

BASS, BERRY & SIMS PLC
A PROFESSIONAL LIMITED LIABILITY COMPANY
ATTORNEYS AT LAW

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OTHER OFFICES

KNOXVILLE
MEMPHIS

March 14, 2008

VIA HAND-DELIVERY TO:

Chairman Eddie Roberson, Ph.D
c/o Ms. Sharla Dillon
Tennessee Regulatory Authority
460 James Robertson Parkway
Nashville, Tennessee 37243

filed electronically in docket office on 03/14/08

***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. 08- 00039***

Dear Chairman Roberson:

Enclosed please find the original and six (6) copies of a Petition to be filed on behalf of our client, Tennessee American Water Company, pursuant to T.C.A. § 65-5-203. We are simultaneously, with the filing of this Petition, filing with Ms. Pat Murphy certain tariffs for Tennessee American Water Company, which are explained and discussed in the Petition and which tariffs have an issue date of March 14, 2008, and an effective date of April 13, 2008.

I am also enclosing the original and six (6) copies of the sworn testimony and exhibits of the following witnesses who will testify in behalf of the Company:

John S. Watson
Michael A. Miller
Sheila A. Miller
Robert A. Shiltz
Edward L. Spitznagel, Jr.
A. Joseph Van den berg
Paul R. Herbert
John J. Spanos
Michael J. Vilbert

Chairman Eddie Roberson

March 14, 2008

Page 2

The entire contents of this filing in PDF format are also contained on a compact disk filed herewith. Also, we have emailed to Ms. Sharla Dillon an electronic version in PDF format of the Petition, the testimony of witnesses, their exhibits, and the tariff filings.

I am sending a copy of this letter to Richard Collier, Esq., Ms. Darlene Standley, and Mr. Jerry Kettles. I am also sending a copy of this letter, the Petition, testimony, exhibits, and the tariffs to Ms. Pat Murphy, the Honorable Ron Littlefield, Mayor of Chattanooga, and Assistant Attorney General Timothy C. Phillips, of the Consumer Advocate Division of the Attorney General's office.

Also enclosed is our check in the amount of \$25.00, payable to the Tennessee Regulatory Authority for the filing fee.

Please return two copies of the Petition and sworn testimony and exhibits, which I would appreciate your stamping as "filed," and returning to me by way of our courier.

Should you have any questions concerning any of the enclosed, please do not hesitate to contact me.

With kindest regards, I remain

Very truly yours,



R. Dale Grimes

RDG:ms

Enclosures

cc: Hon. Ron Jones (*w/o enclosure*)
Hon. Sara Kyle (*w/o enclosure*)
Hon. Tre Hargett (*w/o enclosure*)
Ms. Darlene Standley, Chief of Utilities Division (*w/o enclosure*)
Richard Collier, Esq. (*w/o enclosure*)
Mr. Jerry Kettles, Chief of Economic Analysis & Policy Division (*w/o enclosure*)
Ms. Pat Murphy (*w/o enclosure*)
Timothy C. Phillips, Esq. (*w/enclosure*)
Hon. Ron Littlefield, Mayor of Chattanooga (*w/enclosure*)
Mr. John Watson (*w/enclosure*)
Mr. Michael A. Miller (*w/enclosure*)

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OTHER OFFICES

KNOXVILLE
MEMPHIS

March 14, 2008

VIA HAND-DELIVERY TO:

Ms. Pat Murphy
Tennessee Regulatory Authority
460 James Robertson Parkway
Nashville, Tennessee 37243-0505

***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. 08-_____***

Dear Ms. Murphy:

Enclosed please find six (6) copies of revised rates and charges tariffs being filed with a Petition proposing certain changes and increases in rates and charges by the Tennessee American Water Company. The tariffs enclosed are as follows:

TRA No. 19

Eighth Revision of Sheet No. 3R
Eighth Revision of Sheet No. 3C
Eighth Revision of Sheet No. 3I
Eighth Revision of Sheet No. 3O
Eighth Revision of Sheet No. 3S
Ninth Revision of Sheet No. 4R
Ninth Revision of Sheet No. 4C
Ninth Revision of Sheet No. 4I
Ninth Revision of Sheet No. 4O
Ninth Revision of Sheet No. 4S
Original Sheet of Sheet No. 4R-LO
Original Sheet of Sheet No. 4C-LO
Ninth Revision of Sheet No. 9

Ms. Pat Murphy
March 14, 2008
Page 2

The tariffs enclosed have an issue date of March 14, 2008, and effective date of April 13, 2008. I am also enclosing a copy of the Petition filed by the Company and a copy of my letter to Chairman Roberson, together with copies of sworn testimony and exhibits filed by the witnesses in this matter. The tariffs enclosed and their revenue impact are explained in the Petition and the testimony and exhibits of the Company witnesses.

Should you have any questions concerning any of the enclosed, please do not hesitate to contact me.

With kindest regards, I remain

Very truly yours,



R. Dale Grimes

RDG:ms
Enclosures

cc: Hon. Ron Jones (*w/o enclosure*)
Hon. Sara Kyle (*w/o enclosure*)
Hon. Tre Hargett (*w/o enclosure*)
Ms. Darlene Standley, Chief of Utilities Division (*w/o enclosure*)
Richard Collier, Esq. (*w/o enclosure*)
Mr. Jerry Kettles, Chief of Economic Analysis & Policy Division (*w/o enclosure*)
Ms. Pat Murphy (*w/o enclosure*)
Timothy C. Phillips, Esq. (*w/enclosure*)
Hon. Ron Littlefield, Mayor of Chattanooga (*w/enclosure*)
Mr. John Watson (*w/enclosure*)
Mr. Michael A. Miller (*w/enclosure*)

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

**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. _____

PETITION

Tennessee American Water Company ("Company"), a Tennessee corporation authorized to conduct and conducting a public utility business in the State of Tennessee, does hereby simultaneously file with the Tennessee Regulatory Authority (TRA), this Petition and a revised schedule of tariffs to become effective thirty (30) days after date of issue and requests that the TRA, pursuant to T.C.A. § 65-5-201, et seq., investigate the Company's present and projected earnings and hear and determine that the increased rates as reflected in its Tariffs that it has filed to become effective April 13, 2008, are just and reasonable. In support of this request, the Company avers that:

1. The Company is a public utility as defined in T.C.A. § 65-4-101 and is engaged in providing residential, commercial, industrial and municipal water service, including public and private fire protection service to the City of Chattanooga and surrounding areas including 74,535 customers as of November 30, 2007, subject to the jurisdiction and supervision of the Authority pursuant to Chapter 4 and Chapter 5 of Title 65 of Tennessee Code Annotated. The rates of the customers located in the State of Georgia are not regulated by the Public Service Commission of the State of Georgia but are regulated by this Authority.

2. The Company is a wholly-owned subsidiary of American Water Works Company, Inc. ("AWWC"). AWWC is the largest water holding company in the United States which provides water and waste water services to 15.6 million people in thirty-two (32) states and Ontario, Canada. The Company's existing rates and charges will not provide, and cannot be made to provide, sufficient revenues to cover all the costs incurred in providing adequate quality water service including its cost of capital.

3. The Company has the responsibility to its customers to provide them with the best water service possible. This responsibility includes meeting the present and future service requirements of customers, improving existing service and introducing new technologies as they are developed. The Company has the technological capability to do this, however, it cannot accomplish such a program without adequate earnings. As this Authority knows, the Company, like all regulated utilities, must have customer rates approved that will permit it to earn a rate of return on its investment in the State of Tennessee which will be sufficient to attract new capital at reasonable terms, as it is needed.

4. The Company is also continuing its program of replacing small diameter water mains throughout the system; the installation of 3,700 feet of 16-inch D.I. Water Main in Tyner Road; reinforcement project to the 1.0 M.G. Jenkins Road Tank; installation of 4,550 feet of 12-inch D.I. Water Main in Frawley Road; installation of 5,700 feet of 12-inch D.I. Water Main in Brainerd Road; installation of 2517 feet of 16-inch, 551 feet of 12-inch, and 1,242 feet of 8-inch D.I. Water Main due to T.D.O.T. widening of Shallowford Road west of Lee Highway requiring the relocation of water lines; the replacement of meters and service lines; the installation of main extensions; and the general relocation and replacement of existing facilities. All of these

programs have been planned and are being instituted to bring about more and better water service. Some of them must continue to be carried out at additional costs.

5. The Company's capital expenditures program for 2007 was \$9,246,139 for "normal recurring" items, and \$2,186,307 for specific projects, for a grand total of \$11,432,446. In 2008, the "normal recurring" items are estimated at \$8,450,100 and the special projects at \$5,238,538 for a grand total of \$13,688,638. These capital expenditures have resulted and will result in more and better service to the Company's customers throughout the area it serves. The testimony of the Company's witnesses will detail the major construction projects, the expenditures, the anticipated results and benefits to its customers.

6. Under the present rates, the Company's revenues and revenue projections are not sufficient and cannot be made sufficient to: (a) allow the Company to earn a fair rate of return to which it is entitled under Article 1, Section 8 of the Constitution of Tennessee, and the 14th Amendment to the Constitution of the United States; (b) provide a fair rate of return on its investment for a reasonable period; (c) attract on reasonable terms the large sums of additional capital required to adequately maintain, expand and improve the Company's plant in Tennessee to meet the needs of the public for additional improved quality water service and to maintain existing service levels; (d) maintain its credit; and (e) maintain its operations at a level that will not be materially impaired or damaged.

7. The Company avers that a fair rate of return on the Company's operations is essential to the continued provision of adequate quality service, to make the necessary improvements and to meet the expansion needs of the customers it serves. Consequently, it is essential and in the public interest that the Company's rates and charges be revised to provide an increase in revenue. Because of the continued increase in expenses and costs of providing new

and improved services, the earnings situation of the Company has deteriorated to a level that, without rate relief, the Company cannot meet demands for service in an orderly and economical fashion.

8. As will be testified to and as shown by the accounting exhibits filed by its witness, Sheila A. Miller, the Company selected as the historical test year the twelve months ended November 30, 2007, and has adjusted the test period for two levels of adjustments. The first adjustment normalizes the test year and the second level adjusts the normalized year to arrive at the attrition year, which is the twelve months ended August 31, 2009. The resulting rate of return for the attrition year, using current rates, was 4.81% on a rate base of \$119,881,506 and net operating income of \$5,761,368. At a proposed rate of return of 8.514%, the Company would have a revenue deficiency of \$7,644,859 for the attrition year.

9. The Company would like to be in a position to continue its upgrading program and improve the quality of service offered its customers, but the Company cannot provide the necessary new facilities, maintain existing ones adequately, and meet the needs of its customers for the future with such an unrealistic rate of return. The Company has no other alternative but to petition this Authority to permit it to place higher rates into effect in order to: (a) avoid material impairment of damage to the Company's long range operations; and (b) to enable the Company to earn a fair rate of return on its Tennessee operations during the foreseeable future.

10. Mr. Michael A. Miller will testify as to the Company's capital structure and the cost of debt and preferred stock for the attrition period. The testimony of Mr. Miller will recommend that the capital structure that should be used for the Company for the attrition year should be comprised of \$51,388,610 equity, 42.98%; \$60,559,797¹ long term debt, 50.66%;

¹ Included in this figure is the 6 0% New Series \$16,000,000 General Mortgage Bonds .

\$1,381,600 preferred stock, 1.16%; and \$6,222,000 short term debt, 5.20%. The Company in its overall cost of capital has used an equity cost of 11.75%.² Using the capital structure and cost of capital as set out above and shown in the exhibits of Dr. Michael Vilbert and Mr. Miller, the calculated weighted cost of capital is 8.514%.

11. The Company proposes that it be allowed to place into effect customer rates that will produce an overall rate of return of 8.514% on a rate base of \$119,881,506. The additional gross revenues required would be approximately \$7,644,859. The amount requested is the minimum additional annual gross revenues necessary for the Company to attract the necessary capital required to continue to provide adequate water service to the people of the City of Chattanooga and surrounding area and to meet the demand for water service in the foreseeable future.

12. The Company has filed simultaneously with this Petition revised Tariffs effective April 13, 2008, designed to produce the additional gross revenues needed. The testimony of various Company witnesses and the exhibits that Ms. Miller will sponsor will show how these additional gross revenues will be derived. The tariffs filed will produce a total increase in annual revenue of approximately \$7,644,859 by increasing rates.

13. The Company avers that the above-proposed changes are necessary and proper and are designed to meet the present and future needs of its customers in an economically feasible manner. The Company's Tariffs as filed and the overall rate of return it has requested are all fair and reasonable in the best interests of the Company and the customers it serves, and, therefore, should be approved.

² The Company is filing the testimony of Mr. Michael Vilbert of The Brattle Group, which testimony is that his analysis shows that the cost of common equity capital requested by the Company of 11.75% is reasonable.

WHEREFORE, the Company requests the Tennessee Regulatory Authority to:

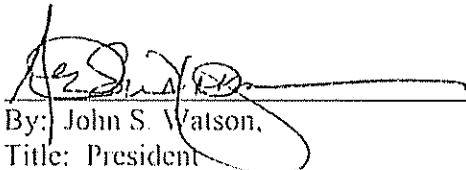
1. Schedule a hearing upon proper notice for the presentation of evidence as to the present and projected earnings and the additional revenues required to provide a fair rate of return on the Company's property used and useful in providing quality water service to its customers.

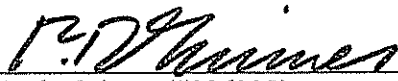
2. Enter an order approving the Company's schedule of rates filed with the Commission designed to increase the Company's annual revenues by approximately \$7,644,859 and adopt as the method to affect this increase in revenues, the Tariffs filed to become effective April 13, 2008, or as soon thereafter as lawfully permitted.

3. Grant such other relief as may be required in light of the evidence to be produced at the hearing.

This the 13TH day of MARCH, 2008.

TENNESSEE AMERICAN WATER COMPANY


By: John S. Watson,
Title: President


R. Dale Grimes (#006332)
Ross Ian Booher (#019304)
BASS, BERRY & SIMS PLC
315 Deaderick Street, Suite 2700
Nashville, TN 37238
(615) 742-6200

Attorneys for Petitioner

VERIFICATION

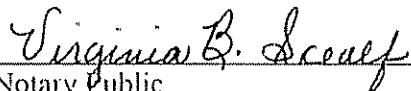
STATE OF TENNESSEE)
)
COUNTY OF HAMILTON)

I, John S. Watson, hereby declare under penalty of perjury, that I am President of TENNESSEE-AMERICAN WATER COMPANY; that I am authorized to make this verification on behalf of TENNESSEE-AMERICAN WATER COMPANY; that I have read the foregoing petition; and that the facts stated therein are true and correct to the best of my knowledge, information, and belief.



Name: John S. Watson
Title: President

Sworn to and subscribed before me this 13th day of March, 2008.



Notary Public

My Commission Expires:

July 30, 2008



CLASSIFICATION OF SERVICE

RESIDENTIAL

1. Schedule of Rates and Charges Available For:

- a) The General Water Service Tariff is available for public water supply service in all territory served by the Company except that area served by the Lookout Mountain System, Elder Mountain, and territory served in Lakeview and other unincorporated areas in Georgia, east of Rossville.
- b) The Lookout Mountain Tariff is available for public water supply service in the territory served by the Company's Lookout Mountain High Service Area in the town of Lookout Mountain, Tennessee, Lookout Mountain, Georgia, and Elder Mountain, Tennessee.
- c) The Lakeview Tariff is available for public water supply service in the territory served by the Company in Lakeview and other unincorporated areas of Georgia, east of Rossville as indicated on the Service Area Map: TPSC No. 19, Pages 13 and 14.
- (N) d) The Suck Creek Tariff is available for public water supply service in the territory served by the Company in Suck Creek and other unincorporated areas of Marion County formerly served by Suck Creek Utility District.
- (N) e) The Lone Oak Tariff is available for public water supply service in the territory served by the Lone Oak Utility District.

(N) New text

ISSUED: March 14, 2008

EFFECTIVE: April 13, 2008

BY: JOHN WATSON, PRESIDENT
1101 Broad Street
Chattanooga, Tennessee 37401

CLASSIFICATION OF SERVICE

COMMERCIAL

1. Schedule of Rates and Charges Available For:

- a) The General Water Service Tariff is available for public water supply service in all territory served by the Company except that area served by the Lookout Mountain System, Elder Mountain, and territory served in Lakeview and other unincorporated areas in Georgia, east of Rossville.
- b) The Lookout Mountain Tariff is available for public water supply service in the territory served by the Company's Lookout Mountain High Service Area in the town of Lookout Mountain, Tennessee, Lookout Mountain, Georgia, and Elder Mountain, Tennessee.
- c) The Lakeview Tariff is available for public water supply service in the territory served by the Company in Lakeview and other unincorporated areas of Georgia, east of Rossville as indicated on the Service Area Map: TPSC No. 19, Pages 13 and 14.
- (N) d) The Suck Creek Tariff is available for public water supply service in the territory served by the Company in Suck Creek and other unincorporated areas of Marion County formerly served by Suck Creek Utility District.
- (N) e) The Lone Oak Tariff is available for public water supply service in the territory served by the Lone Oak Utility District.

(N) New text

ISSUED: March 14, 2008

EFFECTIVE: April 13, 2008

BY: JOHN WATSON, PRESIDENT
1101 Broad Street
Chattanooga, Tennessee 37401

CLASSIFICATION OF SERVICE

INDUSTRIAL

1. Schedule of Rates and Charges Available For:

- a) The General Water Service Tariff is available for public water supply service in all territory served by the Company except that area served by the Lookout Mountain System, Elder Mountain, and territory served in Lakeview and other unincorporated areas in Georgia, east of Rossville.
- b) The Lookout Mountain Tariff is available for public water supply service in the territory served by the Company's Lookout Mountain High Service Area in the town of Lookout Mountain, Tennessee, Lookout Mountain, Georgia, and Elder Mountain, Tennessee.
- c) The Lakeview Tariff is available for public water supply service in the territory served by the Company in Lakeview and other unincorporated areas of Georgia, east of Rossville as indicated on the Service Area Map: TPSC No. 19, Pages 13 and 14.
- (N) d) The Suck Creek Tariff is available for public water supply service in the territory served by the Company in Suck Creek and other unincorporated areas of Marion County formerly served by Suck Creek Utility District.

(N) New text

ISSUED: March 14, 2008

EFFECTIVE:

April 13, 2008

BY: JOHN WATSON, PRESIDENT
1101 Broad Street
Chattanooga, Tennessee 37401

CLASSIFICATION OF SERVICE

OTHER PUBLIC AUTHORITY

1. Schedule of Rates and Charges Available For:

- a) The General Water Service Tariff is available for public water supply service in all territory served by the Company except that area served by the Lookout Mountain System, Elder Mountain, and territory served in Lakeview and other unincorporated areas in Georgia, east of Rossville.
- b) The Lookout Mountain Tariff is available for public water supply service in the territory served by the Company's Lookout Mountain High Service Area in the town of Lookout Mountain, Tennessee, Lookout Mountain, Georgia, and Elder Mountain, Tennessee.
- c) The Lakeview Tariff is available for public water supply service in the territory served by the Company in Lakeview and other unincorporated areas of Georgia, east of Rossville as indicated on the Service Area Map: TPSC No. 19, Pages 13 and 14.
- (N) d) The Suck Creek Tariff is available for public water supply service in the territory served by the Company in Suck Creek and other unincorporated areas of Marion County formerly served by Suck Creek Utility District.

(N) New text

ISSUED: March 14, 2008

EFFECTIVE: April 13, 2008

BY: JOHN WATSON, PRESIDENT
1101 Broad Street
Chattanooga, Tennessee 37401

CLASSIFICATION OF SERVICE

SALE FOR RESALE

1. Schedule of Rates and Charges Available For:

- a) The General Water Service Tariff is available for public water supply service in all territory served by the Company except that area served by the Lookout Mountain System, Elder Mountain, and territory served in Lakeview and other unincorporated areas in Georgia, east of Rossville.
- b) The Lookout Mountain Tariff is available for public water supply service in the territory served by the Company's Lookout Mountain High Service Area in the town of Lookout Mountain, Tennessee, Lookout Mountain, Georgia, and Elder Mountain, Tennessee.
- c) The Lakeview Tariff is available for public water supply service in the territory served by the Company in Lakeview and other unincorporated areas of Georgia, east of Rossville as indicated on the Service Area Map: TPSC No. 19, Pages 13 and 14.
- (N) d) The Suck Creek Tariff is available for public water supply service in the territory served by the Company in Suck Creek and other unincorporated areas of Marion County formerly served by Suck Creek Utility District.

(N) New text

ISSUED: March 14, 2008

EFFECTIVE: April 13, 2008

BY: JOHN WATSON, PRESIDENT
1101 Broad Street
Chattanooga, Tennessee 37401

CLASSIFICATION OF SERVICE**RESIDENTIAL****SERVICE CHARGES:****Service Charge Per Month**

<u>Meter Size</u>	<u>Chattanooga General Water Service Tariff</u>	<u>Lookout Mountain Tariff</u>	<u>Lakeview Tariff</u>	<u>Suck Creek Tariff</u>
5/8"	\$12.80 (I)	\$12.80 (I)	\$12.80 (I)	\$18.50 (N)
3/4"	21.51 (I)	21.51 (I)	21.51 (I)	21.51 (N)
1"	35.80 (I)	35.80 (I)	35.80 (I)	35.80 (N)
1-1/2"	71.62 (I)	71.62 (I)	71.62 (I)	71.62 (N)
2"	114.58 (I)	114.58 (I)	114.58 (I)	114.57 (N)
3"	214.84 (I)	214.84 (I)	214.84 (I)	214.84 (N)
4"	358.08 (I)	358.08 (I)	358.08 (I)	358.07 (N)
6"	716.17 (I)	716.17 (I)	716.17 (I)	716.15 (N)
8"	1,145.85 (I)	1,145.85 (I)	1,145.85 (I)	1,145.82 (N)

VOLUMETRIC RATES:**Cost per CCF**

<u>Monthly Use</u>	<u>Chattanooga General Water Service Tariff</u>	<u>Lookout Mountain Tariff</u>	<u>Lakeview Tariff</u>	<u>Suck Creek Tariff</u>
0-4 CCF/Mo.	\$0.236 (I)	\$0.970 (I)	\$0.970 (I)	\$0.000 (N)
4-65	3.705 (I)	4.432 (I)	4.432 (I)	6.286 (N)
65-500	2.349 (I)	3.076 (I)	3.076 (I)	4.930 (N)
500-5,000	1.755 (I)	2.482 (I)	2.482 (I)	
5,000-15,000	1.342 (I)	2.070 (I)	2.070 (I)	
Over 15,000	0.797 (I)	1.524 (I)	1.524 (I)	

(I) Increase

(N) New Rate

ISSUED: March 14, 2008

EFFECTIVE: April 13, 2008

BY: JOHN WATSON, PRESIDENT
1101 Broad Street
Chattanooga, Tennessee 37401

CLASSIFICATION OF SERVICE**COMMERCIAL****SERVICE CHARGES:****Service Charge Per Month**

<u>Meter Size</u>	<u>Chattanooga General Water Service Tariff</u>		<u>Lookout Mountain Tariff</u>		<u>Lakeview Tariff</u>		<u>Suck Creek Tariff</u>	
5/8"	\$12.80	(I)	\$12.80	(I)	\$12.80	(I)	\$18.50	(N)
3/4"	21.51	(I)	21.51	(I)	21.51	(I)	21.51	(N)
1"	35.80	(I)	35.80	(I)	35.80	(I)	35.80	(N)
1-1/2"	71.62	(I)	71.62	(I)	71.62	(I)	71.62	(N)
2"	114.58	(I)	114.58	(I)	114.58	(I)	114.57	(N)
3"	214.84	(I)	214.84	(I)	214.84	(I)	214.84	(N)
4"	358.08	(I)	358.08	(I)	358.08	(I)	358.07	(N)
6"	716.17	(I)	716.17	(I)	716.17	(I)	716.15	(N)
8"	1,145.85	(I)	1,145.85	(I)	1,145.85	(I)	1,145.82	(N)

VOLUMETRIC RATES:**Cost per CCF**

<u>Monthly Use</u>	<u>Chattanooga General Water Service Tariff</u>		<u>Lookout Mountain Tariff</u>		<u>Lakeview Tariff</u>		<u>Suck Creek Tariff</u>	
0-4 CCF/Mo.	\$0.236	(I)	\$0.970	(I)	\$0.970	(I)	\$0.000	(N)
4-65	3.705	(I)	4.432	(I)	4.432	(I)	6.286	(N)
65-500	2.349	(I)	3.076	(I)	3.076	(I)	4.930	(N)
500-5,000	1.755	(I)	2.482	(I)	2.482	(I)		
5,000-15,000	1.342	(I)	2.070	(I)	2.070	(I)		
Over 15,000	0.797	(I)	1.524	(I)	1.524	(I)		

(I) Increase

(N) New Rate

ISSUED: March 14, 2008

EFFECTIVE: April 13, 2008

BY: JOHN WATSON, PRESIDENT
1101 Broad Street
Chattanooga, Tennessee 37401

CLASSIFICATION OF SERVICE**INDUSTRIAL****SERVICE CHARGES:****Service Charge Per Month**

<u>Meter Size</u>	<u>Chattanooga General Water Service Tariff</u>		<u>Lookout Mountain Tariff</u>		<u>Lakeview Tariff</u>		<u>Suck Creek Tariff</u>	
5/8"	\$12.80	(I)	\$12.80	(I)	\$12.80	(I)	\$18.50	(N)
3/4"	21.51	(I)	21.51	(I)	21.51	(I)	21.51	(N)
1"	35.80	(I)	35.80	(I)	35.80	(I)	35.80	(N)
1-1/2"	71.62	(I)	71.62	(I)	71.62	(I)	71.62	(N)
2"	114.58	(I)	114.58	(I)	114.58	(I)	114.57	(N)
3"	214.84	(I)	214.84	(I)	214.84	(I)	214.84	(N)
4"	358.08	(I)	358.08	(I)	358.08	(I)	358.07	(N)
6"	716.17	(I)	716.17	(I)	716.17	(I)	716.15	(N)
8"	1,145.85	(I)	1,145.85	(I)	1,145.85	(I)	1,145.82	(N)

VOLUMETRIC RATES:**Cost per CCF**

<u>Monthly Use</u>	<u>Chattanooga General Water Service Tariff</u>		<u>Lookout Mountain Tariff</u>		<u>Lakeview Tariff</u>		<u>Suck Creek Tariff</u>	
0-4 CCF/Mo.	\$0.236	(I)	\$0.970	(I)	\$0.970	(I)	\$0.000	(N)
4-65	3.705	(I)	4.432	(I)	4.432	(I)	6.286	(N)
65-500	2.349	(I)	3.076	(I)	3.076	(I)	4.930	(N)
500-5,000	1.755	(I)	2.482	(I)	2.482	(I)		
5,000-15,000	1.342	(I)	2.070	(I)	2.070	(I)		
Over 15,000	0.797	(I)	1.524	(I)	1.524	(I)		

(I) Increase
(N) New Rate

ISSUED: March 14, 2008

EFFECTIVE: April 13, 2008

BY: JOHN WATSON, PRESIDENT
1101 Broad Street
Chattanooga, Tennessee 37401

CLASSIFICATION OF SERVICE
OTHER PUBLIC AUTHORITY

SERVICE CHARGES:**Service Charge Per Month**

<u>Meter Size</u>	<u>Chattanooga General Water Service Tariff</u>		<u>Lookout Mountain Tariff</u>		<u>Lakeview Tariff</u>		<u>Suck Creek Tariff</u>	
5/8"	\$12.80	(I)	\$12.80	(I)	\$12.80	(I)	\$18.50	(N)
3/4"	21.51	(I)	21.51	(I)	21.51	(I)	21.51	(N)
1"	35.80	(I)	35.80	(I)	35.80	(I)	35.80	(N)
1-1/2"	71.62	(I)	71.62	(I)	71.62	(I)	71.62	(N)
2"	114.58	(I)	114.58	(I)	114.58	(I)	114.57	(N)
3"	214.84	(I)	214.84	(I)	214.84	(I)	214.84	(N)
4"	358.08	(I)	358.08	(I)	358.08	(I)	358.07	(N)
6"	716.17	(I)	716.17	(I)	716.17	(I)	716.15	(N)
8"	1,145.85	(I)	1,145.85	(I)	1,145.85	(I)	1,145.82	(N)

VOLUMETRIC RATES:**Cost per CCF**

<u>Monthly Use</u>	<u>Chattanooga General Water Service Tariff</u>		<u>Lookout Mountain Tariff</u>		<u>Lakeview Tariff</u>		<u>Suck Creek Tariff</u>	
0-4 CCF/Mo.	\$0.236	(I)	\$0.970	(I)	\$0.970	(I)	\$0.000	(N)
4-65	3.705	(I)	4.432	(I)	4.432	(I)	6.286	(N)
65-500	2.349	(I)	3.076	(I)	3.076	(I)	4.930	(N)
500-5,000	1.755	(I)	2.482	(I)	2.482	(I)		
5,000-15,000	1.342	(I)	2.070	(I)	2.070	(I)		
Over 15,000	0.797	(I)	1.524	(I)	1.524	(I)		

(I) Increase

(N) New Rate

ISSUED: March 14, 2008

EFFECTIVE: April 13, 2008

BY: JOHN WATSON, PRESIDENT
1101 Broad Street
Chattanooga, Tennessee 37401

CLASSIFICATION OF SERVICE**SALES FOR RESALE****SERVICE CHARGES:****Service Charge Per Month**

<u>Meter Size</u>	<u>Chattanooga General Water Service Tariff</u>		<u>Lookout Mountain Tariff</u>		<u>Lakeview Tariff</u>		<u>Suck Creek Tariff</u>	
5/8"	\$12.80	(I)	\$12.80	(I)	\$12.80	(I)	\$18.50	(N)
3/4"	21.51	(I)	21.51	(I)	21.51	(I)	21.51	(N)
1"	35.80	(I)	35.80	(I)	35.80	(I)	35.80	(N)
1-1/2"	71.62	(I)	71.62	(I)	71.62	(I)	71.62	(N)
2"	114.58	(I)	114.58	(I)	114.58	(I)	114.57	(N)
3"	214.84	(I)	214.84	(I)	214.84	(I)	214.84	(N)
4"	358.08	(I)	358.08	(I)	358.08	(I)	358.07	(N)
6"	716.17	(I)	716.17	(I)	716.17	(I)	716.15	(N)
8"	1,145.85	(I)	1,145.85	(I)	1,145.85	(I)	1,145.82	(N)

VOLUMETRIC RATES:**Cost per CCF**

<u>Monthly Use</u>	<u>Chattanooga General Water Service Tariff</u>		<u>Lookout Mountain Tariff</u>		<u>Lakeview Tariff</u>		<u>Suck Creek Tariff</u>	
0-4 CCF/Mo.	\$0.236	(I)	\$0.970	(I)	\$0.970	(I)	\$0.000	(N)
4-65	3.705	(I)	4.432	(I)	4.432	(I)	6.286	(N)
65-500	2.349	(I)	3.076	(I)	3.076	(I)	4.930	(N)
500-5,000	1.755	(I)	2.482	(I)	2.482	(I)		
5,000-15,000	1.342	(I)	2.070	(I)	2.070	(I)		
Over 15,000	0.797	(I)	1.524	(I)	1.524	(I)		

(I) Increase

(N) New rate

ISSUED: March 14, 2008

EFFECTIVE: April 13, 2008

BY: JOHN WATSON, PRESIDENT
 1101 Broad Street
 Chattanooga, Tennessee 37401

CLASSIFICATION OF SERVICE
RESIDENTIAL

SERVICE CHARGES:

Service Charge Per Month

<u>Meter Size</u>	Lone Oak Utility District Tariff
5/8"	\$29.00 (N)
3/4"	29.00 (N)
1"	35.80 (N)
1-1/2"	71.62 (N)
2"	114.58 (N)
3"	214.84 (N)
4"	358.08 (N)
6"	716.17 (N)
8"	1,145.85 (N)

VOLUMETRIC RATES:

Cost per CCF

<u>Monthly Use</u>	Lone Oak Utility District Tariff
0-4 CCF/Mo.	\$0.000 (N)
4-65	6.286 (N)
65-500	4.930 (N)

(N) New Rate

ISSUED: March 14, 2008

EFFECTIVE: April 13, 2008

BY: JOHN WATSON, PRESIDENT
1101 Broad Street
Chattanooga, Tennessee 37401

CLASSIFICATION OF SERVICE
COMMERCIAL

SERVICE CHARGES:

Service Charge Per Month

<u>Meter Size</u>	Lone Oak Utility District <u>Tariff</u>
5/8"	\$29.00 (N)
3/4"	29.00 (N)
1"	35.80 (N)
1-1/2"	71.62 (N)
2"	114.58 (N)
3"	214.84 (N)
4"	358.08 (N)
6"	716.17 (N)
8"	1,145.85 (N)

VOLUMETRIC RATES:

Cost per CCF

<u>Monthly Use</u>	Lone Oak Utility District <u>Tariff</u>
0-4 CCF/Mo.	\$0.000 (N)
4-65	6.286 (N)
65-500	4.930 (N)

(N) New Rate

ISSUED: March 14, 2008

EFFECTIVE: April 13, 2008

BY: JOHN WATSON, PRESIDENT
1101 Broad Street
Chattanooga, Tennessee 37401

CLASSIFICATION OF SERVICE**PRIVATE FIRE SERVICE****Available For:**

Private Fire Service in all territory served by the Company. Private Fire Service is rendered only after approval by the President or Vice President and General Manager of the Company of an "Application for Special Connection," and only in accordance with the terms and conditions as provided therein.

Rates**Rate per Annum****Private Fire Service Connections:**

1" diameter	\$ 33.00 (I)
1-1/2" diameter	74.42 (I)
2" diameter	132.37 (I)
2-1/2" diameter	201.85 (I)
3" diameter	297.54 (I)
4" diameter	595.83 (I)
6" diameter	1,190.73 (I)
8" diameter	2,383.48 (I)
10" diameter	3,575.50 (I)
12" diameter	4,767.72 (I)

Private Fire Hydrants other than those supplied
by Private Fire Service Connections

1,135.92 (I)

(I) Increase

ISSUED: March 14, 2008

EFFECTIVE: April 13, 2008

BY: JOHN WATSON, PRESIDENT
1101 Broad Street
Chattanooga, Tennessee 37401

Overall Financial Summary

Line No.	Description	Reference to Supporting Exhibit	Proposed Test Year
1	Rate Base	Exhibit 1, Schedule 2	\$119,881,506
2	Operating Income at Attrition Year Present Rates	Exhibit 2, Schedule 1	5,761,368
3	Earned Rate of Return		4.810%
4	Rate of Return	Exhibit 3, Schedule 1	8.514%
5	Required Operating Income		10,206,711
6	Operating Income Deficiency		4,445,343
7	Gross Revenue Deficiency Factor		1.71974555
8	Revenue Deficiency		7,644,859
9			
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Computation of Attrition Year Rate Base

Tennessee Regulatory Authority
Company: Tennessee-American Water Company
Case No:

Line No.	Footnote Reference	Per Books Rate Base @ 11/30/07	Adjustments	Rate Base 13 mo average @ 08/31/09
1				
2				
3				
4				
5				
6	(1)	\$191,067,259	\$12,931,133	\$203,998,392
7	(2)	2,829,032	6,253,968	9,083,000
8				
9		1,590,500		1,590,500
10				
11	(3)	0	0	0
12				
13	(4)	0	0	0
14				
15				
16		1,991,406	0	1,991,406
17				
18		<u>197,478,196</u>	<u>19,185,102</u>	<u>216,663,298</u>
19				
20				
21				
22	(5)	58,457,113	5,106,092	63,563,205
23				
24		(151,351)	0	(151,351)
25				
26	(6)	1,007,317	132,542	1,139,858
27	(7)	15,511,634	1,420,137	16,931,771
28				
29	(8)	5,750,627	1,043,308	6,793,935
30				
31	(9)	8,258,501	140,515	8,399,016
32				
33	(10)	37,993	0	37,993
34				
35	(11)	74,850	(7,485)	67,365
36				
37				
38		<u>88,946,684</u>	<u>7,835,109</u>	<u>96,781,792</u>
39				
40		<u>108,531,513</u>	<u>11,349,993</u>	<u>119,881,506</u>
41				
42				
43				
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45				

Attrition Year Rate Base
 Footnotes

Line No.	FOOTNOTE REFERENCE	DESCRIPTION	AMOUNT
1	(1)	Net Additions to UPIS through August 2009	\$12,931,133
2	(2)	Adjustment to CWIP through August 2009	6,253,968
3	(3)	Adjustment to Deferred Maintenance	0
4	(4)	Adjustment to Limited-Term Utility Plant - Net	0
5	(5)	Adjustment to Accumulated Provision for Depreciation of UPIS	5,106,092
6	(6)	Adjustment to Accumulated Amortization of Utility Plant - Capital Lease	132,542
7	(7)	Adjustment to Deferred Income Taxes	1,420,137
8	(8)	Change in Customer Advances	1,043,308
9	(9)	Change in Contributions in Aid of Construction	140,515
10	(10)	Change in Unamortized Investment Tax Credit	0
11	(11)	Adjustment to Utility Plant Acquisition Adjustment	(7,485)
12			
13			
14			
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Net Additions to Utility Plant In Service & 13 Month Average
From End of Test Year to End of Forecasted Period

Tennessee Regulatory Authority
Company: Tennessee-American Water Company
Case No:

Test Year: Twelve Months Ended: November 30, 2007
Exhibit No. 1, Schedule 2
Page 3 of 3

Line No.	Account Number	Account Description	2007 Net Additions	2008 Net Additions	2009 Net Additions	Net Additions to Utility Plant In Service 12/31/07-9/30/09	13 month average Utility Plant In Service @ 09/30/09
1	301000	Organization	\$0	\$0	\$0	\$0	0
2	301000	Land & Land Rights	\$0	\$240,000	\$0	\$253,000	671,496
3	303000	Comprehensive Planning Study	\$13,000	\$0	\$0	(\$405,132)	0
4	303600	Pumping Structures	\$53,033	\$0	\$0	\$53,033	3,603,562
5	304200	Water Treatment Structures	(\$467)	\$958,000	\$1,146,500	\$2,004,033	2,964,941
6	304300	Water Treatment Structures-Painting	\$0	\$0	\$0	\$0	1,894,806
7	304301	T & D Structures	\$0	\$0	\$0	\$0	524,780
8	304400	Office Structures	\$157,455	\$0	\$0	\$157,455	308,629
9	304600	Stores, Shop, & Garage Structures	\$0	\$0	\$0	\$0	312,642
10	304700	Miscellaneous Structures	\$0	\$0	\$0	\$0	657,573
11	304800	Lakes, Rivers, & Other Intakes	\$0	\$0	\$0	\$0	468,123
12	306000	Supply Mains	\$1,171	\$0	\$0	\$1,171	603,634
13	308000	Power Generation Equipment	\$0	\$30,000	\$85,000	\$95,000	227,422
14	310100	Electric Pumping Equipment	\$0	\$0	\$0	\$0	5,717,338
15	311200	Diesel Pumping Equipment	\$0	\$0	\$0	\$0	119,286
16	311300	Other Pumping Equipment	\$48,049	\$0	\$0	\$48,049	317,113
17	311500	Water Treatment Equipment	\$91,217	\$168,000	\$260,000	\$539,217	0
18	320100	Granular Activated Carbon	\$0	\$0	\$0	\$0	12,728,963
19	320200	T & D Reservoirs & Standpipes	\$97,766	\$362,000	\$605,000	\$1,064,769	7,455,086
20	330000	T & D Reservoirs & Standpipes-Painting	\$284,443	\$0	\$0	\$284,443	1,994,568
21	330003	Cleanwells	\$0	\$0	\$0	\$0	860,784
22	330400	T & D Mains not Classified	\$0	\$0	\$0	\$0	2,217,891
23	331001	T & D Mains - Mains (4" or less)	\$241,103	\$30,000	\$0	\$271,103	4,676,232
24	331100	T & D Mains - Mains (6" - 8")	\$47,268	(\$68,318)	(\$36,544)	(\$75,565)	1,458
25	331200	T & D Mains - Mains (6" - 10")	\$278,065	\$3,087,512	\$1,664,303	\$278,065	84,141,552
26	331210	T & D Mains - Mains (10" - 16")	\$0	\$0	\$0	\$0	6,745,591
27	331300	T & D Mains - Mains (12" or More)	\$651,876	\$1,875,075	\$1,548,762	\$4,951,815	25,916,974
28	331350	Services	\$145,881	\$1,875,075	\$1,548,762	\$3,569,718	20,333,845
29	333000	Meters	\$58,120	\$1,162,431	\$787,958	\$2,008,509	4,081,223
30	334100	Meters-Metal Case/Old Style	\$1,311,374	\$0	\$0	\$1,311,374	1,324,025
31	334120	Meters - Plastic Case	\$0	\$0	\$0	\$0	0
32	334130	Meters - Metal Case/New Style	\$183	\$0	\$0	\$183	833,022
33	334200	Hydrants	(\$1,153,462)	\$687,600	\$525,300	\$59,438	10,810,746
34	335000	Other P/E SS	\$207,822	\$860,000	\$588,500	\$1,656,322	8,077,845
35	339200	Office Furniture	\$0	\$372,345	\$326,887	\$701,232	6,526
36	340100	Computer & Peripheral Equipment	(\$101,349)	\$0	\$0	(\$101,349)	607,594
37	340200	Computer & Mainframe Equipment	\$0	\$71,500	\$67,000	\$138,500	308,231
38	340210	Computer & Periph Personal	\$0	\$77,800	\$45,800	\$123,600	603,485
39	340220	Computer & Periph Other	(\$311,724)	\$0	\$0	(\$311,724)	412,653
40	340230	Computer Software	(\$65,989)	\$17,600	\$17,600	(\$30,768)	180,863
41	340300	Computer Software Mainframe	\$0	\$0	\$0	\$0	398,993
42	340310	Computer Software Personal	(\$14,760)	\$14,000	\$18,500	\$33,500	3,535,059
43	340320	Computer Software Other	\$0	\$0	\$0	(\$14,760)	181,464
44	340330	Data Handling Equipment	\$0	\$0	\$0	\$0	14,222
45	340400	Other Office Equipment	(\$44,518)	\$0	\$0	(\$44,518)	15,284
46	341100	Light Trucks	(\$43,739)	\$0	\$0	(\$43,739)	92,691
47	341200	Heavy Trucks	\$58,422	\$261,800	\$323,100	\$643,422	1,381,808
48	341300	Automobiles	\$0	\$127,800	\$127,800	\$255,600	953,058
49	341400	Transportation-Other	\$0	\$34,200	\$34,200	\$68,400	299,015
50	342000	Stores Equipment	\$0	\$0	\$0	\$0	237,242
51	343000	Tools, Shop, & Garage Equipment	(\$2,843)	\$0	\$0	(\$2,843)	43,392
52	344000	Laboratory Equipment	(\$1,694)	\$98,200	\$151,300	\$247,618	1,315,016
53	345000	Power Operated Equipment	\$0	\$6,000	\$12,000	\$32,767	581,626
54	346100	Communication Equipment	\$35,535	\$0	\$0	\$35,535	332,767
55	346200	Communication Equipment-Telephone	(\$70,027)	\$0	\$0	(\$70,027)	380,368
56	347000	Miscellaneous Equipment	\$8,753	\$5,400	\$5,400	\$20,553	92,350
57	348000	Other Tangible Plant	\$0	\$0	\$11,000	\$19,000	1,097,161
58	348000	Total Plant In Service	1,570,771	10,409,144	8,478,466	20,464,361	4,918
59							203,988,392

Computation of Working Capital

Line No.	Item	Amount
1		
2		
3		
4		
5		
6		
7	Average Cash	214,257
8		
9	Prepaid Insurance	97,506
10		
11	Prepaid Taxes	168,877
12		
13	Materials & Supplies	204,853
14		
15	Deferred Regulatory Expenses	1,020,269
16		
17	Unamortized Debt Expense	290,559
18		
19	Other Deferred Debits	852,184
20		
21	Lead - Lag Study	604,000
22		
23	Total	<u>3,452,505</u>
24		
25	Less:	
26		
27	Customer Deposits	0
28		
29	Incidental Collections	1,461,099
30		
31	Total	<u>1,461,099</u>
32		
33	Working Capital Requirement	<u>1,991,406</u>
34		
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45		

Computation of Working Capital
Lead/Lag Study

Line No.	Description	Days	Amount
1	Net Operating Funds		<u>37,240,793</u>
2			
3	Average Daily Operating Funds		102,030
4			
5	Composite Average Days Interval Between:		
6	(A) Date Service Furnished and Date Collections Deposited	41.73	
7	(B) Date Expenses Incurred and Date of Payment	35.81	
8	(C) Net Interval	<u>5.92</u>	
9	Operating Funds Advanced		604,018
10	Lead/Lag Study Capital		<u>604,018</u>
11	Use		<u>604,000</u>
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Composite Average Days Interval between Date Expenses
are Incurred and Date of Payment

Line No.	Description	Amount	Post Payment or (Lead) Days	Dollar Days
1	Payrolls Charged to Expense - Hourly	3,388,686	5.50	18,637,774
2	Payrolls Charged to Expense - Salary	1,581,935	14.02	22,179,015
3	Fuel and Power	1,986,259	50.65	100,604,007
4	Chemicals	1,049,272	28.27	29,662,907
5	Waste Disposal	179,088	31.23	5,592,917
6	AWWS Charges	4,335,190	(4.46)	(19,334,948)
7	Group Insurance	1,082,191	(1.31)	(1,417,671)
8	Pensions	1,161,108	0.00	0
9	Insurance Other than Group	583,492	(21.72)	(12,673,446)
10	Rents	11,336	9.24	104,741
11	Telephone Expense	111,452	(2.73)	(304,264)
12	Postage Expense	330,315	24.77	8,181,897
13	Amortizations	0	0.00	0
14	Stock E	142,602	23.77	3,389,650
15				
16				
17				
18				
19				
20	Other Operating and Maintenance Expenses	4,572,214	20.51	93,776,105
21	Total O & M Expenses	20,515,160		
22				
23	Depreciation and Amortization	4,730,347	0.00	0
24	Taxes, Other than Income			
25	Payroll	484,884	10.61	5,144,618
26	Other	3,817,512	174.52	666,232,194
27	FIT-Current	1,018,215	37.00	37,673,955
28	SIT-Current	182,238	58.63	10,684,614
29	Deferred Taxes	731,069	0.00	0
30	Interest Expense	4,081,966	87.97	359,090,549
31	Preferred Dividends	69,531	89.48	6,221,634
32	Net Earnings	1,609,871	0.00	0
33	Net Operating Funds	37,240,793		1,333,446,248
34				
35				
36	Average Days Interval between Date Expenses are Incurred and Date of Payment		35.81	
37				
38				
39				
40				
41				
42				
43				
44				
45				

Average Days Interval between Number of Days
From Date Services are Furnished to Date Collections are Received

Line No.	Revenues Amount	Median Service Days	Dollar Days
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12	Revenues less private fire 34,283,659	15.21	521,454,457
13			
14	Private Fire billed in advance 1,489,608	(45.63)	(67,970,813)
15			
16	Total <u>35,773,267</u>		<u>453,483,644</u>
17			
18			
19			
20			
21			
22			
23			
24	Average Median Service Days	12.68	
25			
26	Number of Days between the Reading Date and the Date the Bills are Mailed	4.62	
27			
28			
29	Number of Days between the Reading Date and the Date the Bills are paid	24.43	
30			
31			
32	Total Average Days' Interval between Number of Days from Date Services are Furnished to Date Collections are Received	<u>41.73</u>	
33			
34			
35			
36			
37			
38			
39			
40			
41			
42			
43			
44			
45			

Notes: private fire Quarterly is billed in advance
All monthly customers are billed in arrears

Computation of Average Materials & Supplies Paid

End of Month	
Date	Amount
Nov-05	581,029
Dec-06	229,357
Jan-07	195,445
Feb-07	233,008
Mar-07	224,864
Apr-07	270,637
May-07	291,693
Jun-07	294,104
Jul-07	213,158
Aug-07	230,819
Sep-07	302,090
Oct-07	245,557
Nov-07	230,169
Total	3,541,929
Average Balance	272,456

Tennessee Regulatory Authority
Company: Tennessee-American Water Company
Case No:

Line
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Computation of Average Materials and Supplies Unpaid

Line No.	End of Month	
	Date	Amount
1	Nov-06	65,592
2	Dec-06	62,794
3	Jan-07	77,330
4	Feb-07	76,101
5	Mar-07	70,975
6	Apr-07	71,313
7	May-07	74,198
8	Jun-07	76,903
9	Jul-07	61,895
10	Aug-07	52,926
11	Sep-07	52,775
12	Oct-07	52,123
13	Nov-07	83,918
14	Total	878,843
15	Average Balance	67,603

Test Year: Twelve Months Ended: November 30, 2007
Exhibit No. 2, Schedule 1
Page 1 of 1

Line No.	Adjustment Shown on Schedule No.	Per Books 12 Months Ended 11/30/07	Test Year Adjustments Present Rates	Normalized Test Year	Attrition Year at Adjustments Present Rates	Attrition Year at Proposed Rates
1	2					
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Tennessee Regulatory Authority
Company: Tennessee-American Water Company
Case No:

Operating Revenues Per Books for the Test Year and
for the Attrition Year under both Present and Proposed Rates

Test Year: Twelve Months Ended: November 30, 2007
Exhibit No. 2, Schedule 2
Page 1 of 1

Line No.	Description	Per Books 12 Months Ended 11/30/07	Test Year Adjustments Present Rates	Normalized Test Year	Attrition Year Adjustments	Attrition Year at Present Rates	Adjustments for Proposed Rates	Attrition Year at Proposed Rates
1	Sales of Water							
2								
3	Metered Sales to General Customers							
4								
5	Residential	\$15,183,550	(\$286,909)	\$14,896,641	\$98,315	\$14,994,956	\$3,190,566	\$18,185,522
6								
7	Commercial	11,084,750	246,854	11,331,604	128,661	11,460,265	\$2,464,930	13,925,195
8								
9	Industrial	3,834,564	80,169	3,914,733	0	3,914,733	\$848,260	4,762,993
10								
11	Other Public Authorities	2,482,512	120,566	2,603,078	0	2,603,078	\$561,216	3,164,294
12								
13	Sales for Resale	1,717,504	(406,877)	1,310,627	0	1,310,627	\$194,851	1,505,478
14								
15	Private Fire Service	1,438,263	51,345	1,489,608	0	1,489,608	320,857	1,810,465
16								
17	Miscellaneous	0	0	0	0	0	0	0
18								
19	Total Sales of Water	35,741,144	(194,853)	35,546,291	226,976	35,773,267	7,580,680	43,353,947
20								
21								
22	Other Operating Revenues							
23								
24	Activity / New Service Fees	290,095	0	290,095	0	290,095	0	290,095
25								
26	Late Payment Penalty	302,740	(1,650)	301,090	1,923	303,013	64,211	367,224
27								
28	Rents from Water Property	125,563	0	125,563	0	125,563	0	125,563
29								
30	Sewer Billing Revenues	442,596	(1,752)	440,844	2,718	443,562	0	443,562
31								
32	Miscellaneous	25,492	0	25,492	0	25,492	0	25,492
33								
34	Reconnection Fee	181,468	0	181,468	0	181,468	0	181,468
35								
36	Total Other Operating Revenues	1,367,954	(3,402)	1,364,552	4,641	1,369,193	64,211	1,433,404
37								
38								
39	Total Operating Revenues	37,109,098	(198,255)	36,910,843	231,617	37,142,460	7,644,891	44,787,351
40								
41								
42								
43								
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Summary of Adjustments to Operation and Maintenance Expenses

Test Year: Twelve Months Ended: November 30, 2007
Exhibit No. 2, Schedule 3
Page 1 of 1

Line No.	Adjustment Number Reference	Description	Per Books 12 Months Ended 11/30/07	Test Year Adjustments Present Rates	Normalized Test Year	Attrition Year Adjustments	Attrition Year at Present Rates	Adjustments for Proposed Rates	Attrition Year at Proposed Rates
1	1	Operation and Maintenance Labor	\$4,641,460	\$372,181	\$5,013,641	\$45,346	\$5,058,987	\$0	\$5,058,987
2	2	Purchased Water	\$58,216	0	58,216	(6,106)	52,110	0	52,110
3	3	Fuel and Power	\$2,274,868	(295,247)	1,979,621	6,638	1,986,259	0	1,986,259
4	4	Chemicals	\$1,075,171	(30,988)	1,044,183	5,088	1,049,272	0	1,049,272
5	5	Waste Disposal	\$161,721	0	161,721	17,367	179,088	0	179,088
6	6	Management Fees	\$4,789,601	(728,713)	4,059,888	275,302	4,335,190	0	4,335,190
7	7	Group Insurance	\$1,596,405	136,797	1,733,202	(18,652)	1,714,550	0	1,714,550
8	8	Pensions	\$726,428	(44,427)	682,001	479,107	1,161,108	0	1,161,108
9	9	Regulatory Expense	\$508,129	0	508,129	35,255	543,384	0	543,384
10	10	Insurance Other than Group	\$559,655	0	559,655	23,837	583,492	0	583,492
11	11	Customer Accounting	\$704,362	19,101	723,464	8,978	732,442	0	732,442
12	12	Uncollectible Expense	\$417,277	(2,901)	414,376	3,380	417,756	113,834	531,590
13	13	Rents	\$30,037	(18,701)	11,336	0	11,336	0	11,336
14	14	General Office Expense	\$244,966	(11,748)	233,217	8,883	242,101	0	242,101
15	15	Miscellaneous Expense	\$1,931,046	(198,102)	1,732,944	257,260	1,990,204	0	1,990,204
16	16	Other Maintenance Expense	\$1,211,604	(310,752)	900,852	20,720	921,572	0	921,572
17	17	Interest on Customer Deposits	0	0	0	0	0	0	0
18	18	AFUDC	(\$110,499)	0	(110,499)	(353,191)	(463,690)	0	(463,690)
Total Operation and Maintenance Expenses			20,820,445	(1,114,499)	19,705,947	809,213	20,515,160	113,834	20,628,994

Summary of Adjustments to Depreciation and Amortization Expenses

Line No.	Adjustment Number Reference	Description	Per Books 12 Months Ended 11/30/07	Test Year Adjustments Present Rates	Normalized Test Year	Attrition Year Adjustments	Attrition Year at Present Rates	Adjustments for Proposed Rates	Attrition Year at Proposed Rates
1	1	Depreciation Expense	\$5,065,064	\$45,844	\$5,110,908	(\$300,167)	\$4,810,741	\$0	\$4,810,741
2	2	Amortization of Utility Plant Acquisition Adjustment	0	0	0	0	0	0	0
3	3	Amortization of Utility Capital Lease	106,033	0	106,033	0	106,033	0	106,033
4	4	Amortization of Leased Alteration Expense	0	0	0	0	0	0	0
5	5	Amortization of Accumulated Depreciation on CIAC	(255,448)	86,011	(169,437)	(16,990)	(186,427)	0	(186,427)
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			4,915,650	131,855	5,047,504	(317,157)	4,730,347	0	4,730,347

**Attrition Year Provision for Depreciation Expense
For Utility Plant In Service**

**Tennessee Regulatory Authority
Company: Tennessee-American Water Company
Case No:**

Line No.	Account Number	Account Description	Depreciable Property at 1/1/2007	Depreciation Rate	Normalized Test Year Depreciation Expense	13 Month Avg. Depreciable Property at End of Attrition Year	New Depreciation Rates	Attrition Year Expense
1	339600	Comprehensive Planning Study	\$405,132	20.00%	\$81,026	0	0.00%	\$0
2	304200	Pumping Structures	3,810,529	3.86%	\$147,086	3,863,662	1.98%	76,489
3	304300	Water Treatment Structures	2,013,177	4.57%	\$92,002	1,994,941	4.11%	121,859
4	304301	Water Treatment Structures-Painting	1,694,808	10.00%	\$169,481	1,694,808	12.06%	204,384
5	304400	T & D Structures	524,790	3.51%	\$59,420	524,790	2.13%	11,178
6	304600	Office Structures	149,174	3.98%	\$5,937	306,629	1.13%	3,465
7	304700	Stores - Shop, & Garage Structures	312,642	4.65%	\$14,538	312,642	0.73%	2,282
8	304800	Miscellaneous Structures	657,573	6.64%	\$37,087	657,573	0.49%	3,222
9	306000	Lakes, Rivers, & Other Intakes	489,123	3.40%	\$16,630	489,123	0.83%	4,060
10	309000	Supply Mains	602,664	5.92%	\$35,678	603,834	1.87%	11,292
11	310100	Power Generation Equipment	227,422	3.44%	\$7,823	227,422	12.33%	28,041
12	311200	Electric Pumping Equipment	5,662,338	1.73%	\$97,958	5,717,338	2.45%	140,075
13	311300	Diesel Pumping Equipment	119,296	1.97%	\$2,350	119,296	2.50%	2,982
14	311500	Other Pumping Equipment	268,063	3.94%	\$10,562	317,113	1.83%	5,603
15	320100	Water Treatment Equipment	12,378,400	4.27%	\$526,558	12,726,953	1.09%	138,724
16	320200	Granular Activated Carbon	0	36.42%	\$0	0	0.00%	0
17	330000	T & D Reservoirs & Standpipes	5,137,849	1.80%	\$92,481	5,594,977	2.08%	115,752
18	330003	T & D Reservoirs & Standpipes-Painting	1,710,126	10.00%	\$171,013	1,994,569	11.08%	220,998
19	330100	Elevated Tanks & Standpipes	1,780,769	1.80%	\$32,053	1,890,119	2.74%	51,789
20	330400	Clearwells	680,784	1.80%	\$12,254	680,784	1.65%	11,233
21	331001	T & D Mains not Classified	1,850,624	1.41%	\$27,581	2,217,851	1.50%	33,266
22	331100	T & D Mains - Mains (4' or less)	1,459	1.36%	\$20	1,458	1.50%	22
23	331200	T & D Mains - Mains (6' - 8')	60,596,292	1.36%	\$824,110	64,141,552	1.50%	962,123
24	331210	T & D Mains - Mains (6' - 8')	6,745,591	1.42%	\$95,787	6,745,591	1.50%	101,184
25	331300	T & D Mains - Mains (10' - 16')	23,551,824	1.42%	\$334,862	25,916,974	1.50%	388,755
26	331350	T & D Mains - Mains (10' - 16')	16,858,849	2.28%	\$429,982	20,333,945	1.64%	333,477
27	333000	Services	4,623,103	0.98%	\$45,306	4,681,223	6.91%	323,473
28	334100	Meters	12,651	2.45%	\$310	1,324,025	6.91%	91,490
29	334110	Meters-Metal Case/Old Style	0	16.35%	\$0	0	6.91%	0
30	334120	Meters - Plastic Case	16,786	0.98%	\$165	833,022	6.91%	57,562
31	334131	Meters-rem rdt	10,950,262	1.64%	\$179,584	10,810,746	3.23%	349,187
32	334200	Meter Installations	7,420,322	2.21%	\$163,969	8,077,845	2.63%	212,447
33	335000	Hydrants	8,526	5.92%	\$505	8,526	0.00%	0
34	339200	Other P/E SS	626,817	2.73%	\$17,112	607,584	1.39%	8,445
35	340100	Office Furniture	308,231	15.90%	\$49,008	308,231	2.19%	6,760
36	340200	Computer & Peripheral Equipment	603,486	15.90%	\$93,954	603,486	2.19%	13,216
37	340210	Computer & Mainframe Equipment	619,587	15.90%	\$98,514	412,863	2.19%	9,042
38	340220	Computer & Periph Personal	256,972	15.90%	\$40,859	180,983	2.19%	4,163
39	340230	Computer & Periph Other	362,233	15.90%	\$60,775	399,963	1.83%	7,301
40	340300	Computer Software	3,535,059	15.90%	\$562,074	3,535,059	1.83%	64,892
41	340310	Computer Software Mainframe	206,245	15.90%	\$32,793	191,484	1.83%	3,504
42	340320	Computer Software Personal	14,222	15.90%	\$2,281	14,222	1.83%	260
43	340330	Computer Software Other	15,284	15.90%	\$2,430	15,284	4.84%	755
44	340400	Data Handling Equipment	137,210	4.07%	\$5,584	92,681	1.38%	1,288
45	340500	Other Office Equipment	1,074,347	9.36%	\$100,559	1,381,608	16.00%	221,057
46	341100	Light Trucks	733,952	9.99%	\$73,322	953,058	16.62%	158,398
47	341200	Heavy Trucks	254,777	10.54%	\$26,853	299,015	11.38%	34,028
48	341300	Automobiles	237,242	0.70%	\$1,661	237,242	7.24%	17,176
49	341400	Transportation-Other	43,392	4.98%	\$4,392	43,392	0.00%	0
50	342000	Stores Equipment	1,182,044	3.85%	\$45,509	1,345,016	6.89%	90,605
51	343000	Tools, Shop, & Garage Equipment	370,126	11.12%	\$41,158	381,626	1.01%	3,854
52	344000	Laboratory Equipment	332,767	9.21%	\$30,648	332,767	0.00%	0
53	345000	Power Operated Equipment	354,831	4.43%	\$15,719	390,366	4.21%	16,434
54	346100	Communication Equipment	155,731	14.91%	\$23,219	92,350	3.51%	3,241
55	346200	Communication Equipment-Telephone	1,075,581	2.69%	\$31,084	1,037,181	6.33%	69,452
56	347000	Miscellaneous Equipment	4,918	2.89%	\$142	4,918	5.10%	251
57	348000	Other Tangible Plant	0					(186,427)
58		Amortization of CIAC						
59								
60								
61		Total Plant In Service	190,634,917		4,941,471	203,326,896		4,624,314
62								
63		Land	432,342			671,496	432,342	2.27%
64		Cap Lease Asset	1,590,500			1,590,500		
65		Total Up	192,657,759			205,588,892	432,342	
		GL Balance	197,113,579					
		Walden's Ridge	-4,455,819					

**Test Year: Twelve Months Ended: November 30, 2007
Exhibit No. 2, Schedule 4
Page 2 of 2**

Summary of Adjustments to Taxes Other than Income

Line No.	Adjustment Number Reference	Description	Per Books 12 Months Ended 11/30/07	Test Year Adjustments Present Rates	Normalized Test Year	Attrition Year Adjustments	Attrition Year at Present Rates	Adjustments for Proposed Rates	Attrition Year at Proposed Rates
1	1	Property Taxes	\$2,901,497	(\$317,200)	\$2,584,297	\$268,893	\$2,853,180	\$0	\$2,853,180
2	2	Other General Taxes	878,223	0	878,223	86,109	964,332	216,601	1,180,933
3	3	F.U.T.A. Taxes	5,136	(47)	5,089	0	5,089	0	5,089
4	4	F. I. C. A. Taxes	345,822	30,140	375,962	2,955	378,917	0	378,917
5	5	S.U.T.A. Taxes	2,597	(52)	2,545	0	2,545	0	2,545
11		Total	4,133,274	(287,158)	3,846,116	357,947	4,204,063	216,601	4,420,664

Summary of Income Taxes

Test Year: Twelve Months Ended: November 30, 2007
Exhibit No. 2, Schedule 6
Page 1 of 2

Line No.	Description	Per Books 12 Months Ended 11/30/07	Test Year Adjustments Present Rates	Normalized Test Year	Attribution Year Adjustments	Attribution Year at Present Rates	Adjustments for Proposed Rates	Attribution Year at Proposed Rates
1	Federal Income Tax - Current	\$2,115,677	(\$754,297)	\$1,361,380	(\$343,165)	\$1,018,215	\$2,393,646	\$3,411,861
2		(37,777)	277,698	239,911	(57,673)	182,238	475,437	657,675
3	State Income Tax - Current							
4		(372,909)	782,057	409,148	146,915	556,063	0	556,063
5	Deferred Federal Income Tax							
6		428,593	(177,219)	251,374	0	251,374	0	251,374
7	Deferred State Income Tax							
8		(76,368)	0	(76,368)	0	(76,368)	0	(76,368)
9	Amortization of ITC							
10		(11,247)	11,247	0	0	0	0	0
11	Adjustment of Prior Years - FIT							
12		4,072	(4,072)	0	0	0	0	0
13	Adjustment of Prior Years - SIT							
14								
15								
16								
17								
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44								
45								
	Total	2,050,040	135,405	2,185,445	(253,923)	1,931,522	2,869,093	4,800,605

Line No.	Description	Per Books Test Year Present Rates		Normalized Year Present Rates		Apportionment Year Present Rates		Apportionment Year Proposed Rates	
		Federal	State	Federal	State	Federal	State	Federal	State
1	Operating Revenues	\$37,109,008	\$37,109,008	\$30,910,543	\$39,910,943	\$37,142,160	\$37,142,400	\$44,787,310	\$44,787,310
2									
3	Operation and Maintenance Expenses	20,820,445	20,820,445	18,705,947	19,705,947	20,515,160	20,515,160	20,828,064	20,828,064
4	Depreciation and Amortization	4,915,650	4,915,650	5,047,504	5,047,504	4,730,347	4,730,347	4,730,347	4,730,347
5	Taxes, Other than Income	4,133,274	4,133,274	3,846,116	3,846,116	4,204,063	4,204,063	4,420,664	4,420,664
6	State Income Taxes - Current	(45,591)	(45,591)	239,911	239,911	182,238	182,238	657,675	657,675
7	State Income Taxes - Deferred	440,468	440,468	251,374	251,374	251,374	251,374	251,374	251,374
8	Federal Income Taxes - Current	2,097,768	2,097,768	1,391,380	1,391,380	1,018,215	1,018,215	3,411,861	3,411,861
9	Federal Income Taxes - Deferred	(330,248)	(330,248)	409,148	409,148	559,093	559,093	559,093	559,093
10	Investment Tax Credit	(70,368)	(70,368)	(70,368)	(70,368)	(70,368)	(70,368)	(70,368)	(70,368)
11	Subtotal	31,919,410	31,919,410	30,785,017	30,785,017	31,381,092	31,381,092	34,590,610	34,590,610
12	Total Income Before Deductions	5,189,668	5,189,668	6,125,931	6,125,931	5,761,368	5,761,368	10,208,709	10,208,709
13									
14	Total Other Income	79,250	79,250						
15									
16	Total Other Deductions	91,860	91,860						
17									
18	Total Taxes Applicable to Other Income and Deductions	9,937	9,937						
19									
20	Total Interest Charges	3,776,007	3,776,007	4,091,966	4,091,966	4,091,966	4,091,966	4,091,966	4,091,966
21									
22	Net Income	1,420,214	1,420,214	2,043,965	2,043,965	1,679,402	1,679,402	6,124,743	6,124,743
23									
24	State Income Taxes	822,037	822,037	481,285	481,285	433,612	433,612	809,048	809,048
25	Federal Income Taxes	1,655,153	1,655,153	1,694,160	1,694,160	1,487,910	1,487,910	3,891,556	3,891,556
26									
27	Prelax Income	3,667,403	3,667,403	4,229,310	4,229,310	3,610,924	3,610,924	10,925,348	10,925,348
28									
29	Statutory Additions (Deductions):								
30	Permanent Difference	4,297	4,297	4,297	4,297	4,297	4,297	4,297	4,297
31	617.001 Book Over Tax Travel and Entertainment	14,301	14,301	14,301	14,301	14,301	14,301	14,301	14,301
32	618.008 Nondeductible Dues	(162,544)	(162,544)	(162,544)	(162,544)	(162,544)	(162,544)	(162,544)	(162,544)
33	618.008 Lobbying Expenses	124,042	124,042	124,042	124,042	124,042	124,042	124,042	124,042
34	638.008 Nondeductible Penalties								
35	Total Permanent Differences	(19,904)	(19,904)	(19,904)	(19,904)	(19,904)	(19,904)	(19,904)	(19,904)
36									
37	Financial Taxable Income	3,677,499	3,677,499	4,209,406	4,209,406	3,591,020	3,591,020	10,905,444	10,905,444
38									
39	Temporary Differences	189,693	189,693	189,693	189,693	189,693	189,693	189,693	189,693
40	604.004 Contributions and Advances	0	0	0	0	0	0	0	0
41	605.001 Book Over Tax Depreciation	58,249	58,249	58,249	58,249	58,249	58,249	58,249	58,249
42	612.001 Book Over Tax Bad Debt	(1,312)	(1,312)	(1,312)	(1,312)	(1,312)	(1,312)	(1,312)	(1,312)
43	618.002 Amortization of Regulatory Assets - AFUDC	(626)	(626)	(626)	(626)	(626)	(626)	(626)	(626)
44	618.070 Deferred Maintenance Expense	0	0	0	0	0	0	0	0
45	618.025 Management Study Expense	287,938	287,938	287,938	287,938	287,938	287,938	287,938	287,938
46	618.038 Accrued OFEB Expense	73,259	73,259	73,259	73,259	73,259	73,259	73,259	73,259
47	618.039 Incentive Plan Expense	(22,209)	(22,209)	(22,209)	(22,209)	(22,209)	(22,209)	(22,209)	(22,209)
48	618.030 Regulatory Pension Expenses	1,223,646	1,223,646	1,223,646	1,223,646	1,223,646	1,223,646	1,223,646	1,223,646
49	618.032 Miscellaneous Deferred Expenses	(697,588)	(697,588)	(697,588)	(697,588)	(697,588)	(697,588)	(697,588)	(697,588)
50	626.001 Tax Over Book Depreciation	(7,212)	(7,212)	(7,212)	(7,212)	(7,212)	(7,212)	(7,212)	(7,212)
51	638.014 Cost of Removal	(101,809)	(101,809)	(101,809)	(101,809)	(101,809)	(101,809)	(101,809)	(101,809)
52	638.015 AFUDC over Interest Capitalized for Taxes	0	0	0	0	0	0	0	0
53	638.016 Refund of Taxable Advances	(38,774)	(38,774)	(38,774)	(38,774)	(38,774)	(38,774)	(38,774)	(38,774)
54	638.022 Accrued Vacation Pay Expense	(188,249)	(188,249)	(188,249)	(188,249)	(188,249)	(188,249)	(188,249)	(188,249)
55	638.027 Abandonment Losses	345,095	345,095	345,095	345,095	345,095	345,095	345,095	345,095
56	638.036 Net Negative Salvage	67,640	67,640	67,640	67,640	67,640	67,640	67,640	67,640
57	Miscellaneous Deferred Expenses	(16,345)	(16,345)	(16,345)	(16,345)	(16,345)	(16,345)	(16,345)	(16,345)
58	Gains and Losses	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
59	Rate Case Expense	(1,271,232)	(1,271,232)	(1,271,232)	(1,271,232)	(1,271,232)	(1,271,232)	(1,271,232)	(1,271,232)
60	State Depreciation in excess of federal	184,647	184,647	184,647	184,647	184,647	184,647	184,647	184,647
61	Total Temporary Differences	(79,837)	(79,837)	(79,837)	(79,837)	(79,837)	(79,837)	(79,837)	(79,837)
62									
63	Federal Taxable Income Before SIT	3,597,662	3,597,662	4,129,569	4,129,569	3,091,425	3,091,425	10,405,649	10,405,649
64									
65	Correction to books	378,054	378,054	239,911	239,911	192,238	192,238	657,675	657,675
66	State Income Tax	189,372	189,372	3,899,659	3,899,659	2,809,187	2,809,187	9,748,174	9,748,174
67	Taxable Income	3,786,344	3,786,344	2,813,412	2,813,412	2,809,187	2,809,187	10,118,078	10,118,078
68									
69	Computation of Taxes:								
70	State Income Tax @ 6.50%	1,325,221	1,325,221	1,301,380	1,301,380	1,018,215	1,018,215	3,411,861	3,411,861
71	Federal Income Tax @ 35.00%	0	0	0	0	0	0	0	0
72	Total Current Income Tax	1,325,221	1,325,221	1,301,380	1,301,380	1,018,215	1,018,215	3,411,861	3,411,861
73									
74	Deferred SIT (on living differences)	59,441	59,441						
75	Deferred SIT Reg Assets/Liabilities	53,028	53,028						
76	Deferred SIT Other	139,895	139,895						
77	Deferred FIT (on living differences) including ITC	(179,871)	(179,871)						
	Deferred FIT Reg Assets/Liabilities	454,755	454,755						
	Deferred FIT Other	134,295	134,295						

Line No.	Class of Capital	Reference	Amount	Percent of Total	Cost Rate	Weighted Cost of Capital
1						
2						
3	Long-term Debt	Schedule 2	\$60,559,797	50.66%	6.26%	3.171%
4						
5	Short-term Debt		6,222,000	5.20%	4.50%	0.234%
6						
7	Preferred Equity	Schedule 3	1,381,600	1.16%	5.00%	0.058%
8						
9	Common Equity					
10	Common Stock		29,543,153	24.71%	11.75%	2.904%
11	Retained Earnings		21,845,457	18.27%	11.75%	2.147%
12						
13	Total Capitalization		119,552,007	100.00%		8.514%
14						
15						
16						
17						

Total Common Equity Return Proposed

11.75%

Line No.
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**Embedded Cost of Long-Term Debt
At the Mid-Point of the Attrition Year**

Tennessee Regulatory Authority
Company: Tennessee-American Water Company
Case No:

Test Year: Twelve Months Ended: November 30, 2007
Exhibit No. 3, Schedule 2
Page 1 of 1

Line No.	Debt Issue Type, Coupon Rate	Interest Rate	Issue Date	Maturity Date	Principal Amount	Face Amount Outstanding	Unamortized (Issuance) Debt Exp.	Carrying Value	Annual Interest Expense	Annual Amortization of Issue Expense	Total Cost
5	General Mortgage Bonds										
7	9.25% Series	9.25%	01/12/90	12/01/19	2,500,000	2,500,000	16,270	2,483,730	231,250	1,525	232,775
8	7.84% Series	7.84%	09/04/96	09/01/26	5,700,000	5,700,000	39,665	5,660,335	446,880	2,278	449,158
9	6.50% Series-matured 6/08	6.50%	05/31/98	06/01/08	0	0	0	0	0	7,434	7,434
10	6.87% Series	6.87%	03/31/01	03/29/11	5,100,000	2,040,000	10,010	2,029,990	140,148	5,004	145,152
11	5.39% Series	5.39%	01/31/07	12/21/13	15,000,000	15,000,000	34,585	14,965,415	808,500	3,458	811,958
12	5.62% Series	5.62%	03/29/07	03/29/19	19,000,000	19,000,000	51,691	18,948,309	1,067,800	5,169	1,072,969
13	6.00% Series (proposed)	6.00%	03/01/09	02/28/19	16,000,000	16,000,000	160,000	15,840,000	960,000	16,000	976,000
14											
15											
16	Capital Lease 9.489%	9.489%	06/01/98	05/31/13	1,590,500	632,018		632,018	97,432	0	97,432
17											
18											
19	Total				\$64,890,500	\$60,872,018	\$312,221	\$60,559,797	\$3,752,010	\$40,868	\$3,792,878

Embedded Cost of Long-Term Debt

6.26%

Tennessee Regulatory Authority
Company: Tennessee-American Water Company
Case No:

12 Embedded Cost of Preferred Stock

Line No.	Class/Description	Per Book Sales (CCF)	Per Book Total Revenues	Normalized Sales (CCF)	Normalized Total Revenues	Current Rates Sales (CCF)	Attrition Total Revenues	Proposed Rates Sales (CCF)	Total Revenues	Total Revenue Difference	Total Revenue Percent Change
1											
2											
3	Class/Description										
4											
6	Residential	4,772,347	16,183,650	4,422,166	14,999,640	4,466,330	14,994,968	4,466,330	18,186,522	3,190,666	21.276%
8	Commercial	4,277,009	11,084,760	4,108,791	11,351,604	4,146,286	11,460,268	4,146,286	13,925,198	2,464,930	21.608%
7	Industrial	3,222,174	3,834,664	3,144,866	3,914,733	3,144,866	3,914,733	3,144,865	4,762,893	848,260	21.698%
8	Other Public Authority	1,108,718	2,492,612	1,116,708	2,603,078	1,116,708	2,603,078	1,116,708	3,164,294	661,216	21.680%
9	Other Water Utility	1,988,122	1,717,804	1,603,623	1,310,627	1,603,623	1,310,628	1,603,623	1,605,479	194,861	14.987%
10	Private Fire Service	0	1,438,283	0	1,489,608	0	1,489,608	0	1,810,466	320,857	21.640%
11	Public Fire Service	0	0	0	0	0	0	0	-	-	
12	Subtotal	16,348,430	35,741,144	14,296,062	35,646,280	14,364,712	36,773,289	14,364,712	43,353,949	7,690,680	21.191%
13											
14	Other Operating Revenues		1,397,964		1,364,652		1,369,193		1,433,404	64,211	4.690%
15											
16	Total		37,109,098		36,810,942		37,142,482		44,787,353	7,644,861	20.593%

Per book revenues include unbilled revenues.

Tennessee Regulatory Authority
Residential Class
Company : Tennessee-American Water Company
Case No. :

Attrition Year Revenues at Current and Proposed Rates

Test Year Twelve Months Ending November 30, 2007
Exhibit No 4, Schedule 2
Page No. 1 of 13

Line No.		Per book			Normalized			Attrition Year at Present Rates			Attrition Year at Proposed Rates		
		Billing Determinate	Rate	Revenues	Billing Determinate	Rate	Revenues	Billing Determinate	Rate	Revenues	Billing Determinate	Rate	Revenues
1													
2													
3													
4													
5	Chattanooga												
6	5/8 - inch meter	724,349	10.42	\$7,567,711	720,352	10.42	\$7,509,073	725,327	10.42	\$7,557,912	725,327	12.80	\$9,284,192
7	3/4 - inch meter	1,124	17.51	19,681	1,119	17.51	19,576	1,118	17.51	19,576	1,118	21.51	24,048
8	1 - inch meter	2,116	29.14	61,637	2,103	29.14	61,297	2,103	29.14	61,297	2,103	35.80	75,295
9	1 1/2 - inch meter	223	58.30	12,996	222	58.30	12,937	222	58.30	12,937	222	71.92	16,993
10	2 - inch meter	123	93.27	11,478	123	93.27	11,478	123	93.27	11,478	123	114.58	14,101
11	3 - inch meter	3	174.89	497	3	174.89	497	3	174.89	497	3	214.84	611
12	4 - inch meter	0	291.49	0	0	291.49	-	-	291.49	-	-	358.08	0
13	6 - inch meter	0	592.99	0	0	592.99	-	-	592.99	-	-	716.17	0
14	8 - inch meter	0	932.77	0	0	932.77	-	-	932.77	-	-	1,145.95	0
15	Total Meters	727,939		7,854,000	723,921		7,511,948	728,998		7,693,697	728,998		9,414,140
16													
17	Volumetric												
18	First	2,333,155	0.194	452,932	2,321,755	0.194	450,420	2,341,956	0.194	464,291	2,341,956	0.236	652,931
19	Next	1,919,994	3.073	5,999,939	1,906,178	3.073	4,941,929	1,918,129	3.073	4,972,502	1,918,129	3.705	5,995,168
20	Next	73,763	1.931	142,417	73,495	1.931	141,919	73,495	1.931	141,919	73,495	2.349	172,540
21	Next	5,013	1.443	7,234	5,013	1.443	7,234	5,013	1.443	7,234	5,013	1.755	8,798
22	Next	1,000,000	1.103	0	0	1.103	-	-	1.103	-	-	1.342	0
23	All Over	0	0.695	0	0	0.695	-	-	0.695	-	-	0.797	0
24	Chattanooga Amount	4,331,818		14,169,119	4,009,440		13,163,347	4,038,290		13,239,623	4,038,290		19,143,387
25													
26	Lookout Mountain												
27	5/8 - inch meter	20,203	11.70	238,371	20,431	11.70	239,039	20,595	11.70	240,841	20,595	12.80	283,484
28	3/4 - inch meter	485	17.51	8,484	485	17.51	8,484	485	17.51	8,484	485	21.51	10,422
29	1 - inch meter	1,329	29.14	39,726	1,329	29.14	39,726	1,329	29.14	39,726	1,329	35.80	47,578
30	1 1/2 - inch meter	22	58.30	1,291	22	58.30	1,291	22	58.30	1,291	22	71.92	1,558
31	2 - inch meter	34	93.27	3,172	34	93.27	3,172	34	93.27	3,172	34	114.58	3,997
32	3 - inch meter	0	174.89	0	0	174.89	-	-	174.89	-	-	214.84	0
33	4 - inch meter	0	291.49	0	0	291.49	-	-	291.49	-	-	358.08	0
34	6 - inch meter	0	592.99	0	0	592.99	-	-	592.99	-	-	716.17	0
35	8 - inch meter	0	932.77	0	0	932.77	-	-	932.77	-	-	1,145.95	0
36	Total Meters	22,072		258,044	22,300		250,712	22,454		252,514	22,454		328,967
37													
38	Volumetric												
39	First	76,282	0.721	54,278	76,194	0.721	54,939	76,810	0.721	55,380	76,810	0.970	74,505
40	Next	184,707	3.958	731,072	186,555	3.958	699,228	187,958	3.958	694,772	187,958	4.432	744,383
41	Next	28,698	2.919	80,556	28,006	2.916	80,555	28,909	2.916	80,505	28,909	3.079	87,992
42	Next	56	1.969	110	56	1.969	110	56	1.969	110	56	2.482	139
43	Next	0	1.930	0	0	1.930	-	-	1.930	-	-	2.070	0
44	All Over	0	1.181	0	0	1.181	-	-	1.181	-	-	1.524	0
45	Lookout Mountain Amount	258,661		1,154,059	271,411		1,055,539	273,428		1,093,331	273,428		1,233,989
46													

Attrition Year Revenues at Current and Proposed Rates

Test Year Twelve Months Ending November 30, 2007

Line No.	Description	Per books			Normalized			Attrition Year at Present Rates			Attrition Year at Proposed Rates		
		Billing Determinate	Rates	Revenues	Billing Determinate	Rates	Revenues	Billing Determinate	Rates	Revenues	Billing Determinate	Rates	Revenues
6	Lakeview	33,451	11.70	391,578	34,015	11.70	397,977	34,252	11.70	400,760	34,252	12.80	439,427
7	6/8 - inch meter	4	17.51	70	4	17.51	70	4	17.51	70	4	21.51	89
8	3/4 - inch meter	48	29.14	1,394	48	29.14	1,394	48	29.14	1,394	48	35.80	1,712
9	1 - inch meter	0	58.30	0	0	58.30	0	0	58.30	0	0	71.62	0
10	1 1/2 - inch meter	0	93.27	0	0	93.27	0	0	93.27	0	0	114.59	0
11	2 - inch meter	0	174.89	0	0	174.89	0	0	174.89	0	0	214.84	0
12	3 - inch meter	0	291.49	0	0	291.49	0	0	291.49	0	0	368.08	0
13	4 - inch meter	0	582.99	0	0	582.99	0	0	582.99	0	0	716.17	0
14	8 - inch meter	0	932.77	0	0	932.77	0	0	932.77	0	0	1,145.85	0
15	Total Meters	33,503		392,842	34,067		399,441	34,304		402,214	34,304		440,225
17	Volumetric												
18	Fire	109,978	0.356	38,795	111,232	0.356	39,599	112,180	0.356	39,938	112,180	0.970	109,814
19	Next	84,893	3.386	287,447	72,264	3.386	244,685	72,891	3.386	246,131	72,891	4.432	322,168
20	Next	843	2.244	1,891	843	2.244	1,891	843	2.244	1,891	843	3.078	2,593
21	Next	45,600 Cubic Feet	1.604	0	0	1.604	0	0	1.604	0	0	2.482	0
22	Next	1,000,000 Cubic Feet	1.285	0	0	1.285	0	0	1.285	0	0	2.070	0
23	All Over	1,600,000 Cubic Feet	0.816	0	0	0.816	0	0	0.816	0	0	1.524	0
24	Lakeview Amount	194,711		720,975	184,338		685,616	185,713		690,172	185,713		873,798
26	Lone Oak												
27	6/8 - inch meter	1,281	31.39	40,208	1,281	31.39	40,208	1,281	31.39	40,208	1,281	28.00	37,145
28	3/4 - inch meter	0	31.39	0	0	31.39	0	0	31.39	0	0	29.00	0
29	1 - inch meter	0	31.39	0	0	31.39	0	0	31.39	0	0	35.80	0
30	1 1/2 - inch meter	0	31.39	0	0	31.39	0	0	31.39	0	0	71.62	0
31	2 - inch meter	0	31.39	0	0	31.39	0	0	31.39	0	0	114.59	0
32	3 - inch meter	0	31.39	0	0	31.39	0	0	31.39	0	0	214.84	0
33	4 - inch meter	0	31.39	0	0	31.39	0	0	31.39	0	0	368.08	0
34	6 - inch meter	0	31.39	0	0	31.39	0	0	31.39	0	0	716.17	0
35	8 - inch meter	0	31.39	0	0	31.39	0	0	31.39	0	0	1,145.85	0
36	Total Meters	1,281		40,208	1,281		40,208	1,281		40,208	1,281		37,145
37	Volumetric												
38	Fire	2,976	0.000	0	2,976	0.000	0	2,976	0.000	0	2,976	0.000	0
39	Next	5,189	3.9473	20,483	5,189	3.9473	20,483	5,189	3.9473	20,483	5,189	6.285	22,831
40	In Excess	2.87 (100 CCF)										4.930	1,808
41	Next	43,600 Cubic Feet											81,894
42	Lone Oak Amount	8,165		60,689	8,165		60,689	8,165		60,689	8,165		81,894

Line No.		Per books			Normalized			Attrition Year at Present Rates			Attrition Year at Proposed Rates		
		Billing Determinate	Rate	Revenue	Billing Determinate	Rate	Revenue	Billing Determinate	Rate	Revenue	Billing Determinate	Rate	Revenue
5	Lakeview												
6	6/8 - inch meter	1,780	11.70	20,828	1,780	11.70	20,828	1,780	11.70	20,828	1,780	12.80	22,788
7	3/4 - inch meter	0	17.51	0	0	17.51	-	-	17.51	-	-	21.61	0
8	1 - inch meter	229	29.14	6,664	169	29.14	4,916	188	29.14	6,469	188	36.80	6,719
9	1 1/2 - inch meter	0	68.30	0	0	68.30	-	-	68.30	-	-	71.82	0
10	2 - inch meter	86	93.27	7,928	86	93.27	7,928	86	93.27	7,928	86	114.58	9,740
11	3 - inch meter	0	174.89	0	0	174.89	-	-	174.89	-	-	214.84	0
12	4 - inch meter	0	291.49	0	0	291.49	-	-	291.49	-	-	368.08	0
13	6 - inch meter	0	682.99	0	0	682.99	-	-	682.99	-	-	716.17	0
14	8 - inch meter	0	932.77	0	0	932.77	-	-	932.77	-	-	1,145.85	0
15	Total Meters	2,034		38,420	2,034		33,671	2,033		34,226	2,033		38,246
16													
17	Volumetric												
18	First 400 Cubic Feet	6,328	0.366	1,897	6,088	0.366	1,811	6,164	0.366	1,938	6,164	0.970	5,009
19	Next 8,100 Cubic Feet	14,019	3.388	47,469	13,448	3.388	45,539	13,630	3.388	46,162	13,630	4.432	60,409
20	Next 43,600 Cubic Feet	9,677	2.244	19,248	7,677	2.244	17,002	7,677	2.244	17,002	7,677	3.076	23,305
21	Next 450,000 Cubic Feet	387	1.604	620	387	1.604	620	387	1.604	620	387	2.482	880
22	Next 1,000,000 Cubic Feet	0	1.286	0	0	1.286	-	-	1.286	-	-	2.070	0
23	All Over 1,800,000 Cubic Feet	0	0.816	0	0	0.816	-	-	0.816	-	-	1.524	0
24	Lakeview Amount	28,310		104,662	28,600		99,643	28,767		99,637	28,767		129,928
25													
26	Lone Oak												
27	5/8 - inch meter	23	31.39	731	23	31.39	731	23	31.39	731	23	28.00	676
28	3/4 - inch meter	0	31.39	0	0	31.39	-	-	31.39	-	-	28.00	0
29	1 - inch meter	0	31.39	0	0	31.39	-	-	31.39	-	-	36.80	0
30	1 1/2 - inch meter	0	31.39	0	0	31.39	-	-	31.39	-	-	71.82	0
31	2 - inch meter	0	31.39	0	0	31.39	-	-	31.39	-	-	114.58	0
32	3 - inch meter	0	31.39	0	0	31.39	-	-	31.39	-	-	214.84	0
33	4 - inch meter	0	31.39	0	0	31.39	-	-	31.39	-	-	368.08	0
34	6 - inch meter	0	31.39	0	0	31.39	-	-	31.39	-	-	716.17	0
35	8 - inch meter	0	31.39	0	0	31.39	-	-	31.39	-	-	1,145.85	0
36	Total Meters	23		731	23		731	23		731	23		876
37													
38	Volumetric												
39	First 2.67 (100 CCF)	21	0.000	0	21	0.000	-	21	0.000	-	21		0
40	In Excess 2.67 (100 CCF)	38	3.947	143	38	3.947	143	38	3.947	143	38		0
41													
42													
43	First 400 Cubic Feet										28		0
44	Next 8,100 Cubic Feet										31		186
45	Next 43,600 Cubic Feet												0
46	Lone Oak Amount	67		874	57		874	57		874	57		871

Attrition Year Revenues at Current and Proposed Rates

Line No.	Description	Per books			Normalized			Attrition Year at Present Rates			Attrition Year at Proposed Rates		
		Billing Determinate	Rate	Revenue	Billing Determinate	Rate	Revenue	Billing Determinate	Rate	Revenue	Billing Determinate	Rate	Revenue
1													
2													
3													
4													
5	Chattanooga												
6	5/8 - inch meter	1,990	10.42	\$20,736	1,976	10.42	\$20,679	1,976	10.42	\$20,679	1,976	12.80	\$25,280
7	3/4 - inch meter	138	17.61	2,393	135	17.61	2,365	135	17.61	2,365	135	21.61	2,905
8	1 - inch meter	1,692	29.14	49,105	1,649	29.14	47,970	1,649	29.14	47,970	1,649	35.80	59,934
9	1 1/2 - inch meter	770	68.30	44,901	768	68.30	44,988	768	68.30	44,988	768	71.62	64,874
10	2 - inch meter	3,494	93.27	325,987	3,479	93.27	324,395	3,478	93.27	324,395	3,478	114.68	399,611
11	3 - inch meter	49	174.89	8,564	48	174.89	8,389	48	174.89	8,389	48	214.84	10,305
12	4 - inch meter	251	291.49	73,123	251	291.49	73,123	251	291.49	73,123	251	368.08	89,828
13	6 - inch meter	21	692.99	12,149	21	692.99	12,149	21	692.99	12,149	21	716.17	14,926
14	8 - inch meter	0	932.77	0	0	932.77	0	0	932.77	0	0	1,145.85	0
15	Total Meters	8,283		633,848	8,320		633,638	8,320		633,638	8,320		656,662
16													
17	Volumetric												
18	First 400 Cubic Feet	22,317	0.194	4,329	22,604	0.194	4,366	22,604	0.194	4,366	22,604	0.238	5,311
19	Next 6,100 Cubic Feet	178,173	3.073	547,528	181,788	3.073	556,834	181,788	3.073	556,834	181,788	3.706	673,524
20	Next 43,600 Cubic Feet	347,365	1.931	670,743	350,875	1.931	677,539	350,875	1.931	677,539	350,875	2.349	824,205
21	Next 460,000 Cubic Feet	472,769	1.443	682,191	471,935	1.443	681,002	471,935	1.443	681,002	471,935	1.765	828,248
22	Next 1,000,000 Cubic Feet	77,413	1.103	85,388	77,413	1.103	85,388	77,413	1.103	85,388	77,413	1.342	103,888
23	All Over 1,800,000 Cubic Feet	0	0.866	0	0	0.866	0	0	0.866	0	0	0.787	0
24	Chattanooga Amount	1,098,017		2,624,022	1,104,514		2,640,585	1,104,514		2,640,585	1,104,514		3,090,736
25													
26													
27	Lookout Mountain												
28	5/8 - inch meter	168	11.70	1,847	168	11.70	1,847	168	11.70	1,847	168	12.80	2,021
29	3/4 - inch meter	12	17.61	210	12	17.61	210	12	17.61	210	12	21.61	268
30	1 - inch meter	143	29.14	4,168	143	29.14	4,168	143	29.14	4,168	143	35.80	5,121
31	1 1/2 - inch meter	11	68.30	649	11	68.30	649	11	68.30	649	11	71.62	797
32	2 - inch meter	88	93.27	6,172	88	93.27	6,172	88	93.27	6,172	88	114.68	7,592
33	3 - inch meter	0	174.89	0	0	174.89	0	0	174.89	0	0	214.84	0
34	4 - inch meter	0	291.49	0	0	291.49	0	0	291.49	0	0	368.08	0
35	6 - inch meter	0	692.99	0	0	692.99	0	0	692.99	0	0	716.17	0
36	8 - inch meter	0	932.77	0	0	932.77	0	0	932.77	0	0	1,145.85	0
37	Total Meters	390		13,048	390		13,048	390		13,048	390		15,779
38													
39	Volumetric												
40	First 400 Cubic Feet	952	0.721	687	952	0.721	687	952	0.721	687	952	0.970	924
41	Next 6,100 Cubic Feet	6,954	3.959	26,338	6,954	3.959	26,338	6,954	3.959	26,338	6,954	4.432	28,492
42	Next 43,600 Cubic Feet	5,146	2.816	14,492	5,146	2.816	14,492	5,146	2.816	14,492	5,146	3.078	15,830
43	Next 460,000 Cubic Feet	0	1.989	0	0	1.989	0	0	1.989	0	0	2.482	0
44	Next 1,000,000 Cubic Feet	0	1.630	0	0	1.630	0	0	1.630	0	0	2.070	0
45	All Over 1,800,000 Cubic Feet	0	1.181	0	0	1.181	0	0	1.181	0	0	1.524	0
46	Lookout Mountain Amount	12,753		54,593	12,753		54,593	12,753		54,593	12,753		62,026

Line No.		Per books			Normalized			Attrition Year at Present Rates			Attrition Year at Proposed Rates		
		Billing Determinate	Rate	Revenue	Billing Determinate	Rate	Revenue	Billing Determinate	Rate	Revenue	Billing Determinate	Rate	Revenue
1													
2													
3													
4													
5	Chattanooga												
6	6/8 - inch meter	0	10.42	\$0	-	10.42	\$0	-	10.42	\$0	0	12.80	\$0
7	3/4 - inch meter	0	17.61	0	-	17.61	0	-	17.61	-	-	21.61	0
8	1 - inch meter	0	29.14	0	-	29.14	0	-	29.14	-	-	36.80	0
9	1 1/2 - inch meter	0	58.30	0	-	58.30	0	-	58.30	-	-	71.62	0
10	2 - inch meter	10	93.27	930	10	93.27	930	10	93.27	930	10	114.68	1,142
11	3 - inch meter	0	174.89	0	-	174.89	0	-	174.89	-	-	214.64	0
12	4 - inch meter	33	291.49	9,726	33	291.49	9,726	33	291.49	9,726	33	368.08	11,946
13	6 - inch meter	0	582.99	0	-	582.99	0	-	582.99	-	-	716.17	0
14	8 - inch meter	0	932.77	0	-	932.77	0	-	932.77	-	-	1,145.85	0
15	Total Meters	43		10,655	43		10,655	43		10,655	43		13,089
16													
17	Volumetric												
18	Fire	0	0.194	0	0	0.194	-	-	0.194	-	-	0.238	0
19	Next 6,100 Cubic Feet	0	3.073	0	0	3.073	-	-	3.073	-	-	3.705	0
20	Next 43,600 Cubic Feet	0	1.931	0	0	1.931	-	-	1.931	-	-	2.349	0
21	Next 460,000 Cubic Feet	0	1.443	0	0	1.443	-	-	1.443	-	-	1.765	0
22	Next 1,000,000 Cubic Feet	0	1.103	0	0	1.103	-	-	1.103	-	-	1.342	0
23	All Over 1,600,000 Cubic Feet	0	0.655	0	0	0.655	-	-	0.655	-	-	0.797	0
24	Fl. Ogleshorpe	489,860	0.786	389,929	489,860	0.786	438,984	489,860	0.8961	438,984	489,860	1.0900	533,980
25	Catoosa Co	601,752	0.8961	449,620	601,752	0.8961	449,620	601,752	0.8961	449,620	601,752	1.0900	546,922
26	Signal Mtn	516,804	0.796	410,580	516,804	0.796	410,580	516,804	0.796	410,580	516,804	0.7960	410,580
27	Walden's Ridge	463,797	0.9375	434,810	0	0.9375	-	-	0.9375	-	-	0.9375	0
28	Chattanooga Amount	1,971,213		1,693,584	1,607,416		1,309,818	1,507,416		1,309,818	1,507,416		1,504,560
29													
30	Lookout Mountain												
31	6/8 - inch meter	0	11.70	0	0	11.70	-	-	11.70	-	-	12.80	0
32	3/4 - inch meter	0	17.61	0	0	17.61	-	-	17.61	-	-	21.61	0
33	1 - inch meter	0	29.14	0	0	29.14	-	-	29.14	-	-	36.80	0
34	1 1/2 - inch meter	0	58.30	0	0	58.30	-	-	58.30	-	-	71.62	0
35	2 - inch meter	0	93.27	0	0	93.27	-	-	93.27	-	-	114.68	0
36	3 - inch meter	0	174.89	0	0	174.89	-	-	174.89	-	-	214.64	0
37	4 - inch meter	0	291.49	0	0	291.49	-	-	291.49	-	-	368.08	0
38	6 - inch meter	0	582.99	0	0	582.99	-	-	582.99	-	-	716.17	0
39	8 - inch meter	0	932.77	0	0	932.77	-	-	932.77	-	-	1,145.85	0
40	Total Meters	0		0	0		-	-		-	-		0
41													
42	Volumetric												
43	Fire	0	0.721	0	0	0.721	-	-	0.721	-	-	0.970	0
44	Next 6,100 Cubic Feet	0	3.968	0	0	3.968	-	-	3.968	-	-	4.432	0
45	Next 43,600 Cubic Feet	0	2.816	0	0	2.816	-	-	2.816	-	-	3.076	0
46	Next 460,000 Cubic Feet	0	1.969	0	0	1.969	-	-	1.969	-	-	2.482	0
47	Next 1,000,000 Cubic Feet	0	1.630	0	0	1.630	-	-	1.630	-	-	2.070	0
48	All Over 1,600,000 Cubic Feet	0	1.181	0	0	1.181	-	-	1.181	-	-	1.524	0
49	Lookout Mountain Amount	0		0	0		-	-		-	-		0

Attrition Year Revenues at Current and Proposed Rates

Line No.		Per book		Normalized		Attrition Year at Present Rates			Attrition Year at Proposed Rates			
		Billing Determinate	Rates	Revenues	Determinate	Billing	Determinate	Revenues	Billing	Determinate	Rates	Revenues
1		0	11.70	0	11.70	-	-	11.70	-	-	12.80	0
2		0	17.61	0	17.61	-	-	17.61	-	-	21.61	0
3		0	25.14	0	25.14	-	-	25.14	-	-	36.80	0
4		0	58.30	0	58.30	-	-	58.30	-	-	71.62	0
5	Lakeview	0	93.27	0	93.27	-	-	93.27	-	-	114.68	0
6	5/8 - inch meter	0	174.89	0	174.89	-	-	174.89	-	-	214.84	0
7	3/4 - inch meter	0	291.49	0	291.49	-	-	291.49	-	-	368.09	0
8	1 - inch meter	0	582.99	0	582.99	-	-	582.99	-	-	716.17	0
9	1 1/2 - inch meter	0	932.77	0	932.77	-	-	932.77	-	-	1,145.95	0
10	2 - inch meter	0		0		-	-		-	-		0
11	3 - inch meter	0		0		-	-		-	-		0
12	4 - inch meter	0		0		-	-		-	-		0
13	6 - inch meter	0		0		-	-		-	-		0
14	8 - inch meter	0		0		-	-		-	-		0
15	Total Meters	0		0		-	-		-	-		0
16												
17	Volumetric											
18	Flat	0	0.356	0	0.356	-	-	0.356	-	-	0.970	0
19	Next	0	3.398	0	3.398	-	-	3.398	-	-	4.452	0
20	Next	0	2.244	0	2.244	-	-	2.244	-	-	3.078	0
21	Next	0	1.604	0	1.604	-	-	1.604	-	-	2.482	0
22	Next	0	1.285	0	1.285	-	-	1.285	-	-	2.070	0
23	All Over	0	0.816	0	0.816	-	-	0.816	-	-	1.524	0
24	Lakeview Amount	0		0		-	-		-	-		0
25												
26	Total Gross	1,971,213		1,895,594	1,507,416	1,309,818	1,507,416		1,309,818	1,507,416		1,504,550
27	Provision adjustment			(26,348)		-	-		-	-		0
28	Less: Correction & Allowances				-							
29	Net Amount	1,971,213		1,869,248	1,507,416	1,309,818	1,507,416		1,309,818	1,507,416		1,504,550
30	Net Amt. Per Revenue Summary	1,968,122		1,870,278	1,503,523	1,310,827	1,503,523		1,310,828	1,503,523		1,505,479
31	Difference	6,091		(1,031)	3,893	(809)	3,893		(809)	3,893		(929)
32	Percent Difference	0.2889%		-0.0517%	0.2599%	-0.0517%	0.2589%		-0.0517%	0.2589%		-0.0517%

Line No.	Class/Description	Normalized Year at Present Rates			Attrition Year at Present Rates			Attrition Year at Proposed Rates		
		Billing			Billing			Billing		
		Determinants	Rates	Revenues	Determinants	Rates	Revenues	Determinants	Rates	Revenues
5	Private Fire Service									
6										
7	1 - Inch Service	0	\$27.15	\$0	0	\$27.15	\$0	0	\$33.00	\$0
8	1 1/2 - Inch Service	1	81.24	81	1	81.24	81	1	74.43	74
9	2 - Inch Service	13	108.92	1,416	13	108.92	1,416	13	132.37	1,721
10	2 1/2 - Inch Service	1	168.09	168	1	168.09	168	1	201.86	202
11	3 - Inch Service	2	244.83	490	2	244.83	490	2	287.54	585
12	4 - Inch Service	83	490.28	40,693	83	490.28	40,693	83	595.83	49,484
13	6 - Inch Service	757	979.79	741,701	757	979.79	741,701	757	1,190.85	901,478
14	8 - Inch Service	299	1,981.24	598,411	299	1,981.24	598,411	299	2,383.68	712,715
15	10 - Inch Service	16	2,942.08	44,131	16	2,942.08	44,131	16	3,676.73	63,836
16	12 - Inch Service	19	3,923.10	74,539	19	3,923.10	74,539	19	4,788.02	90,692
17	Total Private Fire Service	1,190		1,489,608	1,190		1,489,608	1,190		1,810,465

Public Fire Service										
	Ridgelside	13	0.00	0	13	0.00	0	13	0.00	0
	Public Fire		0.00	0		0.00	0		0.00	0
	Total Public Fire Service	4,978		0	4,978		0	4,978		0
		4,989		0	4,989		0	4,989		0
	Total Private and Public Fire Service Revenues			\$1,489,608			\$1,489,608			\$1,810,465

Line No.	Rates Effective May 22, 2007							Proposed Rates				Percent Increase	
	Lookout							Lookout				Lookout	
	Chattanooga	Mountain	Lakeview	Chattanooga	Mountain	Lakeview	Lone Oak	Suck Creek	Chattanooga	Mountain	Lakeview		
1													
2													
3													
4													
5	5/8 - inch meter	10.42	11.70	11.70			12.80	12.80	23.00	18.50	22.84069%	8.40171%	8.40171%
6	3/4 - inch meter	17.51	17.51	17.51			21.51	21.51	23.00	21.51	22.84409%	22.84409%	22.84409%
7	1 - inch meter	23.14	23.14	23.14			35.80	35.80	35.80	35.80	22.85518%	22.85518%	22.85518%
8	1 1/2 - inch meter	58.30	58.30	58.30			71.62	71.62	71.62	71.62	22.84734%	22.84734%	22.84734%
9	2 - inch meter	93.27	93.27	93.27			114.58	114.58	114.58	114.58	22.84765%	22.84765%	22.84765%
10	3 - inch meter	174.89	174.89	174.89			214.84	214.84	214.84	214.84	22.84293%	22.84293%	22.84293%
11	4 - inch meter	291.49	291.49	291.49			358.08	358.08	358.08	358.08	22.84469%	22.84469%	22.84469%
12	6 - inch meter	582.09	582.09	582.09			716.17	716.17	716.17	716.17	22.84430%	22.84430%	22.84430%
13	8 - inch meter	932.77	932.77	932.77			1,145.85	1,145.85	1,145.85	1,145.85	22.84378%	22.84378%	22.84378%
14													
15													
16	Volumetric												
17	First	0.194	0.721	0.721			0.236	0.970	0.970	0.970	21.64948%	34.53537%	172.47181%
18	Next	3.073	3.958	3.958			3.705	4.432	4.432	4.432	20.56822%	11.97575%	30.88181%
19	Next	1.831	2.816	2.816			2.349	3.076	3.076	3.076	21.64692%	9.23295%	31.07665%
20	Next	1.443	1.989	1.989			1.755	2.482	2.482	2.482	21.62162%	26.05383%	54.73815%
21	Next	1.103	1.630	1.630			1.342	2.070	2.070	2.070	21.66816%	26.88387%	63.63636%
22	All Over	0.855	1.181	1.181			0.787	1.524	1.524	1.524	21.67838%	23.04318%	86.76471%
23	FL Ogdthorpe, Catcoosa, Signal M	0.8981					1.0900						
24													
25	Private Fire Service												
26													
27	1 - inch Service	27.15					33.00				21.52943%		
28	1 1/2 - inch Service	61.24					74.42				21.52943%		
29	2 - inch Service	108.92					132.37				21.52943%		
30	2 1/2 - inch Service	166.09					201.85				21.52943%		
31	3 - inch Service	244.83					297.54				21.52943%		
32	4 - inch Service	480.28					595.83				21.52943%		
33	6 - inch Service	878.78					1,190.73				21.52943%		
34	8 - inch Service	1,951.24					2,383.48				21.52943%		
35	10 - inch Service	2,842.09					3,575.50				21.52943%		
36	12 - inch Service	3,923.10					4,787.72				21.52943%		
37		934.69					1,135.92				21.52943%		
38													
39	Public Fire Service												
40													
41	Ridgside	0.00					0.00				#DIV/0!		
42	Public Fire	0.00					0.00				#DIV/0!		
43													
44	Suck Creek												
45	First 1500 gal	2	22.85										
46	Next 8000 gal	10.87	meter charge										
47	All over 8500 gal	>12.67	3.30										
48													
49	Lone Oak												
50	First 2000 gal	2.87	31.39	meter charge									
51	All over 2000 gal	>2.67	5.25										
52													

1 TESTIMONY

2 OF

3 EDWARD L. SPITZNAGEL, JR.

4
5 1. Q. Please state your name, business address, and employer.

6
7 A. My name is Edward L. Spitznagel, Jr., and my
8 business address is Campus Box 1146, One
9 Brookings Drive, St Louis, Missouri 63130. I am
10 employed by Washington University.
11

12 2. Q. What is your present position?

13
14 A. I am Professor of Mathematics in the College of
15 Arts and Sciences at Washington University. I
16 also hold a joint appointment in the Division of
17 Biostatistics of the Washington University School
18 of Medicine.
19

20 3. Q. Please review your educational background and work
21 experience.
22

23 A. I hold a Bachelor of Science, summa cum laude, in
24 mathematics, awarded in 1962 by Xavier University,
25 Cincinnati, Ohio. I hold a Master of Science
26 (1963) and Ph.D. (1965) in mathematics awarded by

1 the University of Chicago. I have served on the
2 Faculty of Arts and Sciences of Washington
3 University since 1969. I have held a joint
4 appointment in the Division of Biostatistics
5 since 1978. From 1965 to 1969 I was on the
6 faculty of Northwestern University.

7
8 Attached to my testimony is Appendix A, which
9 provides a more detailed listing of my education and
10 qualifications in the area of mathematics and statistics.
11

12 4. Q. What is the purpose of your testimony in this case?
13

14 A. I have been employed by Tennessee American Water
15 Company to make weather-normalized predictions of
16 water utilization for the period September 2008 to
17 August 2009.
18

19 5. Q. What is weather normalization?
20

21 A. From one year to the next, variations in temperature
22 and precipitation lead to changes in water consumption.
23 More water will generally be used during hotter, drier
24 periods. The regulatory question is how to reflect
25 those weather-related differences when setting rates.
26

1 For ratemaking purposes, revenues need to be set at as
2 "normal" a level as possible, factoring out the
3 potential or actual results of unusual weather
4 conditions. This can be accomplished by building
5 statistical models that predict water utilization from
6 meteorological data and other possible predictors. An
7 estimate of future utilization can then be made by
8 using a long-term average of meteorological data
9 (since there is no better way to forecast next year's
10 weather than as an average) and known values of the
11 other predictors.

12
13 6. Q. What are examples of these other, non-meteorological
14 predictors?

15
16 A. One is the year itself. Due to gradual introduction
17 of water-conserving plumbing fixtures and appliances,
18 use of water appears to be gradually declining over time.

19
20 Another is the month of the year. While water
21 utilization increases during the warmer, drier
22 summer months, analysis of variance shows that
23 month as a categorical variable is a powerful
24 predictor even after temperature and moisture have
25 been included in the model.

1 7. Q. What model for water utilization did you employ?

2
3 In a previous case before the Public Service Commission
4 of the Commonwealth of Kentucky (1997), I screened a
5 large number of candidate predictors by examining data
6 from sixteen different operating companies in five states,
7 Kentucky, Missouri, Ohio, Tennessee, and Virginia.
8 Tennessee American Water Company was one of these sixteen
9 companies.

10
11 I used as candidate predictors only those variables that
12 correlated consistently with utilization for most or all
13 of these operating companies.

14
15 I then fitted the surviving candidates in a multivariate
16 model to predict utilization. I found that calendar month
17 was a strong predictor even in the presence of heat and
18 moisture variables. Therefore I included month as a
19 categorical variable. With month included, I tested drought
20 severity index, temperature, and calendar year as potential
21 numeric predictors. I found that temperature was not a useful
22 predictor in the presence of the other variables, so from
23 that point onward, I did not use it.

24
25 For the months of January through April, there was no evidence
26 that moisture predicted utilization. For the months of May

1 through December, there was evidence of moisture predicting
2 utilization, being a weak predictor in the months of May, June,
3 November, and December and a strong predictor for the months
4 of July through October.

5
6 Since only a deficit of moisture should lead to increased
7 water utilization, I tested truncated versions of the Palmer
8 Drought Severity Index as predictors, finding that truncation
9 at 0 yielded a larger R-square than the non-truncated index
10 and the index truncated at all other levels.

11
12 Month was a very strong predictor, both as a main effect and
13 interacting with the truncated drought severity index. Because
14 of this, I estimated twelve separate predictive models, one
15 for each month of the year.

16
17 For the present case I used those same predictors to estimate
18 Tennessee American Water Company utilization by fitting them
19 to monthly TAWC consumption data from January 1998 through
20 December 2007. The models were estimated separately for
21 residential and commercial consumption. The coefficient
22 estimates can be found in Appendix B.

23
24 8. Q. Not all of the coefficient estimates are statistically
25 significant. Is this a problem?
26

1 A. No. The candidate variables were obtained as described above,
2 by examining data from 16 different water companies, selecting
3 those that correlated with utilization over most or all of
4 those companies. Once those variables were selected, the
5 resulting estimates based on them will be unbiased. If they
6 are subject to further selection based on statistical
7 significance, there is a chance that a small amount of bias
8 could result.

9
10 9. Q. Once you had estimated the coefficients in these monthly
11 models, how did you project utilization for September 2008
12 through August 2009?

13
14 I put the coefficients from the monthly regressions into
15 Excel spreadsheets, one for residential customers, and the
16 other for commercial customers. I calculated the mean
17 truncated Palmer Drought Severity Index for each of the
18 twelve calendar months over the 30 year period from January
19 1978 to December 2007 and inserted those values into the
20 spreadsheets.

21
22 I then projected an average daily utilization for each
23 month. Once these twelve monthly projections were computed,
24 I calculated average daily utilization for the year by taking
25 an average weighted by the number of days in each calendar
26 month.

1 These spreadsheets are given in Appendix C.

2
3 10. Q. What are your projections of daily utilization under
4 average weather for the two customer classes?

5
6 A. For residential customers: 141.81 gallons / customer / day
7 For commercial customers: 1029.41 gallons / customer / day

8
9 11. Q. Does this conclude your testimony?

10
11 A. Yes, it does.

TENNESSEE REGULATORY AUTHORITY

STATE OF MISSOURI

COUNTY OF SAINT LOUIS

BEFORE ME, the undersigned authority, duly commissioned and qualified in and for the State and County aforesaid, personally came and appeared Dr. Edward L. Spitznagel, Jr., being by me first duly sworn deposed and said that:

He is appearing as a witness on behalf of Tennessee-American Water Company before the Tennessee Regulatory Authority, and if present before the Authority and duly sworn, his testimony would set forth in the annexed transcript consisting of 7 pages.

Dr. Edward L. Spitznagel, Jr.
Dr. Edward L. Spitznagel, Jr.

Sworn to and subscribed before me
this 6 day of March 2008.

Lisa Caress
Notary Public

My commission expires 04/11/2010.

LISA CARESS
NOTARY PUBLIC - NOTARY SEAL
STATE OF MISSOURI, JEFFERSON COUNTY
MY COMMISSION EXPIRES 04/11/2010

LISA CARESS
NOTARY PUBLIC - NOTARY SEAL
STATE OF MISSOURI, JEFFERSON COUNTY
MY COMMISSION EXPIRES 04/11/2010

Edward L. Spitznagel, Jr.

Born: Cincinnati, Ohio, September 4, 1941.

Education:

Xavier University, 1959-1962
Awarded Bachelor of Science Degree (Summa Cum Laude), 1962
University of Chicago, 1962-1965
Awarded Master of Science Degree, 1963
Awarded Ph.D. in Mathematics, 1965

Scholarships and Fellowships:

Xavier University, 1959-1962
Honorary Woodrow Wilson Fellow, 1962-1963
National Science Foundation Fellow, 1962-1965

Positions:

Assistant Professor of Mathematics
Northwestern University, 1965-1969
Associate Professor of Mathematics
Washington University, 1969-1980
Professor of Mathematics
Washington University, 1980-present
Joint appointment, Division of Biostatistics,
Washington University School of Medicine, 1978-present

Consulting Experience:

Litton Industries (USACDCEC, Fort Ord, CA)
Price Waterhouse (Advanced Auditing Methods, NY)
Mallinckrodt, Inc.
St. Louis County Juvenile Court
Monsanto Company
American Red Cross
Carboline Corporation
Regional Justice Information Service
Harris-Stowe State College
Equal Employment Opportunity Commission
American Optometric Association
Petrolite Corporation
U.S. Army Atmospheric Sciences Laboratory (White Sands, NM)
St. Louis County Water Company
Gateway Medical Research, Inc.
MasterCard
Simmons Market Research Bureau
Transactional Data Solutions
Missouri-American Water Company
Capital City Water Company
Kentucky-American Water Company
Tennessee-American Water Company
Iowa-American Water Company
New Jersey-American Water Company
Anheuser-Busch, Inc.
Partek, Inc.
Santa Clara County Mental Health Administration (San Jose, CA)
and many law firms

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Run regressions by month: Chattanooga, JAN1998-DEC2007
Residential Model, JANUARY

The REG Procedure
Model: MODEL1
Dependent Variable: gallons

Number of Observations Read 10
Number of Observations Used 10

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	403.29193	403.29193	39.16	0.0002
Error	8	82.38588	10.29824		
Corrected Total	9	485.67781			

Root MSE 3.20909 R-Square 0.8304
Dependent Mean 140.67300 Adj R-Sq 0.8092
Coeff Var 2.28124

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	1	168.31012	4.53145	37.14	<.0001
since_90	1	-2.21097	0.35331	-6.26	0.0002

Run regressions by month: Chattanooga, JAN1998-DEC2007
 Residential Model, FEBRUARY

The REG Procedure
 Model: MODEL1
 Dependent Variable: gallons

Number of Observations Read 10
 Number of Observations Used 10

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	367.38265	367.38265	2.88	0.1282
Error	8	1021.02724	127.62840		
Corrected Total	9	1388.40989			

Root MSE	11.29727	R-Square	0.2646
Dependent Mean	140.25100	Adj R-Sq	0.1727
Coeff Var	8.05504		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	1	166.62903	15.95253	10.45	<.0001
since_90	1	-2.11024	1.24379	-1.70	0.1282

Run regressions by month: Chattanooga, JAN1998-DEC2007
Residential Model, MARCH

The REG Procedure
Model: MODEL1
Dependent Variable: gallons

Number of Observations Read 10
Number of Observations Used 10

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	170.13728	170.13728	1.85	0.2111
Error	8	736.68661	92.08583		
Corrected Total	9	906.82389			

Root MSE	9.59614	R-Square	0.1876
Dependent Mean	137.79100	Adj R-Sq	0.0861
Coeff Var	6.96427		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	1	155.74176	13.55041	11.49	<.0001
since_90	1	-1.43606	1.05650	-1.36	0.2111

Run regressions by month: Chattanooga, JAN1998-DEC2007
Residential Model, APRIL

The REG Procedure
Model: MODEL1
Dependent Variable: gallons

Number of Observations Read 10
Number of Observations Used 10

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	140.91094	140.91094	8.41	0.0199
Error	8	134.10622	16.76328		
Corrected Total	9	275.01716			

Root MSE 4.09430 R-Square 0.5124
Dependent Mean 140.61200 Adj R-Sq 0.4514
Coeff Var 2.91177

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	1	156.94836	5.78143	27.15	<.0001
since_90	1	-1.30691	0.45077	-2.90	0.0199

Run regressions by month: Chattanooga, JAN1998-DEC2007
Residential Model, MAY

The REG Procedure
Model: MODEL1
Dependent Variable: gallons

Number of Observations Read 10
Number of Observations Used 10

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	168.21748	84.10874	2.82	0.1262
Error	7	208.58597	29.79800		
Corrected Total	9	376.80345			

Root MSE 5.45875 R-Square 0.4464
Dependent Mean 149.86500 Adj R-Sq 0.2883
Coeff Var 3.64245

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	1	167.65413	7.96397	21.05	<.0001
pds0	1	-2.37139	1.96321	-1.21	0.2663
since_90	1	-1.51780	0.64661	-2.35	0.0513

Run regressions by month: Chattanooga, JAN1998-DEC2007
Residential Model, JUNE

The REG Procedure
Model: MODEL1
Dependent Variable: gallons

Number of Observations Read 10
Number of Observations Used 10

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	620.54949	310.27474	6.32	0.0270
Error	7	343.74531	49.10647		
Corrected Total	9	964.29480			

Root MSE	7.00760	R-Square	0.6435
Dependent Mean	165.99000	Adj R-Sq	0.5417
Coeff Var	4.22170		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	1	181.63326	10.28857	17.65	<.0001
pds0	1	-8.91506	2.54416	-3.50	0.0099
since_90	1	-1.62161	0.83954	-1.93	0.0947

Run regressions by month: Chattanooga, JAN1998-DEC2007
Residential Model, JULY

The REG Procedure
Model: MODEL1
Dependent Variable: gallons

Number of Observations Read 10
Number of Observations Used 10

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	455.83741	227.91870	2.23	0.1782
Error	7	715.66588	102.23798		
Corrected Total	9	1171.50329			

Root MSE 10.11128 R-Square 0.3891
Dependent Mean 171.75900 Adj R-Sq 0.2146
Coeff Var 5.88690

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	1	194.57807	14.44346	13.47	<.0001
pds0	1	-6.26188	3.94136	-1.59	0.1561
since_90	1	-2.09404	1.16501	-1.80	0.1153

Run regressions by month: Chattanooga, JAN1998-DEC2007
Residential Model, AUGUST

The REG Procedure
Model: MODEL1
Dependent Variable: gallons

Number of Observations Read 10
Number of Observations Used 10

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	812.37400	406.18700	9.52	0.0101
Error	7	298.68084	42.66869		
Corrected Total	9	1111.05484			

Root MSE	6.53213	R-Square	0.7312
Dependent Mean	170.34400	Adj R-Sq	0.6544
Coeff Var	3.83467		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	1	205.88300	9.22854	22.31	<.0001
pds0	1	-3.50798	1.77184	-1.98	0.0882
since_90	1	-3.08699	0.73399	-4.21	0.0040

Run regressions by month: Chattanooga, JAN1998-DEC2007
 Residential Model, SEPTEMBER

The REG Procedure
 Model: MODEL1
 Dependent Variable: gallons

Number of Observations Read 10
 Number of Observations Used 10

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	838.74311	419.37155	3.69	0.0805
Error	7	795.54790	113.64970		
Corrected Total	9	1634.29101			

Root MSE	10.66066	R-Square	0.5132
Dependent Mean	172.17700	Adj R-Sq	0.3741
Coeff Var	6.19169		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	1	193.98722	15.05740	12.88	<.0001
pds0	1	-5.95850	2.66109	-2.24	0.0602
since_90	1	-2.17097	1.18499	-1.83	0.1096

Run regressions by month: Chattanooga, JAN1998-DEC2007
Residential Model, OCTOBER

The REG Procedure
Model: MODEL1
Dependent Variable: gallons

Number of Observations Read 10
Number of Observations Used 10

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	842.05535	421.02768	11.38	0.0063
Error	7	259.08146	37.01164		
Corrected Total	9	1101.13681			

Root MSE	6.08372	R-Square	0.7647
Dependent Mean	161.55300	Adj R-Sq	0.6975
Coeff Var	3.76577		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	1	191.06314	8.71238	21.93	<.0001
pds0	1	-3.72214	1.41616	-2.63	0.0340
since_90	1	-2.70593	0.66997	-4.04	0.0049

Run regressions by month: Chattanooga, JAN1998-DEC2007
Residential Model, NOVEMBER

The REG Procedure
Model: MODEL1
Dependent Variable: gallons

Number of Observations Read 10
Number of Observations Used 10

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	667.79752	333.89876	23.63	0.0008
Error	7	98.93077	14.13297		
Corrected Total	9	766.72829			

Root MSE	3.75938	R-Square	0.8710
Dependent Mean	151.55100	Adj R-Sq	0.8341
Coeff Var	2.48061		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	1	181.70714	5.50291	33.02	<.0001
pds0	1	-1.97065	0.85419	-2.31	0.0544
since_90	1	-2.61366	0.41489	-6.30	0.0004

Run regressions by month: Chattanooga, JAN1998-DEC2007
 Residential Model, DECEMBER

The REG Procedure
 Model: MODEL1
 Dependent Variable: gallons

Number of Observations Read 10
 Number of Observations Used 10

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	323.35122	161.67561	4.52	0.0550
Error	7	250.49499	35.78500		
Corrected Total	9	573.84621			

Root MSE 5.98206 R-Square 0.5635
 Dependent Mean 145.48300 Adj R-Sq 0.4388
 Coeff Var 4.11186

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	1	167.80934	8.47097	19.81	<.0001
pds0	1	1.57676	1.43185	1.10	0.3072
since_90	1	-1.63638	0.68459	-2.39	0.0481

Run regressions by month: Chattanooga, JAN1998-DEC2007
 Commercial Model, JANUARY

The REG Procedure
 Model: MODEL1
 Dependent Variable: gallons

Number of Observations Read 10
 Number of Observations Used 10

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	4135.78201	4135.78201	0.61	0.4565
Error	8	54036	6754.54015		
Corrected Total	9	58172			

Root MSE 82.18601 R-Square 0.0711
 Dependent Mean 936.20300 Adj R-Sq -0.0450
 Coeff Var 8.77865

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	1	1024.70679	116.05233	8.83	<.0001
since_90	1	-7.08030	9.04838	-0.78	0.4565

Run regressions by month: Chattanooga, JAN1998-DEC2007
 Commercial Model, FEBRUARY

The REG Procedure
 Model: MODEL1
 Dependent Variable: gallons

Number of Observations Read 10
 Number of Observations Used 10

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	2213.82840	2213.82840	0.19	0.6753
Error	8	93752	11719		
Corrected Total	9	95966			

Root MSE	108.25459	R-Square	0.0231
Dependent Mean	964.34300	Adj R-Sq	-0.0990
Coeff Var	11.22573		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	1	1029.09527	152.86297	6.73	0.0001
since_90	1	-5.18018	11.91844	-0.43	0.6753

Run regressions by month: Chattanooga, JAN1998-DEC2007
 Commercial Model, MARCH

The REG Procedure
 Model: MODEL1
 Dependent Variable: gallons

Number of Observations Read 10
 Number of Observations Used 10

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	5436.90873	5436.90873	1.17	0.3105
Error	8	37103	4637.88847		
Corrected Total	9	42540			

Root MSE	68.10204	R-Square	0.1278
Dependent Mean	1000.99100	Adj R-Sq	0.0188
Coeff Var	6.80346		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	1	899.51600	96.16480	9.35	<.0001
since_90	1	8.11800	7.49779	1.08	0.3105

Run regressions by month: Chattanooga, JAN1998-DEC2007
 Commercial Model, APRIL

The REG Procedure
 Model: MODEL1
 Dependent Variable: gallons

Number of Observations Read 10
 Number of Observations Used 10

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	6203.60194	6203.60194	1.23	0.3003
Error	8	40464	5057.94175		
Corrected Total	9	46667			

Root MSE	71.11921	R-Square	0.1329
Dependent Mean	982.60800	Adj R-Sq	0.0245
Coeff Var	7.23780		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	1	1091.00194	100.42524	10.86	<.0001
since_90	1	-8.67152	7.82997	-1.11	0.3003

Run regressions by month: Chattanooga, JAN1998-DEC2007
Commercial Model, MAY

The REG Procedure
Model: MODEL1
Dependent Variable: gallons

Number of Observations Read 10
Number of Observations Used 10

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	120.90539	60.45270	0.01	0.9930
Error	7	60267	8609.60057		
Corrected Total	9	60388			

Root MSE 92.78793 R-Square 0.0020
Dependent Mean 1041.07700 Adj R-Sq -0.2831
Coeff Var 8.91269

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	1	1037.44883	135.37162	7.66	0.0001
pds0	1	3.95314	33.37069	0.12	0.9090
since_90	1	0.44806	10.99100	0.04	0.9686

Run regressions by month: Chattanooga, JAN1998-DEC2007
 Commercial Model, JUNE

The REG Procedure
 Model: MODEL1
 Dependent Variable: gallons

Number of Observations Read 10
 Number of Observations Used 10

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	8528.95043	4264.47521	0.89	0.4540
Error	7	33698	4814.01503		
Corrected Total	9	42227			

Root MSE	69.38310	R-Square	0.2020
Dependent Mean	1128.62500	Adj R-Sq	-0.0260
Coeff Var	6.14758		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	1	1179.75809	101.86841	11.58	<.0001
pds0	1	-33.31830	25.19005	-1.32	0.2275
since_90	1	-5.47402	8.31236	-0.66	0.5312

Run regressions by month: Chattanooga, JAN1998-DEC2007
Commercial Model, JULY

The REG Procedure
Model: MODEL1
Dependent Variable: gallons

Number of Observations Read 10
Number of Observations Used 10

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	56994	28497	4.82	0.0482
Error	7	41346	5906.53719		
Corrected Total	9	98340			

Root MSE	76.85400	R-Square	0.5796
Dependent Mean	1164.58600	Adj R-Sq	0.4594
Coeff Var	6.59925		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	1	1426.14526	109.78214	12.99	<.0001
pds0	1	-68.11168	29.95757	-2.27	0.0572
since_90	1	-23.84537	8.85499	-2.69	0.0310

Run regressions by month: Chattanooga, JAN1998-DEC2007
Commercial Model, AUGUST

The REG Procedure
Model: MODEL1
Dependent Variable: gallons

Number of Observations Read 10
Number of Observations Used 10

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	54544	27272	9.49	0.0102
Error	7	20119	2874.20384		
Corrected Total	9	74664			

Root MSE	53.61160	R-Square	0.7305
Dependent Mean	1181.30400	Adj R-Sq	0.6535
Coeff Var	4.53834		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	1	1493.23523	75.74205	19.71	<.0001
pds0	1	-17.41192	14.54218	-1.20	0.2701
since_90	1	-26.16498	6.02415	-4.34	0.0034

Run regressions by month: Chattanooga, JAN1998-DEC2007
 Commercial Model, SEPTEMBER

The REG Procedure
 Model: MODEL1
 Dependent Variable: gallons

Number of Observations Read 10
 Number of Observations Used 10

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	59796	29898	6.35	0.0268
Error	7	32964	4709.15112		
Corrected Total	9	92760			

Root MSE	68.62325	R-Square	0.6446
Dependent Mean	1224.17200	Adj R-Sq	0.5431
Coeff Var	5.60569		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	1	1338.45753	96.92533	13.81	<.0001
pds0	1	-56.91995	17.12955	-3.32	0.0127
since_90	1	-13.21376	7.62787	-1.73	0.1268

Run regressions by month: Chattanooga, JAN1998-DEC2007
 Commercial Model, OCTOBER

The REG Procedure
 Model: MODEL1
 Dependent Variable: gallons

Number of Observations Read 10
 Number of Observations Used 10

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	20710	10355	0.82	0.4797
Error	7	88674	12668		
Corrected Total	9	109384			

Root MSE	112.55104	R-Square	0.1893
Dependent Mean	1187.97700	Adj R-Sq	-0.0423
Coeff Var	9.47418		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	1	1385.76699	161.18229	8.60	<.0001
pds0	1	-0.24703	26.19947	-0.01	0.9927
since_90	1	-15.84610	12.39465	-1.28	0.2418

Run regressions by month: Chattanooga, JAN1998-DEC2007
 Commercial Model, NOVEMBER

The REG Procedure
 Model: MODEL1
 Dependent Variable: gallons

Number of Observations Read 10
 Number of Observations Used 10

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	23965	11982	5.13	0.0425
Error	7	16356	2336.60399		
Corrected Total	9	40321			

Root MSE	48.33843	R-Square	0.5944
Dependent Mean	1091.59900	Adj R-Sq	0.4785
Coeff Var	4.42822		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	1	1207.47359	70.75681	17.07	<.0001
pds0	1	-23.88254	10.98318	-2.17	0.0662
since_90	1	-11.70790	5.33474	-2.19	0.0642

Run regressions by month: Chattanooga, JAN1998-DEC2007
 Commercial Model, DECEMBER

The REG Procedure
 Model: MODEL1
 Dependent Variable: gallons

Number of Observations Read 10
 Number of Observations Used 10

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	5034.02555	2517.01278	0.10	0.9025
Error	7	169239	24177		
Corrected Total	9	174273			

Root MSE	155.48938	R-Square	0.0289
Dependent Mean	1052.96100	Adj R-Sq	-0.2486
Coeff Var	14.76687		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	1	994.60186	220.18289	4.52	0.0027
pds0	1	14.37673	37.21744	0.39	0.7108
since_90	1	6.03395	17.79432	0.34	0.7445

	Projections of Residential Water Utilization, Gallons per Day, Tennessee-American									
	Slope of	Slope of		30-yr Avg	Days	2006	2007	2008	2009	2010
Month	PDS0	SINCE_90	Intercept	PDS0		Gal/Day	Gal/Day	Gal/Day	Gal/Day	Gal/Day
Jan	0	-2.21097	168.3101	-0.77333	31	132.93	130.72	128.51	126.30	124.09
Feb	0	-2.11024	166.6290	-0.90100	28	132.87	130.75	128.64	126.53	124.42
Mar	0	-1.43606	155.7418	-1.00567	31	132.76	131.33	129.89	128.46	127.02
Apr	0	-1.30691	156.9484	-0.79733	30	136.04	134.73	133.42	132.12	130.81
May	-2.37139	-1.51780	167.6541	-0.66067	31	144.94	143.42	141.90	140.38	138.86
Jun	-8.91506	-1.62161	181.6333	-0.70300	30	161.95	160.33	158.71	157.09	155.47
Jul	-6.26188	-2.09404	194.5781	-0.86667	31	166.50	164.41	162.31	160.22	158.12
Aug	-3.50798	-3.08699	205.8830	-0.97300	31	159.90	156.82	153.73	150.64	147.56
Sep	-5.95850	-2.17097	193.9872	-0.82567	30	164.17	162.00	159.83	157.66	155.49
Oct	-3.72214	-2.70593	191.0631	-0.92733	31	151.22	148.51	145.81	143.10	140.40
Nov	-1.97065	-2.61366	181.7071	-0.90933	30	141.68	139.07	136.45	133.84	131.23
Dec	1.57676	-1.63638	167.8093	-0.88833	31	140.23	138.59	136.95	135.32	133.68
			Annual projections:			147.17	145.13	143.05	141.04	139.00
TAWC2008.XLS		Projection for September 2008 through August 2009:						141.81		

		Projections of Commercial Water Utilization, Gallons per Day, Tennessee-American								
	Slope of	Slope of		30-yr Avg	Days	2006	2007	2008	2009	2010
Month	PDS0	SINCE_90	Intercept	PDS0		Gal/Day	Gal/Day	Gal/Day	Gal/Day	Gal/Day
Jan	0	-7.0803	1024.707	-0.77333	31	911.42	904.34	897.26	890.18	883.10
Feb	0	-5.1802	1029.095	-0.90100	28	946.21	941.03	935.85	930.67	925.49
Mar	0	8.1180	899.516	-1.00567	31	1,029.40	1,037.52	1,045.64	1,053.76	1,061.88
Apr	0	-8.6715	1091.002	-0.79733	30	952.26	943.59	934.91	926.24	917.57
May	3.9531	0.4481	1037.449	-0.66067	31	1,042.01	1,042.45	1,042.90	1,043.35	1,043.80
Jun	-33.3183	-5.4740	1179.758	-0.70300	30	1,115.60	1,110.12	1,104.65	1,099.17	1,093.70
Jul	-68.1117	-23.8454	1426.145	-0.86667	31	1,103.65	1,079.80	1,055.96	1,032.11	1,008.27
Aug	-17.4119	-26.1650	1493.235	-0.97300	31	1,091.54	1,065.37	1,039.21	1,013.04	986.88
Sep	-56.9200	-13.2138	1338.458	-0.82567	30	1,174.03	1,160.82	1,147.61	1,134.39	1,121.18
Oct	-0.2470	-15.8461	1385.767	-0.92733	31	1,132.46	1,116.61	1,100.77	1,084.92	1,069.07
Nov	-23.8825	-11.7079	1207.474	-0.90933	30	1,041.86	1,030.16	1,018.45	1,006.74	995.03
Dec	14.3767	6.0340	994.602	-0.88833	31	1,078.37	1,084.41	1,090.44	1,096.48	1,102.51
			Annual projections:			1,052.22	1,043.66	1,034.82	1,026.53	1,017.97
TAWC2008.XLS		Projection for September 2008 through August 2009:						1,029.41		

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APPLICATION OF
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DIRECT TESTIMONY OF JOE VAN DEN BERG

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EXHIBITS

Appendix 1: Independent Cost Assessment Report

I. INTRODUCTION AND QUALIFICATIONS

Q. PLEASE STATE YOUR NAME AND BY WHOM YOU ARE EMPLOYED.

A. My name is Joe Van den Berg and I am a Vice President at Booz Allen Hamilton (Booz Allen). My business address is 8283 Greensboro Dr, Suite 6500, McLean, VA 75202.

Q. WOULD YOU BRIEFLY SUMMARIZE YOUR ACADEMIC AND PROFESSIONAL BACKGROUND?

A. I graduated from the Virginia Polytechnic Institute and State with a BS in Mechanical Engineering. I received my MBA in Finance from George Washington University. Prior to joining Booz Allen I was a Partner with Deloitte Consulting with an emphasis in utility strategy and operations consulting. Prior to Deloitte, I was the Director of Electrotechnology Policy and Planning for the Edison Electric Institute (EEI) after starting my career with Potomac Electric Power Company. I have directed industry regulatory efforts on LCP, IRP, energy efficiency and demand side management. I have also testified before the Department of Energy, as well as a number of state Public Utility Commissions, including Missouri, Minnesota, Indiana, Tennessee and Kentucky, regarding merger related and cost allocation matters.

II. PURPOSE OF TESTIMONY

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. Tennessee American Water Company (TAWC) retained Booz Allen to provide an independent assessment of the costs incurred by the American Water Works Service Company (AWWSC) that are subject to potential allocation to TAWC. This testimony and the accompanying Appendix 1: Independent Cost Assessment Report (“the Report”) responds to the Tennessee Regulatory Authority’s (“TRA” or “Commission”) request for an assessment of service company costs, expressed in Director Pat Miller’s Motion (TRA Dockets 06-00290 et al.). Specifically, the combination of this testimony and the accompanying Report are designed to address the part of the Motion that “TAWC have a management audit performed in compliance with Sarbanes-Oxley requirements and to submit the audit results concurrent with any future rate case filing. This audit should determine whether all costs allocated to TAWC were incurred as a result of prudent or imprudent management decisions by TAWC’s parent and should address the reasonableness of the methodology used to allocate costs to TAWC.”¹

The purpose of my testimony is to address several items related to the incurrence and recovery of charges between the American Water Works Service Company (AWWSC), a wholly owned subsidiary of the American Water Works Company, (American Water), and its operating company, Tennessee American Water Company (TAWC). These charges relate to services performed by AWWSC on behalf of

¹ Tennessee Regulatory Authority – Pat Miller’s Motion. 5/14/07. Docket 06-00290.

1 TAWC. My testimony will explain the approach used by the Booz Allen team for
 2 the analysis. My testimony and Report will examine the nature of these costs to
 3 determine whether they are a result of prudent or imprudent management decisions
 4 by AWWSC's management and will address the reasonableness of the methodology
 5 used to assign a portion of total AWWSC costs to TAWC.
 6 I will begin my testimony by describing the approach that Booz Allen took to
 7 determining the "prudence" of management decisions resulting in costs allocated to
 8 TAWC and the reasonableness of the methodology used to allocate those costs. I
 9 will then discuss in brief our conclusions, findings, and results. A complete
 10 discussion of each is available in the attached Report.

11 **III. APPROACH TO ANALYSIS**

12 **Q. HOW DID YOU APPROACH THE EVALUATION OF AWWSC COSTS?**

13 **A.** To provide an objective assessment of whether all costs allocated to TAWC were
 14 incurred as a result of prudent or imprudent management decisions by AWWSC and
 15 address the reasonableness of the methodology used to allocate costs to TAWC. We
 16 used both qualitative and quantitative assessments to establish a comprehensive
 17 framework within which the "prudence" of activities and related costs could be
 18 determined. This framework incorporated several specific pieces of analysis which
 19 served as evaluative attributes to guide the overall analysis:

- 20 • Are the activities performed necessary for the enterprise?
- 21 • Do the activities provide demonstrated benefits?
- 22 • Is there any duplication or overlap in performance of these activities?

- 1 • Are AWWSC costs fairly allocated to TAWC?
- 2 • Do the budgeting and control processes provide for effective cost management?
- 3 • Do cost trends provide evidence of effective cost control?
- 4 • Are costs comparable to other service companies?

5 To perform this analysis we relied on a number of inputs. First, we obtained detailed
 6 historical cost data related to AWWSC costs and AWWSC billings to TAWC. We
 7 also reviewed internal information such as service level agreements, budgeting
 8 processes, etc., to develop a better understanding of management processes related to
 9 activities and costs and to provide background for subsequent analyses. Interviews
 10 with AWWSC executives, as well as at TAWC, were utilized to understand the
 11 nature of the activities being performed and the scope and structure of AWWSC's
 12 budgeting and cost control processes. Finally, we relied on publicly available data to
 13 compare AWWSC's costs with the costs of relevant utility service companies.

14 **Q. PLEASE DEFINE EACH SECTION OF YOUR ANALYSIS.**

15 **A.** Each piece of the analysis is as follows:

- 16 • **Organization:** This analysis is used to describe how AWWSC is organized and
 17 the way in which it provides services to the operating companies, including
 18 TAWC. We used organizational charts, billing processes, and interviews with
 19 management to understand the organizational layout of American Water, which
 20 was used to structure the remainder of my analysis.

21 We used a combination of methods to develop the comprehensive list of activities
 22 to be tested against the necessity and benefit attributes described later in the
 23 testimony: (1) Performed a detailed analysis of AWWSC costs by business unit

code; (2) Reviewed organization charts and conducted interviews to confirm the nature of the activities performed in each department; (3) Leveraged past experience in defining the activities of service companies at American Water and other utilities; and (4) Reviewed prior American Water operating companies' PUC filings in various jurisdictions. The following figure illustrates the functional classification that we developed:

American Water Works Service Company (AWWSC)						
Functions					Overhead Cost Centers	
Accounting	Engineering	Rates and Revenue			General	
Administration	Finance	Risk Management			Benefit	
Audit	Human Resources	Water Quality				
Communications	Information Systems	Customer Service				
Legal	Operations					

In total, 75 activities were identified which describe the services performed by AWWSC. The list of these activities is shown, by function, in the Report.

In this section, we also compared the type of services that AWWSC performs against other utility service companies to determine if the services AWWSC provides are similar to other service companies.

- Necessity and Benefit Analysis:** To provide the basis from which to assess the “prudence” of management costs, it was first necessary to understand the reason why costs were being incurred. Many activities performed, and the related costs incurred, result from the nondiscretionary demands placed upon the business as a

1 result of its corporate form (e.g., a publicly traded enterprise), normal business
2 mandates (e.g., satisfy governmental requirements), or corporate fiduciary
3 responsibilities (e.g., reduce overall risk to the enterprise).

4 In this analysis, we assessed the need for activity performance and whether
5 discernable benefits can be identified. A common set of attributes was developed
6 to evaluate the necessity of each of the activities performed by AWWSC and to
7 understand the nature of these activities. Experience with the purpose, structure
8 and performance of other similar entities was also utilized to provide a basis from
9 which to determine whether these activities are similar to those provided by other
10 utilities. A common set of attributes was also developed to use in identifying the
11 benefits of activity performance by AWWSC. These attributes provided a basis
12 against which each cost category could be evaluated to determine the nature of the
13 benefit.

- 14 • **Duplication Analysis:** In this section, we explored the potential overlap of
15 activity performance between AWWSC and TAWC.

16 As with the necessity and benefits analysis, the 75 activities which describe the
17 full scope of AWWSC's activities were reviewed to identify any potential areas of
18 overlap. To assess any potential overlap, interviews with representatives of the
19 key AWWSC functions and representatives of TAWC, as well as a detailed
20 review of the AWWSC and TAWC organizational structures, were used to
21 identify any similarities in the nature of the activities being performed.

22 Interviews focused on the determination of the scope of performance of similar

1 activities and the assessment of whether differences in purpose, focus, content,
2 and / or beneficiary of the activities in question were observable.

3 To accurately analyze duplication, we needed to analyze the relationship between
4 AWWSC and TAWC, as well as within AWWSC. We developed two “levels” of
5 distinction within AWWSC – Corporate, which is the part of AWWSC that is not
6 assigned to a specific region, and Southeast Region, which is an organization
7 within AWWSC that performs services on behalf of entities only within the
8 Southeast Region. Duplication was then analyzed between three levels:
9 Corporate, Southeast Region, and TAWC.

- 10 • **Cost Allocation Analysis:** In this section, we examined the way in which costs
11 were allocated from AWWSC to TAWC and whether or not those methods were
12 fair and reasonable.

13 The appropriate distribution of costs from AWWSC to TAWC is a fundamental
14 element of ensuring that service company costs are fairly and reasonably borne
15 and we assessed this methodology and process, as specified by the TRA. In this
16 section of the Report we analyzed the process and methodology AWWSC used to
17 allocate AWWSC costs to TAWC to assess the reasonableness of this approach
18 and to determine whether the methodology resulted in reasonable direct charging
19 and allocation of costs. By reviewing the allocation methodology and the
20 allocation factors we determined the appropriateness of AWWSC’s methodology.
21 My evaluation of the cost allocation process involved multiple elements: (1)
22 interviewed responsible AWWSC and TAWC management; (2) investigated the
23 allocation processes to answer whether they are in alignment with cost causative

1 nature of the service provided; and (3) evaluated the allocation methodology of
2 electric utility service companies to determine whether customer count is an
3 allocation metric used by other utility service companies.

- 4 • **Budgeting and Cost Control Analysis:** In this section of the Report we
5 described the budgeting and cost control processes in place at AWWSC and how
6 they are used to manage and limit costs. My assessment included a review of the
7 AWWSC budget process to determine whether the structure and execution of that
8 process served as an effective means of controlling AWWSC O&M costs.
9 To conduct this assessment, we reviewed (1) the planning process to understand
10 how overall targets are established; (2) the budgeting process to assess its
11 effectiveness in justifying and limiting planned costs; (3) the involvement of the
12 various business units in the budgeting process to assess the nature and extent of
13 the interface between AWWSC and its internal customers; and (4) cost control
14 mechanisms to determine whether costs are properly managed.

- 15 • **Cost Trends:** In this section, we analyzed costs that were billed to TAWC from
16 AWWSC. This section of the testimony provides a view of cost composition and
17 trends. All costs that were billed to operating companies from AWWSC were
18 analyzed. To understand the determinants of the increase, AWWSC billed costs
19 were inflation adjusted. An inflation rate of 3.23% from 2005 to 2006 was
20 calculated using a standard CPI inflation calculation.

21 To properly analyze cost trends though, only recurring O&M information was
22 analyzed. Recurring O&M costs provide a perspective on the actual cost required
23 to perform services. As a result of the business structure defined by management

1 recurring O&M provides insight on the ongoing cost to do business. To calculate
2 recurring O&M, AWWSC total costs were adjusted to exclude depreciation,
3 interest, tax, capital and one time extraordinary items. These excluded items are
4 primarily attributable to extraordinary items such as accounting changes which
5 cause cost increases; all extraordinary items are described further in the Report.

- 6 • **Relative Cost Performance:** In this section, we analyzed publicly available data
7 to provide a point of comparison for AWWSC costs. The purpose of this section
8 is to compare AWWSC cost levels to those of their peers. This process is
9 typically referred to as “benchmarking” which is a commonly used method to
10 gain an understanding of one company’s relative performance across a spectrum
11 of relevant metrics, and provides some insight into the reasonableness of costs
12 incurred. One important benchmarking consideration is to ensure that the peer
13 groups selected are, in fact, comparable and that consistent data is used. It is also
14 important to make the comparison to the group along metrics that will provide a
15 true insight into a company’s performance.

16 Our analysis consists of comparing the AWWSC cost levels against utility service
17 companies that file the FERC Form 60. Based on the limited public water utility
18 service company peer data (2), we included a peer group of electric utility service
19 companies. Utilities in the power industry are appropriate peers since their
20 service companies perform similar services as discussed in the Organizational
21 Overview section making them comparable. Since each company can differ in
22 the type and quantity of services it performs or obtains from its services company,

1 similar per-unit comparison bases were developed to determine if scale

2 differences affect the overall results.

3 The peer group chosen is composed of Service Companies that perform greater

4 than 10 different services so as to use the most comparable group. Since we

5 analyzed the Form 60 data at an aggregate level as opposed to by function, it is

6 important to use companies with a similar number and type of services. Because

7 the types of services are generally similar among all of the Service companies,

8 only service companies with fewer than 10 service offerings were excluded.

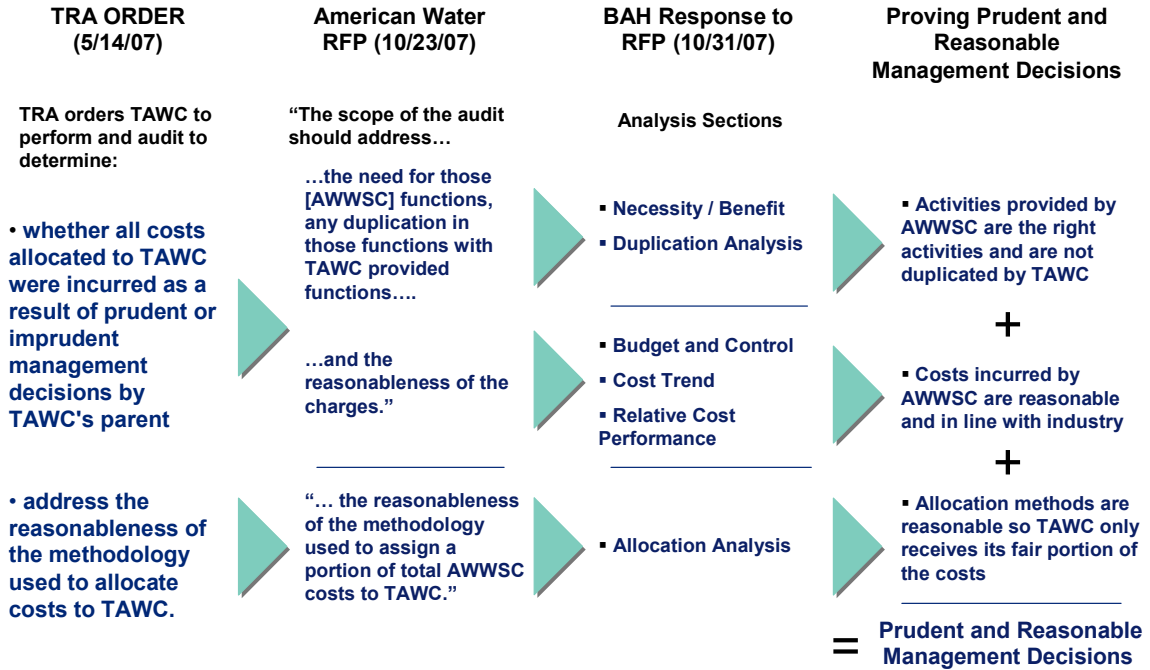
9 **Q. IS YOUR ANALYSIS SUFFICIENT TO JUSTIFY AWWSC COSTS AND**
10 **REASONABLENESS OF THE ALLOCATION METHODS?**

11 **A.** Yes. My testimony and accompanying Report should be viewed in the context of the

12 complete evidentiary material presented by TAWC, which consists of various levels

13 of relevant material – from the very granular analysis of specific activities to the

14 more summary level discussion of management processes.



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As shown in the figure above, these comprehensive analyses, when viewed together, demonstrate that the activities are necessary and provide benefits, while not being duplicative as outlined in the Necessity and Benefit analysis and the Duplication analysis. While justifying the activities, we still needed to investigate their associated costs. To validate the appropriateness of the costs, we analyzed how costs have changed since the last time costs were examined by the TRA in the Cost Trends analysis. We analyzed the budgeting and controls processes to examine the ability of TAWC and American Water to properly control costs in the Budget and Control analysis, and we examined AWWSC's cost performance against other similar utility service companies in the Relative Cost Performance section.

Together these sections show that the costs incurred are reasonable. As outlined in the Report, recurring O&M costs grew by a total of \$8.4 million dollars in real terms, representing a 4.8% increase in costs from 2005 to 2006. Costs grew in General Overhead, which includes items such as office expenses, equipment leases,

1 and power. Costs also grew in Benefit Overhead, which includes labor related
 2 expenses that include employee benefit costs such as payroll taxes, medical
 3 coverage, and pensions. Costs actually declined in Service, which includes all of the
 4 costs to provide the services of AWWSC. Each of these changes are further
 5 explained in the accompanying Report.

6 Although recurring O&M costs did increase for AWWSC, those increases were
 7 driven by normal business changes that are more fully detailed within the
 8 accompanying Report. These sections also demonstrate that costs are well managed
 9 by showing the budget and control process is sufficient and that relative to peers,
 10 AWWSC's costs are generally better or at average as seen in the following figure
 11 where AWWSC performs well in 6 out of 7 benchmarking metrics.

Benchmark	AWWSC Performance vs. Average
Service Co O&M as percentage of total assets	Below average cost
Service Co O&M as percentage of total company O&M	Below average cost
Service Co O&M as percentage of revenue	Average cost
Service Co O&M per customer	Below average cost
Service Co O&M per total company FTE	Below average cost
Service Co O&M per Service Co FTE	Below average cost
Service Co O&M Expense 2005 to 2006 Change	Above average cost change

12 Since the activities are appropriate and are not being duplicated throughout the
 13 organization and the costs for those activities are reasonable, we needed to determine
 14 whether the procedure to allocate costs to the different operating companies,
 15 including TAWC, are appropriate. The Cost Allocation analysis explores the
 16 reasonableness of the methodology used to allocate AWWSC costs to TAWC. All
 17 of these pieces together demonstrate that costs billed to TAWC by AWWSC were
 18

1 incurred as a result of prudent management decisions and a reasonable allocation
2 methodology.

3 **IV. OVERALL CONCLUSIONS**

4 **Q. WHAT ARE THE RESULTS OF YOUR ANALYSIS?**

5 **A.** To assess the reasonableness of AWWSC costs charged to TAWC, we conducted a
6 variety of quantitative and qualitative analyses designed to provide a comprehensive
7 basis for evaluation. These analyses addressed: the necessity of activities performed;
8 the realization of benefits related to the activities performed; the potential for
9 duplication among the American Water companies; the reasonableness of the
10 allocation methodology; the budgeting and cost control processes; the cost trends
11 related to the performance of services; and, the comparability of costs with other
12 utility service companies. We utilized specific evaluative criteria to guide the
13 analysis and provide a more definitive framework for this determination. These
14 analyses lead us to conclude that:

- 15 • The functions performed by AWWSC are similar in nature to those performed by
16 the service companies of other utilities, and therefore the costs incurred by the
17 service company relate to those functions that are generally recognized within the
18 utility industry to be most efficiently provided by a centralized organization. The
19 activities performed by AWWSC would need to be performed by TAWC, or an
20 outside provider, if they were not being performed by AWWSC and, based on my
21 experience, would likely be incurred at a higher cost than presently reflected in
22 the allocations to these operating companies due to the loss of scale efficiencies.

- 1 • The activities performed for TAWC by AWWSC are necessary to satisfy
- 2 responsibilities to customers, shareholders, and government entities and / or
- 3 support management effectiveness and are generally nondiscretionary in nature.
- 4 They include activities that support overall corporate governance as well as
- 5 compliance with legal and regulatory requirements that would be required of any
- 6 business.
- 7 • Additionally, these activities provide direct benefits to TAWC and its customers
- 8 in terms of lower costs and / or more reliable operations. These benefits are in the
- 9 form of reduced financial and operational risk and increased employee
- 10 productivity.
- 11 • All of the 75 discrete activities which define the scope of AWWSC were assessed
- 12 to determine the potential for overlap given the general description of the activity.
- 13 Each of these activities was evaluated in detail, and none were found to be
- 14 duplicative between AWWSC and TAWC.
- 15 • All charges to TAWC from AWWSC are allocated under a 1989 agreement that
- 16 has been approved and is in use in all jurisdictions of American Water's operating
- 17 companies. When costs can be identified and traced to a particular entity, then
- 18 they are directly charged to that entity. Costs that cannot be directly traced to a
- 19 particular entity are allocated on the basis of the number of customers. The
- 20 processes used by AWWSC to allocate AWWSC costs to TAWC are appropriate
- 21 and yield outcomes that are reasonable.
- 22 • AWWSC effectively utilizes several elements of its budgeting and cost control
- 23 processes to manage the costs AWWSC incurs in performing the activities needed

by the operating companies. These budget processes enable an up-front discussion of planned costs from AWWSC and an ongoing review of actual to planned cost performance. The operating companies have multiple opportunities to shape, monitor and dispute costs, if necessary.

- The cost trend analysis we performed indicates that AWWSC costs are reasonable. Although the costs billed to TAWC have increased over the last two years, the principal drivers of those increases are normal business changes, such as the call center expansion, resulting in service and overhead increases.
- AWWSC's costs are generally better than average with the costs of service companies for other utilities.

The combination of all these analyses and their results, lead me to conclude that the AWWSC costs charged to TAWC are prudent, provide a direct value to TAWC customers from their performance, and are allocated in a reasonable manner. The combination of all these analyses and their results, lead me to conclude that all costs billed to TAWC were incurred as a result of prudent management decisions by AWWSC's management, and the methodology used to assign a portion of total AWWSC costs to TAWC is reasonable.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes, it does.

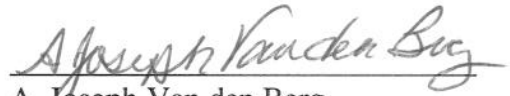
TENNESSEE REGULATORY AUTHORITY

COMMONWEALTH OF VIRGINIA

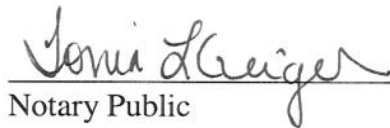
COUNTY OF FAIRFAX

BEFORE ME, the undersigned authority, duly commissioned and qualified in and for the State and County aforesaid, personally came and appeared A. Joseph Van den Berg, being by me first duly sworn deposed and said that:

He is appearing as a witness on behalf of Tennessee-American Water Company before the Tennessee Regulatory Authority, and if present before the Authority and duly sworn, his testimony would set forth in the annexed transcript consisting of 16 pages.


A. Joseph Van den Berg

Sworn to and subscribed before me
this 12th day of March 2008.


Notary Public

My commission expires 9-30-09.



1. INTRODUCTION AND APPROACH TO ANALYSIS

Tennessee American Water Company (TAWC) retained Booz Allen Hamilton ("Booz Allen") to provide an independent assessment of the costs incurred by the American Water Works Service Company (AWWSC) that are subject to potential allocation to TAWC. This report responds to the Tennessee Regulatory Authority's ("TRA" or "Commission") order requiring an independent assessment of service company costs, expressed in Director Pat Miller's Motion (TRA Dockets 06-00290), which was adopted unanimously. Specifically, this report is designed to address the part of the Motion that "TAWC have a management audit performed in compliance with Sarbanes-Oxley requirements and to submit the audit results concurrent with the next rate case filing. This audit should determine whether all costs allocated to TAWC were incurred as a result of prudent or imprudent management decisions by TAWC's parent and should address the reasonableness of the methodology used to allocate costs to TAWC."¹ The accompanying exhibits form a critical element of our analysis and should be reviewed in conjunction with the report.

The framework of our analysis began with an understanding of the organizational elements through which TAWC obtains support services and of overall cost trends. Through the establishment of this baseline, we developed an understanding of the structure of the enterprise as well as the principal drivers of costs and cost changes. With these basic components in mind, we were able to undertake an objective appraisal of TAWC's costs from AWWSC, both direct and allocated.

Having established a baseline, we developed a comprehensive evaluative framework within which to undertake our overall AWWSC cost assessment. This framework led to the identification of several specific questions which served as evaluative attributes (or criteria) to guide the overall cost analysis. These included the following:

- Are the activities performed necessary for the enterprise?
- Do the activities performed provide demonstrated benefits?
- Is there duplication or overlap of activities among responsible entities?
- Does the budgeting process provide for effective control?
- Do ongoing control processes provide for effective cost management?
- Are cost allocation principles reasonable?
- Are costs comparable to those of other companies?

