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**Reply to:**
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May 30, 2003

Honorable Sara Kyle
Chairman
Tennessee Regulatory Authority
460 James Robertson Parkway
Nashville, Tennessee 37243

**RE: In Re: Petition of Tennessee American Water Company to Change and Increase Certain Rates and Charges So As to Permit it to Earn a Fair and Adequate Rate of Return on Its Property Used and Useful in Furnishing Water Service to Its Customers**
**Docket No. 03-00118**

Dear Chairman Kyle:

Enclosed is an original and thirteen copies of the Direct Testimony of Steve N. Brown of the Consumer Advocate and Protection Division of the Office of the Attorney General. Kindly file same in this docket. Copies are being sent to all parties of record. If you have any questions, kindly contact me at (615) 532-3382. Thank you.

Sincerely,

Shilina B. Chatterjee

Shilina B. Chatterjee
Assistant Attorney General

Enclosures
cc: All Parties of Record

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**Before the**

**TENNESSEE REGULATORY AUTHORITY**

**IN RE: PETITION OF TENNESSEE-AMERICAN WATER COMPANY FOR APPROVAL OF CHANGE IN RATES AND CHARGES**
**DOCKET NO. 03-00118**

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**DIRECT TESTIMONY**
**OF**
**STEVE N. BROWN**

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**May 30, 2003**

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# I. Introduction

Q_1. **Please state your name.**

A_1. Steve Brown.

Q_2. **Where do you work and what is your job title?**

A_2. I am an Economist in the Consumer Advocate and Protection Division, Office of the Attorney General.

Q_3. **What are your responsibilities as an Economist?**

A_3. I review companies' petitions for rate changes and follow the economic conditions that affect the companies.

Q_4. **What experience do you have regarding utilities?**

A_4. From 1986 to 1995 I was employed by the Iowa Utilities Board as Chief of the Bureau of Energy Efficiency, Auditing and Research, and Utility Specialist and State Liaison Officer to the U.S. Nuclear Regulatory Commission. From 1984 to 1986 I worked for Houston Lighting & Power as Supervisor of Rate Design. From 1982 to 1984 I worked for Arizona Electric Power Cooperative as a Rate Analyst. From 1979 to 1982 I worked for Tri-State Generation and Transmission Association as Power Requirements Supervisor and Rate Specialist. From 1979 through 1995 my work spanned many issues including cost of service studies, rate design issues, telecommunications issues and matters related to the disposal of nuclear waste.

Q_5. **What is your educational background?**

A_5. I have an M.S. in Regulatory Economics from the University of Wyoming, an M.A. and Ph.D. in International Relations with a specialty in International Economics from the University of Denver, and a B.A. from Colorado State University.

Q_6. **Dr. Brown, have you authored any articles relating to your profession?**

A_6. Yes, my articles have appeared in Public Utilities Fortnightly and the Electricity Journal.

Q_7. **Are you and have you been a member of any professional organizations, Dr. Brown?**

A_7. Yes, I am a past member of the NARUC Staff Committee on Management Analysis, a past trustee of and a member of the Board for the Automatic Meter Reading Association, and a current member of the National Association of Business Economists.

Q_8. **Have you studied mathematics and statistics as part of your education?**

A_8. Yes.

Q_9. **Dr. Brown, do you use mathematics and statistics in combination with economics as part of your profession?**

A_9. Yes.

**Q_10. What were you asked to do with respect to this case?**

A_10. I was asked to form opinions on: 1) the company's treatment of public fire service pricing for the City of Chattanooga; 2) the company's cost-of-capital which includes determining the appropriate capital structure, the appropriate market-based common equity return, the cost of long-term-debt, and the equity and debt ratios in the capital structure; 3) the cost-of-service allocations to the various classes of customers; 4) to assist in the evaluation of testimony offered by other witnesses in this docket.

## *II. Summary of Testimony*

**Q_11. Please summarize your testimony.**

A_11. My opinion is that $1.1 million of the Company's cost-of-service be allocated to the Company's stockholders, rather than the ratepayers, in accordance with the Tennessee Regulatory Authority's order of January 11, 2000 approving a settlement between the Company and the City of Chattanooga.

My opinion is that Tennessee American (TnAm) be treated as a subsidiary of the corporate parent that actually controls capital flows to and from the subsidiary and that sets the subsidiary's pricing policies. It is my opinion that an equity rate of 9.21% and a debt rate of 6% be applied to the capital structure of RWE to give a current weighted cost-of-capital for the parent, whose weighted cost-of-capital is the cost of the subsidiary's equity.

My opinion on the cost-of-equity is based on a discounted cash flow analysis of 12 water supply companies who file data with the Securities and Exchange Commission and who currently have publicly traded stock in American stock exchanges. My opinion considers the current returns being achieved in the market and the low interest rate environment prevailing in the United States and abroad. Based on the data I have gathered and analyzed, in the past 12 months less than one-third of the publicly traded companies in the United States achieved an equity return at or above 11%, the return requested by the Company. One-half of the publicly traded companies achieved returns of less than 6.3%, a rate almost equal to the cost-of-debt prevailing in American markets today.

I have examined the methods employed in the Company's cost-of-capital analysis. The Company applies four different methods to two different groups to develop eight different returns as support for the requested return of 11%. My opinion is that the Tennessee Regulatory Authority disregard each and every return because they are not based on comparable companies, thus the returns are biased and arbitrary, relying on equity returns and debt returns that are not in the mainstream, as well as relying on statistical practices that are not general practice.

Also, my opinion is that if the final rates in this case are different than those rates currently in effect, then any change in TnAm's revenues produced by the difference in rates be allocated equally among the Company's revenue classes, because the Company has no means to know how each revenue class contributes to the need for maximum capacity on the water supply system.

## III. The Company's Pricing of Public Fire Service to the City of Chattanooga

Q_12. **What is the Company's position with regard to the public fire service?**

A_12. The Company is continuing its current practice of charging the City about $1.1 million less than the service's cost, as calculated by the Company. However, with regard to the other customers the Company seeks to change current practice by having them pay for the remaining $1.1 million of the service's cost.

Q_13. **Do you agree that the other classes should pay for the remaining costs of fire-service-protection?**

A_13. No. I disagree because the Authority specifically ordered the Company not to pass such costs on to ratepayers. In January 2000, the City and the Company sought the Authority's approval of a settlement, where the City terminated its effort to acquire and municipalize the Company's water business and in return the Company reduced its monthly fire-service-price from $301 to $50 per installation. Once the price decrease was fully implemented, it reduced the Company's annual revenue by $1.1 million and created an annual savings of $1.1 million for the City.

The Authority discussed the settlement and approved it conditionally. The conference transcript of January 11, 2000 shows the Authority's discussion commencing at page 16, where Director Greer asks the Company: "Can you assure me there will be no rate increase requested as a result of this loss of revenue?" A long discussion ensued with the Company replying: "Nobody is going to be able to say that we never will be able to come in for a rate increase." To which Director Greer replied: "I'm sorry...you're right. I fully understand what you're saying about that. What I'm wondering is if you're going to come in and ask for a rate increase to make up this lost revenue, this particular lost revenue." The Company replied with a definitive answer: "This particular loss will not -- is not occasioned for a rate increase." [See Tr. p. 18].

Then the Authority ruled:

"CHAIRMAN MALONE: It seems that the company has represented that it will not in the future seek to recover lost revenue in a rate case from the ratepayer. With those responses, it would be my inclination and I would move that we approve the tariff, but that in so doing, we order that the allocation of the lost revenue be to the stockholders and not to the ratepayers whether now or at such later time in the future."

"DIRECTOR KYLE: I vote yes. I'm in favor of approving the Tennessee-American Water Company Tariff Filing to reduce the fire hydrant charges with a revenue loss allocated to the stockholders."

Q_14. **In the current docket, No. 03-00118, what has the Company testified to regarding the public fire service issue?**

A_14. Mr. Miller states in his testimony at page 11 lines 13- 16: "...the Company has allocated $1.105 million of the public fire service classification cost of service to other customer classes…" He further states at page 12 lines 6-13: "…the company has been able to more than offset the reduction in public fire service revenues by revenue growth and productivity gains which are embedded in this case.."

Q_15. **Do you agree with Mr. Miller's testimony that "…the company has been able to more than offset the reduction in public fire service revenues?"**

A_15. No, I disagree with Mr. Miller because his testimony is not an accurate rendering of the economics of the Company's agreement with the City. These economics were well understood by the Authority as shown in its discussion and order of January 11, 2000.

Q_16. **What are the economics of the settlement between the City and the Company?**

A_16. The settlement established a permanent flow of resources from the Company to the City where the resources are valued at $1.1 million annually. It is as if the Company is sending cash in the amount of $1.1 million per year to the City on a permanent basis. But rather than sending $1.1 million of cash each year to the City, the Company has achieved the same economic effect by permanently reducing the public-fire-service-price to the City.

Q_17. **What evidence supports your conclusion about the Company providing a permanent price reduction to the City?**

A_17. Evidence is available from different sources. First, there is the transcript of the Authority's January 11, 2000 Directors' Conference. That record shows the Company petitioning the Authority to allow the Company to reduce its monthly price from $301 to $50 per installation. No other price in the Company's tariff was changed. From January 2001 through May 2003, the Company passed about $3.5 million to the City via the price reduction.

However, the record provides no indication that the Company's resource transfer is anything other than permanent. There is no mention of a "date certain" at which the revenue reduction ends, nor is there any discussion of a specific amount of cumulative revenue-reduction that would be deemed as fully discharging the Company's obligation to the City.

Additional compelling facts affirm that the Company is committed to annually transferring $1.1 million to the City year after year.

By its own choosing the Company's rate filing of February 7, 2003, maintains the annual $1.1 million flow to the City, as Mr. Miller testifies, since the Company is charging the City only 25% of the calculated cost of fire protection service.

The Authority, too, saw the Company's resource transfer as permanent because the Authority's Order has the effect of permanently protecting other ratepayers from having to pay for the Company's payments to the City, as clearly shown in the order of January 11, 2000, "we order that the allocation of the lost revenue be to the stockholders and not to the ratepayers ***whether now or at such later time in the future*** [emphasis added By CAPD]."

But the Company is invoking the so-called "Pennsylvania Approach," as Mr. Miller describes at page 10 of his testimony, where every other customer pays for the remaining 75% of public fire service costs. This cost-recovery strategy calls for a permanent increase in the rates of other customers, the exact situation the Authority foresaw and prevented by its Order.

The Authority's Order is consistent with City's apparent intent that other ratepayers not have to pay for the City's savings. On January 11, 2000 Chattanooga's mayor, Jon Kinsey told the Authority: "And I will add that at this point to answer specifically the question about why is this good for the ratepayers, number one, there is no increase in cost to any ratepayer at this point at all. Number two, not only the City of Chattanooga but the cities of Red Bank and East Ridge and many other local governmental entities will be saving a million dollars a year which gets passed on to those ratepayers as citizens and taxpayers."

Q_18. **What is your conclusion regarding Mr. Miller's assertion that the Company has been able "to more than offset the reduction in public fire service revenues?"**

A_18. I conclude it is inaccurate because it is contradictory. Mr. Miller claims the Company "has more than offset the reduction in public fire service revenues" while at the same time asking ratepayers other than the City to pay for the Company's annual $1.1 revenue loss, a specific and particular revenue loss identified by the Authority and a loss that the Company agreed not to recover from ratepayers.

Q_19. **What is your recommendation regarding the "Pennsylvania Approach" and the Company's request to allocate 75% of fire service protection to customers other than the City?**

A_19. I recommend the Authority disregard the request and remove the $1.1 million from the Company's revenue requirement.

## IV. CAPD's Opinion on the Company's Cost-Of-Capital Analysis

**Q_20. What is your opinion on the Company's recommended cost-of-capital?**

A_20. My opinion is that it is not just and reasonable. I have three reasons for my opinion:

1) The Company's analysis ignores the parent-subsidiary relationship between the corporate parent, RWE, and its subsidiary, Tennessee American (TnAm).

2) The Company's analysis uses companies that are not comparable to the water company: gas distribution companies, electric utilities and other companies are used as proxies for the water company, even though the water supply business is TnAm's sole enterprise activity.

3) The recommended rates, 11% for equity and 8.56% overall, overstate the prevailing rates of return in the American economy.

## IV. A. The Parent-Subsidiary Relationship

Q_21. **How is TnAm a subsidiary of RWE?**

A_21. The parent, RWE, owns 100% of TnAm's common stock, therefore, the parent has the final say on capital flows to and from the subsidiary. Although American Water Works (AWW) is no longer the parent, there is ample evidence in the financial history of TnAm showing it was always treated as a subsidiary and under the parent's control.

Q_22. **What evidence supports your opinion that the parent controls the subsidiary?**

A_22. For example, CAPD Interrogatory 55 asked TnAm "to provide the amount of dividends paid... as a percentage... of earnings, to its parent... for 1997 through 2002." TnAm replied: "1997 - 68.4%, 1998 - 75.8%, 1999 - 108.8%, 2000 - 72.8%, 2001 - 81.8%, 2002 -76.5%." The pattern itself, and particularly the 108.8% figure in 1999, where the parent declared more dividends to itself from the subsidiary than the subsidiary earned, demonstrates that capital moves at the parent's discretion, not the subsidiary's. Therefore, the cost-of-capital awarded in this docket is actually being awarded to the parent, which redirects that award at its discretion to the subsidiary. The Tennessee Public Service Commission recognized TnAm's subsidiary status in the Commission's Final Order in Docket U-85-7338:

"The Company argues that the Commission should...ignore the parent-subsidiary relationship ...[but] all of its stock is financed by its parent corporation...the

Commission adopts the double leverage capital structure...[Final Order U-85-7338, pp. 16-18]."

Q_23. **Do you have reason to believe that TnAm will continue to be treated as a subsidiary?**

A_23. Yes. In January 2003 AWW was purchased by a European company, RWE. According to a form 14A filed by AWW with the U.S. Securities and Exchange Commission on December 5, 2001:

"Upon the consummation of the merger, stockholders of American Water Works will have no further interest in the surviving corporation....In the merger, a wholly owned indirect subsidiary of RWE will merge into American Water Works with American Water Works continuing as the surviving corporation. American Water Works will become the Americas division of RWE's water business and it will operate under the name American Water Works....As a result of the merger, we will cease to be an independent, publicly traded company and will become an indirect, wholly owned subsidiary of RWE."

Q_24. **What is the implication of the parent-subsidiary relationship regarding the cost-of-capital in this case?**

A_24. Given this clear evidence of the parent controlling the subsidiary, it is also clear that RWE's capital structure is required to have an accurate cost-of-equity.

Unfortunately, TnAm's cost-of-capital analysis does not recognize or include RWE's capital structure. The only capital structure in TnAm's filing proposed rate is the subsidiary's proposed capital structure, shown in Sheila A. Valentine Exhibit No. 3 Schedule 1, Page 1 of 1.

In that Exhibit, under the column titled "Cost Rate," the figure of 11% appears as the cost of common equity and retained earnings. My cost-of-capital analysis replaces the 11% figure with my estimation of RWE's weighted-cost-of-capital. Therefore, a major issue in this case is the determination of RWE's capital structure, to which the recommended returns will apply.

Q_25. **Did TnAm know that CAPD would raise the parent-subsidiary and "double-leverage" issues?**

A_25. Yes. In response to their first discovery request in April CAPD provided TnAm copies of two papers that discussed double leverage.

Also, CAPD's first discovery request, item 54 requested: "provide the capital structure of Tennessee-American's parent company, RWE, for the attrition year."

Q_26. **When did CAPD request RWE's capital structure?**

A_26. CAPD requested that information in its first discovery request sent approximately April 16.

Q_27. **Were you provided with the capital structure in response to your request?**

A_27. No, not fully.

Q_28. **What were you provided with?**

A_28. CAPD was provided with RWE's consolidated balance sheet, which provides a broad indication of what RWE's capital structure might look like but lacks detail. That consolidated balance sheet is shown is attached to my testimony as Schedule 1, page 1,

The balance sheet reflected European accounting standards in the sense that there was no clear delineation of what figures represented equity and what figures represented debt. For example, in Schedule 1 there is no definition of the term "provisions", which comprises nearly half of the balance sheet's value.

Q_29. **Is the term "capital structure" an obscure term in the financial world?**

A_29. No, the term is not obscure and has an accepted meaning, where the full value of debt and equity are presented along with the costs of equity and debt. With that information, a company's weighted cost-of-capital can be computed, which includes debt and equity and their respective costs. A good example of a capital structure format is the Company's proposed capital structure, shown in Sheila A. Valentine Exhibit No. 3 Schedule 1, Page 1 of 1.

Q_30. **Was RWE's consolidated balance sheet sufficient to develop a capital structure for RWE?**

A_30. No. Therefore, CAPD made further requests.

Q_31. **Why is it necessary to acquire RWE's capital structure?**

A_31. RWE's capital structure is required because public records provide further evidence that the power to set prices for water supply service resides with RWE, not its subsidiary.

