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DOCKET NO. SW-02361A-05-0657

IN THE MATTER OF THE APPLICATION OF
BLACK MOUNTAIN SEWER COMPANY, AN
ARIZONA CORPORATION, FOR A
DETERMINATION OF THE FAIR VALUE OF
ITS UTILITY PLANT AND PROPERTY AND
FOR INCREASES IN ITS RATES AND
CHARGES FOR UTILITY SERVICE BASED
THEREON.

**STAFF'S NOTICE OF FILING
DIRECT TESTIMONY**

Staff of the Arizona Corporation Commission hereby files the Direct Testimony of Crystal S. Brown, Marlin Scott and Pedro M. Chaves of the Utilities Division in the above-referenced matter.

RESPECTFULLY SUBMITTED this 9th day of March, 2006.

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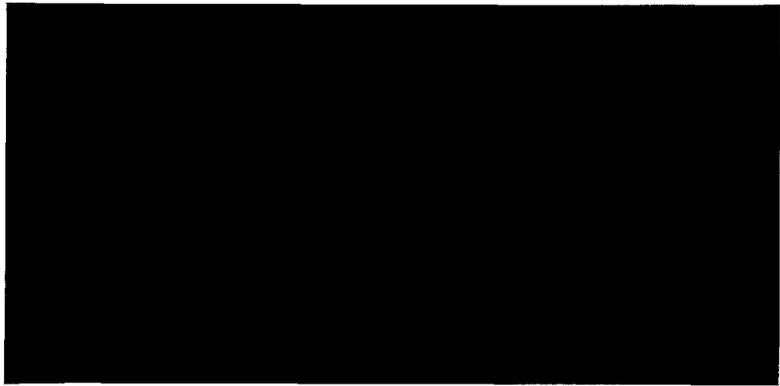
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**ARIZONA CORPORATION COMMISSION
UTILITIES DIVISION**

**DIRECT
TESTIMONY
OF
CRYSTAL S. BROWN
MARLIN SCOTT, JR.
PEDRO M. CHAVES**

DOCKET NO. SW-02361A-05-0657

**IN THE MATTER OF THE APPLICATION OF
BLACK MOUNTAIN SEWER COMPANY, AN
ARIZONA CORPORATION, FOR A
DETERMINATION OF THE FAIR VALUE OF ITS
UTILITY PLANT AND PROPERTY AND FOR
INCREASES IN ITS RATES AND CHARGES FOR
UTILITY SERVICE BASED THEREON.**

MARCH 9, 2006

BROWN

BEFORE THE ARIZONA CORPORATION COMMISSION

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

IN THE MATTER OF THE APPLICATION OF)
BLACK MOUNTAIN SEWER COMPANY, AN)
ARIZONA CORPORATION, FOR A)
DETERMINATION OF THE FAIR VALUE OF ITS)
UTILITY PLANT AND PROPERTY AND FOR)
INCREASES IN ITS RATES AND CHARGES FOR)
UTILITY SERVICE BASED THEREON.)
_____)

DOCKET NO. SW-02361A-05-0657

DIRECT
TESTIMONY
OF
CRYSTAL S. BROWN
PUBLIC UTILITIES ANALYST V
UTILITIES DIVISION
ARIZONA CORPORATION COMMISSION

MARCH 9, 2006

TABLE OF CONTENTS

	<u>Page</u>
Introduction.....	1
Background.....	2
Consumer Service.....	4
Summary of Proposed Revenues.....	4
Rate base.....	7
Fair Value Rate Base.....	7
Rate Base Summary.....	7
Rate Base Adjustment No. 1 – Utility Plant In Service, Post-Test Year Plant.....	8
Rate Base Adjustment No. 2 – Affiliate Costs and Capitalized Affiliate Profit.....	11
Rate Base Adjustment No. 3 – Expensed Plant.....	15
Rate Base Adjustment No. 4 – Contributions in Aid of Construction (“CIAC”) and Amortization of CIAC.....	17
Rate Base Adjustment No. 5 – Customer Deposits.....	18
Rate Base Adjustment No. 6 – Deferred Income Taxes.....	19
Rate Base Adjustment No. 7 – Working Capital.....	21
Prepaid Expenses.....	22
Cash Working Capital.....	22
Operating Income.....	25
Operating Income Summary.....	25
Operating Income Adjustment No. 1 – Expensed Plant.....	25
Operating Income Adjustment No. 2 – Affiliate Expenses.....	26
Operating Income Adjustment No. 3 – Bad Debt Expense.....	29
Operating Income Adjustment No. 4 – Depreciation Expense.....	29
Operating Income Adjustment No. 5 – Nonrecurring and Other Expense.....	31
Operating Income Adjustment No. 6 – Scottsdale Operating Lease.....	32
Operating Income Adjustment No. 7 – Food and Beverages.....	33
Operating Income Adjustment No. 8 – Property Taxes.....	33
Operating Income Adjustment No. 9 – Income Taxes.....	34
Operating Income Adjustment No. 10 – Arizona Corporation Commission Gross Revenue Assessment.....	34
RATE DESIGN.....	35

SCHEDULES

Revenue Requirement.....	CSB-1
Gross Revenue Conversion Factor.....	CSB-2
Rate Base.....	CSB-3
Summary of Rate Base Adjustments.....	CSB-4
Rate Base Adjustment No. 1 – Post-Test Year Plant.....	CSB-5
Rate Base Adjustment No. 2 – Affiliate Plant Costs and Capitalized Affiliate Profits.....	CSB-6
Rate Base Adjustment No. 3 – Expensed Plant.....	CSB-7
Base Adjustment No. 4 – Contributions in Aid of Construction.....	CSB-8
Base Adjustment No. 5 – Customer Deposits.....	CSB-9
Rate Base Adjustment No. 6 – Deferred Income Taxes.....	CSB-10
Rate Base Adjustment No. 7 – Cash Working Capital.....	CSB-11

Income Statement – Test Year and Staff RecommendedCSB-12
Summary of Operating Income Adjustments – Test Year.....CSB-13
Operating Income Adjustment No. 1 – Expensed PlantCSB-14
Operating Income Adjustment No. 2 – Affiliate ExpensesCSB-15
Operating Income Adjustment No. 3 – Bad Debt ExpenseCSB-16
Operating Income Adjustment No. 4 – Depreciation Expense.....CSB-17
Operating Income Adjustment No. 5 – Normalized ExpensesCSB-18
Operating Income Adjustment No. 6 – Scottsdale Capacity Operating LeaseCSB-19
Operating Income Adjustment No. 7 – Food and BeveragesCSB-20
Operating Income Adjustment No. 8 – Property Tax ExpenseCSB-21
Operating Income Adjustment No. 9 – Income Tax ExpenseCSB-22
Operating Income Adjustment No. 10 – ACC Gross Revenue Assessment.....CSB-23

Rate Design.....CSB-24

EXECUTIVE SUMMARY
BLACK MOUNTAIN SEWER COMPANY, INC.
DOCKET NO. SW-02361A-05-0657

Black Mountain Sewer Company (“Black Mountain” or “Company”) is a certificated Arizona public service corporation that provided wastewater utility service to 1,923 customers during 2004 primarily in the Town of Carefree, in unincorporated portions of Maricopa County and portions of the City of Scottsdale.

On September 16, 2005, Black Mountain filed an application for a permanent rate increase. The Company states that it incurred an adjusted test year operating loss of \$14,233 resulting in a negative 1.6 percent rate of return.

Black Mountain proposed a \$163,231, or 13.47 percent, revenue increase from \$1,211,806 to \$1,375,037. The proposed revenue increase would produce an operating income of \$97,619 for an 11.0 percent rate of return on an original cost rate base of \$887,449.

Staff recommends a full accounting of the hook up fees and that excess fees be refunded to customers by a method to be determined outside this rate proceeding.

Staff recommends a \$30,495, or 2.53 percent, revenue increase from \$1,205,452 to \$1,235,947. Staff’s proposed revenue increase would produce an operating income of \$39,857 for a 9.6 percent rate of return on an original cost rate base of \$415,172. Staff’s recommended rates would increase the typical residential bill from \$38.00 to \$38.98, for an increase of \$0.98 or 2.58 percent.

1 **INTRODUCTION**

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

3 A. My name is Crystal S. Brown. I am a Public Utilities Analyst V employed by the Arizona
4 Corporation Commission ("ACC" or "Commission") in the Utilities Division ("Staff").
5 My business address is 1200 West Washington Street, Phoenix, Arizona 85007.

6
7 **Q. Briefly describe your responsibilities as a Public Utilities Analyst V.**

8 A. I am responsible for the examination and verification of financial and statistical
9 information included in utility rate applications. In addition, I develop revenue
10 requirements, prepare written reports, testimonies, and schedules that include Staff
11 recommendations to the Commission. I am also responsible for testifying at formal
12 hearings on these matters.

13
14 **Q. Please describe your educational background and professional experience.**

15 A. I received a Bachelor of Science Degree in Business Administration from the University
16 of Arizona and a Bachelor of Science Degree in Accounting from Arizona State
17 University.

18
19 Since joining the Commission, I have participated in numerous rate cases and other
20 regulatory proceedings involving large electric, gas, telecommunications, and water
21 utilities. I have testified on matters involving regulatory accounting and auditing. During
22 the past six years, I have attended utility-related seminars on regulation, accounting,
23 finance and income taxes designed to provide continuing and updated education in these
24 areas. Various professional and industry organizations sponsored these seminars.

25

1 I have been employed by the Commission as a regulatory auditor and a rate analyst since
2 August 1996.

3
4 **Q. What is the scope of your testimony in this case?**

5 A. I am presenting Staff's analysis and recommendations in the areas of rate base, operating
6 revenues and expenses, revenue requirement, and rate design regarding Black Mountain
7 Sewer Company, Inc.'s ("Black Mountain" or "Company") application for a permanent
8 rate increase. Staff witness Pedro Chaves is presenting Staff's cost of capital
9 recommendations. Staff witness Marlin Scott, Jr. is presenting Staff's engineering
10 analysis and recommendations.

11
12 **Q. What is the basis of your recommendations?**

13 A. I performed a regulatory audit of Black Mountain's application to determine whether
14 sufficient, relevant, and reliable evidence exists to support the Company's requested rate
15 increase. The regulatory audit consisted of examining and testing the financial
16 information, accounting records, and other supporting documentation and verifying that
17 the accounting principles applied were in accordance with the Commission adopted
18 National Association of Regulatory Utility Commissioners ("NARUC") Uniform System
19 of Accounts ("USOA").

20
21 **BACKGROUND**

22 **Q. Please review the background of this application.**

23 A. Black Mountain Sewer Company ("Black Mountain" or "Company") is a certificated
24 Arizona public service corporation that provided wastewater utility service to 1,923
25 customers during 2004 primarily in the Town of Carefree, in unincorporated portions of
26 Maricopa County and portions of the City of Scottsdale.

1 In March 2001, Black Mountain became a wholly owned subsidiary of Algonquin Water
2 Resources. Algonquin Water Resources is Black Mountain's only shareholder.
3 Algonquin Water Resources is a wholly owned subsidiary of Algonquin Power Income
4 Fund¹ (Algonquin Water Resources and Algonquin Power Income Fund are collectively
5 referred to as "Algonquin").
6

7 In addition to Black Mountain, Algonquin owns three other companies located in Arizona:
8 Litchfield Park Service Company, Gold Canyon Sewer Company, and Bella Vista Water
9 Company. Algonquin has a contract to manage and operate Black Mountain. Algonquin
10 also owns and/or operates five utility systems in Illinois and Texas.
11

12 Black Mountain's current rates were authorized in Decision No. 59944, dated December
13 26, 1996.
14

15 **Q. What are the primary reasons for the Company's requested permanent rate**
16 **increase?**

17 A. According to the Company, the primary reasons are to recover increased operating
18 expenses and to earn its authorized rate of return.
19

¹ Algonquin Power Income Fund is an investment trust that owns or has interests in a portfolio of utility companies in the United States and Canada, including 48 hydroelectric facilities, five natural gas cogeneration facilities, 18 alternative fuels facilities and 15 water reclamation and distribution facilities.

1 **CONSUMER SERVICE**

2 **Q. Please provide a brief history of customer complaints received by the Commission**
3 **regarding Black Mountain.**

4 A. Staff reviewed the Commission's records and found two opinions and two inquiries
5 concerning the rate case as of February 24, 2006. For the period of 2003 to 2006, the
6 Commission received five complaints concerning the quality of service, construction, and
7 rates; and two inquiries concerning the rates and other Commission questions. All
8 complaints and inquiries have been resolved and closed.

9

10 **SUMMARY OF PROPOSED REVENUES**

11 **Q. Please summarize the Company's filing.**

12 A. The Company proposes total annual operating revenue of \$1,371,019. This represents an
13 increase of \$163,279, or 13.52 percent, over Test Year revenue of \$1,207,740.

14

15 **Q. Please summarize Staff's recommended revenue.**

16 A. Staff recommends a \$30,495, or 2.53 percent, revenue increase from \$1,205,452 to
17 \$1,235,947. Staff's proposed revenue increase would produce an operating income of
18 \$39,857 for a 9.6 percent rate of return on an original cost rate base of \$415,172. Staff's
19 recommended rates would increase the typical residential bill from \$38.00 to \$38.98, for
20 an increase of \$0.98 or 2.58 percent.

21

22 **Q. What Test Year did Black Mountain use in this filing?**

23 A. Black Mountain's rate filing is based on the twelve months ended December 31, 2004
24 ("Test Year").

25

1 **Q. Please summarize the rate base and operating income recommendations and**
2 **adjustments addressed in your testimony for Black Mountain.**

3 A. My testimony addresses the following issues:

4
5 Post-Test Year Plant – This adjustment decreases Plant in Service by \$94,297 to remove
6 plant that was not used and useful during the Test Year.

7
8 Affiliate Plant Costs – This adjustment decreases Plant in Service by \$163,103 to remove
9 profit capitalized from affiliate billings and computer and software costs that should be
10 recorded in the affiliates' plant accounts.

11
12 Expensed Plant Costs, Plant In Service – This adjustment increases Plant in Service by
13 \$20,048 to reflect plant that the Company expensed when paid rather than capitalized and
14 depreciated.

15
16 Contributions in Aid of Construction (“CIAC”) and Amortization of CIAC – This
17 adjustment increases the CIAC balance by \$296,133 and the Amortization of CIAC
18 balance by \$46,663 to properly reflect all hook-up fees paid by customers.

19
20 Customer Deposits – This adjustment decreases rate base by \$9,435 to remove a refunded
21 deposit that the Company inadvertently classified as customer deposits and to reflect test
22 year-end customer deposits.

23
24 Deferred Income Taxes – This adjustment increases rate base by \$164,000 to recognize in
25 rate base a net deferred income tax asset for Black Mountain that was recorded at the
26 parent company level.

1 Working Capital – This adjustment decreases rate base by \$140,020 to eliminate the
2 Company’s selective recognition of components that only increase working capital.

3
4 Expensed Plant Costs, Operating Expenses – This adjustment decreases operating
5 expenses by \$20,048 to remove plant costs that the Company inappropriately expensed.

6
7 Affiliate Expenses – This adjustment decreases operating expense by \$25,406 to remove
8 expenses that should have been allocated or directly charged to the Company’s affiliates.

9
10 Bad Debt Expense – This adjustment decreases operating expenses by \$5,926 to remove
11 bad debt expense that was not actually incurred.

12
13 Depreciation Expense – This adjustment decreases operating expenses by \$53,439. This
14 adjustment reflects Staff’s calculation of depreciation expense based upon Staff’s
15 recommended plant balances and removes the depreciation expense directly related to the
16 Post-Test Year (“PTY”) plant.

17
18 Nonrecurring & Other Expenses – This adjustment decreases operating expenses by
19 \$5,428 to reflect Staff’s adjustments to certain contract services.

20
21 Scottsdale Capacity Operating Lease Expense – This adjustment decreases operating
22 expense by \$27,801 to remove the Company’s proposed pro forma to gross-up income tax
23 expense on the premium portion of its debt service incurred to acquire treatment capacity
24 from Scottsdale that is recognized for ratemaking as an operating lease expense.

25

1 Food and Beverages – This adjustment decreases operating expenses by \$664 to remove
2 expenses that are not needed to provide wastewater service.

3
4 Property Tax Expense – This adjustment decreases operating expense by \$1,692 to reflect
5 Staff's calculation of the Company's property tax expense.

6
7 Income Tax Expense – This adjustment increases operating expenses by \$103,621 to
8 reflect the income tax obligation on Staff's adjusted test year taxable income.

9
10 ACC Assessment – This adjustment decreases operating expense by \$2,288 to remove
11 revenues and expenses that should be treated as pass-through items.

12

13 **RATE BASE**

14 **Fair Value Rate Base**

15 **Q. Did the Company prepare a Schedule showing the elements of Reconstruction Cost**
16 **New Rate Base?**

17 A. No, the Company did not. The Company requested that its original cost rate base
18 ("OCRB") be treated as its fair value rate base.

19

20 **Rate Base Summary**

21 **Q. Please summarize Staff's adjustments to Black Mountain's rate base shown on**
22 **Schedules CSB-3 and CSB-4.**

23 A. Staff's adjustments to Black Mountain's rate base resulted in a net decrease of \$565,603,
24 from \$887,449 to a \$415,172. This decrease was primarily due to Staff: (1) removing
25 capitalized affiliate profit and plant that was not completed and serving customers during
26 the Test Year; (2) increasing the CIAC and amortization of CIAC balances to properly

1 reflect all hook-up fees paid by customers; and (3) removing the Company's selective
2 recognition of working capital components.

3
4 **Rate Base Adjustment No. 1 – Utility Plant In Service, Post-Test Year Plant**

5 **Q. What is Black Mountain proposing for Utility Plant in Service and Post-Test Year**
6 **Plant?**

7 A. Black Mountain is proposing \$8,464,745 for Utility Plant in Service. The amount is
8 composed of \$8,370,448 that was recorded in the Company's plant accounts and in
9 service during the Test Year and \$94,297 in Post-Test Year ("PTY") plant as shown on
10 Schedule CSB-4.

11
12 **Q. Please describe the Post-Test Year Plant.**

13 A. The \$94,297 in PTY plant is composed of \$24,706 for gravity sewer collection mains and
14 \$69,590 for an on-site sodium hypo chlorite generation system. All of the PTY plant was
15 under construction at the end of the Test Year.

16
17 **Q. What is Staff's recommended treatment for the Post-Test Year Plant?**

18 A. Staff recommends excluding the PTY plant and the related PTY operating expense (i.e.,
19 depreciation expense) from rates.

20
21 **Q. What is the effect of Black Mountain's proposal to include Post-Test Year plant in**
22 **rate base?**

23 A. Black Mountain's proposal to include the \$94,297 of PTY plant in rate base over-states
24 the revenue requirement, and ultimately, the rates paid by the Company's 1,923
25 customers. The over-stated revenue requirement occurs because the PTY plant creates a

1 mismatch between the revenues, expenses incurred and the plant used to provide service
2 in the Test Year and amounts requested for recovery in rates.

3
4 In the absence of extraordinary circumstances, the costs of the historical test year should
5 be used in the development of the revenue requirement. These costs are consistent with
6 the matching principal and result in plant in service measured at the same date as other
7 rate base components and with revenues and expenses of the same accounting period.

8
9 **Q. When is recognition of PTY plant in rate base appropriate?**

10 A. By definition PTY plant is mismatched with the revenues, expenses and rate base
11 components of the test year. Matching is one of the most fundamental principles of
12 accounting and rate-making. The absence of matching distorts the meaning of and
13 reduces the usefulness of operating income and rate of return for measuring the fairness
14 and reasonableness of rates. Accordingly, recognizing PTY plant in rate base should be
15 granted only in special and unusual cases where failure to do so would create an inequity.

16
17 Staff recognizes two such cases:

- 18 1. When the magnitude of the investment relative to the utility's total investment is
19 such that not including the PTY plant in the cost of service would jeopardize the
20 utility's financial health; and
- 21 2. When all of the following conditions exist:
 - 22 a. the cost of the PTY plant is significant and substantial,
 - 23 b. the net impact on revenue and expenses for the PTY plant is known and
24 insignificant,
 - 25 c. the PTY plant is prudent and necessary for the provision of service and reflects
26 appropriate, efficient, effective, and timely decision-making,

- 1 d. the funding source(s) and amounts for the PTY plant are known and
2 recognized in the rate application,
3 e. the PTY plant is in service at the time of the rate filing,
4 f. the PTY plant is recorded in a completed plant account(s) in the general ledger
5 and auditable records are available at the time of the rate filing, and
6 g. all related retirements are recorded in the general ledger and recognized in the
7 rate filing.

8

9 **Q. Would excluding the PTY plant from rate base jeopardize the Company's financial**
10 **health?**

11 A. No, excluding the \$94,297 of PTY plant would not jeopardize the Company's financial
12 health because the amount is a small percentage of the Company's net plant.

13

14 **Q. Does the PTY plant meet all of the conditions of the second case necessary for**
15 **inclusion in rate base?**

16 A. No, it does not. The amount of the plant is not substantial. The impact on revenues and
17 expenses for the PTY plant cannot be measured with sufficient accuracy to determine that
18 it is insignificant. The PTY plant was not needed to correct any service related problem
19 for Test Year customers.

20

21 **Q. What is Staff recommending?**

22 A. Staff recommends decreasing plant in service by \$94,297 to remove all PTY plant from
23 rate base as shown on Schedules CSB-4 and CSB-5.

24

1 **Rate Base Adjustment No. 2 – Affiliate Costs and Capitalized Affiliate Profit**

2 **Q. Did Staff make adjustments to remove affiliate plant costs and the capitalized profit**
3 **on affiliate billings?**

4 A. Yes, Staff discusses each item separately.

5

6 Capitalized Affiliate Profit

7 **Q. Do affiliates charge a profit on activities they perform for Black Mountain?**

8 A. Yes, in response to Staff data request CSB 1.52, the Company indicated that affiliate
9 billings include profit.

10

11 **Q. Does Black Mountain capitalize (i.e. record in its plant accounts) profit included in**
12 **billings from affiliates?**

13 A. Yes. In response to Staff data request CSB-1.52, the Company indicated that the entire
14 billing, including the profit, is capitalized when the costs pertain to a capital project. The
15 Company has included the profit component of the affiliate billings in plant in service.
16 Consequently, by doing so, it has included the affiliate profit in rate base.

17

18 Additionally, in response to Staff data request CSB 10.1, the Company provided
19 documentation showing that \$20,871 of affiliate profit that was capitalized in its 2001
20 through 2004 plant additions. The profit was \$1,666, \$13,148, \$3,102, and \$2,955 for the
21 years 2001, 2002, 2003, and 2004, respectively as shown on Schedule CSB 6, Page 3 of 4,
22 Columns D, E, F, and G.

23

1 **Q. Would this inflated rate base due to affiliate profit (i.e., revenues exceeding all costs)**
2 **exist if Black Mountain employed its workers directly?**

3 A. No, it would not. The Company could employ the workers directly and avoid the mark-up
4 on the labor costs.

5
6 **Q. Did Black Mountain seek competitive bids for the contract services it received from**
7 **its affiliates?**

8 A. No. Competitive bids were not obtained.

9
10 **Q. What explanation did Black Mountain provide for not seeking competitive bids?**

11 A. The Company stated that only Algonquin had the unique experience and expertise needed
12 to operate and manage Black Mountain.

13
14 **Q. Did Black Mountain discuss the nature of the “essential services and management**
15 **expertise” that only Algonquin and no other company could provide?**

16 A. Yes. The Company’s response to Staff data request CSB 5.4 stated that the essential
17 services were “services necessary for proper and efficient continuing operations of the
18 Company as well as long-term financial and strategic development of the business”.

19
20 **Q. Does this response demonstrate any unique characteristics recognizable to Staff that**
21 **suggest that only Algonquin could provide these services for Black Mountain?**

22 A. No.

23
24 **Q. Does Black Mountain perform these services for any unaffiliated companies?**

25 A. No, it does not.

26

1 **Q. What are the risks and/or effects of Black Mountain's exclusive use of labor from an**
2 **unregulated affiliate have on rate payers?**

3 A. Algonquin can effectively circumvent the Commission's ability to regulate the return on
4 equity it earns from owning and operating Black Mountain. Algonquin can increase the
5 effective return of equity invested in Black Mountain by increasing the profit included in
6 billings to Black Mountain that are subsequently included in the revenue requirement
7 authorized by the Commission for Black Mountain.

8
9 **Q. Does Staff have concerns about the cost documentation from Black Mountain's**
10 **affiliates?**

11 A. Yes. Staff found that the Company did not always provide underlying cost documentation
12 for billings from its affiliates.

13
14 **Q. Why are invoices issued from the Company's affiliates that have no additional**
15 **supporting cost documentation a concern to Staff?**

16 A. It is a concern because, as noted above, related party transactions have sometimes been
17 known to be recorded at inflated costs. Additionally, the Company did not use
18 competitive bids to help ensure it received the best price for its contractual services.

19
20 **Q. Should the value of plant included in rate base exceed the actual cost of materials,**
21 **labor and appropriate overhead incurred to purchase or construct them?**

22 A. No. Only the actual cost of materials, labor and overhead of the affiliate (exclusive of any
23 profit) should be recognized in rate base. Black Mountain should be required to provide
24 invoices as evidence to support the actual costs of the affiliate. The Arizona
25 Administrative Code R14-2-610 D.1 states that "Each utility shall keep general and
26 auxiliary accounting records reflecting the cost of its properties . . . and all other

1 accounting and statistical data necessary to give complete and authentic information as to
2 its properties . . .” (emphasis added). Staff concludes that Black Mountain’s practices fall
3 short of this standard.

4
5 **Q. What initial steps could the Commission take to reduce the risk that Algonquin is**
6 **circumventing the Commission return of equity regulatory authority?**

7 A. First, order Black Mountain to require its affiliates to segregate the cost and profit portions
8 in their billings to Black Mountain. Second, order Black Mountain to maintain records to
9 separately accounting for those profits. Third, order Black Mountain to identify the
10 amount of affiliate profits included in the requested revenue requirement in future rate
11 filings. As an alternative to the above, the Commission could require Black Mountain to
12 obtain competitive bids.

13
14 Affiliate Plant Costs, Computer Equipment and Software

15 **Q. Does Black Mountain share property, plant, or equipment with any affiliates?**

16 A. Yes, according to Black Mountain’s response to Staff data request CSB 1.45, the
17 Company shares computer equipment with three affiliates.

18
19 **Q. What is the cost of the shared computer equipment and software addition?**

20 A. The cost is \$142,232 as shown on Schedule CSB-6, Pages 2 through 4.

21
22 **Q. What was the source of the funding for the computer equipment and software?**

23 A. According to the Company’s response to Staff data request CSB 1.45, Black Mountain
24 hook-up fees funded these acquisitions.