¹ Tennessee Regulatory Authority – Pat Miller's Motion. 5/14/07. Docket 06-00290.

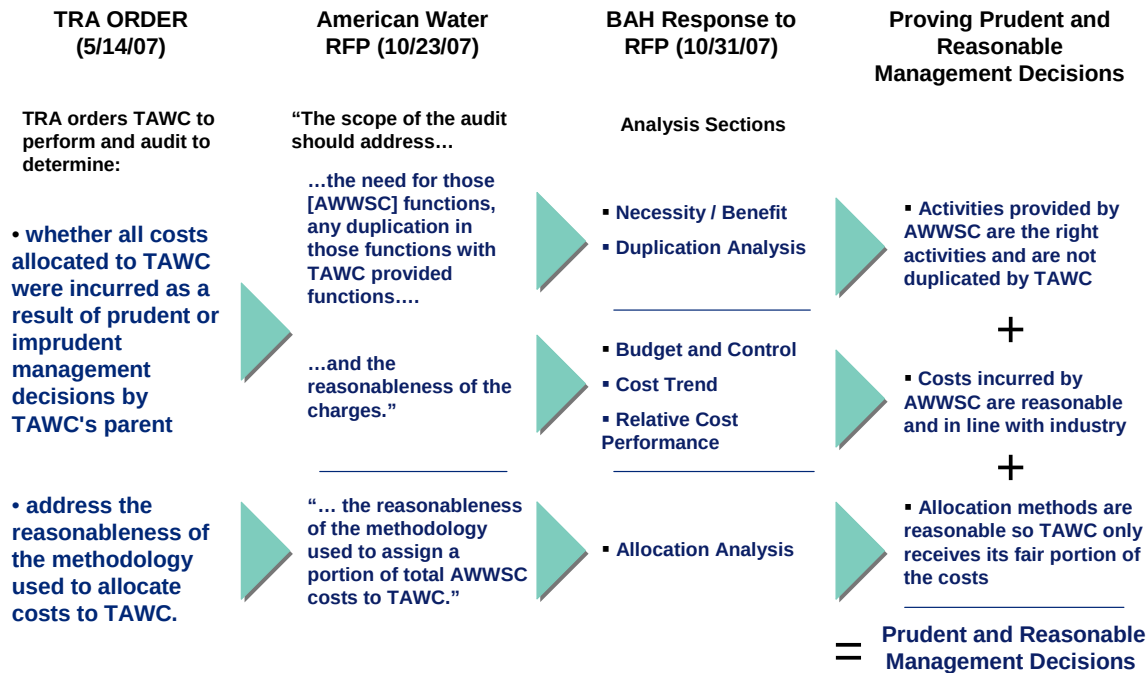
The above criteria were also supplemented in each analysis section of our report with more explicit criteria for that area of analysis.

Throughout the study, Booz Allen worked directly with AWWSC and TAWC personnel to understand the cost drivers impacting each function, the business impacts resulting in changes in costs between 2005 and 2006, the disaggregation of individual cost pools, and the apportionment of costs from AWWSC to TAWC. We conducted more than 30 interviews with both AWWSC and TAWC management to corroborate information discovered through the analytical work described above and to develop an understanding of the control processes in place to manage the relationship between AWWSC and TAWC. Discussion topics during the interviews included, but were not limited to:

- Organizational structure of AWWSC and its interfaces with TAWC
- Activities performed by AWWSC on behalf of TAWC
- Potential duplication of effort between AWWSC and TAWC activities
- Underlying reasons for cost changes within practice areas
- AWWSC's budgeting process and how it is applied in each functional area
- AWWSC's long term planning process and how it is applied in each practice area
- Formal and informal mechanisms for TAWC to provide input into AWWSC budgets and cost levels
- Development and management of service level arrangements ("SLAs") between AWWSC and TAWC
- AWWSC cost assignment and allocation processes, methods, and factors

The insights gained from these analyses and interviews enabled subsequent analysis and data collection related to comparative cost benchmarking, cost allocation, and budget and control processes. The formal analyses performed and the insights gained through the interviews provided the basis for the conclusions reached in each of the framework elements. Our approach to the analysis is directly related to both the order of the Tennessee Regulatory Authority as well as the RFP issued by TAWC. **Figure 1-1** illustrates this relationship.

**Figure 1-1
Approach to Analysis**



The remainder of this report will describe each of the framework elements in greater detail and state the conclusions reached as a result of the analyses performed. The report is organized as follows:

- Executive Summary
- Organization Overview
- Necessity and Benefits Analysis
- Overlap and Duplication Analysis
- AWWSC Cost Allocation
- Budget and Control
- Cost Trends
- Relative Cost Performance

2. EXECUTIVE SUMMARY

Booz Allen undertook this study, at the request of AWWSC, under an order by the TRA to provide an independent assessment of the reasonableness of AWWSC charges to TAWC. This report has been prepared to be submitted concurrent with TAWC's next rate case filing with the TRA and responds to the Authority's request for a management audit, as set forth in its Orders in the most recent TAWC case (TRA Dockets 06-00290).

Our evaluation was conducted with the full cooperation of TAWC and its service company provider, AWWSC. We were provided with broad access to TAWC and AWWSC personnel as well as their documents and records. In performing our analysis, we utilized techniques and methodologies that we have employed in previous similar analyses.

The framework of our analysis began with an understanding of the organizational elements through which TAWC obtains support services and of overall cost trends. To provide a framework for the more specific evaluative analyses, several criteria were defined to guide the assessment of relevant AWWSC charges:

- Are the activities performed necessary for the enterprise?
- Do the activities performed provide demonstrated benefits?
- Is there duplication or overlap of activities among responsible entities?
- Does the budgeting process provide for effective control?
- Do ongoing control processes provide for effective cost management?
- Can evidence of effective cost control be demonstrated?
- Are cost allocation principles reasonable?
- Are costs comparable to those of other companies?

A brief summary of each of these elements of our analysis and the associated conclusions follows.

Organization Overview: Section 3

TAWC is an operating subsidiary of American Water that engages in the production and delivery of water to customers. To facilitate the procurement, delivery, and management of support services that its operating subsidiaries commonly require, American Water formed a collection of organizations that together act as the American Water Works Service Company (AWWSC), whose

function is to provide necessary support services on a shared basis. AWWSC represents a service company model that is commonly used in the utility industry, and performs functions that are similar to those performed by service companies of other comparable utilities.

Several benefits flow from the consolidation of support services into AWWSC. Among other things, it has allowed TAWC to realize cost efficiencies while obtaining necessary services. It has also improved the quality of management information, enhanced implementation of best practices and enabled standardization of processes and activities. Currently, AWWSC consists of fourteen functions within two cost centers.

Necessity and Benefits Analysis: Section 4

Our evaluation of AWWSC's activities focused on the necessity for performing them as well as the benefits that flowed from such performance. In conducting this assessment, we evaluated whether the activities that gave rise to TAWC costs serve a necessary, useful and legitimate business purpose; are consistent with activities performed by other utilities; and provide benefits to TAWC. We determined which activities gave rise to costs incurred at the service company level; we identified the activities performed by each AWWSC function; we evaluated the AWWSC organizational structure; we determined how activities are defined and performed within AWWSC; and we used our experience in defining the activities of service companies, such as AWWSC, at other utilities.

We then evaluated the necessity of each such activity according to six separate attributes: corporate governance, regulatory mandates, legal compliance, management control, operational execution and strategic planning. Based upon our analysis, we concluded that the AWWSC activities were necessary to the operation, management and conduct of TAWC's business.

In addition to being necessary, we concluded that AWWSC activities provide distinct benefits to the organization. We identified six separate potential benefits that may arise from the activities we examined: risk reduction, increased employee productivity, improved management information, corporate performance enhancement, cost reduction or avoidance, and increased reliability. At least one of these benefits (and in many cases more than one) can be linked to each activity performed by AWWSC.

To further validate our conclusions regarding the necessity and benefit of AWWSC activities and to provide an additional frame of reference, we reviewed each activity to determine its appropriateness for performance within a service company (or similar organization) versus an individual operating company. To do this, we reviewed FERC Form 60's for several peer utility companies in the power industry. Based on our review, we determined that services provided by

AWWSC on behalf of TAWC were typical of services provided by other utility service companies. This is important to recognize, as it indicates that the centralization of such functions within service companies is generally accepted as necessary and beneficial to the enterprise, creating economies of scale and procurement efficiencies.

Overlap and Duplication Analysis: Section 5

Performance of certain operational, managerial, and back office activities in a centralized manner using a common business services' entity across an enterprise is not only an effective and cost efficient method of providing services, but also, by its nature, mitigates duplication of activities across an organization.

To confirm this general observation, we tested whether any activities undertaken by AWWSC were duplicative of, or overlapping with, functions that TAWC also performed. We evaluated whether a particular activity was being performed in a centralized or decentralized manner and whether, if potential duplication did exist, adequate differentiation in scope eliminated the possibility of overlap. Our investigation consisted of, among other things, review of internal documents, management interviews, and past PUC filings.

Figure 2-1 summarizes the results of our assessment and provides the delineation between the types of activities being performed at each "level." There are three different organizational "levels" discussed in this section and four different activity "delineations":

Three different organizational levels:

- **Corporate:** This level includes the Shared Services Center (SSC) and is a part of the AWWSC along with all of the Regional levels (explained below). It is the part of the AWWSC that is not assigned to a specific region, but works across regions.
- **Southeast Region:** This level is the part of the AWWSC that performs services only on behalf of entities in the Southeast Region, which includes operations in Kentucky, Pennsylvania, Tennessee, Virginia, Maryland, and West Virginia.
- **TAWC:** This level is the actual Tennessee American Water Company. It is the local Tennessee operating company for which this report is being written.

Four different activity delineations:

- **SPG:** Strategy, Policy, Governance; Activities that are considered to be SPG provide strategy and direction for the given function, set policies and goals for the function, or provide governance for the overall function. SPG activities also include national level and enterprise-wide issues and initiatives, as well as providing expertise and developing standard practices and processes to be implemented throughout all of American Water.
- **Mgmt:** Management; Activities that are considered to be Mgmt are activities that provide oversight, guidance, and review and disseminate policies and standardized processes that were developed by SPG activities. These activities are also designed to provide support and coordination for the day to day operations of the actual function.
- **Ops:** Operations; Activities in which the actual day to day operations of the function are performed. This is where the actual job of the function is performed.
- **T:** Touch Point; Activities in which employees act as “Touch Points” or points of contact if there are questions, issues, or needs, such as data gathering for that function or to perform a minor role at a more localized level.

Figure 2-1
Overlap and Duplication Analysis Areas

Function	Corporate	Southeast Region	TAWC
Accounting	SPG, Mgmt, Ops	T	T
Administration	SPG, Mgmt	Ops	T
Audit	SPG, Mgmt, Ops	T	T
Communications	SPG	Mgmt	Ops
Legal	SPG	Mgmt, Ops	
Engineering		SPG, Mgmt, Ops	T
Finance			
All Finance Activities except for Rates and Regulations	SPG	Mgmt, Ops	Ops, T
Rates and Regulations	T	SPG, Mgmt, Ops	Ops, T
Human Resources	SPG	Mgmt	Ops
Information Systems	SPG, Mgmt, Ops	Ops	
Operations			
Production, Network, Maintenance	SPG	Mgmt, Ops	Ops
Business Development	SPG, Mgmt	Ops	T
Rates & Revenues	SPG, Mgmt, Ops		
Risk Management	SPG	Mgmt, Ops	Ops
Water Quality	SPG	Mgmt, Ops	Ops
Customer Service			
All Customer Service activities except AR	SPG, Ops	Mgmt	T
Accounts Receivable	SPG, Mgmt, Ops		T

Note: Please see section on cross-functional duplication regarding Rates and Regulation as a part of Finance vs. the Rates and Revenues' Function as these functions are complementary rather than duplicative.

As shown in the Figure above, our detailed review of the particular activities confirms that each group has a defined scope of activities that was discrete and non-duplicative. Based upon our investigation of these activities performed by the Corporate, Southeast Regional, and TAWC levels, we concluded that no duplication of effort exists within AWWSC and TAWC.

AWWSC Cost Allocation: Section 6

We analyzed the allocation of costs from AWWSC to TAWC to determine whether TAWC was charged only an appropriate share of AWWSC costs. In conducting this analysis, we interviewed management, investigated the allocation methods employed to assess whether they reflect cost causation principles, and analyzed the allocation factors used by AWWSC in relation to those used at other similar service companies in the power industry.

Our evaluation found that:

- Charges to TAWC from AWWSC are allocated under a 1989 agreement that has been approved and in use in all jurisdictions of American Water's operating companies.
- AWWSC costs are directly charged to the entity that specifically demands the services that give rise to the cost, when costs can be identified and traced to a particular entity. In 2006, direct billed charges increased to 23% of total charges, up from 16% in 2005 showing a continued effort to direct charge as many costs as possible.
- AWWSC costs that cannot be directly traced to a particular entity (and not directly charged) are allocated on the basis of number of customers served by the operating company relative to total number of customers served by all of American Water, which was found to be a reasonable cost causative allocation factor.

As a check on the allocation process used by AWWSC, we reviewed the level of AWWSC billings to TAWC as compared to TAWC's relative presence in the overall enterprise, as reflected by headcount. This was done because in looking at the activities which have costs that are indirectly allocated, headcount and customers were the two most cost causative factors. TAWC's current total of indirectly allocated costs was 2.24% as compared to 2.37% if headcount were the allocation factor that was chosen to allocate indirect costs.

In sum, we concluded that the processes used to allocate AWWSC costs to TAWC were appropriate and yielded outcomes that were reasonable.

Budget and Control: Section 7

Our assessment included a review of the AWWSC budget process to determine whether the structure and execution of that process served as an effective means of controlling AWWSC O&M costs. To conduct our assessment, we reviewed (a) the planning process to understand how overall targets are established; (b) the budgeting process to assess its effectiveness in justifying and limiting planned costs; (c) the involvement of the various business units in the budgeting process to assess the nature and extent of the interface between AWWSC and its internal customers; and (d) cost control mechanisms to determine whether costs are properly managed.

Our review focused on how an operating company interfaced with AWWSC throughout the budget and cost control process. Of particular relevance to our analysis were the mechanisms by which an operating company monitors and manages AWWSC billings.

With respect to planning, the framework and overall direction of an operating company are established in conjunction with regular planning exercises undertaken on behalf of the enterprise as a whole. These include strategic and long-range planning, financial planning, and business planning. Such planning not only exerts pressure on each business unit to improve efficiency, but also serves as a discipline to management to ensure that capital was allocated appropriately and effectively.

Utilizing the plans developed on a strategic, financial, and business basis, the functions, in conjunction with AWWSC, develop detailed annual budgets. Concurrently, AWWSC works in an iterative and interactive process with operating companies to provide and obtain input for development of the AWWSC budget, which provides each operating company the opportunity to review and challenge proposed AWWSC budget amounts that relate to activities performed by AWWSC that are ultimately directly charged or allocated to a particular operating company. The budget development process is the primary mechanism by which an operating company is able to challenge service company costs. Once the initial budget is approved by Corporate Finance, it is then sent on to the Board of Directors for senior management review and approval. Presidents of the operating companies are members of the AWWSC Board of Directors, providing an additional opportunity to assess the budget and its drivers.

AWWSC has established several mechanisms to provide operating companies with oversight of AWWSC cost levels including Service Level Agreements, formal management processes to track performance against budget, monthly AWWSC management reviews of performance, and the monitoring of costs by senior leadership of operating companies.

American Water follows a Capital Investment Management Committee ("CIMC") process, as well as national Commercial Development Process ("CDP") for all major Fixed Asset investment, Material Contracts, Financial Investments, Joint Ventures, and Consultancy Contracts. All projects developed by the respective departments are subject to evaluation using the national Commercial Development Process.

In sum, rigorous budgeting and cost control processes support management's objectives to control costs. In addition, these process elements are being regularly executed throughout the business. The budgeting process provides adequate opportunities for an operating company to influence the extent to which costs are incurred on its behalf, demonstrating that it is not a "price taker" as AWWSC services and costs are established. Finally, an ongoing cost control process is in place that allows for monitoring throughout the year to ensure that expenditures are consistent with the budget and variances are discussed and challenged as appropriate. For these reasons, the budget and control processes

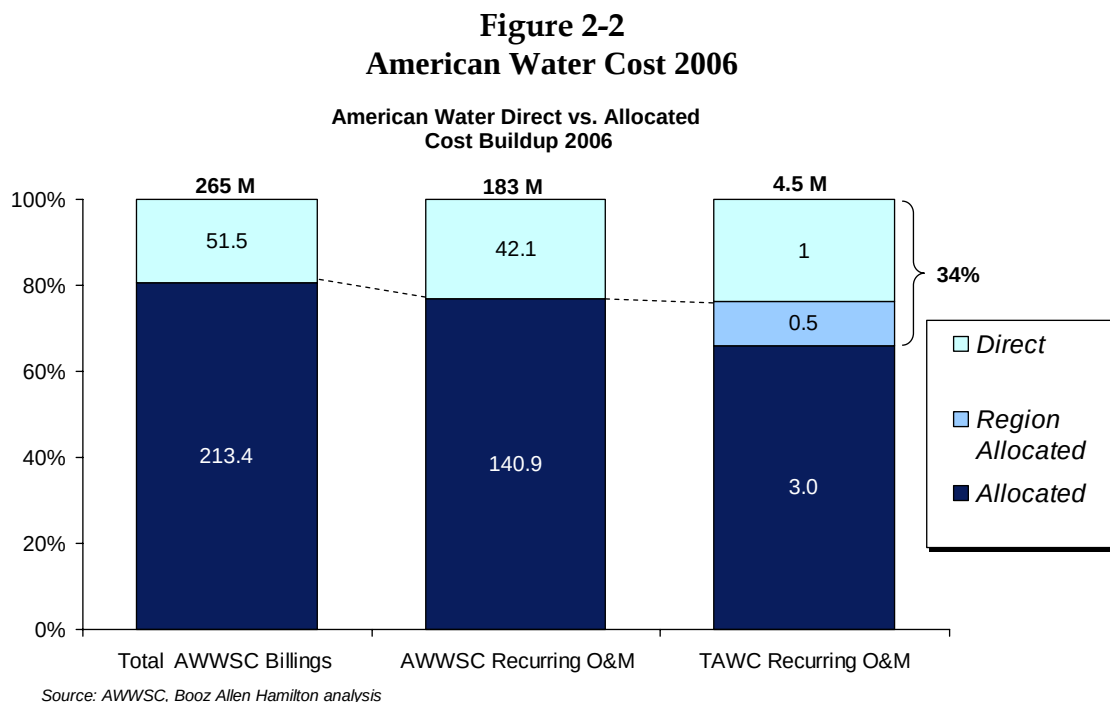
are effective in ensuring that AWWSC charges are appropriately and efficiently incurred.

Cost Trends: Section 8

To understand TAWC costs and their relationship with AWWSC, we performed analyses to determine the business drivers that impacted AWWSC as a whole, between 2005 and 2006, with respect to the nature of costs that were incurred, and consequently, how costs were charged.

In 2006, AWWSC incurred \$265 million in total charges for services provided. Of this amount, \$183 million was accounted for as AWWSC recurring O&M. The remaining \$82 million incurred by AWWSC was for one time extraordinary items, non-operating and maintenance costs, as well as amounts that have been capitalized on the balance sheet. TAWC incurred \$4.5 million in charges from AWWSC.

Figure 2-2 depicts 2006 total AWWSC costs incurred for the American Water enterprise as a whole, total recurring O&M costs billed to operating companies, and AWWSC costs billed to TAWC accounts, broken down by direct and allocated charges.

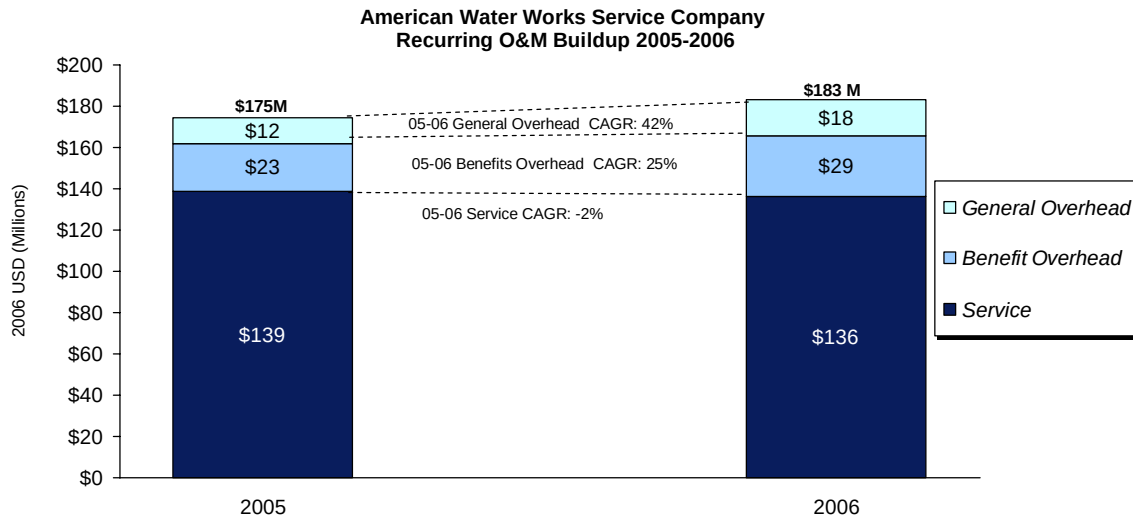


In 2005, AWWSC incurred \$240 million (\$2006), compared to \$265 million in 2006. Services provided are categorized into 14 functions, that will be discussed in Section 3 of this report. The growth in 2006 AWWSC total billings from 2005 represent a real increase of \$25 million in 2006 dollars (\$2006), i.e., inflation adjusted growth of 10% .

AWWSC incurred approximately \$183 million in recurring O&M in 2006 and \$175 million (\$2006) in 2005. Recurring O&M provides a perspective on the actual cost required to perform services. As a result of the business structure defined by management, recurring O&M provides insight into the ongoing cost to do business.

Moreover, as **Figure 2-3** demonstrates, the difference between 2005 and 2006 AWWSC recurring O&M represents a real increase of \$8.4 million, i.e., inflation adjusted growth of 4.8% over 2005. Recurring O&M service charges decreased by \$2.5 million, a 2% decline in 2006. Recurring O&M Benefit overhead increased by \$5.7 million, a 25% increase, to \$29 million in 2006. Recurring O&M General overhead increased by \$5.2 million, a 42% increase to \$18 million in 2006.

Figure 2-3
Recurring O&M Difference 2005 - 2006



Source: AWWSC, Booz Allen Hamilton analysis

The real 4.8% increase in AWWSC cost from 2005 to 2006 suggests that cost control mechanisms in place at AWWSC have been instituted to control spending as business operations have grown. Although total AWWSC costs increased, those increases were driven by normal business changes such as call center expansions resulting in service and overhead increases, as more fully explained in Section 8 of this document.

Relative Cost Performance: Section 9

A benchmarking analysis was conducted to compare AWWSC cost levels to those of a number of a selected peer group. We compared AWWSC's costs on various per unit bases with those of a peer group consisting of twenty holding company systems with more than 10 service offerings.

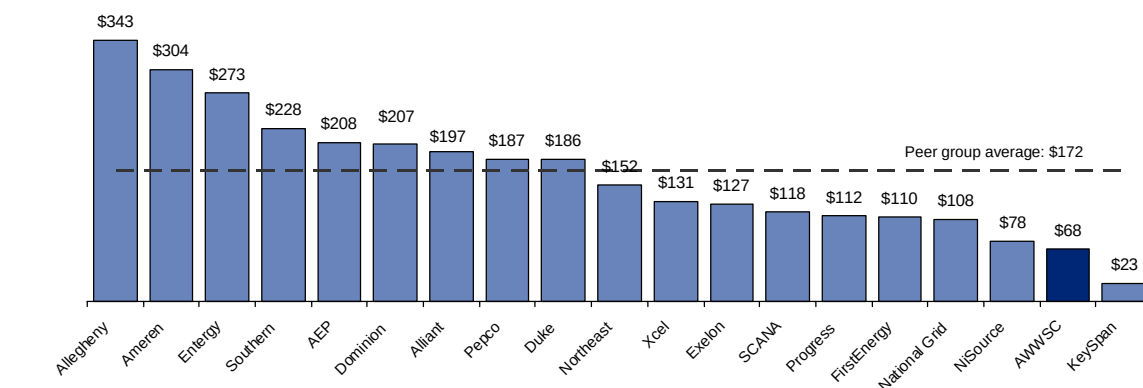
The results of these analyses show that AWWSC compares favorably to the peer utility service companies. Performance is generally average or below average (*i.e.*, lower cost). The results of the AWWSC comparison are set forth in **Figure 2-4**. This figure shows that AWWSC performed at or better than average with respect to six of the seven metrics measured.

Figure 2-4
Summary of Benchmarking Results using 2006 FERC Form 60 Data

Benchmark	AWWSC Performance vs. Average
Service Co O&M as percentage of total assets	Below average cost
Service Co O&M as percentage of total company O&M	Below average cost
Service Co O&M as percentage of revenue	Average cost
Service Co O&M per customer	Below average cost
Service Co O&M per total company FTE	Below average cost
Service Co O&M per Service Co FTE	Below average cost
Service Co O&M Expense 2005 to 2006 Change	Above average cost change

As an example of the FERC Form 60 benchmarking analysis, we compared AWWSC O&M expense per customer to the peer group. Service company O&M includes such costs as salaries and wages, outside services, overhead costs, and rents. **Figure 9-3** shows that AWWSC's benchmark of \$68 per customer compares favorably to the peer group average of \$172.

Figure 2-5
2006 Service Company O&M Expense per Customer



Source: Energy Velocity data, 2006 FERC Form 60 filings, Booz Allen Hamilton analysis.
 Note: Statistical Outliers removed using the Inner Quartile Range Method

CONCLUSION

Overall, our assessment is that AWWSC provides necessary services to TAWC, and that they are provided in a manner that results from prudent management decisions on the part of TAWC's parent. Further, we believe that the methodology used to allocate costs to TAWC is reasonable.

Based on our analysis, we determined that each of the activities performed by AWWSC on behalf of TAWC was necessary and provided specific benefits. Additionally, we noted that, while some activities performed by AWWSC and TAWC may appear similar, the scope and responsibilities of such activities were distinct, leading us to conclude that there was no duplication of efforts that would result in excess cost. We also found that whenever possible, AWWSC charges TAWC directly for services and used a reasonable allocation method when necessary. Our review of the budgeting and cost control processes revealed a thorough system that effectively plans for and controls spending at AWWSC. Analysis of the cost trends at AWWSC between 2005 and 2006 further indicated that costs were managed appropriately. Finally, our benchmarking analysis revealed that AWWSC costs were generally at or better than average.

As a result of our comprehensive assessment, we concluded that TAWC receives necessary services that were provided in an effective, cost controlled manner by AWWSC. Further, we found that the method used to allocate costs from AWWSC to TAWC was reasonable.

3. ORGANIZATION OVERVIEW

American Water Works Company, Inc. ("American Water") is a water utility holding company whose principal operating subsidiaries operate 22 water companies in four regions (northeast, southeast, central and west) that all provide water services, which are all regulated by the local Public Utility Commissions (PUC) in each state. American Water also has several non-regulated entities including its Contract Operations Group, its Applied Water Management Group, and its Homeowner Services Group.

TAWC is a wholly-owned subsidiary of American Water and is engaged in providing water services to customers.

To facilitate the procurement, delivery, and management of support services that its operating subsidiaries commonly require, American Water formed a collection of entities that together act as the American Water Works Service Company (AWWSC). Those entities included Corporate Services, Shared Services Center, and four Regional Service Companies (Central, Northeast, Southeast, and Western). The Corporate Services and Shared Services Center provide services to all regulated and non-regulated entities, while the Regional Service Companies provide services only to regulated entities within their respective region. TAWC is a part of the Southeast Region. In many instances, Corporate Services provides strategic direction, policies, and governance which the Regional Service Companies and the operating companies themselves implement, manage, and operate throughout their regions. The function of AWWSC is to provide necessary support services to American Water's operating subsidiaries, including TAWC, on a common and consistent basis. Several benefits flow to TAWC from the consolidation of support services into AWWSC, including the realization of substantial cost efficiencies. Additionally, with AWWSC primarily responsible for the coordination, delivery, and administration of support services, operating management, including that of TAWC, is allowed an increased opportunity to focus on operational, high-value, essential, and crucial activities, including focusing upon providing water service in a reliable manner.

Currently, AWWSC bills for services utilizing 14 primary functions and is structured into two cost centers as described in **Figure 3-1**:

Figure 3-1
American Water Works Service Company Overview

American Water Works Service Company (AWWSC)						
Functions			Overhead Cost Centers			
Accounting	Engineering	Rates and Revenue	General			
Administration	Finance	Risk Management	Benefit			
Audit	Human Resources	Water Quality				
Communications	Information Systems	Customer Service				
Legal	Operations					

While the activities of most of the functions can be understood from their title alone, a full description of the functions is contained in the activity summary in **Exhibit 3-1**. The Overhead Cost Centers are explained below:

- **General:** office expenses that include office rent, equipment leases, telephone, power, office supplies, property taxes, and office maintenance.
- **Benefits:** labor related expenses that include employee benefit costs (payroll taxes, medical coverage, pensions, disability insurance) and other general expenses.

AWWSC represents a service company model that is commonly used in the utility industry, and AWWSC performs functions that are similar to those currently performed by service companies of other comparable utilities in the power industry, as depicted in Figure 3-2:

Figure 3-2
Service Company Comparison

Services*	Allegheny	Alliant	Ameren	AEP	Black Hills	Dominion	Duke	Energy East	E.ON	Energy	Exelon	First Energy	Great Plains	KeySpan	National Grid	NISource	Northeast	Pepero	PNM	Progress	SCANA	Southern	Unitil	Xcel	AWWSC
Accounting	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Audit	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Business & Administrative Services	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Commercial Operations	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Customer Operations/Service	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Distribution	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Engineering & Environmental Operations	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Executive / Overhead	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Finance	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Facilities	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Fuel	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Generation Operations	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
HR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Investor Relations	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
IT	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Legal	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Logistics and supply chain	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Marketing/sales	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Planning/Budgeting	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Communications	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Regulatory Relations	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Risk Management	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Strategy-Corporate	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Security	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Shared or General Services	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Transmission	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Transmission Ops/Planning (reported jointly)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Treasury	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Utility Operations	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Utility Operations Planning	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
External Affairs	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Other	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Number of Services Provided	21	19	19	24	17	17	20	9	25	11	13	23	6	20	18	19	14	17	5	12	15	13	9	22	23

Source: 2006 FERC Form 60, Booz Allen Hamilton analysis. Note:

"Other" refers to "Investment Management" for First Energy, "Right of Way" for Duke/Cinergy and "Competitive Group" for NE Utilities

AWWSC delivers its services to TAWC, and to the other American Water subsidiaries, through an Agreement dated January 1, 1989. The Agreement outlines all services that are to be provided to TAWC from AWWSC if TAWC elects to use AWWSC. The method for determining the charges to TAWC for those services and how those charges were billed are also described in detail. The agreement also provides that TAWC is not bound to use the Service Company for those services and is free to use its own personnel or engage another company to perform the services.

4. NECESSITY AND BENEFITS ANALYSIS

Our evaluation of AWWSC's activities focused on the necessity of the activity performance, as well as the benefits that flowed from such performance. In conducting this assessment, we evaluated whether the activities that gave rise to AWWSC charges serve a necessary, useful, and legitimate business purpose; were discretionary and could be avoided by management; were consistent with activities performed by other utilities; and provided benefits to TAWC.

In conducting this qualitative analysis, we undertook a broad array of activities, including the following:

- Reviewed AWWSC activities which gave rise to costs incurred at the service company level and were subsequently passed onto TAWC;
- Reviewed prior PUC filings with various states to gain an understanding of the different activities that AWWSC performed for each of its regulated entities, including TAWC;
- Evaluated the AWWSC and TAWC organizational structure and alignment by conducting interviews of AWWSC and TAWC personnel and analyzing their respective organization charts;
- Interviewed department leaders to validate assumptions and findings;
- Leveraged Booz Allen experience in defining the activities of service companies, such as AWWSC, at other utilities.

Based upon our analysis, we concluded that the AWWSC activities, including those giving rise to costs attributed to TAWC as a result of those activities, were necessary to the operation, management, and conduct of TAWC's business. The majority of these expenses arise out of activities required to satisfy responsibilities to governmental entities and customers (*e.g.*, customer services, operations, corporate governance, legal compliance, and regulatory mandates) and, as such, AWWSC costs incurred in connection with these activities were non-discretionary and unavoidable. In fact, the services provided by AWWSC were services that TAWC would have to conduct on its own if it were not a part of American Water and are services that are comparable to those performed by other similar companies.

Exhibit 4-1 sets forth our detailed analysis of the 75 distinct activities giving rise to recurring O&M expenses incurred by TAWC. It describes the nature of the particular activity and identifies the necessity for such expenditure according to six separate attributes: corporate governance, regulatory mandate, legal compliance, management control, operational execution, and strategic planning.

Figure 4-1 sets forth the definitions for each of these necessity attributes:

Figure 4-1
Necessity Attributes Description

Necessity Attributes	Definitions
Corporate Governance	Activities that are necessary to ensure that corporate and portfolio fiduciary responsibilities and enterprise-wide management and operation is effectively executed. Examples include performing shareholder activities, managing cross-business issues, performing risk management activities and evaluating internal controls
Regulatory Mandate	Activities that are required to fulfill statutory, regulatory and other commitments or mandates. Examples include submitting SEC filings, filing IRS documents and complying with other regulatory requirements
Legal Compliance	Costs incurred and activities performed as a direct result of legal proceedings, avoidance of legal proceedings, or compliance with legal requirements. Examples include performing litigation activities and responding to discovery requests
Management Control	Activities performed specifically to provide analysis, decision support data and results to management personnel. Examples include managing projects and reporting results and developing management reports
Operational Execution	Includes fundamental functions performed on a daily basis. Examples include performing maintenance activities, performing general accounting, and tracking employee information.
Strategic Planning	Activities that encompass business unit planning and activities directed at providing enterprise-wide direction. Examples include monitoring marketplace activities, performing strategic planning, and providing business planning assistance

These attributes encompass established and accepted views of why these types of centralized activities are undertaken and are necessary to the proper functioning of a business enterprise. They have been established through similar assessments that Booz Allen has conducted in the utility sector in other jurisdictions. We tested these attributes against the more than 75 discrete activities performed on behalf of TAWC, summarized in **Exhibit 3-1** and discussed further in **Exhibit 4-1**. Based on our analysis, we concluded that each of the 75 identified activities is necessary.

Examples of how we applied this methodology for each attribute are set forth below:

Corporate Governance: The Finance function formulates the SOX controls to ensure that American Water meets its corporate responsibilities of complying with Sarbanes-Oxley. By ensuring that American Water meets its corporate responsibilities, the Finance function provides Corporate Governance. As part of providing enterprise wide management and ensuring operation is effectively executed, the Communications' function also fulfills Corporate Governance by providing internal communications to ensure that all American Water employees are current on company policies, issues, and practices. The Engineering function provides governance and implements

standard best operating practices for all of its projects ensuring enterprise wide operation is effectively executed as part of Corporate Governance.

Regulatory Mandate: The Accounting function ensures that Property, Plant, and Equipment are properly accounted for in its Fixed Asset / Job Costing activity, which provides regulators with an accurate calculation of the rate base, which is required for regulatory filings. Regulatory mandates require accurate accounting for Property, Plant, and Equipment. Similarly, the Rates and Revenue function provides rate case support in which they gather all necessary data for filing rate cases, preparing testimony, putting together work papers, and performing analysis as part of rate case requirements. Rate case requirements are a regulatory mandate.

Legal Compliance: The Legal function performs, manages, or supervises the majority of all legal work done for the operating companies, including handling lawsuits, reviewing contracts, and handling the legal aspects of rate cases, which are all aspects of Legal Compliance. Similarly, the Risk Management function develops and implements policies that are designed to ensure health and safety in the work place, which is a requirement of labor laws and thus meeting Legal Compliance. The Water Quality function tests and treats water to ensure that it meets all governmental water quality standards; many substances must be tested for by law, thus also meeting Legal Compliance.

Management Control: The Administration function performs regional business administration, in which it consolidates all of the operating companies' operational information and data to provide oversight to the operating companies and to provide management reports to Corporate; this includes benchmarking data, Key Performance Indicator (KPI) data, etc. providing management with important decision support data as part of Management Control. In addition, the Audit function performs operational audits in which it tests the functionality of the entire business to ensure it is performing optimally and as designed. After the audit is finished, it provides key decision support data to management that management uses to make improvements as part of Management Control.

Operational Execution: The Information Systems function designs, installs, and handles all information technology work, such as ensuring users have the necessary computer hardware to perform their jobs. Servicing the information technology of American Water is a fundamental function performed on a daily basis as part of Operational Execution. The Customer Service function actively works to manage accounts receivable by working to collect all money that American Water is owed, which is a fundamental function of American Water.

Strategic Planning: The Human Resources function continually plans its human resources strategy to ensure that the appropriate number of human resources is available to handle all of the activities that American Water must perform. Part of that planning includes monitoring and strategically handling turnover, which is particularly important in today's high turnover, aging workforce environments. As part of its work, the Operations function seeks regulated acquisition and other related growth opportunities providing enterprise wide direction as part of Strategic Planning.

In addition to being necessary, we concluded that AWWSC activities provide benefits to the organization. For purposes of this assessment, Booz Allen identified six separate potential benefits that may arise from the activities we examined, which are described in **Figure 4-2**.

Figure 4-2
Benefits Attributes Description

Benefits Attributes	Definitions
Reduce Risk	Actions designed to reduce liability and mitigate exposure to financial, operational, fiduciary and other types of risk through activities such as implementing safety programs, performing internal audit, and developing policies, procedures and manuals
Increase Employee Productivity	Programs that enhance employees' abilities to perform their jobs more productively. Examples include implementing certain automated systems, providing certain types of training, implementing and administering employee health awareness programs, developing procedures, policies and practice manuals, developing employee communications and implementing and administering quality programs
Provide Management Information	Activities conducted primarily to provide decision support data and analysis to management personnel. Examples include developing budgets, monitoring operational and financial performance, performing corporate development, conducting strategic assessments and developing integrated information systems
Enhance Corporate Performance	Activities performed to enhance the abilities and effectiveness of management with respect to the business, including developing strategic plans, managing the performance review process, maintaining the inter / intranet and conducting benchmarking studies
Reduce or Avoid Costs	Activities performed to improve the cost effectiveness of operations. Activities include implementing certain automated systems, negotiating discounts with outside vendors and performing certain credit and collections activities
Increase Reliability	Activities performed to increase the reliability of water distribution / production and to minimize the impact of disruptions

We tested these attributes against the 75 discrete activities identified as being performed on behalf of TAWC, summarized in **Exhibit 3-1** and discussed further in **Exhibit 4-1**. As **Exhibit 4-1** shows, we concluded that each of the activities provides direct and indirect benefits to TAWC.

An example of how we applied this methodology for each attribute is set forth below:

Reduce Risk: The Audit function performs financial audits to ensure that financial reporting controls required by Sarbanes-Oxley laws are functioning correctly, reducing financial risk. The Water Quality function reduces the operational risk of harmful chemicals infiltrating the waters delivered to customers by American Water operating companies.

Increase Employee Productivity: The Human Resources function works with the Information Services function to develop automated human resource systems that allow employees to spend less time on administrative HR related issues, which allows them to concentrate on their jobs. The Information Systems function puts together, obtains, manages, and designs technology systems including technical and functional applications, telecommunications, automated systems, computers, and much more, which are all designed to enhance the employees' abilities to perform their jobs more productively. The Customer Service function manages automated billing systems that allow employees to concentrate on billing issues, such as billing exceptions or corrections, instead of having to perform continually repeated processes.

Provide Management Information: The Finance group provides management with budgets and forecasts which are necessary decision support information. The Rates and Revenue function gathers data and performs analysis to provide management information used to construct rate case documentation and support.

Enhance Corporate Performance: The Operations function develops best operating practices providing management with the best tools and processes by which to run their respective groups thus enhancing corporate performance. The Administration function conducts performance reporting on the Shared Services Center. Obtaining a clear picture of performance increases management's effectiveness by allowing them to understand where improvement is necessary. The Communications function is responsible for building and marketing the American Water brand, providing a better connection between the company and its customers, which enhances overall corporate performance.

Reduce or Avoid Costs: Strategic sourcing is undertaken as a part of supply chain operations; by procuring resources as an entire company as opposed to just TAWC doing it alone, American Water can achieve large economies of scale savings, which it then passes on to its operating companies, such as TAWC. The Legal function actively works to protect the company against lawsuits or to work out favorable results, therefore reducing costs.

Increase Reliability: The Engineering function uses the best operating practices developed by the Operations function to deliver various projects. By using best operating practices, the reliability of the system is greatly increased. The Risk Management function performs an activity called Business Continuity in which the sole purpose is to provide emergency and contingency planning to ensure 24 hours a day, 7 day a week reliability.

To further validate our conclusions and provide an additional frame of reference, we reviewed each activity performed by AWWSC to determine its appropriateness for performance within a service company (or similar organization) rather than performance within an individual operating company. To do this, we reviewed FERC Form 60s² for several peer utility companies which capture the activities of such service companies in the utility industry. Based on our review, we determined that services provided by AWWSC on behalf of TAWC are typical of services provided by utility service companies as previously reflected in **Figure 3-2**. This is important to recognize, as it indicates that the centralization of such functions within such service companies is generally accepted as being necessary and as providing benefits to the enterprise (*e.g.*, economies of scale and procurement efficiencies).

CONCLUSIONS

Activities undertaken by AWWSC satisfy several operational, legal, and regulatory needs for a water utility. All functions were required either to satisfy responsibilities to customers and governmental entities or support the operations of the enterprise and were not avoidable. When compared against the specific attributes used to establish necessity of performance, at least one of these attributes applied to each of the 75 activities reviewed.

These functions also provided direct and indirect benefits, such as standardization to improve productivity or provision of technical support to improve decision-making, that enhanced the effective management and efficiency of TAWC as again demonstrated by the applicability of the attributes used to evaluate whether benefits were derived. Most specifically, centralized performance of these functions created economic benefits which were realized by TAWC and the other operating companies. These functions were also consistent with, and similar to, functions provided by other utility service companies and other businesses outside of the industry.

² The FERC Form 60 is a form that is required under the Public Utility Holding Company Act of 2005 and that contains detailed service company functional data, including descriptions of cost allocation approaches.

5. OVERLAP AND DUPLICATION ANALYSIS

Performance of certain common operational, managerial, and back-office activities in a centralized manner using a single business services entity is generally considered an effective and cost efficient method of providing services. This type of structure, by its nature, limits the amount of duplication of activities across an organization even where similar types of activities may be performed. In performing our analysis of any potential duplication among AWWSC and TAWC, we evaluated whether the activity was being performed in a centralized or decentralized manner and whether, if the potential for overlap did exist, there was adequate differentiation in scope among these entities.

Our investigation into any possible duplication of effort consisted of the following steps:

- Reviewed organizational charts for TAWC and AWWSC to provide an initial baseline for understanding the responsibility and focus of the activities performed within each entity.
- Defined the role that each functional area performs and assessed whether, based on such descriptions, the potential for activity overlap existed.
- Conducted individual interviews with management representatives within the TAWC and AWWSC functions to fully understand the activities that each area performs and assess whether differences in purpose, focus, or content of the activities in question existed.

We reviewed each of the activities of AWWSC previously described in detail in the activity summary in **Exhibit 3-1**, as well as functional activities of TAWC. Our detailed review of the activities of TAWC and AWWSC confirmed that the activities of each entity were not duplicative. While some activities require the participation of multiple levels of the organization, such as the preparation of budgets, this does not constitute duplication.

Figure 5-1 summarizes the results of our assessment and provides the delineation between the types of activities being performed at each “level.” There are three different organizational “levels” discussed in this section and four different activity “delineations”:

Three different organizational levels:

- **Corporate:** This level includes the Shared Services Center (SSC) and is a part of the AWWSC along with all of the Regional levels (explained below). It is the part of the AWWSC that is not assigned to a specific region, but works across regions.

- **Southeast Region:** This organization within AWWSC performs services only on behalf of entities in the Southeast Region, which includes operations in Kentucky, Pennsylvania, Tennessee, Virginia, Maryland, and West Virginia.
- **TAWC:** This level is the actual Tennessee American Water Company. It is the local Tennessee operating company for which this report is being written.

Four different activity delineations:

- **SPG:** Strategy, Policy, Governance; Activities that were considered to be SPG, provide strategy and direction for the given function, set policies and goals for the function, or provide governance for the overall function. SPG activities also include national level and enterprise-wide issues and initiatives, as well as providing expertise and developing standard practices and processes to be implemented throughout all of American Water.
- **Mgmt:** Management; Activities that were considered to be Mgmt are activities that provide oversight, guidance, review and disseminate policies and standardized processes that were developed by SPG activities. These activities are also designed to provide support and coordination for the day to day operations of the actual function.
- **Ops:** Operations; Activities in which the actual day to day operations of the function are performed. This is where the actual job of the function is performed.
- **T:** Touch Point; Activities in which employees act as “Touch Points” or points of contact if there are questions, issues, or needs, such as data gathering for that function or to perform a minor role at a more localized level.

As **Figure 5-1** demonstrates, our thorough review revealed that while, in some cases, similar broad functional descriptions exist across two or more entities, the actual activities performed by each entity were different in scope and were not duplicative. In some cases, Ops occur at multiple organizational levels such as appearing in both Corporate and Regional. There were two reasons this occurred. The first reason was that the Ops’ activities being performed at one level were completely different activities within the same function as those being performed at the other level. The other reason was that some specialist employees, such as in the case of employees working on Non-Revenue water, which is a part of the work done for the Network, perform their Ops’ activity at two or more operating companies so they actually reside within the Southeast Regional level. Many of the employees that perform the Ops’ related activities within Network, however, were held at TAWC because they only perform work

for that level causing Ops' activities to show up at the Southeast Regional level and at the TAWC level. In short, the nature of activities performed within Corporate, Southeast Region, and TAWC was sufficiently delineated, distinct and focused on the requirements of the individual business.

**Figure 5-1
Delineation of Roles and Responsibilities**

Function	Corporate	Southeast Region	TAWC
Accounting	SPG, Mgmt, Ops	T	T
Administration	SPG, Mgmt	Ops	T
Audit	SPG, Mgmt, Ops	T	T
Communications	SPG	Mgmt	Ops
Legal	SPG	Mgmt, Ops	
Engineering		SPG, Mgmt, Ops	T
Finance			
All Finance Activities except for Rates and Regulations	SPG	Mgmt, Ops	Ops, T
Rates and Regulations	T	SPG, Mgmt, Ops	Ops, T
Human Resources	SPG	Mgmt	Ops
Information Systems	SPG, Mgmt, Ops	Ops	
Operations			
Production, Network, Maintenance	SPG	Mgmt, Ops	Ops
Business Development	SPG, Mgmt	Ops	T
Rates & Revenues	SPG, Mgmt, Ops		
Risk Management	SPG	Mgmt, Ops	Ops
Water Quality	SPG	Mgmt, Ops	Ops
Customer Service			
All Customer Service activities except AR	SPG, Ops	Mgmt	T
Accounts Receivable	SPG, Mgmt, Ops		T

SPG = Strategy, Policy, Governance **Mgmt** = Management **Ops** = Operations **T** = Touch Point

Note: Please see section on cross functional duplication regarding Rates and Regulations as a part of Finance vs. the Rates and Revenues Function as these functions are complementary rather than duplicative

Each of these areas is discussed separately and in more detail below.

Accounting:

All activities that were billed through the Accounting function were performed at the Corporate level. The main interaction that the Accounting function had with the Southeast Regional level was to provide the reports to the Regional Finance Director for review; however, those activities performed at the Southeast Regional Level were billed through the Finance function and were, therefore, included as part of the Finance function for the purposes of this report. Otherwise, TAWC had one individual responsible for acting as a Touch Point for the Corporate level. That individual was responsible for answering any questions the Accounting function had in regards to TAWC, and that individual provided the necessary data that the Accounting function required from TAWC. There is further review of potential cross functional duplication between Accounting and Finance later on in this section under "Cross Functional Duplication."

Administration:

Administration at the Corporate level consisted of three major activities, which are Executive Oversight, Business Liaisons, and Project Management (see **Exhibit 3-1**). Executive Oversight was responsible for providing overall executive oversight and strategic direction to American Water, making this a SPG activity. Business Liaison was a Corporate level activity that supported the Shared Services Center (SSC) through customer monitoring and performance analysis, which is a Mgmt activity because it provides review of business performance. Project Management was another Corporate level activity that managed continuous improvement project initiatives and other projects for the SSC making it another Mgmt activity.

Southeast Regional Administration was responsible for putting together reports for its operating companies on such things as Key Performance Indicators (KPIs) and compiling benchmarking data to provide benchmarks to Corporate. The day to day operations of Administration were therefore performed at the regional level, meaning that the Southeast Regional level performed the Ops' activities.

Audit:

All Audit activities were performed at the Corporate level. Audit had interaction with the Southeast Regional level and with TAWC while audits were being performed, requiring people from the Southeast Regional level and from TAWC to act as Touch Points to answer questions or gather necessary data for the audit to be performed.

Communications:

Communications at the Corporate level was responsible for handling all national level communications' activities. The Corporate level was also responsible for setting policy and providing governance for local government affairs. The Corporate level was in charge of marketing the American Water brand at a national level. Policy, strategy, and guidance for media relations and customer communications were provided at the Corporate level. The Corporate level was also responsible for providing internal communications such as company wide emails or newsletters that provide the company with enterprise wide communications. These were all SPG activities.

Communications at the Southeast Regional level was in charge of working closely with and managing local operating company Communications' Specialists. The Southeast Regional level disseminated Corporate policies to the operating companies and ensured their enforcement. It provided support, coordination, and expertise for the operating company Communications' groups and reviewed different communications' documents created by the operating companies. These were all Mgmt activities.

TAWC's Communications' group consisted of one person who created all local media relations documents, built relationships with local government officials, and made public appearances. TAWC Communications was responsible for the day to day activities of the Communications' functions making these all Ops' activities.

Legal:

Legal at the Corporate level provided legal support to all of American Water, while also setting ethics and compliance policies. It set overall legal policy and developed standardized contracts. It also handled all national level legal matters. Therefore, all activities within the Legal function at the Corporate level were SPG activities.

Legal at the Southeast Regional level was responsible for handling and coordinating all legal work at each operating company within the Southeast Region. It either performed or managed all legal work for TAWC and the rest of the operating companies within the Southeast Regional level, therefore handling all Mgmt and Ops' related Legal activities.

Engineering:

In rare circumstances, such as building very large projects that were outside the expertise of both TAWC and the Southeast Regional level or helping to standardize certain company reoccurring projects and best operating practices, did the Corporate level get involved in Engineering. The majority of

Engineering work was performed at the Southeast Regional level due to the uniqueness of each system, geography, and needs. The Southeast Regional level therefore provided all levels of work for the Engineering function, including SPG, Mgmt, and Ops' activities.

Finance:

Finance is one of the more complicated functions within American Water and required further division than just examining it at the Functional level to examine potential duplication. To better explain potential duplication in Finance, the function was split into two primary sub-functions: "All Finance Activities except for Rates and Regulations" and "Rates and Regulations."

All Finance Activities except for Rates and Regulations:

Corporate level Finance was responsible largely for setting policy and providing governance on items such as accounting, planning, budgeting, and forecasting. It also handled national level investor relations in preparation for the initial public offering (IPO) of its common equity. It also set the strategy for and the actual financing of all work done at American Water. These were all SPG activities because they provide governance, strategy, and policies and perform enterprise wide activities.

Southeast Regional Finance was largely in charge of ensuring these efforts were implemented throughout all operating companies in the region. The Southeast Region put consolidated regional budgets together after using TAWC as a Touch Point to gather all of the necessary data. The Southeast Region also performed regional planning and forecasting. It ensured that SOX controls designed by the Corporate level were implemented throughout the region. It was in charge of coordinating and performing all day to day functions of the Finance function for TAWC. Therefore, most Southeast Regional Finance activities were Mgmt and Ops related.

For the Finance function, TAWC was a Touch Point for all activities with one exception. It gathered and provided the necessary data for items such as budgeting and forecasting. The one exception is CSR, where TAWC actually performed the day to day operations of community relations and service work thus performing the Ops' activities of CSR.

Rates and Regulations:

The only exception to the delineations within all of the rest of Finance is the Rates and Regulations activity. For this activity, the Corporate Rates and Regulations group, within the Shared Services Center, provided historical information from the records to the Regional Rates group. This group also

provided assistance and analysis regarding SSC and Corporate level expenses during the rate case and supplied other necessary data which is based on the financial and accounting records maintained at the SSC. By providing data, the Corporate Rates and Regulations Group performed Touch Point activities, and by performing analysis, which was limited to Corporate level expenses, they also performed Ops' activities.

The Southeast Regional level of Rates and Regulations' activity was responsible for all aspects of rate case filings from gathering local operating data, to managing the strategy for filing rate cases, to hiring and managing outside consultants. Therefore, the SPG, Mgmt, and Ops' work were mostly done at the Regional level for Rates and Regulations with Corporate and TAWC serving as Touch Points.

Once again, TAWC acted as a Touch Point for Rates and Regulations by helping to gather data, answer questions, and offer information to the Rates and Regulations group to build the rate cases.

Human Resources:

Corporate Human Resources provided enterprise wide activities such as formulating job descriptions and designing performance appraisals. It provided strategy for union negotiations for all local operating companies and for workforce replenishment strategy. It provided governance through standardizing processes for treating employees and setting leave program policies and diversity initiatives. It did national level work by negotiating with national unions. These were all SPG activities.

Southeast Regional Human Resources maintained the applicant tracking system for the Southeast Regional level. It also helped to manage, direct, and provide support for Human Resources employees at the operating companies. Therefore it provided the Mgmt Activities to TAWC for the Human Resources function.

TAWC Human Resources was responsible for actually recruiting, hiring, and dealing with actual TAWC employee issues. These encompassed the actual day to day operations of the function. TAWC Human Resources reported to the Southeast Regional Human Resources function.

Information Systems:

Almost all Information Systems work was performed at the Corporate level. At the Corporate level, standard practices and definitions were created, policies were set, and the overall Information Technology (IT) infrastructure and IT solutions were developed to meet business requirements, which were all SPG activities. IT Project Management and managing day to day IT operations, such

as the service desk and information systems installation, were also both performed at the Corporate level and were both Mgmt activities. Installing the actual hardware and software and even providing the help desk for phone support on IT related issues were also performed at the Corporate level, which are both Ops' related activities. Therefore, the Corporate level performs SPG, Mgmt, and Ops' activities.

There was a small amount of Information Systems work performed at the Southeast Regional level. This consisted only of face to face PC support, providing assistance with programming for local operating company information systems, and help in writing queries for different computer programs at the local operating companies. The Southeast Regional level provided face to face support for the Regional operating companies, supporting day to day operations of the Information Systems function making the activities Ops related.

Operations:

Operations is one of the largest functions within American Water and required the most understanding. To better explain potential duplication in Operations, the function was split into two primary sub-functions: "Production, Network, and Maintenance" and "Business Development", which is billed under Operations on the service company bill, but is separately managed.

Production, Network, and Maintenance:

This activity was where the actual business of water delivery was performed. At the Corporate level there was one group in charge of working across all operating companies to develop best operating practices ("BOP") and standardizing them across the company. The Corporate level also provided expertise and assistance in large construction and technical projects. This level also set up policies and procedures for the capital project approval process and provided strategic handling of assets and capital. These were all projects of an SPG nature.

The Southeast Regional level implemented and standardized many of the BOP's developed at the Corporate level across the operating companies. This level also monitored performance and consolidated reports from each operating company, including TAWC, which were all Mgmt activities.

TAWC was responsible for actually doing the "on the ground" work of maintaining the network, the production, and keeping the entire water system working and functioning, which were all Ops' activities.

Business Development:

Many activities at the Corporate level for Business Development were of a SPG nature. It included developing overall strategy for growth by analyzing potential regulated acquisition targets developed by the Southeast Regional level, developing an overall strategy to understand the types of regulated acquisition targets it should be pursuing, and performing enterprise wide acquisition integration. The Corporate level also performed the Mgmt activities of business development by coordinating efforts across regions and supporting each region in its research.

The Southeast Regional level was in charge of performing the due diligence on an identified acquisition target or other business development opportunities. This level was also in charge of developing the opportunities all the way to the stage of making a formal proposal for approved acquisition targets and helping to perform the "on the ground" integration work, which were all Ops' activities of the Business Development activity.

Rates and Revenues:

All Rates and Revenues activities were performed at the Corporate level. This function was reviewed for the potential of "cross functional duplication," which is discussed later in this section.

Risk Management:

The Corporate level was responsible for health and safety strategy and planning on an enterprise wide basis; it set security policy and strategy such as where will security badges be required; it monitored IT firewalls on an enterprise wide basis; and, it developed contingency planning as well for all operating companies. All of these activities are SPG.

The Southeast Regional level ensured all of the Corporate initiatives that were developed were actually implemented at the operating companies through support and guidance, which were the Mgmt activities of this function. This level also performed facilities auditing, which is one of the Ops' activities of this function.

TAWC was responsible for actually performing the remaining Ops' activities of Risk Management, including handling claims such as Workman's compensation claims, ensuring OSHA compliance, and monitoring facilities for compliance, which were all Ops' activities.

Water Quality:

The Corporate level was in charge of setting the environmental initiatives for all of American Water and performed several enterprise wide activities, such as inorganic / organic compound testing performed at the Belleville Laboratories for water samples coming from all operating companies. The Corporate level also monitored all national regulations, as well as provided a unified voice for all operating companies to provide advocacy in national regulatory issues on environmental compliance. It also performed applied research looking at products and services that could benefit all operating companies. All of these activities were SPG activities.

The Southeast Regional level monitored local environmental regulations and issues, and implemented some standardization of processes and new beneficial products developed or discovered at the Corporate level. This level also implemented Environmental Management Plans (EMPs) across the region. All of those activities were Mgmt activities. This level also performed one Ops' related activity by performing environmental audits of the operating companies within its region.

TAWC ensured the quality of the water as it left the production plant by monitoring production efforts, analyzing chemical levels, and performing quality control. These were all Ops' activities.

Customer Service:

Customer Service is another complex function to explain as a whole. The Corporate level provided all SPG related activities for Customer Service, but when the Mgmt and Ops' related activities were examined, it is much easier to explain the potential for duplication within the function by breaking it into two sub-functions: "All Customer Service Activities except AR" and "Accounts Receivable."

All Customer Service Activities except AR:

Customer Service at the Corporate level for all activities except AR, performed the Ops' related activities of actually interacting with customers, creating the work orders, sending out bills after receiving the information from the Southeast Regional level, and managing credit and collections.

The Mgmt activities of Customer Service were performed at the Southeast Regional Level. The actual call center employees were managed at the Corporate level, however at the Southeast Regional level, they were responsible for receiving service orders from the Call Centers and then scheduling the actual service and closing the service order. The Southeast Regional level also scheduled meter reads and uploaded those reads so they could be passed onto to

the Corporate level to generate the bills. The Southeast Regional level also performed quality assurance to review new premises being created in the billing system to ensure proper functionality and SOX compliance. In short, they were in charge of coordinating, managing, and providing support and guidance for all customer service activities for TAWC except for emergency after-hours service.

TAWC employees acted as a Touch Point to help gather billing data and investigate meter read exceptions. TAWC employees within the Network, Maintenance, and Production groups (described in the Operations portion earlier in this section) actually performed the service, but since they were a part of Operations, they were not also considered a part of Customer Service for the purposes of this analysis and were therefore also qualified only as Touch Points.

Accounts Receivable:

All Accounts Receivables activities were performed at the Corporate level. Therefore, there was no potential for duplication.

Cross-Functional Duplication:

In some cases analysis was required to ensure activities were not being duplicated across functions. Some more obvious areas included comparing activities such as accounting performed in the Finance portion of the service company bill, to accounting billed in the Accounting portion. This was considered to have potential "Cross-Functional Duplication," and each area where this possibility existed is discussed below:

Accounting – Finance:

The SSC General Accounting activity performed certain aspects of tax, including gross Receipts Tax, Property Tax, Franchise Tax, and all tax activities with the exception of Corporate Income Tax and payroll related taxes, which were performed through Corporate Accounting, which is allocated and billed through the Finance function; so, therefore, there is no duplication of tax work. The SSC General Accounting activity performed as a part of the Accounting function is responsible for actually generating the operating company's financial statements and performed all accounting work for the actual operating companies. This is performed on behalf of and under the management of the Regional Finance Director. Corporate Accounting is responsible for accounting policies and governance for the operating companies, reviewing regulatory policies such as FASB, and creating accounting white papers. Also, Corporate Accounting, billed in the Finance function, was in charge of consolidating all of the operating companies' financials for consolidated reporting.

Finance – Rates & Revenues:

In the Finance function, there was an activity called Rates and Regulations in which almost all aspects of putting together a rate case for local operating companies were performed at the Southeast Regional Level. We reviewed the potential duplication of work done in this activity with activities performed in the Rates and Revenues function, which performed two major activities which were to handle broad, national issues and to look for means of recovering expenses. The Rates and Regulations activity within the Finance function also provided rate case support acting as a Touch Point for all Corporate level questions related to Corporate level expenses in a rate case. It should be noted that the Rates and Revenues function consisted of only four employees and was a relatively small function that primarily was concerned with broad national issues as opposed to local operating company issues, which were covered by Rates and Regulations allocated through the Finance function. Therefore, there was no cross functional duplication.

CONCLUSIONS

Based upon our investigation of substantive activities performed by Corporate, the Southeast Region and TAWC, we concluded that no duplication of effort existed among the business areas. Our initial review of the structure and organization of each entity identified several areas where potential overlap might exist, but our review of the particular activities satisfied us that each group had a defined scope of activities that was discrete and non-duplicative.

Moreover, the AWWSC organization model provides for effective centralization of resources without duplicating or overlapping activities performed within TAWC. By centralizing activities within AWWSC, we noted that the potential for duplication was actually reduced, providing greater evidence that costs were not replicated in multiple locations.

The analysis in this section should be viewed together with the Necessity and Benefits Analysis in Section 4. When taken together, these two analyses indicated that AWWSC and the operating companies were performing required activities in a reasonable manner and that their structure and execution minimized the costs of performance by avoiding duplication of efforts.

6. COST ALLOCATION

The allocation of costs from AWWSC to TAWC must be analyzed to determine that TAWC is charged only an appropriate share of AWWSC costs. In conducting this assessment, we evaluated whether the allocation methods were fully documented and consistently applied. This section discusses the process and methodology used to allocate AWWSC costs to American Water operating companies, including TAWC, and assesses whether that process and methodology were reasonable and appropriate.

Our evaluation of the cost allocation process involved multiple elements:

- Interviewed responsible AWWSC and TAWC management to understand the nature and application of the allocation methodology employed;
- Investigated the allocation processes to assess whether they were in alignment with the cost causative nature of the service provided (i.e., do the allocation methods used bear a reasonable and direct relationship to the actual activities performed on behalf of TAWC); and
- Evaluated the allocation methodology of electric utility service companies to determine whether customer count is an allocation metric used by electric utility service companies.

In our experience we normally see a broad range of cost allocation approaches to distribute costs. The primary purpose of cost allocation is to identify payment responsibility across multiple entities with respect to cost sharing based on the nature of the cost incurred. There are cost implications of different allocation approaches, but the intent should be to assign costs in accordance with the cause of their incurrence. An example of some common allocation factors include:

1. Customer Bills Ratio
2. Customers Ratio
3. Delivery Services Gross Plant Ratio
4. Employee Ratio
5. Invoice Transaction Ratio
6. Labor Dollars Ratio
7. Meters Ratio
8. Modified Massachusetts Formula (MMF)
9. Revenue ratio
10. Square Footage Ratio
11. Total Assets Ratio

We note that customers are used as a metric by most utility service companies; however, they are generally used as one of several allocation factors. In fact none of the companies that file a Form 60 use a single factor to allocate service

company costs. Often an allocation approach includes multiple allocation factors applied to cost. However, the customers' allocation method is utilized by other regulated water utilities as an allocation method. Furthermore the Pennsylvania Public Utility Commission Bureau of Audits concluded that "... there is merit in using the number of customers to distribute most costs among regulated water utilities."³

The AWWSC cost allocation process is well-structured, implemented in conformance with underlying objectives and results in a fair representation of underlying cost causation principles. Charges to TAWC are allocated from AWWSC under the agreement dated January 1, 1989. Furthermore, the cost allocation approach was consistent throughout the operating companies and jurisdictions of the regulated American Water.

The agreement between regulated operating companies and the AWWSC has been approved in all jurisdictions which require that approval. Furthermore this agreement has been in place for several years. The application of the provisions of the agreement results in each operating company paying the cost for services provided to that company. Direct charges can be made for services provided to an identifiable operating company, or for employees performing transactional services.

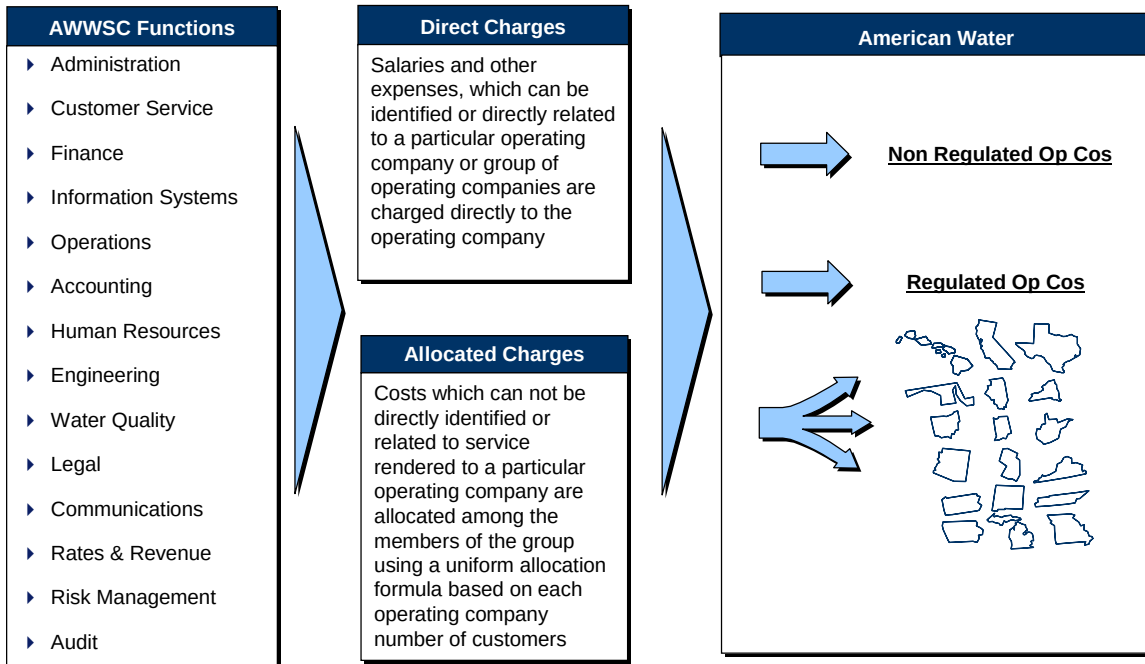
In addition, each regulated operating company pays its proportional share of all common costs that remain after all direct charges have been made. The common costs are allocated on the basis of number of customers served by the operating company relative to the total number of customers served by all of American Water. This method of cost sharing is utilized to allocate common costs that remain after the AWWSC has directly charged both regulated and non-regulated operating companies to the extent possible and has allocated the costs of providing services to non-regulated operating company.

Current procedures support the allocation process. Specifically, operating companies were billed based on services performed by employees of AWWSC. Each employee of AWWSC charged his /her hours directly to each subsidiary for which they performed work, when possible. Where costs could not be directly traced and assigned to a particular entity, those costs were allocated based on the number of customers of each subsidiary in relation to the total customers of the regulated companies. If the function being performed was common to all operating companies or to a group of subsidiaries, the cost associated with the function was allocated across the group of operating companies. As an example within the Water Quality function, charges for routine

³ Focused Management and Operations Audit of Aqua Pennsylvania, Inc. prepared by The Pennsylvania Public Utility Commission Bureau of Audits, issued October 2006 Docket No. D-05MGT022

water testing required nationally for all regulated entities were allocated across the group. Irregular or one time water testing charges required for a specific locality were directly charged to the locality requiring the service. **Figure 6-1** illustrates the way that costs were charged to operating companies.

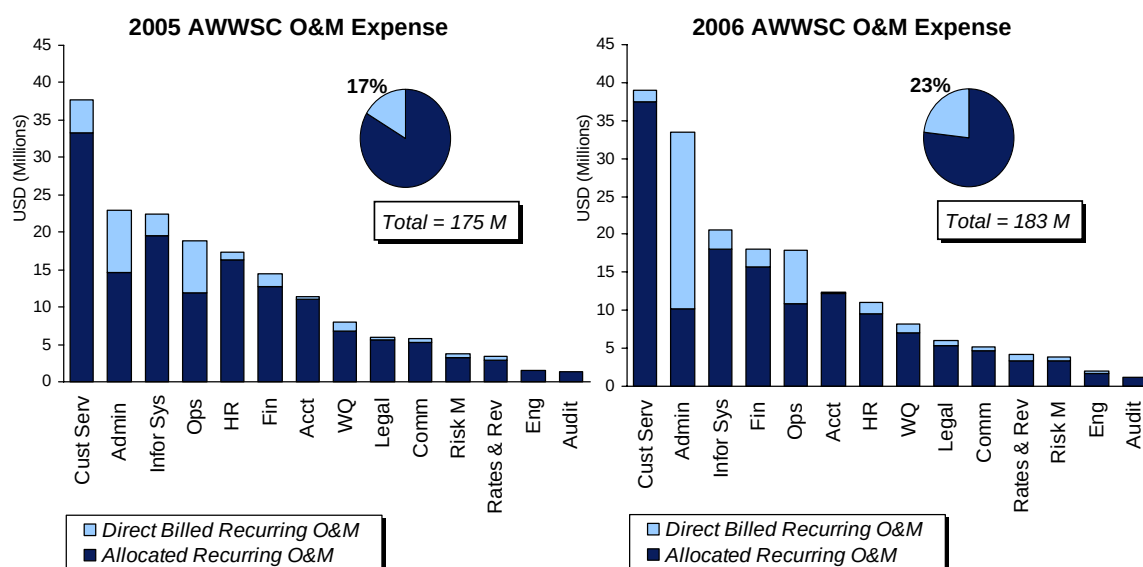
Figure 6-1
AWWSC Service and Overhead Charges Allocation Process



Overhead charges are allocated using a slightly different allocation method. Benefits overhead and general overhead are allocated using ratios of total labor billed to operating companies. Total labor includes non administrative personnel cost associated with services rendered. Benefits overhead include payroll taxes, pensions, OPEB, and 401k. General overhead includes leases, rents, depreciation, interest, and IT maintenance. For example, each service company location's office expenses are allocated to operating companies based on how professional labor charges for the office have been assigned. Also, support administrative personnel charge their time to the activity General overhead. Their labor charges are allocated to operating companies based upon how their office's professional personnel labor charges are assigned. For instance the administrative personnel charges supporting the SSC would be allocated based on the SSC professional labor charges. If 2% of the SSC professional personnel charges were charged to an operating company, then 2% of the administrative personnel charges supporting the SSC would be also charged to the operating company.

AWWSC follows defined procedures to direct charge and allocate costs. Each AWWSC function costs are directly charged, where practical, to the entity that specifically demands the services that give rise to the cost. In our opinion, AWWSC attempts, and prefers, to charge costs directly to the entity that caused the cost to be incurred. AWWSC direct charges when costs can be identified and traced to a particular entity. As illustrated in **Figure 6-2**, in 2006, AWWSC direct billed charges increased to 23% of the total charges, up from 17% in 2005.

Figure 6-2
O&M Expense Allocation Analysis

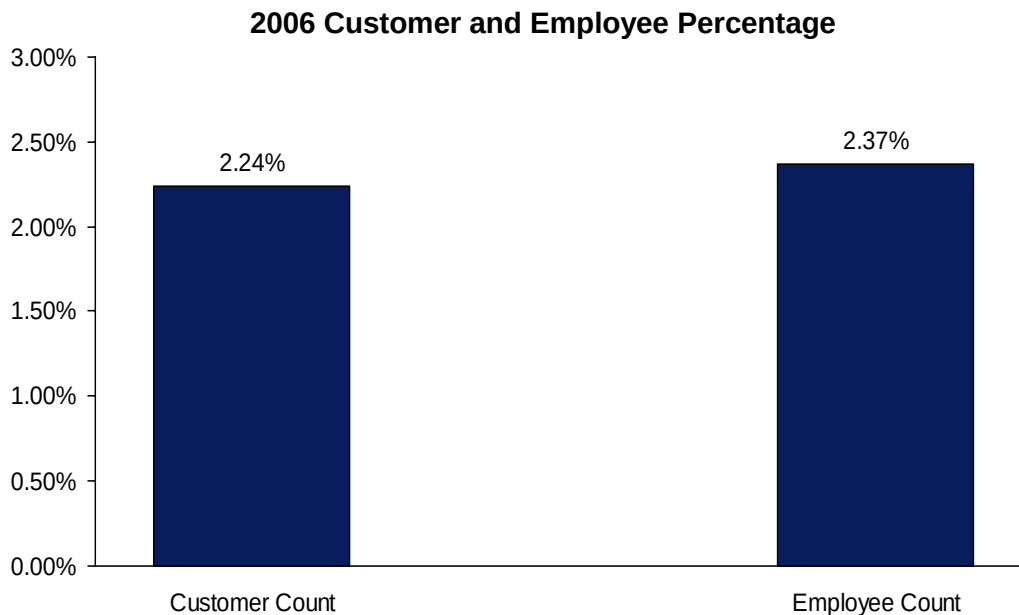


Source: AWWSC, Booz Allen Hamilton analysis

To assess the reasonableness of using customers as an allocation methodology, we looked at the functions that account for a majority of the allocable costs from AWWSC. Looking at the analysis of the Recurring O&M costs from AWWSC by function indicates the significant majority, 83%, of the O&M charges, are incurred within the following functions; Customer Service, Administration, Information Systems, Finance, Operations, Accounting and Human Resources. These functions are directly linked to the number of employees and /or the number of customers serviced by the operating company. As a share of the regulated water business of American Water, TAWC customers represent 2.24%. As a percentage of all operating company employees, TAWC employees represent 2.37%. Therefore, in the case of TAWC, because customers are such a close proxy for employees (within 10%), the customer allocation method does reflect cost causation principles. For example, providing call handling and billing services are direct causes for charges within Customer Service. These call

handling and billing charges are causally related to the number of customers being served. The Administration function, provides oversight and project management. A reasonable driver for business administration cost is the number of employees required by the organization. Within Information Systems, the information technology infrastructure is required to service customers and employees and, as such, the incurrence of information system cost is driven by both customers and employees. Finance and Accounting functions are largely a reflection of revenue. Because of the regulated nature of TAWC's business, revenue is effectively a function of customers. Operations costs, which represent maintenance and general operational activities, are driven by customers. Human Resources services, such as compensation, benefits administration and recruitment, are provided in direct proportion to the number of operating company employees. **Figure 6-3** shows the percentage of American Water customers and employees represented by TAWC.

Figure 6-3
TAWC Customer and Employee Share of Regulated AWWSC



CONCLUSIONS

AWWSC charges were allocated to TAWC in a reasonable manner. Depending on the nature of the cost, AWWSC was able to select the most appropriate charging methodology - direct charge, or allocation formula. Where practical, AWWSC directly charged costs to TAWC. In 2006, AWWSC direct billed charges increased to 23% of the total charges.

There was a recent trend toward increasing the level of direct charges to TAWC. Additionally, the allocation methodology reflects the effective application of cost causation principles within the AWWSC cost distribution process. As a result of these analyses, we believe the processes used to allocate AWWSC costs to TAWC were reasonable and yielded outcomes that were appropriate.

Based upon our experience, we would have expected to see the use of multiple allocation factors to directly link the incurred services to the allocated charges. However, based upon our review, including a comparison of the allocation methods of other utilities that use a centralized service company model to those that TAWC and AWWSC employ, we concluded that the method used to allocate AWWSC costs to TAWC was reasonable. The customer based allocation method simplifies the data requirement for charges and has been approved in all jurisdictions. Additionally, we have found that the customer allocation metric has been upheld for water utilities in other jurisdictions. Furthermore there would be limited impact through the use of a complex multifactor allocation process, and, in fact, would likely increase AWWSC costs due to the additional administrative cost to maintain multiple allocation factors.

7. BUDGET AND CONTROL

Our assessment included a review of the AWWSC budget process to determine whether the structure and execution of that process served as an effective means of controlling AWWSC O&M costs. To conduct our assessment, we reviewed (a) the planning process to understand how overall targets are established; (b) the budgeting process to assess its effectiveness in justifying and limiting planned costs; (c) the involvement of the various business units in the budgeting process to assess the nature and extent of the interface between AWWSC and its internal customers; and (d) cost control mechanisms to determine whether costs are properly managed.

Our review focused on how an operating company interfaced with AWWSC throughout the budget and cost control process. Of particular relevance to our analysis were the mechanisms by which an operating company monitors and manages AWWSC billings.

With respect to planning, the framework and overall direction of an operating company are established in conjunction with regular planning exercises undertaken on behalf of the enterprise as a whole. These include strategic and long-range planning, financial planning, and business planning. Such planning not only exerts pressure on each business unit to improve efficiency, but also serves as a discipline to management to ensure that capital is allocated appropriately and effectively.

Utilizing the plans developed on a strategic, financial, and business basis, the functions, in conjunction with AWWSC, develop detailed annual budgets. Concurrently, AWWSC works in an iterative and interactive process with operating companies to provide and obtain input for development of the AWWSC budget. Each AWWSC function works with the operating companies, to understand their needs and priorities.

This process also provides each operating company the opportunity to review and challenge proposed AWWSC budget amounts that relate to activities performed by AWWSC that are ultimately directly charged or allocated to a particular operating company. The budget development process is the primary mechanism by which an operating company is able to challenge service company costs. Several built-in, front-end features of the process – such as formal dialogues and project specific reviews – allow operating companies to have visibility into AWWSC costs and to influence the level of costs budgeted. Once the initial budget is approved by Corporate Finance, it is then sent on to the Board of Directors for senior management review and approval. The Presidents of the operating companies, including John Watson, President of TAWC, are

members of the AWWSC Board of Directors on a rotating basis, providing an additional opportunity to assess the budget and its drivers.

AWWSC has established several mechanisms to provide operating companies with oversight of AWWSC cost levels. One such mechanism is the various Service Level Agreements, which set forth detailed descriptions of AWWSC services to be provided to operating companies, as well as the basis for any cost allocation. This process ensures that performance expectations are clearly defined and operating companies can measure the service levels against agreed-upon expectations.

Another oversight mechanism was formal management processes that are in place to track performance against the budget. AWWSC management reviewed performance monthly, which involved reviewing actual performance at the line-item level against the budget for each entity. Senior leadership of operating companies was actively engaged in monitoring costs in an effort to assure that functions were performed in an efficient and cost-effective manner. For example, a monthly bill from AWWSC is received for the actual services delivered to an operating company for the month. These reports provide a budget vs. actual comparison which permit the operating company's management to drill down into the back-up data if it needs to do so to question the variance. Utilizing this information, management demonstrated accountability and ensures that the service company charges are actually being delivered, were needed, and provided budget appropriate value to operating company customers.

American Water follows the CIMC process, as well as uses the national Commercial Development Process (CDP) for all major Fixed Asset investment, Material Contracts, Financial Investments, Joint Ventures and Consultancy Contracts. All projects developed by the respective departments are subject to evaluation using the National Commercial Development Process. All projects require CDP approval at the departmental level using the standard National CDP guidelines. To proceed beyond this review level, sign-off must be attained by several departmental representatives referred to as the Business Unit Management Committee. The management committee includes operating company Presidents.

CONCLUSION

Rigorous budgeting and cost control processes support management's objectives to control costs. In addition, these process elements were being regularly executed throughout the business. The budgeting process provides adequate opportunities for an operating company to influence the extent to which costs are incurred on its behalf, demonstrating that it is not a "price taker" as AWWSC services and costs are established. Finally, an ongoing cost control process is in place that allows for monitoring throughout the year to ensure that expenditures

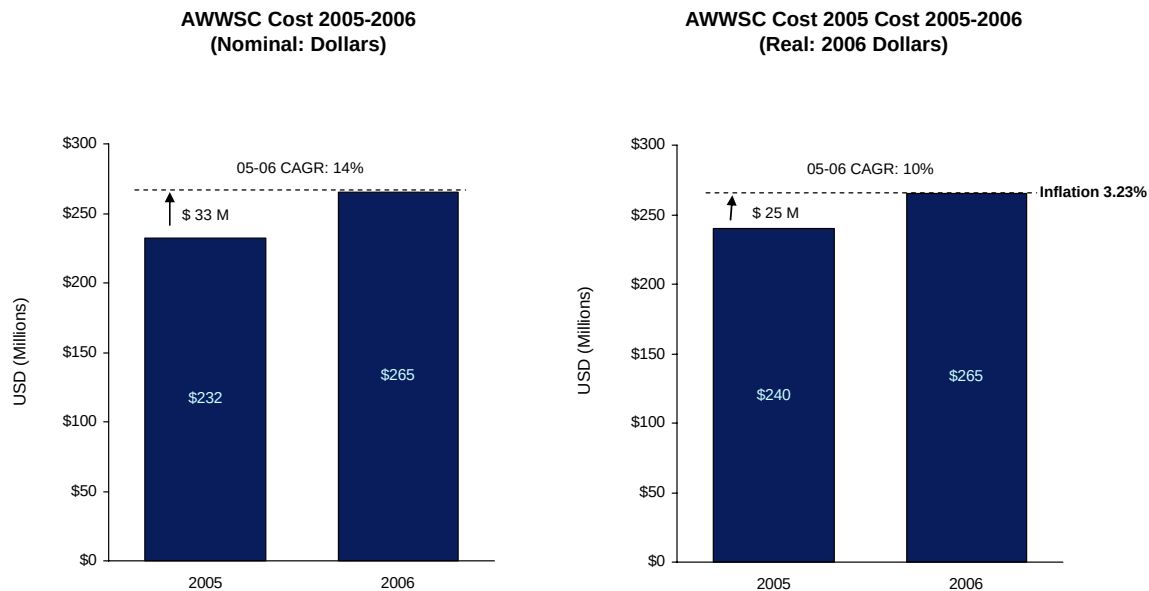
are consistent with the budget and variances are discussed and challenged as appropriate. For these reasons, the budget and control processes were effective in ensuring that AWWSC charges were appropriately and efficiently incurred.

8. COST TRENDS

To understand TAWC costs and their relationship with AWWSC, we performed analyses to determine the business drivers that impacted AWWSC as a whole between 2005 and 2006 with respect to the type of cost that were incurred, and consequently, how costs were charged. In conducting this assessment, we analyzed the drivers of cost trends of AWWSC. This section discusses the methodology used to analyze AWWSC costs trends and the results of the analysis.

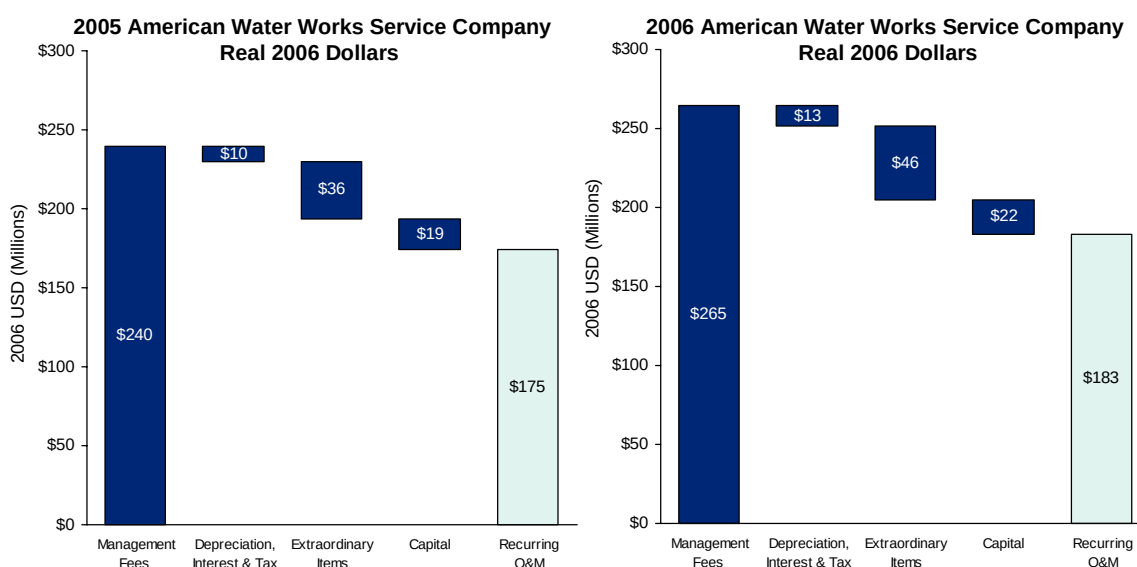
AWWSC billed \$265 million in 2006 and \$232 million in 2005 for services provided to operating companies. These services are categorized into 14 functions, including Administration, Customer Service, Finance, Information Systems, Operations, Accounting, Human Resources, Engineering, Water Quality, Legal, Communications, Rates & Revenue, Risk Management, and Audit. A detailed review of the services is provided in Section 3 of this report. To understand the determinants of the increase, AWWSC billed cost must be inflation adjusted. An inflation rate of 3.23% from 2005 to 2006 was calculated using a standard CPI inflation calculation. Hence AWWSC real cost in 2005 inflation adjusted is \$240 million. The growth in 2006 AWWSC billings from 2005 represent a real increase of \$25 million in 2006 dollars (\$2006), i.e., inflation adjusted growth of 10%.

Figure 8-1
AWWSC Cost Trend (2005 - 2006)



AWWSC incurred approximately \$183 million in recurring O&M in 2006 and \$175 million (2006\$) in 2005. Recurring O&M provides a perspective on the actual cost required to perform services. As a result of the business structure defined by management, recurring O&M provides insight on the ongoing cost to do business. To calculate recurring O&M, AWWSC total costs were adjusted to exclude depreciation, interest, tax, capital and one time extraordinary items. Total excluded items equal \$82 million and \$65 million in 2006 and 2005 respectively. These excluded items were primarily attributable to extraordinary items.

Figure 8-2
Recurring O&M by Year



Note: Capital excludes capital cost associated with Extraordinary Items, Depreciation, Interest and Tax.

Source: AWWSC, Booz Allen Hamilton analysis

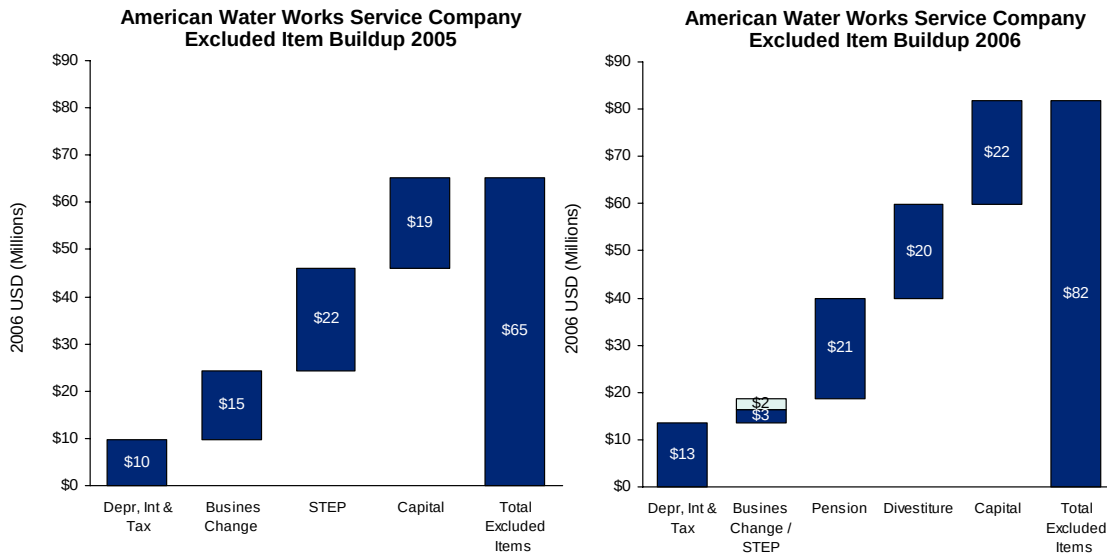
The recurring O&M costs above are subject to further analysis throughout the remainder of this report; however, a brief description of the excluded extraordinary items is warranted:

- **Business Change (BC)** was a formal initiative of AWWSC during the period 2003 to 2006, including numerous different programs. The goal of the Business Change initiative was to re-engineer business processes and systems, change the culture of the business, and create a business environment that embraced change. The objective was to deliver sustainable service and efficiency benefits for customers and other key stakeholders of the business over the long term. There were a number of initiatives which took place as part of the Business Change program. The more significant initiatives were Ideas into Action, Procurement (which became Supply Chain, a regular AWWSC activity), License to Manage, Business Process Blueprinting, Energy Management Strategy, and the

- Diversity Recognition program. In 2005, \$15M costs were incurred and \$3M in 2006.
- A number of BC initiatives are continuing as part of several AWWSC groups, namely Innovation & Environmental Stewardship, Best Operating Practices, Supply Chain, and in the ITS function.
 - **Pension** extraordinary cost occurred due to the AWWSC transition from ERISA to FAS 87 pension recording. In Dec 2006, a \$21M charge was billed to the operating companies. Prior to this charge, the subsidiaries had recorded a payable on their books for pension costs billed from AWWSC. As most operating companies were moving to, or already being regulated on a FAS 87 basis, it was determined that instead of billing the subsidiaries on an accrual basis, AWWSC would bill the receivable in 12/06. Because the subsidiaries had payables on their books, this charge resulted in virtually no expense to the subsidiaries as they credited cash and debited the payable, while AWWSC debited cash and credited the receivables.
 - **Divestiture** extraordinary costs included efforts performed in preparation for divestiture. Significant effort began in 2006 regarding the American Water's return to a publicly traded entity, primarily in the area of SOX compliance. The consulting firm Ernst and Young was contracted to assist American Water in identifying and resolving any control weakness in its financial reporting processes. Those efforts were intensified throughout 2007. In addition to being SOX compliant, a return to a publicly traded company required regulatory approvals from 13 of the States in which American Water operated regulated subsidiaries. Significant effort was under-taken, primarily in-house, to obtain the approvals in each jurisdiction. By the end of the third quarter 2007, all approvals had been received. In 2006, \$20M in divestiture costs were incurred. Divestiture related extraordinary costs were not billed to regulated water operating companies during this period.
 - **The Standardized Technology Enabled Processes (STEP)** program was designed as a multiyear program to be undertaken by American Water to improve the delivery of service to its customers. STEP featured a series of technology-based programs designed to leverage the capabilities of today's technology to streamline business processes and to enable employees to better serve customers and, in some instances, to allow customers to serve themselves more efficiently and effectively. Fundamental to the success of this program was the underlying intention that many of the technologies included in STEP be implemented in a structured fashion, as there were dependencies between certain components of the solutions. As a result of the postponement of the

proposed ERP implementation, several projects that were originally planned have been postponed. Costs of \$22M in 2005 and \$2M in 2006 were incurred for STEP.

Figure 8-3
Excluded Item Build-Up

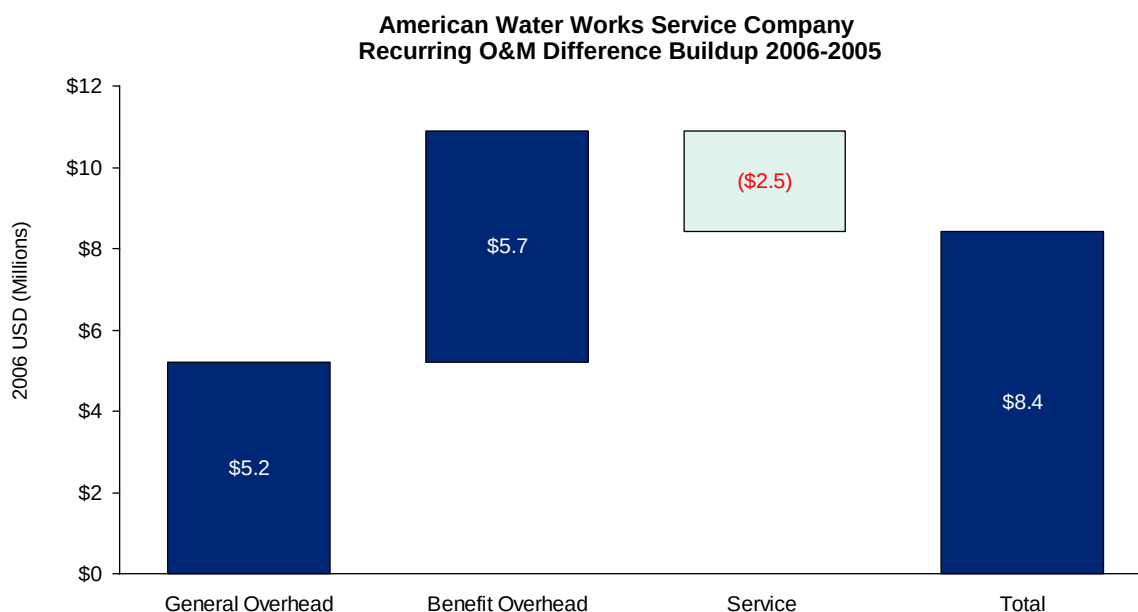


Note: Capital excludes capital cost associated with STEP, Business Change, Depreciation, Interest and Tax.

Source: AWWSC, Booz Allen Hamilton analysis

As mentioned, the difference between 2005 and 2006 AWWSC recurring O&M represents a real increase of \$8.4 million, i.e., inflation adjusted growth of 4.8% over 2005. Recurring O&M represents the ongoing cost of the business and is composed of Service, General overhead and Benefit overhead. Service costs are primarily composed of cost associated with labor, incentive pay, and contract services. Benefit overhead includes group insurance, payroll taxes and pension cost. General overhead costs include rent, miscellaneous maintenance cost and labor from administrative support personnel.

Figure 8-4
Recurring O&M Difference 2005 – 2006



Source: AWWSC, Booz Allen Hamilton analysis

- In 2006, the recurring O&M Service charges decreased by \$2.5 million, a 1.8% decline. Major drivers included:
 - **Labor \$3.8 million:** Over the 2005 – 2006 time period, the total Service Company headcount (system wide) increased by 330. Of these, 191 were attributable to a new Customer Call Center that was opened in Pensacola, FL. The increasing demands of the CSC function, including responding to customer inquiries and concerns, made it necessary to open a second call center location to provide quality customer service. This second site provides business continuity, disaster recovery and improved customer service response times. The CSC also has other benefits such as multilingual operators (along with a contractor, Language Line Services, which can interpret 161 languages, representing approximately 99% of customer requests).

Within Finance, 53 additional employees were added, 16 of which were directly attributable to regions outside of the southeast. In addition, over the two year period, 4 additional employees were added to the Planning group. Also, 7 employees were added to the Corporate income tax group, 4 in reporting and compliance and 2 in investor relations.

Within Human Resources, 9 employees were added over the time period. The primary reason for the increase was the relocation of the Benefits Center from SSC to Corporate.

In researching the drivers of the AWWSC cost increase, our analysis did discover a need for a record detailing the rationale for new positions. The rationale should be based upon required services outlined in the service agreement. The increases were included in the AWWSC budgeting process which was fully reviewed as to its impact on AWW and the operating companies.

- **Incentive Plan Payouts \$1 million:** There has been an increase in the incentive pay based on the long and short term financial performance of American Water. The long term performance payout is based on a 3 year cycle that represents the performance of the company, while the short term is based on annual figures. These payouts are agreed upon based on whether performance targets are met and not atypical in the industry.
- **Contract Services (\$3.3) million:** In 2005, \$820 thousand was incurred for executive search, recruitment and executive management costs not incurred in 2006. Promenix IVR (AP) costs in 2005 were \$516 higher than in 2006. In 2006, there was a reversal of a December 2005 accrual for ITS in the amount of \$1 million causing a \$2 million total difference 2005 – 2006.
- **Other Expenses (\$2.5) million:** In 2005, AWWSC incurred higher costs in accounts which include Other Welf Maint, and P-Card Undistributed accounts. These types of accounts fluctuate with the natural business cycle account expense. Examples include rent paid for one of the Thames Water expatriate employees. The P-Card Undistributed account is used to accrue for the use of the company purchasing card, transactions that have been incurred at the end of an accounting period, but have not been posted to the ledger yet. It is merely a timing or clearing type account.
- **Relocation Expenses (\$1.2) million:** A large portion of the new employees added in 2005 – 2006 were added prior to June of 2005. Since relocation expenses are typically associated with new hires vs. transfers, the wave of new hires in 2005 incurred greater Relocation Expense than in 2006.
- In 2006, the Recurring O&M Benefit overhead increased by \$5.7 million, a 25% increase, to \$29 million.
- **Pension \$5.3 million:** There has been a fundamental change in AWWSC pension charges in 2006, as a result of the new recording

approach, there was an accounting difference represented within this change.

- **Group Insurance \$1.2 million:** American Water is essentially self-insured for employee medical costs with the exception of a Stop Loss Premium for extreme cases. Blue Cross / Blue Shield administers the program. Rates are set in two ways: 1) An external consultant examines claims experience as well as lends expertise regarding future costs, and 2) American Water makes contributions to a VEBA Trust for active insurance rates, with tax deductions limited to incurred claims. Therefore anticipated claims and the balance in the Trust account can affect costs.
- In 2006, the Recurring O&M General overhead increased by \$5.2 million, a 42% increase to \$18 million.
 - **Miscellaneous maintenance expense \$2.4 million:** A \$2.4 million Misc. Maintenance increase was primarily the result of an increase in software maintenance agreement charges. Maintenance agreements were required for new programs such as Mercury, ITRON, SAP, GLOBAL, and IMAGE.
 - **Rents \$1.6 million:** A \$1.6 million increase in rent can be attributed to 3 new offices. A new call center facility was added in Pensacola, FL. Additional offices were also added to the Woodcrest facility in Cherry Hill, NJ, to accommodate AWWSC employees transferred from Mt Laurel. Additional functional space was also required in the central region due to expanded employee requirements, which did not impact TAWC.
 - **Labor \$0.8 million:** An \$800 thousand increase in labor in general overhead was attributable to an increase in the labor of Admin personnel associated with the increase in service labor.
 - **Insurance \$0.7 million:** A \$700,000 increase in Insurance cost was directly attributable to the exposure (estimated annual payroll and number of vehicles) and average five year loss history. AWWSC loss history was fairly stable in 2005 and 2006; the increase in payroll was the primary reason for the corresponding increase in premium.

The real 4.8% increase in AWWSC cost from 2005 to 2006 suggests that cost control mechanisms in place at AWWSC have been instituted to control spending as business operations have grown. Although total AWWSC costs increased, those increases were driven by normal business changes such as call center expansions resulting in direct service and overhead increases. Prior sections of this report described additional tests Booz Allen performed to understand the design and effectiveness of those cost control mechanisms.

9. RELATIVE COST PERFORMANCE

The purpose of this section is to compare AWWSC cost levels to those of their peers. This process is typically referred to as “benchmarking” which is a commonly used method to gain an understanding of one company’s relative performance across a spectrum of relevant metrics, and provides some insight into the reasonableness of costs incurred. One important benchmarking consideration is to ensure that the peer groups selected are, in fact, comparable and that consistent data is used. It is also important to make the comparison to the group along metrics that will provide a true insight into a company’s performance.

Generally speaking, performance at or better than the average can be viewed as good in benchmarking. In the case of a service company, costs which are at or better than average of these peers provide an indication that a company is providing services in a cost effective manner. However, it is not appropriate to expect that all of a company’s costs will be better than average. There can be many extraneous factors that affect a particular company’s costs – geography, operating model, customer density, customer mix, system age, collective bargaining agreements, etc. – that contribute to increased expenses and are not practically surmountable or controllable. Measurement of a company’s performance relative to peers should reflect these factors. Better than average cost or even top quartile performance relative to peers should also reflect the starting position of a company and the relative rate of change or cost trend relative to business changes.

While better than average costs across all functions is a desired goal, it is very difficult to consistently expect such results across all functions within an enterprise. There are many factors in a business that cause functional performance to change or require trade-offs that may preclude consistent cost performance above the peer group average. For example, a company may focus on improving its performance along metrics such as system reliability. In such a case, it may spend more than its peers to obtain improved performance in customer satisfaction metrics. It is also therefore unreasonable, and potentially unwise, to expect a business to perform in the top quartile in cost performance because overall service delivery performance may be greatly affected.

Benchmarking results are also directional, rather than absolute, and do not, in and of themselves, indicate real opportunity for performance improvement, nor do they signify poor performance. Many factors may affect relative comparison and these need to be recognized and understood before conclusions are reached about the comparative results. There can be many explanatory factors that affect any comparisons among companies, some of which may be indigenous to the

situation and beyond management control, and others not readily identifiable, even though legitimate.

Regardless of the issues that often exist in regulatory proceedings around the use of benchmarking data, it still serves a very relevant purpose when assessing cost reasonableness. When used appropriately, it provides additional insight to regulators to aid in understanding how a company is performing relative to its peers.

Key Questions

To initially assess the relative cost performance of AWWSC and TAWC, a number of initial characteristics were defined to guide the analysis. These considerations (expressed as questions) offer a basis for evaluation and are presented below:

- Are relevant costs consistent with those of similar companies?
- How do costs compare with similar companies?
- Are there unique factors that influence cost?

Peer Groups

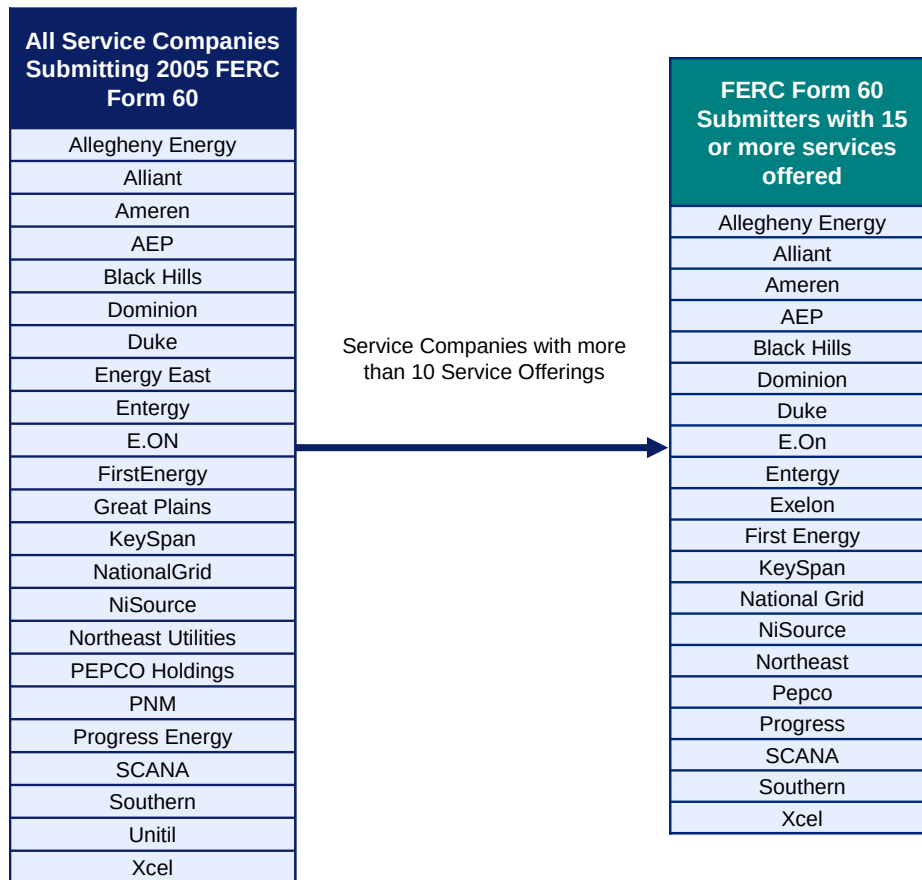
Our analysis consists of analyzing the AWWSC cost levels against utility service companies that file the FERC Form 60. Based on the limited public water utility service company peer data (2), we structured the peer group analysis to include electric utilities. Electric utilities are appropriate peers since their service companies perform similar services, as seen in **Figure 3-2**, making them comparable. The FERC Form 60 is filed annually by regulated energy utilities and is a reporting requirement by the Securities and Exchange Commission resulting from the Public Utilities Holding Company Act (PUHCA)⁴. This report contains detailed service company functional data during the annual reporting period including information describing cost allocation methodologies and cost distribution. Since the data provided in FERC Form 60 is provided on a non-uniform basis with differing levels of granularity and different levels of aggregation, benchmarking must be performed using aggregate service company O&M data. To gain insight into the relative cost position of AWWSC against other service companies, it is again important not to compare total costs, but rather costs that are calculated on a per-unit basis. Since each company can differ in the type and quantity of services it performs or obtains from its service company, similar per-unit comparison bases were developed to determine if scale differences affect the overall results. While American Water is a water

⁴ Recently the Federal Energy Regulatory Commission (FERC) was given reduced jurisdiction previously held by the SEC.

utility and the FERC Form 60 is designed for electric and gas utility service companies, the type of services offered are very similar as seen in **Figure 3-2**, and the cost for such services should be comparable.

We selected a peer group for the Form 60 service company cost analysis as shown in **Figure 9-1**. The peer group chosen was based on the number of services provided by a Service Company so as to use the most comparable group. Since we are analyzing the Form 60 data at an aggregate level as opposed to by function, it is important to use companies with a similar number and type of services. Since the type of services is generally similar among all of the Service companies, the only exclusion that was made was based upon the number of services offered.

Figure 9-1: Service Company Peer Group



For the Form 60 analysis, we developed factors to compare O&M cost levels on a per-unit basis or as a change compared to the previous year. All service company O&M costs were included in this analysis for each service company with the exception of uncontrollable or non-comparable costs such as depreciation, interest, and tax (for a full listing of accounts that were removed from the O&M costs used for benchmarking, please see the backup

documentation on benchmarking in Appendix 1). Service company O&M costs were compared against seven different factors – change from 2005, percentage of total company O&M, percentage of revenue, per customer, per total company full-time equivalent (“FTE”), per service company FTE, and percentage of total assets – to reflect a comprehensive basis from which to compare AWWSC cost performance against these peers.

Across the benchmarking analyses, we summarize results as average, above average or below average. Average is defined as being 10% above or below the average cost calculated for the peer group.

Results of AWWSC Cost Analysis

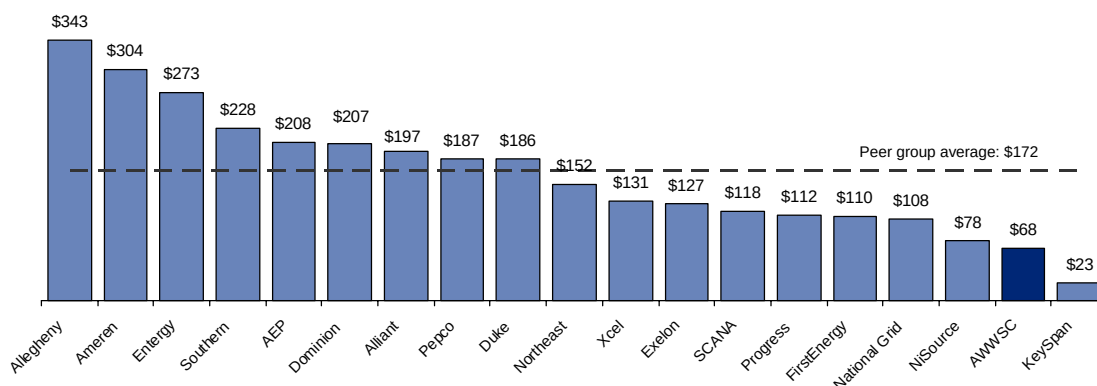
Figure 9-2 summarizes the results of the AWWSC cost comparison. **Figure 9-2** shows that for the majority of the metrics evaluated (6 of 7 metrics measured), AWWSC performed at or better than average compared to the service company peers.

Figure 9-2
Summary of Benchmarking Results using 2006 FERC Form 60 Data

Benchmark	AWWSC Performance vs. Average
Service Co O&M as percentage of total assets	Below average cost
Service Co O&M as percentage of total company O&M	Below average cost
Service Co O&M as percentage of revenue	Average cost
Service Co O&M per customer	Below average cost
Service Co O&M per total company FTE	Below average cost
Service Co O&M per Service Co FTE	Below average cost
Service Co O&M Expense 2005 to 2006 Change	Above average cost change

As an example of the FERC Form 60 benchmarking analysis, we compared AWWSC O&M expense per customer to the peer group. Service company O&M includes such costs as salaries and wages, outside services, injuries and damages, and rents. **Figure 9-3** shows that AWWSC’s benchmark of \$68 per customer compares favorably to the peer group average of \$172.

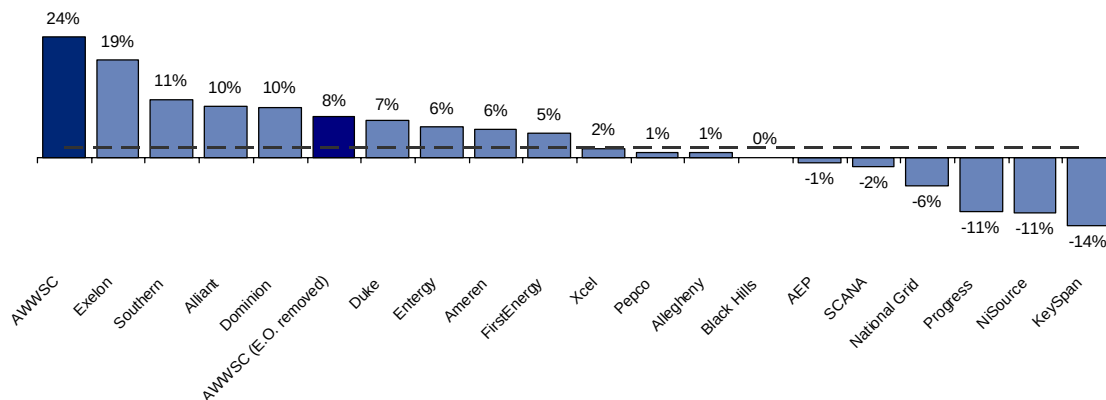
Figure 9-3
2006 Service Company O&M Expense per Customer



Source: Energy Velocity data, 2006 FERC Form 60 filings, Booz Allen Hamilton analysis.
 Note: Statistical Outliers removed using the Inner Quartile Range Method

On the one metric that AWWSC performs above average cost change, titled “Service Company O&M Expense 2005 to 2006 Change,” if extraordinary items (discussed in Section 8 of this report) are not removed, as they weren’t for other service companies, then AWWSC year over year cost increases are 24%. The 24% increase is calculated based on removing all capital expenditures along with depreciation, interest, and tax from total American Water expenses. As previously mentioned, these are costs that can consistently be identified and removed from the set of peer companies and should not be considered in comparing the cost of providing services. If however, extraordinary items are also removed from both 2005 and 2006, then AWWSC year over year nominal costs increases are actually 8%, as shown in **Figure 9-4**. These costs, however, cannot be removed from each peer company because they require detailed insight into the operations of a company that is not available from public data.

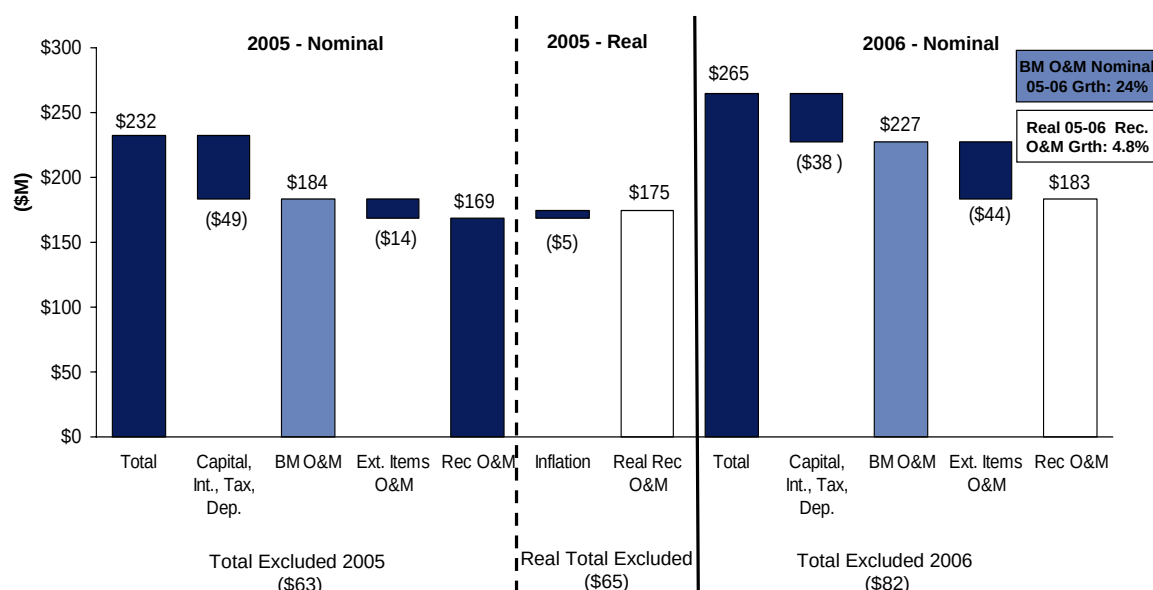
Figure 9-4
Service Company O&M Expense 2005 to 2006 Change



Source: 2006 FERC Form 60 filings, Booz Allen Hamilton analysis.
 Note: Statistical Outliers removed using the Inner Quartile Range Method

As explained in the Cost Trends section of this report, year over year real costs increased by 4.8% after adjusting for inflation. The reason that the real recurring O&M year over year change that was calculated in the Cost Trends section was not used in this benchmark was so that the numbers would be comparable to the numbers used in the peer set benchmarking. The difference in the numbers used to calculate the 24% variance used in this benchmark and the 4.8% variance explained in the Cost Trends section is shown below in Figure 9-5.

Figure 9-5
Service Company O&M Expense Changes



Note: Rec stands for "Recurring"; BM stands for Benchmarking

While AWWSC had a rate of increase that was higher than the average, this benchmark does not account for whether or not the number or the scope of services provided by service companies increased or decreased between 2005 and 2006, which could have a significant effect on costs; the overall costs for the companies for those services may not have changed, but the costs may have been moved out of or into the service company. For a detailed explanation of the cost increases for AWWSC, please see Section 8: Cost Trends.

The full results of the FERC Form 60 benchmarking analysis are included as **Exhibit 9-1**.

CONCLUSIONS

Based on the analyses conducted, AWWSC costs compared favorably to those of the respective peer groups and were at or better than average across most measures. The multiple metrics used to compare the costs provided a comprehensive basis from which to assess relative cost performance. Regardless of the metric selected, AWWSC costs were reasonable when compared to similar peer groups.

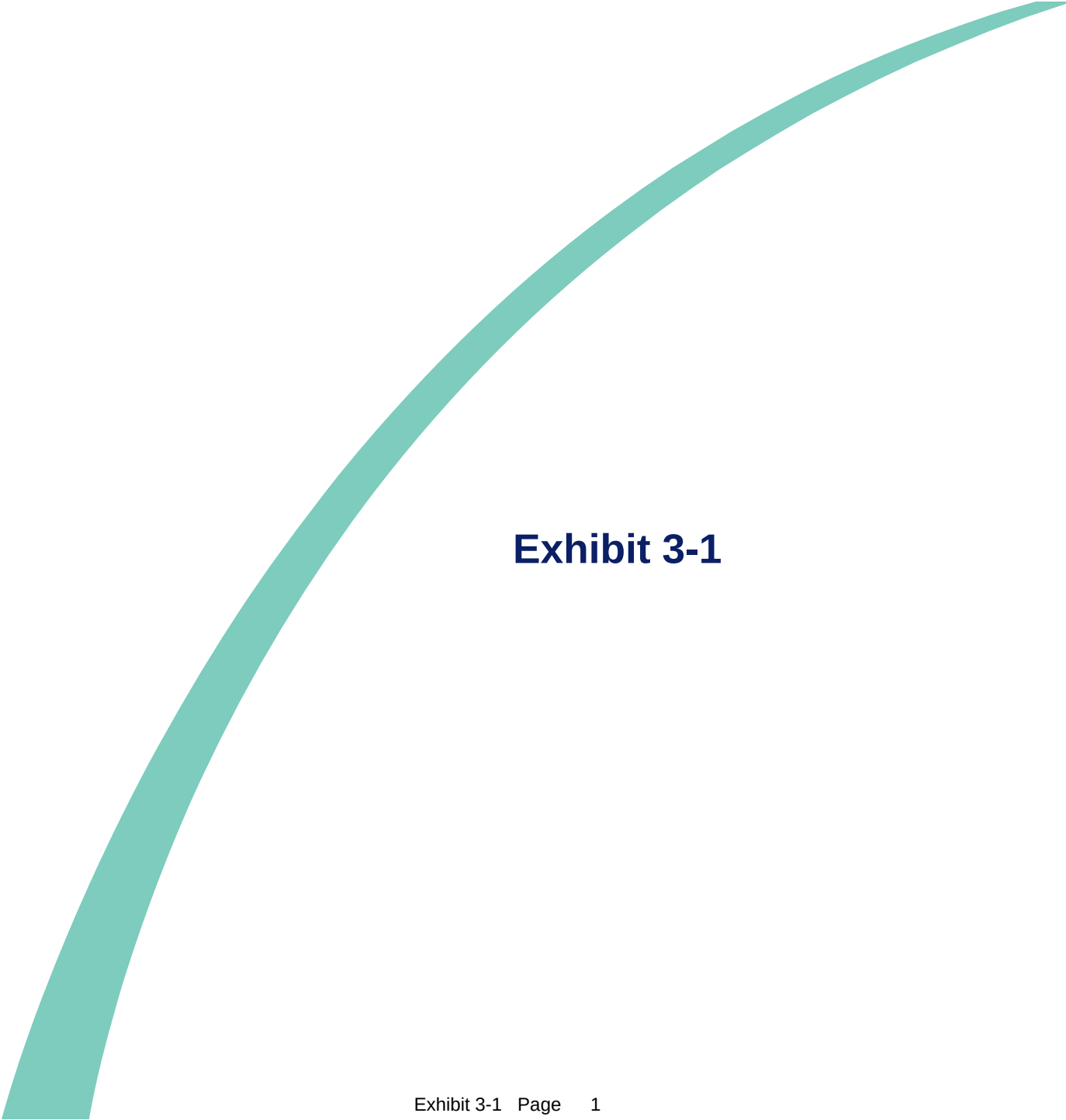


Exhibit 3-1

Exhibit 3-1: AWWSC Activity Summary

- As mentioned in Section 3 – Organization Overview, Booz Allen identified 75 distinct activities being performed by AWWSC. This exhibit provides a summary of those activities within each function. Please refer to the report for overall conclusions.

Activities by Function

Accounting	<i>See activities below</i>
Strategic Sourcing	Procures products and services; monitors purchases at operating companies; maintains relationship with vendors
Accounts Payable	Performs invoice processing ; handles p-card issues; handles reconciliations from accounts payable to general ledger
SSC General Accounting	Maintains books and records for all operating companies; performs external financial reporting; prepares annual reports; provides single point of contact to Regional VP of Finance and has responsibility and accountability for quality of financial reporting in a SOX environment; maintains and updates service company allocation modules
Tax	Prepares Gross Receipts Tax, Property Tax, Franchise Tax; performs all tax activities except corporate income tax and payroll related taxes; plans tax strategies for the taxes it is responsible for
Fixed Asset / Job Costing	Accounts for property, plant, and equipment; processes disposal of assets
Employee Services	Performs payroll processing; files payroll related taxes
Supply Chain Management	Evaluates performance, quality, and cost with objective of continuous improvement; performs fleet management and energy management

Activities by Function

Administration	<i>See activities below</i>
Executive Oversight	Provides overall executive oversight and leadership to all of American Water; provides strategic direction for the entire company
Business Liaisons	Supports SSC and Business Partner Organizations through customer monitoring, performance analysis and training; measures and reports on the performance of the SSC through the application of business performance measurement tools and techniques; manages the budget process to ensure adherence to plan
Project Management	Manages continuous improvement project initiatives and ensures successful project implementation
Regional Business Administration	Pulls all operational information and data together and reports it to the Corporate level; performs operational reporting; reports on the Key Performance Indicators (KPI's); performs benchmarking
Audit	<i>See activities below</i>
Financial Audit	Certifies financial statements of the operating companies; ensures compliance with GAAP, IRS and other requirements; performs SOX testing
Operational Audit	Audits entire business model; audits functional operations; tests different aspects of the business to ensure proper functionality

Activities by Function

Communications	<i>See activities below</i>
Government Affairs	Maintains communication with government entities on a national level; sets policy and provides governance for all other government communication at the operating company level
Advertising	Markets the American Water Brand for all of American Water
External Communications	Sets policy, strategy & governance for media relations, customer awareness and communications; handles national level external communications
Internal Communications	Provides communications for the benefit of AW employees such as newsletters, emails, and different talking points for conference calls on topics such as company policies and changes across entire company
Regional Communications	Informs community and state leadership about company plans, news, capital improvement programs and other activities; works closely with local communications specialists for rate case communications; drafts testimony; ensures communications is performed consistently across all states within region; provides counsel to locals; shares overall American Water talking points; approves local external communications and gets further approval from Corporate when necessary; regional internal communications such as biweekly talking points are also provided
Legal	<i>See activities below</i>
Legal Support, Governance, and General Counsel	Provides legal support to operating companies; provides ethics and compliance policy; assists in larger, more complex lawsuits; sets legal policy; develops standardized contracts for typical contracts
Legal	Performs or coordinates all of the regional legal work (including court claims, real estate, any claims not covered by insurance, lawsuits); acts as supervisor for legal aspects of all local regulatory work; reviews contracts, in particular a lot of contract review for SOX compliance; take minutes for Board Meetings

Activities by Function

Engineering	<i>See activities below</i>
Project Delivery and Developer Services	Provides governance for, policy for, and oversees all aspects of project delivery; employs standard, best operating practices; developer services provides guidance and performs analysis of systems to determine the ability to serve to see what sort of systems are needed
Capital Administration	Pulls together all capital budgets for all state operations (state operations put together budgets and provide them to regional to manage at a regional level; regional helps operating companies identify and handle problems); provides capital investment management process for multiple state regions; reviews documentation for capital projects from operating companies and then presents them to Corporate
Technical Services	Works on anything that requires higher level of expertise than normal project delivery (example of normal is replacing pipe); looks at overall standards of the company and provides unique expertise on more complicated processes or work (such as large or complex water treatment process); provides work as needed; planning engineers look at the system to understand future needs for budgeting reasons

Activities by Function

Finance	<i>See activities below</i>
Planning, Budgeting Forecasting	Analyzes monthly results; provides governance for preparing budgets and forecasts and for the capital spending program; identifies potential spending issues
Internal Controls	Advises and assists in the establishment and maintenance of Sarbanes-Oxley compliant systems of internal control in order to ensure proper financial reporting and safeguarding of company assets
Corporate Accounting	Produces accounting governance for the operating companies; puts together accounting policies and white papers; researches and interprets accounting pronouncements and / or dictates of regulatory agencies such as the Financial Accounting Standards Board ("FASB"); creates consolidated financials; accounts for benefit plans
Investor Relations	Prepares for requirements of American Water to become a Publicly Traded Company (expected to occur in 2008); communicates strategy and financial highlights of the company to the general public allowing the subsidiaries to lower their cost of equity and cost of debt
Income Tax	Accounts for income taxes and ensures compliance through preparation of income tax returns and payments for operating companies; researches and interprets regulations of the Internal Revenue Service ("IRS") and the various state taxing authorities
Corporate Social Responsibility	Develops programs including green initiatives, diversity, etc; handles community relations on national level
Cash Management	Performs debt administration, funding and assessment; performs check printing for payroll and AP checks and all cash receipts reconciliation; acts as in house bank for all subsidiaries; is responsible for payment of debt and accrual debt; provides short term financing and long term financing with parent; views and analyzes the cash that is coming into bank from main accounts from customers of the subsidiaries and moves cash over to one account for concentration and funding; uses American Water Capital Corp to handle disbursements and receipts; manages physical movement of funds

Activities by Function

Finance (cont'd)	<i>See activities below</i>
Debt Compliance	Ensures long term debt balances out; ensures the debt payments are made in timely manner; acts as trustee
Capital Markets	Raises capital through American Water Capital Corp (“AWCC”); provides long and short term debt financing to the regulated entities; drafts financing plans for TAWC and secures Corporate and TAWC approval; after IPO, will aggregate all regulated subsidiary financing requirements and enter the capital markets to secure cost effective long-term financing; has AWCC Commercial Paper program utilized to provide cost effective short term liquidity to regulated subsidiaries
Rates and Regulations	Gets information from regional company on capital budgets, operational items, vacancies, org charts; works with SSC group who gets data from accounting systems; adds pro forma adjustments to data; manages rate case filing; provides testimony in rate cases; hires and manages consultants and outside experts
Performance, Planning, and Reporting	Prepares capital expenditure budgets; handles requests for new employees; puts budget together and reviews it; performs monthly actual vs. budget variance analysis; coordinates budgets with each operating company by dept and coordinates that with SSC; makes quarterly forecasts and re-forecasts for year; performs performance analysis; reports information for quarterly board meetings; manages journal entries

Activities by Function

Human Resources	<i>See activities below</i>
Compensation	Formulates job descriptions and pricing and performance metrics; negotiates benefits with unions; designs performance appraisals for merit pay increases and follows guidelines for promotional increases for nonunion employees; has approval control for special management requests
Organization and Talent Development	Develops training and development programs; develops and manages all training programs; conducts only some of the training programs; performs organizational development such as workforce replenishment strategy; performs succession planning; monitors turnover
Labor Relations	Sets labor strategy; designs strategy for union negotiations at local level; works with national unions; performs contract negotiations for nonunion employees; provides assistance in unfair labor practice issues; ensures consistency in treating employees and handling labor relations
Service Company Center Staffing	Performs all recruitment and hiring for the service company staff
HR Systems and Processes	Works with IT to design HR systems; sets policies on such programs like leave programs, diversity programs, etc., and presents them to the board
Benefits Administration	Addresses employee and retiree questions and concerns about benefits; provide administrative services for benefits
Hiring Process Oversight	Maintains applicant tracking system for the SE Region; helps manage, direct, and provide support for HR employees at the operating companies

Activities by Function

Information Systems	<i>See activities below</i>
IT Capital Program Management	Places orders, ensures receipt of systems, installs and configures all IT equipment and change orders
IT Help and Training	Operates Service Desk that provides telephone support to all computer users of utility subsidiaries and service company employees; provides face to face assistance with IT issues; provides planned training throughout the year for staff as necessary
IT Project Management	Consolidates and orchestrates all project planning and execution activities in a consistent manner; helps the business and IT deliver quality projects; examines processes to ensure projects are delivered on time, budget and per specifications
IT Infrastructure	Provides secure, highly available, optimized and supportable shared computing, storage and communication; provides telecommunications
IT Operations	Performs operations and maintenance for all data centers, systems, related equipment and services; handles data base administration; provides server administration and large hardware service
Business Solutions	Provides solutions (such as quality assurance) that meet the information and technology needs of business; standardizes processes across the enterprise
Applications	Handles all software applications across the enterprise including functional applications (business analysis, business reports specialists) and technical applications (developers, webosphere, intranet); develops Business Information Model (BIM) ensures processes and definitions are standardized
Develop IT Infrastructure	Develops effective architectural infrastructure designs and technologies that deliver standardized, secure, well performing, cost-effective and supportable technology solutions meeting business requirements
SE ITS Client Relations	Provides PC Support, works on hardware, network, software for regional operating companies; provides assistance with programming and writing queries

Activities by Function

Operations	<i>See activities below</i>
Business Development	Develops overall growth strategy by identifying traits to look for in acquisitions and other related growth opportunities; performs acquisition integration; performs overall market research in the water industry
Best Practices	Identifies and develops best practices across the company in all areas of operations
Capital Project Management	Sets up policies and procedures for project approval; reviews exceptionally large projects; provides strategic handling of assets and capital
Regional Production Management	Standardizes practices for Production based upon best operating practices for all of SE Regional Production; provides governance, guidance, and support for all of Production operations in Southeast Region; collects performance data and creates reports for business reporting and regulatory purposes
Network Policy Setting and Administration	Provides standardization of processes such as implementing best operating practices across operating companies ; sets goals for Network operations for all of the operating companies; develops and implements plans to reduce Non Revenue Water; researches for new technologies that will help the operating companies; performed the Service First Project – getting laptop computers into all of the customer service vehicles; ensures regulatory compliance through such things as meter change out programs; reports on the Network on a regional basis
Regional Maintenance Oversight	Provides maintenance oversight; works on developing preventive maintenance; manages SCADA systems and security systems
Client Executive	Identifies and qualifies specific business development opportunities that could help grow the company to reach a company's goals and objectives; develops the opportunities to a preliminary agreement stage; promotes market awareness to facilitate lead development; monitors the general business environment for each of operating companies
Regional Business Developer	Performs due diligence once a viable opportunity is identified and deal structure determined; interfaces with the Client Executive; deals with engineers, operations, water quality and legal staff to get deal to point of formal proposal; develops and coordinates a final implementation plan
Large Project Design	Designs large non-reoccurring capital projects; provides governance for reoccurring projects; manages build of large non-reoccurring capital projects designed by technical services

Activities by Function

Rates & Revenue	<i>See activities below</i>
Regulatory Management	Handles broad, national issues, pushing initiatives, and look at other means of recovering expenses; assists with more difficult regulatory situations at the local level; appears on NARUC programs and advocates for regulatory improvements
Rate Case Support	Puts together rate case work papers; prepares testimony relative to Service Company expenses; loads test rate changes in systems; assists regional rates group with data and analysis needed for rate case; collects historical data for the operating company and service company and performs analysis
Risk Management	<i>See activities below</i>
Health and Safety	Formulates health and safety strategy; provides governance of workman's compensation claims and accidents, employee safety, training courses, and OSHA
Physical Security	Sets security policy and strategy (e.g., where badges are used); manages nationwide contract with ADT
IT Security	Monitors firewalls; ensures user access is properly handled
Business Continuity	Develops emergency and contingency planning to ensure 24 / 7 reliability
Loss Control	Implements health and safety plans, provide training; performs building and facility auditing including noise samplings; driver certification; manages local and regional security
Claims	Handles workers compensation claims; handles and investigates insurance claims and reports them to the carrier (Traveler's Insurance); involved in litigation claims; handles public liability claims

Activities by Function

Water Quality	<i>See activities below</i>
Research Group	Performs applied research; looks at products and best practices to analyze what would benefit utility
Environmental Management	Stays on top of all national regulations (Clean Water Act, Clean Air Act); fights against unfair regulations; interfaces with Government Orgs; puts together environmental audit program
Water Quality	Performs chemical analysis of water samples for regulated and unregulated chemical compounds as requested by EPA or internal customers; does not do routine water treatment
Regional Environmental Management	Provides regulatory insight for water quality compliance; performs some standardization of processes; designed and implemented Environmental Management Plans (EMP); performs environmental audits; provided some training to the operating companies

Activities by Function

Customer Service	<i>See activities below</i>
Call Handling	Handles customer care; receives customer calls; initiates service orders
Billing	Generates bills after receiving information from Southeast Region, resolves billing exceptions, handles special accounts, creates standardization throughout billing; runs daily, weekly, monthly integrity reports
Accounts Receivable	Works to reduce and management of AR; maintains relationship with collection agencies; disputes resolution on collection accounts
Customer Relations	Field Resource Coordination Center in charge of receiving work orders from Corporate call center, scheduling available resources to perform the work order, coach and assist Field Tech, improve service quality; Service Support that does back office follow up to work performed by the Field Techs which may assist in the proper closing of the pending work request initiated by the customer; Meter Management creates monthly meter reading schedules and uploads reads and prints into billing system; Meter Exceptions investigates and performs follow up work on meter exceptions; Quality Assurance as a part of SOX reviews new premises being created in the billing system to ensure proper functionality; review incoming payments and open service orders pending for termination of non payment and perform follow up

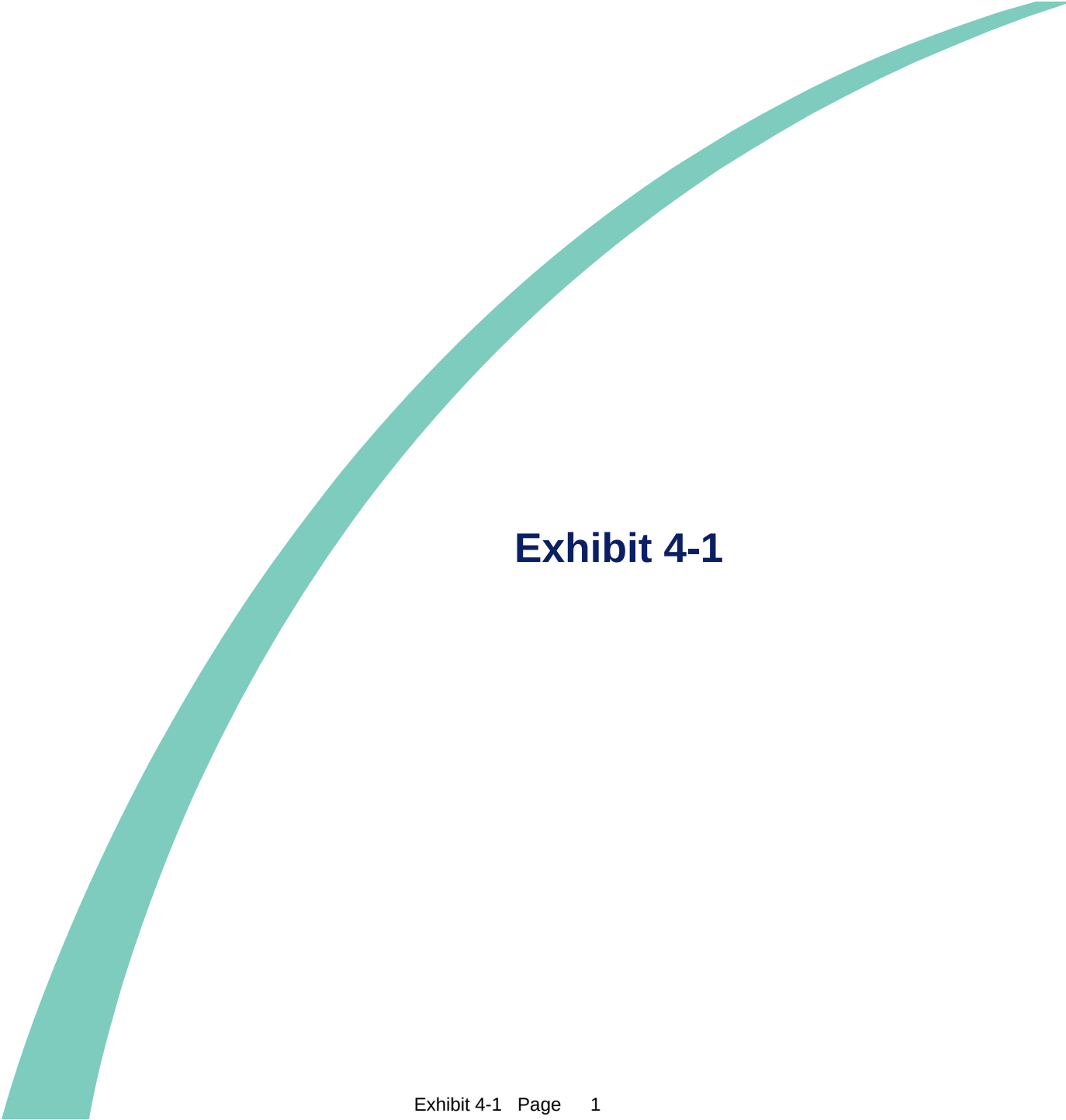


Exhibit 4-1

Corporate Cost Justification

Definitions

Necessity Attributes	Definitions
Corporate Governance	Activities that are necessary to ensure that corporate and portfolio fiduciary responsibilities and enterprise-wide management and operation is effectively executed. Examples include performing shareholder activities, managing cross-business issues, performing risk management activities and evaluating internal controls
Regulatory Mandate	Activities that are required to fulfill statutory, regulatory and other commitments or mandates. Examples include submitting SEC filings, filing IRS documents and complying with other regulatory requirements
Legal Compliance	Costs incurred and activities performed as a direct result of legal proceedings, avoidance of legal proceedings, or compliance with legal requirements. Examples include performing litigation activities and responding to discovery requests
Management Control	Activities performed specifically to provide analysis, decision support data and results to management personnel. Examples include managing projects and reporting results and developing management reports
Operational Execution	Includes fundamental functions performed on a daily basis. Examples include performing maintenance activities, performing general accounting, and tracking employee information.
Strategic Planning	Activities that encompass business unit planning and activities directed at providing enterprise-wide direction. Examples include monitoring marketplace activities, performing strategic planning, and providing business planning assistance

Corporate Cost Justification

Definitions

Benefits Attributes	Definitions
Reduce Risk	Actions designed to reduce liability and mitigate exposure to financial, operational, fiduciary and other types of risk through activities such as implementing safety programs, performing internal audit, and developing policies, procedures and manuals
Increase Employee Productivity	Programs that enhance employees' abilities to perform their jobs more productively. Examples include implementing certain automated systems, providing certain types of training, implementing and administering employee health awareness programs, developing procedures, policies and practice manuals, developing employee communications and implementing and administering quality programs
Provide Management Information	Activities conducted primarily to provide decision support data and analysis to management personnel. Examples include developing budgets, monitoring operational and financial performance, performing corporate development, conducting strategic assessments and developing integrated information systems
Enhance Corporate Performance	Activities performed to enhance the abilities and effectiveness of management with respect to the business, including developing strategic plans, managing the performance review process, maintaining the inter / intranet and conducting benchmarking studies
Reduce or Avoid Costs	Activities performed to improve the cost effectiveness of operations. Activities include implementing certain automated systems, negotiating discounts with outside vendors and performing certain credit and collections activities
Increase Reliability	Activities performed to increase the reliability of water distribution / production and to minimize the impact of disruptions

Exhibit 4-1: Necessity Analysis

Activity	Necessity Attributes					
	Corporate Governance	Regulatory Mandate	Legal Compliance	Management Control	Operational Execution	Strategic Planning
Accounting						
Strategic Sourcing						
Accounts Payable						
General Accounting						
Tax						
Fixed Asset / Job Costing						
Employee Services						
Supply Chain Management						
Administration						
Executive Oversight						
Business Liaisons						
Project Management						
Regional Business Administration						
Audit						
Financial Audit						
Operational Audit						



Indicates underlying activity causation

Exhibit 4-1: Necessity Analysis

Activity	Necessity Attributes					
	Corporate Governance	Regulatory Mandate	Legal Compliance	Management Control	Operational Execution	Strategic Planning
Communications						
Government Affairs						
Advertising						
External Communications						
Internal Communications						
Regional Communications						
Legal						
Legal Support, Governance, and General Counsel						
Legal						
Engineering						
Project Delivery and Developer Services						
Capital Administration						
Technical Services						



Indicates underlying activity causation

Exhibit 4-1: Necessity Analysis

Activity	Necessity Attributes					
	Corporate Governance	Regulatory Mandate	Legal Compliance	Management Control	Operational Execution	Strategic Planning
Finance						
Planning, budgeting forecasting						
Internal Controls						
Corporate Accounting						
Investor Relations						
Income Tax						
Corporate Social Responsibility						
Cash Management						
Debt Compliance						
Capital Markets						
Rates and Regulations						
Performance, Planning, and Reporting						



Indicates underlying activity causation

Exhibit 4-1: Necessity Analysis

Activity	Necessity Attributes					
	Corporate Governance	Regulatory Mandate	Legal Compliance	Management Control	Operational Execution	Strategic Planning
Human Resources						
Compensation						
Organization and Talent Development						
Labor Relations						
Service Company Center Staffing						
HR Systems and Processes						
Benefits Administration						
Hiring Process Oversight						
Information Systems						
IT Capital Program Mgmt						
IT Help and Training						
IT Project Management						
IT Infrastructure						
IT Operations						
Business Solutions						
Applications						
Develop IT Infrastructure						
Regional IT Support						



Indicates underlying activity causation

Exhibit 4-1: Necessity Analysis

Activity	Necessity Attributes					
	Corporate Governance	Regulatory Mandate	Legal Compliance	Management Control	Operational Execution	Strategic Planning
Operations						
Business Development						
Best Practices						
Capital Project Management						
Regional Production Management						
Network Policy Setting and Administration						
Regional Maintenance Oversight						
Client Executive						
Regional Business Developer						
Large Project Design						
Rates & Revenue						
Regulatory Management						
Rate Case Support						



Indicates underlying activity causation

Exhibit 4-1: Necessity Analysis

Activity	Necessity Attributes					
	Corporate Governance	Regulatory Mandate	Legal Compliance	Management Control	Operational Execution	Strategic Planning
Risk Management						
Health and Safety						
Physical Security						
IT Security						
Business Continuity						
Loss Control						
Claims						
Water Quality						
Research Group						
Environmental Management						
Water Quality						
Regional Environmental Management						
Customer Service						
Call Handling						
Billing						
Accounts Receivable						
Customer Relations						



Indicates underlying activity causation

Exhibit 4-1: Benefits Analysis

Activity	Benefit Attributes					
	Reduce Risk	Increase Employee Productivity	Provide Management Information	Enhance Corporate Performance	Reduce or Avoid Costs	Increase Reliability
Accounting						
Strategic Sourcing						
Accounts Payable						
General Accounting						
Tax						
Fixed Asset / Job Costing						
Employee Services						
Supply Chain Management						
Administration						
Executive Oversight						
Business Liaisons						
Project Management						
Regional Business Administration						
Audit						
Financial Audit						
Operational Audit						

 Indicates underlying activity causation

Exhibit 4-1: Benefits Analysis

Activity	Benefit Attributes					
	Reduce Risk	Increase Employee Productivity	Provide Management Information	Enhance Corporate Performance	Reduce or Avoid Costs	Increase Reliability
Communications						
Government Affairs						
Advertising						
External Communications						
Internal Communications						
Regional Communications						
Legal						
Legal Support, Governance, and General Counsel						
Legal						
Engineering						
Project Delivery and Developer Services						
Capital Administration						
Technical Services						



Indicates underlying activity causation

Exhibit 4-1: Benefits Analysis

Activity	Benefit Attributes					
	Reduce Risk	Increase Employee Productivity	Provide Management Information	Enhance Corporate Performance	Reduce or Avoid Costs	Increase Reliability
Finance						
Planning, Budgeting Forecasting						
Internal Controls						
Corporate Accounting						
Investor Relations						
Income Tax						
Corporate Social Responsibility						
Cash Management						
Debt Compliance						
Capital Markets						
Rates and Regulations						
Performance, Planning, and Reporting						



Indicates underlying activity causation

Exhibit 4-1: Benefits Analysis

Activity	Benefit Attributes					
	Reduce Risk	Increase Employee Productivity	Provide Management Information	Enhance Corporate Performance	Reduce or Avoid Costs	Increase Reliability
Human Resources						
Compensation						
Organization and Talent Development						
Labor Relations						
Service Company Center Staffing						
HR Systems and Processes						
Benefits Administration						
Hiring Process Oversight						
Information Systems						
IT Capital Program Mgmt						
IT Help and Training						
IT Project Management						
IT Infrastructure						
IT Operations						
Business Solutions						
Applications						
Develop IT Infrastructure:						

 Indicates underlying activity causation

Exhibit 4-1: Benefits Analysis

Activity	Benefit Attributes					
	Reduce Risk	Increase Employee Productivity	Provide Management Information	Enhance Corporate Performance	Reduce or Avoid Costs	Increase Reliability
Operations						
Business Development						
Best Practices						
Capital Project Management						
Regional Production Management						
Network Policy Setting and Administration						
Regional Maintenance Oversight						
Client Executive						
Regional Business Developer						
Large Project Design						
Rates & Revenue						
Regulatory Management						
Rate Case Support						

 Indicates underlying activity causation

Exhibit 4-1: Benefits Analysis

Activity	Benefit Attributes					
	Reduce Risk	Increase Employee Productivity	Provide Management Information	Enhance Corporate Performance	Reduce or Avoid Costs	Increase Reliability
Risk Management						
Health and Safety						
Physical Security						
IT Security						
Business Continuity						
Loss Control						
Claims						
Water Quality						
Research Group						
Environmental Management						
Water Quality						
Regional Environmental Management						
Customer Service						
Call Handling						
Billing						
Accounts Receivable						
Customer Relations						

 Indicates underlying activity causation

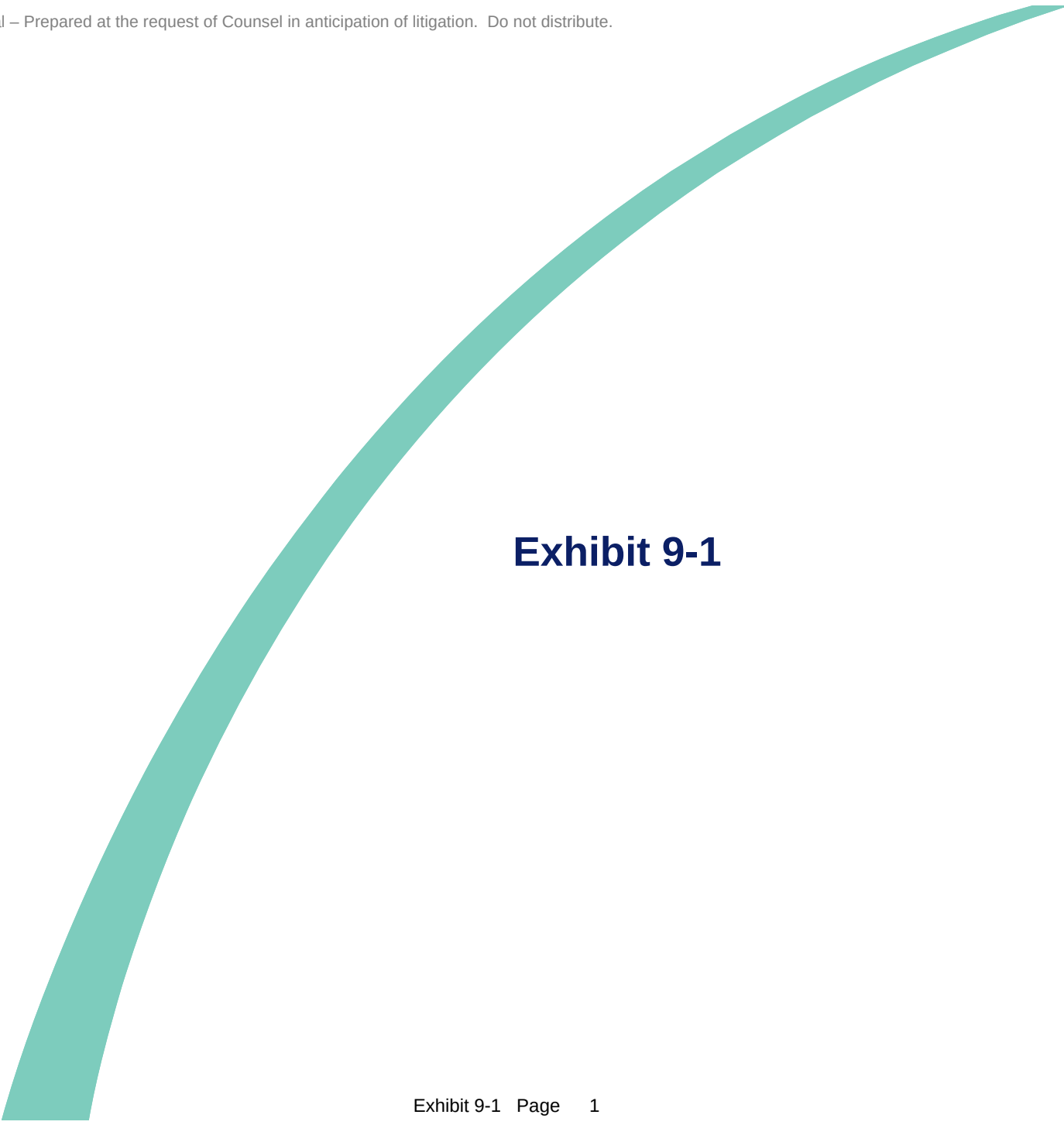
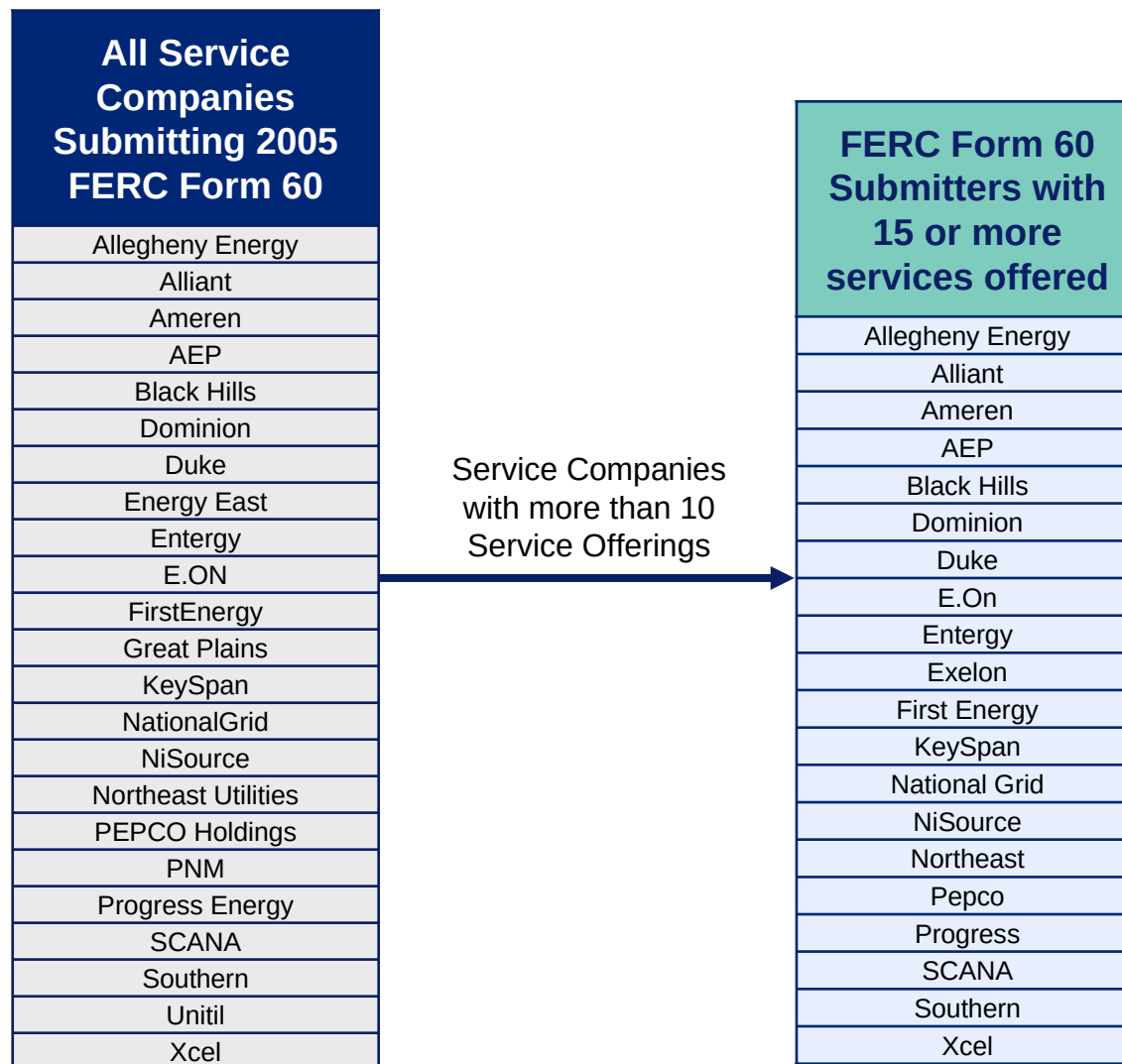


Exhibit 9-1

Data Sources and Calculations

Data Field	Source	Calculation
Service Company O&M	FERC Form 60 Schedule XV, Line 30	N/A – Raw Data
Service Company Adjusted O&M	FERC Form 60 Schedule XV	Total (Expense) (Line 30) - Adjustments
Adjustments	FERC Form 60 Schedule XV, Lines 403 – 405, 408 – 411.5, 419, 427, 430, 431, 435	Total of all lines
Parent Co. Revenue	SEC Form 10-K annual report, Consolidated Statement of Operations	N/A – Raw Data
Parent Co. O&M	FERC Form 1 pgs. 320 – 323, Lines 100, 126, 134, 141, 148, 168	Total all of the lines for all operating companies for each given holding company
Retail Customers	FERC Form 1 pgs. 300 – 301, Line 12	Aggregate the customers from each Form 1 for all of the operating companies for each holding company
Service Company Employees	FERC Form 60 Account 920, Line 40	N/A – Raw Data
Parent Co Total Employees	SEC Form 10-K annual report, Item 1, Employees	N/A – Raw Data
Parent Co Assets	SEC Form 10-K annual report, Consolidated Balance Sheets	N/A – Raw Data

2006 AWWSC Peer Group



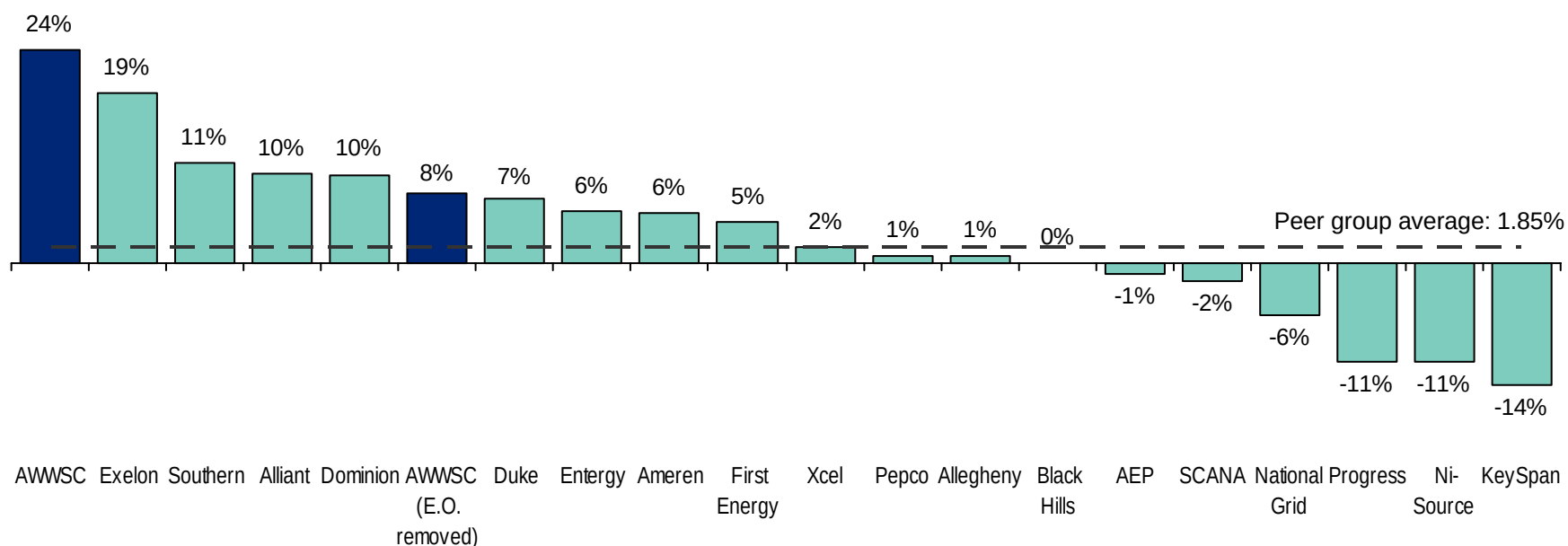
Source: FERC, BAH Analysis.

Summary of Benchmarking Results using the FERC Form 60 Data for 2006

Benchmark	AWWSC Performance vs. Average
Service Co O&M as percentage of total assets	Below average cost
Service Co O&M as percentage of total company O&M	Below average cost
Service Co O&M as percentage of revenue	Average cost
Service Co O&M per customer	Below average cost
Service Co O&M per total company FTE	Below average cost
Service Co O&M per Service Co FTE	Below average cost
Service Co O&M Expense 2005 to 2006 Change	Above average cost change

Service Company O&M Cost Trends

2006 Service Company O&M Expense 2005 to 2006 Change (%)

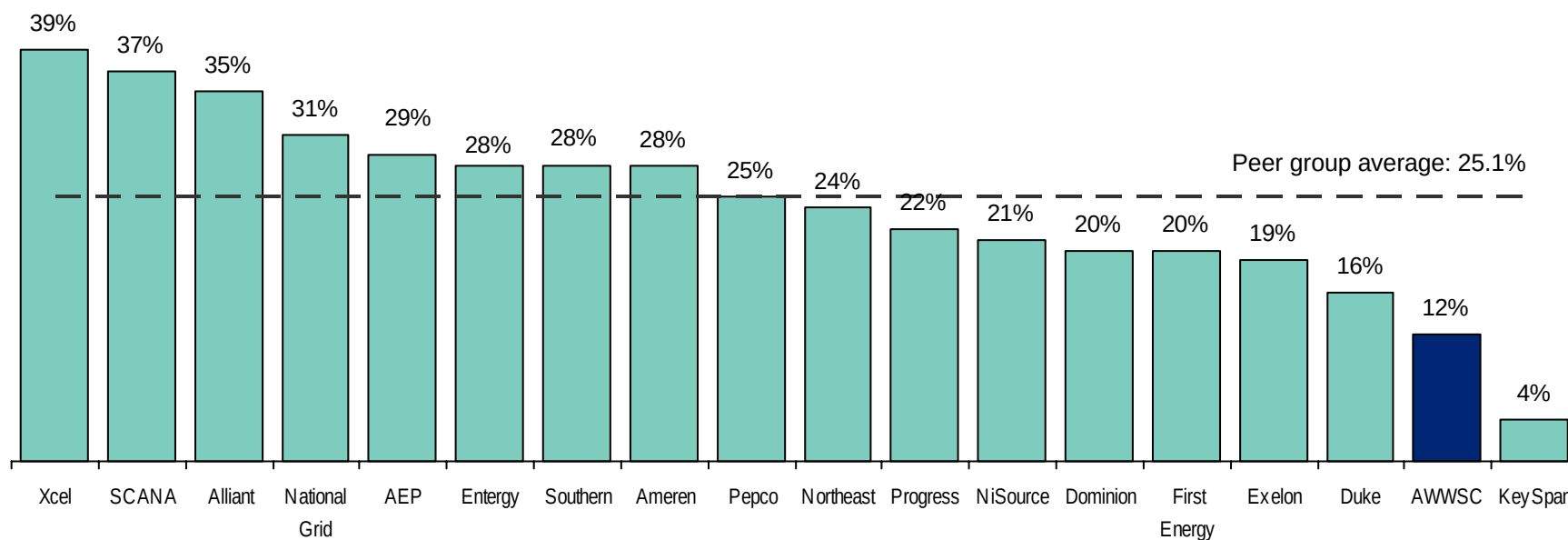


Source: 2006 FERC Form 60 filings, Booz Allen Hamilton analysis.