For example, on May 9, 2002 AWW filed a form 8-k with the Securities and Exchange Commission. The report quotes from a speech given by AWW's CEO, who discussed the prospective impact of RWE's ownership. The CEO explicitly acknowledged RWE as having the final say on any subsidiary's proposed prices for water service:

"Our long experience with and deep respect for the economic regulatory process continues to guide us. We knew, early on, that... significant questions - and our responses - would be the central focus of the regulatory review and approval process.... How will this transaction impact rates? RWE has clearly stated -- strongly and consistently -- that it will not seek to recover the purchase price premium in rates."

Q_32. **What additional requests did CAPD make?**

A_32. CAPD followed up its first discovery request, item 54, with more data requests in CAPD's second discovery request: items 9 through 13, which requested detailed information on the nonequity portions of the balance sheet.

For example, CAPD requested a description of the "provisions" section: What was it composed of? What carrying rate was assigned to it? Regarding the liabilities section of the balance sheet, CAPD asked for the interest rates on notes or bonds carried in the liabilities section, if the debt was senior or subordinated, as well as the terms and conditions of the debt including tier requirements and other items.

Q_33. **What were the first replies CAPD received in response to its further inquiries?**

A_33. With regard to the question about "provisions", the Company responded, "there are no debt issues in" provisions. With regard to the request for interest rates on the notes or bonds, the Company responded with the terms "fixed" and "floating."

Q_34. **Were those responses sufficient to develop a capital structure for RWE?**

A_34. No, they were not sufficient.

Q_35. **When did CAPD receive the information it requested?**

A_35. On May 21 CAPD received descriptions of the items in "provisions." On May 23 CAPD received the interest rates on RWE's debt and the carrying charge that RWE applies to "provisions."

Schedule 1, page 2 shows RWE's consolidated balance sheet converted to U.S. dollars based on the average exchange rate for Euros to dollars between March 15 and May 15. Schedule 1, page 2 also shows RWE's consolidated capital structure split between debt and equity, the relative proportions of debt and equity, and the cost of each.

Schedule 1, page 3 shows the individual notes, with their interest rates, the currency of the loan, and the conversion rates.

Schedule 1, page 4 shows RWE's balance sheet (not its consolidated balance sheet) in euros.

Q_36. **What is the difference between RWE's consolidated balance sheet and RWE's balance sheet?**

A_36. The consolidated statement provides figures that represent a "netting out" of the cash and capital flows between the parent and the subsidiary while at the same time accumulating the balances in the asset and liability accounts.

For example, RWE's consolidated balance sheet has a value of 100 billion euros but the balance sheet of RWE alone has a value of 39 billion euros. The equity portion of the consolidated balance sheet is approximately 9 billion euros, and the equity portion of the RWE alone is about 4 billion euros.

Q_37. **What is your opinion about the nature of the term "provisions" in RWE's balance sheet?**

A_37. In my opinion "provisions" are debt because the amounts cannot be claimed by RWE's equity holders. Also, the Company assigns a carrying rate of 6% to provisions, a rate that corresponds to the Company's cost of long-term-debt, which is a bit under 6%.

Q_38. **What does the difference in the two balance sheets mean with regard to developing a weighted cost-of-capital for RWE?**

A_38. With regard to developing a weighted cost-of-capital for RWE, both balance sheets have approximately the same ratios of debt and equity: Approximately 10% equity and 90% debt. RWE's balance sheets demonstrate that it operates at unusually low levels of equity in comparison to an American company in the utility business.

Q_39. **What is RWE?**

A_39. RWE is an international conglomerate having various operations in water, mining, nuclear power plants, natural gas and electricity production in several countries.

Q_40. **Is RWE listed in any stock exchange in the United States?**

A_40. No. It is not listed.

Q_41. **Does RWE have stock that can be traded?**

A_41. Yes. RWE has stock that can be traded, but RWE is considered an "Over the Counter Stock," or OTC. An OTC stock is one that cannot meet the minimum requirements set by the stock exchanges themselves to list a stock for the purpose of public trading. OTC stocks trade irregularly, in the sense that brokers have to call each other and makes trades. There is no public record of the trade, the prices and volumes.

Q_42. **What is RWE's current financial condition?**

A_42. Apparently RWE is considered to be in difficulty. For example, In a brief search on the internet I found these comments in trade journals "RWE has said debt will soar to 26 billion euros in 2003, more than double its 10.66 billion euro market value, which has unsettled investors and helped drag…", and "RWE: big debt, little added value" and "RWE gives up global ambitions." These quotations suggest that RWE is struggling with a large debt load or at least perceived as struggling. The perception is consistent with RWE's balance sheets.

**Q_43. What is the economic implication of RWE's financial condition regarding its treatment of subsidiaries?**

A_43. RWE's current financial condition means it is hard pressed to cut costs and raise revenues throughout its entire organization. This economic behavior is normal and ongoing in any enterprise, but it is to be expected that RWE will have its newly acquired subsidiaries play their part in restoring the Company's vitality.

**Q_44. Does TnAm's cost-of-capital analysis include any reference to a parent-subsidiary relationship?**

A_44. Yes. Mr. Moul, who prepared the Company's cost-of-capital analysis, testifies at page 3 lines 17-24: "I have not analyzed the market data for American Water Works Company, Inc. ('AWW'), which is the parent company of TAWC, because it is currently the target of an acquisition. On September 16, 2001 AWW entered into an agreement with RWE…Since that time, AWW's stock reflects the pending acquisition premium."

Q_45. **When did TnAm file its case with the Authority?**

A_45. TnAm filed its case on February 7, 2003.

Q_46. **Was AWW the parent company at the time of the filing?**

A_46. No. AWW was not the parent company at the time of the filing.

Q_47. **Who was the parent company at the time of the filing?**

A_47. RWE was the parent company at the time of the filing.

Q_48. **When did RWE become the parent company of TnAm?**

A_48. RWE became the parent on January 9, 2003.

Q_49. **Does Mr. Moul's analysis include any consideration of the parent-subsidiary relationship between RWE and TnAm?**

A_49. No. Mr. Moul's analysis does not consider the parent-subsidiary relationship between RWE and TnAm.

Q_50. **Do you believe that the relationship should be considered?**

A_50. Yes. I believe the relationship should be considered and fully included in the cost-of-capital analysis.

Q_51. **What is your opinion regarding the inclusion of RWE in a ac cost-of-capital analysis?**

A_51. In my opinion it should be included because of the clear evidence of RWE's control over TnAm.

## IV. B. The Company's Recommended Rates Are Not In the Mainstream Market-based Returns in the United States.

**Q_52. Is the Company's requested return a just and reasonable cost-of-equity?**

A_52. No. In my opinion the requested return of 11% is not a just and reasonable cost-of-equity. I disagree with the TnAm's analysis because the recommended rate, 11% for equity, overstates the prevailing return on equity in the American economy, and the prevailing return on equity in the water supply business. This is contrary to the expectation created in anticipation of RWE's purchase of AWW. For example, in an SEC form 8-K filed May 9, 2002, by AWW, its president said:

"Joining with industry leaders like RWE/Thames will deliver the additional benefits of size and reach for our customers. They will benefit from the increased capacity to attract capital at a lower cost..."

This is consistent with including RWE in the cost-of-capital analysis because the parent is able to finance its debt at 6%, significantly lower rates than the debt cost shown by the

Company in Sheila A. Valentine Exhibit No. 3 Schedule 1, Page 1 of 1.

## IV. B.1. The Current Equity Market

**Q_53. What is the prevailing equity return in the market?**

A_53. The prevailing return on equity in our economy appears in Schedule 2 attached to my testimony. Page 1 shows a range of equity returns for approximately 5600 companies in the past year compiled by MorningStar, a data base firm that maintains a data base on stocks, mutual funds and tracks their performance. Its information can be accessed through the internet.

Nearly one-half of the stocks achieved equity returns of less than 6%. The exact middle of that distribution is 6.3%. Less than one-third achieved returns higher than 11%, which is the Company's requested return.

**Q_54. Does Schedule 2 include the returns of companies that are regulated?**

A_54. Yes. Schedule 2 includes the returns of companies that are regulated.

**Q_55. Does Schedule 2 include the returns of companies that are not regulated?**

A_55. Yes. Schedule 2 page 1 includes the returns of companies that are not regulated.

**Q_56. Is there any reason to believe that the returns of regulated companies are automatically lower than the returns of nonregulated companies?**

A_56. No. There is no reason whatsoever to believe that the returns of regulated companies are automatically lower than the returns of nonregulated companies.

For example, Schedule 2 page 1 shows that approximately 2050 stocks had equity returns of less than 1% in the past 12 months. Schedule 2 page 2 provides an alpha-numeric ordered listing of about 50 of those companies, in order by number, such as "1-800-Contacts" to " Wynn Resorts" to "Zygo." All but one of these companies are nonregulated.

**Q_57. What is the economic meaning of Schedule 2 with regard to determining the cost-of-equity in this case?**

A_57. With regard to the cost-of-equity in this case Schedule 2 proves that TnAm's "Comparable Earnings Approach," described at pages 38-39 of Mr. Moul's testimony, is arbitrary.

For example, Mr. Moul testifies:

"In order to identify the appropriate return on equity for a public utility, it is necessary to analyze returns experienced by other firms within the context of the Comparable Earnings standard. The firms selected for the Comparable Earnings approach should be companies whose prices are not subject to cost-based price ceilings (i.e., non-regulated firms) so that circularity is avoided. To avoid circularity, it is essential that returns achieved under regulation not provide the basis for a regulated return. Because regulated firms must compete with non-regulated firms in the capital markets, it is appropriate, if not necessary, to view the returns experienced by firms which operate in competitive markets. One must keep in mind that the rates of return for non-regulated firms represent results on book value actually achieved or expected to be achieved because the starting point of calculations is the actual experience of companies that are not subject to rate regulation."

The clear implication of Mr. Moul's testimony is that regulated firms always fare worse than the nonregulated. Thus he chooses a level of 14% as representative of nonregulated companies' earnings, shown in Mr. Moul's analysis at page 4 line 18. This result is based on the historical performance of about 50 companies he lists in his testimony, Exhibit PRM-2, page 31 of 31, Schedule 12[2 of 2].

However, the assumptions that these firms represent nonregulated companies, or that regulated firms always or systematically fare worse than the nonregulated, are not true.

All but one of the firms shown in Schedule 2 of my testimony are regulated. I could just as well apply the "Comparable Earnings Approach" to them and derive a remarkably low rate of return in this case and claim the return is based on nonregulated firms in the market. That would be accurate but just as arbitrary as what Mr. Moul has done in his comparable earnings analysis.

**Q_58. What is your opinion regarding the "Comparable Earnings Approach" as a method to determine the cost-of-equity in this case?**

A_58. My opinion is to disregard the "Comparable Earnings Approach" because it is arbitrary and not based on the establishment of comparable companies, a long-standing regulatory principle which has the effect of reigning-in the arbitrary determination of equity costs.

## *IV. B.2. THE CURRENT LONG-TERM-DEBT MARKET*

**Q_59. What long-term-debt rates does Mr. Moul use in the Company's analysis?**

A_59. Mr. Moul uses long-term-debt rates for bonds ranging in grade from AAA, the highest rating, to BAA, a midlevel rating. The most expensive bond in Mr. Moul's debt data is 8.36% for a BAA bond. The least expensive bond in Mr. Moul's debt data is 6.98% for a AAA bond. His debt data appear in his Schedule PRM-2, Page 18 of 31, Schedule 9[2 of 5]. He also provides long term rate forecasts in his direct testimony at page 32 lines 3-11, where the forecasts reach a high of 8% for BAA rated bonds in the first quarter of 2004, about 9 months from now.

Q_60. **Do you agree that the long-term-debt rates in Mr. Moul's analysis are representative of current and future conditions?**

A_60. No, I disagree. The prevailing return to long-term-debt is approximately 6% and declining. My Schedule 3 displays a range of long-term-debt returns in descending order for approximately 90 categories monitored by Federal Reserve Data. The highest figure is 7.8%,the annual average in 2002 for bonds rated as BAA, the lowest bond rating considered by Mr. Moul. However, the rate for BAA bonds declined to 6.93% by the second Friday in April 2003, and bonds rated AAA declined to 5.81% by the second Friday in April 2003. These figures prove that the Federal Reserve's policy --lowering interest rates and keeping them low – is still having an impact on the economy and there is no sign that such impacts are over.

For example, the Federal Reserve's data shows states and local government issuing general obligation bonds at 4.76%, and conventional 30 year real estate loans being offered at 5.85%. All of these rates are much lower than the debt cost used by the Company.

Q_61. **Is there any guarantee that interest rates won't rise in the future?**

A_61. No, there is no guarantee that interest rates will not rise. However, economic expectations are groomed and changed slowly over a long period of time. That is why interest rates changes occur gradually over several months.

Schedule 4 is a copy of a recent newspaper article demonstrating how the Federal Reserve signals or hints at its future intent. The Federal Board sets rates as a matter of policy and is not interested in creating economic turmoil through a series of gyrating interest rate changes that create economic instability. The Federal Reserve Board is unlikely to lower rates one month, just to raise them the next, or to raise the interest rate from 2% to 6% overnight or even in a matter of months.

The Federal Reserve Board's data that I have shown in Schedule 3 show various long term securities being issued between 5% and 6% for 10, 20, 25 and 30 years. All the banks, mortgage lenders, homebuyers and businesses who have entered into long term transactions are betting that current interest rate conditions will prevail for the foreseeable future, as are RWE's lenders, who have obviously lent substantial sums in the long term at rates approximating 6%.

The Federal Reserve Board policy of lowering interest rates and keeping them low is explicit and very visible to business, the media, and the public in general. Therefore, it is reasonable to expect utilities' cost-of capital to embody the influences of a lower-interest rate economy. However, a utility is not "locked in" to a cost-of-capital if the interest rate environment changes because a regulated utility has the discretion to file its rate case as needed.

Q_62. **What is your opinion regarding the long-term-debt rates in Mr. Moul's analysis?**

A_62. In my opinion the long-term-debt rates in Mr. Moul's analysis should be disregarded because they are not representative of current rates, rates in the foreseeable future, nor representative of the long-term-debt rates of RWE, which has a debt cost of less than 6%, as shown in Schedule 1 of my testimony.

## IV. C. *Comparable Companies Should Be In the Water Supply Business*

Q_63. **What is the appropriate way to develop an estimate of equity cost when RWE has no stock traded in American exchanges and TnAm has no presence in the stock market?**

A_63. In my opinion the best and appropriate way to develop an estimate is to choose an appropriate group of comparable companies that are in the water supply business.

Q_64. **What evidence supports your opinion that the water supply business should be the basis for developing comparable companies?**

A_64. The evidence is offered by the former parent company, AWW. For example, according to the SEC form 8-K already cited in my testimony, the president of AWW told shareholders:

"The future direction of the company was forever changed last year, and the value of our franchise was substantially affirmed, when shareholders, by an 80 percent approval rate, accepted the offer from RWE AG…By the first half of next year, we have every expectation of joining forces with multinational RWE AG, and, in fact, American Water Works people will be leading the North and South American Region of the water division. In that incredible collaboration, we will become part of a global enterprise premised on the same value upon which a much smaller company was founded. This action confirms the universal value of providing dependable water service; only this time we'll be part of a global enterprise!"

The water supply business is the sole enterprise activity of Tennessee-American and the business that the Company will continue to engage in. But despite the clearly defined scope of business, the Company's cost-of-capital analysis employs gas companies, as proxies for the water company. But they are not in the water supply business and, therefore, are not comparable to the water company.

## V. Determination Of Comparable Companies: Comparison of CAPD's Methods with the Company's Methods

Q_65. **What were your procedures to identify comparable companies in your analysis?**

A_65. I examined the United States Securities and Exchange Commission's on-line data base of all companies which file forms and data with the SEC. The data base covers all SEC filings from 1994 forward. I found several companies that the SEC identifies as being in the water supply business, but only 13 have publicly traded stock as of 2003. Twelve of the companies sole or principal business activity is water supply. The thirteenth company, Vivendi, at one time limited its activity to the water supply business, but in the middle to late 1990s the company expanded its business to include a movie studio, theme parks, telecom businesses, digital music acquisitions, cable networks, and a publisher. Vivendi is considered and evaluated by the market as media conglomerate.

Except for Vivendi, I consider all of the water companies identified by the SEC as being comparable companies because they are in the water supply business and their stock is publicly traded on stock exchanges in the United States. Also, I found no information that suggested they were not comparable.

Q_66. **Are your comparable companies identical to those companies used in TnAm's cost-of-capital analysis?**

A_66. No. I use twelve water companies, but TnAm uses only 6 water companies and 10 natural gas companies.

Q_67. **Is your group of 12 water companies different from the 6 water companies used by TnAm.**

A_67. Yes. My group is different because it is comprehensive including not only the 6 companies used by TnAm, but 6 more that TnAm chose to ignore.