1 **Q. Is the purchase of computer equipment and software an allowable use of hook-up fee**
2 **collections under the conditions set forth in Decision 59944?**

3 A. No, it is not.
4

5 **Q. What other evidence does Staff have to indicate that affiliate plant costs were directly**
6 **charged to Black Mountain?**

7 A. In the Company's response to Staff data request CSB 2.7, Staff noted invoices directly
8 related to Bella Vista Water Company among the invoices sent to support the 2004 Office
9 Furniture and Equipment addition.
10

11 **Q. What is the effect of not properly allocating or directly charging the plant costs to**
12 **Black Mountain's affiliates?**

13 A. Plant in service is overstated and the rates to customers are unfairly increased.
14

15 **Q. What is Staff recommending for the capitalized affiliate profit and affiliate computer**
16 **equipment?**

17 A. Staff recommends decreasing Plant in Service by \$163,103 as shown on Schedules CSB-4
18 and CSB-6, Page 2 of 4.
19

20 **Rate Base Adjustment No. 3 – Expensed Plant**

21 **Q. What guidance should companies use in determining whether a cost should be**
22 **capitalized by recording it in a plant account or treated as an operating expense?**

23 A. The Arizona Administrative Code R14-2-610 D.1 requires sewer companies to maintain
24 their accounting records in accordance with the NARUC USOA. It states that "Each
25 utility shall maintain its books and records in conformity with the Uniform System of
26 Accounts for Class A, B, C and D Sewer Utilities" (emphasis added).

1 Further, the NARUC USOA provides a listing of plant accounts and the types of costs that
2 should be recorded in each account. Utilities should use the plant account listing and
3 Accounting Instruction No. 14 "Utility Plant – Components of Construction Costs" to
4 determine what costs should be recorded as plant.

5
6 **Q. Did Black Mountain expense costs that, according to the NARUC USOA, should be**
7 **recorded in plant accounts?**

8 A. Yes, the Company expensed plant costs and the labor cost incurred for installing plant as
9 shown on Schedule CSB-7.

10
11 **Q. What is the effect of expensing plant?**

12 A. The matching principle is violated. The NARUC USOA requires utilities to follow
13 accrual accounting. The matching principle is the underlying basis of accrual accounting.
14 The matching principle requires that revenues in an accounting period be matched to the
15 expenses incurred during that same accounting period.

16
17 The practice of expensing plant violates the matching principle because the entire cost of
18 the asset is matched to only one accounting period even though the asset will benefit many
19 accounting periods. Adherence to the matching principle and the NARUC USOA requires
20 that the cost of an asset that benefits more than one accounting period be capitalized (by
21 recording it in a plant account) and depreciated over the asset's useful life.

22
23 **Q. What is Staff recommending?**

24 A. Staff recommends increasing plant in service by \$20,892 to reclassify plant that was
25 incorrectly recorded as an operating expense as shown on Schedules CSB-4 and CSB-7.

26

1 **Rate Base Adjustment No. 4 – Contributions in Aid of Construction (“CIAC”) and**
2 **Amortization of CIAC**

3 **Q. What did the Company propose for CIAC and Amortization of CIAC?**

4 A. The Company proposed \$5,346,615 and \$3,308,578, respectively, for the CIAC and
5 Amortization of CIAC as shown on Schedule CSB-4.

6
7 **Q. What is the primary source of the CIAC?**

8 A. The primary source is hook-up fees.

9
10 **Q. Is the Company required to file an annual report detailing the annual amount of**
11 **hook-up fees and the uses of those funds?**

12 A. Yes.

13
14 **Q. Did Staff review the hook-up fee reports and other information for the Company’s**
15 **hook up fees?**

16 A. Yes, Staff reviewed hook up fee reports for the years 2000 through 2004 that were filed
17 with the Commission. Staff also reviewed Company prepared work papers² of hook-up
18 fee collections for the years 1994 through 1999.

19
20 **Q. Was there a difference between the annual hook up fee collection reported in the**
21 **hook up fee reports and the annual fee collections used to calculate the \$5,346,615**
22 **CIAC balance reported in the Company’s application?**

23 A. Yes, there were differences as shown on Column F of Schedule CSB-8, Page 1.
24

² Company response to RUCO 1.8.

1 **Q. How did Staff calculate the CIAC and Accumulated CIAC balances?**

2 A. Staff started with the ending CIAC balance per Staff from the last rate case. To this
3 balance, Staff added the collections reported in the annual hook up fee reports and the
4 Company provided work papers.

5
6 **Q. What did Staff calculate for the CIAC and Accumulated CIAC balances?**

7 A. Staff calculated \$6,096,454 and \$3,355,241 for the CIAC and Amortization of CIAC
8 balances, respectively.

9
10 **Q. What is Staff recommending?**

11 A. Staff recommends increasing the CIAC and Amortization of CIAC balances by \$296,133
12 and \$46,663, respectively, as shown on Schedules CSB-4, and CSB-8.

13
14 **Rate Base Adjustment No. 5 – Customer Deposits**

15 **Q. Is Black Mountain proposing to include Customer Deposits in the rate base**
16 **calculation?**

17 A. Yes, Black Mountain is proposing to treat \$3,000 as a customer deposit that increases its
18 rate base as shown on Schedule CSB-4.

19
20 **Q. Are Customer Deposits normally treated as an addition or deduction from rate base?**

21 A. Customer Deposits are a deduction in the calculation of rate base.

22
23 **Q. Why are Customer Deposits normally deducted from rate base?**

24 A. Customer deposits are deducted from rate base in order to recognize customer provided
25 capital.

26

1 **Q. Why did the Company proposed to add the customer deposits to rate base?**

2 A. Black Mountain inadvertently recorded a deposit that was refunded to Black Mountain as
3 a customer deposit.³

4
5 **Q. What was the Company's customer deposit balance at the end of the Test Year?**

6 A. The balance was \$6,435 as shown on Schedule CSB-9.

7
8 **Q. Should the Test Year-end customer deposit balance be reflected as a deduction from
9 rate base?**

10 A. Yes, because the balance reflects customer provided capital.

11
12 **Q. What is Staff recommending?**

13 A. Staff recommends decreasing rate base by \$9,435 to reflect removal of the \$3,000 refund
14 and to reflect the Test Year-end customer deposit balance in rate base as shown on
15 Schedules CSB-4 and CSB-9.

16
17 **Rate Base Adjustment No. 6 – Deferred Income Taxes**

18 **Q. What are deferred income taxes?**

19 A. Deferred income taxes are the computed tax difference between income taxes calculated
20 for rate-making purposes and the actual income taxes that a Company pays to the United
21 States Treasury and the State of Arizona. The primary cause of the income tax difference
22 is the straight line depreciation method used for rate making purposes and accelerated
23 depreciation method used for federal and state income tax reporting purposes.

24

³ CSB 5.12

1 **Q. When should deferred income taxes be recorded in the financial statements?**

2 A. Statement of Financial Accounting Standards (“SFAS”) No. 109, Accounting for Income
3 Taxes, requires companies to use deferred tax accounting to recognize income tax timing
4 differences when they occur. Also, the Internal Revenue requires that timing differences
5 related to using straight line and accelerated depreciation methods be normalized by
6 recording deferred income taxes.

7

8 **Q. Does Black Mountain have an income tax timing difference that would result in**
9 **deferred income taxes?**

10 A. Yes. Black Mountain uses straight line depreciation for rate-making purposes and
11 accelerated depreciation for income tax purposes. In response to the Residential Utility
12 Consumer Office’s (“RUCO”) data request number 2.7, the Company indicated that it had
13 a deferred income tax credit (liability) of \$360,000.

14

15 **Q. Did Black Mountain reflect the \$360,000 in deferred income tax credit in rate base?**

16 A. No. Black Mountain indicated that the \$360,000 was recognized at the parent company
17 level. Black Mountain did not reflect the deferred tax credit in its rate base calculation.

18

19 **Q. For rate-making purposes, should the \$360,000 in deferred income tax credit be**
20 **reflected in the rate base calculation?**

21 A. Yes, because customers are providing cash for all or a portion of the income taxes through
22 rates before Black Mountain pays its federal and state taxes. The accumulated balance of
23 deferred income tax credits are a cost free source of cash to use until it must pay the
24 United States Treasury. Recognition of deferred income taxes in rate base is required by
25 the Internal Revenue Service (“IRS”) normalization rules. Failure to comply with
26 normalization rules could result in the IRS denying Black Mountain from using

1 accelerated depreciation. The result would be the loss of cost free capital and increased
2 costs to ratepayers.

3
4 **Q. In addition to a deferred tax credit of \$360,000, does the Company have a deferred**
5 **tax debit (asset)?**

6 A. Yes. In response to RUCO 2.7, the Company indicated that it had a deferred tax asset of
7 \$524,000 resulting from the Company's AIAC.

8
9 **Q. What is the net amount of the \$360,000 deferred tax liability and \$524,000 deferred**
10 **tax asset?**

11 A. The net amount is \$164,000 as shown on Schedule CSB-10.

12
13 **Q. What is Staff recommending?**

14 A. Staff recommends increasing rate base by \$164,000 as shown on Schedules CSB-4 and
15 CSB-10.

16
17 **Rate Base Adjustment No. 7 – Working Capital**

18 **Q. What is Black Mountain proposing for working capital?**

19 A. Black Mountain is proposing \$9,512 for prepaid expenses and \$130,508 for cash working
20 capital as shown on Schedule CSB-4. Staff will discuss the adjustment to each item
21 separately.

22

1 **Prepaid Expenses**

2 **Q. What is the amount in Prepaid Expenses that Black Mountain is proposing to**
3 **include in the Working Capital calculation?**

4 A. Black Mountain is proposing \$9,512 in prepaid expenses in the working capital
5 calculation.

6

7 **Q. Does Black Mountain's proposal to include Prepaid Expenses in the Working**
8 **Capital calculation represent an inequitable, selective adjustment to increase rate**
9 **base?**

10 A. Yes, it does. As Staff will discuss further in Adjustment No. 7, Cash Working Capital, the
11 Company failed to reflect any customer provided capital in its working capital
12 requirement because it chose not to conduct a lead-lag study.

13

14 Cash working capital can be a positive or negative component of rate base.⁴ A net
15 negative Working Capital could result if the result of a lead-lag study was a negative cash
16 working capital that exceeds the prepaid expense balance.

17

18 It is inequitable to ignore a major component of the Working Capital analysis and
19 selectively recognize other components.

20

21 **Cash Working Capital**

22 **Q. How much of Black Mountain's proposed Working Capital is represented by cash**
23 **working capital?**

24 A. Black Mountain's Working Capital includes \$130,508 for cash working capital.

⁴ A positive number indicates cash was provided by investors to pay operating expenses before receipt of revenues from customers. A negative number indicates customer sales revenue was received by a company prior to the company paying operating expenses.

1 **Q. How did Black Mountain calculate the cash working capital it proposes to include in**
2 **rate base?**

3 A. Black Mountain calculated cash working capital using the “formula method” which is
4 equal to one-eighth of the operating expenses less depreciation, taxes, purchased water,
5 and purchased pumping power expense, plus one twenty-fourth of purchased water and
6 purchased pumping power expense.

7
8 **Q. Is it appropriate for a company the size of Black Mountain to use the formula**
9 **method to calculate cash working capital?**

10 A. No, it is not. In general, the formula method is appropriate for only Class D and E
11 companies due to the small size of the utilities, the cost and time involved in performing
12 the lead-lag study, and the relatively minor impact on rate base.

13
14 **Q. What are the problems inherent in using the allowance methodology?**

15 A. It always yields a positive result effectively ignoring cash working capital provided by rate
16 payers.

17
18 **Q. What method provides a more accurate measurement of the company’s cash**
19 **working capital?**

20 A. The lead-lag method is recognized as the most accurate measure of the cash working
21 capital.

22
23 **Q. Does Black Mountain’s proposal to use the formula method to calculate cash**
24 **working capital represent an inequitable, selective adjustment to increase rate base?**

25 A. Yes. The Company has ignored a large component of Working Capital (i.e., cash working
26 capital) represented by revenues received and expenses paid. The impact on Working

1 Capital of revenues and expenses can be calculated using a lead-lag study. A lead-lag
2 study is recognized as the most accurate method to calculate cash working capital.

3
4 The Company chose not to conduct a lead-lag study, and accordingly, omitted a major
5 component of Working Capital. It is inequitable to ignore a major component of the
6 Working Capital analysis and selectively recognize other components. Had a lead-lag
7 study been conducted, it might have shown that Cash Working Capital is a negative
8 component of rate base.

9
10 **Q. What factors imply that a lead-lag study could result in Cash Working Capital being**
11 **a negative component of rate base?**

12 A. Black Mountain has proposed \$189,622 for “operating lease” payments for the City of
13 Scottsdale to treat a large portion of its sewage flow and \$45,745 for property taxes.
14 These “operating lease payments” and property taxes would be a component of a lead-lag
15 study. Black Mountain collects cash used to make these payments prior to the dates
16 payment is due. For the period that Black Mountain holds these funds before payment,
17 they are a source of cost-free capital. If a lead-lag study were performed, this source of
18 cost-free cash would be a significant negative factor in calculation of the net working
19 capital.

20
21 **Q. What is Staff recommending for the Prepaid Expenses and Cash Working Capital**
22 **Allowance?**

23 A. Staff recommends removing \$140,020 (i.e., \$9,512 in Prepaid Expenses and \$130,508 for
24 the Cash Working Capital Allowance) as shown on Schedules CSB-4 and CSB-11.

25

1 **Operating Income**

2 **Operating Income Summary**

3 **Q. What are the results of Staff's analysis of Test Year revenues, expenses and**
4 **operating income?**

5 A. As shown on Schedules CSB-12 and CSB-13 Staff's analysis resulted in Test Year
6 revenues of \$1,205,452, expenses of \$1,182,901 and operating margin of \$22,551.

7

8 **Operating Income Adjustment No. 1 – Expensed Plant**

9 **Q. Did Black Mountain inappropriately record as operating expenses costs that should**
10 **have been capitalized and depreciated?**

11 A. Yes, as Staff discussed in Rate Base Adjustment No. 4, Expensed Plant, Black Mountain
12 inappropriately recorded as operating expenses costs that according to the NARUC USOA
13 and the matching principle should be capitalized and depreciated as shown on Schedule
14 CSB 14.

15

16 **Q. What treatment does Staff recommend for the Company's expensed plant costs?**

17 A. Staff recommends that the costs be treated consistent with the NARUC USOA and the
18 matching principle. Staff recommends including these costs in rate base and excluding
19 them from Test Year operating expenses.

20

21 **Q. What is Staff recommending?**

22 A. Staff recommends decreasing operating expenses by \$20,048 as shown on Schedules
23 CSB-13 and CSB-14.

24

1 **Operating Income Adjustment No. 2 – Affiliate Expenses**

2 **Q. Do Black Mountain’s proposed Test Year operating expenses include costs that**
3 **should have been allocated or directly charged to its affiliates?**

4 A. Yes, Staff determined that certain claimed long distance and paging services should be
5 allocated or directly charged to the Company’s affiliates as shown on Schedule CSB-15.
6 Staff discusses each separately below.

7

8 Profit Included In Affiliate Billings

9 **Q. What affiliates provide services for Black Mountain?**

10 A. Algonquin Power Systems, Algonquin Power Trust, and Algonquin Water Services
11 provide contractual services for Black Mountain.

12

13 **Q. What were the charges from these affiliates to Black Mountain?**

14 A. Algonquin Power Systems billed \$27,311, Algonquin Power Trust billed \$32,017, and
15 Algonquin Water Services billed \$275,460, for a total of \$332,604 in billings from
16 affiliates.

17

18 **Q. Is a profit percentage included in the billings from Black Mountain’s affiliates?**

19 A. Yes, in response to Staff data request CSB-1.52, the Company indicated that affiliate
20 billings include a 6.5 percent profit.

21

22 **Q. Is the Company requesting recovery of its affiliate’s profit?**

23 A. Yes, it is.

24

1 **Q. Did Staff calculate the amount of profit included in these affiliate billings?**

2 A. Yes. As shown on schedule CSB-15, Line 21, Staff calculated that these affiliate billing
3 include \$21,761 of profit.
4

5 Long Distance Phone Charges of Affiliates

6 **Q. What amount in long distance charges were reported in the Miscellaneous Expense**
7 **account for Black Mountain?**

8 A. The Company reported \$2,186 for AT&T long distance telephone charges as shown on
9 Schedule CSB-15, Line 8.
10

11 **Q. Did Staff perform an analysis of the long distance phone calls?**

12 A. Yes, Staff's analysis showed that the Company made calls to approximately 20 states over
13 a 10 month period with regular calls made to Canada and Texas.
14

15 **Q. Does Staff agree that all of the long distance expenses should be directly charged to**
16 **Black Mountain?**

17 A. No, in response to Staff data request CSB 2.15, the Company indicated that long distance
18 calls to Texas should be removed because workers at the Black Mountain location perform
19 work for the Company's Texas affiliate.
20

21 **Q. Does the Company keep a log of its long distance phone calls in order to properly**
22 **allocate the costs?**

23 A. No, it does not.⁵
24

⁵ Response to Staff data request CSB 2.15 b.

1 **Q. What is the effect of Black Mountain's failure to properly allocate costs to affiliates?**

2 A. The Company's operating expenses are overstated and, accordingly, its requested rates are
3 overstated.

4

5 **Q. Did Staff quantify the amount of costs that should have been directly charged and/or
6 allocated to the Company's affiliates?**

7 A. Yes. As shown on Schedule CSB-15, Staff identified \$514 of costs related directly to
8 Texas and \$161 of costs directly related to Gold Canyon Sewer Company. Since Black
9 Mountain does not keep a log of the long distance phone calls, Staff allocated the \$1,672
10 (i.e., \$2,186 - \$514) remaining claimed phone charges equally among the Black Mountain
11 and three affiliates resulting in an additional \$1,254 ($\$1,672 \times .75$) disallowance.

12

13 Paging Services Costs for Affiliates

14 **Q. What amount did Black Mountain include in the Miscellaneous Expense account for
15 paging services?**

16 A. The Company claimed \$2,651 for Teletouch, a paging/tracking service.

17

18 **Q. Does the amount Black Mountain claimed for this service as Miscellaneous Expense
19 on Schedule C-1 include costs attributable to any of its affiliates?**

20 A. Yes. As shown on Schedule 15, Line 14, Black Mountain included \$1,716 in costs for the
21 paging/tracking services of its Texas affiliates: Woodmark and Timberlake sewer
22 companies.

23

24 **Q. What is the effect of Black Mountain's proposal to include costs for affiliates in the
25 recoverable costs for Arizona rate payers?**

26 A. It overstates the Company's cost to service its customers.

1 **Q. What is Staff recommending for the affiliate expenses?**

2 A. Staff recommends decreasing operating expenses by \$25,406 to remove affiliate expenses
3 as shown on Schedules CSB-13 and CSB-15.

4

5 **Operating Income Adjustment No. 3 – Bad Debt Expense**

6 **Q. Did the Company include a provision for bad debt in the Test Year expenses?**

7 A. Yes, Black Mountain included \$5,926 for bad debt expense in Test Year expenses.

8

9 **Q. Did Staff analyze the revenues, bad debt provision, and actual bad debt write-offs for
10 the years 2002, 2003, and 2004?**

11 A. Yes. Staff determined that the Company had no actual write-offs of bad debt expense for
12 those years.

13

14 **Q. What effect does recognizing the Company's proposed Bad Debt Expense have on
15 the revenue requirement?**

16 A. It increases the revenue requirement and allows recovery of an expense the Company did
17 not experience in the Test Year.

18

19 **Q. What is Staff recommending?**

20 A. Staff recommends decreasing operating expense by \$5,926 to remove Bad Debt Expense
21 as shown on Schedules CSB-13 and CSB-16.

22

23 **Operating Income Adjustment No. 4 – Depreciation Expense**

24 **Q. What amount in depreciation expense is Black Mountain proposing?**

25 A. Black Mountain is proposing depreciation expense of \$126,749. The amount is composed
26 of \$318,903 of recorded depreciation expense on plant that was used and useful during the

1 Test Year plus \$5,136 on plant that was under construction at the end of the Test Year less
2 \$197,290 for amortization expense for CIAC.

3

4 **Q. Did the Company record any depreciation expense in the Test Year that should not**
5 **be recognized in rates?**

6 A. Yes. The Test Year depreciation recorded by the Company does not reflect Staff
7 recommended adjustments to plant balances. Staff's plant balances differ from the
8 Company's primarily due to the removal of capitalized affiliate billings from plant in
9 service. Staff recommends depreciation expense of \$73,310.

10

11 **Q. When would recognition of depreciation expense related to PTY be appropriate?**

12 A. Depreciation expense related to PTY plant should be recognized only when the PTY plant
13 is recognized. This is essential to preserve the matching principle as previously discussed
14 in this testimony regard the adjustment to PTY plant.

15

16 **Q. What treatment does Staff recommend for the Company's pro forma adjustment for**
17 **PTY depreciation expense?**

18 A. Since Staff recommends disallowance of the PTY plant, Staff also recommends
19 disallowance of the Company's pro forma post-test year depreciation expense.

20

21 **Q. What is Staff recommending?**

22 A. Staff recommends decreasing depreciation expense by \$53,439 as shown on Schedules
23 CSB-13 and CSB-17.

24

1 **Operating Income Adjustment No. 5 – Nonrecurring and Other Expense**

2 **Q. Has Staff prepared a schedule identifying operating expenses that should be**
3 **disallowed due to their nonrecurring nature?**

4 A. Yes. Staff identified certain legal and transportation expenses that should be adjusted as
5 shown on Schedule CSB-18.

6

7 **Q. What legal expense did Staff adjust?**

8 A. Staff removed \$3,228 in legal expenses from the cost of service. The expense was
9 incurred for an operating agreement with the Town of Carefree that was not in effect by
10 December 31, 2004⁶. Staff recommends that the Company defer these costs and amortize
11 them over the life of the contract. Costs that result in multi-year benefits should be
12 distributed over the benefit period in accordance to the matching principle.

13

14 **Q. What transportation expense did Staff adjust?**

15 A. Staff removed \$2,200 for a truck rental contract that expired in March 2004⁷ from the cost
16 of service. The Company's transportation expenses for the years 2002, 2003, and 2004
17 were \$0, \$2,525, and \$4,870, respectively. Staff concluded that the \$2,200 amount should
18 be removed from the cost of service as it was nonrecurring.

19

20 **Q. What is Staff recommending?**

21 A. Staff recommends decreasing operating expenses by \$5,428 as shown on Schedules CSB-
22 13 and CSB-18.

23

⁶ The Company has not filed a signed agreement as of February 17, 2006 (CSB-5.8).

⁷ CSB 9.2

1 **Operating Income Adjustment No. 6 – Scottsdale Operating Lease**

2 **Q. What amount is Black Mountain proposing for the Scottsdale Operating Lease**
3 **expense?**

4 A. Black Mountain is proposing \$189,622 for the Scottsdale Operating Lease expense as
5 shown on Schedule CSB-19. The proposed amount includes \$27,801 as a gross-up factor
6 for income taxes on the principal portion of its loan payments (recognized for rate-making
7 purposes as an operating lease expense).

8
9 **Q. Is the Company’s proposal to gross-up the principal portion of its loan payments for**
10 **income taxes appropriate?**

11 A. The principal payments cannot be deducted for calculating the Company’s income tax
12 liability. If loan principal payments are deducted to determine the amount of the income
13 tax expense included in rates, the different treatments of the principal payments for tax
14 and rate-making need to be recognized. The Company’s proposed gross-up is one method
15 to remedy that difference.

16
17 However, Staff recommends a different and cleaner method that does not create a
18 difference in the treatment of the principal payments that requires no gross-up provision.
19 Staff’s method is simply not to deduct the loan payments to determine the taxable income
20 for rate-making purposes.

21
22 Treating the loan payments as operating expenses for rate-making purposes does not also
23 require deducting the loan payments to calculate taxable income for rate-making purposes.
24 Staff recognized the loan payments in the same manner for calculating income tax expense
25 to include in rates as the Company will for determining its tax liability. Staff’s method
26 results in higher taxable income and higher income tax expense included in rates than the

1 Company's method, thus, eliminating the need for a gross-up provision in operating lease
2 expense. The Company's method causes an understatement of the income tax expense
3 included in rates that must be offset by a gross-up provision.

4
5 **Q. What is Staff recommending?**

6 A. Staff recommends decreasing operating expenses by \$27,801 to remove the gross-up for
7 income taxes on the Scottsdale Operating Lease expense as shown on Schedules CSB-13
8 and CSB-19.

9
10 **Operating Income Adjustment No. 7 – Food and Beverages**

11 **Q. What amount for food and beverages did Black Mountain include in the cost of**
12 **service?**

13 A. Black Mountain included \$664 for beverages as shown on Schedule CSB-20.

14
15 **Q. What rate-making treatment does Staff recommend for these types of expenses?**

16 A. Since these costs are not necessary to provide service, Staff recommends that they be
17 recognized as non-operating expenses and excluded from the revenue requirement.

18
19 **Q. What is Staff recommending?**

20 A. Staff recommends decreasing operating expense by \$664 as shown on Schedules CSB-13
21 and CSB-20.

22
23 **Operating Income Adjustment No. 8 – Property Taxes**

24 **Q. What is Black Mountain proposing for Property Taxes?**

25 A. Black Mountain is proposing \$45,745 for property taxes.

26

1 **Q. Did Staff make any adjustment to the Property Tax Expense?**

2 A. Yes. Staff's adjustment reflects Staff's calculation of the property tax expense using
3 Staff's recommended revenues as shown on Schedule CSB-21.

4
5 **Q. What is Staff recommending?**

6 A. Staff recommends decreasing operating expense by \$1,692 as shown on Schedules CSB-
7 13 and CSB-21.

8
9 **Operating Income Adjustment No. 9 – Income Taxes**

10 **Q. What is the Company proposing for Test Year Income Tax Expense?**

11 A. Black Mountain is proposing a negative \$6,544 for Test Year Income Tax Expense as
12 shown on Schedule CSB-24.

13
14 **Q. Did Staff make any adjustments to Test Year Income Tax Expense?**

15 A. Yes. Staff's adjustment reflects Staff's calculation of the income tax expense based upon
16 Staff's adjusted Test Year taxable income as shown on Schedule CSB-22.

17
18 **Q. What is Staff recommending?**

19 A. Staff recommends increasing Test Year Income Tax Expense by \$103,621 as shown on
20 Schedules CSB-12 and CSB-22.

21
22 **Operating Income Adjustment No. 10 – Arizona Corporation Commission Gross Revenue**
23 **Assessment**

24 **Q. What amount did the Company include in the revenue requirement for the ACC**
25 **assessment?**

26 A. The Company included \$2,288 for the ACC assessment.

1 **Q. What is the appropriate treatment of the ACC assessment charges?**

2 A. The ACC Assessment should be removed from the cost of service and treated as a pass
3 through item similar to sales taxes.

4
5 **Q. What is Staff recommending?**

6 A. Staff recommends decreasing operating revenue and operating expense by \$2,288 to
7 remove the effects of the ACC assessment as shown on Schedules CSB-13.

8
9 **RATE DESIGN**

10 **Q. Has Staff prepared a schedule summarizing the present, Company proposed, and**
11 **Staff recommended rates and service charges?**

12 A. Yes. Schedule CSB-24 provides a summary of the Company's present, Company's
13 proposed, and Staff's recommended rates.

14
15 **Q. Please summarize the present rate design.**

16 A. The present monthly customer charge for the residential customers is \$38.00 with no
17 commodity charge. Regular commercial customers pay \$0.15236 per gallon per day of
18 sewer flow⁸ and no monthly service charge. Special commercial customers pay only a
19 monthly customer charge that varies by customer based on an estimate for each
20 customer's sewer volume flow.