Note: Statistical Outliers removed using the Inner Quartile Range Method

Service Company Benchmarking – Total Company

2006 Service Company O&M Expense as a Percentage of Total O&M¹



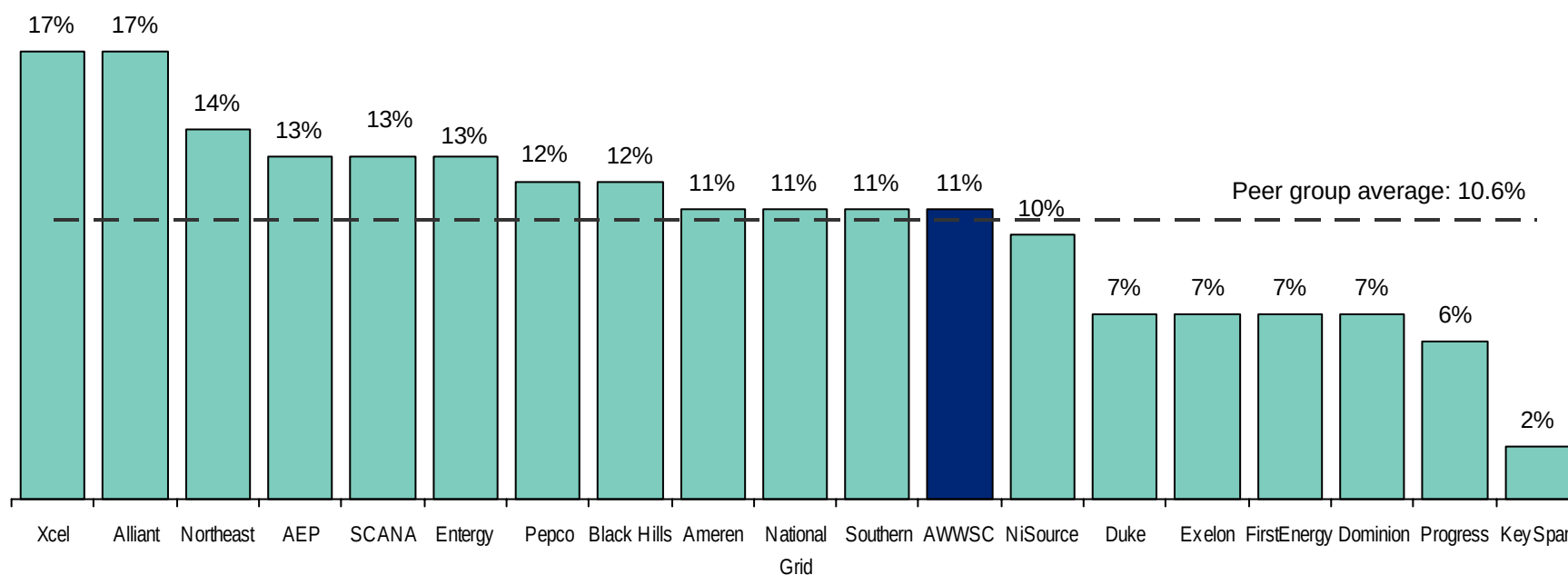
Source: Energy Velocity data, 2006 FERC Form 60 filings, Booz Allen Hamilton analysis.

¹⁾ Total O&M Excludes Fuel and Purchasing Power for electric and gas utilities.

Note: Statistical Outliers removed using the Inner Quartile Range Method

Service Company Benchmarking – Revenue

2006 Service Company O&M Expense as a Percentage of Revenue⁽¹⁾

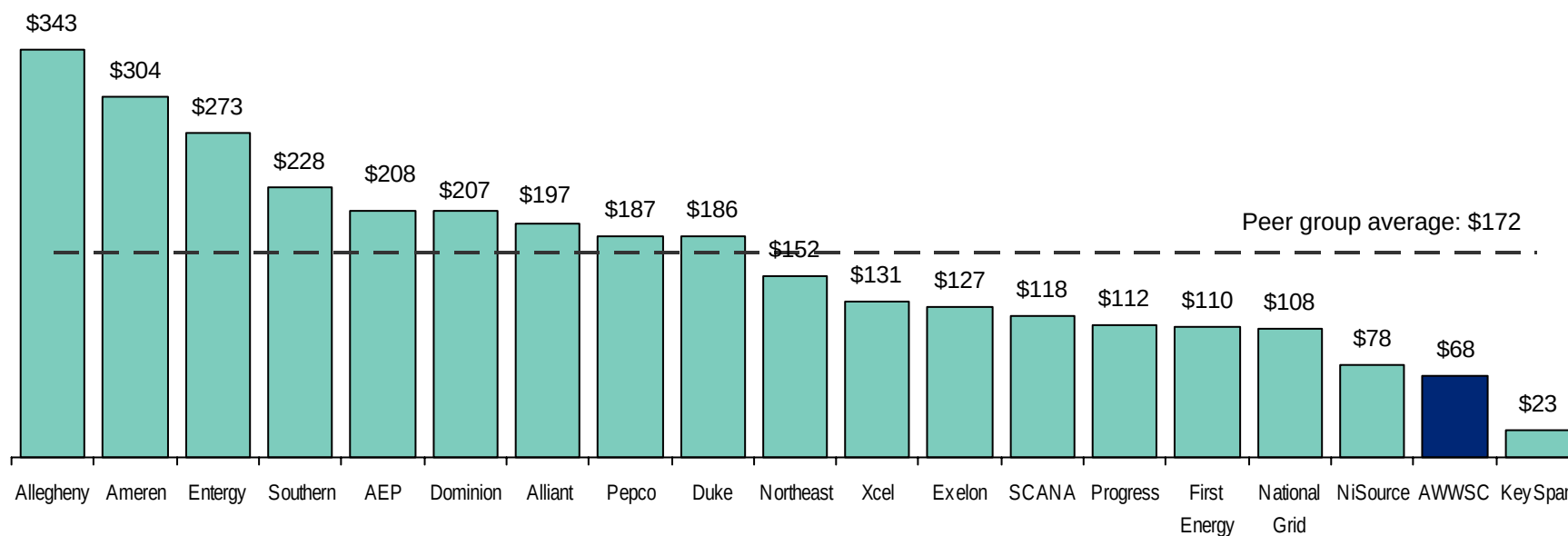


Source: Energy Velocity data, 2006 FERC Form 60 filings, 2006 company SEC 10K filings, Booz Allen Hamilton analysis.

Note: Statistical Outliers removed using the Inner Quartile Range Method

Service Company Benchmarking – Customers

2006 Service Company O&M Expense Per Customer

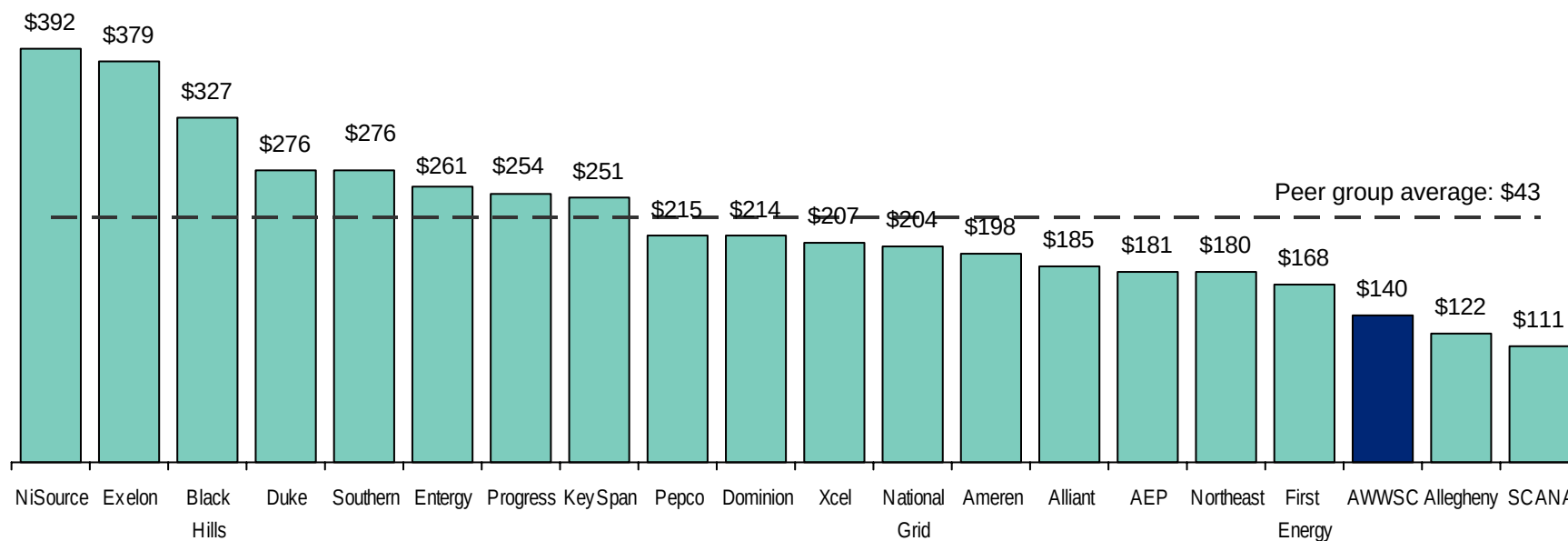


Source: Energy Velocity data, 2006 FERC Form 60 filings, Booz Allen Hamilton analysis.

Note: Statistical Outliers removed using the Inner Quartile Range Method

Service Company Benchmarking – ServCo FTEs

2006 Service Company O&M Expense Per Service Company FTE (\$000s)

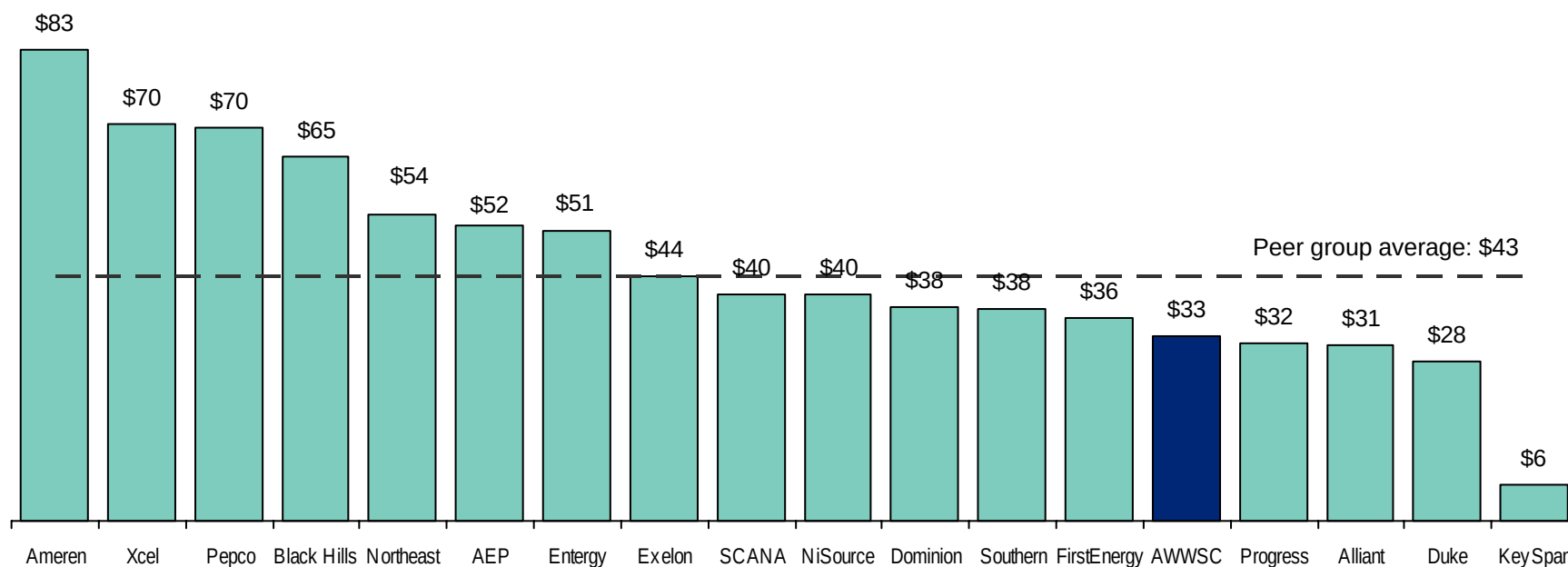


Source: Energy Velocity data, 2006 FERC Form 60 filings, Booz Allen Hamilton analysis.

Note: Statistical Outliers removed using the Inner Quartile Range Method

Service Company Benchmarking – Total FTEs

2006 Service Company O&M Expense Per Total Company FTE (\$000s)

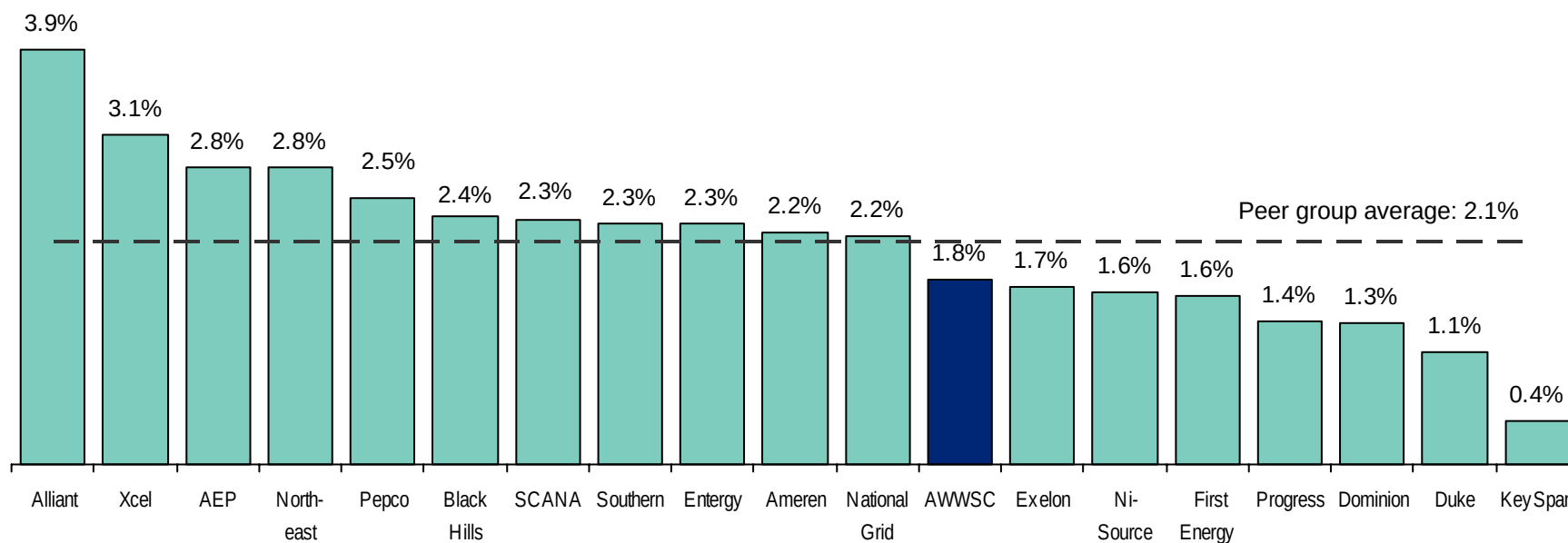


Source: Energy Velocity data, 2006 FERC Form 60 filings, 2006 company SEC 10K filings, Booz Allen Hamilton analysis.

Note: Statistical Outliers removed using the Inner Quartile Range Method

Service Company Benchmarking – Assets

2006 Service Company O&M Expense as a Percentage of Total Assets



Source: Energy Velocity data, 2006 FERC Form 60 filings, 2006 company SEC 10K filings, Booz Allen Hamilton analysis.

Note: Statistical Outliers removed using the Inner Quartile Range Method

BEFORE THE
TENNESSEE REGULATORY AUTHORITY

DIRECT TESTIMONY OF
JOHN J. SPANOS

ON BEHALF OF TENNESSEE AMERICAN WATER COMPANY

CASE NO. - _____

CONCERNING

DEPRECIATION

MARCH 2008

BEFORE THE TENNESSEE REGULATORY AUTHORITY

RE: TENNESSEE AMERICAN WATER COMPANY

CASE NO. _____

DIRECT TESTIMONY OF JOHN J. SPANOS

INTRODUCTION

1 Q. Please state your name and address.

2 A. My name is John J. Spanos. My business address is 207 Senate Avenue, Camp
3 Hill, Pennsylvania.

4 Q. Are you associated with any firm?

5 A. Yes. I am associated with the firm of Gannett Fleming, Inc.

6 Q. How long have you been associated with Gannett Fleming, Inc.?

7 A. I have been associated with the firm since college graduation in June, 1986.

8 Q. What is your position with the firm?

9 A. I am a Vice President.

10 Q. what is your educational background?

11 A. I have Bachelor of Science degrees in Industrial Management and Mathematics
12 from Carnegie-Mellon University and a Master of Business Administration from
13 York College.

14 Q. Do you belong to any professional societies?

15 A. Yes. I am a member of the Society of Depreciation Professionals and the
16 American Gas Association/Edison Electric Institute Industry Accounting
17 Committee.

18 Q. Do you hold any special certification as a depreciation expert?

1 A. Yes. The Society of Depreciation Professionals has established national
2 standards for depreciation professionals. The Society administers an examination
3 to become certified in this field. I passed the certification exam in September
4 1997 and was recertified in August 2003 and December 2007.

5 Q. Please outline your experience in the field of depreciation.

6 A. In June, 1986, I was employed by Gannett Fleming Valuation and Rate
7 Consultants, Inc. as a Depreciation Analyst. During the period from June, 1986
8 through December, 1995, I helped prepare numerous depreciation and original
9 cost studies for utility companies in various industries. I helped perform
10 depreciation studies for the following telephone companies: United Telephone of
11 Pennsylvania, United Telephone of New Jersey, and Anchorage Telephone Utility.
12 I helped perform depreciation studies for the following companies in the railroad
13 industry: Union Pacific Railroad, Burlington Northern Railroad, and Wisconsin
14 Central Transportation Corporation.

15 I helped perform depreciation studies for the following organizations in the
16 electric industry: Chugach Electric Association, The Cincinnati Gas and Electric
17 Company (CG&E), The Union Light, Heat and Power Company (ULH&P),
18 Northwest Territories Power Corporation, and the City of Calgary - Electric
19 System.

20 I helped perform depreciation studies for the following pipeline companies:
21 TransCanada Pipelines Limited, Trans Mountain Pipe Line Company Ltd.,
22 Interprovincial Pipe Line Inc., Nova Gas Transmission Limited and Lakehead
23 Pipeline Company.

1 I helped perform depreciation studies for the following gas companies:
2 Columbia Gas of Pennsylvania, Columbia Gas of Maryland, The Peoples Natural
3 Gas Company, T. W. Phillips Gas & Oil Company, CG&E, ULH&P, Lawrenceburg
4 Gas Company and Penn Fuel Gas, Inc.

5 I helped perform depreciation studies for the following water companies:
6 Indiana-American Water Company, Consumers Pennsylvania Water Company
7 and The York Water Company; and depreciation and original cost studies for
8 Philadelphia Suburban Water Company and Pennsylvania-American Water
9 Company.

10 In each of the above studies, I assembled and analyzed historical and
11 simulated data, performed field reviews, developed preliminary estimates of
12 service life and net salvage, calculated annual depreciation, and prepared reports
13 for submission to state Public Utility Commissions or federal regulatory agencies.
14 I performed these studies under the general direction of William M. Stout, P.E.

15 In January, 1996, I was assigned to the position of Supervisor of
16 Depreciation Studies. In July, 1999, I was promoted to the position of Manager,
17 Depreciation and Valuation Studies. In December, 2000, I was promoted to my
18 present position as Vice-President of Gannett Fleming Valuation and Rate
19 Consultants, Inc. and I became responsible for conducting all depreciation,
20 valuation and original cost studies, including the preparation of final exhibits and
21 responses to data requests for submission to the appropriate regulatory bodies.

22 Since January 1996, I have conducted depreciation studies similar to those
23 previously listed including assignments for Pennsylvania American Water
24 Company; Aqua Pennsylvania; Kentucky American Water Company; Virginia

1 American Water Company; Indiana American Water Company; Hampton Water
2 Works Company, Omaha Public Power District, Enbridge Pipe Line Company,
3 Inc., Columbia Gas of Virginia, Inc., Virginia Natural Gas Company, National Fuel
4 Gas Distribution Corporation - New York and Pennsylvania Divisions, The City of
5 Bethlehem - Bureau of Water, The City of Coatesville Authority, The City of
6 Lancaster - Bureau of Water, Peoples Energy Corporation, The York Water
7 Company, Public Service Company of Colorado, Enbridge Pipelines, Enbridge
8 Gas Distribution, Inc., Reliant Energy-HLP, Massachusetts-American Water
9 Company, St. Louis County Water Company, Missouri-American Water Company,
10 Chugach Electric Association, Alliant Energy, Oklahoma Gas & Electric Company,
11 Nevada Power Company, Dominion Virginia Power, NUI-Virginia Gas
12 Companies, Pacific Gas & Electric Company, PSI Energy, NUI - Elizabethtown
13 Gas Company, Cinergy Corporation – CG&E, Cinergy Corporation – ULH&P,
14 Columbia Gas of Kentucky, SCANA, Inc., Idaho Power Company, El Paso Electric
15 Company, Central Hudson Gas & Electric, Centennial Pipeline Company,
16 CenterPoint Energy-Arkansas, CenterPoint Energy – Oklahoma, CenterPoint
17 Energy – Entex, CenterPoint Energy - Louisiana, NSTAR – Boston Edison
18 Company, Westar Energy, Inc., PPL Electric Utilities, PPL Gas Utilities, Wisconsin
19 Power & Light Company, TransAlaska Pipeline, Avista Corporation, Northwest
20 Natural Gas, Allegheny Energy Supply, Inc.; Public Service Company of North
21 Carolina; South Jersey Gas Company, Duquesne Light Company, MidAmerican
22 Energy Company, Laclede Gas, Duke Energy Company, E.ON U.S. Services Inc.,
23 Elkton Gas Services, Anchorage Water and Wastewater Utility, Duke Energy
24 Carolinas, Duke Energy Ohio Gas, Duke Energy Kentucky, Bonneville Power

Administration, NSTAR Electric and Gas Company, EPCOR Distribution, Inc. and B. C. Gas Utility, Ltd. My additional duties include determining final life and salvage estimates, conducting field reviews and presenting recommended depreciation rates to management for their consideration.

Q. Have you submitted testimony to any state utility commission on the subject of utility plant depreciation?

A. Yes. I have submitted testimony to the Pennsylvania Public Utility Commission, the Commonwealth of Kentucky Public Service Commission, the Public Utilities Commission of Ohio, the Nevada Public Utility Commission, the Public Utilities Board of New Jersey, the Missouri Public Service Commission, the Massachusetts Department of Telecommunications and Energy, the Alberta Energy & Utility Board, the Idaho Public Utility Commission, the Louisiana Public Service Commission, the State Corporation Commission of Kansas, the Oklahoma Corporate Commission, the Public Service Commission of South Carolina, Railroad Commission of Texas – Gas Services Division, the New York Public Service Commission, Illinois Commerce Commission, the Indiana Utility Regulatory Commission, the California Public Utilities Commission, the Federal Energy Regulatory Commission ("FERC"), the Arkansas Public Service Commission, the Public Utility Commission of Texas, the Regulatory Commission of Alaska, and the North Carolina Utilities Commission.

Q. Have you had any additional education relating to utility plant depreciation?

A. Yes. I have completed the following courses conducted by Depreciation Programs, Inc.: "Techniques of Life Analysis," "Techniques of Salvage and Depreciation Analysis," "Forecasting Life and Salvage," "Modeling and Life

1 Analysis Using Simulation,” and “Managing a Depreciation Study.” I have also
2 completed the “Introduction to Public Utility Accounting” program conducted by the
3 American Gas Association.

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

5 A. I sponsor the depreciation study performed for Tennessee American Water
6 Company.

7 DEPRECIATION STUDY

8 Q. Please define the concept of depreciation.

9 A. Depreciation refers to the loss in service value not restored by current
10 maintenance, incurred in connection with the consumption or prospective
11 retirement of utility plant in the course of service from causes which can be
12 reasonably anticipated or contemplated, against which the Company is not
13 protected by insurance. Among the causes to be given consideration are wear
14 and tear, decay, action of the elements, inadequacy, obsolescence, changes in
15 the art, changes in demand and the requirements of public authorities.

16 Q. Did you prepare the depreciation study filed by Tennessee American Water
17 Company in this proceeding?

18 A. Yes. I prepared the depreciation study submitted by Tennessee American Water
19 Company with its filing in this proceeding. My report is entitled: “Depreciation
20 Study - Calculated Annual Depreciation Accruals Related to Utility Plant as of
21 November 30, 2007.” This report sets forth the results of my depreciation study
22 for Tennessee American Water Company.

23 Q. In preparing the depreciation study, did you follow generally accepted practices in
24 the field of depreciation valuation?

1 A. Yes.

2 Q. Are the methods and procedures of this depreciation study consistent with past
3 practices?

4 A. The methods and procedures of this study are the same as those utilized in past
5 studies of this Company as well as many others before this Commission. The
6 study is based on the average service life procedure and remaining life method.

7 Q. Please describe the contents of your report.

8 A. My report is presented in three parts. Part I, Introduction, presents the scope and
9 basis for the depreciation study. Part II, Methods Used in Study, includes
10 descriptions of the basis of the study, the estimation of survivor curves and net
11 salvage and the calculation of annual and accrued depreciation. Part III, Results
12 of Study, presents a description of the results, summaries of the depreciation
13 calculations, graphs and tables that relate to the service life and net salvage
14 analyses, and the detailed depreciation calculations.

15 The table on pages III-4 and III-5 presents the estimated survivor curve, the
16 net salvage percent, the original cost as of November 30, 2007, the book reserve
17 and the calculated annual depreciation accrual and rate for each account or
18 subaccount. The section beginning on page III-6 presents the results of the
19 retirement rate analyses prepared as the historical bases for the service life
20 estimates. The section beginning on page III-119 presents the results of the
21 salvage analysis. The section beginning on page III-143 presents the depreciation
22 calculations related to surviving original cost as of November 30, 2007.

23 Q. Please explain how you performed your depreciation study.

1 A. I used the straight line remaining life method of depreciation, with the average
2 service life procedure. The annual depreciation is based on a method of
3 depreciation accounting that seeks to distribute the unrecovered cost of fixed
4 capital assets over the estimated remaining useful life of each unit, or group of
5 assets, in a systematic and reasonable manner.

6 For General Plant Accounts 340.1, 340.2, 340.3, 340.4, 340.5, 342, 343,
7 344, 346.1, 346.2, 347 and 348 in water plant, I used the straight line remaining
8 life method of amortization. The account numbers identified throughout my
9 testimony represent those in effect as of November 30, 2007. The annual
10 amortization is based on amortization accounting that distributes the unrecovered
11 cost of fixed capital assets over the remaining amortization period selected for
12 each account and vintage.

13 Q. How did you determine the recommended annual depreciation accrual rates?

14 A. I did this in two phases. In the first phase, I estimated the service life and net
15 salvage characteristics for each depreciable group, that is, each plant account or
16 subaccount identified as having similar characteristics. In the second phase, I
17 calculated the composite remaining lives and annual depreciation accrual rates
18 based on the service life and net salvage estimates determined in the first phase.

19 Q. Please describe the first phase of the depreciation study, in which you estimated
20 the service life and net salvage characteristics for each depreciable group.

21 A. The service life and net salvage study consisted of compiling historical data from
22 records related to Tennessee American Water Company's plant; analyzing these
23 data to obtain historical trends of survivor characteristics; obtaining supplementary
24 information from management and operating personnel concerning practices and

1 plans as they relate to plant operations; and interpreting the above data and the
2 estimates used by other water utilities to form judgments of average service life
3 and net salvage characteristics.

4 Q. What historical data did you analyze for the purpose of estimating service life
5 characteristics?

6 A. I analyzed the Company's accounting entries that record plant transactions
7 primarily during the period 1920 through 2007. The transactions included
8 additions, retirements, transfers, sales and the related balances.

9 Q. What method did you use to analyze this service life data?

10 A. I used the retirement rate method. This is the most appropriate method when
11 retirement data covering a long period of time is available, because this method
12 determines the average rates of retirement actually experienced by the Company
13 during the period of time covered by the depreciation study.

14 Q. Please describe how you used the retirement rate method to analyze Tennessee
15 American's service life data.

16 A. I applied the retirement rate analysis to each different group of property in the
17 study. For each property group, I used the retirement rate data to form a life table
18 which, when plotted, shows an original survivor curve for that property group.
19 Each original survivor curve represents the average survivor pattern experienced
20 by the several vintage groups during the experience band studied. The survivor
21 patterns do not necessarily describe the life characteristics of the property group;
22 therefore, interpretation of the original survivor curves is required in order to use
23 them as valid considerations in estimating service life. The Iowa type survivor
24 curves were used to perform these interpretations.

1 Q. What is an "Iowa-type survivor curve" and how did you use such curves to
2 estimate the service life characteristics for each property group?

3 A. Iowa type curves are a widely-used group of survivor curves that contain the range
4 of survivor characteristics usually experienced by utilities and other industrial
5 companies. The Iowa curves were developed at the Iowa State College
6 Engineering Experiment Station through an extensive process of observing and
7 classifying the ages at which various types of property used by utilities and other
8 industrial companies had been retired.

9 Iowa type curves are used to smooth and extrapolate original survivor
10 curves determined by the retirement rate method. The Iowa curves and truncated
11 Iowa curves were used in this study to describe the forecasted rates of retirement
12 based on the observed rates of retirement and the outlook for future retirements.

13 The estimated survivor curve designations for each depreciable property
14 group indicate the average service life, the family within the Iowa system to which
15 the property group belongs, and the relative height of the mode. For example, the
16 Iowa 45-R2.5 indicates an average service life of forty-five years; a right-moded,
17 or R, type curve (the mode occurs after average life for right-moded curves); and a
18 moderate height, 2.5, for the mode (possible modes for R type curves range from
19 1 to 5).

20 Q. What approach did you use to estimate the lives of significant facility structures
21 such as treatment plants?

22 A. I used the life span technique to estimate the lives of significant facilities for which
23 concurrent retirement of the entire facility is anticipated. In this technique, the

1 survivor characteristics of such facilities are described by the use of interim
2 survivor curves and estimated probable retirement dates.

3 The interim survivor curves describe the rate of retirement related to the
4 replacement of elements of the facility, such as, for a building, the retirements of
5 plumbing, heating, doors, windows, roofs, etc., that occur during the life of the
6 facility. The probable retirement date provides the rate of final retirement for each
7 year of installation for the facility by truncating the interim survivor curve for each
8 installation year at its attained age at the date of probable retirement. The use of
9 interim survivor curves truncated at the date of probable retirement provides a
10 consistent method for estimating the lives of the several years of installation for a
11 particular facility inasmuch as a single concurrent retirement for all years of
12 installation will occur when it is retired.

13 Q. Has Gannett Fleming used this approach in other proceedings?

14 A. Yes, we have used the life span technique in performing depreciation studies
15 presented to and accepted by many public utility commissions across the United
16 States and Canada.

17 Q. What are the bases for the probable retirement years that you have estimated for
18 each facility?

19 A. The basis for the probable retirement year is the life span for the water treatment
20 plant that is based on judgment and incorporates consideration of the age, use,
21 size, nature of construction, management outlook and typical life spans
22 experienced and used by other water utilities for similar facilities. The life span
23 results in a probable retirement year that is many years in the future. As a result,
24 the retirement of this facility is not yet subject to specific management plans.

1 Such plans would be premature. At the appropriate time, detailed studies of the
2 economics of rehabilitation and continued use or retirement of the structure will be
3 performed and the results incorporated in the estimation of the facility's life span.

4 Q. Did you physically observe Tennessee American Water Company's plant and
5 equipment as part of your depreciation study?

6 A. Yes. I made a field review of Tennessee American Water Company's property
7 during February 2008 to observe representative portions of plant. Field reviews
8 are conducted to become familiar with Company operations and obtain an
9 understanding of the function of the plant and information with respect to the
10 reasons for past retirements and the expected future causes of retirements. This
11 knowledge as well as information from other discussions with management was
12 incorporated in the interpretation and extrapolation of the statistical analyses.

13 Q. Please describe how you estimated net salvage percentages.

14 A. I estimated the net salvage percentages by incorporating the historical data for the
15 period 1974 through 2007 and considered estimates for other water companies.

16 Q. Please describe the second phase of the process that you used in the
17 depreciation study in which you calculated composite remaining lives and annual
18 depreciation accrual rates.

19 A. After I estimated the service life and net salvage characteristics for each
20 depreciable property group, I calculated the annual depreciation accrual rates for
21 each group, using the straight line remaining life method, and using remaining
22 lives weighted consistent with the average service life procedure.

23 Q. Please describe the straight line remaining life method of depreciation.

1 A. The straight line remaining life method of depreciation allocates the original cost of
2 the property, less accumulated depreciation, less future net salvage, in equal
3 amounts to each year of remaining service life.

4 Q. Please describe the average service life procedure.

5 A. In the average service life procedure, the annual accrual is determined by dividing
6 the original cost less net salvage book depreciable reserve by the average
7 remaining life of the group.

8 Q. Please describe amortization accounting.

9 A. In amortization accounting, units of property are capitalized in the same manner
10 as they are in depreciation accounting. Amortization accounting is used for
11 accounts with a large number of units, but small asset values, therefore,
12 depreciation accounting is difficult for these assets because periodic inventories
13 are required to properly reflect plant in service. Consequently, retirements are
14 recorded when a vintage is fully amortized rather than as the units are removed
15 from service. That is, there is no dispersion of retirement. All units are retired
16 when the age of the vintage reaches the amortization period. Each plant account
17 or group of assets is assigned a fixed period which represents an anticipated life
18 which the asset will render full benefit. For example, in amortization accounting,
19 assets that have a 15-year amortization period will be fully recovered after 15
20 years of service and taken off the Company's books, but not necessarily removed
21 from service. In contrast, assets that are taken out of service before 15 years
22 remain on the books until the amortization period for that vintage has expired.

23 Q. Can you explain why you recommend amortization accounting?

1 A. Amortization accounting has been implemented by almost all utility companies
2 across the United States and Canada over the past 15-20 years. I have
3 presented this methodology in the depreciation study in order to smooth the
4 annual depreciation accrual rate over time for the specific asset classes described
5 in general plant as well as to improve record keeping practices for a large number
6 of assets that have a small utility plant in service value.

7 Q. Amortization accounting is being implemented for which plant accounts?

8 A. Amortization accounting is only appropriate for certain General Plant accounts.
9 These accounts are 340.1, 340.2, 340.3, 340.4, 340.5, 342, 343, 344, 346.1,
10 346.2, 347 and 348 for water plant, which represents slightly more than five
11 percent of depreciable plant.

12 Q. Please use an example to illustrate how the annual depreciation accrual rate for a
13 particular group of property is presented in your depreciation study.

14 A. I will use Account 331, Transmission and Distribution Mains, as an example
15 because it is the largest depreciable account and represents almost 52% of
16 depreciable plant.

17 The retirement rate method was used to analyze the survivor
18 characteristics of this property group. Aged plant accounting data was compiled
19 from 1864 through November 2007 and analyzed in periods that best represent
20 the overall service life of this property. The life tables for the 1864-2007, 1973-
21 2007 and 1988-2007 experience bands are presented on pages III-57 through III-
22 68 of the report. The life table displays the retirement and surviving ratios of the
23 aged plant data exposed to retirement by age interval. For example, page III-57
24 shows \$37,013 retired at age 0.5 with \$102,099,769 exposed to retirement.

1 Consequently, the retirement ratio is 0.0004 and the surviving ratio is 0.9996.
2 These life tables, or original survivor curve, are plotted along with the estimated
3 smooth survivor curve, the 95-R2 on page III-56.

4 My calculation of the annual depreciation related to the original cost at
5 November 30, 2007, of utility plant is presented on pages III-168 through III-170.
6 The calculation is based on the 95-R2 survivor curve, 35% negative net salvage,
7 the attained age, and the allocated book reserve. The tabulation sets forth the
8 installation year, the original cost, calculated accrued depreciation, allocated book
9 reserve, future accruals, remaining life and annual accrual. These totals are
10 brought forward to the table on page III-4.

CONCLUSION

11 Q. Was the depreciation study filed by Tennessee American Water Company in this
12 proceeding prepared by you or under your direction and control?

13 A. Yes.

14 Q. Does this conclude your pre-filed direct testimony?

15 A. Yes.

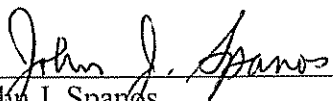
TENNESSEE REGULATORY AUTHORITY

COMMONWEALTH OF PENNSYLVANIA

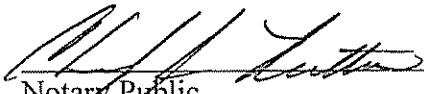
COUNTY OF CUMBERLAND

BEFORE ME, the undersigned authority, duly commissioned and qualified in and for the State and County aforesaid, personally came and appeared John J. Spanos, being by me first duly sworn deposed and said that:

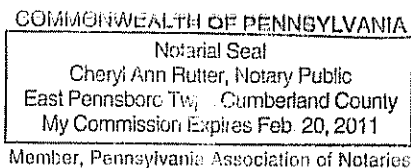
He is appearing as a witness on behalf of Tennessee-American Water Company before the Tennessee Regulatory Authority, and if present before the Authority and duly sworn, his testimony would set forth in the annexed transcript consisting 15 of pages.


John J. Spanos

Sworn to and subscribed before me
this 17th day of March 2008.


Notary Public

My commission expires February 20, 2011.



TENNESSEE AMERICAN WATER COMPANY

CHATTANOOGA, TENNESSEE

DEPRECIATION STUDY

CALCULATED ANNUAL DEPRECIATION ACCRUALS
RELATED TO UTILITY PLANT
AT NOVEMBER 30, 2007

TENNESSEE AMERICAN WATER COMPANY

Chattanooga, Tennessee

DEPRECIATION STUDY

CALCULATED ANNUAL DEPRECIATION ACCRUALS

RELATED TO UTILITY PLANT

AT NOVEMBER 30, 2007

GANNETT FLEMING, INC. - VALUATION AND RATE DIVISION

Harrisburg, Pennsylvania

March 7, 2008

Tennessee American Water Company
1101 Broad Street
Chattanooga, TN 37401

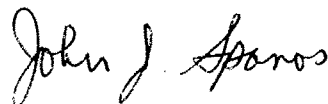
Attention Mr. Michael A. Miller
Manager - Rates and Regulations

Ladies and Gentlemen:

Pursuant to your request, we have conducted a depreciation study related to the utility plant of Tennessee American Water Company as of November 30, 2007. The attached report presents a description of the methods used in the estimation of depreciation, the summary of annual and accrued depreciation, the statistical support for the life and net salvage estimates and the detailed tabulations of annual and accrued depreciation.

Respectfully submitted,

GANNETT FLEMING, INC.



JOHN J. SPANOS
Vice President
Valuation and Rate Division

JJS:krm

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PART III. RESULTS OF STUDY, cont.

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TENNESSEE AMERICAN WATER COMPANY
DEPRECIATION STUDY
CALCULATED ANNUAL DEPRECIATION ACCRUALS
RELATED TO UTILITY PLANT
AT NOVEMBER 30, 2007

PART I. INTRODUCTION

SCOPE

This report presents the results of the depreciation study prepared for the Tennessee American Water Company as applied to utility plant in service as of November 30, 2007. It relates to the concepts, methods, and basic judgments which underlie recommended annual depreciation accrual rates related to current utility plant in service.

The service life and net salvage estimates resulting from the study were based on informed judgment which incorporated analyses of historical plant retirement data as recorded through 2007; a review of Company practice and outlook as they relate to plant operation and retirement; and consideration of current practice in the water industry, including knowledge of service life and salvage estimates used for other water properties.

PLAN OF REPORT

Part I, Introduction, includes brief statements of the scope and basis of the study. Part II presents descriptions of the methods used in the service life and salvage studies and the methods and procedures used in the calculation of depreciation. Part III presents the results of the study, including summary tables, survivor curve charts and life tables resulting from the retirement rate method of analysis, tabular results of the historical net salvage analyses, and detailed tabulations of the calculated remaining lives and annual accruals.

BASIS OF STUDY

Depreciation

For most accounts, the annual depreciation was calculated by the straight line method, using the average service life procedure and the remaining life basis. For certain General Plant accounts, the annual depreciation was based on amortization accounting. The calculated remaining lives and annual depreciation accrual rates were based on attained ages of plant in service and the estimated service life and salvage characteristics of each depreciable group.

Survivor Curve Estimates

The procedure for estimating survivor curves, which define service lives and remaining lives, consisted of compiling historical service life data for the plant accounts or other depreciable groups, analyzing the historical data base through the use of accepted techniques, and forecasting the survivor characteristics for each depreciable account or group. These forecasts were based on interpretations of the historical data analyses and the probable future. The combination of the historical data and the estimated future trend yields a complete pattern of life characteristics, i.e., a survivor curve, from which the average service life and remaining service life are derived.

The historical data analyzed for life estimation purposes were compiled through November 2007 from the Company's plant accounting records. Such data included plant additions, retirements, transfers and other activity recorded by the Company for each of its plant accounts and subaccounts.

The estimates of net salvage incorporated a review of experienced costs of removal and salvage related to plant retirements, and considerations of trends exhibited by the historical data. Each component of net salvage, i.e., cost of removal and salvage was

stated in dollars and as a percent of retirement for purposes of estimating average future levels of the components, as well as of net salvage.

An understanding of the function of the plant and information with respect to the reasons for past retirements and the expected causes of future retirements was obtained through field trips and discussions with operating and management personnel. The supplemental information obtained in this manner was considered in the interpretation and extrapolation of the statistical analyses.

Calculation of Depreciation

The depreciation accrual rates were calculated using the straight line method, the remaining life basis, and the average service life depreciation procedure. The life span technique was used for the water treatment plant. In this technique, an average date of final retirement was estimated for the plant, and the estimated survivor curve applied to each vintage were truncated at ages coinciding with the date of final retirement.

The change to amortization accounting for certain accounts is recommended because of the disproportionate plant accounting effort required when compared to the minimal original cost of the large number of items in these accounts. An explanation of the calculation of annual and accrued amortization is presented on page II-28 of the report.

PART II. METHODS USED IN
THE ESTIMATION OF DEPRECIATION

PART II. METHODS USED IN THE ESTIMATION OF DEPRECIATION

DEPRECIATION

Depreciation, in public utility regulation, is the loss in service value not restored by current repairs or covered by insurance.

Depreciation as used in accounting is a method of distributing fixed capital costs, less net salvage, over a period of time by allocating annual amounts to expense. Each annual amount of such depreciation expense is part of that year's total cost of providing utility service. Normally, the period of time over which the fixed capital cost is allocated to the cost of service is equal to the period of time over which an item renders service, that is, the item's service life. The most prevalent method of allocation is to distribute an equal amount of cost to each year of service life. This method is known as the straight line method of depreciation.

The calculation of annual depreciation based on the straight line method requires the estimation of average life and salvage. These subjects are discussed in the sections which follow.

SERVICE LIFE AND NET SALVAGE ESTIMATION

Average Service Life

The use of an average service life for a property group implies that the various units in the group have different lives. Thus, the average life may be obtained by determining the separate lives of each of the units, or by constructing a survivor curve by plotting the number of units which survive at successive ages. A discussion of the general concept of survivor curves is presented. Also, the Iowa type survivor curves are reviewed.

Survivor Curves

The survivor curve graphically depicts the amount of property existing at each age throughout the life of an original group. From the survivor curve, the average life of the group, the remaining life expectancy, the probable life, and the frequency curve can be calculated. In Figure 1 a typical smooth survivor curve and the derived curves are illustrated. The average life is obtained by calculating the area under the survivor curve, from age zero to the maximum age, and dividing this area by the ordinate at age zero. The remaining life expectancy at any age can be calculated by obtaining the area under the curve, from the observation age to the maximum age, and dividing this area by the percent surviving at the observation age. For example, in Figure 1 the remaining life at age 30 years is equal to the crosshatched area under the survivor curve divided by 29.5 percent surviving at age 30. The probable life at any age is developed by adding the age and remaining life. If the probable life of the property is calculated for each year of age, the probable life curve shown in the chart can be developed. The frequency curve presents the number of units retired in each age interval and is derived by obtaining the differences between the amount of property surviving at the beginning and at the end of each interval.

Iowa Type Curves. The range of survivor characteristics usually experienced by utility and industrial properties is encompassed by a system of generalized survivor curves known as the Iowa type curves. There are four families in the Iowa system, labeled in accordance with the location of the modes of the retirements in relationship to the average life and the relative height of the modes. The left moded curves, presented in Figure 2, are those in which the greatest frequency of retirement occurs to the left of, or prior to, average service life. The symmetrical moded curves, presented in Figure 3, are those in which the greatest frequency of retirement occurs at average service life. The right moded curves,

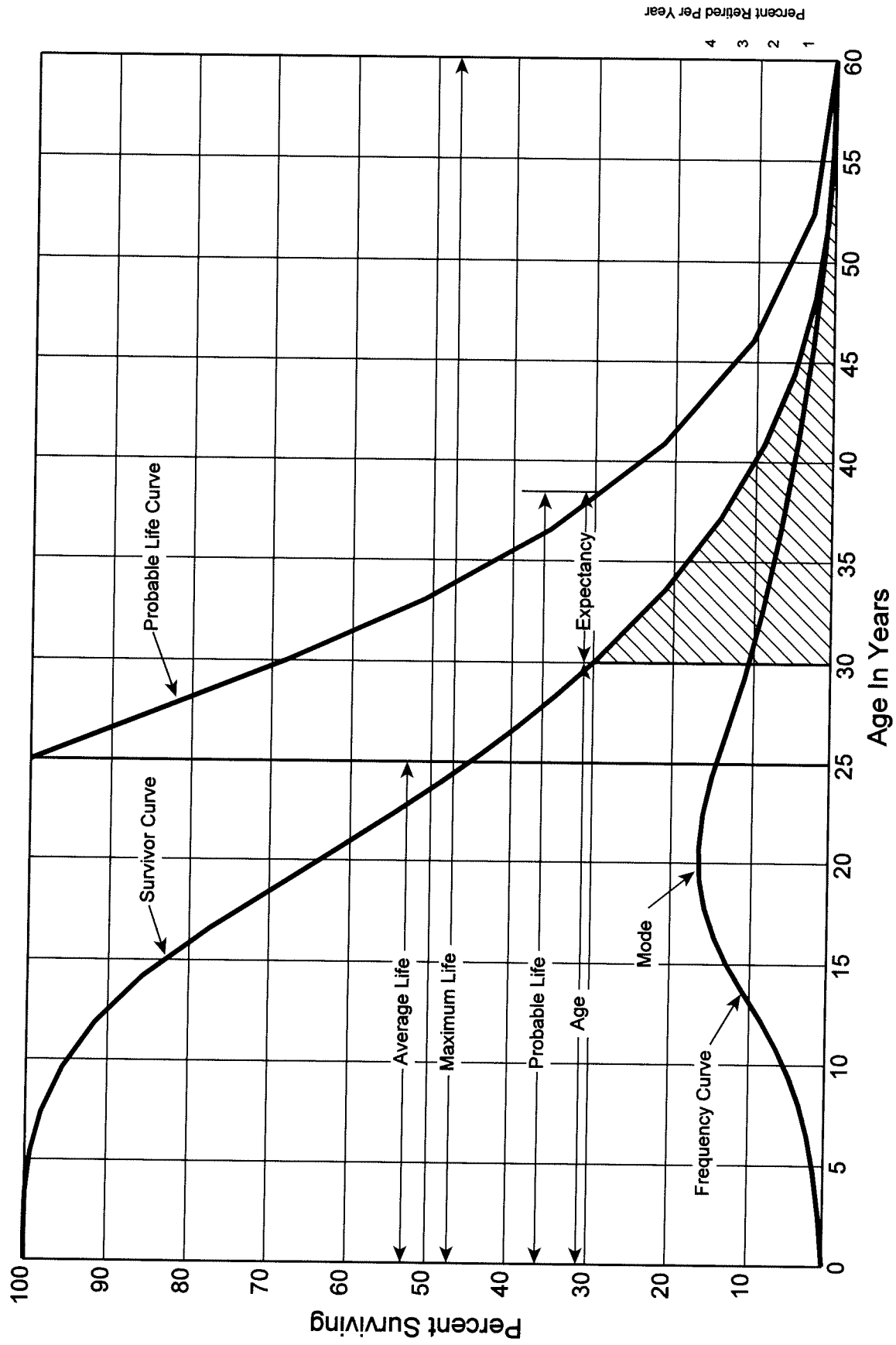


Figure 1. A Typical Survivor Curve and Derived Curves

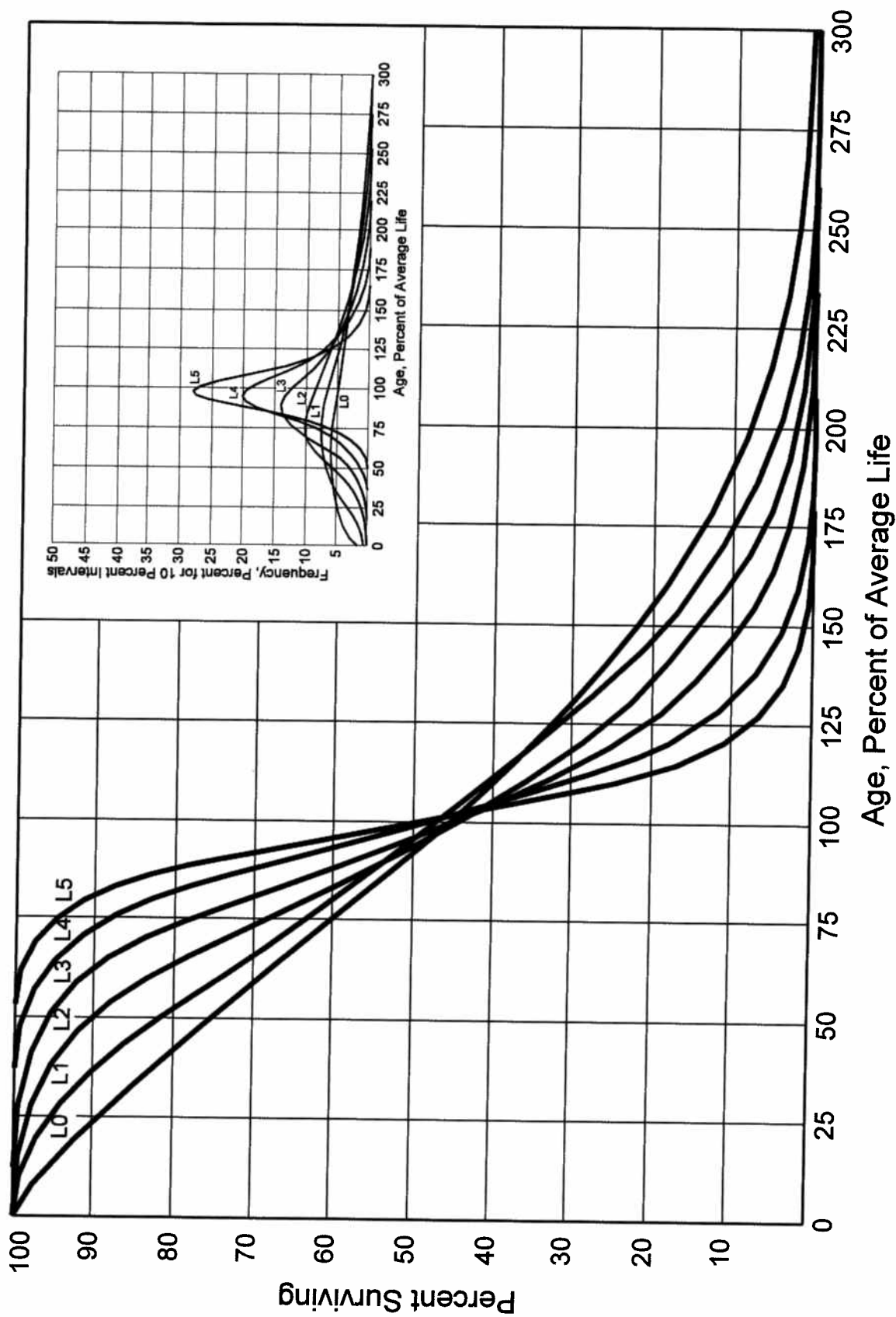


Figure 2. Left Modal or "L" Type Survivor Curves

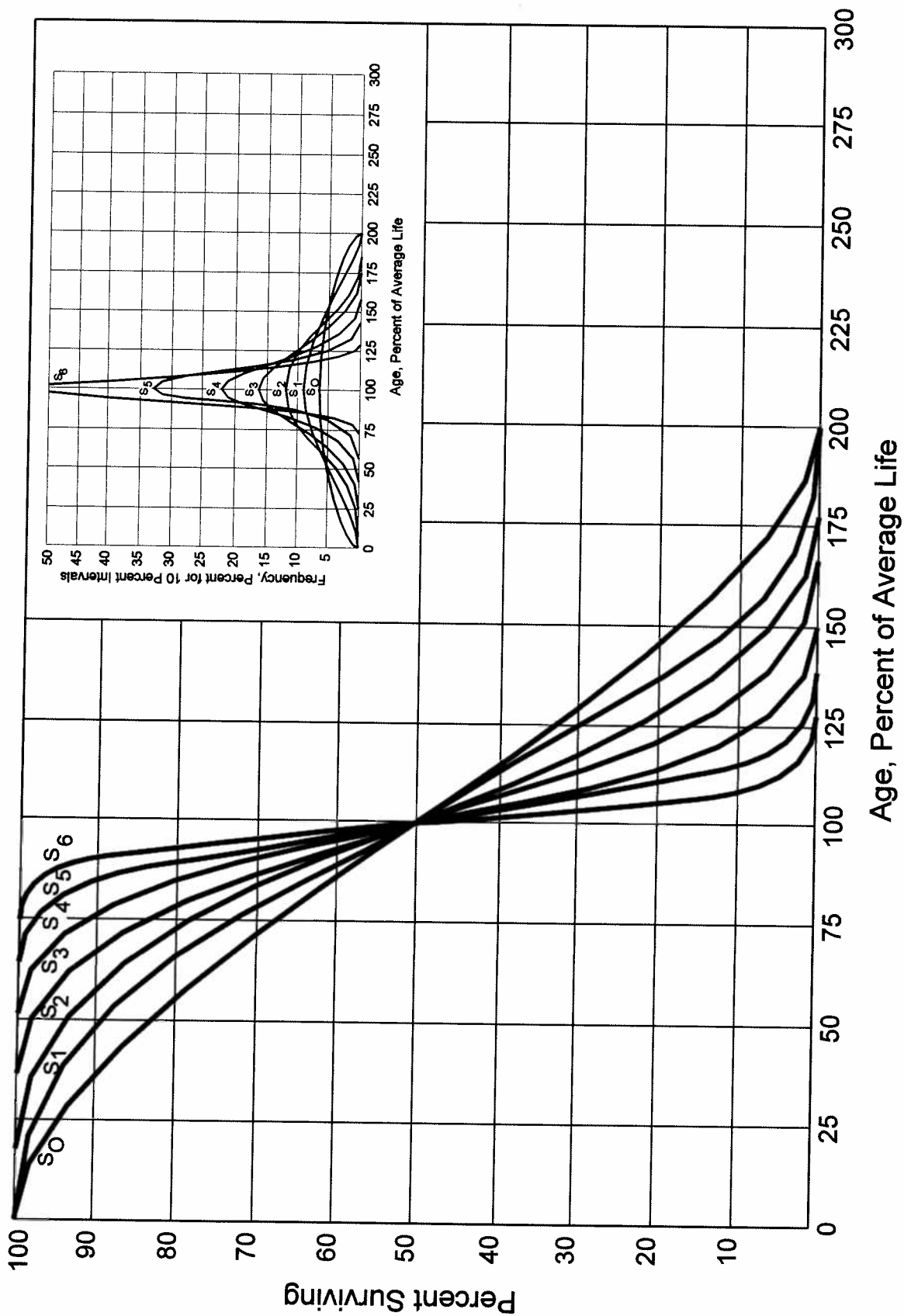


Figure 3. Symmetrical or "S" Iowa Type Survivor Curves

presented in Figure 4, are those in which the greatest frequency occurs to the right of, or after, average service life. The origin moded curves, presented in Figure 5, are those in which the greatest frequency of retirement occurs at the origin, or immediately after age zero. The letter designation of each family of curves (L, S, R or O) represents the location of the mode of the associated frequency curve with respect to the average service life. The numbers represent the relative heights of the modes of the frequency curves within each family.

The Iowa curves were developed at the Iowa State College Engineering Experiment Station through an extensive process of observation and classification of the ages at which industrial property had been retired. A report of the study which resulted in the classification of property survivor characteristics into 18 type curves, which constitute three of the four families, was published in 1935 in the form of the Experiment Station's Bulletin 125.¹ These type curves have also been presented in subsequent Experiment Station bulletins and in the text, "Engineering Valuation and Depreciation."² In 1957, Frank V. B. Couch, Jr., an Iowa State College graduate student, submitted a thesis³ presenting his development of the fourth family consisting of the four O type survivor curves.

Retirement Rate Method of Analysis

The retirement rate method is an actuarial method of deriving survivor curves using the average rates at which property of each age group is retired. The method relates to

¹Winfrey, Robley. Statistical Analyses of Industrial Property Retirements. Iowa State College, Engineering Experiment Station, Bulletin 125. 1935.

²Marston, Anson, Robley Winfrey and Jean C. Hempstead. Engineering Valuation and Depreciation, 2nd Edition. New York, McGraw-Hill Book Company. 1953.

³Couch, Frank V. B., Jr. "Classification of Type O Retirement Characteristics of Industrial Property." Unpublished M.S. thesis (Engineering Valuation). Library, Iowa State College, Ames, Iowa. 1957.

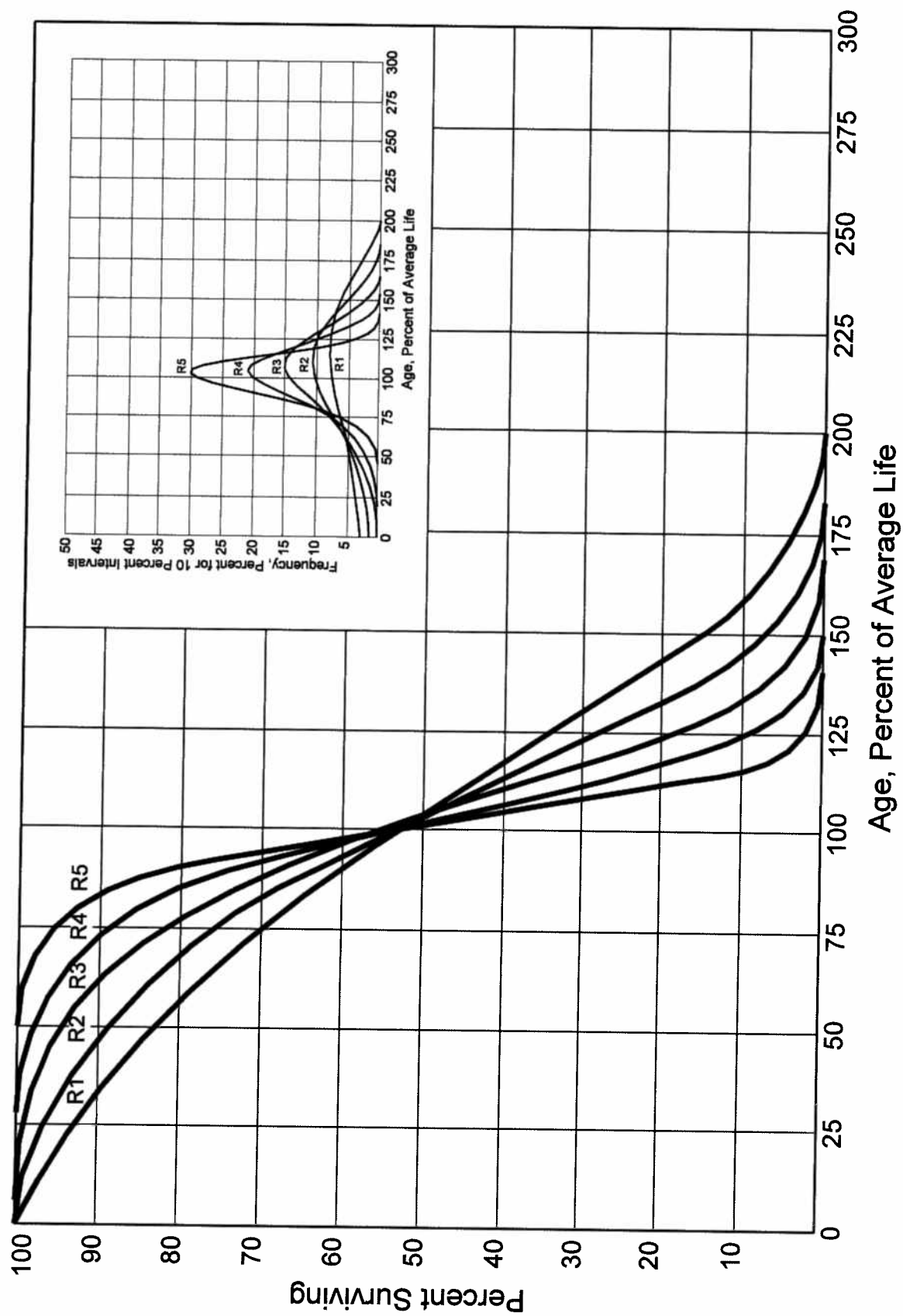


Figure 4. Right Modal or "R" Iowa Type Survivor Curves

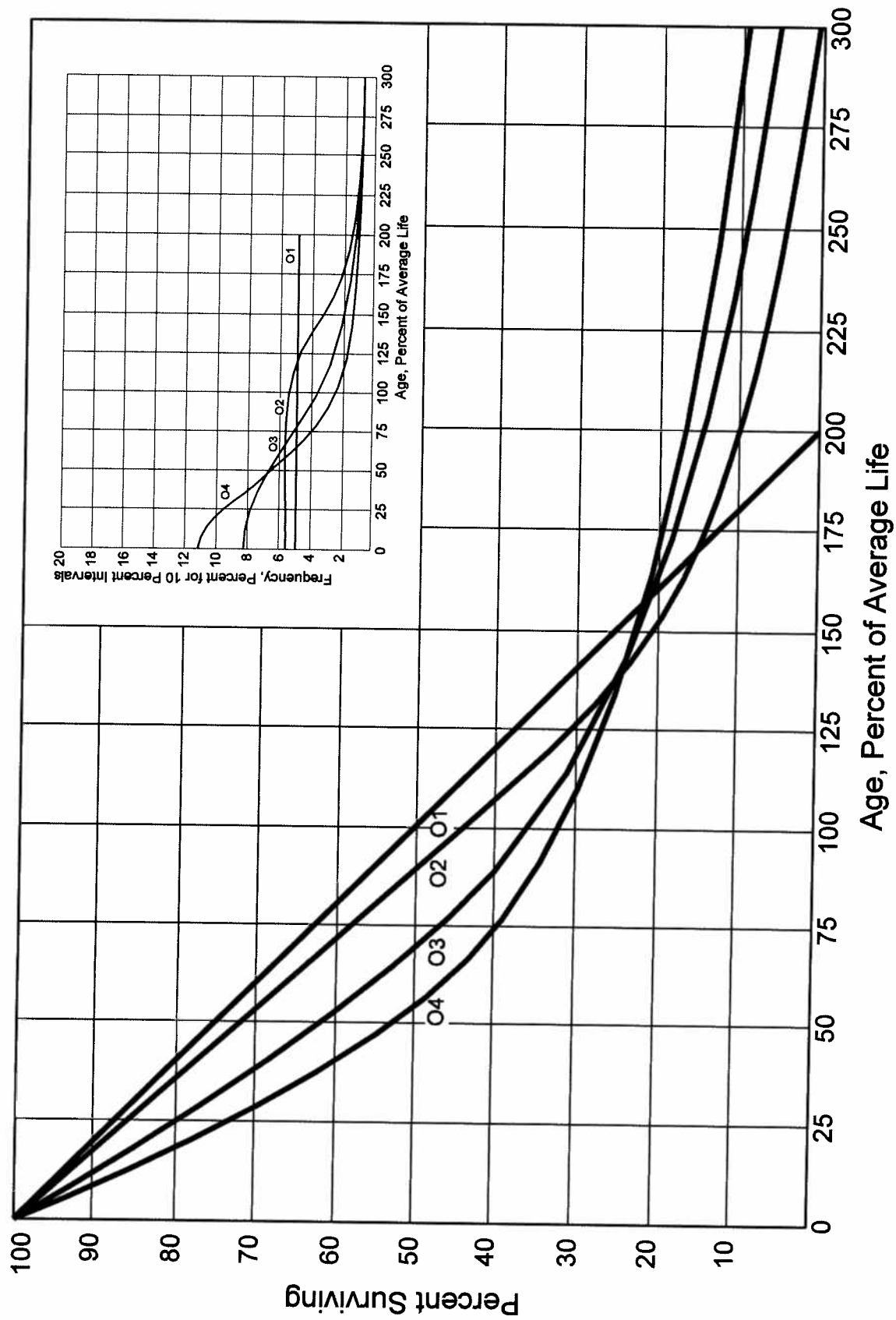


Figure 5. Origin Modal or "O" Iowa Type Survivor Curves

property groups for which aged accounting experience is available or for which aged accounting experience is developed by statistically aging unaged amounts and is the method used to develop the original stub survivor curves in this study. The method (also known as the annual rate method) is illustrated through the use of an example in the following text, and is also explained in several publications, including "Statistical Analyses of Industrial Property Retirements,"⁴ "Engineering Valuation and Depreciation,"⁵ and "Depreciation Systems."⁶

The average rate of retirement used in the calculation of the percent surviving for the survivor curve (life table) requires two sets of data: first, the property retired during a period of observation, identified by the property's age at retirement; and second, the property exposed to retirement at the beginnings of the age intervals during the same period. The period of observation is referred to as the experience band, and the band of years which represent the installation dates of the property exposed to retirement during the experience band is referred to as the placement band. An example of the calculations used in the development of a life table follows. The example includes schedules of annual aged property transactions, a schedule of plant exposed to retirement, a life table, and illustrations of smoothing the stub survivor curve.

Schedules of Annual Transactions in Plant Records. The property group used to illustrate the retirement rate method is observed for the experience band 1997-2006 during which there were placements during the years 1992-2006. In order to illustrate the summation of the aged data by age interval, the data were compiled in the manner

⁴Winfrey, Robley, Supra Note 1.

⁵Marston, Anson, Robley Winfrey, and Jean C. Hempstead, Supra Note 2.

⁶Wolf, Frank K. and W. Chester Fitch. Depreciation Systems. Iowa State University Press. 1994

presented in Tables 1 and 2 on pages II-12 and II-13. In Table 1, the year of installation (year placed) and the year of retirement are shown. The age interval during which a retirement occurred is determined from this information. In the example which follows, \$10,000 of the dollars invested in 1992 were retired in 1997. The \$10,000 retirement occurred during the age interval between 4½ and 5½ years on the basis that approximately one-half of the amount of property was installed prior to and subsequent to July 1 of each year. That is, on the average, property installed during a year is placed in service at the midpoint of the year for the purpose of the analysis. All retirements also are stated as occurring at the midpoint of a one-year age interval of time, except the first age interval which encompasses only one-half year.

The total retirements occurring in each age interval in a band are determined by summing the amounts for each transaction year-installation year combination for that age interval. For example, the total of \$143,000 retired for age interval 4½-5½ is the sum of the retirements entered on Table 1 immediately above the staircase line drawn on the table beginning with the 1997 retirements of 1992 installations and ending with the 2006 retirements of the 2001 installations. Thus, the total amount of 143 for age interval 4½-5½ equals the sum of:

$$10 + 12 + 13 + 11 + 13 + 13 + 15 + 17 + 19 + 20.$$

In Table 2, other transactions which affect the group are recorded in a similar manner. The entries illustrated include transfers and sales. The entries which are credits to the plant account are shown in parentheses. The items recorded on this schedule are

TABLE 1. RETIREMENTS FOR EACH YEAR 1997 -2006
SUMMARIZED BY AGE INTERVAL

Experience Band 1997-2006		Retirements, Thousands of Dollars										Placement Band 1992-2006	
Year Placed (1)		During Year										Total During Age Interval (12)	Age Interval (13)
		1997 (2)	1998 (3)	1999 (4)	2000 (5)	2001 (6)	2002 (7)	2003 (8)	2004 (9)	2005 (10)	2006 (11)		
1992	10		11	12	13	14	16	23	24	25	26	26	13½-14½
1993	11	12	12	13	15	16	18	20	21	22	19	44	12½-13½
1994	11	12	12	13	14	16	17	19	21	22	18	64	11½-12½
1995	8	9	10	10	11	11	13	14	15	16	17	83	10½-11½
1996	9	10	11	11	12	13	14	16	17	19	20	93	9½-10½
1997	4	9	10	10	11	12	13	14	15	16	20	105	8½-9½
1998		5	11	11	12	13	14	15	16	18	20	113	7½-8½
1999			6	6	12	13	15	16	17	19	19	124	6½-7½
2000					6	13	15	16	17	19	19	131	5½-6½
2001					7		14	16	17	19	20	143	4½-5½
2002							8	18	20	22	23	146	3½-4½
2003								9	20	22	25	150	2½-3½
2004									11	23	25	151	1½-2½
2005										11	24	153	½-1½
2006											13	80	0-½
Total	53	68	86	106	128	157	196	231	273	308	1,606		

TABLE 2. OTHER TRANSACTIONS FOR EACH YEAR 1997-2006
SUMMARIZED BY AGE INTERVAL

Experience Band 1997-2006

Placement Band 1992-2006

Year Placed (1)	Acquisitions, Transfers and Sales, Thousands of Dollars										Total During Age Interval (12)	Age Interval (13)
	During Year											
	1997 (2)	1998 (3)	1999 (4)	2000 (5)	2001 (6)	2002 (7)	2003 (8)	2004 (9)	2005 (10)	2006 (11)		
1992	-	-	-	-	-	-	60 ^a	-	-	-	-	13½-14½
1993	-	-	-	-	-	-	-	-	-	-	-	12½-13½
1994	-	-	-	-	-	-	-	-	-	-	-	11½-12½
1995	-	-	-	-	-	-	-	(5) ^b	-	-	60	10½-11½
1996	-	-	-	-	-	-	-	6 ^a	-	-	-	9½-10½
1997	-	-	-	-	-	-	-	-	-	-	(5)	8½-9½
1998	-	-	-	-	-	-	-	-	-	-	6	7½-8½
1999	-	-	-	-	-	-	-	-	-	-	-	6½-7½
2000	-	-	-	-	-	-	-	(12) ^b	-	-	-	5½-6½
2001	-	-	-	-	-	-	-	-	22 ^a	-	-	4½-5½
2002	-	-	-	-	-	-	-	(19) ^b	-	-	10	3½-4½
2003	-	-	-	-	-	-	-	-	-	-	-	2½-3½
2004	-	-	-	-	-	-	-	-	-	(102) ^c	(121)	1½-2½
2005	-	-	-	-	-	-	-	-	-	-	-	½-1½
2006	-	-	-	-	-	-	-	-	-	-	-	0-½
Total	=	=	=	=	=	=	60	(30)	22	(102)	(50)	

^a Transfer Affecting Exposures at Beginning of Year

^b Transfer Affecting Exposures at End of Year

^c Sale with Continued Use

Parentheses denote Credit amount.

not totaled with the retirements but are used in developing the exposures at the beginning of each age interval.

Schedule of Plant Exposed to Retirement. The development of the amount of plant exposed to retirement at the beginning of each age interval is illustrated in Table 3 on page II-15.

The surviving plant at the beginning of each year from 1997 through 2006 is recorded by year in the portion of the table headed "Annual Survivors at the Beginning of the Year." The last amount entered in each column is the amount of new plant added to the group during the year. The amounts entered in Table 3 for each successive year following the beginning balance or addition are obtained by adding or subtracting the net entries shown on Tables 1 and 2. For the purpose of determining the plant exposed to retirement, transfers-in are considered as being exposed to retirement in this group at the beginning of the year in which they occurred, and the sales and transfers-out are considered to be removed from the plant exposed to retirement at the beginning of the following year. Thus, the amounts of plant shown at the beginning of each year are the amounts of plant from each placement year considered to be exposed to retirement at the beginning of each successive transaction year. For example, the exposures for the installation year 2002 are calculated in the following manner:

Exposures at age 0	= amount of addition	= \$750,000
Exposures at age ½	= \$750,000 - \$ 8,000	= \$742,000
Exposures at age 1½	= \$742,000 - \$18,000	= \$724,000
Exposures at age 2½	= \$724,000 - \$20,000 - \$19,000	= \$685,000
Exposures at age 3½	= \$685,000 - \$22,000	= \$663,000

For the entire experience band 1997-2006, the total exposures at the beginning of an age interval are obtained by summing diagonally in a manner similar to the summing

TABLE 3. PLANT EXPOSED TO RETIREMENT
JANUARY 1 OF EACH YEAR 1997-2006
SUMMARIZED BY AGE INTERVAL

Experience Band 1997-2006		Exposures, Thousands of Dollars										Placement Band 1992-2006	
Year Placed (1)	Annual Survivors at the Beginning of the Year										Total at Beginning of Age Interval (12)	Age Interval (13)	
	1997 (2)	1998 (3)	1999 (4)	2000 (5)	2001 (6)	2002 (7)	2003 (8)	2004 (9)	2005 (10)	2006 (11)			
1992	255	245	234	222	209	195	239	216	192	167	167	13½-14½	
1993	279	268	256	243	228	212	194	174	153	131	323	12½-13½	
1994	307	296	284	271	257	241	224	205	184	162	531	11½-12½	
1995	338	330	321	311	300	289	276	262	242	226	823	10½-11½	
1996	376	367	357	346	334	321	307	297	280	261	1,097	9½-10½	
1997	420 ^a	416	407	397	386	374	361	347	332	316	1,503	8½-9½	
1998		460 ^a	455	444	432	419	405	390	374	356	1,952	7½-8½	
1999			510 ^a	504	492	479	464	448	431	412	2,463	6½-7½	
2000				580 ^a	574	561	546	530	501	482	3,057	5½-6½	
2001					660 ^a	653	639	623	628	609	3,789	4½-5½	
2002						750 ^a	742	724	685	663	4,332	3½-4½	
2003							850 ^a	841	821	799	4,955	2½-3½	
2004								960 ^a	949	926	5,719	1½-2½	
2005									1,080 ^a	1,069	6,579	½-1½	
2006										1,220 ^a	7,490	0-½	
Total	1,975	2,382	2,824	3,318	3,872	4,494	5,247	6,017	6,852	7,799	44,780		

^a Additions during the year.

of the retirements during an age interval (Table 1). For example, the figure of 3,789, shown as the total exposures at the beginning of age interval 4½-5½, is obtained by summing:

$$255 + 268 + 284 + 311 + 334 + 374 + 405 + 448 + 501 + 609.$$

Original Life Table. The original life table, illustrated in Table 4 on page II-17, is developed from the totals shown on the schedules of retirements and exposures, Tables 1 and 3, respectively. The exposures at the beginning of the age interval are obtained from the corresponding age interval of the exposure schedule, and the retirements during the age interval are obtained from the corresponding age interval of the retirement schedule. The retirement ratio is the result of dividing the retirements during the age interval by the exposures at the beginning of the age interval. The percent surviving at the beginning of each age interval is derived from survivor ratios, each of which equals one minus the retirement ratio. The percent surviving is developed by starting with 100% at age zero and successively multiplying the percent surviving at the beginning of each interval by the survivor ratio, i.e., one minus the retirement ratio for that age interval. The calculations necessary to determine the percent surviving at age 5½ are as follows:

Percent surviving at age 4½	=	88.15	
Exposures at age 4½	=	3,789,000	
Retirements from age 4½ to 5½	=	143,000	
Retirement Ratio	=	143,000 ÷ 3,789,000	= 0.0377
Survivor Ratio	=	1.000 - 0.0377	= 0.9623
Percent surviving at age 5½	=	(88.15) x (0.9623)	= 84.83

The totals of the exposures and retirements (columns 2 and 3) are shown for the purpose of checking with the respective totals in Tables 1 and 3. The ratio of the total retirements to the total exposures, other than for each age interval, is meaningless.

TABLE 4. ORIGINAL LIFE TABLE
CALCULATED BY THE RETIREMENT RATE METHOD

Experience Band 1997-2006

Placement Band 1992-2006

(Exposure and Retirement Amounts are in Thousands of Dollars)

<u>Age at Beginning of Interval</u> (1)	<u>Exposures at Beginning of Age Interval</u> (2)	<u>Retirements During Age Interval</u> (3)	<u>Retirement Ratio</u> (4)	<u>Survivor Ratio</u> (5)	<u>Percent Surviving at Beginning of Age Interval</u> (6)
0.0	7,490	80	0.0107	0.9893	100.00
0.5	6,579	153	0.0233	0.9767	98.93
1.5	5,719	151	0.0264	0.9736	96.62
2.5	4,955	150	0.0303	0.9697	94.07
3.5	4,332	146	0.0337	0.9663	91.22
4.5	3,789	143	0.0377	0.9623	88.15
5.5	3,057	131	0.0429	0.9571	84.83
6.5	2,463	124	0.0503	0.9497	81.19
7.5	1,952	113	0.0579	0.9421	77.11
8.5	1,503	105	0.0699	0.9301	72.65
9.5	1,097	93	0.0848	0.9152	67.57
10.5	823	83	0.1009	0.8991	61.84
11.5	531	64	0.1205	0.8795	55.60
12.5	323	44	0.1362	0.8638	48.90
13.5	<u>167</u>	<u>26</u>	0.1557	0.8443	42.24
					35.66
Total	<u>44,780</u>	<u>1,606</u>			

Column 2 from Table 3, Column 12, Plant Exposed to Retirement.

Column 3 from Table 1, Column 12, Retirements for Each Year.

Column 4 = Column 3 divided by Column 2.

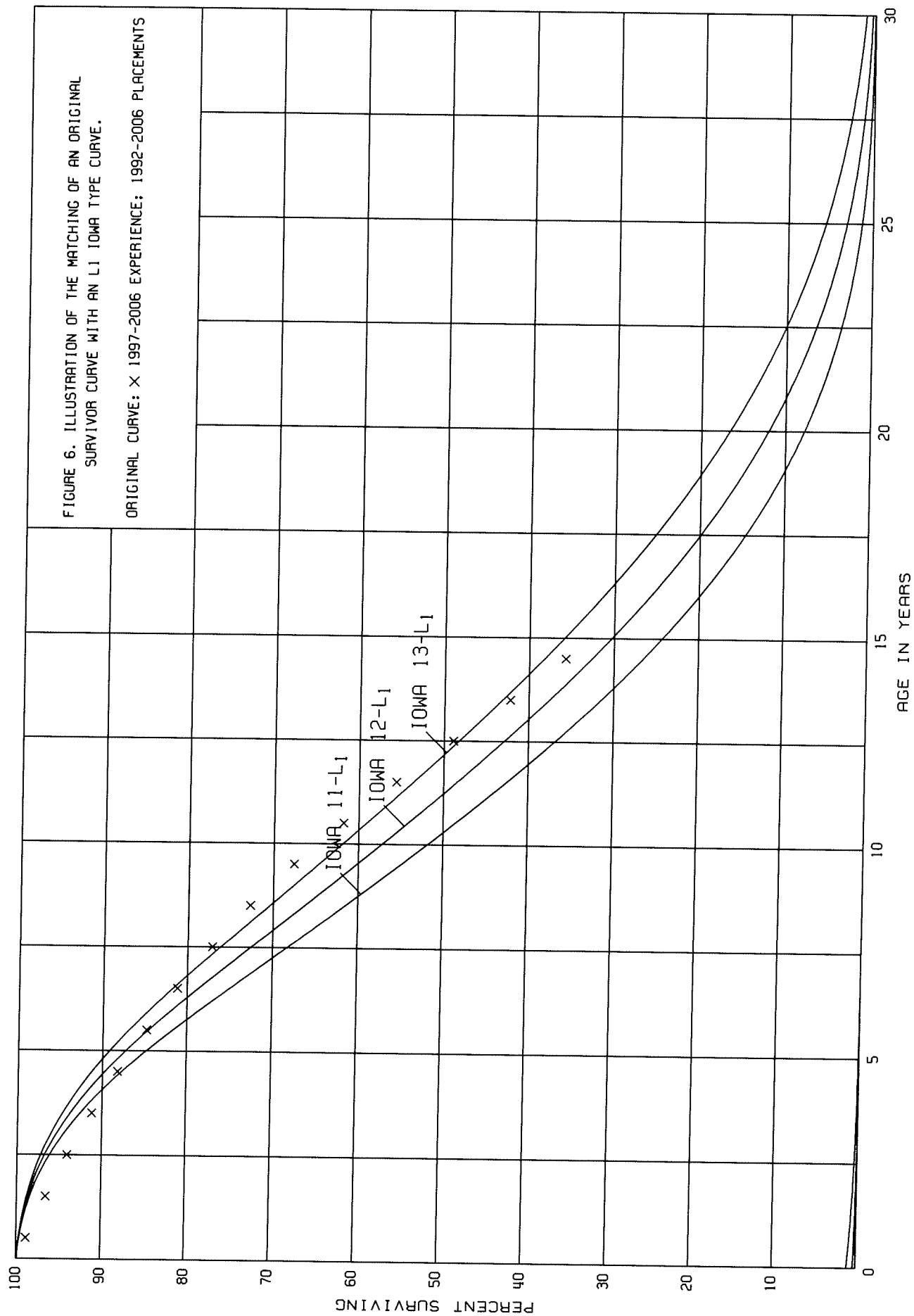
Column 5 = 1.0000 minus Column 4.

Column 6 = Column 5 multiplied by Column 6 as of the Preceding Age Interval.

The original survivor curve is plotted from the original life table (column 6, Table 4). When the curve terminates at a percent surviving greater than zero, it is called a stub survivor curve. Survivor curves developed from retirement rate studies generally are stub curves.

Smoothing the Original Survivor Curve. The smoothing of the original survivor curve eliminates any irregularities and serves as the basis for the preliminary extrapolation to zero percent surviving of the original stub curve. Even if the original survivor curve is complete from 100% to zero percent, it is desirable to eliminate any irregularities as there is still an extrapolation for the vintages which have not yet lived to the age at which the curve reaches zero percent. In this study, the smoothing of the original curve with established type curves was used to eliminate irregularities in the original curve.

The Iowa type curves are used in this study to smooth those original stub curves which are expressed as percents surviving at ages in years. Each original survivor curve was compared to the Iowa curves using visual and mathematical matching in order to determine the better fitting smooth curves. In Figures 6, 7, and 8 the original curve developed in Table 4 is compared with the L, S, and R Iowa type curves which most nearly fit the original survivor curve. In Figure 6 the L1 curve with an average life between 12 and 13 years appears to be the best fit. In Figure 7 the S0 type curve with a 12-year average life appears to be the best fit and appears to be better than the L1 fitting. In Figure 8 the R1 type curve with a 12-year average life appears to be the best fit and appears to be better than either the L1 or the S0. In Figure 9 the three fittings, 12-L1, 12-S0, and 12-R1 are drawn for comparison purposes. It is probable that the 12-R1 Iowa curve would be selected as the most representative of the plotted survivor characteristics of the group, assuming no contrary relevant factors external to the analysis of historical data.



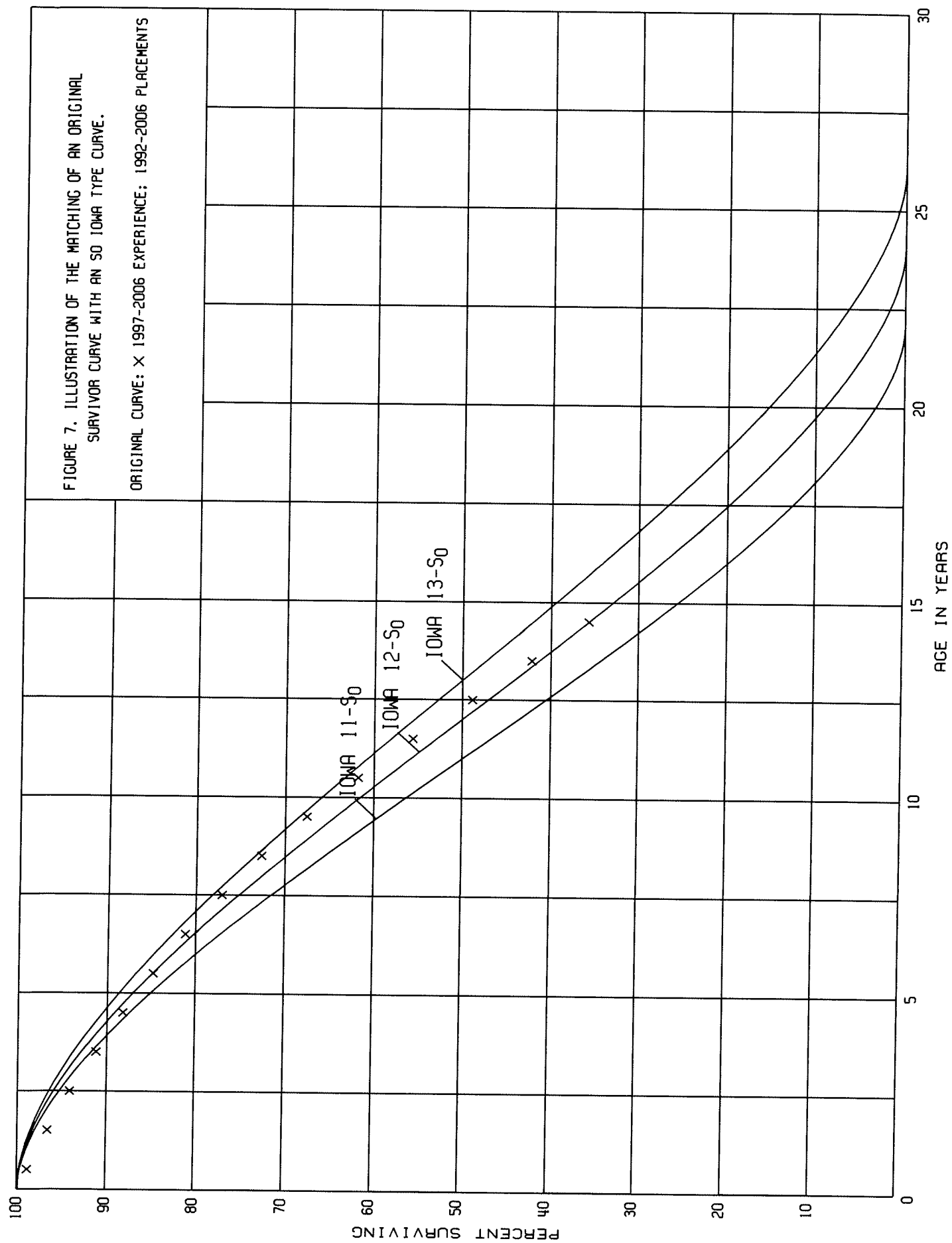
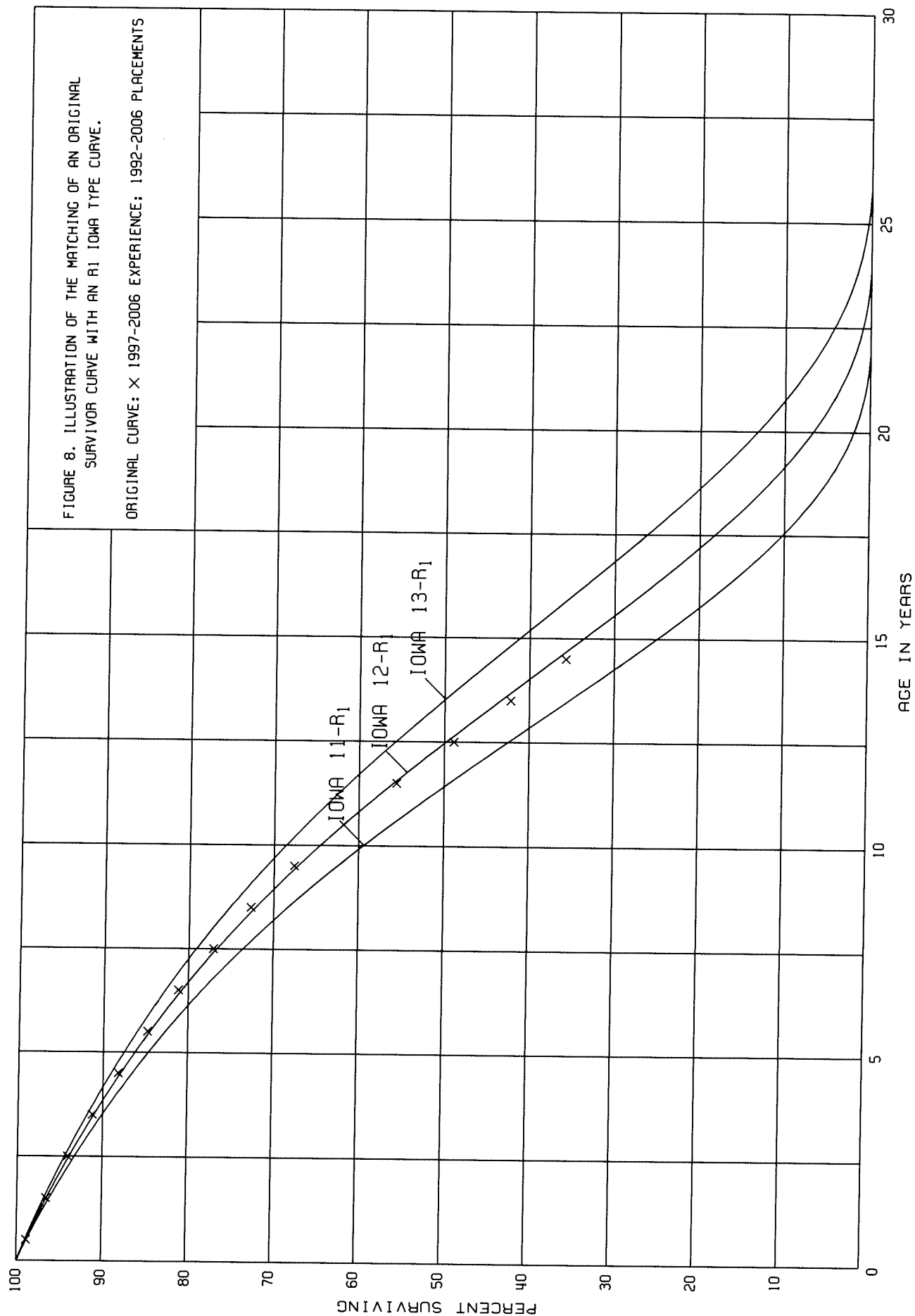
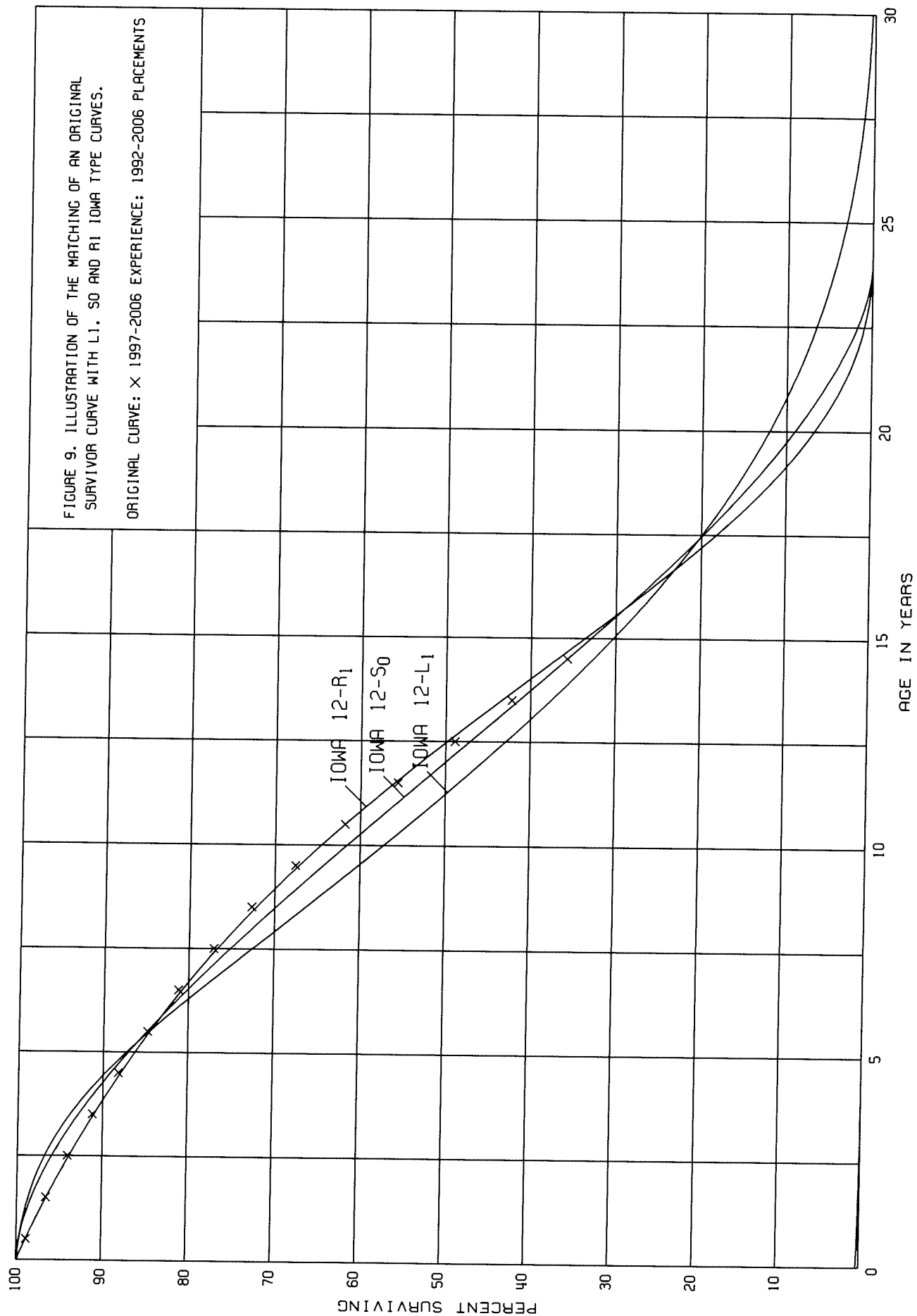


FIGURE 7. ILLUSTRATION OF THE MATCHING OF AN ORIGINAL SURVIVOR CURVE WITH AN SD IOWA TYPE CURVE.

ORIGINAL CURVE: X 1997-2006 EXPERIENCE; 1992-2006 PLACEMENTS





Service Life Considerations

The service life estimates were based on judgment which considered a number of factors. The primary factors were the statistical analyses of data; current company policies and outlook as determined during field reviews of the property and other conversations with management; and the survivor curve estimates from previous studies of this company and other water companies.

For most of the mass plant accounts and subaccounts, the statistical analyses resulted in good to excellent indications of significant survivor patterns. These accounts represent 70 percent of depreciable plant. Generally, the information external to the statistics led to no significant departure from the indicated survivor curves for the accounts listed below.

<u>Account No.</u>	<u>Account Description</u>
304.2	Structures & Improvements - Pumping Equipment
304.6	Structures & Improvements - Office Buildings
330	Distribution Reservoirs and Standpipes
331	Transmission & Distribution Mains
333	Services
334.1	Meters
334.2	Meter Installations
335	Hydrants
341.1	Transportation Equipment - Light Duty Trucks
341.2	Transportation Equipment - Heavy Duty Trucks
341.3	Transportation Equipment - Autos
345	Power Operated Equipment

Accounts 331, Transmission & Distribution Mains, is used to illustrate the manner in which the study was conducted for the accounts in the preceding list. Aged plant accounting data have been compiled for the years through November 2007. These data have been coded according to account or property group, type of transaction, year in which the transaction took place, and year in which the utility plant was placed in service. The

retirements, other plant transactions and plant additions were analyzed by the retirement rate method.

The survivor curve estimate for this account is the 95-R2 and is based on the statistical indication set forth by the experience bands 1864-2007, 1973-2007 and 1988-2007. The 95-R2 is a good fit of the significant portion of the original survivor curve as set forth on page III-56, is consistent with management outlook for a continuation of the historical experience and is within the typical service life range of 75 to 100 years for water mains.

Amortization accounting is proposed for certain General Plant accounts that represent numerous units of property, but a small portion of the depreciable plant in service. These accounts represent approximately 5 percent of total utility plant. A discussion of the basis for the amortization periods is presented in the section "Calculation of Annual and Accrued Amortization".

Generally, the estimates for the remaining accounts which comprise 25 percent of the total depreciable plant in service were based on judgments which considered the nature of the plant and equipment, the previous estimate for this company and a general knowledge of service lives for similar equipment in other water companies.

Salvage Analysis

The estimates of net salvage were based in part on historical data compiled for the years 1974 through 2007. Cost of removal and salvage were expressed as percents of the original cost of plant retired, both on annual and three-year moving average bases. The most recent five-year average also was calculated for consideration. The net salvage estimates are expressed as a percent of the original cost of plant retired.

Net Salvage Considerations

The estimates of salvage were based primarily on judgment which considered a number of factors. The primary factors were the analyses of historical data; a knowledge of management's plans and operating policies; and net salvage estimates from previous studies of this company and other water companies. The accounts for which the historical analyses were representative of expectations for future net salvage levels represent 93 percent of the depreciable plant balance and are presented below:

<u>Account No.</u>	<u>Account Description</u>
304.2, 304.3, 304.4, 304.6, 304.7 & 304.8	Structures & Improvements
306	Lake, River and Other Intakes
311.2, 311.3 & 311.5	Pumping Equipment
320.1	Water Treatment Equipment
330, 330.1 & 330.4	Distribution Reservoirs and Standpipes
331	Transmission & Distribution Mains
333	Services
334.1 & 334.2	Meters and Meter Installations
335	Hydrants
341.1, 341.2, 341.3 & 341.4	Transportation Equipment
345	Power Operated Equipment

Account 335, Hydrants, is used to illustrate the manner in which the study was conducted for the accounts in the preceding list. Depreciation reserve accounting data were compiled for the years 1974 through 2007. These data include the retirements, cost of removal and gross salvage.

The net salvage estimate for this account is negative 30 percent and is based on the trends in cost of removal and salvage percents as shown in the tabulation on pages III-137 and III-138. Cost of removal as a percent of the original cost retired has fluctuated during the experience and most recently decreased as a percentage of plant retired. The overall and most recent five-year bands averaged 42 and 66 percent removal cost, respectively. Gross salvage has been sporadic, averaging 17 percent for the 33-year

period, but trending to 0 percent in recent years. The negative 30 percent net salvage estimate is based on the overall cost of removal and gross salvage percent and the recent trend to much higher net salvage percents.

Amortization accounting is proposed for certain General Plant accounts which represent 5 percent of depreciable property. Future gross salvage and removal cost for these accounts will be recorded against the oldest vintage being retired. Inasmuch as there will be minimal to no depreciation reserve entries related to salvage, the estimate of net salvage for accounts subject to amortization is zero percent.

Generally, the net salvage estimates for the remaining accounts, which comprise 2 percent of the total depreciable plant in service, were based on judgments which considered the nature of the plant and equipment, reviews of available historical data, and a general knowledge of net salvage percents for similar equipment in other water companies.

CALCULATION OF ANNUAL AND ACCRUED DEPRECIATION

After the survivor curve and salvage are estimated, the annual depreciation accrual rate can be calculated. In the average service life procedure, the annual accrual rate is computed by the following equation:

$$\text{Annual Accrual Rate, Percent} = \frac{(100\% - \text{Net Salvage, Percent})}{\text{Average Service Life}}$$

The calculated accrued depreciation for each depreciable property group represents that portion of the depreciable cost of the group which will not be allocated to expense through future depreciation accruals, if current forecasts of life characteristics are used as a basis for straight line depreciation accounting.

The accrued depreciation calculation consists of applying an appropriate ratio to the surviving original cost of each vintage of each account, based upon the attained age and the estimated survivor curve. The accrued depreciation ratios are calculated as follows:

$$\text{Ratio} = \left(1 - \frac{\text{Average Remaining Life Expectancy}}{\text{Average Service Life}} \right) (1 - \text{Net Salvage, Percent}).$$

The application of these procedures is described for a single unit of property and a group of property units. Salvage is omitted from the description for ease of application.

Single Unit of Property

The calculation of straight line depreciation for a single unit of property is straightforward. For example, if a \$1,000 unit of property attains an age of four years and has a life expectancy of six years, the annual accrual over the total life is:

$$\frac{\$1,000}{(4 + 6)} = \$100 \text{ per year.}$$

The accrued depreciation is:

$$\$1,000 \left(1 - \frac{6}{10} \right) = \$400.$$

Group Depreciation Procedures

When more than a single item of property is under consideration, a group procedure for depreciation is appropriate because normally all of the items within a group do not have identical service lives, but have lives that are dispersed over a range of time. There are two primary group procedures, namely, average service life and equal life group.

Remaining Life Annual Accruals. For the purpose of calculating remaining life accruals as of November 30, 2007, the depreciation reserve for each plant account is allocated among vintages in proportion to the calculated accrued depreciation for the account. Explanations of remaining life accruals and calculated accrued depreciation follow. The detailed calculations as of November 30, 2007, are set forth in the Results of Study section of the report.

Average Service Life Procedure. In the average service life procedure, the remaining life annual accrual for each vintage is determined by dividing future book accruals (original cost less book reserve) by the average remaining life of the vintage. The average remaining life is a directly weighted average derived from the estimated future survivor curve in accordance with the average service life procedure.

The calculated accrued depreciation for each depreciable property group represents that portion of the depreciable cost of the group which would not be allocated to expense through future depreciation accruals, if current forecasts of life characteristics are used as the basis for such accruals. The accrued depreciation calculation consists of applying an appropriate ratio to the surviving original cost of each vintage of each account, based upon the attained age and service life. The straight line accrued depreciation ratios are calculated as follows for the average service life procedure:

$$Ratio = 1 - \frac{Average\ Remaining\ Life}{Average\ Service\ Life}.$$

CALCULATION OF ANNUAL AND ACCRUED AMORTIZATION

Amortization is the gradual extinguishment of an amount in an account by distributing such amount over a fixed period, over the life of the asset or liability to which

it applies, or over the period during which it is anticipated the benefit will be realized. Normally, the distribution of the amount is in equal amounts to each year of the amortization period.

The calculation of annual and accrued amortization requires the selection of an amortization period. The amortization periods used in this report were based on judgment which incorporated a consideration of the period during which the assets will render most of their service, the amortization period and service lives used by other utilities, and the service life estimates previously used for the asset under depreciation accounting.

Amortization accounting is proposed for certain General Plant accounts that represent numerous units of property, but a very small portion of depreciable utility plant in service. The accounts and their amortization periods are as follows:

	<u>Account</u>	<u>Amortization Period, Years</u>
	Office Furniture and Equipment	
340.1	Furniture	20
340.2	Computer & Peripheral Equipment	7
340.3	Computer Software	5
340.4	Meter Shop (UPS)	10
340.5	Other Equipment	15
342	Stores Equipment	25
343	Tools, Shop & Garage Equipment	20
344	Laboratory Equipment	15
346.1	Communication Equip. - Non-Telephone	15
346.2	Communication Equipment - Telephone	10
347	Miscellaneous Equipment	20
348	Other Tangible Property	20

The calculated accrued amortization is equal to the original cost multiplied by the ratio of the vintage's age to its amortization period. The annual amortization amount is determined by dividing the original cost by the period of amortization for the account.

PART III. RESULTS OF STUDY

QUALIFICATION OF RESULTS

The calculated annual depreciation accrual rates are the principal results of the study. Continued surveillance and periodic revisions are normally required to maintain continued use of appropriate annual depreciation accrual rates. An assumption that accrual rates can remain unchanged over a long period of time implies a disregard for the inherent variability in service lives and salvage and for the change of the composition of property in service. The annual accrual rates were calculated in accordance with the straight line remaining life method of depreciation using the average service life procedure based on estimates which reflect considerations of current historical evidence and expected future conditions.

The annual depreciation accrual rates are applicable specifically to the water plant in service as of November 30, 2007. For most plant accounts, the application of such rates to future balances that reflect additions subsequent to November 30, 2007, is reasonable for a period of three to five years.

DESCRIPTION OF STATISTICAL SUPPORT

The service life and salvage estimates were based on judgment which incorporated statistical analyses of retirement data, discussions with management and consideration of estimates made for other water utility companies. The results of the statistical analyses of service life are presented in the section titled "Service Life Statistics".

The estimated survivor curves for each account are presented in graphical form. The charts depict the estimated smooth survivor curve and original survivor curve(s), when

applicable, related to each specific group. For groups where the original survivor curve was plotted, the calculation of the original life table is also presented.

The analyses of salvage data are presented in the section titled, "Net Salvage Statistics". The tabulations present annual cost of removal and salvage data, three-year moving averages and the most recent five-year average. Data are shown in dollars and as percentages of original costs retired.

DESCRIPTION OF DEPRECIATION TABULATIONS

A summary of the results of the study, as applied to the original cost of utility plant at November 30, 2007, is presented on pages III-4 and III-5 of this report. The schedule sets forth the original cost, the book depreciation reserve, future accruals, the calculated annual depreciation rate and amount, and the composite remaining life related to utility plant.

The tables of the calculated annual depreciation accruals are presented in account sequence in the section titled "Depreciation Calculations." The tables indicate the estimated survivor curve and salvage percent for the account and set forth for each installation year the original cost, the calculated accrued depreciation, the allocated book reserve, future accruals, the remaining life and the calculated annual accrual amount.

TENNESSEE AMERICAN WATER COMPANY

ESTIMATED SURVIVOR CURVE, NET SALVAGE, ORIGINAL COST, BOOK DEPRECIATION RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO UTILITY PLANT AT NOVEMBER 30, 2007

ACCOUNT	DEPRECIABLE GROUP (1)	SURVIVOR CURVE (2)	NET SALVAGE (3)	ORIGINAL COST AT NOVEMBER 30, 2007 (4)	BOOK DEPRECIATION RESERVE (5)	FUTURE ACCRUALS (6)	CALCULATED ANNUAL ACCRUAL AMOUNT (7)	ANNUAL ACCRUAL RATE (8)	COMPOSITE REMAINING LIFE (9)
STRUCTURES & IMPROVEMENTS									
304.20	PUMPING EQUIPMENT	50-R2	(15)	3,810,529.24	1,040,269	3,341,838	75,583	1.98	44.2
304.30	WATER TREATMENT	60-R1	(15)	2,013,182.07	1,149,211	1,165,950	82,732	4.11	14.1
304.40	TRANSMISSION & DISTRIBUTION	35-R2.5	(15)	524,791.43	387,127	216,383	11,165	2.13	19.4
304.60	OFFICE BUILDINGS	31-R1.5	(15)	149,174.18	129,221	42,330	1,679	1.13	25.2
304.70	STORES, SHOP, & GARAGE	50-S1.5	(15)	312,641.58	272,744	86,794	2,280	0.73	38.1
304.80	MISCELLANEOUS	60-R4	(15)	657,572.65	575,755	180,455	3,193	0.49	56.5
304.99	PAINTING	10-SQ	0	1,694,810.07	1,310,609	384,202	204,437	12.06	1.9
	TOTAL ACCOUNT 304			9,162,701.22	4,864,936	5,417,952	381,069	4.16	14.2
306.00	LAKE, RIVER AND OTHER INTAKES	70-R1	(5)	489,122.97	240,045	273,535	4,073	0.83	67.2
309.00	SUPPLY MAINS	50-R2.5	0	602,663.86	56,036	546,627	11,291	1.87	48.4
310.00	OTHER POWER GENERATION EQUIPMENT	22-R4	(5)	227,421.97	28,388	210,405	28,035	12.33	7.5
PUMPING EQUIPMENT									
311.20	ELECTRIC PUMPING EQUIPMENT	45-R2.5	(10)	5,662,341.08	2,358,001	3,870,576	138,889	2.45	27.9
311.30	DIESEL PUMPING EQUIPMENT	45-R2.5	(10)	119,296.31	50,951	80,275	2,978	2.50	27.0
311.50	MISCELLANEOUS PUMPING EQUIPMENT	45-R2.5	(10)	288,063.36	79,953	214,917	4,915	1.83	43.7
	TOTAL ACCOUNT 311			6,049,700.75	2,488,905	4,165,768	146,782	2.43	28.4
320.10	WATER TREATMENT EQUIPMENT	40-R1	(10)	12,378,401.76	9,415,405	4,200,840	134,770	1.09	31.2
DISTRIBUTION RESERVOIRS & STANDPIPES									
330.00	DISTRIBUTION RESERVOIRS & STANDPIPES	60-R3	(20)	6,607,165.53	1,777,835	6,150,761	137,643	2.08	44.7
330.10	DISTRIBUTION RESERVOIRS & STANDPIPES-MISC.	35-R3	(20)	1,780,709.33	503,593	1,633,259	48,820	2.74	33.5
330.40	DISTRIBUTION RESERVOIRS & STANDPIPES-CLEARWELL	60-R3	(20)	680,783.96	193,199	623,742	11,204	1.65	55.7
330.99	DISTRIBUTION RESERVOIRS & STANDPIPES-PAINTING	10-SQ	0	1,710,126.13	412,411	1,297,716	189,531	11.08	6.8
	TOTAL ACCOUNT 330			10,778,784.95	2,887,038	9,705,478	387,198	3.59	25.1
331.00	TRANSMISSION AND DISTRIBUTION MAINS	95-R2	(35)	100,664,086.42	19,382,859	116,513,654	1,506,069	1.50	77.4
333.00	SERVICES	70-R3	(30)	18,858,847.78	7,299,506	17,217,001	309,647	1.64	55.6
334.10	METERS	18-L1.5	4	4,852,541.59	549,282	3,917,157	321,394	6.91	12.2
334.20	METER INSTALLATIONS	45-R3	(20)	10,950,256.85	988,630	12,151,678	353,367	3.23	34.4
335.00	HYDRANTS	55-R1.5	(30)	7,420,614.90	1,723,514	7,923,283	195,256	2.63	40.6
339.20	OTHER PLANT & EQUIPMENT	25-R3	0	8,523.30	15,500	(6,977)	0	-	-
339.60	OTHER PLANT & EQUIPMENT-COMPREHENSIVE STUDY	10-SQ	0	405,131.83	458,574	(53,442)	0	-	-
OFFICE FURNITURE & EQUIPMENT									
340.10	FURNITURE	20-SQ	0	626,817.51	490,462	136,355	8,744	1.39	15.6
340.20	COMPUTER & PERIPHERAL EQUIPMENT	7-SQ	0	1,788,278.42	1,559,875	228,405	39,074	2.19	5.8
340.30	COMPUTER SOFTWARE	5-SQ	0	4,167,653.31	3,963,260	204,395	76,310	1.83	2.7
340.40	METER SHOP (UPS)	10-SQ	0	15,283.88	8,808	6,476	755	4.94	8.6
340.50	OTHER EQUIPMENT	15-SQ	0	137,209.77	114,912	22,297	1,905	1.39	11.7
	TOTAL ACCOUNT 340			6,735,242.89	6,137,317	597,928	126,788	1.88	4.7

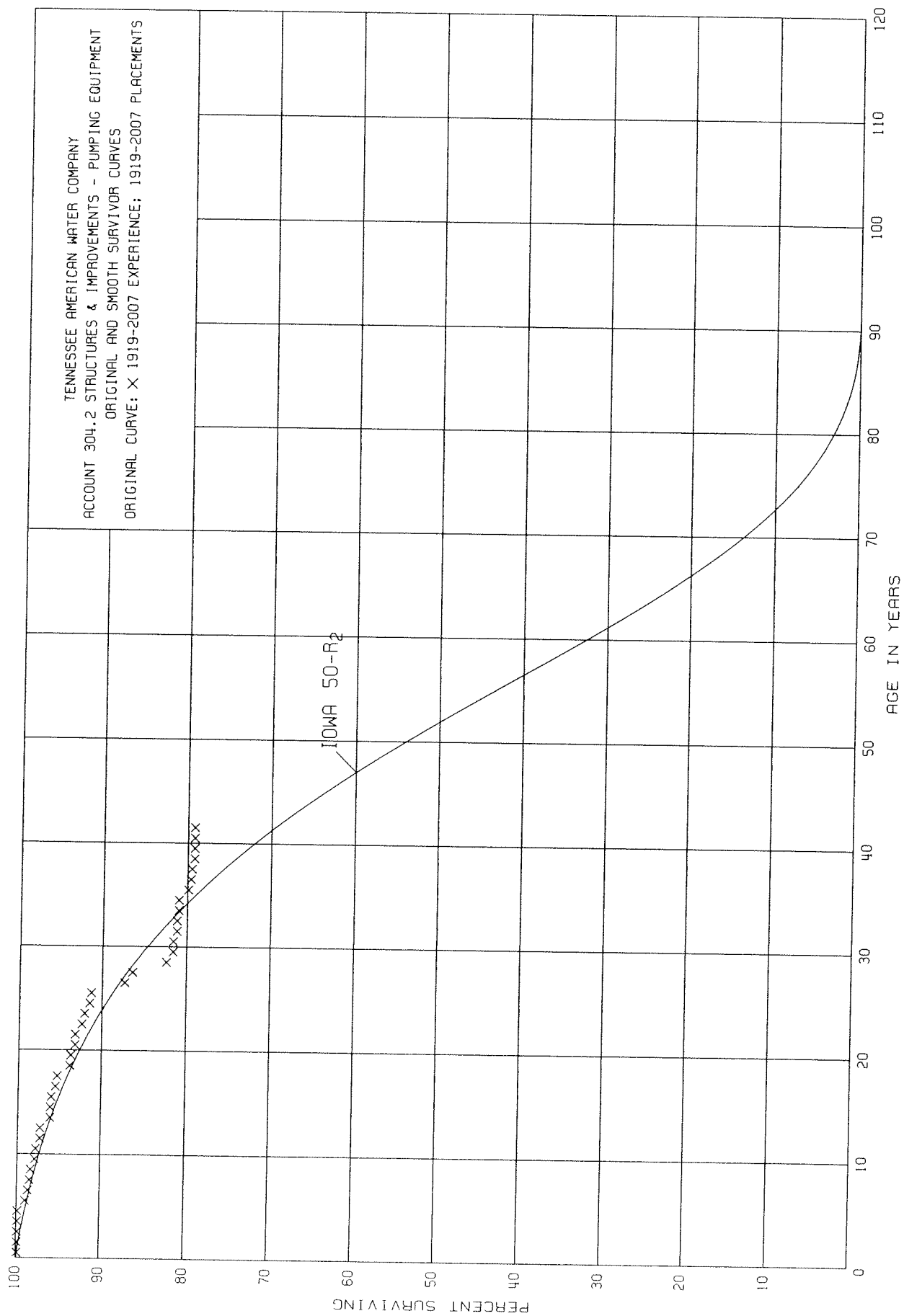
TENNESSEE AMERICAN WATER COMPANY

ESTIMATED SURVIVOR CURVE, NET SALVAGE, ORIGINAL COST, BOOK DEPRECIATION RESERVE AND CALCULATED
ANNUAL DEPRECIATION ACCRUALS RELATED TO UTILITY PLANT AT NOVEMBER 30, 2007

ACCOUNT	DEPRECIABLE GROUP (1)	SURVIVOR CURVE (2)	NET SALVAGE (3)	ORIGINAL COST AT NOVEMBER 30, 2007 (4)	BOOK DEPRECIATION RESERVE (5)	FUTURE ACCRUALS (6)	CALCULATED ANNUAL ACCRUAL AMOUNT (7)	ANNUAL ACCRUAL RATE (8)	COMPOSITE REMAINING LIFE (9)
	TRANSPORTATION EQUIPMENT								
341.10	LIGHT DUTY TRUCKS	9-L1.5	15	1,074,347.12	202,611	710,586	171,844	16.00	4.1
341.20	HEAVY DUTY TRUCKS	8-L1	15	733,951.40	147,963	475,898	121,993	16.62	3.9
341.30	AUTOS	8-S2.5	15	254,776.59	65,390	151,171	28,989	11.38	5.2
341.40	OTHER	12-L2.5	15	237,241.98	34,529	167,127	17,184	7.24	9.7
	TOTAL ACCOUNT 341			2,300,317.09	450,493	1,504,782	340,010	14.78	4.4
342.00	STORES EQUIPMENT	25-SQ	0	43,392.21	47,205	(3,813)	0	- **	-
343.00	TOOLS, SHOP & GARAGE EQUIPMENT	20-SQ	0	1,182,044.81	362,623	819,420	81,472	6.89	10.1
344.00	LABORATORY EQUIPMENT	15-SQ	0	370,119.75	334,056	36,064	3,733	1.01	9.7
345.00	POWER OPERATED EQUIPMENT	15-O1	5	332,767.47	324,535	(8,407)	0	- **	-
346.10	COMMUNICATION EQUIPMENT - NON-TELEPHONE	15-SQ	0	354,831.19	259,942	94,888	14,930	4.21	6.4
346.20	COMMUNICATION EQUIPMENT - TELEPHONE	10-SQ	0	155,730.84	126,849	28,881	5,469	3.51	5.3
347.00	MISCELLANEOUS EQUIPMENT	20-SQ	0	1,075,581.01	183,331	892,248	68,050	6.33	13.1
348.00	OTHER TANGIBLE PROPERTY	20-SQ	0	4,918.13	260	4,658	251	5.10	18.6
	TOTAL DEPRECIABLE PLANT			195,203,745.54	58,625,229	186,149,608	4,419,654	2.26	42.1
	NONDEPRECIABLE PLANT								
303.30	LAND & LAND RIGHTS - WATER TREATMENT			73,444.37					
303.40	LAND & LAND RIGHTS - TRANSMISSION & DISTRIBUTION			18,009.00					
303.50	LAND & LAND RIGHTS - DISTRIBUTION RESERVOIRS & STANDPIPES			315,867.14					
303.60	LAND & LAND RIGHTS - GENERAL			25,021.90					
339.50	OTHER PLANT & EQUIPMENT			0.00	1,213				
	TOTAL NONDEPRECIABLE PLANT			432,342.41	1,213				
	TOTAL PLANT			195,636,087.95	58,626,442	186,149,608	4,419,654		

* Life Span Procedure was used. Curve Shown is Interim Survivor Curve.
** Accrual Rate to be used for New Additions:

Account	Rate
339.20	4.68%
339.60	10.00%
342.00	4.00%
345.00	7.03%



TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 304.2 STRUCTURES & IMPROVEMENTS - PUMPING EQUIPMENT

ORIGINAL LIFE TABLE

PLACEMENT BAND 1919-2007

EXPERIENCE BAND 1919-2007

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	3,441,420		0.0000	1.0000	100.00
0.5	3,440,068	715	0.0002	0.9998	100.00
1.5	3,895,669	262	0.0001	0.9999	99.98
2.5	2,063,401	1,321	0.0006	0.9994	99.97
3.5	2,062,080	963	0.0005	0.9995	99.91
4.5	2,061,116	17,299	0.0084	0.9916	99.86
5.5	2,043,817	6,864	0.0034	0.9966	99.02
6.5	2,022,120	3,542	0.0018	0.9982	98.68
7.5	1,884,393	1,788	0.0009	0.9991	98.50
8.5	1,042,615	5,497	0.0053	0.9947	98.41
9.5	1,037,118	840	0.0008	0.9992	97.89
10.5	1,036,278	4,964	0.0048	0.9952	97.81
11.5	1,019,314	191	0.0002	0.9998	97.34
12.5	1,019,123	13,027	0.0128	0.9872	97.32
13.5	1,006,096	20	0.0000	1.0000	96.07
14.5	1,006,076	448	0.0004	0.9996	96.07
15.5	1,005,628	5,099	0.0051	0.9949	96.03
16.5	938,146	2,372	0.0025	0.9975	95.54
17.5	723,363	11,232	0.0155	0.9845	95.30
18.5	707,078	954	0.0013	0.9987	93.82
19.5	585,791	3,152	0.0054	0.9946	93.70
20.5	581,555	87	0.0001	0.9999	93.19
21.5	580,468	5,118	0.0088	0.9912	93.18
22.5	539,230	1,821	0.0034	0.9966	92.36
23.5	534,579	3,278	0.0061	0.9939	92.05
24.5	531,301	1,197	0.0023	0.9977	91.49
25.5	528,059	23,065	0.0437	0.9563	91.28
26.5	465,749	4,590	0.0099	0.9901	87.29
27.5	417,265	19,335	0.0463	0.9537	86.43
28.5	394,355	3,794	0.0096	0.9904	82.43
29.5	390,561	224	0.0006	0.9994	81.64
30.5	379,018	1,987	0.0052	0.9948	81.59
31.5	377,031	43	0.0001	0.9999	81.17
32.5	368,774	732	0.0020	0.9980	81.16
33.5	311,955	68	0.0002	0.9998	81.00
34.5	307,908	4,314	0.0140	0.9860	80.98
35.5	301,343	1,097	0.0036	0.9964	79.85
36.5	300,246	100	0.0003	0.9997	79.56
37.5	299,758	1,320	0.0044	0.9956	79.54
38.5	296,898		0.0000	1.0000	79.19

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 304.2 STRUCTURES & IMPROVEMENTS - PUMPING EQUIPMENT

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1919-2007

EXPERIENCE BAND 1919-2007

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5	296,898		0.0000	1.0000	79.19
40.5	277,559		0.0000	1.0000	79.19
41.5	271,738	219	0.0008	0.9992	79.19
42.5	257,519		0.0000	1.0000	79.13
43.5	257,519		0.0000	1.0000	79.13
44.5	252,553		0.0000	1.0000	79.13
45.5	252,553		0.0000	1.0000	79.13
46.5	252,553	341	0.0014	0.9986	79.13
47.5	248,280	2,840	0.0114	0.9886	79.02
48.5	244,359		0.0000	1.0000	78.12
49.5	243,950		0.0000	1.0000	78.12
50.5	225,780		0.0000	1.0000	78.12
51.5	221,194		0.0000	1.0000	78.12
52.5	220,769		0.0000	1.0000	78.12
53.5	217,296		0.0000	1.0000	78.12
54.5	205,654		0.0000	1.0000	78.12
55.5	195,716		0.0000	1.0000	78.12
56.5	164,766		0.0000	1.0000	78.12
57.5	164,147		0.0000	1.0000	78.12
58.5	162,918		0.0000	1.0000	78.12
59.5	156,918		0.0000	1.0000	78.12
60.5	153,418	2,500	0.0163	0.9837	78.12
61.5	121,972		0.0000	1.0000	76.85
62.5	121,924		0.0000	1.0000	76.85
63.5	121,924		0.0000	1.0000	76.85
64.5	121,488	2,196	0.0181	0.9819	76.85
65.5	118,431		0.0000	1.0000	75.46
66.5	118,283		0.0000	1.0000	75.46
67.5	117,888		0.0000	1.0000	75.46
68.5	115,926		0.0000	1.0000	75.46
69.5	115,904		0.0000	1.0000	75.46
70.5	115,901		0.0000	1.0000	75.46
71.5	115,771		0.0000	1.0000	75.46
72.5	115,551		0.0000	1.0000	75.46
73.5	115,496		0.0000	1.0000	75.46
74.5	115,496		0.0000	1.0000	75.46
75.5	115,496	31,279	0.2708	0.7292	75.46
76.5	73,266		0.0000	1.0000	55.03
77.5	70,710		0.0000	1.0000	55.03
78.5	70,660		0.0000	1.0000	55.03

TENNESSEE AMERICAN WATER COMPANY

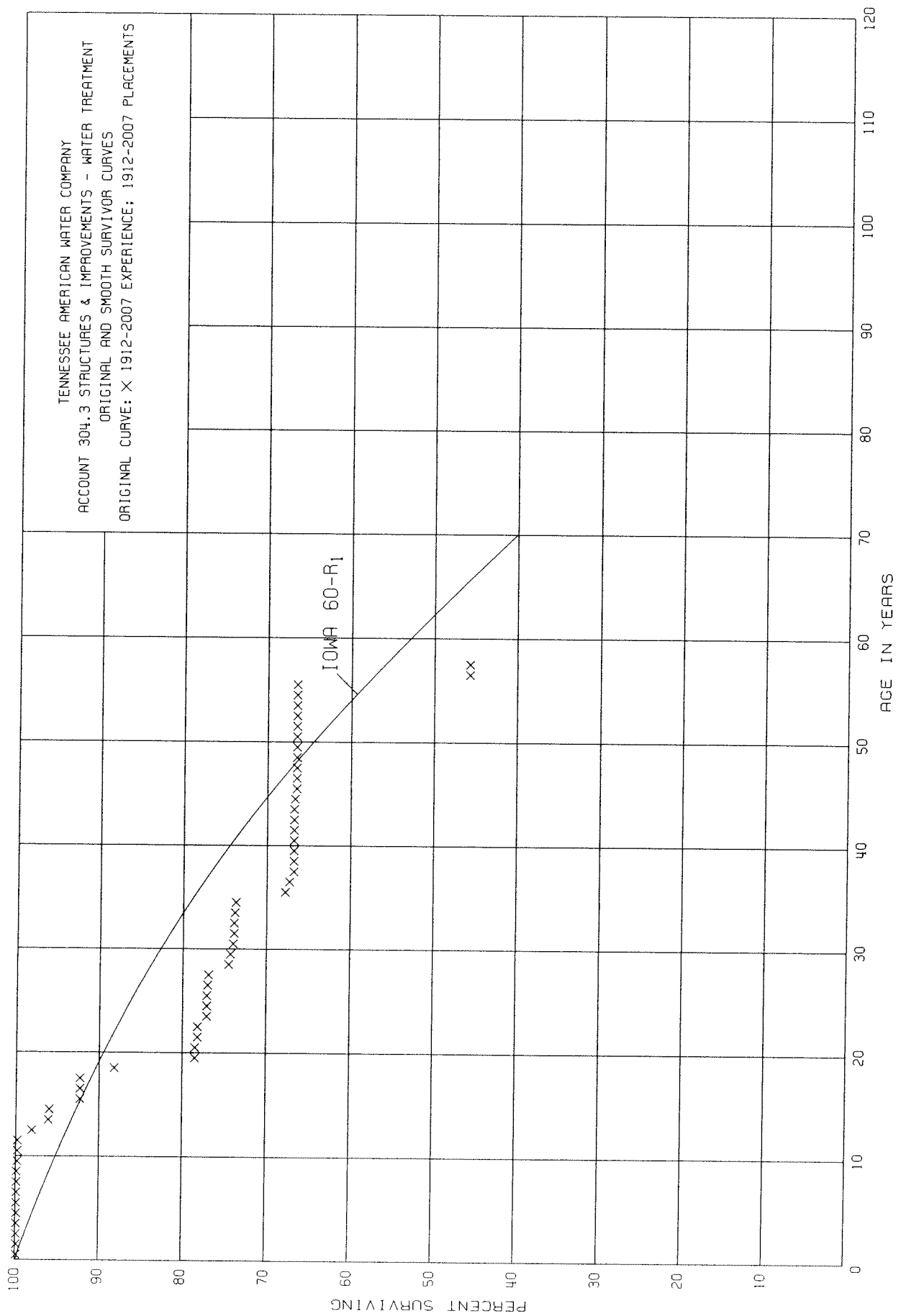
ACCOUNT 304.2 STRUCTURES & IMPROVEMENTS - PUMPING EQUIPMENT

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1919-2007

EXPERIENCE BAND 1919-2007

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
79.5	70,518		0.0000	1.0000	55.03
80.5	67,732		0.0000	1.0000	55.03
81.5	63,189		0.0000	1.0000	55.03
82.5	58,941		0.0000	1.0000	55.03
83.5	57,401		0.0000	1.0000	55.03
84.5	56,795		0.0000	1.0000	55.03
85.5	54,100		0.0000	1.0000	55.03
86.5	54,100		0.0000	1.0000	55.03
87.5	54,100		0.0000	1.0000	55.03
88.5					55.03



TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 304.3 STRUCTURES & IMPROVEMENTS - WATER TREATMENT

ORIGINAL LIFE TABLE

PLACEMENT BAND 1912-2007

EXPERIENCE BAND 1912-2007

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	2,214,060		0.0000	1.0000	100.00
0.5	2,175,660	145	0.0001	0.9999	100.00
1.5	2,175,515		0.0000	1.0000	99.99
2.5	2,170,430		0.0000	1.0000	99.99
3.5	2,170,430		0.0000	1.0000	99.99
4.5	2,170,430		0.0000	1.0000	99.99
5.5	2,437,448	655	0.0003	0.9997	99.99
6.5	2,436,793		0.0000	1.0000	99.96
7.5	2,077,507	792	0.0004	0.9996	99.96
8.5	2,073,017	3,079	0.0015	0.9985	99.92
9.5	2,069,938	50	0.0000	1.0000	99.77
10.5	2,010,999	130	0.0001	0.9999	99.77
11.5	2,003,869	32,630	0.0163	0.9837	99.76
12.5	1,971,239	40,124	0.0204	0.9796	98.13
13.5	1,931,115	2,292	0.0012	0.9988	96.13
14.5	1,820,783	69,832	0.0384	0.9616	96.01
15.5	1,559,562		0.0000	1.0000	92.32
16.5	1,559,562	313	0.0002	0.9998	92.32
17.5	1,559,249	70,000	0.0449	0.9551	92.30
18.5	977,069	106,653	0.1092	0.8908	88.16
19.5	870,416	134	0.0002	0.9998	78.53
20.5	868,226	3,850	0.0044	0.9956	78.51
21.5	826,166	40	0.0000	1.0000	78.16
22.5	814,023	10,599	0.0130	0.9870	78.16
23.5	803,424	268	0.0003	0.9997	77.14
24.5	803,156	78	0.0001	0.9999	77.12
25.5	799,885	1,203	0.0015	0.9985	77.11
26.5	798,681	1,014	0.0013	0.9987	76.99
27.5	787,153	24,903	0.0316	0.9684	76.89
28.5	762,250	1,240	0.0016	0.9984	74.46
29.5	617,264	2,733	0.0044	0.9956	74.34
30.5	607,489	950	0.0016	0.9984	74.01
31.5	605,837		0.0000	1.0000	73.89
32.5	605,623	500	0.0008	0.9992	73.89
33.5	604,353	1,000	0.0017	0.9983	73.83
34.5	603,028	48,371	0.0802	0.9198	73.70
35.5	402,602	3,000	0.0075	0.9925	67.79
36.5	371,947	2,551	0.0069	0.9931	67.28
37.5	369,396		0.0000	1.0000	66.82
38.5	369,221		0.0000	1.0000	66.82

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 304.3 STRUCTURES & IMPROVEMENTS - WATER TREATMENT

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1912-2007

EXPERIENCE BAND 1912-2007

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5	369,221	226	0.0006	0.9994	66.82
40.5	368,941		0.0000	1.0000	66.78
41.5	368,941		0.0000	1.0000	66.78
42.5	368,941		0.0000	1.0000	66.78
43.5	300,343	188	0.0006	0.9994	66.78
44.5	295,455	1,230	0.0042	0.9958	66.74
45.5	294,141		0.0000	1.0000	66.46
46.5	291,180		0.0000	1.0000	66.46
47.5	287,219		0.0000	1.0000	66.46
48.5	285,667		0.0000	1.0000	66.46
49.5	269,095		0.0000	1.0000	66.46
50.5	265,518		0.0000	1.0000	66.46
51.5	260,353		0.0000	1.0000	66.46
52.5	199,769		0.0000	1.0000	66.46
53.5	194,078		0.0000	1.0000	66.46
54.5	179,357		0.0000	1.0000	66.46
55.5	113,892	35,604	0.3126	0.6874	66.46
56.5	40,703		0.0000	1.0000	45.68
57.5	40,564		0.0000	1.0000	45.68
58.5	40,564		0.0000	1.0000	45.68
59.5	40,529		0.0000	1.0000	45.68
60.5	40,141	696	0.0173	0.9827	45.68
61.5	39,445		0.0000	1.0000	44.89
62.5	39,405		0.0000	1.0000	44.89
63.5	37,355		0.0000	1.0000	44.89
64.5	37,355		0.0000	1.0000	44.89
65.5	37,253		0.0000	1.0000	44.89
66.5	25,476		0.0000	1.0000	44.89
67.5	25,276		0.0000	1.0000	44.89
68.5	25,230		0.0000	1.0000	44.89
69.5	24,175		0.0000	1.0000	44.89
70.5	24,175		0.0000	1.0000	44.89
71.5	23,938	823	0.0344	0.9656	44.89
72.5	22,797		0.0000	1.0000	43.35
73.5	22,797		0.0000	1.0000	43.35
74.5	22,797		0.0000	1.0000	43.35
75.5	22,797		0.0000	1.0000	43.35
76.5	22,797		0.0000	1.0000	43.35
77.5	18,567		0.0000	1.0000	43.35
78.5	18,445		0.0000	1.0000	43.35

TENNESSEE AMERICAN WATER COMPANY

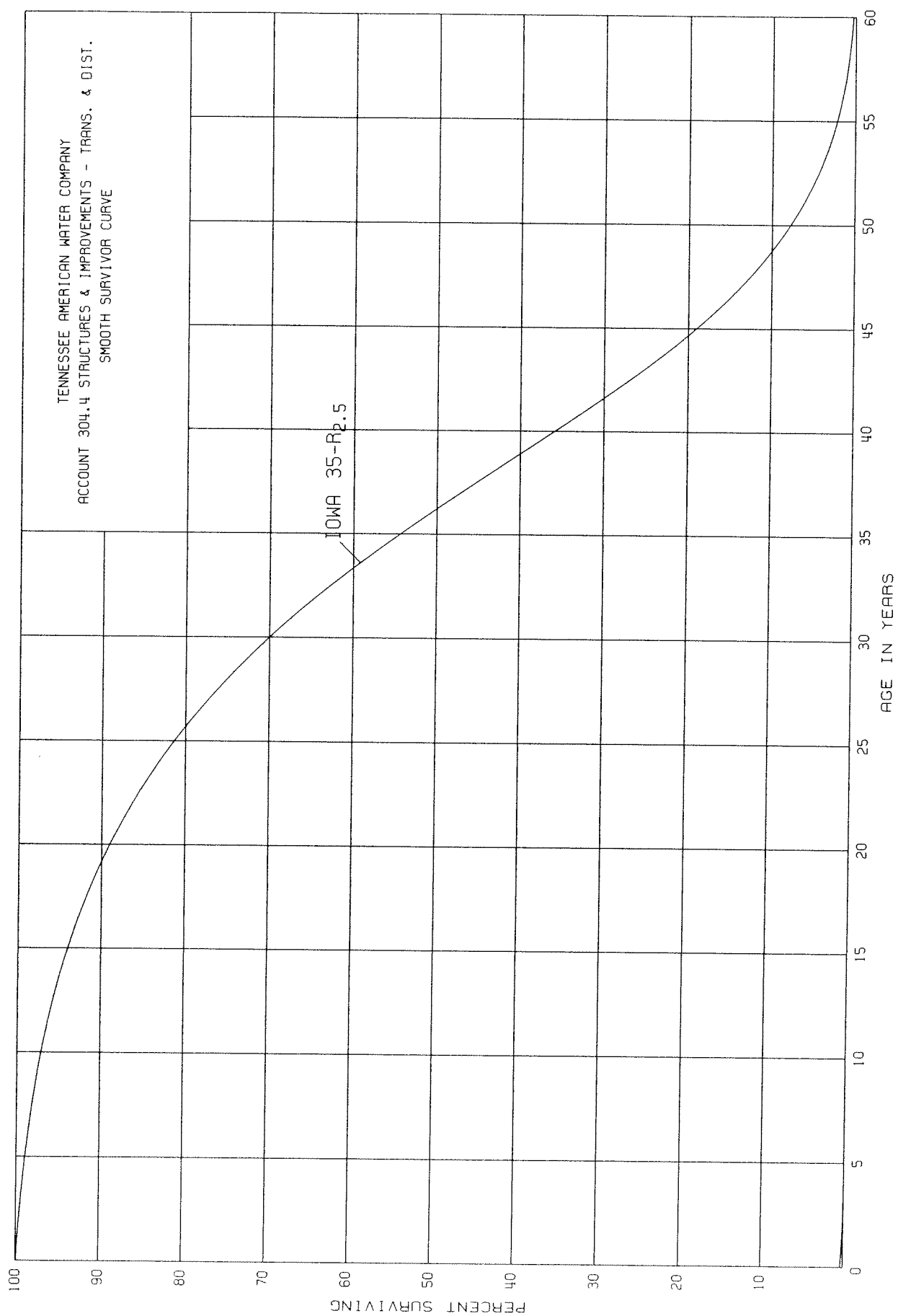
ACCOUNT 304.3 STRUCTURES & IMPROVEMENTS - WATER TREATMENT

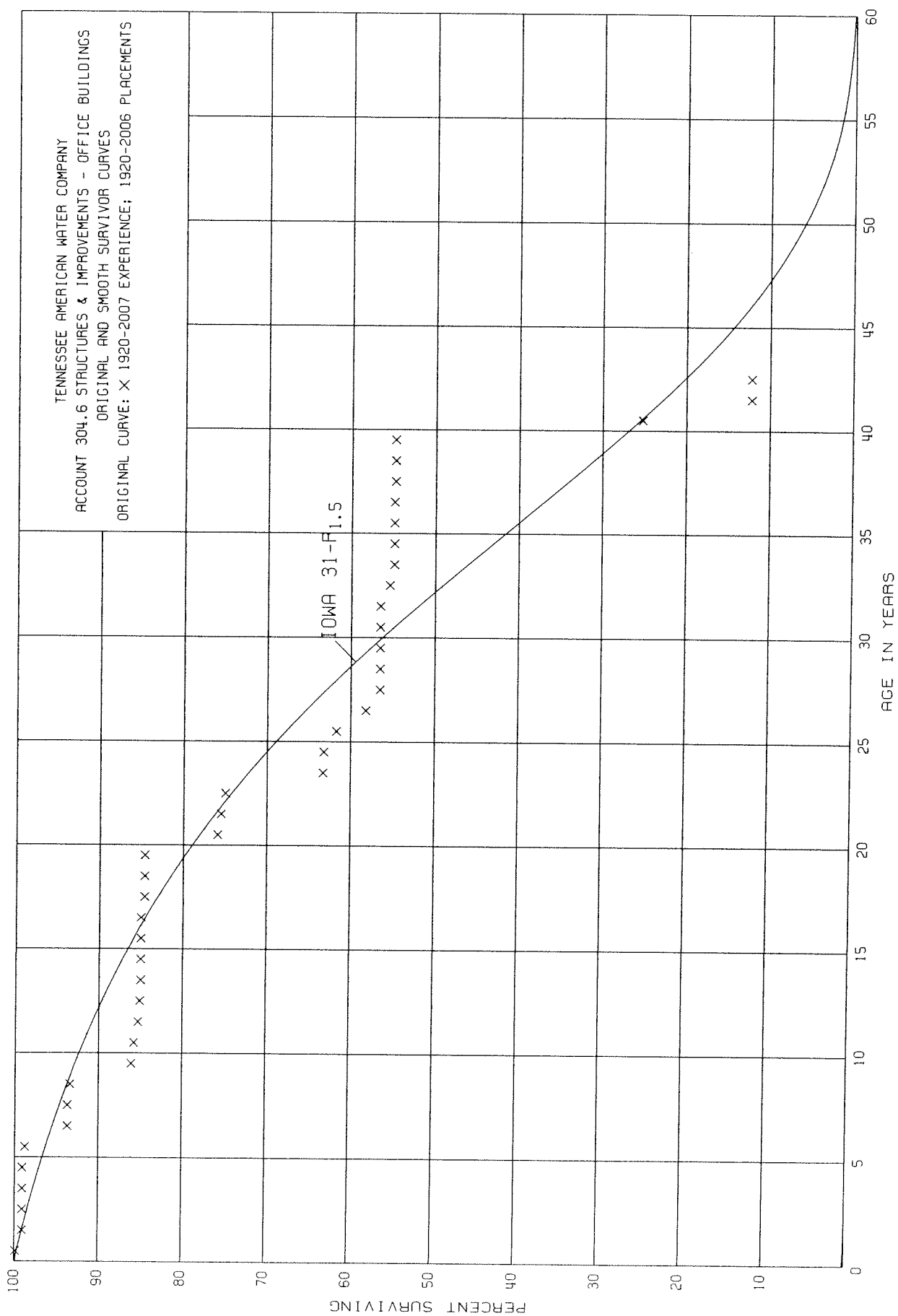
ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1912-2007

EXPERIENCE BAND 1912-2007

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
79.5	18,341		0.0000	1.0000	43.35
80.5	17,921		0.0000	1.0000	43.35
81.5	13,870		0.0000	1.0000	43.35
82.5	10,963		0.0000	1.0000	43.35
83.5	10,366		0.0000	1.0000	43.35
84.5	10,366		0.0000	1.0000	43.35
85.5	10,061		0.0000	1.0000	43.35
86.5	10,061		0.0000	1.0000	43.35
87.5	10,061		0.0000	1.0000	43.35
88.5	10,061		0.0000	1.0000	43.35
89.5	10,061		0.0000	1.0000	43.35
90.5	6,977		0.0000	1.0000	43.35
91.5	6,977		0.0000	1.0000	43.35
92.5	6,977		0.0000	1.0000	43.35
93.5	6,977		0.0000	1.0000	43.35
94.5	6,977		0.0000	1.0000	43.35
95.5					43.35





TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 304.6 STRUCTURES & IMPROVEMENTS - OFFICE BUILDINGS

ORIGINAL LIFE TABLE

PLACEMENT BAND 1920-2006

EXPERIENCE BAND 1920-2007

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	292,406	71	0.0002	0.9998	100.00
0.5	292,335	2,488	0.0085	0.9915	99.98
1.5	282,832		0.0000	1.0000	99.13
2.5	268,324	15	0.0001	0.9999	99.13
3.5	259,993		0.0000	1.0000	99.12
4.5	259,993	871	0.0034	0.9966	99.12
5.5	259,122	13,321	0.0514	0.9486	98.78
6.5	245,801	34	0.0001	0.9999	93.70
7.5	245,767	744	0.0030	0.9970	93.69
8.5	231,948	18,254	0.0787	0.9213	93.41
9.5	178,879	471	0.0026	0.9974	86.06
10.5	168,311	1,083	0.0064	0.9936	85.84
11.5	157,925	328	0.0021	0.9979	85.29
12.5	157,597	137	0.0009	0.9991	85.11
13.5	154,416		0.0000	1.0000	85.03
14.5	154,416		0.0000	1.0000	85.03
15.5	140,066	31	0.0002	0.9998	85.03
16.5	127,622	573	0.0045	0.9955	85.01
17.5	121,674		0.0000	1.0000	84.63
18.5	114,174		0.0000	1.0000	84.63
19.5	114,174	11,751	0.1029	0.8971	84.63
20.5	102,423	585	0.0057	0.9943	75.92
21.5	101,838	650	0.0064	0.9936	75.49
22.5	101,188	15,792	0.1561	0.8439	75.01
23.5	81,367	83	0.0010	0.9990	63.30
24.5	68,155	1,674	0.0246	0.9754	63.24
25.5	66,481	3,722	0.0560	0.9440	61.68
26.5	62,759	1,856	0.0296	0.9704	58.23
27.5	60,141	21	0.0003	0.9997	56.51
28.5	59,334		0.0000	1.0000	56.49
29.5	54,738		0.0000	1.0000	56.49
30.5	54,738		0.0000	1.0000	56.49
31.5	54,738	1,075	0.0196	0.9804	56.49
32.5	53,663	449	0.0084	0.9916	55.38
33.5	53,214		0.0000	1.0000	54.91
34.5	53,214		0.0000	1.0000	54.91
35.5	53,214		0.0000	1.0000	54.91
36.5	53,214	87	0.0016	0.9984	54.91
37.5	53,127	12	0.0002	0.9998	54.82
38.5	53,115		0.0000	1.0000	54.81

TENNESSEE AMERICAN WATER COMPANY

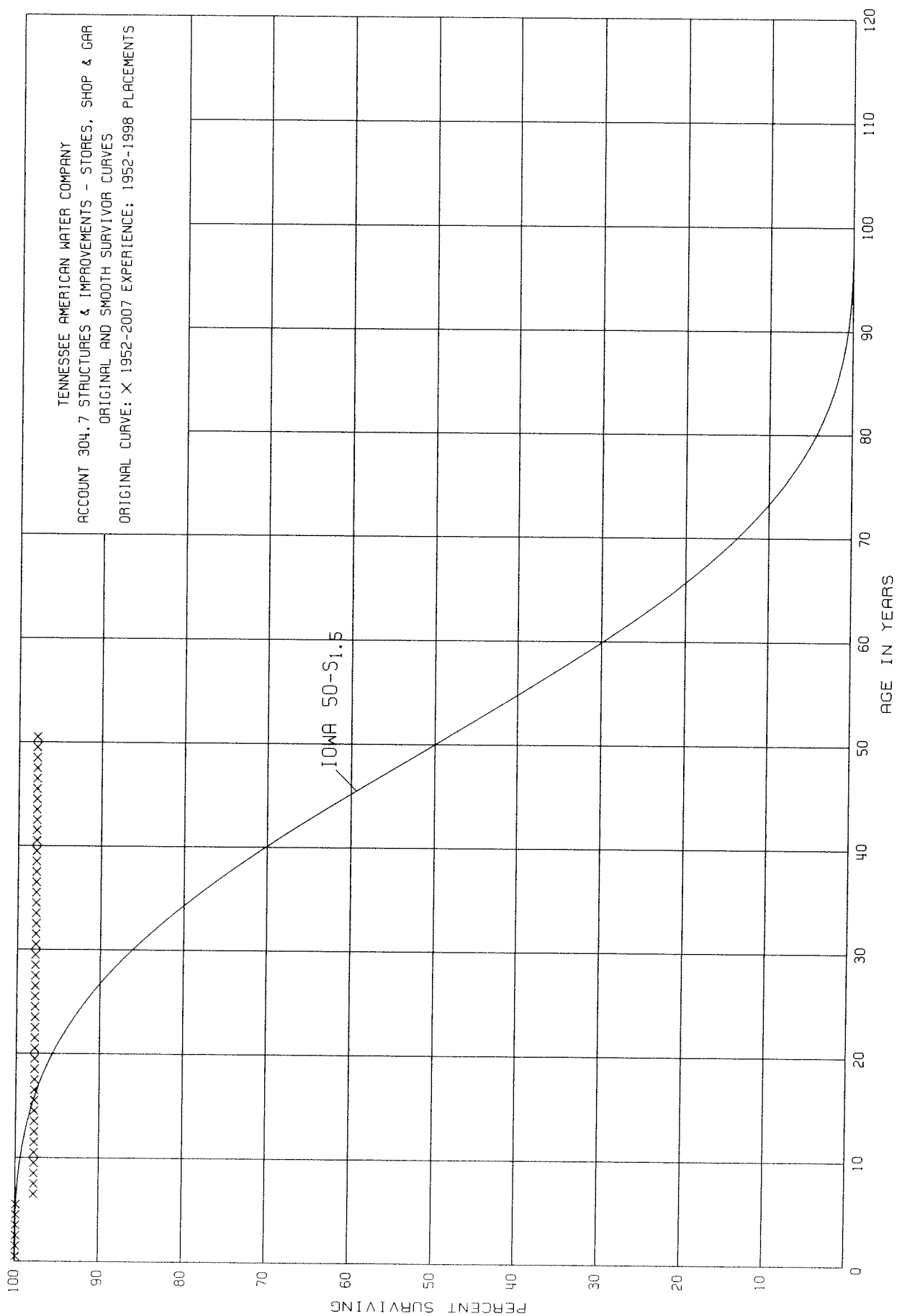
ACCOUNT 304.6 STRUCTURES & IMPROVEMENTS - OFFICE BUILDINGS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1920-2006

EXPERIENCE BAND 1920-2007

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5	53,115	28,691	0.5402	0.4598	54.81
40.5	24,424	12,624	0.5169	0.4831	25.20
41.5	11,800	24	0.0020	0.9980	12.17
42.5	11,776	649	0.0551	0.9449	12.15
43.5	11,127		0.0000	1.0000	11.48
44.5	11,127	117	0.0105	0.9895	11.48
45.5	11,010	110	0.0100	0.9900	11.36
46.5	10,900	465	0.0427	0.9573	11.25
47.5	10,435	2,280	0.2185	0.7815	10.77
48.5	8,155	8,155	1.0000	0.0000	8.42
49.5					0.00



TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 304.7 STRUCTURES & IMPROVEMENTS - STORES, SHOP & GAR

ORIGINAL LIFE TABLE

PLACEMENT BAND 1952-1998

EXPERIENCE BAND 1952-2007

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	312,832		0.0000	1.0000	100.00
0.5	312,832		0.0000	1.0000	100.00
1.5	319,732		0.0000	1.0000	100.00
2.5	319,732		0.0000	1.0000	100.00
3.5	319,732		0.0000	1.0000	100.00
4.5	319,732		0.0000	1.0000	100.00
5.5	319,732	7,091	0.0222	0.9778	100.00
6.5	312,642		0.0000	1.0000	97.78
7.5	312,642		0.0000	1.0000	97.78
8.5	312,642		0.0000	1.0000	97.78
9.5	280,182		0.0000	1.0000	97.78
10.5	255,986		0.0000	1.0000	97.78
11.5	251,876		0.0000	1.0000	97.78
12.5	206,256		0.0000	1.0000	97.78
13.5	194,756		0.0000	1.0000	97.78
14.5	167,681		0.0000	1.0000	97.78
15.5	167,681		0.0000	1.0000	97.78
16.5	167,681		0.0000	1.0000	97.78
17.5	126,762		0.0000	1.0000	97.78
18.5	126,762		0.0000	1.0000	97.78
19.5	126,762		0.0000	1.0000	97.78
20.5	126,762		0.0000	1.0000	97.78
21.5	126,762		0.0000	1.0000	97.78
22.5	126,762		0.0000	1.0000	97.78
23.5	126,762		0.0000	1.0000	97.78
24.5	126,762		0.0000	1.0000	97.78
25.5	126,762		0.0000	1.0000	97.78
26.5	126,762		0.0000	1.0000	97.78
27.5	126,762		0.0000	1.0000	97.78
28.5	126,762		0.0000	1.0000	97.78
29.5	126,762		0.0000	1.0000	97.78
30.5	126,762		0.0000	1.0000	97.78
31.5	126,762		0.0000	1.0000	97.78
32.5	126,762		0.0000	1.0000	97.78
33.5	126,762		0.0000	1.0000	97.78
34.5	126,762		0.0000	1.0000	97.78
35.5	126,762		0.0000	1.0000	97.78
36.5	126,762		0.0000	1.0000	97.78
37.5	126,762		0.0000	1.0000	97.78
38.5	126,762		0.0000	1.0000	97.78

TENNESSEE AMERICAN WATER COMPANY

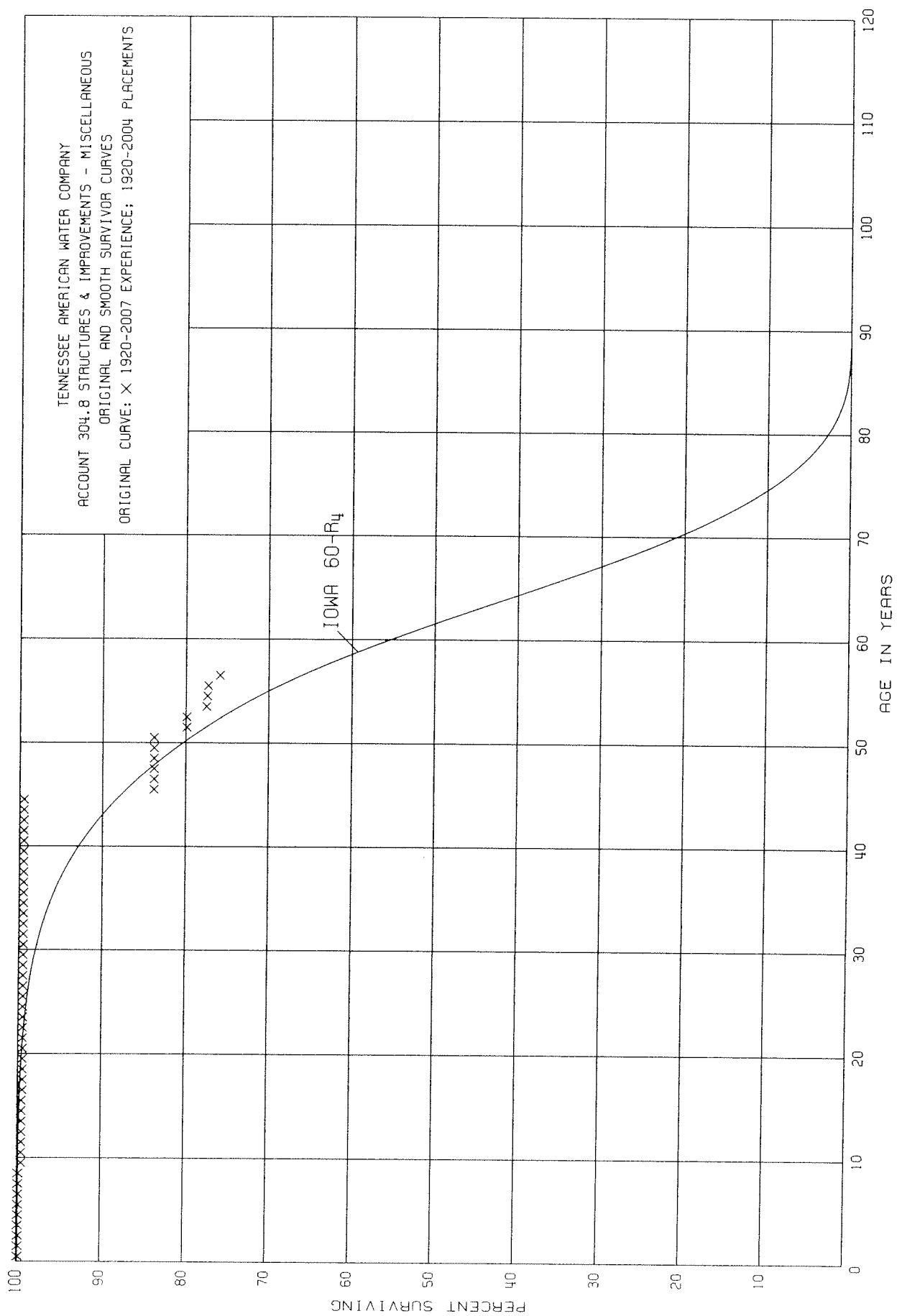
ACCOUNT 304.7 STRUCTURES & IMPROVEMENTS - STORES, SHOP & GAR

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1952-1998

EXPERIENCE BAND 1952-2007

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5	126,762		0.0000	1.0000	97.78
40.5	126,762		0.0000	1.0000	97.78
41.5	126,762		0.0000	1.0000	97.78
42.5	126,762		0.0000	1.0000	97.78
43.5	126,762		0.0000	1.0000	97.78
44.5	125,479		0.0000	1.0000	97.78
45.5	125,479		0.0000	1.0000	97.78
46.5	125,479		0.0000	1.0000	97.78
47.5	125,479		0.0000	1.0000	97.78
48.5	125,479		0.0000	1.0000	97.78
49.5	125,479		0.0000	1.0000	97.78
50.5	9,780		0.0000	1.0000	97.78
51.5	9,780		0.0000	1.0000	97.78
52.5	9,780		0.0000	1.0000	97.78
53.5	9,780		0.0000	1.0000	97.78
54.5	9,780		0.0000	1.0000	97.78
55.5					97.78



TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 304.8 STRUCTURES & IMPROVEMENTS - MISCELLANEOUS

ORIGINAL LIFE TABLE

PLACEMENT BAND 1920-2004

EXPERIENCE BAND 1920-2007

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	665,824		0.0000	1.0000	100.00
0.5	665,824		0.0000	1.0000	100.00
1.5	665,824		0.0000	1.0000	100.00
2.5	665,824	574	0.0009	0.9991	100.00
3.5	390,815		0.0000	1.0000	99.91
4.5	390,815		0.0000	1.0000	99.91
5.5	390,815		0.0000	1.0000	99.91
6.5	374,120		0.0000	1.0000	99.91
7.5	374,120		0.0000	1.0000	99.91
8.5	373,595	1,184	0.0032	0.9968	99.91
9.5	372,411		0.0000	1.0000	99.59
10.5	371,971		0.0000	1.0000	99.59
11.5	371,971		0.0000	1.0000	99.59
12.5	371,971		0.0000	1.0000	99.59
13.5	366,914		0.0000	1.0000	99.59
14.5	301,890		0.0000	1.0000	99.59
15.5	301,890	218	0.0007	0.9993	99.59
16.5	301,672		0.0000	1.0000	99.52
17.5	301,672		0.0000	1.0000	99.52
18.5	36,643		0.0000	1.0000	99.52
19.5	27,563		0.0000	1.0000	99.52
20.5	27,563		0.0000	1.0000	99.52
21.5	27,563		0.0000	1.0000	99.52
22.5	27,563		0.0000	1.0000	99.52
23.5	27,563		0.0000	1.0000	99.52
24.5	27,563		0.0000	1.0000	99.52
25.5	27,563		0.0000	1.0000	99.52
26.5	27,563		0.0000	1.0000	99.52
27.5	27,563		0.0000	1.0000	99.52
28.5	27,563		0.0000	1.0000	99.52
29.5	27,563		0.0000	1.0000	99.52
30.5	27,563		0.0000	1.0000	99.52
31.5	27,563		0.0000	1.0000	99.52
32.5	27,563		0.0000	1.0000	99.52
33.5	27,563		0.0000	1.0000	99.52
34.5	27,563		0.0000	1.0000	99.52
35.5	26,863		0.0000	1.0000	99.52
36.5	26,863		0.0000	1.0000	99.52
37.5	26,863		0.0000	1.0000	99.52
38.5	26,863		0.0000	1.0000	99.52