In Schedule 5 I have listed my comparable companies and the water companies used by TnAm. Column 1 lists the names of the companies which have filed with the SEC, column 2 provides a "YES" or a "NO" to indicate if the company ever had stock that was traded in American markets, column 3 provides a "YES" or a "NO" to indicate if the company's stock continues to be traded. Column 4 lists the water company's name, the stock exchange where the company is listed and the company's stock symbol. Columns 5 lists a "YES" or a "NO" to indicate if I used the company in my analysis. Column 6 indicates why I chose not to use the company. Column 7 indicates if the company was used in TnAm's analysis. Column 8 lists the reasons TnAm did not use the company.

Q_68. **What is TnAm's justification for not using the six water companies that you used?**

A_68. The justification appears in Mr. Moul's testimony at page 11 lines 19-24. Four companies were not used because their data is not in Value Line, which is Mr. Moul's data source. One of those four companies is Pennichuck, which according to Mr. Moul reduced its dividend and "is presently the target of an acquisition by Philadelphia suburban Corporation." Two other companies which I use, Consolidated Water and Southwest Water, are not mentioned by Mr. Moul.

Q_69. **Do you agree with the TnAm's justification for not using those companies?**

A_69. No, I disagree. Value Line's lack of coverage is not a fair or good reason to ignore water companies that are covered by other data sources. Also, Pennichuck's potential merger remains a potential until the merger is complete.. For example, for several months in the year 2000 American Water Works was going to merge with SJW and then March 1, 2001, both parties "immediately" terminated their agreement. Schedule 6 is a copy of AWW's press release announcing the merger's termination. SJW is still a publicly traded stock, but if being a target of a merger affects a company's perceived performance, then surely SJW's historical data and current valuation bears the indelible mark of once being targeted for acquisition. However, I don't agree with this assessment. If SJW is a comparable company, then Pennichuck is, too.

More importantly, it is contradictory for Mr. Moul to ignore 4 water companies that he knew of, and then say in his testimony at page 3 lines 27-30: "Natural gas distribution companies provide additional evidence of the cost-of-equity in this case because the number of water companies with traded stock continues to decline due to consolidation."

This justification is even less persuasive considering that two additional water companies were not examined by Mr. Moul, even though they are listed on American stock exchanges, publicly traded, and listed in the SEC's publicly available data. TnAm could have used 12 water companies in its analysis but chose not to primarily because 6 of these water companies were not in Value Line. Since TnAm did not utilize all water supply companies, there is no good reason to use 10 gas companies to estimate the cost-of-equity for a business that is exclusively in the water supply business.

Q_70. **What criteria does Mr. Moul use to select gas companies?**

A_70. Mr. Moul lists his criteria: "The Gas Distribution Group companies have the following common characteristics: (i) they are listed Edition 3 of The Value Line Investment Survey in the section 'Natural Gas Distribution Industry,' (ii) their stock is publicly-traded on the New York Stock Exchange, (iii) They have not reduced or omitted their dividend, (iv) they operate in the Northeastern, Great Lakes, and Southeastern regions of the U.S., and (v) they are not currently involved in a publicly-announced merger or acquisition."

Q_71. **Do you agree these criteria could be used as to find gas companies that could be substitutes for water companies?**

A_71. No, I disagree because each criterion is arbitrary and unable to specify gas companies that could substitute for water companies.

For example, relying totally on Value Line as a data source is sure to provide a less than full picture of an industry, as I have just demonstrated with regard to the water supply business. Limiting gas companies to those traded on the New York Stock Exchange is contradictory because only three water companies in TnAm's water group are traded on the NYSE. Two others are traded on NASDAQ and one is traded on AMEX.

Also, imposing a geographic limit, such as confining gas companies to those that operate in the "Northeastern, Great Lakes, and Southeastern" regions, is not apt because SJW, used in my analysis and in Mr. Moul's, is in California. The notion of omitting companies that have reduced or omitted dividends is nothing more than arbitrarily choosing to ignore bad news. The last criterion, "not currently involved in a publicly-announced merger or acquisition" is not tenable because "publicly announced" is not defined. This is an especially unhelpful criterion because the SEC requires filings by any group of individuals who own stock in a company and who could bring about a merger. These filings are public and are filed according to Sections 13 and 16 of the Securities Exchange Act.

Regarding the natural gas companies chosen by TnAm as proxies, my Schedule 7 lists those companies' filings from 2001 through 2003 required by the Securities and Exchange

Commission whenever there is a "change of beneficial ownership" of a company's stock and the portion of stock involved is potentially large enough to establish a takeover or a merger. There is plenty of insider activity and reshuffling of stock ownership in the gas-proxy-companies to suggest that some of those companies are on the cusp of mergers or acquisitions. Since this information is public, it suggests that a public announcement of a merger is the last act in a very visible process and not a reliable criterion to establish comparability.

Q_72. **Does the market view the gas and water industries as equivalent, where one group could be substituted for the other?**

A_72. No. I base my answer on the so-called "betas" of the water and gas companies in TnAm's analysis.

Q_73. **What is a beta?**

A_73. It is a ratio of the change in a stock price to the change in the overall market price or index, and there are three possibilities. For example, if a market index increases by 10 percent and a stock price increases 5 percent, then the stock's beta is .5 or one-half. On the other hand, if a market index increases by 10 percent and a stock price decreases 5 percent, then the stock's beta is a negative one-half. Finally, if a market index changes and the stock price does not change, the stock's beta is zero.

Q_74. **What economic meaning is normally assigned to the beta?**

A_74. It is regarded as a measure of risk, the higher the beta, the higher the risk.

**Q_75. Does the TnAms' cost-of-capital analysis use betas?**

A_75. Yes.

**Q_76. What is the source of TnAm's betas?**

A_76. TnAm uses Value Line betas.

**Q_77. What role do Value Line Betas have in Mr. Moul's analysis with regard to his selection of comparable companies?**

A_77. The Value Line Betas carry the implication that the water and gas companies are indeed comparable because they have similar betas. For example, in his testimony at page 16, lines 9 to 20, Mr. Moul implies comparability when he states "A comparison of market risk is shown by Value Line Betas, .55 as the average for the Water Group,.., .67 as the average for the Gas Distribution Group."

**Q_78. Do you agree that Value Line betas show comparable risk between the water and gas companies?**

A_78. No. I disagree because Value Line's betas inflate the measure of risk and are not standard practice in the financial industry. My Schedule 8 provides a comparison of Value Line betas with other betas. The far left column lists the companies, and columns 1 through 4 list betas from the financial sources on the internet.

Column 5 lists my calculation of the beta and column 6 lists Value Line's beta. With the exception of on company, SJW, Value Line's betas are substantially higher than all others. Clearly, Value Line's betas are not standard practice. My calculations give results consistent with standard practice.

Q_79. **What is the effect of Value Line's betas on the estimated cost-of-capital?**

A_79. Value Line's beta always lead to an overestimate of risk and an overestimate of capital cost.

Q_80. **How does Value Line calculate its betas?**

A_80. Value Line reduces the calculated beta by one-third and then adds .35 to produce a beta. This adjustment to the calculated beta makes low betas look higher than they really are. Schedule 9 of my testimony shows the relationship between a calculated beta and the Value Line Beta.

Q_81. **Do the water and gas industries appear comparable when the normal beta is used instead of the Value Line beta?**

A_81. No, the water and gas industries appear noncomparable and less risky when the Value Line beta is replaced with the normal one. For example, the normal beta for the Water Group would be .30, if Value Line did not make its adjustments to the calculation, instead of.55, the figure Mr. Moul uses, and the beta for the Gas Group would be .50 instead of .67. The risk measure drops for both industries and the water group risk shrinks more than the gas group's.

Q_82. **Why do financial reporting services, such as those you reference in your Schedule 8 not follow Value Line's example?**

A_82. Financial reporting services do not follow Value Line's example, because, in my opinion, it is common knowledge that Value Line's betas are overestimates, and AWW offers perfect example of Value Line's overestimation. At page 3 lines 19 to 25 of his testimony Mr. Moul explains why he did not use AWW: "On September 16, 2001 AWW [American Water Works] entered into an agreement [to] merge...The cash purchase price of [the] stock represented a 36.5% premium over the stock's average price for 30 days prior to the announcement. Since that time AWW's stock reflects the pending acquisition and it would be unsuitable to measure the cost-of-equity in this case."

Q_83. **Do you agree with Mr. Moul's decision to keep AWW out of the cost-of-capital analysis?**

A_83. I agree with keeping it out because AWW no longer exists as an independent company.

However, I don't agree with his reasoning for keeping it out. If a "pending acquisition" is reason to exclude a water company from the analysis then all of Mr. Moul's water companies would have to be excluded.

For example, Mr. Moul testifies from page 19 line 29 to page 20 line 2: "The pending acquisition of [AWW]… includes a 36.5% premium… These premiums create a ripple effect … on the stock prices of all water companies … a rising tide lifts all boats." But Mr. Moul has not examined "all boats." He has examined only the 6 "boats" covered by Value Line and is no position to describe the behavior of the 6 water companies not in his analysis.

However, if AWW were in my analysis, the behavior of its stock price would create a very low beta very similar to the betas of most of the water companies in that continue to have publicly trade stock.

For example, by the end of 2001 AWW's stock price was almost fixed, behaving like cash sitting in a passbook savings account, where the value is immune and unaffected by movements in the stock market. My Schedule 10 lists the month end stock price for AWW the index for value for S&P 500 from December 31, 2001 to January 9, 2003 as well the month-to-month percentage changes for the stock and the index.

Those percentage changes are plotted in Chart 1, which shows that AWW's price changed little, not tracking the price changes in the overall market.

The month-to-month changes show that AWW's price was unaffected by the market. In the entire 12 months period the overall market declined about 17% and the AWW's stock went up about 10%. I calculated AWW's beta as zero for that time period. This is exactly what is expected because by 2002 AWW's stock was no longer related to the overall market. The stock was considered absolutely, perfectly risk free since RWE had guaranteed a purchase price. However, if Value Line's procedure were applied to the data in my

Schedule 10, the beta would be .35, an overestimation, not an accurate rendering of the behavior of AWW's stock.

Q_84. **Why did you calculate the beta for AWW?**

A_84. I calculated it because no financial services carry that data for AWW because AWW disappeared from all stock markets as of January 9, 2003. Since TnAm filed its case on February 7, 2003, an entire month passed before CAPD was aware that information would not be available.

Q_85. **Do you consider your calculated beta to be accurate?**

A_85. Yes, I consider it accurate, and the proof is in Schedule 8 where my calculated beta is shown to be consistent with the betas published by Standard & Poors, Yahoo and Lycos. Thomson's betas are sometimes higher than mine but still much lower than Value Line's.

Q_86. **What is your opinion with regard to Value Line's betas?**

A_86. My opinion is that they be disregarded because they are inaccurate, leading to a higher risk assessment than otherwise, making dissimilar industries appear similar.

Q_87. **Where are Value Line's betas used in TnAm's cost-of-capital analysis?**

A_87. Value Lines' betas appear in Mr. Moul's analysis of the Captial Asset Pricing Model, CAPM, from pages 34 to 38 of his testimony. They are used to arrive at equity returns of 12.76% for the "water group" and 13.71%, for the "gas" group, where the betas are .71 and .80.

**Q_88. What is your opinion regarding the company's CAPM analysis?**

A_88. My opinion is that the CAPM be disregarded because it relies on Value Line's betas, which are vast overestimates and not standard practice.

**Q_89. Do you know the basis for Value Line's procedure to calculate betas?**

A_89. Yes. *Value Line* bases its procedure on an article titled "On The Assessment Of Risk" which was authored by Marshall Blume of the University of Pennsylvania. Professor Blume's article was published in the March 1971 issue of the *Journal of Finance*. Blume believed that all betas tend towards one, so he performed a calculation to raise the value of betas that are low and lower the value of betas that are high. This procedure was adopted by Value Line. The portfolios in Blume's article were formed between the years 1926 and 1968. His most recent portfolio is now thirty years old. His inquiry has not been updated, and there is no evidence that his portfolio included water companies.

**Q_90. Has Blume's method been criticized?**

A_90. Yes. For example, James C. VanHorne of Stanford University, a long-time author of a standard financial textbook *Financial Management and Policy*, said in his book at page 79 of the 7th edition: "Adjusting historical betas is difficult business because the process is seldom clear and consistent."

Maybe another reference

Q_91. **Is the company aware that you would raise the Value Line betas as an issue in this docket?**

A_91. Yes. In response to their first discovery request CAPD provided them with a copy of the cover page of Blume's 1971 article and a copy of Value Line's fax sent to me in 1995, where the fax provided a reference to Blume's article.

Q_92. **What is your opinion regarding TnAm's use of gas companies to estimate TnAm's cost-of-capital?**

A_92. My opinion is that the gas companies be disregarded because:

they are not in the water supply business, the sole enterprise activity of TnAm, a fact supported by the previously described statements of AWW's president and its CEO in filings with the SEC;

the actual betas of the water and gas industries are different, a fact supported by my Schedule 8;

Mr. Moul's criteria to select the gas companies is arbitrary, contradictory and therefore not able to create comparability, where in fact there is none.

## VI. Determination Of the cost-of-equity: Comparison of CAPD's Methods with the Company's Methods

Q_93. **What analyses did you perform to identify an equity rate of return that is just and reasonable?**

A_93. I performed two analyses, the risk premium method and the discounted cash flow method.

Q_94. **What methods does the Company use to identify its requested equity rate of return?**

A_94. The Company uses four methods: comparable earnings, capital asset pricing, risk premium, and discounted cash flow.

## VI. A. COMPANY METHODS

Q_95. **What is your opinion of each method as means to arrive at a cost-of-equity?**

A_95. My opinion is that no method is inherently superior to another. What matters is how the analyst selects the numbers to implement the method and whether the selection process is grounded in reasonability and standard practice and, if standard practice is abandoned, the reason for so doing.

For example, I have already expressed my opinion that the Company's comparable earnings method be disregarded because it is based on the arbitrary selection of the best performing companies rather than the worst or mediocre. I have also expressed my opinion that the Company's CAPM method be disregarded because it relies on Value Line betas which are not standard practice, and therefore result in overestimates of actual betas and overestimates of the cost-of-capital.

Q_96. **What is your opinion of the Company's risk premium method?**

A_96. My opinion is that it produces a biased return, one higher than would be arrived at by correct use of statistics.

For example, Mr. Moul brings statistical analysis into his testimony at page 32 lines 31 to 34 where he testifies: "To develop an appropriate risk premium, I analyzed the results for the S&P public utilities by averaging (i) the mid point of the range shown by the geometric mean and median and (ii) the arithmetic mean…this is a comprehensive way of measuring the central tendency of historical returns."

Q_97. **What does the term "central tendency" mean?**

A_97. It is a term used in the Statistics profession. A lay person would use the term "average" or "midpoint."

**Q_98. Isn't it true that Mr. Moul is averaging two different kinds of averages?**

A_98. Yes, Mr. Moul is averaging two different kinds of averages.

**Q_99. Isn't it true that this is a reasonable statistical procedure?**

A_99. No. It is not reasonable once the terms "arithmetic" and "geometric" are made clear.

Here is an example of the "arithmetic" mean. If I bought a stock two years ago for $1000 and the market price declined to $500, I would have a loss of 50% in that year. If by a miracle the stock climbed back to $1000 the next year, I would have a 100% gain even though I have the same amount of money I started with. The average gain over two years is the "arithmetic" mean, which is 25%, i.e., (-50% + 100%)/2. Any historical record using the arithmetic means of stock gains and losses is biased in the sense that it always overestimates the true gain.

Here is an example of the "geometric" mean. If I started with $1000 two years and I have $1000 today, my gain is zero and the "geometric mean" is zero.

If the "arithmetic" mean is averaged with the "geometric" mean the gain is 12.5%, which is still a misleading figure.

Thus averaging the "arithmetic" and "geometric" means, as Mr. Moul does, is not a reasonable procedure. The "geometric" mean is the actual return.

**Q_100. How does Mr. Moul develop his averages of the "geometric" and "arithmetic" means?**

A_100. Mr. Moul develops his means by taking the data from four different time periods shown at page 33 lines 2 to 3 of his testimony: 1928-2001, 1952-2001, 1974-2001, and 1979-2001.

**Q_101. Is this procedure reasonable?**

A_101. No. It is unreasonable because the periods are arbitrarily selected and subject to manipulation.

For example, my Schedule 11 lists returns to large company stocks from the period 1925 through 2002 taken from Ibbotson Associates 2002 Yearbook – "Stocks Bonds, Bills and Inflation," Tables A-1 and B-1. Column 1 lists the year, column 2 lists the actual value of the return and column 3 lists the percentage gain or loss from the prior year. The actual or "geometric" return over the entire period is 10.20%, shown at the bottom of column 2. The 'arithmetic' return is 12.20%. In this case the 'arithmetic' return overstates the real return by 2%.