21
22 **Q. Please summarize the Company's proposed rate design.**

23 A. The Company is proposing an approximate 13.65 percent increase for all residential,
24 commercial, and effluent customers.

25

⁸ Flow volume is based on the average daily flows set forth in the *Engineering Bulletin No. 12*, Table 1, published by the Arizona Department of Environmental Quality (June 1989).

1 **Q. Please summarize Staff's recommended rate design.**

2 A. Staff recommends an approximate 2.52 percent increase for all residential, commercial,
3 and effluent customers. Staff's rate design is presented in Schedule CSB-24.

4
5 **Q. Does Staff recommend any changes to the Company's Hook-up Fee?**

6 A. Yes. Staff recommends elimination of Black Mountain's Hook up Fee.

7
8 **Q. Please provide some background on the Company's hook-up fee?**

9 A. Black Mountain was authorized to charge a hook-up fee when its Certificate of
10 Convenience and Necessity ("CC&N") was granted in 1980. At that time, it was a
11 relatively small company with little ability to attract the capital necessary to build its back
12 bone plant to fund growth. At the present time, Black Mountain is owned by Algonquin
13 Power Income Fund with approximately \$800 million in assets.

14
15 **Q. What did Decision No. 59944 state concerning the hook-up fee in the Company's
16 prior rate proceeding?**

17 A. In Decision No. 59944 (p. 10 at line 5), it states ". . . the Commission may rescind the
18 hook-up fee . . . Such reasons . . . shall include, but are not limited to, failure to track and
19 account for hook-up fees, misuse of hook-up fees, or no need for additional capital . .
20 (emphasis added).

21
22 **Q. Did Black Mountain use the hook-up fees for any items that were not provided for in
23 Decision No. 59944.**

24 A. Yes. The Company purchased computer equipment totaling approximately \$142,232,
25 vehicles totaling approximately \$20,000, and land totaling \$451,000 from the hook-up
26 fees.

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Q. Please discuss the \$451,000 purchase of land from the hook-up fees.

A. In March of 2001, Algonquin purchased all of the shares of Boulders Carefree Sewer Company. All of the ownership of Boulders existing sewer plant was transferred to Boulders with the exception of the land. The Company had all of its plant built on the land but had no land recorded in its plant accounts. To Staff's knowledge Boulder's Carefree Sewer Company was not making lease payments to the original shareholders in exchange for the privilege of using the land.

Q. Was the land purchased to increase capacity of the sewer plant or to serve growth?

A. No. The documentation provided by the Company to support the recorded cost of the land acquisition shows that the land acquired was the site of the plant assets.

Q. Was the land purchase an arm's- length transaction whose cost was supported with an appraisal report?

A. No, the land was purchased from an affiliate, and no appraisal report was provided to support the cost of the land.

Q. During the prior rate proceeding, did Staff encounter problems determining how the Company used the hook up fee collections?

A. Yes, and as a consequence, the Commission set forth rules governing what types of purchases that can be made with the hook-up fees.

1 **Q. What is the relationship between hook-up fees and the Company's rate base?**

2 A. The Hook up fees are the primary source of the Company's CIAC, and CIAC is the
3 Company's major source of capital funding. In short, hook-up fees have supplanted
4 investment resulting in a relatively negligible rate base.

5
6 **Q. What is Staff's Conclusion regarding the hook-up fee?**

7 A. Staff concludes that the hook-up fee should be eliminated because Black Mountain (a) has
8 access to the capital markets via Algonquin and (b) used a total of \$613,232 in hook-up
9 fees to purchase computer equipment totaling approximately \$142,232, vehicles totaling
10 approximately \$20,000, and land totaling \$451,000 outside of the purposes allowed by
11 Decision No. 59944.

12
13 **Q. What else does Staff recommend concerning the hook-up fees?**

14 A. First, Staff recommends that the \$613,232 be reimbursed to Black Mountain. Second,
15 Staff recommends a full accounting of the hook-up fees be filed with the Commission
16 showing an ending balance that includes the reimbursements. Finally, Staff recommends
17 that the excess fees be refunded to customers. Staff will make a recommendation on a
18 methodology on the refunding outside of this rate proceeding.

19
20 **Q. Does Staff recommend any changes to the Company's Service Charges?**

21 A. Yes. Staff recommends that a provision to pay interest on customer deposits be added.

22
23 **Q. Does this conclude your direct testimony?**

24 A. Yes, it does.

Black Mountain Sewer Company
 Docket No. SW-02361A-05-0657
 Test Year Ended December 31, 2004

Schedule CSB-1

REVENUE REQUIREMENT

<u>LINE NO.</u>	<u>DESCRIPTION</u>	<u>[A] COMPANY ORIGINAL COST</u>	<u>[B] STAFF ORIGINAL COST</u>
1	Adjusted Rate Base	\$ 887,449	\$ 415,172
2	Adjusted Operating Income (Loss)	\$ (14,233)	\$ 22,551
3	Current Rate of Return (L2 / L1)	-1.60%	5.43%
4	Required Rate of Return	11.00%	9.60%
5	Required Operating Income (L4 * L1)	\$ 97,619	\$ 39,857
6	Operating Income Deficiency (L5 - L2)	\$ 111,852	\$ 17,306
7	Gross Revenue Conversion Factor	1.45980	1.76213
8	Increase In Gross Revenue (L7 * L6)	\$ 163,279	\$ 30,495
9	Adjusted Test Year Revenue	\$ 1,207,740	\$ 1,205,452
10	Proposed Annual Revenue (L8 + L9)	\$ 1,371,019	\$ 1,235,947
11	Required Increase in Revenue (%) (L8/L9)	13.52%	2.53%

References:

Column [A]: Company Schedules A-1, C-1, C-3, & D-1

Column [B]: Staff Schedules CSB-2, CSB-3, & CSB-7

GROSS REVENUE CONVERSION FACTOR

LINE NO.	DESCRIPTION	(A)	(B)	(C)	(D)
<i>Calculation of Gross Revenue Conversion Factor:</i>					
1	Billings	1.000000			
2	Uncollectible Factor	0.000000			
3	Revenues	1.000000			
4	Less: Combined Federal and State Tax Rate (Line 12)	0.432505			
5	Subtotal (L3 - L4)	0.5675			
6	Revenue Conversion Factor (L1 / L5)	1.76213			
 <i>Calculation of Effective Tax Rate:</i>					
7	Operating Income Before Taxes (Arizona Taxable Income)	100.0000%			
8	Arizona State Income Tax Rate	6.9680%			
9	Federal Taxable Income (L7 - L8)	93.0320%			
10	Applicable Federal Income Tax Rate (Line 34)	39.0000%			
11	Effective Federal Income Tax Rate (L9 x L10)	36.2825%			
12	Combined Federal and State Income Tax Rate (L8 +L11)	43.2505%			

RATE BASE - ORIGINAL COST

LINE NO.	(A) COMPANY AS FILED	(B) STAFF ADJUSTMENTS	(C) STAFF AS ADJUSTED
1	\$ 8,464,745	\$ (237,352)	\$ 8,227,393
2	4,366,379	-	4,366,379
3	<u>\$ 4,098,366</u>	<u>\$ (237,352)</u>	<u>\$ 3,861,014</u>
<u>LESS:</u>			
4	\$ 1,315,900	\$ -	\$ 1,315,900
5	\$ -	\$ -	\$ -
6	\$ 5,346,615	\$ 296,133	\$ 5,642,748
7	3,308,578	46,663	3,355,241
8	<u>\$ 2,038,037</u>	<u>342,796</u>	<u>\$ 2,287,507</u>
9	\$ 3,353,937	\$ 342,796	\$ 3,603,407
10	\$ (3,000)	\$ 9,435	\$ 6,435
11	\$ -	\$ 164,000	\$ 164,000
<u>ADD:</u>			
12	\$ 9,512	\$ (9,512)	\$ -
13	\$ 130,508	\$ (130,508)	\$ -
14	<u>\$ 887,449</u>	<u>\$ (565,603)</u>	<u>\$ 415,172</u>

References:

Column [A], Company Schedule B-1, Page 1
Column [B]: Schedule CSB-4
Column [C]: Column [A] + Column [B]

RATE BASE ADJUSTMENT NO. 1 - POST-TEST YEAR PLANT

LINE NO.	DESCRIPTION	[A]	[B]	[C]
		COMPANY AS FILED (Sch E-5)	STAFF ADJUSTMENTS	STAFF AS ADJUSTED
1	2004 Actual Plant	\$ 8,370,448	\$ -	\$ 8,370,448
2	Post Test Year Plant	\$ 94,297	\$ (94,297)	\$ -
3	Total	\$ 8,464,745	\$ (94,297)	\$ 8,370,448

References:

Column [A]: Company Schedule B-2, Pages 1 and 2

Column [B]: Testimony, CSB

Column [C]: Column [A] + Column [B]

RATE BASE ADJUSTMENT NO. 2 - AFFILIATE COSTS

LINE NO.	DESCRIPTION	[A]	[B]	[C]
		2001 to 2004 Plant Additions PER COMPANY	STAFF ADJUSTMENTS	STAFF AS ADJUSTED Col A - Col B
1	353 - Land and Land Rights	\$ 453,592	\$ 146	\$ 453,446
2	354 - Structures and Improvements	242,441	5,387	\$ 237,054
3	355 - Power Generation Equipment	-	-	\$ -
4	360 - Collection Services - Force	12,210	205	\$ 12,005
5	361 - Collection Services - Gravity	797,304	1,361	\$ 795,943
6	363 - Services to Customers	29,161	1,584	\$ 27,577
7	364 - Flow Measuring Devices	9,169	49	\$ 9,120
8	365 - Flow Measuring Installations	-	2,154	\$ (2,154)
9	370 - Receiving Wells	58,584	369	\$ 58,215
10	371 - Effluent Pumping Equipment	181,924	360	\$ 181,564
11	381 - Plant Sewers	198,712	1,152	\$ 197,560
12	389 - Other Plant and Miscellaneous Equip	699,247	5,185	\$ 694,062
13	390 - Office Furniture and Equipment	365,511	145,152	\$ 220,359
14	391 - Transportation Equipment	87,811	-	\$ 87,811
15	394 - Laboratory Equipment	5,079	-	\$ 5,079
16	Total	\$ 3,140,745	\$ 163,103	\$ 2,977,642

References:

Column [A]: Company Schedule B-2, Pages 3h through 3k

Column [B]: Testimony, CSB; Schedule CSB-6, Pages 2 through 4

Column [C]: Column [A] - Column [B]

RATE BASE ADJUSTMENT NO. 2 - AFFILIATE COSTS
Total Affiliate Costs To Be Removed

LINE NO.	DESCRIPTION	[A]	[B]	[C]
		Affiliate Capitalized Profit	Plant Allocated to Affiliates	Total Staff Adjustments (Col A + Col B)
1	353 - Land and Land Rights	\$ 146	\$ -	\$ 146
2	354 - Structures and Improvements	\$ 5,387	-	\$ 5,387
3	355 - Power Generation Equipment	\$ -	-	\$ -
4	360 - Collection Services - Force	\$ 205	-	\$ 205
5	361 - Collection Services - Gravity	\$ 1,361	-	\$ 1,361
6	363 - Services to Customers	\$ 1,584	-	\$ 1,584
7	364 - Flow Measuring Devices	\$ 49	-	\$ 49
8	365 - Flow Measuring Installations	\$ 2,154	-	\$ 2,154
9	370 - Receiving Wells	\$ 369	-	\$ 369
10	371 - Effluent Pumping Equipment	\$ 360	-	\$ 360
11	381 - Plant Sewers	\$ 1,152	-	\$ 1,152
12	389 - Other Plant and Miscellaneous Equip	\$ 5,185	-	\$ 5,185
13	390 - Office Furniture and Equipment	\$ 2,920	142,232	\$ 145,152
14	391 - Transportation Equipment	\$ -	-	\$ -
15	394 - Laboratory Equipment	\$ -	-	\$ -
16	Total	\$ 20,871	\$ 142,232	\$ 163,103

References:

Column [A]: Schedule CSB-6, Page 3

Column [B]: Schedule CSB-6, Page 4; Data Request Response CSB 1.45

Column [C]: Column [A] + Column [B]

RATE BASE ADJUSTMENT NO. 2 - AFFILIATE COSTS
Affiliate Capitalized Profit

LINE NO.	DESCRIPTION	[A]		[B]		[C]		[D]		[E]		[F]		[G]		[H]		[I]	
		2001 to 2004 Plant Additions Per Company	\$	Plant Allocated to Affiliate Sch CSB-6, Page 2 (Col A - Col B)	\$	Total (Col A - Col B)	\$	Capitalized Profit 2001	\$	Capitalized Profit 2002	\$	Capitalized Profit 2003	\$	Capitalized Profit 2004	\$	Total Capitalized Profit (Col D+E+F+G)	\$	Plant Less Capitalized Profit (Col C - Col H)	\$
1	353 - Land and Land Rights	453,592	\$	-	\$	453,592	\$	-	\$	146.25	\$	-	\$	-	\$	146.25	\$	453,446	\$
2	354 - Structures and Improvements	242,441	-	-	-	242,441	-	-	-	2,975.09	-	-	-	-	-	2,975.09	-	237,054	-
3	355 - Power Generation Equipment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	360 - Collection Services - Force	12,210	-	-	-	12,210	-	-	-	204.75	-	-	-	-	204.75	-	12,005	-	
5	361 - Collection Services - Gravity	797,304	-	-	-	797,304	-	-	-	463.52	-	-	897.03	-	1,360.55	-	795,943	-	
6	363 - Services to Customers	29,161	-	-	-	29,161	-	22.44	-	1,344.20	-	136.08	-	-	1,583.57	-	27,577	-	
7	364 - Flow Measuring Devices	9,169	-	-	-	9,169	-	-	-	48.75	-	-	-	-	48.75	-	9,120	-	
8	365 - Flow Measuring Installations	158,358	-	-	-	158,358	-	-	-	1,467.70	-	685.80	-	-	2,153.50	-	156,205	-	
9	370 - Receiving Wells	58,584	-	-	-	58,584	-	-	-	369.20	-	-	-	-	369.20	-	58,215	-	
10	371 - Effluent Pumping Equipment	181,924	-	-	-	181,924	-	333.07	-	27.30	-	-	-	-	360.37	-	181,564	-	
11	381 - Plant Sewers	40,354	-	-	-	40,354	-	-	-	-	-	-	-	-	1,152.00	-	39,202	-	
12	389 - Other Plant and Misc. Equip	699,247	-	-	-	699,247	-	134.66	-	4,348.43	-	178.82	-	-	5,185.13	-	694,062	-	
13	390 - Office Furniture and Equipment	365,511	-	142,232	-	223,279	-	502.74	-	1,752.56	-	598.22	-	-	2,919.78	-	220,359	-	
14	391 - Transportation Equipment	87,811	-	-	-	87,811	-	-	-	-	-	-	-	-	-	-	87,811	-	
15	394 - Laboratory Equipment	5,079	-	-	-	5,079	-	-	-	-	-	-	-	-	-	-	5,079	-	
16	Total	3,140,745	\$	142,232	\$	2,998,513	\$	1,666.28	\$	13,147.75	\$	3,101.56	\$	2,955.42	\$	20,871.01	\$	2,977,642	\$

References:

- Column [A]: Company Schedule B-2, Pages 3h through 3k
- Column [B]: Schedule CSB-6, Page 4; Data Request Response CSB 1.45
- Column [C]: Column [A] - Column [B]
- Column [D]: Data Request Response CSB 10.1
- Column [E]: Data Request Response CSB 10.1
- Column [F]: Data Request Response CSB 10.1
- Column [G]: Data Request Response CSB 10.1
- Column [H]: Data Request Response CSB 10.1
- Column [I]: Column [C] - Column [H]

RATE BASE ADJUSTMENT NO. 2 - AFFILIATE PLANT COSTS
Computer and Computer Software

LINE NO.	DESCRIPTION	[A]	[B]	[C]
		COMPANY AS FILED	STAFF ADJUSTMENTS	STAFF AS ADJUSTED (Col A - Col B)
1	Office Furniture & Equip	\$ 162,908	\$ -	\$ 162,908
2	Allocated Costs for Affiliates	-	72,505	(72,505)
3	Direct Costs for Bella Vista CSB 2.7	-	69,727	(69,727)
4	Total	\$ 162,908	\$ 142,232	\$ 20,676

	[D]	[E]	[F]	[G]	[H]	[I]
	Costs to be Allocated (From Col P)	Percentage for Black Mountain (From Col R)	Costs to be Allocated to Black Mtn (Col D x Col E)	Percentage for Affiliates (Cols S+T+U)	Costs to be Allocated to Affiliates (Col D x Col G)	Total for Black Mountain & Affiliates (Col F + Col H)
5	\$ 48,800	22.19%	\$ 10,828	77.81%	\$ 37,972	\$ 48,800
6	\$ 8,017	22.19%	\$ 1,779	77.81%	\$ 6,238	\$ 8,017
7	\$ 11,076	22.19%	\$ 2,458	77.81%	\$ 8,618	\$ 11,076
8	\$ 10,307	22.19%	\$ 2,287	77.81%	\$ 8,020	\$ 10,307
9	\$ 8,459	22.19%	\$ 1,877	77.81%	\$ 6,582	\$ 8,459
10	\$ 6,522	22.19%	\$ 1,447	77.81%	\$ 5,075	\$ 6,522
11	\$ -	22.19%	\$ -	77.81%	\$ -	\$ -
12	\$ 93,181		\$ 20,676		\$ 72,505	\$ 93,181

[J]	[K]	[L]	[M]	[N]	[O]	[P]
Year Added	Account Number	Description	Cost Per CSB 1.45 & CSB 2.7	Amount Included In Adj. No. 2 Acct. No. 390	Costs to be Allocated	
13	2002	212	Software Upgrades	\$ 48,800	\$ -	\$ 48,800
14	2003	257	Equipment/Automation	\$ 8,017	\$ -	\$ 8,017
15	2003	261	Equipment/Automation	\$ 11,076	\$ -	\$ 11,076
16	2003	270	Equipment/Automation	\$ 10,307	\$ -	\$ 10,307
17	2003	273	System Migration	\$ 8,459	\$ -	\$ 8,459
18	2003	298	Professional Services	\$ 6,522	\$ -	\$ 6,522
19	2003	319	Data Conversion	\$ 14,044	\$ (14,044)	\$ -
20			Total	\$ 107,225	\$ (14,044)	\$ 93,181

[Q]	[R]	[S]	[T]	[U]	[V]	
	Black Mountain	Gold Canyon	Tall Timbers	Woodmark	Total	
21	12/31/2005 Customer Counts ¹	1,798	4,491	978	836	8,103
22	Percentage of Total Customers	22.19%	55.42%	12.07%	10.32%	100.00%

23 Note 1: 2005 Customer counts were used as the 2002 and 2003 counts for Tall Timbers and Woodmark
24 were not provided to Staff for the calculation.

References:

- Column A: Company Schedule E-5
- Column B: Testimony, CSB, Company Data Request Responses CSB 1.45
- Column C: Column [A] + Column [B]

RATE BASE ADJUSTMENT NO. 3 - EXPENSED PLANT

LINE NO.	Plant Account Number	Description	[A]	[B]	[C]
			COMPANY AS FILED	STAFF ADJUSTMENTS	STAFF AS ADJUSTED (Col A + Col B)
1	361	Collection Sewers, Gravity	\$ 3,608,619	\$ 7,286	\$ 3,615,905
2	371	Effluent Pumping Equipment	\$ 451,705	\$ 2,913	\$ 454,618
3	381	Plant Sewers	\$ 121,651	\$ 2,790	\$ 124,441
4	389	Other Plant & Misc Equip	\$ 738,804	\$ 7,059	\$ 745,863
5		Total	<u>\$ 4,920,779</u>	<u>\$ 20,048</u>	<u>\$ 4,940,827</u>

FROM CONTRACTUAL SERVICES , OTHER EXPENSE (CSB 1.37)

Acct. No.	Vendor Name	Description	Amount	
6	361-Collection Sewers	Jensen System Engineering	Algonquin Indian Basket Alarm	\$ 1,499.01
7	361-Collection Sewers	Keller Equipment Company	Pull and Install Motors	\$ 1,947.71
8	361-Collection Sewers	Keller Equipment Company	Rebuild Motor/Pump	\$ 1,119.65
9	361-Collection Sewers	KSK Electric	Replace Meter Socket	\$ 1,315.00
10	361-Collection Sewers	LTC, Inc.	Concrete Pad & Drain for Manhole	\$ 1,404.92
11			Subtotal	\$ 7,286.29
12	371-Effluent Pumping Plant	Keller Equipment Company	Change out Pumps	\$ 551.62
13	371-Effluent Pumping Plant	Keller Equipment Company	Pull Pump. Set New Pump	\$ 1,095.40
14			Subtotal	\$ 1,647.02
15	381-Plant Sewers	Foster Electric Motor Service	Install Outlets in Vault	\$ 589.57
16	381-Plant Sewers	KSK Electric	Boulder Facility Lighting Repair Proj.	\$ 2,200.00
17			Subtotal	\$ 2,789.57
18			Total	\$ 11,722.88

FROM RENTS EXPENSE (CSB 1.38)

Acct. No.	Vendor Name	Description	Amount	
19	371-Effluent Pumping Plant	Pump Systems, Inc.	Replace Pump	\$ 566.13
20			Total	\$ 566.13

References:

- Column A: Company Schedule E-5
- Column B: Testimony, CSB, Company Data Request Responses CSB 1.37, 1.38, 1.40, & 7.13
- Column C: Column [A] + Column [B]

**RATE BASE ADJUSTMENT NO. 3 - EXPENSED PLANT
CONTINUED**

FROM MISCELLANEOUS EXPENSE (CSB 1.40)				
Maricopa County Environ. Serv. Dept, Approval to Construct Expedited Fees				
LINE NO.	Acct. No	Project Title	Description	Amount
1	389-Other Plant & Misc Equip	Boulders West WWTP Bypass	Reclaimed Water Line	\$ 500.00
2	389-Other Plant & Misc Equip	Boulders West Effluent Pump	Addition of pumps	\$ 700.00
3	371-Effluent Pumping Plant	Indian Basket Lift Station	Replace Existing Lift Station	\$ 700.00
4	389-Other Plant & Misc Equip	Boulders West WWTP Bypass	Add Structure and Manhole	\$ 2,000.00
5			Subtotal	\$ 3,900.00
6	389-Other Plant & Misc Equip	Safety Equipment	Company Response to CSB 2.13b	\$ 2,184.75
7			Total	\$ 6,084.75

FROM MATERIALS AND SUPPLIES EXPENSE (CSB 7.13)				
	Acct. No.	Vendor Name	Description	Amount
8	389-Other Plant & Misc Equip	Arizona Pneumatic Systems	Blower	\$ 1,674.47
9			Total	\$ 1,674.47

RATE BASE ADJUSTMENT NO. 4 - CIAC & Amortization of CIAC

LINE NO.	Description	[A]	[B]	[C]
		COMPANY AS FILED	ADJUSTMENTS	STAFF AS ADJUSTED Col A - Col B
1	CIAC	\$ 5,346,615	\$ 296,133	\$ 5,642,748
2	Less: Amortization of CIAC	\$ 3,308,578	\$ 46,663	\$ 3,355,241
3	Net CIAC	\$ 2,038,037	\$ 249,470	\$ 2,287,507

CIAC Calculation					
	[D]	[E]	[F]	[G]	
	Year	CIAC Charges Per Company (RUCO 1.8)	Difference	CIAC Balance Staff Col. E - Col. F	
4					
5					
6					
7	7/01/94	Opening Balance	\$ 3,127,264.00	\$ -	\$ 3,127,264.00
8		1994	\$ 116,507.00	\$ 101,845.00	\$ 218,352.00
9		1995	\$ 112,578.00	\$ 3,235.00	\$ 115,813.00
10		1996	\$ 182,068.56	\$ (14,172.56)	\$ 167,896.00
		1996 Treatment Capacity	\$ -	\$ (300,000.00)	\$ (300,000.00)
11		1997	\$ 172,749.00	\$ -	\$ 172,749.00
		1997 Treatment Capacity	\$ -	\$ (153,706.00)	\$ (153,706.00)
12		1998	\$ 571,000.91	\$ -	\$ 571,000.91
13		1999	\$ 319,182.03	\$ -	\$ 319,182.03
14		2000	\$ 405,077.00	\$ -	\$ 405,077.00
15		2001	\$ 489,268.94	\$ -	\$ 489,268.94
16		2002	\$ 110,490.00	\$ -	\$ 110,490.00
17		2003	\$ 196,061.83	\$ (28,480.00)	\$ 167,581.83
18		2004	\$ (1,926.25)	\$ 233,705.75	\$ 231,779.50
19			\$ 5,800,321.02	\$ (157,572.81)	\$ 5,642,748.21

References:

- Column A: Company Schedule B-2
- Column B: Testimony, CSB, Company Data Request Responses RUCO 1.8
- Column C: Column [A] + Column [B]