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 304.8 STRUCTURES & IMPROVEMENTS - MISCELLANEOUS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1920-2004

EXPERIENCE BAND 1920-2007

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5	26,863		0.0000	1.0000	99.52
40.5	26,863		0.0000	1.0000	99.52
41.5	26,863		0.0000	1.0000	99.52
42.5	26,863		0.0000	1.0000	99.52
43.5	26,863		0.0000	1.0000	99.52
44.5	26,459	4,194	0.1585	0.8415	99.52
45.5	22,265		0.0000	1.0000	83.75
46.5	22,265		0.0000	1.0000	83.75
47.5	22,265		0.0000	1.0000	83.75
48.5	22,265		0.0000	1.0000	83.75
49.5	22,265		0.0000	1.0000	83.75
50.5	22,265	1,012	0.0455	0.9545	83.75
51.5	21,253	6	0.0003	0.9997	79.94
52.5	21,247	635	0.0299	0.9701	79.92
53.5	20,612	45	0.0022	0.9978	77.53
54.5	20,567	29	0.0014	0.9986	77.36
55.5	20,538	354	0.0172	0.9828	77.25
56.5	20,184		0.0000	1.0000	75.92
57.5	20,184		0.0000	1.0000	75.92
58.5	20,184		0.0000	1.0000	75.92
59.5	20,184		0.0000	1.0000	75.92
60.5	20,184		0.0000	1.0000	75.92
61.5	20,184		0.0000	1.0000	75.92
62.5	20,184		0.0000	1.0000	75.92
63.5	20,184		0.0000	1.0000	75.92
64.5	20,184		0.0000	1.0000	75.92
65.5	20,184		0.0000	1.0000	75.92
66.5	20,184		0.0000	1.0000	75.92
67.5	20,184		0.0000	1.0000	75.92
68.5	20,184		0.0000	1.0000	75.92
69.5	20,184		0.0000	1.0000	75.92
70.5	20,184		0.0000	1.0000	75.92
71.5	20,184		0.0000	1.0000	75.92
72.5	20,184		0.0000	1.0000	75.92
73.5	20,184		0.0000	1.0000	75.92
74.5	20,184		0.0000	1.0000	75.92
75.5	20,184		0.0000	1.0000	75.92
76.5	20,184		0.0000	1.0000	75.92
77.5	20,184		0.0000	1.0000	75.92
78.5	20,184		0.0000	1.0000	75.92

TENNESSEE AMERICAN WATER COMPANY

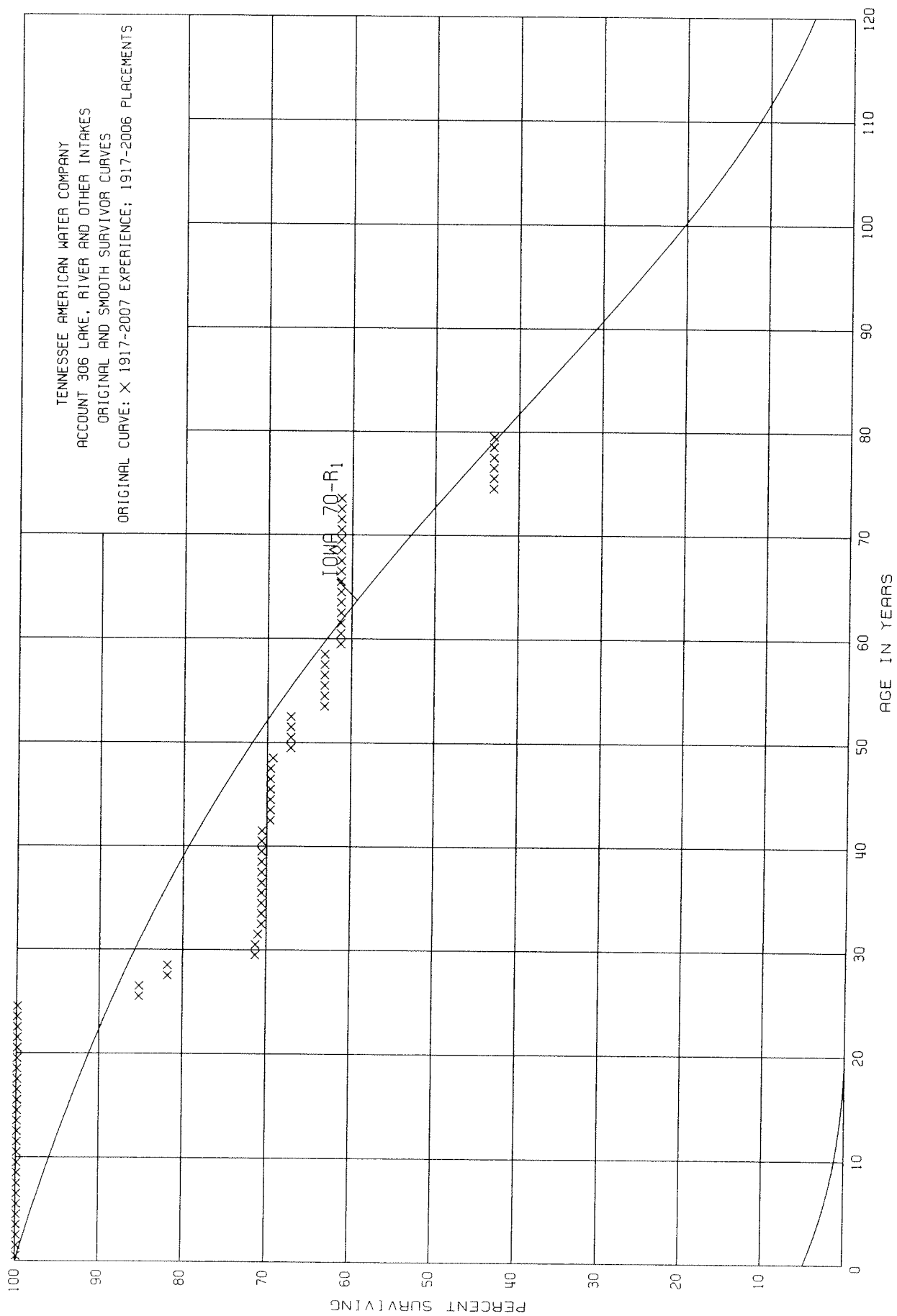
ACCOUNT 304.8 STRUCTURES & IMPROVEMENTS - MISCELLANEOUS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1920-2004

EXPERIENCE BAND 1920-2007

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
79.5	20,184		0.0000	1.0000	75.92
80.5	20,184		0.0000	1.0000	75.92
81.5	20,184		0.0000	1.0000	75.92
82.5	20,184		0.0000	1.0000	75.92
83.5	20,184		0.0000	1.0000	75.92
84.5	20,184		0.0000	1.0000	75.92
85.5	20,184		0.0000	1.0000	75.92
86.5	20,184		0.0000	1.0000	75.92
87.5					75.92



TENNESSEE AMERICAN WATER COMPANY
ACCOUNT 306 LAKE, RIVER AND OTHER INTAKES
ORIGINAL LIFE TABLE

PLACEMENT BAND 1917-2006			EXPERIENCE BAND 1917-2007		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	569,341		0.0000	1.0000	100.00
0.5	569,341		0.0000	1.0000	100.00
1.5	361,671		0.0000	1.0000	100.00
2.5	361,671		0.0000	1.0000	100.00
3.5	361,671		0.0000	1.0000	100.00
4.5	361,671		0.0000	1.0000	100.00
5.5	361,671		0.0000	1.0000	100.00
6.5	361,671		0.0000	1.0000	100.00
7.5	361,671		0.0000	1.0000	100.00
8.5	361,671		0.0000	1.0000	100.00
9.5	255,333		0.0000	1.0000	100.00
10.5	255,333		0.0000	1.0000	100.00
11.5	255,333		0.0000	1.0000	100.00
12.5	226,223		0.0000	1.0000	100.00
13.5	226,223		0.0000	1.0000	100.00
14.5	226,223		0.0000	1.0000	100.00
15.5	226,223		0.0000	1.0000	100.00
16.5	209,703		0.0000	1.0000	100.00
17.5	209,703		0.0000	1.0000	100.00
18.5	209,703		0.0000	1.0000	100.00
19.5	209,703		0.0000	1.0000	100.00
20.5	209,703	150	0.0007	0.9993	100.00
21.5	209,553		0.0000	1.0000	99.93
22.5	209,553		0.0000	1.0000	99.93
23.5	199,267		0.0000	1.0000	99.93
24.5	199,267	29,357	0.1473	0.8527	99.93
25.5	169,910		0.0000	1.0000	85.21
26.5	169,910	6,825	0.0402	0.9598	85.21
27.5	163,085		0.0000	1.0000	81.78
28.5	163,085	21,004	0.1288	0.8712	81.78
29.5	142,081		0.0000	1.0000	71.25
30.5	142,081	602	0.0042	0.9958	71.25
31.5	141,479	617	0.0044	0.9956	70.95
32.5	140,862		0.0000	1.0000	70.64
33.5	140,862	30	0.0002	0.9998	70.64
34.5	140,832		0.0000	1.0000	70.63
35.5	140,832		0.0000	1.0000	70.63
36.5	140,832		0.0000	1.0000	70.63
37.5	140,832	10	0.0001	0.9999	70.63
38.5	140,822		0.0000	1.0000	70.62

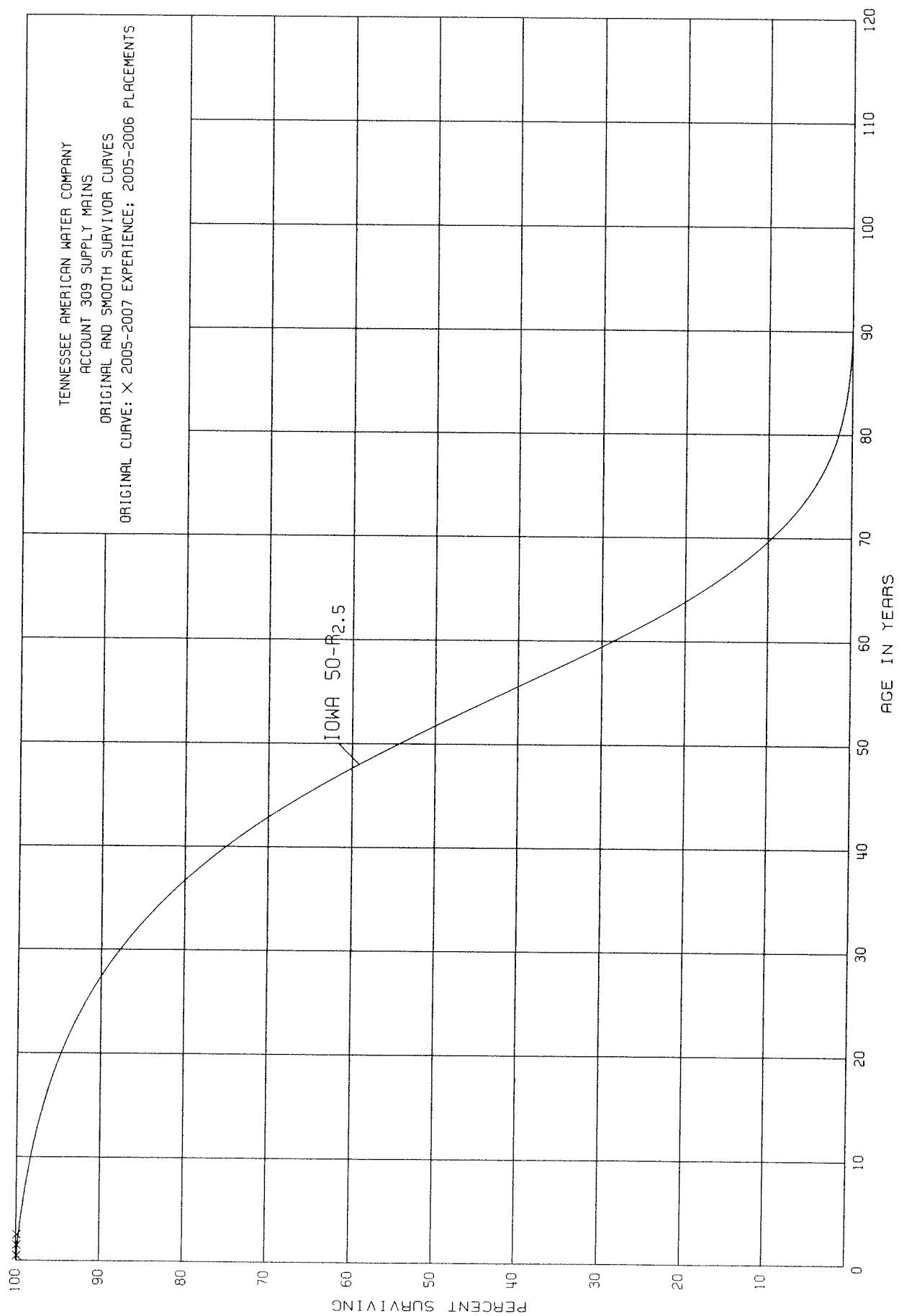
TENNESSEE AMERICAN WATER COMPANY
ACCOUNT 306 LAKE, RIVER AND OTHER INTAKES
ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1917-2006			EXPERIENCE BAND 1917-2007		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5	140,822		0.0000	1.0000	70.62
40.5	140,822		0.0000	1.0000	70.62
41.5	140,822	2,000	0.0142	0.9858	70.62
42.5	138,822		0.0000	1.0000	69.62
43.5	138,822		0.0000	1.0000	69.62
44.5	138,822		0.0000	1.0000	69.62
45.5	138,822		0.0000	1.0000	69.62
46.5	138,822		0.0000	1.0000	69.62
47.5	138,822	661	0.0048	0.9952	69.62
48.5	138,161	4,105	0.0297	0.9703	69.29
49.5	134,056		0.0000	1.0000	67.23
50.5	134,056		0.0000	1.0000	67.23
51.5	134,056		0.0000	1.0000	67.23
52.5	134,056	7,975	0.0595	0.9405	67.23
53.5	124,589		0.0000	1.0000	63.23
54.5	123,566		0.0000	1.0000	63.23
55.5	123,566		0.0000	1.0000	63.23
56.5	123,566		0.0000	1.0000	63.23
57.5	123,566		0.0000	1.0000	63.23
58.5	123,566	3,774	0.0305	0.9695	63.23
59.5	119,792		0.0000	1.0000	61.30
60.5	119,792		0.0000	1.0000	61.30
61.5	119,792		0.0000	1.0000	61.30
62.5	119,792		0.0000	1.0000	61.30
63.5	119,792		0.0000	1.0000	61.30
64.5	119,792		0.0000	1.0000	61.30
65.5	10,430		0.0000	1.0000	61.30
66.5	10,430		0.0000	1.0000	61.30
67.5	10,430		0.0000	1.0000	61.30
68.5	10,430		0.0000	1.0000	61.30
69.5	10,430		0.0000	1.0000	61.30
70.5	10,430		0.0000	1.0000	61.30
71.5	10,418		0.0000	1.0000	61.30
72.5	10,418		0.0000	1.0000	61.30
73.5	10,418	3,108	0.2983	0.7017	61.30
74.5	7,310		0.0000	1.0000	43.01
75.5	7,310		0.0000	1.0000	43.01
76.5	7,310		0.0000	1.0000	43.01
77.5	7,310		0.0000	1.0000	43.01
78.5	7,310		0.0000	1.0000	43.01

TENNESSEE AMERICAN WATER COMPANY
ACCOUNT 306 LAKE, RIVER AND OTHER INTAKES

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1917-2006			EXPERIENCE BAND 1917-2007		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
79.5	7,310		0.0000	1.0000	43.01
80.5	7,310		0.0000	1.0000	43.01
81.5	7,310		0.0000	1.0000	43.01
82.5	7,310		0.0000	1.0000	43.01
83.5	7,310		0.0000	1.0000	43.01
84.5	7,310		0.0000	1.0000	43.01
85.5	7,310		0.0000	1.0000	43.01
86.5	7,310		0.0000	1.0000	43.01
87.5	100		0.0000	1.0000	43.01
88.5	100		0.0000	1.0000	43.01
89.5	100		0.0000	1.0000	43.01
90.5					43.01

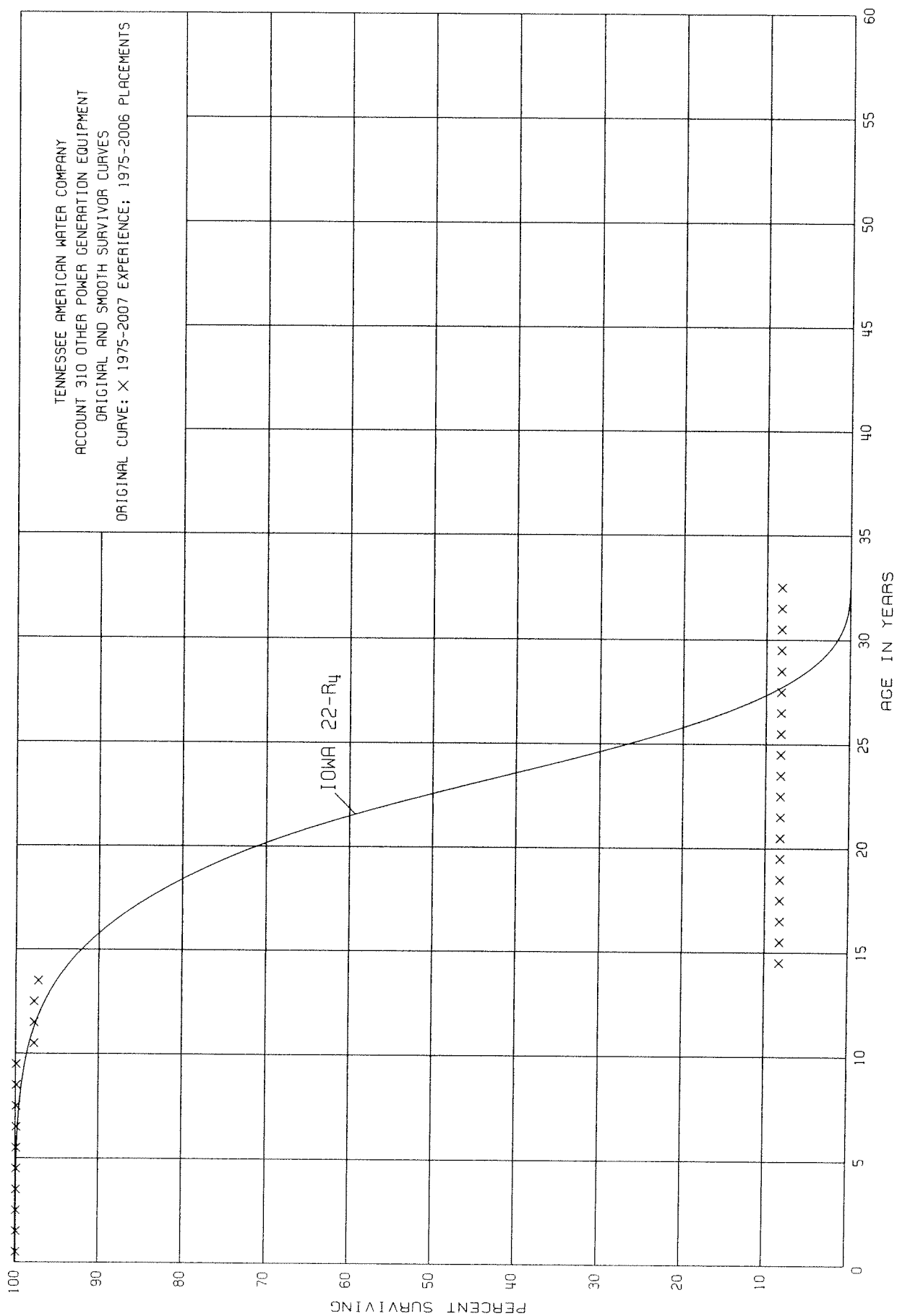


TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 309 SUPPLY MAINS

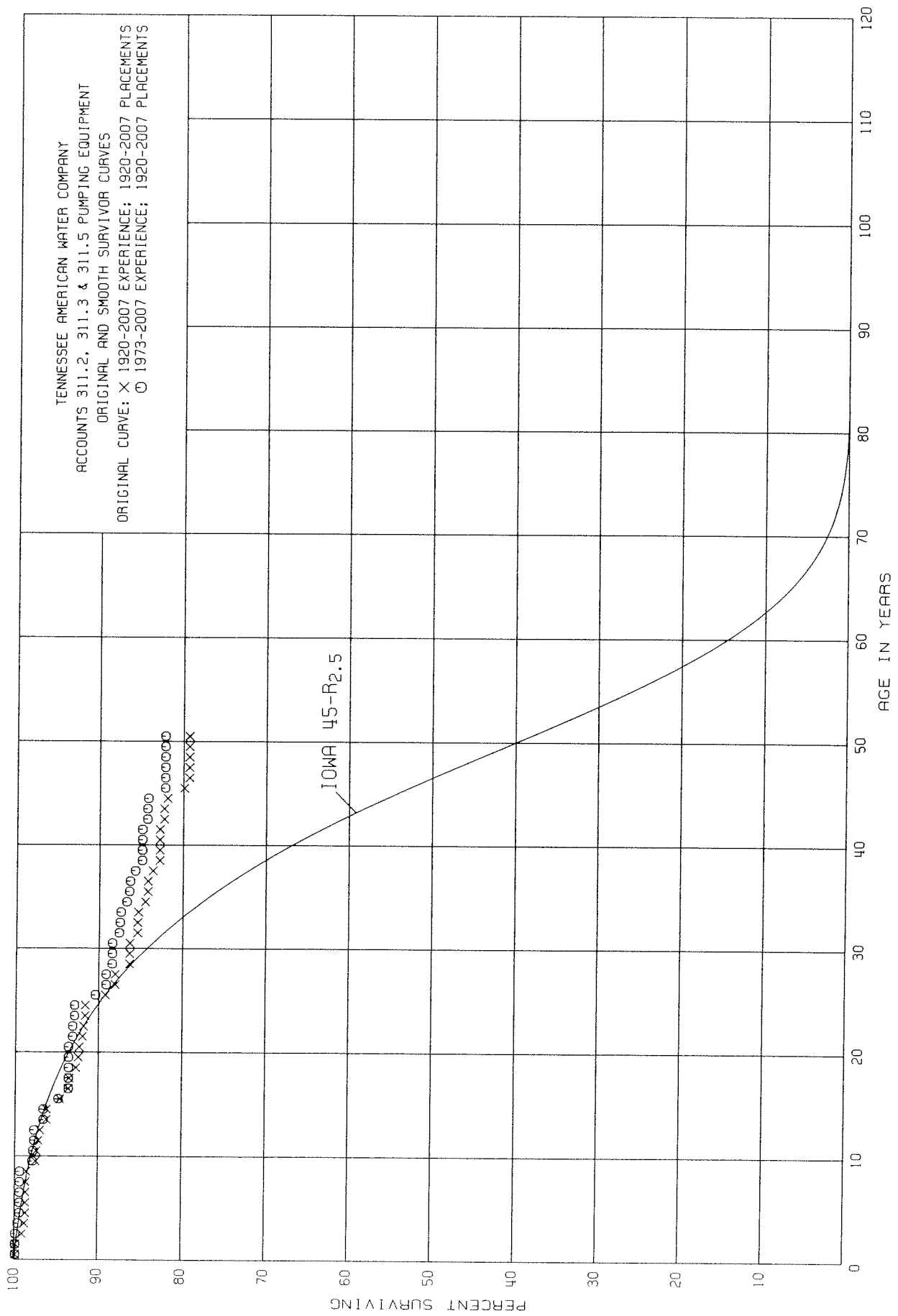
ORIGINAL LIFE TABLE

PLACEMENT BAND 2005-2006			EXPERIENCE BAND 2005-2007		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	602,664		0.0000	1.0000	100.00
0.5	602,664		0.0000	1.0000	100.00
1.5	161,231		0.0000	1.0000	100.00
2.5					100.00



TENNESSEE AMERICAN WATER COMPANY
ACCOUNT 310 OTHER POWER GENERATION EQUIPMENT
ORIGINAL LIFE TABLE

PLACEMENT BAND 1975-2006			EXPERIENCE BAND 1975-2007		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	372,492		0.0000	1.0000	100.00
0.5	372,492		0.0000	1.0000	100.00
1.5	359,265		0.0000	1.0000	100.00
2.5	359,265		0.0000	1.0000	100.00
3.5	359,265		0.0000	1.0000	100.00
4.5	359,265		0.0000	1.0000	100.00
5.5	359,265		0.0000	1.0000	100.00
6.5	359,265		0.0000	1.0000	100.00
7.5	359,265		0.0000	1.0000	100.00
8.5	359,265		0.0000	1.0000	100.00
9.5	359,265	8,000	0.0223	0.9777	100.00
10.5	351,265		0.0000	1.0000	97.77
11.5	351,265		0.0000	1.0000	97.77
12.5	171,984	898	0.0052	0.9948	97.77
13.5	148,764	136,172	0.9154	0.0846	97.26
14.5	12,592		0.0000	1.0000	8.23
15.5	12,592		0.0000	1.0000	8.23
16.5	12,592		0.0000	1.0000	8.23
17.5	12,592		0.0000	1.0000	8.23
18.5	12,592		0.0000	1.0000	8.23
19.5	12,592		0.0000	1.0000	8.23
20.5	12,592		0.0000	1.0000	8.23
21.5	12,592		0.0000	1.0000	8.23
22.5	12,592		0.0000	1.0000	8.23
23.5	12,592		0.0000	1.0000	8.23
24.5	8,560		0.0000	1.0000	8.23
25.5	8,560		0.0000	1.0000	8.23
26.5	8,560		0.0000	1.0000	8.23
27.5	8,560		0.0000	1.0000	8.23
28.5	8,560		0.0000	1.0000	8.23
29.5	8,560		0.0000	1.0000	8.23
30.5	5,960		0.0000	1.0000	8.23
31.5	5,960		0.0000	1.0000	8.23
32.5					8.23



TENNESSEE AMERICAN WATER COMPANY

ACCOUNTS 311.2, 311.3 & 311.5 PUMPING EQUIPMENT

ORIGINAL LIFE TABLE

PLACEMENT BAND 1920-2007

EXPERIENCE BAND 1920-2007

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	6,594,197		0.0000	1.0000	100.00
0.5	6,546,436		0.0000	1.0000	100.00
1.5	6,290,549	57,931	0.0092	0.9908	100.00
2.5	6,231,133	15,573	0.0025	0.9975	99.08
3.5	6,192,407	7,533	0.0012	0.9988	98.83
4.5	6,168,057		0.0000	1.0000	98.71
5.5	6,085,898		0.0000	1.0000	98.71
6.5	5,672,555	2,100	0.0004	0.9996	98.71
7.5	5,312,573	2,076	0.0004	0.9996	98.67
8.5	5,078,964	60,222	0.0119	0.9881	98.63
9.5	4,229,158	3,492	0.0008	0.9992	97.46
10.5	4,218,505	8,464	0.0020	0.9980	97.38
11.5	3,528,450	6,485	0.0018	0.9982	97.19
12.5	3,399,886	28,322	0.0083	0.9917	97.02
13.5	2,993,813		0.0000	1.0000	96.21
14.5	2,992,710	48,819	0.0163	0.9837	96.21
15.5	2,938,831	31,210	0.0106	0.9894	94.64
16.5	2,896,693	3,670	0.0013	0.9987	93.64
17.5	2,537,070	21,665	0.0085	0.9915	93.52
18.5	2,497,202	8,986	0.0036	0.9964	92.73
19.5	2,463,315	2,900	0.0012	0.9988	92.40
20.5	2,459,043	11,356	0.0046	0.9954	92.29
21.5	2,335,477	2,257	0.0010	0.9990	91.87
22.5	2,312,159	4,835	0.0021	0.9979	91.78
23.5	2,229,229		0.0000	1.0000	91.59
24.5	1,968,090	50,653	0.0257	0.9743	91.59
25.5	1,894,255	26,787	0.0141	0.9859	89.24
26.5	1,819,116		0.0000	1.0000	87.98
27.5	1,620,652	30,286	0.0187	0.9813	87.98
28.5	1,514,105		0.0000	1.0000	86.33
29.5	1,513,150	789	0.0005	0.9995	86.33
30.5	1,419,352	14,078	0.0099	0.9901	86.29
31.5	1,393,413	1,150	0.0008	0.9992	85.44
32.5	1,275,223	1,446	0.0011	0.9989	85.37
33.5	1,175,786	10,274	0.0087	0.9913	85.28
34.5	1,129,052	4,752	0.0042	0.9958	84.54
35.5	1,116,140	300	0.0003	0.9997	84.18
36.5	1,113,925	7,285	0.0065	0.9935	84.15
37.5	981,093	8,941	0.0091	0.9909	83.60
38.5	972,152		0.0000	1.0000	82.84

TENNESSEE AMERICAN WATER COMPANY

ACCOUNTS 311.2, 311.3 & 311.5 PUMPING EQUIPMENT

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1920-2007

EXPERIENCE BAND 1920-2007

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5	970,663		0.0000	1.0000	82.84
40.5	946,718		0.0000	1.0000	82.84
41.5	921,849	6,281	0.0068	0.9932	82.84
42.5	915,276		0.0000	1.0000	82.28
43.5	886,800	3,955	0.0045	0.9955	82.28
44.5	874,697	21,194	0.0242	0.9758	81.91
45.5	821,121	6,344	0.0077	0.9923	79.93
46.5	730,462	20	0.0000	1.0000	79.31
47.5	726,888		0.0000	1.0000	79.31
48.5	697,697		0.0000	1.0000	79.31
49.5	694,508		0.0000	1.0000	79.31
50.5	690,104	2,278	0.0033	0.9967	79.31
51.5	644,903	1,058	0.0016	0.9984	79.05
52.5	632,080		0.0000	1.0000	78.92
53.5	608,559	20	0.0000	1.0000	78.92
54.5	511,618		0.0000	1.0000	78.92
55.5	470,923	1,122	0.0024	0.9976	78.92
56.5	174,930		0.0000	1.0000	78.73
57.5	164,890		0.0000	1.0000	78.73
58.5	127,289	237	0.0019	0.9981	78.73
59.5	81,693		0.0000	1.0000	78.58
60.5	78,796	19,691	0.2499	0.7501	78.58
61.5	59,053		0.0000	1.0000	58.94
62.5	57,745	7,988	0.1383	0.8617	58.94
63.5	49,711		0.0000	1.0000	50.79
64.5	47,178	3,264	0.0692	0.9308	50.79
65.5	36,958		0.0000	1.0000	47.28
66.5	35,027		0.0000	1.0000	47.28
67.5	35,027		0.0000	1.0000	47.28
68.5	33,785		0.0000	1.0000	47.28
69.5	17,940		0.0000	1.0000	47.28
70.5	16,632	500	0.0301	0.9699	47.28
71.5	16,132		0.0000	1.0000	45.86
72.5	16,039	500	0.0312	0.9688	45.86
73.5	15,539		0.0000	1.0000	44.43
74.5	15,539	1,002	0.0645	0.9355	44.43
75.5	14,537		0.0000	1.0000	41.56
76.5	14,154		0.0000	1.0000	41.56
77.5	4,461		0.0000	1.0000	41.56
78.5	4,461		0.0000	1.0000	41.56

TENNESSEE AMERICAN WATER COMPANY

ACCOUNTS 311.2, 311.3 & 311.5 PUMPING EQUIPMENT

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1920-2007

EXPERIENCE BAND 1920-2007

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
79.5	4,461		0.0000	1.0000	41.56
80.5	4,317		0.0000	1.0000	41.56
81.5	2,588		0.0000	1.0000	41.56
82.5	2,446		0.0000	1.0000	41.56
83.5	2,446		0.0000	1.0000	41.56
84.5	1,855		0.0000	1.0000	41.56
85.5	202		0.0000	1.0000	41.56
86.5					41.56

TENNESSEE AMERICAN WATER COMPANY

ACCOUNTS 311.2, 311.3 & 311.5 PUMPING EQUIPMENT

ORIGINAL LIFE TABLE

PLACEMENT BAND 1920-2007

EXPERIENCE BAND 1973-2007

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	5,155,067		0.0000	1.0000	100.00
0.5	5,123,957		0.0000	1.0000	100.00
1.5	4,869,985	6,437	0.0013	0.9987	100.00
2.5	5,050,083	15,573	0.0031	0.9969	99.87
3.5	5,011,357	7,533	0.0015	0.9985	99.56
4.5	4,989,297		0.0000	1.0000	99.41
5.5	4,931,083		0.0000	1.0000	99.41
6.5	4,551,420		0.0000	1.0000	99.41
7.5	4,230,251	2,076	0.0005	0.9995	99.41
8.5	4,025,720	60,222	0.0150	0.9850	99.36
9.5	3,186,062	3,375	0.0011	0.9989	97.87
10.5	3,209,374	2,500	0.0008	0.9992	97.76
11.5	2,617,620		0.0000	1.0000	97.68
12.5	2,499,095	26,381	0.0106	0.9894	97.68
13.5	2,124,484		0.0000	1.0000	96.64
14.5	2,126,570	39,519	0.0186	0.9814	96.64
15.5	2,098,513	27,569	0.0131	0.9869	94.84
16.5	2,106,663	330	0.0002	0.9998	93.60
17.5	1,764,362	20	0.0000	1.0000	93.58
18.5	1,771,817		0.0000	1.0000	93.58
19.5	1,844,477		0.0000	1.0000	93.58
20.5	1,883,800	9,354	0.0050	0.9950	93.58
21.5	2,085,662	187	0.0001	0.9999	93.11
22.5	2,074,454	3,600	0.0017	0.9983	93.10
23.5	2,032,607		0.0000	1.0000	92.94
24.5	1,827,585	50,613	0.0277	0.9723	92.94
25.5	1,756,687	24,423	0.0139	0.9861	90.37
26.5	1,683,964		0.0000	1.0000	89.11
27.5	1,487,308	11,175	0.0075	0.9925	89.11
28.5	1,399,919		0.0000	1.0000	88.44
29.5	1,401,497		0.0000	1.0000	88.44
30.5	1,316,394	13,227	0.0100	0.9900	88.44
31.5	1,293,873	1,150	0.0009	0.9991	87.56
32.5	1,175,682	1,446	0.0012	0.9988	87.48
33.5	1,093,273	8,961	0.0082	0.9918	87.38
34.5	1,072,103	3,526	0.0033	0.9967	86.66
35.5	1,061,725	300	0.0003	0.9997	86.37
36.5	1,059,510	7,285	0.0069	0.9931	86.34
37.5	926,771	8,941	0.0096	0.9904	85.74
38.5	917,830		0.0000	1.0000	84.92

TENNESSEE AMERICAN WATER COMPANY
ACCOUNTS 311.2, 311.3 & 311.5 PUMPING EQUIPMENT

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1920-2007			EXPERIENCE BAND 1973-2007		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5	916,341		0.0000	1.0000	84.92
40.5	892,396		0.0000	1.0000	84.92
41.5	873,589	6,281	0.0072	0.9928	84.92
42.5	876,709		0.0000	1.0000	84.31
43.5	848,233	1,300	0.0015	0.9985	84.31
44.5	858,476	20,219	0.0236	0.9764	84.18
45.5	806,039		0.0000	1.0000	82.19
46.5	723,753		0.0000	1.0000	82.19
47.5	720,341		0.0000	1.0000	82.19
48.5	691,150		0.0000	1.0000	82.19
49.5	688,552		0.0000	1.0000	82.19
50.5	686,500	1,615	0.0024	0.9976	82.19
51.5	642,664	1,058	0.0016	0.9984	81.99
52.5	632,080		0.0000	1.0000	81.86
53.5	608,559	20	0.0000	1.0000	81.86
54.5	511,618		0.0000	1.0000	81.86
55.5	470,923	1,122	0.0024	0.9976	81.86
56.5	174,930		0.0000	1.0000	81.66
57.5	164,890		0.0000	1.0000	81.66
58.5	127,289	237	0.0019	0.9981	81.66
59.5	81,693		0.0000	1.0000	81.50
60.5	78,796	19,691	0.2499	0.7501	81.50
61.5	59,053		0.0000	1.0000	61.13
62.5	57,745	7,988	0.1383	0.8617	61.13
63.5	49,711		0.0000	1.0000	52.68
64.5	47,178	3,264	0.0692	0.9308	52.68
65.5	36,958		0.0000	1.0000	49.03
66.5	35,027		0.0000	1.0000	49.03
67.5	35,027		0.0000	1.0000	49.03
68.5	33,785		0.0000	1.0000	49.03
69.5	17,940		0.0000	1.0000	49.03
70.5	16,632	500	0.0301	0.9699	49.03
71.5	16,132		0.0000	1.0000	47.55
72.5	16,039	500	0.0312	0.9688	47.55
73.5	15,539		0.0000	1.0000	46.07
74.5	15,539	1,002	0.0645	0.9355	46.07
75.5	14,537		0.0000	1.0000	43.10
76.5	14,154		0.0000	1.0000	43.10
77.5	4,461		0.0000	1.0000	43.10
78.5	4,461		0.0000	1.0000	43.10

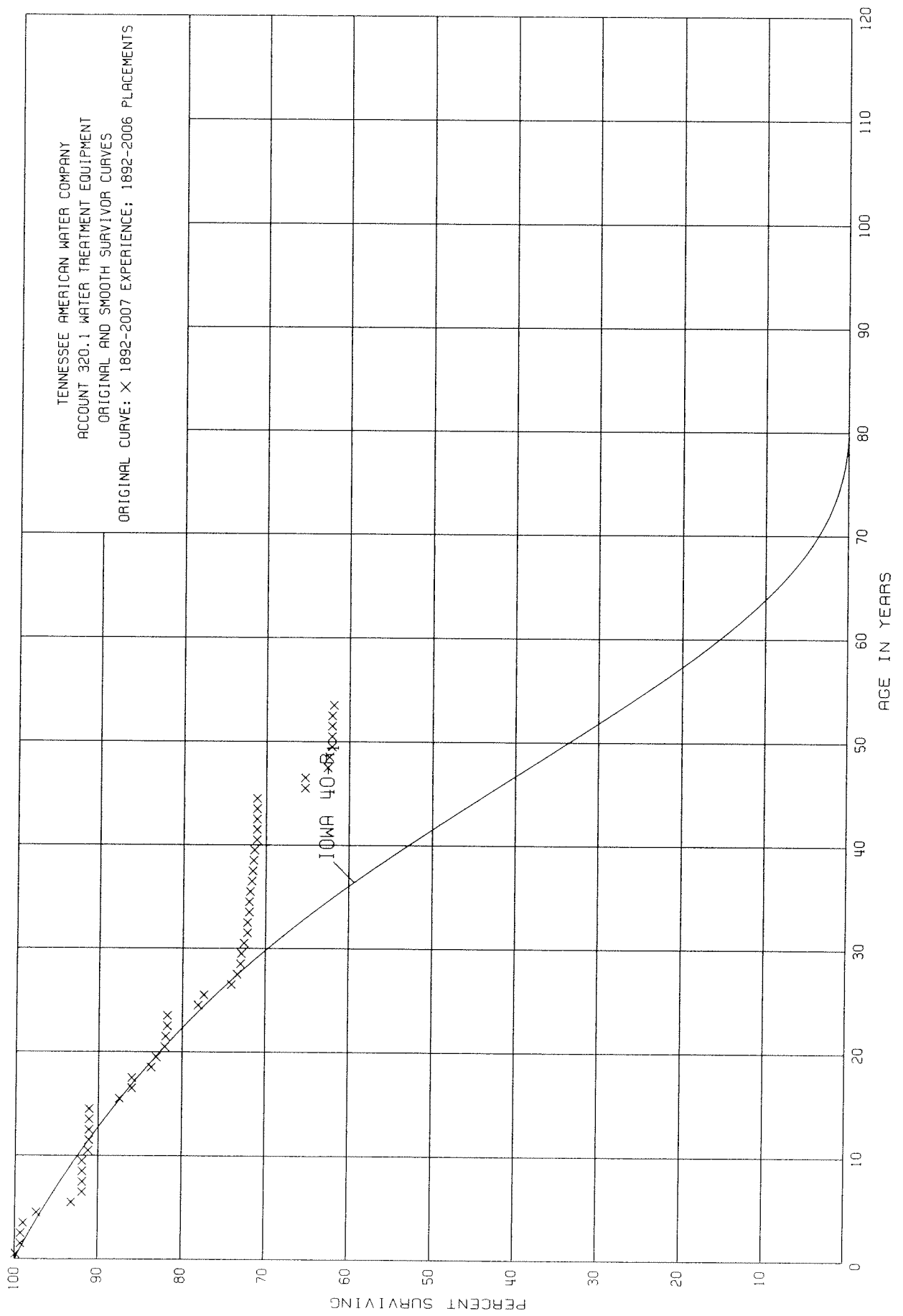
TENNESSEE AMERICAN WATER COMPANY
 ACCOUNTS 311.2, 311.3 & 311.5 PUMPING EQUIPMENT

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1920-2007

EXPERIENCE BAND 1973-2007

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
79.5	4,461		0.0000	1.0000	43.10
80.5	4,317		0.0000	1.0000	43.10
81.5	2,588		0.0000	1.0000	43.10
82.5	2,446		0.0000	1.0000	43.10
83.5	2,446		0.0000	1.0000	43.10
84.5	1,855		0.0000	1.0000	43.10
85.5	202		0.0000	1.0000	43.10
86.5					43.10



TENNESSEE AMERICAN WATER COMPANY
ACCOUNT 320.1 WATER TREATMENT EQUIPMENT
ORIGINAL LIFE TABLE

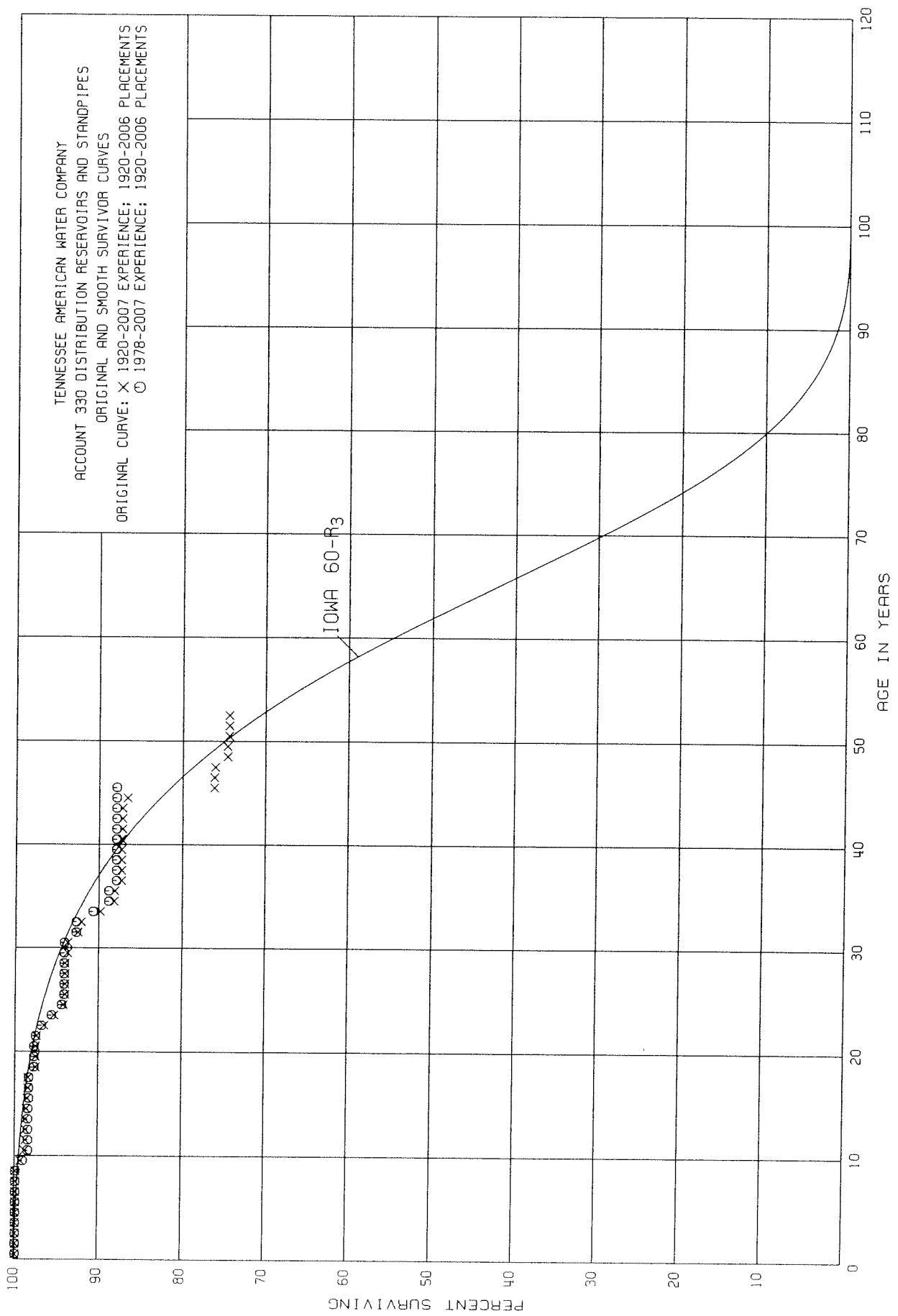
PLACEMENT BAND 1892-2006			EXPERIENCE BAND 1892-2007		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	15,809,385		0.0000	1.0000	100.00
0.5	15,809,385	106,238	0.0067	0.9933	100.00
1.5	15,459,337		0.0000	1.0000	99.33
2.5	15,416,523	58,818	0.0038	0.9962	99.33
3.5	15,453,164	243,990	0.0158	0.9842	98.95
4.5	15,193,220	660,170	0.0435	0.9565	97.39
5.5	14,533,051	191,724	0.0132	0.9868	93.15
6.5	14,341,327	2,000	0.0001	0.9999	91.92
7.5	13,884,656	3,415	0.0002	0.9998	91.91
8.5	12,911,465	551	0.0000	1.0000	91.89
9.5	12,872,961	103,395	0.0080	0.9920	91.89
10.5	11,671,548	881	0.0001	0.9999	91.15
11.5	10,145,591		0.0000	1.0000	91.14
12.5	10,137,704	984	0.0001	0.9999	91.14
13.5	10,099,869	3,426	0.0003	0.9997	91.13
14.5	10,064,493	400,407	0.0398	0.9602	91.10
15.5	9,543,441	157,934	0.0165	0.9835	87.47
16.5	9,241,769	2,534	0.0003	0.9997	86.03
17.5	9,090,742	244,118	0.0269	0.9731	86.00
18.5	7,638,899	54,288	0.0071	0.9929	83.69
19.5	7,584,611	94,041	0.0124	0.9876	83.10
20.5	7,490,570	2,849	0.0004	0.9996	82.07
21.5	7,487,721	25,000	0.0033	0.9967	82.04
22.5	7,462,721	2,152	0.0003	0.9997	81.77
23.5	7,460,569	336,394	0.0451	0.9549	81.75
24.5	7,060,288	59,949	0.0085	0.9915	78.06
25.5	6,709,187	289,930	0.0432	0.9568	77.40
26.5	6,367,999	55,796	0.0088	0.9912	74.06
27.5	5,893,800	33,878	0.0057	0.9943	73.41
28.5	5,817,515	4,556	0.0008	0.9992	72.99
29.5	5,319,668	25,428	0.0048	0.9952	72.93
30.5	4,943,558	23,323	0.0047	0.9953	72.58
31.5	4,920,235	27	0.0000	1.0000	72.24
32.5	4,920,208	15,334	0.0031	0.9969	72.24
33.5	4,904,874	152	0.0000	1.0000	72.02
34.5	4,464,036	8,231	0.0018	0.9982	72.02
35.5	4,258,729	12,200	0.0029	0.9971	71.89
36.5	3,740,732	2,356	0.0006	0.9994	71.68
37.5	3,508,763	8,000	0.0023	0.9977	71.64
38.5	3,493,195	3,091	0.0009	0.9991	71.48

TENNESSEE AMERICAN WATER COMPANY
ACCOUNT 320.1 WATER TREATMENT EQUIPMENT
ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1892-2006			EXPERIENCE BAND 1892-2007		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5	2,397,068	11,257	0.0047	0.9953	71.42
40.5	2,383,137		0.0000	1.0000	71.08
41.5	1,340,611		0.0000	1.0000	71.08
42.5	1,330,928		0.0000	1.0000	71.08
43.5	1,253,127	523	0.0004	0.9996	71.08
44.5	1,252,604	101,985	0.0814	0.9186	71.05
45.5	1,150,599		0.0000	1.0000	65.27
46.5	1,149,736	46,693	0.0406	0.9594	65.27
47.5	1,100,383	3,610	0.0033	0.9967	62.62
48.5	1,076,348	6,000	0.0056	0.9944	62.41
49.5	1,045,398		0.0000	1.0000	62.06
50.5	1,008,744		0.0000	1.0000	62.06
51.5	977,063		0.0000	1.0000	62.06
52.5	871,409	2,686	0.0031	0.9969	62.06
53.5	864,959	86	0.0001	0.9999	61.87
54.5	840,898		0.0000	1.0000	61.86
55.5	393,444		0.0000	1.0000	61.86
56.5	393,349	1,950	0.0050	0.9950	61.86
57.5	390,483		0.0000	1.0000	61.55
58.5	382,110		0.0000	1.0000	61.55
59.5	377,783		0.0000	1.0000	61.55
60.5	352,683		0.0000	1.0000	61.55
61.5	352,683		0.0000	1.0000	61.55
62.5	351,394		0.0000	1.0000	61.55
63.5	351,007		0.0000	1.0000	61.55
64.5	351,007	18,633	0.0531	0.9469	61.55
65.5	332,227		0.0000	1.0000	58.28
66.5	254,231		0.0000	1.0000	58.28
67.5	230,569		0.0000	1.0000	58.28
68.5	230,544		0.0000	1.0000	58.28
69.5	230,544		0.0000	1.0000	58.28
70.5	230,544		0.0000	1.0000	58.28
71.5	230,048		0.0000	1.0000	58.28
72.5	229,243		0.0000	1.0000	58.28
73.5	229,243		0.0000	1.0000	58.28
74.5	229,151		0.0000	1.0000	58.28
75.5	229,151		0.0000	1.0000	58.28
76.5	228,962		0.0000	1.0000	58.28
77.5	205,304		0.0000	1.0000	58.28
78.5	205,157		0.0000	1.0000	58.28

TENNESSEE AMERICAN WATER COMPANY
ACCOUNT 320.1 WATER TREATMENT EQUIPMENT
ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1892-2006			EXPERIENCE BAND 1892-2007		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
79.5	205,157		0.0000	1.0000	58.28
80.5	204,690		0.0000	1.0000	58.28
81.5	203,318		0.0000	1.0000	58.28
82.5	175,374		0.0000	1.0000	58.28
83.5	175,374		0.0000	1.0000	58.28
84.5	175,041		0.0000	1.0000	58.28
85.5	175,041		0.0000	1.0000	58.28
86.5	175,041		0.0000	1.0000	58.28
87.5	175,041		0.0000	1.0000	58.28
88.5	175,041		0.0000	1.0000	58.28
89.5	175,041		0.0000	1.0000	58.28
90.5	175,041		0.0000	1.0000	58.28
91.5	175,041		0.0000	1.0000	58.28
92.5	175,041		0.0000	1.0000	58.28
93.5	175,041		0.0000	1.0000	58.28
94.5	175,041		0.0000	1.0000	58.28
95.5	152,338		0.0000	1.0000	58.28
96.5	152,338		0.0000	1.0000	58.28
97.5	152,338		0.0000	1.0000	58.28
98.5	152,338		0.0000	1.0000	58.28
99.5	152,338		0.0000	1.0000	58.28
100.5	152,338		0.0000	1.0000	58.28
101.5	152,338		0.0000	1.0000	58.28
102.5	152,338		0.0000	1.0000	58.28
103.5	152,338		0.0000	1.0000	58.28
104.5	152,338		0.0000	1.0000	58.28
105.5	152,338		0.0000	1.0000	58.28
106.5	152,338		0.0000	1.0000	58.28
107.5	152,338		0.0000	1.0000	58.28
108.5	152,338		0.0000	1.0000	58.28
109.5	152,338		0.0000	1.0000	58.28
110.5	152,338		0.0000	1.0000	58.28
111.5	152,338		0.0000	1.0000	58.28
112.5	152,338		0.0000	1.0000	58.28
113.5	152,338		0.0000	1.0000	58.28
114.5	152,338		0.0000	1.0000	58.28
115.5					58.28



TENNESSEE AMERICAN WATER COMPANY
ACCOUNT 330 DISTRIBUTION RESERVOIRS AND STANDPIPES
ORIGINAL LIFE TABLE

PLACEMENT BAND 1920-2006			EXPERIENCE BAND 1920-2007		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	6,941,575		0.0000	1.0000	100.00
0.5	6,941,575		0.0000	1.0000	100.00
1.5	6,702,595		0.0000	1.0000	100.00
2.5	5,287,865		0.0000	1.0000	100.00
3.5	5,287,865	25	0.0000	1.0000	100.00
4.5	5,287,840	713	0.0001	0.9999	100.00
5.5	5,287,127		0.0000	1.0000	99.99
6.5	5,279,535	3,840	0.0007	0.9993	99.99
7.5	3,666,638		0.0000	1.0000	99.92
8.5	3,666,638	23,885	0.0065	0.9935	99.92
9.5	3,642,753	15,832	0.0043	0.9957	99.27
10.5	3,626,922	4,630	0.0013	0.9987	98.84
11.5	2,322,971	24	0.0000	1.0000	98.71
12.5	2,322,947		0.0000	1.0000	98.71
13.5	2,320,010	3,216	0.0014	0.9986	98.71
14.5	2,316,794	1,595	0.0007	0.9993	98.57
15.5	2,315,199	2,437	0.0011	0.9989	98.50
16.5	2,312,762	573	0.0002	0.9998	98.39
17.5	2,312,189	20,686	0.0089	0.9911	98.37
18.5	2,291,503		0.0000	1.0000	97.49
19.5	2,291,503	205	0.0001	0.9999	97.49
20.5	2,291,298	2,400	0.0010	0.9990	97.48
21.5	2,288,898	22,080	0.0096	0.9904	97.38
22.5	2,266,818	27,969	0.0123	0.9877	96.45
23.5	2,238,849	25,205	0.0113	0.9887	95.26
24.5	2,200,629	4,544	0.0021	0.9979	94.18
25.5	1,799,473		0.0000	1.0000	93.98
26.5	1,736,036	354	0.0002	0.9998	93.98
27.5	1,735,682	34	0.0000	1.0000	93.96
28.5	1,142,226	2,904	0.0025	0.9975	93.96
29.5	1,139,322	100	0.0001	0.9999	93.73
30.5	1,139,222	15,000	0.0132	0.9868	93.72
31.5	1,124,213	4,472	0.0040	0.9960	92.48
32.5	1,117,235	27,756	0.0248	0.9752	92.11
33.5	1,088,879	19,619	0.0180	0.9820	89.83
34.5	1,051,347	1,531	0.0015	0.9985	88.21
35.5	1,049,440	9,274	0.0088	0.9912	88.08
36.5	1,040,166		0.0000	1.0000	87.30
37.5	1,036,865		0.0000	1.0000	87.30
38.5	1,035,861		0.0000	1.0000	87.30

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 330 DISTRIBUTION RESERVOIRS AND STANDPIPES

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1920-2006

EXPERIENCE BAND 1920-2007

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5	1,035,861		0.0000	1.0000	87.30
40.5	1,035,861	675	0.0007	0.9993	87.30
41.5	1,035,186		0.0000	1.0000	87.24
42.5	543,321	296	0.0005	0.9995	87.24
43.5	542,385	4,057	0.0075	0.9925	87.20
44.5	532,739	63,902	0.1199	0.8801	86.55
45.5	356,256		0.0000	1.0000	76.17
46.5	354,664	200	0.0006	0.9994	76.17
47.5	297,048	5,875	0.0198	0.9802	76.12
48.5	284,118		0.0000	1.0000	74.61
49.5	280,094	892	0.0032	0.9968	74.61
50.5	275,471		0.0000	1.0000	74.37
51.5	274,472		0.0000	1.0000	74.37
52.5	238,769		0.0000	1.0000	74.37
53.5	150,127		0.0000	1.0000	74.37
54.5	147,290		0.0000	1.0000	74.37
55.5	145,219		0.0000	1.0000	74.37
56.5	144,619		0.0000	1.0000	74.37
57.5	142,486		0.0000	1.0000	74.37
58.5	139,804		0.0000	1.0000	74.37
59.5	74,398		0.0000	1.0000	74.37
60.5	62,103		0.0000	1.0000	74.37
61.5	62,103		0.0000	1.0000	74.37
62.5	62,103		0.0000	1.0000	74.37
63.5	62,083		0.0000	1.0000	74.37
64.5	62,083		0.0000	1.0000	74.37
65.5	62,083		0.0000	1.0000	74.37
66.5	62,083		0.0000	1.0000	74.37
67.5	62,083		0.0000	1.0000	74.37
68.5	62,083		0.0000	1.0000	74.37
69.5	62,036	14,923	0.2406	0.7594	74.37
70.5	47,113	2,686	0.0570	0.9430	56.48
71.5	44,358		0.0000	1.0000	53.26
72.5	44,193		0.0000	1.0000	53.26
73.5	44,026		0.0000	1.0000	53.26
74.5	44,026		0.0000	1.0000	53.26
75.5	43,977		0.0000	1.0000	53.26
76.5	43,666		0.0000	1.0000	53.26
77.5	43,517		0.0000	1.0000	53.26
78.5	43,516		0.0000	1.0000	53.26

TENNESSEE AMERICAN WATER COMPANY
ACCOUNT 330 DISTRIBUTION RESERVOIRS AND STANDPIPES

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1920-2006			EXPERIENCE BAND 1920-2007		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
79.5	43,077		0.0000	1.0000	53.26
80.5	29,625		0.0000	1.0000	53.26
81.5	6,155		0.0000	1.0000	53.26
82.5	114		0.0000	1.0000	53.26
83.5	86		0.0000	1.0000	53.26
84.5	68		0.0000	1.0000	53.26
85.5	68		0.0000	1.0000	53.26
86.5	68		0.0000	1.0000	53.26
87.5					53.26

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 330 DISTRIBUTION RESERVOIRS AND STANDPIPES

ORIGINAL LIFE TABLE

PLACEMENT BAND 1920-2006

EXPERIENCE BAND 1978-2007

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	5,691,899		0.0000	1.0000	100.00
0.5	5,691,899		0.0000	1.0000	100.00
1.5	5,452,928		0.0000	1.0000	100.00
2.5	4,040,704		0.0000	1.0000	100.00
3.5	4,042,899		0.0000	1.0000	100.00
4.5	4,075,812		0.0000	1.0000	100.00
5.5	4,076,188		0.0000	1.0000	100.00
6.5	4,068,596	3,603	0.0009	0.9991	100.00
7.5	2,459,238		0.0000	1.0000	99.91
8.5	2,460,242	22,500	0.0091	0.9909	99.91
9.5	2,437,742	15,309	0.0063	0.9937	99.00
10.5	2,422,433		0.0000	1.0000	98.38
11.5	1,133,017		0.0000	1.0000	98.38
12.5	1,651,632		0.0000	1.0000	98.38
13.5	1,649,335		0.0000	1.0000	98.38
14.5	1,654,924	1,595	0.0010	0.9990	98.38
15.5	1,777,910		0.0000	1.0000	98.28
16.5	1,779,502		0.0000	1.0000	98.28
17.5	1,836,917	11,385	0.0062	0.9938	98.28
18.5	1,832,587		0.0000	1.0000	97.67
19.5	1,836,611		0.0000	1.0000	97.67
20.5	1,883,311	2,400	0.0013	0.9987	97.67
21.5	1,881,910	15,000	0.0080	0.9920	97.54
22.5	1,902,613	23,750	0.0125	0.9875	96.76
23.5	1,987,049	24,905	0.0125	0.9875	95.55
24.5	1,951,966	4,544	0.0023	0.9977	94.36
25.5	1,562,155		0.0000	1.0000	94.14
26.5	1,499,418		0.0000	1.0000	94.14
27.5	1,501,551		0.0000	1.0000	94.14
28.5	910,811		0.0000	1.0000	94.14
29.5	976,217	100	0.0001	0.9999	94.14
30.5	988,412	15,000	0.0152	0.9848	94.13
31.5	973,403		0.0000	1.0000	92.70
32.5	970,897	20,960	0.0216	0.9784	92.70
33.5	949,357	19,609	0.0207	0.9793	90.70
34.5	911,835		0.0000	1.0000	88.82
35.5	911,459	9,274	0.0102	0.9898	88.82
36.5	902,185		0.0000	1.0000	87.91
37.5	904,759		0.0000	1.0000	87.91
38.5	903,755		0.0000	1.0000	87.91

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 330 DISTRIBUTION RESERVOIRS AND STANDPIPES

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1920-2006

EXPERIENCE BAND 1978-2007

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5	903,802		0.0000	1.0000	87.91
40.5	903,802		0.0000	1.0000	87.91
41.5	903,872		0.0000	1.0000	87.91
42.5	412,172		0.0000	1.0000	87.91
43.5	411,699		0.0000	1.0000	87.91
44.5	406,110		0.0000	1.0000	87.91
45.5	293,578		0.0000	1.0000	87.91
46.5	292,297		0.0000	1.0000	87.91
47.5	235,031	5,875	0.0250	0.9750	87.91
48.5	222,101		0.0000	1.0000	85.71
49.5	218,516		0.0000	1.0000	85.71
50.5	228,238		0.0000	1.0000	85.71
51.5	265,631		0.0000	1.0000	85.71
52.5	238,655		0.0000	1.0000	85.71
53.5	150,040		0.0000	1.0000	85.71
54.5	147,222		0.0000	1.0000	85.71
55.5	145,151		0.0000	1.0000	85.71
56.5	144,551		0.0000	1.0000	85.71
57.5	142,486		0.0000	1.0000	85.71
58.5	139,804		0.0000	1.0000	85.71
59.5	74,398		0.0000	1.0000	85.71
60.5	62,103		0.0000	1.0000	85.71
61.5	62,103		0.0000	1.0000	85.71
62.5	62,103		0.0000	1.0000	85.71
63.5	62,083		0.0000	1.0000	85.71
64.5	62,083		0.0000	1.0000	85.71
65.5	62,083		0.0000	1.0000	85.71
66.5	62,083		0.0000	1.0000	85.71
67.5	62,083		0.0000	1.0000	85.71
68.5	62,083		0.0000	1.0000	85.71
69.5	62,036	14,923	0.2406	0.7594	85.71
70.5	47,113	2,686	0.0570	0.9430	65.09
71.5	44,358		0.0000	1.0000	61.38
72.5	44,193		0.0000	1.0000	61.38
73.5	44,026		0.0000	1.0000	61.38
74.5	44,026		0.0000	1.0000	61.38
75.5	43,977		0.0000	1.0000	61.38
76.5	43,666		0.0000	1.0000	61.38
77.5	43,517		0.0000	1.0000	61.38
78.5	43,516		0.0000	1.0000	61.38

TENNESSEE AMERICAN WATER COMPANY

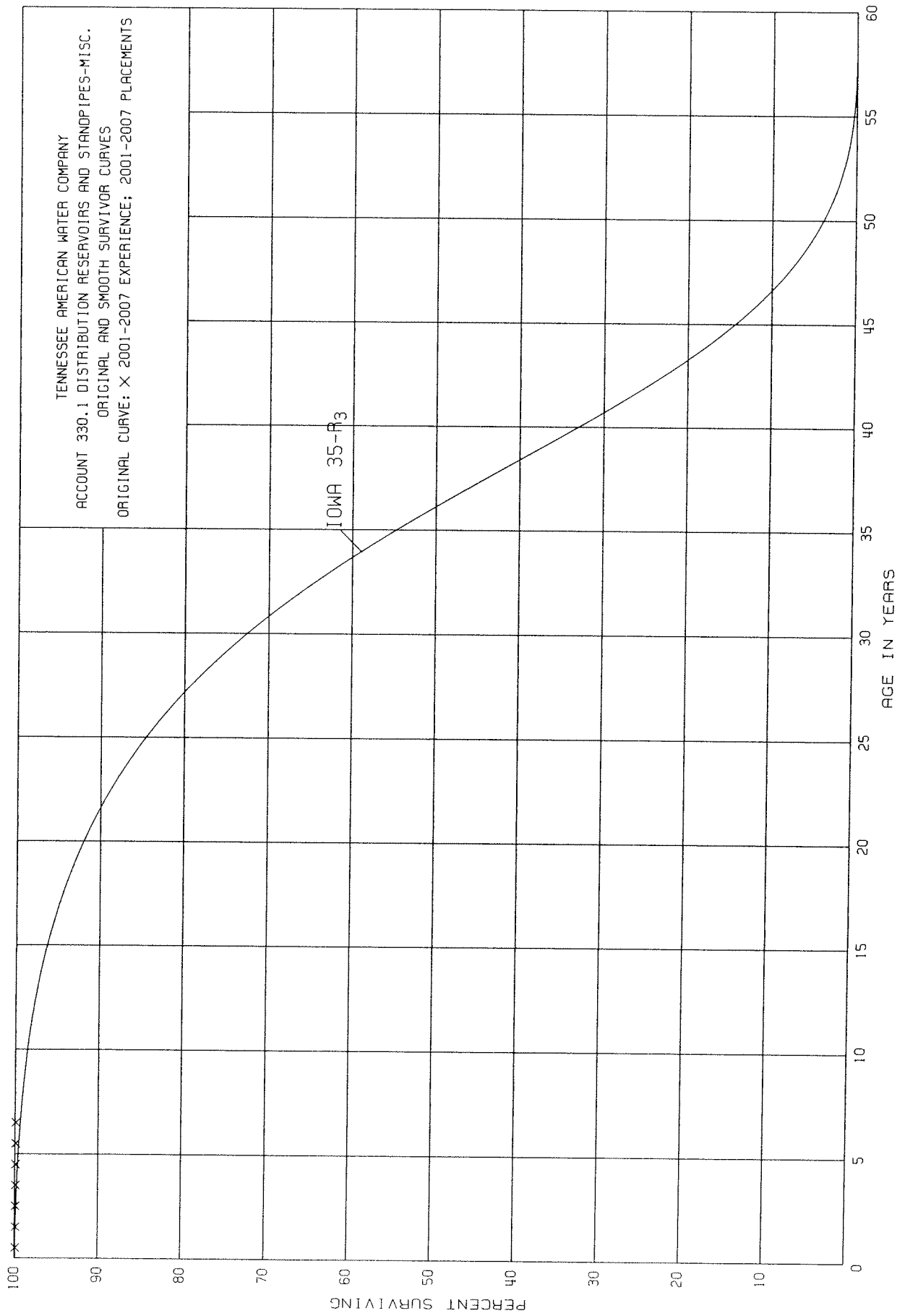
ACCOUNT 330 DISTRIBUTION RESERVOIRS AND STANDPIPES

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1920-2006

EXPERIENCE BAND 1978-2007

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
79.5	43,077		0.0000	1.0000	61.38
80.5	29,625		0.0000	1.0000	61.38
81.5	6,155		0.0000	1.0000	61.38
82.5	114		0.0000	1.0000	61.38
83.5	86		0.0000	1.0000	61.38
84.5	68		0.0000	1.0000	61.38
85.5	68		0.0000	1.0000	61.38
86.5	68		0.0000	1.0000	61.38
87.5					61.38



TENNESSEE AMERICAN WATER COMPANY

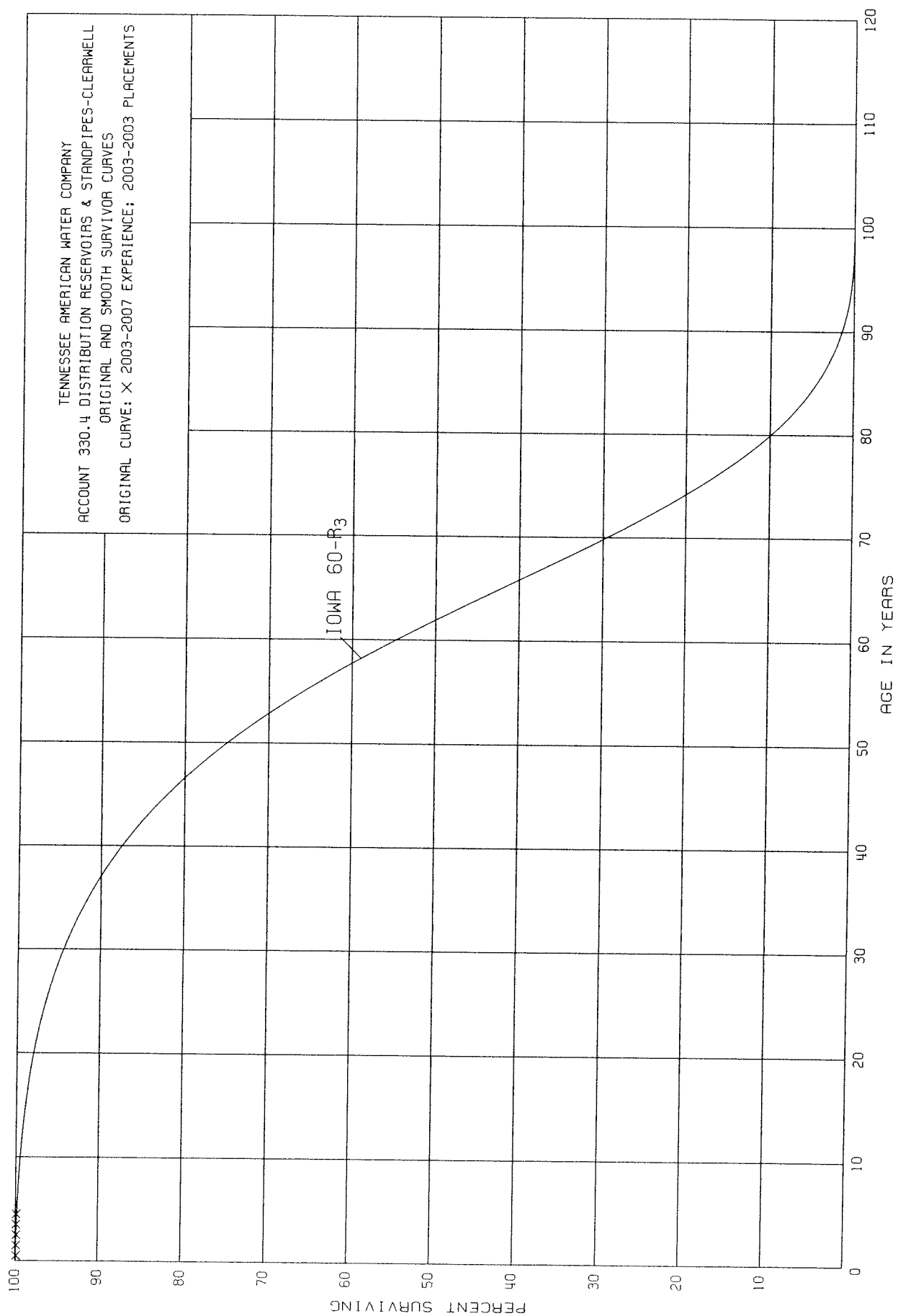
ACCOUNT 330.1 DISTRIBUTION RESERVOIRS AND STANDPIPES-MISC.

ORIGINAL LIFE TABLE

PLACEMENT BAND 2001-2007

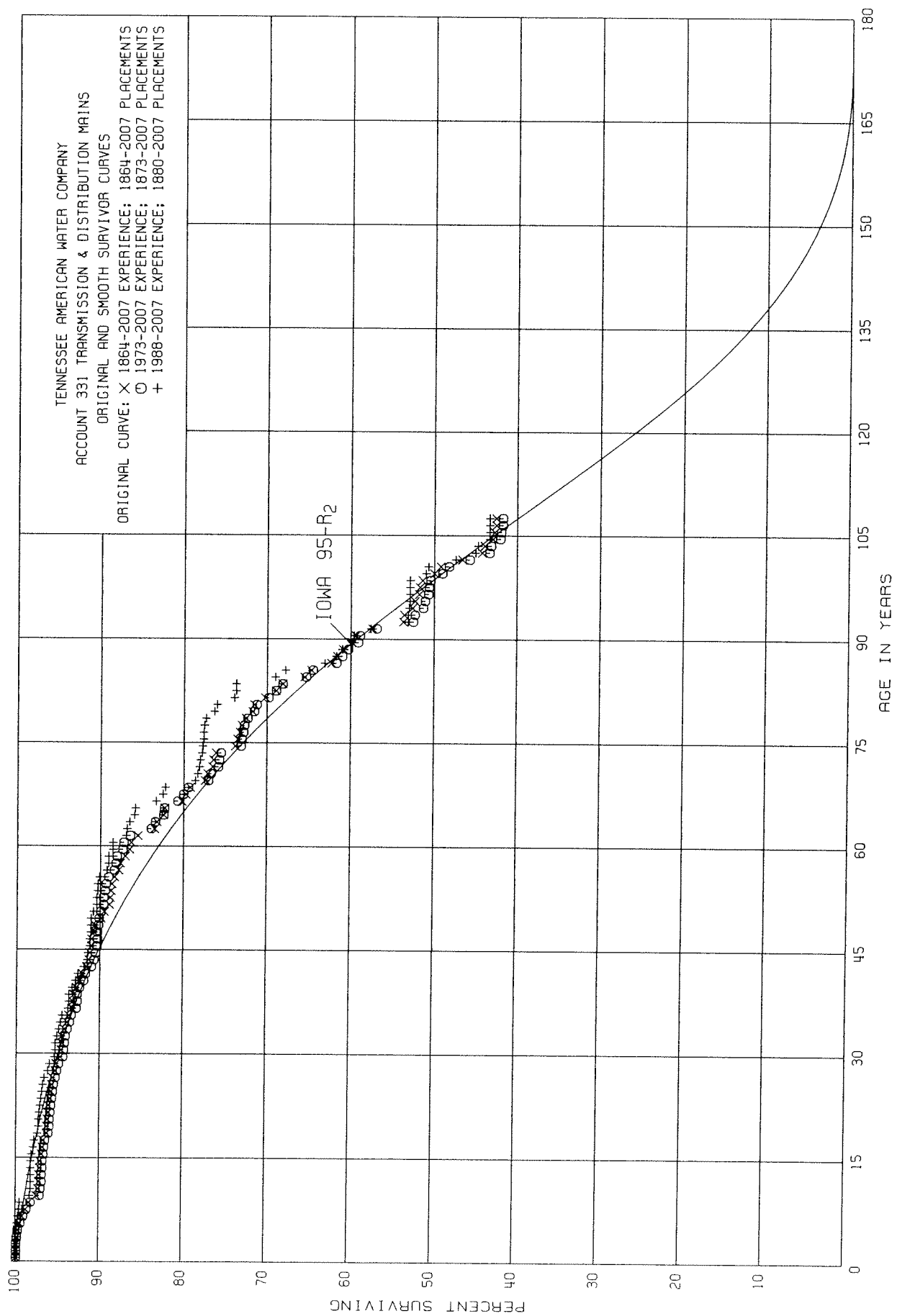
EXPERIENCE BAND 2001-2007

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	1,780,709		0.0000	1.0000	100.00
0.5	1,774,882		0.0000	1.0000	100.00
1.5	170,895		0.0000	1.0000	100.00
2.5	170,895		0.0000	1.0000	100.00
3.5	170,895		0.0000	1.0000	100.00
4.5	170,895		0.0000	1.0000	100.00
5.5	162,242		0.0000	1.0000	100.00
6.5					100.00



TENNESSEE AMERICAN WATER COMPANY
ACCOUNT 330.4 DISTRIBUTION RESERVOIRS & STANDPIPES-CLEARWELL
ORIGINAL LIFE TABLE

PLACEMENT BAND 2003-2003			EXPERIENCE BAND 2003-2007		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	680,784		0.0000	1.0000	100.00
0.5	680,784		0.0000	1.0000	100.00
1.5	680,784		0.0000	1.0000	100.00
2.5	680,784		0.0000	1.0000	100.00
3.5	680,784		0.0000	1.0000	100.00
4.5					100.00



TENNESSEE AMERICAN WATER COMPANY
ACCOUNT 331 TRANSMISSION & DISTRIBUTION MAINS
ORIGINAL LIFE TABLE

PLACEMENT BAND 1864-2007			EXPERIENCE BAND 1864-2007		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	106,217,490	12,998	0.0001	0.9999	100.00
0.5	102,099,769	37,013	0.0004	0.9996	99.99
1.5	93,953,052	55,920	0.0006	0.9994	99.95
2.5	86,058,951	52,834	0.0006	0.9994	99.89
3.5	81,815,154	106,978	0.0013	0.9987	99.83
4.5	79,769,734	169,330	0.0021	0.9979	99.70
5.5	76,927,285	261,518	0.0034	0.9966	99.49
6.5	73,754,786	234,967	0.0032	0.9968	99.15
7.5	71,191,017	284,630	0.0040	0.9960	98.83
8.5	67,620,307	645,259	0.0095	0.9905	98.43
9.5	65,388,922	121,467	0.0019	0.9981	97.49
10.5	63,706,017	38,589	0.0006	0.9994	97.30
11.5	62,000,300	46,749	0.0008	0.9992	97.24
12.5	60,172,193	32,410	0.0005	0.9995	97.16
13.5	58,143,116	37,698	0.0006	0.9994	97.11
14.5	55,273,649	73,867	0.0013	0.9987	97.05
15.5	53,498,309	61,142	0.0011	0.9989	96.92
16.5	51,740,087	76,358	0.0015	0.9985	96.81
17.5	48,781,353	168,074	0.0034	0.9966	96.66
18.5	46,472,645	34,873	0.0008	0.9992	96.33
19.5	44,104,649	16,413	0.0004	0.9996	96.25
20.5	42,704,289	33,912	0.0008	0.9992	96.21
21.5	40,759,287	33,502	0.0008	0.9992	96.13
22.5	39,624,642	45,736	0.0012	0.9988	96.05
23.5	38,954,189	48,575	0.0012	0.9988	95.93
24.5	37,957,499	33,234	0.0009	0.9991	95.81
25.5	35,843,353	65,688	0.0018	0.9982	95.72
26.5	32,476,019	81,733	0.0025	0.9975	95.55
27.5	30,196,621	51,483	0.0017	0.9983	95.31
28.5	27,523,025	129,753	0.0047	0.9953	95.15
29.5	24,910,095	17,681	0.0007	0.9993	94.70
30.5	23,465,763	20,432	0.0009	0.9991	94.63
31.5	22,674,374	22,471	0.0010	0.9990	94.54
32.5	22,324,906	59,331	0.0027	0.9973	94.45
33.5	19,959,059	59,630	0.0030	0.9970	94.19
34.5	16,693,046	29,570	0.0018	0.9982	93.91
35.5	15,867,501	80,537	0.0051	0.9949	93.74
36.5	15,331,725	14,764	0.0010	0.9990	93.26
37.5	15,001,090	13,656	0.0009	0.9991	93.17
38.5	14,092,720	46,384	0.0033	0.9967	93.09

TENNESSEE AMERICAN WATER COMPANY
ACCOUNT 331 TRANSMISSION & DISTRIBUTION MAINS
ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1864-2007

EXPERIENCE BAND 1864-2007

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5	13,448,142	55,013	0.0041	0.9959	92.78
40.5	13,008,192	36,103	0.0028	0.9972	92.40
41.5	12,441,968	68,973	0.0055	0.9945	92.14
42.5	10,809,228	38,199	0.0035	0.9965	91.63
43.5	10,317,611	18,815	0.0018	0.9982	91.31
44.5	10,084,543	17,089	0.0017	0.9983	91.15
45.5	9,553,817	5,209	0.0005	0.9995	91.00
46.5	9,252,204	29,762	0.0032	0.9968	90.95
47.5	8,826,866	8,418	0.0010	0.9990	90.66
48.5	8,185,606	61,150	0.0075	0.9925	90.57
49.5	8,000,306	38,196	0.0048	0.9952	89.89
50.5	7,199,483	43,023	0.0060	0.9940	89.46
51.5	6,599,257	6,823	0.0010	0.9990	88.92
52.5	6,118,988	10,962	0.0018	0.9982	88.83
53.5	5,567,656	7,246	0.0013	0.9987	88.67
54.5	5,120,727	15,270	0.0030	0.9970	88.55
55.5	4,761,550	26,851	0.0056	0.9944	88.28
56.5	4,413,603	10,916	0.0025	0.9975	87.79
57.5	4,278,339	28,921	0.0068	0.9932	87.57
58.5	4,050,548	22,172	0.0055	0.9945	86.97
59.5	3,480,367	6,538	0.0019	0.9981	86.49
60.5	3,391,631	34,102	0.0101	0.9899	86.33
61.5	3,312,405	76,008	0.0229	0.9771	85.46
62.5	3,221,162	12,967	0.0040	0.9960	83.50
63.5	3,198,613	29,560	0.0092	0.9908	83.17
64.5	3,159,144	4,843	0.0015	0.9985	82.40
65.5	3,098,683	77,636	0.0251	0.9749	82.28
66.5	2,943,971	20,005	0.0068	0.9932	80.21
67.5	2,877,946	16,644	0.0058	0.9942	79.66
68.5	2,806,302	63,201	0.0225	0.9775	79.20
69.5	2,735,118	9,739	0.0036	0.9964	77.42
70.5	2,696,964	22,670	0.0084	0.9916	77.14
71.5	2,632,259	3,915	0.0015	0.9985	76.49
72.5	2,585,064	9,506	0.0037	0.9963	76.38
73.5	2,566,851	76,880	0.0300	0.9700	76.10
74.5	2,488,276	10,239	0.0041	0.9959	73.82
75.5	2,468,057	12,586	0.0051	0.9949	73.52
76.5	2,349,619	5,015	0.0021	0.9979	73.15
77.5	2,264,680	14,777	0.0065	0.9935	73.00
78.5	2,132,903	24,789	0.0116	0.9884	72.53

TENNESSEE AMERICAN WATER COMPANY
ACCOUNT 331 TRANSMISSION & DISTRIBUTION MAINS
ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1864-2007			EXPERIENCE BAND 1864-2007		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
79.5	2,033,302	6,789	0.0033	0.9967	71.69
80.5	1,805,214	31,215	0.0173	0.9827	71.45
81.5	1,523,437	27,535	0.0181	0.9819	70.21
82.5	1,450,445	18,184	0.0125	0.9875	68.94
83.5	1,355,010	52,238	0.0386	0.9614	68.08
84.5	1,268,819	15,039	0.0119	0.9881	65.45
85.5	1,217,439	45,131	0.0371	0.9629	64.67
86.5	1,167,286	12,893	0.0110	0.9890	62.27
87.5	1,149,355	12,335	0.0107	0.9893	61.59
88.5	1,137,020	19,866	0.0175	0.9825	60.93
89.5	1,117,154	9,459	0.0085	0.9915	59.86
90.5	1,107,695	35,867	0.0324	0.9676	59.35
91.5	1,071,827	69,528	0.0649	0.9351	57.43
92.5	1,002,300	2,393	0.0024	0.9976	53.70
93.5	999,907	18,798	0.0188	0.9812	53.57
94.5	981,108	5,400	0.0055	0.9945	52.56
95.5	569,479	5,053	0.0089	0.9911	52.27
96.5	564,425	840	0.0015	0.9985	51.80
97.5	563,585	3,181	0.0056	0.9944	51.72
98.5	560,404	16,093	0.0287	0.9713	51.43
99.5	544,312	8,175	0.0150	0.9850	49.95
100.5	536,137	28,136	0.0525	0.9475	49.20
101.5	508,000	26,775	0.0527	0.9473	46.62
102.5	481,225	2,516	0.0052	0.9948	44.16
103.5	478,709	11,461	0.0239	0.9761	43.93
104.5	467,248	1,530	0.0033	0.9967	42.88
105.5	465,717	2,354	0.0051	0.9949	42.74
106.5	463,315	316	0.0007	0.9993	42.52
107.5	130,988		0.0000	1.0000	42.49
108.5	130,988		0.0000	1.0000	42.49
109.5	130,988	11,017	0.0841	0.9159	42.49
110.5	119,971		0.0000	1.0000	38.92
111.5	119,971		0.0000	1.0000	38.92
112.5	119,971		0.0000	1.0000	38.92
113.5	119,971		0.0000	1.0000	38.92
114.5	119,971		0.0000	1.0000	38.92
115.5	119,971		0.0000	1.0000	38.92
116.5	119,971	95	0.0008	0.9992	38.92
117.5	119,876		0.0000	1.0000	38.89
118.5	119,876	14,594	0.1217	0.8783	38.89

TENNESSEE AMERICAN WATER COMPANY
ACCOUNT 331 TRANSMISSION & DISTRIBUTION MAINS
ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1864-2007			EXPERIENCE BAND 1864-2007		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
119.5	105,283	7,101	0.0674	0.9326	34.16
120.5	98,182	14,638	0.1491	0.8509	31.86
121.5	83,544		0.0000	1.0000	27.11
122.5	83,544		0.0000	1.0000	27.11
123.5	83,544	196	0.0023	0.9977	27.11
124.5	83,348		0.0000	1.0000	27.05
125.5	83,348		0.0000	1.0000	27.05
126.5	83,348		0.0000	1.0000	27.05
127.5					27.05

TENNESSEE AMERICAN WATER COMPANY
ACCOUNT 331 TRANSMISSION & DISTRIBUTION MAINS
ORIGINAL LIFE TABLE

PLACEMENT BAND 1873-2007			EXPERIENCE BAND 1973-2007		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	88,950,423	11,647	0.0001	0.9999	100.00
0.5	85,647,938	35,085	0.0004	0.9996	99.99
1.5	77,962,677	43,752	0.0006	0.9994	99.95
2.5	70,405,449	45,227	0.0006	0.9994	99.89
3.5	67,096,431	98,140	0.0015	0.9985	99.83
4.5	65,668,928	155,043	0.0024	0.9976	99.68
5.5	63,234,401	248,811	0.0039	0.9961	99.44
6.5	60,636,235	231,703	0.0038	0.9962	99.05
7.5	59,665,163	276,144	0.0046	0.9954	98.67
8.5	56,668,313	639,938	0.0113	0.9887	98.22
9.5	54,771,883	80,534	0.0015	0.9985	97.11
10.5	53,644,575	26,699	0.0005	0.9995	96.96
11.5	52,262,400	17,948	0.0003	0.9997	96.91
12.5	50,862,102	18,527	0.0004	0.9996	96.88
13.5	49,487,986	21,597	0.0004	0.9996	96.84
14.5	46,758,201	60,275	0.0013	0.9987	96.80
15.5	45,773,966	48,238	0.0011	0.9989	96.67
16.5	44,592,738	43,805	0.0010	0.9990	96.56
17.5	42,144,551	161,542	0.0038	0.9962	96.46
18.5	40,395,103	30,818	0.0008	0.9992	96.09
19.5	38,574,807	12,166	0.0003	0.9997	96.01
20.5	37,529,465	31,601	0.0008	0.9992	95.98
21.5	35,915,017	27,015	0.0008	0.9992	95.90
22.5	34,940,744	42,241	0.0012	0.9988	95.82
23.5	34,499,239	44,862	0.0013	0.9987	95.71
24.5	34,080,957	31,072	0.0009	0.9991	95.59
25.5	32,058,500	60,380	0.0019	0.9981	95.50
26.5	28,744,916	80,792	0.0028	0.9972	95.32
27.5	26,482,936	49,342	0.0019	0.9981	95.05
28.5	23,827,017	126,695	0.0053	0.9947	94.87
29.5	21,227,336	12,361	0.0006	0.9994	94.37
30.5	19,860,914	14,677	0.0007	0.9993	94.31
31.5	19,155,135	20,940	0.0011	0.9989	94.24
32.5	18,853,776	50,706	0.0027	0.9973	94.14
33.5	16,559,683	57,588	0.0035	0.9965	93.89
34.5	13,306,587	24,186	0.0018	0.9982	93.56
35.5	12,543,450	74,502	0.0059	0.9941	93.39
36.5	12,058,950	12,702	0.0011	0.9989	92.84
37.5	11,775,853	5,939	0.0005	0.9995	92.74
38.5	10,883,988	37,396	0.0034	0.9966	92.69

TENNESSEE AMERICAN WATER COMPANY
ACCOUNT 331 TRANSMISSION & DISTRIBUTION MAINS
ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1873-2007

EXPERIENCE BAND 1973-2007

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5	10,251,100	48,701	0.0048	0.9952	92.37
40.5	9,828,181	30,932	0.0031	0.9969	91.93
41.5	9,380,146	65,526	0.0070	0.9930	91.65
42.5	7,868,170	27,558	0.0035	0.9965	91.01
43.5	7,513,395	12,831	0.0017	0.9983	90.69
44.5	7,362,657	14,690	0.0020	0.9980	90.54
45.5	7,123,455	2,218	0.0003	0.9997	90.36
46.5	7,113,455	3,283	0.0005	0.9995	90.33
47.5	6,806,632	7,021	0.0010	0.9990	90.28
48.5	6,258,443	5,118	0.0008	0.9992	90.19
49.5	6,173,415	16,538	0.0027	0.9973	90.12
50.5	5,436,229	16,031	0.0029	0.9971	89.88
51.5	4,871,414	3,145	0.0006	0.9994	89.62
52.5	4,414,295	8,571	0.0019	0.9981	89.57
53.5	3,865,368	3,357	0.0009	0.9991	89.40
54.5	3,422,329	10,993	0.0032	0.9968	89.32
55.5	3,078,530	25,115	0.0082	0.9918	89.03
56.5	2,736,082	6,861	0.0025	0.9975	88.30
57.5	2,605,109	2,917	0.0011	0.9989	88.08
58.5	2,453,469	19,491	0.0079	0.9921	87.98
59.5	1,893,605	1,101	0.0006	0.9994	87.28
60.5	2,534,618	23,773	0.0094	0.9906	87.23
61.5	2,471,075	73,140	0.0296	0.9704	86.41
62.5	2,384,976	11,921	0.0050	0.9950	83.85
63.5	2,363,879	28,149	0.0119	0.9881	83.43
64.5	2,325,936	3,945	0.0017	0.9983	82.44
65.5	2,267,931	45,236	0.0199	0.9801	82.30
66.5	2,146,598	18,995	0.0088	0.9912	80.66
67.5	2,083,821	14,539	0.0070	0.9930	79.95
68.5	2,016,382	61,701	0.0306	0.9694	79.39
69.5	1,947,526	7,178	0.0037	0.9963	76.96
70.5	1,912,435	21,496	0.0112	0.9888	76.68
71.5	1,850,144	2,515	0.0014	0.9986	75.82
72.5	2,329,487	6,835	0.0029	0.9971	75.71
73.5	2,313,945	72,811	0.0315	0.9685	75.49
74.5	2,239,439	4,950	0.0022	0.9978	73.11
75.5	2,224,508	5,147	0.0023	0.9977	72.95
76.5	2,113,510	2,509	0.0012	0.9988	72.78
77.5	2,031,076	11,700	0.0058	0.9942	72.69
78.5	1,902,377	21,384	0.0112	0.9888	72.27

TENNESSEE AMERICAN WATER COMPANY
ACCOUNT 331 TRANSMISSION & DISTRIBUTION MAINS
ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1873-2007			EXPERIENCE BAND 1973-2007		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
79.5	1,806,180	6,545	0.0036	0.9964	71.46
80.5	1,578,337	31,139	0.0197	0.9803	71.20
81.5	1,296,636	17,105	0.0132	0.9868	69.80
82.5	1,234,075	13,950	0.0113	0.9887	68.88
83.5	1,142,872	47,815	0.0418	0.9582	68.10
84.5	1,061,376	12,010	0.0113	0.9887	65.25
85.5	1,013,024	44,037	0.0435	0.9565	64.51
86.5	963,965	11,567	0.0120	0.9880	61.70
87.5	947,360	10,661	0.0113	0.9887	60.96
88.5	936,700	18,852	0.0201	0.9799	60.27
89.5	917,848	3,236	0.0035	0.9965	59.06
90.5	914,612	31,085	0.0340	0.9660	58.85
91.5	883,527	68,172	0.0772	0.9228	56.85
92.5	997,809	2,393	0.0024	0.9976	52.46
93.5	995,415	18,798	0.0189	0.9811	52.33
94.5	976,617	4,792	0.0049	0.9951	51.34
95.5	565,595	4,132	0.0073	0.9927	51.09
96.5	561,463	840	0.0015	0.9985	50.72
97.5	560,623	2,572	0.0046	0.9954	50.64
98.5	558,050	16,093	0.0288	0.9712	50.41
99.5	544,312	8,175	0.0150	0.9850	48.96
100.5	536,137	28,136	0.0525	0.9475	48.23
101.5	508,000	26,775	0.0527	0.9473	45.70
102.5	481,225	2,516	0.0052	0.9948	43.29
103.5	478,709	11,461	0.0239	0.9761	43.06
104.5	467,248	1,530	0.0033	0.9967	42.03
105.5	465,717	2,354	0.0051	0.9949	41.89
106.5	463,315	316	0.0007	0.9993	41.68
107.5	130,988		0.0000	1.0000	41.65
108.5	130,988		0.0000	1.0000	41.65
109.5	130,988	11,017	0.0841	0.9159	41.65
110.5	119,971		0.0000	1.0000	38.15
111.5	119,971		0.0000	1.0000	38.15
112.5	119,971		0.0000	1.0000	38.15
113.5	119,971		0.0000	1.0000	38.15
114.5	119,971		0.0000	1.0000	38.15
115.5	119,971		0.0000	1.0000	38.15
116.5	119,971	95	0.0008	0.9992	38.15
117.5	119,876		0.0000	1.0000	38.12
118.5	119,876	14,594	0.1217	0.8783	38.12

TENNESSEE AMERICAN WATER COMPANY
ACCOUNT 331 TRANSMISSION & DISTRIBUTION MAINS
ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1873-2007

EXPERIENCE BAND 1973-2007

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
119.5	105,283	7,101	0.0674	0.9326	33.48
120.5	98,182	14,638	0.1491	0.8509	31.22
121.5	83,544		0.0000	1.0000	26.57
122.5	83,544		0.0000	1.0000	26.57
123.5	83,544	196	0.0023	0.9977	26.57
124.5	83,348		0.0000	1.0000	26.51
125.5	83,348		0.0000	1.0000	26.51
126.5	83,348		0.0000	1.0000	26.51
127.5					26.51

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 331 TRANSMISSION & DISTRIBUTION MAINS

ORIGINAL LIFE TABLE

PLACEMENT BAND 1880-2007

EXPERIENCE BAND 1988-2007

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	60,159,404	3,155	0.0001	0.9999	100.00
0.5	57,455,367	9,027	0.0002	0.9998	99.99
1.5	51,270,812	26,336	0.0005	0.9995	99.97
2.5	44,513,468	17,205	0.0004	0.9996	99.92
3.5	40,939,090	27,565	0.0007	0.9993	99.88
4.5	39,925,475	5,421	0.0001	0.9999	99.81
5.5	39,348,192	22,249	0.0006	0.9994	99.80
6.5	39,906,949	39,274	0.0010	0.9990	99.74
7.5	39,745,268	56,066	0.0014	0.9986	99.64
8.5	39,069,489	475,443	0.0122	0.9878	99.50
9.5	39,526,111	18,068	0.0005	0.9995	98.29
10.5	39,416,621	16,447	0.0004	0.9996	98.24
11.5	38,559,654	8,612	0.0002	0.9998	98.20
12.5	37,117,932	9,029	0.0002	0.9998	98.18
13.5	37,556,195	3,817	0.0001	0.9999	98.16
14.5	38,216,671	37,679	0.0010	0.9990	98.15
15.5	37,282,808	41,758	0.0011	0.9989	98.05
16.5	36,002,758	40,545	0.0011	0.9989	97.94
17.5	33,402,060	144,271	0.0043	0.9957	97.83
18.5	32,022,960	30,304	0.0009	0.9991	97.41
19.5	30,263,947	9,508	0.0003	0.9997	97.32
20.5	29,261,296	31,601	0.0011	0.9989	97.29
21.5	27,865,655	11,124	0.0004	0.9996	97.18
22.5	28,338,577	39,172	0.0014	0.9986	97.14
23.5	28,237,196	41,742	0.0015	0.9985	97.00
24.5	27,564,702	25,442	0.0009	0.9991	96.85
25.5	25,972,877	57,259	0.0022	0.9978	96.76
26.5	22,923,214	78,303	0.0034	0.9966	96.55
27.5	21,045,673	48,967	0.0023	0.9977	96.22
28.5	19,013,808	119,465	0.0063	0.9937	96.00
29.5	16,534,747	10,715	0.0006	0.9994	95.40
30.5	15,861,255	14,349	0.0009	0.9991	95.34
31.5	15,638,232	19,663	0.0013	0.9987	95.25
32.5	15,768,211	37,648	0.0024	0.9976	95.13
33.5	13,970,190	32,966	0.0024	0.9976	94.90
34.5	11,250,804	23,866	0.0021	0.9979	94.67
35.5	10,780,811	73,835	0.0068	0.9932	94.47
36.5	10,579,438	12,061	0.0011	0.9989	93.83
37.5	10,403,658	4,908	0.0005	0.9995	93.73
38.5	9,718,059	37,043	0.0038	0.9962	93.68

TENNESSEE AMERICAN WATER COMPANY
ACCOUNT 331 TRANSMISSION & DISTRIBUTION MAINS
ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1880-2007			EXPERIENCE BAND 1988-2007		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5	9,650,333	47,531	0.0049	0.9951	93.32
40.5	9,304,795	29,341	0.0032	0.9968	92.86
41.5	8,792,069	64,577	0.0073	0.9927	92.56
42.5	7,180,080	26,702	0.0037	0.9963	91.88
43.5	6,709,622	12,631	0.0019	0.9981	91.54
44.5	6,492,929	14,512	0.0022	0.9978	91.37
45.5	6,037,017	128	0.0000	1.0000	91.17
46.5	5,819,367	2,311	0.0004	0.9996	91.17
47.5	5,467,893	3,346	0.0006	0.9994	91.13
48.5	4,894,281	1,620	0.0003	0.9997	91.08
49.5	4,778,319	14,806	0.0031	0.9969	91.05
50.5	4,055,738	14,521	0.0036	0.9964	90.77
51.5	3,526,667	1,312	0.0004	0.9996	90.44
52.5	3,096,366	2,306	0.0007	0.9993	90.40
53.5	2,562,396	353	0.0001	0.9999	90.34
54.5	2,124,823	5,493	0.0026	0.9974	90.33
55.5	1,785,917	18,654	0.0104	0.9896	90.10
56.5	1,558,334	3,014	0.0019	0.9981	89.16
57.5	1,545,917	849	0.0005	0.9995	88.99
58.5	1,471,536	6,819	0.0046	0.9954	88.95
59.5	992,087	73	0.0001	0.9999	88.54
60.5	1,191,260	22,625	0.0190	0.9810	88.53
61.5	1,406,581	632	0.0004	0.9996	86.85
62.5	1,469,781	5,080	0.0035	0.9965	86.82
63.5	1,540,324	10,809	0.0070	0.9930	86.52
64.5	1,557,683	2,638	0.0017	0.9983	85.91
65.5	1,540,633	43,409	0.0282	0.9718	85.76
66.5	1,428,563	14,620	0.0102	0.9898	83.34
67.5	1,378,637	4,677	0.0034	0.9966	82.49
68.5	1,318,974	58,309	0.0442	0.9558	82.21
69.5	1,252,682	5,180	0.0041	0.9959	78.58
70.5	1,228,734	2,225	0.0018	0.9982	78.26
71.5	1,188,237	1,528	0.0013	0.9987	78.12
72.5	1,143,625	3,378	0.0030	0.9970	78.02
73.5	1,180,221	2,139	0.0018	0.9982	77.79
74.5	1,176,485	590	0.0005	0.9995	77.65
75.5	1,765,161	1,037	0.0006	0.9994	77.61
76.5	1,659,816	998	0.0006	0.9994	77.56
77.5	1,580,015	4,611	0.0029	0.9971	77.51
78.5	1,458,410	18,310	0.0126	0.9874	77.29

TENNESSEE AMERICAN WATER COMPANY
ACCOUNT 331 TRANSMISSION & DISTRIBUTION MAINS
ORIGINAL LIFE TABLE, CONT.

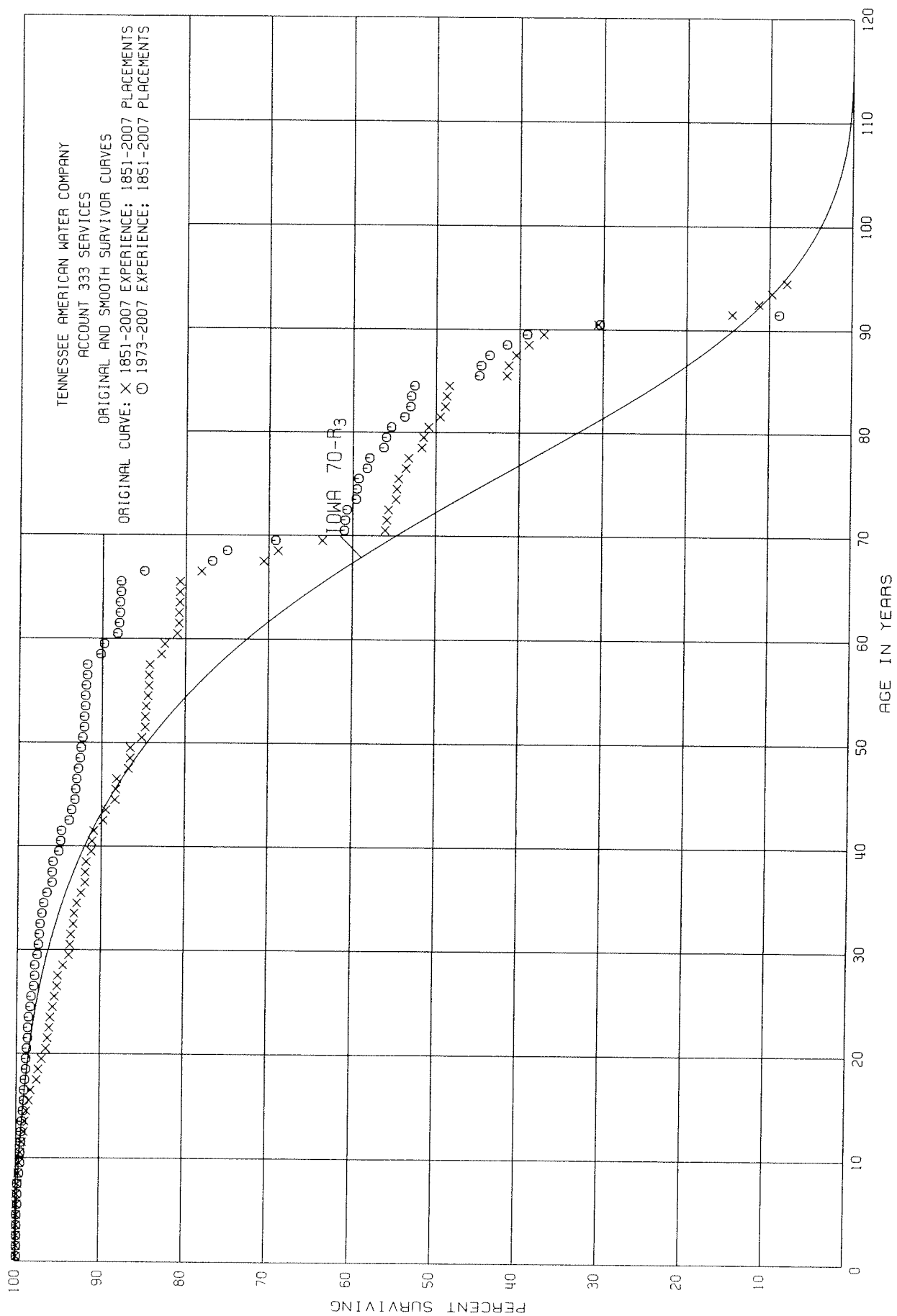
PLACEMENT BAND 1880-2007			EXPERIENCE BAND 1988-2007		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
79.5	1,365,287	6,094	0.0045	0.9955	76.32
80.5	1,139,178	30,537	0.0268	0.9732	75.98
81.5	858,078	2,922	0.0034	0.9966	73.94
82.5	809,700	146	0.0002	0.9998	73.69
83.5	733,434	46,744	0.0637	0.9363	73.68
84.5	652,743	11,182	0.0171	0.9829	68.99
85.5	605,696	42,501	0.0702	0.9298	67.81
86.5	558,327	11,567	0.0207	0.9793	63.05
87.5	947,090	10,661	0.0113	0.9887	61.74
88.5	936,429	18,852	0.0201	0.9799	61.04
89.5	917,578	2,966	0.0032	0.9968	59.81
90.5	914,612	31,085	0.0340	0.9660	59.62
91.5	883,527	68,172	0.0772	0.9228	57.59
92.5	815,355	40	0.0000	1.0000	53.14
93.5	815,315	2,798	0.0034	0.9966	53.14
94.5	812,516	1,219	0.0015	0.9985	52.96
95.5	405,068		0.0000	1.0000	52.88
96.5	405,068	260	0.0006	0.9994	52.88
97.5	404,808		0.0000	1.0000	52.85
98.5	404,808	14,535	0.0359	0.9641	52.85
99.5	390,273	1,919	0.0049	0.9951	50.95
100.5	388,354	25,322	0.0652	0.9348	50.70
101.5	363,032	18,679	0.0515	0.9485	47.39
102.5	344,353	1,746	0.0051	0.9949	44.95
103.5	342,607	10,548	0.0308	0.9692	44.72
104.5	332,059		0.0000	1.0000	43.34
105.5	332,059		0.0000	1.0000	43.34
106.5	332,011		0.0000	1.0000	43.34
107.5	130,988		0.0000	1.0000	43.34
108.5	130,988		0.0000	1.0000	43.34
109.5	130,988	11,017	0.0841	0.9159	43.34
110.5	119,971		0.0000	1.0000	39.70
111.5	119,971		0.0000	1.0000	39.70
112.5	119,971		0.0000	1.0000	39.70
113.5	119,971		0.0000	1.0000	39.70
114.5	119,971		0.0000	1.0000	39.70
115.5	119,971		0.0000	1.0000	39.70
116.5	119,971	95	0.0008	0.9992	39.70
117.5	119,876		0.0000	1.0000	39.67
118.5	119,876	14,594	0.1217	0.8783	39.67

TENNESSEE AMERICAN WATER COMPANY
ACCOUNT 331 TRANSMISSION & DISTRIBUTION MAINS
ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1880-2007

EXPERIENCE BAND 1988-2007

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
119.5	105,283	7,101	0.0674	0.9326	34.84
120.5	98,182	14,638	0.1491	0.8509	32.49
121.5	83,544		0.0000	1.0000	27.65
122.5	83,544		0.0000	1.0000	27.65
123.5	83,544	196	0.0023	0.9977	27.65
124.5	83,348		0.0000	1.0000	27.59
125.5	83,348		0.0000	1.0000	27.59
126.5	83,348		0.0000	1.0000	27.59
127.5					27.59



TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 333 SERVICES

ORIGINAL LIFE TABLE

PLACEMENT BAND 1851-2007

EXPERIENCE BAND 1851-2007

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	19,840,665	1,907	0.0001	0.9999	100.00
0.5	18,826,669	6,204	0.0003	0.9997	99.99
1.5	17,517,040	5,224	0.0003	0.9997	99.96
2.5	16,399,501	2,943	0.0002	0.9998	99.93
3.5	15,420,161	2,249	0.0001	0.9999	99.91
4.5	14,615,227	3,711	0.0003	0.9997	99.90
5.5	13,857,323	1,020	0.0001	0.9999	99.87
6.5	13,319,584	3,855	0.0003	0.9997	99.86
7.5	12,719,133	23,164	0.0018	0.9982	99.83
8.5	12,227,863	5,186	0.0004	0.9996	99.65
9.5	11,690,782	15,565	0.0013	0.9987	99.61
10.5	11,212,243	25,054	0.0022	0.9978	99.48
11.5	10,736,531	13,693	0.0013	0.9987	99.26
12.5	10,230,038	12,486	0.0012	0.9988	99.13
13.5	9,803,481	16,413	0.0017	0.9983	99.01
14.5	9,493,434	34,502	0.0036	0.9964	98.84
15.5	9,109,993	18,856	0.0021	0.9979	98.48
16.5	8,720,240	57,003	0.0065	0.9935	98.27
17.5	8,282,926	20,608	0.0025	0.9975	97.63
18.5	7,894,793	29,554	0.0037	0.9963	97.39
19.5	7,527,463	38,782	0.0052	0.9948	97.03
20.5	7,210,888	14,827	0.0021	0.9979	96.53
21.5	6,810,608	16,490	0.0024	0.9976	96.33
22.5	6,470,872	6,532	0.0010	0.9990	96.10
23.5	6,215,799	19,280	0.0031	0.9969	96.00
24.5	5,978,969	11,905	0.0020	0.9980	95.70
25.5	5,770,350	21,856	0.0038	0.9962	95.51
26.5	5,452,336	5,108	0.0009	0.9991	95.15
27.5	5,224,175	29,026	0.0056	0.9944	95.06
28.5	4,955,151	36,510	0.0074	0.9926	94.53
29.5	4,732,513	7,746	0.0016	0.9984	93.83
30.5	4,589,735	6,127	0.0013	0.9987	93.68
31.5	4,448,458	10,756	0.0024	0.9976	93.56
32.5	4,348,999	8,770	0.0020	0.9980	93.34
33.5	4,191,336	10,829	0.0026	0.9974	93.15
34.5	3,478,809	19,519	0.0056	0.9944	92.91
35.5	3,309,176	16,474	0.0050	0.9950	92.39
36.5	3,165,727	1,206	0.0004	0.9996	91.93
37.5	3,018,617	1,433	0.0005	0.9995	91.89
38.5	2,862,771	20,063	0.0070	0.9930	91.84

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 333 SERVICES

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1851-2007

EXPERIENCE BAND 1851-2007

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5	2,685,130	3,497	0.0013	0.9987	91.20
40.5	2,541,401	4,119	0.0016	0.9984	91.08
41.5	2,412,053	30,891	0.0128	0.9872	90.93
42.5	2,270,901	6,486	0.0029	0.9971	89.77
43.5	2,162,209	27,034	0.0125	0.9875	89.51
44.5	2,023,007	2,508	0.0012	0.9988	88.39
45.5	1,894,144	1,723	0.0009	0.9991	88.28
46.5	1,768,298	28,333	0.0160	0.9840	88.20
47.5	1,610,813	3,500	0.0022	0.9978	86.79
48.5	1,488,166	570	0.0004	0.9996	86.60
49.5	1,373,556	21,103	0.0154	0.9846	86.57
50.5	1,227,872	5,960	0.0049	0.9951	85.24
51.5	1,128,422	636	0.0006	0.9994	84.82
52.5	1,017,130	331	0.0003	0.9997	84.77
53.5	934,029	2,585	0.0028	0.9972	84.74
54.5	886,411	910	0.0010	0.9990	84.50
55.5	811,186	394	0.0005	0.9995	84.42
56.5	751,222	591	0.0008	0.9992	84.38
57.5	694,047	11,825	0.0170	0.9830	84.31
58.5	610,772	2,763	0.0045	0.9955	82.88
59.5	542,552	9,770	0.0180	0.9820	82.51
60.5	478,519	1,387	0.0029	0.9971	81.02
61.5	463,866	220	0.0005	0.9995	80.79
62.5	449,691	99	0.0002	0.9998	80.75
63.5	439,402	304	0.0007	0.9993	80.73
64.5	438,389	33	0.0001	0.9999	80.67
65.5	418,791	13,295	0.0317	0.9683	80.66
66.5	387,931	37,383	0.0964	0.9036	78.10
67.5	329,140	7,699	0.0234	0.9766	70.57
68.5	298,289	23,172	0.0777	0.9223	68.92
69.5	251,233	29,622	0.1179	0.8821	63.56
70.5	197,078	466	0.0024	0.9976	56.07
71.5	178,016	621	0.0035	0.9965	55.94
72.5	166,308	2,958	0.0178	0.9822	55.74
73.5	152,976	282	0.0018	0.9982	54.75
74.5	141,557	416	0.0029	0.9971	54.65
75.5	126,472	2,085	0.0165	0.9835	54.49
76.5	107,343	662	0.0062	0.9938	53.59
77.5	75,058	2,145	0.0286	0.9714	53.26
78.5	42,570	221	0.0052	0.9948	51.74

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 333 SERVICES

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1851-2007			EXPERIENCE BAND 1851-2007			
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL	
79.5	29,355	338	0.0115	0.9885	51.47	
80.5	24,672	672	0.0272	0.9728	50.88	
81.5	20,080	260	0.0129	0.9871	49.50	
82.5	13,865	42	0.0030	0.9970	48.86	
83.5	9,053	55	0.0061	0.9939	48.71	
84.5	7,363	1,051	0.1427	0.8573	48.41	
85.5	5,768	25	0.0043	0.9957	41.50	
86.5	5,107	112	0.0219	0.9781	41.32	
87.5	1,453	56	0.0385	0.9615	40.42	
88.5	1,396	63	0.0451	0.9549	38.86	
89.5	1,333	235	0.1763	0.8237	37.11	
90.5	1,098	577	0.5255	0.4745	30.57	
91.5	521	114	0.2188	0.7812	14.51	
92.5	407	59	0.1450	0.8550	11.34	
93.5	348	63	0.1810	0.8190	9.70	
94.5	285		0.0000	1.0000	7.94	
95.5	285		0.0000	1.0000	7.94	
96.5	285		0.0000	1.0000	7.94	
97.5	285		0.0000	1.0000	7.94	
98.5	285		0.0000	1.0000	7.94	
99.5	285		0.0000	1.0000	7.94	
100.5	285		0.0000	1.0000	7.94	
101.5	285		0.0000	1.0000	7.94	
102.5	285		0.0000	1.0000	7.94	
103.5	285		0.0000	1.0000	7.94	
104.5	285		0.0000	1.0000	7.94	
105.5	285		0.0000	1.0000	7.94	
106.5	285		0.0000	1.0000	7.94	
107.5	285		0.0000	1.0000	7.94	
108.5	285		0.0000	1.0000	7.94	
109.5	285		0.0000	1.0000	7.94	
110.5	285		0.0000	1.0000	7.94	
111.5	285		0.0000	1.0000	7.94	
112.5	285		0.0000	1.0000	7.94	
113.5	285		0.0000	1.0000	7.94	
114.5	285		0.0000	1.0000	7.94	
115.5	285		0.0000	1.0000	7.94	
116.5	285		0.0000	1.0000	7.94	
117.5	285		0.0000	1.0000	7.94	
118.5	285		0.0000	1.0000	7.94	

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 333 SERVICES

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1851-2007

EXPERIENCE BAND 1851-2007

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
119.5	285		0.0000	1.0000	7.94
120.5	285		0.0000	1.0000	7.94
121.5	285		0.0000	1.0000	7.94
122.5	285		0.0000	1.0000	7.94
123.5	285		0.0000	1.0000	7.94
124.5	285		0.0000	1.0000	7.94
125.5	285		0.0000	1.0000	7.94
126.5	285		0.0000	1.0000	7.94
127.5	285		0.0000	1.0000	7.94
128.5	285		0.0000	1.0000	7.94
129.5	285		0.0000	1.0000	7.94
130.5	285		0.0000	1.0000	7.94
131.5	285		0.0000	1.0000	7.94
132.5	285		0.0000	1.0000	7.94
133.5	285		0.0000	1.0000	7.94
134.5	285		0.0000	1.0000	7.94
135.5	285		0.0000	1.0000	7.94
136.5	285		0.0000	1.0000	7.94
137.5	285		0.0000	1.0000	7.94
138.5	285		0.0000	1.0000	7.94
139.5	285		0.0000	1.0000	7.94
140.5	285		0.0000	1.0000	7.94
141.5	285		0.0000	1.0000	7.94
142.5	285		0.0000	1.0000	7.94
143.5	285		0.0000	1.0000	7.94
144.5	285		0.0000	1.0000	7.94
145.5	285		0.0000	1.0000	7.94
146.5	285		0.0000	1.0000	7.94
147.5	285	285	1.0000	0.0000	7.94
148.5					0.00

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 333 SERVICES

ORIGINAL LIFE TABLE

PLACEMENT BAND 1851-2007

EXPERIENCE BAND 1973-2007

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	15,941,613	1,907	0.0001	0.9999	100.00
0.5	15,079,086	6,204	0.0004	0.9996	99.99
1.5	13,897,799	5,224	0.0004	0.9996	99.95
2.5	12,942,697	2,501	0.0002	0.9998	99.91
3.5	12,120,270	2,249	0.0002	0.9998	99.89
4.5	11,474,343	3,711	0.0003	0.9997	99.87
5.5	10,858,311	1,020	0.0001	0.9999	99.84
6.5	10,447,468	3,337	0.0003	0.9997	99.83
7.5	9,963,795	23,164	0.0023	0.9977	99.80
8.5	9,576,661	5,186	0.0005	0.9995	99.57
9.5	9,154,038	4,537	0.0005	0.9995	99.52
10.5	8,813,689	2,436	0.0003	0.9997	99.47
11.5	8,492,077	4,521	0.0005	0.9995	99.44
12.5	8,125,499	6,722	0.0008	0.9992	99.39
13.5	7,842,266	12,691	0.0016	0.9984	99.31
14.5	7,652,725	3,022	0.0004	0.9996	99.15
15.5	7,425,561	4,557	0.0006	0.9994	99.11
16.5	7,160,463	6,544	0.0009	0.9991	99.05
17.5	6,890,077	3,751	0.0005	0.9995	98.96
18.5	6,605,552	2,007	0.0003	0.9997	98.91
19.5	6,356,205	5,939	0.0009	0.9991	98.88
20.5	6,148,753	4,016	0.0007	0.9993	98.79
21.5	5,821,720	3,530	0.0006	0.9994	98.72
22.5	5,560,864	6,347	0.0011	0.9989	98.66
23.5	5,379,829	9,124	0.0017	0.9983	98.55
24.5	5,228,590	3,363	0.0006	0.9994	98.38
25.5	5,085,196	15,861	0.0031	0.9969	98.32
26.5	4,787,145	4,609	0.0010	0.9990	98.02
27.5	4,577,776	2,120	0.0005	0.9995	97.92
28.5	4,346,310	10,380	0.0024	0.9976	97.87
29.5	4,150,680	6,338	0.0015	0.9985	97.64
30.5	4,029,208	3,845	0.0010	0.9990	97.49
31.5	3,907,914	2,446	0.0006	0.9994	97.39
32.5	3,838,262	8,116	0.0021	0.9979	97.33
33.5	3,710,954	9,089	0.0024	0.9976	97.13
34.5	3,024,586	13,498	0.0045	0.9955	96.90
35.5	2,886,874	15,883	0.0055	0.9945	96.46
36.5	2,763,009	989	0.0004	0.9996	95.93
37.5	2,627,503	1,382	0.0005	0.9995	95.89
38.5	2,482,140	20,027	0.0081	0.9919	95.84

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 333 SERVICES

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1851-2007

EXPERIENCE BAND 1973-2007

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5	2,318,177	3,465	0.0015	0.9985	95.06
40.5	2,191,904	3,893	0.0018	0.9982	94.92
41.5	2,081,275	19,785	0.0095	0.9905	94.75
42.5	1,983,222	6,275	0.0032	0.9968	93.85
43.5	1,909,596	7,506	0.0039	0.9961	93.55
44.5	1,804,075	2,466	0.0014	0.9986	93.19
45.5	1,708,255	1,680	0.0010	0.9990	93.06
46.5	1,606,903	2,975	0.0019	0.9981	92.97
47.5	1,510,969	3,484	0.0023	0.9977	92.79
48.5	1,393,933	557	0.0004	0.9996	92.58
49.5	1,291,331	3,774	0.0029	0.9971	92.54
50.5	1,170,093	1,700	0.0015	0.9985	92.27
51.5	1,075,794	636	0.0006	0.9994	92.13
52.5	1,007,604	331	0.0003	0.9997	92.07
53.5	924,556	641	0.0007	0.9993	92.04
54.5	878,923	910	0.0010	0.9990	91.98
55.5	806,487	394	0.0005	0.9995	91.89
56.5	746,869	591	0.0008	0.9992	91.84
57.5	689,734	11,825	0.0171	0.9829	91.77
58.5	606,521	2,434	0.0040	0.9960	90.20
59.5	538,684	9,770	0.0181	0.9819	89.84
60.5	478,234	1,387	0.0029	0.9971	88.21
61.5	463,581	220	0.0005	0.9995	87.95
62.5	449,406	99	0.0002	0.9998	87.91
63.5	439,117	304	0.0007	0.9993	87.89
64.5	438,104	33	0.0001	0.9999	87.83
65.5	418,506	13,295	0.0318	0.9682	87.82
66.5	387,646	37,383	0.0964	0.9036	85.03
67.5	328,855	7,699	0.0234	0.9766	76.83
68.5	298,004	23,172	0.0778	0.9222	75.03
69.5	250,948	29,622	0.1180	0.8820	69.19
70.5	196,793	466	0.0024	0.9976	61.03
71.5	177,731	621	0.0035	0.9965	60.88
72.5	166,023	2,958	0.0178	0.9822	60.67
73.5	152,691	282	0.0018	0.9982	59.59
74.5	141,272	416	0.0029	0.9971	59.48
75.5	126,187	2,085	0.0165	0.9835	59.31
76.5	107,058	662	0.0062	0.9938	58.33
77.5	74,773	2,145	0.0287	0.9713	57.97
78.5	42,285	221	0.0052	0.9948	56.31

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 333 SERVICES

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1851-2007

EXPERIENCE BAND 1973-2007

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
79.5	29,070	338	0.0116	0.9884	56.02
80.5	24,387	672	0.0276	0.9724	55.37
81.5	19,795	260	0.0131	0.9869	53.84
82.5	13,580	42	0.0031	0.9969	53.13
83.5	8,768	55	0.0063	0.9937	52.97
84.5	7,078	1,051	0.1485	0.8515	52.64
85.5	5,483	25	0.0046	0.9954	44.82
86.5	4,822	112	0.0232	0.9768	44.61
87.5	1,168	56	0.0479	0.9521	43.58
88.5	1,111	63	0.0567	0.9433	41.49
89.5	1,048	235	0.2242	0.7758	39.14
90.5	813	577	0.7097	0.2903	30.36
91.5	236	114	0.4831	0.5169	8.81
92.5	122	59	0.4836	0.5164	4.55
93.5	63	63	1.0000	0.0000	2.35
94.5					0.00
95.5					
96.5					
97.5					
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TENNESSEE AMERICAN WATER COMPANY

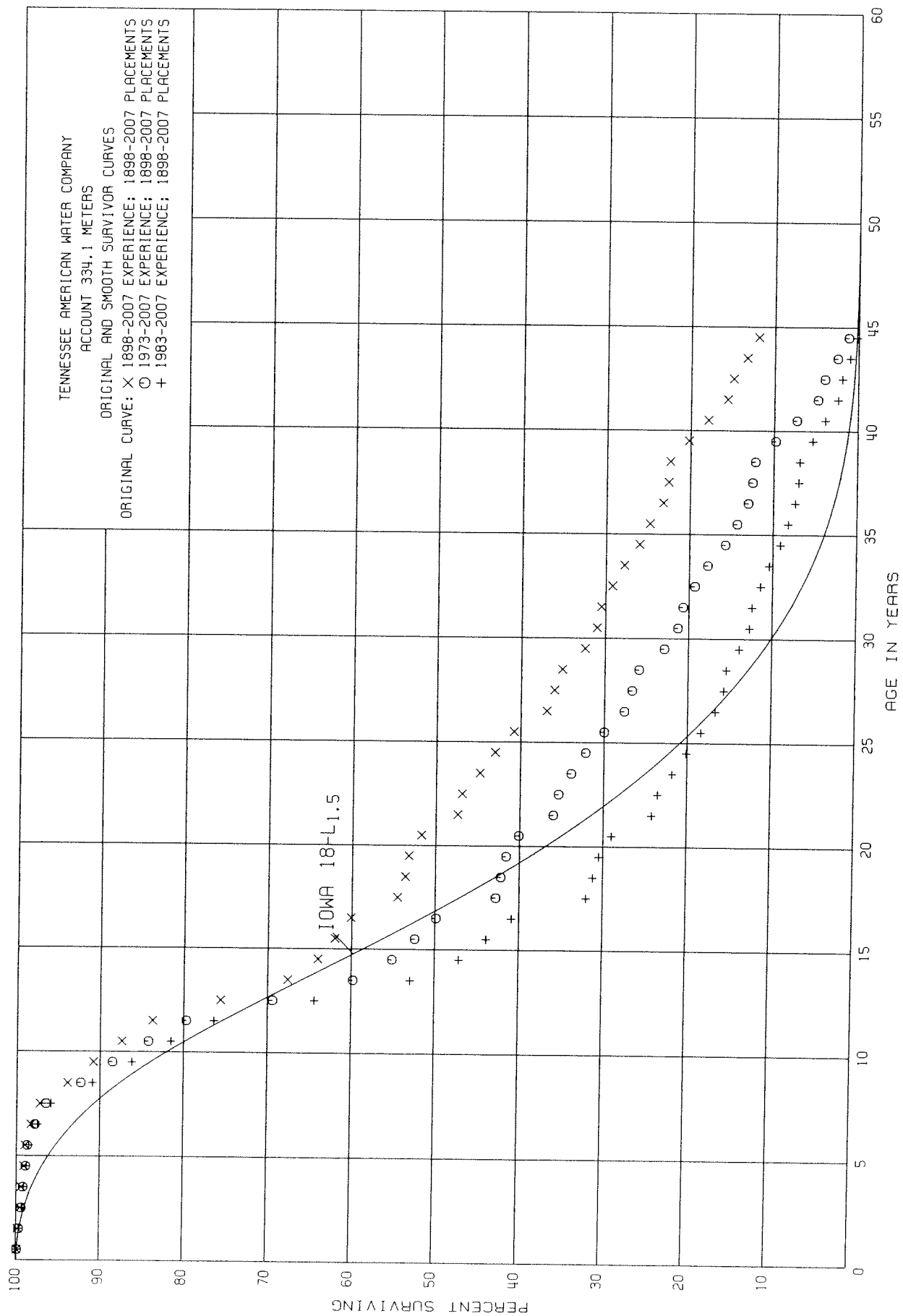
ACCOUNT 333 SERVICES

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1851-2007

EXPERIENCE BAND 1973-2007

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
119.5					
120.5					
121.5	285		0.0000		
122.5	285		0.0000		
123.5	285		0.0000		
124.5	285		0.0000		
125.5	285		0.0000		
126.5	285		0.0000		
127.5	285		0.0000		
128.5	285		0.0000		
129.5	285		0.0000		
130.5	285		0.0000		
131.5	285		0.0000		
132.5	285		0.0000		
133.5	285		0.0000		
134.5	285		0.0000		
135.5	285		0.0000		
136.5	285		0.0000		
137.5	285		0.0000		
138.5	285		0.0000		
139.5	285		0.0000		
140.5	285		0.0000		
141.5	285		0.0000		
142.5	285		0.0000		
143.5	285		0.0000		
144.5	285		0.0000		
145.5	285		0.0000		
146.5	285		0.0000		
147.5	285	285	1.0000		
148.5					



TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 334.1 METERS

ORIGINAL LIFE TABLE

PLACEMENT BAND 1898-2007

EXPERIENCE BAND 1898-2007

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	8,378,099	7,254	0.0009	0.9991	100.00
0.5	8,464,418	12,996	0.0015	0.9985	99.91
1.5	7,955,954	22,647	0.0028	0.9972	99.76
2.5	6,116,304	8,176	0.0013	0.9987	99.48
3.5	5,979,734	13,918	0.0023	0.9977	99.35
4.5	5,907,964	9,923	0.0017	0.9983	99.12
5.5	5,786,754	40,399	0.0070	0.9930	98.95
6.5	5,616,365	59,181	0.0105	0.9895	98.26
7.5	5,448,409	188,340	0.0346	0.9654	97.23
8.5	5,108,641	166,945	0.0327	0.9673	93.87
9.5	4,827,757	181,021	0.0375	0.9625	90.80
10.5	4,585,422	192,794	0.0420	0.9580	87.40
11.5	4,258,773	412,984	0.0970	0.9030	83.73
12.5	3,390,820	358,196	0.1056	0.8944	75.61
13.5	2,889,702	156,807	0.0543	0.9457	67.63
14.5	2,680,127	83,555	0.0312	0.9688	63.96
15.5	2,472,274	73,616	0.0298	0.9702	61.96
16.5	2,330,168	215,713	0.0926	0.9074	60.11
17.5	2,053,607	33,980	0.0165	0.9835	54.54
18.5	2,009,427	15,551	0.0077	0.9923	53.64
19.5	1,982,860	55,527	0.0280	0.9720	53.23
20.5	2,109,276	179,056	0.0849	0.9151	51.74
21.5	1,915,255	20,170	0.0105	0.9895	47.35
22.5	1,875,288	82,541	0.0440	0.9560	46.85
23.5	1,775,800	72,065	0.0406	0.9594	44.79
24.5	1,680,155	84,540	0.0503	0.9497	42.97
25.5	1,546,732	146,965	0.0950	0.9050	40.81
26.5	1,348,099	34,883	0.0259	0.9741	36.93
27.5	1,288,116	32,323	0.0251	0.9749	35.97
28.5	1,233,537	94,004	0.0762	0.9238	35.07
29.5	1,125,822	47,937	0.0426	0.9574	32.40
30.5	1,062,432	19,581	0.0184	0.9816	31.02
31.5	1,034,390	42,091	0.0407	0.9593	30.45
32.5	988,403	46,482	0.0470	0.9530	29.21
33.5	939,113	61,547	0.0655	0.9345	27.84
34.5	869,487	42,399	0.0488	0.9512	26.02
35.5	822,742	52,113	0.0633	0.9367	24.75
36.5	769,203	19,097	0.0248	0.9752	23.18
37.5	745,262	8,148	0.0109	0.9891	22.61
38.5	734,921	70,817	0.0964	0.9036	22.36

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 334.1 METERS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1898-2007			EXPERIENCE BAND 1898-2007		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5	662,534	74,954	0.1131	0.8869	20.20
40.5	584,221	74,558	0.1276	0.8724	17.92
41.5	509,664	24,169	0.0474	0.9526	15.63
42.5	485,495	51,634	0.1064	0.8936	14.89
43.5	433,861	46,174	0.1064	0.8936	13.31
44.5	387,687	12,846	0.0331	0.9669	11.89
45.5	374,841	3,331	0.0089	0.9911	11.50
46.5	371,510	10,712	0.0288	0.9712	11.40
47.5	360,797	2,021	0.0056	0.9944	11.07
48.5	358,777	4,532	0.0126	0.9874	11.01
49.5	354,245	14,693	0.0415	0.9585	10.87
50.5	339,553	553	0.0016	0.9984	10.42
51.5	339,000	3,372	0.0099	0.9901	10.40
52.5	335,628	5,232	0.0156	0.9844	10.30
53.5	330,396	14,840	0.0449	0.9551	10.14
54.5	315,556	18,850	0.0597	0.9403	9.68
55.5	296,706	13,480	0.0454	0.9546	9.10
56.5	283,226	268	0.0009	0.9991	8.69
57.5	282,958	1,213	0.0043	0.9957	8.68
58.5	281,745	1,317	0.0047	0.9953	8.64
59.5	280,428	12,794	0.0456	0.9544	8.60
60.5	267,634	775	0.0029	0.9971	8.21
61.5	266,859	14,944	0.0560	0.9440	8.19
62.5	251,915	50,315	0.1997	0.8003	7.73
63.5	201,600	335	0.0017	0.9983	6.19
64.5	201,265	160	0.0008	0.9992	6.18
65.5	201,104	6,440	0.0320	0.9680	6.18
66.5	194,664	8,089	0.0416	0.9584	5.98
67.5	186,575	2,785	0.0149	0.9851	5.73
68.5	183,790	7,908	0.0430	0.9570	5.64
69.5	175,882	1,059	0.0060	0.9940	5.40
70.5	174,824	17,339	0.0992	0.9008	5.37
71.5	157,485	676	0.0043	0.9957	4.84
72.5	156,808	270	0.0017	0.9983	4.82
73.5	156,538	545	0.0035	0.9965	4.81
74.5	155,993	653	0.0042	0.9958	4.79
75.5	155,340	47,915	0.3085	0.6915	4.77
76.5	107,425	492	0.0046	0.9954	3.30
77.5	106,933	102,416	0.9578	0.0422	3.28
78.5	4,518	1,808	0.4002	0.5998	0.14

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 334.1 METERS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1898-2007

EXPERIENCE BAND 1898-2007

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
79.5	2,710	118	0.0435	0.9565	0.08
80.5	2,592	104	0.0401	0.9599	0.08
81.5	2,488	22	0.0088	0.9912	0.08
82.5	2,466	1,888	0.7656	0.2344	0.08
83.5	578	557	0.9637	0.0363	0.02
84.5	21		0.0000	1.0000	0.00
85.5	21		0.0000	1.0000	0.00
86.5	21		0.0000	1.0000	0.00
87.5	21		0.0000	1.0000	0.00
88.5	21		0.0000	1.0000	0.00
89.5	21		0.0000	1.0000	0.00
90.5	21		0.0000	1.0000	0.00
91.5	21		0.0000	1.0000	0.00
92.5	21		0.0000	1.0000	0.00
93.5	21		0.0000	1.0000	0.00
94.5	21		0.0000	1.0000	0.00
95.5	21		0.0000	1.0000	0.00
96.5	21		0.0000	1.0000	0.00
97.5	21		0.0000	1.0000	0.00
98.5	21		0.0000	1.0000	0.00
99.5	21		0.0000	1.0000	0.00
100.5	21		0.0000	1.0000	0.00
101.5	21		0.0000	1.0000	0.00
102.5	21		0.0000	1.0000	0.00
103.5	21		0.0000	1.0000	0.00
104.5	21		0.0000	1.0000	0.00
105.5	21		0.0000	1.0000	0.00
106.5	21	21	1.0000	0.0000	0.00
107.5					0.00

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 334.1 METERS

ORIGINAL LIFE TABLE

PLACEMENT BAND 1898-2007

EXPERIENCE BAND 1973-2007

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	6,896,545	7,254	0.0011	0.9989	100.00
0.5	7,004,369	12,996	0.0019	0.9981	99.89
1.5	6,524,668	22,647	0.0035	0.9965	99.70
2.5	4,729,592	8,169	0.0017	0.9983	99.35
3.5	4,640,194	12,870	0.0028	0.9972	99.18
4.5	4,605,594	9,702	0.0021	0.9979	98.90
5.5	4,524,781	40,337	0.0089	0.9911	98.69
6.5	4,395,957	58,233	0.0132	0.9868	97.81
7.5	4,263,219	185,396	0.0435	0.9565	96.52
8.5	3,956,813	164,126	0.0415	0.9585	92.32
9.5	3,701,579	180,716	0.0488	0.9512	88.49
10.5	3,484,475	184,826	0.0530	0.9470	84.17
11.5	3,185,744	412,615	0.1295	0.8705	79.71
12.5	2,340,598	323,473	0.1382	0.8618	69.39
13.5	1,905,005	150,928	0.0792	0.9208	59.80
14.5	1,720,810	82,797	0.0481	0.9519	55.06
15.5	1,547,019	73,616	0.0476	0.9524	52.41
16.5	1,452,285	206,711	0.1423	0.8577	49.92
17.5	1,233,324	19,246	0.0156	0.9844	42.82
18.5	1,247,775	15,551	0.0125	0.9875	42.15
19.5	1,258,441	46,108	0.0366	0.9634	41.62
20.5	1,425,994	147,444	0.1034	0.8966	40.10
21.5	1,286,654	20,105	0.0156	0.9844	35.95
22.5	1,277,448	52,636	0.0412	0.9588	35.39
23.5	1,227,485	64,259	0.0524	0.9476	33.93
24.5	1,151,057	78,035	0.0678	0.9322	32.15
25.5	1,038,426	82,692	0.0796	0.9204	29.97
26.5	911,302	29,272	0.0321	0.9679	27.58
27.5	862,514	27,201	0.0315	0.9685	26.69
28.5	814,489	94,004	0.1154	0.8846	25.85
29.5	708,115	47,801	0.0675	0.9325	22.87
30.5	651,414	19,581	0.0301	0.9699	21.33
31.5	628,878	42,091	0.0669	0.9331	20.69
32.5	583,487	46,482	0.0797	0.9203	19.31
33.5	534,849	61,547	0.1151	0.8849	17.77
34.5	470,008	42,399	0.0902	0.9098	15.72
35.5	427,010	38,203	0.0895	0.9105	14.30
36.5	391,782	16,839	0.0430	0.9570	13.02
37.5	370,373	8,148	0.0220	0.9780	12.46
38.5	362,997	70,817	0.1951	0.8049	12.19

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 334.1 METERS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1898-2007

EXPERIENCE BAND 1973-2007

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5	291,615	74,458	0.2553	0.7447	9.81
40.5	215,029	74,558	0.3467	0.6533	7.31
41.5	142,289	24,169	0.1699	0.8301	4.78
42.5	124,151	45,640	0.3676	0.6324	3.97
43.5	78,923	41,122	0.5210	0.4790	2.51
44.5	42,664	9,577	0.2245	0.7755	1.20
45.5	36,010	653	0.0181	0.9819	0.93
46.5	36,640	904	0.0247	0.9753	0.91
47.5	37,011	1,358	0.0367	0.9633	0.89
48.5	36,173	4,532	0.1253	0.8747	0.86
49.5	32,047	4,851	0.1514	0.8486	0.75
50.5	34,694	83	0.0024	0.9976	0.64
51.5	35,371	2,620	0.0741	0.9259	0.64
52.5	335,607	5,232	0.0156	0.9844	0.59
53.5	330,375	14,840	0.0449	0.9551	0.58
54.5	315,536	18,850	0.0597	0.9403	0.55
55.5	296,686	13,480	0.0454	0.9546	0.52
56.5	283,205	268	0.0009	0.9991	0.50
57.5	282,938	1,213	0.0043	0.9957	0.50
58.5	281,724	1,317	0.0047	0.9953	0.50
59.5	280,407	12,794	0.0456	0.9544	0.50
60.5	267,613	775	0.0029	0.9971	0.48
61.5	266,838	14,944	0.0560	0.9440	0.48
62.5	251,894	50,315	0.1997	0.8003	0.45
63.5	201,580	335	0.0017	0.9983	0.36
64.5	201,244	160	0.0008	0.9992	0.36
65.5	201,084	6,440	0.0320	0.9680	0.36
66.5	194,643	8,089	0.0416	0.9584	0.35
67.5	186,554	2,785	0.0149	0.9851	0.34
68.5	183,770	7,908	0.0430	0.9570	0.33
69.5	175,861	1,059	0.0060	0.9940	0.32
70.5	174,803	17,339	0.0992	0.9008	0.32
71.5	157,464	676	0.0043	0.9957	0.29
72.5	156,788	270	0.0017	0.9983	0.29
73.5	156,517	545	0.0035	0.9965	0.29
74.5	155,993	653	0.0042	0.9958	0.29
75.5	155,340	47,915	0.3085	0.6915	0.29
76.5	107,425	492	0.0046	0.9954	0.20
77.5	106,933	102,416	0.9578	0.0422	0.20
78.5	4,518	1,808	0.4002	0.5998	0.01

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 334.1 METERS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1898-2007

EXPERIENCE BAND 1973-2007

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
79.5	2,710	118	0.0435	0.9565	0.01
80.5	2,592	104	0.0401	0.9599	0.01
81.5	2,488	22	0.0088	0.9912	0.01
82.5	2,466	1,888	0.7656	0.2344	0.01
83.5	578	557	0.9637	0.0363	0.00
84.5	21		0.0000	1.0000	0.00
85.5	21		0.0000	1.0000	0.00
86.5	21		0.0000	1.0000	0.00
87.5	21		0.0000	1.0000	0.00
88.5	21		0.0000	1.0000	0.00
89.5	21		0.0000	1.0000	0.00
90.5	21		0.0000	1.0000	0.00
91.5	21		0.0000	1.0000	0.00
92.5	21		0.0000	1.0000	0.00
93.5	21		0.0000	1.0000	0.00
94.5	21		0.0000	1.0000	0.00
95.5	21		0.0000	1.0000	0.00
96.5	21		0.0000	1.0000	0.00
97.5	21		0.0000	1.0000	0.00
98.5	21		0.0000	1.0000	0.00
99.5	21		0.0000	1.0000	0.00
100.5	21		0.0000	1.0000	0.00
101.5	21		0.0000	1.0000	0.00
102.5	21		0.0000	1.0000	0.00
103.5	21		0.0000	1.0000	0.00
104.5	21		0.0000	1.0000	0.00
105.5	21		0.0000	1.0000	0.00
106.5	21	21	1.0000	0.0000	0.00
107.5					0.00

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 334.1 METERS

ORIGINAL LIFE TABLE

PLACEMENT BAND 1898-2007

EXPERIENCE BAND 1983-2007

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	6,276,640	7,254	0.0012	0.9988	100.00
0.5	6,311,924	12,996	0.0021	0.9979	99.88
1.5	5,848,840	22,647	0.0039	0.9961	99.67
2.5	4,040,379	8,169	0.0020	0.9980	99.28
3.5	3,933,886	12,870	0.0033	0.9967	99.08
4.5	3,884,176	9,702	0.0025	0.9975	98.75
5.5	3,810,795	40,337	0.0106	0.9894	98.50
6.5	3,668,054	58,233	0.0159	0.9841	97.46
7.5	3,520,870	185,396	0.0527	0.9473	95.91
8.5	3,230,175	164,126	0.0508	0.9492	90.86
9.5	3,292,640	180,716	0.0549	0.9451	86.24
10.5	2,921,979	184,826	0.0633	0.9367	81.51
11.5	2,632,062	412,615	0.1568	0.8432	76.35
12.5	1,809,052	323,473	0.1788	0.8212	64.38
13.5	1,389,821	150,928	0.1086	0.8914	52.87
14.5	1,222,248	82,797	0.0677	0.9323	47.13
15.5	1,056,822	73,616	0.0697	0.9303	43.94
16.5	956,219	206,711	0.2162	0.7838	40.88
17.5	722,928	19,246	0.0266	0.9734	32.04
18.5	723,900	15,551	0.0215	0.9785	31.19
19.5	930,421	46,108	0.0496	0.9504	30.52
20.5	882,418	147,444	0.1671	0.8329	29.01
21.5	739,959	20,105	0.0272	0.9728	24.16
22.5	722,495	52,636	0.0729	0.9271	23.50
23.5	683,715	53,787	0.0787	0.9213	21.79
24.5	625,849	52,400	0.0837	0.9163	20.08
25.5	557,868	51,256	0.0919	0.9081	18.40
26.5	502,316	29,272	0.0583	0.9417	16.71
27.5	496,543	11,326	0.0228	0.9772	15.74
28.5	506,859	50,366	0.0994	0.9006	15.38
29.5	587,070	47,801	0.0814	0.9186	13.85
30.5	540,657	14,399	0.0266	0.9734	12.72
31.5	540,866	42,091	0.0778	0.9222	12.38
32.5	515,104	46,482	0.0902	0.9098	11.42
33.5	485,433	61,547	0.1268	0.8732	10.39
34.5	427,218	42,399	0.0992	0.9008	9.07
35.5	394,761	38,203	0.0968	0.9032	8.17
36.5	362,368	16,839	0.0465	0.9535	7.38
37.5	346,269	7,876	0.0227	0.9773	7.04
38.5	337,631	70,802	0.2097	0.7903	6.88

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 334.1 METERS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1898-2007

EXPERIENCE BAND 1983-2007

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5	266,601	74,458	0.2793	0.7207	5.44
40.5	190,155	74,558	0.3921	0.6079	3.92
41.5	120,832	24,169	0.2000	0.8000	2.38
42.5	97,243	45,640	0.4693	0.5307	1.90
43.5	52,256	41,122	0.7869	0.2131	1.01
44.5	15,919	9,577	0.6016	0.3984	0.22
45.5	10,089	653	0.0647	0.9353	0.09
46.5	13,836	904	0.0653	0.9347	0.08
47.5	13,206		0.0000	1.0000	0.07
48.5	16,172	3,975	0.2458	0.7542	0.07
49.5	13,202	4,764	0.3609	0.6391	0.05
50.5	9,668		0.0000	1.0000	0.03
51.5	11,486		0.0000	1.0000	0.03
52.5	15,419	2,430	0.1576	0.8424	0.03
53.5	13,401	3,877	0.2893	0.7107	0.03
54.5	11,242	2,560	0.2277	0.7723	0.02
55.5	9,752	166	0.0170	0.9830	0.02
56.5	10,094	268	0.0266	0.9734	0.02
57.5	10,706	924	0.0863	0.9137	0.02
58.5	10,301	1,258	0.1221	0.8779	0.02
59.5	9,448	1,447	0.1532	0.8468	0.02
60.5	15,238	775	0.0509	0.9491	0.02
61.5	15,223	193	0.0127	0.9873	0.02
62.5	251,894	50,315	0.1997	0.8003	0.02
63.5	201,580	335	0.0017	0.9983	0.02
64.5	201,244	160	0.0008	0.9992	0.02
65.5	201,084	6,440	0.0320	0.9680	0.02
66.5	194,643	8,089	0.0416	0.9584	0.02
67.5	186,554	2,785	0.0149	0.9851	0.02
68.5	183,770	7,908	0.0430	0.9570	0.02
69.5	175,861	1,059	0.0060	0.9940	0.02
70.5	174,803	17,339	0.0992	0.9008	0.02
71.5	157,464	676	0.0043	0.9957	0.02
72.5	156,788	270	0.0017	0.9983	0.02
73.5	156,517	545	0.0035	0.9965	0.02
74.5	155,972	653	0.0042	0.9958	0.02
75.5	155,319	47,915	0.3085	0.6915	0.02
76.5	107,404	492	0.0046	0.9954	0.01
77.5	106,913	102,416	0.9579	0.0421	0.01
78.5	4,497	1,808	0.4020	0.5980	0.00

TENNESSEE AMERICAN WATER COMPANY

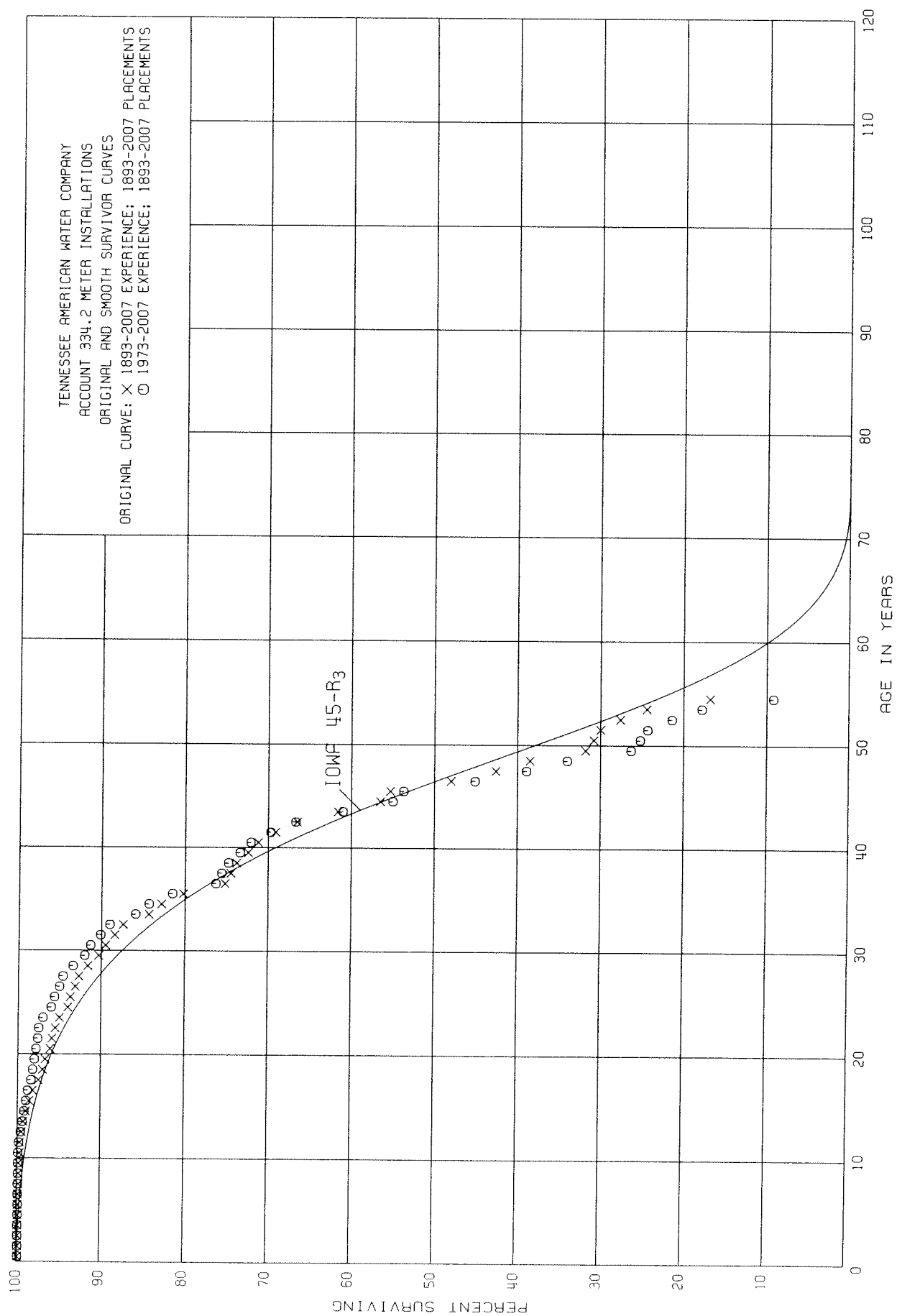
ACCOUNT 334.1 METERS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1898-2007

EXPERIENCE BAND 1983-2007

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
79.5	2,689	118	0.0439	0.9561	0.00
80.5	2,571	104	0.0405	0.9595	0.00
81.5	2,467	22	0.0089	0.9911	0.00
82.5	2,445	1,888	0.7722	0.2278	0.00
83.5	557	557	1.0000	0.0000	0.00
84.5	21		0.0000	1.0000	0.00
85.5	21		0.0000	1.0000	0.00
86.5	21		0.0000	1.0000	0.00
87.5	21		0.0000	1.0000	0.00
88.5	21		0.0000	1.0000	0.00
89.5	21		0.0000	1.0000	0.00
90.5	21		0.0000	1.0000	0.00
91.5	21		0.0000	1.0000	0.00
92.5	21		0.0000	1.0000	0.00
93.5	21		0.0000	1.0000	0.00
94.5	21		0.0000	1.0000	0.00
95.5	21		0.0000	1.0000	0.00
96.5	21		0.0000	1.0000	0.00
97.5	21		0.0000	1.0000	0.00
98.5	21		0.0000	1.0000	0.00
99.5	21		0.0000	1.0000	0.00
100.5	21		0.0000	1.0000	0.00
101.5	21		0.0000	1.0000	0.00
102.5	21		0.0000	1.0000	0.00
103.5	21		0.0000	1.0000	0.00
104.5	21		0.0000	1.0000	0.00
105.5	21		0.0000	1.0000	0.00
106.5	21	21	1.0000	0.0000	0.00
107.5					0.00



TENNESSEE AMERICAN WATER COMPANY
ACCOUNT 334.2 METER INSTALLATIONS

ORIGINAL LIFE TABLE

PLACEMENT BAND 1893-2007			EXPERIENCE BAND 1893-2007		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	11,650,778	1,280	0.0001	0.9999	100.00
0.5	9,266,319	4,751	0.0005	0.9995	99.99
1.5	8,397,342	2,360	0.0003	0.9997	99.94
2.5	7,660,684	581	0.0001	0.9999	99.91
3.5	6,959,453		0.0000	1.0000	99.90
4.5	6,450,072	2,246	0.0003	0.9997	99.90
5.5	6,002,703	634	0.0001	0.9999	99.87
6.5	5,583,765	1,752	0.0003	0.9997	99.86
7.5	5,222,405	2,041	0.0004	0.9996	99.83
8.5	4,877,116	1,401	0.0003	0.9997	99.79
9.5	4,570,725	1,884	0.0004	0.9996	99.76
10.5	4,333,216	1,362	0.0003	0.9997	99.72
11.5	4,104,871	7,763	0.0019	0.9981	99.69
12.5	3,636,521	8,569	0.0024	0.9976	99.50
13.5	3,415,691	7,609	0.0022	0.9978	99.26
14.5	3,213,585	15,830	0.0049	0.9951	99.04
15.5	3,013,528	11,728	0.0039	0.9961	98.55
16.5	2,783,894	19,999	0.0072	0.9928	98.17
17.5	2,561,295	12,000	0.0047	0.9953	97.46
18.5	2,312,305	6,717	0.0029	0.9971	97.00
19.5	2,064,231	13,596	0.0066	0.9934	96.72
20.5	1,835,179	4,255	0.0023	0.9977	96.08
21.5	1,538,398	6,450	0.0042	0.9958	95.86
22.5	1,302,682	5,779	0.0044	0.9956	95.46
23.5	1,136,389	11,960	0.0105	0.9895	95.04
24.5	981,483	4,073	0.0041	0.9959	94.04
25.5	895,984	5,538	0.0062	0.9938	93.65
26.5	816,066	3,381	0.0041	0.9959	93.07
27.5	748,464	8,833	0.0118	0.9882	92.69
28.5	678,847	9,921	0.0146	0.9854	91.60
29.5	604,444	4,828	0.0080	0.9920	90.26
30.5	543,730	6,767	0.0124	0.9876	89.54
31.5	468,938	5,472	0.0117	0.9883	88.43
32.5	424,082	14,825	0.0350	0.9650	87.40
33.5	356,091	6,518	0.0183	0.9817	84.34
34.5	244,016	7,671	0.0314	0.9686	82.80
35.5	196,594	12,302	0.0626	0.9374	80.20
36.5	151,419	1,303	0.0086	0.9914	75.18
37.5	124,423	1,265	0.0102	0.9898	74.53
38.5	97,087	1,784	0.0184	0.9816	73.77

TENNESSEE AMERICAN WATER COMPANY
ACCOUNT 334.2 METER INSTALLATIONS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1893-2007			EXPERIENCE BAND 1893-2007		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5	76,404	1,238	0.0162	0.9838	72.41
40.5	61,861	1,858	0.0300	0.9700	71.24
41.5	41,051	1,537	0.0374	0.9626	69.10
42.5	39,514	2,908	0.0736	0.9264	66.52
43.5	36,606	3,061	0.0836	0.9164	61.62
44.5	33,545	690	0.0206	0.9794	56.47
45.5	32,856	4,351	0.1324	0.8676	55.31
46.5	28,504	3,214	0.1128	0.8872	47.99
47.5	25,290	2,456	0.0971	0.9029	42.58
48.5	22,834	3,976	0.1741	0.8259	38.45
49.5	18,858	548	0.0291	0.9709	31.76
50.5	18,310	475	0.0259	0.9741	30.84
51.5	17,834	1,480	0.0830	0.9170	30.04
52.5	16,354	1,847	0.1129	0.8871	27.55
53.5	14,507	4,532	0.3124	0.6876	24.44
54.5	9,975	207	0.0208	0.9792	16.80
55.5	9,768	267	0.0273	0.9727	16.45
56.5	9,501	906	0.0954	0.9046	16.00
57.5	8,596	980	0.1140	0.8860	14.47
58.5	7,616	183	0.0240	0.9760	12.82
59.5	7,433	258	0.0347	0.9653	12.51
60.5	7,176	251	0.0350	0.9650	12.08
61.5	6,924	162	0.0234	0.9766	11.66
62.5	6,762	191	0.0282	0.9718	11.39
63.5	6,571	148	0.0225	0.9775	11.07
64.5	6,422	430	0.0670	0.9330	10.82
65.5	5,993	247	0.0412	0.9588	10.10
66.5	5,746	217	0.0378	0.9622	9.68
67.5	5,529	93	0.0168	0.9832	9.31
68.5	5,436		0.0000	1.0000	9.15
69.5	5,436		0.0000	1.0000	9.15
70.5	5,436		0.0000	1.0000	9.15
71.5	5,436		0.0000	1.0000	9.15
72.5	5,436		0.0000	1.0000	9.15
73.5	5,436		0.0000	1.0000	9.15
74.5	5,436		0.0000	1.0000	9.15
75.5	5,436		0.0000	1.0000	9.15
76.5	5,436		0.0000	1.0000	9.15
77.5	5,436		0.0000	1.0000	9.15
78.5	5,436		0.0000	1.0000	9.15