When I repeat the analysis but start with 1979, as shown in columns 5 and 6, the overstatement increases to 2.8%, a hefty 40% increase. Thus shortening the time period is a way to increase the bias of an "arithmetic" mean.

Depending on the particular pattern of data that underlies the derivation of the "geometric" and "arithmetic" mean, an overstatement can be increased or decreased at will but masked as a "reasonable" procedure.

Q_102. **What is your opinion regarding the Company's Risk Premium analysis?**

A_102. My opinion is to disregard the analysis because it relies on the 'arithmetic' mean and on the arbitrary selection of time periods by Mr. Moul.

Q_103. **What is your opinion of the Company's Capital Asset Pricing Model, or CAPM?**

A_103. My opinion is to disregard it because the model relies on Value Line betas, as I have already described. However, the Company's implementation has more errors that I want to discuss.

Q_104. **What is the CAPM model?**

A_104. The model defines the cost-of-equity as the market's risk-free rate of return plus an estimated risk premium which is multiplied by a beta. The risk premium is the difference between the overall market return and the risk free return. The model is often expressed by the following general formula:

$$K_e = R_f + (R_m - R_f) * B_e$$

where

$K_e$ is the cost-of-equity

$R_m$ is the overall market rate of return

$R_f$ is the risk free rate of return

$B_e$ is the beta for common stock

There is an exact correspondence between this formula and the formulas shown in Mr. Moul's testimony at page 37 lines 23 -24.

However, the betas in Mr. Moul's formulas are even larger then the Value Line betas Mr. Moul discusses in his testimony at page 16 lines 9 to 19.

Q_105. **Why are the betas at page 37 of Mr. Moul's testimony larger than the Value Line betas he discusses at page 16 lines 9 to 19 of his testimony?**

A_105. Mr. Moul has increased the Value Line betas according to his formula at page 36 line 6 of his testimony. He has 'leveraged' them to account for the "book value of a capital structure," a process often described as leveraging an equity beta into an asset beta.

Q_106. **Do you agree with his procedure?**

A_106. No. I disagree for four reasons.

First, the Value Line betas are overestimates and do not conform to standard practice. If Mr. Moul had used standard betas the 'leveraged' betas would be much smaller and in many cases zero, because many of the standard betas were close to zero. Consider the case of AWW in 2002. Its beta was near zero and could not be converted to reflect capital structure. This shows that the process of converting standard betas to "asset betas" has no particular economic meaning because a company's book value can stay constant while betas fluctuate.

Second, there is no need to 'leverage' the beta. The practical value of 'leveraging' a standard beta into an asset beta was studied thoroughly by the Australian government. The relevant report is: "Final Report, Empirical Evidence on Proxy Beta Values for Regulated Gas Transmission Activities: July 2002 Report for the Australian Competition and Consumer Commission," prepared by the Allen Consulting Group of Melbourne, Australia.

The following conclusion appears at page 30 of the report: "Moreover, as the CAPM is only being used to estimate the cost-of-capital for the equity financed portion of regulated Australian gas transmission activities, it is the equity beta - not the asset beta - that is the relevant input into the cost-of-capital estimation…", and "Accordingly this report uses the raw betas estimates produced by each of the beta estimation services." The sources are

http://www.accc.gov.au/gas/br_reg_iss/empiricalA.pdf,

and

http://www.accc.gov.au/gas/br_reg_iss/empiricalB.pdf.

Schedule 12 provides a copy of the source's cover sheet and relevant pages, where the quotation is found.

Third, 'leveraged' betas are not published by any reporting service.

Fourth, normal betas change over time according to the market's perceptions of the company and the overall economy. Betas can go up and down even if a company's capital structure does not.

Q_107. **What is your opinion of the $R_m$ , the overall market rate used by Mr. Moul.?**

A_107. My opinion is that it is hyperbole. Given the figure of 5.25% as the risk free rate and 10.58% as the risk premium, the overall market rate of return is 15.83%, a return that is large enough to be at least unusual and extreme instead of typical and mainstream.

Q_108. **What is your opinion regarding the Company's CAPM analysis?**

A_108. My opinion is to disregard the analysis because not only does it rely on the Value Line betas, it also relies on 'leveraging' those betas, an unreasonable procedure, and relies on an overall market return of 15.83% that is hyperbole and unsupported.

Q_109. **What is your opinion regarding the Company's DCF analysis?**

A_109. My opinion is that its application to gas companies be disregarded for the reasons I have already discussed. With regard to its applications to the six water companies, Mr. Moul's methods are not reasonable, but they provide an opportunity to compare his methods with mine.

For example, Mr. Moul arrives at a figure of 9.85% shown at page 30, line 20 of his testimony. The figure of 9.85% is subdivided into three parts: a "leverage" ratio of .57%, a "growth rate" of 5.75% and a "yield" of 3.53%. These figures are variations on the traditional DCF method, and I don't agree with them.

However, Mr. Moul justifies his departure from the standard application of DCF (in which equity cost is the sum of a dividend yield and dividend growth) by referring to the "merger" environment for water companies. At page 26 lines 13-17 of his testimony he states: "expectations concerning merger[s] impact stock prices…without necessarily showing up in higher long-term growth rate forecasts. In that case the traditional DCF calculation would understate the required cost-of-equity."

At page 28 lines 8-11 Mr. Moul offers another reason for his departure from the standard DCF model: "because the ratesetting process utilizes the book value capitalization, **an adjustment should be made to the market cost-of-equity upward...** [emphasis added by CAPD]"

Q_110. **What is Mr. Moul's market cost-of-equity using his particular version of the DCF model before he makes the upward adjustment?**

A_110. Mr. Moul's market cost-of-equity is 9.28 %.

**Q_111. Do agree with his upward adjustment of .57%**

A_111. No. I disagree. Since he acknowledges that 9.28% is the market cost, there is no need to increase it. More importantly, Mr. Moul's DCF analysis is the only point in his whole analysis that overlaps with mine, in the sense that my DCF analysis leads to a 9.21% equity return.

## VI. B. CAPD METHODS

**Q_112. What methods did you use to determine the cost-of-equity?**

A_112. I used the traditional DCF method, where equity cost is the sum of a dividend yield and dividend growth.

**Q_113. What were your results?**

A_113. I arrived at 9.21% as the DCF determined market cost equity based on the 12 water companies that continue to be publicly traded in the United States. My DCF analysis is shown in Schedule 13.

**Q_114. What are the advantages of your method with regard to Mr. Moul's?**

A_114. The method is accurate, clear and simple requiring no adjustments whatsoever, other than verifying the historical record of dividends for the 12 water companies. Schedule 14 shows the corrections I made to historical dividends of Pennichuck and Condolidated Water.

**Q_115. Why should the traditional DCF model be used?**

A_115. The DCF model is a standard way that investors evaluate their potential returns. The model defines the cost of common equity as the cash flowing to the investor, where the cash flow is based on the revenue stream the dividend yield plus the dividend's expected growth rate. The DCF model does exactly what every investor does. It pays close attention to the company's dividend per share of common stock and to the company's ability to raise or lower the dividend and the dividend yield.

**Q_116. Does the DCF Model account for capital gains that may occur when an investor sells stock?**

A_116. No. The DCF model avoids entanglement with either capital gain or capital loss because the model is tied directly to dividend yield and dividend growth. In addition, losses and gains are a matter of the investor timing the stock's purchase and sale. The DCF model neither protects investors from risk nor penalizes them for what happens in the stock market.

**Q_117. Are capital gains part of a DCF analysis?**

A_117. No. Dividends and capital gains are mutually exclusive in the sense that once a stock is sold, the investor gives up the stream of future dividends. Also, the rational investor sells stock in anticipation of a permanent decline of the stock's price, which means the unfortunate buyer, who is now the owner, bears the capital loss. Any capital gain by the first owner is nullified by the capital loss of the second owner.

Q_118. **Do you agree that earnings growth is part of a DCF model?**

A_118. No. A correct DCF analysis is based on the investor's real-world cash flow from dividends and their growth. Earnings is not a predictor of dividend flows because dividend policy is set by a company's board. Dividends can continue in times when earnings are poor, and dividends can be restricted if the company needs to retain earnings. It is a matter of company policy.

Q_119. **What other method did you use to develop a cost-of-equity?**

A_119. I used a combination of the CAPM model and the risk premium analysis.

Q_120. **What is the difference between your approach and Mr. Moul's**

A_120. Whereas Mr. Moul's model is

$$K_e = R_f + (R_m - R_f) * B_e \quad (1)$$

mine is

$$K_e = K_d + (R_m - R_f) * B_e \quad (2)$$

The formula's terms have the same meanings as already discussed:

$K_e$ is the cost-of-equity

$R_m$ is the market rate of return

$R_f$ is the risk free rate of return

$B_e$ is the beta for common stock

The only difference is that $K_d$ is the cost-of-debt and substitutes for $R_f$.

I arrived at my formula by using the following equation:

$$K_d = R_f + (R_m-R_f)*B_d \quad (3)$$

Where $B_d$ is the beta for debt capital

There is a market for debt capital just like there is a market for equity capital. I derived equation (2) by subtracting equation (3) from equation (1) and the result is equation (2):

$$K_e = K_d + (R_m-R_f)*(B_e-B_d) \quad (2).$$

I've assumed that that $B_d$ is zero, so that equation (2) reduces to equation (1) but $K_d$ substitutes for $R_f$.

The betas for my 12 water companies are listed in Schedule 15. The water companies' betas are low, averaging only .1 for all 12 companies. Given these figures for $B_e$ and 6% as the prevailing cost of long-term-debt, $K_d$, this analysis would not yield more than a 7.5% return, even if $R_m$ were above 15%.

Q_121. **Where would a 9.2% and 7.5% return be placed in your Schedule 2, page 1?**

A_121. A return of 9.2% would place the return in the top 35% of company returns. A return of 7.5%

would place the return in the top 42% of company returns.

Q_122. **In your opinion are those reasonable returns?**

A_122. Yes, in my opinion they are reasonable returns, performing well ahead of long-term-debt cost and over half of the companies in the past year.

Q_123. **In your opinion which return is appropriate for the double leverage situation?**

A_123. In my opinion my DCF result, 9.21%, is appropriate for keeping RWE's equity return higher than its debt cost for the foreseeable future.

Q_124. **In your opinion what is RWE's capital structure?**

A_124. In my opinion RWE has a capital structure where 11% is equity and the 89% remainder is debt.

Q_125. **In your opinion what is RWE's weighted cost-of-capital and debt?**

A_125. In my opinion RWE's weighted cost-of-capital equals a debt cost of 6% multiplied by a debt ratio of 89%, plus an equity cost of 9.21% multiplied by an equity ratio of 11%.

Q_126. **In your opinion are RWE's debt and equity ratios typical of the comparable companies you chose?**

A_126. No. RWE's ratios are not typical of the comparable companies.

Q_127. **What are the typical ratios of the comparable companies?**

A_127. The typical ratios are 56% equity and 44% debt and shown in Schedule 13.

**Q_128. What is your opinion regarding the use of RWE's debt and equity ratios in the final cost-of-capital?**

A_128. In my opinion the water companies' ratios of 56% equity and 44% debt should be used. This is consistent with the equity cost being derived from water supply companies.

**Q_129. What is the weighted cost-of-capital when the water companies' ratios are used?**

A_129. The weighted cost-of-capital is 7.8%.

**Q_130. What is your opinion regarding the application of 7.8% as the weighted cost-of-capital?**

A_130. In my opinion 7.8% is the weighted cost-of-capital to apply to RWE's wholly-owned subsidiary, TnAm, giving it an overall return of 7.46% shown in Schedule 16.

## *VII. Cost of Service*

**Q_131. In your opinion, how should the distribution of revenues resulting from a change in the Company's rates be allocated among the Company's revenue classes?**

A_131. In my opinion any change should be distributed equally among the revenue classes because the

Company has indicated in it responses to CAPD's discovery request 62 through 68 in the first set of requests, and in the Company's response to item 12 of the second set of requests, that the Company has no evidence of how each revenue class contributes to the need for capacity.

For example, regarding item 12 the Company responded: "The analysis used to develop the judgment for the class demand factors was not an arithmetic process or analysis. Rather, results of demand studies prepared for Pennsylvania-American Water Company, West-Virginia American Water Company and Philadelphia Suburban Water Company were considered along with observations of the Companies' service areas to determine the estimated class demand factors." However, in response to request 64 the Company said: "The contribution of each customer class to the peak day volume is not known." This lack of information is important since the Company has already stated that the public-fire-service issue is related to capacity. According to the Directors' conference transcript of January 11, 2000: "…it's not really the service of the hydrant, but it's the standby costs that are necessary to have fire service in the city [Tr. P. 22]." Standby costs are capacity costs. There is no reason to allocate capacity costs to revenue classes when their contribution to capacity requirements is unknown.

Q_132. **Does this conclude your testimony?**

A_132. Yes. It concludes my testimony at this time.

**BEFORE THE TENNESSEE REGULATORY AUTHORITY**
**AT NASHVILLE, TENNESSEE**

| | | |
|---|---|---|
| **IN RE: PETITION OF TENNESSEE-AMERICAN WATER COMPANY FOR APPROVAL OF CHANGE IN RATES AND CHARGES** | )<br>)<br>)<br>) | **DOCKET NO. 03-00118** |

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**AFFIDAVIT**

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**STATE OF TENNESSEE )**

**COUNTY OF DAVIDSON )**

Before me, the undersigned authority, duly commissioned and qualified in and for the State and County aforesaid, personally came and appeared, Steve N. Brown, being by me first duly sworn deposed and said that:

He is appearing as a witness on behalf of the Consumer Advocate and Protection Division of the Tennessee Attorney General's Office and if present before the Authority and duly sworn, his testimony is set forth in the annexed transcript consisting of ____ pages.

Steve N. Brown
STEVE N. BROWN

Sworn to and subscribed before me this 29th day of May, 2003.

Emily Knight
NOTARY PUBLIC

My commission expires: Oct. 25, 2003

# EXHIBIT CAPD-SB 1

Docket No. 03-00118
Exhibit CAPD-SB / 
Direct Testimony
Schedule 1
Page 1 of 4

# Consolidated Balance Sheet as at December 31, 2002

**Assets**
€ million

| | Note | 12/31/02 | 12/31/01 |
|---|---|---|---|
| **Non-current assets** | (11) | | |
| Intangible assets | | 18,518 | 8,502 |
| Property, plant and equipment | | 33,779 | 32,310 |
| Financial assets[1] | | 9,280 | 8,370 |
| | | **61,577** | **49,182** |
| **Current assets** | | | |
| Inventories | (12) | 3,505 | 3,643 |
| Accounts receivable and other assets | (13) | 16,371 | 15,244 |
| Marketable securities | (14) | 8,459 | 10,611 |
| Cash and cash equivalents | (15) | 2,143 | 3,842 |
| | | **30,478** | **33,340** |
| **Deferred taxes** | (16) | **7,593** | **8,399** |
| **Prepaid expenses** | | **625** | **528** |
| | | **100,273** | **91,449** |

**Equity and Liabilities**
€ million

| | Note | 12/31/02 | 12/31/01 |
|---|---|---|---|
| **Equity/Minority interest** | (17) | | |
| Group interest | | 6,429 | 7,730 |
| Minority interest | | 2,495 | 3,399 |
| | | **8,924** | **11,129** |
| **Provisions** | (18) | **40,187** | **40,383** |
| **Liabilities[2]** | (19) | **41,140** | **30,535** |
| **Deferred taxes** | (16) | **6,566** | **6,206** |
| **Deferred income** | (20) | **3,456** | **3,196** |
| | | **100,273** | **91,449** |

[1] Include €4,030 million in financial assets accounted for using the equity method (previous year: €4,614 million).
[2] Include €23,935 million in long-term interest-bearing liabilities (previous year: €11,408 million).