RATE BASE ADJUSTMENT NO. 4 - CIAC & Amortization of CIAC Continued

Amortization of CIAC Calculation				
[A]	[B]	[C]	[D]	[E]
Year	CIAC Balance Per Staff	Amortization Rate	Amortization of CIAC Col. A - Col. B	Accumulated Amortization of CIAC
7/01/94 CIAC Balance Per Staff	\$ 3,127,264.00		\$ 1,121,838.00	\$ 1,121,838.00
994 July to December Amortization	\$ 3,127,264.00	2.50%	\$ 78,181.60	
Additions - Half Year Convention	\$ 218,352.00	2.50%	\$ 5,458.80	
	<u>\$ 3,345,616.00</u>		<u>\$ 83,640.40</u>	<u>\$ 83,640.40</u>
1994 Ending Accumulated Amortization of CIAC Balance:				\$ 1,205,478.40
1995 Beginning CIAC Balance	\$ 3,345,616.00	5.00%	\$ 167,280.80	\$ 1,205,478.40
Additions - Half Year Convention	\$ 115,813.00	2.50%	\$ 2,895.33	
	<u>\$ 3,461,429.00</u>		<u>\$ 170,176.13</u>	<u>\$ 170,176.13</u>
1995 Ending Accumulated Amortization of CIAC Balance:				\$ 1,375,654.53
1996 Beginning CIAC Balance	\$ 3,461,429.00			
Less: Scottsdale Capacity	<u>\$ (300,000.00)</u>			
	\$ 3,161,429.00	5.00%	\$ 158,071.45	\$ 1,375,654.53
Additions - Half Year Convention	\$ 167,896.00	2.50%	\$ 4,197.40	
	<u>\$ 3,329,325.00</u>		<u>\$ 162,268.85</u>	<u>\$ 162,268.85</u>
1996 Ending Accumulated Amortization of CIAC Balance:				\$ 1,537,923.38
1997 Beginning CIAC Balance	\$ 3,329,325.00			
Less: Scottsdale Capacity	<u>\$ (153,706.00)</u>			
	\$ 3,175,619.00	5.00%	\$ 158,780.95	\$ 1,537,923.38
Additions - Half Year Convention	\$ 172,749.00	2.50%	\$ 4,318.73	
	<u>\$ 3,348,368.00</u>		<u>\$ 163,099.68</u>	<u>\$ 163,099.68</u>
1997 Ending Accumulated Amortization of CIAC Balance:				\$ 1,701,023.05
1998 Beginning CIAC Balance	\$ 3,348,368.00	5.00%	\$ 167,418.40	\$ 1,701,023.05
Additions - Half Year Convention	\$ 571,000.91	2.50%	\$ 14,275.02	
	<u>\$ 3,919,368.91</u>		<u>\$ 181,693.42</u>	<u>\$ 181,693.42</u>
1998 Ending Accumulated Amortization of CIAC Balance:				1,882,716.47
1999 Beginning CIAC Balance	\$ 3,919,368.91	5.00%	\$ 195,968.45	\$ 1,882,716.47
Additions - Half Year Convention	\$ 319,182.03	2.50%	\$ 7,979.55	
	<u>\$ 4,238,550.94</u>		<u>\$ 203,948.00</u>	<u>\$ 203,948.00</u>
1999 Ending Accumulated Amortization of CIAC Balance:				2,086,664.47
2000 Beginning CIAC Balance	\$ 4,238,550.94	5.00%	\$ 211,927.55	\$ 2,086,664.47
Additions - Half Year Convention	\$ 405,077.00	2.50%	\$ 10,126.93	
	<u>\$ 4,643,627.94</u>		<u>\$ 222,054.47</u>	<u>\$ 222,054.47</u>
2000 Ending Accumulated Amortization of CIAC Balance:				2,308,718.94
2001 Beginning CIAC Balance	\$ 4,643,627.94	5.00%	\$ 232,181.40	\$ 2,308,718.94
Additions - Half Year Convention	\$ 489,268.94	2.50%	\$ 12,231.72	
	<u>\$ 5,132,896.88</u>		<u>\$ 244,413.12</u>	<u>\$ 244,413.12</u>
2001 Ending Accumulated Amortization of CIAC Balance:				2,553,132.06
2002 Beginning CIAC Balance	\$ 5,132,896.88	5.00%	\$ 256,644.84	\$ 2,553,132.06
Additions - Half Year Convention	\$ 110,490.00	2.50%	\$ 2,762.25	
	<u>\$ 5,243,386.88</u>		<u>\$ 259,407.09</u>	<u>\$ 259,407.09</u>
2002 Ending Accumulated Amortization of CIAC Balance:				2,812,539.16

RATE BASE ADJUSTMENT NO. 4 - CIAC & Amortization of CIAC Continued

Amortization of CIAC Calculation				
[A]	[B]	[C]	[D]	[E]
Year	CIAC Balance Per Staff	Amortization Rate	Amortization of CIAC Col. A - Col. B	Total Amortization of CIAC
2003 Beginning CIAC Balance	\$ 5,243,386.88	5.00%	\$ 262,169.34	\$ 2,812,539.16
Additions - Half Year Convention	\$ 167,581.83	2.50%	\$ 4,189.55	
	<u>\$ 5,410,968.71</u>		<u>\$ 266,358.89</u>	<u>\$ 266,358.89</u>
2003 Ending Accumulated Amortization of CIAC Balance:				3,078,898.05
2004 Beginning CIAC Balance	\$ 5,410,968.71	5.00%	\$ 270,548.44	\$ 3,078,898.05
Additions - Half Year Convention	\$ 231,779.50	2.50%	\$ 5,794.49	
	<u>\$ 5,642,748.21</u>		<u>\$ 276,342.92</u>	<u>\$ 276,342.92</u>
2004 Ending Accumulated Amortization of CIAC Balance:				3,355,240.97

RATE BASE ADJUSTMENT NO. 5 - CUSTOMER DEPOSITS

LINE NO.	DESCRIPTION	[A]	[B]	[C]
		COMPANY AS FILED	STAFF ADJUSTMENTS	STAFF AS ADJUSTED
1	Customer Deposits - To Remove Refund	\$ (3,000)	\$ 3,000	\$ -
2	Customer Deposits - To Reflect Year-End Balance	-	6,435	6,435
3	Total	<u>\$ (3,000)</u>	<u>\$ 9,435</u>	<u>\$ 6,435</u>

References:

- Column A: Company Schedule B-2
- Column B: Testimony, CSB, Company Data Request Responses CSB 5.12
- Column C: Column [A] + Column [B]

RATE BASE ADJUSTMENT NO. 6 - DEFERRED INCOME TAXES

LINE NO.	DESCRIPTION	[A]	[B]	[C]
		COMPANY AS FILED	STAFF ADJUSTMENTS	STAFF AS ADJUSTED
1	Deferred Income Tax Liability	\$ -	524,000	\$ 524,000
2	Deferred Income Tax Asset	-	(360,000)	(360,000)
		<u>\$ -</u>	<u>\$ 164,000</u>	<u>\$ 164,000</u>

References:

Column A: Company Schedule B-2, Page 1

Column B: Testimony, CSB, Company Data Request Responses to RUCO 2.7

Column C: Column [A] + Column [B]

RATE BASE ADJUSTMENT NO. 7 - WORKING CAPITAL

LINE NO.	DESCRIPTION	[A]	[B]	[C]
		COMPANY AS FILED	STAFF ADJUSTMENTS	STAFF AS ADJUSTED
1	Prepaid Expenses	\$ 9,512	\$ (9,512)	\$ -
2	Cash Working Capital Allowance	\$ 130,508	\$ (130,508)	\$ -
3	Total Working Capital	\$ 140,020	\$ (140,020)	\$ -

References:

- Column [A]: Company Schedule B-2
- Column [B]: Testimony, CSB
- Column [C]: Column [A] + Column [B]

OPERATING INCOME - TEST YEAR AND STAFF RECOMMENDED

LINE NO.	DESCRIPTION	[A] COMPANY TEST YEAR AS FILED	[B] STAFF TEST YEAR ADJUSTMENTS	[C] STAFF TEST YEAR AS ADJUSTED	[D] STAFF PROPOSED CHANGES	[E] STAFF RECOMMENDED
REVENUES:						
1	Flat Rate Revenues	\$ 1,191,268	\$ (2,288)	\$ 1,188,980	\$ 30,495	\$ 1,219,475
2	Other Wastewater Revenues	16,472	-	16,472	-	16,472
3	Total Operating Revenues	\$ 1,207,740	\$ (2,288)	\$ 1,205,452	\$ 30,495	\$ 1,235,947
EXPENSES:						
4	Salaries and Wages	\$ -	\$ -	\$ -	\$ -	\$ -
5	Purchased Wastewater Treatment	162,082	-	162,082	-	162,082
6	Sludge Removal Expense	981	-	981	-	981
7	Purchased Power	47,727	-	47,727	-	47,727
8	Fuel for Power Production	-	-	-	-	-
9	Chemicals	76,612	-	76,612	-	76,612
10	Materials and Supplies	30,420	(3,624)	26,796	-	26,796
11	Contractual Services - Professional	171,683	(12,433)	159,250	-	159,250
12	Contractual Services - Testing	11,000	-	11,000	-	11,000
13	Contractual Services - Other	226,595	(22,270)	204,325	-	204,325
14	Rental Expense	10,825	(566)	10,259	-	10,259
15	Transportation Expense	4,870	(2,327)	2,543	-	2,543
16	Insurance - General Liability	16,204	(596)	15,608	-	15,608
17	Regulatory Commission Expense	30,000	-	30,000	-	30,000
18	Miscellaneous Expense	77,401	(17,943)	59,458	-	59,458
19	Scottsdale Capacity Operating Lease	189,622	(27,801)	161,821	-	161,821
20	Depreciation	126,749	(53,439)	73,310	-	73,310
21	Taxes Other Than Income	-	-	-	-	-
22	Property Taxes	45,745	(1,692)	44,053	-	44,053
23	Income Taxes	(6,544)	103,621	97,077	13,189	110,266
24	Total Operating Expenses	\$ 1,221,972	\$ (39,071)	\$ 1,182,901	\$ 13,189	\$ 1,196,090
25	Operating Income (Loss)	\$ (14,232)	\$ 36,783	\$ 22,551	\$ 17,305	\$ 39,856

References:

- Column (A): Company Schedule C-1, Page 2
- Column (B): Schedule CSB-8
- Column (C): Column (A) + Column (B)
- Column (D): Schedules CSB-1 and CSB-2
- Column (E): Column (C) + Column (D)

SUMMARY OF OPERATING INCOME ADJUSTMENTS - TEST YEAR

LINE NO.	DESCRIPTION	[A] COMPANY AS FILED	[B] ADJ #1 Expensed Plant	[C] ADJ #2 Affiliate Expenses	[D] ADJ #3 Bad Debt Expense	[F] ADJ #4 Depreciation Expense	[G] ADJ #5 NonRecurring & Other Exp	[H] ADJ #6 Scottsdale Operating Lease	[I] ADJ #7 Food & Beverages	[J] ADJ #8 Property Taxes	[J] ADJ #9 Income Tax Expense	[L] ADJ #10 Assessment ACC	[M] STAFF ADJUSTED
1	Flat Rate Revenues	\$ 1,191,268											
2	Other Wastewater Revenues	16,472											16,472
3	Total Revenues	\$ 1,207,740											\$ 1,205,452
OPERATING EXPENSES:													
4	Salaries and Wages												
5	Purchased Wastewater Treatment	162,082											162,082
6	Sludge Removal Expense	981											981
7	Purchased Power	47,727											47,727
8	Fuel for Power Production												
9	Chemicals	76,612											76,612
10	Materials and Supplies	30,420	(1,674)	(1,472)					(478)				26,796
11	Contractual Services - Professional	171,683		(9,205)		(3,228)							159,250
12	Contractual Services - Testing	11,000											11,000
13	Contractual Services - Other	226,595	(11,723)	(10,361)					(186)				204,325
14	Rents Expense	10,825	(566)										10,259
15	Transportation Expense	4,870		(127)		(2,200)							2,543
16	Insurance - General Liability	16,204		(596)									15,608
17	Regulatory Commission Expense	30,000											30,000
18	Miscellaneous Expense	77,401	(6,085)	(3,644)	(5,926)							(2,288)	59,458
19	Scottsdale Capacity Operating Lease	189,622						(27,801)					161,821
20	Depreciation	126,749				(53,439)							73,310
21	Taxes Other Than Income									(1,692)			
22	Property Taxes	45,745											44,053
23	Income Taxes	(6,544)									103,621		97,077
24	Total Operating Expenses	\$ 1,221,972	\$ (20,048)	\$ (25,406)	\$ (5,926)	\$ (53,439)	\$ (5,428)	\$ (27,801)	\$ (664)	\$ (1,692)	\$ 103,621	\$ (2,288)	\$ 1,182,901
25	Operating Income (Loss)	\$ (14,232)	\$ 20,048	\$ 25,406	\$ 5,926	\$ 53,439	\$ 5,428	\$ 27,801	\$ 664	\$ 1,692	\$ (103,621)	\$ 0	\$ 22,551

ADJ No.	References:
1	Expensed Plant
2	Affiliate Expenses
3	Bad Debt Expense
4	Depreciation Expense
5	Normalized Expenses
6	Scottsdale Operating Lease Payments
7	Food and Beverages
8	Property Tax Expense
9	Income Tax Expense
10	ACC Assessment

OPERATING INCOME ADJUSTMENT NO. 1 - EXPENSED PLANT

LINE NO.	Description	[A]	[B]	[C]
		COMPANY AS FILED	STAFF ADJUSTMENTS	STAFF AS ADJUSTED
1	Contractual Services, Other	\$ 226,595	\$ (11,723)	\$ 214,872
2	Rents Expense	\$ 10,825	\$ (566)	\$ 10,259
3	Miscellaneous Expense	\$ 77,401	\$ (6,085)	\$ 71,316
4	Material and Supplies Expense	\$ 30,420	\$ (1,674)	\$ 28,746
5	Total	\$ 345,241	\$ (20,048)	\$ 325,193

PLANT COST REMOVED FROM CONTRACTUAL SERVICES, OTHER EXPENSE (CSB 1.37)				
Acct. No.	Vendor Name	Description	Amount	
6	361-Collection Sewers	Jensen Sys. Engineering	Algonquin Indian Basket Alarm	\$ 1,499.01
7	361-Collection Sewers	Keller Equipment Co	Pull and Install Motors	\$ 1,947.71
8	361-Collection Sewers	Keller Equipment Co	Rebuild Motor/Pump	\$ 1,119.65
9	361-Collection Sewers	KSK Electric	Replace Meter Socket	\$ 1,315.00
10	361-Collection Sewers	LTC, Inc.	Concrete Pad & Drain for Manhole	\$ 1,404.92
11			Subtotal	\$ 7,286.29
12	371-Effluent Pumping Plant	Keller Equipment Co	Change out Pumps	\$ 551.62
13	371-Effluent Pumping Plant	Keller Equipment Co	Pull Pump. Set New Pump	\$ 1,095.40
14			Subtotal	\$ 1,647.02
15	381-Plant Sewers	Foster Elec. Motor Servc	Install Outlets in Vault	\$ 589.57
16	381-Plant Sewers	KSK Electric	Boulder Facility Lighting Repair Proj.	\$ 2,200.00
17			Subtotal	\$ 2,789.57
18			Total	\$ 11,722.88

PLANT COSTS REMOVED FROM RENTS EXPENSE (CSB 1.38)				
Acct. No.	Vendor Name	Description	Amount	
21	371-Effluent Pumping Plant	Pump Systems, Inc.	Replace Pump	\$ 566.13
22			Total	\$ 566.13

References:

- Column A: Company Schedule C-1
- Column B: Testimony, CSB, Company Data Request Responses CSB 1.37, 1.38, 1.40 & 7.13
- Column C: Column [A] + Column [B]

**OPERATING INCOME ADJUSTMENT NO. 1 - EXPENSED PLANT
 CONTINUED**

PLANT COSTS REMOVED FROM MISCELLANEOUS EXPENSE (CSB 1.40)				
Maricopa County Environ. Serv. Dept, Approval to Construct Expedited Fees				
LINE NO.	Acct. No	Project Title	Description	Amount
1	389-Other Plant & Misc Equip	Boulders WWTP Bypass	Reclaimed Water Line	\$ 500.00
2	389-Other Plant & Misc Equip	Boulders Effluent Pump	Addition of pumps	\$ 700.00
3	371-Effluent Pumping Plant	Indian Basket Lift Station	Replace Existing Lift Station	\$ 700.00
4	389-Other Plant & Misc Equip	Boulders WWTP Bypass	Add Structure and Manhole	\$ 2,000.00
5			Subtotal	\$ 3,900.00
6	389-Other Plant & Misc Equip	Safety Equipment	Company Response to CSB 2.13b	\$ 2,184.75
7			Total	\$ 6,084.75

PLANT COSTS REMOVED FROM MISC. EXP., MATERIALS & SUPPLIES (CSB 7.13)				
	Acct. No.	Vendor Name	Description	Amount
8	389-Other Plant & Misc Equip	Arizona Pneumatic Sys	Blower	\$ 1,674.47
9			Total	\$ 1,674.47

OPERATING INCOME ADJUSTMENT NO. 2 - AFFILIATE EXPENSES

LINE NO.	DESCRIPTION	[A]	[B]	[C]
		COMPANY AS FILED	STAFF ADJUSTMENTS	STAFF AS ADJUSTED
1	Materials and Supplies Expense	\$ 30,420	\$ (1,472)	\$ 28,948
2	Contractual Services - Professional Expense	171,683	(9,205)	162,478
3	Contractual Services - Other Expense	226,595	(10,361)	216,234
4	Transportation Expense	4,870	(127)	4,743
5	Insurance - General Liability Expense	16,204	(596)	15,608
6	Miscellaneous Expense	30,420	(3,644)	26,776
7	Total	\$ 480,192	\$ (25,406)	\$ 454,786

Description	Affiliate Phone Charges Summary		
8 Miscellaneous Expense, AT&T Long Distance	\$ 2,186	\$ -	\$ 2,186
9 Misc Exp, Long Distance - Direct Charge to Gold Canyon	161	(161)	-
10 Miscellaneous Exp, AT&T Long Distance - Direct Charged to Texas	-	(514)	(514)
11 Misc Exp, Long Distance - Allocation to 3 Affiliated Companies	-	(1,254)	(1,254)
12 Total	\$ 2,346	\$ (1,928)	\$ 418

Description	Affiliate Paging Charges Summary		
13 Miscellaneous Expense, Teletouch Paging	\$ 2,651	\$ -	\$ 2,651
14 Misc Exp, Paging Services - Direct Charge to Texas Affiliates	-	(1,716)	(1,716)
15 Total	\$ 2,651	\$ (1,716)	\$ 935

Profit Included In Affiliate Billings			
16	Materials and Supplies	\$ 22,639	6.50% \$ 1,472
17	Contractual Services - Professional	141,623	6.50% \$ 9,205
18	Contractual Services - Other	159,402	6.50% \$ 10,361
19	Transportation Expense	1,952	6.50% \$ 127
20	Insurance - General Liability	9,173	6.50% \$ 596
21	Total	\$ 334,789	\$ 21,761

References:

- Column A: Company Data Request Response CSB 1.40
- Column B: Testimony, CSB
- Column C: Column [A] + Column [B]

OPERATING INCOME ADJUSTMENT NO. 3 - BAD DEBT EXPENSE

		[A]	[B]	[C]
LINE NO.	DESCRIPTION	COMPANY AS FILED	STAFF ADJUSTMENTS	STAFF AS ADJUSTED
1	Bad Debt Expense	5,926	(5,926)	-

References:

- Column A: Company Data Request Response CSB 1.30 & 5.9
- Column B: Testimony, CSB
- Column C: Column [A] + Column [B]

OPERATING INCOME ADJUSTMENT NO. 4 - DEPRECIATION EXPENSE ON TEST YEAR PLANT

LINE NO.	DESCRIPTION	[A] PLANT In SERVICE Per Staff	[B] NonDepreciable or Fully Depreciated PLANT	[C] DEPRECIABLE PLANT (Col A - Col B)	[D] DEPRECIATION RATE	[E] DEPRECIATION EXPENSE (Col C x Col D)
1	351 - Organization	\$ -	\$ -	\$ -	0.00%	\$ -
2	352 - Franchises	\$ -	\$ -	\$ -	0.00%	\$ -
3	353 - Land and Land Rights	\$ 461,300	\$ 461,300	\$ -	0.00%	\$ -
4	354 - Structures and Improvements	\$ 1,239,905	\$ -	\$ 1,239,905	3.33%	\$ 41,289
5	355 - Power Generation Equipment	\$ -	\$ -	\$ -	5.00%	\$ -
6	360 - Collection Services - Force	\$ 228,580	\$ -	\$ 228,580	2.00%	\$ 4,572
7	361 - Collection Services - Gravity	\$ 3,614,545	\$ -	\$ 3,614,545	2.00%	\$ 72,291
8	362 - Special Collecting Structures	\$ -	\$ -	\$ -	2.00%	\$ -
9	363 - Services to Customers	\$ 157,218	\$ -	\$ 157,218	2.00%	\$ 3,144
10	364 - Flow Measuring Devices	\$ 39,829	\$ -	\$ 39,829	10.00%	\$ 3,983
11	365 - Flow Measuring Installations	\$ 156,205	\$ -	\$ 156,205	10.00%	\$ 15,620
12	370 - Receiving Wells	\$ 696,137	\$ -	\$ 696,137	3.33%	\$ 23,181
13	371 - Effluent Pumping Equipment	\$ 454,258	\$ -	\$ 454,258	12.50%	\$ 56,782
14	380 - Treatment and Disposal Equipment	\$ -	\$ -	\$ -	5.00%	\$ -
15	381 - Plant Sewers	\$ 123,289	\$ -	\$ 123,289	5.00%	\$ 6,164
16	382 - Outfall Sewer Lines	\$ -	\$ -	\$ -	3.33%	\$ -
17	389 - Other Plant and Miscellaneous Equip	\$ 740,678	\$ -	\$ 740,678	6.67%	\$ 49,403
18	390 - Office Furniture and Equipment	\$ 220,360	\$ -	\$ 220,360	6.67%	\$ 14,698
19	391 - Transportation Equipment	\$ 87,811	\$ -	\$ 87,811	20.00%	\$ 17,562
20	393 - Tools, Shop and Garage Equipment	\$ -	\$ -	\$ -	5.00%	\$ -
21	394 - Laboratory Equipment	\$ -	\$ -	\$ -	10.00%	\$ -
22	395 - Power Operated Equipment	\$ -	\$ -	\$ -	5.00%	\$ -
23	398 - Other Tangible Equipment	\$ 7,279	\$ -	\$ 7,279	10.00%	\$ 728
24	Total Plant	\$ 8,227,393	\$ 461,300	\$ 7,766,094		\$ 268,130
25	Composite Depreciation Rate (Depr Exp / Depreciable Plant):	3.45%				
26	CIAC:	\$ 5,642,748				
27	Amortization of CIAC (Line 25 x Line 26):	\$ 194,820				
28	Depreciation Expense Before Amortization of CIAC:	\$ 268,130				
29	Less Amortization of CIAC:	\$ 194,820				
30	Test Year Depreciation Expense - Staff:	\$ 73,310				
31	Depreciation Expense - Company:	\$ 126,749				
32	Staff's Total Adjustment:	\$ (53,439)				

References:

- Column [A]: Schedule CSB-4
- Column [B]: Staff Workpapers
- Column [C]: Column [A] - Column [B]
- Column [D]: Engineering Staff Report
- Column [E]: Column [C] x Column [D]

OPERATING INCOME ADJUSTMENT NO. 5 - NONRECURRING & OTHER

LINE NO.	DESCRIPTION	[A]	[B]	[C]
		COMPANY AS FILED	STAFF ADJUSTMENTS	STAFF AS ADJUSTED
1	Transportation Expense	\$ 4,870	\$ (2,200)	\$ 2,670
2	Contractual Services, Professional	\$ 171,683	\$ (3,228)	\$ 168,455
		<u>\$ 176,553</u>	<u>\$ (5,428)</u>	<u>\$ 171,125</u>

References:

- Column A: Company Data Request Response CSB 5.8 and 9.2
- Column B: Testimony, CSB
- Column C: Column [A] + Column [B]

OPERATING INCOME ADJUSTMENT NO. 6 - OPERATING LEASE

LINE NO.	DESCRIPTION	[A]	[B]	[C]
		COMPANY AS FILED	STAFF ADJUSTMENTS	STAFF AS ADJUSTED
1	Treatment Capacity Costs Per Dec. 59944	\$ 1,260,000	\$ -	\$ 1,260,000
2	Less Amount Funded by CIAC	\$ (300,000)	\$ -	\$ (300,000)
3	Net Amount Funded by Debt	\$ 960,000	\$ -	\$ 960,000
4	2006 Principle	\$ 38,448	\$ -	\$ 38,448
5	Income Tax Factor	1.4805	(0.4805)	1.0000
6	2006 Principle Plus Taxes	\$ 56,922	\$ (18,474)	\$ 38,448
7	Add: 2006 Interest	\$ 67,952	\$ -	\$ 67,952
8	Annual "Lease" Expense	\$ 124,874	\$ (18,474)	\$ 106,400
9	Treatment Capacity Costs Per Dec. 60240	\$ 653,706	\$ -	\$ 653,706
10	Less Amount Funded by CIAC	\$ (153,706)	\$ -	\$ (153,706)
11	Net Amount Funded by Debt	\$ 500,000	\$ -	\$ 500,000
12	2006 Principle	\$ 19,411	\$ -	\$ 19,411
13	Income Tax Factor	1.4805	(0.4805)	1.0000
14	2006 Principle Plus Taxes	\$ 28,738	\$ (9,327)	\$ 19,411
15	Add: 2006 Interest	\$ 36,010	\$ -	\$ 36,010
16	Annual "Lease" Expense	\$ 64,748	\$ (9,327)	\$ 55,421
17	Total Annual "Lease" Expense	\$ 189,622	\$ (27,801)	\$ 161,821

References:

- Column A: Company Schedule C-2, Page 4
- Column B: Testimony, CSB
- Column C: Column [A] + Column [B]

OPERATING INCOME ADJUSTMENT NO. 7 - FOOD AND BEVERAGES

LINE NO.	DESCRIPTION	[A]	[B]	[C]
		COMPANY AS FILED	STAFF ADJUSTMENTS	STAFF AS ADJUSTED
1	Contractual Services, Other	\$ 226,595	\$ (478)	\$ 226,117
2	Material and Supplies Expense	77,401	(186)	77,215
3		\$ 303,996	\$ (664)	\$ 303,332

References:

- Column A: Company Schedule C-1
- Column B: Testimony, CSB, Company Data Request Responses CSB 1.43 and 7.15
- Column C: Column [A] + Column [B]

1

References:

- Column A: Company Data Request Response CSB 1-3 and 2-9
- Column B: Testimony, CSB
- Column C: Column [A] + Column [B]

OPERATING INCOME ADJUSTMENT NO. 8 - PROPERTY TAX EXPENSE

LINE NO.	DESCRIPTION	[A] COMPANY AS FILED	[B] STAFF ADJUSTMENT	[C] STAFF AS ADJUSTED
1	2004 Staff Adjusted Test Year Revenues			\$ 1,205,452
2	Weight Factor			\$ 2
3	Subtotal (Line 1 x Line 2)			\$ 2,410,904
4	Staff Recommended Revenue			\$ 1,235,947
5	Subtotal (Line 4 + Line 5)			\$ 3,646,851
6	Number of Years			\$ 3
7	Three Year Average (Line 5 / Line 6)			\$ 1,215,617
8	Department of Revenue Multiplier			2
9	Revenue Base Value (Line 7 x Line 8)			\$ 2,431,234
10	Plus: 10% of 2004 CWIP			\$ -
11	Less: Net Book Value of Licensed Vehicles			\$ 7,279
12	Full Cash Value (Line 9 + Line 10 - Line 11)			\$ 2,423,955
13	Assessment Ratio			0.24
14	Assessed Value (Line 12 x Line 13)			\$ 581,749
15	Composite Property Tax Rate			0.07573
16	Staff Proposed Property Tax Expense (Line 14 x Line 15)	\$ 45,745	\$ (1,692)	\$ 44,053

References:

- Column A: Company Schedule C-1, Page 2
- Column B: Testimony, CSB
- Column C: Column [A] + Column [B]

OPERATING INCOME ADJUSTMENT NO. 9 - TEST YEAR INCOME TAXES

LINE NO.	DESCRIPTION	(A)	(B)
	<i>Calculation of Income Tax:</i>		
		<u>Test Year</u>	
1	Revenue (Schedule CSB-9, Line 9)	\$ 1,205,452	
2	Less: Operating Expenses - Excluding Income Taxes & Lease Expense	\$ 924,003	
3	Less: Synchronized Interest (L17)	\$ 18,268	
4	Arizona Taxable Income (L1- L2 - L3)	\$ 263,181	
5	Arizona State Income Tax Rate	6.968%	
6	Arizona Income Tax (L4 x L5)		\$ 18,338
7	Federal Taxable Income (L4 - L6)	\$ 244,843	
8	Federal Tax on First Income Bracket (\$1 - \$50,000) @ 15%	\$ 7,500	
9	Federal Tax on Second Income Bracket (\$51,001 - \$75,000) @ 25%	\$ 6,250	
10	Federal Tax on Third Income Bracket (\$75,001 - \$100,000) @ 34%	\$ 8,500	
11	Federal Tax on Fourth Income Bracket (\$100,001 - \$335,000) @ 39%	\$ 56,489	
12	Federal Tax on Fifth Income Bracket (\$335,001 - \$10,000,000) @ 34%	\$ -	
13	Total Federal Income Tax		\$ 78,739
14	Combined Federal and State Income Tax (L6 + L13)		<u>\$ 97,077</u>
	<i>Calculation of Interest Synchronization:</i>		
15	Rate Base (Schedule CSB-13, Col. (C), Line 16)	\$ 415,172	
16	Weighted Average Cost of Debt	4.40%	
17	Synchronized Interest (L16 x L17)	<u>\$ 18,268</u>	
18		Income Tax - Per Staff \$ 97,077	
19		Income Tax - Per Company \$ (6,544)	
20		Staff Adjustment \$ 103,621	