TENNESSEE AMERICAN WATER COMPANY
ACCOUNT 334.2 METER INSTALLATIONS
ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1893-2007			EXPERIENCE BAND 1893-2007			
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL	
79.5	5,436	29	0.0053	0.9947	9.15	
80.5	5,407	124	0.0229	0.9771	9.10	
81.5	5,282	6	0.0011	0.9989	8.89	
82.5	5,276	11	0.0021	0.9979	8.88	
83.5	5,265	199	0.0378	0.9622	8.86	
84.5	5,067	702	0.1385	0.8615	8.53	
85.5	4,364	116	0.0266	0.9734	7.35	
86.5	4,248	135	0.0318	0.9682	7.15	
87.5	4,114	230	0.0559	0.9441	6.92	
88.5	3,883	113	0.0291	0.9709	6.53	
89.5	3,770	313	0.0830	0.9170	6.34	
90.5	3,457	537	0.1553	0.8447	5.81	
91.5	2,920	227	0.0777	0.9223	4.91	
92.5	2,694	2,136	0.7929	0.2071	4.53	
93.5	557	372	0.6679	0.3321	0.94	
94.5	186		0.0000	1.0000	0.31	
95.5	186		0.0000	1.0000	0.31	
96.5	186		0.0000	1.0000	0.31	
97.5	186		0.0000	1.0000	0.31	
98.5	186		0.0000	1.0000	0.31	
99.5	186		0.0000	1.0000	0.31	
100.5	186		0.0000	1.0000	0.31	
101.5	186		0.0000	1.0000	0.31	
102.5	186		0.0000	1.0000	0.31	
103.5	186		0.0000	1.0000	0.31	
104.5	186		0.0000	1.0000	0.31	
105.5	186		0.0000	1.0000	0.31	
106.5	186		0.0000	1.0000	0.31	
107.5	186		0.0000	1.0000	0.31	
108.5	186		0.0000	1.0000	0.31	
109.5	186		0.0000	1.0000	0.31	
110.5	186		0.0000	1.0000	0.31	
111.5	186	186	1.0000	0.0000	0.31	
112.5					0.00	

TENNESSEE AMERICAN WATER COMPANY
ACCOUNT 334.2 METER INSTALLATIONS

ORIGINAL LIFE TABLE

PLACEMENT BAND 1893-2007			EXPERIENCE BAND 1973-2007		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	10,770,990	1,280	0.0001	0.9999	100.00
0.5	8,426,186	1,540	0.0002	0.9998	99.99
1.5	7,600,675	811	0.0001	0.9999	99.97
2.5	6,905,597		0.0000	1.0000	99.96
3.5	6,244,010		0.0000	1.0000	99.96
4.5	5,764,344	1,075	0.0002	0.9998	99.96
5.5	5,346,635	161	0.0000	1.0000	99.94
6.5	4,959,678	730	0.0001	0.9999	99.94
7.5	4,636,870	394	0.0001	0.9999	99.93
8.5	4,325,975	252	0.0001	0.9999	99.92
9.5	4,047,798	1,884	0.0005	0.9995	99.91
10.5	3,837,169	1,362	0.0004	0.9996	99.86
11.5	3,637,357	7,284	0.0020	0.9980	99.82
12.5	3,200,261	7,406	0.0023	0.9977	99.62
13.5	3,016,632	6,072	0.0020	0.9980	99.39
14.5	2,847,877	4,687	0.0016	0.9984	99.19
15.5	2,695,208	7,074	0.0026	0.9974	99.03
16.5	2,509,473	10,177	0.0041	0.9959	98.77
17.5	2,338,730	4,329	0.0019	0.9981	98.37
18.5	2,131,850	3,670	0.0017	0.9983	98.18
19.5	1,915,728	4,083	0.0021	0.9979	98.01
20.5	1,719,871	2,948	0.0017	0.9983	97.80
21.5	1,445,393	2,456	0.0017	0.9983	97.63
22.5	1,232,864	5,322	0.0043	0.9957	97.46
23.5	1,084,785	11,805	0.0109	0.9891	97.04
24.5	948,288	4,073	0.0043	0.9957	95.98
25.5	872,289	5,538	0.0063	0.9937	95.57
26.5	796,256	3,381	0.0042	0.9958	94.97
27.5	730,674	8,833	0.0121	0.9879	94.57
28.5	661,839	9,886	0.0149	0.9851	93.43
29.5	589,594	4,828	0.0082	0.9918	92.04
30.5	529,016	6,767	0.0128	0.9872	91.29
31.5	456,544	5,472	0.0120	0.9880	90.12
32.5	414,788	14,825	0.0357	0.9643	89.04
33.5	348,131	6,518	0.0187	0.9813	85.86
34.5	238,580	7,671	0.0322	0.9678	84.25
35.5	191,158	12,302	0.0644	0.9356	81.54
36.5	145,983	1,303	0.0089	0.9911	76.29
37.5	118,986	1,265	0.0106	0.9894	75.61
38.5	91,651	1,784	0.0195	0.9805	74.81

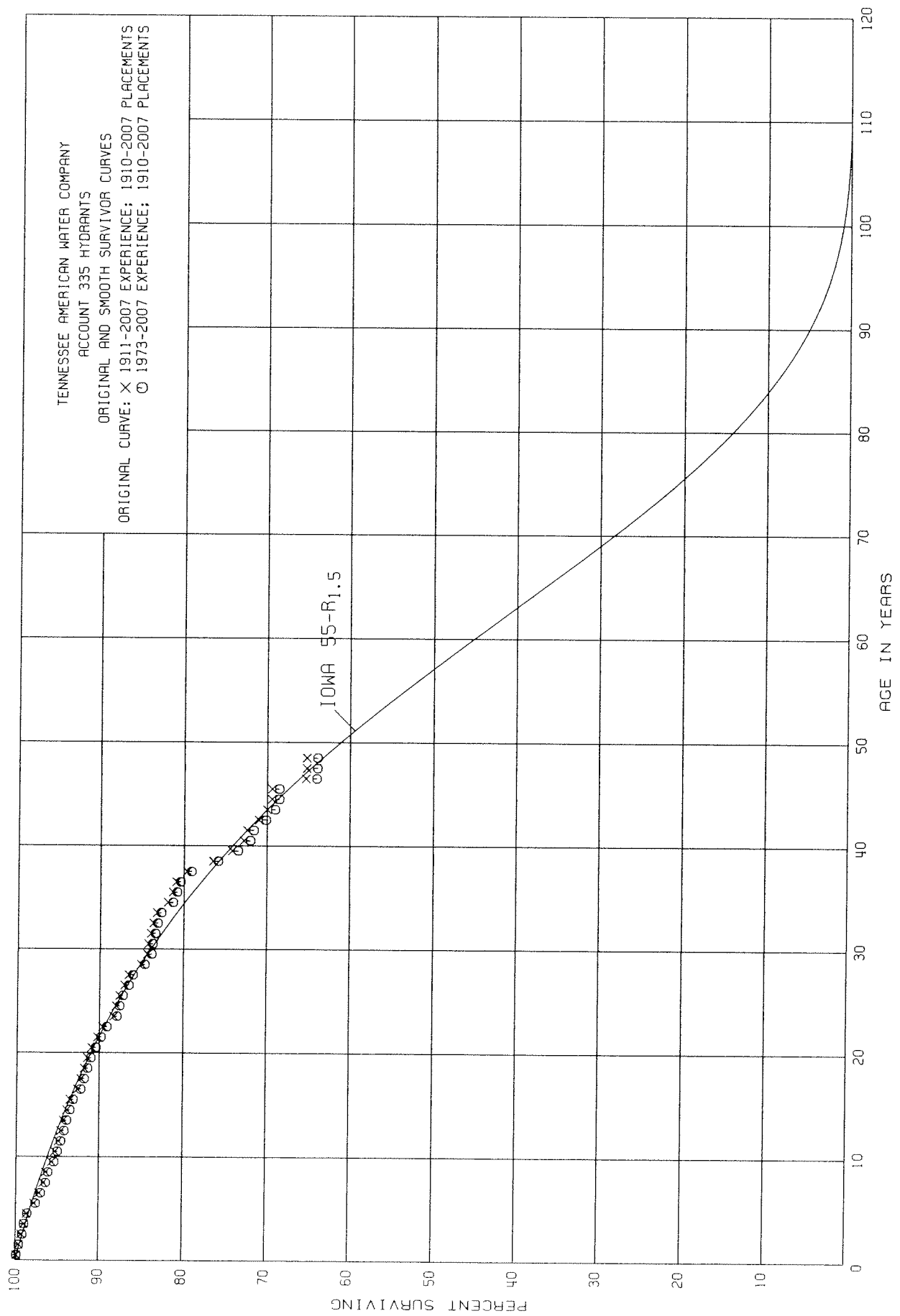
TENNESSEE AMERICAN WATER COMPANY
ACCOUNT 334.2 METER INSTALLATIONS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1893-2007			EXPERIENCE BAND 1973-2007		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5	70,967	1,238	0.0174	0.9826	73.35
40.5	56,425	1,858	0.0329	0.9671	72.07
41.5	35,615	1,537	0.0432	0.9568	69.70
42.5	34,078	2,908	0.0853	0.9147	66.69
43.5	31,170	3,061	0.0982	0.9018	61.00
44.5	28,109	690	0.0245	0.9755	55.01
45.5	27,419	4,351	0.1587	0.8413	53.66
46.5	23,068	3,214	0.1393	0.8607	45.14
47.5	19,854	2,456	0.1237	0.8763	38.85
48.5	17,398	3,976	0.2285	0.7715	34.04
49.5	13,421	548	0.0408	0.9592	26.26
50.5	12,873	475	0.0369	0.9631	25.19
51.5	12,398	1,480	0.1194	0.8806	24.26
52.5	11,154	1,847	0.1656	0.8344	21.36
53.5	9,400	4,532	0.4821	0.5179	17.82
54.5	4,889	207	0.0423	0.9577	9.23
55.5	4,923	267	0.0542	0.9458	8.84
56.5	5,022	906	0.1804	0.8196	8.36
57.5	4,240	980	0.2311	0.7689	6.85
58.5	3,463	183	0.0528	0.9472	5.27
59.5	3,844	258	0.0671	0.9329	4.99
60.5	6,990	251	0.0359	0.9641	4.66
61.5	6,739	162	0.0240	0.9760	4.49
62.5	6,576	191	0.0290	0.9710	4.38
63.5	6,385	148	0.0232	0.9768	4.25
64.5	6,237	430	0.0689	0.9311	4.15
65.5	5,807	247	0.0425	0.9575	3.86
66.5	5,560	217	0.0390	0.9610	3.70
67.5	5,343	93	0.0174	0.9826	3.56
68.5	5,251		0.0000	1.0000	3.50
69.5	5,251		0.0000	1.0000	3.50
70.5	5,251		0.0000	1.0000	3.50
71.5	5,251		0.0000	1.0000	3.50
72.5	5,251		0.0000	1.0000	3.50
73.5	5,251		0.0000	1.0000	3.50
74.5	5,251		0.0000	1.0000	3.50
75.5	5,251		0.0000	1.0000	3.50
76.5	5,251		0.0000	1.0000	3.50
77.5	5,251		0.0000	1.0000	3.50
78.5	5,251		0.0000	1.0000	3.50

TENNESSEE AMERICAN WATER COMPANY
ACCOUNT 334.2 METER INSTALLATIONS
ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1893-2007			EXPERIENCE BAND 1973-2007			
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL	
79.5	5,436	29	0.0053	0.9947	3.50	
80.5	5,407	124	0.0229	0.9771	3.48	
81.5	5,282	6	0.0011	0.9989	3.40	
82.5	5,276	11	0.0021	0.9979	3.40	
83.5	5,265	199	0.0378	0.9622	3.39	
84.5	5,067	702	0.1385	0.8615	3.26	
85.5	4,364	116	0.0266	0.9734	2.81	
86.5	4,248	135	0.0318	0.9682	2.74	
87.5	4,114	230	0.0559	0.9441	2.65	
88.5	3,883	113	0.0291	0.9709	2.50	
89.5	3,770	313	0.0830	0.9170	2.43	
90.5	3,457	537	0.1553	0.8447	2.23	
91.5	2,920	227	0.0777	0.9223	1.88	
92.5	2,694	2,136	0.7929	0.2071	1.73	
93.5	557	372	0.6679	0.3321	0.36	
94.5	186		0.0000	1.0000	0.12	
95.5	186		0.0000	1.0000	0.12	
96.5	186		0.0000	1.0000	0.12	
97.5	186		0.0000	1.0000	0.12	
98.5	186		0.0000	1.0000	0.12	
99.5	186		0.0000	1.0000	0.12	
100.5	186		0.0000	1.0000	0.12	
101.5	186		0.0000	1.0000	0.12	
102.5	186		0.0000	1.0000	0.12	
103.5	186		0.0000	1.0000	0.12	
104.5	186		0.0000	1.0000	0.12	
105.5	186		0.0000	1.0000	0.12	
106.5	186		0.0000	1.0000	0.12	
107.5	186		0.0000	1.0000	0.12	
108.5	186		0.0000	1.0000	0.12	
109.5	186		0.0000	1.0000	0.12	
110.5	186		0.0000	1.0000	0.12	
111.5	186	186	1.0000	0.0000	0.12	
112.5					0.00	



TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 335 HYDRANTS

ORIGINAL LIFE TABLE

PLACEMENT BAND 1910-2007

EXPERIENCE BAND 1911-2007

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	8,262,998	10,378	0.0013	0.9987	100.00
0.5	8,100,213	21,136	0.0026	0.9974	99.87
1.5	7,496,647	24,894	0.0033	0.9967	99.61
2.5	7,105,470	17,044	0.0024	0.9976	99.28
3.5	6,698,624	23,904	0.0036	0.9964	99.04
4.5	6,491,633	59,965	0.0092	0.9908	98.68
5.5	6,200,455	37,169	0.0060	0.9940	97.77
6.5	5,898,785	30,465	0.0052	0.9948	97.18
7.5	5,701,529	17,272	0.0030	0.9970	96.67
8.5	5,530,060	40,852	0.0074	0.9926	96.38
9.5	5,373,013	22,432	0.0042	0.9958	95.67
10.5	5,170,856	20,850	0.0040	0.9960	95.27
11.5	4,846,719	17,130	0.0035	0.9965	94.89
12.5	4,656,620	14,058	0.0030	0.9970	94.56
13.5	4,470,420	19,293	0.0043	0.9957	94.28
14.5	4,333,786	17,592	0.0041	0.9959	93.87
15.5	4,217,910	40,066	0.0095	0.9905	93.49
16.5	4,044,994	16,366	0.0040	0.9960	92.60
17.5	3,906,567	18,958	0.0049	0.9951	92.23
18.5	3,768,655	13,988	0.0037	0.9963	91.78
19.5	3,642,891	22,768	0.0062	0.9938	91.44
20.5	3,521,589	25,586	0.0073	0.9927	90.87
21.5	3,310,324	23,267	0.0070	0.9930	90.21
22.5	3,143,435	44,623	0.0142	0.9858	89.58
23.5	2,983,543	9,209	0.0031	0.9969	88.31
24.5	2,836,393	14,436	0.0051	0.9949	88.04
25.5	2,602,703	18,209	0.0070	0.9930	87.59
26.5	2,348,059	13,532	0.0058	0.9942	86.98
27.5	2,125,127	35,459	0.0167	0.9833	86.48
28.5	1,876,611	17,059	0.0091	0.9909	85.04
29.5	1,634,607	2,103	0.0013	0.9987	84.27
30.5	1,451,231	5,167	0.0036	0.9964	84.16
31.5	1,382,656	4,247	0.0031	0.9969	83.86
32.5	1,275,367	6,681	0.0052	0.9948	83.60
33.5	613,944	9,792	0.0159	0.9841	83.17
34.5	601,966	3,756	0.0062	0.9938	81.85
35.5	568,119	3,173	0.0056	0.9944	81.34
36.5	547,427	8,393	0.0153	0.9847	80.88
37.5	535,157	20,804	0.0389	0.9611	79.64
38.5	431,433	13,324	0.0309	0.9691	76.54

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 335 HYDRANTS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1910-2007			EXPERIENCE BAND 1911-2007		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5	381,805	7,322	0.0192	0.9808	74.17
40.5	374,483	1,926	0.0051	0.9949	72.75
41.5	339,714	6,496	0.0191	0.9809	72.38
42.5	249,919	3,699	0.0148	0.9852	71.00
43.5	230,509	1,779	0.0077	0.9923	69.95
44.5	162,042		0.0000	1.0000	69.41
45.5	136,169	8,130	0.0597	0.9403	69.41
46.5	128,039	203	0.0016	0.9984	65.27
47.5	127,836		0.0000	1.0000	65.17
48.5	95,293	69	0.0007	0.9993	65.17
49.5	72,299	700	0.0097	0.9903	65.12
50.5	71,599	20	0.0003	0.9997	64.49
51.5	71,580	43	0.0006	0.9994	64.47
52.5	55,040	117	0.0021	0.9979	64.43
53.5	54,923	341	0.0062	0.9938	64.29
54.5	30,607	164	0.0054	0.9946	63.89
55.5	17,942		0.0000	1.0000	63.54
56.5	17,942	1,627	0.0907	0.9093	63.54
57.5	16,315	514	0.0315	0.9685	57.78
58.5	15,801	542	0.0343	0.9657	55.96
59.5	15,259		0.0000	1.0000	54.04
60.5	15,259	24	0.0016	0.9984	54.04
61.5	15,235	282	0.0185	0.9815	53.95
62.5	14,953	306	0.0205	0.9795	52.95
63.5	14,647		0.0000	1.0000	51.86
64.5	14,647		0.0000	1.0000	51.86
65.5	14,647	161	0.0110	0.9890	51.86
66.5	14,485	65	0.0045	0.9955	51.29
67.5	14,420	496	0.0344	0.9656	51.06
68.5	13,924	109	0.0078	0.9922	49.30
69.5	13,816	993	0.0719	0.9281	48.92
70.5	12,823	1,059	0.0826	0.9174	45.40
71.5	11,764	1,056	0.0898	0.9102	41.65
72.5	10,708		0.0000	1.0000	37.91
73.5	10,708	933	0.0871	0.9129	37.91
74.5	9,774	1,004	0.1027	0.8973	34.61
75.5	8,770	1,935	0.2206	0.7794	31.06
76.5	6,835	753	0.1102	0.8898	24.21
77.5	6,082	700	0.1151	0.8849	21.54
78.5	5,382	1,602	0.2977	0.7023	19.06

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 335 HYDRANTS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1910-2007

EXPERIENCE BAND 1911-2007

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
79.5	3,779	1,402	0.3710	0.6290	13.39
80.5	2,377	42	0.0177	0.9823	8.42
81.5	2,335	53	0.0227	0.9773	8.27
82.5	2,282	3	0.0013	0.9987	8.08
83.5	2,279		0.0000	1.0000	8.07
84.5	2,279	335	0.1470	0.8530	8.07
85.5	1,944	308	0.1584	0.8416	6.88
86.5	1,636		0.0000	1.0000	5.79
87.5	1,636		0.0000	1.0000	5.79
88.5	1,636	38	0.0232	0.9768	5.79
89.5	1,598	35	0.0219	0.9781	5.66
90.5	1,563	609	0.3896	0.6104	5.54
91.5	954		0.0000	1.0000	3.38
92.5	954	250	0.2621	0.7379	3.38
93.5	704	700	0.9943	0.0057	2.49
94.5	5	5	1.0000	0.0000	0.01
95.5					0.00

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 335 HYDRANTS

ORIGINAL LIFE TABLE

PLACEMENT BAND 1910-2007

EXPERIENCE BAND 1973-2007

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	7,623,884	10,378	0.0014	0.9986	100.00
0.5	7,492,320	21,136	0.0028	0.9972	99.86
1.5	6,908,204	24,894	0.0036	0.9964	99.58
2.5	6,528,685	17,044	0.0026	0.9974	99.22
3.5	6,206,817	23,904	0.0039	0.9961	98.96
4.5	6,037,226	59,965	0.0099	0.9901	98.57
5.5	5,746,048	37,169	0.0065	0.9935	97.59
6.5	5,479,277	30,465	0.0056	0.9944	96.96
7.5	5,403,639	17,272	0.0032	0.9968	96.42
8.5	5,254,545	40,852	0.0078	0.9922	96.11
9.5	5,171,814	22,432	0.0043	0.9957	95.36
10.5	5,001,307	20,850	0.0042	0.9958	94.95
11.5	4,677,169	17,130	0.0037	0.9963	94.55
12.5	4,487,070	14,058	0.0031	0.9969	94.20
13.5	4,340,069	19,293	0.0044	0.9956	93.91
14.5	4,231,648	17,592	0.0042	0.9958	93.50
15.5	4,115,772	40,066	0.0097	0.9903	93.11
16.5	3,942,856	16,366	0.0042	0.9958	92.21
17.5	3,824,047	18,958	0.0050	0.9950	91.82
18.5	3,686,135	13,988	0.0038	0.9962	91.36
19.5	3,602,102	22,768	0.0063	0.9937	91.01
20.5	3,502,422	25,586	0.0073	0.9927	90.44
21.5	3,291,157	23,267	0.0071	0.9929	89.78
22.5	3,124,269	44,623	0.0143	0.9857	89.14
23.5	2,964,462	9,209	0.0031	0.9969	87.87
24.5	2,817,428	14,436	0.0051	0.9949	87.60
25.5	2,583,738	18,209	0.0070	0.9930	87.15
26.5	2,329,093	13,532	0.0058	0.9942	86.54
27.5	2,106,162	35,459	0.0168	0.9832	86.04
28.5	1,857,646	17,059	0.0092	0.9908	84.59
29.5	1,615,642	2,103	0.0013	0.9987	83.81
30.5	1,432,727	5,167	0.0036	0.9964	83.70
31.5	1,364,152	4,247	0.0031	0.9969	83.40
32.5	1,256,863	6,651	0.0053	0.9947	83.14
33.5	595,470	9,792	0.0164	0.9836	82.70
34.5	583,492	3,756	0.0064	0.9936	81.34
35.5	549,951	3,173	0.0058	0.9942	80.82
36.5	529,333	8,393	0.0159	0.9841	80.35
37.5	517,063	20,804	0.0402	0.9598	79.07
38.5	413,339	13,324	0.0322	0.9678	75.89

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 335 HYDRANTS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1910-2007

EXPERIENCE BAND 1973-2007

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5	363,711	7,322	0.0201	0.9799	73.45
40.5	356,393	1,926	0.0054	0.9946	71.97
41.5	323,158	6,496	0.0201	0.9799	71.58
42.5	234,900	3,699	0.0157	0.9843	70.14
43.5	215,490	1,779	0.0083	0.9917	69.04
44.5	147,655		0.0000	1.0000	68.47
45.5	125,242	8,130	0.0649	0.9351	68.47
46.5	119,496	203	0.0017	0.9983	64.03
47.5	121,253		0.0000	1.0000	63.92
48.5	89,616	69	0.0008	0.9992	63.92
49.5	67,930	700	0.0103	0.9897	63.87
50.5	67,231	20	0.0003	0.9997	63.21
51.5	67,211	43	0.0006	0.9994	63.19
52.5	50,675	117	0.0023	0.9977	63.15
53.5	50,893	341	0.0067	0.9933	63.00
54.5	26,577	164	0.0062	0.9938	62.58
55.5	13,911		0.0000	1.0000	62.19
56.5	14,792	1,627	0.1100	0.8900	62.19
57.5	13,165	514	0.0390	0.9610	55.35
58.5	12,850	542	0.0422	0.9578	53.19
59.5	12,573		0.0000	1.0000	50.95
60.5	12,725	24	0.0019	0.9981	50.95
61.5	15,181	282	0.0186	0.9814	50.85
62.5	14,953	306	0.0205	0.9795	49.90
63.5	14,647		0.0000	1.0000	48.88
64.5	14,647		0.0000	1.0000	48.88
65.5	14,647	161	0.0110	0.9890	48.88
66.5	14,485	65	0.0045	0.9955	48.34
67.5	14,420	496	0.0344	0.9656	48.12
68.5	13,924	109	0.0078	0.9922	46.46
69.5	13,816	993	0.0719	0.9281	46.10
70.5	12,823	1,059	0.0826	0.9174	42.79
71.5	11,764	1,056	0.0898	0.9102	39.26
72.5	10,708		0.0000	1.0000	35.73
73.5	10,708	933	0.0871	0.9129	35.73
74.5	9,774	1,004	0.1027	0.8973	32.62
75.5	8,770	1,935	0.2206	0.7794	29.27
76.5	6,835	753	0.1102	0.8898	22.81
77.5	6,082	700	0.1151	0.8849	20.30
78.5	5,382	1,602	0.2977	0.7023	17.96

TENNESSEE AMERICAN WATER COMPANY

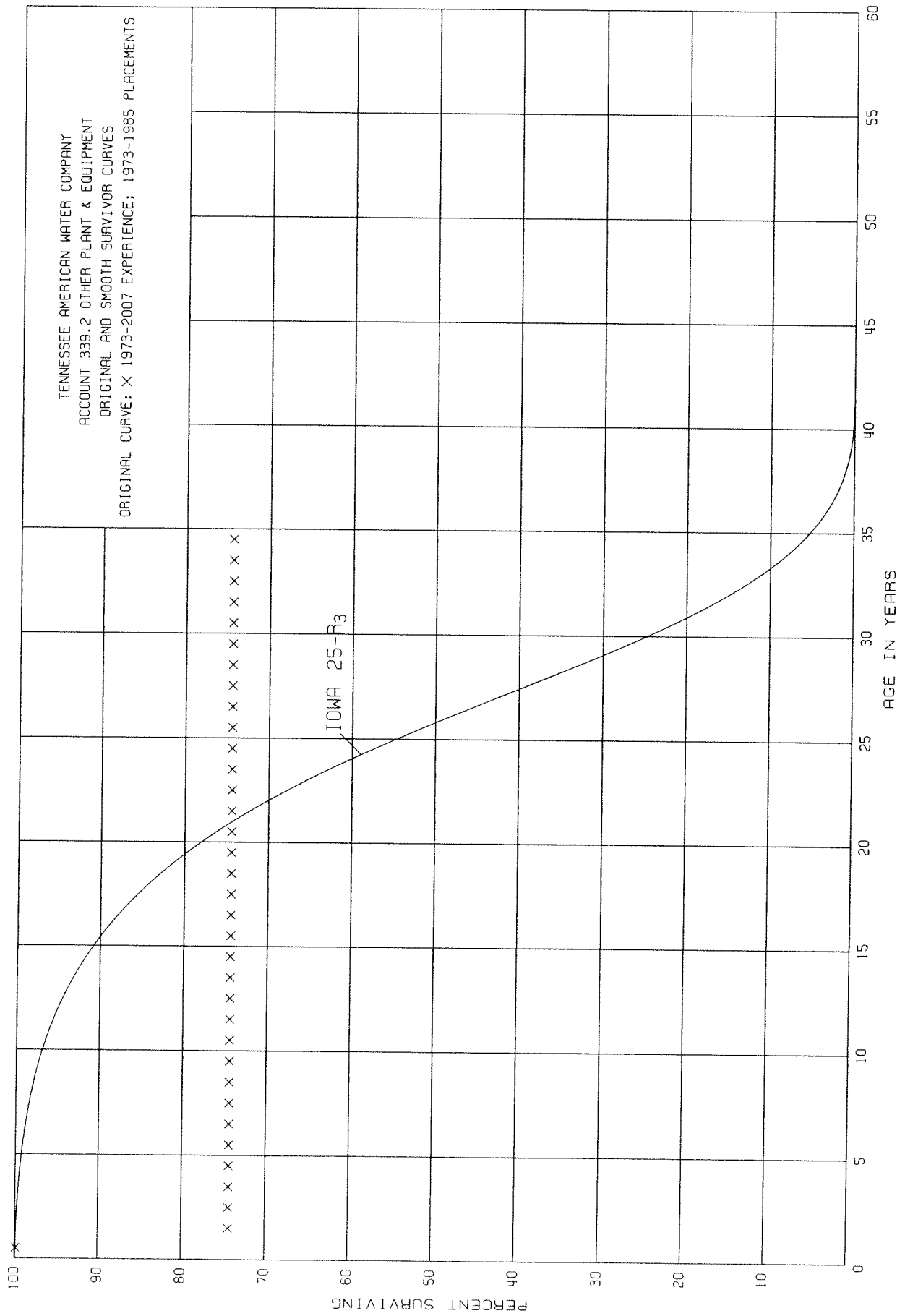
ACCOUNT 335 HYDRANTS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1910-2007

EXPERIENCE BAND 1973-2007

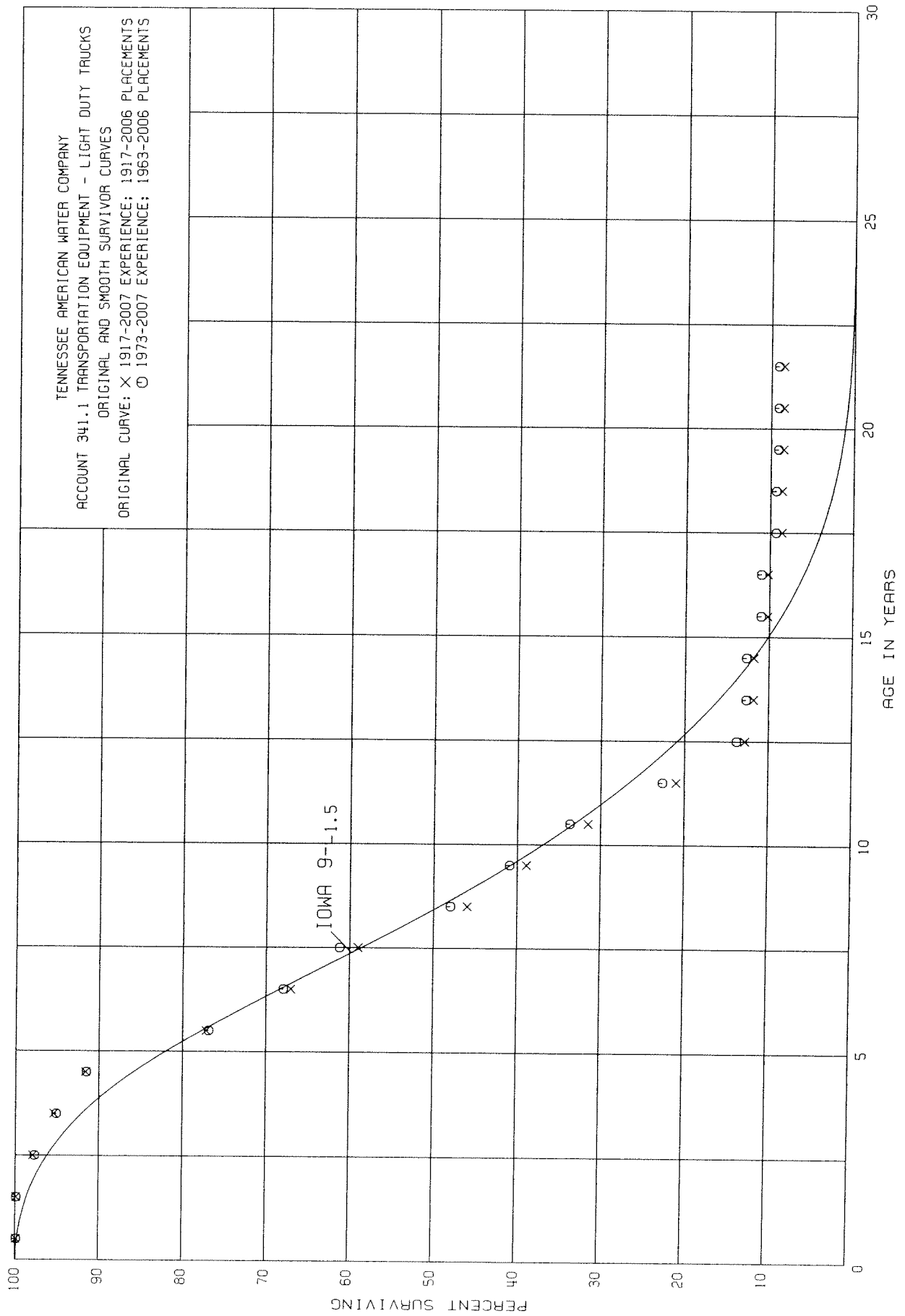
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
79.5	3,779	1,402	0.3710	0.6290	12.61
80.5	2,377	42	0.0177	0.9823	7.93
81.5	2,335	53	0.0227	0.9773	7.79
82.5	2,282	3	0.0013	0.9987	7.61
83.5	2,279		0.0000	1.0000	7.60
84.5	2,279	335	0.1470	0.8530	7.60
85.5	1,944	308	0.1584	0.8416	6.48
86.5	1,636		0.0000	1.0000	5.45
87.5	1,636		0.0000	1.0000	5.45
88.5	1,636	38	0.0232	0.9768	5.45
89.5	1,598	35	0.0219	0.9781	5.32
90.5	1,563	609	0.3896	0.6104	5.20
91.5	954		0.0000	1.0000	3.17
92.5	954	250	0.2621	0.7379	3.17
93.5	704	700	0.9943	0.0057	2.34
94.5	5	5	1.0000	0.0000	0.01
95.5					0.00



TENNESSEE AMERICAN WATER COMPANY
ACCOUNT 339.2 OTHER PLANT & EQUIPMENT

ORIGINAL LIFE TABLE

PLACEMENT BAND 1973-1985			EXPERIENCE BAND 1973-2007		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	11,460	2,937	0.0000	1.0000	100.00
0.5	11,460		0.2563	0.7437	100.00
1.5	8,523		0.0000	1.0000	74.37
2.5	8,523		0.0000	1.0000	74.37
3.5	8,523		0.0000	1.0000	74.37
4.5	8,523		0.0000	1.0000	74.37
5.5	8,523		0.0000	1.0000	74.37
6.5	8,523		0.0000	1.0000	74.37
7.5	8,523		0.0000	1.0000	74.37
8.5	8,523		0.0000	1.0000	74.37
9.5	8,523		0.0000	1.0000	74.37
10.5	8,523		0.0000	1.0000	74.37
11.5	8,523		0.0000	1.0000	74.37
12.5	8,523		0.0000	1.0000	74.37
13.5	8,523		0.0000	1.0000	74.37
14.5	8,523		0.0000	1.0000	74.37
15.5	8,523		0.0000	1.0000	74.37
16.5	8,523		0.0000	1.0000	74.37
17.5	8,523		0.0000	1.0000	74.37
18.5	8,523		0.0000	1.0000	74.37
19.5	8,523		0.0000	1.0000	74.37
20.5	8,523		0.0000	1.0000	74.37
21.5	8,523		0.0000	1.0000	74.37
22.5	7,477		0.0000	1.0000	74.37
23.5	7,477		0.0000	1.0000	74.37
24.5	7,477		0.0000	1.0000	74.37
25.5	7,477		0.0000	1.0000	74.37
26.5	7,477		0.0000	1.0000	74.37
27.5	7,477		0.0000	1.0000	74.37
28.5	7,477		0.0000	1.0000	74.37
29.5	7,477		0.0000	1.0000	74.37
30.5	4,275		0.0000	1.0000	74.37
31.5	4,275		0.0000	1.0000	74.37
32.5	4,275		0.0000	1.0000	74.37
33.5	2,889		0.0000	1.0000	74.37
34.5					74.37



TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 341.1 TRANSPORTATION EQUIPMENT - LIGHT DUTY TRUCKS

ORIGINAL LIFE TABLE

PLACEMENT BAND 1917-2006

EXPERIENCE BAND 1917-2007

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	3,347,041		0.0000	1.0000	100.00
0.5	3,347,041		0.0000	1.0000	100.00
1.5	3,007,117	64,233	0.0214	0.9786	100.00
2.5	2,875,494	72,501	0.0252	0.9748	97.86
3.5	2,715,447	107,419	0.0396	0.9604	95.39
4.5	2,585,835	407,184	0.1575	0.8425	91.61
5.5	2,157,486	286,095	0.1326	0.8674	77.18
6.5	1,832,467	217,439	0.1187	0.8813	66.95
7.5	1,615,028	356,684	0.2209	0.7791	59.00
8.5	1,151,915	177,428	0.1540	0.8460	45.97
9.5	754,753	143,915	0.1907	0.8093	38.89
10.5	586,903	195,923	0.3338	0.6662	31.47
11.5	389,900	151,934	0.3897	0.6103	20.97
12.5	237,966	19,195	0.0807	0.9193	12.80
13.5	200,593		0.0000	1.0000	11.77
14.5	200,593	26,940	0.1343	0.8657	11.77
15.5	173,654		0.0000	1.0000	10.19
16.5	173,654	26,882	0.1548	0.8452	10.19
17.5	146,772		0.0000	1.0000	8.61
18.5	125,271	2,050	0.0164	0.9836	8.61
19.5	113,103		0.0000	1.0000	8.47
20.5	78,022		0.0000	1.0000	8.47
21.5	25,433	254	0.0100	0.9900	8.47
22.5	24,458		0.0000	1.0000	8.39
23.5	24,458		0.0000	1.0000	8.39
24.5	24,458		0.0000	1.0000	8.39
25.5	14,323		0.0000	1.0000	8.39
26.5	690		0.0000	1.0000	8.39
27.5					8.39

TENNESSEE AMERICAN WATER COMPANY

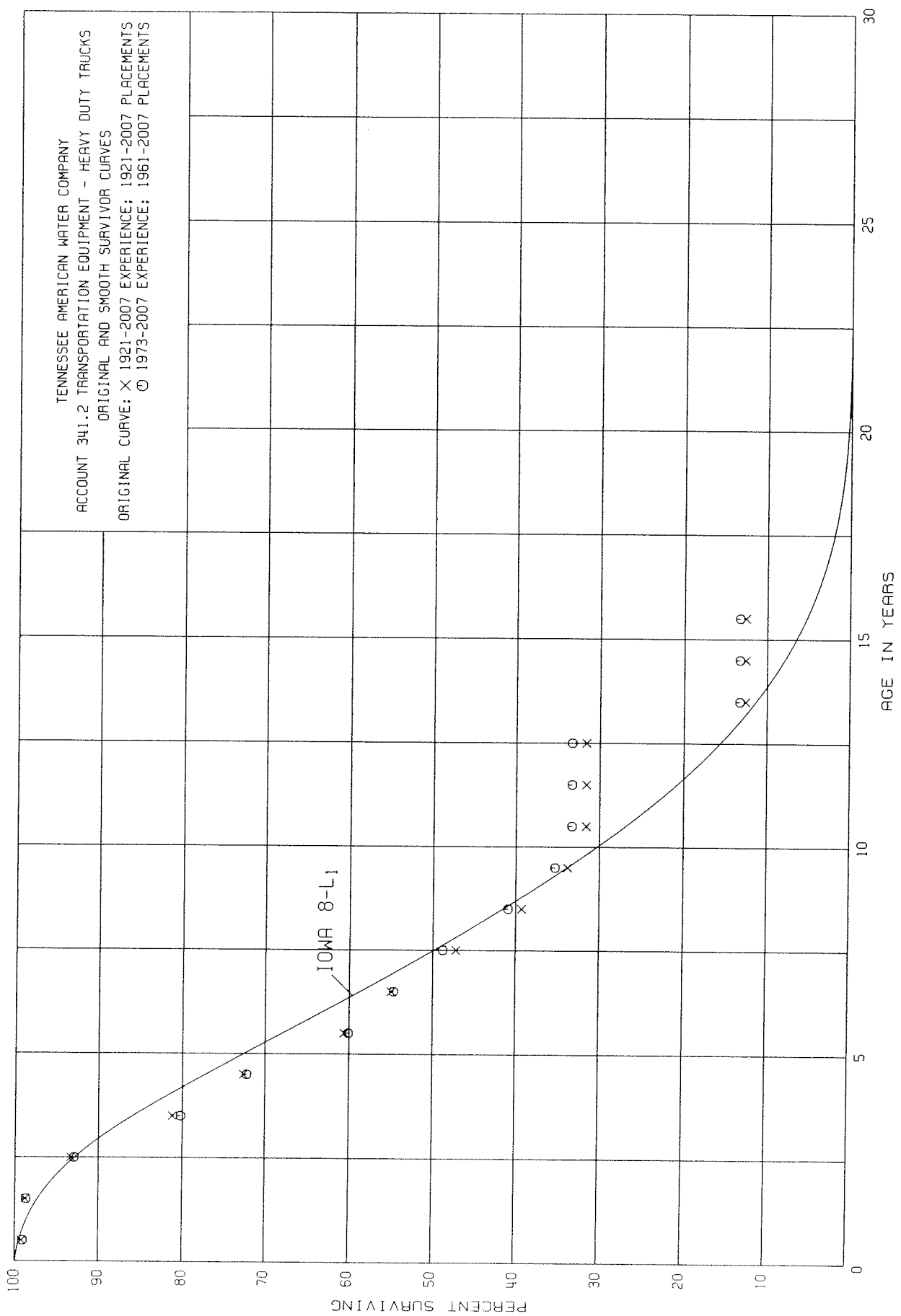
ACCOUNT 341.1 TRANSPORTATION EQUIPMENT - LIGHT DUTY TRUCKS

ORIGINAL LIFE TABLE

PLACEMENT BAND 1963-2006

EXPERIENCE BAND 1973-2007

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	3,057,678		0.0000	1.0000	100.00
0.5	3,083,929		0.0000	1.0000	100.00
1.5	2,757,538	64,233	0.0233	0.9767	100.00
2.5	2,634,960	70,001	0.0266	0.9734	97.67
3.5	2,496,458	93,974	0.0376	0.9624	95.07
4.5	2,391,847	381,859	0.1597	0.8403	91.50
5.5	2,002,959	234,012	0.1168	0.8832	76.89
6.5	1,732,342	171,483	0.0990	0.9010	67.91
7.5	1,560,859	335,845	0.2152	0.7848	61.19
8.5	1,122,088	166,953	0.1488	0.8512	48.02
9.5	735,655	128,889	0.1752	0.8248	40.87
10.5	582,830	191,851	0.3292	0.6708	33.71
11.5	389,900	151,934	0.3897	0.6103	22.61
12.5	237,966	19,195	0.0807	0.9193	13.80
13.5	200,593		0.0000	1.0000	12.69
14.5	200,593	26,940	0.1343	0.8657	12.69
15.5	173,654		0.0000	1.0000	10.99
16.5	173,654	26,882	0.1548	0.8452	10.99
17.5	146,772		0.0000	1.0000	9.29
18.5	125,271	2,050	0.0164	0.9836	9.29
19.5	113,103		0.0000	1.0000	9.14
20.5	78,022		0.0000	1.0000	9.14
21.5	25,433	254	0.0100	0.9900	9.14
22.5	24,458		0.0000	1.0000	9.05
23.5	24,458		0.0000	1.0000	9.05
24.5	24,458		0.0000	1.0000	9.05
25.5	14,323		0.0000	1.0000	9.05
26.5	690		0.0000	1.0000	9.05
27.5					9.05



TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 341.2 TRANSPORTATION EQUIPMENT - HEAVY DUTY TRUCKS

ORIGINAL LIFE TABLE

PLACEMENT BAND 1921-2007

EXPERIENCE BAND 1921-2007

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	1,831,342	14,951	0.0082	0.9918	100.00
0.5	1,714,589	6,428	0.0037	0.9963	99.18
1.5	1,682,000	93,156	0.0554	0.9446	98.81
2.5	1,498,802	194,833	0.1300	0.8700	93.34
3.5	1,303,969	138,838	0.1065	0.8935	81.21
4.5	1,165,130	191,456	0.1643	0.8357	72.56
5.5	973,675	91,025	0.0935	0.9065	60.64
6.5	822,193	115,750	0.1408	0.8592	54.97
7.5	706,444	118,122	0.1672	0.8328	47.23
8.5	364,840	51,168	0.1402	0.8598	39.33
9.5	303,286	20,384	0.0672	0.9328	33.82
10.5	234,027		0.0000	1.0000	31.55
11.5	171,235		0.0000	1.0000	31.55
12.5	90,666	54,540	0.6015	0.3985	31.55
13.5	36,126		0.0000	1.0000	12.57
14.5	36,126		0.0000	1.0000	12.57
15.5	14,667		0.0000	1.0000	12.57
16.5	8,896		0.0000	1.0000	12.57
17.5	8,450	654	0.0774	0.9226	12.57
18.5	7,796		0.0000	1.0000	11.60
19.5	6,086		0.0000	1.0000	11.60
20.5	6,086	22	0.0036	0.9964	11.60
21.5	6,064		0.0000	1.0000	11.56
22.5	6,064	542	0.0894	0.9106	11.56
23.5	5,522		0.0000	1.0000	10.53
24.5	5,522	1,022	0.1851	0.8149	10.53
25.5	4,500	4,500	1.0000	0.0000	8.58
26.5					0.00

TENNESSEE AMERICAN WATER COMPANY

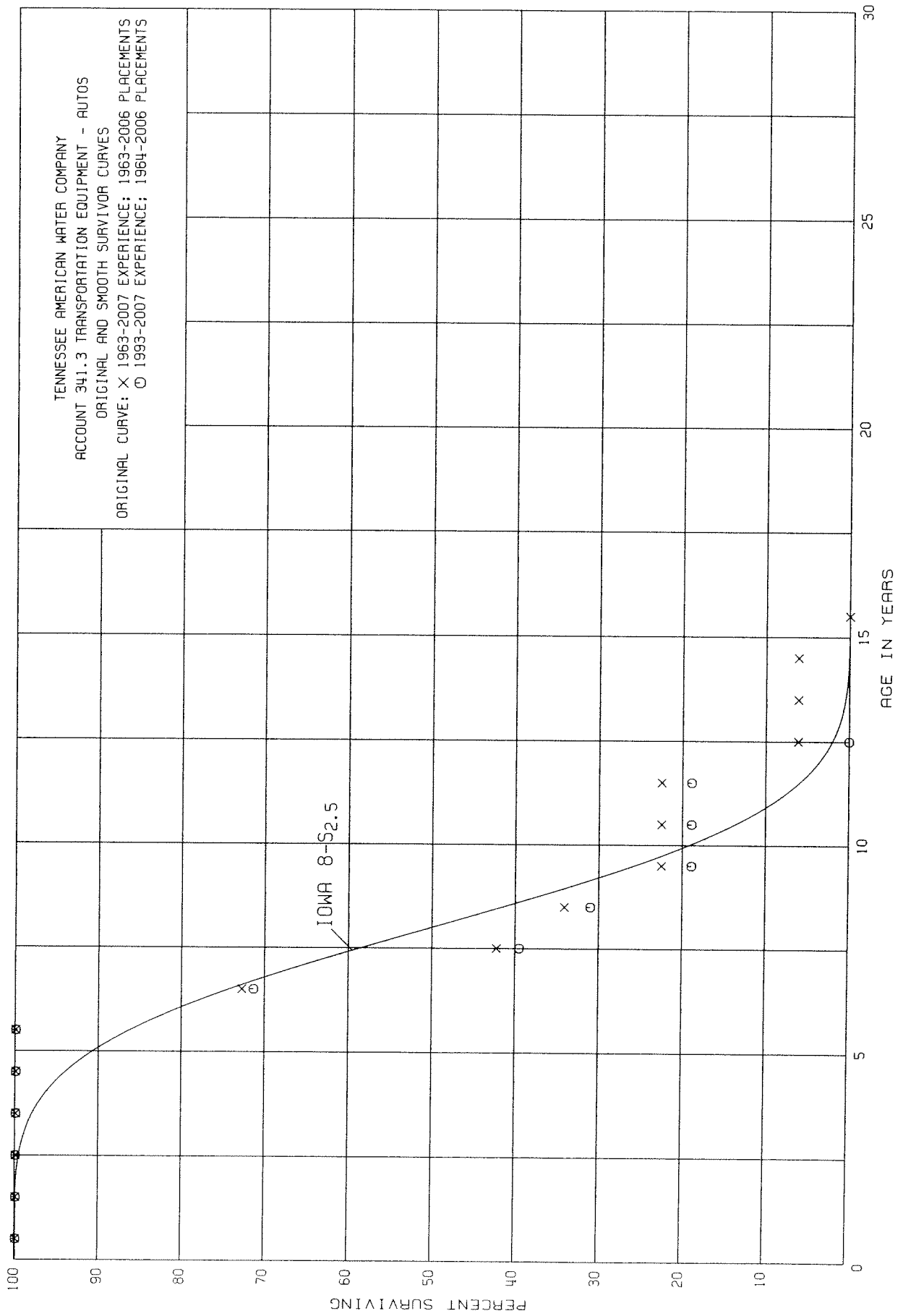
ACCOUNT 341.2 TRANSPORTATION EQUIPMENT - HEAVY DUTY TRUCKS

ORIGINAL LIFE TABLE

PLACEMENT BAND 1961-2007

EXPERIENCE BAND 1973-2007

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	1,709,042	14,951	0.0087	0.9913	100.00
0.5	1,603,879	6,428	0.0040	0.9960	99.13
1.5	1,584,485	93,156	0.0588	0.9412	98.73
2.5	1,409,736	193,619	0.1373	0.8627	92.92
3.5	1,216,117	121,514	0.0999	0.9001	80.16
4.5	1,094,624	182,555	0.1668	0.8332	72.15
5.5	912,070	82,664	0.0906	0.9094	60.12
6.5	768,949	82,972	0.1079	0.8921	54.67
7.5	685,978	110,073	0.1605	0.8395	48.77
8.5	353,988	48,700	0.1376	0.8624	40.94
9.5	294,902	16,499	0.0559	0.9441	35.31
10.5	229,528		0.0000	1.0000	33.34
11.5	171,235		0.0000	1.0000	33.34
12.5	90,666	54,540	0.6015	0.3985	33.34
13.5	36,126		0.0000	1.0000	13.29
14.5	36,126		0.0000	1.0000	13.29
15.5	14,667		0.0000	1.0000	13.29
16.5	8,896		0.0000	1.0000	13.29
17.5	8,450	654	0.0774	0.9226	13.29
18.5	7,796		0.0000	1.0000	12.26
19.5	6,086		0.0000	1.0000	12.26
20.5	6,086	22	0.0036	0.9964	12.26
21.5	6,064		0.0000	1.0000	12.22
22.5	6,064	542	0.0894	0.9106	12.22
23.5	5,522		0.0000	1.0000	11.13
24.5	5,522	1,022	0.1851	0.8149	11.13
25.5	4,500	4,500	1.0000	0.0000	9.07
26.5					0.00



TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 341.3 TRANSPORTATION EQUIPMENT - AUTOS

ORIGINAL LIFE TABLE

PLACEMENT BAND 1963-2006

EXPERIENCE BAND 1963-2007

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	494,187		0.0000	1.0000	100.00
0.5	494,187		0.0000	1.0000	100.00
1.5	408,601		0.0000	1.0000	100.00
2.5	378,104		0.0000	1.0000	100.00
3.5	272,647		0.0000	1.0000	100.00
4.5	272,647		0.0000	1.0000	100.00
5.5	272,647	74,556	0.2735	0.7265	100.00
6.5	198,091	83,000	0.4190	0.5810	72.65
7.5	115,092	22,115	0.1922	0.8078	42.21
8.5	92,977	31,752	0.3415	0.6585	34.10
9.5	44,607		0.0000	1.0000	22.45
10.5	44,607		0.0000	1.0000	22.45
11.5	44,607	32,406	0.7265	0.2735	22.45
12.5	12,201		0.0000	1.0000	6.14
13.5	12,201		0.0000	1.0000	6.14
14.5	12,201	12,201	1.0000	0.0000	6.14
15.5					0.00

TENNESSEE AMERICAN WATER COMPANY

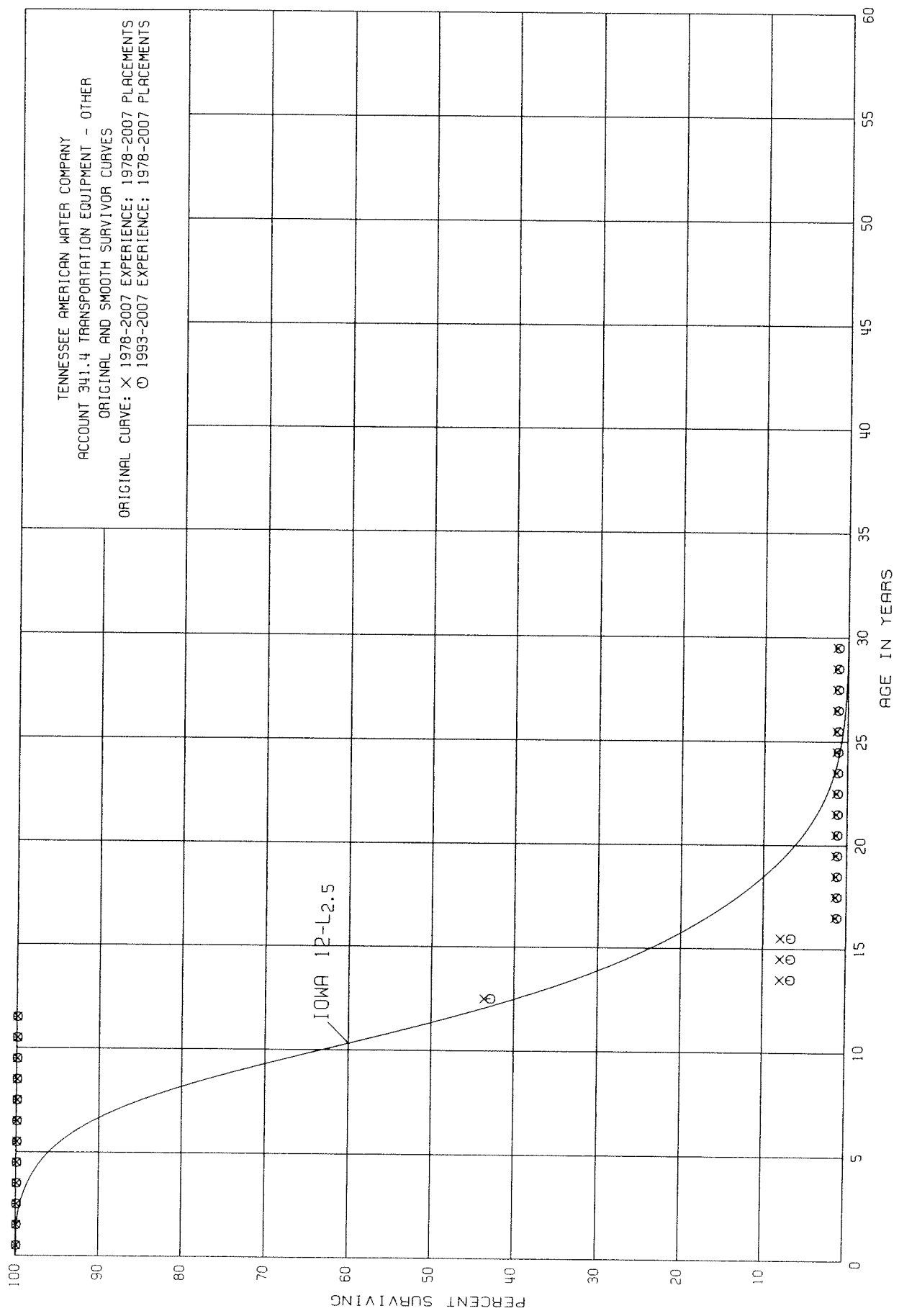
ACCOUNT 341.3 TRANSPORTATION EQUIPMENT - AUTOS

ORIGINAL LIFE TABLE

PLACEMENT BAND 1964-2006

EXPERIENCE BAND 1993-2007

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	431,789		0.0000	1.0000	100.00
0.5	431,789		0.0000	1.0000	100.00
1.5	373,605		0.0000	1.0000	100.00
2.5	365,222		0.0000	1.0000	100.00
3.5	259,766		0.0000	1.0000	100.00
4.5	259,766		0.0000	1.0000	100.00
5.5	259,766	74,556	0.2870	0.7130	100.00
6.5	185,210	82,645	0.4462	0.5538	71.30
7.5	102,565	22,115	0.2156	0.7844	39.49
8.5	80,450	31,426	0.3906	0.6094	30.98
9.5	32,406		0.0000	1.0000	18.88
10.5	32,406		0.0000	1.0000	18.88
11.5	32,406	32,406	1.0000	0.0000	18.88
12.5					0.00



TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 341.4 TRANSPORTATION EQUIPMENT - OTHER

ORIGINAL LIFE TABLE

PLACEMENT BAND 1978-2007

EXPERIENCE BAND 1978-2007

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	273,680		0.0000	1.0000	100.00
0.5	253,953		0.0000	1.0000	100.00
1.5	84,784		0.0000	1.0000	100.00
2.5	84,784		0.0000	1.0000	100.00
3.5	84,784		0.0000	1.0000	100.00
4.5	84,784		0.0000	1.0000	100.00
5.5	84,784		0.0000	1.0000	100.00
6.5	84,784		0.0000	1.0000	100.00
7.5	84,784		0.0000	1.0000	100.00
8.5	74,922		0.0000	1.0000	100.00
9.5	59,803		0.0000	1.0000	100.00
10.5	50,050		0.0000	1.0000	100.00
11.5	50,050	28,255	0.5645	0.4355	100.00
12.5	21,795	17,861	0.8195	0.1805	43.55
13.5	3,935		0.0000	1.0000	7.86
14.5	3,935		0.0000	1.0000	7.86
15.5	3,935	3,281	0.8338	0.1662	7.86
16.5	654		0.0000	1.0000	1.31
17.5	654		0.0000	1.0000	1.31
18.5	654		0.0000	1.0000	1.31
19.5	654		0.0000	1.0000	1.31
20.5	654		0.0000	1.0000	1.31
21.5	654		0.0000	1.0000	1.31
22.5	654		0.0000	1.0000	1.31
23.5	654		0.0000	1.0000	1.31
24.5	654		0.0000	1.0000	1.31
25.5	654		0.0000	1.0000	1.31
26.5	654		0.0000	1.0000	1.31
27.5	654		0.0000	1.0000	1.31
28.5	654		0.0000	1.0000	1.31
29.5					1.31

TENNESSEE AMERICAN WATER COMPANY

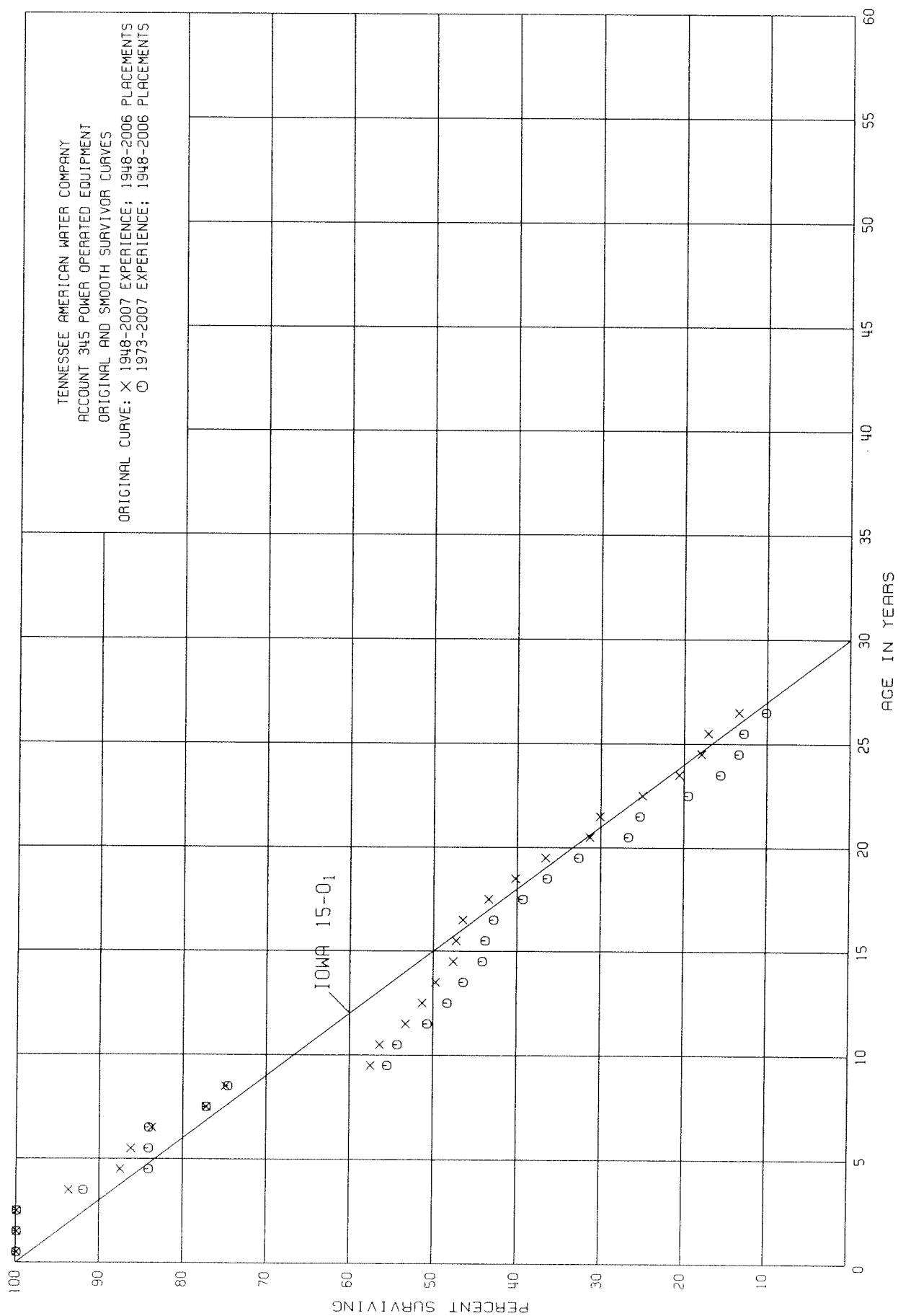
ACCOUNT 341.4 TRANSPORTATION EQUIPMENT - OTHER

ORIGINAL LIFE TABLE

PLACEMENT BAND 1978-2007

EXPERIENCE BAND 1993-2007

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	223,630		0.0000	1.0000	100.00
0.5	203,903		0.0000	1.0000	100.00
1.5	34,734		0.0000	1.0000	100.00
2.5	34,734		0.0000	1.0000	100.00
3.5	34,734		0.0000	1.0000	100.00
4.5	40,761		0.0000	1.0000	100.00
5.5	46,566		0.0000	1.0000	100.00
6.5	46,566		0.0000	1.0000	100.00
7.5	46,566		0.0000	1.0000	100.00
8.5	36,704		0.0000	1.0000	100.00
9.5	21,586		0.0000	1.0000	100.00
10.5	34,283		0.0000	1.0000	100.00
11.5	49,396	28,255	0.5720	0.4280	100.00
12.5	21,141	17,861	0.8449	0.1551	42.80
13.5	3,281		0.0000	1.0000	6.64
14.5	3,935		0.0000	1.0000	6.64
15.5	3,935	3,281	0.8338	0.1662	6.64
16.5	654		0.0000	1.0000	1.10
17.5	654		0.0000	1.0000	1.10
18.5	654		0.0000	1.0000	1.10
19.5	654		0.0000	1.0000	1.10
20.5	654		0.0000	1.0000	1.10
21.5	654		0.0000	1.0000	1.10
22.5	654		0.0000	1.0000	1.10
23.5	654		0.0000	1.0000	1.10
24.5	654		0.0000	1.0000	1.10
25.5	654		0.0000	1.0000	1.10
26.5	654		0.0000	1.0000	1.10
27.5	654		0.0000	1.0000	1.10
28.5	654		0.0000	1.0000	1.10
29.5					1.10



TENNESSEE AMERICAN WATER COMPANY
ACCOUNT 345 POWER OPERATED EQUIPMENT
ORIGINAL LIFE TABLE

PLACEMENT BAND 1948-2006			EXPERIENCE BAND 1948-2007		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	627,099		0.0000	1.0000	100.00
0.5	670,218		0.0000	1.0000	100.00
1.5	603,887		0.0000	1.0000	100.00
2.5	582,307	36,603	0.0629	0.9371	100.00
3.5	545,704	35,922	0.0658	0.9342	93.71
4.5	509,782	7,960	0.0156	0.9844	87.54
5.5	501,822	14,243	0.0284	0.9716	86.17
6.5	499,644	39,024	0.0781	0.9219	83.72
7.5	460,620	13,759	0.0299	0.9701	77.18
8.5	446,861	103,861	0.2324	0.7676	74.87
9.5	343,000	6,309	0.0184	0.9816	57.47
10.5	321,177	17,592	0.0548	0.9452	56.41
11.5	257,364	9,773	0.0380	0.9620	53.32
12.5	247,591	7,714	0.0312	0.9688	51.29
13.5	239,877	10,130	0.0422	0.9578	49.69
14.5	229,747	1,290	0.0056	0.9944	47.59
15.5	173,780	3,063	0.0176	0.9824	47.32
16.5	170,717	11,315	0.0663	0.9337	46.49
17.5	159,402	11,831	0.0742	0.9258	43.41
18.5	144,300	12,940	0.0897	0.9103	40.19
19.5	53,550	7,750	0.1447	0.8553	36.58
20.5	36,579	1,444	0.0395	0.9605	31.29
21.5	21,976	3,710	0.1688	0.8312	30.05
22.5	18,266	3,182	0.1742	0.8258	24.98
23.5	15,084	2,034	0.1348	0.8652	20.63
24.5	13,051	584	0.0447	0.9553	17.85
25.5	12,467	2,665	0.2138	0.7862	17.05
26.5	4,128		0.0000	1.0000	13.40
27.5	4,128		0.0000	1.0000	13.40
28.5	4,128	333	0.0807	0.9193	13.40
29.5					12.32

TENNESSEE AMERICAN WATER COMPANY
ACCOUNT 345 POWER OPERATED EQUIPMENT
ORIGINAL LIFE TABLE

PLACEMENT BAND 1948-2006			EXPERIENCE BAND 1973-2007		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	498,978		0.0000	1.0000	100.00
0.5	542,097		0.0000	1.0000	100.00
1.5	475,766		0.0000	1.0000	100.00
2.5	454,186	36,603	0.0806	0.9194	100.00
3.5	423,579	35,922	0.0848	0.9152	91.94
4.5	393,747		0.0000	1.0000	84.14
5.5	399,592		0.0000	1.0000	84.14
6.5	417,310	34,219	0.0820	0.9180	84.14
7.5	383,091	12,878	0.0336	0.9664	77.24
8.5	376,235	96,372	0.2561	0.7439	74.64
9.5	284,767	6,309	0.0222	0.9778	55.52
10.5	263,495	17,590	0.0668	0.9332	54.29
11.5	207,862	9,773	0.0470	0.9530	50.66
12.5	199,309	7,714	0.0387	0.9613	48.28
13.5	197,832	9,792	0.0495	0.9505	46.41
14.5	188,103	1,290	0.0069	0.9931	44.11
15.5	135,199	3,063	0.0227	0.9773	43.81
16.5	138,751	11,315	0.0815	0.9185	42.82
17.5	134,340	10,176	0.0757	0.9243	39.33
18.5	125,597	12,940	0.1030	0.8970	36.35
19.5	42,597	7,750	0.1819	0.8181	32.61
20.5	27,070	1,444	0.0533	0.9467	26.68
21.5	16,177	3,710	0.2293	0.7707	25.26
22.5	16,111	3,182	0.1975	0.8025	19.47
23.5	14,588	2,034	0.1394	0.8606	15.62
24.5	13,051	584	0.0447	0.9553	13.44
25.5	12,467	2,665	0.2138	0.7862	12.84
26.5	4,128		0.0000	1.0000	10.09
27.5	4,128		0.0000	1.0000	10.09
28.5	4,128	333	0.0807	0.9193	10.09
29.5					9.28

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NET SALVAGE STATISTICS

TENNESSEE AMERICAN WATER COMPANY
ACCOUNT 304 STRUCTURES AND IMPROVEMENTS

SUMMARY OF BOOK SALVAGE

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT PCT	GROSS SALVAGE AMOUNT PCT	NET SALVAGE AMOUNT PCT
1977	650	0	0	0
1978	4,193	0	0	0
1979	4,238	180 4	0	180- 4-
1980	552	0	0	0
1981	1,318	21 2	0	21- 2-
1982	2,849	0	0	0
1983				
1984	898	70 8	0	70- 8-
1985	500	200 40	0	200- 40-
1986	14,900	0	20 0	20 0
1987	3,938	0	0	0
1988	1,537	0	0	0
1989	178,287	18,715 10	0	18,715- 10-
1990	1,075	1,000 93	0	1,000- 93-
1991	10,630	0	0	0
1992	9,616-	0	0	0
1993	132,400	0	0	0
1994	301,642	0	0	0
1995	33,475	0	0	0
1996	2,800	0	0	0
1997	66,542	51,542 77	31,542 47	20,000- 30-
1998	2,184	4,140 190	0	4,140-190-
1999	24,903	0	0	0
2000	35,551	0	0	0
2001	141,805	41 0	0	41- 0
2002	167,023	0	0	0
2003				
2004	7,091	0	0	0
2005	180,420	0	0	0
2006		57,180		57,180-
TOTAL	1,311,785	133,089 10	31,562 2	101,527- 8-

THREE-YEAR MOVING AVERAGES

77-79	3,027	60 2	0	60- 2-
78-80	2,994	60 2	0	60- 2-
79-81	2,036	67 3	0	67- 3-
80-82	1,573	7 0	0	7- 0
81-83	1,389	7 1	0	7- 1-
82-84	1,249	23 2	0	23- 2-

TENNESSEE AMERICAN WATER COMPANY
ACCOUNT 304 STRUCTURES AND IMPROVEMENTS

SUMMARY OF BOOK SALVAGE

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT PCT	GROSS SALVAGE AMOUNT PCT	NET SALVAGE AMOUNT PCT
THREE-YEAR MOVING AVERAGES				
83-85	466	90 19	0	90- 19-
84-86	5,433	90 2	7 0	83- 2-
85-87	6,446	67 1	7 0	60- 1-
86-88	6,792	0	7 0	7 0
87-89	61,254	6,238 10	0	6,238- 10-
88-90	60,300	6,572 11	0	6,572- 11-
89-91	63,331	6,572 10	0	6,572- 10-
90-92	696	333 48	0	333- 48-
91-93	44,471	0	0	0
92-94	141,475	0	0	0
93-95	155,839	0	0	0
94-96	112,639	0	0	0
95-97	34,272	17,181 50	10,514 31	6,667- 19-
96-98	23,842	18,561 78	10,514 44	8,047- 34-
97-99	31,210	18,561 59	10,514 34	8,047- 26-
98-00	20,879	1,380 7	0	1,380- 7-
99-01	67,420	14 0	0	14- 0
00-02	114,793	14 0	0	14- 0
01-03	102,943	14 0	0	14- 0
02-04	58,038	0	0	0
03-05	62,504	0	0	0
04-06	62,504	19,060 30	0	19,060- 30-

FIVE-YEAR AVERAGE

02-06	70,907	11,436 16	0	11,436- 16-

TENNESSEE AMERICAN WATER COMPANY
ACCOUNT 306 LAKE, RIVER AND OTHER INTAKES

SUMMARY OF BOOK SALVAGE

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT PCT	GROSS SALVAGE AMOUNT PCT	NET SALVAGE AMOUNT PCT
1984	2,000	2,214 111	0	2,214-111-
1985				
1986				
1987				
1988				
1989				
1990				
1991	8,500	0	0	0
1992				
1993				
1994				
1995				
1996				
1997				
1998	50,361	0	0	0
1999				
2000				
2001				
2002				
2003				
2004				
2005				
2006				
TOTAL	60,861	2,214 4	0	2,214- 4-

THREE-YEAR MOVING AVERAGES

84-86	667	738 111	0	738-111-
85-87				
86-88				
87-89				
88-90				
89-91	2,833	0	0	0
90-92	2,833	0	0	0
91-93	2,833	0	0	0
92-94				
93-95				
94-96				
95-97				
96-98	16,787	0	0	0

TENNESSEE AMERICAN WATER COMPANY
ACCOUNT 306 LAKE, RIVER AND OTHER INTAKES

SUMMARY OF BOOK SALVAGE

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT PCT	GROSS SALVAGE AMOUNT PCT	NET SALVAGE AMOUNT PCT

THREE-YEAR MOVING AVERAGES

97-99	16,787	0	0	0
98-00	16,787	0	0	0
99-01				
00-02				
01-03				
02-04				
03-05				
04-06				

FIVE-YEAR AVERAGE

02-06

TENNESSEE AMERICAN WATER COMPANY
ACCOUNT 310 POWER GENERATION EQUIPMENT

SUMMARY OF BOOK SALVAGE

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT PCT.	GROSS SALVAGE AMOUNT PCT	NET SALVAGE AMOUNT PCT
1994	137,070	0	0	0
1995				
1996				
1997				
1998				
1999				
2000		626		626-
2001				
2002				
2003				
2004				
2005	8,000-	0	0	0
2006				
TOTAL	129,070	626 0	0	626- 0

THREE-YEAR MOVING AVERAGES

94-96	45,690	0	0	0
95-97				
96-98				
97-99				
98-00		209		209-
99-01		209		209-
00-02		209		209-
01-03				
02-04				
03-05	2,667-	0	0	0
04-06	2,667-	0	0	0

FIVE-YEAR AVERAGE

02-06	1,600-	0	0	0

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 311 PUMPING EQUIPMENT

SUMMARY OF BOOK SALVAGE

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT PCT	GROSS SALVAGE AMOUNT PCT	NET SALVAGE AMOUNT PCT
1976	4,485	0	0	0
1977	16,400	0	3,894 24	3,894 24
1978				
1979	9,600	0	0	0
1980	38,668	42 0	0	42- 0
1981	4,229	132 3	0	132- 3-
1982	1,950	69 4	0	69- 4-
1983	7,965	918 12	75 1	843- 11-
1984	3,330	1,810 54	0	1,810- 54-
1985				
1986	7,588	316 4	0	316- 4-
1987	7,797	132 2	300 4	168 2
1988	7,250	5,016 69	0	5,016- 69-
1989	19,691	209 1	0	209- 1-
1990	146	4,681	0	4,681-
1991	7,500	349 5	0	349- 5-
1992	15,631-	0	0	0
1993	3,875	0	0	0
1994	822	0	0	0
1995	2,167	0	0	0
1996	27,014	25,000 93	0	25,000- 93-
1997	3,099	0	0	0
1998				
1999	2,100	0	0	0
2000	18,018	0	0	0
2001	11,078	1,586 14	0	1,586- 14-
2002	30,510	0	0	0
2003	3,264	0	0	0
2004				
2005	17,437	0	0	0
2006	33,983	0	0	0
TOTAL	274,335	40,260 15	4,269 2	35,991- 13-

THREE-YEAR MOVING AVERAGES

76-78	6,962	0	1,298 19	1,298 19
77-79	8,667	0	1,298 15	1,298 15
78-80	16,089	14 0	0	14- 0
79-81	17,499	58 0	0	58- 0
80-82	14,949	81 1	0	81- 1-

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 311 PUMPING EQUIPMENT

SUMMARY OF BOOK SALVAGE

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT PCT	GROSS SALVAGE AMOUNT PCT	NET SALVAGE AMOUNT PCT
THREE-YEAR MOVING AVERAGES				
81-83	4,715	373 8	25 1	348- 7-
82-84	4,415	932 21	25 1	907- 21-
83-85	3,765	909 24	25 1	884- 23-
84-86	3,639	709 19	0	709- 19-
85-87	5,128	149 3	100 2	49- 1-
86-88	7,545	1,821 24	100 1	1,721- 23-
87-89	11,579	1,786 15	100 1	1,686- 15-
88-90	9,029	3,302 37	0	3,302- 37-
89-91	9,112	1,746 19	0	1,746- 19-
90-92	2,662-	1,677 63-	0	1,677- 63
91-93	1,419-	116 8-	0	116- 8
92-94	3,645-	0	0	0
93-95	2,288	0	0	0
94-96	10,001	8,333 83	0	8,333- 83-
95-97	10,760	8,333 77	0	8,333- 77-
96-98	10,038	8,333 83	0	8,333- 83-
97-99	1,733	0	0	0
98-00	6,706	0	0	0
99-01	10,399	529 5	0	529- 5-
00-02	19,869	529 3	0	529- 3-
01-03	14,951	529 4	0	529- 4-
02-04	11,258	0	0	0
03-05	6,900	0	0	0
04-06	17,140	0	0	0
FIVE-YEAR AVERAGE				
02-06	17,039	0	0	0

TENNESSEE AMERICAN WATER COMPANY
ACCOUNT 320 WATER TREATMENT EQUIPMENT

SUMMARY OF BOOK SALVAGE

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT PCT	GROSS SALVAGE AMOUNT PCT	NET SALVAGE AMOUNT PCT
1977	2,000	6,000 300	0	6,000-300-
1978	18,050	16,500 91	0	16,500- 91-
1979	2,000	0	0	0
1980	61,084	0	0	0
1981	32,362	0	0	0
1982	113,400	19,015 17	0	19,015- 17-
1983	99,714	18,910 19	0	18,910- 19-
1984	108,011	15,330 14	0	15,330- 14-
1985	164	0	0	0
1986	135,407	9,398 7	0	9,398- 7-
1987	98,963	1,467 1	0	1,467- 1-
1988	98,224	4,149 4	0	4,149- 4-
1989	325,913	30,045 9	0	30,045- 9-
1990	72,673	21,948 30	0	21,948- 30-
1991	125,615	2,623 2	0	2,623- 2-
1992	113,996	14,921 13	0	14,921- 13-
1993	174,350	1,141 1	5,990 3	4,849 3
1994	162,480	12,705 8	0	12,705- 8-
1995	18,633	0	0	0
1996	477,165	0	0	0
1997	160,786	0	0	0
1998	5,000	0	0	0
1999	74,297	0	0	0
2000	50-	31,030	0	31,030-
2001				
2002				
2003				
2004				
2005	25,320	0	0	0
2006	54,045	0	0	0
TOTAL	2,559,602	205,182 8	5,990 0	199,192- 8-

THREE-YEAR MOVING AVERAGES

77-79	7,350	7,500 102	0	7,500-102-
78-80	27,045	5,500 20	0	5,500- 20-
79-81	31,815	0	0	0
80-82	68,949	6,338 9	0	6,338- 9-
81-83	81,825	12,642 15	0	12,642- 15-
82-84	107,042	17,752 17	0	17,752- 17-

TENNESSEE AMERICAN WATER COMPANY
ACCOUNT 320 WATER TREATMENT EQUIPMENT

SUMMARY OF BOOK SALVAGE

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT PCT	GROSS SALVAGE AMOUNT PCT	NET SALVAGE AMOUNT PCT
THREE-YEAR MOVING AVERAGES				
83-85	69,296	11,413 16	0	11,413- 16-
84-86	81,194	8,243 10	0	8,243- 10-
85-87	78,178	3,622 5	0	3,622- 5-
86-88	110,865	5,005 5	0	5,005- 5-
87-89	174,367	11,887 7	0	11,887- 7-
88-90	165,603	18,714 11	0	18,714- 11-
89-91	174,734	18,205 10	0	18,205- 10-
90-92	104,095	13,164 13	0	13,164- 13-
91-93	137,987	6,228 5	1,997 1	4,231- 3-
92-94	150,275	9,589 6	1,997 1	7,592- 5-
93-95	118,488	4,615 4	1,997 2	2,618- 2-
94-96	219,426	4,235 2	0	4,235- 2-
95-97	218,861	0	0	0
96-98	214,317	0	0	0
97-99	80,028	0	0	0
98-00	26,416	10,343 39	0	10,343- 39-
99-01	24,749	10,343 42	0	10,343- 42-
00-02	17-	10,343	0	10,343-
01-03				
02-04				
03-05	8,440	0	0	0
04-06	26,455	0	0	0
FIVE-YEAR AVERAGE				
02-06	15,873	0	0	0

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 330 DISTRIBUTION RESERVOIRS AND STANDPIPES

SUMMARY OF BOOK SALVAGE

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT PCT	GROSS SALVAGE AMOUNT PCT	NET SALVAGE AMOUNT PCT
1975	300	0	0	0
1976				
1977				
1978	2,400	2,500 104	0	2,500-104-
1979				
1980				
1981	100	0	0	0
1982				
1983				
1984				
1985	27,000	0	0	0
1986				
1987	15,000	0	0	0
1988	57,401	2,792 5	0	2,792- 5-
1989	5,000	0	0	0
1990	29,960	50,972 170	0	50,972-170-
1991	45,000	23,344- 52-	0	23,344 52
1992	2,891-	0	0	0
1993				
1994				
1995				
1996	17,609	24,000 136	0	24,000-136-
1997	47,900	0	0	0
1998				
1999	31,832	0	413 1	413 1
2000	65,672	16,995 26	0	16,995- 26-
2001	25,217	0	0	0
2002				
2003				
2004				
2005				
2006				
TOTAL	367,500	73,915 20	413 0	73,502- 20-

THREE-YEAR MOVING AVERAGES

75-77	100	0	0	0
76-78	800	833 104	0	833-104-
77-79	800	833 104	0	833-104-
78-80	800	833 104	0	833-104-

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 330 DISTRIBUTION RESERVOIRS AND STANDPIPES

SUMMARY OF BOOK SALVAGE

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT PCT	GROSS SALVAGE AMOUNT PCT	NET SALVAGE AMOUNT PCT
THREE-YEAR MOVING AVERAGES				
79-81	33	0	0	0
80-82	33	0	0	0
81-83	33	0	0	0
82-84				
83-85	9,000	0	0	0
84-86	9,000	0	0	0
85-87	14,000	0	0	0
86-88	24,134	931 4	0	931- 4-
87-89	25,800	931 4	0	931- 4-
88-90	30,787	17,921 58	0	17,921- 58-
89-91	26,653	9,209 35	0	9,209- 35-
90-92	24,023	9,209 38	0	9,209- 38-
91-93	14,036	7,781- 55-	0	7,781 55
92-94	964-	0	0	0
93-95				
94-96	5,870	8,000 136	0	8,000-136-
95-97	21,836	8,000 37	0	8,000- 37-
96-98	21,836	8,000 37	0	8,000- 37-
97-99	26,577	0	138 1	138 1
98-00	32,501	5,665 17	138 0	5,527- 17-
99-01	40,907	5,665 14	138 0	5,527- 14-
00-02	30,296	5,665 19	0	5,665- 19-
01-03	8,406	0	0	0
02-04				
03-05				
04-06				

FIVE-YEAR AVERAGE

02-06

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 331 TRANSMISSION AND DISTRIBUTION MAINS

SUMMARY OF BOOK SALVAGE

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT PCT	GROSS SALVAGE AMOUNT PCT	NET SALVAGE AMOUNT PCT
1975	12,184	109 1	0	109- 1-
1976	50,588	6,316 12	4,500 9	1,816- 4-
1977	54,910	306 1	0	306- 1-
1978	159,131	17,229 11	215 0	17,014- 11-
1979	145,366	24,255 17	2,696 2	21,559- 15-
1980	214,213	25,826 12	683 0	25,143- 12-
1981	241,755	28,690 12	365 0	28,325- 12-
1982	221,310	23,120 10	2,151 1	20,969- 9-
1983	70,133	14,044 20	10,053 14	3,991- 6-
1984	46,785	14,841 32	2,115 5	12,726- 27-
1985	38,317	18,484 48	8,345 22	10,139- 26-
1986	74,312	31,685 43	2,697 4	28,988- 39-
1987	192,565	18,934 10	4,158 2	14,776- 8-
1988	38,173	26,222 69	5,787 15	20,435- 54-
1989	137,517	42,105 31	12,931 9	29,174- 21-
1990				
1991	80,205	40,828 51	19,399 24	21,429- 27-
1992	57,680	49,316 85	6,926 12	42,390- 73-
1993	53,465	35,799 67	2,092 4	33,707- 63-
1994	87,896	64,665 74	523 1	64,142- 73-
1995	64,240	56,199 87	39,289 61	16,910- 26-
1996	128,155	22,841 18	1,473 1	21,368- 17-
1997	127,657	56,315 44	7,618 6	48,697- 38-
1998	89,631	55,146 62	2,298 3	52,848- 59-
1999	188,541	53,322 28	31,279 17	22,043- 12-
2000	34,566	78,250 226	271 1	77,979-226-
2001	134,383	58,268 43	201 0	58,067- 43-
2002	228,993	75,382 33	0	75,382- 33-
2003	243,545	35,636 15	0	35,636- 15-
2004	89,651	135,799 151	0	135,799-151-
2005	65,225	0	0	0
2006	208,053	132,415 64	0	132,415- 64-
TOTAL	3,579,145	1,242,347 35	168,065 5	1,074,282- 30-

THREE-YEAR MOVING AVERAGES

75-77	39,227	2,244 6	1,500 4	744- 2-
76-78	88,210	7,950 9	1,572 2	6,378- 7-
77-79	119,802	13,930 12	970 1	12,960- 11-
78-80	172,903	22,437 13	1,198 1	21,239- 12-

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 331 TRANSMISSION AND DISTRIBUTION MAINS

SUMMARY OF BOOK SALVAGE

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT PCT	GROSS SALVAGE AMOUNT PCT	NET SALVAGE AMOUNT PCT
THREE-YEAR MOVING AVERAGES				
79-81	200,445	26,257 13	1,248 1	25,009- 12-
80-82	225,759	25,879 11	1,066 0	24,813- 11-
81-83	177,733	21,951 12	4,190 2	17,761- 10-
82-84	112,743	17,335 15	4,773 4	12,562- 11-
83-85	51,745	15,790 31	6,838 13	8,952- 17-
84-86	53,138	21,670 41	4,386 8	17,284- 33-
85-87	101,731	23,034 23	5,067 5	17,967- 18-
86-88	101,683	25,614 25	4,214 4	21,400- 21-
87-89	122,752	29,087 24	7,625 6	21,462- 17-
88-90	58,563	22,776 39	6,239 11	16,537- 28-
89-91	72,574	27,644 38	10,777 15	16,867- 23-
90-92	45,962	30,048 65	8,775 19	21,273- 46-
91-93	63,783	41,981 66	9,472 15	32,509- 51-
92-94	66,347	49,927 75	3,180 5	46,747- 70-
93-95	68,534	52,221 76	13,968 20	38,253- 56-
94-96	93,430	47,902 51	13,762 15	34,140- 37-
95-97	106,684	45,118 42	16,127 15	28,991- 27-
96-98	115,148	44,767 39	3,796 3	40,971- 36-
97-99	135,276	54,928 41	13,732 10	41,196- 30-
98-00	104,246	62,239 60	11,283 11	50,956- 49-
99-01	119,163	63,280 53	10,584 9	52,696- 44-
00-02	132,647	70,633 53	157 0	70,476- 53-
01-03	202,307	56,429 28	67 0	56,362- 28-
02-04	187,396	82,272 44	0	82,272- 44-
03-05	132,807	57,145 43	0	57,145- 43-
04-06	120,976	89,405 74	0	89,405- 74-
FIVE-YEAR AVERAGE				
02-06	167,093	75,846 45	0	75,846- 45-

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 333 SERVICES

SUMMARY OF BOOK SALVAGE

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT PCT	GROSS SALVAGE AMOUNT PCT	NET SALVAGE AMOUNT PCT
1975	2,482	1,156 47	0	1,156- 47-
1976	3,178	1,915 60	2,000 63	85 3
1977	3,473	2,311 67	0	2,311- 67-
1978	2,789	2,778 100	8,267 296	5,489 197
1979	8,300	5,197 63	0	5,197- 63-
1980	13,675	21,210 155	3,277 24	17,933-131-
1981	6,893	14,475 210	1,839 27	12,636-183-
1982	5,450	7,097 130	635 12	6,462-119-
1983	7,907	9,380 119	3,934 50	5,446- 69-
1984	4,865	4,708 97	302 6	4,406- 91-
1985	11,627	8,197 70	0	8,197- 70-
1986	6,956	8,578 123	0	8,578-123-
1987	9,581	8,917 93	17 0	8,900- 93-
1988	13,965	6,964 50	2,613 19	4,351- 31-
1989	30,074	6,318 21	0	6,318- 21-
1990	47,517	6,959 15	0	6,959- 15-
1991	16,288	6,862 42	0	6,862- 42-
1992	17,827	7,549 42	0	7,549- 42-
1993	12,536	1,962 16	0	1,962- 16-
1994	12,312	2,960 24	0	2,960- 24-
1995	14,135	1,883 13	216 2	1,667- 12-
1996	19,217	3,481 18	130 1	3,351- 17-
1997	30,472	2,800 9	486 2	2,314- 8-
1998	35,021	530 2	0	530- 2-
1999	14,179	23 0	884 6	861 6
2000	13,999	1,231 9	0	1,231- 9-
2001	11,629	0	0	0
2002	10,923	0	0	0
2003	26,993	23 0	0	23- 0
2004	10,608	419 4	0	419- 4-
2005	3,361	0	0	0
2006	8,483	0	0	0
TOTAL	436,715	145,883 33	24,600 6	121,283- 28-

THREE-YEAR MOVING AVERAGES

75-77	3,044	1,794 59	667 22	1,127- 37-
76-78	3,147	2,335 74	3,422 109	1,087 35
77-79	4,854	3,429 71	2,756 57	673- 14-
78-80	8,255	9,728 118	3,848 47	5,880- 71-

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 333 SERVICES

SUMMARY OF BOOK SALVAGE

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT PCT	GROSS SALVAGE AMOUNT PCT	NET SALVAGE AMOUNT PCT
THREE-YEAR MOVING AVERAGES				
79-81	9,623	13,627 142	1,705 18	11,922-124-
80-82	8,673	14,261 164	1,917 22	12,344-142-
81-83	6,750	10,317 153	2,136 32	8,181-121-
82-84	6,074	7,062 116	1,624 27	5,438- 90-
83-85	8,133	7,428 91	1,412 17	6,016- 74-
84-86	7,816	7,161 92	101 1	7,060- 90-
85-87	9,388	8,564 91	6 0	8,558- 91-
86-88	10,167	8,153 80	877 9	7,276- 72-
87-89	17,873	7,400 41	877 5	6,523- 36-
88-90	30,519	6,747 22	871 3	5,876- 19-
89-91	31,293	6,713 21	0	6,713- 21-
90-92	27,211	7,123 26	0	7,123- 26-
91-93	15,550	5,458 35	0	5,458- 35-
92-94	14,225	4,157 29	0	4,157- 29-
93-95	12,994	2,268 17	72 1	2,196- 17-
94-96	15,221	2,775 18	115 1	2,660- 17-
95-97	21,275	2,721 13	277 1	2,444- 11-
96-98	28,237	2,270 8	205 1	2,065- 7-
97-99	26,557	1,118 4	457 2	661- 2-
98-00	21,066	595 3	295 1	300- 1-
99-01	13,269	418 3	295 2	123- 1-
00-02	12,184	410 3	0	410- 3-
01-03	16,515	8 0	0	8- 0
02-04	16,175	147 1	0	147- 1-
03-05	13,654	147 1	0	147- 1-
04-06	7,484	140 2	0	140- 2-
FIVE-YEAR AVERAGE				
02-06	12,074	88 1	0	88- 1-

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 334 METERS AND METER INSTALLATIONS

SUMMARY OF BOOK SALVAGE

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT PCT	GROSS SALVAGE AMOUNT PCT	NET SALVAGE AMOUNT PCT
1975	16,571	65 0	13,429 81	13,364 81
1976	14,605	58 0	9,648 66	9,590 66
1977	15,850	973 6	7,096 45	6,123 39
1978	11,764	20 0	9,617 82	9,597 82
1979	16,857	0	5,322 32	5,322 32
1980	19,796	614 3	9,146 46	8,532 43
1981	22,287	1,110 5	8,527 38	7,417 33
1982	63,939	3,505 5	19,139 30	15,634 24
1983	73,945	4,519 6	29,223 40	24,704 33
1984	88,558	1,102 1	15,117 17	14,015 16
1985	115,273	487 0	24,638 21	24,151 21
1986	95,859	606 1	16,851 18	16,245 17
1987	128,489	116 0	28,282 22	28,166 22
1988	102,325	360 0	14,018 14	13,658 13
1989	174,203	917 1	23,031 13	22,114 13
1990	195,517	2,179 1	20,391 10	18,212 9
1991	141,855	2,440 2	6,453 5	4,013 3
1992	173,915	771 0	11,868 7	11,097 6
1993	131,330	1,931 1	6,616 5	4,685 4
1994	134,556	598 0	10,138 8	9,540 7
1995	165,796	380 0	6,932 4	6,552 4
1996	138,765	245 0	3,292 2	3,047 2
1997	94,533	2,280 2	3,957 4	1,677 2
1998	133,789	0	2,948 2	2,948 2
1999	42,164	669 2	1,340 3	671 2
2000	127,363	1,055- 1-	1,414 1	2,469 2
2001	116,705	1,473 1	2,344 2	871 1
2002	156,378	4,429 3	2,432 2	1,997- 1-
2003	70,818	23,539 33	406 1	23,133- 33-
2004	49,357	20,517 42	0	20,517- 42-
2005	155,351	0	0	0
2006	391,624	122,984 31	29,888 8	93,096- 24-
TOTAL	3,380,137	197,832 6	343,503 10	145,671 4

THREE-YEAR MOVING AVERAGES

75-77	15,675	365 2	10,058 64	9,693 62
76-78	14,073	350 2	8,787 62	8,437 60
77-79	14,824	331 2	7,345 50	7,014 47
78-80	16,139	211 1	8,028 50	7,817 48

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 334 METERS AND METER INSTALLATIONS

SUMMARY OF BOOK SALVAGE

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT PCT	GROSS SALVAGE AMOUNT PCT	NET SALVAGE AMOUNT PCT
THREE-YEAR MOVING AVERAGES				
79-81	19,647	575 3	7,665 39	7,090 36
80-82	35,341	1,743 5	12,271 35	10,528 30
81-83	53,390	3,045 6	18,963 36	15,918 30
82-84	75,481	3,042 4	21,160 28	18,118 24
83-85	92,592	2,036 2	22,993 25	20,957 23
84-86	99,897	732 1	18,869 19	18,137 18
85-87	113,207	403 0	23,257 21	22,854 20
86-88	108,891	361 0	19,717 18	19,356 18
87-89	135,006	464 0	21,777 16	21,313 16
88-90	157,348	1,152 1	19,147 12	17,995 11
89-91	170,525	1,845 1	16,625 10	14,780 9
90-92	170,429	1,797 1	12,904 8	11,107 7
91-93	149,033	1,714 1	8,312 6	6,598 4
92-94	146,600	1,100 1	9,541 7	8,441 6
93-95	143,894	970 1	7,895 5	6,925 5
94-96	146,372	408 0	6,787 5	6,379 4
95-97	133,031	968 1	4,727 4	3,759 3
96-98	122,362	842 1	3,399 3	2,557 2
97-99	90,162	983 1	2,748 3	1,765 2
98-00	101,105	129- 0	1,901 2	2,030 2
99-01	95,411	362 0	1,699 2	1,337 1
00-02	133,482	1,616 1	2,063 2	447 0
01-03	114,634	9,814 9	1,727 2	8,087- 7-
02-04	92,184	16,162 18	946 1	15,216- 17-
03-05	91,842	14,685 16	135 0	14,550- 16-
04-06	198,777	47,834 24	9,963 5	37,871- 19-

FIVE-YEAR AVERAGE

02-06	164,706	34,294 21	6,545 4	27,749- 17-

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 335 HYDRANTS

SUMMARY OF BOOK SALVAGE

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT PCT	GROSS SALVAGE AMOUNT PCT	NET SALVAGE AMOUNT PCT
1974	1,584	300 19	30 2	270- 17-
1975	3,684	34 1	1,154 31	1,120 30
1976	1,840	0	2,461 134	2,461 134
1977	5,178	53 1	100 2	47 1
1978	19,000	2,236 12	2,991 16	755 4
1979	11,119	661 6	2,129 19	1,468 13
1980	21,659	2,237 10	18,319 85	16,082 74
1981	16,189	4,806 30	12,917 80	8,111 50
1982	12,013	3,134 26	3,412 28	278 2
1983	17,702	4,624 26	8,690 49	4,066 23
1984	13,387	6,644 50	5,051 38	1,593- 12-
1985	10,224	5,028 49	2,801 27	2,227- 22-
1986	19,487	7,950 41	4,722 24	3,228- 17-
1987	31,609	10,107 32	6,304 20	3,803- 12-
1988	16,034	10,332 64	3,509 22	6,823- 43-
1989	17,538	3,523 20	2,238 13	1,285- 7-
1990	145,259	59,859 41	15,180 10	44,679- 31-
1991	19,827	10,497 53	6,684 34	3,813- 19-
1992	14,772	8,916 60	2,575 17	6,341- 43-
1993	16,387	8,932 55	3,298 20	5,634- 34-
1994	38,095	14,943 39	8,050 21	6,893- 18-
1995	38,812	13,068 34	9,824 25	3,244- 8-
1996	42,463	16,864 40	13,553 32	3,311- 8-
1997	48,026	20,178 42	8,383 17	11,795- 25-
1998	27,113	10,478 39	263 1	10,215- 38-
1999	31,973	6,105 19	5,621 18	484- 2-
2000	45,615	14,754 32	2,090 5	12,664- 28-
2001	32,690	13,676 42	3,692 11	9,984- 31-
2002	23,395	4,681 20	0	4,681- 20-
2003	64,208	31,283 49	0	31,283- 49-
2004	27,338	66,000 241	0	66,000-241-
2005	30,333	0	0	0
2006	35,452	17,002 48	0	17,002- 48-
TOTAL	900,005	378,905 42	156,041 17	222,864- 25-

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 335 HYDRANTS

SUMMARY OF BOOK SALVAGE

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT	PCT	GROSS SALVAGE AMOUNT	PCT	NET SALVAGE AMOUNT	PCT
THREE-YEAR MOVING AVERAGES							
74-76	2,369	111	5	1,215	51	1,104	47
75-77	3,567	29	1	1,238	35	1,209	34
76-78	8,673	763	9	1,851	21	1,088	13
77-79	11,766	983	8	1,740	15	757	6
78-80	17,259	1,711	10	7,813	45	6,102	35
79-81	16,322	2,568	16	11,122	68	8,554	52
80-82	16,620	3,392	20	11,549	69	8,157	49
81-83	15,301	4,188	27	8,340	55	4,152	27
82-84	14,367	4,801	33	5,718	40	917	6
83-85	13,771	5,432	39	5,514	40	82	1
84-86	14,366	6,541	46	4,191	29	2,350-	16-
85-87	20,440	7,695	38	4,609	23	3,086-	15-
86-88	22,377	9,463	42	4,845	22	4,618-	21-
87-89	21,727	7,987	37	4,017	18	3,970-	18-
88-90	59,610	24,571	41	6,976	12	17,595-	30-
89-91	60,875	24,626	40	8,034	13	16,592-	27-
90-92	59,953	26,424	44	8,146	14	18,278-	30-
91-93	16,995	9,448	56	4,186	25	5,262-	31-
92-94	23,085	10,930	47	4,641	20	6,289-	27-
93-95	31,098	12,314	40	7,057	23	5,257-	17-
94-96	39,790	14,958	38	10,476	26	4,482-	11-
95-97	43,100	16,703	39	10,587	25	6,116-	14-
96-98	39,201	15,840	40	7,400	19	8,440-	22-
97-99	35,704	12,254	34	4,756	13	7,498-	21-
98-00	34,900	10,446	30	2,658	8	7,788-	22-
99-01	36,759	11,512	31	3,801	10	7,711-	21-
00-02	33,900	11,037	33	1,927	6	9,110-	27-
01-03	40,098	16,547	41	1,231	3	15,316-	38-
02-04	38,314	33,988	89		0	33,988-	89-
03-05	40,626	32,428	80		0	32,428-	80-
04-06	31,041	27,667	89		0	27,667-	89-

FIVE-YEAR AVERAGE

02-06	36,145	23,793	66	0	23,793-	66-

TENNESSEE AMERICAN WATER COMPANY
ACCOUNT 341 TRANSPORTATION EQUIPMENT

SUMMARY OF BOOK SALVAGE

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT PCT	GROSS SALVAGE AMOUNT PCT	NET SALVAGE AMOUNT PCT
1975	16,356	0	3,198 20	3,198 20
1976	23,719	0	5,000 21	5,000 21
1977	43,767	0	14,502 33	14,502 33
1978	35,751	1,043 3	7,743 22	6,700 19
1979	44,525	0	13,107 29	13,107 29
1980	11,302	0	1,900 17	1,900 17
1981	74,524	0	16,178 22	16,178 22
1982	42,497	0	17,150 40	17,150 40
1983	4,643	0	1,337 29	1,337 29
1984	4,885	0	3,600 74	3,600 74
1985	55,358	76 0	5,700 10	5,624 10
1986	67,411	0	11,185 17	11,185 17
1987	108,961	0	28,151 26	28,151 26
1988	80,289	0	13,067 16	13,067 16
1989	41,339	0	5,200 13	5,200 13
1990	114,258	0	39,748 35	39,748 35
1991	161,827	54 0	25,600 16	25,546 16
1992	176,946	0	29,237 17	29,237 17
1993	68,438	0	19,400 28	19,400 28
1994	243,967	0	19,368 8	19,368 8
1995	175,432	0	40,251 23	40,251 23
1996	150,725	0	19,259 13	19,259 13
1997	216,402	0	30,650 14	30,650 14
1998	221,143	0	35,800 16	35,800 16
1999	258,491	0	3,050 1	3,050 1
2000			29,173	29,173
2001	37,151	0	3,260 9	3,260 9
2002	17,000	6,200- 36-	0	6,200 36
2003	14,898	1,553 10	400 3	1,153- 8-
2004				
2005	586,744	0	0	0
2006	230,658	0	0	0
TOTAL	3,329,407	3,474- 0	442,214 13	445,688 13

THREE-YEAR MOVING AVERAGES

75-77	27,947	0	7,567 27	7,567 27
76-78	34,412	348 1	9,082 26	8,734 25
77-79	41,348	348 1	11,784 28	11,436 28
78-80	30,526	348 1	7,583 25	7,235 24

TENNESSEE AMERICAN WATER COMPANY
ACCOUNT 341 TRANSPORTATION EQUIPMENT

SUMMARY OF BOOK SALVAGE

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT PCT	GROSS SALVAGE AMOUNT PCT	NET SALVAGE AMOUNT PCT
THREE-YEAR MOVING AVERAGES				
79-81	43,450	0	10,395 24	10,395 24
80-82	42,774	0	11,743 27	11,743 27
81-83	40,555	0	11,555 28	11,555 28
82-84	17,342	0	7,362 42	7,362 42
83-85	21,629	25 0	3,546 16	3,521 16
84-86	42,551	25 0	6,828 16	6,803 16
85-87	77,243	25 0	15,012 19	14,987 19
86-88	85,554	0	17,468 20	17,468 20
87-89	76,863	0	15,473 20	15,473 20
88-90	78,629	0	19,338 25	19,338 25
89-91	105,808	18 0	23,516 22	23,498 22
90-92	151,010	18 0	31,528 21	31,510 21
91-93	135,737	18 0	24,746 18	24,728 18
92-94	163,117	0	22,668 14	22,668 14
93-95	162,612	0	26,340 16	26,340 16
94-96	190,041	0	26,293 14	26,293 14
95-97	180,853	0	30,053 17	30,053 17
96-98	196,090	0	28,570 15	28,570 15
97-99	232,012	0	23,167 10	23,167 10
98-00	159,878	0	22,674 14	22,674 14
99-01	98,547	0	11,828 12	11,828 12
00-02	18,050	2,067- 11-	10,811 60	12,878 71
01-03	23,016	1,549- 7-	1,220 5	2,769 12
02-04	10,633	1,549- 15-	133 1	1,682 16
03-05	200,547	518 0	133 0	385- 0
04-06	272,467	0	0	0

FIVE-YEAR AVERAGE

02-06	169,860	929- 1-	80 0	1,009 1

TENNESSEE AMERICAN WATER COMPANY
ACCOUNT 345 POWER OPERATED EQUIPMENT

SUMMARY OF BOOK SALVAGE

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT PCT	GROSS SALVAGE AMOUNT PCT	NET SALVAGE AMOUNT PCT
1975	555	0	0	0
1976	5,845	0	525 9	525 9
1977				
1978				
1979	1,273	0	0	0
1980				
1981	6,090	0	700 11	700 11
1982				
1983	1,542	0	256 17	256 17
1984				
1985				
1986	9,803	0	401 4	401 4
1987	17,491	0	1,106 6	1,106 6
1988	53,727	0	2,750 5	2,750 5
1989				
1990				
1991				
1992	4,260	0	0	0
1993				
1994	13,592	0	0	0
1995	44,193	0	0	0
1996	26,144	36 0	4,454 17	4,418 17
1997	21,462	0	0	0
1998	37,136	0	5,000 13	5,000 13
1999	1,588	0	0	0
2000				
2001				
2002				
2003				
2004				
2005				
2006				
TOTAL	244,701	36 0	15,192 6	15,156 6

THREE-YEAR MOVING AVERAGES

75-77	2,133	0	175 8	175 8
76-78	1,948	0	175 9	175 9
77-79	424	0	0	0
78-80	424	0	0	0

TENNESSEE AMERICAN WATER COMPANY
ACCOUNT 345 POWER OPERATED EQUIPMENT

SUMMARY OF BOOK SALVAGE

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT PCT	GROSS SALVAGE AMOUNT PCT	NET SALVAGE AMOUNT PCT
THREE-YEAR MOVING AVERAGES				
79-81	2,454	0	233 9	233 9
80-82	2,030	0	233 11	233 11
81-83	2,544	0	319 13	319 13
82-84	514	0	85 17	85 17
83-85	514	0	85 17	85 17
84-86	3,268	0	134 4	134 4
85-87	9,098	0	502 6	502 6
86-88	27,007	0	1,419 5	1,419 5
87-89	23,739	0	1,285 5	1,285 5
88-90	17,909	0	917 5	917 5
89-91				
90-92	1,420	0	0	0
91-93	1,420	0	0	0
92-94	5,951	0	0	0
93-95	19,262	0	0	0
94-96	27,976	12 0	1,485 5	1,473 5
95-97	30,600	12 0	1,485 5	1,473 5
96-98	28,247	12 0	3,151 11	3,139 11
97-99	20,062	0	1,667 8	1,667 8
98-00	12,908	0	1,667 13	1,667 13
99-01	529	0	0	0
00-02				
01-03				
02-04				
03-05				
04-06				

FIVE-YEAR AVERAGE

02-06

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 304.2 STRUCTURES & IMPROVEMENTS - PUMPING EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AT NOVEMBER 30, 2007

YEAR	ORIGINAL COST	CALCULATED ACCRUED	ALLOC. BOOK RESERVE	FUT. BOOK ACCRUALS	REM. LIFE	ANNUAL ACCRUAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)
SURVIVOR CURVE.. IOWA 50-R2						
NET SALVAGE PERCENT.. -15						
1919	54,100.00	60,796	62,215			
1922	2,695.00	2,978	3,099			
1923	606.00	666	697			
1924	1,540.00	1,682	1,771			
1925	4,248.00	4,614	4,885			
1926	4,543.00	4,904	5,224			
1927	2,786.03	2,989	3,204			
1928	142.00	151	163			
1929	50.00	53	58			
1930	2,556.00	2,691	2,939			
1931	10,951.45	11,458	12,594			
1934	55.00	56	63			
1935	220.00	224	253			
1936	130.00	132	150			
1937	3.00	3	3			
1938	22.00	22	25			
1939	1,962.00	1,946	2,256			
1940	395.00	389	454			
1941	148.00	145	170			
1942	861.00	836	990			
1943	436.00	420	501			
1945	48.00	45	55			
1946	28,946.00	27,203	33,288			
1947	3,499.16	3,259	4,024			
1948	6,000.00	5,539	6,900			
1949	1,229.00	1,124	1,413			
1950	619.00	561	712			
1951	30,950.68	27,749	35,593			
1952	9,937.22	8,815	11,428			
1953	11,642.00	10,218	13,388			
1954	3,473.00	3,014	3,994			
1955	425.00	364	489			
1956	4,586.00	3,885	5,274			
1957	18,170.18	15,200	20,896			
1958	409.00	338	470			
1959	1,081.00	880	1,243			
1960	3,932.00	3,156	4,522			
1963	4,966.62	3,807	5,491	221	16.67	13

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 304.2 STRUCTURES & IMPROVEMENTS - PUMPING EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AT NOVEMBER 30, 2007

YEAR	ORIGINAL COST	CALCULATED ACCRUED	ALLOC. BOOK RESERVE	FUT. BOOK ACCRUALS	REM. LIFE	ANNUAL ACCRUAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)
SURVIVOR CURVE.. IOWA 50-R2						
NET SALVAGE PERCENT.. -15						
1965	14,000.00	10,375	14,965	1,135	17.78	64
1966	5,821.00	4,237	6,111	583	18.35	32
1967	19,339.00	13,820	19,934	2,306	18.93	122
1969	1,540.00	1,058	1,526	245	20.13	12
1970	388.00	261	376	70	20.75	3
1972	2,251.00	1,449	2,090	499	22.01	23
1973	3,979.00	2,502	3,609	967	22.66	43
1974	56,087.00	34,430	49,662	14,838	23.31	637
1975	8,213.65	4,916	7,091	2,355	23.98	98
1977	11,319.77	6,420	9,260	3,758	25.34	148
1979	3,575.00	1,912	2,758	1,353	26.75	51
1980	43,894.00	22,756	32,823	17,655	27.46	643
1981	39,245.00	19,695	28,408	16,724	28.18	593
1982	2,045.00	991	1,429	923	28.92	32
1984	2,830.00	1,275	1,839	1,416	30.41	47
1985	36,120.00	15,652	22,576	18,962	31.16	609
1986	1,000.00	416	600	550	31.93	17
1987	1,084.00	431	622	625	32.70	19
1988	120,333.00	45,722	65,949	72,434	33.48	2,164
1989	5,053.00	1,828	2,637	3,174	34.27	93
1990	212,411.25	72,940	105,209	139,064	35.07	3,965
1991	62,382.41	20,274	29,243	42,497	35.87	1,185
1996	12,000.00	2,760	3,981	9,819	40.00	245
1999	839,990.40	143,932	207,608	758,381	42.55	17,823
2000	134,184.75	20,308	29,292	125,020	43.42	2,879
2001	14,833.13	1,948	2,810	14,248	44.29	322
2005	1,832,006.14	91,857	132,494	1,974,313	47.82	41,286
2006	104,888.26	3,088	4,454	116,167	48.72	2,384
2007	1,352.14	13	19	1,536	49.58	31
	3,810,529.24	759,578	1,040,269	3,341,838		75,583

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PCT.. 44.2 1.98

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 304.3 STRUCTURES & IMPROVEMENTS - WATER TREATMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AT NOVEMBER 30, 2007

YEAR	ORIGINAL COST	CALCULATED ACCRUED	ALLOC. BOOK RESERVE	FUT. BOOK ACCRUALS	REM. LIFE	ANNUAL ACCRUAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)
INTERIM SURVIVOR CURVE.. IOWA 60-R1						
PROBABLE RETIREMENT YEAR.. 12-2022						
NET SALVAGE PERCENT.. -15						
1912	6,976.84	7,021	6,557	1,466	7.49	196
1917	3,084.00	3,042	2,841	706	8.52	83
1922	305.00	295	275	76	9.41	8
1924	597.00	574	536	151	9.73	16
1925	2,906.70	2,786	2,602	741	9.88	75
1926	4,051.72	3,871	3,615	1,044	10.03	104
1927	420.00	400	374	109	10.17	11
1928	104.00	99	92	28	10.31	3
1929	122.00	115	107	33	10.44	3
1930	4,229.50	3,990	3,726	1,138	10.57	108
1935	318.00	295	275	91	11.17	8
1936	237.00	219	205	68	11.28	6
1938	1,055.00	971	907	306	11.49	27
1939	46.00	42	39	14	11.59	1
1940	200.00	183	171	59	11.69	5
1941	11,776.78	10,733	10,023	3,520	11.78	299
1942	102.00	93	87	30	11.88	3
1944	2,050.67	1,850	1,728	630	12.05	52
1945	40.00	36	34	12	12.14	1
1947	388.00	346	323	123	12.30	10
1948	35.00	31	29	11	12.38	1
1950	139.00	123	115	45	12.53	4
1951	37,584.90	33,052	30,866	12,357	12.61	980
1952	65,464.81	57,344	53,551	21,734	12.68	1,714
1953	14,721.00	12,841	11,992	4,937	12.75	387
1954	5,691.00	4,943	4,616	1,929	12.82	150
1955	60,583.51	52,400	48,934	20,737	12.88	1,610
1956	5,165.00	4,448	4,154	1,786	12.94	138
1957	3,577.00	3,065	2,862	1,252	13.01	96
1958	16,572.00	14,135	13,200	5,858	13.07	448
1959	1,552.00	1,317	1,230	555	13.13	42
1960	3,961.00	3,345	3,124	1,431	13.18	109
1961	2,961.00	2,487	2,322	1,083	13.24	82
1962	84.00	70	65	32	13.29	2
1963	4,699.38	3,904	3,646	1,758	13.35	132
1964	68,598.02	56,649	52,902	25,986	13.40	1,939
1967	55.00	45	42	21	13.54	2

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 304.3 STRUCTURES & IMPROVEMENTS - WATER TREATMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AT NOVEMBER 30, 2007

YEAR	ORIGINAL COST	CALCULATED ACCRUED	ALLOC. BOOK RESERVE	FUT. BOOK ACCRUALS	REM. LIFE	ANNUAL ACCRUAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)
INTERIM SURVIVOR CURVE.. IOWA 60-R1						
PROBABLE RETIREMENT YEAR.. 12-2022						
NET SALVAGE PERCENT.. -15						
1969	175.00	140	131	70	13.63	5
1971	27,655.00	21,753	20,314	11,489	13.72	837
1972	152,055.00	118,627	110,780	64,083	13.76	4,657
1973	325.00	251	234	140	13.79	10
1974	770.00	590	551	335	13.83	24
1975	214.00	162	151	95	13.87	7
1976	702.00	528	493	314	13.90	23
1977	7,042.00	5,236	4,890	3,208	13.94	230
1978	143,747.00	105,715	98,722	66,587	13.97	4,766
1980	10,514.00	7,547	7,048	5,043	14.03	359
1982	3,193.00	2,231	2,083	1,589	14.08	113
1985	12,103.00	8,055	7,522	6,396	14.16	452
1986	38,210.00	24,968	23,317	20,625	14.18	1,455
1987	2,057.00	1,317	1,230	1,136	14.21	80
1989	512,179.81	313,528	292,790	296,217	14.25	20,787
1990	0.15					
1992	191,389.00	107,848	100,714	119,383	14.30	8,348
1993	108,040.03	58,855	54,962	69,284	14.32	4,838
1996	7,000.00	3,365	3,142	4,908	14.37	342
1997	58,888.93	26,859	25,083	42,639	14.38	2,965
1999	3,698.00	1,478	1,380	2,873	14.42	199
2000	359,285.43	132,341	123,588	289,590	14.43	20,069
2005	5,085.32	788	736	5,112	14.50	353
2007	38,399.57	1,267	1,183	42,977	14.53	2,958
	2,013,182.07	1,230,609	1,149,211	1,165,950		82,732
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PCT..						
					14.1	4.11

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 304.4 STRUCTURES & IMPROVEMENTS - TRANS. & DIST.

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AT NOVEMBER 30, 2007

YEAR	ORIGINAL COST	CALCULATED ACCRUED	ALLOC. BOOK RESERVE	FUT. BOOK ACCRUALS	REM. LIFE	ANNUAL ACCRUAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)
SURVIVOR CURVE.. IOWA 35-R2.5						
NET SALVAGE PERCENT.. -15						
1987	463,317.92	268,219	370,851	161,965	17.38	9,319
1992	7,656.94	3,449	4,769	4,036	21.29	190
1999	23,454.39	5,964	8,246	18,727	27.26	687
2000	2,200.00	495	684	1,846	28.15	66
2003	8,316.45	1,129	1,561	8,003	30.87	259
2004	3,254.66	342	473	3,270	31.80	103
2005	2,616.00	195	269	2,739	32.73	84
2007	13,975.07	198	274	15,797	34.57	457
	524,791.43	279,991	387,127	216,383		11,165
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PCT..					19.4	2.13

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 304.6 STRUCTURES & IMPROVEMENTS - OFFICE BUILDINGS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AT NOVEMBER 30, 2007

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUT. BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 31-R1.5						
NET SALVAGE PERCENT.. -15						
1978	4,595.86	3,456	5,285			
1979	786.29	577	904			
1980	762.00	544	876			
1983	13,128.48	8,562	15,098			
1984	4,029.48	2,541	4,634			
1989	7,500.00	3,854	8,625			
1990	5,375.00	2,628	6,181			
1991	12,412.73	5,756	14,275			
1992	14,350.00	6,287	16,503			
1994	3,044.00	1,173	3,130	371	20.61	18
1996	9,303.05	3,082	8,225	2,474	22.07	112
1997	10,096.94	3,068	8,188	3,423	22.81	150
1998	34,814.69	9,609	25,645	14,392	23.56	611
1999	13,075.00	3,240	8,647	6,389	24.32	263
2005	14,507.46	1,066	2,845	13,839	29.02	477
2006	1,393.20	60	160	1,442	29.84	48
	149,174.18	55,503	129,221	42,330		1,679
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PCT..					25.2	1.13

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 304.7 STRUCTURES & IMPROVEMENTS - STORES, SHOP & GAR

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AT NOVEMBER 30, 2007

YEAR	ORIGINAL COST	CALCULATED ACCRUED	ALLOC. BOOK RESERVE	FUT. BOOK ACCRUALS	REM. LIFE	ANNUAL ACCRUAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)
SURVIVOR CURVE.. IOWA 50-S1.5						
NET SALVAGE PERCENT.. -15						
1952	9,780.00	8,473	11,247			
1957	115,698.81	95,266	133,054			
1963	1,283.68	983	1,476			
1990	40,918.64	15,350	36,469	10,587	33.69	314
1993	27,074.45	8,562	20,342	10,794	36.25	298
1994	11,500.00	3,404	8,087	5,138	37.13	138
1995	45,620.00	12,560	29,841	22,622	38.03	595
1996	4,110.00	1,046	2,485	2,242	38.94	58
1997	24,196.00	5,643	13,407	14,418	39.86	362
1998	32,460.00	6,876	16,336	20,993	40.79	515
	312,641.58	158,163	272,744	86,794		2,280
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PCT..					38.1	0.73

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 304.8 STRUCTURES & IMPROVEMENTS - MISCELLANEOUS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AT NOVEMBER 30, 2007

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUT. BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 60-R4						
NET SALVAGE PERCENT.. -15						
1920	20,184.00	22,887	23,212			
1963	404.05	320	465			
1972	699.73	457	805			
1988	9,080.00	3,352	10,442			
1989	265,029.00	92,867	304,783			
1993	65,024.19	17,887	74,778			
1994	5,057.00	1,296	5,816			
1997	439.69	88	506			
1999	525.00	85	604			
2001	16,694.84	2,050	15,789	3,410	53.59	64
2004	274,435.15	17,989	138,555	177,045	56.58	3,129
	657,572.65	159,278	575,755	180,455		3,193
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PCT..					56.5	0.49

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 304.99 STRUCTURES & IMPROVEMENTS - PAINTING

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AT NOVEMBER 30, 2007

YEAR	ORIGINAL COST	CALCULATED ACCRUED	ALLOC. BOOK RESERVE	FUT. BOOK ACCRUALS	REM. LIFE	ANNUAL ACCRUAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)
SURVIVOR CURVE.. 10-SQUARE						
NET SALVAGE PERCENT.. 0						
1984	12,512.00	12,512	12,512			
1992	46,334.00	46,334	46,334			
1993	91,541.00	91,541	91,541			
1996	761,562.83	761,563	761,563			
1997	498,658.50	498,659	498,659			
1999	172,076.32	144,888	64,007-	236,083	1.58	149,420
2000	94,899.75	70,416	31,107-	126,007	2.58	48,840
2001	17,225.67	11,059	4,886-	22,112	3.58	6,177
	1,694,810.07	1,636,972	1,310,609	384,202		204,437
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PCT..					1.9	12.06

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 306 LAKE, RIVER AND OTHER INTAKES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AT NOVEMBER 30, 2007

YEAR	ORIGINAL COST	CALCULATED ACCRUED	ALLOC. BOOK RESERVE	FUT. BOOK ACCRUALS	REM. LIFE	ANNUAL ACCRUAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)
SURVIVOR CURVE.. IOWA 70-R1						
NET SALVAGE PERCENT.. -5						
1917	100.00	80	105			
1920	7,210.00	5,630	7,571			
1936	12.00	8	13			
1942	109,362.00	68,910	114,830			
1953	1,023.00	554	1,074			
1954	1,492.00	796	1,567			
1984	10,286.00	2,563	10,800			
1991	16,520.00	2,921	14,437	2,909	58.21	50
1995	29,109.30	3,925	19,400	11,165	61.01	183
1998	106,338.04	10,942	54,081	57,574	63.14	912
2006	207,670.63	3,271	16,167	201,887	68.95	2,928
	489,122.97	99,600	240,045	273,535		4,073
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PCT..					67.2	0.83

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 309 SUPPLY MAINS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AT NOVEMBER 30, 2007

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUT. BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 50-R2.5						
NET SALVAGE PERCENT.. 0						
2005	161,231.45	7,352	21,477	139,754	47.72	2,929
2006	441,432.41	11,830	34,559	406,873	48.66	8,362
	602,663.86	19,182	56,036	546,627		11,291
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PCT..					48.4	1.87

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 310 OTHER POWER GENERATION EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AT NOVEMBER 30, 2007

YEAR	ORIGINAL COST	CALCULATED ACCRUED	ALLOC. BOOK RESERVE	FUT. BOOK ACCRUALS	REM. LIFE	ANNUAL ACCRUAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)
SURVIVOR CURVE.. IOWA 22-R4						
NET SALVAGE PERCENT.. -5						
1975	5,959.91	6,190	1,352	4,906	0.24	4,906
1977	2,600.04	2,648	579	2,151	0.66	2,151
1983	4,031.84	3,795	829	3,404	2.28	1,493
1994	22,321.86	13,711	2,996	20,442	9.13	2,239
1995	179,281.94	102,688	22,436	165,810	10.00	16,581
2006	13,226.38	896	196	13,692	20.58	665
	227,421.97	129,928	28,388	210,405		28,035
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PCT..					7.5	12.33

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 311.2 ELECTRIC PUMPING EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AT NOVEMBER 30, 2007

YEAR	ORIGINAL COST	CALCULATED ACCRUED	ALLOC. BOOK RESERVE	FUT. BOOK ACCRUALS	REM. LIFE	ANNUAL ACCRUAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)
SURVIVOR CURVE.. IOWA 45-R2.5						
NET SALVAGE PERCENT.. -10						
1921	202.40	223	223			
1922	1,652.90	1,818	1,818			
1923	591.00	650	650			
1925	142.00	155	155	1	0.32	1
1926	1,729.00	1,878	1,872	30	0.56	30
1927	144.00	156	156	2	0.81	2
1930	9,693.00	10,281	10,249	413	1.61	257
1931	383.00	404	403	18	1.88	10
1935	93.00	96	96	6	2.93	2
1937	1,308.00	1,330	1,326	113	3.39	33
1938	15,844.26	16,031	15,981	1,448	3.61	401
1939	1,242.85	1,251	1,247	120	3.83	31
1941	1,930.15	1,922	1,916	207	4.27	48
1942	6,956.00	6,888	6,867	785	4.49	175
1943	2,533.00	2,494	2,486	300	4.72	64
1944	47.00	46	46	6	4.95	1
1945	1,308.00	1,273	1,269	170	5.18	33
1946	52.00	50	50	7	5.41	1
1947	2,897.00	2,786	2,777	410	5.65	73
1948	45,358.25	43,353	43,218	6,676	5.90	1,132
1949	37,600.94	35,707	35,596	5,765	6.15	937
1950	10,040.00	9,471	9,442	1,602	6.41	250
1951	294,871.13	276,223	275,364	48,994	6.68	7,334
1952	40,695.00	37,839	37,721	7,044	6.96	1,012
1953	96,921.67	89,438	89,160	17,454	7.25	2,407
1954	23,520.30	21,531	21,464	4,408	7.55	584
1955	11,766.04	10,679	10,646	2,297	7.87	292
1956	42,923.00	38,613	38,493	8,722	8.20	1,064
1957	4,403.58	3,924	3,912	932	8.55	109
1958	3,189.00	2,813	2,804	704	8.91	79
1959	29,191.00	25,473	25,394	6,716	9.30	722
1960	3,554.00	3,067	3,057	852	9.70	88
1961	84,315.00	71,888	71,664	21,083	10.12	2,083
1962	32,382.00	27,260	27,175	8,445	10.56	800
1963	8,148.00	6,768	6,747	2,216	11.02	201
1964	28,475.97	23,317	23,245	8,079	11.50	703
1965	292.32	236	235	87	12.00	7
1966	24,868.76	19,745	19,684	7,672	12.52	613

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 311.2 ELECTRIC PUMPING EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AT NOVEMBER 30, 2007

YEAR	ORIGINAL COST	CALCULATED ACCRUED	ALLOC. BOOK RESERVE	FUT. BOOK ACCRUALS	REM. LIFE	ANNUAL ACCRUAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)
SURVIVOR CURVE.. IOWA 45-R2.5						
NET SALVAGE PERCENT.. -10						
1967	23,945.00	18,696	18,638	7,702	13.06	590
1968	1,489.60	1,143	1,139	500	13.61	37
1970	125,546.74	92,777	92,489	45,612	14.77	3,088
1971	1,915.00	1,386	1,382	725	15.38	47
1972	8,160.52	5,785	5,767	3,210	16.00	201
1973	36,459.50	25,274	25,195	14,910	16.64	896
1974	97,991.00	66,377	66,171	41,619	17.29	2,407
1975	93,182.00	61,613	61,421	41,079	17.95	2,289
1976	11,860.00	7,645	7,621	5,425	18.63	291
1977	93,009.00	58,358	58,177	44,133	19.33	2,283
1978	955.00	583	581	470	20.03	23
1979	76,260.86	45,207	45,066	38,821	20.75	1,871
1980	196,301.00	112,867	112,516	103,415	21.48	4,814
1981	48,352.00	26,923	26,839	26,348	22.22	1,186
1982	22,609.29	12,176	12,138	12,732	22.97	554
1983	261,139.00	135,784	135,362	151,891	23.73	6,401
1984	77,175.00	38,677	38,557	46,336	24.50	1,891
1985	21,061.00	10,147	10,115	13,052	25.29	516
1986	112,209.66	51,890	51,729	71,702	26.08	2,749
1987	1,372.00	608	606	903	26.88	34
1988	24,901.00	10,529	10,496	16,895	27.70	610
1989	18,203.00	7,333	7,310	12,713	28.52	446
1990	262,008.00	100,239	99,928	188,281	29.35	6,415
1991	10,928.00	3,956	3,944	8,077	30.19	268
1992	5,059.00	1,726	1,721	3,844	31.04	124
1993	1,102.94	353	352	861	31.90	27
1994	377,751.00	113,023	112,672	302,854	32.76	9,245
1995	122,078.60	33,894	33,789	100,497	33.64	2,987
1996	681,591.39	174,617	174,074	575,677	34.52	16,677
1997	7,161.00	1,680	1,675	6,202	35.40	175
1998	786,602.65	167,255	166,734	698,529	36.30	19,243
1999	231,533.11	44,137	44,000	210,686	37.20	5,664
2000	357,882.37	60,271	60,083	333,588	38.11	8,753
2001	413,342.75	60,427	60,239	394,438	39.02	10,109
2002	82,158.72	10,158	10,127	80,248	39.94	2,009
2003	16,817.65	1,702	1,697	16,802	40.86	411
2004	23,152.94	1,816	1,810	23,658	41.79	566
2005	1,484.68	83	83	1,550	42.72	36

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 311.2 ELECTRIC PUMPING EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AT NOVEMBER 30, 2007

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUT. BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 45-R2.5						
NET SALVAGE PERCENT.. -10						
2006	25,181.57	825	822	26,878	43.66	616
2007	31,143.02	329	328	33,929	44.57	761
	5,662,341.08	2,365,346	2,358,001	3,870,576		138,889
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PCT..					27.9	2.45

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 311.3 DIESEL PUMPING EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AT NOVEMBER 30, 2007

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUT. BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 45-R2.5						
NET SALVAGE PERCENT.. -10						
1975	23,858.28	15,775	15,313	10,931	17.95	609
1982	572.96	309	300	330	22.97	14
1984	919.63	461	448	564	24.50	23
1990	93,945.44	35,942	34,890	68,450	29.35	2,332
	119,296.31	52,487	50,951	80,275		2,978
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PCT..					27.0	2.50

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 311.5 MISCELLANEOUS PUMPING EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AT NOVEMBER 30, 2007

YEAR	ORIGINAL COST	CALCULATED ACCRUED	ALLOC. BOOK RESERVE	FUT. BOOK ACCRUALS	REM. LIFE	ANNUAL ACCRUAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)
SURVIVOR CURVE.. IOWA 45-R2.5						
NET SALVAGE PERCENT.. -10						
1980	2,163.64	1,244	2,380			
1998	2,981.03	634	3,279			
2006	246,300.73	8,074	72,718	198,213	43.66	4,540
2007	16,617.96	175	1,576	16,704	44.57	375
	268,063.36	10,127	79,953	214,917		4,915
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PCT..					43.7	1.83

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 320.1 WATER TREATMENT EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AT NOVEMBER 30, 2007

YEAR	ORIGINAL COST	CALCULATED ACCRUED	ALLOC. BOOK RESERVE	FUT. BOOK ACCRUALS	REM. LIFE	ANNUAL ACCRUAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)
SURVIVOR CURVE.. IOWA 40-R1						
NET SALVAGE PERCENT.. -10						
1892	152,338.25	167,572	167,572			
1912	22,702.73	24,973	24,973			
1923	333.00	366	366			
1925	27,944.01	30,738	30,738			
1926	1,372.00	1,509	1,509			
1927	467.00	514	514			
1929	147.00	159	162			
1930	23,658.00	25,386	26,024			
1931	189.00	201	208			
1933	92.00	96	101			
1935	805.00	827	886			
1936	496.00	506	546			
1939	25.00	25	28			
1940	23,662.00	23,347	26,028			
1941	77,996.00	76,315	85,796			
1942	147.00	143	162			
1944	387.00	369	426			
1945	1,289.00	1,216	1,418			
1947	25,100.00	23,226	27,610			
1948	4,327.00	3,962	4,760			
1949	8,373.00	7,587	9,210			
1950	916.00	821	1,008			
1951	95.00	84	105			
1952	447,454.14	392,135	492,200			
1953	23,974.66	20,768	26,372			
1954	3,764.00	3,221	4,140			
1955	105,653.93	89,280	116,219			
1956	31,681.00	26,433	34,849			
1957	36,654.00	30,179	40,319			
1958	24,950.00	20,260	27,445			
1959	20,425.00	16,350	22,468			
1960	2,660.00	2,099	2,926			
1961	863.00	671	949			
1962	20.00	15	22			
1964	77,801.00	57,596	85,581			
1965	9,683.00	7,046	10,651			
1966	1,042,526.00	745,062	1,146,779			
1967	2,674.00	1,876	2,941			

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 320.1 WATER TREATMENT EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AT NOVEMBER 30, 2007

YEAR	ORIGINAL COST	CALCULATED ACCRUED	ALLOC. BOOK RESERVE	FUT. BOOK ACCRUALS	REM. LIFE	ANNUAL ACCRUAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)
SURVIVOR CURVE.. IOWA 40-R1						
NET SALVAGE PERCENT.. -10						
1968	1,093,036.00	752,304	1,202,340			
1969	7,567.90	5,105	8,325			
1970	229,613.32	151,722	252,575			
1971	505,796.45	327,149	556,376			
1972	197,076.20	124,586	216,784			
1973	440,686.00	272,190	484,755			
1977	350,682.00	195,382	365,656	20,094	19.74	1,018
1978	493,290.37	266,969	499,631	42,988	20.32	2,116
1979	42,408.00	22,275	41,688	4,961	20.90	237
1980	418,403.00	212,955	398,544	61,699	21.49	2,871
1981	51,258.31	25,243	47,242	9,142	22.09	414
1982	291,151.00	138,579	259,350	60,916	22.69	2,685
1983	63,887.00	29,319	54,870	15,406	23.31	661
1989	1,207,725.76	427,112	799,338	529,160	27.14	19,497
1990	148,493.00	49,819	93,236	70,106	27.80	2,522
1991	143,738.00	45,615	85,368	72,744	28.46	2,556
1992	120,645.33	36,057	67,480	65,230	29.13	2,239
1993	31,949.70	8,951	16,752	18,393	29.81	617
1994	36,851.00	9,648	18,056	22,480	30.48	738
1995	7,887.00	1,915	3,584	5,092	31.17	163
1996	1,525,075.27	341,724	639,535	1,038,048	31.85	32,592
1997	1,098,018.00	225,258	421,569	786,251	32.54	24,163
1998	37,952.21	7,055	13,203	28,544	33.24	859
1999	969,776.91	161,827	302,858	763,897	33.93	22,514
2000	454,670.10	67,118	125,611	374,526	34.63	10,815
2003	15,953.64	1,416	2,650	14,899	36.77	405
2004	27,867.38	1,922	3,597	27,057	37.49	722
2005	42,813.30	2,096	3,923	43,172	38.22	1,130
2006	120,484.89	3,472	6,498	126,035	38.95	3,236
	12,378,401.76	5,717,716	9,415,405	4,200,840		134,770

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PCT.. 31.2 1.09

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 330 DISTRIBUTION RESERVOIRS AND STANDPIPES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AT NOVEMBER 30, 2007

YEAR	ORIGINAL COST	CALCULATED ACCRUED	ALLOC. BOOK RESERVE	FUT. BOOK ACCRUALS	REM. LIFE	ANNUAL ACCRUAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)
SURVIVOR CURVE.. IOWA 60-R3						
NET SALVAGE PERCENT.. -20						
1920	67.78	77	71	10	3.41	3
1923	18.64	21	19	3	4.18	1
1924	28.00	31	29	5	4.44	1
1925	6,040.52	6,681	6,193	1,056	4.70	225
1926	23,470.07	25,841	23,953	4,211	4.95	851
1927	13,452.31	14,742	13,665	2,478	5.21	476
1928	439.00	479	444	83	5.47	15
1929	0.19					
1930	149.00	161	149	30	6.00	5
1931	311.00	334	310	63	6.27	10
1932	49.00	52	48	11	6.54	2
1934	167.00	177	164	36	7.11	5
1935	165.29	174	161	37	7.41	5
1936	69.56	73	68	15	7.71	2
1938	47.00	49	45	11	8.35	1
1944	20.00	20	19	5	10.59	
1947	12,295.00	11,825	10,961	3,793	11.91	318
1948	65,405.98	62,295	57,743	20,744	12.38	1,676
1949	2,682.00	2,528	2,343	875	12.87	68
1950	2,133.00	1,989	1,844	716	13.37	54
1951	600.00	553	513	207	13.89	15
1952	2,071.00	1,888	1,750	735	14.42	51
1953	2,836.98	2,555	2,368	1,036	14.97	69
1954	88,642.14	78,821	73,062	33,309	15.54	2,143
1955	35,703.00	31,332	29,043	13,801	16.12	856
1956	999.25	865	802	397	16.71	24
1957	3,730.56	3,184	2,951	1,526	17.32	88
1958	4,024.00	3,385	3,138	1,691	17.94	94
1959	7,055.00	5,844	5,417	3,049	18.58	164
1960	57,415.16	46,816	43,395	25,503	19.23	1,326
1961	1,592.00	1,277	1,184	726	19.89	37
1962	112,581.00	88,799	82,310	52,787	20.56	2,567
1963	5,589.00	4,331	4,015	2,692	21.25	127
1964	640.00	487	451	317	21.95	14
1965	491,865.00	367,305	340,466	249,772	22.66	11,023
1969	1,004.00	691	641	564	25.60	22
1970	3,301.00	2,221	2,059	1,902	26.36	72
1972	376.00	241	223	228	27.90	8

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 330 DISTRIBUTION RESERVOIRS AND STANDPIPES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AT NOVEMBER 30, 2007

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUT. BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 60-R3						
NET SALVAGE PERCENT.. -20						
1973	17,913.00	11,216	10,396	11,100	28.69	387
1974	600.00	366	339	381	29.49	13
1975	2,506.00	1,489	1,380	1,627	30.29	54
1976	9.00	5	5	6	31.11	
1979	593,422.00	313,327	290,432	421,674	33.60	12,550
1981	63,436.97	31,340	29,050	47,074	35.30	1,334
1982	396,612.00	189,089	175,272	300,662	36.16	8,315
1983	13,015.00	5,979	5,542	10,076	37.03	272
1994	2,936.85	762	706	2,818	47.03	60
1996	1,299,320.86	287,981	266,939	1,292,246	48.92	26,415
2000	1,609,056.75	233,249	216,206	1,714,662	52.75	32,505
2001	7,591.94	954	884	8,226	53.72	153
2005	1,414,730.02	67,398	62,473	1,635,203	57.62	28,379
2006	238,979.71	6,682	6,194	280,582	58.60	4,788
	6,607,165.53	1,917,981	1,777,835	6,150,761		137,643
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PCT..					44.7	2.08

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 330.1 DISTRIBUTION RESERVOIRS AND STANDPIPES-MISC.

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AT NOVEMBER 30, 2007

YEAR	ORIGINAL COST	CALCULATED ACCRUED	ALLOC. BOOK RESERVE	FUT. BOOK ACCRUALS	REM. LIFE	ANNUAL ACCRUAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)
SURVIVOR CURVE.. IOWA 35-R3						
NET SALVAGE PERCENT.. -20						
2001	162,241.61	34,655	154,030	40,660	28.77	1,413
2002	8,653.79	1,567	6,965	3,420	29.72	115
2006	1,603,986.28	76,991	342,198	1,582,586	33.60	47,101
2007	5,827.65	90	400	6,593	34.55	191
	1,780,709.33	113,303	503,593	1,633,259		48,820
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PCT..					33.5	2.74

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 330.4 DISTRIBUTION RESERVOIRS & STANDPIPES-CLEARWELL

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AT NOVEMBER 30, 2007

YEAR	ORIGINAL COST	CALCULATED ACCRUED	ALLOC. BOOK RESERVE	FUT. BOOK ACCRUALS	REM. LIFE	ANNUAL ACCRUAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)
SURVIVOR CURVE.. IOWA 60-R3						
NET SALVAGE PERCENT.. -20						
2003	680,783.96	58,983	193,199	623,742	55.67	11,204
	680,783.96	58,983	193,199	623,742		11,204
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PCT..					55.7	1.65

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 330.99 DISTRIBUTION RESERVOIRS AND STANDPIPES-PAINT.