# Determination of RWE Equity and Debt Ratios: From Consolidated Balance Sheet



## CAPITALIZATION (EUROS)

| | | RATIOS |
|---|---|---|
| Equity: | | |
| Group Interest | 6,429 | |
| Minority Interest | 2,495 | |
| Total Equity | 8,924 | 10% |
| NonEquity: | | |
| Provisions: | 40,187 | |
| Liabilities: | 41,140 | |
| Total NonEquity | 81,327 | 90% |
| Total Capitalization | 90,251 | |

## CAPITALIZATION (USD)

| | | RATIOS |
|---|---|---|
| Equity: | | |
| Group Interest | 7,200 | |
| Minority Interest | 2,794 | |
| Total Equity | 9,995 | 10% |
| NonEquity: | | |
| Provisions: | 45,009 | |
| Liabilities: | 46,077 | |
| Total NonEquity | 91,086 | 90% |
| Total Capitalization | 101,081 | |

# Determination of RWE Long Term Debt Cost

Docket No. 03-00118
Exhibit CAPD-SB 1
Direct Testimony
Schedule 1
Page 3 of 4

## RWE: All Notes and Debt

| Amount | Currency | Interest Rate | Maturity Year | In USD | Weighted Cost | Converson Range March 13- May 23 | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | Max | Min | Average |
| 800 | GBP | 6.25 | 2030 | $1,280 | 0.441 | $1.6400 | $1.5600 | $1.6000 |
| 650 | GBP | 6.50 | 2021 | $1,040 | 0.373 | $1.6400 | $1.5600 | $1.6000 |
| 350 | GBP | 6.50 | 2021 | $560 | 0.201 | $1.6400 | $1.5600 | $1.6000 |
| 225 | GBP | 6.50 | 2021 | $360 | 0.129 | $1.6400 | $1.5600 | $1.6000 |
| 75 | GBP | 6.50 | 2021 | $120 | 0.043 | $1.6400 | $1.5600 | $1.6000 |
| 350 | NOK | 3.68 | 2017 | $50 | 0.010 | $0.1490 | $0.1350 | $0.1420 |
| 100 | EUR | 3.00 | 2017 | $112 | 0.019 | $1.1800 | $1.0600 | $1.1200 |
| 750 | GBP | 6.38 | 2013 | $1,200 | 0.422 | $1.6400 | $1.5600 | $1.6000 |
| 1750 | EUR | 6.13 | 2012 | $1,960 | 0.662 | $1.1800 | $1.0600 | $1.1200 |
| 1500 | EUR | 6.13 | 2012 | $1,680 | 0.567 | $1.1800 | $1.0600 | $1.1200 |
| 250 | EUR | 6.13 | 2012 | $280 | 0.095 | $1.1800 | $1.0600 | $1.1200 |
| 100 | EUR | 5.63 | 2009 | $112 | 0.035 | $1.1800 | $1.0600 | $1.1200 |
| 385 | HKD | 1.76 | 2009 | $49 | 0.005 | $0.1282 | $0.1282 | $0.1282 |
| 2000 | EUR | 5.38 | 2008 | $2,240 | 0.664 | $1.1800 | $1.0600 | $1.1200 |
| 2500 | EUR | 5.50 | 2007 | $2,800 | 0.849 | $1.1800 | $1.0600 | $1.1200 |
| 150 | EUR | 4.75 | 2007 | $168 | 0.044 | $1.1800 | $1.0600 | $1.1200 |
| 2000 | CZK | 3.39 | 2007 | $707 | 0.132 | $0.3720 | $0.3350 | $0.3535 |
| 5000 | JPY | 2.90 | 2007 | $42 | 0.007 | $0.0086 | $0.0083 | $0.0085 |
| 350 | GBP | 5.75 | 2006 | $560 | 0.177 | $1.6400 | $1.5600 | $1.6000 |
| 250 | GBP | 5.75 | 2006 | $400 | 0.127 | $1.6400 | $1.5600 | $1.6000 |
| 100 | GBP | 5.75 | 2006 | $160 | 0.051 | $1.6400 | $1.5600 | $1.6000 |
| 100 | GBP | 5.50 | 2005 | $160 | 0.048 | $1.6400 | $1.5600 | $1.6000 |
| 350 | EUR | 2.84 | 2005 | $392 | 0.061 | $1.1800 | $1.0600 | $1.1200 |
| 150 | EUR | 3.08 | 2004 | $168 | 0.029 | $1.1800 | $1.0600 | $1.1200 |
| 125 | EUR | 2.95 | 2004 | $140 | 0.023 | $1.1800 | $1.0600 | $1.1200 |
| 50 | EUR | 2.92 | 2004 | $56 | 0.009 | $1.1800 | $1.0600 | $1.1200 |
| 5000 | JPY | 1.52 | 2004 | $42 | 0.004 | $0.0086 | $0.0083 | $0.0085 |
| 75 | US | 3.72 | 2003 | $75 | 0.015 | $1.0000 | $1.0000 | $1.0000 |
| 550 | EUR | 3.08 | 2002 | $616 | 0.105 | $1.1800 | $1.0600 | $1.1200 |
| 250 | EUR | 3.08 | 2002 | $280 | 0.048 | $1.1800 | $1.0600 | $1.1200 |
| 200 | EUR | 3.08 | 2002 | $224 | 0.038 | $1.1800 | $1.0600 | $1.1200 |
| 100 | EUR | 3.08 | 2002 | $112 | 0.019 | $1.1800 | $1.0600 | $1.1200 |
| 26585 ← | Total Value of Notes | | | $18,146 | 5.447 | | | |
| 14555 ← | UnAccounted Liabililites | | | | | | | |

## RWE: Notes Maturing From 2005 to 2030

| Amount | Currency | Interest Rate | Maturity Year | In USD | Weighted Cost | Converson Range March 13- May 23 | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | Max | Min | Average |
| 800 | GBP | 6.25 | 2030 | $1,280 | 0.487 | $1.6400 | $1.5600 | $1.6000 |
| 650 | GBP | 6.50 | 2021 | $1,040 | 0.411 | $1.6400 | $1.5600 | $1.6000 |
| 350 | GBP | 6.50 | 2021 | $560 | 0.222 | $1.6400 | $1.5600 | $1.6000 |
| 225 | GBP | 6.50 | 2021 | $360 | 0.142 | $1.6400 | $1.5600 | $1.6000 |
| 75 | GBP | 6.50 | 2021 | $120 | 0.047 | $1.6400 | $1.5600 | $1.6000 |
| 350 | NOK | 3.68 | 2017 | $50 | 0.011 | $0.1490 | $0.1350 | $0.1420 |
| 100 | EUR | 3.00 | 2017 | $112 | 0.020 | $1.1800 | $1.0600 | $1.1200 |
| 750 | GBP | 6.38 | 2013 | $1,200 | 0.466 | $1.6400 | $1.5600 | $1.6000 |
| 1750 | EUR | 6.13 | 2012 | $1,960 | 0.731 | $1.1800 | $1.0600 | $1.1200 |
| 1500 | EUR | 6.13 | 2012 | $1,680 | 0.626 | $1.1800 | $1.0600 | $1.1200 |
| 250 | EUR | 6.13 | 2012 | $280 | 0.104 | $1.1800 | $1.0600 | $1.1200 |
| 100 | EUR | 5.63 | 2009 | $112 | 0.038 | $1.1800 | $1.0600 | $1.1200 |
| 385 | HKD | 1.76 | 2009 | $49 | 0.005 | $0.1282 | $0.1282 | $0.1282 |
| 2000 | EUR | 5.38 | 2008 | $2,240 | 0.733 | $1.1800 | $1.0600 | $1.1200 |
| 2500 | EUR | 5.50 | 2007 | $2,800 | 0.937 | $1.1800 | $1.0600 | $1.1200 |
| 150 | EUR | 4.75 | 2007 | $168 | 0.049 | $1.1800 | $1.0600 | $1.1200 |
| 2000 | CZK | 3.39 | 2007 | $707 | 0.146 | $0.3720 | $0.3350 | $0.3535 |
| 5000 | JPY | 2.90 | 2007 | $42 | 0.007 | $0.0086 | $0.0083 | $0.0085 |
| 350 | GBP | 5.75 | 2006 | $560 | 0.196 | $1.6400 | $1.5600 | $1.6000 |
| 250 | GBP | 5.75 | 2006 | $400 | 0.140 | $1.6400 | $1.5600 | $1.6000 |
| 100 | GBP | 5.75 | 2006 | $160 | 0.056 | $1.6400 | $1.5600 | $1.6000 |
| 100 | GBP | 5.50 | 2005 | $160 | 0.054 | $1.6400 | $1.5600 | $1.6000 |
| 350 | EUR | 2.84 | 2005 | $392 | 0.068 | $1.1800 | $1.0600 | $1.1200 |
| | | | | $16,432 | 5.697 | | | |

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# Balance Sheet as of December 31, 2002

| Assets<br>€ million | Note | 12/31/02 | 12/31/01 |
|---|---|---|---|
| **Non current assets** | (1) | | |
| Financial assets | | 32,498 | 22,652 |
| **Current assets** | | | |
| Accounts receivable and other assets | (2) | | |
| _Accounts receivable from affiliated companies | | 4,884 | 4,654 |
| _Accounts receivable from investments | | 43 | 209 |
| _Other assets | | 99 | 237 |
| Securities | (3) | 1,164 | 1,779 |
| Cash and cash equivalents | (4) | 176 | 1,005 |
| **Prepaid expenses** | (5) | **62** | **23** |
| | | **38,926** | **30,559** |

| Equity and Liabilities<br>€ million | Note | 12/31/02 | 12/31/01 |
|---|---|---|---|
| **Equity** | (6) | | |
| _Subscribed capital | | | |
| _Common shares | | 1,340 | 1,359 |
| _Preferred shares | | 100 | 100 |
| **(Contingent capital: € 51 million)** | | **1,440** | **1,459** |
| Capital reserve | | 1,288 | 1,269 |
| Retained earnings | | 829 | 614 |
| Distributable profit | | 619 | 562 |
| | | **4,176** | **3,904** |
| **Special reserves with an equity portion** | (7) | – | ◻ |
| **Provisions** | (8) | | |
| Provisions for pensions and similar obligations | | 5,550 | 5,375 |
| Tax provisions | | 1,939 | 1,501 |
| Other provisions | | 1,241 | 754 |
| | | **8,730** | **7,630** |
| **Liabilities** | (9) | | |
| Bonds | | 2,689 | 246 |
| Bank debt | | 263 | 1,482 |
| Trade accounts payable | | 11 | 5 |
| Accounts payable to affiliated companies | | 21,104 | 15,146 |
| Accounts payable to investments | | 7 | 850 |
| Other liabilities | | 1,892 | 1,282 |
| | | **25,966** | **19,011** |
| **Deferred income** | (10) | **54** | **14** |
| | | **38,926** | **30,559** |

◻ **Negligible amount.**

# EXHIBIT CAPD-SB 2

# Range of Return On Equity:
# 5600 Companies - Trailing 12 Months
# www. Morningstar.com

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Exhibit CAPD-SB 2
Direct Testimony
Schedule 2
Page 1 of 2

| Range of ROE Within Last 12 Months Percent | Number of Stocks In Range | Percent of Total | Cumulative Percent |
|---|---|---|---|
| Less than Zero* | 1947 | 35% | 35% |
| Zero to 1 | 100 | 2% | 36% |
| 1 TO 2 | 135 | 2% | 39% |
| 2 TO 3 | 128 | 2% | 41% |
| 3 TO 4 | 147 | 3% | 44% |
| 4 TO 5 | 163 | 3% | 47% |
| 5 TO 6 | 153 | 3% | 49% |
| 6 TO 7 | 189 | 3% | 53% |
| 7 TO 8 | 208 | 4% | 56% |
| 8 TO 9 | 190 | 3% | 60% |
| 9 TO 10 | 223 | 4% | 64% |
| 10 TO 11 | 213 | 4% | 68% |
| 11 TO 12 | 194 | 3% | 71% |
| 12 TO 13 | 200 | 4% | 75% |
| 13 TO 14 | 194 | 3% | 78% |
| 14 And Above** | 1238 | 22% | 100% |
| Total: | 5622 | | |

*Lowest: -97%
**Highest: 754%
Source: MorningStar - www.morningstar.com

# Companies With ROE Less Than 1%



| Stock Name | Sector | Industry | Market Cap ($ mil) |
|---|---|---|---|
| 1-800 Contacts | Consumer Svc | Specialty retail | 266 |
| 1-800-Attorney | Business Svc | Business / Online Services | 0 |
| 21st Century Insurance Group | Financial Svc | Insurance (Property) | 1189 |
| 3Com | Hardware | Data Networking | 1875 |
| 3TEC Energy | Energy | Oil & Gas | 286 |
| 724 Solutions | Business Svc | Business / Online Services | 13 |
| 724 Solutions | Business Svc | Business / Online Services | 10 |
| @Road | Business Svc | Business / Online Services | 379 |
| A.D.A.M. | Software | Entertainment / Education Media | 8 |
| AAR | Ind Mtrls | Aerospace & Defense | 127 |
| Abaxis | Healthcare | Diagnostics | 90 |
| Aber Diamond | Ind Mtrls | Mining (Nonferrous & Nonmetals | 873 |
| Abgenix | Healthcare | Biotechnology | 963 |
| Able Energy | Energy | Oil / Gas Products | 8 |
| Ablest | Business Svc | Employment | 13 |
| Abrams Industries | Business Svc | Engineering & Construction | 11 |
| Accelr8 Technology | Software | Systems & Security | 16 |
| ACE*Comm | Hardware | Wireline Equipment | 9 |
| Aclara Biosciences | Healthcare | Medical Equipment | 90 |
| Acorn Holding | Financial Svc | Finance | 1 |
| ACT Teleconferencing | Telecom | Telecommunication Services | 16 |
| ---------- | ---------- | ---------- | ---------- |
| Wynn Resorts | Consumer Svc | Gambling / Hotel Casinos | 1416 |
| X-Rite | Ind Mtrls | Manufacturing - Misc. | 168 |
| Xanser | Energy | Pipelines | 73 |
| Xata | Software | Business Applications | 25 |
| Xcel Energy | Utilities | Electric Utilities | 5785 |
| Xerox | Ind Mtrls | Office Equipment | 7914 |
| Xicor | Hardware | Semiconductors | 135 |
| XL Capital | Financial Svc | Reinsurance | 11131 |
| XM Satellite Radio Holdings | Media | Radio | 941 |
| Yellow | Business Svc | Land Transport | 725 |
| York International | Business Svc | Environmental Control | 962 |
| Zale | Goods | Jewelry / Accessories | 1113 |
| Zanett | Consumer Svc | Restaurants | 55 |
| Zapworld | Goods | Recreation | 13 |
| Zapworld | Goods | Recreation | 16 |
| Zarlink Semiconductor | Hardware | Wireline Equipment | 602 |
| Zi Corporation | Software | Development Tools | 82 |
| Zila | Healthcare | Drugs | 80 |
| Zoltek Companies | Ind Mtrls | Electric Equipment | 46 |
| Zomax | Goods | Photography & Imaging | 103 |
| Zonagen | Healthcare | Biotechnology | 19 |
| Zones | Consumer Svc | Specialty retail | 14 |
| Zoom Technologies | Hardware | Wireline Equipment | 8 |
| Zoran | Hardware | Semiconductors | 477 |
| Zygo | Hardware | Semiconductor Equipment | 116 |

# EXHIBIT CAPD-SB 3

Release h.15 04/21/2003

**Federal Reserve Data:**
**Long Term Debt**

Docket No. 03-00118__
Exhibit CAPD-SB_3_
Direct Testimony_____
Schedule 3 _______
Page 1 of 1________