OPERATING INCOME ADJUSTMENT NO. 10 - ACC ASSESSMENT

		[A]	[B]	[C]
LINE NO.	DESCRIPTION	COMPANY AS FILED	STAFF ADJUSTMENTS	STAFF AS ADJUSTED
1	ACC Assessment	\$ 2,288	\$ (2,288)	\$ -

References:

- Column A: Company Data Request Response CSB 1.30
- Column B: Testimony, CSB
- Column C: Column [A] + Column [B]

RATE DESIGN

	Present Rates	Company Proposed	Staff Recommended
Residential Service-Per Month	\$38.00	\$ 43.19	\$38.98
Commercial, Regular (c)	\$ 0.15236	\$ 0.01732	\$ 0.15631

Commercial - Special Rate	Present Rates			Company Proposed			Staff Recommended		
	Gallons Per Day	Rate Per Gallon	Monthly Charge	Gallons Per Day	Rate Per Gallon	Monthly Charge	Gallons Per Day	Rate Per Gallon	Monthly Charge
Name of Business									
BH Enterprises-West	2,525	\$0.11685	\$295.05	2,525	\$0.13280	\$335.32	2,525	\$0.11988	\$302.69
BH Enterprises-East	1,400	\$0.11685	\$163.59	1,400	\$0.13280	\$185.92	1,400	\$0.11988	\$167.83
Barb's Pet Grooming	250	\$0.11685	\$29.21	250	\$0.13280	\$33.20	250	\$0.11988	\$29.97
Boulder's Resort	29,345	\$0.11843	\$3,475.33	29,345	\$0.13459	\$3,949.54	29,345	\$0.12150	\$3,565.34
Carefree Dental	1,625	\$0.11685	\$189.88	1,625	\$0.13280	\$215.80	1,625	\$0.11988	\$194.80
Ridgecrest Realty	450	\$0.11818	\$53.18	450	\$0.13431	\$60.44	450	\$0.12124	\$54.56
Desert Forest	7,000	\$0.13609	\$952.63	7,000	\$0.15467	\$1,082.69	7,000	\$0.13961	\$977.30
Desert Hills Pharmacy	800	\$0.14206	\$113.65	800	\$0.16145	\$129.16	800	\$0.14574	\$116.59
El Pedregal	15,787	\$0.11685	\$1,844.71	15,787	\$0.13280	\$2,096.51	15,787	\$0.11988	\$1,892.49
Lemon Tree	300	\$0.11400	\$43.20	300	\$0.12956	\$43.20	300	\$0.11695	\$43.20
Body Shop	1,000	\$0.14544	\$145.44	1,000	\$0.16529	\$165.29	1,000	\$0.14921	\$149.21
Spanish Village	4,985	\$0.11685	\$582.50	4,985	\$0.13280	\$662.01	4,985	\$0.11988	\$597.58
Boulder's Club	1,200	\$0.11685	\$140.22	1,200	\$0.13280	\$159.36	1,200	\$0.11988	\$143.85
Anthony Vuitaggio	300	\$0.12987	\$38.96	300	\$0.14760	\$44.28	300	\$0.13323	\$39.97

Effluent Sales
Per thousand gallons \$0.374400

	Present Rates	Company Proposed	Staff Recommended
Service Charges:			
Establishment	\$ 25.00	\$ 25.00	\$ 25.00
Re-establishment	\$ 25.00	\$ 25.00	\$ 25.00
Re-connection	No Charge	No Charge	No Charge
Minimum Deposit (Residential)	(a)	(a)	(a)
Minimum Deposit (Non-Residential)	(a)	(a)	(a)
Deposit Interest	N/A	N/A	(a)
NSF Check Charge	\$ 10.00	\$ 10.00	\$ 10.00
Deferred Paymnt Finance Charge	1.50%	1.50%	1.50%
Late Charge	1.50%	1.50%	1.50%

Main Extension Tariff (b)	Cost	Cost	Cost
Hook-Up Fee for New Service (c)	\$ 6.47	\$ 6.47	Discontinue

(a) Per A.A.C. R14-2-603B: Residential - two times average bill, Non-residential - two and one-half times average bill
(b) Per A.A.C. R14-2-406B
(c) Per Gallon per Day. Wastewater flows are based on Engineering Bulletin 12, Table 1.
N/A Not included in current or proposed tariff.

SCOTT, JR.

BEFORE THE ARIZONA CORPORATION COMMISSION

COMMISSIONERS

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

IN THE MATTER OF THE APPLICATION OF
BLACK MOUNTAIN SEWER CORPORATION,
AN ARIZONA CORPORATION, FOR A
DETERMINATION OF THE FAIR VALUE OF ITS
UTILITY PLANT AND PROPERTY AND FOR
INCREASES IN ITS RATES AND CHARGES FOR
UTILITY SERVICE BASED THEREON

DOCKET NO. SW-02361A-05-0657

DIRECT TESTIMONY

OF

MARLIN SCOTT, JR.
UTILITIES ENGINEER
UTILITIES DIVISION

MARCH 9, 2006

TABLE OF CONTENTS

	<u>Page</u>
EXECUTIVE SUMMARY	i
Conclusions	
Recommendations	
DIRECT TESTIMONY	
Introduction.....	1
Purpose of Testimony	2
Engineering Report	2
EXHIBIT MSJ, Engineering Report	
A. Location of Black Mountain Sewer Corporation.....	1
B. Description of Wastewater System.....	1
C. Wastewater Flows.....	4
D. Growth	4
E. ADEQ Compliance	4
F. ACC Compliance.....	4
G. Depreciation Rates	6
FIGURES	
A-1. Maricopa County Map	8
A-2. Certificated Areas	9
B-1. System Schematic	10
C-1. Wastewater Flows.....	11
D-1. Growth	11
TABLE	
G-1. Wastewater Depreciation Rates	12

EXECUTIVE SUMMARY
BLACK MOUNTAIN SEWER CORPORATION
DOCKET NO. SW-02361A-05-0657

CONCLUSIONS

- A. The Black Mountain Sewer Corporation (“Corporation”) wastewater system’s total available capacity of 1.12 million GPD is adequate to serve the present customer base and reasonable growth.
- B. The Arizona Department of Environmental Quality (“ADEQ”) reported the Corporation’s System, Inventory #100351, had no deficiencies and is in total compliance.

RECOMMENDATION

- 1. The Corporation has an outstanding Arizona Corporation Commission compliance issue. As of February 7, 2006, the required documentation has not been filed. Therefore, Staff recommends that any permanent rates and charges in this matter shall become effective on the first day of the month after the Corporation submits to Docket Control the required permit, license or franchise from the appropriate governmental authority as ordered in Decision No. 64748 (See Page 5, Line 20 in Decision.)
- 2. Staff recommends that the Corporation use Staff’s wastewater depreciation rates by individual National Association of Regulatory Utility Commissioners category on a going-forward basis.

1 **INTRODUCTION**

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

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

6
7 **Q. How long have you been employed by the Commission?**

8 A. I have been employed by the Commission since November 1987.

9
10 **Q. Please list your duties and responsibilities.**

11 A. As a Utilities Engineer, specializing in water and wastewater engineering, my
12 responsibilities include: the inspection, investigation, and evaluation of water and
13 wastewater systems; preparing reconstruction cost new and/or original cost studies, cost of
14 service studies and investigative reports; providing technical recommendations and
15 suggesting corrective action for water and wastewater systems; and providing written and
16 oral testimony on rate applications and other cases before the Commission.

17
18 **Q. How many cases have you analyzed for the Utilities Division?**

19 A. I have analyzed approximately 430 cases covering various responsibilities for the Utilities
20 Division.

21
22 **Q. Have you previously testified before this Commission?**

23 A. Yes, I have testified in 49 proceedings before this Commission.

24

25

26

1 **Q. What is your educational background?**

2 A. I graduated from Northern Arizona University in 1984 with a Bachelor of Science degree
3 in Civil Engineering Technology.

4
5 **Q. Briefly describe your pertinent work experience.**

6 A. Prior to my employment with the Commission, I was Assistant Engineer for the City of
7 Winslow, Arizona, for about two years. Prior to that, I was a Civil Engineering
8 Technician with the U.S. Public Health Service in Winslow for approximately six years.

9
10 **Q. Please state your professional membership, registrations, and licenses.**

11 A. I am a member of the National Association of Regulatory Utility Commissioners
12 (“NARUC”) Staff Subcommittee on Water.

13
14 **PURPOSE OF TESTIMONY**

15 **Q. Were you assigned to provide Staff’s engineering analysis and recommendation for**
16 **the Black Mountain Sewer Corporation (“Corporation”) in this proceeding?**

17 A. Yes. I reviewed the Corporation’s application and responses to data requests, and I
18 inspected the wastewater system on January 11, 2006. This testimony and its attachment
19 present Staff’s engineering evaluation.

20
21 **ENGINEERING REPORT**

22 **Q. Please describe the attached Engineering Report, Exhibit MSJ.**

23 A. Exhibit MSJ presents the details and analyses of Staff’s findings, and is attached to this
24 direct testimony. Exhibit MSJ contains the following major topics: (1) a description of
25 the wastewater system, (2) wastewater flows, (3) growth, (4) compliance with the rules of

1 the Arizona Department of Environmental Quality and the Arizona Corporation
2 Commission, and (5) depreciation rates.

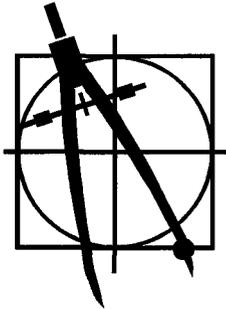
3

4 Staff's conclusions and recommendations from the Engineering Report are contained in
5 the "EXECUTIVE SUMMARY", above.

6

7 **Q. Does this conclude your direct testimony?**

8 **A. Yes, it does.**

**ENGINEERING REPORT****For****Black Mountain Sewer Corporation****Docket No. SW-02361A-05-0657 (Rates)****February 8, 2006****A. LOCATION OF BLACK MOUNTAIN SEWER CORPORATION ("CORPORATION")**

The Corporation serves the Town of Carefree and in the nearby unincorporated areas of Maricopa County, as well as portions within the northern city limits of Scottsdale. Figure A-1 shows the location of the Corporation within Maricopa County and Figure A-2 shows the approximate five square-miles of certificated area.

B. DESCRIPTION OF WASTEWATER SYSTEM

The wastewater system was field inspected on January 11, 2006, by Marlin Scott, Jr. and Jian Liu, Staff Utilities Engineers, in the accompaniment of Charles Hernandez, Operations Manager, and Dan Schanaman, Operator, for the Corporation.

The wastewater operation consists of two systems; the northern and southern systems. The northern system operates a 160,000 gallon per day ("GPD") wastewater treatment plant ("WWTP") and the southern system diverts its wastewater flows to the City of Scottsdale wastewater system. The effluent from the WWTP is delivered to two lakes in The Boulders Golf Course. The entire Corporation's collection system operated 15 lift stations serving 1,923 service laterals during the test year of 2004. A system schematic is shown in Figure B-1 with detailed plant facility descriptions as follows:

Table 1. Wastewater Treatment Plant and Scottsdale Connection

Name or Description	Plant Items	Location
Northern System's WWTP	160,000 GPD extended aeration (designed). Operating at 120,000 GPD (permitted)	Boulders Resort
Southern System - Scottsdale Connection	Metered – could purchase up to 1.0 Million GPD	Scottsdale Road & Dove Valley Road

Table 2. Lift Stations

Location	Quantity of Pumps	Horsepower per Pump	Capacity per Pump (GPM)	Wet Well Capacity (gals.)
Commercial	2	20	200	1,130
CIE	2	15	200	4,200
Indian Rock	2	5	100	470
Sage Brush	2	3	N/A	470
Trade Center	2	0.75	N/A	200
Sentinel Rock	2	15	370	1,500
Carefree Highway	2	25	350	1,525
Stagecoach Pass	2	5	50	470
Peaceful Place	2	1	15	470
Sunset Trails	2	30	290	2,600
El Pedregal	2	10	185	2,000
Ridgeview	2	5	100	470
Canyon Crossings	2	3	85	300
Carefree Village	2	3	85	1,760
Indian Basket	2	1	11	150

Notes: GPM = gallons per minute and gals = gallons.

Table 3. Force Mains

Size	Material	Length (Feet)
3-inch	ACP	915
4-inch	ACP	9,366
6-inch	ACP	7,460
1.25-inch	PVC	443
1.5-inch	PVC	5,384
2-inch	PVC	5,155
4-inch	PVC	2,390
6-inch	PVC	10,353
8-inch	PVC	10,426
	Total:	51,892

Table 4. Manholes

Type	Quantity
Standard	974
Drop	14

Table 5. Cleanouts

Quantity
27

Table 6. Collection Mains

Diameter	Material	Length (Feet)
4-inch	ABS	720
12-inch	ABS	9,343
6-inch	VCP	12,760
8-inch	VCP	71,673
10-inch	VCP	7,675
15-inch	VCP	1,900
6-inch	PVC	3,046
8-inch	PVC	80,054
10-inch	PVC	3,455
12-inch	PVC	565
15-inch	PVC	6,735
6-inch	DIP	85
8-inch	DIP	1,280
15-inch	DIP	165
18-inch	CIP	130
21-inch	CIP	74
	Total:	199,660

Table 7. Service Laterals

Size	Quantity
Residential	1,724
Commercial	199
Total:	1,923

C. WASTEWATER FLOWS

Wastewater Flows

Based on the information provided by the Corporation, wastewater flows for the year 2004 are presented in Figure C-1. The wastewater flows produced a high monthly flow of 443,160 GPD and a low monthly flow of 227,083 GPD for an average annual flow of 325,542 GPD.

System Analysis

The wastewater system's total available capacity of 1.12 million GPD (WWTP at 120,000 GPD and Scottsdale availability up to 1.0 million GPD) is adequate to serve the present customer base and reasonable growth.

D. GROWTH

Figure D-1 depicts the customer growth using linear regression analysis. The number of service laterals was obtained from annual reports submitted to the Commission. During the test year 2004, the Corporation had 1,923 service laterals and it is projected that the Corporation could have approximately 2,550 service laterals by 2009.

E. ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY ("ADEQ") COMPLIANCE

Compliance

ADEQ reported the Corporation's system, Inventory #100351, had no deficiencies and is in total compliance.

F. ARIZONA CORPORATION COMMISSION ("ACC") COMPLIANCE

In Decision No. 64748 (April 17, 2002), the Corporation received approval for an extension to its CC&N. One of the conditions for this approval was "that the Corporation file with the Director,

within 365 days of the effective date of this Decision, the required permit, license or franchise from the appropriate governmental authority permitting it to provide service to the extension parcels approved hereinafter or the approval for that parcel shall be rendered null and void without further Order of the Commission.” This documentation was originally due April 17, 2003.

On April 14, 2003, the Corporation filed a request for a 90 day extension of time to file the documentation. This request was granted by procedural order on May 9, 2003, and extended the compliance due date to July 16, 2003.

On July 17, 2003, the Corporation filed a request for a 120 day extension to the July 16, 2003 compliance due date, stating that, “despite its best efforts, it had been unable to conclude negotiations on a proposed Operating Agreement with the Town of Carefree, Arizona.” On September 12, 2003, the Corporation amended the July 17, 2003 request for extension via e-mail, requesting an additional 60 days due to the fact that the Corporation was going through some internal management restructuring. As amended, the Corporation therefore requested a 180 day extension from the July 16, 2003 deadline to January 12, 2004. This request was granted by procedural order on October 14, 2003, and extended the compliance due date to January 12, 2004.

On January 9, 2004, the Corporation submitted another request for extension of time to provide the required documentation. In that request the Corporation requested that the deadline for extension be moved from January 12, 2004 to July 12, 2004, a total of 180 days. The Corporation’s request was further supported by a letter filed on January 16, 2004, from the Mayor for the Town of Carefree (“Town”). His letter described the ongoing negotiations between the Town and the Corporation.

On June 10, 2004, Staff filed a Memorandum which indicated that Staff verified that the Corporation and the Town were involved in ongoing negotiations and that even more time would be required for the requested extension in order to conclude an agreement between them. To resolve concerns raised by the Town, Staff indicated that the Corporation is taking active steps to resolve odor problems in order to reach an agreement with the Town to secure the needed documentation. Based on Staff’s review of the ongoing negotiations and balancing the interests of the parties, Staff recommended a further extension for the Corporation to December 31, 2004, but indicated that it will not favor any further extensions beyond that date. Accordingly, this request was granted by procedural order on June 24, 2004, and extended the compliance due date to December 31, 2004.

As of February 7, 2006, the required documentation has not been filed. Therefore, Staff recommends that any permanent rates and charges in this matter shall become effective on the first day of the month after the Corporation submits to Docket Control the required permit, license or franchise from the appropriate governmental authority as ordered in Decision No. 64748.

G. DEPRECIATION RATES

The Corporation has been using a depreciation rate of 5.00% in every National Association of Regulatory Utility Commissioners ("NARUC") plant category. In recent orders, the Commission has been shifting away from the use of composite rates in favor of individual depreciation rates by NARUC category. (For example, a uniform 2.50% composite rate would not really be appropriate for either vehicles or collection 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 G-1 and it is recommended that the Corporation use these depreciation rates by individual NARUC category on a going-forward basis.