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AT NOVEMBER 30, 2007

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUT. BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. 10-SQUARE						
NET SALVAGE PERCENT.. 0						
1985	26,806.23	26,806	26,806			
1987	120,890.83	120,891	120,891			
1988	66,390.24	66,390	66,390			
1989	91,438.00	91,438	91,438			
1990	28,981.60	28,982	28,982			
1991	107,846.86	107,847	107,847			
2000	109,593.79	81,319	8,577-	118,171	2.58	45,803
2005	450,916.53	109,122	11,510-	462,427	7.58	61,006
2006	634,444.92	90,091	9,503-	643,948	8.58	75,052
2007	72,817.13	3,350	353-	73,170	9.54	7,670
	1,710,126.13	726,236	412,411	1,297,716		189,531
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PCT..					6.8	11.08

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 331 TRANSMISSION & DISTRIBUTION MAINS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AT NOVEMBER 30, 2007

YEAR	ORIGINAL COST	CALCULATED ACCRUED	ALLOC. BOOK RESERVE	FUT. BOOK ACCRUALS	REM. LIFE	ANNUAL ACCRUAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)
SURVIVOR CURVE.. IOWA 95-R2						
NET SALVAGE PERCENT.. -35						
1880	83,348.07	96,126	77,856	34,664	13.84	2,505
1900	332,010.64	349,831	283,341	164,873	20.85	7,908
1901	48.49	51	41	24	21.25	1
1912	406,229.89	397,872	322,251	226,159	26.08	8,672
1920	5,037.19	4,648	3,765	3,035	30.07	101
1921	5,022.25	4,597	3,723	3,057	30.59	100
1922	36,341.65	32,989	26,719	22,342	31.12	718
1923	33,952.30	30,559	24,751	21,085	31.66	666
1924	77,251.86	68,925	55,825	48,465	32.21	1,505
1925	45,456.36	40,207	32,565	28,801	32.76	879
1926	250,562.35	219,632	177,888	160,371	33.32	4,813
1927	221,298.50	192,218	155,684	143,069	33.88	4,223
1928	74,812.62	64,376	52,140	48,857	34.45	1,418
1929	116,998.92	99,713	80,761	77,188	35.03	2,203
1930	79,924.69	67,458	54,637	53,261	35.61	1,496
1931	105,851.64	88,469	71,654	71,246	36.19	1,969
1932	9,980.44	8,255	6,686	6,788	36.79	185
1933	1,694.99	1,388	1,124	1,164	37.39	31
1934	8,706.90	7,054	5,713	6,041	37.99	159
1935	43,279.87	34,689	28,096	30,332	38.60	786
1936	42,035.36	33,322	26,989	29,759	39.22	759
1937	28,414.71	22,272	18,039	20,321	39.84	510
1938	7,983.03	6,186	5,010	5,767	40.47	143
1939	55,000.23	42,130	34,123	40,127	41.10	976
1940	46,020.11	34,828	28,208	33,919	41.74	813
1941	77,076.14	57,635	46,681	57,372	42.38	1,354
1942	55,617.20	41,078	33,271	41,812	43.03	972
1943	9,909.06	7,225	5,852	7,525	43.69	172
1944	9,582.33	6,898	5,587	7,349	44.35	166
1945	15,234.10	10,822	8,765	11,801	45.01	262
1946	45,124.73	31,629	25,617	35,301	45.68	773
1947	82,197.62	56,815	46,017	64,950	46.36	1,401
1948	548,008.98	373,457	302,476	437,336	47.04	9,297
1949	198,869.46	133,619	108,223	160,251	47.72	3,358
1950	124,348.43	82,307	66,663	101,207	48.42	2,090
1951	321,096.32	209,414	169,612	263,868	49.11	5,373
1952	343,905.75	220,855	178,879	285,394	49.81	5,730
1953	439,682.86	277,910	225,089	368,483	50.52	7,294

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 331 TRANSMISSION & DISTRIBUTION MAINS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AT NOVEMBER 30, 2007

YEAR	ORIGINAL COST	CALCULATED ACCRUED	ALLOC. BOOK RESERVE	FUT. BOOK ACCRUALS	REM. LIFE	ANNUAL ACCRUAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)
SURVIVOR CURVE.. IOWA 95-R2						
NET SALVAGE PERCENT.. -35						
1954	540,370.49	336,081	272,204	457,296	51.23	8,926
1955	473,445.78	289,728	234,661	404,491	51.94	7,788
1956	557,204.00	335,267	271,545	480,680	52.66	9,128
1957	763,196.34	451,278	365,507	664,808	53.39	12,452
1958	123,580.41	71,788	58,144	108,690	54.12	2,008
1959	632,841.54	361,042	292,421	561,915	54.85	10,245
1960	395,575.88	221,515	179,413	354,614	55.59	6,379
1961	296,403.80	162,899	131,938	268,207	56.33	4,761
1962	513,637.55	276,810	224,199	469,212	57.08	8,220
1963	214,253.41	113,180	91,669	197,573	57.83	3,416
1964	453,418.20	234,624	190,031	422,084	58.59	7,204
1965	1,563,766.37	792,290	641,705	1,469,380	59.35	24,758
1966	530,121.26	262,863	212,902	502,762	60.11	8,364
1967	384,937.70	186,664	151,186	368,480	60.88	6,053
1968	598,193.56	283,535	229,645	577,916	61.65	9,374
1969	894,713.60	414,056	335,359	872,504	62.43	13,976
1970	315,871.41	142,682	115,563	310,863	63.21	4,918
1971	455,238.84	200,535	162,421	452,151	64.00	7,065
1972	795,974.96	341,820	276,853	797,713	64.78	12,314
1973	3,206,383.78	1,340,573	1,085,779	3,242,839	65.58	49,449
1974	2,306,516.26	938,498	760,124	2,353,673	66.37	35,463
1975	326,996.46	129,255	104,688	336,757	67.18	5,013
1976	770,957.19	296,001	239,742	801,050	67.98	11,784
1977	1,426,651.11	531,378	430,382	1,495,597	68.79	21,741
1978	2,483,176.57	896,402	726,029	2,626,259	69.60	37,734
1979	2,622,113.11	915,760	741,708	2,798,145	70.42	39,735
1980	2,197,665.52	742,009	600,980	2,365,868	71.24	33,210
1981	3,301,646.10	1,076,419	871,831	3,585,391	72.06	49,756
1982	2,080,912.32	653,708	529,462	2,279,770	72.89	31,277
1983	948,114.77	286,710	232,217	1,047,738	73.72	14,212
1984	624,717.01	181,577	147,066	696,302	74.55	9,340
1985	1,101,143.39	306,823	248,507	1,238,037	75.39	16,422
1986	1,911,089.70	509,802	412,907	2,167,064	76.23	28,428
1987	1,383,946.97	352,554	285,546	1,582,782	77.07	20,537
1988	2,333,122.98	566,319	458,683	2,691,033	77.92	34,536
1989	2,140,634.35	493,587	399,774	2,490,082	78.77	31,612
1990	2,882,376.60	629,598	509,935	3,381,273	79.63	42,462
1991	1,697,080.12	349,845	283,352	2,007,706	80.49	24,944

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 331 TRANSMISSION & DISTRIBUTION MAINS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AT NOVEMBER 30, 2007

YEAR	ORIGINAL COST	CALCULATED ACCRUED	ALLOC. BOOK RESERVE	FUT. BOOK ACCRUALS	REM. LIFE	ANNUAL ACCRUAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)
SURVIVOR CURVE.. IOWA 95-R2						
NET SALVAGE PERCENT.. -35						
1992	1,701,472.09	330,077	267,341	2,029,646	81.35	24,950
1993	2,831,769.00	514,561	416,762	3,406,126	82.21	41,432
1994	1,996,667.23	338,285	273,989	2,421,512	83.08	29,147
1995	1,781,357.78	279,682	226,525	2,178,308	83.95	25,948
1996	1,667,128.56	241,267	195,411	2,055,213	84.82	24,230
1997	1,561,437.59	206,367	167,144	1,940,797	85.70	22,646
1998	1,586,126.63	189,717	153,659	1,987,612	86.58	22,957
1999	3,286,072.29	352,234	285,287	4,150,911	87.46	47,461
2000	2,328,801.49	220,386	178,499	2,965,383	88.34	33,568
2001	2,910,980.69	238,540	193,202	3,736,622	89.23	41,876
2002	2,673,127.02	185,488	150,234	3,458,487	90.12	38,376
2003	1,938,084.56	109,628	88,792	2,527,622	91.02	27,770
2004	4,190,962.72	183,878	148,929	5,508,871	91.91	59,938
2005	7,853,864.72	244,923	198,372	10,404,345	92.81	112,104
2006	7,630,773.27	139,071	112,639	10,188,905	93.72	108,716
2007	4,089,555.33	24,292	19,675	5,501,225	94.58	58,165
	100,664,086.42	23,931,330	19,382,859	116,513,654		1,506,069

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PCT.. 77.4 1.50

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 333 SERVICES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AT NOVEMBER 30, 2007

YEAR	ORIGINAL COST	CALCULATED ACCRUED	ALLOC. BOOK RESERVE	FUT. BOOK ACCRUALS	REM. LIFE	ANNUAL ACCRUAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)
SURVIVOR CURVE.. IOWA 70-R3						
NET SALVAGE PERCENT.. -30						
1920	3,542.32	4,092	4,605			
1921	636.05	732	827			
1922	544.61	623	708			
1923	1,634.77	1,862	2,125			
1924	4,769.90	5,407	6,201			
1925	5,955.51	6,716	7,742			
1926	3,919.76	4,397	5,096			
1927	4,344.89	4,846	5,648			
1928	12,993.61	14,410	16,892			
1929	30,343.17	33,450	39,446			
1930	31,622.23	34,651	41,109			
1931	17,044.17	18,555	22,157			
1932	14,669.12	15,864	19,070			
1933	11,136.89	11,959	14,478			
1934	10,374.74	11,059	13,487			
1935	11,086.99	11,731	14,413			
1936	18,595.97	19,524	24,156	19	13.47	1
1937	24,534.12	25,547	31,608	286	13.93	21
1938	23,884.03	24,662	30,513	536	14.40	37
1939	23,152.11	23,699	29,321	777	14.88	52
1940	21,407.64	21,716	26,868	962	15.38	63
1941	17,566.17	17,652	21,840	996	15.89	63
1942	19,564.61	19,467	24,085	1,349	16.42	82
1943	709.78	699	865	58	16.96	3
1944	10,189.48	9,933	12,290	956	17.51	55
1945	13,954.99	13,459	16,652	1,489	18.07	82
1946	13,265.52	12,651	15,652	1,593	18.65	85
1947	54,262.41	51,149	63,284	7,257	19.24	377
1948	65,457.28	60,979	75,446	9,648	19.84	486
1949	71,450.40	65,735	81,330	11,556	20.46	565
1950	56,583.77	51,410	63,607	9,952	21.08	472
1951	59,569.65	53,411	66,082	11,359	21.72	523
1952	74,315.18	65,733	81,328	15,282	22.37	683
1953	45,033.13	39,282	48,601	9,942	23.03	432
1954	82,770.29	71,168	88,052	19,549	23.70	825
1955	110,655.45	93,748	115,989	27,863	24.38	1,143
1956	93,489.86	78,014	96,522	25,015	25.07	998
1957	124,010.46	101,871	126,039	35,175	25.77	1,365

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 333 SERVICES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AT NOVEMBER 30, 2007

YEAR	ORIGINAL COST	CALCULATED ACCRUED	ALLOC. BOOK RESERVE	FUT. BOOK ACCRUALS	REM. LIFE	ANNUAL ACCRUAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)
SURVIVOR CURVE.. IOWA 70-R3						
NET SALVAGE PERCENT.. -30						
1958	114,610.41	92,629	114,605	34,389	26.48	1,299
1959	119,146.69	94,700	117,167	37,724	27.20	1,387
1960	129,152.72	100,907	124,847	43,052	27.93	1,541
1961	124,122.53	95,267	117,869	43,490	28.67	1,517
1962	126,356.21	95,256	117,855	46,408	29.41	1,578
1963	112,167.57	82,970	102,654	43,164	30.17	1,431
1964	102,206.07	74,154	91,747	41,121	30.93	1,329
1965	110,261.14	78,421	97,026	46,313	31.70	1,461
1966	125,228.15	87,259	107,961	54,836	32.48	1,688
1967	140,231.76	95,690	118,392	63,909	33.26	1,921
1968	157,578.28	105,171	130,122	74,730	34.06	2,194
1969	154,413.93	100,771	124,678	76,060	34.86	2,182
1970	145,903.78	93,017	115,085	74,590	35.67	2,091
1971	126,974.26	79,050	97,804	67,263	36.48	1,844
1972	150,113.81	91,134	112,755	82,393	37.31	2,208
1973	701,698.05	415,146	513,637	398,570	38.14	10,450
1974	148,891.71	85,805	106,162	87,397	38.97	2,243
1975	88,703.52	49,712	61,506	53,809	39.82	1,351
1976	135,149.67	73,616	91,081	84,614	40.67	2,081
1977	135,032.16	71,393	88,331	87,211	41.53	2,100
1978	186,128.17	95,432	118,073	123,894	42.39	2,923
1979	239,998.70	119,183	147,458	164,540	43.26	3,804
1980	223,052.79	107,114	132,526	157,443	44.14	3,567
1981	296,157.54	137,408	170,007	214,998	45.02	4,776
1982	196,714.41	87,996	108,873	146,856	45.91	3,199
1983	217,549.25	93,725	115,961	166,853	46.80	3,565
1984	248,540.79	102,876	127,283	195,820	47.71	4,104
1985	323,247.10	128,420	158,887	261,334	48.61	5,376
1986	385,452.43	146,618	181,402	319,686	49.52	6,456
1987	277,792.29	100,900	124,838	236,292	50.44	4,685
1988	337,776.98	116,935	144,677	294,433	51.36	5,733
1989	367,524.43	120,879	149,557	328,225	52.29	6,277
1990	380,311.42	118,509	146,624	347,781	53.22	6,535
1991	370,897.57	109,163	135,061	347,106	54.15	6,410
1992	348,939.66	96,621	119,544	334,078	55.09	6,064
1993	293,634.54	76,116	94,174	287,551	56.04	5,131
1994	414,070.75	100,122	123,875	414,417	56.98	7,273
1995	492,800.60	110,382	136,569	504,072	57.94	8,700

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 333 SERVICES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AT NOVEMBER 30, 2007

YEAR	ORIGINAL COST	CALCULATED ACCRUED	ALLOC. BOOK RESERVE	FUT. BOOK ACCRUALS	REM. LIFE	ANNUAL ACCRUAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)
SURVIVOR CURVE.. IOWA 70-R3						
NET SALVAGE PERCENT.. -30						
1996	450,657.43	92,975	115,033	470,822	58.89	7,995
1997	462,974.38	87,271	107,976	493,891	59.85	8,252
1998	531,894.33	90,789	112,328	579,135	60.81	9,524
1999	468,106.26	71,442	88,391	520,147	61.78	8,419
2000	596,596.55	80,427	99,508	676,068	62.74	10,776
2001	536,718.58	62,726	77,607	620,127	63.71	9,734
2002	753,550.98	74,353	91,993	887,623	64.69	13,721
2003	802,969.81	64,719	80,073	963,788	65.66	14,678
2004	976,610.78	60,941	75,399	1,194,195	66.64	17,920
2005	1,112,243.82	49,161	60,824	1,385,093	67.62	20,483
2006	1,217,032.18	31,643	39,151	1,542,991	68.60	22,493
2007	1,011,919.81	8,419	10,416	1,305,080	69.55	18,765
	18,858,847.78	5,907,196	7,299,506	17,217,001		309,647
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PCT..					55.6	1.64

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 334.1 METERS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AT NOVEMBER 30, 2007

YEAR	ORIGINAL COST	CALCULATED ACCRUED	ALLOC. BOOK RESERVE	FUT. BOOK ACCRUALS	REM. LIFE	ANNUAL ACCRUAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)
SURVIVOR CURVE.. IOWA 18-L1.5						
NET SALVAGE PERCENT.. +4						
1967	3,358.09	2,731	1,225	1,999	2.75	727
1968	1,569.76	1,263	566	941	2.92	322
1969	2,193.60	1,746	783	1,323	3.08	430
1970	4,844.33	3,808	1,708	2,943	3.26	903
1971	1,425.37	1,107	496	872	3.44	253
1972	4,345.71	3,330	1,493	2,679	3.63	738
1973	8,079.60	6,111	2,741	5,015	3.82	1,313
1974	2,808.60	2,096	940	1,756	4.01	438
1975	3,896.61	2,864	1,284	2,457	4.22	582
1976	8,460.24	6,127	2,748	5,374	4.42	1,216
1977	15,452.95	11,010	4,938	9,897	4.64	2,133
1978	13,711.99	9,609	4,309	8,855	4.86	1,822
1979	22,255.67	15,323	6,872	14,493	5.09	2,847
1980	25,100.44	16,974	7,613	16,483	5.32	3,098
1981	51,668.05	34,279	15,374	34,227	5.56	6,156
1982	48,883.62	31,808	14,265	32,663	5.80	5,632
1983	23,579.89	15,029	6,740	15,897	6.05	2,628
1984	16,946.44	10,565	4,738	11,531	6.31	1,827
1985	19,797.30	12,068	5,412	13,593	6.57	2,069
1986	14,964.68	8,916	3,999	10,367	6.83	1,518
1987	26,819.79	15,605	6,999	18,748	7.09	2,644
1988	11,015.57	6,257	2,806	7,769	7.35	1,057
1989	10,200.11	5,647	2,533	7,259	7.62	953
1990	60,849.20	32,841	14,729	43,686	7.88	5,544
1991	68,489.64	35,946	16,121	49,629	8.16	6,082
1992	124,296.84	63,314	28,395	90,930	8.45	10,761
1993	52,768.61	26,033	11,675	38,983	8.75	4,455
1994	142,922.26	68,068	30,528	106,677	9.07	11,762
1995	253,305.47	115,921	51,989	191,184	9.42	20,296
1996	133,854.49	58,468	26,222	102,278	9.81	10,426
1997	271,568.84	112,390	50,405	210,301	10.24	20,537
1998	93,742.28	36,393	16,322	73,671	10.72	6,872
1999	151,428.09	54,427	24,410	120,961	11.26	10,743
2000	108,774.09	35,567	15,951	88,472	11.87	7,453
2001	131,482.14	38,283	17,169	109,054	12.54	8,696
2002	111,287.16	28,130	12,616	94,220	13.26	7,106
2003	57,367.18	12,149	5,449	49,623	14.03	3,537
2004	128,727.00	21,552	9,666	113,912	14.86	7,666

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 334.1 METERS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AT NOVEMBER 30, 2007

YEAR	ORIGINAL COST	CALCULATED ACCRUED	ALLOC. BOOK RESERVE	FUT. BOOK ACCRUALS	REM. LIFE	ANNUAL ACCRUAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)
SURVIVOR CURVE.. IOWA 18-L1.5						
NET SALVAGE PERCENT.. +4						
2005	1,817,003.07	219,959	98,648	1,645,675	15.73	104,620
2006	546,735.62	39,680	17,796	507,070	16.64	30,473
2007	56,561.20	1,357	609	53,690	17.55	3,059
	4,652,541.59	1,224,751	549,282	3,917,157		321,394
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PCT..					12.2	6.91

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 334.2 METER INSTALLATIONS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AT NOVEMBER 30, 2007

YEAR	ORIGINAL COST	CALCULATED ACCRUED	ALLOC. BOOK RESERVE	FUT. BOOK ACCRUALS	REM. LIFE	ANNUAL ACCRUAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)
SURVIVOR CURVE.. IOWA 45-R3						
NET SALVAGE PERCENT.. -20						
1966	18,952.52	17,235	6,714	16,029	10.90	1,471
1967	13,304.81	11,904	4,637	11,329	11.45	989
1968	18,900.11	16,618	6,474	16,206	12.03	1,347
1969	26,070.40	22,512	8,770	22,514	12.62	1,784
1970	25,693.41	21,761	8,477	22,355	13.24	1,688
1971	32,872.92	27,290	10,631	28,817	13.87	2,078
1972	38,832.50	31,562	12,296	34,303	14.52	2,362
1973	105,482.57	83,884	32,679	93,900	15.18	6,186
1974	52,023.12	40,409	15,742	46,686	15.87	2,942
1975	37,406.21	28,369	11,052	33,835	16.56	2,043
1976	67,888.94	50,184	19,550	61,917	17.28	3,583
1977	54,837.19	39,483	15,381	50,424	18.00	2,801
1978	64,481.99	45,158	17,592	59,786	18.74	3,190
1979	59,630.64	40,551	15,797	55,760	19.50	2,859
1980	64,220.55	42,370	16,506	60,559	20.26	2,989
1981	74,379.96	47,520	18,512	70,744	21.04	3,362
1982	71,116.81	43,942	17,118	68,222	21.83	3,125
1983	128,505.42	76,656	29,863	124,344	22.63	5,495
1984	143,893.77	82,693	32,215	140,458	23.45	5,990
1985	212,646.46	117,559	45,797	209,379	24.27	8,627
1986	275,905.78	146,340	57,009	274,078	25.11	10,915
1987	215,456.59	109,392	42,616	215,932	25.96	8,318
1988	209,806.35	101,764	39,644	212,124	26.81	7,912
1989	198,295.88	91,589	35,680	202,275	27.68	7,308
1990	166,964.46	73,191	28,513	171,844	28.56	6,017
1991	188,140.90	78,071	30,414	195,355	29.44	6,636
1992	156,190.79	61,064	23,789	163,640	30.34	5,394
1993	163,252.63	59,907	23,338	172,565	31.24	5,524
1994	184,519.43	63,172	24,610	196,813	32.16	6,120
1995	436,598.05	138,786	54,066	469,852	33.08	14,204
1996	200,596.63	58,831	22,919	217,797	34.00	6,406
1997	211,222.46	56,675	22,079	231,388	34.94	6,622
1998	498,248.46	121,194	47,213	550,685	35.88	15,348
1999	311,286.04	67,835	26,426	347,117	36.83	9,425
2000	359,607.88	69,217	26,965	404,564	37.78	10,708
2001	404,714.56	67,555	26,317	459,340	38.74	11,857
2002	435,113.98	61,403	23,921	498,216	39.71	12,546
2003	499,350.91	57,525	22,410	576,811	40.68	14,179

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 334.2 METER INSTALLATIONS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AT NOVEMBER 30, 2007

YEAR	ORIGINAL COST	CALCULATED ACCRUED	ALLOC. BOOK RESERVE	FUT. BOOK ACCRUALS	REM. LIFE	ANNUAL ACCRUAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)
SURVIVOR CURVE.. IOWA 45-R3						
NET SALVAGE PERCENT.. -20						
2004	682,276.14	60,914	23,730	795,001	41.65	19,088
2005	732,311.11	46,487	18,110	860,663	42.62	20,194
2006	864,104.82	32,248	12,563	1,024,363	43.60	23,495
2007	2,245,152.70	26,942	10,495	2,683,688	44.55	60,240
	10,950,256.85	2,537,762	988,630	12,151,678		353,367
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PCT..					34.4	3.23

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 335 HYDRANTS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AT NOVEMBER 30, 2007

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUT. BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 55-R1.5						
NET SALVAGE PERCENT.. -30						
1952	12,500.95	11,087	8,023	8,228	17.48	471
1953	23,975.90	20,995	15,193	15,976	17.95	890
1955	16,496.30	14,068	10,180	11,265	18.92	595
1958	22,925.01	18,722	13,548	16,255	20.45	795
1959	32,543.21	26,166	18,935	23,371	20.98	1,114
1962	25,872.63	19,807	14,333	19,301	22.61	854
1963	66,688.24	50,153	36,293	50,402	23.18	2,174
1964	15,710.26	11,605	8,398	12,025	23.75	506
1965	83,299.68	60,382	43,695	64,595	24.33	2,655
1966	32,842.82	23,350	16,897	25,799	24.92	1,035
1968	36,303.54	24,772	17,926	29,269	26.13	1,120
1969	82,919.72	55,385	40,079	67,717	26.74	2,532
1970	3,877.59	2,533	1,833	3,208	27.37	117
1971	17,518.78	11,180	8,090	14,684	28.00	524
1972	30,090.39	18,749	13,568	25,550	28.64	892
1973	2,187.01	1,329	962	1,881	29.28	64
1974	654,742.30	387,791	280,625	570,540	29.94	19,056
1975	103,041.20	59,422	43,001	90,953	30.60	2,972
1976	63,407.95	35,569	25,740	56,690	31.27	1,813
1977	181,273.57	98,810	71,504	164,152	31.94	5,139
1978	224,944.97	118,931	86,065	206,363	32.63	6,324
1979	213,056.36	109,238	79,050	197,923	33.31	5,942
1980	209,399.52	103,879	75,172	197,047	34.01	5,794
1981	236,435.81	113,388	82,053	225,314	34.71	6,491
1982	219,253.88	101,471	73,430	211,600	35.42	5,974
1983	138,433.10	61,745	44,682	135,281	36.13	3,744
1984	115,268.62	49,450	35,784	114,065	36.85	3,095
1985	143,621.29	59,168	42,817	143,891	37.57	3,830
1986	185,678.76	73,284	53,032	188,350	38.30	4,918
1987	98,534.23	37,199	26,919	101,175	39.03	2,592
1988	111,776.83	40,236	29,117	116,193	39.77	2,922
1989	109,350.32	37,430	27,086	115,069	40.52	2,840
1990	122,060.95	39,606	28,661	130,018	41.27	3,150
1991	132,850.49	40,759	29,495	143,211	42.02	3,408
1992	98,283.78	28,390	20,544	107,225	42.78	2,506
1993	117,342.08	31,790	23,005	129,540	43.54	2,975
1994	172,141.02	43,526	31,498	192,285	44.30	4,341
1995	158,690.32	37,237	26,947	179,350	45.07	3,979

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 335 HYDRANTS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AT NOVEMBER 30, 2007

YEAR	ORIGINAL COST	CALCULATED ACCRUED	ALLOC. BOOK RESERVE	FUT. BOOK ACCRUALS	REM. LIFE	ANNUAL ACCRUAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)
SURVIVOR CURVE.. IOWA 55-R1.5						
NET SALVAGE PERCENT.. -30						
1996	303,287.60	65,607	47,477	346,797	45.85	7,564
1997	178,327.24	35,284	25,533	206,292	46.63	4,424
1998	116,193.99	20,845	15,084	135,968	47.41	2,868
1999	154,197.83	24,777	17,930	182,527	48.20	3,787
2000	166,790.51	23,699	17,150	199,678	48.99	4,076
2001	264,500.23	32,563	23,564	320,286	49.79	6,433
2002	231,213.32	24,106	17,444	283,133	50.59	5,597
2003	183,087.27	15,614	11,299	226,714	51.39	4,412
2004	389,801.85	25,793	18,665	488,077	52.20	9,350
2005	366,283.08	17,142	12,405	463,763	53.02	8,747
2006	583,454.12	16,156	11,692	746,798	53.83	13,873
2007	168,138.48	1,508	1,091	217,489	54.62	3,982
	7,420,614.90	2,381,696	1,723,514	7,923,283		195,256
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PCT..					40.6	2.63

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 339.2 OTHER PLANT & EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AT NOVEMBER 30, 2007

YEAR	ORIGINAL COST	CALCULATED ACCRUED	ALLOC. BOOK RESERVE	FUT. BOOK ACCRUALS	REM. LIFE	ANNUAL ACCRUAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)

SURVIVOR CURVE.. IOWA 25-R3
NET SALVAGE PERCENT.. 0

1973	2,889.24	2,665	5,489	2,600-		
1974	1,386.16	1,265	2,605	1,219-		
1977	3,201.17	2,816	5,800	2,599-		
1985	1,046.73	780	1,606	559-		
	8,523.30	7,526	15,500	6,977-		

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PCT.. 0.0 0.00

TENNESSEE AMERICAN WATER COMPANY

ACCOUTN 339.6 OTHER PLANT & EQUIPMENT - COMPREHENSIVE STUDY

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AT NOVEMBER 30, 2007

YEAR	ORIGINAL COST	CALCULATED ACCRUED	ALLOC. BOOK RESERVE	FUT. BOOK ACCRUALS	REM. LIFE	ANNUAL ACCRUAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)

SURVIVOR CURVE.. 10-SQUARE
NET SALVAGE PERCENT.. 0

1993	43,380.00	43,380	59,624	16,244-		
1998	109,188.88	102,856	141,372	32,183-		
2000	252,562.95	187,402	257,578	5,015-		
	405,131.83	333,638	458,574	53,442-		

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PCT.. 0.0 0.00

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 340.1 OFFICE FURNITURE & EQUIPMENT - FURNITURE

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AT NOVEMBER 30, 2007

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUT. BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. 20-SQUARE NET SALVAGE PERCENT.. 0						
1977	2,329.00	2,329	2,329			
1978	55,666.34	55,666	55,666			
1979	460.00	460	460			
1980	398.74	399	399			
1981	4,328.00	4,328	4,328			
1982	1,969.00	1,969	1,969			
1983	4,247.00	4,247	4,247			
1984	2,152.00	2,152	2,152			
1985	6,697.02	6,697	6,697			
1986	13,291.00	13,291	13,291			
1987	31,797.25	31,797	31,797			
1988	76,601.01	74,380	76,601			
1989	8,030.50	7,396	8,031			
1992	7,175.43	5,532	7,175			
1993	5,188.16	3,741	5,188			
1995	9,709.89	6,030	9,710			
1996	21,251.27	12,134	21,251			
1997	129,913.00	67,685	123,245	6,668	9.58	696
1998	69,744.26	32,850	59,816	9,928	10.58	938
1999	2,640.22	1,112	2,025	615	11.58	53
2000	13,124.30	4,869	8,866	4,258	12.58	338
2001	18,108.01	5,813	10,585	7,523	13.58	554
2004	105,198.66	17,989	32,755	72,444	16.58	4,369
2006	3,854.95	274	499	3,356	18.58	181
2007	32,942.50	758	1,380	31,563	19.54	1,615
	626,817.51	363,898	490,462	136,355		8,744
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PCT..						
				15.6		1.39

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 340.2 OFFICE FURNITURE & EQUIPMENT - COMP. & PER. EQ

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AT NOVEMBER 30, 2007

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUT. BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. 7-SQUARE						
NET SALVAGE PERCENT.. 0						
1965	481.78	482	482			
1971	561.92	562	562			
1972	856.00	856	856			
1973	5,687.05	5,687	5,687			
1974	817.54	818	818			
1975	58.00	58	58			
1976	533.67	534	534			
1977	3,652.15	3,652	3,652			
1978	2,227.07	2,227	2,227			
1981	552.64	553	553			
1982	616.00	616	616			
1983	1,365.00	1,365	1,365			
1984	2,137.00	2,137	2,137			
1985	6,332.00	6,332	6,332			
1986	56.54	57	57			
1987	9,765.27	9,765	9,765			
1988	12,355.84	12,356	12,356			
1989	2,282.39	2,282	2,282			
1990	2,422.53	2,423	2,423			
1991	44,778.00	44,778	44,778			
1992	50,031.99	50,032	50,032			
1993	76,064.46	76,064	76,064			
1994	30,920.32	30,920	30,920			
1995	89,764.22	89,764	89,764			
1996	216,478.14	216,478	216,478			
1997	8,110.00	8,110	8,110			
1998	45,357.85	45,358	45,358			
1999	502,243.59	502,244	502,244			
2000	107,842.79	107,843	107,843			
2001	128,682.87	118,015	128,683			
2002	4,033.13	3,123	4,033			
2003	2,864.59	1,809	2,865			
2004	9,758.17	4,768	9,758			
2005	143,827.81	49,721	109,917	33,911	4.58	7,404
2006	133,059.88	26,998	59,684	73,376	5.58	13,150
2007	141,700.22	9,310	20,582	121,118	6.54	18,520
	1,788,278.42	1,438,097	1,559,875	228,405		39,074

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PCT.. 5.8 2.19

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 340.3 OFFICE FURNITURE & EQUIPMNET - COMP. SOFTWARE

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AT NOVEMBER 30, 2007

YEAR	ORIGINAL COST	CALCULATED ACCRUED	ALLOC. BOOK RESERVE	FUT. BOOK ACCRUALS	REM. LIFE	ANNUAL ACCRUAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)
SURVIVOR CURVE.. 5-SQUARE						
NET SALVAGE PERCENT.. 0						
1981	309.50	310	310			
1985	745.39	745	745			
1987	7,983.89	7,984	7,984			
1988	1,362.06	1,362	1,362			
1990	11,106.14	11,106	11,106			
1991	6,757.83	6,758	6,758			
1992	4,623.08	4,623	4,623			
1996	18,728.28	18,728	18,728			
1997	6,079.98	6,080	6,080			
1998	6,090.21	6,090	6,090			
1999	393,178.14	393,178	393,178			
2000	3,675.89	3,676	3,676			
2001	1,820.64	1,821	1,821			
2003	3,243,404.77	2,867,170	3,243,405			
2004	28,447.60	19,458	23,038	5,410	1.58	3,424
2005	374,343.51	181,182	214,518	159,826	2.58	61,948
2006	58,996.40	16,755	19,838	39,158	3.58	10,938
	4,167,653.31	3,547,026	3,963,260	204,394		76,310
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PCT..					2.7	1.83

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 340.4 OFFICE FURNITURE & EQUIPMENT - METER SHOP (UPS)

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AT NOVEMBER 30, 2007

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUT. BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. 10-SQUARE						
NET SALVAGE PERCENT.. 0						
2006	15,283.88	2,170	8,808	6,476	8.58	755
	15,283.88	2,170	8,808	6,476		755
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PCT..					8.6	4.94

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 340.5 OFFICE FURNITURE & EQUIPMENT - OTHER EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AT NOVEMBER 30, 2007

YEAR	ORIGINAL COST	CALCULATED ACCRUED	ALLOC. BOOK RESERVE	FUT. BOOK ACCRUALS	REM. LIFE	ANNUAL ACCRUAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)
SURVIVOR CURVE.. 15-SQUARE						
NET SALVAGE PERCENT.. 0						
1985	3,178.00	3,178	3,178			
1987	3,731.93	3,732	3,732			
1988	5,556.83	5,557	5,557			
1989	6,503.55	6,504	6,504			
1990	2,102.06	2,102	2,102			
1991	9,793.31	9,793	9,793			
1994	7,816.39	6,993	7,816			
1995	671.49	556	671			
1996	3,447.55	2,625	3,448			
1998	441.45	277	441			
1999	37,401.04	20,993	37,401			
2000	5,629.00	2,785	5,629			
2001	3,162.24	1,353	3,029	133	8.58	16
2003	31,772.04	9,363	20,963	10,809	10.58	1,022
2005	8,413.92	1,357	3,038	5,376	12.58	427
2006	7,588.97	719	1,610	5,979	13.58	440
	137,209.77	77,887	114,912	22,297		1,905
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PCT..					11.7	1.39

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 341.1 TRANSPORTATION EQUIPMENT - LIGHT DUTY TRUCKS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AT NOVEMBER 30, 2007

YEAR	ORIGINAL COST	CALCULATED ACCRUED	ALLOC. BOOK RESERVE	FUT. BOOK ACCRUALS	REM. LIFE	ANNUAL ACCRUAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)
SURVIVOR CURVE.. IOWA 9-L1.5						
NET SALVAGE PERCENT.. +15						
1980	689.65	568	295	291	0.28	291
1981	13,633.77	11,035	5,724	5,865	0.43	5,865
1982	10,135.00	8,060	4,181	4,434	0.58	4,434
1985	721.00	542	281	332	1.04	319
1986	52,588.34	38,791	20,122	24,578	1.19	20,654
1987	35,081.00	25,379	13,165	16,654	1.34	12,428
1988	10,117.94	7,157	3,713	4,887	1.51	3,236
1989	21,501.51	14,864	7,711	10,565	1.68	6,289
1994	1,559.51	924	479	847	2.73	310
1996	1,079.42	588	305	613	3.23	190
1997	23,935.13	12,455	6,461	13,884	3.49	3,978
1998	219,734.22	108,945	56,514	130,260	3.75	34,736
1999	106,428.33	50,054	25,965	64,499	4.02	16,045
2001	38,924.46	16,066	8,334	24,752	4.63	5,346
2002	21,164.17	7,955	4,127	13,863	5.02	2,762
2003	22,193.53	7,316	3,795	15,070	5.51	2,735
2004	87,546.67	23,813	12,353	62,062	6.12	10,141
2005	67,389.99	13,685	7,099	50,182	6.85	7,326
2006	339,923.48	42,387	21,987	266,948	7.68	34,759
	1,074,347.12	390,584	202,611	710,586		171,844
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PCT..					4.1	16.00

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 341.2 TRANSPORTATION EQUIPMENT - HEAVY DUTY TRUCKS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AT NOVEMBER 30, 2007

YEAR	ORIGINAL COST	CALCULATED ACCRUED	ALLOC. BOOK RESERVE	FUT. BOOK ACCRUALS	REM. LIFE	ANNUAL ACCRUAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)
SURVIVOR CURVE.. IOWA 8-L1						
NET SALVAGE PERCENT.. +15						
1988	1,710.48	1,261	652	802	1.06	757
1990	446.09	311	161	218	1.43	152
1991	5,770.66	3,905	2,018	2,887	1.63	1,771
1992	21,458.63	14,045	7,260	10,980	1.84	5,967
1995	80,569.00	46,911	24,248	44,236	2.52	17,554
1996	62,792.37	34,890	18,034	35,340	2.77	12,758
1997	48,874.98	25,757	13,313	28,231	3.04	9,287
1998	10,386.55	5,165	2,670	6,159	3.32	1,855
1999	223,481.17	104,003	53,757	136,202	3.62	37,625
2001	60,456.14	23,957	12,383	39,005	4.27	9,135
2005	79,706.78	16,599	8,580	59,171	6.04	9,797
2006	36,497.06	4,808	2,485	28,538	6.76	4,222
2007	101,801.49	4,647	2,402	84,129	7.57	11,113
	733,951.40	286,259	147,963	475,898		121,993
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PCT..					3.9	16.62

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 341.3 TRANSPORTATION EQUIPMENT - AUTOS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AT NOVEMBER 30, 2007

YEAR	ORIGINAL COST	CALCULATED ACCRUED	ALLOC. BOOK RESERVE	FUT. BOOK ACCRUALS	REM. LIFE	ANNUAL ACCRUAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)
SURVIVOR CURVE.. IOWA 8-S2.5						
NET SALVAGE PERCENT.. +15						
1998	16,618.33	11,760	10,657	3,469	1.34	2,589
2004	105,456.35	37,200	33,711	55,927	4.68	11,950
2005	30,497.16	7,777	7,048	18,875	5.60	3,371
2006	102,204.75	15,420	13,974	72,900	6.58	11,079
	254,776.59	72,157	65,390	151,171		28,989
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PCT..					5.2	11.38

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 341.4 TRANSPORTATION EQUIPMENT - OTHER

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AT NOVEMBER 30, 2007

YEAR	ORIGINAL COST	CALCULATED ACCRUED	ALLOC. BOOK RESERVE	FUT. BOOK ACCRUALS	REM. LIFE	ANNUAL ACCRUAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)
SURVIVOR CURVE.. IOWA 12-L2.5						
NET SALVAGE PERCENT.. +15						
1978	654.16	517	484	72	0.85	72
1997	9,753.03	5,202	4,868	3,422	4.47	766
1998	15,118.65	7,764	7,265	5,586	4.75	1,176
1999	9,862.02	4,792	4,484	3,899	5.14	759
2006	179,030.84	17,881	16,733	135,443	10.59	12,790
2007	22,823.28	743	695	18,705	11.54	1,621
	237,241.98	36,899	34,529	167,127		17,184
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PCT..					9.7	7.24

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 342 STORES EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AT NOVEMBER 30, 2007

YEAR	ORIGINAL COST	CALCULATED ACCRUED	ALLOC. BOOK RESERVE	FUT. BOOK ACCRUALS	REM. LIFE	ANNUAL ACCRUAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)

SURVIVOR CURVE.. 25-SQUARE
NET SALVAGE PERCENT.. 0

1957	3,178.92	3,179	4,590	1,411-		
1965	139.56	140	202	62-		
1970	148.35	148	214	66-		
1973	937.26	937	1,353	416-		
1983	451.80	441	637	185-		
1985	1,987.41	1,782	2,573	586-		
1988	17,178.21	13,344	19,266	2,088-		
1991	19,370.70	12,723	18,370	1,001		
	43,392.21	32,694	47,205	3,813-		

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PCT.. 0.0 0.00

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 343 TOOLS, SHOP AND GARAGE EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AT NOVEMBER 30, 2007

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUT. BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. 20-SQUARE NET SALVAGE PERCENT.. 0						
1973	3,723.12	3,723	3,723			
1974	101.00	101	101			
1975	363.00	363	363			
1976	1,048.00	1,048	1,048			
1977	176.12	176	176			
1978	2,719.00	2,719	2,719			
1979	1,838.40	1,838	1,838			
1981	7,609.99	7,610	7,610			
1982	2,908.04	2,908	2,908			
1983	9,405.28	9,405	9,405			
1984	3,884.00	3,884	3,884			
1985	14,776.00	14,776	14,776			
1986	7,993.68	7,994	7,994			
1987	32,619.00	32,619	32,619			
1988	10,214.00	9,918	6,299	3,915	0.58	3,915
1989	11,025.00	10,154	6,448	4,577	1.58	2,897
1990	3,237.23	2,820	1,791	1,446	2.58	560
1991	29,067.50	23,864	15,155	13,913	3.58	3,886
1992	88,401.39	68,157	43,284	45,117	4.58	9,851
1993	57,073.00	41,150	26,133	30,940	5.58	5,545
1994	82,632.44	55,446	35,212	47,420	6.58	7,207
1995	30,140.00	18,717	11,887	18,253	7.58	2,408
1996	12,422.05	7,093	4,505	7,917	8.58	923
1997	72,718.36	37,886	24,060	48,658	9.58	5,079
1998	125,149.60	58,945	37,434	87,716	10.58	8,291
1999	41,595.71	17,512	11,121	30,475	11.58	2,632
2000	12,587.09	4,670	2,966	9,621	12.58	765
2001	33,632.03	10,796	6,856	26,776	13.58	1,972
2002	41,772.90	11,320	7,189	34,584	14.58	2,372
2004	184,304.33	31,516	20,015	164,289	16.58	9,909
2005	68,002.36	8,228	5,226	62,776	17.58	3,571
2006	167,910.83	11,922	7,571	160,340	18.58	8,630
2007	20,994.36	483	307	20,687	19.54	1,059
	1,182,044.81	519,761	362,623	819,420		81,472
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PCT..					10.1	6.89

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 344 LABORATORY EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AT NOVEMBER 30, 2007

YEAR	ORIGINAL COST	CALCULATED ACCRUED	ALLOC. BOOK RESERVE	FUT. BOOK ACCRUALS	REM. LIFE	ANNUAL ACCRUAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)
SURVIVOR CURVE.. 15-SQUARE						
NET SALVAGE PERCENT.. 0						
1961	122.71	123	123			
1964	74.50	75	75			
1981	1,717.00	1,717	1,717			
1983	2,620.00	2,620	2,620			
1985	6,552.03	6,552	6,552			
1986	128.38	128	128			
1987	17,275.00	17,275	17,275			
1988	646.51	647	647			
1989	39,288.25	39,288	39,288			
1990	13,200.10	13,200	13,200			
1991	28,702.29	28,702	28,702			
1993	62,004.00	59,604	62,004			
1994	11,068.17	9,903	11,068			
1995	22,264.00	18,435	22,264			
1996	5,426.73	4,131	5,427			
1997	7,644.00	5,310	7,644			
1998	17,860.80	11,217	17,861			
1999	87,441.23	49,081	78,903	8,538	6.58	1,298
2003	21,563.07	6,355	10,216	11,347	10.58	1,072
2004	22,482.69	5,126	8,241	14,242	11.58	1,230
2007	2,038.29	63	101	1,937	14.54	133
	370,119.75	279,552	334,056	36,064		3,733
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PCT..					9.7	1.01

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 345 POWER OPERATED EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AT NOVEMBER 30, 2007

YEAR	ORIGINAL COST	CALCULATED ACCRUED	ALLOC. BOOK RESERVE	FUT. BOOK ACCRUALS	REM. LIFE	ANNUAL ACCRUAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)

SURVIVOR CURVE.. IOWA 15-01
NET SALVAGE PERCENT.. +5

1978	3,795.00	3,536	9,051	5,446-		
1981	5,674.00	4,747	12,150	6,760-		
1986	13,159.00	8,926	22,846	10,345-		
1987	9,220.62	5,963	15,263	6,503-		
1988	77,810.45	47,848	122,469	48,549-		
1989	3,271.13	1,908	4,884	1,776-		
1992	54,677.33	26,699	68,337	16,394-		
1996	46,220.77	16,716	42,785	1,125		
1997	15,514.07	5,119	13,102	1,636		
2005	21,580.41	1,654	4,234	16,267		
2006	81,844.69	3,678	9,414	68,338		
	332,767.47	126,794	324,535	8,407-		

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PCT.. 0.0 0.00

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 346.1 COMMUNICATION EQUIPMENT - NON-TELEPHONE

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AT NOVEMBER 30, 2007

YEAR	ORIGINAL COST	CALCULATED ACCRUED	ALLOC. BOOK RESERVE	FUT. BOOK ACCRUALS	REM. LIFE	ANNUAL ACCRUAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)

SURVIVOR CURVE.. 15-SQUARE
NET SALVAGE PERCENT.. 0

1977	15,295.77	15,296	15,296			
1978	6,654.00	6,654	6,654			
1979	212.00	212	212			
1985	9,805.00	9,805	9,805			
1990	698.00	698	698			
1992	11,158.42	11,158	11,158			
1993	22,529.00	21,657	22,529			
1994	39,563.00	35,397	38,428	1,135	1.58	718
1995	14,223.00	11,777	12,785	1,438	2.58	557
1997	4,806.31	3,339	3,625	1,181	4.58	258
1998	196,353.32	123,310	133,868	62,485	5.58	11,198
1999	703.35	395	429	274	6.58	42
2000	2,486.35	1,230	1,335	1,151	7.58	152
2006	30,343.67	2,874	3,120	27,224	13.58	2,005
	354,831.19	243,802	259,942	94,888		14,930

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PCT.. 6.4 4.21

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 346.2 COMMUNICATION EQUIPMENT - TELEPHONE

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AT NOVEMBER 30, 2007

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUT. BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. 10-SQUARE						
NET SALVAGE PERCENT.. 0						
1985	70,026.85	70,027	70,027			
1988	5,935.40	5,935	5,935			
1992	16,743.08	16,743	16,743			
1997	12,901.44	12,901	12,901			
2001	23,401.71	15,024	13,761	9,641	3.58	2,693
2004	23,440.09	8,017	7,344	16,096	6.58	2,446
2007	3,282.27	151	138	3,144	9.54	330
	155,730.84	128,798	126,849	28,881		5,469
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PCT..					5.3	3.51

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 347 MISCELLANEOUS EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AT NOVEMBER 30, 2007

YEAR	ORIGINAL	CALCULATED	ALLOC. BOOK	FUT. BOOK	REM.	ANNUAL
(1)	COST	ACCRUED	RESERVE	ACCRUALS	LIFE	ACCRUAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)
SURVIVOR CURVE.. 20-SQUARE						
NET SALVAGE PERCENT.. 0						
1987	42,058.23	42,058	42,058			
1988	2,820.00	2,738	1,598	1,222	0.58	1,222
1989	5,925.18	5,457	3,185	2,740	1.58	1,734
1990	14,197.16	12,366	7,217	6,980	2.58	2,705
1991	44,797.16	36,778	21,463	23,334	3.58	6,518
1992	17,292.00	13,332	7,780	9,512	4.58	2,077
1993	4,644.11	3,348	1,954	2,690	5.58	482
1994	3,442.00	2,310	1,348	2,094	6.58	318
1995	99,601.00	61,852	36,096	63,505	7.58	8,378
1996	1,345.36	768	448	897	8.58	105
1997	3,253.00	1,695	989	2,264	9.58	236
1998	3,470.00	1,634	954	2,516	10.58	238
2000	978.55	363	212	767	12.58	61
2001	9,117.27	2,927	1,708	7,409	13.58	546
2002	839.16	227	132	707	14.58	48
2003	21,781.38	4,814	2,809	18,972	15.58	1,218
2004	1,907.14	326	190	1,717	16.58	104
2005	739,211.30	89,445	52,201	687,010	17.58	39,079
2006	7,102.62	504	294	6,809	18.58	366
2007	51,798.39	1,191	695	51,103	19.54	2,615
	1,075,581.01	284,133	183,331	892,248		68,050

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PCT.. 13.1 6.33

TENNESSEE AMERICAN WATER COMPANY

ACCOUNT 348 OTHER TANGIBLE PROPERTY

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AT NOVEMBER 30, 2007

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUT. BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. 20-SQUARE						
NET SALVAGE PERCENT.. 0						
2006	4,918.13	349	260	4,658	18.58	251
	4,918.13	349	260	4,658		251
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PCT..					18.6	5.10

1 **TENNESSEE-AMERICAN WATER COMPANY**
2 **CASE NO. _____**
3 **DIRECT TESTIMONY**
4 **JOHN S. WATSON**
5
6
7

8 **1. Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS?**

9 **A. My name is John S. Watson and my address is 1101 Broad**
10 **Street, Chattanooga, Tennessee, 37402.**

11
12 **2. Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT**
13 **CAPACITY?**

14 **A. I am employed by Tennessee-American Water Company**
15 **("TAWC" or "Company") as President.**

16
17 **3. Q. HOW LONG HAVE YOU HELD THIS POSITION?**

18 **A. I was named President effective June 28, 2007.**

19
20 **4. Q. PLEASE STATE YOUR EDUCATIONAL BACKGROUND**
21 **AND WORK EXPERIENCE PRIOR TO YOUR PRESENT**
22 **POSITION.**

23 **A. I hold a B. S. Degree in Management Accounting with an**
24 **emphasis in Computer Science from Ball State University.**
25 **Prior to my current position, I served as Vice-President and**
26 **General Network Manager at TAWC from July 2004 through**
27 **June 2007. Prior to working at TAWC, I was the Operations**
28 **Manager at Virginia American Water's Hopewell facility for**
29 **seven years. I also served as the Corporate Office Manager for**
30 **over four years at the Ohio-American Water Company in**

1 Marion, Ohio. Prior to the Marion assignment, I served as
2 District Manager for Ohio-American's Tiffin District for over
3 8 years, and as Operations Manager for Ohio-American Water
4 Company's, Lawrence County District for approximately three
5 years from 1981 to 1984. I have also held a Class I Water
6 Operators License in the State of Ohio. I attended the NARUC
7 Western Utility Rate School. I have participated in a number
8 of Company training and professional development programs
9 supporting the water utility industry. I have also attended
10 various seminars on management development, materials
11 management, government contracting, and water utility
12 management. I have actively participated in NARUC
13 conferences, and spoken to groups such as AWWA's Water
14 Professional Conference on a variety of subjects regarding the
15 water utility industry in Kentucky and Tennessee during my
16 employment with TAWC.

17
18 5. Q. ARE YOU AFFILIATED WITH ANY PROFESSIONAL
19 ORGANIZATIONS?

20 A. Yes. I am a member of the American Water Works
21 Association, and an active member of the Kentucky/Tennessee
22 Section, as well as the National Association of Water
23 Companies.

24
25 6. Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE ANY
26 REGULATORY AGENCIES REGARDING WATER
27 UTILITY COMPANIES?

1 **A. Yes. I testified before the Tennessee Regulatory Authority in**
2 **the Tennessee American Case Number 2006-00290, as well as**
3 **Case 2004-00288. I have also testified before the Public Utility**
4 **Commission of Ohio and the State Corporation Commission in**
5 **Virginia.**

6
7 **7. Q. WHAT ARE YOUR DUTIES AND RESPONSIBILITIES AS**
8 **PRESIDENT OF TENNESSEE AMERICAN?**

9 **A. I serve as the Chief Executive Officer for the Company. I**
10 **oversee the strategic planning, operations, and local policy**
11 **process implementation of the Company.**

12
13 **8. Q. WHAT IS THE GENERAL AREA SERVED BY**
14 **TENNESSEE AMERICAN?**

15 **A. TAWC supplies water service, and public and private fire**
16 **service to over 74,400 customers in the City of Chattanooga**
17 **and surrounding areas plus four sale for resale customers:**
18 **Signal Mountain, Fort Oglethorpe, Catoosa Utility District,**
19 **and Walden's Ridge Utility District.**

20
21 **9. Q. WILL ALL OF THE ITEMS CONTAINED IN UTILITY**
22 **PLANT FOR WHICH THE COMPANY IS REQUESTING**
23 **RATE BASE TREATMENT BE USED AND USEFUL?**

24 **A. Yes.**
25

1 10. Q. MR. WATSON, WHAT DOES TENNESSEE AMERICAN
2 DO AS A PART OF ITS DAY-TO-DAY OPERATIONS TO
3 CONTROL COSTS?

4 A. The first element of cost control is the Operating &
5 Maintenance plan developed for the current year. The
6 Company's plan is developed utilizing a zero-based approach,
7 with reliance on historical cost of service elements, which looks
8 at technology/productivity on which to make value-based
9 management decisions and provide maximum value to our
10 customers.

11
12 The plan is prepared and controlled utilizing cost center
13 concepts – thus specific, proposed expenditures can be
14 reviewed during the planning process, and actual expenditures
15 can be compared to the plan. Each month, plans are reviewed
16 relative to current operating conditions and an appropriate
17 forecast developed for the remainder of the year regarding any
18 expected changes in revenues or expenses.

19
20 Other benchmarks are constantly reviewed by the Company.
21 Customers served per employee provides a benchmark of
22 productivity. The ratio has increased slightly from 2006---a
23 ratio of 670 customers per employee in the previous case
24 compared with the current historical test year ratio of 676.

25
26 Capital expenditures of the Company are planned and
27 scrutinized to assure that needed facilities are identified, that

1 facilities are scheduled for construction within an acceptable
2 time frame, and that they are cost-effectively constructed. The
3 primary planning vehicle of the Company in this area is our
4 least/cost comprehensive planning study.

5
6 Technological advances are reviewed to improve productivity,
7 and enhance the service we provide our customers.

- 8 • In 1998 and 1999 the accounting department
9 implemented new J.D. Edwards payroll, inventory,
10 accounts payable, purchase order, fixed asset and job
11 cost systems as well as FAMS system and the In Source
12 CS for Income Taxes.
- 13 • The Production Department has added radio telemetry
14 capabilities to the production facilities in the distribution
15 system. The new addition will further enhance the
16 control and capability of the company's booster stations,
17 storage tanks and pressure control/monitoring stations.
- 18 • The Network Department has installed laptop computers
19 and wireless communication to transmit orders to and
20 from field vehicles which increases responsiveness to the
21 external customer and provides real-time data from the
22 field to the operation in order to respond to customers
23 via the Centralized Call Center. This system called
24 "Service First" also permits monitoring of the progress
25 of field personnel locations to respond to emergency
26 work, assure their safety, and capture productivity
27 measurements for planning purposes.

- 1 • The Company has available electronic surveying
2 equipment for leak detection. This equipment includes
3 the purchase and installation of approximately 1400
4 permalog devices located across roughly 80% of the
5 service area which permits mobile patrolling of the
6 distribution system by our employees to analyze for
7 potential leakage points before the leakage would surface
8 and develop into a main break.
- 9 • We have employed a web-based tool to review and
10 analyze electric and other utility service billings to
11 analyze power usage at our treatment plant and booster
12 stations, and our operations and office facilities. This
13 allows us to see trends in energy consumption, demand
14 charges, unit costs from the power companies and how
15 demand for water use at each of these locations affects
16 our expense.

17
18 11. Q. WHY DOES TENNESSEE AMERICAN NEED TO FILE A
19 RATE CASE AT THIS TIME?

20 A. The request to increase rates at this time is driven by (i) the
21 increase in capital investment in water utility facilities across
22 the TAWC service area, (ii) increased operating costs
23 associated with the production of water to our customers
24 including fuel, power, water treatment chemical unit prices,
25 and waste disposal expense; and (iii) to recover increased labor
26 costs including labor-related cost of pensions, group insurance

1 and taxes, which when combined in the aggregate represent
2 approximately 23% of the requested increase.

3
4 TAWC is under constant pressure to make capital investments
5 which enhance the quality of service to its customers. This
6 pressure comes from various sources such as federal and state
7 regulations, needed infrastructure replacement, and customer
8 expectations for water quality and service. Mr. Miller will
9 cover the drivers of the need to increase rates in more detail in
10 his testimony.

11
12 12. Q. PLEASE EXPLAIN THE COMPANY'S REDUCTION IN
13 ESTIMATED BILLS?

14 A. The Company has worked diligently to obtain actual meter
15 readings on customer meters. As evidenced by the Service
16 Metric reports filed with the TRA and CAPD's office there has
17 been significant improvement in this area when compared to
18 data filed in the last rate filing regarding estimated bills. Over
19 the past twenty-six months, the company has focused on
20 leveraging the use of electronic meter reading equipment and
21 hiring additional field service representatives to insure that we
22 can achieve the company goal of 98% actual meter readings.
23 During 2007, TAWC employees have obtained actual meter
24 readings on 99.2% of the company's meters (See Exhibit JSW-
25 1). We also have made a concerted effort to reinforce the
26 importance of the meter reading function and customer service

1 by conducting formal training sessions with all our field
2 services personnel during this period of time.

3
4 13. Q. PLEASE EXPLAIN THE COMPANY'S SERVICE ORDER
5 COMPLETION SERVICE METRIC AND THE USE OF
6 SERVICE FIRST TECHNOLOGY?

7 A. The Company has also worked diligently to improve customer
8 service and has invested in technology to improve the
9 productivity and real-time tracking of customer service order
10 execution. American Water began to utilize the Service First
11 mobile laptop computers in its service vehicles in the fourth
12 quarter of 2004 and this technology is currently in place at
13 TAWC. Service First allows all service requests to be
14 displayed electronically in the service vehicle for the day's
15 work for each field service representative (FSR). As each
16 service request is completed, the information is then entered in
17 the laptop and updates the customer's on-line service record
18 immediately on completion of the field service order. This
19 process also provides the ability to determine the location of
20 each FSR along their route, and in the event an emergency
21 order needs to be issued, it is dispatched electronically to the
22 FSR that is located nearest to the service location.

23
24 TAWC has been able to determine through the use of Service
25 First that on average each field service representative is
26 routinely completing 5-6 orders per hour, and up to 50 service
27 requests per day per FSR. Service requests are scheduled

1 based upon requested appointments for work by the customer.
2 For the year 2005, FSR's at TAWC worked and completed an
3 average of 5097 service requests per month, and 99.55% of
4 those service requests were completed on time, as scheduled.
5 In 2006, the number of service requests increased to an
6 average of 7,061 service requests per month, and on average
7 99.77% of those requests were completed on time, as
8 scheduled. In 2007, the number of service requests further
9 increased to an average of 7,417 service requests per month,
10 and on average 99.64% of those requests were completed on
11 time, as scheduled.

12
13 Each FSR is also issued a cellular phone and is able to call
14 ahead to the customer to make sure that if the customer desires
15 to be at their premise, the customer can be contacted when the
16 FSR is near their location. As orders are completed, the
17 Service First technology also allows for FSR's to have orders
18 dropped to them if they are progressing quicker than expected,
19 and likewise, orders can be moved to other FSR's if an FSR is
20 delayed due to additional work at a location that might
21 jeopardize the appointment. In short, Service First has
22 contributed to TAWC's significant gains in employee efficiency
23 and customer service. See Exhibit JSW-1 attached which
24 provides the statistical data regarding customer service orders
25 and appointments met.

CAPITAL INVESTMENT

14. Q. ARE THERE PROJECTS CONDUCTED BY MUNICIPALITIES, HIGHWAY DEPARTMENTS, CITIES OR OTHER ENTITIES WHICH REQUIRE FUNDING FOR REPLACEMENT OR RELOCATION OF EXISTING INFRASTRUCTURE?

A. Yes. There are projects involving storm water and sewer enhancement/replacement, street rehabilitation including widening, sidewalks, curbs and gutters, and paving which require main and other infrastructure replacements by the Company. Several are federally funded highway projects conducted by the Tennessee Department of Transportation (TDOT), which require the Company to relocate or move existing infrastructure within the public right of way when the Company's facilities conflict with TDOT projects.

In the attrition year from September 2008 through August 2009, some TDOT projects will be reimbursable due to changes in Tennessee utility relocation laws, however many projects will not be reimbursable as they do not meet the criteria set forth by TDOT. If a TDOT project is conducted in conjunction with a participating city or municipality, the joint participant must contribute matching funds to TDOT for those relocations to be covered. If the municipality does not contribute matching funds for utility relocations then company funding becomes necessary.

1 We have been notified that bids have been issued by TDOT
2 regarding projects requiring relocation of water mains and
3 associated facilities along Cummings Highway near Lookout
4 Creek, the Lee Highway Bridge at the CSX Railroad, Ringgold
5 Road near Camp Jordan Parkway, and the FEDEX
6 Distribution Center. These TDOT projects have been designed
7 or are in design and are currently scheduled to be constructed
8 during the attrition year. Most of the areas under construction
9 are currently served by existing facilities, however, due to the
10 extensive nature of the construction many existing water mains
11 require replacement. These particular projects will extend
12 into the attrition year period of September 2008 through
13 August 2009.

14
15 In addition to highway projects some of the cities we serve are
16 undertaking street, sidewalk and sewer improvements which
17 require funding for relocation or renewal of our infrastructure
18 grid. As an example, we are currently spending approximately
19 \$130,500 in 2008 for facility improvements/relocations for the
20 City of Chattanooga in the Shallowford Road area and in the
21 Ashland Terrace area.

22
23 15. Q. WHAT MAJOR INVESTMENT PROJECTS HAVE BEEN
24 INSTALLED SINCE THE LAST RATE CASE?

25 A. The Company has completed construction in 2007 of the
26 following major investment projects:

27 1. Fire protection upgrades.

2. Normal reoccurring construction programs for replacing aged mains, meters, services, and equipment.
3. The construction of pipelines including 5,714 feet of 12-inch D.I. Water Main in Brainerd Road.
4. The replacement of 8-inch PVC main with 4,550 feet of 12-inch D.I. Water Main in Frawley Road in East Ridge to improve fire protection flows and meet customer demands in this area of the system.
5. The installation of 3,550 feet of 16-inch D.I. water main in Tyner Road from Lee Highway to Jenkins Road to provide increased fire flow and to improve service in the northeast quadrant of the distribution system along the fast developing area in proximity of the commercial areas near the Hamilton Place Mall.

During 2007, other capital expenditures included:

1. The Company has completed the replacement of 5,066 periodic water meters and upgraded an additional 9,321 to radio-frequency reads by the end of 2007 in sizes from 5/8" through 2" at a cost of \$1.822 million. Meters in sizes from 3" and greater have been field tested and/or replaced as appropriate.
2. The replacement of computers and peripheral equipment at approximately \$0.114 million.
3. TDOT relocation work of approximately \$0.130 million.
4. \$0.564 million to purchase service vehicles that replaced vehicles that were beyond their useful life.

1 **5. Capitalized Steel Water Tank Rehabilitation and**
2 **Repainting Project at a cost of approximately \$0.841 million**
3 **which provided for painting and structural improvements**
4 **of the 500,000 gallon White Oak Tank in Red Bank and**
5 **completion of rehabilitation of two of the 800,000 gallon**
6 **Aldrich Units at the Citico Plant.**

7 **6. During 2007, the Company spent \$2.529 million to replace**
8 **approximately 27,200 feet of water main up to 12” in**
9 **diameter. This main replacement project focuses on**
10 **strategically replacing cast iron and steel water mains in**
11 **different sections of the service area as the pipelines reach**
12 **the end of their useful life and have contributed to service**
13 **issues for our customers.**

14
15 **In this rate increase, the company has excluded the rate base**
16 **assets associated directly with service to the Walden’s Ridge**
17 **Utility District which TAWC installed in 2004 and 2005, since**
18 **it is served directly by a special water purchase agreement not**
19 **subject to the rate increase requested in this case.**

20 **16. Q. WHAT MAJOR CAPITAL INVESTMENT PROJECTS ARE**
21 **PLANNED FOR YEAR 2008-2009, THROUGH THE END OF**
22 **THE ATTRITION YEAR?**

23 **A. In addition to normal reoccurring expenses for Water Main**
24 **and Fire Hydrant Replacement, New Services, Meters, Tools &**
25 **Equipment, Vehicles and other miscellaneous items totaling**
26 **\$6.592 million, the Company will:**

- 1 **1. Replace the Lookout Supply Mains costing \$0.910 million**
- 2 **2. Continue the steel water tank rehabilitation and repainting**
- 3 **program at a cost of \$1.085 million**
- 4 **3. Complete projected TDOT relocation projects costing**
- 5 **\$3.000 million**
- 6 **4. Install approximately 6,000 feet of 20-inch main to replace**
- 7 **an existing 8-inch main along Ringgold Road at I-75 to**
- 8 **provide hydraulic improvements in the East Ridge pressure**
- 9 **zone at an estimated cost of \$1.300 million**
- 10 **5. Complete construction of the Phase I improvements to the**
- 11 **Citico Water Treatment Improvements at an estimated cost**
- 12 **of \$1.800 million for flocculation equipment and**
- 13 **rehabilitation of the Aldrich Units #3 and #4.**

14

15 **Additionally, the Company will expend nearly \$7.0 million**

16 **dollars in 2008/2009 for the Phase II improvements to the**

17 **Citico Treatment Plant which will replace sedimentation**

18 **basins, flocculation equipment, chlorination improvements,**

19 **electrical improvements including provision for a stand-by**

20 **generator and to improve the hydraulic capacity of the Citico**

21 **plant. Once completed the treatment plant upgrade will**

22 **enhance the reliability and improve water quality performance**

23 **within the water treatment process to meet current regulations**

24 **and address future water quality regulations of the Tennessee**

25 **Department of Environment and Conservation, and the U.S.**

26 **Environmental Protection Agency.**

27

OPERATING EXPENSES

17. Q. PLEASE EXPLAIN THE TENNESSEE AMERICAN ORGANIZATION CHART IN THIS CASE?

A. TAWC as of November 30, 2007 was authorized 111 employees to perform the daily operations at TAWC. This level of employees is the same as the number of employees approved in the previous rate case by the TRA. In addition, TAWC has identified three additional employees that have or soon will be added to the workforce in 2008 to complete the 114 employees included in the Company's filing. These employees are directly involved in the provision of water service to the customers of TAWC. In the 2004 rate case, the Company agreed to and has provided on a quarterly basis it's employee headcount to the TRA and to the CAPD. This quarterly update includes the status for each job classification at TAWC (Exhibit JSW-2).

The TAWC departmental workforce at the end of the historical test-year was as follows:

Production: Nineteen (19) personnel engaged in the "around the clock" supervision/operation/maintenance of the water pumping station, filtration and treatment plant, booster stations, and water storage tank facilities.

Water Quality: Six (6) employees are engaged in conducting water quality wet chemistry and bacteriological sampling,

1 analysis and reporting. The WQ group also addresses the
2 requirements of existing and future water quality regulations,
3 and execution of the Company's cross connection and
4 backflow prevention program.

5
6 **Distribution:** Forty-two (42) employees are engaged in
7 supervision/operations/maintenance of water distribution
8 facilities, including water mains, service lines, and fire
9 hydrants. The Distribution Department also is responsible for
10 main flushing, valve inspection and repair, leak detection, and
11 material and supplies inventory and ordering.

12
13 **Outside Commercial:** Thirty-one (31) employees are engaged
14 in the supervision and operations for meter reading, customer
15 service requests, meter installation, meter replacement, and
16 meter testing and repair.

17
18 **Engineering:** Six (6) employees that supervise and provide
19 support for capital improvement projects, permits,
20 applications for new service installations, bidding and
21 scheduling pipeline and other construction work with outside
22 contractors and developers.

23
24 **Administrative:** Seven (7) employees that provide general
25 management, administrative support, human resources,
26 budgeting, finance and accounting, communications, and loss
27 control.

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18. Q. PLEASE EXPLAIN THE INCREASE IN LABOR COST FOR TENNESSEE AMERICAN IN THIS CASE?

A. TAWC regularly reviews the appropriate level of employees necessary to provide adequate service levels and to meet the needs of the business and its customers. The Company has identified three additional positions in its 2008 Business Plan that are required for TAWC which have been incorporated into this case.

- 1. The first position of Operations Specialist was filled in February 2008. This position was hired to address support for the local operations in the areas of budgeting, finance and accounting. This position will provide operational and financial statistical reporting and analysis, and will serve as a liaison with each local department to coordinate Sarbanes Oxley compliance, monthly operational reports, review and analysis of financial statements, service metric reporting, compilation of reports to TAWC management personnel, preparation of electronic spreadsheets for comparative and detailed analytics of operating and capital expenditure programs, and to assist in the annual budget preparation.**
- 2. The Company is currently interviewing to fill the new position of Manager-Engineering Services, and has included that position in the labor cost for this rate case. The Manager-Engineering Services will be responsible for general supervision of the Project Manager and the entire**

1 **Engineering staff at TAWC, and will direct the Capital**
2 **Expenditure Program for TAWC. Duties will include**
3 **compliance with State and Federal standards for**
4 **construction, review, and management of the specifications**
5 **for construction activities, inspection services, and manage**
6 **the short-term and long-term capital expenditure planning.**
7 **The Manager of Engineering will head the Capital**
8 **Investment Management Committee (“CIMC”) which will**
9 **provide governance over the capital spending plan to assure**
10 **compliance with American Water and TAWC policies. The**
11 **CIMC will identify, develop, recommend and execute on**
12 **those projects to meet the needs of our customers. This**
13 **position will report directly to me as President of TAWC.**

14 **3. The third new position is the Non-Revenue Water**
15 **Supervisor who will now be fully dedicated to the Non-**
16 **Revenue Water function at TAWC. The Company has**
17 **continued to work diligently on reducing unaccounted for**
18 **water and it has been determined that TAWC needs a full**
19 **time employee dedicated to this function. The NRW**
20 **Manager will also supervise the Cross-Connection Control**
21 **personnel at the Company.**

22 **These three personnel additions are also included on**
23 **Exhibit JSW-2.**

24
25
26 **19. Q. PLEASE EXPLAIN THE INCREASE IN FUEL AND**
27 **POWER COST FOR THE COMPANY IN THIS CASE?**

1 A. TAWC is provided electric service in the Chattanooga area by
2 the Electric Power Board of Chattanooga ("EPB") which
3 obtains its service from the Tennessee Valley Authority
4 ("TVA"). The Company is provided service from the EPB at
5 its Citico Water Treatment and Pumping Station and to 28
6 booster stations which boost the pressure to serve customers at
7 different elevations across the service area. Many of these
8 facilities operate continuously in order to meet customer
9 demands. TAW has been advised by EPB's Account
10 Representative, Lan Hilliard, that the EPB will increase its
11 rates by 6% effective April 1, 2008 due to the pass-through of
12 the TVA's fuel adjustment costs. This increase is driven by
13 the TVA's escalating costs to generate power. The TVA has
14 indicated that its costs are increasing because it cannot fully
15 utilize the hydroelectric generating plants it owns and
16 operates, the TVA is experiencing increased fuel costs for its
17 nuclear and coal-fired power plants, and is having to purchase
18 power that it has had to obtain from other electric utilities.

19
20 Additionally, the EPB has also announced it will raise its
21 energy and demand rates for service by 7.5% effective April 1,
22 2008 for TAWC as well as all of its other retail customers.
23 These increases announced for April 2008, as well as, several
24 TVA pass-through fuel adjustment rate increases that have
25 been implemented since the Company's previous rate case are
26 embedded in the Fuel & Power costs of the Company being
27 requested in this case. Since the previous rate case filing by

1 TAWC, the EPB of Chattanooga has experienced three Fuel
2 Cost Adjustment (FCA) rate increases from the TVA which
3 became effective in April 2007, July 2007, and September 2007,
4 with a slight decrease effective January 1, 2008. The Company
5 has had to absorb these increased power costs since the last
6 rate case.

7
8 TAWC is requesting in this rate increase the recovery of the
9 electric utility expense at the rates that are known to be placed
10 into effect by EPB of Chattanooga and TVA effective April 1,
11 2008 plus an inflationary factor for a TVA fuel adjustment cost
12 increase of an additional 6% which the TVA has announced
13 will be effective on July 1, 2008. Witness Sheila Miller
14 describes in her testimony the adjustments necessary to reflect
15 the Company's fuel & power costs for the attrition year in this
16 case.

17
18 The company has excluded fuel and power expense related to
19 providing service to Walden's Ridge Utility District from it's
20 request in this rate case, because the Walden's Ridge Utility
21 District costs are not subject to the rate increase requested in
22 this case.

23
24 20. Q. PLEASE EXPLAIN THE INCREASE IN CHEMICAL
25 EXPENSE?

26 A. The Company has based its rate filing for chemicals on the
27 chemical usage per million gallons experienced in the historical

1 test-year in this case, and adjusted those chemical units to
2 reflect the system delivery for the attrition year. The company
3 then applied the 2008 chemical prices obtained through
4 competitive bids to determine the chemical expense for the
5 attrition year. Ms. Miller will discuss the details of these
6 calculations in her direct testimony.

7
8 While the total chemical expense requested in this case has
9 declined from the previous case due to a decline in normalized
10 sales and system delivery for the attrition year, many of the
11 chemicals used in the water treatment process are petroleum
12 based, therefore, the price of those chemicals have increased
13 significantly since the Company's previous rate case. The
14 current cost of petroleum based products, as well as the cost of
15 delivering those products, has risen sharply due to the current
16 price of oil. The cost of transportation that suppliers are
17 encountering due to the costs of diesel fuel and other expenses
18 are beyond the control of the Company, and chemical suppliers
19 must price their product accordingly.

20
21 **21. Q. PLEASE EXPLAIN THE INCREASE IN WASTE DISPOSAL**
22 **EXPENSE?**

23 **A. The Company disposes its clear water from filter backwash**
24 **operations, as well as sedimentation basin cleaning and water**
25 **treatment residuals, by discharging them to the City of**
26 **Chattanooga Sewer System. These discharges are based upon**
27 **approved permits. The City of Chattanooga invoices the**

1 Company for the materials discharged to the city sewer system
2 based upon two criteria. First, the quantity of water that is
3 discharged as flow is billed under the rates established by the
4 city of Chattanooga under City Ordinance 12023. Second, the
5 Company incurs a charge for the quantity of Total Suspended
6 Solids (TSS) as an industrial user on the city sewer system.
7 These rates have increased effective October 1, 2007 and will
8 again increase on April 1, 2008. Ms. Miller discusses in her
9 testimony the necessary adjustment to the historical test-year
10 waste disposal expense to reflect this known increase in cost.

11
12
13 22. Q. PLEASE EXPLAIN THE INCREASE IN MAINTENANCE
14 EXPENSE THAT THE COMPANY HAS INCLUDED IN
15 THIS RATE CASE?

16 A. TAWC has treatment plant, booster pumping facilities, and
17 distribution system assets that it maintains throughout the
18 service area to assure that at all times, customers have reliable
19 water service. A review has been made by the Company
20 regarding the motors and pumping units that it has in service
21 at it's pumping stations. As a result of that review, the
22 Company has determined that it needs to increase the expense
23 for programmed preventative maintenance on these pumps
24 and motors if it is to maintain them properly. Motors that have
25 been identified that range in horsepower from 5 horsepower to
26 700 horsepower, and pumps identified range in capacity from
27 200 gallons per minute to approximately 15,275 gallons per

1 minute. As a result of this review, TAWC will expend an
2 additional \$50,000 in 2008/2009 in order to perform this
3 additional programmed preventative maintenance and has
4 included that additional expense in the attrition year.
5

6 23. Q. PLEASE EXPLAIN HOW THIS RATE INCREASE WILL
7 IMPACT THE AVERAGE RESIDENTIAL CUSTOMER OF
8 TENNESSEE AMERICAN?

9 A. The average TAWC residential customer under current tariffs
10 pays \$19.39 per month for 5,000 gallons of water service.
11 According to the survey of the Tennessee water providers
12 performed by the firm of Allen and Hoshall in June 2007, the
13 Company ranks in the 39th percentile, which means TAWC's
14 residential customers currently pay less for water service than
15 61% of 265 Tennessee water utilities surveyed.
16

17 If the full increase were approved by the TRA in this case as
18 filed, the average Chattanooga residential customer of TAWC
19 would pay \$23.63 for 5,000 gallons of water per month which
20 would equate to the 54th percentile of the survey. In other
21 words, if the entire increase in rates requested in this case were
22 approved, the Company's residential customers would still pay
23 less for water service than 46% of the 265 water utilities
24 surveyed in the Allen and Hoshall Study from June 2007.
25

26 TAWC's customers are receiving water at a great value, and
27 receive excellent service from TAWC. A copy of the Allen and

1 Hoshall survey related to residential rates for 5000 gallons per
2 month is provided as Exhibit JSW-3.

3

4

5 24. Q. DOES THIS CONCLUDE YOUR TESTIMONY?

6 A. Yes, it does.

7

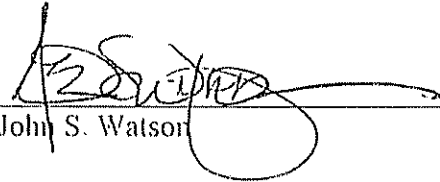
TENNESSEE REGULATORY AUTHORITY

STATE OF TENNESSEE

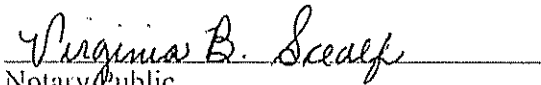
COUNTY OF HAMILTON

BEFORE ME, the undersigned authority, duly commissioned and qualified in and for the State and County aforesaid, personally came and appeared John S. Watson, being by me first duly sworn deposed and said that:

He is appearing as a witness on behalf of Tennessee-American Water Company before the Tennessee Regulatory Authority, and if present before the Authority and duly sworn, his testimony would set forth in the annexed transcript consisting of 24 pages.


John S. Watson

Sworn to and subscribed before me
this 13th day of March 2008.


Notary Public

My commission expires July 30, 2008

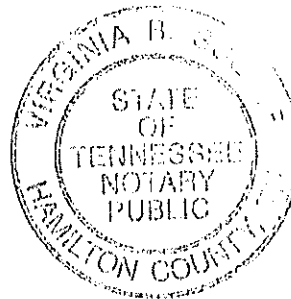


Exhibit JSW-1
Page 1 of 1

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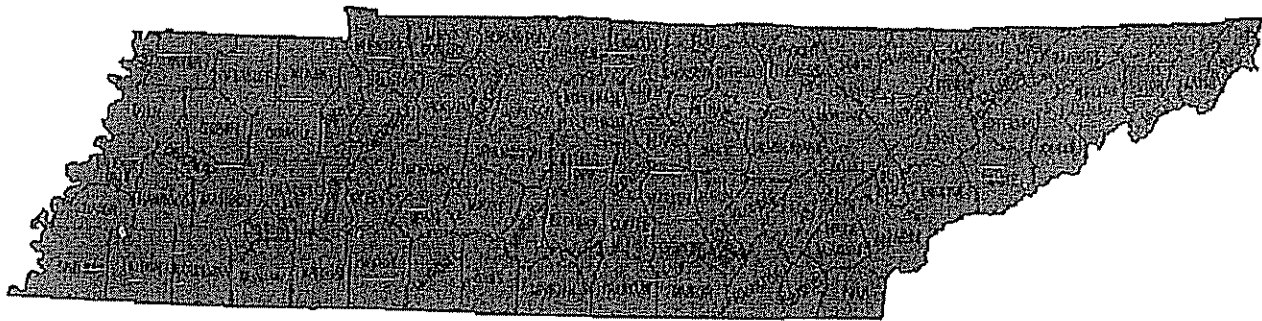
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						Auth	Business Unit
			Truck Driver Utility Worker			1	260206
			Truck Driver Utility Worker			1	260206
			Truck Driver Utility Worker			1	260206
			Truck Driver Utility Worker			1	260206
			Truck Driver Utility Worker			1	260206
			Truck Driver Utility Worker			1	260206
			Truck Driver Utility Worker			1	260206
						22	
	Utility Worker						
			Utility Worker			1	260206
			Utility Worker			1	260206
						2	
				Subtotal Distribution		42	
	Network Operations - Outside Commercial Management						
			Network Operations Supervisor			1	260203
			Network Operations Supervisor			1	260203
						2	
	Meter Reader						
			Meter Reader			1	260203
			Meter Reader			1	260203
						2	
	Field Representative						
			Field Representative			1	260203
			Field Representative			1	260203
			Field Representative			1	260203
			Field Representative			1	260203
			Field Representative			1	260203
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			Field Representative			1	260203
			Field Representative			1	260203
			Field Representative			19	
	On/Off						
			On/Off			1	260203
			On/Off			1	260203
						2	
	Meter Repair						
			Meter Repair			1	260203
			Meter Repair			1	260203
						2	
	Field Services						
			Field Services			1	260203
			Field Services			1	260203
						2	
	Clerical						
			Field Service Records Clerk			1	260203
			Field Service Records Clerk			1	260203
						2	

						Auth	Business Unit
						</	

					Auth	Business Unit
	Management					
		WQ Spec/Cross Connection			1	260201
		WQ Spec/Cross Connection			1	260201
		Lab Analyst			1	260201
		Water Quality Supervisor			1	260201
		Lab Analyst			1	260201
					5	
	Lab Worker					
		Lab Worker			1	260201
					1	
			Subtotal Water Quality		6	
	Total				114	
	Non-Union Employees				28	
	Union Employees				86	

TENNESSEE
WATER AND SEWER
RATE SURVEY



JUNE 2007

Tennessee Water and Sewer Rate Survey 2007 Document Overview

In April of 2007, Allen & Hoshall mailed form letters to 452 utility organizations throughout the State of Arkansas. The purpose of the mailing was to survey the respective utility entities, soliciting information on water and sewer billing rates. Allen & Hoshall received 196 survey replies. This represents a response rate of approximately 43%. If no response was received from a Utility, prior year/ previous data were referenced.

The submitted data was compiled into a bound document entitled "Tennessee Water and Sewer Rate Survey 2007." The Survey is divided into the following twelve sections:

- Section 1 – Tennessee Water Rates – Rank of 5,000 Gallon Water Bill – Sorted Numerically
Using the compiled Utility rate schedules, a list was generated of the water bills for a monthly residential volume of 5,000 gallons. This list was sorted from the lowest calculated monthly bill to the highest calculated monthly bill.
- Section 2 – Tennessee Water Rates – Rank of 5,000 Gallon Water Bill – Sorted Alphabetically
This list reports the same information as that in Section 1, but the entries are sorted alphabetically by Utility.
- Section 3 – Tennessee Water Rates – Rank of 15,000 Gallon Water Bill – Sorted Numerically
Using the compiled Utility rate schedules, a list was generated of the water bills for a monthly commercial volume of 15,000 gallons. This list was sorted from the lowest calculated monthly bill to the highest calculated monthly bill.
- Section 4 – Tennessee Water Rates – Rank of 15,000 Gallon Water Bill – Sorted Alphabetically
This list reports the same information as that in Section 3, but the entries are sorted alphabetically by Utility.
- Section 5 – Tennessee Water Rates – Rank of 25,000 Gallon Water Bill – Sorted Numerically
Using the compiled Utility rate schedules, a list was generated of the water bills for a monthly industrial volume of 25,000 gallons. This list was sorted from the lowest calculated monthly bill to the highest calculated monthly bill.
- Section 6 – Tennessee Water Rates – Rank of 25,000 Gallon Water Bill – Sorted Alphabetically
This list reports the same information as that in Section 5, but the entries are sorted alphabetically by Utility.
- Section 7 – Tennessee Sewer Rates – Rank of 5,000 Gallon Sewer Bill – Sorted Numerically
Using the compiled Utility rate schedules, a list was generated of the sewer bills for a monthly residential volume of 5,000 gallons. This list was sorted from the lowest calculated monthly bill to the highest calculated monthly bill.

Tennessee Water and Sewer Rate Survey 2007
Document Overview

- Section 8 – Tennessee Sewer Rates – Rank of 5,000 Gallon Sewer Bill – Sorted Alphabetically
This list reports the same information as that in Section 7, but the entries are sorted alphabetically by Utility.
- Section 9 – Tennessee Sewer Rates – Rank of 15,000 Gallon Sewer Bill – Sorted Numerically
Using the compiled Utility rate schedules, a list was generated of the sewer bills for a monthly commercial volume of 15,000 gallons. This list was sorted from the lowest calculated monthly bill to the highest calculated monthly bill.
- Section 10 – Tennessee Sewer Rates – Rank of 15,000 Gallon Sewer Bill – Sorted Alphabetically
This list reports the same information as that in Section 9, but the entries are sorted alphabetically by Utility.
- Section 11 – Tennessee Sewer Rates – Rank of 25,000 Gallon Sewer Bill – Sorted Numerically
Using the compiled Utility rate schedules, a list was generated of the sewer bills for a monthly industrial volume of 25,000 gallons. This list was sorted from the lowest calculated monthly bill to the highest calculated monthly bill.
- Section 12 – Tennessee Sewer Rates – Rank of 25,000 Gallon Sewer Bill – Sorted Alphabetically
This list reports the same information as that in Section 11, but the entries are sorted alphabetically by Utility.

The detailed water and sewer rate schedules are not included in this document, but will be free to download from the Allen & Hoshall website after July 1, 2007. The schedule information will also be available on compact disc (CD) and in printed copy. To obtain the schedule information on compact disc (CD) or paper, please direct requests to:

Angie Campbell
Allen & Hoshall, Inc.
1661 International Drive, Suite 100
Memphis, TN 38120
Phone: 901-820-0820
Fax: 901-683-1001
Email: acampbell@allenhoshall.com

Allen & Hoshall wishes to thank all the participants in the 2007 Survey and hopes this document is useful and beneficial to your organization's planning and informational referencing

SECTION 1

2007 TENNESSEE WATER RATES

RANK OF 5,000 GALLON WATER BILL, SORTED NUMERICALLY

TENNESSEE WATER RATES**RANK OF 5,000 GALLON WATER BILL - SORTED NUMERICALLY****May 31, 2007**

RANK	UTILITY COMPANY	5,000 GAL BILL FOR
1	Duck River Utility Commission	\$ 5.25
2	Germantown, City	\$ 6.75
3	Bartlett, City of	\$ 7.72
4	Erwin Utilities	\$ 8.77
5	Jefferson City, City of	\$ 9.72
6	Hixson Utility District (Hamilton Co.)	\$ 9.78
7	Morristown Utilities	\$ 10.25
8	Humboldt Utilities	\$ 11.00
9	Munford, City of	\$ 11.25
10	Brownsville Utility Department	\$ 11.34
11	Union City, City of	\$ 11.40
12	Marion Natural Gas	\$ 11.48
13	South Pittsburg, City of	\$ 11.48
14	Kingsport, City of	\$ 11.49
15	Moscow Water Department	\$ 11.50
16	Selmer Public Works Department	\$ 11.70
17	Columbia Power & Water System	\$ 12.00
18	Millington, City of	\$ 12.00
19	Sweetwater Utilities Board	\$ 12.12
20	Covington, City of	\$ 12.31
21	Bolivar, City of	\$ 12.34
22	Dresden, City of	\$ 12.40
23	Collierville, Town of	\$ 12.45
24	Smyrna Utilities	\$ 12.46
25	Cookeville, City of	\$ 12.66
26	Ripley Gas, Water & Wastewater Dept.	\$ 13.00
27	Alcoa, City of	\$ 13.20
28	Gallaway, City of	\$ 13.20
29	Mount Pleasant, City of	\$ 13.25
30	Algood, City of	\$ 13.43
31	Milan Dept. of Public Utilities	\$ 13.52
32	Paris Board of Public Utilities	\$ 13.58
33	Maryville, City of	\$ 13.80
34	Saltillo Utility District of Hardin Co	\$ 13.80
35	Atoka, Town of	\$ 14.00
36	Savannah, City of	\$ 14.00
37	Gallatin Public Utilities	\$ 14.03
38	Old Hickory Utility District	\$ 14.15
39	Sparta Electric & Water System	\$ 14.15
40	Lexington Water Systems	\$ 14.21
41	Spring Hill, City of	\$ 14.34
42	First Utility District of Knox County	\$ 14.38
43	Gatlinburg Utility Department	\$ 14.65
44	Harpeth Valley Utilities District	\$ 14.65
45	Middleton, City of	\$ 14.70
46	Johnson City Utility Department	\$ 14.94
47	Jellico Water System	\$ 15.00
48	Bristol, City of	\$ 15.06
49	Decherd Water System	\$ 15.10

TENNESSEE WATER RATES**RANK OF 5,000 GALLON WATER BILL - SORTED NUMERICALLY****May 31, 2007**

RANK	UTILITY COMPANY	5,000 GAL BILL FOR
50	Sharon, City of	\$ 15.11
51	Henderson Utility Department	\$ 15.13
52	Martin, City of	\$ 15.18
53	Trenton Light & Water	\$ 15.35
54	Hampton Utility District	\$ 15.45
55	Madison Suburban Utility District	\$ 15.70
56	Athens Utilities Board	\$ 15.75
57	Hohenwald Water System	\$ 15.76
58	Byrdstown, Town of	\$ 15.78
59	Franklin, City of	\$ 16.10
60	Camden Water & Sewer	\$ 16.12
61	Clinton Utilities Board	\$ 16.22
62	Jackson Energy Authority	\$ 16.26
63	McKenzie, City of	\$ 16.53
64	Linden, Town of	\$ 16.56
65	Knoxville Utilities Board	\$ 16.57
66	Elizabethton, City of	\$ 16.80
67	Bluff City Waterworks	\$ 16.81
68	Springfield Water & Wastewater Dept	\$ 16.86
69	LaVergne, City of	\$ 16.90
70	Dandridge Water Department	\$ 16.94
71	Grand Junction Water	\$ 16.94
72	McMinnville, City of	\$ 17.00
73	Centerville, Town of	\$ 17.05
74	Clifton, City of	\$ 17.10
75	Oak Ridge, City of	\$ 17.31
76	Huntland Waterworks	\$ 17.36
77	Obion, Town of	\$ 17.38
78	Scotts Hill Water Department	\$ 17.43
79	Murfreesboro Water & Sewer	\$ 17.45
80	Estill Springs, Town of	\$ 17.50
81	Loudon Utilities	\$ 17.50
82	Pigeon Forge Utility	\$ 17.50
83	Smithville, City of	\$ 17.50
84	Clarksville Gas & Water Dept	\$ 17.70
85	White Pine, Town of	\$ 17.87
86	Etowah Utilities	\$ 18.15
87	Halls, Town of	\$ 18.18
88	Lewisburg, City of	\$ 18.20
89	Englewood Water & Gas	\$ 18.25
90	Leoma Utility District	\$ 18.25
91	Oneida Water & Wastewater	\$ 18.40
92	Crossville, City of	\$ 18.45
93	Tulahoma Utilities Board	\$ 18.45
94	Lafayette, City of	\$ 18.48
95	Gibson Water System	\$ 18.50
96	West Knox Utility District	\$ 18.57
97	Madisonville, City of	\$ 18.67
98	Signal Mountain, Town of	\$ 18.70

May 31, 2007

TENNESSEE WATER RATES**RANK OF 5,000 GALLON WATER BILL - SORTED NUMERICALLY**

RANK	UTILITY COMPANY	5,000 GAL BILL FOR
99	Red Boiling Springs Water	\$ 18.75
100	Lobelville, City of	\$ 18.91
101	Huntingdon, Town of	\$ 18.99
102	Sardis Water System	\$ 19.00
103	Graysville, City of	\$ 19.09
104	Elbridge Water Association	\$ 19.50
105	First Utility District of Tipton County	\$ 19.50
106	Russellville-Whitesburg Utility District	\$ 19.75
107	Kenton, City of	\$ 19.78
108	Oliver Springs Water Department	\$ 19.80
109	McLemoresville Water System	\$ 20.00
110	North Knox Utility District	\$ 20.20
111	Montea, Town of	\$ 20.65
112	Dowelltown Liberty Water	\$ 20.88
113	Winchester Utilities	\$ 20.93
114	Shelbyville Power Water & Sewerage	\$ 21.50
115	Copperhill, City of	\$ 21.55
116	Northwest Dyersburg Utility District	\$ 21.65
117	Tellico Area Services System	\$ 21.66
118	Newbern, City of	\$ 21.85
119	Bloomingtondale Utility District	\$ 22.00
120	Michie, City of	\$ 22.00
121	First Utility District of Hardin County	\$ 22.05
122	Greenbrier, City of	\$ 22.05
123	Bangham Utility (Pulnam & Overton Cos.)	\$ 22.06
124	Jonesborough, Town of	\$ 22.10
125	Bristol Bluff City Suburban Utility Dist.	\$ 22.25
126	Pulaski, City of	\$ 22.36
127	Lafayette Utilities	\$ 22.45
128	Reelfoot Utility District	\$ 22.50
129	Luttrell-Blaine-Corryton Utility District	\$ 22.60
130	Hartsville/Trousdale Water	\$ 22.68
131	Portland, City of	\$ 22.69
132	Sevierville, City of	\$ 22.71
133	Adamsville, Town of	\$ 22.85
134	Collinwood, City of	\$ 22.93
135	Maynardville, City of	\$ 23.00
136	Gleason, City of	\$ 23.10
137	Monterey, Town of	\$ 23.25
138	Tiptonville, Town of	\$ 23.26
139	Alpha-Talbott Utility District	\$ 23.35
140	Decatur, Town of	\$ 23.36
141	Lakewood, City of	\$ 23.43
142	Lauderdale Co. Water System	\$ 23.50
143	Mountain City, Town of	\$ 23.50
144	Aqua Utilities Company, Inc	\$ 23.56
145	Rutledge, Town of	\$ 23.71
146	Eastside Utility District (Hamilton Co.)	\$ 23.77
147	Bell Buckle, Town of	\$ 24.37

May 31, 2007

TENNESSEE WATER RATES**RANK OF 5,000 GALLON WATER BILL - SORTED NUMERICALLY**

RANK	UTILITY COMPANY	5,000 GAL BILL FOR
148	Riceville Utility District	\$ 24.42
149	Bangham Utility (Jackson)	\$ 24.56
150	Piperton Water System	\$ 24.90
151	Tuckaleechee Utility District	\$ 25.00
152	Union Fork Bakewell Utility District	\$ 25.02
153	Pikeville, City of	\$ 25.19
154	Celina, City of	\$ 25.21
155	South Elizabethton Utility	\$ 25.25
156	Big Sandy Waterworks	\$ 25.40
157	Hiwassee Water Cooperative	\$ 25.50
158	Tennessee Ridge, City of	\$ 25.64
159	Ardmore Water System	\$ 25.70
160	Old Gainesboro Road Utility District	\$ 26.10
161	Watertown, City of	\$ 26.10
162	Ocoee Utility District	\$ 26.45
163	Hollow Rock Water System	\$ 26.50
164	Hollow Rock Water System	\$ 26.50
165	Dyersburg Suburban Cons. Utility	\$ 26.70
166	Hallsdale-Powell Utility District	\$ 26.71
167	Center Grove-Winchester Springs UD	\$ 26.74
168	South Fulton, City of	\$ 26.80
169	Kingston, City of	\$ 26.84
170	Dunlap, City of	\$ 26.96
171	County-Wide Utility Dist. Of Crockett Co.	\$ 27.00
172	Cumberland Gap, Town of	\$ 27.00
173	Rogersville Water Department	\$ 27.01
174	E. Montgomery Utility	\$ 27.50
175	Nolensville/College Grove UD	\$ 27.58
176	Baxter Waterworks	\$ 27.75
177	Savannah Valley Utility District	\$ 27.75
178	Friendsville City Water Works	\$ 27.90
179	Henning, Town of	\$ 28.00
180	Knox Chapman Utility District	\$ 28.08
181	Chapel Hill, Town of	\$ 28.30
182	White House Utility District	\$ 28.37
183	Claiborne Utilities District	\$ 28.40
184	Shady Grove Utility District	\$ 28.40
185	South Blount Utility District	\$ 28.49
186	Surgoinsville Utility District	\$ 28.50
187	South Paris Water Co-Operative	\$ 28.72
188	Waynesboro, City of	\$ 28.78
189	Cornersville, Town of	\$ 28.91
190	Tri-Cities Sullivan Utilities District	\$ 29.00
191	Walden's Ridge Utility District	\$ 29.31
192	Metro Water Services	\$ 29.57
193	Gibson Co. Municipal Water District	\$ 29.98
194	Adams-Cedar Hill Water System	\$ 30.00
195	DeKalb Utility District #1	\$ 30.00
196	Martel Utility District	\$ 30.00

TENNESSEE WATER RATES**RANK OF 5,000 GALLON WATER BILL - SORTED NUMERICALLY**

RANK	UTILITY COMPANY	5,000 GAL BILL FOR
197	Witt Utility District	\$ 30.20
198	Glen Hills Utility District	\$ 30.61
199	Crab Orchard Utility District	\$ 30.80
200	Maury County Board of Public Utilities	\$ 30.83
201	Warren County Utility District	\$ 30.83
202	Arthur-Shewanee Utility District	\$ 30.95
203	Copper Basin Board of Public Utility	\$ 31.39
204	First Utility District of Hawkins County	\$ 31.41
205	Ashland City Water & Sewer	\$ 31.70
206	Tarpley Shop Utility District	\$ 31.84
207	Cons. Utility District of Rutherford Co.	\$ 31.95
208	Price's Switch Community, Inc.	\$ 31.95
209	Brownlow Utility District	\$ 32.00
210	North Overton Utility District	\$ 32.00
211	Quebeck-Walling Utility District	\$ 32.00
212	West Point Utility District	\$ 32.00
213	West Warren-Viola Utility District	\$ 32.15
214	Huntsville Utility District	\$ 32.25
215	O'Connor Utility District	\$ 32.42
216	North Stewart Utility District	\$ 32.75
217	Hillsville Utility District	\$ 33.00
218	Newport Resort Water System	\$ 33.00
219	South Side Utility District #1	\$ 33.00
220	Vanleer, Town of	\$ 33.00
221	Cedar Grove Utility District	\$ 33.50
222	Lynnville, Town of	\$ 33.58
223	North Utility District (Rhea County)	\$ 33.75
224	Pleasant View Utility District	\$ 34.04
225	Lincoln Co. Board of Public Utilities	\$ 34.09
226	Grandview Utility District	\$ 34.14
227	Woodlawn Utility District	\$ 34.87
228	HB & TS Utility District (Williamson Co.)	\$ 34.88
229	Holston Utility District	\$ 34.90
230	Carderview Utility District	\$ 35.01
231	Milcrofton Utility District	\$ 35.40
232	South Bristol-Weaver Pike Utility Dist.	\$ 35.47
233	South Giles Utility District	\$ 35.50
234	New Market Utility District	\$ 35.64
235	Petersburg Water System	\$ 36.58
236	Clearfork Utility District	\$ 36.66
237	La Grange, Town of	\$ 36.85
238	North Anderson Co. Utility District	\$ 37.40
239	DeWhite Utility District (White/DeKalb Cos.)	\$ 37.55
240	Jackson County Utility District	\$ 37.87
241	Watts Bar Utility District	\$ 38.00
242	Northwest Henry Utility District	\$ 38.12
243	West Wilson Utility District	\$ 38.41
244	Cumberland UD (Roane & Morgan Cos.)	\$ 38.52
245	Fall River Utility District	\$ 38.75

TENNESSEE WATER RATES**May 31, 2007****RANK OF 5,000 GALLON WATER BILL - SORTED NUMERICALLY**

RANK	UTILITY COMPANY	5,000 GAL BILL FOR
246	Cumberland Heights Utility District	\$ 39.10
247	Mid Hawkins County Utility District	\$ 39.92
248	North Utility District (Decatur & Benton Cos.)	\$ 42.00
249	Persia Utility District	\$ 42.51
250	Sunbright Utility District	\$ 42.70
251	Marshall County Public Utilities	\$ 42.93
252	South Side Utility District #2	\$ 43.75
253	South Side Utility District #3	\$ 44.50
254	New Canton Utility District	\$ 44.60
255	Mt. Carmel Public Utilities	\$ 46.00
256	River Road Utility District	\$ 46.40
257	West Cumberland Utility District	\$ 47.05
258	South Cumberland Utility District	\$ 47.26
259	Striggersville Utility District	\$ 47.26
260	DeKalb Utility District #4	\$ 50.00
261	Harbor Utility District	\$ 50.50
262	Lakeview Utility District (Hawkins Co.)	\$ 53.00
263	Griffith Creek Utility District	\$ 56.04
264	Cold Springs Utility District	\$ 57.00
265	Webb Creek Utility District	\$ 60.24

TENNESSEE-AMERICAN WATER COMPANY
CASE NO. _____
DIRECT TESTIMONY
MICHAEL A. MILLER

1. Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Michael A. Miller, 1600 Pennsylvania Avenue, Charleston,
West Virginia.

2. Q. WHAT POSITION DO YOU HOLD WITH TENNESSEE AMERICAN
WATER?

A. I am the Treasurer/Comptroller of the Company. In this position I am
responsible for the financial statements, accounting, finance, budgets and
regulatory filings for the Company.

3. Q. PLEASE DESCRIBE YOUR PROFESSIONAL EDUCATION AND
EXPERIENCE.

A. Please see my resume attached to this testimony as Appendix A.

4. Q. WHAT OTHER POSITIONS DO YOU HOLD WITH AMERICAN
WATER?

A. I am the Director of Rates for the Southeast Region of American Water
Works Service Company, Inc. In that position, I am responsible for
overseeing the rates and revenue functions for the operating companies
located in West Virginia, Kentucky, Pennsylvania, Maryland, Virginia, as
well as, Tennessee American.

1 5. Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

2 A. I will address (i) the factors driving the need to seek increased rates, (ii) the
3 Capital Structure and overall cost of capital that includes the return on
4 equity which will be addressed by Dr. Vilbert, (iii) cost of service
5 allocations, (iv) management fees, (v) employee benefit costs, (vi) rate case
6 expense, and (vii) depreciation rates.

7
8 **RATE CASE DRIVERS**
9

10 6. Q. WHAT IS THE OVERALL INCREASE IN RATES REQUESTED IN
11 THIS CASE?

12 A. The overall increase requested is \$7.645, million or 21.2% to tariff
13 customers.
14

15 7. Q. WHAT HAS BEEN THE RECENT HISTORY OF RATE INCREASES
16 FOR THE COMPANY?

17 A. I have a schedule attached to this testimony identified as Exhibit MAM-1
18 that shows the average residential water bill for the Company since 1995.
19 The schedule indicates that since 1995 (including the proposed rate increase
20 in this case), the residential water bill will have increased on average 4.60%
21 per year. This compares to an average increase for the Consumer Price
22 Index of 2.6% per year. The Company has been able to hold rates to
23 reasonable increases, while investing \$106.2 million (a 99.1% increase in
24 Utility Plant) in capital improvements to maintain and improve its

1 exceptional service since 1995.

2
3 8. Q. OTHER THAN THE COST OF CAPITAL DESCRIBED BELOW WHAT
4 IS THE COST OF SERVICE COMPONENTS THAT ARE THE
5 PRIMARY DRIVERS OF THE REQUESTED RATE INCREASE IN
6 THIS CASE?

7 A. The summary of the increased costs supporting the requested increase in
8 rates is provided as Exhibit MAM-2 attached to this testimony. The
9 Company's rate base has increased by \$15.599 million above the level
10 approved in the Company's 2006 rate case, and is a primary driver of the
11 need to increase rates. The increase in rate base and the associated
12 increases in property taxes account for approximately 32% of the requested
13 increase in rates. John Watson, President of Tennessee-American will
14 discuss in his direct testimony the Company's significant capital investment
15 since the prior rate case. Operation and Maintenance expenses have
16 increased by \$2.883 million from the level recognized in the 2006 rate case.
17 This increase accounts for approximately 38% of the increased rates
18 requested in this case. The primary increases for O&M expenses relate to
19 labor (both company labor and service company labor) and benefits
20 (including over \$1.0 million to reflect the federal government mandated
21 contribution to the employee's pension plan); water production costs for
22 fuel, power and chemicals; and maintenance costs. As discussed by Mr.
23 Watson, there have been significant increases in energy prices from the
24 TVA, which are passed through to the Company by the Chattanooga

1 Electric Power Board. The increased price of gasoline has impacted
2 delivery costs for materials, as well as, the transportation cost to provide
3 service to the customers. Mr. Watson, Mr. Shiltz, and Ms. Miller will
4 discuss various O&M costs in their direct testimony, as will I later in this
5 testimony.

6
7 **CAPITAL STRUCTURE AND OVERALL COST OF CAPITAL**

8
9 9. Q. WHAT CAPITAL STRUCTURE DID THE COMPANY USE IN
10 CALCULATING THE RATES IN THIS CASE?

11 A. The Company used a forecasted capital structure for the midpoint of the
12 attrition year, March, 2009. The capital structure includes the permanent
13 financing that will be consummated in early 2009 and the level of short-
14 term debt that will be in place after the permanent debt financing is
15 completed. The proposed capital structure is included in the filing and is
16 attached to this testimony as Exhibit MAM-3.

17
18 10. Q. WHY IS THIS LEVEL OF SHORT-TERM DEBT APPROPRIATE FOR
19 SETTING RATES IN THIS CASE?

20 A. The Company uses short-term debt to finance capital improvements and
21 meet other short-term cash requirements. This type of financing is used to
22 bridge the gap between permanent financings. This permits the Company
23 to time permanent financings in a cost-effective manner and to take
24 advantage of the optimum permanent debt market conditions as they occur.

1 The Company believes the capital structure included in this case reflects the
2 capital components that will be in place to finance the rate base on which
3 rates will be set in this case.
4

5 11. Q. HOW WERE THE WEIGHTED COSTS OF LONG-TERM DEBT AND
6 PREFERRED STOCK DETERMINED?

7 A. The face value of each LT debt and preferred stock issue was reduced by
8 the unamortized issuance cost and the result was divided by the total capital
9 cost to arrive at the overall cost rate for both long-term debt and preferred
10 stock. These calculations are shown on pages 2 and 3 of Exhibit MAM-3
11

12 12. Q. HOW WAS THE COST RATE FOR SHORT-TERM DEBT
13 DETERMINED?

14 A. The Company reviewed its recent Short-term debt rates from American
15 Water Capital Corporation ("AWCC") and market forecasts for 2009 to
16 determine a cost rate for short-term debt that will likely be in place during
17 the rate year.
18

19 13. Q. IN WHAT MANNER IS THE COMPANY CURRENTLY OBTAINING
20 ITS LONG-TERM AND SHORT-TERM DEBT?

21 A. The Company is currently utilizing the services of AWCC to place its
22 required financing needs. AWCC is an American Water Works Company
23 affiliate and was created to consolidate the financing activities of the
24 operating subsidiaries to effect economies of scale on debt issuance and

1 legal costs, and to attract lower debt interest rates through larger debt issues
2 in the public market. The Company believes the use of AWCC has
3 accomplished the goal of reducing issuance costs and attracting capital at
4 lower interest rates though the purchasing power of the entire American
5 System.

6
7 14. Q. HAS THE COMMISSION APPROVED PLACING THE COMPANY'S
8 FINANCING NEEDS WITH AWCC?

9 A. Yes. By Order entered June 14, 2007 in Case No. 06-00305, the
10 Commission authorized the Company to enter into a Financial Services
11 Agreement with AWCC to issue up to \$44.9 million of Long-term debt
12 obligations.

13
14 15. Q. WHAT FACTORS REQUIRE THE COMPANY TO SEEK
15 ADDITIONAL CAPITAL?

16 A. The Company has documented in past rate cases and in this filing that
17 capital improvements it has made in order to meet the new and changing
18 regulations in the water industry, replace aged treatment and distribution
19 facilities, and provide quality, reliable water service to its customers have
20 driven and will continue to drive the need for new capital. In addition, the
21 Company will be required to replace several maturing debt series in the
22 next five years. It is important that the Company maintain a strong
23 financial position to attract this capital at the lowest possible price in order
24 to provide those service improvements at the least possible cost to its

1 customers.

2
3 16. Q. WILL THE COMPANY ISSUE NEW LT DEBT IN EARLY 2009?

4 A. Yes. The Company plans to issue \$16.0 million of LT Debt in early 2009
5 to replace a portion of its short term debt outstanding. This LT debt issue
6 has been incorporated into the capital structure proposed for this case.
7

8 17. Q. WHAT INTEREST RATE IS THE COMPANY PROPOSING FOR THE
9 NEW LONG-TERM DEBT?

10 A. The Company included the \$16.0 million series note in its capital structure
11 at an interest rate of 6.00%. Given the current favorable bond market
12 conditions and forecasts the Company will likely issue that note for a 10-
13 year term.
14

15 18. Q. HOW DID THE COMPANY ARRIVE AT THAT INTEREST RATE?

16 A. As shown on Exhibit MAM-4 attached to this testimony, the Company
17 calculated the latest two and four-quarter spread between 10-year A-rated
18 bonds and 10-year T-bonds. The two and four quarter spreads (148.3 and
19 119.3 basis points, respectively) were applied to the 2009 Value Line
20 Publication Forecast (publication of November 23, 2007) for 10-year T-
21 bonds to arrive at a reasonable projection for the interest rates on this note.
22 The Company used 6.00% based on this analysis as a reasonable estimate
23 of the interest rate.
24

1 19. Q. WHAT IS THE OVERALL COST OF CAPITAL REQUESTED IN THIS
2 CASE?

3 A. The overall weighted cost of capital being requested is 8.514%. The
4 weighted cost of Long-term debt is 6.26% a decrease of 51 basis points
5 from the weighted cost of Long-term Debt approved in the Company's
6 2006 rate case. The 51 basis point decrease results from favorable
7 experience in the debt markets over the last two years and the favorable
8 impact on the new and refinanced LT Debt issued by the Company in early
9 2007 and to be issued in the first quarter of 2009.

10
11 20. Q. HAVE YOU REVIEWED THE TESTIMONY OF COMPANY WITNESS
12 VILBERT IN THIS CASE REGARDING THE COST OF EQUITY?

13 A. Yes. The Company has elected to base its filing on a requested ROE of
14 11.75%, which is within the range of ROE determined by Dr. Vilbert. The
15 Company has incorporated the 11.75% ROE into the capital structure and
16 weighted cost of capital utilized by the Company in its filing

17
18 **COST OF SERVICE (TARIFF) ALLOCATIONS**

19
20 21. Q. HAS THE COMPANY PREPARED A COST OF SERVICE STUDY AS
21 PART OF THIS CASE?

22 A. Yes. The Company has asked Paul Herbert, from the firm Gannett/Fleming
23 to review the cost of service and tariffs of the Company. Mr. Herbert has
24 filed testimony in this case supporting the Company's proposed tariff and

1 cost of service allocations.

2
3 22. Q. HOW IS THE COMPANY PROPOSING TO ALLOCATE THE
4 INCREASED RATES IN THIS CASE?

5 A. The Company is generally proposing to increase rates to all classes of
6 customers (except public fire protection) in an across the board percentage
7 increase of 21.2% to the metered tariffs. The Company is also proposing to
8 merge the Lookout Mountain and Lakeview tariffs into one "Mountain
9 Tariff" and begin the process of merging the Suck Creek and Lone Oak
10 tariffs into the Mountain Tariff. The Company is proposing to move to one
11 "Mountain Tariff" over time due to the similar characteristics of the service
12 areas and requirements to boost the water service to the higher elevations in
13 the Lookout Mountain, Lakeview, Suck Creek and Lone Oak service areas.

14
15 23. Q. WHAT IS THE COMPANY'S PROPOSAL REGARDING PUBLIC FIRE
16 PROTECTION IN THIS CASE?

17 A. The Company did not include in the tariffs in this filing a public fire service
18 fee and allocated that portion of the cost of service to the remaining
19 customer classifications. The public fire protection was a major issue in the
20 Company's 2003 rate case. The Company was able to reach agreement
21 with the parties to that case on an overall revenue requirement and all other
22 issues except for the handling of public fire protection charges. This issue
23 went before the TRA which eventually set the public fire protection fees at
24 the approximate mid-point of the tariffs at the time of the hearing and the

1 full cost of service determination, allocating the remaining cost of public
2 fire protection to the other customer classifications. In the 2004 rate case
3 the Company proposed to eliminate the public fire protection fees, and
4 allocate those fees proportionately to the remaining customer
5 classifications.

6
7 24. Q. WHY DID THE COMPANY PROPOSE TO ELIMINATE THE PUBLIC
8 FIRE PROTECTION FEES CHARGED TO THE VARIOUS
9 MUNICIPALITIES?

10 A. On May 18, 2004 the Tennessee Legislature enacted an amendment to
11 Tennessee Code Annotated, Section 65-5-201 relative to Public Utilities
12 that prohibits the Company from collecting the cost of public fire protection
13 from the municipalities in its service area.

14
15 25. Q. DID THE TRA APPROVE THE ELIMINATION OF THE PUBLIC FIRE
16 SERVICE FEES IN CASE NO. 04-00288?

17 A. Yes. The TRA approved the tariffs of the Company in that case which
18 eliminated public fire protection fees.

19
20 26. Q. IS THE COMPANY'S FILING IN THIS CASE IN COMPLIANCE WITH
21 THE LEGISLATION?

22 A. Yes. The Company does not believe the public fire service fees should be
23 an issue in this case.

1 **MANAGEMENT FEES**

2

3 27. Q. PLEASE DESCRIBE THE COMPANY’S FILING REGARDING

4 MANAGEMENT FEES.

5 A. The Company’s filing includes management fees of \$4.335 million. The

6 Company started with the historical test-year expenses of \$4.790 million

7 and eliminated non-reoccurring expenses of \$729,713 for the STEP project,

8 the STAR project, the Business Change project, the Divestiture, and

9 implementation costs related to Sarbanes Oxley compliance. American

10 Water has undertaken these initiatives to improve service and growth

11 opportunities for its operating companies; however, they are expenses that

12 will not be reoccurring during the attrition year for this case. In addition,

13 the Company eliminated the labor and labor related overheads for the Non-

14 Revenue Water (“NRW”) Manager from the SE Region Service Company

15 charges. The NRW Manager has been added to the direct employee cost at

16 Tennessee American. To that adjusted historical test-year base period

17 (twelve months ended November 2007), the Company used an inflation

18 factor of 3.5% per year to reflect the expected salary and salary related

19 overhead increases to management fee cost for the attrition year in this

20 case, the twelve months ended August 2009.

21

22 28. Q. WHAT HAS BEEN THE INCREASE IN MANAGAEMENT FEES FROM

23 THE COMPANY’S PREVIOUS RATE CASE TO THE LEVEL

24 REQUESTED IN THIS CASE?

1 A. The Company is requesting management fees of \$4.335 in this case which
2 represents an increase of approximately \$355,000 or 8.9% over the level
3 currently embedded in rates. This increase represents approximately a
4 4.4% per year increase over the nearly two years between the effective
5 dates of rates and is driven primarily by salary increases and significant
6 increases in pension and OPEB costs.

7
8 29. Q. ARE THERE OTHER ADJUSTMENTS TO THE HISTORICAL TEST-
9 YEAR MANAGEMENT FEES?

10 A. Yes. For the historical test-year, the 12 months ended November 2007,
11 AWWSC billed to Tennessee American pension expense based on the FAS
12 87 accrual method. The TRA has historically regulated Tennessee
13 American using the ERISA (or cash basis) for pension expense recovery in
14 rates. To properly reflect the ERISA pension expense for rate recovery,
15 Tennessee American has added \$148,212 to management fees in the
16 attrition year to reflect the difference between the FAS 87 pension expense
17 billed to Tennessee American by AWWSC and the pension expense under
18 ERISA. The ERISA pension used in this case is based on the Minimum
19 ERISA pension contribution per the 2008 American Water Actuarial Study
20 performed by the firm Towers/Perrin. The 2008 Towers/Perrin Actuarial
21 Study is for the pension year ended June 30, 2008. I will provide more
22 detail about the ERISA pension expense later in this testimony.

1 30. Q. PLEASE DESCRIBE WHAT COMPRISES MANAGEMENT FEES?

2 A. Management fees are the charges from American Water Works Service
3 Company for services provided under the 1989 Service Company contract.
4 Those services consist of services related to accounting, administration,
5 communication, corporate secretarial, engineering, finance, human
6 resources, information systems, operations, rates and revenue, risk
7 management, water quality and other services as agreed to by the
8 Company. These services are billed at cost to Tennessee American.

9
10 31. Q. WHAT IS THE BENEFIT TO TENNESSEE AMERICAN'S
11 CUSTOMERS FROM UTILIZING THE SERVICE COMPANY?

12 A. The Service Company permits American Water Works to utilize its size to
13 generate economies of scale. Highly qualified employees in specialized
14 fields are available to each operating company which is more cost effective
15 than maintaining the same level of expertise at each operating company.
16 The Service Company format permits that expertise to be shared by each
17 operating company through the cost allocations and direct charges as
18 outlined in the Service Company contract. In addition, the Service
19 Company is able to take advantage of the size of American Water to utilize
20 its purchasing power for materials, capital, and other services on a national
21 basis bringing lower costs to each operating company, including Tennessee
22 American.

1 32. Q. IS THERE FURTHER SUPPORT FOR THE BENEFIT OF THE
2 SERVICE COMPANY?

3 A. Yes. In the verbal order in the Company's Case No. 06-00290, the
4 Company was ordered by the TRA: "TAWC is directed to have a
5 management audit performed in compliance with Sarbanes-Oxley
6 requirements and submit the audit results concurrent with any future rate
7 case filing. This audit should determine whether all costs allocated to
8 TAWC were incurred as a result of prudent or imprudent management
9 decisions by TAWC's parent and should address the reasonableness of the
10 methodology used to allocate costs to TAWC."
11

12 33. Q. HAS TAWC PERFORMED SUCH AN AUDIT OF THE AMERICAN
13 WATER WORKS SERVICE COMPANY CHARGES?

14 A. Yes. The Company retained the firm of Booz Allen Hamilton ("Booz
15 Allen") to perform the management audit of the AWWSC charges. The
16 Booz Allen management audit of AWWSC has been filed with the
17 Company's petition in this case. That audit is being sponsored by the
18 testimony by Mr. Joseph Vandenberg. Mr. Vandenberg's testimony and
19 the Booz Allen report will indicate that the AWWSC costs allocated to
20 TAWC were prudent, were allocated to TAWC by a reasonable
21 methodology and the costs of AWWSC are very reasonable when
22 compared or benchmarked on several key elements to other utilities.
23
24

1 **EMPLOYEE BENEFIT COSTS.**

2
3 34. Q. WAS PENSION EXPENSE AN ISSUE IN THE COMPANY'S LAST
4 RATE CASE?

5 A. Yes. While the Company demonstrated that in its previous rate case it was
6 making contributions to the American Water Pension Trust Fund in 2007,
7 the TRA order in Case No. 06-00290 recognized no pension expense for
8 rate recovery. The TRA based its decision on a Towers/Perrin actuarial
9 study from August 2006 for the 2006 Pension plan year (twelve months
10 ended June 30, 2007) which indicated the required minimum ERISA
11 pension expense was zero.
12

13 35. Q. WHAT IS THE POLICY OF AMERICAN WATER REGARDING ERISA
14 PENSION CONTRIBUTIONS?

15 A. American Water's funding policy is to contribute an amount equal to the
16 minimum required contribution under ERISA, except that American Water
17 may increase its contribution above the minimum if appropriate to its tax
18 and cash position and the plan's funded position.
19

20 36. Q. WHY DID AMERICAN WATER FUND IN EXCESS OF THE
21 MINIMUM PENSION EXPENSE IN 2007?

22 A. In 2004 through 2006 American Water funded in excess of the ERISA
23 required minimum level because its funded position at that time had
24 declined due to market conditions and changes in demographics and

1 discount rates to the point that notification requirements to its employees
2 and additional insurance requirements would have been required if only the
3 ERISA minimum level had been funded. This would have added additional
4 costs to the Plan. In addition, based on actuarial projections, significant
5 increases in ERISA contributions were forecasted for the 2007-2009
6 timeframe. In order to avoid the notification and insurance requirements
7 and to smooth the impact on ERISA pension contributions in future years,
8 American Water funded in excess of the minimum requirements. Under
9 ERISA law those payments in excess of the minimum requirements for
10 2004-2006 were used to offset future ERISA minimum payments in the
11 2006 plan year actuarial report.

12
13 37. Q. FOR 2007 HOW MUCH DID AMERICAN WATER CONTRIBUTE TO
14 THE PENSION PLAN FUND?

15 A. In 2007 American Water Contributed \$49.6 million (\$855,492 for
16 Tennessee American), even when the actuarial report determined the
17 minimum ERISA contribution was zero. The payments in excess of the
18 minimum for 2004-2006 were credited against the ERISA minimum
19 contribution for the 2006 plan year. The ERISA pension contributions in
20 2007 were made in order to smooth the expected ERISA contributions for
21 2008-2010, which would have increased significantly if the ERISA
22 contribution had not been made in 2007.

1 38. Q. DID THE COMPANY IN FACT MAKE AN ERISA CONTRIBUTION TO
2 THE AMERICAN WATER PENSION TRUST IN 2007?

3 A. As stated earlier the Company did make ERISA contributions in 2007 of
4 855,492, although it is not currently recovering any of the ERISA pension
5 expense in currently approved rates. This situation has been very harmful
6 to the Company's financial condition, and is one of the major reasons the
7 Company is seeking to increase rates at this time.
8

9 39. Q. WHAT LEVEL OF PENSION COST IS THE COMPANY REQUESTING
10 IN THIS CASE?

11 A. The Company is requesting pension cost of \$1,456,476 of which
12 \$1,161,108 is charged to O&M expense in this case for the ERISA
13 contribution related to the defined benefit portion of the American Water
14 Pension Plan.
15

16 40. Q. HOW WAS THAT COST DETERMINED?

17 A. I am attaching to this testimony Exhibit MAM-5 which is the ERISA
18 pension contributions for American Water for 2008 (the 2007 Plan Year,
19 the twelve months ending June 30, 2008). That schedule indicates that
20 Tennessee American will contribute \$1.456 million to the American Water
21 Pension Trust Fund.
22

23 41. Q. DOES THE ACTUARIAL REPORT FOR 2008 SUPPORT THIS
24 PAYMENT?

1 A. Yes. American Water employs the actuarial firm of Towers Perrin to
2 evaluate its Pension Plan. Towers Perrin provided the ERISA contributions
3 for American Water for the 2007 plan year (twelve months ended June 30,
4 2008). I have attached the latest Towers/Perrin Actuarial Report for the
5 2007 plan year dated February 2008 as Exhibit MAM-6. . On page MS-9
6 of that actuarial report it indicates that a minimum ERISA contribution of
7 \$75.996 million is required for the 2008. This report fully supports the
8 Company's requested ERISA pension expense in this case.

9
10 42. Q. YOU MENTIONED EARLIER THAT THE COSTS IDENTIFIED IN
11 THE RESPONSE TO QUESTION 37 ABOVE APPLIED TO THE
12 AMERICAN WATER DEFINED BENEFIT PLAN. DOES AMERICAN
13 WATER HAVE PENSION COSTS OTHER THAN THOSE IN THE
14 DEFINED BENEFIT PLAN?

15 A. Yes. As part of its national employee benefit negotiations, American Water
16 moved to a defined contribution plan for pension costs for union employees
17 hired after January 1, 2001 and non-union employees hired after January 1,
18 2006.

19
20 43. Q. WHAT LEVEL OF EXPENSE IS INCLUDED IN THE COMPANY'S
21 REQUEST RELATED TO THE DEFINED CONTRIBUTION PLAN FOR
22 PENSIONS?

23 A. The Company included \$115,696 of defined contribution costs as shown in
24 the workpapers for account 604.8. This amount was determined by

1 applying the contribution rate of 5.25% to the attrition year wages of the
2 Company's employees covered by this portion of the plan.

3
4 44. Q. WHAT LEVEL OF POST RETIREMENT BENEFIT COSTS (OPEB'S)
5 DID THE COMPANY INCLUDE IN ITS FILING?

6 A. The Company is requesting OPEB cost of \$793,221 of which \$632,356 is
7 charged to O&M expense.

8
9 45. Q. HOW WAS THAT COST DETERMINED?

10 A. American Water employs the actuarial firm of Towers Perrin to evaluate its
11 OPEB Plan. Towers Perrin provided the expected OPEB expense for
12 American Water for 2008. The summary of those projections are included
13 in the workpapers under the payroll tab made a part of the Company's
14 filing in this case. The Company determined the attrition year level
15 expense by conservatively using the 2008 cost to match the attrition year in
16 this case.

17
18 46. Q. DID AMERICAN WATER ALSO CHANGE ITS OPEB PLAN FOR
19 EMPLOYEES HIRED AFTER JANUARY 1, 2006?

20 A. Yes. The employees hired after January 1, 2006 no longer are provided
21 OPEB's. Instead, American Water provides a defined contribution plan for
22 retiree's health costs.

23
24 47. Q. WHAT LEVEL OF EXPENSE IS INCLUDED IN THE COMPANY'S

1 REQUEST RELATED TO THE DEFINED CONTRIBUTION PLAN FOR
2 OPEB'S?

3 A. The Company included \$7,500 of defined contribution costs as shown in
4 the workpapers for account 604.8. This amount was determined by
5 applying the contribution rate of \$500 per employee to the Company's
6 employees covered by this plan.

7
8 **RATE CASE EXPENSE:**

9
10 48. Q. WHAT LEVEL OF RATE CASE EXPENSE IS THE COMPANY
11 SEEKING IN THIS RATE CASE?

12 A. The Company is seeking amortization of various rate case expenses in the
13 aggregate of \$543,384.

14
15 49. Q. HOW WAS THAT LEVEL DETERMINED?

16 A. The Company has estimated the cost to process this case at \$550,000 and is
17 requesting that amount be amortized over thirty-six months. In addition,
18 the Company has included twelve months of the amortization of the 2006
19 rate case expense for rate recovery in this case. The Company is also
20 requesting that the cost of service study for this case estimated to cost
21 \$16,000 be amortized over five years, one years amortization of the cost of
22 service from the 2006 rate case approved for a five year amortization, and
23 the estimated cost of the depreciation study provided in this case estimated
24 to cost \$30,000 be amortized over five years.

1 50. Q. WHAT LEVEL OF RATE CASE EXPENSE FROM THE 2006 RATE
2 CASE IS CURRENTLY EMBEDDED IN RATE RECOVERY?

3 A. The Company estimated the cost of the 2006 rate case to be \$400,000 and
4 the TRA approved a three-year amortization of the estimated cost. Due to
5 certain unusual and unanticipated events, including the significant
6 discovery put forth by the CAPD, the City of Chattanooga, and the
7 Chattanooga Manufacturers Association in the 2006 case, along with the
8 added cost of moving the hearing to Chattanooga, the cost of the 2006
9 exceeded the estimate. Even though the TRA only approved rates at the
10 estimated cost of \$400,000 the Company has amortized the entire cost on
11 its books and records. This resulted in the Company amortizing \$283,520
12 more than approved in rates between May 2007 and the beginning of the
13 attrition year in this case, September 2008. The Company is not seeking to
14 recover the additional amortization between the date of new rates in the last
15 case and the date new rates are expected to be approved in this case.

16
17 **DEPRECIATION RATES:**

18
19 51. Q. WAS DEPRECIATION EXPENSE ON CERTAIN ASSETS AN ISSUE
20 IN THE COMPANY'S PREVIOUS RATE CASE?

21 A. Yes, there was considerable disagreement among the parties regarding rate
22 recovery of the E-CIS software and related depreciation expense, as well as,
23 depreciation expense on various office furniture and equipment
24 classifications of utility plant.

1 52. Q. HAS THE COMPANY ADDRESSED THOSE ISSUES IN THIS CASE?

2 A. Yes. The Company has asked the firm of Gannett/Fleming to perform a
3 depreciation study. The depreciation study is being filed with this rate case
4 and will be addressed in the testimony of Mr. John Spanos.
5

6 53. Q. PLEASE SUMMARIZE THE RESULTS OF THE DEPRECIATION
7 STUDY?

8 A. Mr. Spanos will cover the details of his study and calculations, however,
9 the depreciation rates proposed by Mr. Spanos will generate \$518,675 less
10 depreciation expense than would the currently approved depreciation rates.
11 The issues raised by the CAPD in the previous Company rate case
12 regarding mainframe computer software and office furniture & equipment
13 should not be issues if the proposed depreciation rates are approved. Mr.
14 Spanos has used the remaining life approach in determining his proposed
15 depreciation rates. For all utility plant accounts, including mainframe
16 computer software and office furniture & equipment to the extent the utility
17 plant is nearly or completely depreciated, the depreciation rates have been
18 adjusted appropriately. For the computer mainframe software and office
19 furniture & equipment accounts the proposed depreciation rates are
20 significantly less than current rates.
21

22 54. Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

23 A. Yes.

TENNESSEE REGULATORY AUTHORITY

STATE OF WEST VIRGINIA

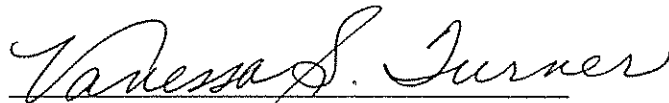
COUNTY OF KANAWHA

BEFORE ME, the undersigned authority, duly commissioned and qualified in and for the State and County aforesaid, personally came and appeared Michael A. Miller, being by me first duly sworn deposed and said that:

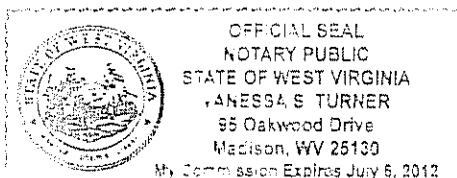
He is appearing as a witness on behalf of Tennessee-American Water Company before the Tennessee Regulatory Authority, and if present before the Authority and duly sworn, his testimony would set forth in the annexed transcript consisting of 22 pages.


Michael A. Miller

Sworn to and subscribed before me
this 11th day of March 2008.


Notary Public

My commission expires July 6, 2012



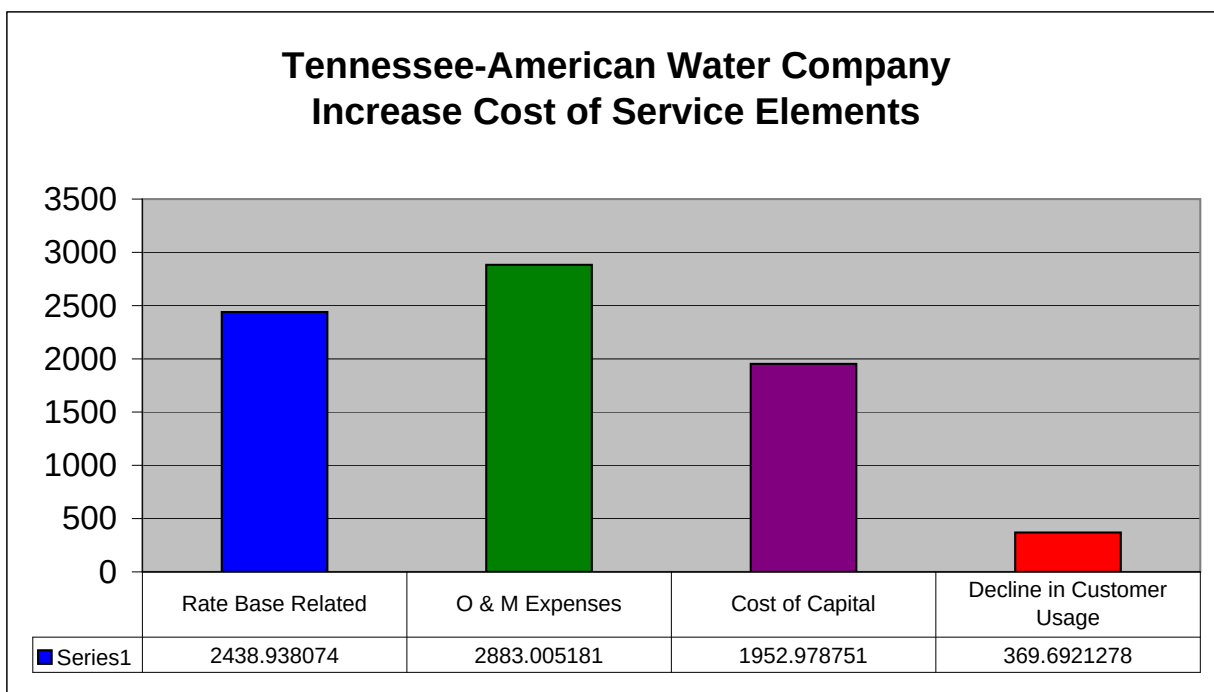
**Tennessee-American Water Company
Average Usage and Revenue Per Residential Customer**

<u>Year</u>	<u>Average Revenue per Customer</u>	<u>% Change</u>
1995	156.22	
1996	164.23	5.10%
1997	164.23	0.00%
1998	164.23	0.00%
1999	164.23	0.00%
2000	164.23	0.00%
2001	164.23	0.00%
2002	164.23	0.00%
2003	177.53	8.10%
2004	177.53	0.00%
2005	184.30	3.80%
2006	184.30	0.00%
2007	198.52	7.70%
Rate Case	242.29	22.05%
	Average	4.60%

Tennessee-American Water Company
Increase Cost of Service Elements

Rate Base and Related Items (in million dollars):

Increase in rate base of \$15.599 million	\$	2.117	
Depreciation expense on add'l rate base	\$	(0.207)	
Add'l General Taxes	\$	0.529	
Total increase attributable to rate base and related items	\$	2.439	32% of total increase
O & M Expense	\$	2.883	38% of total increase
Increase in cost of capital	\$	1.953	25% of total increase
Decline in customer usage	\$	0.370	5% of total increase
TOTAL INCREASE		7.645	



Line No.	<u>Class of Capital</u>	<u>Reference</u>	<u>Amount</u>	<u>Percent of Total</u>	<u>Cost Rate</u>	<u>Weighted Cost of Capital</u>
1						
2						
3	Long-term Debt	Schedule 2	\$60,559,797	50.66%	6.26%	3.171%
4						
5	Short-term Debt		6,222,000	5.20%	4.50%	0.234%
6						
7	Preferred Equity	Schedule 3	1,381,600	1.16%	5.00%	0.058%
8						
9	Common Equity					
10	Common Stock		29,543,153	24.71%	11.75%	2.904%
11	Retained Earnings		21,845,457	18.27%	11.75%	2.147%
12						
13	Total Capitalization		<u>119,552,007</u>	<u>100.00%</u>		<u>8.514%</u>
14						
15						
16						
17						
18	Total Common Equity Return Proposed		<u>11.75%</u>			
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

**Embedded Cost of Long-Term Debt
At the Mid-Point of the Attrition Year**

Tennessee Regulatory Authority
Company: Tennessee-American Water Company
Case No:

Test Year: Twelve Months Ended November 30, 2007
Exhibit No. 3, Schedule 2
Page 1 of 1

Line No.	Debt Issue Type, Coupon Rate	Interest Rate	Issue Date	Maturity Date	Principal Amount	Face Amount Outstanding	Unamortized (Issuance) Debt Exp.	Carrying Value	Annual Interest Expense	Annual Amortization of Issue Expense	Total Cost
5	General Mortgage Bonds										
7	9.25% Series	9.25%	01/12/90	12/01/19	2,500,000	2,500,000	16,270	2,483,730	231,250	1,525	232,775
8	7.84% Series	7.84%	09/04/96	09/01/26	5,700,000	5,700,000	39,665	5,660,335	446,880	2,278	449,158
9	6.50% Series-matured 6/08	6.50%	05/31/98	06/01/08	0	0	0	0	0	7,434	7,434
10	6.87% Series	6.87%	03/31/01	03/29/11	5,100,000	2,040,000	10,010	2,029,990	140,148	5,004	145,152
11	5.39% Series	5.39%	01/31/07	12/21/13	15,000,000	15,000,000	34,585	14,965,415	808,500	3,458	811,958
12	5.62% Series	5.62%	03/29/07	03/29/19	19,000,000	19,000,000	51,691	18,948,309	1,067,800	5,169	1,072,969
13	6.00% Series (proposed)	6.00%	03/01/09	02/28/19	16,000,000	16,000,000	160,000	15,840,000	960,000	16,000	976,000
14											
15											
16	Capital Lease 9.489%	9.489%	06/01/98	05/31/13	1,590,500	632,018		632,018	97,432	0	97,432
17											
18											
19	Total				\$64,890,500	\$60,872,018	\$312,221	\$60,559,797	\$3,752,010	\$40,868	\$3,792,878
20											
21											
22	Embedded Cost of Long-Term Debt										
23											
24											
25											
26											
27											
28											
29											
30											

6.26%

Test Year: Twelve Months Ended November 30, 2007
Exhibit No. 3, Schedule 3
Page 1 of 1

5.00%

Embedded Cost of Preferred Stock

Tennessee American Water Analysis of Interest Rates of Past Year

Value Line Publication Date	As of Market Date	"A" Rated Utility Bonds	30-year Treasury Bonds	Spread	10-year Corporate Bonds	10-year Treasury Bonds	Spread	13-Week Treasury Bills	Federal Reserve Rate
1/12/2007	1/3/2007	5.790%	4.760%	1.030%	5.500%	4.650%	0.850%	5.040%	5.250%
1/19/2007	1/10/2007	5.760%	4.780%	0.980%	5.530%	4.680%	0.850%	5.080%	5.250%
1/26/2007	1/17/2007	5.860%	4.870%	0.990%	5.620%	4.780%	0.840%	5.100%	5.250%
2/2/2007	1/24/2007	5.870%	4.910%	0.960%	5.620%	4.810%	0.810%	5.120%	5.250%
2/9/2007	1/31/2007	5.880%	4.910%	0.970%	5.630%	4.810%	0.820%	5.100%	5.250%
2/16/2007	2/7/2007	5.810%	4.850%	0.960%	5.560%	4.740%	0.820%	5.150%	5.250%
2/23/2007	2/14/2007	5.770%	4.830%	0.940%	5.520%	4.740%	0.780%	5.150%	5.250%
3/2/2007	2/21/2007	5.740%	4.790%	0.950%	5.510%	4.690%	0.820%	5.170%	5.250%
3/9/2007	2/28/2007	5.650%	4.680%	0.970%	5.380%	4.570%	0.810%	5.120%	5.250%
3/16/2007	3/7/2007	5.590%	4.630%	0.960%	5.310%	4.490%	0.820%	5.080%	5.250%
3/23/2007	3/14/2007	5.850%	4.700%	1.150%	5.400%	4.530%	0.870%	5.040%	5.250%
3/30/2007	3/21/2007	5.860%	4.720%	1.140%	5.400%	4.540%	0.860%	5.030%	5.250%
4/6/2007	3/28/2006	5.990%	4.830%	1.160%	5.510%	4.620%	0.890%	5.040%	0.053%
Quarterly Average		5.802%	4.789%	1.012%	5.499%	4.665%	0.834%	5.094%	4.850%
4/13/2007	4/4/2007	5.980%	4.840%	1.140%	5.540%	4.650%	0.890%	5.030%	5.250%
4/20/2007	4/11/2007	6.110%	4.910%	1.200%	5.670%	4.730%	0.940%	5.010%	5.250%
4/27/2007	4/18/2007	6.010%	4.820%	1.190%	5.630%	4.650%	0.980%	4.970%	5.250%
5/4/2007	4/25/2007	6.030%	4.830%	1.200%	5.620%	4.650%	0.970%	4.950%	5.250%
5/11/2007	5/2/2007	6.010%	4.820%	1.190%	5.610%	4.640%	0.970%	4.870%	5.250%
5/18/2007	5/9/2007	6.040%	4.840%	1.200%	5.630%	4.660%	0.970%	4.850%	5.250%
5/25/2007	5/16/2007	6.070%	4.880%	1.190%	5.690%	4.710%	0.980%	4.730%	5.250%
6/1/2007	5/23/2007	6.180%	5.000%	1.180%	5.800%	4.850%	0.950%	4.890%	5.250%
6/8/2007	5/30/2007	6.180%	5.000%	1.180%	5.840%	4.870%	0.970%	4.830%	5.250%
6/15/2007	6/6/2007	6.240%	5.080%	1.160%	5.920%	4.960%	0.960%	4.780%	5.250%
6/22/2007	6/13/2007	6.430%	5.280%	1.150%	6.210%	5.200%	1.010%	4.640%	5.250%
6/29/2007	6/20/2007	6.410%	5.240%	1.170%	6.160%	5.130%	1.030%	4.720%	5.250%
7/6/2007	6/27/2006	6.360%	5.190%	1.170%	6.090%	5.080%	1.010%	4.770%	5.250%
Quarterly Average		6.158%	4.979%	1.178%	5.801%	4.829%	0.972%	4.849%	5.250%
7/13/2007	7/3/2007	6.310%	5.140%	1.170%	6.040%	5.040%	1.000%	4.950%	5.250%
7/20/2007	7/11/2007	6.370%	5.190%	1.180%	6.150%	5.090%	1.060%	4.940%	5.250%
7/27/2007	7/18/2007	6.250%	5.120%	1.130%	6.080%	5.030%	1.050%	4.950%	5.250%
8/3/2007	7/25/2007	6.140%	5.020%	1.120%	5.970%	4.900%	1.070%	4.970%	5.250%
8/10/2007	8/1/2007	6.130%	4.920%	1.210%	5.950%	4.790%	1.160%	4.880%	5.250%
8/17/2007	8/8/2007	6.210%	5.040%	1.170%	6.070%	4.880%	1.190%	4.940%	5.250%
8/24/2007	8/15/2007	6.280%	5.030%	1.250%	6.000%	4.720%	1.280%	4.090%	5.250%
8/31/2007	8/22/2007	6.280%	4.960%	1.320%	6.040%	4.650%	1.390%	3.650%	5.250%
9/7/2007	8/29/2007	6.220%	4.880%	1.340%	6.140%	4.560%	1.580%	4.000%	5.250%
9/14/2007	9/5/2007	6.110%	4.770%	1.340%	5.990%	4.470%	1.520%	4.390%	5.250%
9/21/2007	9/12/2007	6.050%	4.770%	1.280%	5.820%	4.470%	1.350%	4.380%	5.250%
9/28/2007	9/19/2007	6.310%	4.840%	1.470%	6.010%	4.550%	1.460%	3.900%	4.750%
10/5/2007	9/28/2007	6.310%	4.890%	1.420%	6.090%	4.620%	1.470%	3.690%	4.750%
Quarterly Average		6.228%	4.967%	1.262%	6.027%	4.752%	1.275%	4.441%	5.173%
10/12/2007	10/3/2007	6.220%	4.800%	1.420%	5.970%	4.560%	1.410%	3.940%	4.750%
10/19/2007	10/10/2007	6.270%	4.870%	1.400%	5.970%	4.650%	1.320%	4.040%	4.750%
10/26/2007	10/17/2007	6.210%	4.830%	1.380%	5.930%	4.550%	1.380%	3.990%	4.750%
11/2/2007	10/24/2007	6.030%	4.640%	1.390%	5.680%	4.340%	1.340%	3.870%	4.750%
11/9/2007	10/31/2007	6.130%	4.750%	1.380%	5.880%	4.470%	1.410%	3.910%	4.500%
11/16/2007	11/7/2007	6.070%	4.650%	1.420%	5.810%	4.310%	1.500%	3.440%	4.500%
11/23/2007	11/14/2007	6.090%	4.600%	1.490%	5.950%	4.250%	1.700%	3.390%	4.500%
11/30/2007	11/20/2007	6.040%	4.500%	1.540%	6.010%	4.100%	1.910%	3.280%	4.500%
12/7/2007	11/27/2007	6.030%	4.420%	1.610%	5.940%	4.040%	1.900%	3.030%	4.500%
12/14/2007	12/5/2007	6.070%	4.400%	1.670%	5.920%	3.960%	1.960%	3.050%	4.500%
12/21/2007	12/12/2007	6.250%	4.540%	1.710%	6.260%	4.090%	2.170%	2.860%	4.250%
12/28/2007	12/21/2007	6.140%	4.450%	1.690%	6.010%	4.030%	1.980%	2.890%	4.250%
1/4/2008	12/26/2007	6.280%	4.670%	1.610%	6.270%	4.280%	1.990%	3.310%	4.250%
Quarterly Average		6.141%	4.625%	1.516%	5.969%	4.279%	1.690%	3.462%	4.519%

	2008 Projected 30-Yr. "A" Rated Util. <u>Bond Rate</u>	2008 Value Line <u>Forecast</u>	Average <u>Spread</u>	2008 Projected 10-Yr. "A" Rated Util. <u>Bond Rate</u>	2008 Value Line <u>Forecast</u>	Average <u>Spread</u>		
2008 Value Line Projection (11-23-07):								
"A" Rated Utility Bonds 30-Yr. & 10-Yr.								
Corp. Bonds based on:								
Latest 2 Qtr. Avg. Spread	6.09%	4.70%	1.389%	5.98%	4.50%	1.483%	3.951%	4.846%
Latest 4 Qtr. Avg. Spread	5.94%	4.70%	1.242%	5.69%	4.50%	1.193%	4.461%	4.948%
March 2008 to date	5.85%	4.20%	1.653%	5.81%	3.80%	2.007%	2.958%	4.063%

AMERICAN WATER SYSTEM
QUALIFIED PENSION PLAN
2008 FUNDING SCHEDULE

COMPANY	A ALLOCATION OF 20087 PENSION FUNDING	B ESTIMATED FUNDING ON February 15	C ESTIMATED FUNDING ON May 15	D ESTIMATED FUNDING ON August 15	E ESTIMATED FUNDING ON November 14
AMERICAN WATER WORKS COMPANY	\$ 17,822	\$ 5,393	\$ 5,393	\$ 3,518	\$ 3,518
AMERICAN WATER RESOURCES	298,421	90,311	90,312	58,899	58,899
AMERICAN WATER SERVICES	17,524,162	5,303,365	5,303,365	3,458,716	3,458,716
AMERICAN WATER WORKS SERVICE COMPANY	1,712,512	518,260	518,260	337,996	337,996
ARIZONA-AMERICAN	3,167,040	958,446	958,446	625,074	625,074
CALIFORNIA-AMERICAN	2,783,898	842,495	842,495	549,454	549,454
ELIZABETHTOWN	250,043	75,670	75,671	49,351	49,351
HAWAII-AMERICAN	5,734,111	1,735,324	1,735,323	1,131,732	1,131,732
ILLINOIS-AMERICAN	3,941,777	1,192,907	1,192,906	777,982	777,982
INDIANA-AMERICAN	848,724	256,851	256,851	167,511	167,511
IOWA-AMERICAN	1,589,000	480,882	480,882	313,618	313,618
KENTUCKY-AMERICAN	1,614,755	488,675	488,675	318,702	318,702
LONG ISLAND	100,564	30,434	30,434	19,848	19,848
MARYLAND-AMERICAN	91,671	27,742	27,743	18,093	18,093
MICHIGAN-AMERICAN	8,082,706	2,446,082	2,446,082	1,595,271	1,595,271
MISSOURI-AMERICAN	6,761,404	2,046,214	2,046,214	1,334,488	1,334,488
NEW JERSEY-AMERICAN	298,394	90,303	90,303	58,894	58,894
NEW MEXICO-AMERICAN	1,133,360	342,991	342,991	223,689	223,689
OHIO-AMERICAN	13,054,683	3,950,760	3,950,759	2,576,582	2,576,582
PENNSYLVANIA-AMERICAN	1,456,476	440,776	440,776	287,462	287,462
TENNESSEE-AMERICAN	149,026	45,100	45,100	29,413	29,413
TEXAS-AMERICAN	993,420	300,640	300,640	196,070	196,070
VIRGINIA-AMERICAN	95,235	28,822	28,821	18,796	18,796
VIRGINIA EASTERN	4,300,796	1,301,557	1,301,557	848,841	848,841
WEST VIRGINIA-AMERICAN					
	\$ 76,000,000	\$ 23,000,000	\$ 23,000,000	\$ 15,000,000	\$ 15,000,000
		23,000,000	23,000,000	15,000,000	15,000,000

American Water Works Company, Inc.
Pension Plan

Actuarial Valuation Report

Pension Cost for Fiscal Year Ending December 31, 2008

Employer Contributions for Plan Year Beginning July 1, 2007

February 2008

This report is confidential and intended solely for the information and benefit of the immediate recipient thereof. It may not be distributed to a third party unless expressly allowed under the "Actuarial Certification, Reliances and Distribution" section herein.

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Management Summary of Valuation Results

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<i>FAS 87 Pension Cost and Funded Position.....</i>	<i>MS-6</i>
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Financial Results

This report summarizes financial results for the American Water Works Company, Inc. Pension Plan based on actuarial valuations as of January 1, 2008 and January 1, 2007 for determination of pension accounting cost, and valuations as of July 1, 2007 and July 1, 2006 for determination of plan contributions.

	January 1, 2008 ⁽¹⁾	January 1, 2007 ⁽¹⁾
FAS 87 Pension Cost ⁽²⁾		
Amount	\$ 39,625,996	\$ 38,968,697
Percent of covered pay ⁽³⁾	13.4%	13.5%
FAS 87 Funded Position		
Accumulated benefit obligation [ABO]	\$ 772,542,892	\$ 749,311,739
Fair value of assets [FV]	627,988,678	578,280,462
ABO funded percentage [FV ÷ ABO]	81.3%	77.2%
Prepaid (accrued) pension cost	\$ (90,483,238)	\$ (102,302,391)
	July 1, 2007	July 1, 2006
Employer Contributions ⁽³⁾		
Minimum required	\$ 75,996,105	\$ 0
Percent of covered pay ⁽⁴⁾	25.8%	0.0%
Maximum deductible	\$ 673,880,639	\$ 539,127,891
Percent of covered pay	228.5%	186.7%
ERISA Funded Position ⁽⁵⁾		
Actuarial accrued liability [AAL]	\$ 687,475,512	\$ 556,822,415
Actuarial value of assets [AV]	591,972,484	518,247,375
AAL funded percentage [AV ÷ AAL]	86.1%	93.1%
Current liability funded percentage:		
▶ Selected interest rate	73.9%	80.0%
▶ Highest allowable interest rate	73.9%	80.0%

(1) Pension costs for fiscal year 2007 and 2008 reflect the merger of the Elizabethtown Water Company Pension Plan into the American Water Pension Plan. Results are prior to FAS 158.

(2) All FAS 87 results shown in this report were prepared before application of purchase accounting due to the sale of American Water to RWE.

(3) All results reflect the merger of Elizabethtown Water Company Pension Plan into the American Water Pension Plan as of January 1, 2007.

(4) For fiscal year 2007 and the plan year beginning July 1, 2007, covered pay is based on the most recent valuation data received from the client (Elizabethtown covered compensation of \$22,483,921 expected in fiscal year 2006 and American Water covered compensation of \$266,216,479 expected in plan year 2006).

(5) July 1, 2006 values shown are before the merger of Elizabethtown Water Company pension plan.

Discussion of Financial Results

The financial results of American Water Works Company, Inc.'s Pension Plan were affected by the following factors:

- ▶ Effective December 31, 2006, the Elizabethtown Pension Plan was merged into the American Water Works Plan. Funding and expense results in this report reflect the merged plan.
- ▶ Investment returns during the prior fiscal year were lower than expected, which decreased the funded percentage and increased the pension cost.
- ▶ Long-term bond yields increased during the prior year resulting in a higher FAS 87 discount rate, which increased the funded percentage and decreased the pension cost.
- ▶ The mortality table used for the calculation of current liability was changed from 1983 GAM to RP-2000 to reflect final IRS regulations issued in February 2007, which increased the minimum required contribution and decreased the current liability funded percentage.
- ▶ The interest rate used for calculating Actuarial Accrued Liability and Normal Cost under ERISA was changed from 8.25% in the prior year to 8.00% in the current year to reflect expected long term plan returns. This increased the minimum required contribution and decreased funded percentage.
- ▶ On August 17, 2006 the Pension Protection Act (PPA) was signed into law. Among other provisions, the PPA:
 - Extended current liability interest rate relief for the 2006 and 2007 plan years
 - Modified several aspects of the calculation of the maximum tax deductible contribution for 2006 and 2007 (most notably, increased the maximum deductible amount from 100% of the plan's unfunded current liability to 150%)
 - Made permanent the increased statutory limits on pensionable earnings and pension benefits that were temporarily increased under EGTRRA
 - Beginning with 2008, made extensive changes in the determination of both the minimum required contribution and the maximum tax deductible limit. This did not impact the 2007 valuation results.

Note that there is some uncertainty regarding how the 25% of pay limitation is to be applied for 2006 and 2007 due to the PPA. Deductibility should be reviewed prior to any contributions being made.

Highlights

Economic Assumptions

The discount rate for pension cost purposes is the rate at which the pension obligations could be effectively settled. This rate is developed from yields on available high-quality bonds and reflects the plan's expected cash flows. The following bond yields provide information on the general interest rate environment:

	December 31, 2007	December 31, 2006
30-year Treasury	4.45%	4.81%
Merrill Lynch 10+ High Quality	6.18%	5.85%
Moody's Aa	5.80%	5.72%
Moody's Baa	6.56%	6.35%

The assumed rate of return on assets for pension cost purposes is the weighted average of expected long-term asset return assumptions. The salary increase rate is a long-term rate based on current expectations of future pay increases. The assumptions for pension cost purposes are:

	December 31, 2007	December 31, 2006
Discount rate	6.27%	5.90%
Rate of return on assets	7.90%	8.00%
Salary increase rate	Age-graded scale averaging 4.25%	Age-graded scale averaging 4.25%

Assumptions used to determine statutory contribution limits must be reasonable taking into account the experience of the plan and reasonable expectations. The discount rate used to determine the normal cost and actuarial accrued liability is based on the long-term expected return on assets. The current liability interest rates must be within permissible ranges as issued by the IRS. These ranges and assumptions for contribution purposes are:

	July 1, 2007	July 1, 2006
Discount rate for normal cost and actuarial accrued liability	8.00%	8.25%
Current liability interest rates:		
▶ Permissible range	5.25% to 5.83%	5.19% to 5.77%
▶ Selected rate	5.83%	5.77%
Salary increase rate	Age-graded scale averaging 4.25%	Age-graded scale averaging 4.25%

MS-4

Assets

In fiscal 2007, the fund recorded a 4.7% investment return, while the capital markets performed as follows:

Large equities [S&P 500]	5.49%
Intermediate/small equities [Russell 2500]	1.38%
Non-U.S. equities [EAFE]	11.63%
Bonds [Lehman Brothers Aggregate]	6.97%
Cash equivalents [Citi 3 Month T-Bill]	4.74%

Demographic Assumptions

The cost of providing plan benefits depends on demographic factors such as retirement, mortality, and turnover. With the exception of the IRS-required mortality basis used to calculate current liability, demographic assumptions used in the valuation were selected to reflect the experience of the covered population and reasonable expectations. If actual experience is more favorable than assumed, future plan costs will be lower. Alternatively, if actual experience is less favorable than assumed, future plan costs will be higher.

Demographic assumptions have been changed since the prior valuation. The mortality basis used to calculate current liability was changed from 1983 GAM to RP-2000 to reflect final IRS regulations issued in February 2007. Plans were given the option to use separate non-annuitant and annuitant mortality tables, or to use a single combined table of non-annuitant and annuitant mortality. For purposes of the 2007 plan year valuation, the separate non-annuitant and annuitant tables were used. In addition, the termination rate assumptions were aligned for prior Elizabethtown Plan participants and American Water Plan participants.

American Water Works Company, Inc. had 5,053 active participants covered under this pension plan as of July 1, 2007 versus 4,745 for the prior year. Covered payroll increased 10.8% from the prior year.

The average compensation increase for the participants who remained active since July 1, 2006 was about 4.7%.

Changes in Benefits Valued

There were no changes in benefits valued since the prior year other than to reflect increases in the statutory limits on pay and benefits, including the elimination of the sunset provision for the IRS pay and benefit limits under the Pension Protection Act.

Legislative Changes

On August 17, 2006 the Pension Protection Act (PPA) was signed into law, as discussed on page MS-2.

In February 2007, the IRS issued final regulations regarding the selection of the mortality basis used to calculate current liability. These regulations updated the basis from 1983 GAM sex-distinct mortality to RP-2000 sex-distinct mortality.

PBGC Reporting Requirements

Beginning in 2007, the PPA eliminated the PBGC participant notification requirements for plans that are required to pay a PBGC variable premium and have a funded percentage below a specified “gateway” percentage. The PPA stipulates that all defined benefit plans are required to issue annual funding notices (due 120 days after the end of the plan year) for plan years beginning in 2008.

Additional financial and actuarial information must be provided to the PBGC if, at the end of the year, all defined benefit plans within the controlled group have an unfunded vested liability of \$50 million or more using assumptions mandated by the PBGC. In February 2007, the IRS updated the interest rate assumption and asset valuation method used to calculate the \$50 million “gateway test.” The interest rate assumption was updated from 85% to 100% of the applicable PFEA corporate bond rate, and the asset valuation method was updated from actuarial value to market value for all calculations.

As of June 30, 2006, unfunded vested liabilities for all defined benefit plans within the controlled group were more than \$50 million. Consequently, additional financial and actuarial information will be provided to the PBGC.

Plan Merger

Effective December 31, 2006, the Elizabethtown Pension Plan was merged into the American Water Works Pension Plan. Results shown in this report generally reflect the plan merger.

FAS 87 Pension Cost and Funded Position

Pension cost is the amount recognized in AW's financial statement as the cost of the pension plan and is determined in accordance with Financial Accounting Standard No. 87. The fiscal 2008 pension cost for the plan is \$39,825,996, or 13.4% of covered pay.

Under FAS 87, one measure of funded position is a comparison of the fair value of assets to the accumulated benefit obligation (ABO). The ABO is the present value of accumulated benefits based on service and pay as of the measurement date.

American Water's ABO funded percentage is 81.3% as of January 1, 2008, based on the fair value of assets of \$627,988,678 and an ABO of \$772,542,892.

Change in Pension Cost and Funded Position

The pension cost increased from \$38,968,697 in fiscal 2007 to \$39,625,996 in fiscal 2008 because:

- ▶ Expected changes, based on prior year's assumptions, methods, plan provisions, and contributions, decreased the pension cost \$2,555,740.
- ▶ Noninvestment experience increased the pension cost \$6,511,120.
- ▶ The return on the fair value of plan assets was 4.7% in fiscal 2007, which increased the pension cost \$3,105,575.
- ▶ Assumption changes decreased the pension cost \$6,565,802.
- ▶ Plan changes increased the pension cost \$162,146.

The ABO funded percentage increased from 77.2% to 81.3%.

History of Pension Cost and ABO Funded Percentage

----- *Pension cost* -----

<i>Fiscal year</i>	<i>Amount</i>	<i>Percent of covered pay</i>	<i>ABO funded percentage</i>	<i>Discount rate</i>
2008*	\$ 39,625,996	13.4%	81.3%	6.27%
2007*	38,968,697	13.5	77.2	5.90
2006	40,327,960	16.7	67.6	5.65
2005	36,845,672	15.5	78.9	6.00
2004	35,623,816	14.9	80.8	6.25

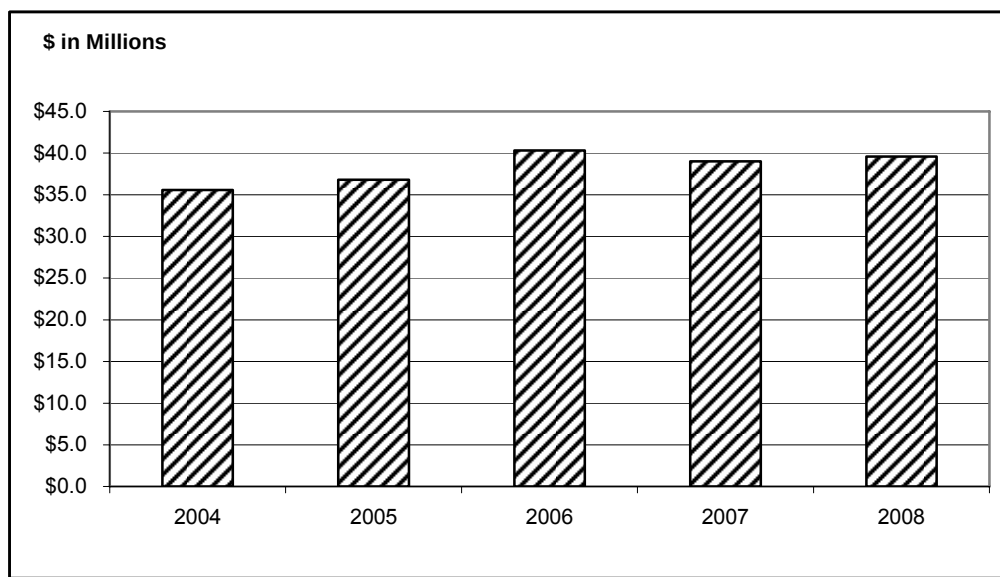
* All 2007 and 2008 values reflect the merger of Elizabethtown Water Company Pension Plan as of December 31, 2006.

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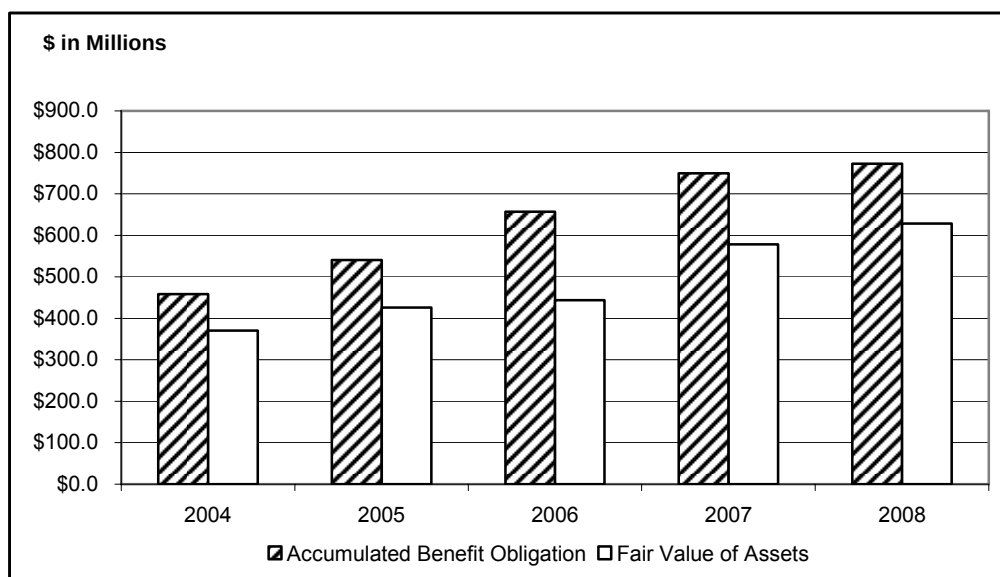
History of Pension Cost and Funded Position

The following charts show the history of the plan's pension cost and ABO funded position:

History of Pension Cost*



History of the Accumulated Benefit Obligation and Fair Value of Assets*



* All 2007 and 2008 values reflect the merger of Elizabethtown Water Company Pension Plan as of December 31, 2006.

Employer Contributions and ERISA Funded Position

American Water's funding policy is to contribute an amount equal to the minimum required contribution under ERISA. American Water may increase its contribution above the minimum if appropriate to its tax and cash position and the plan's funded position. For 2007, the minimum required contribution is \$75,996,105, or 25.8% of covered pay. The maximum deductible contribution under the Internal Revenue Code is \$673,880,639, or 228.5% of covered pay.

The funded position, on a contribution basis, is measured by comparing the actuarial value of assets with the actuarial accrued liability (AAL). The actuarial value of assets is a smoothed value that recognizes investment gains and losses over time. The AAL is the funding target, under ERISA, on which the employer contribution limits are based. As the funded percentage for a plan approaches or exceeds 100%, contributions to the plan may be restricted.

The plan's funded percentage (actuarial value of assets divided by AAL) is 86.1% as of July 1, 2007. This percentage is based on an actuarial value of assets of \$591,972,484 and an AAL of \$687,475,512.

Change in Contribution Requirements and Funded Position

The minimum required contribution increased from \$0 for 2006 to \$75,996,105 for 2007.

Current Liability

An alternative measure of funded position compares the actuarial value of assets with the plan's current liability. The current liability is the present value of benefits accrued to the valuation date reflecting IRS restrictions on interest and mortality assumptions.

The Pension Protection Act of 2006 (PPA) extended interest rate relief through the 2007 plan year. The PPA also raised the maximum deductible contribution level to 150% of the current liability funding target for the 2006 and 2007 plan years.

Current liability for minimum funding requirements is measured in two ways. The first measure is used to determine whether quarterly contribution requirements apply and to determine the amount of any applicable Additional Funding Requirements. The second measure is used to determine whether Additional Funding Requirements apply.

Timing of Contributions

If the current liability funded percentage measured using the selected interest rate is below 100%, quarterly contributions may be required in the following plan year. The plan's current liability funded percentage on this basis is 73.9% as of July 1, 2007. This percentage is based on an actuarial value of assets of \$592.0 million and a current liability of \$801.4 million. Quarterly contributions may be required for the 2008 plan year based on this year's valuation results and current understanding of applicable legislation.

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Additional Funding Requirements

If the current liability funded percentage measured using the highest allowable interest rate is below 90%, additional funding requirements may be triggered. The plan's current liability funded percentage on this basis is 73.9% as of July 1, 2007.

Actuarial Certification, Reliances and Distribution

American Water Works Company, Inc. retained Towers Perrin to perform a valuation of its pension plan for the purpose of determining (1) the value of benefit obligations and its pension cost in accordance with FAS 87 and (2) the minimum required and maximum tax-deductible contributions in accordance with ERISA and allowed by the Internal Revenue code. This valuation has been conducted in accordance with generally accepted actuarial principles and practices.

The consulting actuaries are members of the Society of Actuaries and other professional actuarial organizations and meet their "General Qualification Standard for Prescribed Statements of Actuarial Opinions" relating to pension plans.

In preparing the results presented in this report, we have relied upon information provided to us regarding plan provisions, plan participants, and plan assets. We have reviewed this information for overall reasonableness and consistency, but have neither audited nor independently verified this information. The accuracy of the results presented in this report is dependent upon the accuracy and completeness of the underlying information.

The actuarial assumptions and the accounting policies and methods employed in the development of the pension cost have been selected by the plan sponsor, with the concurrence of Towers Perrin. FAS 87 requires that each significant assumption "individually represent the best estimate of a particular future event."

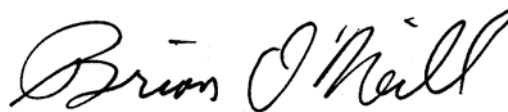
The actuarial assumptions and methods employed in the development of the contribution limits have been selected by Towers Perrin, with the concurrence of the plan sponsor. The Internal Revenue Code requires the use of assumptions "each of which is reasonable (taking into account the experience of the plan and reasonable expectations)" and "which, in combination, offer the actuary's best estimate of anticipated experience under the plan."

The results shown in this report have been developed based on actuarial assumptions that are considered to be reasonable and within the "best-estimate range" as described by the Actuarial Standards of Practice. Other actuarial assumptions could also be considered to be reasonable and within the best-estimate range. Thus, reasonable results differing from those presented in this report could have been developed by selecting different points within the best-estimate ranges for various assumptions.

The information contained in this report was prepared for the internal use of American Water Works Company, Inc. and its auditors in connection with our actuarial valuation of the pension plan. It is neither intended nor necessarily suitable for other purposes. American Water Works Company, Inc. may also distribute this actuarial valuation report to the appropriate authorities who have the legal right to require American Water Works Company, Inc. to provide them this report, in which case American Water Works Company, Inc. will use best efforts to notify Towers Perrin in advance of this distribution. Further distribution to, or use by, other parties of all or part of this report is expressly prohibited without Towers Perrin's prior written consent.



Roy Costa, FSA, EA



Brian J. O'Neill, FSA, EA

Towers Perrin
February 2008

Supplemental Information

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Asset Values

Asset Values for Calculating Pension Cost

Fair value, excluding
contributions receivable:

▶ As of January 1, 2007	\$ 578,280,462
▶ Contributions	50,787,850
▶ Disbursements	(28,331,669)
▶ Investment return	<u>27,252,035</u>
▶ As of January 1, 2008	\$ 627,988,678
▶ Rate of return	4.7%

Market-related value:

▶ As of January 1, 2007	\$ 578,280,462
▶ As of January 1, 2008	627,988,678
▶ Rate of return	4.7%

Asset Values for Calculating Employer Contributions

Market value, including
contributions receivable:

▶ As of July 1, 2006	\$ 511,588,284
▶ Contributions	956,000
▶ Disbursements	(29,659,522)
▶ Investment return	74,586,134
▶ Elizabethtown transfer (asset values as of December 31, 2006)	<u>55,831,168</u>
▶ As of July 1, 2007	\$ 613,302,064
▶ Rate of return	14.2%

Actuarial value:

▶ As of July 1, 2006	\$ 518,247,375
▶ As of July 1, 2007	591,972,484
▶ Rate of return	8.9%
▶ Rate of return (assuming mid-year cash flow) for Schedule B of Form 5500	8.8%

SI-2

Basic Results for Pension Cost

	January 1, 2008 ⁽¹⁾	January 1, 2007 ⁽¹⁾
Service Cost	\$ 25,892,330	\$ 25,214,558
Obligations		
Accumulated benefit obligation [ABO]:		
▶ Participants currently receiving benefits	\$ 305,427,668	\$ 295,371,687
▶ Deferred inactive participants	77,443,963	79,720,120
▶ Active participants	<u>389,671,261</u>	<u>374,219,932</u>
Total ABO	\$ 772,542,892	\$ 749,311,739
Obligation due to future salary increases	<u>120,580,851</u>	<u>114,781,487</u>
Projected benefit obligation [PBO]	\$ 893,123,743	\$ 864,093,226
Assets		
Fair value [FV]	\$ 627,988,678	\$ 578,280,462
Unrecognized investment losses (gains)	<u>0</u>	<u>0</u>
Market-related value	\$ 627,988,678	\$ 578,280,462
Funded Position		
Unfunded PBO	\$ 265,135,065	\$ 285,812,764
Minimum liability [ABO – FV, minimum zero] ⁽²⁾	144,554,214	171,031,277
Key Economic Assumptions		
Discount rate	6.27%	5.90%
Rate of return on assets	7.90%	8.00%
Salary increase rate	Age-graded scale averaging 4.25%	Age-graded scale averaging 4.25%

(1) All values reflect the merger of Elizabethtown Water Company Pension Plan as of December 31, 2006.

(2) Does not reflect FAS 158.

Fiscal 2007

Development of Prepaid (Accrued)
Pension Cost as of January 1, 2008

Prepaid (accrued) pension cost, as of January 1, 2007	\$ (102,302,391)
Change during fiscal 2006	
▶ Income (cost) recognized	(38,968,697)
▶ Employer contributions	50,787,850
▶ Effect of curtailments, settlements, and termination benefits	0
▶ Adjustment	0
Prepaid (accrued) pension cost as of January 1, 2008 (before FAS 158)	\$ (90,483,238)

	January 1, 2008 ⁽¹⁾	January 1, 2007 ⁽¹⁾
Reconciliation of Funded Status		
Funded status [FV – PBO]	\$ (265,135,065)	\$ (285,812,764)
Unrecognized net actuarial loss (gain)	171,339,010	180,409,625
Unrecognized prior service cost (credit)	3,312,817	3,100,748
Unrecognized transition obligation (asset)	0	0
Prepaid (accrued) pension cost	\$ (90,483,238)	\$ (102,302,391)
Balance Sheet Effects		
Prepaid pension cost	\$ 0	\$ 0
Accrued pension cost	(90,483,238)	(102,302,391)
Additional minimum liability	(54,070,976)	(68,728,886)
Intangible asset	3,312,817	3,100,748
Accumulated other comprehensive income	50,758,159	65,628,138
Balance sheet effect	\$ (90,483,238)	\$ (102,302,391)

(1) All values reflect the merger of Elizabethtown Water Company Pension Plan as of December 31, 2006.

The results above do not reflect FAS 158. The accumulated other comprehensive income was developed based on FAS 87 prior to FAS 158 and has not been tax effected. Any tax effect should be separately recognized.

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Pension Cost

	Fiscal 2008 ⁽¹⁾	Fiscal 2007 ⁽¹⁾
Pension Cost		
Service cost	\$ 25,892,330	\$ 25,214,558
Interest cost	56,675,301	51,613,587
Expected return on assets	(51,701,245)	(47,052,194)
Amortization:		
▶ Transition obligation (asset)	0	0
▶ Prior service cost (credit)	707,521	637,931
▶ Net loss (gain)	<u>8,052,089</u>	<u>8,554,815</u>
Pension cost	\$ 39,625,996	\$ 38,968,697
Percent of covered pay ⁽²⁾	13.4%	13.5%
Per active participant ⁽³⁾	\$ 7,842	\$ 7,700

Change in Pension Cost

Pension cost for fiscal 2007	\$ 38,968,697
Change from fiscal 2007 to fiscal 2008:	
▶ Expected based on prior valuation	(2,555,740)
▶ Loss (gain) from noninvestment experience	6,511,120
▶ Loss (gain) from asset experience	3,105,575
▶ Assumption changes	(6,565,802)
▶ Plan amendments	<u>162,146</u>
Pension cost for fiscal 2008	\$ 39,625,996

(1) All values reflect the merger of Elizabethtown Water Company Pension Plan as of December 31, 2006.

(2) For Fiscal 2007, covered pay is based on the most recent valuation data received from the client (Elizabethtown covered compensation of \$22,483,921 as of January 1, 2006 and American Water covered compensation of \$266,216,479 as of July 1, 2006).

(3) For Fiscal 2007, the number of active participants is based on the most recent valuation data received from the client (Elizabethtown had 316 active participants as of January 1, 2006 and American Water had 4,745 active participants as of July 1, 2006).

Present Value of Accumulated Plan Benefits for FAS 35

	July 1, 2007	July 1, 2006 ⁽¹⁾
Actuarial Present Value of Accumulated Plan Benefits		
Vested benefits:		
▶ Participants currently receiving benefits	\$ 311,969,354	\$ 220,940,005
▶ Other participants	<u>287,334,674</u>	<u>262,001,205</u>
▶ Total vested benefits	\$ 599,304,028	\$ 482,941,210
Nonvested benefits	<u>5,011,162</u>	<u>12,220,390</u>
Total accumulated benefits	\$ 604,315,190	\$ 495,161,600
Market value of assets	613,302,064	511,588,284

Key Assumptions

Interest rate	8.00%	8.25%
Average retirement age	62	62
Mortality	RP-2000	RP-2000

Change in Actuarial Present Value of Accumulated Plan Benefits

Actuarial present value of accumulated plan benefits as of July 1, 2006 \$ 495,161,600

Change from 2006 to 2007:

▶ Additional benefits accumulated (including the effect of noninvestment experience)	27,449,357
▶ Interest due to decrease in the discount period	39,808,355
▶ Benefits paid	(25,783,090)
▶ Assumption changes	17,087,825
▶ Plan amendments	0
▶ Merger of Elizabethtown Water	<u>50,591,143</u>

Actuarial present value of accumulated plan benefits as of July 1, 2007 \$ 604,315,190

(1) The assets and liabilities as of July 1, 2006 shown above are before the Elizabethtown Water Company Pension Plan merger and include only the American Water Pension Plan.

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Basic Results for Employer Contributions

	July 1, 2007	July 1, 2006 ⁽¹⁾
Normal Cost and Liabilities		
Normal cost	\$ 18,351,357	\$ 14,614,358
Actuarial accrued liability [AAL]	687,475,512	556,822,415
Current liability [CL]:		
▶ Selected interested rate	801,432,166	647,682,990
▶ Highest allowable interest rate	801,432,166	647,682,990
Assets		
Market value	\$ 613,302,064	\$ 511,588,284
Unrecognized investment losses (gains)	<u>(21,329,580)</u>	<u>6,659,091</u>
Actuarial value [AV]	\$ 591,972,484	\$ 518,247,375
Funded Position		
Unfunded actuarial accrued liability [AAL – AV]	\$ 95,503,028	\$ 38,575,040
AAL funded percentage [AV ÷ AAL]	86.1%	93.1%
CL funded percentage:		
▶ Selected interest rate	73.9%	80.0%
▶ Highest allowable interest rate	73.9%	80.0%
Key Economic Assumptions		
Discount rate for normal cost and actuarial accrued liability	8.00%	8.25%
Current liability interest rate:		
▶ Selected	5.83%	5.77%
▶ Highest allowable	5.83%	5.77%
Salary increase rate	Age-graded scale averaging 4.25%	Age-graded scale averaging 4.25%

(1) The assets and liabilities as of July 1, 2006 shown above are before the Elizabethtown Water Company Pension Plan merger and include only the American Water Pension Plan.

The results reflect extension of current liability interest rate relief.

Minimum Required Employer Contribution

	July 1, 2007	July 1, 2006 ⁽¹⁾⁽²⁾
Minimum Required Employer Contribution		
Normal cost	\$ 18,351,357	\$ 15,252,843
Amortization amounts	25,938,181	19,393,438
Interest adjustments	3,543,162	2,831,734
Additional funding charge	53,265,597	
Credit balance with interest	<u>(25,102,192)</u>	<u>(60,702,787)</u>
Minimum required contribution before full funding limit	\$ 75,996,105	\$ 0
Minimum required contribution after full funding limit	75,996,105	0

(1) Contribution amounts reflect the merger of Elizabethtown Water Company Pension Plan as of December 31, 2006.

(2) Amounts reflect Final Funding Standard Account adjustments due to merger of Elizabethtown Water Company Pension Plan.

Additional details regarding the calculation of the minimum required employer contribution may be obtained from the Form 5500 Schedule B filings and attachments.

SI-8

Maximum Deductible Employer Contribution

	July 1, 2007 ⁽¹⁾	July 1, 2006 ⁽¹⁾
Maximum Deductible Employer Contribution		
Maximum deductible contribution before adjustments	\$ 33,430,023	\$ 22,418,851
Allowable deduction, the greatest of:		
▶ Maximum deductible contribution after full funding limit	33,430,023	22,418,851
▶ Contribution necessary to satisfy minimum funding standards	0	0
▶ Contribution necessary to fund maximum allowable percentage of current liability ⁽²⁾	673,880,639	539,127,891
Maximum deductible contribution	673,880,639	539,127,891

(1) Contribution amounts reflect the merger of Elizabethtown Water Company Pension Plan as of December 31, 2006.

(2) Contribution necessary to fund 150% of current liability.

Deductibility of contributions to a defined contribution plan maintained for the same employees may be affected by the 25% of pay limitation for defined benefit and defined contribution plans combined.

Note that there is some uncertainty regarding how the 25% of pay combined deductible limit for DB and DC plans is to be applied when the plan year and tax year differ.

Actuarial Assumptions and Methods

	Pension Cost	Contributions
Economic Assumptions		
Discount rate	6.27%	8.00%
Return on assets	7.90%	N/A
Current liability interest rates:		
▶ Selected	N/A	5.83%
▶ Highest allowable	N/A	5.83%
Lump sum conversion interest rate	5.27%	6.00%*
* 5.83% for current liability		
Annual rates of increase in:		
▶ Compensation		
Sample rates:		
	<i>Age</i>	<i>% Increase</i>
	25	5.85%
	35	4.45%
	40	4.15%
	45	3.95%
	55	3.65%
	Average rate	4.25%
▶ Future Social Security wage bases	3.75%	3.75%
▶ Indexed limits on compensation and benefits	3.25%	N/A

SI-10

Demographic Assumptions

Mortality

- ▶ Pension cost For healthy participants, sex-distinct RP-2000 table projected to 2015 using scale AA with phase-out without any collar adjustment.
- ▶ Contributions For healthy participants, sex-distinct RP-2000 table projected to 2015 using scale AA with phase-out without any collar adjustment.