| Interest Rate | Measured Every: | Debt Rating Or Term Length | Market Scope: | Federal Reseve's Description: | Federal Reserve's Source: |
|---|---|---|---|---|---|
| 7.80 | Twelve months ending December | BAA Rating | Private, all industries | Long-term or Capital Market | Moody's Investor Service |
| 6.95 | Month | BAA Rating | Private, all industries | Long-term or Capital Market | Moody's Investor Service |
| 6.93 | Business (Five days, Monday-Friday) | BAA Rating | Private, all industries | Long-term or Capital Market | Moody's Investor Service |
| 6.93 | Week ending Friday | BAA Rating | Private, all industries | Long-term or Capital Market | Moody's Investor Service |
| 6.54 | Twelve months ending December | Contract rate | Fixed-rate | 30-year conventional mortgages | Federal Home Loan Mortgage Corporation |
| 6.49 | Twelve months ending December | AAA Rating | Private, all industries | Long-term or Capital Market | Moody's Investor Service |
| 5.89 | Month | AAA Rating | Private, all industries | Long-term or Capital Market | Moody's Investor Service |
| 5.85 | Week ending Friday | Contract rate | Fixed-rate | 30-year conventional mortgages | Federal Home Loan Mortgage Corporation |
| 5.82 | Business (Five days, Monday-Friday) | AAA Rating | Private, all industries | Long-term or Capital Market | Moody's Investor Service |
| 5.81 | Week ending Friday | AAA Rating | Private, all industries | Long-term or Capital Market | Moody's Investor Service |
| 5.80 | Twelve months ending December | Thirty-year maturity | Interest rate swaps | Derivative securities | Federal Reserve System |
| 5.75 | Month | Contract rate | Fixed-rate | 30-year conventional mortgages | Federal Home Loan Mortgage Corporation |
| 5.43 | Twelve months ending December | Twenty-year | Constant maturity | Federal | Government securities |
| 5.43 | Twelve months ending December | Thirty-year | Constant maturity | Federal | Government securities |
| 5.41 | Twelve months ending December | Treasury long-term average (25 years and above) | Federal | Government securities | Long-term or capital market |
| 5.24 | Week ending Friday | Thirty-year maturity | Interest rate swaps | Derivative securities | Federal Reserve System |
| 5.23 | Business (Five days, Monday-Friday) | Thirty-year maturity | Interest rate swaps | Derivative securities | Federal Reserve System |
| 5.18 | Twelve months ending December | Ten-year maturity | Interest rate swaps | Derivative securities | Federal Reserve System |
| 5.10 | Month | Thirty-year maturity | Interest rate swaps | Derivative securities | Federal Reserve System |
| 5.05 | Business (Five days, Monday-Friday) | Treasury long-term average (25 years and above) | Federal | Government securities | Long-term or capital market |
| 5.04 | Week ending Friday | Treasury long-term average (25 years and above) | Federal | Government securities | Long-term or capital market |
| 4.96 | Business (Five days, Monday-Friday) | Twenty-year | Constant maturity | Federal | Government securities |
| 4.95 | Week ending Friday | Twenty-year | Constant maturity | Federal | Government securities |
| 4.90 | Month | Treasury long-term average (25 years and above) | Federal | Government securities | Long-term or capital market |
| 4.82 | Month | Twenty-year | Constant maturity | Federal | Government securities |
| 4.79 | Twelve months ending December | Seven-year maturity | Interest rate swaps | Derivative securities | Long-term or capital market |
| 4.76 | Month | 20-bond index | General obligation | State and Local | Government securities |
| 4.76 | Week ending Thursday | 20-bond index | General obligation | State and Local | Government securities |
| 4.61 | Twelve months ending December | Ten-year | Constant maturity | Federal | Government securities |
| 4.39 | Business (Five days, Monday-Friday) | Ten-year maturity | Interest rate swaps | Derivative securities | Long-term or capital market |
| 4.38 | Week ending Friday | Ten-year maturity | Interest rate swaps | Derivative securities | Long-term or capital market |
| 4.34 | Twelve months ending December | Five-year maturity | Interest rate swaps | Derivative securities | Long-term or capital market |
| 4.30 | Twelve months ending December | Seven-year | Constant maturity | Federal | Government securities |
| 4.22 | Month | Ten-year maturity | Interest rate swaps | Derivative securities | Long-term or capital market |
| 4.02 | Twelve months ending December | Four-year maturity | Interest rate swaps | Derivative securities | Long-term or capital market |
| 4.00 | Business (Five days, Monday-Friday) | Ten-year | Constant maturity | Federal | Government securities |
| 3.97 | Week ending Friday | Ten-year | Constant maturity | Federal | Government securities |
| 3.86 | Business (Five days, Monday-Friday) | Seven-year maturity | Interest rate swaps | Derivative securities | Long-term or capital market |
| 3.85 | Week ending Friday | Seven-year maturity | Interest rate swaps | Derivative securities | Long-term or capital market |
| 3.82 | Twelve months ending December | Five-year | Constant maturity | Federal | Government securities |
| 3.81 | Month | Ten-year | Constant maturity | Federal | Government securities |
| 3.70 | Month | Seven-year maturity | Interest rate swaps | Derivative securities | Long-term or capital market |
| 3.61 | Twelve months ending December | Three-year maturity | Interest rate swaps | Derivative securities | Long-term or capital market |
| 3.49 | Business (Five days, Monday-Friday) | Seven-year | Constant maturity | Federal | Government securities |
| 3.48 | Week ending Friday | Seven-year | Constant maturity | Federal | Government securities |
| 3.34 | Month | Seven-year | Constant maturity | Federal | Government securities |
| 3.31 | Business (Five days, Monday-Friday) | Five-year maturity | Interest rate swaps | Derivative securities | Long-term or capital market |
| 3.30 | Week ending Friday | Five-year maturity | Interest rate swaps | Derivative securities | Long-term or capital market |
| 3.17 | Month | Five-year maturity | Interest rate swaps | Derivative securities | Long-term or capital market |
| 3.10 | Twelve months ending December | Three-year | Constant maturity | Federal | Government securities |
| 3.02 | Twelve months ending December | Two-year maturity | Interest rate swaps | Derivative securities | Long-term or capital market |
| 2.95 | Business (Five days, Monday-Friday) | Five-year | Constant maturity | Federal | Government securities |
| 2.93 | Business (Five days, Monday-Friday) | Four-year maturity | Interest rate swaps | Derivative securities | Long-term or capital market |
| 2.92 | Week ending Friday | Four-year maturity | Interest rate swaps | Derivative securities | Long-term or capital market |
| 2.92 | Week ending Friday | Five-year | Constant maturity | Federal | Government securities |
| 2.80 | Month | Four-year maturity | Interest rate swaps | Derivative securities | Long-term or capital market |
| 2.78 | Month | Five-year | Constant maturity | Federal | Government securities |
| 2.64 | Twelve months ending December | Two-year | Constant maturity | Federal | Government securities |
| 2.47 | Business (Five days, Monday-Friday) | Three-year maturity | Interest rate swaps | Derivative securities | Long-term or capital market |
| 2.44 | Week ending Friday | Three-year maturity | Interest rate swaps | Derivative securities | Long-term or capital market |
| 2.36 | Month | Three-year maturity | Interest rate swaps | Derivative securities | Long-term or capital market |

# EXHIBIT CAPD-SB 4

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oney
SECTION B
lay 22, 2003

Docket No. 03-00118
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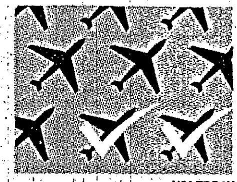
Direct Testimony___
Schedule 4______
Page 1 of 1____

## Business travel

By Alison Maxwell


USA TODAY

**Auction action:** Members of American's and Midwest's frequent-flier programs and Hilton Hotels' frequent-guest program can cash in their points for merchandise on eBay. EBay partnered directly with Hilton to award Anything Points to members of its HHonors program. American AAdvantage miles and Midwest Miles can be converted into Anything Points through the online customer loyalty program clearinghouse Points.com. The exchange rate varies. It takes 1 million Hilton HHonors points to equal $100 worth of eBay Anything Points. That compares with 13,889 American AAdvantage or 20,202 Midwest Miles points.

► More travel news at travel.usatoday.com



### ...ew July solvency

...co said it expects to emerge from ...ection in July. The U.S. Bankruptcy ...to June 6 a deadline for creditors to ...nded reorganization plan. Conseco ...n in December after years of aggres- ...uding the 1998 takeover of mobile ...en Tree Financial that left it with too ...ad loans. Conseco will become an in- ...mpany, selling Conseco Finance to ...nd CFN Investment Holdings.

### ...ne imports set records

...ted record amounts of oil and gaso- ...t inventories remained low, the U.S. ...ent and the American Petroleum In- ...p reported Wednesday. The Energy ...wed a 0.2% rise in crude oil inven- ...illion barrels, last week vs. the previ- ...sing a different method, reported a ...82.6 million. At 270 million and less, ...n occur. The tight inventories plus ...r Mideast supplies pushed the price ...ermediate crude for July delivery to ...p 62 cents. Average price for a gallon ...lar in the USA is $1.497, AAA report-

### ...d to settle with doctors

...ed to announce today a class-action ...nearly all the doctors in the USA over ...care giant unfairly cut reimburse- ...he *Wall Street Journal* reported on its ...esday. Aetna also agreed to settle ...oup of about 600,000 physicians that ...their recommendations to patients ...der terms of the deal, Aetna prom- ...bill-payment systems in ways that ...will result in fewer cuts to reim- ...company also will adopt what doc- ...more patient-friendly definition of ...ty." The settlement is estimated to ...470 million.

### ...ders reject stock option plan

...ers Wednesday narrowly rejected a ...ensing employee stock options. Intel ...mpaigned hard against the propos- ...rly 48% of shareholder votes. Some ...reating stock options as a standard ...leads to more accurate accounting, ...difficult to accurately calculate the ...ns. If Intel expensed options, its first- ...would have dropped by about a third.

### ...soars

...Japan's third-largest automaker, re- ...ge in operating profit last business ...y strong U.S. sales and a weak yen. ...profit at Nissan, owned 44.4% by ...was $6.3 billion, with net profit up ...

### ...iconductor cuts jobs

...ional Semiconductor said Wednes- ...cut about 340 jobs and close a cell- ...o trim costs. The company says the ...lt in a $25 million to $30 million ...ent quarter. But it stood by its reve- ...420 million to $432 million for the

### ...o sales are sluggish

...consultant J.D. Power and Associates ...how sluggish new vehicle sales the ...pparently because consumers want ...unts. Sales the second week of the ...er than they were the first week.

...aff and wire reports

...ess & financial news as it happens

# Greenspan hints at more rate cuts

## Your dollar in Europe is now worth . . .

### And that's not necessarily bad

By Sue Kirchhoff, Noelle Knox and Paul Wiseman
USA TODAY

The mystery, economists say, is not why the dollar is falling, but why it took so long to decline — and how low it will go.

**Cover story**

The combination of a weak U.S. economy and stock market, ballooning budget and trade deficits, low interest rates and a White House that is stepping away from nearly decade-old "strong dollar" rhetoric, has spooked investors, pushing the greenback down about 19% against a basket of currencies since its February 2002 peak; and about 25% against the euro alone.

The decline is helping U.S. businesses, from Eastman Kodak to farms, by making their products cheaper overseas. But the drop makes foreign goods more expensive in the huge U.S. market, hurting already weak economies in Europe and Japan where such companies as Volkswagen and Canon are reporting lower sales. The weaker dollar also means U.S. consumers may face higher prices for imported goods like French wine or cheese — assuming they end their Iraq-inspired boycott.

**Pocket change:** The dollar has fallen in value to 86 cents in Europe.

Likewise, European tourists should find a U.S. vacation an unexpected bargain.

"The dollar has been too high in the sense of making (U.S.) firms uncompetitive in the international marketplaces," says Catherine Mann, a senior fellow at the Institute for International Economics. "The negative side . . . is it makes the products that consumers buy more expensive."

While the dollar's fall is not unexpected, neither is it wholly predictable. The ultimate economic impact depends on how sustained the decline is and how governments and businesses respond.

Philippe Lemaitre is president and CEO of

Please see COVER STORY next page ►

## Deflation's 'minor' threat may call for action by Fed

By Barbara Hagenbaugh
USA TODAY

WASHINGTON — Chances the USA will slide in... dangerous deflationary spiral are "minor," but ... venting such a price decline may warrant additi... interest rate cuts, Federal Reserve Chairman ... Greenspan said Wednesday.

The Fed chief gave an overall tepid outlook for the economy, warning that business caution may continue to act as a drag on the economy.


Agence France-Pre...
**Alan Greenspan**

► Uncertainty plagues businesses, 3B

Greenspan stressed deflation — a consistent, broad decline in prices over a length of time — was not "an imminent, dangerous threat" to the USA. However, the threat, "though minor, is sufficiently large that it does require very close scrutiny and maybe, maybe, action on the part of the central bank," he told lawmakers on the Joint Economic Committee.

"We believe that because in the current environment the cost of taking out insurance against deflation is so lo... that we can aggressively attack some of t... underlying forces," Greenspan said, suggesti... the Fed sees little danger to cutting inter... rates further.

The chairman's comments were his fi... since Fed officials raised the issue of deflation ... ter their May 6 meeting, when they left the targ... for short-term interest rates at 1.25%, the lowest in ... years. Greenspan on Wednesday emphasized the F... had plenty of tools in its arsenal despite the low rat...

With attention on deflation, Fed officials will ke... rates where they are, or cut them further, until th... see clear evidence the economy is picking ... enough speed to spark price increases, economi... say. In a report by the National Association for Bu... ness Economics released Wednesday, only five out ... the 37 members surveyed expected the Fed to ra... rates later this year. Most expected no changes in ... terest rates for the rest of 2003.

The Fed next meets June 24-25.

Greenspan said deflation could have a "very su... stantial" and "quite negative" impact on the U.S. eco... omy. Deflation can lead to lower spending as consu... ers put off buying in anticipation of further pr... declines and to lower profits as firms are unable ... raise — or even maintain — prices. That can lead ... wage or job cuts. Less income makes it harder ... companies and consumers to pay off debts.

Inflation in the USA is currently running at abou... 1% pace, the slowest in four decades.

Greenspan gave a lukewarm economic outlook ... the economy as a whole, saying expectations fo... pickup in activity this year were "not unreasonal... though the timing and extent of that improvem... continue to be uncertain."

Low interest rates, a healthy housing market a... decreased energy costs should help foster grow... but caution on the part of CEOs could still slow t...

# EXHIBIT CAPD-SB 5

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Direct Testimony
Schedule 5
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# CAPD Comparable Companies Are In The Water Supply Business

# DETERMINATION OF COMPARABLE COMPANIES

## Securities and Exchange Commission Filings By Companies for Standard Industrial Code 4941 - Water Supply

| Companies | Ever Publicly Traded In American Markets? | Publicly Traded In American Markets After Rate Case Filed? | If Traded After Rate Case Filing: Company Name (Stock Exchange:Symbol) | If Traded: Used In CAPD's Analysis? | CAPD's Reason For Not Using: | If Traded: Used In Company's Analysis? | Company's Reason For Not Using: |
|---|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| AMERICAN STATES WATER CO | YES | YES | Amer St Water (NYSE:AWR) | YES | | YES | |
| AMERICAN WATER CAPITAL CORP | NO | NO | NA | | | | |
| AMERICAN WATER WORKS CO INC | YES | NO | NA | | | | |
| AQUARION CO | YES | NO | NA | | | | |
| ARTESIAN RESOURCES CORP | YES | YES | Artesian Resources (NASDAQ:ARTNA) | YES | | NO | Not in Value Line |
| AZURIX CORP | YES | NO | NA | | | | |
| BIRMINGHAM UTILITIES INC | YES | YES | Birmingham Utilities (AMEX:BIW) | YES | | NO | Not in Value Line |
| BIW LTD | NO | NO | NA | | | | |
| CALIFORNIA WATER SERVICE CO | YES | YES | California Water Svc (NYSE:CWT) | YES | | YES | |
| CALIFORNIA WATER SERVICE GROUP | YES | YES | NA | | | | |
| CAYMAN WATER CO LTD | YES | NO | NA | | | | |
| SANEAMENTO BASICO DO ESTADO DE SAO PAULO-SABESP | NO | NO | NA | | | | |
| SANEAMENTO DO PARANA SANEPAR | NO | NO | NA | | | | |
| CONNECTICUT WATER SERVICE INC / CT | YES | YES | Connecticut Water Service, Inc. (NASDAQ:CTWS) | YES | | YES | |
| CONSOLIDATED WATER CO LTD | YES | YES | Consolidated Water Co. Ltd. (NASDAQ:CWCO) * | YES | | NO | NONE |
| CONSUMERS WATER CO | YES | NO | NA | | | | |
| DOMINGUEZ SERVICES CORP | YES | NO | NA | | | | |
| ELIZABETHTOWN WATER CO /NJ/ | YES | NO | NA | | | | |
| ETOWN CORP | YES | NO | NA | | | | |
| GENTRY RESOURCES INC | ?? | NO | NA | | | | |
| HOLIDAY GULF HOMES INC | ?? | NO | NA | | | | |
| IWC RESOURCES CORP | ?? | NO | NA | | | | |
| MIDDLESEX WATER CO | YES | YES | Middlesex Water Company (NASDAQ:MSEX) | YES | | YES | |
| PENNICHUCK CORP | YES | YES | Pennichuck Corporation (NASDAQ:PNNW) | YES | | NO | Merger Target |
| PHILADELPHIA SUBURBAN CORP | YES | YES | Phila Suburban Cp (NYSE:PSC) | YES | | YES | |
| SJW CORP | YES | YES | S J W Cp (AMEX:SJW) | YES | | YES | |
| SOUTHERN CALIFORNIA WATER CO | YES | NO | NA | | | | |
| SOUTHWEST WATER CO | YES | YES | Southwest Water Company (NASDAQ:SWWC) | YES | | NO | NONE |
| UNITED WATER RESOURCES INC | YES | NO | NA | | | | |
| VIVENDI UNIVERSAL | YES | YES | Vivendi ADR (NYSE:V) | NO | Conglomerate | NO | NONE |
| YORK WATER CO | YES | YES | York Water Company (NASDAQ:YORW) | YES | | NO | Not in Value Line |

# EXHIBIT CAPD-SB 6

American Water Works Company, Inc. Announces Termination of the SJW Corp. Merger Agreement

American Water Works Company Inc.
Voorhees, NJ, March 1, 2001

American Water Works Company, Inc. Announces Termination of the SJW Corp. Merger Agreement

American Water Works Company, Inc., (NYSE:AWK) today announced that it and SJW Corp. (AMEX:SJW) mutually agreed to terminate the merger agreement between them effective immediately.

American Water Works previously announced its intention to terminate that agreement when it expired on April 28, 2001 in light of the additional delays outlined in a procedural scheduling order issued by the California Public Utilities Commission (CPUC) on February 20, 2001. "Today's action by both companies to terminate that agreement now is, given the circumstances we confront, in the best interests of all concerned," noted Mr. J. James Barr, the president and chief executive officer of American Water Works.