FIGURES

Maricopa County Map Figure A-1

Certificated Areas Figure A-2

System Schematic Figure B-1

Wastewater Flows Figure C-1

Growth Figure D-1

TABLE

Wastewater Depreciation Rates Table G-1

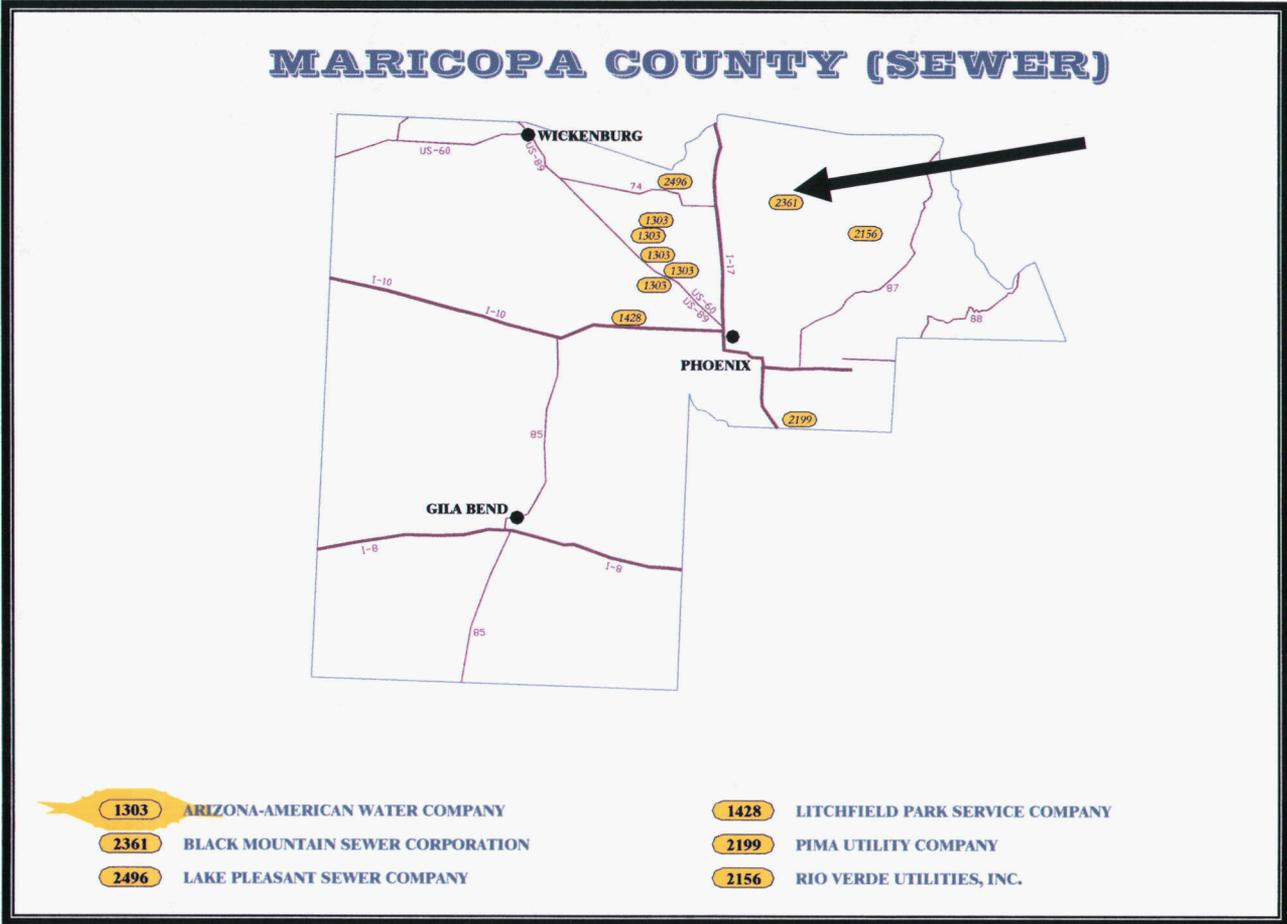


Figure A-1. Maricopa County Map

COUNTY: *Maricopa*

RANGE 4 East

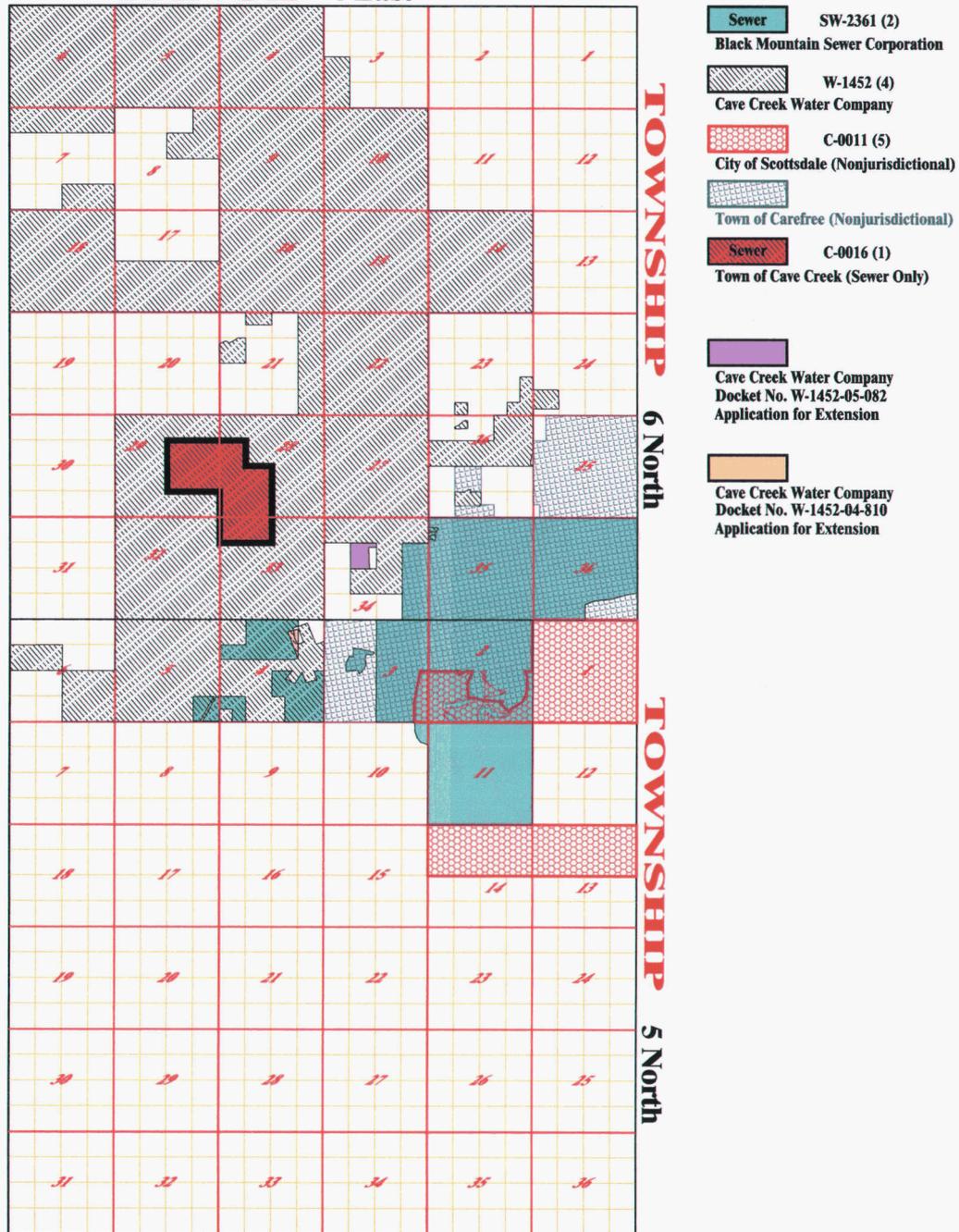


Figure A-2. Certificated Areas

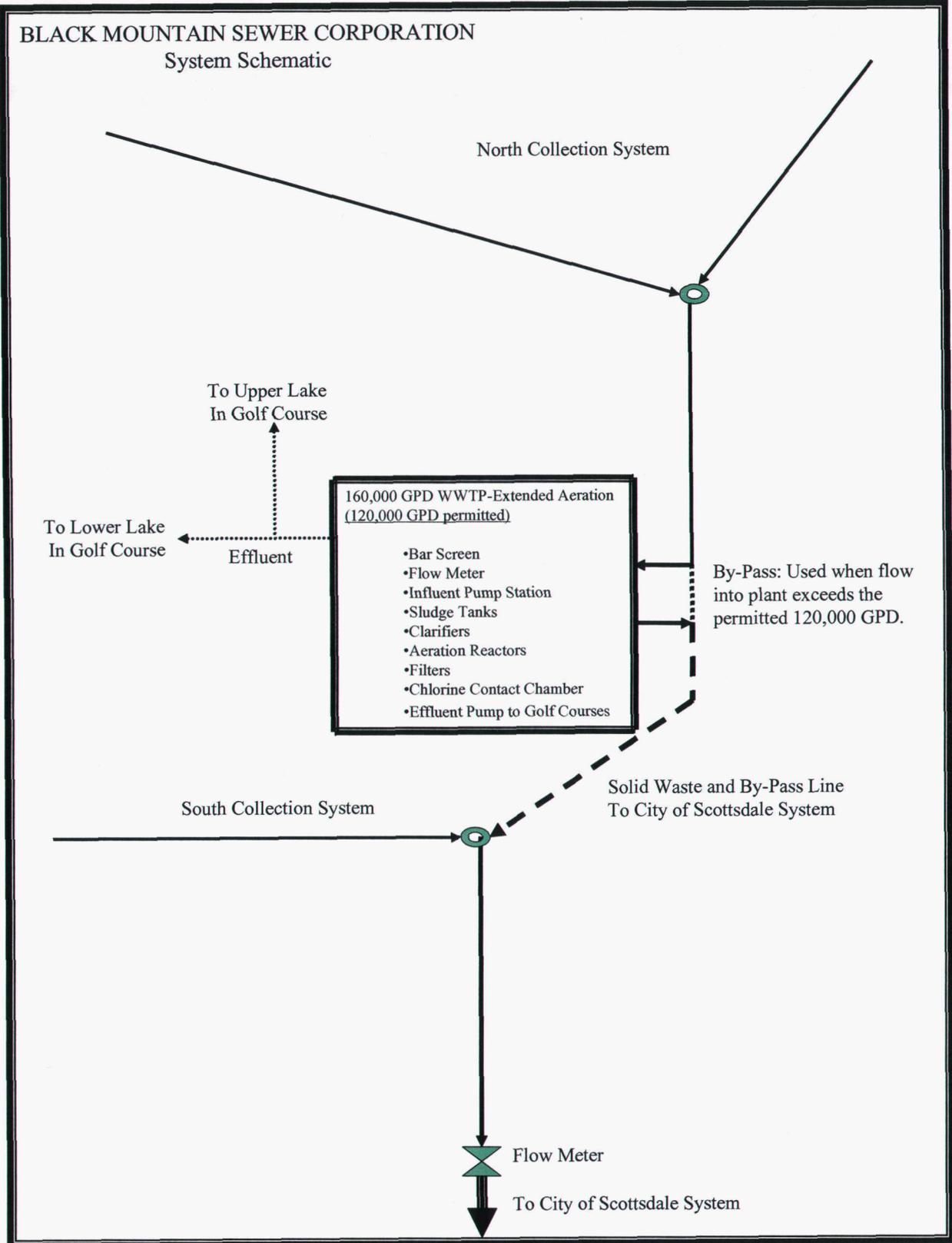


Figure B-1. System Schematic

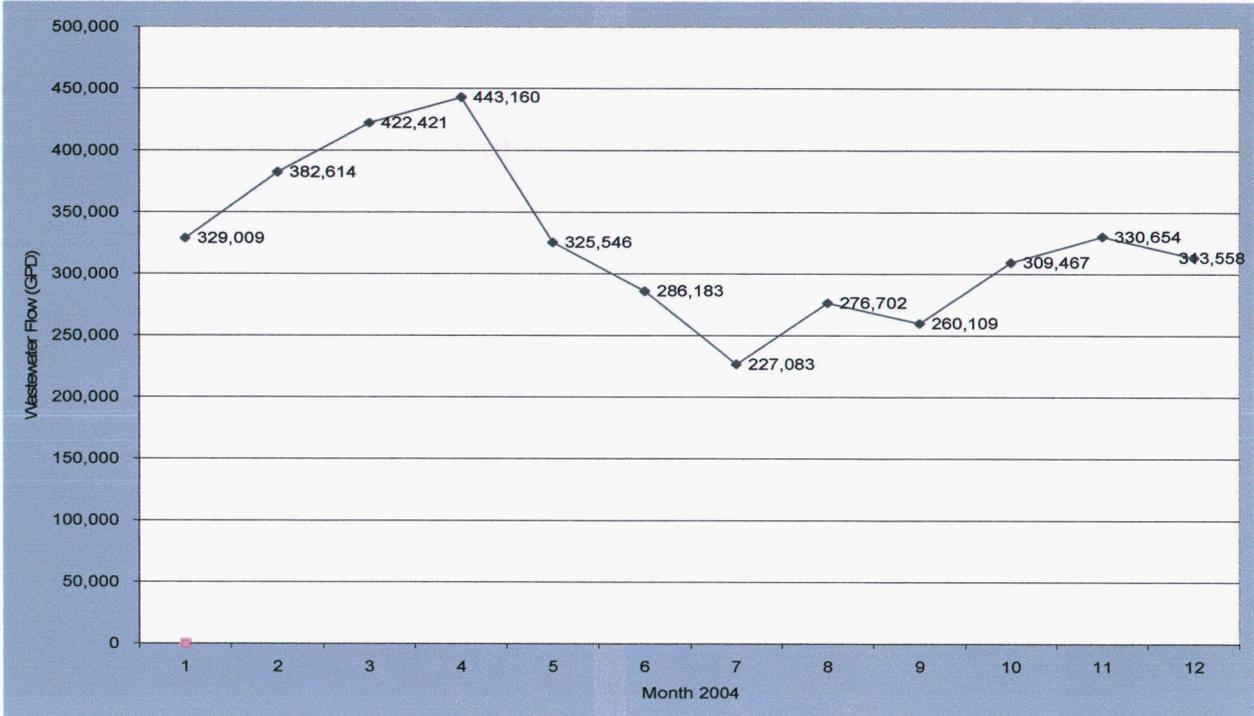


Figure C-1. Wastewater Flows

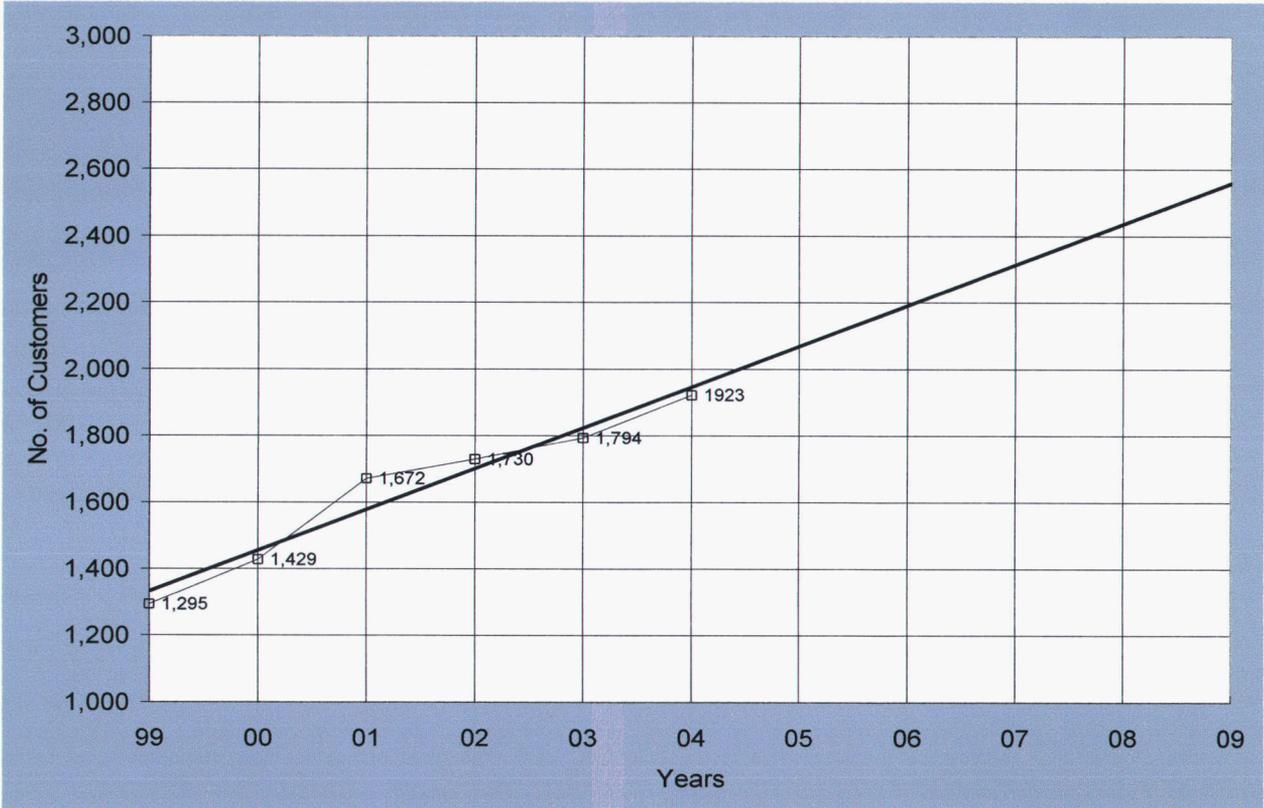


Figure D-1. Growth

Table G-1. Wastewater Depreciation Rates

NARUC Acct. No.	Depreciable Plant	Average Service Life (Years)	Annual Accrual Rate (%)
354	Structures & Improvements	30	3.33
355	Power Generation Equipment	20	5.0
360	Collection Sewers – Force	50	2.0
361	Collection Sewers- Gravity	50	2.0
362	Special Collecting Structures	50	2.0
363	Services to Customers	50	2.0
364	Flow Measuring Devices	10	10.0
365	Flow Measuring Installations	10	10.0
366	Reuse Services	50	2.0
367	Reuse Meters & Meter Installations	12	8.33
370	Receiving Wells	30	3.33
371	Pumping Equipment	8	12.5
374	Reuse Distribution Reservoirs	40	2.5
375	Reuse Transmission & Distribution System	40	2.5
380	Treatment & Disposal Equipment	20	5.0
381	Plant Sewers	20	5.0
382	Outfall Sewer Lines	30	3.33
389	Other Plant & Miscellaneous Equipment	15	6.67
390	Office Furniture & Equipment	15	6.67
390.1	Computers & Software	5	20.0
391	Transportation Equipment	5	20.0
392	Stores Equipment	25	4.0
393	Tools, Shop & Garage Equipment	20	5.0
394	Laboratory Equipment	10	10.0
395	Power Operated Equipment	20	5.0
396	Communication Equipment	10	10.0
397	Miscellaneous Equipment	10	10.0
398	Other Tangible Plant	----	----

NOTE: Acct. 398, Other Tangible Plant may vary from 5% to 50%. The depreciation rate would be set in accordance with the specific capital items in this account.

CHAVES

BEFORE THE ARIZONA CORPORATION COMMISSION

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

IN THE MATTER OF THE APPLICATION OF)
BLACK MOUNTAIN SEWER CORPORATION,)
AN ARIZONA CORPORATION, FOR A)
DETERMINATION OF THE FAIR VALUE OF)
ITS UTILITY PLANT AND PROPERTY AND)
FOR INCREASES IN ITS RATES AND)
CHARGES FOR UTILITY SERVICE BASED)
THEREON)

DOCKET NO. SW-02519A-00-0638

DIRECT
TESTIMONY
OF
PEDRO M. CHAVES
PUBLIC UTILITIES ANALYST I
UTILITIES DIVISION
ARIZONA CORPORATION COMMISSION

MARCH 9, 2006

TABLE OF CONTENTS

	<u>Page</u>
I. INTRODUCTION	1
SUMMARY OF TESTIMONY AND RECOMMENDATIONS.....	1
BLACK MOUNTAIN'S PROPOSED OVERALL RATE OF RETURN	3
II. THE WEIGHTED AVERAGE COST OF CAPITAL	3
III. CAPITAL STRUCTURE	5
Background.....	5
Black Mountain's Capital Structure	6
IV. RETURN ON EQUITY	7
Background.....	7
Risk.....	10
V. ESTIMATING THE COST OF EQUITY	13
Introduction	13
Discounted Cash Flow Model Analysis.....	14
<i>The Constant-Growth DCF</i>	15
<i>The Multi-Stage DCF</i>	24
Capital Asset Pricing Model.....	26
VI. SUMMARY OF STAFF'S COST OF EQUITY ANALYSIS	31
VII. FINAL COST OF EQUITY ESTIMATES FOR BLACK MOUNTAIN	33
VIII. RATE OF RETURN RECOMMENDATION.....	34
IX. STAFF RESPONSE TO APPLICANT'S COST OF CAPITAL WITNESS MR. THOMAS J. BOURASSA.....	35
<i>Constant-Growth DCF</i>	35
<i>Multi-Stage DCF</i>	40
<i>Risk Premium</i>	40
<i>Comparative Earnings</i>	41
X. CONCLUSION.....	42

SCHEDULES

Capital Structure and Weighted Cost of Capital.....	PMC-1
Final Cost of Equity Estimates for Sample Water Utilities	PMC-2
Average Capital Structure of Sample Water Utilities.....	PMC-3
Growth in Earnings & Dividends of Sample Water Utilities	PMC-4
Sustainable Growth for Sample Water Utilities.....	PMC-5

Selected Financial Data of Sample Water Utilities.....PMC-6
Calculation of Expected Infinite Annual Growth in Dividends.....PMC-7
Multi-Stage DCF EstimatesPMC-8

EXECUTIVE SUMMARY
BLACK MOUNTAIN SEWER CORPORATION
DOCKET NO. SW-02361A-05-0657

The direct testimony of Staff witness Pedro M. Chaves addresses the following issues:

Capital Structure – Staff recommends that the Commission adopt a capital structure for Black Mountain (“Applicant”) for this proceeding consisting of 0.0 percent debt and 100.0 percent equity.

Cost of Equity – Staff’s estimated return on equity (“ROE”) for the Applicant is based on cost of equity estimates for the sample companies ranging from 9.4 percent for the capital asset pricing model (“CAPM”) to 9.7 percent for the discounted cash flow method (“DCF”). Staff’s ROE recommendation does not reflect a financial risk adjustment due to the Applicant’s lower financial risk in relation to the sample companies because the capital structure is reasonable. If Staff had made an adjustment for financial risk, it would have been a 0.3 percent downward adjustment.

Overall Rate of Return – Staff recommends that the Commission adopt an overall rate of return (“ROR”) of 9.6 percent.

Mr. Bourassa’s Testimony – The Commission should reject the Company proposed 11.0 percent ROE for the following reasons:

1. Mr. Bourassa’s DCF estimates rely exclusively on analyst’s forecasts. In addition Mr. Bourassa’s DCF constant growth analysis does not include dividend growth.
2. Mr. Bourassa’s risk premium analysis is not market based and relies on forecasted interest rates for 10-year Treasuries for 2007-2008.

1 **I. INTRODUCTION**

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

3 A. My name is Pedro M. Chaves. I am a Public Utilities Analyst employed by the Arizona
4 Corporation Commission (“ACC” or “Commission”) in the Utilities Division (“Staff”).
5 My business address is 1200 West Washington Street, Phoenix, Arizona 85007.

6
7 **Q. Briefly describe your responsibilities as a Public Utilities Analyst.**

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

11
12 **Q. Please describe your educational background and professional experience.**

13 A. I am a graduate of Arizona State University, receiving a Bachelor of Science degree in
14 Global Business with a specialization in finance. My course of studies included classes in
15 corporate and international finance, investments, accounting, statistics, and economics. I
16 began employment as a Staff Public Utilities Analyst in December, 2005.

17
18 **Q. What is the scope of your testimony in this case?**

19 A. I provide Staff’s recommended rate of return in this case. I discuss the appropriate rate of
20 return (“ROR”) for establishing the revenue requirement for Black Mountain Sewer
21 Corporation (“Black Mountain” or “Applicant”).

22
23 **SUMMARY OF TESTIMONY AND RECOMMENDATIONS**

24 **Q. Briefly summarize how Staff’s cost of capital testimony is organized.**

25 A. Staff’s cost of capital testimony is presented in nine sections. Section I is this
26 introduction. Section II discusses the concept of weighted average cost of capital

1 (“WACC”). Section III presents the concept of capital structure and presents Staff’s
2 recommended capital structure for Black Mountain in this proceeding. Section IV
3 discusses the concepts of return on equity (“ROE”) and risk. Section V presents the
4 methods employed by Staff to estimate Black Mountain’s ROE. Section VI presents the
5 findings of Staff’s ROE analysis. Section VII presents Staff’s final cost of equity
6 estimates for Black Mountain. Section VIII presents Staff’s ROR recommendation.
7 Section IX presents Staff’s comments on the direct testimony of the Applicant’s witness,
8 Mr. Thomas J. Bourassa. Finally, section X presents the conclusions.

9
10 **Q. Have you prepared any exhibits to accompany your testimony?**

11 A. Yes. I prepared eight schedules (PMC-1 to PMC-8) that support Staff’s cost of capital
12 analysis.

13
14 **Q. What is Staff’s recommended rate of return for Black Mountain?**

15 A. Staff recommends a 9.6 percent overall ROR. Staff’s ROR is based on cost of equity
16 estimates for Black Mountain that range from 9.4 percent to 9.7 percent. Staff’s
17 recommended 9.6 percent ROR is calculated in Schedule PMC-1. Staff’s ROE
18 recommendation does not reflect a financial risk adjustment due to the Applicant’s lower
19 financial risk in relation to the sample companies because the capital structure is
20 reasonable. If Staff had made an adjustment for financial risk, it would have been a 0.3
21 percent downward adjustment.

22

1 **BLACK MOUNTAIN'S PROPOSED OVERALL RATE OF RETURN**

2 **Q. Briefly summarize the Applicant's proposed capital structure, cost of debt, return on**
3 **equity and overall rate of return for this proceeding.**

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

6
7 **Table 1**

	Weight	Cost	Weighted Cost
Long-term Debt	0.0%	0.0%	0.0%
Common Equity	100.0%	11.0%	<u>11.0%</u>
Cost of Capital/ROR			11.0%

8
9 Black Mountain is proposing an overall rate of return of 11.0 percent.

10
11 **II. THE WEIGHTED AVERAGE COST OF CAPITAL**

12 **Q. Please define the cost of capital concept.**

13 A. The cost of capital is the opportunity cost represented by anticipated returns or earnings
14 that are foregone by choosing one investment over others with equivalent risk. In other
15 words, the cost of capital is the return that stakeholders expect for committing their
16 resources in a determined business enterprise.

17
18 **Q. What is the overall cost of capital?**

19 A. The overall cost of capital is equal to the WACC.

20

1 **Q. How is the WACC calculated?**

2 A. The WACC is calculated by adding the weighted expected returns of a firm's securities.
3 Equation 1 that follows presents the WACC as a mathematical expression.

4 Equation 1.

5

$$6 \quad \text{WACC} = \sum_{i=1}^n W_i * r_i$$

7

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

10

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

12 A. Yes. For this example, assume that an entity has a capital structure composed of 55
13 percent debt and 45 percent equity. Also, assume that the embedded cost of debt is 8.0
14 percent and the expected return on equity, i.e. the cost of equity, is 11.0 percent.
15 Calculation of the WACC is as follows:

16 $\text{WACC} = (55\% * 7.0\%) + (45\% * 11.0\%)$

17 $\text{WACC} = 3.85\% + 4.95\%$

18 $\text{WACC} = 8.80\%$

19

20 The weighted average cost of capital in this example is 8.80 percent. The entity in this
21 example would need to earn an overall rate of return of 8.80 percent to cover its cost of
22 capital.

23

1 **III. CAPITAL STRUCTURE**

2 **Background**

3 **Q. Please explain the capital structure concept.**

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

7

8 **Q. How is the capital structure expressed?**

9 A. The capital structure of a company is expressed as the percentage of each component of
10 the capital structure (capital leases, short-term debt, long-term debt, preferred stock and
11 common stock) relative to the total capital (the total sum of all the components of the
12 capital structure).

13

14 For instance, the capital structure for an entity that is financed by \$25,000 of capital
15 leases, \$30,000 of long-term debt, \$7,000 of preferred stock and \$38,000 of common
16 stock is shown in Table 2.

17

18

Table 2

Component			%
Capital Leases	\$25,000	(\$25,000/\$100,000)	25.0%
Long-Term Debt	\$30,000	(\$30,000/\$100,000)	30.0%
Preferred Stock	\$7,000	(\$7,000/\$100,000)	7.0%
Common Stock	\$38,000	(\$38,000/\$100,000)	38.0%
Total	\$100,000		100%

19

1 The capital structure in this example is composed of 25.0 percent capital leases, 30.0
2 percent long-term debt, 7.0 percent preferred stock and 38.0 percent common stock.

3

4 **Black Mountain's Capital Structure**

5 **Q. What capital structure does the Black Mountain propose?**

6 A. The Applicant proposes a capital structure composed of 0.0 percent debt and 100.0 percent
7 common equity.

8

9 **Q. Is the Applicant's proposed capital structure the same capital structure**
10 **recommended by Staff?**

11 A. Yes, it is.

12

13 **Q. How does Black Mountain's capital structure compare to capital structures of**
14 **publicly traded water utilities?**

15 A. The Applicant's capital structure is composed of 0.0 percent debt and 100.0 percent
16 equity. Schedule PMC-3 shows the capital structures of six publicly traded water
17 companies ("sample water companies") as of January 2006. The average capital structure
18 for the sample water utilities is comprised of approximately 47.2 percent debt and 52.8
19 percent equity.

20

21 **Q. Do you have additional comments on Black Mountain's capital structure?**

22 A. Yes. Black Mountain has two inter-company loans. However, Commission Decision
23 Nos. 59944 and 60240 specify that the debt service cost for these loans is to be treated as
24 an operating expense. Therefore, Staff did not include these loans in the Applicant's
25 capital structure. However, regardless of how these loans are treated for rate-making
26 purposes, the loans do exist and present financial risk in the eyes of investors.

1 Accordingly, Staff recognized the real financial risk presented by these loans in
2 calculating an ROE estimate as discussed in Section VII of this testimony.

3

4 **IV. RETURN ON EQUITY**

5 **Background**

6 **Q. Please define the term cost of equity capital.**

7 A. The cost of equity capital is determined by the market. It is the rate of return that
8 investors expect to earn on their equity investment in an entity given its risk. In other
9 words, the cost of equity to an entity is the investors' expected rate of return on other
10 investments of similar risk.

11

12 **Q. Is there any relationship between interest rates and the cost of equity capital?**

13 A. Yes. The cost of equity tends to move in the same direction as interest rates. This
14 relationship is integral to the capital asset pricing model ("CAPM") formula. The CAPM
15 is a market based model used for estimating the cost of equity capital that is discussed in
16 Section V of this testimony. Therefore, a comparison of current interest rates to historical
17 interest rates provides insight for how the current cost of equity capital might be compared
18 to the cost of equity capital historically.

19

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

21 A. A chronological chart of interest rates is a good tool to show interest rate history and
22 identify trends. Chart 1 graphs intermediate U.S. treasury rates from January 2000 to
23 January 2006.

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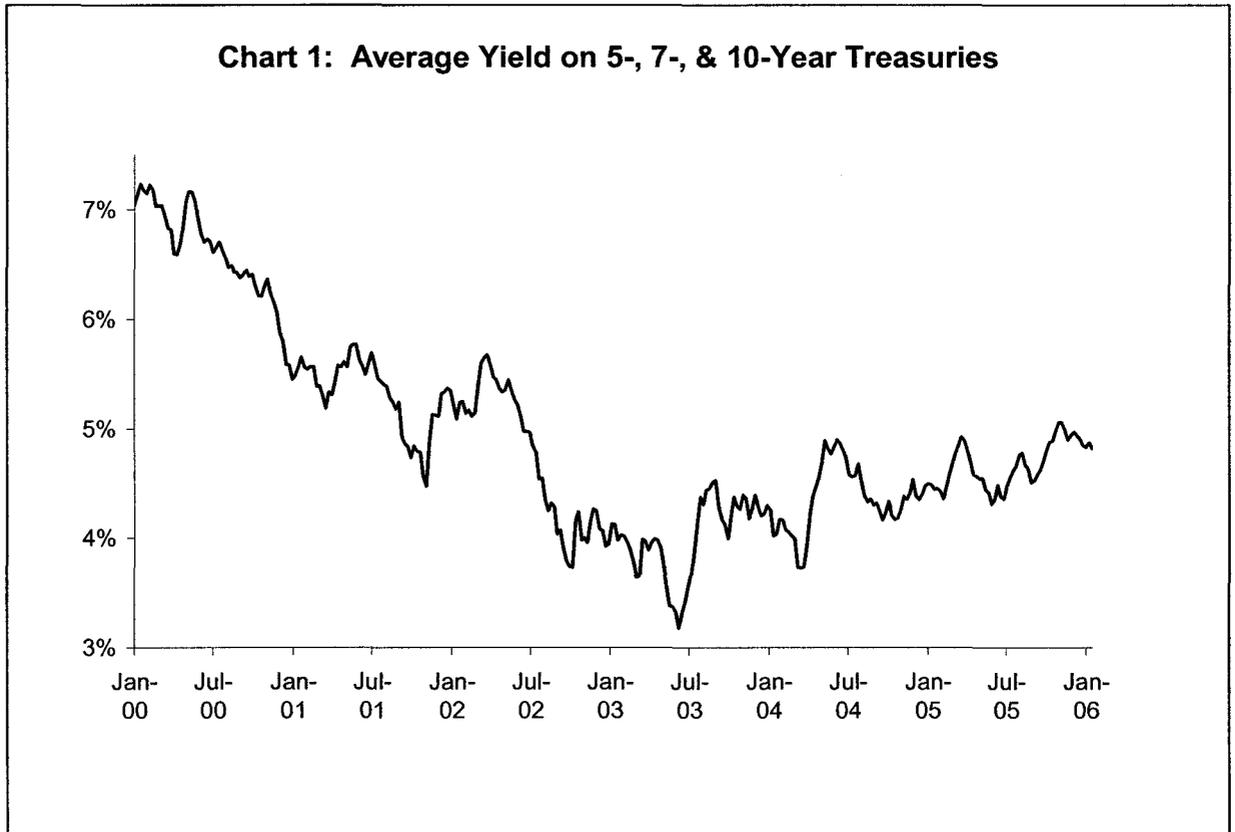
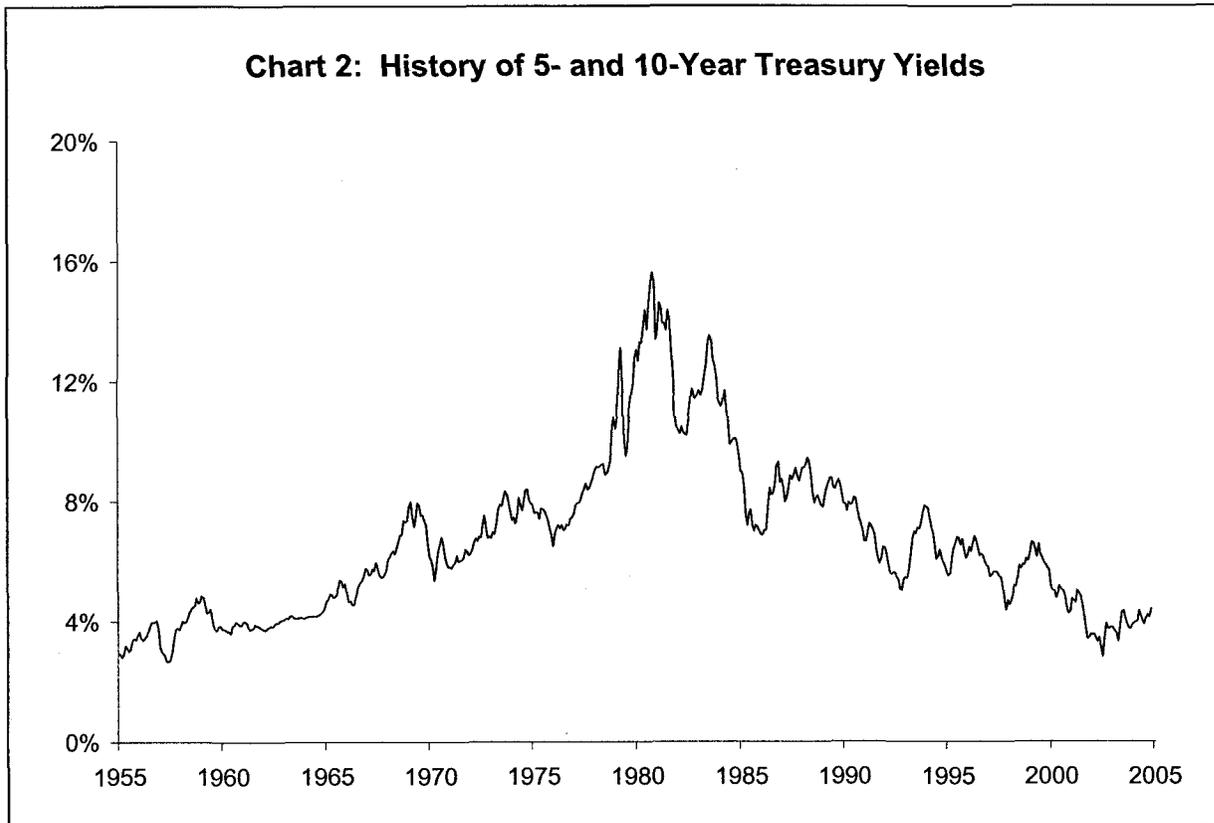


Chart 1 shows that intermediate interest rates trended downward from 2000 to mid-2003 and have remained low despite a slight upward trend in the past two years.