For disabled participants, select and ultimate mortality rates from the PBGC disabled mortality for Social Security recipients.

For current liability purposes, the separate IRS non-annuitant and annuitant mortality tables were used.

Termination

Rates varying by age

Sample rates:

Age	<u>Service</u>			
	0-4	5-9	10-14	Ultimate
25	0.100	0.090	0.080	0.060
35	0.070	0.065	0.060	0.040
40	0.065	0.055	0.050	0.040
45	0.060	0.050	0.040	0.030
55	0.000	0.000	0.000	0.000

Sample termination rates for Alton and Pensacola Call Center Employees:

Age	<u>Service</u>						Ultimate
	0-1	2	3	4-5	6-7	8-9	
25	0.35	0.30	0.25	0.20	0.15	0.10	0.05
35	0.35	0.30	0.25	0.20	0.15	0.10	0.05
40	0.35	0.30	0.25	0.20	0.15	0.10	0.05
45	0.35	0.30	0.25	0.20	0.15	0.10	0.05
55	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Disability

50% of 1987 CGDT (shown below)

Sample annual rates of disablement:

Age	Male	Female
25	.0005	.0006
35	.0007	.0012
40	.0010	.0015
45	.0018	.0023
55	.0059	.0053

None for Elizabethtown

Retirement

Rates varying by age averaging 61; terminated vested participants, age 65

<i>Age</i>	<i>Rate</i>	<i>Age</i>	<i>Rate</i>
55	.10	61	.10
56	.07	62	.60
57	.07	63	.40
58	.07	64	.40
59	.10	65	.45
60	.10	66	1.00

Elizabethtown:

Rates varying by age averaging 63; terminated vested participants, age 65

Sample rates:

<i>Age</i>	<i>Rate</i>
55-59	.025
60-61	.075
62	.35
63	.30
64	.20
65	.60
66-69	.20
70	1.00

Form of payment

Life annuity. Normal cost and actuarial accrued liability have been increased by .2% for the two-year "pop-up" provision.

Administrative expense

\$300,000 is added to the plan's normal cost

Percent married

100% males and 100% females are assumed married.

Spouse age

Wife three years younger than husband

Valuation pay

Annualized target pay rate plus bonus.

Annual rates of pay are increased 3% for those without a bonus to approximate total company overtime.

Maximum benefit

For contribution purposes: \$180,000 for 2007, payable at age 62.

For accounting purposes: \$180,000 for 2007, increasing with inflation.

Maximum pensionable earnings

For contribution purposes: \$225,000 for 2007

For accounting purposes: \$225,000 for 2007, increasing with inflation.

SI-12

Methods

Pension cost:

- ▶ Measurement date January 1, 2008 based on July 1, 2007 participant data
- ▶ Service cost and projected benefit obligation Projected unit credit
- ▶ Market-related value of assets Fair value
- ▶ Amortization of unrecognized amounts:
 - Prior service cost (credit) Increase in PBO resulting from a plan amendment is amortized on a straight-line basis over the expected average remaining service of active participants.
 - Net loss (gain) Net loss (gain) in excess of 10% of the greater of the PBO or the market-related value of assets is amortized on a straight-line basis over the expected average remaining service of active participants.

Contributions:

- ▶ Valuation date July 1, 2007
- ▶ Normal cost and actuarial accrued liability Projected unit credit
- ▶ Actuarial value of assets A preliminary actuarial value of assets as of the valuation date is determined as the market value of assets as of the valuation date less the following percentage applied to investment gains (losses) from previous years:
 - 80% for the year ending on the valuation date
 - 60% for the previous year
 - 40% for the second previous year
 - 20% for the third previous year

The preliminary actuarial value is then adjusted to be within a corridor of 80% to 120% of the market value.
- ▶ Funding policy The company's funding policy is to contribute an amount at least equal to the minimum required contribution under ERISA. American Water Works may increase its contribution above the minimum, if appropriate to its tax and cash position and the plan's funded status.

Benefits Not Valued

All benefits described in the Plan Provisions section of this report were valued. Towers Perrin has reviewed documentation provided by American Water Works and is not aware of any significant benefits that were not valued.

Change in Assumptions and Methods Since Prior Valuation

Pension cost	The discount rate for benefit obligations was changed from 5.90% to 6.27%.
	The lump sum conversion interest rate changed from 4.90% to 5.27%.
	The Elizabethtown termination rates were changed to the AW termination rates.
Contributions	The current liability interest rate was changed from 5.77% to 5.83%, which is within the permissible range.
	The discount rate was changed from 8.25% to 8.00%.
	The lump sum conversion interest rate was changed from 6.25% to 6.00% (it was changed from 5.77% to 5.83% for current liability).
	The mortality tables for current liability were changed as described above.
	The Elizabethtown termination rates were changed to the AW termination rates.

Data Sources

Towers Perrin used asset data supplied by the trustee. American Water Works furnished participant data as of July 1, 2007. In addition, accrued pension costs were furnished as of December 31, 2007. Data were reviewed for reasonableness and consistency. Towers Perrin is not aware of any errors or omissions in the data that would have a significant effect on the results of our calculations.

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Participant Data

	July 1, 2007	July 1, 2006 ⁽¹⁾
Active		
Number	5,053	4,745
Average age	46.1	45.8
Average past service	13.6	14.5
Average future service	10.2	11.0
Covered pay:		
▸ Total	\$ 294,901,541	\$ 266,216,479
▸ Average	58,362	56,105
Deferred Inactive		
Number	1,957	1,801
Average age	49.3	48.8
Annual benefits:		
▸ Total	\$ 17,141,403	\$ 15,344,148
▸ Average	8,759	8,520
Currently Receiving Benefits		
Number	1,803	1,495
Average age	68.2	67.3
Annual benefits:		
▸ Total	\$ 28,473,534	\$ 23,363,331
▸ Average	15,792	15,628
Total Participants Included in Valuation		
Number	8,813	8,041

(1) The July 1, 2006 Participant Data does not reflect the Elizabethtown plan merger as of December 31, 2006. As of January 1, 2006, the Elizabethtown Pension Plan had 316 active participants, 117 deferred inactive participants and 196 participants currently receiving benefits.

Analysis of Inactive Participant Data

Deferred Inactive

<i>Age last birthday</i>	<i>Number</i>	<i>Annual benefit</i>	<i>Average annual benefit</i>
< 40	205	\$ 1,146,388	\$ 5,592
40 – 49	813	6,606,771	8,126
50 – 54	441	4,870,275	11,044
55 – 59	289	3,124,332	10,811
60 – 64	154	1,088,198	7,066
> 64	<u>55</u>	<u>305,439</u>	5,553
Total	1,957	\$ 17,141,403	\$ 8,759

Currently Receiving Benefits

<i>Age last birthday</i>	<i>Number</i>	<i>Annual benefit</i>	<i>Average annual benefit</i>
< 55	45	\$ 488,229	\$ 10,850
55 – 59	208	3,385,711	16,277
60 – 64	444	8,290,767	18,673
65 – 69	484	8,697,445	17,970
70 – 74	218	3,474,539	15,938
75 – 79	143	2,066,318	14,450
> 79	<u>261</u>	<u>2,070,525</u>	7,933
Total	1,803	\$ 28,473,534	\$ 15,792

ANALYSIS OF ACTIVE PARTICIPANT DATA BY AGE, SERVICE AND EARNINGS AS OF 07/01/2007

Age Nearest Birthday	Completed Years of Service									Total
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	Over 34		
15 to 24	Count	56	1	0	0	0	0	0	0	57
	Total Earnings	2,020,953	60,051	0	0	0	0	0	0	2,081,004
	Average Earnings	36,088	60,051	0	0	0	0	0	0	36,509
25 to 29	Count	208	44	0	0	0	0	0	0	252
	Total Earnings	8,487,883	2,112,590	0	0	0	0	0	0	10,600,472
	Average Earnings	40,807	48,013	0	0	0	0	0	0	42,065
30 to 34	Count	227	142	14	1	0	0	0	0	384
	Total Earnings	10,272,323	7,504,235	736,615	46,747	0	0	0	0	18,559,920
	Average Earnings	45,253	52,847	52,615	46,747	0	0	0	0	48,333
35 to 39	Count	235	183	89	35	1	0	0	0	543
	Total Earnings	12,729,249	10,679,723	5,105,595	2,092,946	53,346	0	0	0	30,660,859
	Average Earnings	54,167	58,359	57,366	59,798	53,346	0	0	0	56,466
40 to 44	Count	209	183	145	163	73	4	0	0	777
	Total Earnings	11,075,483	10,874,913	8,261,866	10,469,388	4,540,666	254,116	0	0	45,476,432
	Average Earnings	52,993	59,426	56,978	64,229	62,201	63,529	0	0	58,528
45 to 49	Count	155	171	152	190	188	111	13	0	980
	Total Earnings	8,932,549	9,760,532	9,495,225	11,708,328	12,868,827	7,154,849	819,144	0	60,739,453
	Average Earnings	57,629	57,079	62,469	61,623	68,451	64,458	63,011	0	61,979
50 to 54	Count	122	142	128	157	162	236	80	9	1,036
	Total Earnings	8,081,586	8,233,160	7,597,556	9,705,455	10,061,324	15,835,710	4,960,927	471,939	64,947,657
	Average Earnings	66,243	57,980	59,356	61,818	62,107	67,100	62,012	52,438	62,691
55 to 59	Count	86	88	81	71	78	130	89	81	704
	Total Earnings	5,788,912	5,434,635	4,469,547	4,026,327	4,325,870	7,959,476	5,654,100	5,374,983	43,033,851
	Average Earnings	67,313	61,757	55,180	56,709	55,460	61,227	63,529	66,358	61,128
60 to 64	Count	28	50	30	23	23	29	32	66	281
	Total Earnings	1,659,758	2,817,977	1,549,725	1,403,290	1,325,831	1,632,677	1,791,501	4,357,735	16,538,493
	Average Earnings	59,277	56,360	51,658	61,013	57,645	56,299	55,984	66,026	58,856
65 to 69	Count	5	9	2	1	0	8	0	5	30
	Total Earnings	431,148	547,903	103,092	52,478	0	416,697	0	273,392	1,824,710
	Average Earnings	86,230	60,878	51,546	52,478	0	52,087	0	54,678	60,824
Over 69	Count	0	4	0	0	0	0	1	4	9
	Total Earnings	0	153,880	0	0	0	0	44,883	239,927	438,691
	Average Earnings	0	38,470	0	0	0	0	44,883	59,982	48,743
Total	Count	1,331	1,017	641	641	525	518	215	165	5,053
	Total Earnings	69,479,842	58,179,600	37,319,220	39,504,960	33,175,864	33,253,525	13,270,554	10,717,976	294,901,541
	Average Earnings	52,201	57,207	58,220	61,630	63,192	64,196	61,724	64,957	58,362
		Average Age: 46.1 Average Service: 13.6								

Reconciliation of Participant Data

	<i>Active</i>	<i>Deferred inactive</i>	<i>Currently receiving benefits</i>	<i>Total</i>
Included in July 1, 2006 valuation	4,745	1,801	1,495	8,041
Elizabethtown Merger (counts as of January 1, 2006)	316	117	196	629
Change due to:				
▶ New hire and rehire	285	0	0	285
▶ Nonvested termination	(103)	0	0	(103)
▶ Vested termination	(98)	98	0	0
▶ Retirement	(62)	(47)	109	0
▶ Disability	(11)	0	11	0
▶ Death without beneficiary	(1)	0	(13)	(14)
▶ Death with beneficiary	(9)	2	7	0
▶ Cashout	(1)	(1)	0	(2)
▶ Miscellaneous	(8)	(13)	(2)	(23)
▶ Net change	308	156	308	772
Included in July 1, 2007 valuation	5,053	1,957	1,803	8,813

Plan Provisions

Plan Provisions as of July 1, 2007

1. Effective Date: July 1, 1952. Most recent amendment/restatement effective January 1, 2007.
2. Definitions:
 - (a) Average Social Security Wage Base: Average of the maximum amounts subject to Social Security taxation for the year of retirement or termination and the nine preceding years.
 - (b) Earnings: Total compensation for services paid as an annual salary or as an hourly wage (including overtime and shift differentials) plus annual incentive awards paid in cash during the period, plus amounts paid under the company's business development incentive plan, plus amounts deferred under Sections 401(k), 125 or 132(f)(4) of the Internal Revenue Code. Earnings are subject to a maximum amount as set forth in Section 401(a)(17)(B) of the Internal Revenue Code.
 - (c) Final Average Earnings: The highest average monthly Earnings during the 60 consecutive months of the final 120 months (or lesser period of employment) preceding termination from employment or retirement.
 - (d) Year of Service:
 - (i) For periods prior to the first anniversary of employment after July 1, 1975: A Year of Service is credited for each year of continuous service during which the employee's customary employment was for more than 1,000 hours per year, subject to the following exceptions:
 - (a) California-American Water Company: Only continuous service accrued beginning December 28, 1970 is credited for the purpose of determining the amount of benefits payable under the Plan (in addition to any prior plan benefits).
 - (b) West Virginia Water Company and Yardley Water Company: Only service accrued beginning December 1, 1970 is credited for the purpose of determining the amount of benefits accrued under the Plan (in addition to any prior plan benefits). Service for eligibility purposes and for the schedule of early retirement factors is measured from the original date of hire.

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- (ii) For periods beginning on or after the first anniversary of employment after July 1, 1975: In general, a Year of Service is credited for each 12-month period commencing on the employee's anniversary date of employment during which the employee completes 1,000 hours of service. For the purpose of determining the amount of benefits of any participant (other than a part-time employee) who completes at least 1,000 but fewer than 2,080 hours of service in this 12-month period, the participant is credited with the fraction of a Year of Service determined by dividing his actual hours of service by 2,080. The following exceptions apply:
- (a) Hershey Water Company: Employees on April 19, 1977 who were vested in benefits accrued under the prior plan receive credit only for service beginning April 19, 1977.
 - (b) Pekin Water Company: Nonunion participants who were members of the prior plan get credit for all service less any prior plan benefit. Other nonunion employees get credit for periods of service beginning January 1, 1982. Union employees' service is credited for periods beginning April 1, 1982 for the purposes of determining the amount of benefits payable under the Plan (in addition to any prior plan benefits).
 - (c) Seymour Water Company: Only service accrued beginning March 16, 1982 is credited for the purpose of determining the amount of benefits payable under the Plan (in addition to any prior plan benefits).
 - (d) New Mexico-American: All service is credited, including periods before the August 1, 1986 acquisition. The prior plan benefit is a minimum.
 - (e) Indiana-American Terre Haute Plan: Only service accrued beginning May 11, 1987 is credited for the purpose of determining the amount of benefits payable under the Plan (in addition to any prior plan benefits).
 - (f) Brownsville Water Company: Only service accrued beginning July 1, 1990 is credited for the purpose of determining the amount of benefits payable under the Plan (in addition to any prior plan benefits).
 - (g) California Water Company: Only service accrued beginning July 1, 1990 is credited for the purpose of determining the amount of benefits payable under the Plan (in addition to any prior plan benefits).
 - (h) Avatar Utilities Inc: Only service accrued beginning August 31, 1993 is credited for the purpose of determining the amount of benefits payable under the Plan (in addition to any prior plan benefits).

- (i) PG Energy: Only service accrued beginning February 16, 1996 is credited for the purpose of determining the amount of benefits accrued under the Plan (in addition to any prior plan benefits). Service for eligibility and vesting purposes and for the schedule of early retirement factors is measured from the original date of hire.

- (j) United Water Resources, Inc.: Dates of acquisition are shown below:

<u>Location</u>	<u>Date</u>
United Water of Indiana	February 1, 2000
United Water of West Lafayette	February 1, 2000
United Water of Virginia	February 29, 2000
United Water of Missouri	May 1, 2000
United Water of Illinois	May 31, 2000

- (i) Nonunion employees: Service for eligibility purposes and for the schedule of early retirement factors is measured from the original date of hire. Service for benefit accrual is measured from the date of acquisition.
- (ii) Union employees: Service for all purposes is measured from the original date of hire. All benefits are determined under the United Waterworks Plan formula in effect on the date of acquisition.
- (k) City of Coatesville Authority: Only service accrued beginning March 23, 2001 is credited for the purpose of determining the amount of benefits accrued under the Plan. Service for eligibility to participate, vesting and early retirement eligibility is measured from the original date of hire.
- (l) Citizens Utilities Companies: Only service accrued beginning January 15, 2002 is credited for the purpose of determining the amount of benefits payable under the Plan. Service for eligibility and vesting purpose and for the schedule of early retirement factors is measured from the original date of hire.
- (m) Cessation of Years of Service for Benefit Accrual for Certain Employee Groups: Union participants hired or rehired on or after January 1, 2001 cease to be credited with years of service for benefit accrual after December 31, 2005. Likewise, all accrued benefits for those participants are frozen as of December 31, 2005.

The following union groups are excluded from this benefit freeze provision:

- ▶ Union employees at Sterling or Alton, Illinois
- ▶ Union employees at Pensacola, Florida
- ▶ Union employees as of January 15, 2002 who were included in the Citizens Utility acquisition
- ▶ Elizabethtown Water Company employees of Local 423 hired before April 1, 2006 or Local 68 hired before May 1, 2006

Note: Years of service for purposes of determining eligibility for benefits (vesting, disability, early retirement and preretirement death benefits) continue to accrue for all union participants whose benefits are frozen as of December 31, 2005.

(n) Recent acquisitions — service credit from dates shown below:

<u>Location</u>	<u>Date</u>
Country Place Water	June 30, 1995
Hawaii American Water	July 1, 1998
City of Florissant, MO (nonunion employees)	November 1, 2001
Texas American Water	July 1, 2002
City of Webster Groves, MO	February 8, 2002
LP Water and Sewer Company (nonunion employees)	April 3, 2002

3. Eligibility for Participation: Each employee commences participation on the first day of the calendar month next following completion of one Year of Service. The following groups of employees are not eligible to participate in the plan:

- (a) Nonunion employees hired or rehired on or after January 1, 2006
- (b) Union employees hired or rehired on or after January 1, 2006 (April 1, or May 1, 2006 for employees of Elizabethtown Water unions 423 and 68 respectively)
- (c) Any employee who was not eligible to accrue a benefit as of January 1, 2006 (with noted exceptions for certain union groups).

4. Benefits:

- (a) Normal Retirement Benefit:

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- (i) Normal retirement date: The first day of the calendar month next following the participant's 65th birthday.
- (ii) Basic monthly benefit: The sum of (A) and (B) below. Union employees hired on or after January 1, 2001 have their accrued benefit frozen as of December 31, 2005.
- (A1) For service before July 1, 2001 for American Water employees (other than former NEI plan participants), the larger of (1) or (2) below:
- (1) The sum of (a) plus (b) plus (c):
- (a) 1.85% of Final Average Earnings not in excess of the Average Social Security Wage Base multiplied by Years of Service up to 25 years.
- (b) 2.10% of Final Average Earnings in excess of the Average Social Security Wage Base multiplied by Years of Service up to 25 years.
- (c) 0.70% of Final Average Earnings multiplied by Years of Service in excess of 25 years.
- (2) The benefit accrued under the Plan formula as of June 30, 1989.
- (A2) For former NEI participants and Elizabethtown Water nonunion participants, the benefit formula in effect under the provisions of the former respective NEI plans using the Final Average Earnings described in 2(c) above, and service (determined under the provisions of the former plan) prior to the dates described below:

<u>Nonbargaining participants of</u>	<u>service before</u>
▶ Northern Illinois	July 1, 2001
▶ Long Island	July 1, 2001
▶ Northwest Indiana	July 1, 2001
▶ St. Louis	July 1, 2001
▶ Elizabethtown Water	January 1, 2006

<u>Bargaining participants of</u>	<u>service before</u>
▶ Northwest Indiana	January 1, 2003
▶ St. Louis	January 1, 2004
▶ Northern Illinois	July 1, 2004
▶ Long Island	July 1, 2004*

- * The applicable benefit formula is 1.75% of Final Average Earnings as of the earlier of December 31, 2007 or termination date times credited service through June 30, 2004.

(B) For service on or after July 1, 2001 for AW participants*, and after dates described above for former NEI and Elizabethtown Water nonbargaining participants, sum of (1) + (2) + (3):

- (1) 1.6% of Final Average Earnings not in excess of the Average Social Security Wage Base multiplied by Years of Service up to 25 years.**
- (2) 2.1% (1.6% for Union Associates, former NEI participants, former Elizabethtown Water participants and all participants hired after July 1, 2001) of Final Average Earnings in excess of the Average Social Security Wage Base multiplied by Years of Service up to 25 years.**
- (3) 1.6% of Final Average Earnings multiplied by Years of Service in excess of 25 years**

* For participants hired on or after July 1, 2001, 1.6% of Final Average Earnings multiplied by Years of Service.

** The threshold of 25 years of service is based on total service, including Years of Service credited prior to July 1, 2001.

The following groups represent variances from the above benefit formulas:

- ▶ IBEW Local 51 members employed at Sterling, Illinois — the former Northern Illinois plan's benefit provisions continued unchanged. The formula is 1.33% of Final 5-year Average Earnings (based on the highest five consecutive out of the last 10 plan years, where plan years are from April 1 to March 31) multiplied by Years of Service.
- ▶ United Water (acquired in 2000) union employees previously covered under the United Waterworks Plan — the former plan's benefit provisions continue unchanged.
- ▶ Union employees of Long Island — 1.60% multiplied by Years of Service from July 1, 2004 to January 1, 2008 multiplied by final 60-month average pay as of December 31, 2007. 1.60% for each Year of Service after December 31, 2007 multiplied by average pay from January 1, 2008 to date of retirement.
- ▶ Union employees of Elizabethtown Water Company hired before the effective date of the most recent bargaining agreement — the former Elizabethtown retirement plan's provisions continue unchanged. The formula is 1.6% of Final 4-year Average Base Earnings times Years of Service (maximum 40 years).

In addition to the above amounts, benefits are payable under prior plans that have been merged into this Plan: for the Pekin, Seymour, California-American, West Virginia Water Companies and the Indiana-American Terre Haute Plan, the Brownsville Water Company, California Water Company, Avatar Utilities Inc. and PG Energy. Also, any benefits payable through a purchased annuity are subtracted from the above amounts (under Metropolitan contracts #153 and #369).

(b) Early Retirement Benefit:

(i) Early retirement date:

- ▶ For American Water employees, former St. Louis County employees and Long Island employees, the first day of any month on which the employee elects to retire provided that:
 - (a) the participant has attained age 55, and
 - (b) the sum of the individual's age and Years of Service totals at least 70.
- ▶ For former non-bargaining employees of Northwest Indiana hired prior to July 1, 2001 and former bargaining employees of Northwest Indiana hired prior to January 1, 2003, the first day of any month on which the employee elects to retire provided that the participant has attained age 55 and completed five Years of Service.
- ▶ For former employees of Northern Illinois hired prior to July 1, 2001 and for all Local 51 union employees at Sterling, Illinois, the first day of any month on which the employee elects to retire provided that the employee has attained age 55.
- ▶ For former employees of Elizabethtown Water Company, the first day of any month on which an employee elects to retire after he has attained age 55 and completed 10 Years of Service.

- (ii) Basic monthly benefit: Except for those employees whose benefits continue to be determined under the provisions of their prior plan, the benefit as in (a)(ii) above based upon Earnings and Years of Service to the date of early retirement, multiplied by the appropriate factors from the Schedule of Early Retirement Factors contained in the American Water Plan document. For benefits attributable to service prior to the dates described below under the former NEI plans' provisions, the applicable early retirement factors are those set forth in the respective former plans, except for Long Island bargaining participants, whose entire benefit will be subject to the American Water early retirement factors..

<u>Nonbargaining participants of</u>	<u>service before</u>
▸ Northern Illinois	July 1, 2001
▸ Long Island	July 1, 2001
▸ Northwest Indiana	July 1, 2001
▸ St. Louis	July 1, 2001

<u>Bargaining participants of</u>	<u>service before</u>
▸ Northwest Indiana	January 1, 2003
▸ St. Louis	January 1, 2004
▸ Northern Illinois	July 1, 2004
▸ Long Island	July 1, 2004

Note: All benefits which continue to accrue under the provisions of a prior plan (e.g., United Waterworks, Elizabethtown Water, Sterling union at Northern Illinois) will be subject to the early retirement factors from those prior plans.

- (iii) Supplemental Early Retirement Income: For Long Island non-union employees hired prior to July 1, 2001 who retire and whose age plus service at retirement is at least 90 points, benefit is \$100 per month reduced by 5% for each point below 90. This benefit is available to the Long Island union employees only if they retired before July 1, 2004. This benefit is payable until age 65.
- (c) Late Retirement: Effective July 1, 2006 an active participant who works beyond age 65 shall receive a Suspension of Benefits notice. Benefits payable upon retirement will be determined based on actual earnings and service credited through the date of retirement.
- (d) Vested Benefit:
 - (i) Eligibility: Completion of five Years of Service.
 - (ii) Basic monthly benefit: The benefit as in (a)(ii), based upon Earnings and Years of Service to date of termination.
- (e) Disability Benefit:
 - (i) Disability retirement date: The first day of the month following the submission of evidence that the employee qualifies for disability benefits from the Social Security Administration, provided that the employee has completed 10 Years of Service.
 - (ii) Basic monthly benefit: The benefit in (a) below, plus any frozen benefit payable under the prior plans for former employees of Pekin Water Company, Seymour Water Company and West Virginia Water Company:
 - (a) the benefit accrued under section (4)(a)(ii) based on Earnings and Years of Service at the date of disability without reduction for early commencement.

(f) Preretirement Death Benefit:

(i) Eligibility: Monthly benefits under (ii) depend on the status of the participant as follows:

- (a) All active and former employees eligible for early retirement as of the date of death, provided the employee is married or has designated a contingent annuitant.
- (b) All employees not eligible for early retirement with at least 10 Years of Service on the date of death, provided the employee is married or has designated a contingent annuitant.
- (c) All active employees not eligible for early retirement with at least five Years of Service but less than 10 on the date of death and all former employees who had completed at least five Years of Service but were not eligible for Early Retirement at termination and have not begun to receive retirement benefits, provided the employee is married or has designated a contingent annuitant.

(ii) Monthly benefit:

- (a) The benefit that would have been payable to the employee if the participant had retired early on the date of death and elected to receive a 100% contingent annuity (50% for Elizabethtown Water union employees).
- (b) An immediate benefit, based on the amount that would have been payable to the employee had the employee retired on the date of death and elected to receive a 100% contingent annuity. Such benefit will be based upon the Early Retirement Factor for the employee's age at death (or, if greater, age 55) and the number of Years of Service at death. Such benefit will also be based upon the 100% Contingent Annuity Factor for the employee's age at death (or, if greater, age 55) with a spouse's age that bears the same relation as to that at death. (This benefit is not applicable for Elizabethtown Water union employees.)
- (c) A benefit, equal to 50% of the amount that would have been payable to the participant had he survived to age 55 (if death is before age 55) and elected a 50% contingent annuity. Such benefit will be based upon the Early Retirement Factor and the 50% Contingent Annuity Factor for an employee age 55 (if death is before age 55), the number of Years of Service completed at death or termination, and the spouse's then attained age. Benefit is payable immediately or at the employee's age 55, if later.

(iii) Duration of benefit: Monthly benefits are payable during the lifetime of the survivor.

(g) Special Prior Plan Preretirement Death Benefits:

- (i) California-American Water Works: All former employees not eligible for early retirement on the date of death will receive the amount of their accumulated contributions with interest.
- (ii) West Virginia Water Works: All former employees not eligible for early retirement on the date of death will have the accrued frozen benefit without reduction payable for 10 years.

5. Form of Retirement and Disability Benefits:

(a) Normal Form:

- (i) Married participants: 50% contingent annuity (with two-year “pop-up”), with monthly payment equal to the actuarial equivalent of the basic benefit.
- (ii) Single participants: Life annuity, with monthly payment equal to the basic benefit.
- (iii) For former employees of Pekin Water Company, Seymour Water Company and West Virginia Water Company, 10 years certain and continuous annuities are payable with regard to amounts due from prior plan.

- (b) Optional Forms: Life annuity; 100%, 66 2/3% or 50% contingent annuity (with two-year “pop-up”); 5-year, 10-year, or 15 year certain and continuous annuity; and a lump sum*.

6. Maximum Benefits: Maximum benefits payable conform to those set forth in the Employee Retirement Income Security Act of 1974 and the Tax Reform Act of 1986.

- * Effective January 1, 2006 for union employees hired on or after January 1, 2001. In addition, all Elizabethtown Water participants are eligible for a lump sum if the actuarially equivalent present value of the retirement benefit does not exceed \$15,000.

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Changes in Plan Provisions Since Prior Year

There were no changes in benefits valued since the prior year other than to reflect increases in the statutory limits on pay and benefits, including the elimination of the sunset provision for the IRS pay and benefit limits under the Pension Protection Act.

Future Plan Changes

The Long Island union plan change, extending the final average pay formula to December 31, 2011, was reflected for FAS 87 but not for ERISA or FAS 35.

Glossary of Selected Terms

Actuarial Accrued Liability — The cost allocated to years prior to the valuation date under the plan's funding method (contribution basis).

Accumulated Benefit Obligation (ABO) — The present value of benefits earned by participants prior to the measurement date. The benefits are based on compensation earned prior to the valuation date (pension cost basis).

Accrued/Prepaid Pension Cost — Cumulative employer contributions less than/in excess of pension cost (pension cost basis).

Actuarial Asset Value — A smoothed value of assets, used in calculating the plan's contributions (contribution basis).

Current Liability Rate — The interest rate used to calculate the current liability. The rate is determined by the IRS (contribution basis).

Current Liability — The value of accrued benefits calculated using the current liability rate (contribution basis).

Discount Rate — The interest rate used to adjust liabilities and obligations for the time value of money. It is used in calculating the service cost and benefit obligations (pension cost basis).

Expected Rate of Return — The assumption as to the rate of return on plan assets reflecting the average long-term rate of earnings expected on the funds invested (pension cost basis).

Full Funding Limitation — A plan contribution is not required, nor is it deductible, if either:

- (i) the plan's expected assets exceed the plan's expected actuarial accrued liability at the end of the year, or
- (ii) the plan's expected assets exceed 90% of the expected current liability at the end of the year.

Funded Status — A comparison of the plan's assets and liabilities at a particular point in time.

Gain or Loss — A change in the value of the projected benefit obligation, actuarial accrued liability or plan assets resulting from experience different from that assumed. On the pension cost basis, a change in these values arising from a change in actuarial assumptions is also considered a gain or loss.

Market Value of Assets — The value of assets reported by the trustee, adjusted for plan receivables and payables.

Market-Related Value of Assets — At the option of the plan sponsor, a smoothed value of assets may be used in calculating the expected return on plan assets component of pension cost.

Maximum Deductible Contribution — The largest amount the plan sponsor may contribute to the plan and deduct for tax purposes without incurring a penalty.

Measurement Date — The date as of which assets and obligations are measured in determining pension cost.

Minimum Required Contribution — The smallest amount the plan sponsor may contribute to the plan without incurring a penalty.

Normal Cost — The cost allocated to the current year by the plan's funding method (contribution basis).

Pension Cost — The annual accounting cost recognized in the plan sponsor's financial statements as the cost of the pension plan. The pension cost is determined in accordance with Financial Accounting Standard No. 87.

Projected Benefit Obligation (PBO) — The present value of benefits earned by participants prior to the measurement date. The benefits are based on the employee's projected compensation (pension cost basis).

Service Cost — The present value of benefits earned by employees during the year covered by this valuation. The benefits are based on the employee's projected compensation (pension cost basis).

Valuation Date — The date as of which assets and liabilities are measured.

10% Corridor — Gains or losses that, in the aggregate, are less than 10% of the greater of the projected benefit obligation or the plan's market-related value of assets may be excluded from the determination of pension cost.

**BEFORE THE
TENNESSEE REGULATORY AUTHORITY**

DIRECT TESTIMONY OF

MICHAEL J. VILBERT

ON BEHALF OF

TENNESSEE-AMERICAN WATER

CASE NO. _____

CONCERNING

COST OF CAPITAL

MARCH 11, 2008

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I. INTRODUCTION AND SUMMARY

Q1. Please state your name and address for the record.

A1. My name is Michael J. Vilbert. My business address is The Brattle Group, 44 Brattle Street, Cambridge, MA 02138.

Q2. Please describe your job and educational experience.

A2. I am a Principal of *The Brattle Group*, (“Brattle”), an economic, environmental and management consulting firm with offices in Cambridge, Washington, London, San Francisco and Brussels. My work concentrates on financial and regulatory economics. I hold a B.S. from the U.S. Air Force Academy and a Ph.D. in finance from the Wharton School of Business at the University of Pennsylvania.

Q3. What is the purpose of your testimony in this proceeding?

A3. I have been asked by Tennessee-American Water (“Tennessee-American” or the “Company”) to estimate the cost of equity that the Tennessee Regulatory Authority (the “TRA” or the “Authority”) should allow Tennessee-American an opportunity to earn on the equity financed portion of its rate base.

Q4. How did you approach this task?

A4. To accomplish this task, I estimate the overall cost of capital for two samples of regulated companies using the discounted cash flow (“DCF”) and the risk positioning models. I then evaluate the relative risk of Tennessee-American and the sample companies to determine the recommended cost of equity for a capital structure with 45.3 percent equity, which is the percentage of equity in Tennessee-American’s proposed capital structure in the filing for this proceeding.¹

¹ The capital structure that I customarily use in these analyses is based upon the long-term sources of capital, i.e., long-term debt, preferred equity and common equity. I do not use short-term debt because long-term assets are not generally financed with short-term debt. This approach is consistent with the information that I use for the sample companies.

Q5. Please summarize the parts of your background and experience that are particularly relevant to your testimony on these matters.

A5. Brattle's specialties include financial economics, regulatory economics, and the gas, water and electric industries. I have worked in the areas of cost of capital, investment risk and related matters for many industries, regulated and unregulated alike, in many forums. I have testified or filed cost of capital testimony before the Federal Energy Regulatory Commission, the Arizona Corporation Commission, the Pennsylvania Public Utility Commission, the Public Service Commission of West Virginia, the Public Service Commission of Wisconsin, the South Dakota Utilities Board, the Public Utilities Commission of Ohio, the California Public Utilities Commission, the Canadian National Energy Board, Alberta Energy and Utilities Board, the Ontario Energy Board, and the Labrador & Newfoundland Board of Commissioners of Public Utilities. I previously testified before the TRA in Case No. 06-00290, on behalf of Tennessee-American. Appendix A contains more information on my professional qualifications.

Q6. Please summarize how you approached this task.

A6. I review the evidence from two samples, a sample of regulated water utilities and a sample of regulated natural gas local distribution companies ("gas LDC"). I use the results of the gas LDC sample as a check on the results of the water sample, because the sample of available water companies is not completely reliable at this time. My analysis considers cost of capital evidence from the risk positioning (i.e., the CAPM and Empirical CAPM) and discounted cash flow models, but I rely primarily on the risk positioning results because I believe that the DCF method is generally less reliable. In the case of the water sample in particular the conditions necessary for the implementation of the DCF method are not met at this time.

Specifically, I estimate the cost of equity for the companies in the two benchmark samples using both cost of equity estimation methods. Given the cost of equity estimates for each company and the sample company's market costs of debt and preferred stock, I calculate each firm's overall cost of capital, i.e., its after-tax weighted-average cost of capital ("ATWACC"), using the company's market value capital structure. For each

1 method of estimating the return on equity, I report the sample average ATWACC and the
2 cost of equity for a capital structure with 45.3 percent equity. I thus present the cost of
3 equity that is consistent with the sample's market information and Tennessee-American's
4 regulatory capital structure.

5 This method automatically avoids problems that can arise when an analyst focuses
6 separately on the individual components of the overall cost of capital. The danger with
7 that approach is that the estimated cost of equity may correspond to a very different level
8 of financial risk than would exist at the regulated company's capital structure. The result
9 could be an inconsistency between the allowed return on equity and the regulatory capital
10 structure.

11 For the water sample, the results of the DCF model are more variable and less reliable
12 than those based upon the risk positioning model; however, I provide results using the
13 DCF method because it is a method that has been used extensively in the past. For the
14 gas LDC sample, the earnings growth rate forecasts are much less variable and are
15 consistent with the long-term forecast of the GDP growth. Therefore, I give some weight
16 to the DCF estimates from the gas LDC sample.

17 **Q7. You mentioned the importance of considering financial risk when evaluating the**
18 **results of the models. Please explain how you adjust for financial risk.**

19 A7. Both the DCF and the risk positioning models rely on market data to estimate the cost of
20 equity for the sample companies. That cost of equity estimates for the sample companies
21 reflect both the business risk and the financial risk of the companies' equity. Business
22 risk is the risk that the company would have if it were financed entirely with equity.
23 Financial risk is the additional risk carried by the equity holders when debt is used to
24 finance some of the assets. The more debt that is used by a company, the riskier the
25 company's equity becomes. As explained in more detail below, the procedures I use
26 consider both the business risk and the financial risk of the sample companies in
27 comparison to Tennessee-American in determining my recommended cost of equity for
28 the Company.

Q8. What is your conclusion on the market-determined cost of capital for Tennessee-American based upon the results from the sample of regulated companies you selected?

A8. As explained more fully below, the best point estimate of the cost of equity for Tennessee-American is 11¾ percent for a capital structure with 45.3 percent equity, but it is more correct to say that the estimation results and the risk level of Tennessee-American indicate a range for the cost of equity estimate for the Company from 11¼ to 12¼ percent. The corresponding midpoint of the range of the overall after-tax weighted-average cost of capital estimates, i.e., the ATWACC, is about 7¼ percent with a range of 7 to 7½ percent. Note, that I specify a plus or minus ½ percent range for the return on equity and specify the point estimate to the nearest ¼ percent because I do not believe that it is possible to estimate the cost of equity more precisely than that.

Q9. How is your testimony organized?

A9. *Section II* formally defines the cost of capital and touches on the principles relating to the cost of capital and capital structure for a business. *Section III* presents the methods used to estimate the cost of capital for the benchmark sample and the associated numerical analyses, and explains the basis of my conclusions for the two samples' returns on equity and overall costs of capital. *Section IV* presents the results of these methods applied to the two sample groups, and presents the costs of equity implied by the results. My conclusion on the cost of equity for Tennessee-American is presented in *Section V*. Appendix B provides additional details on the selection of the sample and the calculation of the market value capital structures of the sample companies. Appendices C and D support *Sections III* and *IV* with additional details on the risk positioning model and DCF approach, respectively, including the details of the numerical analyses. Appendix E discusses the effect of debt on the cost of equity in more detail.

II. COST OF CAPITAL THEORY

A. THE COST OF CAPITAL AND RISK

Q10. Please formally define the “Cost of Capital.”

A10. The cost of capital can be defined as *the expected rate of return in capital markets on alternative investments of equivalent risk*. In other words, it is the rate of return investors require based on the risk-return alternatives available in competitive capital markets. The cost of capital is a type of opportunity cost: it represents the rate of return that investors could expect to earn elsewhere without bearing more risk. “Expected” is used in the statistical sense: the mean of the distribution of possible outcomes. The terms “expect” and “expected” in this testimony, as in the definition of the cost of capital itself, refer to the probability-weighted average over all possible outcomes.

The definition of the cost of capital recognizes a tradeoff between risk and return that is known as the “security market risk-return line,” or “security market line” for short. This line is depicted in Figure 1. The higher the risk, the higher is the cost of capital. A version of Figure 1 applies for all investments. However, for different types of securities, the location (i.e., the intercept and the slope) of the line may depend on corporate and personal tax rates.

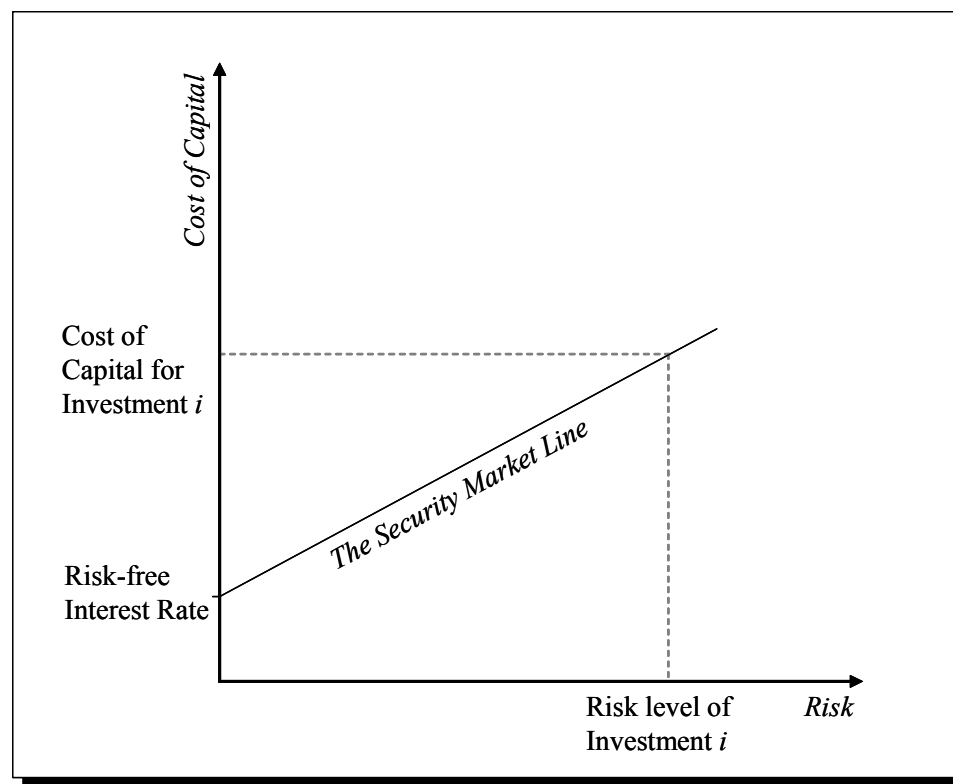


Figure 1: The Security Market Line

Q11. Why is the cost of capital relevant in rate regulation?

A11. It has become routine in U.S. rate regulation to accept the "cost of capital" as the right expected rate of return on utility investment.² That practice is normally viewed as consistent with the U.S. Supreme Court's opinions in *Bluefield Waterworks & Improvement Co. v. Public Service Commission*, 262 U.S. 678 (1923), and *Federal Power Commission v. Hope Natural Gas*, 320 U.S. 591 (1944).

From an economic perspective, rate levels that give investors a fair opportunity to earn the cost of capital are the lowest levels that compensate investors for the risks they bear. Over the long run, an expected return above the cost of capital makes customers overpay for service. Regulatory authorities normally try to prevent such outcomes, unless there are offsetting benefits (e.g., from incentive regulation that reduces future costs). At the

² A formal link between the cost of capital as defined by financial economics and the right expected rate of return for utilities is established by Stewart C. Myers, "Application of Finance Theory to Public Utility Rate Cases," *The Bell Journal of Economics and Management Science*, 3:58-97 (Spring 1972).

1 same time, an expected return below the cost of capital does a disservice not just to
2 investors but, importantly, to customers as well. In the long run, such a return denies the
3 company the ability to attract capital, to maintain its financial integrity, and to expect a
4 return commensurate with that of other enterprises attended by corresponding risks and
5 uncertainties.

6 More important for customers, however, are the economic issues an inadequate return
7 raises for them. In the short run, deviations of the expected rate of return on the rate base
8 from the cost of capital may seemingly create a "zero-sum game"-- investors gain if
9 customers are overcharged, and customers gain if investors are shortchanged. But in fact,
10 even in the short run, such action may adversely affect the utility's ability to provide
11 stable and favorable rates because some potential efficiency investments may be delayed
12 or because the company is forced to file more frequent rate cases. In the long run,
13 inadequate returns are likely to cost customers -- and society generally -- far more than
14 may be gained in the short run. Inadequate returns lead to inadequate investment,
15 whether for maintenance or for new plant and equipment. The costs of an
16 undercapitalized industry can be far greater than the short-run gains from shortfalls in the
17 cost of capital. Moreover, in capital-intensive industries (such as the water industry),
18 systems that take a long time to decay cannot be fixed overnight. Thus, it is in the
19 customers' interest not only to make sure the return investors expect does not exceed the
20 cost of capital, but also to make sure that it does not fall short of the cost of capital, either.

21 Of course, the cost of capital cannot be estimated with perfect certainty, and other aspects
22 of the way the revenue requirement is set may mean investors expect to earn more or less
23 than the cost of capital even if the allowed rate of return equals the cost of capital exactly.
24 However, a regulatory authority that sets rates so investors expect to earn the cost of
25 capital on average treats both customers and investors fairly, and acts in the long-run
26 interests of both groups.

B. BUSINESS RISK & FINANCIAL RISK: CAPITAL STRUCTURE AND THE COST OF EQUITY

Q12. Please explain briefly the difference between business risk and financial risk.

A12. Business risk is the risk of a company from its line of business if it used no debt financing. When a firm uses debt to finance its assets, the business risk of the assets is shared between the debt holders and the equity holders, but the equity holders bear more of the risk because debt holders have a prior claim on the company's cash flows. Equity holders are residual-claimants, which simply means that equity holders get paid last. In other words, the use of debt imposes financial risk on the equity holders. Therefore, the goal of selecting a sample is to choose companies whose business risk is judged to be comparable to Tennessee-American.

Q13. Please explain why it is necessary to report the cost of equity adjusted for capital structure.

A13. Briefly, rate regulation in North America tends to focus on the components of the overall cost of capital, and in particular, on what the "right" cost of equity and capital structure should be. Frequently, there is no consideration of whether the financial risks of the sample companies differ among themselves or differ from the regulated company. The cost of equity estimated using the standard models (e.g., the DCF model or the risk positioning model) reflects both the business and financial risk of the sample companies. However, the overall cost of capital depends primarily on the business the firm is in, i.e., business risk, while the costs of the debt and equity components depend not only on this business risk alone but also on the distribution of revenues between debt and equity, i.e. financial risk. The overall cost of capital is thus the more basic concept. As I explain in Appendix E, the overall cost of capital is constant within a broad middle range of values of capital structures, but the distribution of the costs and risks among debt and equity is not. Appendix E sets out the principles and procedures on which I rely.

C. IMPLICATIONS FOR ANALYSIS

Q14. Please explain the implications of the relationship between capital structure and the cost of equity in your testimony.

A14. The risk equity holders carry, and therefore the cost of equity, depends on the capital structure. As leverage increases, financial risk increases, and hence the required return on equity increases. An approach that estimates the cost of equity for each of the sample firms without explicit consideration of the market value capital structure (i.e., the financial risk) underlying those cost estimates risks material errors. The costs of equity of the sample companies at their actual market-value capital structures do not necessarily reflect the same degree of financial risk as faced by equity holders in the regulated company, and thus could lead to an unfair rate of return if the sample's cost of equity estimate were simply and mechanically applied to the regulated company's capital structure. I avoid this problem by calculating each sample company's ATWACC using its market value capital structure. Using the sample's average overall cost of capital (i.e., the average of the sample companies' ATWACCs) as an estimate of Tennessee-American's cost of capital, I then determine the corresponding return on equity at Tennessee-American's filed regulatory capital structure as sponsored by Company Witness Sheila Miller. This procedure ensures that the capital structure (i.e., financial risk) and the estimated cost of equity are consistent with the market derived sample information.

In the following analyses, I estimate the cost of equity for each of the sample firms using the DCF and risk positioning estimation methods. I use each company's estimated cost of equity along with Tennessee-American's estimated 2008 marginal tax rate and each sample company's cost of debt and market-value capital structure to estimate the company's overall cost of capital.³ I then calculate the sample's average overall cost of capital for each equity estimation method. Using the procedure discussed above, I then determine the cost of equity at Tennessee-American's regulated capital structure that is

³ The marginal tax rate is based on the federal and state tax rates applicable to Tennessee-American, which were provided by the Company.

1 consistent with the sample's overall cost of capital information for each estimation
2 method.

3 **Q15. To assess the magnitude of financial risk for a rate regulated company, should you**
4 **use the market-value or the book-value capital structure?**

5 A15. The market-value capital structure is the relevant quantity for analyzing the cost of equity
6 evidence, which is based on market information.

7 **Q16. Has the need to use market-value capital structures to estimate the cost of equity**
8 **been widely recognized in the academic community?**

9 A16. Yes. The need to use market-value capital structures to analyze the effect of debt on the
10 cost of equity has been recognized in the financial literature for a long time. For example,
11 the initial reconciliation of the Modigliani-Miller theories of capital structure with the
12 Capital Asset Pricing Model, in Robert S. Hamada, "Portfolio Analysis, Market
13 Equilibrium and Corporate Finance," The Journal of Finance 24: 13-31 (March 1969)
14 works with market-value capital structures. For a more recent presentation of the concept,
15 see, for example, Richard A. Brealey, Stewart C. Myers, and Franklin Allen, *Principles*
16 *of Corporate Finance*, New York: McGraw-Hill/Irwin 8th ed. (2006) pp. 503-06. Book
17 values may be relevant for some issues, e.g., for covenants on individual bond issues, but
18 as explained in the text, market values are the determinants of the impact of debt on the
19 cost of equity.

20 **Q17. Is the use of market values to calculate the impact of capital structure on the risk of**
21 **equity incompatible with use of a book-value rate base for a regulated company?**

22 A17. No, no more than it is incompatible to use market-based cost of equity estimation
23 methods (such as DCF or the risk positioning model) with a book-value rate base. That is,
24 the cost of capital is the fair rate of return on regulatory investment (i.e., rate base) for
25 both investors and customers. Most regulatory jurisdictions in North America measure
26 the rate base using the net book value of assets, not current replacement value or
27 historical cost trended for inflation, but the jurisdictions still apply market-derived
28 measures of the cost of equity to that net book-value rate base.

1 The issue here is “what level of risk is reflected in that cost of equity estimate?” That
2 equity risk level depends on the sample company’s market-value capital structure, not its
3 book-value capital structure. *That risk level would be different if the sample company’s*
4 *market-value capital structure exactly equaled its book-value capital structure, so the*
5 *estimated cost of equity would be different, too.*

6 **Q18. Please sum up the implications of this section.**

7 A18. The market risk, and therefore the cost of equity, depends directly on the market-value
8 capital structure of the company or asset in question. It therefore is impossible to
9 compare validly the measured costs of equity of different companies without taking
10 capital structure into account. Capital structure and the cost of equity are unbreakably
11 linked, and any effort to treat the two as separate and distinct questions violates both
12 everyday experience (e.g., with home mortgages as shown in the extended example in
13 Appendix E) and basic financial principles.

14 **Q19. How should a cost of capital analyst implement this principle?**

15 A19. As discussed further in Appendix E, there has been a great deal of financial research on
16 the effects of capital structure on the value of the firm. One of the key conclusions that
17 results from the research is that no narrowly defined optimal capital structure exists
18 within industries, although the typical range of capital structures does vary among
19 industries.⁴ Instead, there is a relatively wide range of capital structures within any
20 industry in which fine-tuning the debt ratio makes little or no difference to the value of
21 the firm, and hence to its overall after-tax cost of capital.

22 Accordingly, analysts should treat the market-value weighted average of the cost of
23 equity and the after-tax current cost of corporate debt, or the “ATWACC” for short,⁵ as

⁴ An exception is that very high-risk industries should avoid debt entirely, which makes their optimal capital structure zero percent debt.

⁵ This quantity typically is called the “weighted-average cost of capital” or “WACC” in finance textbooks. The textbook WACC equals the *market-value* weighted average of the cost of equity and the *after-tax, current* cost of debt. However, rate regulation in North America has a legacy of working with another, and very different, weighted-average cost of capital, the *book-value* weighted average of the cost of equity and

constant within a broad middle range of capital structures for the industry. Sample evidence should be analyzed to determine the sample's average ATWACC, which can be compared across different firms or industries. The economically appropriate cost of equity for a regulated firm is the quantity that, when applied to the *regulatory* capital structure, produces the same ATWACC. That value is the cost of equity that the sample would have had, estimation problems aside, if the sample's market-value capital structure had been equal to the regulatory capital structure in question.

Q20. Can you provide an example of the calculation of the cost of equity consistent with the market-determined estimate of the sample's average overall cost of capital?

A20. Yes. Consider the following equation to calculate the ATWACC:⁶

$$ATWACC = r_D \times (1 - T_C) \times D + r_E \times E \quad (1)$$

where r_D = market cost of debt,
 r_E = market cost of equity,
 T_C = corporate marginal income tax rate,
 D = percentage of debt in the capital structure, and
 E = percentage of equity in capital structure.

The cost of equity consistent with overall cost of capital estimate (ATWACC), the market cost of debt and equity, the marginal corporate income tax rate and the amount of debt and equity in the capital structure can be determined by solving equation (1) for r_E .

III. COST OF CAPITAL METHODOLOGY

Q21. How is this section of your testimony organized?

A21. As noted in *Section II*, I estimate the cost of capital using a sample of comparable risk companies. This section first covers matters such as sample selection, market-value capital structure determination, and the sample companies' costs of debt. It then covers

the *before-tax, embedded* cost of debt. Accordingly, in regulatory settings it's useful to refer to the textbook WACC as the "ATWACC," or "after-tax weighted-average cost of capital." I follow that practice here.

⁶ Note that this equation assumes that only debt and equity are in the capital structure, but one can add preferred equity to the equation if appropriate.

1 estimation of the cost of equity for the sample companies and the resulting estimates of
2 the sample's overall after-tax cost of capital. Next, it analyzes these data to reach a
3 conclusion on the overall cost of capital and the corresponding cost of equity at
4 Tennessee-American's regulatory capital structure for both benchmark samples.

5 **A. USE OF PROXY GROUPS**

6 **Q22. What preliminary decisions are needed to implement the above principles?**

7 A22. I must select the benchmark samples, calculate the sample companies' market-value
8 capital structures, and determine the sample companies' market costs of debt, preferred
9 equity and common equity.

10 **Q23. Why is it necessary to use two samples?**

11 A23. The overall cost of capital for a part of a company depends on the risk of the business in
12 which the part is engaged, not on the overall risk of the parent company on a consolidated
13 basis. According to financial theory, the overall risk of a diversified company equals the
14 market-value-weighted average of the risks of its components.

15 Estimating the cost of capital for Tennessee-American's regulated assets is the subject of
16 this proceeding. The ideal sample would be a number of companies that are publicly
17 traded "pure plays" in the water production, storage, treatment, transmission and
18 distribution lines of business. "Pure play" is an investment term referring to companies
19 with operations only in one line of business. Publicly traded firms, firms whose shares
20 are freely traded on stock exchanges, are ideal because the best way to infer the cost of
21 capital is to examine evidence from capital markets on companies in the given line of
22 business.

23 In this case, a sample of companies whose operations are concentrated solely in the
24 regulated portion of the water industry would be ideal. Unfortunately, the available
25 sample of pure "water" companies in the U.S. is relatively small and has certain data

1 problems.⁷ My standard selection procedure, for example, requires that companies have
2 a high percentage of revenues from regulated operations, at least \$300 million in annual
3 revenues for the last available year of financial data, no significant merger activity in the
4 previous five years, and no recent dividend cuts or other activity that could cause the
5 growth rates or beta estimates to be biased. If these standards were applied to the
6 companies in the water sample it would leave at most only two companies.⁸ Even these
7 two companies have relatively low trading volumes and other data issues that make cost
8 of capital estimation procedures less reliable. A two company sample is simply too small
9 to provide reliable results, so I keep the other companies in my sample.

10 **Q24. But if this is the best available sample of regulated water utilities, what else can be**
11 **done?**

12 A24. Given the concerns with the water sample, it is prudent to investigate the cost of capital
13 estimates from a second sample of regulated companies. Absent such analysis, the expert
14 cannot have sufficient confidence in the resulting estimates.

15 An additional sample is provided here by a sample of companies whose operations are
16 concentrated in the natural gas distribution business, which is in a regulated portion of the
17 natural gas industry. The gas LDC sample consists of larger companies with high
18 proportion of assets from rate regulated activities. The gas LDC sample has been
19 selected to eliminate, as much as possible, companies with company-specific factors that
20 may affect the cost of capital estimates. Additional details of the sample selection
21 process for each sample are described below as well as in Appendix B.

22 **Q25. If the business risk of the second sample differs from the water sample, would that**
23 **invalidate any comparison between the costs of equity estimated for the second**
24 **sample and the risk of a water company?**

25 A25. No. Even though the business and financial risk of the two samples may differ somewhat,
26 the analyst can still make use of the information from a secondary sample.

⁷ See *Section IV.A.1* for an expanded discussion of the data issues with the sample companies.

⁸ Aqua America Inc. and California Water Service Group.

1 **Q26. Please elaborate on the way two samples with different business and financial risks**
2 **can be compared.**

3 A26. Calculating the overall after-tax weighted average cost of capital for each sample
4 company as described above allows the analyst to estimate the average overall cost of
5 capital for the sample. The ATWACC captures both the business risk and the financial
6 risk of the sample companies in one number. This allows comparison of the cost of
7 capital between two samples on a much more informed basis. If the alternative (more
8 reliable) sample is judged to have slightly different business risk than the water sample,
9 but the results show wide differences in the ATWACC estimates, the analyst should
10 carefully consider the validity of the water sample estimates, whether they are materially
11 higher or lower than the alternative sample's estimates. Of course, the alternative sample
12 could be the source of the error, but this is something that can be further investigated
13 given an observed difference in results. In this case, the results from the water sample are
14 substantially higher than the results from the gas LDC sample. In light of the problems
15 associated with the water sample, I find it necessary at this time to rely more heavily on
16 the results from the gas LDC sample in order to arrive at a reliable estimate for the
17 Company's cost of equity.

18 **Q27. Please compare the characteristics of the water utility sample and the gas LDC**
19 **sample.**

20 A27. The two samples differ primarily in that they operate in two different (regulated)
21 industries, but they are very similar in terms of the percentage of revenues from regulated
22 operations and the customers they serve. Both samples earn a large percentage of their
23 revenue from regulated activities, serve a mix of residential, industrial, and other
24 customers, and involve pipeline transportation of a storable good. However, the gas LDC
25 sample has fewer of the data and estimation issues identified above for the water sample.
26 Please refer to Appendix B for additional details comparing the two samples.

B. CAPITAL STRUCTURE & THE COST OF DEBT

1. Market-Value Capital Structure

Q28. What capital structure information do you require?

A28. For reasons discussed in Appendix E, explicit evaluation of the market-value capital structures of the sample companies is vital for a correct interpretation of the market evidence on the return on equity. This requires estimates of the market values of common equity, preferred equity and debt, and the current market costs of preferred equity and debt.

Q29. Please describe how you calculate the market values of common equity, preferred equity and debt.

A29. I estimate the capital structure for each sample company by estimating the market values of common equity, preferred equity and debt from the most recent publicly available data. The details are in Appendix B.

Briefly, the market value of common equity is the price per share times the number of shares outstanding. For the risk positioning approach, I use the last 15 trading days of each year to calculate the market value of equity for the year. I then calculate the average capital structure over the corresponding five-year period used to estimate the “beta” risk measures for the sample companies.⁹ This procedure matches the estimated beta to the degree of financial risk present during its estimation period. In the DCF analyses, I use the average closing stock price over the 15 trading days ending on the day that the earnings growth rate forecasts are obtained from Bloomberg.¹⁰

The market value of debt is estimated at its book value adjusted by the difference between the “estimated fair (market) value” and the “carrying cost” of long-term debt

⁹ *Value Line* uses five years of historical data to estimate its forecasted betas.

¹⁰ Forecasts were obtained on February 7, 2008.

1 reported in each company's 10-K.¹¹ The market value of preferred stock for the samples
2 is set equal to its book value because the percent of preferred stock in the capital
3 structures of the sample companies is relatively small compared to the debt and common
4 equity components.

5 2. Market Costs of Debt and Preferred Equity

6 **Q30. How do you estimate the current market cost of debt?**

7 A30. The fifteen-day average market cost of debt for each company is set equal to the yield on
8 an index of public utility bonds that have the same credit rating, and the yield is reported
9 by Bloomberg for an index of public utility company bonds with the same S&P rating.¹²
10 The DCF analyses use the current credit rating whereas the risk positioning analyses use
11 the current yield of a utility bond that corresponds to the five-year average debt rating of
12 each company so as to match consistently the horizon of information used by *Value Line*
13 to estimate company's beta.

14 **Q31. How do you estimate the market cost of preferred equity?**

15 A31. For each company with preferred stock, the cost of preferred equity for each company is
16 set equal to the yield on an index of preferred stock as reported in the Mergent Bond
17 Record¹³ corresponding to the S&P rating of that company's debt.

¹¹ The book value of debt from Bloomberg includes all interest-bearing financial obligations that are not current and includes capitalized leases and mandatory redeemable preferred and trust preferred securities in accordance with FASB 150 effective June 2003. See Bloomberg definition of long-term debt for additional detail.

¹² See Workpaper #2, Panel A to Table No. MJV-11.

¹³ Published monthly, *Mergent's Bond Record* offers a comprehensive review of over 68,000 bond issues including coverage of corporate, government, municipal, industrial development/environmental control revenue and international bonds, plus structured finance and equipment trust issues, medium-term notes, convertible issues, preferred stocks and commercial paper issues.

3. Risk-Free Interest Rate Estimate

Q32. What is the risk-free rate?

A32. The risk-free rate is the interest rate that can be earned with certainty. A common measure of this rate is the return on the government's Treasury bills and bonds. This rate is usually significantly below the rate that other borrowers pay for debt.

Q33. How do you obtain the estimates of the risk-free interest rates used in your analysis?

A33. I obtain these rates using data provided by Bloomberg. In particular, I use the reported government debt yields from the "constant maturity series". This information is displayed in Panels A and B of Table No. MJV-9.

Q34. What values do you use for the short-term and long-term risk-free interest rates?

A34. I use a value of 4.3 percent for the long-term risk-free interest rate as the benchmark risk-free interest rates in the equity risk premium analyses and a value of 1.7 percent for the short-term risk-free interest rate. The short-term rate is derived by using historical yield curve data to find the long-run average implied term premia on government securities, and combining these with recent yield curve data. Details of their calculation can be found in the Workpapers to Table No. MJV-9.

C. COST OF EQUITY METHODS

Q35. How do you estimate the cost of equity for your sample companies?

A35. Recall the definition of the cost of capital from the outset of my testimony: the expected rate of return in capital markets on alternative investments of equivalent risk. My cost of capital estimation procedures address three key points implied by the definition:

1. Since the cost of capital is an expected rate of return, it cannot be directly observed; it must be inferred from available evidence.
2. Since the cost of capital is determined in capital markets (e.g., the New York Stock Exchange), data from capital markets provide the best evidence from which to infer it.

3. Since the cost of capital depends on the return offered by alternative investments of equivalent risk, measures of the risks that matter in capital markets are part of the evidence that needs to be examined.

Q36. How does the above definition help in cost of capital estimation?

A36. The definition of the cost of capital recognizes a tradeoff between risk and expected return, plotted above in Figure 1, the security market line. Cost of capital estimation methods take one of two approaches: (1) they try to identify a comparable-risk sample of companies and to estimate the cost of capital directly; or (2) they establish the location of the security market line and estimate the relative risk of the security, which jointly determine the cost of capital. In terms of Figure 1, the first approach focuses directly on the vertical axis, while the second focuses both on the security's position on the horizontal axis and on the position of the security market line.

The first type of approach is more direct, but ignores the wealth of information available on securities not thought to be of precisely comparable risk. The "discounted cash flow" or "DCF" model is an example. The second type of approach, sometimes known as "equity risk premium approach," requires an extra step, but as a result can make use of information on all securities, not just a very limited subset. The Capital Asset Pricing Model ("CAPM") is an example. While both approaches can work equally well if conditions are right, one may be preferable to the other under a given set of circumstances. In particular, approaches that rely on the entire security market line (e.g., the risk positioning model) are less sensitive to deviations from the assumptions that underlie the model, all else equal. In this proceeding, I examine sample evidence from both the DCF and risk positioning models.

1. The Risk Positioning Approach

Q37. Please explain the risk positioning method.

A37. The risk positioning method estimates the cost of equity as the sum of a current interest rate and a company specific risk premium. It is therefore sometimes also known as the "risk premium" approach. This approach may sometimes be applied informally. For

1 example, an analyst or regulatory authority may check the spread between interest rates
2 and what is believed to be a reasonable estimate of the cost of capital at one time, and
3 then apply that spread to changed interest rates to get a new estimate of the cost of capital
4 at another time.

5 More formal applications of the risk positioning approach take full advantage of the
6 security market line depicted in Figure 1: they use information on all securities to
7 identify the security market line and derive the cost of capital for the individual security
8 based on that security's relative risk. This reliance on the entire security market line
9 makes the method less vulnerable to the kinds of problems that arise for the DCF method,
10 which relies on one stock at a time. The risk positioning approach is widely used and
11 underlies most of the current research published in academic journals on the nature,
12 determinants and magnitude of the cost of capital.

13 Section I of Appendix C to this testimony provides more detail on the principles that
14 underlie the risk positioning approach. Section II of Appendix C provides the details of
15 the empirical estimates I obtain using the risk positioning approach.

16 **Q38. How are the “more formal” applications of risk positioning approach implemented?**

17 A38. The first step is to specify the current values of the parameters that determine the security
18 market line. The second is to determine the security's or the investment's relative risk.
19 The third is to specify exactly how the parameters combine to produce the security
20 market line, so the company's cost of capital can be calculated based on its relative risk.
21 All of these elements and how they relate are usefully formulated in the framework of the
22 CAPM.

23 ***a) The Capital Asset Pricing Model***

24 **Q39. Please start with the CAPM, by describing the model.**

25 A39. As noted above, the modern models of capital market equilibrium express the cost of
26 equity as the sum of a risk-free rate and a market risk premium. The CAPM is the
27 longest-standing and most widely used of these theories. The CAPM states that the cost

of capital for an investment, s , (e.g., a particular common stock) is given by the following equation:

$$k_s = r_f + \beta_s \times MRP \quad (2)$$

where k_s is the cost of capital for investment s ; r_f is the risk-free rate, β_s is the beta risk measure for the investment s ; and MRP is the market risk premium.

The CAPM relies on the empirical fact that investors price risky securities to offer a higher expected rate of return than safe securities do. It says that the security market line starts at the risk-free interest rate (that is the return on a zero-risk security, the y-axis intercept in Figure 1, equals the risk-free interest rate). It further says that the risk premium over the risk-free rate equals the product of beta and the risk premium on a value-weighted portfolio of all investments, which by definition has average risk.

b) The Empirical Capital Asset Pricing Model

Q40. What other equity risk premium model do you use?

A40. Empirical research has long shown that the CAPM tends to overstate the actual sensitivity of the cost of capital to beta: low-beta stocks tend to have higher risk premia than predicted by the CAPM and high-beta stocks tend to have lower risk premia than predicted. A number of variations on the original CAPM theory have been proposed to explain this finding, but this finding can also be used to estimate the cost of capital directly, using beta to measure relative risk without simultaneously relying on the CAPM.

The second model makes use of these empirical findings. It estimates the cost of capital with the equation, where α is the “alpha” adjustment of the risk-return line, a constant,

$$k_s = r_f + \alpha + \beta_s \times (MRP - \alpha) \quad (3)$$

and the other symbols are defined as above. I label this model the Empirical Capital Asset Pricing Model, or “ECAPM.” The alpha adjustment has the effect of increasing the intercept but reducing the slope of the security market line in Figure 1, which results in a security market line that more closely matches the results of empirical tests.

Q41. Why is it appropriate for you to use the empirical CAPM?

A41. Although the CAPM is still the most widely used cost of capital estimation model, it has not been completely satisfactory as an empirical model; however, its short-comings are directly addressed by the ECAPM. The ECAPM recognizes the consistent empirical observation that the CAPM underestimates (overestimates) the cost of capital for low (high) beta stocks. In other words, the ECAPM is based on the recognition that the actual slope of the risk-return tradeoff is flatter than predicted and the intercept higher based upon repeated empirical tests of the CAPM. The alpha parameter (α) in the ECAPM adjusts for this fact. The difference between the CAPM and the type of relationship identified in the empirical studies is depicted in Figure 2.

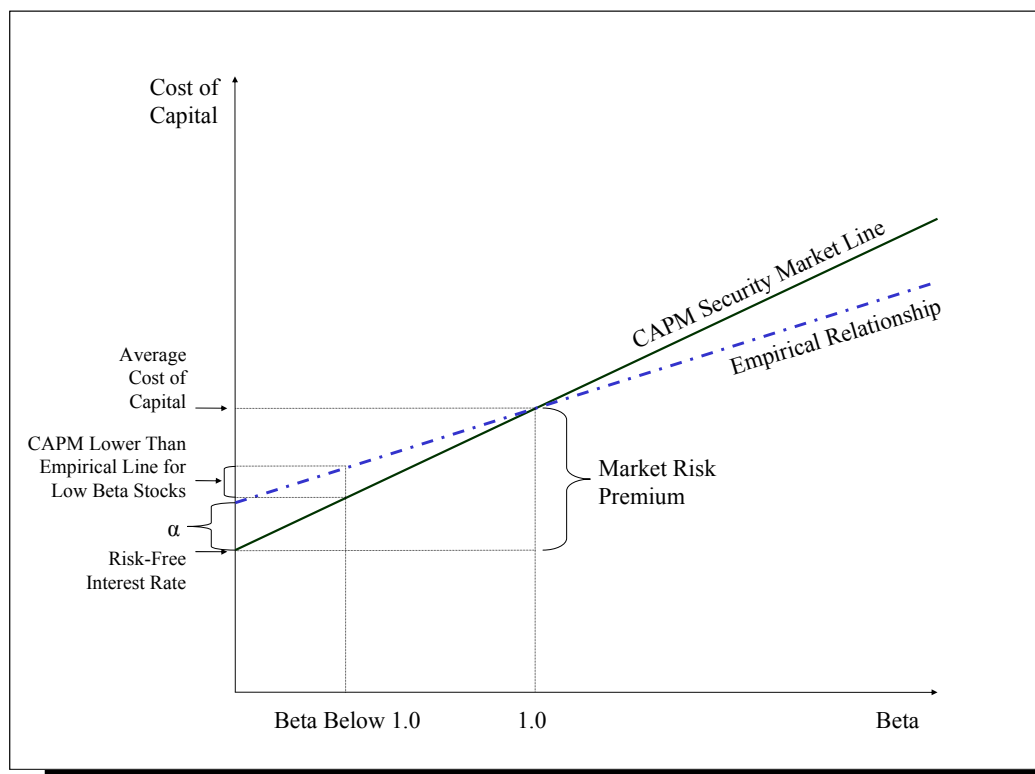


Figure 2: The Empirical Security Market Line

Research supports values for α of one to seven percent when using a short-term interest rate. I use baseline values of α of 2 percent for the short-term risk-free rate and 0.5 percent for the long-term risk-free rate. I also conduct sensitivity tests for different values of α . For the short-term risk-free rate I use values for α of 1, 2 and 3 percent.

These α values are lower than would be justified by the magnitude of the correction revealed in the tests of the CAPM. For the long-term risk-free rate, the corresponding values for α are 0, 0.5 and 1.5 percent. The use of a long-term risk-free rate incorporates some of the desired effect of using the ECAPM. That is, the long-term risk-free rate version of the security market line has a higher intercept and a flatter slope than the short-term risk-free version which has been extensively tested. Thus, I do not need to make the same degree of refinement when I use the long-term risk-free rate. Please see Table No. MJV-C1 in Appendix C for a summary of the empirical evidence on the size of the required adjustment necessary to better match the results of the empirical tests.

2. Discounted Cash Flow Method

Q42. Please describe the discounted cash flow approach.

A42. The DCF model takes the first approach to cost of capital estimation, i.e., to attempt to estimate the cost of capital in one step. The method assumes that the market price of a stock is equal to the present value of the dividends that its owners expect to receive. The method also assumes that this present value can be calculated by the standard formula for the present value of a cash flow stream:

$$P = \frac{D_1}{(1+k)} + \frac{D_2}{(1+k)^2} + \frac{D_3}{(1+k)^3} + \cdots + \frac{D_T}{(1+k)^T} \quad (4)$$

where “ P ” is the market price of the stock; “ D_t ” is the dividend cash flow expected at the end of period t (i.e., subscript period 1, 2, 3 or T in the equation); “ k ” is the cost of capital; and “ T ” is the last period in which a dividend cash flow is to be received. The formula just says that the stock price is equal to the sum of the expected future dividends, each discounted for the time and risk between now and the time the dividend is expected to be received.

Very often, when the DCF is applied in regulatory proceedings, very strong (i.e., unrealistic) assumptions are used that yield a simplification of the standard formula, which then can be rearranged to estimate the cost of capital. Specifically, it is assumed

that investors expect a dividend stream that will grow *forever* at a steady rate, and if so, the market price of the stock will be given by a very simple formula,

$$P = \frac{D_1}{(k - g)} \quad (5)$$

where “ D_1 ” is the dividend expected at the end of the first period, “ g ” is the perpetual growth rate, and “ P ” and “ k ” are the market price and the cost of capital, as before. Equation (5) is a simplified version of equation (4) that can be solved to yield the well known “DCF formula” for the cost of capital:

$$\begin{aligned} k &= \frac{D_1}{P} + g \\ &= \frac{D_0 \times (1 + g)}{P} + g \end{aligned} \quad (6)$$

where “ D_0 ” is the current dividend, which investors expect to increase at rate g by the end of the next period, and the other symbols are defined as before. Equation (6) says that if equation (5) holds, the cost of capital equals the expected dividend yield plus the (perpetual) expected future (forever constant) growth rate of dividends. I refer to this as the simple DCF model. Of course, the “simple” model is simple because it relies on very strong (i.e., unrealistic) assumptions.

Q43. Are there other versions of the DCF models besides the “simple” one?

A43. Yes. The constant growth rate DCF model requires that dividends and earnings grow at the same rate for companies that earn their cost of capital on average.¹⁴ It is inconsistent with the theory on which the model is based to have different growth rates in earnings and dividends over the period when growth is assumed to be constant. If the growth in

¹⁴ Why must the two growth rates be equal in a steady-growth DCF model? Think of earnings as divided between reinvestment, which funds future growth, and dividends. If dividends grow faster than earnings, there is less investment and slower growth each year. Sooner or later dividends will equal earnings. At that point, growth is zero because nothing is being reinvested (dividends are constant). If dividends grow slower than earnings, each year a bigger fraction of earnings are reinvested. That makes for ever faster growth. Both scenarios contradict the steady-growth assumption. So if you observe a company with different expectations for dividend and earnings growth, you know the company’s stock price and its dividend growth forecast are inconsistent with the assumptions of the steady-growth DCF model.

1 dividends and earnings were expected to vary over some number of years before settling
2 down into a constant growth period, then it would be appropriate to estimate a multistage
3 DCF model. In the multistage model, earnings and dividends can grow at different rates,
4 but must grow at the same rate in the final, constant growth rate period. A difference
5 between forecasted dividend and earnings rates therefore is a signal that the facts do not
6 fit the assumptions of the simple DCF model.

7 So, I consider a variant of the DCF model that relies on slightly less strong assumptions
8 in that it allows for varying dividend growth rates in the near term before assuming a
9 perpetual growth rate beginning in year eleven. I use the forecast growth of GDP as the
10 forecast of the long-term growth rate, i.e. year eleven on. This is a “multistage” variant
11 of the DCF method. The DCF models are described in detail in Section I.A of Appendix
12 D. (Section II of Appendix D provides the details of my empirical DCF results.)

13 **Q44. What are the merits of the DCF approach?**

14 A44. The DCF approach is conceptually sound if its assumptions are met, but can run into
15 difficulty in practice because those assumptions are so strong¹⁵, and hence so unlikely to
16 correspond to reality. Dividends, earnings and prices are unlikely to grow at a constant
17 rate literally forever. Two conditions are also well known to be necessary for the DCF
18 approach to yield a reliable estimate of the cost of capital: the variant of the present
19 value formula that is used must actually match the variations in investor expectations for
20 the growth of dividends, and the growth rate(s) used in that formula must match current
21 investor expectations. Less frequently noted conditions may also create problems (see
22 Appendix D for details).

23 **Q45. Is estimating the “right” dividend growth rate the most difficult part for the**
24 **implementation of the DCF approach?**

25 A45. Yes. Finding the right growth rate(s) is the usual “hard part” of a DCF application. The
26 original approach to estimation of g relied on average historical growth rates in

¹⁵ In this context “strong” means that the assumption is unlikely to match reality and that it also has a substantial impact on the model’s results.

1 observable variables, such as dividends or earnings, or on the “sustainable growth”
2 approach, which estimates g as the average book rate of return times the fraction of
3 earnings retained within the firm. But it is highly unlikely that these historical averages
4 over periods with widely varying rates of inflation and costs of capital will equal current
5 growth rate expectations. In general, a better estimate of the growth rate can be obtained
6 by using forward-looking analyst forecasts, which take into account current and expected
7 company characteristics, and this is the method I use in my analysis. However, such
8 growth estimates are only indicative of long-term expectations if the industry is in a
9 stable state, which is not the case with the water industry at this time.

10 The water industry is currently going through a period characterized by a need for large
11 capital investments, caused by the aging state of the infrastructure and more stringent
12 water safety and purification requirements.¹⁶ The American Society of Civil Engineers
13 estimated in 2005 that the drinking water infrastructure required “\$11 billion annually to
14 replace aging infrastructure and comply with safe drinking water regulations,” while the
15 wastewater segment required \$390 billion in investments over the following 20 years.¹⁷
16 Coupled with the rising construction costs of utility infrastructure, this creates uncertainty
17 about future conditions and diverging expectations. The water industry is also going
18 through a series of mergers and acquisitions, which affects the companies’ earnings
19 growth rate estimates. Taken together, these factors mean that it may be some time
20 before the water industry settles into anything investors will see as a stable equilibrium.

21 **IV. TENNESSEE-AMERICAN’S COST OF CAPITAL**

22 **A. SAMPLE SELECTION**

23 **1. The Water Utility Sample**

24 **Q46. How did you select your sample of water utilities?**

¹⁶ *Value Line Investment Survey*, Water Utilities, January 25, 2008.

¹⁷ *Report Card for America’s Infrastructure*, The American Society of Civil Engineers, 2005, pp. 15, 55.

1 A46. The goal was to create a sample of companies whose primary business is as a regulated
2 water utility with business risk generally similar to that of Tennessee-American. To
3 construct this sample, I started with the universe of eight water utilities tracked by *Value*
4 *Line Investment Survey, Plus Edition* as of January 25, 2008.¹⁸ The companies are
5 American States Water Co., Aqua America Inc., California Water Service Group,
6 Connecticut Water Service Inc., Middlesex Water Co., SJW Corp., Southwest Water Co.,
7 and York Water Co. In addition, I report results for a subsample of the companies that
8 excludes Southwest Water Company because its percentage of revenues from regulated
9 activities was only 41 percent compared to the next lowest company, Middlesex Water
10 Company, which has 89 percent of revenues from regulated activities. Details on the
11 sample selection process for the water sample are in Appendix B.

12 **Q47. Earlier you said that the sample of water utilities had certain data problems. Please**
13 **elaborate on these problems.**

14 A47. In attempting to apply the DCF model to the sample, two of the eight companies have
15 five-year BEst earnings forecasts¹⁹ from only one analyst, and only four of eight
16 companies have long-term growth forecasts from *Value Line*. In addition, Connecticut
17 Water Service Inc., Middlesex Water Co., and York Water Co. were dropped from the
18 results of the DCF analysis because their cost of equity was estimated to be less than 25
19 basis points higher than their cost of debt. York Water Co. was dropped from the results
20 of the risk positioning analysis as well for the same reason.

21 The size of the companies in the water sample also makes cost of capital estimation
22 difficult. Only two of the eight companies have annual revenues in 2006 that exceed
23 \$300 million, the threshold I normally use in my cost of capital analyses. However,
24 applying this criterion here would yield a sample of only two companies, which is too
25 small to be appropriate. Four of the companies have less than \$500 million in market
26 value of equity. The stock of these companies also trades infrequently relative to the

¹⁸ *Value Line* also lists Sun Hydraulics as a water utility, although its main line of business is the production of industrial equipment. I exclude it from analysis since it is not a regulated water utility.

¹⁹ BEst is Bloomberg's name for its earnings growth rate information.

1 companies in the gas LDC sample. For example, three of the eight water utilities traded
2 an average of less than 20,000 shares per trading day since January of 2007. In
3 percentage terms, these companies traded less than 0.2 percent of their shares outstanding.
4 By contrast, each of the gas LDC sample companies had a average trading volume of at
5 least 107,000 shares per day (greater than 180,000 if Laclede Group were excluded),
6 which in percentage terms represented more than 0.45 percent of shares outstanding for
7 each company. Greater trading volume gives the expert more confidence in both the
8 DCF and risk positioning estimates for the sample since there is less likelihood of a delay
9 between the release of important information and the time that this information is
10 reflected in prices. Such delay is well known to cause beta estimates to be statistically
11 insignificant and possibly biased.

12 In addition to lack of data and the small size of the companies, there are firm-specific
13 events that render the water utility sample less reliable than would be ideal. First, Aqua
14 America (the largest of the companies) has gone through several mergers and acquisitions
15 in recent years. Normally, I would not include companies with significant merger or
16 acquisition activity in a sample because the individual information about the progress of
17 the proposed merger is so much more important for the determination of the company's
18 stock price than day-to-day market fluctuations. In practice, beta estimates for such
19 companies tend to be too low. Second, Southwest Water Co. earns only 41 percent of its
20 revenue from regulated activities. I therefore also report my results for the subsample of
21 companies that does not include Southwest Water Co.

22 It is because of these weaknesses in the water sample that I also utilize a sample of
23 natural gas LDCs as the basis for my recommendation.

24 2. The Gas LDC Sample

25 **Q48. How do you select your sample of gas local distribution companies?**

26 A48. One reason for use of the gas LDC sample is to generate a sample of regulated companies
27 whose primary source of revenues is in the regulated portion of the natural gas industry to
28 provide a check for the results of the water sample. Therefore, I started with the universe

1 of publicly traded gas distribution utilities covered by *Value Line Investment Survey*, and
2 I required the sample companies to have at least 50 percent regulated assets in 2006.²⁰
3 The final sample includes ten companies: AGL Resources Inc., Atmos Energy Corp.,
4 Nicor Inc., The Laclede Group Inc., New Jersey Resources Corp., Northwest Natural Gas
5 Co., Piedmont Natural Gas Co., South Jersey Industries Inc., Southwest Gas Corp., WGL
6 Holdings Inc. These companies satisfy the selection criteria outlined earlier. Appendix
7 B discusses the selection process for the gas LDC sample in more detail.

8 **B. COST OF CAPITAL ESTIMATES FOR THE SAMPLES**

9 **Q49. Please summarize the results of the risk positioning and DCF methodologies in**
10 **estimating the average cost of capital for the two samples and the implications for**
11 **Tennessee-American's cost of equity?**

12 A49. Table 1 summarizes the risk positioning and DCF estimates of the average ATWACC for
13 the water and gas LDC samples, along with the implied cost of equity for Tennessee-
14 American at its regulatory capital structure with 45.3 percent equity.²¹

15 **Q50. How did you determine a representative tax rate to use in your cost of capital**
16 **estimation?**

17 A50. The expected marginal income tax rate of 39.2 percent for Tennessee-American is
18 derived using a federal tax rate of 35 percent and state tax rate of 6.5 percent, as provided
19 by the company.

²⁰ 2006 is the last year for which 10-K data is currently available.

²¹ Note that the percentages of debt, preferred equity and common equity in the top row of Table 1 do not appear to sum to 100 percent because of rounding.

1 **Table 1. Cost of Equity Results**

Regulatory Capital Structure:		45.3% Equity / 1.2% Preferred / 53.4% Debt				2008 Tax Rate: 39.2%					
METHODS											
		RISK POSITIONING (using Long-Term Risk-Free Rate)			RISK POSITIONING (using Short-Term Risk-Free Rate)				DCF		
		CAPM	$\alpha = 0.5\%$	$\alpha = 1.5\%$	CAPM	$\alpha = 1\%$	$\alpha = 2\%$	$\alpha = 3\%$	Simple	Multi-stage	
[1]	Water Sample*										
	<i>Full Sample</i>										
	Cost of Equity	13.8%	13.9%	14.0%	12.1%	12.1%	12.2%	12.3%	16.9%	10.4%	
	Average ATWACC	8.3%	8.3%	8.4%	7.5%	7.6%	7.6%	7.6%	9.7%	6.8%	
	<i>Sub-sample</i>										
	Cost of Equity	13.8%	13.8%	13.9%	12.0%	12.1%	12.2%	12.3%	15.9%	10.4%	
	Average ATWACC	8.3%	8.3%	8.4%	7.5%	7.5%	7.6%	7.6%	9.3%	6.7%	
[2]	Gas LDC Sample**										
	Cost of Equity	11.7%	11.9%	12.1%	9.8%	10.0%	10.3%	10.6%	11.0%	11.1%	
	Average ATWACC	7.4%	7.4%	7.6%	6.5%	6.6%	6.7%	6.9%	7.1%	7.1%	
[3]	<u>Risk Positioning Security Market Line Parameters:</u>					<u>Multi-Stage DCF Parameter:</u>					
	<i>Long-Term</i>				<i>Short-Term</i>						
	Risk Free Rate Estimate:	4.3%			Risk Free Rate Estimate:	1.7%			GDP Growth		
	Estimated MRP:	6.5%			Estimated MRP:	8.0%			Estimate:	4.9%	
Sources and Notes:											
* For the Water Sample, Risk Positioning data from Table No. MJV-12 and DCF data from Table No. MJV-8.											
** For the Gas LDC Sample, Risk Positioning data from Table No. MJV-22 and DCF data from Table No. MJV-19.											
[1]	The full water sample consists of American States Water Co, Aqua America Inc, California Water Service Group, Connecticut Water Service Inc, Middlesex Water Co, SJW Corp, Southwest Water Co, and York Water Co. The subsample excludes Southwest Water Co. Results exclude companies whose estimated cost of equity is less than their cost of debt plus 25 basis points.										
[2]	The gas LDC sample consists of AGL Resources, Atmos Energy Corp, Laclede Group, New Jersey Resources, Nicor Inc., Northwest Natural Gas, Piedmont Natural Gas, South Jersey Industries, Southwest Gas, and WGL Holdings.										
[3]	See Appendices C and D for details on Risk Positioning and DCF parameters used in estimates.										

2

3

1. The Water Sample Estimates

4

5 **Q51. How were the cost of equity estimates derived from the risk positioning approach**
6 **for the water sample?**

7

8 A51. I derive two sets of risk-positioning estimates, one using long-term risk-free rates and
9 market risk premium, and one using short-term values. The long-term interest rate I use
10 is 4.3 percent and the corresponding estimated market risk premium is 6.5 percent. When
11 using the short-term risk-free rate of 1.7 percent, the estimated MRP is 8.0 percent.
Details on the derivation of these forecasts can be found in Appendix C.

12

13 For each estimated risk-free rate, the two risk positioning models (CAPM and ECAPM)
are estimated utilizing the different values of the ECAPM parameter (0.5% and 1.5% for

1 the long-term model and 1%, 2%, and 3% for the short-term model). I therefore obtain
2 three long-term and four short-term estimates of each sample company's cost of equity.
3 The results using the long-term risk-free rate are displayed in Table MJV-10, Panel A,
4 and the results using the short-term risk-free rate are displayed in Table MJV-10, Panel B.
5 Next, the cost of equity estimates are combined with each company's estimated cost of
6 debt and preferred equity to calculate the company's ATWACC using each company's
7 market value capital structure. These calculations and the resulting sample average
8 ATWACCs are presented in Table No. MJV-11. Panels A-C rely on the cost of equity
9 estimates from the long-term version of the model, while Panels D-G utilize the estimates
10 from the short-term version of the model. The sample average ATWACCs and costs of
11 equity at Tennessee-American's 45.3 percent equity capital structure for each risk
12 positioning cost of equity estimate are displayed in Table No. MJV-12. These results are
13 summarized in Table 1 above.

14 **Q52. What are the DCF estimates for the water sample?**

15 A52. For each sample company, cost-of-equity estimates are calculated for the two versions of
16 the DCF method, the simple DCF model and multistage DCF model. The DCF estimates
17 for each company are displayed in Table No. MJV-6, Panel A (simple DCF) and Panel B
18 (multistage DCF). The sample average ATWACC for each method is calculated in Table
19 No. MJV-7 and the resulting sample average ATWACC is used in Table No. MJV-8 to
20 derive returns on equity at Tennessee-American's 45.3 percent equity capital structure.
21 These results are shown in Table 1 above, along with the sample average ATWACC
22 numbers. Table 1 shows an estimated cost of equity of 16.9 percent for the full sample
23 and 15.9 percent for the subsample when using the simple DCF model. The estimates
24 from the multistage DCF model are considerably lower – 10.4 percent for both the full
25 sample and for the subsample. The estimates from the simple DCF exceed the estimates
26 from the risk positioning models, while the estimates from the multistage DCF are lower
27 than the risk positioning estimates (see Table 1 above).

2. The Gas LDC Sample Estimates

Q53. How were the cost of equity estimates derived from the risk positioning approach for the gas LDC sample?

A53. As with the water sample, the risk positioning model is used to obtain three cost-of-equity estimates using the long-term risk-free rate and four cost of equity estimates using the short-term risk-free rate for the gas LDC sample companies.

The results using the long-term risk-free rate are displayed in Table MJV-20, Panel A, and the results using the short-term risk-free rate are displayed in Table MJV-20, Panel B. Next, the cost of equity estimates are combined with each company's estimated cost of debt and preferred equity to calculate the company's ATWACC using each company's market value capital structure. These calculations and the resulting sample average ATWACCs are presented in Table No. MJV-21. Panels A-C rely on the cost of equity estimates from the long-term version of the model, while Panels D-G utilize the estimates from the short-term version of the model. The sample average ATWACCs and costs of equity at Tennessee-American's 45.3 percent equity capital structure for each risk positioning cost of equity estimate are displayed in Table No. MJV-22. These results are reproduced in Table 1 above. The cost of equity estimates from the risk positioning model for the gas LDC samples are approximately 200 basis points lower than those for the water sample, suggesting that at this time the results from the water sample are affected by the reliability issues identified in the discussion of the water sample selection.

Q54. What DCF cost of equity estimates do you obtain for the gas LDC sample?

A54. The cost-of-equity estimates from the simple DCF model and from the multistage DCF model are very close for the gas LDC sample: 11.0 percent and 11.1 percent respectively. The range of results for the risk positioning method for the gas LDC sample is between 9.8 percent and 12.1 percent. The DCF results for the gas LDC sample are more consistent with the risk positioning model results in that they are in the middle of the range. In contrast, the single DCF results for the water sample are higher than the range of estimates for the risk positioning method while the multistage DCF estimates are lower than the range of estimates. The consistency of the results between different methods

bolsters confidence in the results based on the gas LDC sample, and because of the relative stability of the growth rate estimates I give some weight to the DCF results for this sample. Specifically, the DCF results lead me to round the best risk positioning cost of equity estimates for the gas LDC sample down to the nearest $\frac{1}{4}$ percent.

V. CONCLUSIONS

Q55. What conclusions do you draw from the DCF estimates regarding each sample's cost of equity at Tennessee-American's 45.3 percent equity?

A55. For the water sample, the estimated cost of equity from the simple DCF is much higher than the estimate from the multistage DCF, suggesting that the conditions necessary for the reliable application of the DCF methodology are not met by the water industry at this time. The simple DCF estimates exceed the risk positioning estimates while the multistage DCF estimates are substantially lower than the risk positioning models' results for the water sample. The simple DCF model relies on company-specific growth rate forecasts, but those forecasts vary significantly among the companies in the water sample, from a low of 0.6 percent to a high of 13.1 percent. On the other hand, the earnings growth rate forecasts for the gas LDC sample are much less variable than those for the water sample, and in addition both DCF models yield very similar cost of equity estimates for the gas LDC sample. As a result, I do not rely upon the DCF model results for the water sample, but I believe that DCF cost of capital estimates provide a useful check on the risk positioning results for the gas LDC sample.

Q56. Do you have any comments regarding the results of the risk positioning models?

A56. The estimated costs of equity displayed in Panel B of Table No. MJV-12 compared to Table No. MJV-22 are significantly higher on average for the water sample (by approximately 2 percentage points). The risk positioning results are summarized above in Table 1. Of those results, the CAPM values deserve the least weight, because this method does not adjust for the empirical finding that the cost of capital is less sensitive to beta than predicted by the CAPM (which my testimony considers by using the ECAPM). Conversely, the ECAPM numbers deserve the most weight, because this method adjusts

1 for the empirical findings on the risk-return tradeoff displayed in Figure 2 above. The
2 cost of equity estimates using the long-term risk free rate and adjusted for a capital
3 structure with a 45.3 percent equity ratio range from 13.8 to 14.0 percent for the water
4 sample (13.8 to 13.9 percent for the subsample), and 11.7 to 12.1 percent for the gas LDC
5 sample. The estimates based upon the short-term risk-free rate give lower values. The
6 cost of equity estimates range from 12.1 to 12.3 percent for the water sample and 12.0 to
7 12.3 percent for the water company subsample. The short-term risk positioning cost of
8 equity estimates range from 9.8 to 10.6 percent for the gas LDC sample.

9 The estimates based upon the short-term risk-free rate are about 150 – 170 basis points
10 lower than the estimates using the long-term risk-free rate, because the yield curve is
11 currently fairly steep. The lower yield on the short-term Treasury bills reflects the efforts
12 by the Federal Reserve (“Fed”) to prevent the economy from sliding into a recession and
13 to improve liquidity in the credit market in the wake of the subprime mortgage crisis.²² If
14 the Fed believes further action is necessary, short-term rates are likely to fall further. On
15 the other hand, if inflation becomes a concern, as it appears to be the case,²³ then short-
16 term rates could remain constant or even start increasing. Because of this uncertainty, I
17 give more weight to the estimates using the long-term risk-free rate at this time.

18 **Q57. Given the results of the two models, what is your conclusion regarding the cost of**
19 **equity for Tennessee-American Water?**

20 A57. Focusing on the middle values in Table 1 for the results from the long-term risk
21 positioning model (ECAPM with $\alpha = 0.5$) applied to the currently more reliable gas
22 LDC sample, the average ATWACC for the sample is 7.4 percent, with a corresponding
23 cost of equity estimate of 11.9 percent. For the water sample, the corresponding
24 estimates are 8.3 percent for the ATWACC and 13.9 percent for the cost of equity. The
25 estimates from the DCF models for the gas LDC sample are 11.0 and 11.1 percent. I

²² The Fed has cut the Federal Funds target rate five times since its recent high of 5.25 percent in June of 2006. The rate is now 3.0 percent for a total decrease of 225 basis points. See the Federal Reserve Bank of New York’s web site for the history of the Federal Funds and Discount Rates.

²³ ”Rising Inflation Limits the Fed as Growth Lags,” *The New York Times*, February 21, 2008.

1 believe that the higher cost of equity estimates for the water sample should be tempered
2 by the lower results for the gas LDC sample from both the risk positioning and the DCF
3 models because the results of the water sample are more variable, and the quality of the
4 data for the water sample is lower. The gas LDC sample, in contrast, contains companies
5 that are expected to provide more reliable cost of equity estimates. The gas LDC sample
6 yields estimates that are less variable and that show consistency between different
7 methods.

8 Based upon the evidence, the best point estimate for the cost of equity for Tennessee-
9 American is $11\frac{3}{4}$ percent. However, it is more correct to say that the estimates from the
10 two samples indicate a range of reasonable values for the cost of equity between $11\frac{1}{4}$ and
11 $12\frac{1}{4}$, for a capital structure with 45.3 percent equity, corresponding to a range of
12 ATWACCs between 7 and $7\frac{1}{2}$ percent. Given the evidence, the estimate of $11\frac{3}{4}$ percent
13 is conservative because it places more weight on the results from the gas LDC sample,
14 which are lower than those from the water sample.

15 As previously noted, in estimating the cost of equity I use increments of $\frac{1}{4}$ of a percent
16 (25 basis points) because I do not believe that cost of capital estimates can be made more
17 precisely than that.

18 **Q58. Does this conclude your testimony?**

19 A58. Yes.

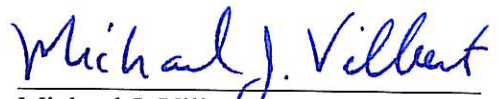
TENNESSEE REGULATORY AUTHORITY

COMMONWEALTH OF MASSACHUSETTS

COUNTY OF MIDDLESEX

BEFORE ME, the undersigned authority, duly commissioned and qualified in and for the State and County aforesaid, personally came and appeared Michael J. Vilbert, being by me first duly sworn deposed and said that:

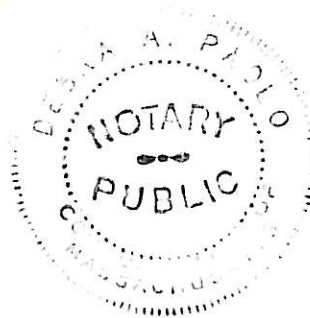
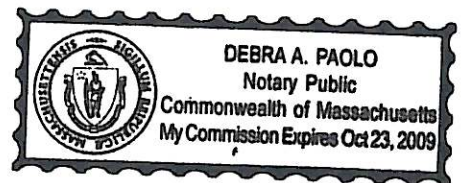
He is appearing as a witness on behalf of Tennessee-American Water Company before the Tennessee Regulatory Authority, and if present before the Authority and duly sworn, his testimony would set forth in the annexed transcript consisting of 35 pages.


Michael J. Vilbert

Sworn to and subscribed before me
this 11th day of March 2008.


Notary Public

My commission expires October 23, 2009



APPENDIX A

RÉSUMÉ

MICHAEL J. VILBERT

PRINCIPAL

Michael Vilbert is an expert in cost of capital, financial planning and valuation who has advised clients on these matters in the context of a wide variety of investment and regulatory decisions. He received his Ph.D. in Financial Economics from the Wharton School of the University of Pennsylvania, an MBA from the University of Utah, an M.S. from the Fletcher School of Law and Diplomacy, Tufts University, and a B.S. degree from the United States Air Force Academy. He joined The Brattle Group in 1994 after a career as an Air Force officer, where he served as a fighter pilot, intelligence officer, and professor of finance at the Air Force Academy.

REPRESENTATIVE CONSULTING EXPERIENCE

- In a securities fraud case, Dr. Vilbert designed and created a model to value the private placement stock of a drug store chain as if there had been full disclosure of the actual financial condition of the firm. He analyzed key financial data and security analysts' reports regarding the future of the industry in order to recreate pro forma balance sheet and income statements under a variety of scenarios designed to establish the value of the firm.
- For pharmaceutical companies rebutting price-fixing claims in antitrust litigation, Dr. Vilbert was a member of a team that prepared a comprehensive analysis of industry profitability. The analysis replicated, tested and critiqued the major recent analyses of drug costs, risks and returns. The analyses helped develop expert witness testimony to rebut allegations of excess profits.
- For an independent electric power producer, Dr. Vilbert created a model that analyzed the reasonableness of rates and costs filed by a natural gas pipeline. The model not only duplicated the pipeline's rates, but it also allowed simulation of a variety of "what if" scenarios associated with cost recovery under alternative time patterns and joint cost allocations. Results of the analysis were adopted by the intervenor group for negotiation with the pipeline.
- For the CFO of an electric utility, Dr. Vilbert developed the valuation model used to support a stranded cost estimation filing. The case involved a conflict between two utilities over the responsibility for out-of-market costs associated with a power purchase contract between them. In addition, he advised and analyzed cost recovery mechanisms

that would allow full recovery of the stranded costs while providing a rate reduction for the company's rate payers.

- Dr. Vilbert has testified as well as assisted in the preparation of testimony and the development of estimation models in numerous cost of capital cases for natural gas pipeline, water utility and electric utility clients before the Federal Energy Regulatory Commission ("FERC") and state regulatory commissions. These have spanned standard estimation techniques (e.g., Discounted Cash Flow and Risk Positioning models). He has also developed and applied more advanced models specific to the industries or lines of business in question, e.g., based on the structure and risk characteristics of cash flows, or based on multi-factor models that better characterize regulated industries.
- Dr. Vilbert has valued several large, residual oil-fired generating stations to evaluate the possible conversion to natural gas or other fuels. In these analyses, the expected pre- and post-conversion station values were computed using a range of market electricity and fuel cost conditions.
- For a major western electric utility, Dr. Vilbert helped prepare testimony that analyzed the prudence of QF contract enforcement. The testimony demonstrated that the utility had not been compensated in its allowed cost of capital for major disallowances stemming from QF contract management.
- Dr. Vilbert analyzed the economic need for a major natural gas pipeline expansion to the Midwest. This involved evaluating forecasts of natural gas use in various regions of the United States and the effect of additional supplies on the pattern of natural gas pipeline use. The analysis was used to justify the expansion before the FERC and the National Energy Board of Canada.
- For a Public Utility Commission in the Northeast, Dr. Vilbert analyzed the auction of an electric utility's purchase power agreements to determine whether the outcome of the auction was in the ratepayers' interest. The work involved the analysis of the auction procedures as well as the benefits to ratepayers of transferring risk of the PPA payments to the buyer.
- Dr. Vilbert led a team tasked to determine whether bridge tolls were "just and reasonable" for a non-profit port authority. Determination of the cost of service for the authority required estimation of the value of the authority's assets using the trended original cost methodology as well as evaluation of the operations and maintenance budgets. Investment costs, bridge traffic information and inflation indices covering a 75 year period were utilized to estimate the value of four bridges and a passenger transit line valued in excess of \$1 billion.
- Dr. Vilbert helped a recently privatized railroad in Brazil develop an estimate of its revenue requirements, including a determination of the railroad's cost of capital. He also helped evaluate alternative rate structures designed to provide economic incentives to shippers as well as to the railroad for improved service. This involved the explanation

and analysis of the contribution margin of numerous shipper products, improved cost analysis and evaluation of bottlenecks in the system.

- For a utility in the Southeast, Dr. Vilbert quantified the company's stranded costs under several legislative electric restructuring scenarios. This involved the evaluation of all of the company's fossil and nuclear generating units, its contracts with Qualifying Facilities and the prudence of those QF contracts. He provided analysis concerning the impact of securitizing the company's stranded costs as a means of reducing the cost to the rate payers and several alternative designs for recovering stranded costs.
- For a recently privatized electric utility in Australia, Dr. Vilbert evaluated the proposed regulatory scheme of the Australian Competition and Consumer Commission for the company's electric transmission system. The evaluation highlighted the elements of the proposed regulation which would impose uncompensated asymmetric risks on the company and the need to either eliminate the asymmetry in risk or provide additional compensation so that the company could expect to earn its cost of capital.
- For an electric utility in the Southwest, Dr. Vilbert helped design and create a model to estimate the stranded costs of the company's portfolio of Qualifying Facilities and Power Purchase contracts. This exercise was complicated by the many variations in the provisions of the contracts that required modeling in order to capture the effect of changes in either the performance of the plants or in the estimated market price of electricity.
- Dr. Vilbert helped prepare the testimony responding to a FERC request for further comments on the appropriate return on equity for electric transmission facilities. In addition, Dr. Vilbert was a member of the team that made a presentation to the FERC staff on the expected risks of the unbundled electric transmission line of business.
- Dr. Vilbert and Mr. Frank C. Graves, also of The Brattle Group, prepared testimony evaluating an innovative Canadian stranded cost recovery procedure involving the auctioning of the output of the province's electric generation plants instead of the plants themselves. The evaluation required the analysis of the terms and conditions of the long-term contracts specifying the revenue requirements of the plants for their entire forecasted remaining economic life and required an estimate of the cost of capital for the plant owners under this new stranded cost recovery concept.
- Dr. Vilbert served as the neutral arbitrator for the valuation of a petroleum products tanker. The valuation required analysis of the Jones Act tanker market and the supply and demand balance of the available U.S. constructed tanker fleet.

PRESENTATIONS

"Utility Distribution Cost of Capital," *EEI Electric Rates Advanced Course*, Bloomington, IN, 2002, 2003.

"Issues for Cost of Capital Estimation," with Bente Villadsen, *Edison Electric Institute Cost of Capital Conference*, Chicago, IL, February 2004.

"Not Your Father's Rate of Return Methodology," *Utility Commissioners/Wall Street Dialogue*, NY, May 2004.

"Current Issues in Cost of Capital," *EEI Electric Rates Advanced Course*, Madison, WI, July 2004.

"Cost of Capital Estimation: Issues and Answers," *MidAmerican Regulatory Finance Conference*, Des Moines, IA, April 7, 2005.

"Cost of Capital - Explaining to the Commission - Different ROEs for Different Parts of the Business," *EEI Economic Regulation & Competition Analysts Meeting*, May 2, 2005.

"Current Issues in Cost of Capital," with Bente Villadsen, *EEI Electric Rates Advanced Course*, Madison, WI, 2005.

"Current Issues in Estimating the Cost of Capital," *EEI Electric Rates Advanced Course*, Madison, WI, 2006.

"Revisiting the Development of Proxy Groups and Relative Risk Analysis," Society of Utility and Regulatory Financial Analysts: 39th Financial Forum, April 2007.

ARTICLES

"Flaws in the Proposed IRS Rule to Reinstate Amortization of Deferred Tax Balances Associated with Generation Assets Reorganized in Industry Restructuring," by Frank C. Graves and Michael J. Vilbert, white paper for *Edison Electric Institute* (EEI) to the IRS, July 25, 2003.

"The Effect of Debt on the Cost of Equity in a Regulatory Setting," by A. Lawrence Kolbe, Michael J. Vilbert, Bente Villadsen and The Brattle Group, *Edison Electric Institute*, April 2005.

"Measuring Return on Equity Correctly: Why current estimation models set allowed ROE too low," by A. Lawrence Kolbe, Michael J. Vilbert and Bente Villadsen, *Public Utilities Fortnightly*, August 2005.

"Understanding Debt Imputation Issues," by Michael J. Vilbert, Bente Villadsen and Joseph B. Wharton, *Edison Electric Institute*, forthcoming Feb 2008.

TESTIMONY

Direct and rebuttal testimony before the Alberta Energy and Utilities Board on behalf of TransAlta Utilities Corporation in the matter of an application for approval of its 1999 and 2000 generation tariff, transmission tariff, and distribution revenue requirement, October 1998.

Direct testimony before the Federal Energy Regulatory Commission on behalf of Central Maine Power in Docket No. ER00-982-000, December 1999.

Direct testimony before the Alberta Energy and Utilities Board on behalf of TransAlta Utilities Corporation for approval of its 2001 transmission tariff, May 2000.

Direct testimony before the Federal Energy Regulatory Commission on behalf of Mississippi River Transmission Corporation in Docket No. RP01-292-000, March 2001.

Written evidence, rebuttal, reply and further reply before the National Energy Board in the matter of an application by TransCanada PipeLines Limited for orders pursuant to Part I and Part IV of the *National Energy Board Act*, Order AO-1-RH-4-2001, May 2001, Nov. 2001, Feb. 2002.

Written evidence before the Public Utility Board on behalf of Newfoundland & Labrador Hydro - Rate Hearings, October 2001.

Direct testimony (with William Lindsay) before the Federal Energy Regulatory Commission on behalf of DTE East China, LLC in Docket No. ER02-1599-000, April 2002.

Direct and rebuttal reports before the Arbitration Panel in the arbitration of stranded costs for the City of Casselberry, FL, Case No. 00-CA-1107-16-L, July 2002.

Direct reports before the Arbitration Board for Petroleum products trade in the Arbitration of the Military Sealift Command vs. Household Commercial Financial Services, fair value of sale of the Darnell, October 2002.

Direct testimony and hearing before the Arbitration Panel in the arbitration of stranded costs for the City of Winter Park, FL, In the Circuit Court of the Ninth Judicial Circuit in and for Orange County, FL, Case No. C1-01-4558-39, December 2002.

Direct testimony before the Federal Energy Regulatory Commission on behalf of Florida Power Corporation, dba Progress Energy Florida, Inc. in Docket No. SC03-1-000, March 2003.

Direct report before the Arbitration Panel in the arbitration of stranded costs for the Town of Belleair, FL, Case No. 000-6487-C1-007, April 2003.

Direct and rebuttal reports before the Alberta Energy and Utilities Board in the matter of the Alberta Energy and Utilities Board Act, R.S.A. 2000, c. A-17, and the Regulations under it; in the matter of the Gas Utilities Act, R.S.A. 2000, c. G-5, and the Regulations under it; in the

matter of the Public utilities Board Act, R.S.A. 2000, c. P-45, as amended, and the Regulations under it; and in the matter of Alberta Energy and Utilities Generic Cost of Capital Hearing, Proceeding No. 1271597, July 2003, November 2003.

Written evidence before the National Energy Board in the matter of the National Energy Board Act, R.S.C. 1985, c. N-7, as amended, (Act) and the Regulations made under it; and in the matter of an application by TransCanada PipeLines Limited for orders pursuant to Part IV of the *National Energy Board Act*, for approval of Mainline Tolls for 2004, RH-2-2004, January 2004.

Direct and rebuttal testimony before the Public Service Commission of West Virginia, on Cost of Capital for West Virginia-American Water Company, Case No 04-0373-W-42T, May 2004.

Direct and rebuttal testimony before the Federal Energy Regulatory Commission, on Energy Allocation of Debt Cost for Incremental Shipping Rates for Edison Mission Energy, Docket No. RP04-274-000, December 2004 and March 2005.

Direct testimony before the Arizona Corporation Commission, Cost of Capital for Paradise Valley Water Company, a subsidiary of Arizona-American Water Company, Docket No. WS-01303A-05, May 2005.

Written evidence before the Ontario Energy Board, Cost of Capital for Union Gas Limited, Inc., Docket No. EB-2005-0520, January 2006.

Direct and rebuttal testimony before the Pennsylvania Public Utility Commission, Return on Equity for Metropolitan Edison Company, Docket No. R-00061366 and Pennsylvania Electric Company, Docket No. R-00061367, April 2006 and August 2006.

Expert report in the United States Tax Court, Docket No. 21309-05, 34th Street Partners, DH Petersburg Investment, LLC and Mid-Atlantic Finance, Partners Other than the Tax Matters Partner, Petitioner, v. Commissioner of Internal Revenue, Respondent, July 28, 2006.

Direct and supplemental testimony before the Federal Energy Regulatory Commission, Docket No. ER06-427-003, on behalf of Mystic Development, LLC on the Cost of Capital for Mystic 8 and 9 Generating Plants Operating Under a Reliability Must Run Contract, August 2006 and September 2006.

Direct testimony before the Federal Energy Regulatory Commission, Docket No. ER07-46-000, on behalf of Northwestern Corporation on the Cost of Capital for Transmission Assets, October 2006.

Direct and rebuttal testimony before the Tennessee Regulatory Authority, Case No. 06-00290, on behalf of Tennessee American Water Company, on the Cost of Capital, November, 2006 and April 2007.

Direct and rebuttal testimony before the Public Service Commission of Wisconsin, Docket No. 5-UR-103, on behalf of Wisconsin Energy Corporation, on the Cost of Capital for Wisconsin Electric Power Company and Wisconsin Gas LLC, May 2007 and October 2007.

Rebuttal testimony before the California Public Utilities Commission, Docket No. A. 07-01-036-39, on behalf of California-American Water Company, on the Cost of Capital, May 2007.

Direct and rebuttal testimony before the Public Utilities Commission of the State of South Dakota, Docket No. NG-07-013, on behalf of NorthWestern Corporation, on the Cost of Capital for NorthWestern Energy Company's natural gas operations in South Dakota, June 2007 and November 2007.

Direct, supplemental and rebuttal testimony before the Public Utilities Commission of Ohio, Case No. 07-551-EL-AIR, Case No. 07-552-EL-ATA, Case No. 07-553-EL-AAM, and Case No. 07-554-EL-UNC, on behalf of Ohio Edison Company, The Toledo Edison Company, and The Cleveland Electric Illuminating Company, on the cost of capital for the FirstEnergy Company's Ohio electric distribution utilities, June 2007, January 2008 and February 2008.

Direct and rebuttal testimony before the State Corporation Commission of Virginia, Case No. PUE-2007-00066, on behalf of Virginia Electric and Power Company on the cost of capital for its southwest Virginia coal plant, July 2007 and December 2007.

Direct testimony before the Public Utilities Commission of Ohio, Case No. 07-829-GA-AIR, Case No. 07-830-GA-ALT, and Case No. 07-831-GA-AAM, on behalf of Dominion East Ohio Company, on the rate of return for Dominion East Ohio's natural gas distribution operations, September 2007.

Direct testimony before the Federal Energy Regulatory Commission, Docket No. ER08- -000, on behalf of Virginia Electric and Power Company, on the Cost of Capital for Transmission Assets, October 2007.

Direct and rebuttal testimony before the California Public Utilities Commission, Docket No. A. 07-01-022, on behalf of California-American Water Company, on the Effect of a Water Revenue Adjustment Mechanism on the Cost of Capital, October 2007 and November 2007.

Written evidence before the National Energy Board in the matter of the National Energy Board Act, R.S.C. 1985, c. N-7, as amended, and the Regulations made thereunder; and in the matter of an application by Trans Québec & Maritimes PipeLines Inc. for orders pursuant to Part I and Part IV of the *National Energy Board Act*, for determining the overall fair return on capital for tolls charged by TQM, December 2007.

Comments in support of The Interstate Natural Gas Association of America's Additional Initial Comments on the FERC's Proposed Policy Statement with regard to the Composition of Proxy Companies for Determining Gas and Oil Pipeline Return on Equity, Docket No. PL07-2-000, December, 2007

APPENDIX B

SELECTING THE WATER AND GAS LDC SAMPLES AND THE USE OF MARKET VALUES

I.	SAMPLE SELECTION AND THE CHARACTERISTICS OF EACH SAMPLE.....	B-2
A.	THE WATER SAMPLE	B-2
B.	THE GAS LOCAL DISTRIBUTION COMPANIES SAMPLE	B-4
II.	MARKET VALUE CAPITAL STRUCTURE, COSTS OF DEBT & COSTS OF PREFERRED EQUITY	B-7

I. SAMPLE SELECTION AND THE CHARACTERISTICS OF EACH SAMPLE

A. The Water Sample

Q1. How did you select your sample of water utilities?

A1. The goal was to create a sample of companies whose primary business is as a regulated water utility with business risk generally similar to that of Tennessee-American Water. To construct this sample, I started with the universe of nine water utility companies listed as such in the *Value Line Investment Survey - Plus Edition*. I then eliminated Sun Hydraulics because, although listed as a water utility, its operations consist mainly of producing industrial equipment.¹

Normally, I would apply several additional selection criteria to eliminate companies with unique circumstances that may affect the cost of capital estimates. For example, I would normally eliminate companies with annual revenues lower than \$300 million in 2006,² no or low bond ratings, lack of growth estimates or Bloomberg data, and all companies with announced dividend cuts or that were involved in significant merger activity over the last five years (2003 to today). However, applying my standard procedures to the eight water utilities followed by *Value Line* would result in a sample of at most two companies. (The areas of concern associated with the companies included in the sample are detailed below.) I try to balance my standard criteria against the need to have a reasonable sample size. This results in the use of all eight companies to form a full sample, as well as the use of seven companies to form a subsample with a high percentage of regulated revenues.³ The eight companies that form the full sample of water utilities are American States Water Co., Aqua America Inc., California Water Service Group, Connecticut

¹ Bloomberg lists it in the “metal fabricate/hardware” industry group, which is a subset of the “industrial” sector.

² Table No. MJV-2 and its associated workpapers report the share of operating revenues from different lines of business in 2006 for these companies. (Table No. MJV-1 provides an index to the other tables.)

³ Southwest Water Company is dropped from the subsample because it only earns an estimated 41 percent of its 2006 revenues from regulated activities. The remaining companies in the subsample earn at least an estimated 89 percent of their 2006 revenues through regulated activities.

Water Service Inc., Middlesex Water Co., SJW Corp., Southwest Water Co., and York Water Co.

Q2. Why do you usually eliminate companies currently involved in a merger from your samples?

A2. The stock prices of companies involved in mergers are often more affected by news relating to the merger than to movements in the stock market. In other words, the stock price “decouples” from its normal relationship to the stock market (the economy) which is the basis upon which a company’s relative risk is calculated. Instead the stock price of a merger candidate is more affected by the latest speculation on the terms and probability of the merger.

Q3. What are some of the water sample’s data problems?

A3. First, of the eight water utilities followed by *Value Line*, three companies (Connecticut Water, Middlesex Water, and York Water) have 2006 revenues below \$100 million. If I were to consider the threshold of \$300 million I usually rely on, then six of the eight companies would fall under it. The stocks of small companies frequently exhibit “thin trading” which means that their stock trades infrequently. Indeed, since January of 2007, the three companies listed above have traded an average of less than 20,000 shares per trading day. In percentage terms, these companies traded less than 0.2 percent of their shares outstanding. By contrast, each of the gas LDC sample companies had an average trading volume of at least 107,000 shares per day (180,000 if Laclede Group were excluded), which in percentage terms represented more than 0.45 percent of shares outstanding for each company. Greater trading volume gives the expert more confidence in the estimates since there is less likelihood of a delay between the release of important information and the time that this information is reflected in prices. Such delay is well known to cause beta estimates to be statistically insignificant and possibly biased.

Second, four companies lack long-term earnings forecasts from *Value Line*, and two companies only have one analyst providing BEst growth rate forecasts. In addition, the existing growth rates estimates are highly variable, ranging from a low of 0.6 percent to a high of 13.1 percent. Such highly variable growth rates are not indicative of an industry

1 that is stable and cast doubt on the applicability of the DCF model to this industry at this
2 time.

3 Third, only two companies have significant revenue, are not thinly traded, have a bond
4 rating and have more than one long-term growth forecast.

5 Fourth, many companies have significant merger activity over the last five years, leading
6 *Value Line* to note that “mergers and acquisitions activity has remained at a feverishly
7 high pace.”⁴ For example, Aqua America acquired more than two dozen smaller
8 companies in 2007, while Southwest Water Co. completed six small acquisitions in the
9 last three years, the most recent of which in February 2008.⁵ The large number of
10 mergers and acquisitions is an indication of an industry in flux which will certainly affect
11 the DCF estimates and perhaps the risk positioning estimates as well.

12 These factors may all potentially affect the cost of equity estimates in ways not
13 completely predictable. Because of the substantial data problems and the lack of a large
14 number of publicly traded water utilities, without considering the gas LDC sample I
15 would be forced to rely either on a sample with significant data problems, or on a sample
16 with at most two companies (Aqua America Inc., and California Water Services Group).⁶

17 **B. The Gas Local Distribution Companies Sample**

18 **Q4. How do you select your gas local distribution company sample?**

19 A4. To select this sample, I started with the universe of publicly traded natural gas utilities
20 covered by *Value Line*. This resulted in an initial group of 20 companies. I then
21 eliminated companies by applying additional selection criteria designed to eliminate
22 companies with unique circumstances which may bias the cost of capital estimates.

⁴ *Value Line Investment Survey*, Water Utility Industry, January 25, 2008.

⁵ Sources: *Value Line Investment Survey*, January 25, 2008, Bloomberg mergers and acquisitions historical search, performed February 5, 2008.

⁶ Several companies have multiple problems. For example, Connecticut Water has revenues below \$100 million, exhibits thin trading and lacks *Value Line* long-term earnings growth forecasts. Middlesex Water has revenues below \$100 million and no long-term *Value Line* earnings forecast. York Water has revenues below \$100 million, exhibits thin trading and has no long-term *Value Line* earnings forecast.

Q5. What are the selection criteria you applied?

A5. I eliminated all companies whose regulated assets are not greater than 50 percent of their total assets as reported in each company's 2006 10-K form, because one goal for this sample was for the companies to derive the majority of their revenues from regulated activities. I also eliminated all companies whose bond rating was less than BBB- as rated by S&P, and companies that had a large merger during the period February 2003 to February 2008.⁷ Merger activity is obtained from Bloomberg, which provides a history of past acquisitions and divestitures for each company, and also the size of each transaction, if such information is available.⁸ To guard against measurement bias caused by "thin trading," I also restricted the sample to companies with total operating revenues greater than \$300 million in 2006.

Finally, I required that the companies have historical data available from Bloomberg and that they had no dividend cuts or restatement of financial statements in the past five years, since the latter can be signs of financial distress.

The final sample consists of ten gas LDC companies: AGL Resources Inc., Atmos Energy Corp., Laclede Group Inc., Nicor Inc., New Jersey Resources Corp., Northwest Natural Gas Co., Piedmont Natural Gas Co., South Jersey Industries Inc., Southwest Gas Corp., and WGL Holdings Inc.

Q6. What companies did you eliminate before arriving at the final sample?

A6. I eliminated three companies because they had no bond rating and their annual revenues were less than \$300 million (Chesapeake Utilities Corp., EnergySouth Inc., and RGC Resources Inc.), one company because it had no bond rating available (Energy West Inc.), four companies because their credit ratings were below investment grade (Amerigas Partners LP, Ferrellgas Partners LP, Markwest Hydrocarbon Inc., and Star Gas Partners LP), and lastly two companies because they had significant M&A activity in the last five years (Southern Union Co. and UGI Corp.).

⁷ One company included in the sample (Atmos Energy Corp.) did undertake an acquisition in 2004. I discuss below the reasons for keeping it in the sample.

⁸ For purposes of sample selection, a sizeable merger is defined to be one which would exceed 30 percent of the total capitalization of the company at the time of the merger announcement.

Q7. Are there any issues with the remaining companies in your sample?

A7. Possibly. Atmos Energy acquired TXU Gas Company in 2004 for \$1.925 billion, making it a candidate for exclusion from the sample because of significant M&A activity. In balancing the goal to have a larger sample with the desire to have a problem-free sample, I decided to include Atmos in the gas LDC sample because the acquisition occurred relatively close to the five-year threshold that I consider relevant for this criterion. However, excluding Atmos Energy from the sample would raise cost of equity estimates by approximately 10 basis points. As a result, my estimates are conservative, and the inclusion of Atmos Energy is not a source of concern about sample quality.

Q8. Please compare the characteristics of the water utility sample and the gas LDC sample.

A8. The following summarizes the water utility and the gas LDC samples' characteristics in terms of being regulated utilities. Both samples earn a large percentage of their revenue from regulated activities and serve a mix of residential, industrial, and other customers, and involve pipeline transportation of a storable good. The water subsample includes only those companies with a higher percent of their revenues from regulated utilities and fewer data problems which was at least 89 percent of revenues from regulated activities in 2006. Companies in the gas LDC sample had at least 65 percent of their assets attributable to regulated activities. (See Table No. MJV-2 and Table No. MJV-13).⁹ All companies in the water utility sample and the gas LDC sample are regulated by one or more states. The companies in the water industry also face regulatory requirements from federal and local authorities through, for example, the Clean Water Act of 1974 and EPA enforcement, which will likely require the water industry to invest substantial amounts in infrastructure going forward.¹⁰

⁹ Water utilities do not report the percentage of assets subject to regulatory activities, while gas LDCs do not report the fraction of revenues derived from regulated activities. However, both measures are likely to be good indicators of the percentage of net income obtained by sample companies from regulated activities, which is the quantity that is of ultimate interest.

¹⁰ The *Value Line Investment Survey* (Water Utility Industry, January 25, 2008) mentions "elevated infrastructure costs that should persist for years to come." More specifically, Value Line analysts "[...] suspect that many systems are still outdated and require additional renovations. That observation, coupled with more stringent water purification standards due to greater fear of bioterrorism, will result in high costs for the foreseeable future."

To determine the additional risk characteristics of the gas LDC sample, I reviewed several key features of their regulatory environment. Most if not all companies have a fuel adjustment clause that allows them to pass (at least part of) increases in gas purchase costs onto their customers. Some gas LDC companies have tariffs that contain provisions that permit the recovery of (some) environmental remediation costs. Such provisions exist, for example, for South Jersey Industries.¹¹ However, the gas LDC sample has fewer of the data and estimation issues identified above for the water sample.

II. MARKET VALUE CAPITAL STRUCTURE, COSTS OF DEBT & COSTS OF PREFERRED EQUITY

Q9. What capital structure information do you require?

A9. For reasons discussed in my direct testimony and explained in detail in Appendix E, explicit evaluation of the market-value capital structures of the sample companies versus the capital structure used for rate making is vital for a correct interpretation of the market evidence. This requires estimates of the market values of common and preferred equity and debt, and the current market costs of preferred equity and debt.

Q10. How do you calculate the market-value capital structures of the sample companies?

A10. I estimate the capital structure for each company by estimating the market values of common equity, preferred equity and debt from publicly available data. The calculations for the water sample are in Panels A to H of Table No. MJV-3, and those for the gas LDC sample are in Panels A to J of Table MJV-13.

The market value of equity is straightforward: the price per share times the number of shares outstanding. The market value of preferred is set equal to its book value because the portion of the capital structure financed with preferred equity is generally small. The market value of debt is estimated at the book value of debt reported by Bloomberg plus or

¹¹ South Jersey Industries, 2006 10-K, p. SJI-20.

1 minus the difference in the estimated fair (market) value and book value of long-term
2 debt as reported in the companies' 10-Ks or annual reports.¹²

3 For purposes of assessing financial risk to common shareholders, I add an adjustment for
4 short-term debt to the debt portion of the capital structure. This adjustment is used only
5 for those companies whose short-term (current) liabilities exceed their short-term
6 (current) assets. I add an amount equal to the minimum of the difference between short-
7 term liabilities and short-term assets or the amount of short-term debt. The reason for
8 this adjustment is to recognize that when current liabilities exceed current assets, a
9 portion of the companies long-term assets are being financed, in effect, by short-term
10 debt.

11 The market value capital structure is calculated to be consistent with the time period over
12 which the cost of capital is estimated for each sample. The capital structure is determined
13 over the historical period over which the relevant risk positioning parameters were
14 determined and as of the date analysts provide forward looking growth forecasts.
15 Therefore, Tables No. MJV-3 and MJV-13 report the market value capital structure at
16 year end for the years ending 2002 – 2006, and the third quarter of 2007.¹³ The output of
17 each of these tables is the market equity-to-value, debt-to-value, and preferred equity-to-
18 value ratios. The overall cost of capital calculation for the risk positioning estimates rely
19 on the average of the market value capital structure computed for the years 2002 through
20 third quarter of 2007, as shown in Table No. MJV-4 and Table No. MJV-15, respectively.
21 The results in columns [1]-[3] are used in the DCF model calculations, while columns
22 [4]-[6] are for the risk positioning models.

23 **Q11. How do you estimate the current market cost of preferred equity?**

24 A11. For companies with preferred equity, the cost of preferred equity for each company was
25 set equal to the yield on an index of preferred stock as reported in the *Mergent Bond*

¹² See Panels A through H in Table No. MJV-3 and Panels A through J in Table MJV-13 for details. The adjustment relies on the difference between the companies' self-reported fair value of long-term debt and the carrying value of the same line items. This information was obtained from the sample companies' annual reports.

¹³ This was the most current information on the capital structures for the sample companies at the time this testimony was prepared.

1 *Record* corresponding to the S&P rating of that company's debt. The yields from
2 *Mergent Bond Record* were as of January 2008. In general, the average amount of
3 preferred equity in the sample companies' capital structures is very small and frequently
4 zero. No company in either sample has more than two percent on average.

5 **Q12. How do you estimate the current market cost of debt?**

6 A12. The market cost of debt for each company in the DCF analysis is the current yield
7 reported by Bloomberg for a public utility company bond corresponding to the sample
8 company's current debt rating as classified by S&P. The risk positioning analysis, on the
9 other hand, uses the current yield of a utility bond that corresponds to the five-year
10 average debt rating of each company so as to match consistently the horizon of
11 information used by *Value Line* to estimate company betas. The current S&P debt ratings
12 were obtained from Bloomberg.¹⁴

13 The fifteen day average yield on A-rated Public Utility bonds was 6.09 percent as of
14 February 7, 2008, and 6.31 percent on average for BBB-rated Public Utility bonds. (See
15 Panel A of Workpaper #1 to Table No. MJV-11 for the yields on utility bonds and
16 preferred stock by credit rating.) Calculation of the after-tax cost of debt uses the
17 marginal tax rate 39.2 percent provided by the company.

¹⁴ Southwest Water Co.'s debt rating was not available. I used a rating of A, which is the same as that of all other water utilities in the sample.

APPENDIX C

RISK POSITIONING METHODOLOGY AND EMPIRICAL RESULTS

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Q1. What is the purpose of this appendix?

A1. This appendix reviews the principles behind the risk positioning methodologies, describes the estimation of the parameters used in the models, and details the cost of capital estimates obtained from these methodologies. This appendix intentionally repeats portions of my direct testimony, because I want the reader to be able to have a full discussion of the issues addressed here, rather than having to continually turn back to the corresponding section of the testimony.

I. EQUITY RISK PREMIUM METHODOLOGY

Q2. How is this section of the appendix organized?

A2. It first reviews the basic nature of the equity risk premium approach. It then discusses the individual components of the model: the benchmark risk premium, the relative risk of the company or line of business in question, the appropriate interest rate, and the combination of these elements in a particular equity risk premium model.

A. THE BASIC EQUITY RISK PREMIUM MODEL

Q3. How does the equity risk premium model work?

A3. The equity risk premium approach estimates the cost of equity as the sum of a current interest rate and a risk premium. (It therefore is sometimes also known as the “risk premium” or the “risk positioning” approach.)

This approach may sometimes be applied informally. For example, an analyst or a commission may check the spread between interest rates and what is believed to be a reasonable estimate of the cost of capital at one time, and then apply that spread to changed interest rates to get a new estimate of the cost of capital at another time.

More formal applications of equity risk premium method implement the second approach to cost of capital estimation. They use information on all securities to identify the security market line (Figure 1 in the body of the testimony) and derive the cost of capital for the individual security based on that security’s relative risk. This equity risk premium

approach is widely used and underlies most of the current scholarly research on the nature, determinants and magnitude of the cost of capital.

Q4. How are “more formal applications” put into practice?

A4. The essential benchmarks that determine the security market line are the risk-free interest rate and the premium that a security of average risk commands over the risk-free rate. This premium is commonly referred to as the “market risk premium” (“MRP”), i.e., the excess of the expected return on the average common stock over the risk-free interest rate. In the equity risk premium approach the risk-free interest rate and MRP are common to all securities. A security-specific measure of relative risk (beta) is estimated separately and combined with the MRP to obtain the company-specific risk premium.

In principle, there may be more than one factor affecting the expected stock return, each with its own security-specific measure of relative risk and its own benchmark risk premium. For example, the “arbitrage pricing theory” and other “multi-factor” models have been proposed in the academic literature. These models estimate the cost of capital as the sum of a risk-free rate and several security-specific risk premia. However, none of these alternative models has emerged in practice as “the” improvement to use instead of the original, single-factor model. I use the traditional single-factor model in this testimony.

Accordingly, the required elements in my formal equity risk premium approach are the market risk premium, an objective measure of relative risk, the risk-free rate that corresponds to the measure of the market risk premium, and a specific method to combine these elements into an estimate of the cost of capital.

B. MARKET RISK PREMIUM

Q5. Why is a risk premium necessary?

A5. Experience (e.g., the U.S. market's October Crash of 1987) demonstrates that shareholders, even well diversified shareholders, are exposed to enormous risks. By investing in stocks instead of risk-free Government bills, investors subject themselves not

1 only to the risk of earning a return well below those they expected in any year but also to
2 the risk that they might lose much of their initial capital. This is why investors demand a
3 risk premium.

4 I estimate two versions of the Capital Asset Pricing Model (“CAPM”). The first version
5 measures the market risk premium as the risk premium of average risk common stocks
6 over the long-term risk-free rate. The second version measures the risk premium relative
7 to a short-term risk-free rate, which is the usual measure of the “market risk premium”
8 used in capital market theories.

9 **Q6. Please discuss some of the issues involved in selecting the appropriate MRP?**

10 A6. To determine the cost of capital in a regulatory proceeding, the MRP should be used with
11 an estimate of the same interest rate used to calculate the MRP (i.e., the short-term
12 Treasury bill rate or the long-term Government rate). For example, it would be
13 inconsistent to utilize a short-term risk-free with an estimate of the MRP derived from
14 comparisons to long-term interest rates. In addition, the appropriate measure of the MRP
15 should be based upon the arithmetic mean not the geometric mean return.¹ The
16 arithmetic mean is the simple average while the geometric mean is the compound rate of
17 return between two periods.

18 **Q7. How do you estimate the MRP?**

19 A7. There is presently little consensus on “best practice” for estimating the MRP, which does
20 not mean that each approach is equally valid. For example, the latest edition of the
21 leading graduate textbook in corporate finance, after recommending use of the arithmetic
22 average realized excess return on the market for many years (which for a while was
23 noticeably over 9 percent), now reviews the current state of the research and expresses
24 the view that the a range between 5 to 8 percent is reasonable for the U.S.^{2,3}

¹ See, for example, Morningstar, *Stocks, Bonds, Bills, and Inflation: Valuation Edition 2007 Yearbook*, pp. 75-77.

² Richard A. Brealey, Stewart C. Myers, and Franklin Allen, *Principles of Corporate Finance*, McGraw-Hill, 8th edition, 2006, pp. 151-154.

1 My written testimony considers both the historical evidence and the results of scholarly
2 studies of the factors that affect the risk premium for average-risk stocks in order to
3 estimate the benchmark risk premium investors currently expect. I consider the historical
4 difference in returns between the Standard and Poor's 500 Index ("S&P 500") and the
5 risk-free rate, recent academic literature on the MRP and the results of recent surveys to
6 estimate the market risk premium.

7 **Q8. Please summarize the recent literature on the MRP and the conclusions you draw**
8 **from it?**

9 A8. Some recent research based upon U.S. data challenges the conventional wisdom of using
10 the arithmetic average historical excess returns to estimate the MRP. However, after
11 reviewing the issues in the debate, I remain skeptical for several reasons that the market
12 risk premium has declined in the U.S. as much as is claimed in some of the literature.

13 First, despite eye-catching claims like "equity risk premium as low as three percent,"⁴
14 and "the death of the risk premium,"⁵ not all recent research arrives at the same
15 conclusion. In his presidential address to the American Finance Association in 2001,
16 Professor Constantinides seeks to estimate the unconditional equity premium based on
17 average historical stock returns.⁶ (Note that this address was based upon evidence just
18 before the major fall in market value.) He adjusts the average returns downward by the
19 change in price-earnings ratio because he assumes no change in valuations in an
20 unconditional state. His estimates for 1926 to 2000 and 1951 to 2000 are 8.0 percent and
21 6.0 percent, respectively, over the 3-month T-bill rate. In another published study in
22 2001, Professors Harris and Marston use the DCF method to estimate the market risk

³ In past editions, the authors expressed the view that they are "most comfortable" with values toward the upper end of that range, but this language does not appear in the 8th edition. Although Professor Myers still holds this view, this language and other sections were dropped to accommodate a request to reduce the length of the text.

⁴ Claus, J. and J. Thomas, (2001), "Equity Risk Premium as Low as Three Percent: Evidence from Analysts' Earnings Forecasts for Domestic and International Stocks," *Journal of Finance* 56:1629-1666.

⁵ Arnott, R. and R. Ryan, (2001), "The Death of the Risk Premium," *Journal of Portfolio Management* 27(3):61-84.

⁶ Constantinides, G.M. (2002), "Rational Asset Prices," *Journal of Finance* 57:1567-1591.

1 premium for the U.S. stocks.⁷ Using analysts' forecasts to proxy for investors'
2 expectation, they conclude that over the period 1982-1998 the MRP over the *long-term*
3 risk-free rate is 7.14 percent. As yet another example, the paper by Drs. Ibbotson and
4 Chen (2003) adopts a supply side approach to estimate the forward looking long-term
5 sustainable equity returns and equity risk premium based upon economic fundamentals.
6 Their equity risk premium over the *long-term* risk-free rate is estimated to be 3.97
7 percent in geometric terms and 5.90 percent on an arithmetic basis. They conclude their
8 paper by stating that their estimate of the equity risk premium is "far closer to the
9 historical premium than being zero or negative."⁸

10 Second, Professor Ivo Welch surveyed a large group of financial economists in 1998 and
11 1999. The average of the estimated MRP was 7.1 percent in Prof. Welch's first survey
12 and 6.7 percent in his second survey which was based on a smaller number of individuals.
13 However, a more recent survey⁹ by Prof. Welch reported only a 5.5 percent MRP.¹⁰ In
14 characterizing these results Prof. Welch notes that "[T]he equity premium consensus
15 forecast of finance and economics professors seems to have dropped during the last 2 to 3
16 years, a period with low realized equity premia."¹¹

17 The above quotation from Prof. Welch emphasizes the caution that must attend survey
18 data even from knowledgeable survey participants: the outcome is likely to change
19 quickly with changing market circumstances. Regulatory commissions should not, in my
20 opinion, attempt to keep pace with such rapidly changing opinions.

21 Third, some of the evidence for negative or close to zero market risk premium simply
22 does not make sense. Despite the relatively high valuation levels, stock returns remain

⁷ Robert S. Harris and Felicia C. Marston, "The Market Risk Premium: Expectational Estimates Using Analysts' Forecasts," *Journal of Applied Finance* 11 (1) 6-16, 2001.

⁸ Ibbotson, R. and P. Chen (2003), "Stock Market Returns in the Long Run: Participating in the Real Economy," *Financial Analyst Journal*, 59(1):88-98. Cited figures are on p. 97.

⁹ Ivo Welch (2000), "Views of Financial Economists on the Equity Premium and on Professional Controversies," *Journal of Business*, 73(4):501-537. The cited figures are in Table 2, p. 514.

¹⁰ Ivo Welch (2001), "The Equity Premium Consensus Forecast Revisited," School of Management at Yale University working paper. The cited figure is in Table 2.

¹¹ *Ibid*, p. 8.

1 much more volatile than Treasury bond returns. I am not aware of any empirical or
2 theoretical evidence showing that investors would rationally hold equities and not expect
3 to earn a positive risk premium for bearing their higher risk.

4 Fourth, I am unaware of a convincing theory for why the future MRP should have
5 substantially declined. At the height of the stock market bubble in the U.S., many
6 claimed that the only way to justify the high stock prices would be if the MRP had
7 declined dramatically,¹² but this argument was heard less frequently after the market
8 declined substantially from its tech bubble high. All else equal, a high valuation ratio
9 such as price-earnings ratio implies a low required rate of return, hence a low MRP.
10 However, there is considerable debate about whether the high level of stock prices
11 (despite the burst of the internet bubble from its high in the summer of 2000) represents
12 the transition to a new economy or is simply an “irrational exuberance,” which cannot be
13 sustained for the long term. If the former case is true, then the MRP may have decreased
14 permanently. Conversely, the long-run MRP may remain the same even if expected
15 market returns in the short-term are smaller.

16 Another common argument for a lower expected MRP is that the U.S. experienced very
17 remarkable growth in the 20th century that was not anticipated at the start of the century.
18 As a result, the average realized excess return is overestimated meaning the standard
19 method of estimating the MRP would be biased upward. However, one recent study by
20 Professors Jorion and Goetzmann finds, under some simplifying assumptions, that the so-
21 called “survivorship bias” is only 29 basis points.¹³ Furthermore, “[I]f investors have
22 overestimated the equity premium over the second half of the last century, Constantinides

¹² See Robert D. Arnott and Peter L. Bernstein, “What Risk Premium is ‘Normal’?,” *Financial Analysts Journal* 58:64-85, for an example.

¹³ Jorion, P., and W. Goetzmann (1999), “Global Stock Markets in the Twentieth Century,” *Journal of Finance* 54:953-980. Dimson, Marsh, and Staunton (2003) make a similar point when they comment on the equity risk premia for 16 countries based on returns between 1900 and 2001: “While the United States and the United Kingdom have indeed performed well, compared to other markets there is no indication that they are hugely out of line.” p.4.

(2002) argues that ‘we now have a bigger puzzle on our hands’ Why have investors systematically biased their estimates over such a long horizon?”¹⁴

To sum up the above, I cite two passages from Profs. Mehra and Prescott’s review of the theoretical literature on equity premium puzzle:¹⁵

Even if the conditional equity premium given current market conditions is small, and there appears to be general consensus that it is, this in itself does not imply that it was obvious either that the historical premium was too high or that the equity premium has diminished.

In the absence of this [knowledge of the future], and based on what we currently know, we can make the following claim: over the long horizon the equity premium is likely to be similar to what it has been in the past and the returns to investment in equity will continue to substantially dominate that in T-bills for investors with a long planning horizon.

Q9. Is there other scholarly support for the conclusion?

A9. Yes. Another line of research was pursued by Steven N. Kaplan and Richard S. Ruback. They estimate the market risk premium in their article, “The Valuation of Cash Flow Forecasts: An Empirical Analysis.”¹⁶ Professors Kaplan and Ruback compare published cash flow forecasts for management buyouts and leveraged recapitalization over the 1983 to 1989 period against the actual market values that resulted from these transactions. One of their results is an estimate of the market risk premium over the long-term Treasury bond yield that is based on careful analysis of actual major investment decisions, not realized market returns. Their median estimate is 7.78 percent and their mean estimate is 7.97 percent.¹⁷ This is considerably higher than my estimate of 6.5 percent. Even if the maturity premium of Treasury bonds over Treasury bills were only 1 percent, well below the best estimate of 1.5 percent the resulting estimate of the market risk premium over Treasury bills is higher than my estimate of 8.0 percent.

¹⁴ Mehra, R., and E.C. Prescott (2003), “The Equity Premium in Retrospect,” in *Handbook of the Economics of Finance*, Edited by G.M. Constantinides, M. Harris and R. Stulz, Elsevier B.V, p. 926

¹⁵ *Ibid*, p. 926.

¹⁶ *Journal of Finance*, 50, September 1995, pp. 1059-1093.

¹⁷ *Ibid*, p. 1082.

Q10. In addition to the scholarly articles and survey evidence you discussed in Section I of your Direct Testimony, what other evidence do you consider to estimate the MRP?

A10. I also consider the long-run realized equity premia reported in Morningstar *SBBI Valuation Edition 2007 Yearbook*. The data provided cover the period 1926 through 2006. The results are discussed below.

Q11. What is the “long-run realized risk premium” in the U.S.?

A11. From 1926 to 2006, the full period reported, Morningstar’s data show that the average premium of stocks over Treasury bills is 8.6 percent. I also examine the “post-War” period. The risk premium for 1947-2006 is 8.4 percent.¹⁸ (I exclude 1946 because its economic statistics are heavily influenced by the War years; e.g., the end of price controls yielded an inflation rate of 18 percent. It is not really a “post-War” year, from an economic viewpoint.) These averages often change slightly when another year of data is added to the Ibbotson series. The average premium of stocks over the income returns on long-term Government bonds is 7.1 percent for the 1926 to 2006 period and 7.1 for the 1947 to 2006 period.

Recently there has been a great deal of academic research on the MRP. This research has put practitioners in a dilemma: there is nothing close to a consensus about how the MRP should be estimated, but a general agreement in the academic community seems to be emerging that the old approach of using the average realized return over long periods gives too high an answer.

Q12. What is your conclusion regarding the MRP?

A12. Estimation of the MRP remains controversial. There is no consensus on its value or even how to estimate it. Given a careful review of all of the information, I estimate the risk premium for average risk stocks to be 8.0 percent over Treasury bills and 6.5 percent over long-term Government bonds.

¹⁸ Morningstar, *SBBI Valuation Edition 2007 Yearbook*, Appendix A.

C. RELATIVE RISK

Q13. How do you measure relative risk?

A13. The risk measure I examine is the “beta” of the stocks in question. Beta is a measure of the “systematic” risk of a stock — the extent to which a stock's value fluctuates more or less than average when the market fluctuates. It is the most commonly used measure of risk in capital market theories.

Q14. Please explain beta in more detail.

A14. The basic idea behind beta is that risks that cannot be diversified away in large portfolios matter more than those that can be eliminated by diversification. Beta is a measure of the risks that *cannot* be eliminated by diversification.

Diversification is a vital concept in the study of risk and return. (Harry Markowitz won a Nobel Prize for work showing just how important it was.) Over the long run, the rate of return on the stock market has a very high standard deviation, on the order of 15 - 20 percent per year. But many individual stocks have much higher standard deviations than this. The stock market's standard deviation is “only” about 15 - 20 percent because when stocks are combined into portfolios, some of the risk of individual stocks is eliminated by diversification. Some stocks go up when others go down, and the average portfolio return — positive or negative — is usually less extreme than that of individual stocks within it.

In the limiting case, if the returns on individual stocks were completely uncorrelated with one another, the formation of a large portfolio of such stocks would eliminate risk entirely. That is, the market's long-run standard deviation would be not 15-20 percent per year, but virtually zero.

The fact that the market's actual annual standard deviation is so large means that, in practice, the returns on stocks are correlated with one another, and to a material degree. The reason is that many factors that make a particular stock go up or down also affect other stocks. Examples include the state of the economy, the balance of trade, and inflation. Thus some risk is “non-diversifiable”. Single-factor equity risk premium

1 models derive conditions in which all of these factors can be considered simultaneously,
2 through their impact on the market portfolio. Other models derive somewhat less
3 restrictive conditions under which several of them might be individually relevant.

4 Again, the basic idea behind all of these models is that risks that cannot be diversified
5 away in large portfolios matter more than those that can be eliminated by diversification,
6 because there are a large number of large portfolios whose managers actively seek the
7 best risk-reward tradeoffs available. Of course, undiversified investors would like to get
8 a premium for bearing diversifiable risk, but they cannot.

9 **Q15. Why not?**

10 A15. Well-diversified investors compete away any premium rates of return for diversifiable
11 risk. Suppose a stock were priced especially low because it had especially high
12 diversifiable risk. Then it would seem to be a bargain to well diversified investors. For
13 example, suppose an industry is subject to active competition, so there is a large risk of
14 loss of market share. Investors who held a portfolio of all companies in the industry
15 would be immune to this risk, because the loss on one company's stock would be offset
16 by a gain on another's stock. (Of course, the competition might make the whole industry
17 more vulnerable to the business cycle, but the issue here is the diversifiable risk of shifts
18 in market share among firms.)

19 If the shares were priced especially low because of the risk of a shift in market shares,
20 investors who could hold shares of the whole industry would snap them up. Their buying
21 would drive up the stocks' prices until the premium rates of return for diversifiable risk
22 were eliminated. Since all investors pay the same price, even those who are not
23 diversified can expect no premium for bearing diversifiable risk.

24 Of course, substantial non-diversifiable risk remains, as the October Crash of 1987
25 demonstrates. Even an investor who held a portfolio of all traded stocks could not
26 diversify against that type of risk. Sensitivity to such market-wide movements is what
27 beta measures. That type of sensitivity, whether considered in a single- or multi-factor
28 model, determines the risk premium in the cost of equity.

Q16. What does a particular value of beta signify?

A16. By definition, a stock with a beta equal to 1.0 has average non-diversifiable risk: it goes up or down by 10 percent on average when the market goes up or down by 10 percent. Stocks with betas above 1.0 exaggerate the swings in the market: stocks with betas of 2.0 tend to fall 20 percent when the market falls 10 percent, for example. Stocks with betas below 1.0 are less volatile than the market. A stock with a beta of 0.5 will tend to rise 5 percent when the market rises 10 percent.

Q17. How is beta measured?

A17. The usual approach to calculating beta is a statistical comparison of the sensitivity of a stock's (or a portfolio's) return to the market's return. Many investment services report betas, including Merrill Lynch's quarterly Security Risk Evaluation, Bloomberg and the *Value Line Investment Survey*. Betas are not always calculated the same way, and therefore must be used with a degree of caution, but the basic point that a high beta indicates a risky stock has long been widely accepted by both financial theorists and investment professionals.

Q18. Are there circumstances when the “usual approach to calculating beta” should not be used?

A18. There are at least two cases where the standard estimate of beta should be viewed skeptically.

First, companies in serious financial distress seem to “decouple” from their normal sensitivity to the stock market. The stock prices of financially distressed companies tend to change based more on individual news about their particular circumstances than upon overall market movements. Thus, a risky stock could have a low estimated beta if the company was in financial distress. Other circumstances that may cause a company's stock to decouple include an industry restructuring or major changes in a company's supply or output markets.

Second, similar circumstances seem to arise for companies “in play” during a merger or acquisition. Once again, the individual information about the progress of the proposed

1 takeover is so much more important for that stock than day-to-day market fluctuations
2 that, in practice, beta estimates for such companies seem to be too low.

3 **Q19. How reliable is beta as a risk measure?**

4 A19. Scholarly studies have long confirmed the importance of beta for a stock's required rate
5 of return. It is widely regarded as the best single risk measure available. The merits of
6 beta seemed to have been challenged by widely publicized work by Professors Eugene F.
7 Fama and Kenneth R. French.¹⁹ However, despite the early press reports of their work as
8 signifying that "beta is dead," it turns out that beta is still a potentially important
9 explanatory factor (albeit one of several) in their work. Thus, beta remains alive and well
10 as the best single measure of relative risk.

11 **D. INTEREST RATE ESTIMATE**

12 **Q20. What interest rates do your procedures require?**

13 A20. Modern capital market theories of risk and return use the short-term risk-free rate of
14 return as the starting benchmark. My measures of the MRP incorporate this approach,
15 since they represent the excess of the expected return on the market over the 30-day U.S.
16 Treasury bill rate and over the long-term U.S. Government bond rate. Accordingly,
17 implementation of my procedures requires use of an estimate of the 30-day Treasury bill
18 rate and the long-term Government bond rate.

19 **E. COST OF CAPITAL MODELS**

20 **Q21. How do you combine the above components into an estimate of the cost of capital?**

21 A21. By far the most widely used approach to estimation of the cost of capital is the "Capital
22 Asset Pricing Model," and I do calculate CAPM estimates. However, the CAPM is only
23 one equity risk premium approach technique, and I also use another.

¹⁹ See for example, "The Capital Asset Pricing Model: Theory and Evidence", Eugene F. Fama and Kenneth R. French, *Journal of Economic Perspectives*, Volume 18, Summer 2004, pp. 25-46.

Q22. Please start with the CAPM, by describing the model.

A22. As noted above, the modern models of capital market equilibrium express the cost of equity as the sum of a risk-free rate and a risk premium. The CAPM is the longest-standing and most widely used of these theories. The CAPM states that the cost of capital for investment s (e.g., a particular common stock) is given by the following equation:

$$k_s = r_f + \beta_s \times MRP \quad (\text{C-1})$$

where k_s is the cost of capital for investment s ; r_f is the risk-free rate, β_s is the beta risk measure for the investment s ; and MRP is the market risk premium.

The CAPM relies on the empirical fact that investors price risky securities to offer a higher expected rate of return than safe securities do. It says that the security market line starts at the risk-free interest rate (that is, that the return on a zero-risk security, the y-axis intercept in Figure 1 in the body of my testimony, equals the risk-free interest rate). Further, it says that the risk premium over the risk-free rate equals the product of beta and the risk premium on a value-weighted portfolio of all investments, which by definition has average risk.

Q23. What other equity risk premium approach model do you use?

A23. Empirical research has long shown that the CAPM tends to overstate the actual sensitivity of the cost of capital to beta: low-beta stocks tend to have higher risk premia than predicted by the CAPM and high-beta stocks tend to have lower risk premia than predicted. A number of variations on the original CAPM theory have been proposed to explain this finding. The difference between the CAPM and the type of relationship identified in the empirical studies is depicted in Figure MJV-C1.

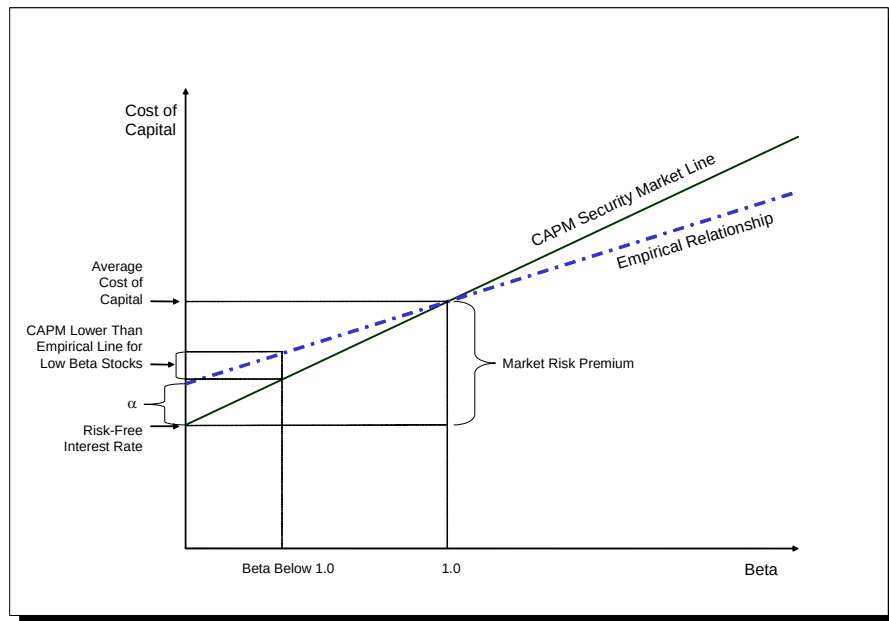


Figure MJV-C1: The Empirical Security Market Line

The second model makes use of these empirical findings. It estimates the cost of capital with the equation,

$$k_s = r_f + \alpha + \beta_s \times (MRP - \alpha) \quad (C-2)$$

where α is the “alpha” of the risk-return line, a constant, and the other symbols are defined as above. I label this model the Empirical Capital Asset Pricing Model, or “ECAPM.” For the short-term risk-free rate models, I set alpha equal to 1, 2, and 3 percent which are values somewhat lower than that estimated empirically. For low-beta stocks such as regulated utilities, the use of a lower value for alpha leads to a lower estimate of the cost of capital. For the long-term risk-free rate models, I set alpha equal to both 0.5 percent and 1.5 percent, but I rely more heavily on the 0.5 percent results. The use of a long-term risk-free rate incorporates some of the desired effect of using the ECAPM. That is, the long-term risk-free rate version of the Security Market Line has a higher intercept and a flatter slope than the short-term risk-free version which has been tested. Thus, it is likely that I do not need to make the same degree adjustment when I use the long-term risk-free rate. A summary of the empirical evidence on the magnitude of alpha is provided in Table No. MJV-C1 below.

II. EMPIRICAL EQUITY RISK PREMIUM RESULTS

Q24. How is this part of the appendix organized?

A24. This section presents the full details of my equity risk premium approach analyses, which are summarized in the body of my testimony. Details behind the estimates of the short-term and the long-term risk-free interest rates are discussed. Next, the beta estimates, and the estimates of the MRP I use in the models are addressed. Finally, this section reports the CAPM and ECAPM results for the sample's costs of equity, and then describes the results of adjusting for differences between the benchmark sample and Dominion Virginia Power's regulated capital structures.

A. RISK-FREE INTEREST RATE

Q25. How do you obtain estimates of the risk-free interest rates over the period the utility rates set here are to be in effect?

A25. I obtain these rates using data provided by Bloomberg. In particular, I use their reported government debt yields from the "constant maturity series". This information is displayed in Panels A and B of Table No. MJV-9.

Q26. What values do you use for the short-term and long-term risk-free interest rates?

A26. I use a value of 1.7 percent for the short-term risk-free interest rate and a value of 4.3 percent for the long-term risk-free interest rate as the benchmark interest rates in the equity risk premium analyses. These values are derived by using historical yield curve data to find the long-run average implied term premia on government securities, and combining these with recent yield curve data. Details of their calculation can be found in the Workpapers to Table No. MJV-9.

B. BETAS AND THE MARKET RISK PREMIUM

1. Beta Estimation Procedures

Q27. How do you estimate beta?

A27. I use beta estimates reported in the *Value Line* for the sample companies. Although *Value Line* reports adjusted betas, I undo this process because I do not believe it is warranted for the companies in the water industry at this time. Therefore, I use “unadjusted” betas in my analyses. In order to maintain consistency between results obtained from the two samples, I also use unadjusted betas for the gas LDC sample. The estimates range from 0.22 to 1.19 for the water sample and from 0.75 to 0.97 for the gas LDC sample.

2. Market Risk Premium Estimation

Q28. Given all of the evidence, what MRP do you use in your analysis?

A28. It is clear that market return information is volatile and difficult to interpret, but based on the collective evidence, the MRP I use for the short-term risk-free rate is 8 percent and for the long-term risk-free rate is 6.5 percent.

C. COST OF CAPITAL ESTIMATES

Q29. Based on these data, what are the values you calculate for the overall cost of capital and the corresponding cost of equity for the water utility sample?

A29. Panels A and B of Table No. MJV-10 present the cost of equity results using the equity risk positioning methods. Panel A uses the long-term risk-free rate forecast while Panel B uses the short-term risk-free rate forecast. These returns on equity are replicated and the overall cost of capital for the various equity risk positioning methods are reported in Table No. MJV-11, Panels A to G. Panels A through C utilize the long-term risk-free rate while Panels D through G use the short-term risk free rate. Panel A reports the cost of capital estimates using the CAPM results for the long-term risk-free rate, while Panels B and C report these estimates for the ECAPM cost of equity results using ECAPM parameters of 0.5 and 1.5 percent, respectively. Panel D reports the CAPM estimates

1 using the short-term risk free rate, while Panels E, F and G report ECAPM results using
2 ECAPM parameters of 1, 2 and 3 respectively. In each panel, column [8] reports the
3 overall cost of capital for each company. The last row of each panel reports the sample
4 and the subsample averages.

5 **Q30. What does the water market data imply about the sample's cost of equity at the**
6 **proposed 45.3 percent equity ratio for Tennessee-American Water?**

7 A30. The sample average ATWACC from each panel of Table No. MJV-11 is reproduced in
8 column [1] of Table No. MJV-12, which then reports the cost of equity for each of the
9 risk positioning methods that is consistent with the sample information and the capital
10 structure of Tennessee-American. The sample average ATWACCs and corresponding
11 costs of equity at a 45.3 percent equity ratio are also displayed in Table 1 of my
12 testimony.

13 **Q31. What cost of equity values do you calculate for the gas LDC sample?**

14 A31. The cost of equity estimates for the gas LDC sample are displayed on Panels A and B of
15 Table No. MJV-20. As with the water utility sample results, Panel A uses the long-term
16 risk-free rate, and Panel B uses the short-term risk-free rate.

17 **Q32. What does the gas LDC market data imply about the sample's cost of equity at the**
18 **proposed 45.3 percent equity ratio for Tennessee-American Water?**

19 A32. The sample average ATWACC from each panel of Table No. MJV-21 is reproduced in
20 column [1] of Table No. MJV-22, which then reports the cost of equity for each of the
21 risk positioning methods that is consistent with the sample information and the capital
22 structure of Tennessee-American. The sample average ATWACCs and corresponding
23 costs of equity at a 45.3 percent equity ratio are also displayed in Table 1 of my
24 testimony.