"All of us who have worked so hard to accomplish the merger are very disappointed," Mr. Barr said. "But the continued uncertainty surrounding the regulatory proceeding in this matter left us no alternative."

American Water Works Company is the largest and most geographically diverse investor-owned water service provider in the nation. Its subsidiaries serve a population of approximately 10 million customers in 23 states.

This release may contain certain forward looking statements, including, without limitation, statements relating to the Company's plans, strategies, objectives, expectations, intentions and adequacy of resources, which are made pursuant to the safe harbor provisions of the U.S. Private Securities Litigation Reform Act of 1995. These forward looking statements involve known and unknown risks, uncertainties, and other factors which may cause the actual results, performance or achievements of the Company to be materially different from any future results, performance or achievements expressed or implied by such forward looking statements. These factors include, among others, the following: the success of pending applications for rate increases, inability to obtain, or to meet conditions imposed for, regulatory approval of pending acquisitions; general economic and business conditions; competition; success of operating initiatives, advertising and promotional efforts; existence of adverse publicity or litigation; changes in business strategy or plans; quality of management; availability, terms and development of capital; business abilities and judgement of personnel; changes in, or the failure to comply with governmental regulations, particularly those affecting the environment and water quality; and other factors described in the filings of the Company with the SEC. The Company undertakes no obligation to publicly update or revise any forward looking statement, whether as a result of new information, future events or otherwise.

American Water Works
Company, Inc.

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Direct Testimony
Schedule 6
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1025 Laurel Oak Road
P.O. Box 1770
Voorhees, NJ 08043
(856) 346-8200AWK is the trading symbol of American Water Works Company, Inc., on the New York Stock Exchange, on which the common stock, 5% preferred and 5% preference stock of the Company are traded.

# EXHIBIT CAPD-SB 7

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Exhibit CAPD-SB 7
Direct Testimony_____
Schedule 7 _______
Page 1 of 1_________

# Filings of
# Beneficial Ownership Changes

## Gas Companies Annual filings of SEC Forms 4, 5, 13d, and 13g by Year

| | 2003 | 2002 | 2001 | 2000 |
|---|---|---|---|---|
| AGL RESOURCES INC | 33 | 10 | 3 | 1 |
| ATLANTA GAS LIGHT CO | | | | |
| ATMOS ENERGY CORP | 14 | 13 | 7 | |
| ENERGEN CORP | 63 | 53 | 14 | 1 |
| KEYSPAN CORP | 74 | 1 | 4 | 2 |
| KEYSPAN ENERGY CORP /NY/ | | | | 1 |
| N J RESOURCES (NYSE:NJR) | | | | |
| NICOR INC | 25 | 5 | | |
| PEOPLES ENERGY CORP | | | | |
| PIEDMONT NATURAL GAS CO INC | 1 | | | |
| SOUTH JERSEY INDUSTRIES INC | 12 | 17 | 1 | 1 |
| WGL HOLDINGS INC | 1 | 1 | | |

# EXHIBIT CAPD-SB 8

# Value Line Betas
# Are Not Standard Practice

## BETAS AND THEIR SOURCES

| Companies Used In Tennessee American's Analysis | Sources on the Internet | | | | | |
|---|---|---|---|---|---|---|
| Company (Stock Exchange: SYMBOL) | Yahoo | Lycos | Thomson | Standard & Poors | CAPD Calulation | Value Line |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Amer St Water (NYSE:AWR) | 0.02 | 0.02 | 0.42 | 0.02 | 0.14 | 0.65 |
| California Water Svc (NYSE:CWT) | 0.01 | 0.01 | Not Found | 0.03 | -0.01 | 0.60 |
| Connecticut Water Service, Inc. (NASDAQ:CTWS) | -0.07 | -0.07 | -0.36 | -0.07 | -0.11 | 0.45 |
| Middlesex Water Company (NASDAQ:MSEX) | 0.26 | 0.26 | 0.25 | 0.24 | 0.25 | 0.45 |
| Phila Suburban Cp (NYSE:PSC) | -0.28 | -0.28 | 0.31 | -0.29 | -0.35 | 0.60 |
| S J W Cp (AMEX:SJW) | 0.55 | 0.55 | 0.33 | 0.56 | 0.54 | 0.55 |
| Atlanta Gas Light (NYSE:ATG) | 0.25 | 0.25 | 0.43 | 0.25 | 0.24 | 0.70 |
| Atmos Energy Cp (NYSE:ATO) | -0.01 | Not Found | 0.52 | -0.01 | 0.00 | 0.60 |
| Energen Cp (NYSE:EGN) | 0.26 | 0.26 | 0.48 | 0.24 | 0.27 | 0.75 |
| Keyspan Corp (NYSE:KSE) | Not Found | Not Found | 0.43 | 0.22 | 0.18 | 0.65 |
| N J Resources Cp (NYSE:NJR) | 0.09 | 0.09 | 0.31 | 0.09 | 0.07 | 0.65 |
| Nicor Inc (NYSE:GAS) | 0.22 | 0.22 | 0.60 | 0.22 | 0.26 | 0.80 |
| Peoples Energy Cp (NYSE:PGL) | -0.01 | -0.01 | 0.36 | -0.03 | -0.02 | 0.75 |
| Piedmont Nat Gas Co (NYSE:PNY) | 0.10 | 0.10 | 0.40 | 0.11 | 0.09 | 0.65 |
| South Jersey Ind (NYSE:SJI) | 0.14 | Not Found | 0.16 | 0.13 | 0.15 | 0.50 |
| WGL Holdings Inc (NYSE:WGL) | 0.14 | 0.14 | 0.43 | 0.14 | 0.13 | 0.65 |
| American Water Works (NYSE:AWK) | Not Found | Not Found | Not Found | Not Found | | |

# EXHIBIT CAPD-SB 9

# The Value Line Mask

## Value Line Beta Is
## .35 + Two-Thirds of Calculated Beta

Calculated Values 'Masked' by Value Line Procedures

| Calculated Beta | Value Line Beta |
|---|---|
| 0.00 | 0.35 |
| 0.10 | 0.42 |
| 0.20 | 0.48 |
| 0.30 | 0.55 |
| 0.40 | 0.62 |
| 0.50 | 0.68 |
| 0.60 | 0.75 |
| 0.70 | 0.82 |
| 0.80 | 0.88 |
| 0.90 | 0.95 |
| 1.00 | 1.02 |

# EXHIBIT CAPD-SB 10

# AWW Price Unaffected by the Market

| Date: | AWW Closing Price | AWW Percent Change | S&P 500 Index | S & P Index Percent Change |
|---|---|---|---|---|
| 12/31/2001 | 41.75 | | 1148.08 | |
| 1/31/2002 | 43.05 | 3.11% | 1130.20 | -1.56% |
| 2/28/2002 | 43.11 | 0.1% | 1106.73 | -2.08% |
| 3/28/2002 | 43.8 | 1.6% | 1147.39 | 3.67% |
| 4/30/2002 | 43.7 | -0.2% | 1076.75 | -6.16% |
| 5/31/2002 | 43.51 | -0.4% | 1067.13 | -0.89% |
| 6/28/2002 | 43.21 | -0.7% | 989.82 | -7.24% |
| 7/31/2002 | 43.65 | 1.0% | 910.60 | -8.00% |
| 8/30/2002 | 44.47 | 1.9% | 915.70 | 0.56% |
| 9/30/2002 | 44.66 | 0.4% | 815.28 | -10.97% |
| 10/31/2002 | 44.78 | 0.3% | 885.76 | 8.64% |
| 11/29/2002 | 44.37 | -0.9% | 936.31 | 5.71% |
| 12/31/2002 | 45.48 | 2.5% | 879.82 | -6.03% |
| 1/9/2003 | 46.03 | 1.2% | 927.57 | 5.43% |
| Total Change | | 10.3% | | -17.9% |

Calculated Beta: ZERO

Value Line Beta: .35

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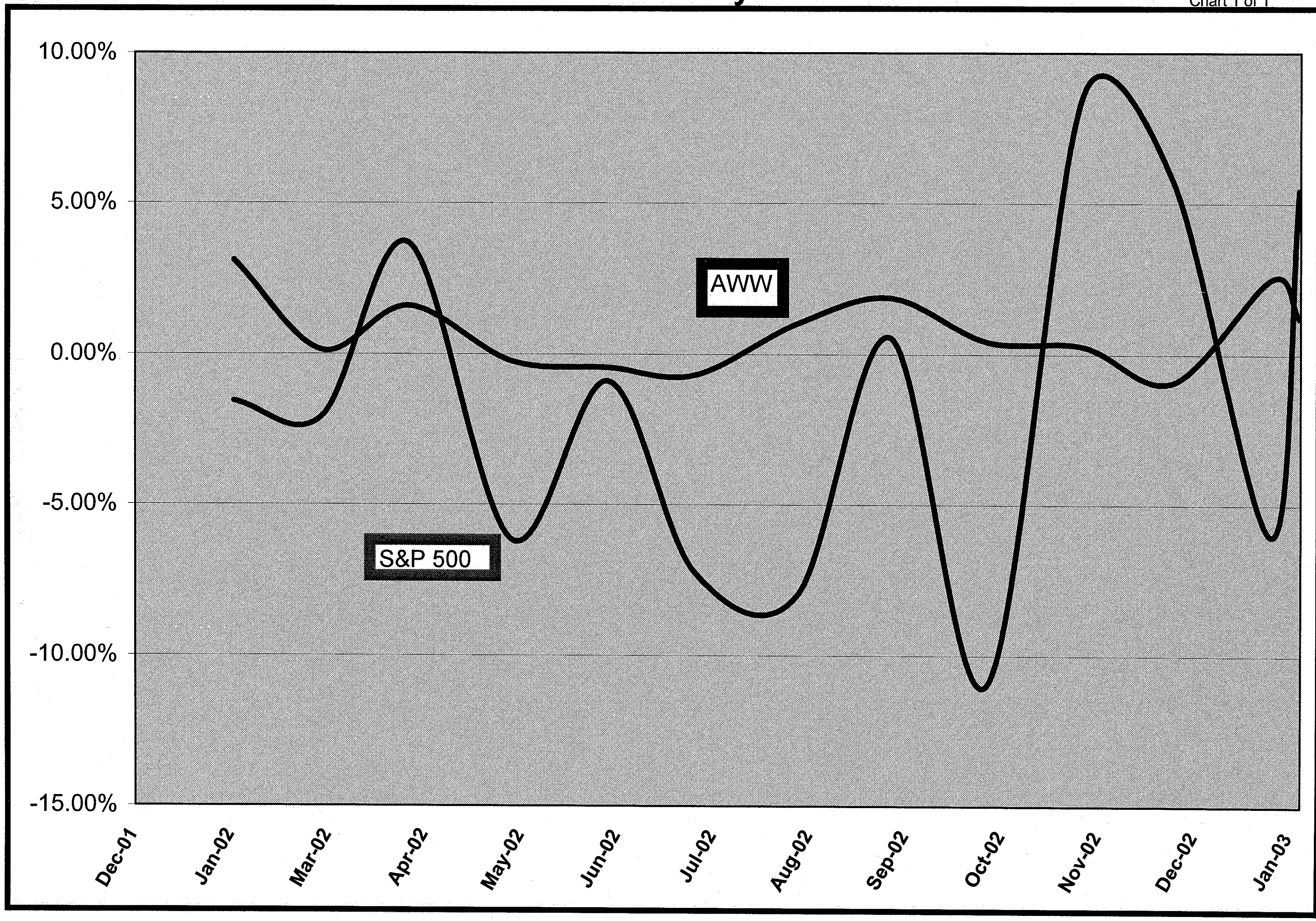
Exhibit CAPD-SB 10
Direct Testimony
Chart 1 of 1

# AWW's Price Changes Very Little While Market Gyrates



# EXHIBIT CAPD-SB 11

# SHORTENING TIME PERIODS
# MAY GIVE THE PERCEPTION OF HIGHER RETURNS TO EQUITY

| YEAR (1) | Large Company Total Return Index For Year (2) | Year-To-Year Percentage Change In Large Company Total Return Index (3) |
|---|---|---|
| 1925 | $\boxed{1.00}$ | |
| 1926 | 1.12 | 11.60% |
| 1927 | 1.54 | 37.54% |
| 1928 | 2.20 | 43.58% |
| 1929 | 2.02 | -8.44% |
| 1931 | 0.86 | -43.34% |
| 1932 | 0.79 | -8.15% |
| 1933 | 1.21 | 53.87% |
| .......... | .......... | .......... |
| .......... | .......... | .......... |
| .......... | .......... | .......... |
| 1979 | 106.11 | 18.44% |
| 1980 | 140.51 | 32.42% |
| 1981 | 133.62 | -4.91% |
| 1982 | 162.22 | 21.41% |
| 1983 | 198.74 | 22.51% |
| 1984 | 211.20 | 6.27% |
| 1985 | 279.11 | 32.16% |
| 1986 | 330.67 | 18.47% |
| 1987 | 347.97 | 5.23% |
| 1988 | 406.46 | 16.81% |
| 1989 | 534.46 | 31.49% |
| 1990 | 517.50 | -3.17% |
| 1991 | 675.59 | 30.55% |
| 1992 | 727.41 | 7.67% |
| 1993 | 800.08 | 9.99% |
| 1994 | 810.54 | 1.31% |
| 1995 | 1113.92 | 37.43% |
| 1996 | 1370.95 | 23.07% |
| 1997 | 1828.37 | 33.37% |
| 1998 | 2350.89 | 28.58% |
| 1999 | 2845.63 | 21.04% |
| 2000 | 2586.52 | -9.11% |
| 2001 | 2279.13 | -11.88% |
| 2002 | 1775.34 | -22.10% |
| RETURN → | 10.20% | 12.20% BIASED |

**BIAS IS 2%**

| YEAR | Large Company Total Return Index For Year | Year-To-Year Percentage Change In Large Company Total Return Index |
|---|---|---|
| 1979 | 106.11 | 18.44% |
| 1980 | 140.51 | 32.42% |
| 1981 | 133.62 | -4.91% |
| 1982 | 162.22 | 21.41% |
| 1983 | 198.74 | 22.51% |
| 1984 | 211.20 | 6.27% |
| 1985 | 279.11 | 32.16% |
| 1986 | 330.67 | 18.47% |
| 1987 | 347.97 | 5.23% |
| 1988 | 406.46 | 16.81% |
| 1989 | 534.46 | 31.49% |
| 1990 | 517.50 | -3.17% |
| 1991 | 675.59 | 30.55% |
| 1992 | 727.41 | 7.67% |
| 1993 | 800.08 | 9.99% |
| 1994 | 810.54 | 1.31% |
| 1995 | 1113.92 | 37.43% |
| 1996 | 1370.95 | 23.07% |
| 1997 | 1828.37 | 33.37% |
| 1998 | $\boxed{2350.89}$ | 28.58% |
| 1999 | 2845.63 | 21.04% |
| 2000 | 2586.52 | -9.11% |
| 2001 | 2279.13 | -11.88% |
| 2002 | 1775.34 | -22.10% |
| ACTUAL RETURN → | 11.66% | 14.46% |

**BIAS IS 2.8%**

BIASED

*Source: Ibbotson Associates 2003 Yearbook:
Column (2) - From Table B-1
Column (3) - From Table A-1

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July 2002

Report for the Australian Competition and Consumer Commission

# Empirical Evidence on Proxy Beta Values for Regulated Gas Transmission Activities

Final Report

The Allen Consulting Group

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In a recent draft decision, the Victorian Essential Servi has referred to recent research that may shed some li default premium embedded in the yields on corporate bonds, and thus provide more insight into the likely magnitude of the debt beta.[43] Elton *et al.* have provided estimates of the breakdown of the yield on US corporate bonds of different credit ratings and terms into the default premium, risk premium and tax premium (the last factor has less significance for Australia) for debt of different terms and credit ratings.[44] The ESC interpreted this research as implying that a default premium of 0.28 percentage points would apply for debt with a ten year term and BBB+ credit rating. If liquidity premia were negligible, then this would imply an expected return to debt of 0.92 per cent (using the assumptions noted above), and a debt beta of approximately 0.15. However, as we do not know the size of any potential liquidity premium, this remains an upper limit of the debt beta.

Accordingly, for the purposes of this report, a range for the debt beta of 0 to 0.15 will be used.

### *Should the Concern be with Asset Betas or Equity Betas?*

Where asset betas are estimates for a group of comparable entities, and (for example) the average asset beta for the group is then re-levered for an assumed financing structure to be used as a proxy beta, care needs to be taken to adopt consistent assumptions between the de-levering and re-levering stages. There may be sound reasons for using a different levering methodology for the different stages in some instances – for example, to take account of differences in taxation regimes across countries. However, it is possible to misinterpret empirical data if inconsistent levering/de-levering approaches are used in the different stages without sound reasons or inadvertently (with different assumptions about the debt beta particularly important).[45]

**In order to avoid the potential for misinterpretation of empirical data, this report will focus on the proxy equity beta that is consistent with the standard benchmark gearing assumption of 60 per cent debt-to-assets.**

[43] Essential Services Commission (Victoria), 2002, Review of Gas Access Arrangements: Draft Decision, pp.231-233.