Q. Where are current interest rates compared to a longer term history of interest rates and what does it suggest for capital costs?

A. Chart 2 shows that interest rates have trended downward for more than 20 years. It also shows that interest rates over the past 40 years have been consistently higher than currently. The inference from the relationship between interest rates and the cost of equity capital is that current capital costs are low in comparison to historical capital costs.

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Source: Federal Reserve

Q. Do actual returns represent the cost of equity?

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

Q. What have historical returns been for average risk securities?

A. Jeremy Siegel, a Wharton School finance professor, found that the average arithmetic and compound annual returns on U.S. equities have been 9.7 percent and 8.3 percent, respectively, using 200 years of data through 2001.¹

¹ Siegel, Jeremy J. *Stocks for the Long Run*, third edition. McGraw-Hill, New York. 2002. p.13.

1 **Q. Is there any information available that leads to an understanding of the relationship**
2 **between the equity returns required for a regulated water utility versus the market?**

3 A. Yes. A comparison of betas, a component of the CAPM discussed in Section V, for the
4 water utility industry and the market provide insight into this relationship. The average
5 beta (0.74)² for a water utility is lower than the theoretical average beta for all stocks (1.0).
6 According to the CAPM formula, the cost of equity capital moves in the same direction as
7 beta. Since the beta for the water utility industry is lower than the beta for the market, the
8 implication is that the required return on equity for a regulated water utility is below the
9 average required return on the market.

10

11 **Risk**

12 **Q. Please define risk.**

13 A. Risk, as it relates to an investment, is generally recognized as the variability or uncertainty
14 of the returns on the investment. Risk is often separated into two components. Those
15 components are market risk (systematic risk) and non-market risk (unique risk).

16

17 **Q. What is market risk?**

18 A. Market risk or systematic risk is the risk that changes in the stock market as a whole will
19 cause changes in the stock price of a particular entity. Market risk is related to the
20 economy-wide perils that affect all business such as inflation, interest rates, and general
21 business cycles. Market risk affects all stocks and it cannot be eliminated by
22 diversification, i.e. it is non-diversifiable. However, the impact on each entity is not
23 necessarily the same. Accordingly, market risk is the only risk that affects the cost of
24 equity.

25

² See Schedule PMC-6

1 **Q. Is there a measure for market risk?**

2 A. Yes. Market risk is measured by the beta. Beta reflects both the business risk and
3 financial risk of an entity.

4

5 **Q. How are business and financial risks defined?**

6 A. Business risk is that risk which is associated with the fluctuation in earnings due to the
7 basic nature of an entity's business. Financial risk is that risk which affects shareholders
8 due to a firm's use of fixed obligation (i.e., debt) financing.

9

10 **Q. Is the cost of equity affected by both business and financial risk?**

11 A. Yes.

12

13 **Q. What is the relationship between the capital structure of a firm and its financial
14 risk?**

15 A. As previously discussed, the relative proportions of short-term debt, long-term debt
16 (including capital leases), preferred stock and common stock used to finance an entity's
17 assets represent its capital structure. Financial risk increases as an entity includes a greater
18 proportion of fixed obligation financing in its capital structure (i.e., as it becomes more
19 leveraged). An increase in financial risk is reflected in the market risk measured by beta
20 resulting in an increase in an entity's cost of equity.

21

22 **Q. How does Black Mountain's financial risk compare to the sample water companies'
23 financial risk from the perspective of an investor that does not recognize the loan
24 payments as operating expenses?**

25 A. From an investor's perspective Black Mountain's capital structure is composed of
26 approximately 47.2 percent debt and 52.8 percent equity. Schedule PMC-3 shows the

1 capital structures of six publicly traded water companies (“sample water companies”) as
2 of January 2006, as well as Black Mountain’s actual capital structure. As of January
3 2006, the sample water utilities were capitalized with approximately 51.1 percent debt and
4 48.9 percent equity, while Black Mountain’s actual capital structure consists of
5 approximately 47.2 percent debt and 52.8 percent equity. Thus, Black Mountain’s
6 shareholders bear less financial risk than the shareholders of the sample companies.
7

8 **Q. What is non-market risk?**

9 A. Non-market (unique risk) is risk related an individual entity. There is no correlation
10 among entities for unique risk; accordingly, it can be eliminated through diversification.
11 Specifically, investors can eliminate unique risk by holding a diversified investment
12 portfolio.
13

14 **Q. Is unique risk measured by beta?**

15 A. No. Unique risk is not measured by beta.
16

17 **Q. Is the cost of equity affected by unique risk?**

18 A. No. Since unique or firm-specific risk can be eliminated through diversification, it does
19 not affect the cost of equity capital.
20

21 **Q. What additional return can investors expect to account for unique risk?**

22 A. None. Investors who hold diversified portfolios can eliminate unique risk, and
23 consequently do not require any related additional return. Since investors who choose to
24 be less than fully diversified must compete in the market with fully diversified investors,
25 the former cannot expect to be compensated for unique risk.
26

1 **V. ESTIMATING THE COST OF EQUITY**

2 **Introduction**

3 **Q. Did Staff directly estimate the cost of equity for the Applicant?**

4 A. No. Staff did not directly estimate Black Mountain's cost of equity for two reasons. First,
5 Black Mountain's stock is not publicly traded; therefore, its cost of equity cannot be
6 estimated because the required information is not available to perform the analysis.
7 Second, using an average of a representative sample group reduces the potential for
8 random fluctuations resulting in a more reliable estimate.

9
10 **Q. What companies did Staff select as proxies or comparables for Black Mountain?**

11 A. Staff selected six publicly traded water utilities shown in Schedule PMC-3. Staff chose
12 these six entities because they derive most of their earnings from regulated operations, and
13 they are currently analyzed by *The Value Line Investment Survey Small and Mid Cap*
14 *Edition* ("Value Line Small Cap") and *The Value Line Investment Survey* ("Value Line")
15 making available the necessary information to perform a cost of capital estimation for
16 Black Mountain.

17
18 **Q. What models did Staff implement to estimate Black Mountain's cost of equity?**

19 A. The cost of equity is determined by the market; therefore, Staff used two market-based
20 models to estimate the cost of equity for Black Mountain: the discounted cash flow
21 ("DCF") model and the CAPM.

22
23 **Q. Explain why Staff chose the DCF and CAPM market-based models?**

24 A. Staff chose to use the DCF and CAPM models because they are widely recognized as
25 appropriate models and have been used extensively to estimate the cost of equity. A
26 description of the DCF model and then the CAPM model begins immediately below.

1 **Discounted Cash Flow Model Analysis**

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

4 A. The theory underlying the DCF method of estimating the cost of capital is that the cost of
5 equity is that discount rate which equates the current market price to all future cash flows
6 expected by investors. That is, the cost of equity is the rate that future expected cash
7 flows (primarily dividends) must be discounted to equal a given market price.

8

9 In the 1960s, Professor Myron Gordon pioneered the use of the DCF method to estimate
10 the cost of capital for a public utility. The DCF model has become widely used due to its
11 theoretical merit and its simplicity.

12

13 **Q. How is the DCF model applied?**

14 A. The DCF model is applied via a mathematical formula where the current market price, the
15 expected dividend, and projected dividend growth rate are inputs, while the discount rate
16 (cost of equity) is the result. The formula can be applied to a sample of companies that
17 exhibit similar risk to the entity whose cost of equity is being estimated and the results
18 averaged to arrive at an estimate of the cost of equity for the subject entity.

19

20 **Q. Did Staff apply more than one version of the DCF Model?**

21 A. Yes. Staff applied two versions of the DCF model: the constant-growth DCF Model and
22 the multi-stage or non-constant growth DCF. The constant-growth DCF Model assumes
23 that an entity will grow indefinitely at the same rate. Alternately, the non-constant growth
24 DCF model does not assume one constant, indefinite dividend grow rate.

25

1 *The Constant-Growth DCF*

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

3 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

4 Equation 2 assumes that the entity has a constant earnings retention rate and that its
5 earnings are expected to grow at a constant rate. According to Equation 2, a stock with a
6 current market price of \$10 per share, an expected annual dividend of \$0.39 per share and
7 an expected dividend growth rate of 5.0 percent per year has a cost of equity to the entity
8 of 8.9 percent reflected by the sum of the dividend yield ($\$0.39 / \$10 = 3.9$ percent) and the
9 5.0 percent annual dividend growth rate.

10

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

13 A. Staff calculated the yield component of the DCF formula by dividing the expected annual
14 dividend³ (D_1) by the spot stock price (P_0) after the close of the market January 25, 2006,
15 as reported by *MSN money*.

16

³ Value Line Summary & Index. 01-27-06

1 **Q. Why did Staff use the spot stock price rather than a historical average stock price to**
2 **calculate the dividend yield component of the DCF formula?**

3 A. Use of the current market stock price (spot stock price) is consistent with finance theory,
4 i.e., the efficient market hypothesis. This hypothesis asserts that the current stock price
5 reflects information investors use to form expectations of future returns. Use of a
6 historical average of stock prices illogically discounts the most recent information in favor
7 of less recent information. The latter is stale and is representative of underlying
8 conditions that may have changed.

9
10 **Q. How did Staff estimate the dividend growth (g) component of the constant-growth**
11 **DCF model represented by Equation 2?**

12 A. The dividend growth component for Staff's constant-growth DCF model is the average of
13 six different estimation methods as shown in Schedule PMC-7. Staff computed both
14 historical and projected growth estimates on dividend-per-share ("DPS")⁴, earnings-per-
15 share ("EPS")⁵ and sustainable growth bases.

16
17 **Q. Why did Staff examine EPS growth to estimate the dividend growth component of**
18 **the constant-growth DCF model?**

19 A. Staff examined EPS growth (both historical and projected) because dividends are
20 dependent on earnings. Dividend distribution in excess of earnings results in capital
21 contraction. Continued capital contraction is not sustainable in the long run, and it is
22 inconsistent with the constant-growth DCF model. Therefore, EPS growth is an
23 appropriate consideration for estimating expected dividend growth.

24

⁴ Derived from information provided by *Value Line*

⁵ Derived from information provided by *Value Line*

1 **Q. How did Staff estimate historical DPS growth?**

2 A. Staff estimated historical DPS growth by calculating the average rate of growth in DPS of
3 the sample water companies from 1995 to 2004. The results of that calculation are shown
4 in Schedule PMC-4. Staff calculated an average historical DPS growth rate of 2.4 percent
5 for the sample water utilities for the period 1995 to 2004.

6

7 **Q. How did Staff estimate the projected DPS growth?**

8 A. Staff calculated an average of the projected DPS growth rates for the sample water utilities
9 from *Value Line*. The average projected DPS growth rate is 4.7 percent as shown in
10 Schedule PMC-4.

11

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

13 A. Staff estimated historical EPS growth by calculating the average rate of growth in EPS of
14 the sample water companies from 1995 to 2004. The results of that calculation are shown
15 in Schedule PMC-4. Staff calculated an average historical EPS growth rate of 2.9 percent
16 for the sample water utilities for the period 1995 to 2004.

17

18 **Q. How did Staff estimate the projected EPS growth?**

19 A. Staff calculated an average of the projected EPS growth rates for the sample water utilities
20 from *Value Line*. The average projected EPS growth rate is 15.4 percent as shown in
21 Schedule PMC-4. It is important to take into account that, as discussed later on this
22 testimony, analysts' projections of future earnings are usually high and vary widely.

23

1 **Q. How did Staff calculate its historical and projected sustainable growth rates?**

2 A. Staff's historical and projected sustainable growth rates were calculated by adding their
3 respective retention growth rate terms (*br*) to their respective stock financing growth rate
4 terms (*vs*) as shown in Schedule PMC-5.

5
6 **Q. What is retention growth?**

7 A. Retention growth is the growth in dividends due to the retention of earnings. Viewed
8 differently, an entity cannot expect to grow dividends if it does not retain any earnings.
9 Retention growth is dependent on the percentage of earnings retained (retention ratio) and
10 the value of earnings. Mathematically, the retention growth rate is the product of the
11 retention ratio and the book/accounting return on equity.

12
13 **Q. What is the formula for the retention growth rate?**

14 A. The retention growth rate formula is:

15 Equation 3:

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

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

16
17 **Q. How did Staff calculate the average historical retention growth rate (*br*) for the
18 sample water utilities?**

19 A. First, Staff calculated the retention rate for each of the sample water companies from 1995
20 to 2004. Then Staff calculated the mean of those results. The historical average retention
21 (*br*) growth for the sample water utilities is 3.1 percent as shown in Schedule PMC-5.

22

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

3 A. Staff used the retention growth projections for the sample water utilities for the period
4 2008 to 2010 from *Value Line*. The projected average retention growth rate for the sample
5 water utilities is 6.3 percent as shown in Schedule PMC-5.

6
7 **Q. When can retention growth provide a reasonable estimate of future dividend**
8 **growth?**

9 A. The retention growth rate is a reasonable estimate of future dividend growth when the
10 retention ratio is reasonably constant and the entity's market price to book value ("market-
11 to-book ratio") is expected to be 1.0. The average retention ratio has been reasonably
12 constant in recent years. However, the market-to-book ratio for the sample water utilities
13 is 2.7, notably higher than 1.0, as shown in Schedule PMC-6.

14
15 **Q. Is there any financial implication of a market-to-book ratio greater than 1.0?**

16 A. Yes. A market-to-book ratio greater than 1.0 implies that investors expect an entity to
17 earn an accounting/book return on its equity that exceeds its cost of equity. The
18 relationship between required returns and expected cash flows is readily observed in the
19 fixed securities market. For example, assume an entity contemplating issuance of bonds
20 with a face value of \$10 million at either 5 percent or 7 percent, and thus, paying annual
21 interest of \$500,000 or \$700,000, respectively. Regardless of investors' required return on
22 similar bonds, investors will be willing to pay more for the bonds if issued at 7 percent
23 than if the bonds are issued at 5 percent. For example, if the current interest rate required
24 by investors is 5 percent, then they would bid \$10 million for the 5 percent bonds and
25 more than \$10 million for the 7 percent bonds. Similarly, if equity investors require a 7
26 percent return and expect an entity to earn accounting/book returns of 11 percent, the

1 market will bid up the price of the entity's stock to provide the required return of 7
2 percent.

3
4 **Q. How has Staff generally recognized a market-to-book ratio exceeding 1.0 in its cost of
5 equity analyses in recent years?**

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

10

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

14 A. Yes.

15

16 **Q. What is stock financing growth?**

17 A. Stock financing growth is the growth in an entity's dividends due to the sale of stock by
18 that entity. Stock financing growth is a concept derived by Myron Gordon and discussed
19 in his book *The Cost of Capital to a Public Utility*.⁶ Stock financing growth is the product
20 of the fraction of the funds raised from the sale of stock that accrues to existing
21 shareholders (v) and the fraction resulting from dividing the funds raised from the sale of
22 stock by the existing common equity (s).

23

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

25 A. The mathematical formula for stock financing growth is:

⁶ 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

1

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

3 A. Variable v is calculated as follows:

Equation 5 :

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

4

5 For example, assume that a share of stock has a \$40 book value and is selling for \$50.

6 Then, to find the value of v , the formula is applied:

$$v = 1 - \left(\frac{40}{50} \right)$$

7

In this example, v is equal to 0.20.

8

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

10 A. Variable s is calculated as follows:

11

Equation 6:

12

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

13

14

1 For example, assume that an entity has \$100 in existing equity, and it sells \$10 of stock.
2 Then, to find the value of s , the formula is applied:

$$s = \left(\frac{10}{100} \right)$$

3 In this example, s is equal to 10.0 percent.
4

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

6 A. A market-to-book ratio equal to 1.0 reflects that investors expect an entity to earn a
7 book/accounting return on their equity investment equal to the cost of equity. When the
8 market-to-book ratio is equal to 1.0, none of the funds raised from the sale of stock by the
9 entity accrues to the benefit of existing shareholders, i.e., the term v is equal to zero (0.0).
10 Consequently, the vs term is also equal to zero (0.0). When stock financing growth is
11 zero, dividend growth depends solely on the br term.
12

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

14 A. A market-to-book ratio greater than 1.0 reflects that investors expect an entity to earn a
15 book/accounting return on their equity investment greater than the cost of equity.
16 Equation 5 shows that when the market-to-book ratio is greater than 1.0 the v term is also
17 greater than zero. The excess by which new shares are issued and sold over book value
18 per share of outstanding stock is a contribution that accrues to existing stockholders in the
19 form of a higher book value. The resulting higher book value leads to higher expected
20 earnings and dividends. Continued growth from the vs term is dependent upon the
21 continued issuance and sale of additional shares at a price that exceeds book value per
22 share.
23

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

2 A. Staff estimated an average stock financing growth of 2.8 percent for the sample water
3 utilities as shown in Schedule PMC-5.

4
5 **Q. What would occur if an entity had a market-to-book ratio greater than 1.0 due to**
6 **investors expecting earnings to exceed the cost of equity capital and the entity**
7 **subsequently experienced newly authorized rates equal to its cost of equity capital?**

8 A. There would be downward pressure on the entity's stock price to reflect the change in
9 future expected cash flows because, in theory, the market-to-book ratio should decline to
10 1.0.

11
12 **Q. What is implied by Staff's continued use of the vs term in the historical and projected**
13 **sustainable growth rates Staff uses to develop its DCF cost of equity in this case?**

14 A. The implication is that there are expectations regarding the market-to-book ratio
15 continuing to exceed 1.0, and that the water utilities will continue to issue and sell stock at
16 prices exceeding book value to provide benefits to existing shareholders. If the authorized
17 ROEs for water utilities are established at the cost of equity capital, the market-to-book
18 ratio should decline to 1.0. If that occurs, the stock financing term would no longer be
19 necessary. If investors expect the average market-to-book ratio of the sample water
20 utilities to fall to 1.0 due to authorized ROEs equaling the cost of equity capital, then
21 Staff's inclusion of the vs term in its constant-growth DCF analysis might result in an over
22 estimate of its sustainable dividend growth rate and the resulting DCF ROE estimate.

23
24 **Q. What are Staff's historical and projected sustainable growth rates?**

25 A. Staff's estimated historical sustainable growth rate is 5.9 percent based on an analysis of
26 earnings retention for the sample water companies. Staff's projected sustainable growth

1 rate is 10.3 percent based on retention growth projected by *Value Line*. Schedule PMC-5
2 presents Staff's estimates of the sustainable growth rate.

3
4 **Q. What is Staff's expected infinite annual growth rate in dividends?**

5 A. Staff averaged historical and projected dividends per share ("DPS"), earnings per share
6 ("EPS"), and sustainable growth estimates to calculate the expected infinite annual growth
7 rate in dividends. Schedule PMC-7 presents the calculation of the expected infinite annual
8 growth rate in dividends. Staff's estimate is 6.9 percent.

9
10 **Q. What is Staff's constant-growth DCF estimate?**

11 A. Staff's constant-growth DCF estimate is 9.8 percent, which is shown in Schedule PMC-2.
12

13 *The Multi-Stage DCF*

14 **Q. Why did Staff implement the multi-stage DCF model to estimate Black Mountain's**
15 **cost of equity?**

16 A. As previously stated, Staff used the multi-stage DCF model to consider the assumption
17 that dividends may not grow at a constant rate. Staff's multi-stage DCF model
18 incorporates two growth rates: a near term growth rate and a long-term growth rate.

19
20 **Q. What is the mathematical formula for the multi-stage DCF?**

21 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

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As mentioned above, Staff incorporated two growth rates. This assumes that investors expect dividends to grow at a one rate in the near-term (“Stage -1 growth”) and another rate in the long-term (“Stage-2 growth”).

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

A. First, Staff projected a stream of 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 stream of dividends to the current stock price for each of the sample water utilities. Then, Staff calculated an average of the individual sample company cost of equity estimates.

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

A. Staff projected four years of dividends for each of the sample water utilities. Projections for the first twelve months, to the extent available, were from *Value Line*. The dividend projections for the remainder of stage 1 reflect the average dividend growth rate calculated in Staff’s constant growth DCF analysis, or 6.9 percent, as shown in Schedule PMC-7.

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

2 A. Staff used the arithmetic average rate of growth in gross domestic product (“GDP”) from
3 1929 to 2005⁷. Using the GDP growth rate assumes that the water utility industry is
4 expected to grow at the same rate as the overall economy.

5
6 **Q. What is the historical GDP growth rate that Staff used to estimate stage-2 growth?**

7 A. Staff used 6.8 percent to estimate the stage-2 growth rate.

8
9 **Q. What is Staff’s multi-stage DCF estimate?**

10 A. Staff’s multi-stage DCF estimate is 9.6 percent as shown in Schedule PMC-8.

11
12 **Q. What is Staff’s overall DCF estimate?**

13 A. Staff’s overall DCF estimate is 9.7 percent. Staff calculated the overall DCF estimate by
14 averaging the constant growth DCF (9.8%) and multi-stage DCF (9.6%) estimates as
15 shown in Schedule PMC-2.

16
17 **Capital Asset Pricing Model**

18 **Q. Please describe the capital asset pricing model.**

19 A. The Capital Asset Pricing Model is concerned with the determination of the prices of
20 capital assets in a competitive market. The CAPM model describes the relationship
21 between a security’s investment risk and its market rate of return. This relationship
22 identifies the expected rate of return which investors expect a security to earn so that its
23 market return is comparable with the market returns earned by other securities of similar
24 risk.⁸ The CAPM model assumes that investors require a return that is commensurate with
25 the level of risk associated with a particular security. The model also assumes that

⁷ www.bea.doc.gov

⁸ David C. Purcell; Cost of Capital – A Practitioner’s Guide Pg. 6-1.

1 investors will sufficiently diversify their investments to eliminate any non-systematic or
2 unique risk.⁹ In 1990, Professors Harry Markowitz, William Sharpe, and Merton Miller
3 earned the Nobel Prize in Economic Sciences for their contribution to the development of
4 the CAPM.

5
6 **Q. What sample did Staff use to compute the CAPM to estimate Black Mountain's cost
7 of equity?**

8 A. Staff used the same sample water utilities for its CAPM computation that it used for its
9 DCF analysis.

10

11 **Q. What is the mathematical formula for the CAPM?**

12 A. The mathematical formula for the CAPM is:

13

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

14

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

⁹ 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 6.
homogeneous expectations.

1 **Q. What did Staff use as an estimate for the risk-free rate of interest in its historical**
2 **market risk premium CAPM method?**

3 A. Staff calculated an estimate of the risk-free rate of interest by averaging three (five-,
4 seven-, and ten-year) intermediate-term U.S. Treasury securities' spot rates as published in
5 the January 26, 2006, edition of *The Wall Street Journal* and reflect January 25, 2006
6 yields to correspond with the date Staff selected the sample companies' stock spot market
7 prices. Staff's estimated risk-free rate for use in its historical market risk premium CAPM
8 method is 4.5 percent¹⁰ as shown in Schedule PMC-2.

9
10 **Q. What did Staff use as an estimate for the risk-free rate of interest in its current**
11 **market risk premium CAPM method?**

12 A. Staff used the spot rate on 30-year U.S. Treasury notes as published in the January 26,
13 2006 edition of *The Wall Street Journal*.

14
15 **Q. Why do U.S Treasury security spot rates provide an appropriate representation of**
16 **the risk-free rate?**

17 A. U.S. Treasury spot rates represent a good estimate of a risk free rate because they have
18 virtually no chance of default and are backed by the U.S. Government. In addition, they
19 are verifiable, objective and readily available.

20
21 **Q. What does beta measure?**

22 A. Beta measures the systematic risk of a particular entity's stock relative to the market's
23 beta which is 1.0. Systematic risk is the only risk that cannot be diversified away;
24 therefore it is the only risk that is relevant when estimating an entity's required return.

¹⁰ Average yield on 5-, 7-, and 10-year Treasury notes according to the January 26, 2006, edition of *The Wall Street Journal*: 4.40%, 4.47%, and 4.48%, respectively.

1 Since the market's beta is 1.0, a security with a beta higher than 1.0 is riskier than the
2 market and a security with a beta lower than 1.0 is less risky than the market.

3

4 **Q. How did Staff estimate a proxy for Black Mountain's beta?**

5 A. Staff averaged the *Value Line* betas of the sample water utilities and used this average as a
6 proxy for Black Mountain's beta. Schedule PMC-6 shows the *Value Line* betas for each
7 of the sample water utilities. Staff's estimated beta for Black Mountain is 0.74.

8

9 **Q. What is a descriptive explanation for the expected market risk premium ($R_m - R_f$)?**

10 A. Descriptively, the expected market risk premium is the expected return on all common
11 stocks minus the risk free rate. It is the additional amount of return over the risk-free rate
12 that investors expect to receive from investing in the market (or an average-risk security).
13 Staff used two approaches to calculate the market risk premium: the historical market risk
14 premium approach and the current market risk premium approach.

15

16 **Q. What is the historical market risk premium estimate approach used by Staff?**

17 A. The historical market risk premium estimate approach assumes that if the long-run
18 average market risk premium is used consistently to estimate the expected market risk
19 premium, it should, on average, yield the correct premium. In this approach Staff
20 assumed that the average historical market risk premium estimate is a reasonable estimate
21 of the expected market risk premium.

22

23 **Q. How did Staff calculate the historical market risk premium?**

24 A. Staff calculated the historical market risk premium by averaging the historical arithmetic
25 differences between the S&P 500 and the intermediate-term government bond income
26 returns published in the Ibbotson Associates' *Stocks, Bonds, Bills, and Inflation 2005*

1 *Yearbook* for the period 1926-2004. Ibbotson Associates calculated the historical risk
2 premium by averaging the historical arithmetic differences between the S&P 500 and the
3 intermediate-term government bond income returns. Staff's historical market risk
4 premium estimate is 7.2 percent as shown in Schedule PMC-2.

5
6 **Q. How did Staff calculate the current market risk premium estimate?**

7 A. Staff first derived a DCF ROE of 10.38 (1.6 + 8.78¹¹) percent using the expected dividend
8 yield (1.6 percent over the next twelve months) and the annual per share growth rate (8.78
9 percent) that *Value Line* projects for all dividend-paying stocks under its review (January
10 27, 2006) as inputs. Then, Staff used the DCF-derived ROE (10.38 percent), the current
11 long-term risk-free rate (4.65 percent 30-year Treasury note) and the market's average
12 beta of 1.0 as inputs into equation 8 to solve for the implied current market risk premium
13 of 5.73 percent.¹²

14
15 **Q. What is the range of Staff's expected market risk premium estimates?**

16 A. Staff's market risk premium estimates range from 5.73 percent to 7.2 percent.

17
18 **Q. What is Staff's overall CAPM estimate?**

19 A. Staff's overall CAPM estimate is 9.4 percent. Staff's overall CAPM estimate is the
20 average of the historical market risk premium CAPM (9.8 percent) and the current market
21 risk premium CAPM (8.9 percent) estimates as shown in Schedule PMC-2.

22

¹¹ The three to five year price appreciation is 40%. $1.40^{0.25} - 1 = 8.78\%$

¹² $10.38\% = 4.65\% + (1) (5.73\%)$

1 **VI. SUMMARY OF STAFF'S COST OF EQUITY ANALYSIS**

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

4 A. Schedule PMC-2 shows the result of Staff's constant-growth DCF analysis. The result of
5 Staff's constant-growth DCF analysis is as follows:

6

7

$$k = 2.9\% + 6.9\%$$

8

9

$$k = 9.8\%$$

10

Staff's constant-growth DCF estimate of the cost of equity to the sample water utilities is
11 9.8 percent.

12

13

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

14

15

A. Schedule PMC-8 shows the result of Staff's multi-stage DCF analysis. The result of
16 Staff's multi-stage DCF analysis is:

16

17

18

Company	Equity Cost Estimate (k)
American States Water	9.6%
California Water	9.8%
Aqua America	8.3%
Connecticut Water	10.4%
Middlesex Water	10.5%
SJW Corp	<u>9.1%</u>
Average	9.6%

19

20

21

22

23

24

25

26

27

28

29

Staff's multi-stage DCF estimate of the cost of equity for the sample water utilities is 9.6
30 percent.

30

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

2 A. Staff's overall DCF estimate of the cost of equity for the sample utilities is 9.7 percent.

3 Staff's overall DCF estimate was calculated by averaging Staff's constant growth DCF
4 and Staff's multi-stage DCF estimates as shown in Schedule PMC-2.

5
6 **Q. What is the result of Staff's historical market risk premium CAPM analysis to
7 estimate of the cost of equity for the sample utilities?**

8 A. Schedule PMC-2 shows the result of Staff's CAPM analysis using the historical risk
9 premium estimate. The result is as follows:

10 $k = 4.5\% + 0.74 * 7.2\%$

11 $k = 9.8\%$

12
13 Staff's CAPM estimate (using the historical market risk premium) of the cost of equity to
14 the sample water utilities is 9.8 percent.

15
16 **Q. What is the result of Staff's current market risk premium CAPM analysis to
17 estimate the cost of equity for the sample utilities?**

18 A. Schedule PMC-2 shows the result of Staff's CAPM Analysis using the current market risk
19 premium estimate. The result is:

20 $k = 4.7\% + 0.74 * 5.7\%$

21 $k = 8.9\%$

22
23 Staff's CAPM estimate (using the current market risk premium) of the cost of equity to the
24 sample water utilities is 8.9 percent.

25

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

2 A. Staff's overall CAPM estimate for the sample utilities is 9.4 percent. Staff's overall
3 CAPM estimate is the average of the historical market risk premium CAPM (9.8 percent)
4 and the current market risk premium CAPM (8.9 percent) estimates as shown in Schedule
5 PMC-2.

6
7 **Q. Please summarize the results of Staff's cost of equity analysis for the sample utilities.**

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

9
10

Table 2

Method	Estimate
Average DCF Estimate	9.7%
Average CAPM Estimate	9.4%
Overall Average	9.6%

11

12 Staff's average estimate of the cost of equity to the sample water utilities is 9.6 percent.

13

14 **VII. FINAL COST OF EQUITY ESTIMATES FOR BLACK MOUNTAIN**

15 **Q. Do Black Mountain's loans affect its cost of equity despite their recognition as**
16 **operating expenses for rate-making purposes?**

17 A. Yes. An entity's financial risk increases with increased leverage placing upward pressure
18 on its cost of equity regardless of the rate-making recovery mechanism. The average
19 capital structure for the sample water utilities is composed of 48.9 percent equity and 51.1
20 percent debt as shown on Staff Schedule PMC-3. Black Mountain's actual capital
21 structure is composed of 52.8 percent equity and 47.2 percent debt. In this case, since
22 Black Mountain's capital structure is less leveraged than that of the average sample water
23 utilities' capital structure, its stockholders bear less financial risk than the sample water

1 utilities. Accordingly, Black Mountain's cost of equity is lower than the sample water
2 utilities.

3

4 **Q. Has Staff quantified the effect of difference in financial risk between Black Mountain**
5 **and the sample water utilities on its cost of equity?**

6 A. Yes. Staff used the methodology developed by Professor Robert Hamada of the
7 University of Chicago, which incorporates capital structure theory with the CAPM, to
8 estimate the effect of Black Mountain's capital structure on its cost of equity. Staff
9 calculated a financial risk adjustment for Black Mountain of negative 30 basis points.
10 Black Mountain's cost of equity adjusted for financial risk (9.3 percent) can be determined
11 by subtracting this 0.3 percent financial risk adjustment from Staff's average estimate of
12 the cost of equity to the sample water utilities (9.6 percent).

13

14 **Q. What is Staff's ROE estimate for Black Mountain?**

15 A. Staff determined an ROE estimate of 9.6 percent for the Applicant based on cost of equity
16 estimates for the sample companies ranging from 9.4 percent for the CAPM to 9.7 percent
17 for the DCF. Staff is not recommending adoption of the 30 basis point downward
18 financial risk adjustment because Black Mountain's actual capital structure is reasonable,
19 and utilities should be encouraged to maintain an adequate level of equity.

20

21 **VIII. RATE OF RETURN RECOMMENDATION**

22 **Q. What overall rate of return did Staff determine for Black Mountain?**

23 A. Staff determined a 9.6 percent ROR for the Applicant as shown in Schedule PMC-1 and
24 the following table:

25

Table 3

	Weight	Cost	Weighted Cost
Long-term Debt	0.0%	0.0%	0.0%
Common Equity	100%	9.6%	9.6%

IX. STAFF RESPONSE TO APPLICANT'S COST OF CAPITAL WITNESS MR. THOMAS J. BOURASSA

Q. Please summarize Mr. Bourassa's analyses and recommendations.

A. Mr. Bourassa recommends an 11.0 percent ROE based on his constant growth and multi-stage growth DCF models. He also performs a bond-yield plus risk premium analysis and a comparative earning analysis to support the results of his DCF models. In addition, Mr. Bourassa asserts that Black Mountain faces additional risks not captured by the market models, such as risk of rate regulation and financial risk, and he concludes that 11.0 percent ROE presents a reasonable balance resulting from his analyses.

Constant-Growth DCF

Q. Does Staff have any comments on Mr. Bourassa's sole reliance on analysts' forecasts to estimate DPS growth in his constant growth DCF estimates?

A. Yes. Analysts' forecasts are known to be overly optimistic. Sole use of analysts' forecasts to calculate the growth in dividends (g), causes inflated growth, and consequently, inflated cost of equity estimates. Furthermore, sole reliance on analysts' forecasts of earnings growth to forecast DPS is inappropriate because it assumes that investors do not look at other relevant information such as past dividend and earnings growth.

1 **Q. Does Staff have any comments on the study cited by Mr. Bourassa, conducted by**
2 **David A. Gordon, Myron J. Gordon and Lawrence I. Gould¹³ that he asserts support**
3 **exclusive use of analysts' forecasts in the DCF model?**

4 A. Yes. The article cited by Mr. Bourassa does not conclude that investors ignore past
5 growth when pricing stocks; therefore, it does not support the sole use of analysts' forecast
6 in the DCF model.

7
8 **Q. Does Professor Gordon recommend relying exclusively on analysts' forecasts as the**
9 **measure of growth in the DCF model?**

10 A. No. Subsequent to the study cited by Mr. Bourassa¹⁴, Professor Gordon provided the
11 keynote address at the 30th Financial Forum of the Society of Utility and Regulatory
12 Financial Analysts, in which he stated:

13 I understand that companies coming before regulatory agencies
14 liked and advocated the high growth rates in security analyst
15 forecasts for arriving at their cost of equity capital. Instead of
16 rejecting these forecasts, I understand that FERC and other
17 regulatory agencies have decided to compromise with them. In
18 particular, in arriving at the cost of equity for company X, the
19 FERC has decided to arrive at the growth rate in my dividend
20 growth model by using an average of two growth rates. One is
21 security analysts forecast of the short-term growth rate in earnings
22 provided by IBES or Value Line and the other a more long run and
23 typically lower figure such as the past growth in GNP.

24 Such an average can be questioned on various grounds. However,
25 my judgment is that between the short-term forecast alone and its
26 average with the past growth rate in GNP, *the latter may be a more*
27 *reasonable figure.*¹⁵ (Emphasis added)

¹³ Gordon, David A., Myron J. Gordon, Lawrence I. Gould. "Choice Among Methods of Estimating Share Yield." *The Journal of Portfolio Management*. Spring 1989. pp. 50-55. (Bourassa's direct testimony, page 36, footnote.)

¹⁴ Ibid.

¹⁵ Gordon, M. J. Keynote Address at the 30th Financial Forum of the Society of Utility and Regulatory Financial Analysts. May 8, 1998. Transparency 3.

1 Simply stated, Professor Gordon would temper the typically higher analysts' forecasts
2 with the typically lower GNP growth rate by averaging the two.

3
4 **Q. How does Staff respond to Mr. Bourassa's statement, "Logically, in estimating future**
5 **growth, financial institutions and analyst have taken into account all relevant**
6 **historical information on a company as well as other more recent information. To**
7 **the extent that past results provide useful indications of future growth prospects,**
8 **analysts' forecasts would already incorporate that information.?" (Bourassa's Direct**
9 **Testimony, Page 36, line 4-8)**

10 A. The appropriate growth rate to use in the DCF formula is the dividend growth rate
11 expected by *investors*, not analysts. Therefore, while analysts may have considered
12 historical measures of growth, it is reasonable to assume that investors rely to some extent
13 on past growth as well. This calls for consideration of both analysts' forecasts as well as
14 past growth.

15
16 **Q. Can Staff provide further evidence to support its assertion that exclusive reliance on**
17 **analysts' forecasts of earnings growth in the DCF model would result in inflated cost**
18 **of equity estimates?**

19 A. Yes. Experts in the financial community have commented on the optimism in analysts'
20 forecasts of future earnings.¹⁶ A study cited by David Breman in his book *Contrarian*
21 *Investment Strategies: The Next Generation* found that *Value Line* analysts were
22 optimistic in their forecasts by 9 percent annually, on average for the 1987 – 1989 period.

¹⁶ See Seigel, Jeremy J. *Stocks for the Long Run*. 2002. McGraw-Hill. New York. p. 100. Dreman, David. *Contrarian Investment Strategies: The Next Generation*. 1998. Simon & Schuster. New York. pp. 97-98. Malkiel, Burton G. *A Random Walk Down Wall Street*. 2003. W.W. Norton & Co. New York. p. 175. Testimony of Professors Myron J. Gordon and Lawrence I. Gould, consultant to the Trial Staff (Common Carrier Bureau), FCC Docket 79-63, p. 95.

1 Another study conducted by David Dreman found that between 1982 and 1997, analysts
2 overestimated the growth of earnings of companies in the S&P 500 by 188 percent.

3 In addition, Burton Malkiel of Princeton University studied the one-year and five-year
4 earnings forecasts made by some of the most respected names in the investment business.
5 His results showed that the five-year estimates of professional analysts, when compared
6 with actual earnings growth rates, were much worse than the predictions from several
7 naïve forecasting models, such as the long-run rate of growth of national income. In the
8 following excerpt from Professor Malkiel's book *A Random Walk Down Wall Street*, he
9 discusses the results of his study:

10 When confronted with the poor record of their five-year growth
11 estimates, *the security analysts honestly, if sheepishly, admitted*
12 *that five years ahead is really too far in advance to make reliable*
13 *projections.* They protested that although long-term projections
14 are admittedly important, they really ought to be judged on their
15 ability to project earnings changes one year ahead. Believe it or
16 not, it turned out that their one-year forecasts were even worse than
17 their five-year projections.

18 The analysts fought back gamely. They complained that it was
19 unfair to judge their performance on a wide cross section of
20 industries, because earnings for high-tech firms and various
21 "cyclical" companies are notoriously hard to forecast. "*Try us on*
22 *utilities,*" *one analyst confidently asserted. At the time they were*
23 *considered among the most stable group of companies because of*
24 *government regulation. So we tried it and they didn't like it. Even*
25 *the forecasts for the stable utilities were far off the mark.*¹⁷
26 (Emphasis added)

27
28 **Q. Are investors aware of the problems related to analysts' forecasts?**

29 A. Yes. In addition to books, there are numerous published articles appearing in *The Wall*
30 *Street Journal* and other financial publications that cast doubt as to how accurate research

¹⁷ Malkiel, Burton G. *A Random Walk Down Wall Street*. 2003. W.W. Norton & Co. New York. p. 175

1 analysts are in their forecasts.¹⁸ To the extent that investors are aware of the bias in
2 analysts' projections of future earnings, they will make appropriate adjustments.

3
4 **Q. Should DPS growth be considered in a DCF analysis?**

5 A. Yes. The omission of historical DPS growth in a DCF analysis implies that investors do
6 not take into account dividend growth when pricing stocks. As previously mentioned on
7 section V of this testimony, the current market price of a stock is equal to the present
8 value of all expected future dividends, not future earnings. Professor Jeremy Siegel from
9 the Wharton School of Finance stated:

10
11 Note that the price of the stock is always equal to the present value
12 of all future *dividends* and not the present value of future earnings.
13 Earnings not paid to investors can have value only if they are paid
14 as dividends or other cash disbursements at a later date. Valuing
15 stock as the present discounted value of future earnings is
16 manifestly wrong and greatly overstates the value of the firm.¹⁹
17

18 In other words, investors pay attention to earnings as long as they are paid as dividends.
19 Earnings can easily be overstated, but if investors do not receive dividends or other cash
20 disbursement at a later date, then such earnings are meaningless.
21

¹⁸ See Smith, Randall & Craig, Suzanne. "Big Firms Had Research Ploy: Quiet Payments Among Rivals." *The Wall Street Journal*. April 30, 2003. Brown, Ken. "Analysts: Still Coming Up Rosy." *The Wall Street Journal*. January 27, 2003. p. C1. Karmin, Craig. "Profit Forecasts Become Anybody's Guess." *The Wall Street Journal*. January 21, 2003. p. C1. Gasparino, Charles. "Merrill Lynch Investigation Widens." *The Wall Street Journal*. April 11, 2002. p. C4. Elstein, Aaron. "Earnings Estimates Are All Over the Map." *The Wall Street Journal*. August 2, 2001. p. C1. Dreman, David. "Don't Count on those Earnings Forecasts." *Forbes*. January 26, 1998. p. 110.

¹⁹ Siegel, Jeremy J. *Stocks for the Long Run*. 2002. McGraw-Hill. New York. P. 93.

1 **Multi-Stage DCF**

2 **Q. Does Staff have any comments on Mr. Bourassa's sole reliance on forecasted**
3 **earnings growth for the near-term ("Stage -1 growth") in his multi-stage DCF?**

4 A. Yes. As previously discussed, exclusive reliance on forecasted earnings growth for the
5 near-term (Stage-1 growth) is inappropriate since analysts forecasts of earnings growth are
6 known to be overly optimistic. Exclusive reliance on forecasted earnings growth likely
7 results in inflated cost of equity estimates.

8

9 **Risk Premium**

10 **Q. Please describe Mr. Bourassa's risk premium analysis.**

11 A. Mr. Bourassa computed the average risk premium for (1) actual returns for the ten years
12 1995 to 2004 and (2) authorized returns for the ten years 1995 to 2004 compared to the
13 10-year Treasury rate on Black Mountain's proxies. Then, he adds the average risk
14 premium for each method to the forecasted interest rates for 10-year Treasuries for 2007-
15 2008.

16

17 **Q. Does Staff have any comments on Mr. Bourassa's risk premium method to estimate**
18 **Black Mountain's cost of equity?**

19 A. Yes. First, Mr. Bourassa's analysis is not market based. Actual and authorized returns are
20 not market based data. The cost of equity is determined by the market, not by actual or
21 authorized returns. Second, Mr. Bourassa's risk premium method to estimate Black
22 Mountain's cost of equity relies on forecasted interest rates for 10-year Treasuries for
23 2007-2008. Analysts who forecast future rates do not have any more information about
24 the future than what is already reflected in the current rate.

25

1 According to Nancy L. Jacob of the University of Washington and R. Richardson Pettit of
2 the University of Houston:

3
4 While we know something about many of the factors that
5 determine interest rates (money supply, the demand for loanable
6 funds, etc.) little evidence exists to suggest these factors can be
7 predicted with enough accuracy to successfully predict the rates.²⁰

8
9 As previously stated, the best forecast of tomorrow's yield is simply today's yield.
10 "Professional forecasts of financial variables are notoriously unreliable and appear to be
11 getting worse, not better, over time." "The direction of interest rates [bond yields] cannot
12 be predicted any better than by the flip of a coin."²¹

13
14 **Q. How does Staff respond to Mr. Bourassa's statement (regarding the use of projected**
15 **interest rates for 2007 – 2008), "I have used this period because it is the period in**
16 **which Black Mountain's rates will be in effect." (Bourassa's Direct Testimony, page**
17 **38, lines 23 & 24)**

18 A. As discussed above, Mr. Bourassa relies on the faulty assumption that interest rates can be
19 predicted.

20
21 **Comparative Earnings**

22 **Q. Please describe Mr. Bourassa's comparative earnings analysis.**

23 A. Mr. Bourassa compares the actual and authorized returns reported in AUS Utility Reports
24 to the results of his DCF and risk premium methods. He then considers Value Line's
25 forecasts of the composite equity return for the water utility industry for the years 2005,

²⁰ Jacob, Nancy L., R. Richardson Pettit. *Investments*. Irwin. Homewood, Ill. 1988. p. 499.

²¹ Kihm, Steven G. "The Superiority of Spot Yields in Estimating Cost of Capital." *Public Utilities Fortnightly*. February 1, 1996. pp. 42-45.

1 2006, and for the three years 2008 to 2010 as support for his cost of equity estimate of 11
2 percent.

3
4 **Q. Does Staff have any comments on Mr. Bourassa's comparative earnings method to**
5 **estimate Black Mountain's cost of equity?**

6 A. Yes. First, as mentioned previously, actual and authorized returns are not market based.
7 The cost of equity is determined by the market; hence, actual and authorized returns are
8 not reliable indicators of the cost of equity. These methods are not consistent with modern
9 financial theory. Second, Mr. Bourassa relies on forecasts of the composite equity return
10 for the water utility industry. As previously discussed, analyst's forecasts are known to be
11 overly optimistic.

12
13 **X. CONCLUSION**

14 **Q. Please summarize Staff's recommendations.**

15 A. Staff recommends that the Commission adopt a capital structure for Black Mountain in
16 this proceeding composed of 0.0 percent debt and 100.0 percent equity.

17
18 Staff also recommends that the Commission adopt a 9.6 percent ROR for the Applicant,
19 based on Staff's cost of equity estimates that range from 9.4 percent to 9.7 percent.

20
21 **Q. Does this conclude your direct testimony?**

22 A. Yes, it does.

Black Mountain Sewer Corporation
 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	0.0%	0.0%	0.0%
Debt	100.0%	9.6%	9.6%
Common Equity			9.6%
Weighted Average Cost of Capital/ROR			
Company Proposed Structure	0.0%	0.0%	0.0%
Debt	100.0%	11.0%	11.0%
Common Equity			11.0%
Weighted Average Cost of Capital/ROR			

[D] : [B] x [C]
 Supporting Schedule: PMC-3

Black Mountain Sewer Corporation
 Final Cost of Equity Estimates
 Sample Water Utilities

[A]	[B]	[C]	[D]	[E]
DCF Method				
Constant Growth DCF Estimate		$\frac{D_1/P_0}{1}$	+ g^2	= k
Multi-Stage DCF Estimate		2.9%	+ 6.9%	= 9.8%
Average of DCF Estimates				= <u>9.6%</u>
				9.7%
CAPM Method				
Historical Market Risk Premium ³	R_f	β^5	x (R_p)	= k
Current Market Risk Premium ⁴	4.5%	0.74	x 7.2% ⁶	= 9.8%
Average of CAPM Estimates	4.7%	0.74	x 5.7% ⁷	= <u>8.9%</u>
				9.4%
			Average	9.6%
			Financial risk adjustment	-0.3%
			Total	9.3%

1 MSN Money and Value Line
 2 PMC-7
 3 Wall Street Journal (RJ) 5, 7, and 10 year Treasury rates
 4 Wall Street Journal (RJ) 30 Year Treasury bond rate
 5 Value Line
 6 Historical Market Risk Premium (Rp) from Ibbotson Associates SBBI 2005 Yearbook
 7 Testimony

Black Mountain Sewer Corporation
Average Capital Structure of Sample Water Utilities

[A]	[B]	[C]	[D]
<u>Company</u>	<u>Debt</u>	Common <u>Equity</u>	<u>Total</u>
American States Water	50.8%	49.2%	100.0%
California Water	48.7%	51.3%	100.0%
Aqua America	56.2%	43.8%	100.0%
Connecticut Water	44.9%	55.1%	100.0%
Middlesex Water	60.7%	39.3%	100.0%
SJW Corp	<u>45.1%</u>	<u>54.9%</u>	<u>100.0%</u>
Average Sample Water Utilities	51.1%	48.9%	100.0%
Black Mountain Sewer Corporation ¹	47.2%	52.8%	100.0%

Source:

Sample Water Companies from Value Line

1 : Reflects actual capital structure. However, Staff adopted 100 percent equity as the capital structure for determining the rate of return to be consistent with treating the loan payments as operating expense.

Black Mountain Sewer Corporation
 Growth in Earnings and Dividends
 Sample Water Utilities

[A]	[B]	[C]	[D]	[E]
<u>Company</u>	Dividends Per Share 1995 to 2004 <u>DPS¹</u>	Dividends Per Share Projected <u>DPS¹</u>	Earnings Per Share 1995 to 2004 <u>EPS¹</u>	Earnings Per Share Projected <u>EPS¹</u>
American States Water	0.9%	1.9%	0.2%	18.9%
California Water	1.0%	2.3%	2.2%	10.2%
Aqua America	5.3%	9.9%	8.2%	17.0%
Connecticut Water	1.1%	No Projection	1.9%	No Projection
Middlesex Water	2.0%	No Projection	0.7%	No Projection
SJW Corp	<u>3.8%</u>	<u>No Projection</u>	<u>4.0%</u>	<u>No Projection</u>
Average Sample Water Utilities	2.4%	4.7%	2.9%	15.4%

¹ Value Line

Black Mountain Sewer Corporation
Sustainable Growth
Sample Water Utilities

[A]	[B]	[C]	[D]	[E]	[F]
	Retention Growth 1995 to 2004 br	Retention Growth Projected br	Stock Financing Growth vs	Sustainable Growth 1995 to 2004 br + vs	Sustainable Growth Projected br + vs
<u>Company</u>					
American States Water	2.5%	6.7%	1.4%	3.9%	8.1%
California Water	2.5%	4.8%	2.9%	5.4%	7.7%
Aqua America	4.2%	7.4%	7.6%	11.8%	15.0%
Connecticut Water	3.0%	No Projection	0.5%	3.5%	No Projection
Middlesex Water	1.4%	No Projection	4.4%	5.8%	No Projection
SJW Corp	<u>5.0%</u>	<u>No Projection</u>	<u>0.0%</u>	<u>5.0%</u>	<u>No Projection</u>
Average Sample Water Utilities	3.1%	6.3%	2.8%	5.9%	10.3%

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

Black Mountain Sewer Corporation
Selected Financial Data of Sample Water Utilities

[A]	[B]	[C]	[D]	[E]	[F]	[G]
Company	Symbol	Spot Price 1/25/2006	Book Value	Mkt To Book	Value Line Beta β	Raw Beta β_{raw}
American States Water	AWR	32.65	15.74	2.1	0.75	0.60
California Water	CWT	40.83	15.73	2.6	0.75	0.60
Aqua America	WTR	27.82	6.21	4.5	0.80	0.67
Connecticut Water	CTWS	24.25	11.30	2.1	0.75	0.60
Middlesex Water	MSEX	18.45	8.25	2.2	0.75	0.60
SJW Corp	SJW	48.29	19.99	2.4	0.65	0.45
Average				2.7	0.74	0.58

[C]: Msn Money

[D]: Value Line

[E]: [C] / [D]

[F]: Value Line

[G]: $-0.35 + [F] / 0.67$

Black Mountain Sewer Corporation
 Calculation of Expected Infinite Annual Growth in Dividends
 Sample Water Utilities

[A]	[B]
<u>Description</u>	<u>g</u>
DPS Growth - Historical ¹	2.4%
DPS Growth - Projected ¹	4.7%
EPS Growth - Historical ¹	2.9%
EPS Growth - Projected ¹	15.4%
Sustainable Growth - Historical ²	5.9%
<u>Sustainable Growth - Projected²</u>	<u>10.3%</u>
Average	6.9%

¹ Schedule PMC-4

² Schedule PMC-5

Black Mountain Sewer Corporation
Multi-Stage DCF Estimates
Sample Water Utilities

[A] Company	[B] Current Mkt. Price (P ₀) ¹ 1/25/2006	[C] Projected Dividends ² (Stage 1 growth) (D _t)				[E] d ₃	[F] d ₄	[H] Stage 2 growth ³ (g _n)	[I] Equity Cost Estimate (K) ⁴
		d ₁	d ₂	d ₃	d ₄				
American States Water	32.7	0.92	0.98	1.05	1.12		6.8%	9.6%	
California Water	40.8	1.22	1.30	1.39	1.49		6.8%	9.8%	
Aqua America	27.8	0.44	0.47	0.50	0.54		6.8%	8.3%	
Connecticut Water	24.3	0.88	0.94	1.01	1.08		6.8%	10.4%	
Middlesex Water	18.5	0.69	0.74	0.79	0.85		6.8%	10.5%	
SJW Corp	48.3	1.15	1.23	1.31	1.40		6.8%	9.1%	

Average **9.6%**

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

Where : P₀ = 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 PMC-6
 2 Derived from Value Line Information
 3 Average annual growth in GDP 1929 - 2005 in current dollars.
 4 Internal Rate of Return of Projected Dividends