[44] Elton, E., M. Gruber, D. Agrawal, C. Mann, 2001, 'Explaining the Rate Spread on Corporate Bonds', *Journal of Finance*, Vol. LVI, No. 1, pp.247-277.

[45] This point was illustrated by the former Office of the Regulator-General. It showed that the proxy equity beta (for a gearing assumption of 60 per cent debt-to-assets) derived from a hypothetical but plausible set of empirical observations could vary from 1.0 to 1.6 if inconsistent assumptions about debt betas were made between the de-levering and re-levering stages. The resultant effect on the estimated cost of capital is substantial: Office of the Regulator-General, 2000, Electricity Distribution Price Determination 2001-2005, Volume 1, Statement of Purpose and Reasons, p.268.

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Equity betas can only be compared for consistent a which is why it is common practice to derive asset gearing as a confounding factor). However, as all Australian energy regulators have accepted an assumption of 60 per cent debt-to-assets as the standard gearing benchmark, the equity betas assumed by various energy regulators are directly comparable.[46] In contrast, however, different regulators' assumed asset betas *may not be comparable* if those betas reflect different de-levering/re-levering approaches (and, in particular, different assumptions about the magnitude of debt beta). Moreover, as the CAPM is only being used to estimate the cost of capital for the equity financed portion of regulated Australian gas transmission activities, it is the equity beta – not the asset beta – that is the relevant input into the cost of capital estimation.

### 3.4 Pooling of Beta Estimates

As discussed in section 2.5, even where a beta estimate is available for a particular stock, it is common practice to 'pool' that beta estimate with those of a set of comparable entities in order to improve the precision of the beta estimate. Where a beta estimate for a particular activity is not available (for example, because the entity undertaking the activity is not listed on a stock exchange), the use of comparable entities to derive a proxy beta is made necessary.

The most common method of 'pooling' various beta estimates is to focus on one of the measures of central tendency for the beta estimates for the set of comparable entities, with the simple average of the beta estimates a common measure. The standard error of the average beta across a proxy group will be lower than the average standard error of the individual betas, with the precision of the average of the proxy group rising (ie standard error falling) with the number of firms added to the proxy group.[47] The simple average of the set of proxy betas will be used in this report as the principal means of pooling betas.

One issue that arises when using an average (or even other measured of central tendency, such as the median) is whether beta estimates that are negative should be excluded from consideration. There are two potential responses to this finding.

- A negative beta could be interpreted as outside of the reasonable bounds for a beta for regulated gas transmission activities (or any other utility activity), and thus excluded to minimise the likelihood that extreme observations could bias the beta estimate.
- Alternatively, where the expected beta is low, and the standard error is high, a certain proportion of negative betas should be expected. Moreover, for every point estimate of an equity beta that is at the lower-end of a confidence interval, there may be others are the upper end. Thus, excluding only betas at the lower end of the confidence interval (ie the negative betas) may lead to bias in the beta derived from the proxy group.

[46] This gearing assumption was proposed by the utility and accepted by the regulators in the first major decisions on the cost of capital under the Gas Code (the 1998 Victorian decisions), and has been adopted in almost all energy decisions since that time.

[47] The standard error of the average beta of the proxy group will depend upon the pair-wise correlations between the various beta estimates, which is not available from commercial beta estimation services, as used in this report.

In this report, no view is taken on the relative merits of these tw rather, average beta estimates with and without any observed negative betas will be reported.

One of two more sophisticated adjustments to beta estimates are made by some of the common beta estimation services, which are often referred to as the Vasicek adjustment and the Blume adjustment. Both of these adjustments may have merit when adjusting a particular beta estimate for a firm, and when projecting a future beta for a particular firm. The Vasicek adjustment is useful where the goal is to derive a beta estimate for a particular stock, for which a beta estimate can be observed individually, and the Blume adjustment may be a convenient means of responding to expected management tendencies over a future period. However, neither of these adjustments is considered appropriate where the objective to derive a proxy beta for (pure-play) regulated gas transmission activities, and this proxy beta is based upon estimates from a carefully selected set of comparable entities.[48]

The *Vasicek* adjustment[49,50] takes the weighted average of the beta estimate for an individual company, and the simple average for a 'peer group' of entities (the prior distribution), with the weighting in inverse proportion to the variances of the distributions from which the estimates are drawn.

To the extent that the 'peer group' that is used by the beta estimation service in the Vasecik adjustment is similar to the group of comparable entities used to derive the proxy beta, the application of the Vasecik adjustment is likely to have little effect on the average of the group.[51] However, to the extent that the peer group differs – and betas for entities that undertake activities that were judged not to be sufficiently comparable to regulated gas transmission activities would be taken into account – then bias to the estimate of the proxy beta may be introduced.

As noted in section 3.2, the relevant peer group employed by the Ibbotson service most relevant to gas transmission are firms classified in the two-digit industry code Electric, Gas, and Sanitary Services. While this will include a number of firms that are not considered sufficiently comparable to regulated gas transmission activities, any bias introduced may not be substantial – and, indeed, the average of the Ibbotson adjusted betas is not substantially different to the average of the raw betas. In contrast, the London Business School service uses all listed companies as the peer group, which may introduce bias in the beta estimate.

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[48] The discussion in this section draws upon Lally, M., 1998, 'An Examination of Blume and Vasicek Betas,, *The Financial Review*, Vol.33, pp 183-198; and Lally, M., 2000. *The Cost of Equity Capital and Its Estimation*, McGraw-Hill Series in Advanced Finance Volume 3, Sydney: McGraw-Hill, p33-35.

[49] Vasicek, O., 1973. A note on using cross-sectional information in bayesian estimation of security betas, *Journal of Finance* 26: pp 123–129.

[50] Lally, M., 2000. *The Cost of Equity Capital and Its Estimation*, McGraw-Hill Series in Advanced Finance Volume 3, Sydney: McGraw-Hill, p 34.

[51] If the standard errors of the beta estimates for all of the firms in the peer group are identical, then the average of the Vasecik adjusted betas will be identical to the average of the raw betas. In any other case, the average of the Vasecik betas will place more weight upon the beta estimates that have a lower standard error.

The *Blume* adjustment[52,53] also involves taking a weighe betas and a prior distribution, except that the prior distribution comp firms (that is, an equity beta of one).[54] Further, one of the rationales for the Blume adjustment is to take account of a tendency for beta values of firms to tend to a value of one over time. That is, the adjustment is based upon two prior beliefs about betas:

- in the absence of any information, a reasonably prior belief is that a beta of a stock is one – being the market average beta; and
- empirically, betas tend to get closer to one over time.

With respect to the first of these reasons for the Blume adjustment, as with the Vasicek adjustment, the use of a prior distribution that includes all firms may introduce bias into the proxy beta that is derived. Certainly, taking account of information from all firms is somewhat at odds with carefully selecting the group of comparable entities that is used to derive the proxy beta.

Regarding the tendency of betas to regress towards one over time, it is accepted that there is empirical support for the phenomenon of beta convergence (even after the potential for the estimation method to find a spurious relationship is taken into account).[55] However, these studies attribute the regression in equity betas to conscious behavioural decisions of management – for example, by undertaking investment projects with less extreme risk characteristics, or by manipulation of financial structures (eg by equity issues, leveraged buy-outs and equity carve-outs).[56] Indeed, in a Reserve Bank of Australia working paper, Sheutrim finds a motive for the manipulation of equity betas by managers, finding a positive relationship between events that may be adverse to managers – namely, the probability of the firm being delisted.[57]

While allowing for such a management tendency may well be reasonable when projecting forward the estimated equity beta for an actual entity, it has less relevance for the estimation of the cost of capital for the regulated activities of gas transmission entity. In particular, as the objective is to derive the cost of capital associated with a pure-play gas transmission business, any prospective change to the equity beta arising from diversification into other activities would be introducing irrelevant information. Likewise, regarding changes to leverage, a better approach is to adjust betas explicitly for changes to gearing (using the theoretical relationship between equity betas and gearing, discussed above). It is noted, however, that if the 'regression' of equity betas over time and the associated change to gearing were both taken into account, the asset beta that would be derived would most likely remain unchanged.

[52] Blume, M., 1971. On the assessment of risk, *Journal of Finance* 26, pp 1–10. Blume, M., 1975. betas and their regression tendancies, *Journal of Finance* 30, pp 785–95.

[53] Lally, M., 2000. *The Cost of Equity Capital and Its Estimation*, McGraw-Hill Series in Advanced Finance Volume 3, Sydney: McGraw-Hill, p 34.

[54] As noted in section 3.2, a Blume-adjusted beta is provided in the standard output from the Bloomberg service.

[55] The existing empirical evidence – as well as further evidence – is presented in: Sheutrim, G, 1998, Systematic Risk Characteristics of Corporate Equity, Research Discussion Paper 9802, Reserve Bank of Australia, Sydney.

[56] Brailsford, T.J., Faff, R.W. and Oliver, B.R., 2000. Research design Issues in the Estimation of Beta, McGraw-Hill Series in Advanced Finance Volume 1, Sydney: McGraw-Hill, p28; Sheutrim, G, 1998, Systematic Risk Characteristics of Corporate Equity, Research Discussion Paper 9802, Reserve Bank of Australia, Sydney, p. 8.

[57] Sheutrim, G, 1998, Systematic Risk Characteristics of Corporate Equity, Research Discussion Paper 9802, Reserve Bank of Australia, Sydney, p. 23.

Accordingly, this report uses the raw beta estimates produced by each of the beta estimation services.

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# EXHIBIT CAPD-SB 13

# DCF Analysis, Results and Equity Debt Ratios

| Water Company | Dividend History (1) 1998 | (2) 1999 | (3) 2000 | (4) 2001 | (5) 2002 | Dividend Growth Rate (6) (%) | Current Div. Yield (7) (%) | DCF Return On Equity (8) (%) | Equity Ratio (9) (%) | Debt Ratio (10) (%) |
|---|---|---|---|---|---|---|---|---|---|---|
| Amer St Water (NYSE:AWR) | 0.84 | 0.85 | 0.86 | 0.87 | 0.87 | 0.88 | 3.420 | 4.30 | 45.87 | 54.13 |
| Artesian Resources Corporation (NASDAQ:ARTNA)* | 0.97 | 1.06 | 1.10 | 1.11 | 1.16 | 4.57 | 3.590 | 8.16 | 44.44 | 55.56 |
| Birmingham Utilities (AMEX:BIW)* | 0.34 | 0.40 | 0.50 | 0.58 | 0.50 | 10.12 | 2.600 | 12.72 | 76.30 | 23.70 |
| California Water Svc (NYSE:CWT) | 1.07 | 0.81 | 1.10 | 1.12 | 1.12 | 1.15 | 5.190 | 6.34 | 54.64 | 45.36 |
| Connecticut Water Service, Inc. (NASDAQ:CTWS) | 0.78 | 0.79 | 0.79 | 0.80 | 0.81 | 0.95 | 3.270 | 4.22 | 53.76 | 46.24 |
| Consolidated Water Co. Ltd. (NASDAQ:CWCO) * | 0.19 | 0.20 | 0.34 | 0.40 | 0.42 | 21.93 | 2.920 | 24.85 | 94.34 | 5.66 |
| Middlesex Water Company (NASDAQ:MSEX) | 0.77 | 0.79 | 0.82 | 0.83 | 0.85 | 2.50 | 3.800 | 6.30 | 46.51 | 53.49 |
| Pennichuck Corporation (NASDAQ:PNNW)* | 0.59 | 0.69 | 0.73 | 0.76 | 0.81 | 8.25 | 2.480 | 10.73 | 52.63 | 47.37 |
| Phila Suburban Cp (NYSE:PSC) | 0.43 | 0.45 | 0.47 | 0.50 | 0.54 | 5.86 | 2.400 | 8.26 | 46.08 | 53.92 |
| S J W Cp (AMEX:SJW) | 2.34 | 2.40 | 2.46 | 2.57 | 2.76 | 4.21 | 2.490 | 6.70 | 58.48 | 41.52 |
| Southwest Water Company (NASDAQ:SWWC)* | 0.15 | 0.16 | 0.19 | 0.21 | 0.22 | 10.05 | 1.820 | 11.87 | 50.00 | 50.00 |
| York Water Company (NASDAQ:YORW)* | 0.47 | 0.47 | 0.49 | 0.51 | 0.53 | 3.05 | 2.960 | 6.01 | 53.19 | 46.81 |
| Average | 0.75 | 0.76 | 0.82 | 0.86 | 0.88 | 6.13 | 3.08 | 9.21 | 56.36 | 43.64 |

*Company Not Used In Mr. Moul's Analysis
Source: www.morningstar.com

Mstar Data for PNNW
1998 corrected by CAPD.
Mstar showed .31

Mstar Data For CWCO
1998 corrected by CAPD.
Mstar showed .15

# EXHIBIT CAPD-SB 14

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# Dividend Correction

| | | | Pennichuck Data Correction | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Quarter | | | | | |
| SEC Source | Filed | | 1 | 2 | 3 | 4 | YR | Condition |
| 10KSB | FILED AS OF DATE:20010328 | 1998 | 0.19 | 0.19 | 0.19 | 0.22 | 0.79 | |
| 10KSB | FILED AS OF DATE:20010328 | 1999 | 0.23 | 0.23 | 0.23 | 0.24 | 0.93 | |
| 10KSB | FILED AS OF DATE:20010328 | 2000 | 0.24 | 0.24 | 0.24 | 0.25 | 0.97 | To adjust for three for two stock split effected on September 1, 1998. |
| 10-K | FILED AS OF DATE: 20030331 | 2000 | 0.18 | 0.18 | 0.18 | 0.19 | 0.73 | To adjust for four to three stock split effected on December 1, 2001. |
| | | Restatement of 1998 Pennichuck Dividend To Account for 4-3 split in Dec 2001 | | | | | | |
| | | 1998 figures reduced by the ratio of .73/.97 | | | | | | |
| | | 1998 | 0.14 | 0.14 | 0.14 | 0.17 | 0.59 | |

| | | | Consolidated Water Data Correction |
|---|---|---|---|
| SEC Source | Filed | | Annual Figure |
| 10-K | FILED AS OF DATE: 20010402 | 1998 | 0.19 |

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# Water Companies Betas

Betas From Yahoo As of May 15, 2003

| Water Company | Company | Industry | Sector | S&P 500 |
|---|---|---|---|---|
| Amer St Water (NYSE:AWR) | 0.06 | -0.04 | 0.20 | 1.00 |
| (NASDAQ:ARTNA)* | 0.17 | -0.04 | 0.20 | 1.00 |
| Birmingham Utilities (AMEX:BIW)* | 0.20 | -0.04 | 0.20 | 1.00 |
| California Water Svc (NYSE:CWT) | 0.07 | -0.04 | 0.20 | 1.00 |
| Connecticut Water Service, Inc. (NASDAQ:CTWS) | -0.11 | -0.04 | 0.20 | 1.00 |
| Consolidated Water Co. Ltd. (NASDAQ:CWCO) * | 0.14 | -0.04 | 0.20 | 1.00 |
| Middlesex Water Company (NASDAQ:MSEX) | 0.26 | -0.04 | 0.20 | 1.00 |
| Pennichuck Corporation (NASDAQ:PNNW)* | -0.05 | -0.04 | 0.20 | 1.00 |
| Phila Suburban Cp (NYSE:PSC) | -0.25 | -0.04 | 0.20 | 1.00 |
| S J W Cp (AMEX:SJW) | 0.55 | -0.04 | 0.20 | 1.00 |
| Southwest Water Company (NASDAQ:SWWC)* | 0.08 | -0.04 | 0.20 | 1.00 |
| York Water Company (NASDAQ:YORW)* | 0.04 | -0.04 | 0.20 | 1.00 |
| Average | 0.10 | -0.04 | 0.20 | 1.00 |

# EXHIBIT CAPD-SB 16

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Tennessee-American Water
Cost of Capital
For the 12 Months Ending March 31, 2004

| Line No. | Parent: | Ratio | Cost | Weighted Cost |
|---|---|---|---|---|
| 1 | Common Equity | 56.00% | 9.21% | 5.16% |
| 2 | Debt | 44.00% | 6.00% | 2.64% |
| 3 | Total | 100.00% | | 7.80% |

| | Tennessee American: | Ratio | Cost | Weighted Cost |
|---|---|---|---|---|
| 4 | Short Term Debt | 6.2% | 3.50% | 0.22% |
| 5 | Long Term Debt | 20.8% | 7.62% | 1.59% |
| 6 | Preferred Equity | 1.6% | 5.01% | 0.08% |
| 7 | Common Equity | 71.4% | 7.80% | 5.57% |
| 8 | Total | 100.00% | | 7.46% |