25 **Q33. What are the implications of the risk positioning results for Tennessee-American's**
26 **estimated cost of equity?**

27 I discuss the implications of the risk positioning results for the two samples in the main
28 body of my testimony.

Table MJV-C1

EMPIRICAL EVIDENCE ON THE ALPHA FACTOR IN ECAPM [*]		
AUTHOR	RANGE OF ALPHA	PERIOD RELIED UPON
Black (1993) ¹	1% for betas 0 to 0.80	1931-1991
Black, Jensen and Scholes (1972) ²	4.31%	1931-1965
Fama and McBeth (1972)	5.76%	1935-1968
Fama and French (1992) ³	7.32%	1941-1990
Litzenberger and Ramaswamy (1979) ⁴	5.32%	1936-1977
Litzenberger, Ramaswamy and Sosin (1980)	1.63% to 3.91%	1926-1978
Pettengill, Sundaram and Mathur (1995) ⁵	4.6%	1936-1990

^{*}The figures reported in this table are for the longest estimation period available and, when applicable, use the authors' recommended estimation technique. Many of the articles cited also estimate alpha for sub-periods and those alphas may vary.

¹Black estimates alpha in a one step procedure rather than in an un-biased two-step procedure.

²Estimate a negative alpha for the subperiod 1931-39 which contain the depression years 1931-33 and 1937-39.

³Calculated using Ibbotson's data for the 30-day treasury yield.

⁴Relies on Lizenberger and Ramaswamy's before-tax estimation results. Comparable after-tax alpha estimate is 4.4%.

⁵Pettengill, Sundaram and Mathur rely on total returns for the period 1936 through 1990 and use 90-day treasuries. The 4.6% figure is calculated using auction averages 90-day treasuries back to 1941 as no other series were found this far back.

Sources:

Black, Fischer. 1993. Beta and Return. *The Journal of Portfolio Management* 20 (Fall): 8-18.

Black, F., Michael C. Jensen, and Myron Scholes. 1972. The Capital Asset Pricing Model: Some Empirical Tests, from Studies in the theory of Capital Markets. In *Studies in the Theory of Capital Markets*, edited by Michael C. Jensen, 79-121. New York: Praeger.

Fama, Eugene F. and James D. MacBeth. 1972. Risk, Returns and Equilibrium: Empirical Tests. *Journal of Political Economy* 81 (3): 607-636.

Fama, Eugene F. and Kenneth R. French. 1992. The Cross-Section of Expected Stock Returns. *Journal of Finance* 47 (June): 427-465.

Litzenberger, Robert H. and Krishna Ramaswamy. 1979. The Effect of Personal Taxes and Dividends on Capital Asset Prices, Theory and Empirical Evidence. *Journal of Financial Economics* XX (June): 163-195.

Litzenberger, Robert H. and Krishna Ramaswamy and Howard Sosin. 1980. On the CAPM Approach to Estimation of a Public Utility's Cost of Equity Capital. *The Journal of Finance* 35 (2): 369-387.

Pettengill, Glenn N., Sridhar Sundaram and Ike Mathur. 1995. The Conditional Relation between Beta and Returns. *Journal of Financial and Quantitative Analysis* 30 (1): 101-116.

APPENDIX D

DISCOUNTED CASH FLOW METHODOLOGY:

DETAILED PRINCIPLES AND RESULTS

I.	DISCOUNTED CASH FLOW METHODOLOGY PRINCIPLES.....	2
A.	SIMPLE AND MULTISTAGE DISCOUNTED CASH FLOW MODELS.....	2
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Q1. What is the purpose of this appendix?

A1. This appendix reviews the principles behind the discounted cash flow or “DCF” methodology and the details of the cost of capital estimates obtained from this methodology.

I. DISCOUNTED CASH FLOW METHODOLOGY PRINCIPLES

Q2. How is this section of the appendix organized?

A2. The first part discusses the general principles that underlie the DCF approach. The second portion describes the strengths and weaknesses of the DCF model and why it is generally less reliable for estimating the cost of capital for the sample companies at the present time than the risk positioning method discussed in Appendix C.

A. SIMPLE AND MULTISTAGE DISCOUNTED CASH FLOW MODELS

Q3. Please summarize the DCF model.

A3. The DCF model takes the first approach to cost of capital estimation discussed with Figure 1 in Section II-A of my direct testimony. That is, it attempts to measure the cost of equity in one step. The method assumes that the market price of a stock is equal to the present value of the dividends that its owners expect to receive. The method also assumes that this present value can be calculated by the standard formula for the present value of a cash flow stream:

$$P = \frac{D_1}{(1+k)} + \frac{D_2}{(1+k)^2} + \frac{D_3}{(1+k)^3} + \cdots + \frac{D_T}{(1+k)^T} \quad (\text{D-1})$$

where “ P ” is the market price of the stock; “ D_t ” is the dividend cash flow expected at the end of period t ; “ k ” is the cost of capital; and “ T ” is the last period in which a dividend cash flow is to be received. The formula just says that the stock price is equal to the sum of the expected future dividends, each discounted for the time and risk between now and the time the dividend is expected to be received.

Most DCF applications go even further, and make very strong (*i.e.*, unrealistic) assumptions that yield a simplification of the standard formula, which then can be rearranged to estimate the cost of capital. Specifically, if investors expect a dividend stream that will grow forever at a steady rate, the market price of the stock will be given by a very simple formula,

$$P = \frac{D_1}{(k - g)} \quad (\text{D-2})$$

where “ D_1 ” is the dividend expected at the end of the first period, “ g ” is the perpetual growth rate, and “ P ” and “ k ” are the market price and the cost of capital, as before. Equation D-2 is a simplified version of Equation D-1 that can be solved to yield the well known “DCF formula” for the cost of capital:

$$\begin{aligned} k &= \frac{D_1}{P} + g \\ &= \frac{D_0 \times (1 + g)}{P} + g \end{aligned} \quad (\text{D-3})$$

where “ D_0 ” is the current dividend, which investors expect to increase at rate g by the end of the next period, and the other symbols are defined as before. Equation D-3 says that if Equation D-2 holds, the cost of capital equals the expected dividend yield plus the (perpetual) expected future growth rate of dividends. I refer to this as the simple DCF model. Of course, the “simple” model is simple because it relies on very strong (*i.e.*, very unrealistic) assumptions.

Q4. Are there other versions of the DCF models besides the “simple” one?

A4. Yes. If Equation D-2 and its underlying assumptions do not hold, sometimes other variations of the general present value formula, Equation D-1, can be used to solve for k in ways that differ from Equation D-3. For example, if there is reason to believe that investors do *not* expect a steady growth rate forever, but rather have different growth rate forecasts in the near term (e.g., over the next five or ten years as compared with subsequent periods), these forecasts can be used to specify the early dividends in Equation D-1. Once the near-term dividends are specified, Equation D-2 can be used to

specify the share price value at the end of the near-term (e.g., at the end of five or ten years), and the resulting cash flow stream can be solved for the cost of capital using Equation D-1.

More formally, the “multistage” DCF approach solves the following equation for k :

$$P = \frac{D_1}{(1+k)} + \frac{D_2}{(1+k)^2} + \frac{D_3}{(1+k)^3} + \dots + \frac{D_T + P_{TERM}}{(1+k)^T} \quad (\text{D-4})$$

The terminal price, P_{TERM} is estimated as

$$P_{TERM} = \frac{D_{T+1}}{(k - g_{LR})} \quad (\text{D-5})$$

where T is the last of the periods in which a near term dividend forecast is made and g_{LR} is the long-run growth rate. Thus, Equation D-4 defers adoption of the very strong perpetual growth assumptions that underlie Equation D-2 — and hence the simple DCF formula, Equation D-3 — for as long as possible, and instead relies on near term knowledge to improve the estimate of k . I examine both simple and multistage DCF results below.

Q5. What are the merits of the DCF model?

A5. The DCF approach is conceptually sound only if its assumptions are met. In actual practice one can run into difficulty because those assumptions are so strong, and hence so unlikely to correspond to reality. Two conditions are well-known to be necessary for the DCF approach to yield a reliable estimate of the cost of capital: the variant of the present value formula, Equation D-1, that is used must actually match the variations in investor expectations for the dividend growth path; and the growth rate(s) used in that formula must match current investor expectations. Less frequently noted conditions may also create problems.

The DCF model assumes that investors expect the cost of capital to be the same in all future years. Investors may not expect the cost of capital to be the same, which can bias the DCF estimate of the cost of capital in either direction.

The DCF model only works for companies for which the standard present value formula works. The standard formula does *not* work for companies that operate in industries or markets options (*e.g.*, puts and calls on common stocks), and so it will not work for companies whose stocks behave as options do. Option-pricing effects will be important for companies in financial distress, for example, which implies the DCF model will *understate* their cost of capital, all else equal.

In recent years even the most basic DCF assumption, that the market price of a stock in the absence of growth options is given by the standard present value formula (*i.e.*, by Equation D-1 above), has been called into question by a literature on market volatility.¹ In any case, it is still too early to throw out the standard formula, if for no other reasons than that the evidence is still controversial and no one has offered a good replacement. But the evidence suggests that it must be viewed with more caution than financial analysts have traditionally applied. Simple models of stock prices may not be consistent with the available evidence on stock market volatility.

Q6. Normally DCF debates center on the right growth rate. What principles underlie that choice?

A6. Finding the right growth rate(s) is indeed the usual “hard part” of a DCF application. The original approach to estimation of g relied on average historical growth rates in observable variables, such as dividends or earnings, or on the “sustainable growth” approach, which estimates g as the average book rate of return times the fraction of earnings retained within the firm. But it is highly unlikely that historical averages over

¹ See for example, Robert J. Shiller (1981), “Do Stock Prices Move Too Much to be Justified by Subsequent Changes in Dividends?,” *The American Economic Review*, Vol. 71, No. 3, pp. 421-436. John Y. Campbell and Robert J. Shiller (1988), “The Dividend-Price Ratio and Expectations of Future Dividends and Discount Factors,” *The Review of Financial Studies*, Vol. 1, No. 3, pp. 195-228. Lucy F. Ackert and Brian F. Smith (1993), “Stock Price Volatility, Ordinary Dividends, and Other Cash Flows to Shareholders,” *Journal of Finance*, Vol. 48, No. 1, pp. 1147-1160. Eugene F. Fama and Kenneth R. French (2001), “Disappearing Dividends: Changing Firm Characteristics or Lower Propensity to Pay?,” *Journal of Financial Economics*, Vol. 60, pp. 3-43. Borja Larrain and Motohiro Yogo (2005), “Does Firm Value Move Too Much to be Justified by Subsequent Changes in Cash Flow?,” Federal Reserve Bank of Boston, *Working Paper*, No. 05-18.

1 periods with widely varying rates of inflation, interest rates and costs of capital, such as
2 in the relatively recent past, will equal current growth rate expectations.

3 A better approach is to use the growth rates currently expected by investment analysts, if
4 an adequate sample of such rates is available. If this approach is feasible and if the
5 person estimating the cost of capital is able to select the appropriate version of the DCF
6 formula, the DCF method should yield a reasonable estimate of the cost of capital for
7 companies not in financial distress and without material option-pricing effects (always
8 subject to recent concerns about the applicability of the basic present value formula to
9 stock prices as well as issues of optimism bias). However, for the DCF approach to work,
10 the basic stable-growth assumption must become reasonable and the underlying stable-
11 growth rate must become determinable *within the period for which forecasts are*
12 *available.*

13 **Q7. What is the so called “optimism bias” in the earnings growth rate forecasts of**
14 **security analysts and what is its effect on the DCF analysis?**

15 A7. Optimism bias is related to the observed tendency for analysts to forecast earnings
16 growth rates that are higher than are actually achieved. This tendency to over estimate
17 growth rates is perhaps related to incentives faced by analysts that provide rewards not
18 strictly based upon the accuracy of the forecasts. To the extent optimism bias is present
19 in the analysts’ earnings forecasts, the cost of capital estimates from the DCF model
20 would be too high.

21 **Q8. Does optimism bias mean that the DCF estimates are completely unreliable?**

22 A8. No. The effect of optimism bias is least likely to affect DCF estimates for large, rate
23 regulated companies in relatively stable segments of an industry. Furthermore, the
24 magnitude of the optimism bias (if any) for regulated companies is not clear. This issue
25 is addressed in a paper by Chan, Karceski, and Lakonishok (2003)² who sort companies
26 on the basis of the size of the I/B/E/S forecasts to test the level of optimism bias. Utilities
27 constitute 25 percent of the companies in lowest quintile, and by one measure the level of

² L. K.C. Chan, J. Karceski, and J. Lakonishok, 2003, “The Level and Persistence of Growth Rates,” *Journal of Finance* 58(2):643-684.

1 optimism bias is 4 percent. However, the 4 percent figure does not represent the
2 complete characterization of the results in the paper. Table IX of the paper shows that
3 the median I/B/E/S forecast for the first (lowest) quintile averages 6.0 percent. The
4 realized “Income before Extraordinary Items” is 2.0 percent (implying a four percent
5 upward bias in I/B/E/S forecasts), but the “Portfolio Income before Extraordinary Items”
6 is 8.0 percent (implying a two percent downward bias in I/B/E/S forecasts).

7 The difference between the “Income before Extraordinary Items” and “Portfolio Income
8 before Extraordinary Items” is whether individual firms or a portfolio are used in
9 estimating the realized returns. The first is a simple average of all firms in the quintile
10 while the second is a market value weighted-average. Although both measures of bias
11 have their own drawbacks according to the authors,³ the Portfolio Income measure gives
12 more weight to the larger firms in the quintile such as regulated utilities. In addition, the
13 paper demonstrates that “analysts’ forecasts as well as investors’ valuations reflect a
14 wide-spread belief in the investment community that many firms can achieve streaks of
15 high growth in earnings.”⁴ Therefore, it is not clear how severe the problem of optimism
16 bias may be for regulated utilities or even whether there is a problem at all.

17 Finally, the two-stage DCF model also adjusts for any over optimistic (or pessimistic)
18 growth rate forecasts by substituting the long-term GDP growth rate for the 5-year
19 growth rate forecasts of the analysts in the years beginning in year 11. I linearly trend the
20 5-year forecast growth rate to the GDP forecast growth rate in years 6 to 10.

21 **Q9. What about the reforms by the National Associate of Security Dealers (NASD) that**
22 **were designed to reduce the conflicts of interest and pressures brought against**
23 **security analysts? Have those reforms been generally successful?**

24 A9. Yes. The conclusion from the Joint Report by NASD and the New York Stock Exchange
25 (“NYSE”) on the reforms states

³ Chan, Karceski, and Lakonishok, *op. cit.*, p. 675.

⁴ Chan, Karceski, and Lakonishok, *op. cit.*, p. 663.

1 ... the SRO Rules have been effective in helping restore integrity to
2 research by minimizing the influences of investment banking and
3 promoting transparency of other potential conflicts of interest. Evidence
4 also suggests that investors are benefiting from more balanced and
5 accurate research to aid their investment decisions.⁵

6 The report does note additional reforms are advisable, but the situation is far different
7 today than during the height of the tech bubble when analyst objectivity was clearly
8 suspect.

9 **B. CONCLUSIONS ABOUT DCF**

10 **Q10. Please sum up the implications of this part of the appendix.**

11 A10. The unavoidable questions about the DCF model's strong assumptions — whether the
12 basic present value formula works for stocks, whether option pricing effects are
13 important for the company, whether the right variant of the basic formula has been found,
14 and whether the true growth rate expectations have been identified — cause me to view
15 the DCF method as *inherently* less reliable than equity risk premium approach, the other
16 approach I use. However, because the DCF method has been widely used in the past and
17 in other forums when the industry's economic conditions were different from today's, I
18 submit DCF evidence in this case. DCF estimates also serve as a check on the values
19 provided by the risk positioning approach methods.

20 **II. EMPIRICAL DCF RESULTS**

21 **Q11. How is this part of the appendix organized?**

22 A11. This section presents the details of my DCF analyses for the water and gas LDC samples,
23 which are summarized in my written testimony. The first part describes some
24 preliminary matters, such as the calculation of market value capital structures of the
25 sample companies and the determination of the growth rates. It then turns to the details
26 of the DCF estimates themselves.

⁵ Joint Report by NASD and NYSE on the Operation and Effectiveness of the Research Analyst Conflict of Interest Rules, December 2005, p. 44.

1 In particular, implementation of the simple DCF models described above requires an
2 estimate of the current price, the dividend, and near-term and long-run growth rate
3 forecasts. The simple DCF model relies only on a single growth rate forecast, while the
4 multistage DCF model employs both near-term individual company forecasts and long-
5 run GDP growth rate forecasts. The remaining parts of this section describe each of these
6 inputs in turn.

7 **A. PRELIMINARY MATTERS**

8 **Q12. In Appendix C you discuss estimating cost of capital and implied cost of equity**
9 **using the risk positioning methodology. What, if anything, is different when you use**
10 **the DCF method?**

11 A12. First, the timing of the market value capital structure calculations is different in the DCF
12 method than in the equity risk premium method. The equity risk premium method relies
13 on the average capital structure over the five-year period *Value Line* uses to estimate beta
14 while the DCF approach uses only current data, so the relevant market value capital
15 structure measure is the most recent that can be calculated. This capital structure for the
16 water sample companies is reported in columns [1]-[3] of Table No. MJV-4, and for the
17 gas LDC sample companies in columns [1]-[3] of Table No. MJV-15.

18 **B. GROWTH RATES**

19 **Q13. What growth rates do you use?**

20 A13. For reasons discussed above, historical growth rates today are generally unreliable as
21 forecasts of current investor expectations for the water utility industry. I therefore use
22 rates forecasted by security analysts.

23 The ideal in a DCF application would be a detailed forecast of future dividends, year by
24 year well into the future, based on a large sample of investment analysts' expectations. I
25 know of no source of such data. Dividends are ultimately paid from earnings, however,
26 and earnings forecasts are available for a few years. Investors do not expect dividends to
27 grow in lockstep with earnings, but for companies for which the DCF approach can be
28 used reliably (*i.e.*, for relatively stable companies whose prices do not include the option-

1 like values described previously), they do expect dividends to track earnings over the
2 long-run. Thus, use of earnings growth rates as a proxy for expectations of dividend
3 growth rates is a common practice.

4 Accordingly, the first step in my DCF analysis is to examine a sample of investment
5 analysts' forecasted earnings growth rates. In particular, I utilize Bloomberg's BEst and
6 *Value Line*'s forecasted earnings growth.⁶ The projected earnings growth rates for the
7 water sample companies are in Table No. MJV-5, and those for the gas LDC sample
8 companies are in Table No. MJV-16. Column [1] reports Bloomberg's BEst analysts'
9 forecasts of the long-term earnings growth for the sample companies. Column [2] reports
10 the number of analysts that provided a forecast. Columns [3] and [4] report *Value Line*'s
11 forecasted earnings per share ("EPS") value for each company for 2007 and 2010-2012
12 respectively. Column [5] provides *Value Line*'s implied long-term growth rate forecast,
13 and column [6] provides a weighted average growth rate for each company across the two
14 sources. (I treat the *Value Line* forecasts as though they overlap exactly with the
15 forecasts from Bloomberg.) These growth rates underlie my simple and multistage DCF
16 analyses.

17 In particular, the five-year average annual growth rate is the perpetual growth rate I
18 employ in the simple DCF model.⁷ In the multistage model, I rely on the company-
19 specific growth rate until 2012 and on the long-term GDP forecast for year 2018 onwards.
20 During the years from 2013 to 2017, I assume the growth rate converges linearly towards
21 the long-term GDP forecast.⁸

22 **Q14. Do these growth rates correspond to the ideal you mentioned above?**

23 A14. No, not completely. While forecasted growth rates are the quantity required in principle,
24 the forecasts need to go far enough out into the future so that it is reasonable to believe
25 that investors expect a stable growth path afterwards. As can be seen from Table No.

⁶ The BEst growth rates were downloaded from Bloomberg on February 7, 2008. *Value Line* estimates are from the most recent report available, dated January 25, 2008 for the water sample utilities, and December 14, 2007 for the gas LDCs.

⁷ This growth rate is in column [6] of Table No. MJV-5 (Table No. MJV-16 for the gas LDC sample).

1 MJV-5 and Table No. MJV-16, the growth rate estimates do not support the view that
2 investors are expecting growth rates equal to the single perpetual growth rate assumed in
3 the simple DCF model. The growth rate forecasts vary substantially in the short-term,
4 and the five-year growth rate forecasts are also quite different from company to company.
5 However, the five-year growth rate forecasts for the gas LDC sample vary much less
6 from company to company than do the five-year growth rate forecasts for the water
7 companies. Similarly, the short-term growth forecast for companies in the gas LDC
8 sample vary much less than do the forecasts for the short-term growth forecast for the
9 water sample companies.

10 **Q15. How well are the conditions needed for DCF reliability met at present?**

11 A15. The requisite conditions for the sample companies are not fully met at this time. Of
12 particular concern for this proceeding is the uncertainty about what investors truly expect
13 the long-run outlook for the sample companies to be. The longest time period available
14 for growth rate forecasts of which I am aware is five years. The long-run growth rate (*i.e.*,
15 the growth rate after the industry settles into a steady state, which is certainly *beyond* the
16 next five years for water industry) drives the actual results one gets with the DCF model.
17 Unfortunately, this implies that unless the company or industry in question is stable, so
18 there is little doubt as to the growth rate investors expect. DCF results in practice can end
19 up being driven by the subjective judgment of the analyst who performs the work.

20 This is a problem at present because it is hard to imagine that today's water industry
21 would accurately be described as stable. There is great uncertainty about the costs
22 required to undertake the large investments in infrastructure forecasted for the industry.
23 Indeed, *Value Line* notes the need for investments aimed at replacing the aging
24 infrastructure and complying with increasingly stringent water safety regulations,
25 partially driven by increased fear of bioterrorism. Additionally, American Society of
26 Civil Engineers estimated in 2005 that the drinking water infrastructure requires \$11
27 billion of annual investments, while the wastewater segment requires \$390 billion in

⁸ I use the long-term U.S. GDP growth estimate from *Blue Chip Economic Indicators* (October 10, 2007).

1 investments over the following 20 years.⁹ The water industry is also going through a
2 series of mergers and acquisitions, which affects the companies' earnings growth rate
3 estimates. This is one reason why companies heavily involved in mergers and
4 acquisitions are normally excluded from the sample. Taken together, these factors mean
5 that it may be some time before the water industry settles into anything investors will see
6 as a stable equilibrium.

7 Such circumstances imply that a regulator may often be faced with a wide range of DCF
8 numbers, none of which can be well grounded in objective data on true long-run growth
9 expectations, *because no such objective data now exist*. DCF for firms or industries in
10 flux is *inherently* subjective with regard to a parameter (the long-run growth rate) that
11 drives the answer one gets.

12 It is clear that much longer detailed growth rate forecasts than currently available from
13 Bloomberg and Value Line would be needed to implement the DCF model in a
14 completely reliable way for the water sample at this time; however, the general stability
15 of the 5-year growth rate forecasts for the gas LDC sample indicates a higher degree of
16 reliability than for the water sample at this time.

17 C. DIVIDEND AND PRICE INPUTS

18 Q16. What values do you use for dividends and stock prices?

19 A16. Dividends are the most recent recorded dividend payments as reported by Bloomberg.
20 For some companies this is the 4th quarter 2007 dividend, while for others it is the 1st
21 quarter 2008 dividend. This dividend is grown at the estimated growth rate and divided
22 by the price described below to estimate the dividend yield for the simple and multistage
23 DCF models.

24 For the sample calculations, stock prices are the average of the closing stock prices for
25 the 15 trading days (approximately three weeks) ending February 7, 2008 for each
26 company, the most recent data available on the date the growth rate estimates were

⁹ Report Card for America's Infrastructure, The American Society of Civil Engineers, 2005.

downloaded from Bloomberg. I do not use a longer period to measure the price, because that would be inconsistent with the principles that underlie the DCF formula. The DCF approach assumes the stock price is the present value of future expected dividends. Stock prices six months or a year ago reflect expectations at that time, which are different from those that underlie the currently available growth forecasts. At the same time, use of an average over a brief period helps guard against a company's price on a particular day price being unduly influenced by the release of information on a particular day, differences in trading frequency, and the like.

The closing stock price is used because it is at least as good as any other measure of the day's outcome, and may be better for DCF purposes. In particular, if there were any single price during the day that would affect investors' decisions to buy or sell a stock, I would suspect that it would be each day's closing price, not the high or low during the day. The daily price changes reported in the financial pages, for example, are from close to close, not from high to high or from low to low.

D. COMPANY-SPECIFIC DCF COST OF CAPITAL ESTIMATES

Q17. What DCF estimates do these data yield?

A17. The cost of equity results for the simple and multistage DCF models are shown in Table No. MJV-6 for the water utility sample and in Table No. MJV-17 for the gas LDC sample. In both tables, Panel A reports the results for the simple DCF method while Panel B reports the results for the multistage DCF method using the long-term GDP growth rate as the perpetual growth rate.

Q18. What overall cost of capital estimates result from the DCF cost of equity estimates?

A18. The capital structure, DCF cost of equity, and cost of debt estimates are combined to obtain the overall after-tax weighted-average cost of capital for each sample company. These results are presented in Table No. MJV-7 for the water sample and in Table No. MJV-18. Again, Panel A relies on the simple DCF cost of equity results while Panel B relies on the multistage DCF cost of equity results.

1 **Q19. What information do you report in Table No. MJV-8 and in Table No. MJV-19?**

2 A19. These tables report, for each sample, the return on equity consistent with that sample's
3 estimated overall after-tax weighted-average cost of capital and the proposed equity
4 thickness of 45.3 percent for Tennessee-American. For both the simple DCF and
5 multistage DCF methods, the sample's average ATWACC is reported in column [1].
6 Column [6] reports the return on equity as if the sample companies' average market value
7 capital structure had been that currently proposed for Tennessee-American.

8 **Q20. What are the implications of these results?**

9 A20. The implication of these numbers is discussed in my written testimony, along with the
10 findings of the equity risk premium approach.

APPENDIX E

EFFECT OF DEBT ON THE COST OF EQUITY

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1 **Q1. What is the purpose of this Appendix?**

2 A1. In this appendix, I provide details on the effects of debt on the cost of equity. First, I
3 summarize a fairly large body of financial research on capital structure. Second, I
4 provide an extended example to illustrate the effect of debt on the cost of equity.

5 **I. AN OVERVIEW OF THE ECONOMIC LITERATURE**

6 **Q2. What is the focus of the economic literature on the effects of debt?**

7 A2. The economic literature focuses on the effects of debt on the value of a firm. The
8 standard way to recognize one of these effects, the impact of the fact that interest expense
9 is tax-deductible, is to discount the all-equity after-tax operating cash flows generated by
10 a firm or an investment project at a weighted average cost of capital, typically known in
11 textbooks as the “WACC.” The textbook WACC equals the *market-value* weighted
12 average of the cost of equity and the *after-tax, current* cost of debt. However, rate
13 regulation in North America has a legacy of working with another weighted-average cost
14 of capital, the *book-value* weighted average of the cost of equity and the *before-tax,*
15 *embedded* cost of debt. To distinguish the concepts, I refer to the after-tax weighted-
16 average cost of capital as ATWACC.

17 **Q3. How is this section of the appendix organized?**

18 A3. It starts with the tax effects of debt. It then turns to other effects of debt.

19 **A. TAX EFFECTS**

20 **Q4. What are the key findings in the literature regarding tax effects?**

21 A4. Three seminal papers are vital for this literature. The first assumes no taxes and risk-free
22 debt. The second adds corporate income taxes. The third adds personal income taxes.

1. Base Case: No Taxes, No Risk to High Debt Ratios

Q5. Please start by explaining the simplest case of the effect of debt on the value of a firm.

A5. The “base case,” no taxes and no costs to excessive debt, was worked out in a classic 1958 paper by Franco Modigliani and Merton Miller, two economists who eventually won Nobel Prizes in part for their body of work on the effects of debt.¹ Their 1958 paper made what is in retrospect a very simple point: if there are no taxes and no risk to the use of excessive debt, use of debt will have no effect on a company’s operating cash flows (i.e., the cash flows to investors as a group, debt plus equity combined). If the operating cash flows are the same regardless of whether the company finances mostly with debt or mostly with equity, then the value of the firm cannot be affected at all by the debt ratio. In cost of capital terms, this means the overall cost of capital is constant regardless of the debt ratio, too.

In the base case, issuing debt merely divides the cash flows into two pools, one for bondholders and one for shareholders. If the divided pools have different priorities in claims on the cash flows, the risks and costs of capital will differ for each pool. But the risk and overall cost of capital of the entire firm, the sum of the two pools, is constant regardless of the debt ratio. Thus,

$$r_1^* = r_{A1} \quad (\text{E-1a})$$

where r_1^* is the overall after-tax cost of capital at any particular capital structure and r_{A1} is the all-equity cost of capital for the firm. (The “1” subscripts distinguish the case where there are no taxes from subsequent equations that consider first corporate and then both corporate and personal taxes.) With no taxes and no risk to debt, the overall cost of capital does not change with capital structure.

This implies that the relationship of the overall cost of capital to the component costs of debt and equity is

¹ Franco Modigliani and Merton H. Miller (1958), “The Cost of Capital, Corporation Finance and the Theory of Investment,” *American Economic Review*, 48, pp. 261-297.

$$r_{E1} \times \left(\frac{E}{V} \right) + r_{D1} \times \left(\frac{D}{V} \right) = r_1^* \quad (\text{E-1b})$$

with the overall cost of capital (r^*) on the *right* side, as the *independent* variable, and the costs of equity (r_E) and debt (r_D) on the left side, as *dependent* variables determined by the overall cost of capital and by the capital structure (i.e., the shares of equity (E) and debt (D) in overall firm value ($V = E + D$) that the firm happens to choose. Note that if equation (E-1a) were correct, the equation that solved it for the cost of equity would be,

$$r_{E1} = r_1^* + (r_1^* - r_D) \times \left(\frac{D}{E} \right) \quad (\text{E-1c})$$

Note also that (D/E) gets exponentially higher in this equation as the debt-to-value ratio increases² i.e., the cost of equity increases exponentially with leverage.

2. Corporate Tax Deduction for Interest Expense

Q6. What happens when you add corporate taxes to the discussion?

A6. If corporate taxes exist with risk-free debt (and if only taxes at the corporate level matter, not taxes at the level of the investor's personal tax return), the initial conclusion changes. Debt at the corporate level reduces the company's tax liability by an amount equal to the marginal tax rate times interest expense. All else equal, this will add value to the company because more of the operating cash flows will end up in the hands of investors as a group. That is, if only corporate taxes mattered, interest would add cash to the firm equal to the corporate tax rate times the interest expense. This increase in cash would increase the value of the firm, all else equal. In cost of capital terms, it would reduce the overall cost of capital.

How much the value of the firm would rise and *how far* the overall cost of capital would fall would depend in part on how often the company adjusts its capital structure, but this is a second-order effect in practice. (The biggest effect would be if companies could issue riskless perpetual debt, an assumption Profs. Modigliani and Miller explored in

² For example, at 20-80, 50-50, and 80-20 debt-equity ratios, (D/E) equals, respectively, $(20/80) = 0.25$, $(50/50) = 1.0$, and $(80/20) = 4.0$. The extra 30 percent of debt going from 20-80 to 50-50 has much less impact on (D/E) [i.e., by moving it from 0.25 to 1.0] than the extra 30 percent of debt going from 50-50 to 80-20 [i.e., by moving it from 1.0 to 4.0]. Since the cost of equity equals a constant risk premium times the debt-equity ratio, the cost of equity grows ever more rapidly as you add more and more debt.

1963, in the second seminal paper;³ this assumption could *not* be true for a real company.) Prof. Robert A. Taggart provides a unified treatment of the main papers in this literature and shows how various cases relate to one another.⁴ Perhaps the most useful set of benchmark equations for the case where only corporate taxes matter are:

$$r_2^* = r_{A2} - r_D \times t_C \times \left(\frac{D}{V} \right) \quad (\text{E-2a})$$

$$r_2^* = r_{E2} \times \left(\frac{E}{V} \right) + r_D \times \left(\frac{D}{V} \right) \times (1 - t_C) \quad (\text{E-2b})$$

which imply for the cost of equity,

$$r_{E2} = r_{A2} + (r_{A2} - r_D) \times \left(\frac{D}{E} \right) \quad (\text{E-2c})$$

where the variables have the same meaning as before but the “2” subscripts indicate the case that considers corporate but not personal taxes.

Note that Equation (E-2a) implies that when only corporate taxes matter, the overall after-tax cost of capital declines steadily as more debt is added, until it reaches a minimum at 100 percent debt (i.e., when $D/V = 1.0$). Note also that Equation (E-2c) still implies an exponentially increasing cost of equity as more and more debt is added.

In fact, except for the subscript, Equation (E-2c) looks just like Equation (E-1c).

However, whether any value is added and whether the cost of capital changes at all also depends on the effect of taxes at the personal level.

3. Personal Tax Burden on Interest Expense

Q7. How do personal taxes affect the results?

A7. Ultimately, the purpose of investment is to provide income for consumption, so personal taxes affect investment returns. For example, in the U.S., municipal bonds have lower interest rates than corporate bonds because their income is taxed less heavily at the

³ Franco Modigliani and Merton H. Miller (1963), “Corporate Income Taxes and the Cost of Capital: A Correction,” *American Economic Review*, 53, pp. 433-443.

⁴ Robert A. Taggart, Jr. (1991), “Consistent Valuation and Cost of Capital Expressions with Corporate and Personal Taxes,” *Financial Management* 20, pp. 8-20.

personal level. In general, capital appreciation on common stocks is taxed less heavily than interest on corporate bonds because (1) taxes on unrealized capital gains are deferred until the gains are realized, and (2) the capital gains tax rate is lower. Dividends are taxed less heavily than interest, also, under current tax law.⁵ The effects of personal taxes on the cost of common equity are hard to measure, however, because common equity is so risky.

Professor Miller, in his Presidential Address to the American Finance Association,⁶ explored the issue of how personal taxes affect the overall cost of capital. The paper pointed out that personal tax effects could offset the effect of corporate taxes entirely.

Q8. Is it likely that the effect of personal taxes will completely neutralize the effect of corporate taxes?

A8. I do not believe so, although the likelihood of such a result would be increased if the current federal tax reductions on dividends and capital gains became permanent rather than expiring in 2010. However, personal taxes are important even if they do not make the corporate tax advantage on interest vanish entirely. Capital gains and dividend tax advantages definitely convey some personal tax advantage to equity, and even a partial personal advantage to equity reduces the corporate advantage to debt.

The Taggart paper explores the case of a partial offset, also. With personal taxes, the risk-free rate on the security market line is the after-personal-tax rate, which must be equal for risk-free debt and risk-free equity.⁷ Therefore, the pre-personal-tax risk-free rate for equity will generally not be equal to the pre-personal-tax risk-free rate for debt. In particular, $r_{fE} = r_{fD} \times [(1 - t_D)/(1 - t_E)]$, where r_{fE} and r_{fD} are the risk-free costs of equity and debt and t_E and t_D are the personal tax rates for equity and debt, respectively.

⁵ The current maximum personal tax rate on dividend income was extended to the end of 2010 by the President on May 17, 2006. It is uncertain whether the reduced rates on dividend income will be further extended.

⁶ Merton H. Miller (1977), "Debt and Taxes," *The Journal of Finance*, 32: 261-276, the third of the seminal papers mentioned earlier.

⁷ As Prof. Taggart notes (his footnote 9), it is not necessary that a specific, risk-free equity security exist as long as one can be created synthetically, through a combination of long and short sales of traded assets. Such constructs are a common analytical tool in financial economics.

In terms of the cost of debt, the Taggart paper's results imply that a formal statement of these effects can be written as:⁸

$$r_3^* = r_{A3} - r_D \times t_N \times \left(\frac{D}{V} \right) \quad (\text{E-3a})$$

$$= r_{E3} \times \left(\frac{E}{V} \right) + r_D \times \left(\frac{D}{V} \right) \times (1 - t_C) \quad (\text{E-3b})$$

which imply

$$r_{E3} = r_{A3} + \left[r_{A3} - r_D \times \left(\frac{1 - t_D}{1 - t_E} \right) \right] \times \left(\frac{D}{E} \right) \quad (\text{E-3c})$$

Suppose, for example, that $t_C = 35$ percent, $t_E = 7.7$ percent and $t_D = 40$ percent. Then $[(1 - t_D)/(1 - t_E)] = 0.65 = (1 - t_C)$. That condition corresponds to Miller's 1977 paper, in which the net personal tax advantage of equity fully offsets the net corporate tax advantage of debt. Note also that in that case, $t_N = 0$.⁹ Therefore, if the personal tax advantage on equity fully offsets the corporate tax advantage on debt, Equation (E-3a) confirms that the overall after-tax cost of capital is a constant.

However, it is unlikely that the personal tax advantage of equity fully offsets the corporate tax advantage of debt. If taxes were all that mattered (i.e., if there were no other costs to debt), the overall after-corporate-tax cost of capital would still fall as debt was added, just not as fast.

Finally, note that the overall after-tax cost of capital, Equation (E-3b), still uses the corporate tax rate even when personal taxes matter. Equations (E-2b) and (E-3b) both correspond to the usual formula for the ATWACC. Personal taxes affect the way the cost of equity changes with capital structure -- Equation (E-3c) -- but not the formula for the overall after-tax cost of capital given that cost of equity.

⁸ The net all-tax effect of debt on the overall cost of capital, t_N , equals $\{[t_C + t_E - t_D - (t_C \times t_E)] / (1 - t_E)\}$, where t_D is the personal tax rate on debt, as before. This measure of net tax effect is designed for use with the cost of debt in Equation (E-3a), which seems more useful in the present context. The Taggart paper works with a similar measure, but one which is designed for use with the cost of risk-free equity in the equivalent Taggart equation.

⁹ In the above example, $t_N = \{[0.35 + 0.077 - 0.4 - (0.35 \times 0.077)] / (1.0 - 0.077)\} = 0.0 / 0.923 = 0$.

B. NON-TAX EFFECTS

Q9. Please describe the non-tax effects of Debt.

A9. If debt is truly valuable, firms should use as much as possible, and competition should drive firms in a particular industry to the same, optimal capital structure for the industry. If debt is harmful on balance, firms should avoid it. Neither picture corresponds to what we actually see. A large economic literature has evolved to try to explain why.

Part of the answer clearly is the costs of excessive debt. Here the results cannot be reduced to equations, but they are no less real for that fact. As companies add too much debt, the costs come to outweigh the benefits. Too much debt reduces or eliminates financial flexibility, which cuts the firm's ability to take advantage of unexpected opportunities or weather unexpected difficulty. Use of debt rather than internal financing may be taken as a negative signal by the market.

Even if the company is generally healthy, more debt increases the risk that the company cannot use all of the interest tax shields in a bad year. As debt continues to grow, this problem grows and others may crop up. Management begins to worry about meeting debt payments instead of making good operating decisions. Suppliers are less willing to extend trade credit, and a liquidity shortage can translate into lower operating profits. Ultimately, the firm might have to go through the costs of bankruptcy and reorganization. Collectively, such factors are known as the costs of "financial distress."¹⁰

The net tax advantage to debt, if positive, is affected by costs such as a growing risk that the firm might have to bear the costs of financial distress. First, the expected present value of these costs offsets the value added by the interest tax shield. Second, since the likelihood of financial distress is greater in bad times when other investments also do poorly, the possibility of financial distress will increase the risks investors bear. These effects increase the variability of the value of the firm. Thus, firms that use too much debt can end up with a higher overall cost of capital than those that use none.

¹⁰ See, for example, Section 18.3 of Brealey, Myers and Allen, 2006, *Principles of Corporate Finance*, 8th Edition, McGraw-Hill/Irwin, 2006.

Other parts of the answer include the signals companies send to investors by the decision to issue new securities, and by the type of securities they issue. Other threads of the literature explore cases where management acts against shareholder interests, or where management attempts to “time” the market by issuing specific securities under different conditions. For present purposes, the important point is that no theory, whether based on taxes or on some completely different issue, has emerged as “the” explanation for capital structure decisions by firms. Nonetheless, despite the lack of a single “best” theory, there is a great deal of relevant empirical research.

Q10. What does that research show?

A10. The research does not support the view that debt makes a material difference in the value of the firm, at least not once a modest amount of debt is in place. If debt were truly valuable, competitive firms should use as much debt as possible short of producing financial distress, and competitive firms that use less debt ought to be less profitable. The research shows exactly the opposite.

For example, Kester¹¹ found that firms in the same industry in both the U.S. and Japan do not band around a single, “optimal” capital structure, and the most profitable firms are the ones that use the *least* debt. This finding comes despite the fact that both countries at the time (unlike the U.S. currently) had fully “classical” tax systems, in which dividends are taxed fully at both the corporate and personal level. Wald¹² confirms that high profitability implies low debt ratios in France, Germany, Japan, the U.K., and the U.S. Booth *et al.* find the same result for a sample of developing nations.¹³ Fama and French¹⁴ analyze over 2000 firms for 28 years (1965-1992, inclusive) and conclude, “Our tests

¹¹ Carl Kester (1986), “Capital and Ownership Structure: A Comparison of United States and Japanese Manufacturing Concerns,” *Financial Management*, 15:5-16.

¹² John K. Wald (1999), “How Firm Characteristics Affect Capital Structure: An International Comparison,” *Journal of Financial Research*, 22:161-167.

¹³ Laurence Booth *et al.* (2001), “Capital Structures in Developing Countries,” *The Journal of Finance* Vol. LVI, pp. 87-130, finds at p. 105 that “[o]verall, the strongest result is that profitable firms use less total debt. The strength of this result is striking ...”

¹⁴ Eugene F. Fama and Kenneth R. French (1998), “Taxes, Financing Decisions and Firm Value,” *The Journal of Finance*, 53:819-843.

1 thus produce no indication that debt has net tax benefits.”¹⁵ A paper by Graham¹⁶
2 carefully analyzes the factors that might have led a firm not to take advantage of debt. It
3 confirms that a large proportion of firms that ought to benefit substantially from use of
4 additional debt, including large, profitable, liquid firms, appear not to use it “enough.”

5 This research leaves us with only three options: either (1) apparently good, profit-
6 generating managers are making major mistakes or deliberately acting against
7 shareholder interests, (2) the benefits of the tax deduction on debt are less than they
8 appear, or (3) the non-tax costs to use of debt offset the potential tax benefits. Only the
9 first of these possibilities is consistent with the view that the tax deductibility of debt
10 conveys a material cost advantage. Moreover, if the first explanation were interpreted to
11 mean that otherwise good managers are acting against shareholder interests, either
12 deliberately or by mistake, it would require the additional assumption that their
13 competitors (and potential acquirers) let them get away with it.

14 **Q11. Are there any explanations in the financial literature for this puzzle other than**
15 **stupid or self-serving managers at the most profitable firms?**

16 A11. Yes. For example, Stewart C. Myers, a leading expert on capital structure, made it the
17 topic of his Presidential Address to the American Finance Association.¹⁷ The poor
18 performance of tax-based explanations for capital structure led him to propose an entirely
19 different mechanism, the “pecking order” hypothesis. This hypothesis holds that the net
20 tax benefits of debt (i.e., corporate tax advantage over personal tax disadvantage) are at
21 most of a second order of importance relative to other factors that drive actual debt
22 decisions.¹⁸ Similarly, Baker and Wurgler (2002)¹⁹ observe a strong and persistent

¹⁵ *Ibid.*, p. 841.

¹⁶ John R. Graham (2000), “How Big Are the Tax Benefits of Debt,” *The Journal of Finance*, 55:1901-1942.

¹⁷ Stewart C. Myers (1984), “The Capital Structure Puzzle,” *The Journal of Finance*, 39: 575-592. See also S. C. Myers and N. S. Majluf (1984), “Corporate Financing Decisions When Firms Have Information Investors Do Not Have,” *Journal of Financial Economics* 13:187-222.

¹⁸ See also Stewart C. Myers (1989), “Still Searching for Optimal Capital Structure,” *Are the Distinctions Between Debt and Equity Disappearing?*, R.W. Kopke and E. S. Rosengren, eds., Federal Reserve Bank of Boston.

¹⁹ Malcolm Baker and Jeffrey Wurgler (2002), “Market Timing and Capital Structure,” *The Journal of Finance* 57:1-32.

1 impact that fluctuations in market value have on capital structure. They argue that this
2 impact is not consistent with other theories. The authors suggest a new capital structure
3 theory based on market timing -- capital structure is the cumulative outcome of attempts
4 to time the equity market.²⁰ In this theory, there is no optimal capital structure, so market
5 timing financing decisions just accumulate over time into the capital structure outcome.
6 (Of course, this theory only makes sense if investors do not recognize what managers are
7 doing.)

8 **Q12. Do inter-firm differences within an industry explain the wide variations in capital**
9 **structure across the firms in an industry?**

10 A12. No. This view is contradicted by the empirical research. As mentioned before, it has
11 long been found that the most profitable firms in an industry, i.e., those in the best
12 position to take advantage of debt, use the least.²¹ Graham (2000) carefully examines
13 differences in firm characteristics as possible explanations for why firms use “too little”
14 debt and concludes that such differences are *not* the explanation: firms that ought to
15 benefit substantially from more debt by all measurable criteria, if the net tax advantage of
16 debt is truly valuable, voluntarily do not use it.²²

17 Nor does the research support the view that firms are constantly trying to adjust their
18 capital structures to optimal levels. Additional research on the pecking order hypothesis
19 demonstrates that firms do not tend towards a target capital structure, or at least do not do
20 so with any regularity, and that past studies that seemed to show the contrary actually
21 lacked the power to distinguish whether the hypothesis was true or not.²³ In the words of

²⁰ *Ibid.*, p. 29.

²¹ For example, Kester, *op. cit.* and Wald, *op. cit.*

²² While not contradicting Graham’s finding that differences in firm characteristics do not explain capital structure differences, Nengjiu Ju, Robert Parrino, Allen M. Poteshman, and Michael S. Weisbach, “Horses and Rabbits? Trade-Off Theory and Optimal Capital Structure,” *Journal of Financial and Quantitative Analysis*, June 2005, pp. 1-24, looks at the issue in a different manner. Their paper uses a dynamic rather than static model to analyze the tradeoff between the tax benefits of debt and the risk of financial distress. It finds that bankruptcy costs by themselves are enough to explain observed capital structures, once dynamic effects are considered. This means debt is not as valuable as suggested by the traditional static analysis (of the sort used by Graham).

²³ Lakshmi Shyam-Sunder and Stewart C. Myers (1999), “Testing static tradeoff against pecking order models of capital structure,” *Journal of Financial Economics* 51:219-244.

the Shyam-Sunder - Myers paper p. 242, “If our sample companies did have well-defined optimal debt ratios, it seems that their managers were not much interested in getting there.”

II. EXPANDED EXAMPLE

Q13. What topics do you cover in this section?

A13. The discussion in my testimony did not detail the impact of different starting points for the level of debt nor did it address income earned on the investment, interest expense, or taxes. This section covers these topics. First, it discusses how the level of debt affects the cost of equity. Second, it addresses the influence of income and interest on the investment. Third, it explains the impact of taxes on capital structure decisions. The final topic covered in this section is the combined consequence of tax and non-tax effects of debt.

A. DETAILS OF DIFFERENT LEVELS OF DEBT

Q14. Why does more debt mean more risk for equity holders?

A14. Debt magnifies the variability of the equity return. As a simple example, think of an investor who takes money out of her savings and invests \$100,000 in real estate. The future value of the real estate is uncertain. If the real estate market booms, she wins. If the real estate market goes down, she loses. Figure E-1 below illustrates this.

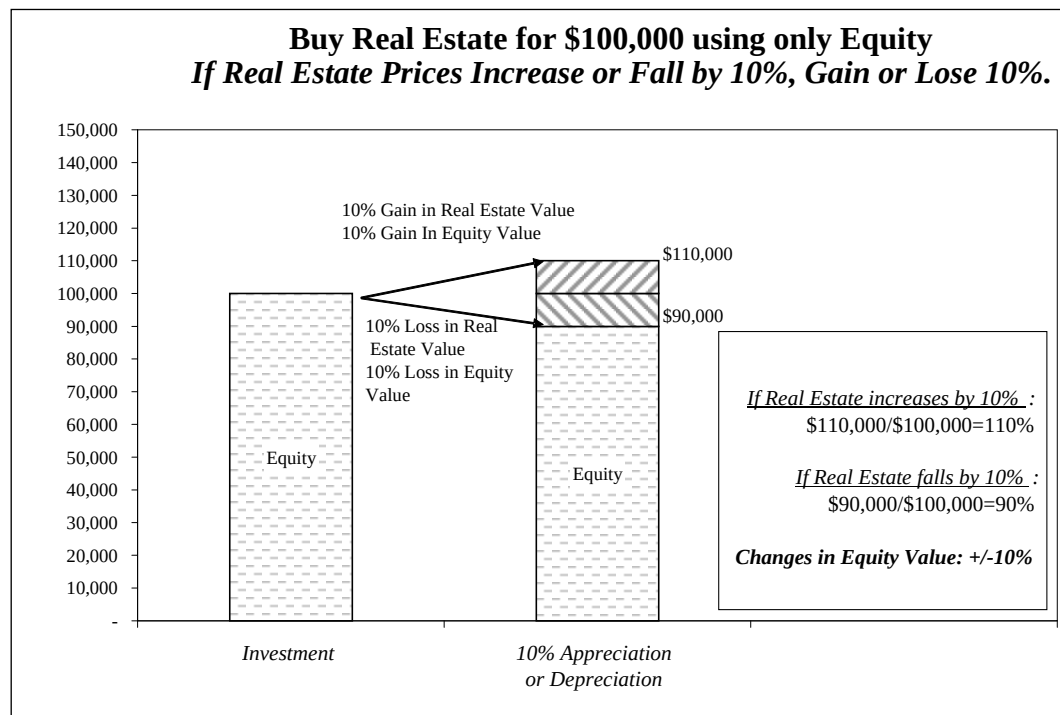


Figure E-1

1 In the scenario above, the investor financed her real estate purchase through 100 percent
2 equity. Suppose instead that the investor had financed 50 percent of her real estate
3 investment with a mortgage of \$50,000. The mortgage lender does not expect to share in
4 any benefits from increases in real estate values. Neither does the mortgage lender
5 expect to share in any losses from falling real estate values, i.e., the investor carries the
6 entire risk of fluctuating real estate prices. Figure E-2 illustrates this effect.

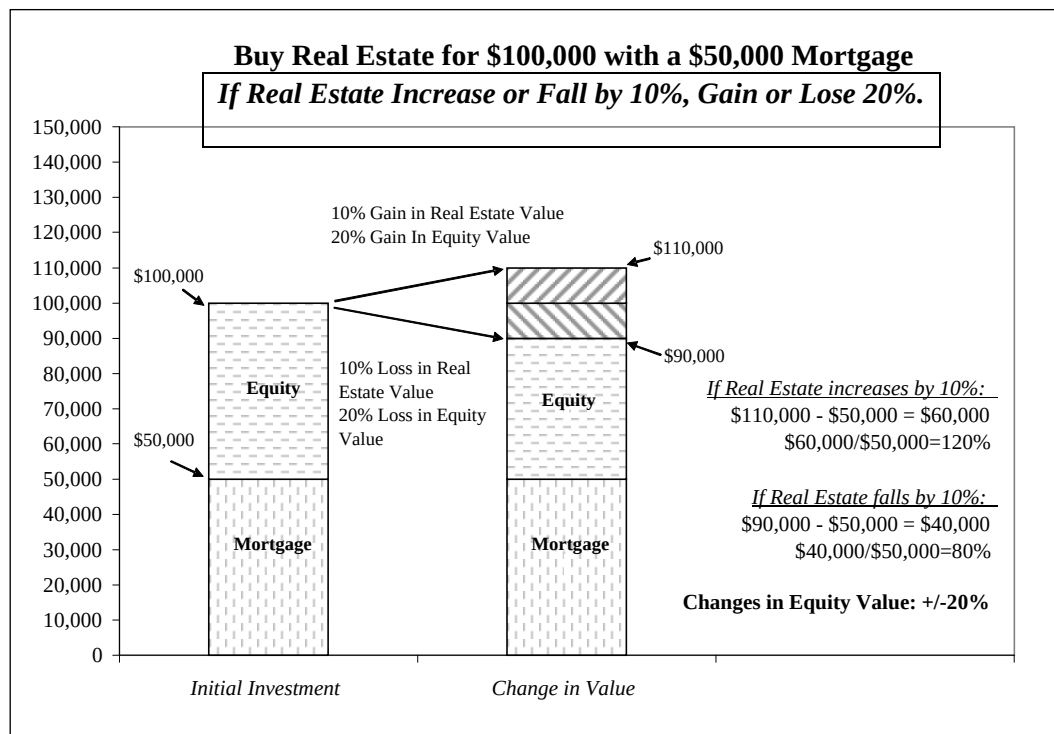


Figure E-2

In Figure E-2 where the investor financed her purchase through 50 percent equity and 50 percent debt, the variability in the investor's equity return is two times greater than that of Figure E-1. The entire fluctuation of 10 percent from rising or falling real estate prices falls on the investor's \$50,000 equity investment. The lesson from the example is obvious, debt adds risk to equity.

Q15. What happens if the investor finances the real estate purchase with different proportions of debt?

A15. The equity return becomes more variable when the mortgage percentage is a greater proportion of the initial price. Table E-1 below calculates the return on equity when real estate prices increase by 10 percent when mortgages are 0 percent, 30 percent, 50 percent, and 70 percent of the initial price.

Table E-1: The Impact of Leverage on the Return on Equity

	100% Equity	70% Equity	50% Equity	30% Equity
Debt	\$0	\$30,000	\$50,000	\$70,000
Original Equity Investment	\$100,000	\$70,000	\$50,000	\$30,000
Increase in Market Value of Equity	\$10,000	\$10,000	\$10,000	\$10,000
Return on Equity Investment	10%	14.3%	20%	33.3%

Note that going from 70 percent equity down to 50 percent equity increases the return on the equity investment by 5.7 percent while going from 50 percent equity to 30 percent equity increases the return on equity by 13.3 percent. This illustrates a general point; the rate of return on equity increases more quickly at higher levels of debt than at lower levels. Investors demand a higher equity rate of return to bear more risk and debt magnifies equity's risk at an ever increasing rate. Therefore, the required equity rate of return goes up at an ever increasing rate as debt is added. This is not only basic finance theory, it is the everyday experience of anyone who buys a home. The bigger the mortgage, the more percentage risk the equity faces from changes in housing prices.

Q16. Please provide an example that illustrates why market values are relevant.

A16. Suppose in the above example that the investor has invested in real estate 10 years ago. Further assume that depreciation has reduced the book value of the real estate from \$100,000 to \$75,000 and assume the investor has paid off 40 percent of his \$50,000 mortgage. Thus, the investor has a remaining mortgage of \$30,000 ($= 60\% \times \$50,000$). The book value of the investor's equity investment is therefore \$45,000 ($= \$75,000 - \$30,000$).

What happens now if real estate prices rise or fall 20 percent? To answer that question, we need to know how real estate prices have developed over the past 10 years. If the market value of the real estate now is \$200,000 then a 20 percent decrease in the price of real estate (\$40,000) is almost equal to the investor's book value equity. However, his

market value equity (or net worth) is equal to the value of the real estate minus what he owes on the mortgage. If we assume that the market value of the mortgage equals the unpaid balance (\$30,000), then the investor's net worth is calculated as follows:

$$\begin{array}{rclcl} \text{Net Worth} & = & \text{Market Value of} & - & \text{Remaining} \\ & & \text{Real Estate} & & \text{Mortgage} \\ & = & \$200,000 & - & \$30,000 \\ & = & \$170,000 & & \end{array}$$

Therefore, the rate of return on equity due to a 20 percent decline in real estate prices is calculated in Table E-2.

Table E-2: Calculating the Rate of Return on Equity

Decline in Real Estate Value	\$40,000
Market-Value Equity	\$170,000
Rate of Return on Equity	- \$40,000/\$170,000 = -23.5%

B. THE IMPACT OF INCOME AND INTEREST

Q17. How does earning income from the investment and paying interest on debt affect the results?

A17. In the following explanation, I ignore income taxes which I deal with in Section C below. Assume the investor is receiving income, e.g., rent, from the real estate. Specifically, assume the investor receives \$500 per month in income after all non-interest expenses (\$6,000 per year). Also, assume that the expected appreciation is 5 percent per year, so the expected market value is \$105,000 after one year. Then the expected rate of return from the real estate with all equity financing is:

$$\begin{aligned}
\text{Expected Return on Equity @ 0\% debt} &= \frac{\text{Expected Net Income} + \text{Expected Appreciation}}{\text{Initial Investment}} \\
&= \frac{\$6,000 + (\$105,000 - \$100,000)}{\$100,000} \\
&= 11\%
\end{aligned}$$

1 Now suppose that the mortgage interest rate were 5 percent. Then at a mortgage equal to
2 50 percent, or \$50,000, interest expense would be (\$50,000 x 0.05), or \$2,500. The
3 expected equity rate of return would be:

$$\begin{aligned}
\text{Expected Return on Equity @ 50\% debt} &= \frac{\text{Expected (Net Income} + \text{Appreciation)} - \text{Int. Expense}}{\text{Initial Equity Investment}} \\
&= \frac{\$6,000 + \$5,000 - \$2,500}{\$50,000} \\
&= 17\%
\end{aligned}$$

4 Notice that the expected return on equity is higher as is the risk carried by equity.

5 **Q18. Can you provide a more general illustration?**

6 A18. Yes. Figure E-3 uses these assumptions at different mortgage levels to plot both (i) the
7 expected rate of return on the equity in the dwelling, and (ii) the realized rate of return on

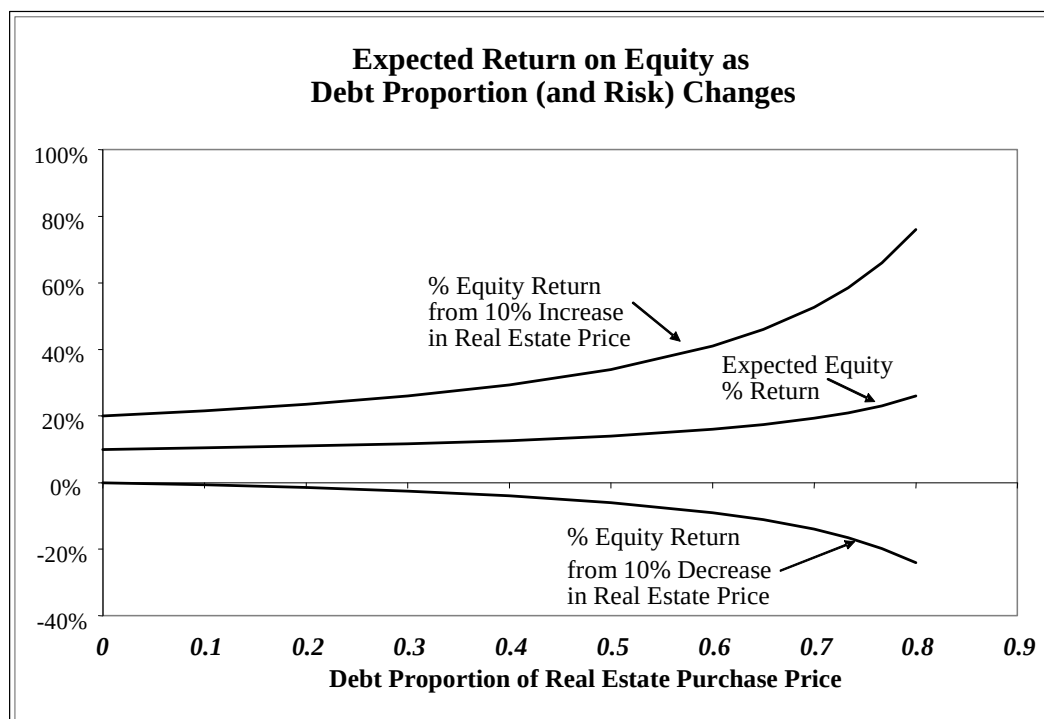


Figure E-3

that equity in a year if the dwelling value increases by 10 percent more than the expected 5 percent rate (i.e., if the value increases by 15 percent) or by 10 percent less than expected (i.e., if it decreases by 5 percent).²⁴

The expected rate of return on equity increases at an increasing rate as the investor finances more and more of the real estate through loans (e.g., with a mortgage). Since equity bears all the risk of increases or decreases in real estate values (absent financial distress or bankruptcy), the amount of risk the buyer bears grows at an ever increasing rate as the mortgage percentage also increases.

Q19. What are the implications of this example?

A19. Any time an individual or a company uses debt to finance part an investment, the same risk magnifies. For example, if an investor buys stocks “on margin” -- by borrowing part of the money used to buy the stock -- the expected rate of return will be higher as will the risks the investor carries. As an everyday example, imagine investing your retirement

²⁴ For simplicity, the figure assumes the debt’s interest rate is independent of the debt proportion. This might not always be true, and in general would not be true for a corporation that issued debt. However, the general shape of the graphs remains the same.

savings in a stock portfolio bought with as much margin as possible. If you were lucky, you could end up living very well in retirement. But you would be taking a lot of risk on the opposite outcome, since your portfolio could decline by more than 100 percent of your initial investment.

The same risk-magnifying effects happen when companies borrow to finance part of their investments.

C. THE EFFECT OF TAXES

Q20. What is the impact of taxes?

A20. Analyzing the net effect of taxes in capital structure decisions by corporations is an important part of the financial research. (Other parts of that research address such issues as the risk of financial distress or bankruptcy, and the signals corporations send investors by the choice of how to finance new investments.) The bottom line is that taxes complicate the picture without changing the basic conclusion.

Q21. Please describe the potential impact of taxes.

A21. Interest expense is tax-deductible for corporations. That increases the pool of cash the corporation gets to keep out of its operating earnings (i.e., its earnings before interest expense). With no debt, 100 percent of operating income is subject to taxes. With debt, only the equity part of the operating income is subject to taxes.

All else equal, the extra money kept from operating income increases the value of the corporation. The standard way to recognize that increase in value is to use an after-tax weighted-average cost of capital as a discount rate when valuing a company's operating cash flows.

Q22. Do personal taxes affect the value of debt, too?

A22. Yes, but in the other direction. One offset to debt's tax benefits at the corporate level is its higher tax burden at the personal level. Investors care about the money they get to keep after all taxes are paid, and while the corporation saves taxes by opting for debt over

equity, individuals pay more taxes on interest than on capital gains from equity (and for now, on dividends as well).

Q23. Are there factors other than taxes matter?

A23. Absolutely, “all else” does not remain equal as more debt is added. The more debt, the more the non-tax effects of debt offset the tax benefits. Other costs include such effects as a loss of flexibility, the possibility of sending negative signals to investors, and a host of costs and risks associated with the danger of financial distress.

Q24. Does the tradeoff between the tax and non-tax effects of debt mean that firms have well-defined, optimal capital structures?

A24. No, this sort of “tradeoff” model does not explain actual corporate behavior. A substantial body of economic research confirms that real-world corporations act as if, after a moderate amount of debt is in place, the tax benefits of debt are not worth debt’s other costs. In country after country and in industry after industry, the most profitable corporations in an industry tend to use the least debt. The research on this point is quite thorough, and the finding that the most profitable companies tend to use the least debt in a given industry is robust. Yet these are the companies with the most operating income to shield from taxes, who would benefit most if interest tax shields were truly valuable net of debt’s other costs. They also presumptively are the best-managed on average (else why are they the most profitable?). This means it is unrealistic to suppose that more debt is always better, or that greater tax savings due to higher interest expense always add value to the firm on balance.

Q25. If the tradeoff model doesn’t explain capital structure decisions by firms, is there a model that does?

A25. No single model has (yet) emerged as ‘the’ explanation of capital structure. However, several alternative models attempt to model the tradeoff (e.g., the “pecking order” hypothesis and “agency cost” explanations).

Q26. What does the absence of an agreed theory of capital structure in the financial literature imply about the overall effect of debt on the value of the firm?

A26. The findings of the financial literature mean that within an industry, there is no well-defined optimal capital structure. The use of some debt does convey some value advantage in most industries, but that advantage is offset by other costs as firms add more debt.²⁵ The range of capital structures over which the value of the firm in any industry is maximized is wide and should be treated as flat. The location and level of that range, however, does vary from industry to industry, just as the overall cost of capital varies from industry to industry.

Figure E-4 illustrates the picture that emerges from the research. This figure shows the present value of an investment in each of four different industries. For simplicity, the investment is expected to yield \$1.00 per year forever. For firms in relatively high-risk industries (Industry 1 in the graph, the lowest line), the \$1.00 perpetuity is not worth much and any use of debt decreases firm value. For firms in relatively low-risk industries (Industry 4 in the graph), the perpetuity is worth more and substantial amounts of debt make sense. Industries 2 and 3 are intermediate cases.

The maximum net rate at which taxes can increase value in this figure equals 20 percent of interest expense, representing a balance between the corporate tax advantage to debt and the personal tax disadvantage. The figure plots the maximum possible impact of taxes on value as a separate line, starting at the all-equity value of the lowest-risk industry (Industry 4).

²⁵ Note that if debt did increase the value of the firm materially, competition would tend to take that value away, since issuing debt is an easy-to-copy competitive strategy. Prices would fall as firms copied the strategy, lowering operating earnings and passing the net tax advantages to debt through to customers (just as happens under rate regulation). Therefore, if also there were a narrow range of optimal capital structures within an industry, competition would drive all firms in the industry to capital structures within that range. This does not happen in practice, which contradicts one or both of the assumptions, i.e., (1) that debt adds material value on balance, and/or (2) that there is a narrow range of optimal capital structures.

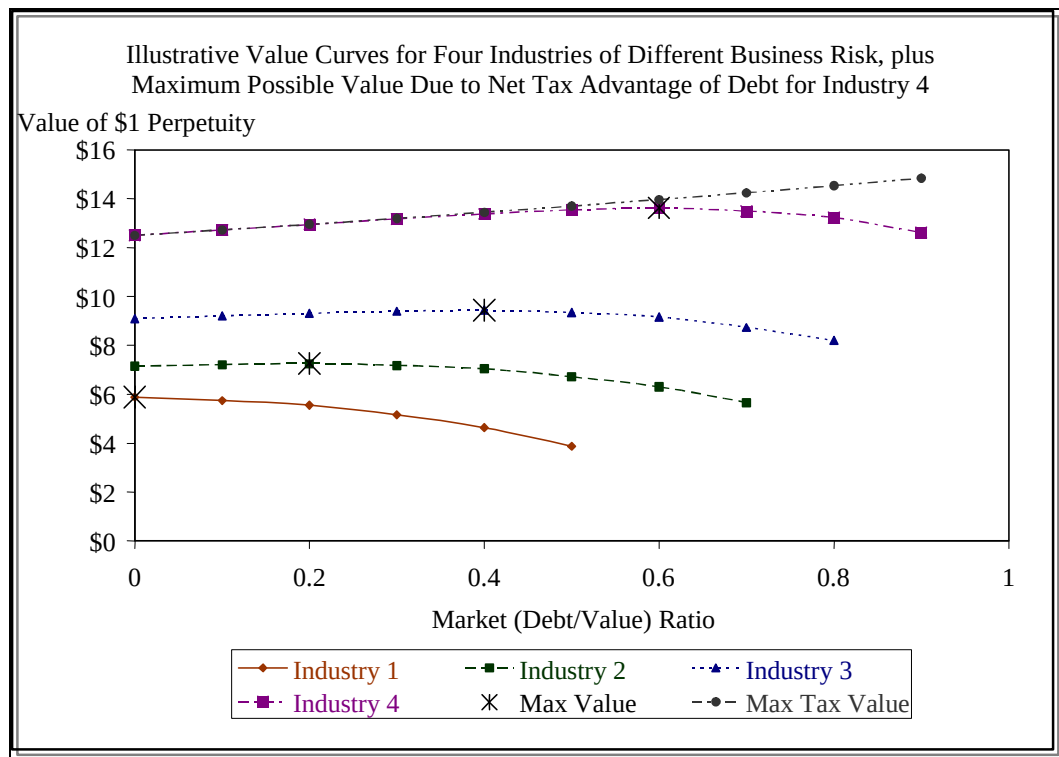


Figure E-4

Figure E-4 identifies a particular point as the maximum value on each of the four curves. However, the research shows that reliable identification of this maximum point, except in the extreme case where no debt should be used, is impossible. In accord with the research, the graph is prepared so that in none of the industries does a change in capital structure make much difference near the top of the curve. Even Industry 4, which increases in value at the maximum rate as quite a lot of debt is added, eventually must reach a broad range where changes in the debt ratio make little difference to firm value, given the research. For Industry 4, debt makes less than a 2 percent difference in the total value of the firm for debt-to-value ratios between 40 and 70 percent. (While these particular values are illustrative, numbers of this order of magnitude are the only ones consistent with the research.)

Q27. What does this imply for the overall cost of capital?

A27. Figure E-5 plots the after-tax weighted-average costs of capital ("ATWACCs") that correspond to the value curves in Figure E-4. This picture just turns Figure E-4 upside

down.²⁶ All the same conclusions remain, except that they are stated in terms of the overall cost of capital instead of the overall firm value. In particular, except for high-risk industries, the overall cost of capital is essentially flat across a broad middle range of capital structures for each industry, which is the only outcome consistent with the research. For Industry 4, for example, the ATWACC changes by less than 15 basis points for debt-to-value ratios between 40 and 70 percent.

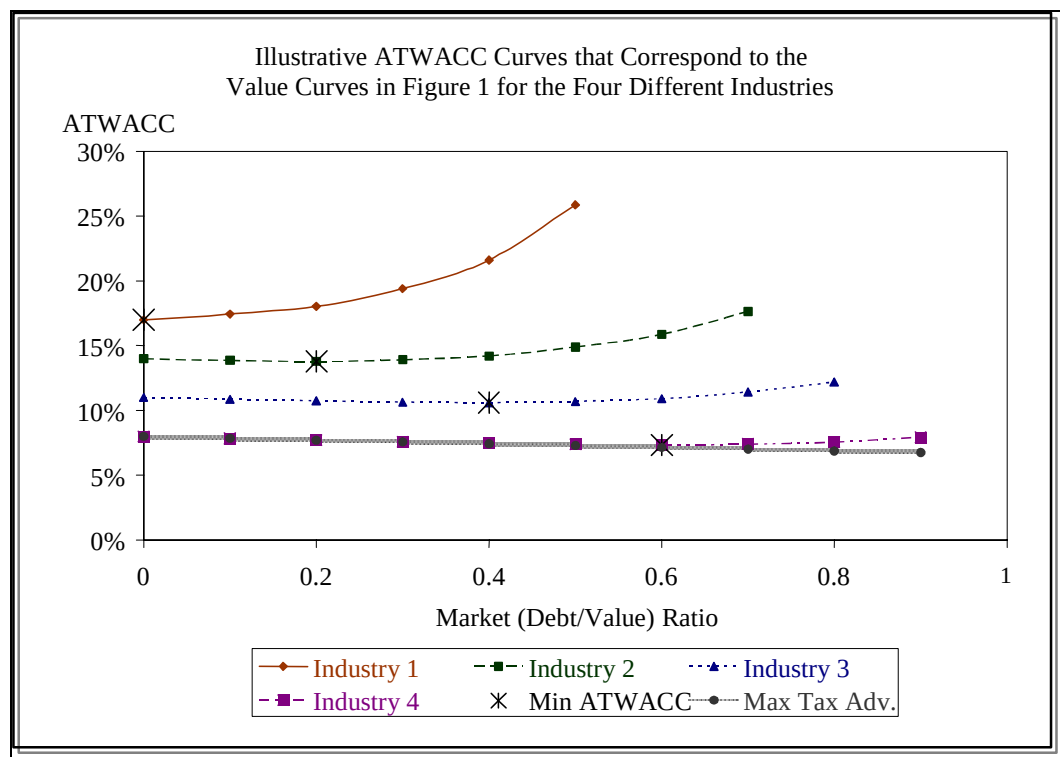


Figure E-5

Q28. How does this discussion relate to estimation of the right cost of equity for ratemaking purposes?

A28. When an analyst estimates the cost of equity for a sample of companies, s/he does so at the sample's actual market-value capital structure. That is, the sample evidence corresponds to ATWACCs that are already out somewhere in the broad middle range in

²⁶ Note that the actual estimated ATWACC at higher debt ratios will tend to underestimate the ATWACC that corresponds to the value curves in Figure E-4, which are depicted in Figure E-5, and so will tend to overestimate the value of debt to the firm. The reason is that some of the non-tax effects of excessive debt, such as a loss of financial flexibility, may be hard to detect and not show up in cost of capital measurement.

1 which changes in the debt ratio have little or no impact on the overall value of the firm or
2 the ATWACC.

3 An analyst therefore should assume the ATWACCs for the sample companies are
4 literally flat. This assumption always provides the exact tradeoff between the cost of
5 equity and capital structure at the literal minimum of the company's ATWACC curve.
6 The research shows that this minimum is actually a broad, flat region, as depicted above.
7 If the company happens to be somewhat to one side or the other of the literal minimum
8 within this region, the recommended procedure may lead to a small understatement or
9 overstatement of the amount that the cost of equity will change as capital structure
10 changes. The degree of this under- or overstatement, however, is very small compared to
11 the inherent uncertainty in estimating the cost of equity in the first place. Otherwise, the
12 financial research would have found very different results about the existence of a
13 narrowly defined optimal capital structure.

14 **D. COMBINED EFFECTS**

15 **Q29. Please summarize the implications for the combined impact of the tax and non-tax**
16 **effects of debt.**

17 A29. The most profitable firms do not behave as if the precise amount of debt they use makes
18 any material difference to value, and competition does not force them into an alternative
19 decision, as it would if debt were genuinely valuable. The explanation that fits the facts
20 and the research is that within an industry, there is no well-defined optimal capital
21 structure. Use of some debt does convey an advantage in most industries, but that
22 advantage is offset by other costs as firms add more debt. The range of capital structures
23 over which the value of the firm in any industry is maximized is wide and should be
24 treated as flat. The location and level of that range, however, does vary from industry to
25 industry, just as the overall cost of capital varies from industry to industry. To conclude
26 that more debt does add more value, once the firm is somewhere in the normal range for
27 the industry, is to conclude that corporate management in general is either blind to an
28 easy source of value or otherwise incompetent (and that their competitors let them get
29 away with it).

1 The finding that there is no narrowly defined optimal capital structure implies that
2 analysts should estimate the ATWACCs for a sample of companies in a given industry
3 and treat the average ATWACC value as independent of capital structure (at least within
4 a broad middle range of capital structures). The right cost of equity for a rate-regulated
5 company in the same industry is the number that yields the same ATWACC at the capital
6 structure used to set the revenue requirement, since that is the cost of equity that
7 (estimation problems aside) the sample companies would have had if their market-value
8 capital structures had been equal to the regulatory capital structure.

Table No. MJV-1

Index to Tables for the Direct Testimony of Michael J. Vilbert

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Table No. MJV-4	Capital Structure Summary of the Water Sample
Table No. MJV-5	Estimated Growth Rates of the Water Sample
Table No. MJV-6	DCF Cost of Equity of the Water Sample
Table No. MJV-7	Overall After-Tax DCF Cost of Equity of the Water Sample
Table No. MJV-8	DCF Cost of Equity at Tennessee-American Water's Capital Structure
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Table No. MJV-2

Water Sample

Percentage of Revenue from Regulated Activities

Company	State	2006 [1]
American States Water Co	CA	94%
Aqua America Inc	CA	96%
California Water Service Group	CT	97%
Connecticut Water Service Inc	NJ	90%
Middlesex Water Co	PA	89%
SJW Corp	CA	95%
Southwest Water Co	CA	41%
York Water Co	PA	92%

Sources and Notes:

[1]: Workpaper #1 to Table No. MJV-2; Panels A - H.

Workpaper #1 to Table No. MJV-2
Water Sample: Breakdown of Revenues
Panel A: American States Water Co (\$MM)

		% Total 2006	2006
Operating Revenues			
Water			
GSCW Water		80%	215.2
GSCW Electric		11%	29.3
CCWC Water		3%	7.8
Total Regulated Revenue	[1]		252.2
Other (ASUS Contracts*)	[2]	6%	16.4
Total Operating Revenues	[3]		268.6
Estimated % Regulated Revenues	[1] / [3]		94%

Sources and Notes:

American States Water Co's 2006 10-K, Note 15 - Business Segments.

*ASUS is assumed to be a non-regulated entity.

Workpaper #1 to Table No. MJV-2
Water Sample: Breakdown of Revenues
Panel B: Aqua America Inc (\$MM)

	% Total 2006	2006
Operating Revenues		
Residential Water	65%	317.8
Commercial Water	16%	76.1
Industrial Water	4%	18.8
Other Water	6%	27.4
Wastewater	10%	48.9
Other*	3%	13.5
Total Regulated Revenue	[1]	488.9
Other (Non-Regulated)	[2]	20.7
Total Operating Revenues	[3]	510
Estimated % Regulated Revenues	[1] / [3]	96%

Sources and Notes:

Aqua America Inc's 2006 10-K, page 5.

* "Our Regulated segment also includes certain non-regulated operating revenues of \$13,525 in 2006...", 2006 10-K, page 8.

Workpaper #1 to Table No. MJV-2
Water Sample: Breakdown of Revenues
Panel C: California Water Service Group (\$MM)

	% Total 2006	2006
Operating Revenues		
Residential	70%	232.8
Business	18%	60.4
Industrial	5%	16.3
Public Authorities	5%	15.7
Other	3%	9.5
Total Operating Revenues		334.7
Estimated % Regulated Revenues		97%

Sources and Notes:

California Water Service Group's 2006 10-K, Five Year Financial Review, page 28.

On page 2 of the 10-K, there is a note saying that 96% of total consolidated operating revenue is from the California Water Operations. The business is regulated.

Workpaper #1 to Table No. MJV-2

Water Sample: Breakdown of Revenues

Panel D: Connecticut Water Service Inc (\$MM)

	% Total 2006	2006
Operating Revenues		
Water Activities		47.9
Total Regulated Revenue	[1]	47.9
Real Estate Transactions		1.0
Services and Rentals		4.1
Total Non - Regulated Revenue	[2]	5.1
Total Operating Revenues	[3]	53.0
Estimated % Regulated Revenues	[1] / [3]	90%

Sources and Notes:

Connecticut Water Service Inc's 2005 10-K, Note 15 - Segment Reporting.

Workpaper #1 to Table No. MJV-2
Water Sample: Breakdown of Revenues
Panel E: Middlesex Water Co (\$MM)

		% Total 2006	2006
Operating Revenues			
Regulated	[1]	89%	71.9
Non-Regulated	[2]	11%	9.3
Inter-segment Elimination		0%	(0.2)
Total Operating Revenues	[3]		81.1
Estimated % Regulated Revenues	[1] / [3]		89%

Sources and Notes:
Middlesex Water Co's 2006 10-K, Note 8: Business Segment Data.

Workpaper #1 to Table No. MJV-2
Water Sample: Breakdown of Revenues
Panel F: SJW Corp (\$MM)

		% Total 2006	2006
Operating Revenues			
Regulated	[1]	95%	179.8
Non Regulated	[2]	5%	9.5
Total Operating Revenues	[3]		189.2
Estimated % Regulated Revenues	[1] / [3]		95%

Sources and Notes:

SJW Corp's 2006 10-K, Note 15 - Non-regulated Businesses.

Workpaper #1 to Table No. MJV-2
Water Sample: Breakdown of Revenues
Panel G: Southwest Water Co (\$MM)

		% Total 2006	2006
Operating Revenues			
Services Group	[1]	59%	126.2
Utility Group	[2]	41%	86.3
Total Operating Revenues	[3]		212.5
Estimated % Regulated Revenues	[2] / [3]		41%

Sources and Notes:

Southwest Water Co 2006 10-K, Note 12 - Segment Information:

"While state and federal agencies issue regulations regarding standards of water quality, safety, environmental and other matters which affect our Services Group operations, the pricing of the services provided by our Services Group is not subject to government regulation." p. 1.

Workpaper #1 to Table No. MJV-2
Water Sample: Breakdown of Revenues
Panel H: York Water Co (\$MM)

		% Total 2006	2006
Operating Revenues			
Residential		63%	18.0
Commercial and Industrial		30%	8.5
Total Regulated Revenue	[1]		26.5
Other	[2]	8%	2.2
Total Operating Revenues	[3]		28.7
Estimated % Regulated Revenues	[1] / [3]		92%

Sources and Notes:

York Water Co 2006 10-K, p. 2.

It is assumed that "Other" represents non-regulated revenues.

Table No. MJV-3
Market Value of the Water Sample
Panel A: American States Water Co
(\$MM)

	DCF Capital Structure	3rd Quarter, 2007	Year End, 2006	Year End, 2005	Year End, 2004	Year End, 2003	Year End, 2002	Notes
MARKET VALUE OF COMMON EQUITY								
Book Value, Common Shareholder's Equity	\$299	\$299	\$284	\$264	\$251	\$212	\$213	[a]
Shares Outstanding (in millions) - Common	17	17	17	17	17	15	15	[b]
Price per Share - Common	\$34.54	\$40.79	\$38.23	\$31.75	\$25.66	\$24.97	\$23.85	[c]
Market Value of Common Equity	\$594	\$701	\$652	\$533	\$430	\$380	\$362	[d] = [b] x [c].
Market to Book Value of Common Equity	1.99	2.35	2.30	2.02	1.71	1.79	1.70	[e] = [d] / [a].
MARKET VALUE OF PREFERRED EQUITY								
Book Value of Preferred Equity	\$0	\$0	\$0	\$0	\$0	\$0	\$0	[f]
Market Value of Preferred Equity	\$0	\$0	\$0	\$0	\$0	\$0	\$0	[g] = [f].
MARKET VALUE OF DEBT								
Current Assets	\$69	\$69	\$64	\$67	\$53	\$58	\$54	[h]
Current Liabilities	\$89	\$89	\$86	\$75	\$86	\$96	\$78	[i]
Current Portion of Long-Term Debt	\$1	\$1	\$1	\$1	\$1	\$1	\$13	[j]
Net Working Capital	(\$19)	(\$19)	(\$21)	(\$8)	(\$32)	(\$37)	(\$11)	[k] = [h] - ([i] - [j]).
Notes Payable (Short-Term Debt)	\$29	\$29	\$32	\$27	\$45	\$56	\$35	[l]
Adjusted Short-Term Debt	\$19	\$19	\$21	\$8	\$32	\$37	\$11	[m] = See Sources and Notes.
Long-Term Debt	\$268	\$268	\$268	\$268	\$229	\$230	\$231	[n]
Book Value of Long-Term Debt	\$287	\$287	\$289	\$277	\$262	\$267	\$255	[o] = [n] + [j] + [m].
Adjustment to Book Value of Long-Term Debt	\$38	\$38	\$38	\$39	\$54	\$47	\$38	[p] = See Sources and Notes.
Market Value of Long-Term Debt	\$325	\$325	\$327	\$316	\$316	\$314	\$293	[q] = [p] + [o].
Market Value of Debt	\$325	\$325	\$327	\$316	\$316	\$314	\$293	[r] = [q].
MARKET VALUE OF FIRM								
	\$919	\$1,026	\$979	\$850	\$746	\$694	\$655	[s] = [d] + [g] + [r].
DEBT AND EQUITY TO MARKET VALUE RATIOS								
Common Equity - Market Value Ratio	64.63%	68.34%	66.60%	62.77%	57.66%	54.73%	55.25%	[t] = [d] / [s].
Preferred Equity - Market Value Ratio	-	-	-	-	-	-	-	[u] = [g] / [s].
Debt - Market Value Ratio	35.37%	31.66%	33.40%	37.23%	42.34%	45.27%	44.75%	[v] = [r] / [s].

Sources and Notes:

Bloomberg as of February 07, 2008.

Capital structure from 3rd Quarter, 2007 calculated using respective balance sheet information and 15-day average prices ending at period end.

The DCF Capital structure is calculated using 3rd Quarter, 2007 balance sheet information and a 15-trading day average closing price ending on 2/7/2008.

Prices are reported in Workpaper #1 to Table No. MJV-6.

[m] =

(1): 0 if [k] > 0.

(2): The absolute value of [k] if [k] < 0 and |[k]| < [l].

(3): [l] if [k] < 0 and |[k]| > [l].

[p]: Difference between fair value of Long-Term debt and carrying amount of Long-Term debt per company 10-K. Data for adjustment is from 2006 10-K. Companies do not report the fair value of Long-Term debt in quarterly reports, so end-of-year 2006 data is used instead.

Table No. MJV-3
Market Value of the Water Sample
Panel B: Aqua America Inc
(\$MM)

	DCF Capital Structure	3rd Quarter, 2007	Year End, 2006	Year End, 2005	Year End, 2004	Year End, 2003	Year End, 2002	Notes
MARKET VALUE OF COMMON EQUITY								
Book Value, Common Shareholder's Equity	\$965	\$965	\$922	\$812	\$747	\$658	\$493	[a]
Shares Outstanding (in millions) - Common	133	133	132	129	127	123	113	[b]
Price per Share - Common	\$19.70	\$24.14	\$23.40	\$27.51	\$17.98	\$16.32	\$12.43	[c]
Market Value of Common Equity	\$2,624	\$3,216	\$3,097	\$3,547	\$2,287	\$2,015	\$1,407	[d] = [b] x [c].
Market to Book Value of Common Equity	2.72	3.33	3.36	4.37	3.06	3.06	2.86	[e] = [d] / [a].
MARKET VALUE OF PREFERRED EQUITY								
Book Value of Preferred Equity	\$0	\$0	\$0	\$0	\$0	\$0	\$0	[f]
Market Value of Preferred Equity	\$0	\$0	\$0	\$0	\$0	\$0	\$0	[g] = [f].
MARKET VALUE OF DEBT								
Current Assets	\$129	\$129	\$135	\$98	\$91	\$84	\$71	[h]
Current Liabilities	\$315	\$315	\$256	\$272	\$214	\$232	\$227	[i]
Current Portion of Long-Term Debt	\$24	\$24	\$31	\$25	\$50	\$39	\$34	[j]
Net Working Capital	(\$162)	(\$162)	(\$90)	(\$149)	(\$73)	(\$109)	(\$121)	[k] = [h] - ([i] - [j]).
Notes Payable (Short-Term Debt)	\$196	\$196	\$119	\$139	\$75	\$96	\$115	[l]
Adjusted Short-Term Debt	\$162	\$162	\$90	\$139	\$73	\$96	\$115	[m] = See Sources and Notes.
Long-Term Debt	\$1,038	\$1,038	\$952	\$878	\$784	\$697	\$583	[n]
Book Value of Long-Term Debt	\$1,225	\$1,225	\$1,073	\$1,042	\$908	\$833	\$732	[o] = [n] + [j] + [m].
Adjustment to Book Value of Long-Term Debt	\$4	\$4	\$4	\$47	\$29	\$45	\$43	[p] = See Sources and Notes.
Market Value of Long-Term Debt	\$1,228	\$1,228	\$1,076	\$1,089	\$936	\$878	\$776	[q] = [p] + [o].
Market Value of Debt	\$1,228	\$1,228	\$1,076	\$1,089	\$936	\$878	\$776	[r] = [q].
MARKET VALUE OF FIRM								
	\$3,853	\$4,444	\$4,173	\$4,636	\$3,223	\$2,893	\$2,183	[s] = [d] + [g] + [r].
DEBT AND EQUITY TO MARKET VALUE RATIOS								
Common Equity - Market Value Ratio	68.12%	72.36%	74.21%	76.51%	70.95%	69.65%	64.46%	[t] = [d] / [s].
Preferred Equity - Market Value Ratio	-	-	-	-	-	-	0.01%	[u] = [g] / [s].
Debt - Market Value Ratio	31.88%	27.64%	25.79%	23.49%	29.05%	30.35%	35.53%	[v] = [r] / [s].

Sources and Notes:

Bloomberg as of February 07, 2008.

Capital structure from 3rd Quarter, 2007 calculated using respective balance sheet information and 15-day average prices ending at period end.

The DCF Capital structure is calculated using 3rd Quarter, 2007 balance sheet information and a 15-trading day average closing price ending on 2/7/2008.

Prices are reported in Workpaper #1 to Table No. MJV-6.

[m] =

(1): 0 if [k] > 0.

(2): The absolute value of [k] if [k] < 0 and |[k]| < [l].

(3): [l] if [k] < 0 and |[k]| > [l].

[p]: Difference between fair value of Long-Term debt and carrying amount of Long-Term debt per company 10-K. Data for adjustment is from 2006 10-K. Companies do not report the fair value of Long-Term debt in quarterly reports, so end-of-year 2006 data is used instead.

Table No. MJV-3
Market Value of the Water Sample
Panel C: California Water Service Group
(\$MM)

	DCF Capital Structure	3rd Quarter, 2007	Year End, 2006	Year End, 2005	Year End, 2004	Year End, 2003	Year End, 2002	Notes
MARKET VALUE OF COMMON EQUITY								
Book Value, Common Shareholder's Equity	\$384	\$384	\$378	\$294	\$288	\$245	\$199	[a]
Shares Outstanding (in millions) - Common	21	21	21	18	18	17	15	[b]
Price per Share - Common	\$35.09	\$40.56	\$40.35	\$38.87	\$36.49	\$27.53	\$24.17	[c]
Market Value of Common Equity	\$725	\$838	\$834	\$715	\$670	\$466	\$367	[d] = [b] x [c].
Market to Book Value of Common Equity	1.89	2.19	2.20	2.43	2.33	1.91	1.84	[e] = [d] / [a].
MARKET VALUE OF PREFERRED EQUITY								
Book Value of Preferred Equity	\$3	\$3	\$3	\$3	\$3	\$3	\$3	[f]
Market Value of Preferred Equity	\$3	\$3	\$3	\$3	\$3	\$3	\$3	[g] = [f].
MARKET VALUE OF DEBT								
Current Assets	\$88	\$88	\$110	\$52	\$70	\$44	\$41	[h]
Current Liabilities	\$82	\$82	\$70	\$63	\$57	\$64	\$89	[i]
Current Portion of Long-Term Debt	\$2	\$2	\$2	\$1	\$1	\$1	\$1	[j]
Net Working Capital	\$9	\$9	\$41	(\$10)	\$14	(\$19)	(\$48)	[k] = [h] - ([i] - [j]).
Notes Payable (Short-Term Debt)	\$0	\$0	\$0	\$0	\$0	\$6	\$36	[l]
Adjusted Short-Term Debt	\$0	\$0	\$0	\$0	\$0	\$6	\$36	[m] = See Sources and Notes.
Long-Term Debt	\$291	\$291	\$292	\$274	\$275	\$272	\$250	[n]
Book Value of Long-Term Debt	\$293	\$293	\$294	\$275	\$276	\$280	\$288	[o] = [n] + [j] + [m].
Adjustment to Book Value of Long-Term Debt	\$24	\$24	\$24	\$15	\$25	\$16	\$56	[p] = See Sources and Notes.
Market Value of Long-Term Debt	\$317	\$317	\$318	\$290	\$301	\$296	\$344	[q] = [p] + [o].
Market Value of Debt	\$317	\$317	\$318	\$290	\$301	\$296	\$344	[r] = [q].
MARKET VALUE OF FIRM								
	\$1,046	\$1,159	\$1,155	\$1,008	\$975	\$765	\$714	[s] = [d] + [g] + [r].
DEBT AND EQUITY TO MARKET VALUE RATIOS								
Common Equity - Market Value Ratio	69.36%	72.35%	72.19%	70.87%	68.77%	60.92%	51.40%	[t] = [d] / [s].
Preferred Equity - Market Value Ratio	0.33%	0.30%	0.30%	0.34%	0.36%	0.45%	0.49%	[u] = [g] / [s].
Debt - Market Value Ratio	30.31%	27.35%	27.51%	28.78%	30.88%	38.63%	48.11%	[v] = [r] / [s].

Sources and Notes:

Bloomberg as of February 07, 2008.

Capital structure from 3rd Quarter, 2007 calculated using respective balance sheet information and 15-day average prices ending at period end.

The DCF Capital structure is calculated using 3rd Quarter, 2007 balance sheet information and a 15-trading day average closing price ending on 2/7/2008.

Prices are reported in Workpaper #1 to Table No. MJV-6.

[m] =

(1): 0 if [k] > 0.

(2): The absolute value of [k] if [k] < 0 and |[k]| < [l].

(3): [l] if [k] < 0 and |[k]| > [l].

[p]: Difference between fair value of Long-Term debt and carrying amount of Long-Term debt per company 10-K. Data for adjustment is from 2006 10-K. Companies do not report the fair value of Long-Term debt in quarterly reports, so end-of-year 2006 data is used instead.

Table No. MJV-3
Market Value of the Water Sample
Panel D: Connecticut Water Service Inc
(\$MM)

	DCF Capital Structure	3rd Quarter, 2007	Year End, 2006	Year End, 2005	Year End, 2004	Year End, 2003	Year End, 2002	Notes
MARKET VALUE OF COMMON EQUITY								
Book Value, Common Shareholder's Equity	\$100	\$100	\$96	\$94	\$88	\$83	\$80	[a]
Shares Outstanding (in millions) - Common	8	8	8	8	8	8	8	[b]
Price per Share - Common	\$24.03	\$23.66	\$22.75	\$25.09	\$26.66	\$27.90	\$26.07	[c]
Market Value of Common Equity	\$201	\$198	\$188	\$205	\$214	\$222	\$207	[d] = [b] x [c].
Market to Book Value of Common Equity	2.01	1.98	1.96	2.18	2.44	2.67	2.59	[e] = [d] / [a].
MARKET VALUE OF PREFERRED EQUITY								
Book Value of Preferred Equity	\$1	\$1	\$1	\$1	\$1	\$1	\$1	[f]
Market Value of Preferred Equity	\$1	\$1	\$1	\$1	\$1	\$1	\$1	[g] = [f].
MARKET VALUE OF DEBT								
Current Assets	\$19	\$19	\$14	\$26	\$15	\$11	\$10	[h]
Current Liabilities	\$21	\$21	\$13	\$13	\$16	\$15	\$15	[i]
Current Portion of Long-Term Debt	\$0	\$0	\$0	\$2	\$0	\$0	\$0	[j]
Net Working Capital	(\$2)	(\$2)	\$1	\$15	(\$0)	(\$4)	(\$5)	[k] = [h] - ([i] - [j]).
Notes Payable (Short-Term Debt)	\$11	\$11	\$5	\$5	\$6	\$10	\$7	[l]
Adjusted Short-Term Debt	\$2	\$2	\$0	\$0	\$0	\$4	\$5	[m] = See Sources and Notes.
Long-Term Debt	\$77	\$77	\$77	\$77	\$66	\$65	\$65	[n]
Book Value of Long-Term Debt	\$80	\$80	\$77	\$80	\$67	\$69	\$70	[o] = [n] + [j] + [m].
Adjustment to Book Value of Long-Term Debt	\$1	\$1	\$1	(\$2)	(\$7)	\$9	\$6	[p] = See Sources and Notes.
Market Value of Long-Term Debt	\$81	\$81	\$79	\$78	\$60	\$78	\$76	[q] = [p] + [o].
Market Value of Debt	\$81	\$81	\$79	\$78	\$60	\$78	\$76	[r] = [q].
MARKET VALUE OF FIRM								
	\$282	\$279	\$268	\$284	\$275	\$301	\$283	[s] = [d] + [g] + [r].
DEBT AND EQUITY TO MARKET VALUE RATIOS								
Common Equity - Market Value Ratio	71.10%	70.78%	70.34%	72.23%	77.92%	73.93%	73.04%	[t] = [d] / [s].
Preferred Equity - Market Value Ratio	0.27%	0.28%	0.29%	0.30%	0.31%	0.28%	0.30%	[u] = [g] / [s].
Debt - Market Value Ratio	28.63%	28.94%	29.37%	27.47%	21.77%	25.79%	26.66%	[v] = [r] / [s].

Sources and Notes:

Bloomberg as of February 07, 2008.

Capital structure from 3rd Quarter, 2007 calculated using respective balance sheet information and 15-day average prices ending at period end.

The DCF Capital structure is calculated using 3rd Quarter, 2007 balance sheet information and a 15-trading day average closing price ending on 2/7/2008.

Prices are reported in Workpaper #1 to Table No. MJV-6.

[m] =

(1): 0 if [k] > 0.

(2): The absolute value of [k] if [k] < 0 and |[k]| < [l].

(3): [l] if [k] < 0 and |[k]| > [l].

[p]: Difference between fair value of Long-Term debt and carrying amount of Long-Term debt per company 10-K. Data for adjustment is from 2006 10-K. Companies do not report the fair value of Long-Term debt in quarterly reports, so end-of-year 2006 data is used instead.

Table No. MJV-3
Market Value of the Water Sample
Panel E: Middlesex Water Co
(\$MM)

	DCF Capital Structure	3rd Quarter, 2007	Year End, 2006	Year End, 2005	Year End, 2004	Year End, 2003	Year End, 2002	Notes
MARKET VALUE OF COMMON EQUITY								
Book Value, Common Shareholder's Equity	\$133	\$133	\$129	\$100	\$95	\$80	\$77	[a]
Shares Outstanding (in millions) - Common	13	13	13	12	11	11	10	[b]
Price per Share - Common	\$18.32	\$19.01	\$18.64	\$18.08	\$19.44	\$20.19	\$16.09	[c]
Market Value of Common Equity	\$242	\$251	\$245	\$209	\$221	\$214	\$167	[d] = [b] x [c].
Market to Book Value of Common Equity	1.83	1.89	1.90	2.10	2.32	2.68	2.18	[e] = [d] / [a].
MARKET VALUE OF PREFERRED EQUITY								
Book Value of Preferred Equity	\$4	\$4	\$4	\$4	\$4	\$4	\$4	[f]
Market Value of Preferred Equity	\$4	\$4	\$4	\$4	\$4	\$4	\$4	[g] = [f].
MARKET VALUE OF DEBT								
Current Assets	\$23	\$23	\$21	\$17	\$16	\$18	\$20	[h]
Current Liabilities	\$27	\$27	\$18	\$21	\$28	\$28	\$30	[i]
Current Portion of Long-Term Debt	\$3	\$3	\$3	\$2	\$1	\$1	\$1	[j]
Net Working Capital	(\$1)	(\$1)	\$5	(\$3)	(\$11)	(\$8)	(\$9)	[k] = [h] - ([i] - [j]).
Notes Payable (Short-Term Debt)	\$7	\$7	\$0	\$4	\$11	\$13	\$18	[l]
Adjusted Short-Term Debt	\$1	\$1	\$0	\$3	\$11	\$8	\$9	[m] = See Sources and Notes.
Long-Term Debt	\$128	\$128	\$131	\$128	\$115	\$97	\$87	[n]
Book Value of Long-Term Debt	\$132	\$132	\$133	\$133	\$127	\$107	\$97	[o] = [n] + [j] + [m].
Adjustment to Book Value of Long-Term Debt	\$2	\$2	\$2	\$3	\$3	\$3	\$2	[p] = See Sources and Notes.
Market Value of Long-Term Debt	\$134	\$134	\$135	\$135	\$130	\$110	\$99	[q] = [p] + [o].
Market Value of Debt	\$134	\$134	\$135	\$135	\$130	\$110	\$99	[r] = [q].
MARKET VALUE OF FIRM								
	\$380	\$389	\$385	\$349	\$355	\$328	\$270	[s] = [d] + [g] + [r].
DEBT AND EQUITY TO MARKET VALUE RATIOS								
Common Equity - Market Value Ratio	63.66%	64.51%	63.81%	60.05%	62.19%	65.24%	61.74%	[t] = [d] / [s].
Preferred Equity - Market Value Ratio	1.04%	1.02%	1.03%	1.13%	1.14%	1.24%	1.51%	[u] = [g] / [s].
Debt - Market Value Ratio	35.30%	34.47%	35.16%	38.82%	36.67%	33.53%	36.76%	[v] = [r] / [s].

Sources and Notes:

Bloomberg as of February 07, 2008.

Capital structure from 3rd Quarter, 2007 calculated using respective balance sheet information and 15-day average prices ending at period end.

The DCF Capital structure is calculated using 3rd Quarter, 2007 balance sheet information and a 15-trading day average closing price ending on 2/7/2008.

Prices are reported in Workpaper #1 to Table No. MJV-6.

[m] =

(1): 0 if [k] > 0.

(2): The absolute value of [k] if [k] < 0 and |[k]| < [l].

(3): [l] if [k] < 0 and |[k]| > [l].

[p]: Difference between fair value of Long-Term debt and carrying amount of Long-Term debt per company 10-K. Data for adjustment is from 2006 10-K. Companies do not report the fair value of Long-Term debt in quarterly reports, so end-of-year 2006 data is used instead.

Table No. MJV-3
Market Value of the Water Sample
Panel F: SJW Corp
(\$MM)

	DCF Capital Structure	3rd Quarter, 2007	Year End, 2006	Year End, 2005	Year End, 2004	Year End, 2003	Year End, 2002	Notes
MARKET VALUE OF COMMON EQUITY								
Book Value, Common Shareholder's Equity	\$237	\$237	\$228	\$196	\$185	\$166	\$153	[a]
Shares Outstanding (in millions) - Common	18	18	18	18	18	18	18	[b]
Price per Share - Common	\$30.06	\$33.44	\$36.49	\$24.74	\$18.62	\$14.63	\$13.18	[c]
Market Value of Common Equity	\$552	\$614	\$667	\$452	\$340	\$267	\$241	[d] = [b] x [c].
Market to Book Value of Common Equity	2.33	2.59	2.92	2.31	1.84	1.61	1.57	[e] = [d] / [a].
MARKET VALUE OF PREFERRED EQUITY								
Book Value of Preferred Equity	\$0	\$0	\$0	\$0	\$0	\$0	\$0	[f]
Market Value of Preferred Equity	\$0	\$0	\$0	\$0	\$0	\$0	\$0	[g] = [f].
MARKET VALUE OF DEBT								
Current Assets	\$39	\$39	\$59	\$32	\$28	\$27	\$19	[h]
Current Liabilities	\$41	\$41	\$37	\$21	\$15	\$15	\$24	[i]
Current Portion of Long-Term Debt	\$1	\$1	\$0	\$0	\$0	\$0	\$0	[j]
Net Working Capital	(\$2)	(\$2)	\$23	\$11	\$13	\$12	(\$5)	[k] = [h] - ([i] - [j]).
Notes Payable (Short-Term Debt)	\$8	\$8	\$16	\$0	\$0	\$0	\$11	[l]
Adjusted Short-Term Debt	\$2	\$2	\$0	\$0	\$0	\$0	\$5	[m] = See Sources and Notes.
Long-Term Debt	\$196	\$196	\$164	\$145	\$144	\$140	\$110	[n]
Book Value of Long-Term Debt	\$199	\$199	\$164	\$146	\$144	\$140	\$115	[o] = [n] + [j] + [m].
Adjustment to Book Value of Long-Term Debt	(\$23)	(\$23)	(\$23)	\$22	\$25	\$23	\$9	[p] = See Sources and Notes.
Market Value of Long-Term Debt	\$176	\$176	\$141	\$168	\$169	\$163	\$124	[q] = [p] + [o].
Market Value of Debt	\$176	\$176	\$141	\$168	\$169	\$163	\$124	[r] = [q].
MARKET VALUE OF FIRM								
	\$728	\$790	\$808	\$620	\$509	\$430	\$365	[s] = [d] + [g] + [r].
DEBT AND EQUITY TO MARKET VALUE RATIOS								
Common Equity - Market Value Ratio	75.84%	77.74%	82.55%	72.94%	66.77%	62.15%	66.01%	[t] = [d] / [s].
Preferred Equity - Market Value Ratio	-	-	-	-	-	-	-	[u] = [g] / [s].
Debt - Market Value Ratio	24.16%	22.26%	17.45%	27.06%	33.23%	37.85%	33.99%	[v] = [r] / [s].

Sources and Notes:

Bloomberg as of February 07, 2008.

Capital structure from 3rd Quarter, 2007 calculated using respective balance sheet information and 15-day average prices ending at period end.

The DCF Capital structure is calculated using 3rd Quarter, 2007 balance sheet information and a 15-trading day average closing price ending on 2/7/2008.

Prices are reported in Workpaper #1 to Table No. MJV-6.

[m] =

(1): 0 if [k] > 0.

(2): The absolute value of [k] if [k] < 0 and |[k]| < [l].

(3): [l] if [k] < 0 and |[k]| > [l].

[p]: Difference between fair value of Long-Term debt and carrying amount of Long-Term debt per company 10-K. Data for adjustment is from 2006 10-K. Companies do not report the fair value of Long-Term debt in quarterly reports, so end-of-year 2006 data is used instead.

Table No. MJV-3
Market Value of the Water Sample
Panel G: Southwest Water Co
(\$MM)

	DCF Capital Structure	3rd Quarter, 2007	Year End, 2006	Year End, 2005	Year End, 2004	Year End, 2003	Year End, 2002	Notes
MARKET VALUE OF COMMON EQUITY								
Book Value, Common Shareholder's Equity	\$172	\$172	\$166	\$145	\$126	\$79	\$61	[a]
Shares Outstanding (in millions) - Common	24	24	24	22	21	16	14	[b]
Price per Share - Common	\$11.32	\$13.06	\$13.31	\$14.19	\$12.12	\$10.87	\$8.98	[c]
Market Value of Common Equity	\$274	\$316	\$317	\$315	\$259	\$176	\$129	[d] = [b] x [c].
Market to Book Value of Common Equity	1.59	1.84	1.91	2.17	2.06	2.22	2.10	[e] = [d] / [a].
MARKET VALUE OF PREFERRED EQUITY								
Book Value of Preferred Equity	\$0	\$0	\$0	\$0	\$0	\$1	\$1	[f]
Market Value of Preferred Equity	\$0	\$0	\$0	\$0	\$0	\$1	\$1	[g] = [f].
MARKET VALUE OF DEBT								
Current Assets	\$42	\$42	\$48	\$48	\$58	\$35	\$30	[h]
Current Liabilities	\$34	\$34	\$36	\$41	\$36	\$31	\$32	[i]
Current Portion of Long-Term Debt	\$1	\$1	\$1	\$9	\$3	\$3	\$2	[j]
Net Working Capital	\$9	\$9	\$14	\$17	\$25	\$7	\$0	[k] = [h] - ([i] - [j]).
Notes Payable (Short-Term Debt)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	[l]
Adjusted Short-Term Debt	\$0	\$0	\$0	\$0	\$0	\$0	\$0	[m] = See Sources and Notes.
Long-Term Debt	\$143	\$143	\$129	\$118	\$116	\$73	\$81	[n]
Book Value of Long-Term Debt	\$145	\$145	\$130	\$127	\$119	\$76	\$83	[o] = [n] + [j] + [m].
Adjustment to Book Value of Long-Term Debt	\$0	\$0	\$0	\$2	\$0	\$0	\$0	[p] = See Sources and Notes.
Market Value of Long-Term Debt	\$145	\$145	\$130	\$129	\$119	\$76	\$83	[q] = [p] + [o].
Market Value of Debt	\$145	\$145	\$130	\$129	\$119	\$76	\$83	[r] = [q].
MARKET VALUE OF FIRM								
	\$419	\$461	\$447	\$444	\$378	\$252	\$212	[s] = [d] + [g] + [r].
DEBT AND EQUITY TO MARKET VALUE RATIOS								
Common Equity - Market Value Ratio	65.37%	68.54%	70.80%	70.93%	68.54%	69.72%	60.69%	[t] = [d] / [s].
Preferred Equity - Market Value Ratio	0.11%	0.10%	0.10%	0.10%	0.12%	0.20%	0.24%	[u] = [g] / [s].
Debt - Market Value Ratio	34.52%	31.36%	29.09%	28.97%	31.34%	30.08%	39.07%	[v] = [r] / [s].

Sources and Notes:

Bloomberg as of February 07, 2008.

Capital structure from 3rd Quarter, 2007 calculated using respective balance sheet information and 15-day average prices ending at period end.

The DCF Capital structure is calculated using 3rd Quarter, 2007 balance sheet information and a 15-trading day average closing price ending on 2/7/2008.

Prices are reported in Workpaper #1 to Table No. MJV-6.

[m] =

(1): 0 if [k] > 0.

(2): The absolute value of [k] if [k] < 0 and |[k]| < [l].

(3): [l] if [k] < 0 and |[k]| > [l].

[p]: Difference between fair value of Long-Term debt and carrying amount of Long-Term debt per company 10-K. Data for adjustment is from 2006 10-K. Companies do not report the fair value of Long-Term debt in quarterly reports, so end-of-year 2006 data is used instead.

Table No. MJV-3
Market Value of the Water Sample
Panel H: York Water Co
(\$MM)

	DCF Capital Structure	3rd Quarter, 2007	Year End, 2006	Year End, 2005	Year End, 2004	Year End, 2003	Year End, 2002	Notes
MARKET VALUE OF COMMON EQUITY								
Book Value, Common Shareholder's Equity	\$67	\$67	\$65	\$50	\$48	\$39	\$37	[a]
Shares Outstanding (in millions) - Common	11	11	11	16	10	10	10	[b]
Price per Share - Common	\$15.39	\$17.01	\$17.99	\$17.02	\$13.00	\$12.20	\$10.79	[c]
Market Value of Common Equity	\$173	\$191	\$202	\$265	\$134	\$117	\$103	[d] = [b] x [c].
Market to Book Value of Common Equity	2.58	2.86	3.08	5.27	2.80	3.01	2.77	[e] = [d] / [a].
MARKET VALUE OF PREFERRED EQUITY								
Book Value of Preferred Equity	\$0	\$0	\$0	\$0	\$0	\$0	\$0	[f]
Market Value of Preferred Equity	\$0	\$0	\$0	\$0	\$0	\$0	\$0	[g] = [f].
MARKET VALUE OF DEBT								
Current Assets	\$7	\$7	\$7	\$5	\$5	\$4	\$4	[h]
Current Liabilities	\$13	\$13	\$6	\$25	\$21	\$14	\$5	[i]
Current Portion of Long-Term Debt	\$1	\$1	\$1	\$12	\$16	\$3	\$0	[j]
Net Working Capital	(\$5)	(\$5)	\$2	(\$7)	\$0	(\$7)	(\$2)	[k] = [h] - ([i] - [j]).
Notes Payable (Short-Term Debt)	\$5	\$5	\$0	\$7	\$0	\$7	\$3	[l]
Adjusted Short-Term Debt	\$5	\$5	\$0	\$7	\$0	\$7	\$2	[m] = See Sources and Notes.
Long-Term Debt	\$61	\$61	\$61	\$40	\$36	\$30	\$33	[n]
Book Value of Long-Term Debt	\$67	\$67	\$62	\$59	\$52	\$40	\$34	[o] = [n] + [j] + [m].
Adjustment to Book Value of Long-Term Debt	\$8	\$8	\$8	\$10	\$12	\$12	\$9	[p] = See Sources and Notes.
Market Value of Long-Term Debt	\$75	\$75	\$70	\$69	\$64	\$52	\$44	[q] = [p] + [o].
Market Value of Debt	\$75	\$75	\$70	\$69	\$64	\$52	\$44	[r] = [q].
MARKET VALUE OF FIRM								
	\$248	\$266	\$272	\$335	\$198	\$170	\$147	[s] = [d] + [g] + [r].
DEBT AND EQUITY TO MARKET VALUE RATIOS								
Common Equity - Market Value Ratio	69.81%	71.88%	74.22%	79.30%	67.73%	69.25%	70.19%	[t] = [d] / [s].
Preferred Equity - Market Value Ratio	-	-	-	-	-	-	-	[u] = [g] / [s].
Debt - Market Value Ratio	30.19%	28.12%	25.78%	20.70%	32.27%	30.75%	29.81%	[v] = [r] / [s].

Sources and Notes:

Bloomberg as of February 07, 2008.

Capital structure from 3rd Quarter, 2007 calculated using respective balance sheet information and 15-day average prices ending at period end.

The DCF Capital structure is calculated using 3rd Quarter, 2007 balance sheet information and a 15-trading day average closing price ending on 2/7/2008.

Prices are reported in Workpaper #1 to Table No. MJV-6.

[m] =

(1): 0 if [k] > 0.

(2): The absolute value of [k] if [k] < 0 and |[k]| < [l].

(3): [l] if [k] < 0 and |[k]| > [l].

[p]: Difference between fair value of Long-Term debt and carrying amount of Long-Term debt per company 10-K. Data for adjustment is from 2006 10-K. Companies do not report the fair value of Long-Term debt in quarterly reports, so end-of-year 2006 data is used instead.

Table No. MJV-4
Water Sample
Capital Structure Summary

Company	DCF Capital Structure			5-Year Average Capital Structure		
	Common Equity - Value Ratio	Preferred Equity - Value Ratio	Debt - Value Ratio	Common Equity - Value Ratio	Preferred Equity - Value Ratio	Debt - Value Ratio
	[1]	[2]	[3]	[4]	[5]	[6]
American States Water Co	0.65	-	0.35	0.61	-	0.39
Aqua America Inc	0.68	-	0.32	0.72	0.00	0.28
California Water Service Group	0.69	0.00	0.30	0.68	0.00	0.32
Connecticut Water Service Inc	0.71	0.00	0.29	0.73	0.00	0.27
Middlesex Water Co	0.64	0.01	0.35	0.63	0.01	0.36
SJW Corp	0.76	-	0.24	0.72	-	0.28
Southwest Water Co	0.65	0.00	0.35	0.69	0.00	0.31
York Water Co	0.70	-	0.30	0.72	-	0.28
Average	0.69	0.00	0.31	0.69	0.00	0.31

Sources and Notes:

[1], [4]:Workpaper #1 to Table No. MJV-4.

[2], [5]:Workpaper #2 to Table No. MJV-4.

[3], [6]:Workpaper #3 to Table No. MJV-4.

Values in this table may not add up exactly to 1.0 because of rounding.

Workpaper #1 to Table No. MJV-4

Water Sample

Calculation of the Average Common Equity - Market Value Ratio

Company	DCF Capital Structure [1]	3rd Quarter, 2007 [2]	2006 [3]	2005 [4]	2004 [5]	2003 [6]	2002 [7]	5-Year Average [8]
American States Water Co	0.65	0.68	0.67	0.63	0.58	0.55	0.55	0.61
Aqua America Inc	0.68	0.72	0.74	0.77	0.71	0.70	0.64	0.72
California Water Service Group	0.69	0.72	0.72	0.71	0.69	0.61	0.51	0.68
Connecticut Water Service Inc	0.71	0.71	0.70	0.72	0.78	0.74	0.73	0.73
Middlesex Water Co	0.64	0.65	0.64	0.60	0.62	0.65	0.62	0.63
SJW Corp	0.76	0.78	0.83	0.73	0.67	0.62	0.66	0.72
Southwest Water Co	0.65	0.69	0.71	0.71	0.69	0.70	0.61	0.69
York Water Co	0.70	0.72	0.74	0.79	0.68	0.69	0.70	0.72

Sources and Notes:

[1] - [7]: Table No. MJV-3; Panels A - H, [t].

[8]: $\{([2] \times 0.75) + [3] + [4] + [5] + [6] + ([7] \times 0.25)\} / 5$.

Workpaper #2 to Table No. MJV-4

Water Sample

Calculation of the Average Preferred Equity - Market Value Ratio

Company	DCF Capital Structure [1]	3rd Quarter, 2007 [2]	2006 [3]	2005 [4]	2004 [5]	2003 [6]	2002 [7]	5-Year Average [8]
American States Water Co	-	-	-	-	-	-	-	-
Aqua America Inc	-	-	-	-	-	-	0.00	0.00
California Water Service Group	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Connecticut Water Service Inc	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Middlesex Water Co	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01
SJW Corp	-	-	-	-	-	-	-	-
Southwest Water Co	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
York Water Co	-	-	-	-	-	-	-	-

Sources and Notes:

[1] - [7]: Table No. MJV-3; Panels A - H, [u].

[8]: $\{([2] \times 0.75) + [3] + [4] + [5] + [6] + ([7] \times 0.25)\} / 5$.

Workpaper #3 to Table No. MJV-4

Water Sample

Calculation of the Average Debt - Market Value Ratio

Company	DCF Capital Structure [1]	3rd Quarter, 2007 [2]	2006 [3]	2005 [4]	2004 [5]	2003 [6]	2002 [7]	5-Year Average [8]
American States Water Co	0.35	0.32	0.33	0.37	0.42	0.45	0.45	0.39
Aqua America Inc	0.32	0.28	0.26	0.23	0.29	0.30	0.36	0.28
California Water Service Group	0.30	0.27	0.28	0.29	0.31	0.39	0.48	0.32
Connecticut Water Service Inc	0.29	0.29	0.29	0.27	0.22	0.26	0.27	0.27
Middlesex Water Co	0.35	0.34	0.35	0.39	0.37	0.34	0.37	0.36
SJW Corp	0.24	0.22	0.17	0.27	0.33	0.38	0.34	0.28
Southwest Water Co	0.35	0.31	0.29	0.29	0.31	0.30	0.39	0.31
York Water Co	0.30	0.28	0.26	0.21	0.32	0.31	0.30	0.28

Sources and Notes:

[1] - [7]: Table No. MJV-3; Panels A - H, [v].

[8]: $\{([2] \times 0.75) + [3] + [4] + [5] + [6] + ([7] \times 0.25)\} / 5$.

Table No. MJV-5

Water Sample

Combined Bloomberg Estimated and Value Line Estimated Growth Rates

Company	Bloomberg Estimate		Value Line			Combined BEst and Value Line Growth Rate
	BEST Long-Term Growth Rate	Number of Estimates	EPS Year 2007 Estimate	EPS Year 2010 - 2012 Estimate	Annualized Growth Rate	
	[1]	[2]	[3]	[4]	[5]	
American States Water Co	5.0%	2	\$1.63	\$2.20	7.8%	5.9%
Aqua America Inc	10.5%	6	\$0.75	\$1.05	8.8%	10.3%
California Water Service Group	7.8%	4	\$1.43	\$2.20	11.4%	8.5%
Connecticut Water Service Inc	1.1%	1	\$1.10	n/a	n/a	1.1%
Middlesex Water Co	0.8%	2	\$0.84	n/a	n/a	0.8%
SJW Corp	10.0%	1	\$1.09	n/a	n/a	10.0%
Southwest Water Co	9.7%	3	\$0.30	\$0.70	23.6%	13.1%
York Water Co	0.6%	2	\$0.57	n/a	n/a	0.6%

Sources and Notes:

[1] - [2]: Bloomberg as of February 07, 2008.

[3] - [4]: Most recent Value Line Standard Edition, dated January 25, 2008.

[5]: $([4] / [3])^{(1/4)} - 1$.[6]: $([1] \times [2] + [5]) / ([2] + 1)$.

Table No. MJV-6
DCF Cost of Equity of the Water Sample
Panel A: Simple DCF Method (Quarterly)

Company	Stock Price [1]	Most Recent Dividend [2]	Quarterly Dividend Yield [3]	Combined BEst and Value Line Long- Term Growth Rate [4]	Quarterly Growth Rate [5]	DCF Cost of Equity [6]
American States Water Co	\$34.54	\$0.25	0.72%	5.9%	1.5%	9.0%
Aqua America Inc	\$19.70	\$0.13	0.63%	10.3%	2.5%	13.1%
California Water Service Group	\$35.09	\$0.29	0.83%	8.5%	2.1%	12.1%
Connecticut Water Service Inc	\$24.03	\$0.22	0.91%	1.1%	0.3%	4.8%
Middlesex Water Co	\$18.32	\$0.18	0.96%	0.8%	0.2%	4.7%
SJW Corp	\$30.06	\$0.16	0.54%	10.0%	2.4%	12.4%
Southwest Water Co	\$11.32	\$0.06	0.53%	13.1%	3.1%	15.6%
York Water Co	\$15.39	\$0.12	0.79%	0.6%	0.1%	3.8%

Sources and Notes:

[1]: Workpaper #1 to Table No. MJV-6.

[2]: Workpaper #2 to Table No. MJV-6.

[3]: [2] / [1].

[4]: Table No. MJV-5, [6].

[5]: $\{(1 + [4])^{(1/4)}\} - 1$.

[6]: $\{((([2] / [1]) \times (1 + [5]) + [5] + 1)^4) - 1\}$.

Table No. MJV-6

DCF Cost of Equity of the Water Sample

Panel B: Multi-Stage DCF (Using Blue Chip Long-Term GDP Growth Forecast as the Perpetual Rate)

Company	Stock Price [1]	Most Recent Dividend [2]	Combined BEst and <i>Value Line</i> Long-Term Growth		Growth Rate: FY 2013 [4]	Growth Rate: FY 2014 [5]	Growth Rate: FY 2015 [6]	Growth Rate: FY 2016 [7]	Growth Rate: FY 2017 [8]	GDP Long- Term Growth Rate [9]	DCF Cost of Equity [10]
			Rate [3]	Rate [3]							
American States Water Co	\$34.54	\$0.25	5.9%		5.8%	5.6%	5.4%	5.2%	5.1%	4.9%	8.1%
Aqua America Inc	\$19.70	\$0.13	10.3%		9.4%	8.5%	7.6%	6.7%	5.8%	4.9%	8.6%
California Water Service Group	\$35.09	\$0.29	8.5%		7.9%	7.3%	6.7%	6.1%	5.5%	4.9%	9.2%
Connecticut Water Service Inc	\$24.03	\$0.22	1.1%		1.7%	2.4%	3.0%	3.6%	4.3%	4.9%	7.8%
Middlesex Water Co	\$18.32	\$0.18	0.8%		1.5%	2.2%	2.9%	3.5%	4.2%	4.9%	7.9%
SJW Corp	\$30.06	\$0.16	10.0%		9.2%	8.3%	7.5%	6.6%	5.8%	4.9%	7.9%
Southwest Water Co	\$11.32	\$0.06	13.1%		11.8%	10.4%	9.0%	7.6%	6.3%	4.9%	8.5%
York Water Co	\$15.39	\$0.12	0.6%		1.3%	2.0%	2.7%	3.5%	4.2%	4.9%	7.3%

Sources and Notes:

[1]: Workpaper #1 to Table No. MJV-6.

[2]: Workpaper #2 to Table No. MJV-6.

[3]: Table No. MJV-5, [6].

[4]: [3] - {[3] - [9]}/ 6}.

[5]: [4] - {[3] - [9]}/ 6}.

[6]: [5] - {[3] - [9]}/ 6}.

[7]: [6] - {[3] - [9]}/ 6}.

[8]: [7] - {[3] - [9]}/ 6}.

[9]: Blue Chip Economic Indicators published October 10, 2007. This number is assumed to be the perpetual growth rate. (See Appendix D).

[10]: Workpaper #3 to Table No. MJV-6.

Workpaper #1 to Table No. MJV-6

Water Sample

Common Stock Prices from January 17, 2008 to February 7, 2008

Company	2/7/2008	2/6/2008	2/5/2008	2/4/2008	2/1/2008	1/31/2008	1/30/2008	1/29/2008	1/28/2008	1/25/2008	1/24/2008	1/23/2008	1/22/2008	1/18/2008	1/17/2008	Average
American States Water Co	\$33.99	\$34.34	\$34.12	\$35.27	\$34.67	\$34.52	\$33.02	\$34.02	\$34.11	\$34.00	\$34.07	\$34.35	\$34.25	\$35.95	\$37.35	\$34.54
Aqua America Inc	\$20.03	\$19.92	\$19.85	\$20.55	\$20.24	\$19.92	\$19.52	\$19.75	\$19.19	\$18.91	\$19.17	\$19.23	\$19.02	\$20.00	\$20.17	\$19.70
California Water Service Group	\$35.37	\$34.86	\$34.68	\$35.75	\$35.35	\$34.74	\$33.58	\$35.00	\$35.23	\$34.60	\$35.15	\$36.02	\$34.00	\$35.96	\$36.09	\$35.09
Connecticut Water Service Inc	\$23.88	\$24.06	\$24.39	\$24.20	\$23.91	\$23.88	\$24.19	\$24.31	\$24.14	\$23.91	\$23.92	\$23.42	\$23.50	\$24.34	\$24.37	\$24.03
Middlesex Water Co	\$18.25	\$18.18	\$18.01	\$18.18	\$18.15	\$18.47	\$18.27	\$18.59	\$18.44	\$18.62	\$18.66	\$17.80	\$17.86	\$18.75	\$18.58	\$18.32
SJW Corp	\$30.75	\$29.71	\$29.23	\$29.92	\$31.21	\$30.23	\$28.80	\$30.04	\$30.72	\$29.00	\$29.75	\$31.04	\$29.96	\$29.65	\$30.88	\$30.06
Southwest Water Co	\$11.16	\$11.02	\$11.00	\$11.25	\$11.38	\$11.44	\$10.87	\$11.26	\$11.49	\$11.10	\$11.24	\$11.83	\$11.04	\$11.73	\$11.95	\$11.32
York Water Co	\$15.42	\$14.94	\$15.30	\$15.31	\$15.59	\$15.42	\$15.29	\$15.50	\$15.33	\$15.35	\$15.30	\$15.15	\$15.27	\$15.65	\$15.97	\$15.39

Sources and Notes:

Bloomberg as of February 07, 2008.

The prices chosen are the daily closing prices from Bloomberg starting from the most recent prices available in Bloomberg as of February 07, 2008 and ending fifteen trading days before.

Workpaper #2 to Table No. MJV-6

Water Sample

Most Recent Dividend Payment

Company	Most Recent Dividend
American States Water Co	\$0.25
Aqua America Inc	\$0.13
California Water Service Group	\$0.29
Connecticut Water Service Inc	\$0.22
Middlesex Water Co	\$0.18
SJW Corp	\$0.16
Southwest Water Co	\$0.06
York Water Co	\$0.12

Sources and Notes:

Bloomberg as of February 07, 2008.

Workpaper #3 to Table No. MJV-6

DCF Cost of Equity of the Water Sample

Multi - Stage DCF (using Blue Chip Economic Indicator Long-Term GDP Growth Forecast as the Perpetual Growth Rate)

		American States Water Co	Aqua America Inc	California Water Service Group	Connecticut Water Service Inc	Middlesex Water Co	SJW Corp	Southwest Water Co	York Water Co
Year	Company								
	Current Stock Price	(\$34.54)	(\$19.70)	(\$35.09)	(\$24.03)	(\$18.32)	(\$30.06)	(\$11.32)	(\$15.39)
	Current Dividend	\$0.25	\$0.13	\$0.29	\$0.22	\$0.18	\$0.16	\$0.06	\$0.12
YEAR 2008	Dividend Q1 Estimate	\$0.25	\$0.13	\$0.30	\$0.22	\$0.18	\$0.16	\$0.06	\$0.12
YEAR 2008	Dividend Q2 Estimate	\$0.26	\$0.13	\$0.30	\$0.22	\$0.18	\$0.17	\$0.06	\$0.12
YEAR 2008	Dividend Q3 Estimate	\$0.26	\$0.13	\$0.31	\$0.22	\$0.18	\$0.17	\$0.06	\$0.12
YEAR 2008	Dividend Q4 Estimate	\$0.26	\$0.14	\$0.31	\$0.22	\$0.18	\$0.17	\$0.07	\$0.12
YEAR 2009	Dividend Q1 Estimate	\$0.27	\$0.14	\$0.32	\$0.22	\$0.18	\$0.18	\$0.07	\$0.12
YEAR 2009	Dividend Q2 Estimate	\$0.27	\$0.14	\$0.33	\$0.22	\$0.18	\$0.18	\$0.07	\$0.12
YEAR 2009	Dividend Q3 Estimate	\$0.28	\$0.15	\$0.33	\$0.22	\$0.18	\$0.19	\$0.07	\$0.12
YEAR 2009	Dividend Q4 Estimate	\$0.28	\$0.15	\$0.34	\$0.22	\$0.18	\$0.19	\$0.07	\$0.12
YEAR 2010	Dividend Q1 Estimate	\$0.28	\$0.16	\$0.35	\$0.22	\$0.18	\$0.20	\$0.08	\$0.12
YEAR 2010	Dividend Q2 Estimate	\$0.29	\$0.16	\$0.36	\$0.22	\$0.18	\$0.20	\$0.08	\$0.12
YEAR 2010	Dividend Q3 Estimate	\$0.29	\$0.16	\$0.36	\$0.22	\$0.18	\$0.20	\$0.08	\$0.12
YEAR 2010	Dividend Q4 Estimate	\$0.30	\$0.17	\$0.37	\$0.22	\$0.18	\$0.21	\$0.08	\$0.12
YEAR 2011	Dividend Q1 Estimate	\$0.30	\$0.17	\$0.38	\$0.23	\$0.18	\$0.21	\$0.09	\$0.12
YEAR 2011	Dividend Q2 Estimate	\$0.31	\$0.18	\$0.39	\$0.23	\$0.18	\$0.22	\$0.09	\$0.12
YEAR 2011	Dividend Q3 Estimate	\$0.31	\$0.18	\$0.39	\$0.23	\$0.18	\$0.23	\$0.09	\$0.12
YEAR 2011	Dividend Q4 Estimate	\$0.31	\$0.18	\$0.40	\$0.23	\$0.18	\$0.23	\$0.10	\$0.12
YEAR 2012	Dividend Q1 Estimate	\$0.32	\$0.19	\$0.41	\$0.23	\$0.18	\$0.24	\$0.10	\$0.12
YEAR 2012	Dividend Q2 Estimate	\$0.32	\$0.19	\$0.42	\$0.23	\$0.18	\$0.24	\$0.10	\$0.12
YEAR 2012	Dividend Q3 Estimate	\$0.33	\$0.20	\$0.43	\$0.23	\$0.18	\$0.25	\$0.10	\$0.12
YEAR 2012	Dividend Q4 Estimate	\$0.33	\$0.20	\$0.44	\$0.23	\$0.18	\$0.25	\$0.11	\$0.12
YEAR 2013	Dividend Q1 Estimate	\$0.34	\$0.21	\$0.44	\$0.23	\$0.18	\$0.26	\$0.11	\$0.12
YEAR 2013	Dividend Q2 Estimate	\$0.34	\$0.21	\$0.45	\$0.23	\$0.18	\$0.27	\$0.11	\$0.12
YEAR 2013	Dividend Q3 Estimate	\$0.35	\$0.22	\$0.46	\$0.23	\$0.18	\$0.27	\$0.12	\$0.13
YEAR 2013	Dividend Q4 Estimate	\$0.35	\$0.22	\$0.47	\$0.23	\$0.18	\$0.28	\$0.12	\$0.13
YEAR 2014	Dividend Q1 Estimate	\$0.36	\$0.23	\$0.48	\$0.23	\$0.19	\$0.28	\$0.12	\$0.13
YEAR 2014	Dividend Q2 Estimate	\$0.36	\$0.23	\$0.49	\$0.24	\$0.19	\$0.29	\$0.13	\$0.13
YEAR 2014	Dividend Q3 Estimate	\$0.37	\$0.24	\$0.50	\$0.24	\$0.19	\$0.29	\$0.13	\$0.13
YEAR 2014	Dividend Q4 Estimate	\$0.37	\$0.24	\$0.51	\$0.24	\$0.19	\$0.30	\$0.13	\$0.13
YEAR 2015	Dividend Q1 Estimate	\$0.38	\$0.25	\$0.51	\$0.24	\$0.19	\$0.31	\$0.14	\$0.13
YEAR 2015	Dividend Q2 Estimate	\$0.38	\$0.25	\$0.52	\$0.24	\$0.19	\$0.31	\$0.14	\$0.13
YEAR 2015	Dividend Q3 Estimate	\$0.39	\$0.26	\$0.53	\$0.24	\$0.19	\$0.32	\$0.14	\$0.13
YEAR 2015	Dividend Q4 Estimate	\$0.39	\$0.26	\$0.54	\$0.24	\$0.19	\$0.32	\$0.15	\$0.13
YEAR 2016	Dividend Q1 Estimate	\$0.40	\$0.27	\$0.55	\$0.25	\$0.20	\$0.33	\$0.15	\$0.13
YEAR 2016	Dividend Q2 Estimate	\$0.40	\$0.27	\$0.56	\$0.25	\$0.20	\$0.34	\$0.15	\$0.13
YEAR 2016	Dividend Q3 Estimate	\$0.41	\$0.28	\$0.57	\$0.25	\$0.20	\$0.34	\$0.16	\$0.13
YEAR 2016	Dividend Q4 Estimate	\$0.41	\$0.28	\$0.57	\$0.25	\$0.20	\$0.35	\$0.16	\$0.14
YEAR 2017	Dividend Q1 Estimate	\$0.42	\$0.28	\$0.58	\$0.26	\$0.20	\$0.35	\$0.16	\$0.14
YEAR 2017	Dividend Q2 Estimate	\$0.42	\$0.29	\$0.59	\$0.26	\$0.20	\$0.36	\$0.16	\$0.14
YEAR 2017	Dividend Q3 Estimate	\$0.43	\$0.29	\$0.60	\$0.26	\$0.21	\$0.36	\$0.17	\$0.14
YEAR 2017	Dividend Q4 Estimate	\$0.43	\$0.30	\$0.61	\$0.26	\$0.21	\$0.37	\$0.17	\$0.14
YEAR 2018 Q1	Year 10 Stock Price	\$57.69	\$34.15	\$60.28	\$38.52	\$29.27	\$51.61	\$19.98	\$24.68
	Trial COE: Quarterly Rate	2.0%	2.1%	2.2%	1.9%	1.9%	1.9%	2.1%	1.8%
	Trial COE: Annual Rate	8.1%	8.6%	9.2%	7.8%	7.9%	7.9%	8.5%	7.3%
	Cost of Equity	8.1%	8.6%	9.2%	7.8%	7.9%	7.9%	8.5%	7.3%
	(Trial COE - COE) x 100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Sources and Notes:

All Growth Rate Estimates: Table No. MJV-6; Panel B.

Stock Prices and Dividends are from Bloomberg as of February 07, 2008.

1. See Workpaper #1 to Table No. MJV-6 for the average closing stock price obtained from Bloomberg.
2. See Workpaper #2 to Table No. MJV-6 for the for the quarterly dividend obtained from Bloomberg.
3. The Blue Chip Economic Indicator Long-Term GDP Growth Rate is used to calculate the Year 10 Stock Price.

$$\{((\text{the Dividend Year 2017 Q3 Estimate}) \times ((1 + \text{the Perpetual Growth Rate}) ^ (1/2))) /$$

$$\{(\text{Trial COE} - \text{Quarterly Rate}) - ((1 + \text{the Perpetual Growth Rate}) ^ (1/4) - 1)\}.$$

Table No. MJV-7
Overall Cost of Capital of the Water Sample
Panel A: Simple DCF Method (Quarterly)

Company		3rd Quarter, 2007 Bond Rating [1]	3rd Quarter, 2007 Preferred Equity Rating [2]	DCF Cost of Equity [3]	DCF Common Equity to Market Value Ratio [4]	Cost of Preferred Equity [5]	DCF Preferred Equity to Market Value Ratio [6]	DCF Cost of Debt [7]	DCF Debt to Market Value Ratio [8]	Tennessee- American Water's Income Tax Rate [9]	Overall After- Tax Cost of Capital [10]
American States Water Co	*	A	-	9.0%	0.65	-	-	6.1%	0.35	39.2%	7.1%
Aqua America Inc	*	A	-	13.1%	0.68	-	-	6.1%	0.32	39.2%	10.1%
California Water Service Group	*	A	A	12.1%	0.69	6.2%	0.00	6.1%	0.30	39.2%	9.5%
Connecticut Water Service Inc	*	A	A	4.8%	0.71	6.2%	0.00	6.1%	0.29	39.2%	4.5%
Middlesex Water Co	*	A	A	4.7%	0.64	6.2%	0.01	6.1%	0.35	39.2%	4.4%
SJW Corp	*	A	-	12.4%	0.76	-	-	6.1%	0.24	39.2%	10.3%
Southwest Water Co		A	A	15.6%	0.65	6.2%	0.00	6.1%	0.35	39.2%	11.5%
York Water Co	*	A	-	3.8%	0.70	-	-	6.1%	0.30	39.2%	3.7%
Average [a]				12.4%	0.69	6.2%	0.00	6.1%	0.31	39.2%	9.7%
Average [b]				11.6%	0.69	6.2%	0.00	6.1%	0.30	39.2%	9.3%

Sources and Notes:

[1]: Bloomberg as of February 07, 2008.

[2]: Preferred ratings were assumed equal to debt ratings.

[3]: Table No. MJV-6; Panel A, [5].

[4]: Table No. MJV-4, [1].

[5]: Workpaper #2 to Table No. MJV-11, Panel B, [1].

[6]: Table No. MJV-4, [2].

[7]: Workpaper #2 to Table No. MJV-11, Panel A, [1].

[8]: Table No. MJV-4, [3].

[9]: Provided by Tennessee-American Water.

[10]: $([3] \times [4]) + ([5] \times [6]) + ([7] \times [8] \times (1 - [9]))$.

[a]: Average for all companies whose cost of equity exceeds their cost of debt by at least 25 basis points.

[b]: Average for companies in sample [a] and with an asterisk.

* Represents companies that have revenues from regulated activities greater than 85%.

Table No. MJV-7

Overall Cost of Capital of the Water Sample

Panel B: Multi-Stage DCF (Using Blue Chip Long-Term GDP Growth Forecast as the Perpetual Rate)

Company		3rd Quarter, 2007 Bond Rating [1]	3rd Quarter, 2007 Preferred Equity Rating [2]	DCF Cost of Equity [3]	DCF Common Equity to Market Value Ratio [4]	Cost of Preferred Equity [5]	DCF Preferred Equity to Market Value Ratio [6]	DCF Cost of Debt [7]	DCF Debt to Market Value Ratio [8]	Tennessee- American Water's Income Tax Rate [9]	Overall After- Tax Cost of Capital [10]
American States Water Co	*	A	-	8.1%	0.65	-	-	6.1%	0.35	39.2%	6.5%
Aqua America Inc	*	A	-	8.6%	0.68	-	-	6.1%	0.32	39.2%	7.0%
California Water Service Group	*	A	A	9.2%	0.69	6.2%	0.00	6.1%	0.30	39.2%	7.5%
Connecticut Water Service Inc	*	A	A	7.8%	0.71	6.2%	0.00	6.1%	0.29	39.2%	6.6%
Middlesex Water Co	*	A	A	7.9%	0.64	6.2%	0.01	6.1%	0.35	39.2%	6.4%
SJW Corp	*	A	-	7.9%	0.76	-	-	6.1%	0.24	39.2%	6.9%
Southwest Water Co		A	A	8.5%	0.65	6.2%	0.00	6.1%	0.35	39.2%	6.8%
York Water Co	*	A	-	7.3%	0.70	-	-	6.1%	0.30	39.2%	6.2%
Average [a]				8.2%	0.68	6.2%	0.00	6.1%	0.31	39.2%	6.8%
Average [b]				8.1%	0.69	6.2%	0.01	6.1%	0.31	39.2%	6.7%

Sources and Notes:

[1]: Bloomberg as of February 07, 2008.

[2]: Preferred ratings were assumed equal to debt ratings.

[3]: Table No. MJV-6; Panel B, [10].

[4]: Table No. MJV-4, [1].

[5]: Workpaper #2 to Table No. MJV-11, Panel B, [1].

[6]: Table No. MJV-4, [2].

[7]: Workpaper #2 to Table No. MJV-11, Panel A, [1].

[8]: Table No. MJV-4, [3].

[9]: Provided by Tennessee-American Water.

[10]: $([3] \times [4]) + ([5] \times [6]) + \{[7] \times [8] \times (1 - [9])\}$.

[a]: Average for all companies whose cost of equity exceeds their cost of debt by at least 25 basis points.

[b]: Average for companies in sample [a] and with an asterisk.

* Represents companies that have revenues from regulated activities greater than 85%.

Table No. MJV-8
DCF Cost of Equity at Tennessee-American Water Capital Structure
Water Sample

	Overall Cost of Capital [1]	Tennessee- American Water's Regulatory % Debt [2]	Tennessee- American Water's Cost of Debt [3]	Tennessee- American Water's Income Tax Rate [4]	Tennessee- American Water's Regulatory % Preferred Equity [5]	Tennessee- American Water's Cost of Preferred Equity [6]	Tennessee- American Water's Regulatory % Equity [7]	Estimated Return on Equity [8]
Using All Companies with Bloomberg Forecast								
Simple DCF Quarterly	9.7%	0.53	6.1%	39.2%	1.2%	6.2%	0.45	16.9%
Multi-Stage DCF - Using the Blue Chip Economic Indicator Long-Term GDP Growth Forecast as the Perpetual Rate	6.8%	0.53	6.1%	39.2%	1.2%	6.2%	0.45	10.4%
Using Companies that have 2006 Revenues from Regulated Activities Greater Than 85%								
Simple DCF Quarterly	9.3%	0.53	6.1%	39.2%	1.2%	6.2%	0.45	15.9%
Multi-Stage DCF - Using the Blue Chip Economic Indicator Long-Term GDP Growth Forecast as the Perpetual Rate	6.7%	0.53	6.1%	39.2%	1.2%	6.2%	0.45	10.4%

Sources and Notes:

[1]: Table No. MJV-7; Panels A-B, [10].

[2]: Provided by Tennessee-American Water.

[3]: Based on an A rating, as provided by Tennessee-American Water. Yield from Bloomberg as of February 07, 2008.

[4]: Provided by Tennessee-American Water.

[5]: Provided by Tennessee-American Water.

[6]: From Mergent Bond Record, January 2008 Edition.

[7]: Provided by Tennessee-American Water.

[8]: $\{[1] - ([2] \times [3] \times (1 - [4]) + [5] \times [6])\} / [7]$.

Table No. MJV-9 - Interest Rates

Water Sample

Panel A: US Interest Rate Series (All Constant Maturity Series)

Trading Date	30 Day	90 Day	180 Day	1 Year	2 Year	3 Year	5 Year	7 Year	10 Year	Long Term
1/17/2008	3.07%	3.07%	3.01%	2.81%	2.44%	2.46%	2.90%	3.22%	3.66%	4.27%
1/18/2008	2.63%	2.86%	2.86%	2.69%	2.36%	2.39%	2.86%	3.20%	3.66%	4.30%
1/22/2008	2.15%	2.35%	2.41%	2.29%	2.08%	2.12%	2.64%	3.01%	3.52%	4.23%
1/23/2008	2.07%	2.21%	2.25%	2.19%	2.09%	2.12%	2.64%	3.01%	3.51%	4.23%
1/24/2008	2.19%	2.37%	2.48%	2.40%	2.25%	2.30%	2.85%	3.21%	3.68%	4.37%
1/25/2008	2.07%	2.30%	2.41%	2.34%	2.23%	2.28%	2.81%	3.15%	3.61%	4.30%
1/28/2008	2.12%	2.34%	2.36%	2.30%	2.20%	2.27%	2.80%	3.15%	3.61%	4.30%
1/29/2008	2.13%	2.28%	2.36%	2.33%	2.29%	2.33%	2.87%	3.23%	3.69%	4.35%
1/30/2008	1.93%	2.21%	2.29%	2.30%	2.30%	2.44%	2.96%	3.32%	3.78%	4.45%
1/31/2008	1.64%	1.96%	2.07%	2.11%	2.17%	2.27%	2.82%	3.19%	3.67%	4.35%
2/1/2008	1.75%	2.10%	2.15%	2.13%	2.09%	2.22%	2.75%	3.13%	3.62%	4.31%
2/4/2008	2.15%	2.27%	2.22%	2.17%	2.08%	2.23%	2.78%	3.18%	3.68%	4.37%
2/5/2008	2.22%	2.19%	2.13%	2.06%	1.93%	2.08%	2.66%	3.08%	3.61%	4.32%
2/6/2008	2.12%	2.10%	2.10%	2.05%	1.96%	2.11%	2.67%	3.08%	3.61%	4.36%
2/7/2008	2.19%	2.17%	2.13%	2.08%	1.99%	2.21%	2.79%	3.21%	3.74%	4.50%
[A] Average:	2.16%	2.32%	2.35%	2.28%	2.16%	2.26%	2.79%	3.16%	3.64%	4.33%
[B] Maturity Premium:	0.00%	0.10%	0.20%	0.33%	0.59%	0.75%	1.00%	1.15%	1.27%	1.50%
[C] Implied Short-Term Yield:	2.16%	2.22%	2.15%	1.95%	1.57%	1.51%	1.79%	2.01%	2.37%	2.83%

Sources and Notes:

[A]: Average over the last 15 trading days.

[B]: Workpaper #1 to Table No. MJV-9, Panel C, [2].

[C]: [A] - [B].

Bloomberg as of February 07, 2008. The most recent 15 trading days are used.

Table No. MJV-9 - Interest Rates
Water Sample
Panel B: Implicit Short-Term Interest Rates

	30 Day [1]	90 Day [2]	180 Day [3]	1 Year [4]	2 Year [5]	3 Year [6]	5 Year [7]	7 Year [8]	10 Year [9]	Total Days [10]	Implicit Short- Term Rate [11]
[A] Implied Short-Term Yield:	2.16%	2.22%	2.15%	1.95%	1.57%	1.51%	1.79%	2.01%	2.37%		
[B] Days Remaining in 2008	30	60	90	148						328	2.07%
[C] Days Remaining in 2009				37	328					365	1.61%
[D] Days Remaining in 2010					37	328				365	1.51%
[E] Days Remaining in 2011						37	328			365	1.76%
[F] Days Remaining in 2012							37	328		365	1.99%
[G] Days Remaining in 2013								37	328	365	2.34%
[H] Total Days	30	60	90	185	365	365	730	730	1095		
[I] Implicit Short-Term Rate for 2009-2012										1460	1.72%
[J] Implicit Short-Term Rate for 2009-2013										1825	1.84%

Sources and Notes:

[A]: Table No. MJV-9 - Interest Rates, Panel A, [C].

[B] - [G]: Total number of days remaining for each period, beginning with February 7, 2008.

[H]: Sum of [B] through [G] for the respective period.

[11]: $[(1 + \text{Implied Short-Term Yield}_1)^{(\text{days remaining in period}_1)} \times \dots \times (1 + \text{Implied Short-Term Yield}_n)^{(\text{days remaining in period}_n)}]^{(1/[9])} - 1$.

This formula is applied to all periods from 1 to n in each year.

[I]: $((1 + [10][C])^{[9][C]} \times \dots \times (1 + [10][F])^{[9][F]})^{(1/[9][I])} - 1$.

[J]: $((1 + [10][C])^{[9][C]} \times \dots \times (1 + [10][G])^{[9][G]})^{(1/[9][J])} - 1$.

Workpaper #1 to Table No. MJV-9 - Risk Premium Forecast

Water Sample

Panel A: Historical Bond Yield Averages

	Treasury Bill Yield [1]	Intermediate-Term Government Bond Yield (5-year) [2]	Long-Term Government Bond Yield (20-year) [3]	Long-Term Corporate Bonds (Total Return) [4]
1926	3.27%	3.61%	3.54%	7.37%
1927	3.12%	3.40%	3.17%	7.44%
1928	3.56%	4.01%	3.40%	2.84%
1929	4.75%	3.62%	3.40%	3.27%
1930	2.41%	2.91%	3.30%	7.98%
1931	1.07%	4.12%	4.07%	-1.85%
1932	0.96%	3.04%	3.15%	10.82%
1933	0.30%	3.25%	3.36%	10.38%
1934	0.16%	2.49%	2.93%	13.84%
1935	0.17%	1.63%	2.76%	9.61%
1936	0.18%	1.29%	2.55%	6.74%
1937	0.31%	1.14%	2.73%	2.75%
1938	-0.02%	1.52%	2.52%	6.13%
1939	0.02%	0.98%	2.26%	3.97%
1940	0.00%	0.57%	1.94%	3.39%
1941	0.06%	0.82%	2.04%	2.73%
1942	0.27%	0.72%	2.46%	2.60%
1943	0.35%	1.45%	2.48%	2.83%
1944	0.33%	1.40%	2.46%	4.73%
1945	0.33%	1.03%	1.99%	4.08%
1946	0.35%	1.12%	2.12%	1.72%
1947	0.50%	1.34%	2.43%	-2.34%
1948	0.81%	1.51%	2.37%	4.14%
1949	1.10%	1.23%	2.09%	3.31%
1950	1.20%	1.62%	2.24%	2.12%
1951	1.49%	2.17%	2.69%	-2.69%
1952	1.66%	2.35%	2.79%	3.52%
1953	1.82%	2.18%	2.74%	3.41%
1954	0.86%	1.72%	2.72%	5.39%
1955	1.57%	2.80%	2.95%	0.48%
1956	2.46%	3.63%	3.45%	-6.81%
1957	3.14%	2.84%	3.23%	8.71%
1958	1.54%	3.81%	3.82%	-2.22%
1959	2.95%	4.98%	4.47%	-0.97%
1960	2.66%	3.31%	3.80%	9.07%
1961	2.13%	3.84%	4.15%	4.82%
1962	2.73%	3.50%	3.95%	7.95%
1963	3.12%	4.04%	4.17%	2.19%
1964	3.54%	4.03%	4.23%	4.77%
1965	3.93%	4.90%	4.50%	-0.46%
1966	4.76%	4.79%	4.55%	0.20%
1967	4.21%	5.77%	5.56%	-4.95%
1968	5.21%	5.96%	5.98%	2.57%
1969	6.58%	8.29%	6.87%	-8.09%
1970	6.52%	5.90%	6.48%	18.37%
1971	4.39%	5.25%	5.97%	11.01%
1972	3.84%	5.85%	5.99%	7.26%
1973	6.93%	6.79%	7.26%	1.14%
1974	8.00%	7.12%	7.60%	-3.06%
1975	5.80%	7.19%	8.05%	14.64%
1976	5.08%	6.00%	7.21%	18.65%
1977	5.12%	7.51%	8.03%	1.71%
1978	7.18%	8.83%	8.98%	-0.07%
1979	10.38%	10.33%	10.12%	-4.18%
1980	11.24%	12.45%	11.99%	-2.62%
1981	14.71%	13.96%	13.34%	-0.96%
1982	10.54%	9.90%	10.95%	43.79%
1983	8.80%	11.41%	11.97%	4.70%
1984	9.85%	11.04%	11.70%	16.39%
1985	7.72%	8.55%	9.56%	30.90%
1986	6.16%	6.85%	7.89%	19.85%
1987	5.47%	8.32%	9.20%	-0.27%
1988	6.35%	9.17%	9.19%	10.70%
1989	8.37%	7.94%	8.16%	16.23%
1990	7.81%	7.70%	8.44%	6.78%
1991	5.60%	5.97%	7.30%	19.89%
1992	3.51%	6.11%	7.26%	9.39%
1993	2.90%	5.22%	6.54%	13.19%
1994	3.90%	7.80%	7.99%	-5.76%
1995	5.60%	5.38%	6.03%	27.20%
1996	5.21%	6.16%	6.73%	1.40%
1997	5.26%	5.73%	6.02%	12.95%
1998	4.86%	4.68%	5.42%	10.76%
1999	4.68%	6.45%	6.82%	-7.45%
2000	5.89%	5.07%	5.58%	12.87%
2001	3.83%	4.42%	5.75%	10.65%
2002	1.65%	2.61%	4.84%	16.33%
2003	1.02%	2.97%	5.11%	5.27%
2004	1.20%	3.47%	4.84%	8.72%
2005	2.98%	4.34%	4.61%	5.87%
2006	4.80%	4.65%	4.91%	3.24%

[1] - [4]: Ibbotson Associates Stocks Bonds Bills and Inflation (SBBi) monthly paper reports.

Workpaper #1 to Table No. MJV-9

Water Sample

Panel B: Calculation of Maturity Premia for Different Bond Series

	Annual Historical Average			Maturity Premium Calculation		
	T-Bill Total Return [1]	Intermediate Term Bond Yields [2]	Long-Term Government Bond Yield [3]	T-Bill Total Return [4]	Intermediate Term Bond Yields [5]	Long-Term Government Bond Yield [6]
1926 - 2006	3.77%	4.74%	5.29%	0.00%	0.97%	1.52%
1947 - 2006	4.72%	5.66%	6.16%	0.00%	0.94%	1.44%
1947 - 1966	2.20%	3.03%	3.37%	0.00%	0.83%	1.17%
1967 - 1986	7.41%	8.25%	8.57%	0.00%	0.83%	1.16%
1987 - 2006	4.54%	5.71%	6.54%	0.00%	1.16%	1.99%
Current	2.16%	2.79%	4.33%	0.00%	0.62%	2.17%

Sources and Notes:

[1] - [3] : Workpaper #1 to Table No. MJV-9, Panel A.

Maturity Premium is defined as the Average Bond Yield (for each series) less Risk Free Total Return.

[4]: [1] - [1].

[5]: [2] - [1].

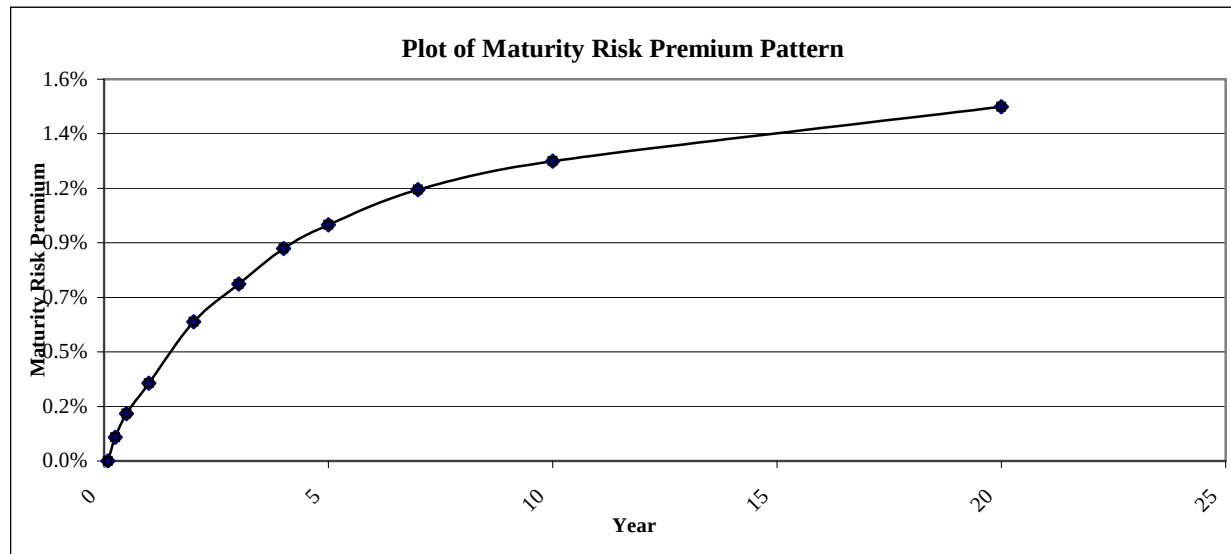
[6]: [3] - [1].

Current data from Table No. MJV-9, Panel A.

Workpaper #1 to Table No. MJV-9

Water Sample

Panel C: Maturity Premium Graph and Calculations (Using Annual Series Data)



Maturity of Bond (Years) [1]	Maturity Risk Premium [2]	Annualized Difference [3]
0.083	0.00%	
0.25	0.10%	0.60%
0.5	0.20%	0.40%
1	0.33%	0.26%
2	0.59%	0.26%
3	0.75%	0.16%
4	0.90%	0.15%
5	1.00%	0.10%
7	1.15%	0.08%
10	1.27%	0.04%
20	1.50%	0.02%

Sources and Notes:

[1]: The maturity of a bond in years.

[2]: Workpaper #1 to Table No. MJV-9, Panel B; [4] - [6] and Vilbert Direct Testimony.

[3]: Vilbert Direct Testimony.

Table No. MJV-10
Risk Positioning Cost of Equity of the Water Sample
Panel A: Using the Long-Term Risk-Free Rate

Company	Long-Term Risk-Free Rate [1]	Value Line Unadjusted Betas [2]	Long-Term Market Risk Premium [3]	CAPM Cost of Equity [4]	ECAPM (0.5%) Cost of Equity [5]	ECAPM (1.5%) Cost of Equity [6]
American States Water Co	4.3%	0.97	6.50%	10.6%	10.6%	10.7%
Aqua America Inc	4.3%	0.82	6.50%	9.6%	9.7%	9.9%
California Water Service Group	4.3%	1.19	6.50%	12.1%	12.0%	11.8%
Connecticut Water Service Inc	4.3%	0.75	6.50%	9.2%	9.3%	9.5%
Middlesex Water Co	4.3%	0.82	6.50%	9.6%	9.7%	9.9%
SJW Corp	4.3%	1.12	6.50%	11.6%	11.5%	11.4%
Southwest Water Co	4.3%	0.97	6.50%	10.6%	10.6%	10.7%
York Water Co	4.3%	0.22	6.50%	5.8%	6.1%	6.9%

Sources and Notes:

[1]: Table No. MJV-9 - Interest Rates, Panel A, Row [A].

[2]: Workpaper # 1 to Table No. MJV-10, column [1].

[3]: Vilbert Direct Testimony, Appendix B.

[4]: $[1] + ([2] \times [3])$.

[5]: $([1] + 0.5\%) + [2] \times ([3] - 0.5\%)$.

[6]: $([1] + 1.5\%) + [2] \times ([3] - 1.5\%)$.

Table No. MJV-10
Risk Positioning Cost of Equity of the Water Sample
Panel B: Using the Short-Term Risk-Free Rate.

Company	Short-Term Risk-Free Rate [1]	Value Line Unadjusted Betas [2]	Short-Term Market Risk Premium [3]	CAPM Cost of Equity [4]	ECAPM (1%) Cost of Equity [5]	ECAPM (2%) Cost of Equity [6]	ECAPM (3%) Cost of Equity [7]
American States Water Co	1.7%	0.97	8.0%	9.5%	9.5%	9.5%	9.6%
Aqua America Inc	1.7%	0.82	8.0%	8.3%	8.4%	8.6%	8.8%
California Water Service Group	1.7%	1.19	8.0%	11.3%	11.1%	10.9%	10.7%
Connecticut Water Service Inc	1.7%	0.75	8.0%	7.7%	7.9%	8.2%	8.4%
Middlesex Water Co	1.7%	0.82	8.0%	8.3%	8.4%	8.6%	8.8%
SJW Corp	1.7%	1.12	8.0%	10.7%	10.5%	10.4%	10.3%
Southwest Water Co	1.7%	0.97	8.0%	9.5%	9.5%	9.5%	9.6%
York Water Co	1.7%	0.22	8.0%	3.5%	4.3%	5.0%	5.8%

Sources and Notes:

[1]: Table No. MJV-9 - Interest Rates, Panel B, Row [I].

[2]: Workpaper # 1 to Table No. MJV-10, column [1].

[3]: Vilbert Direct Testimony, Appendix B.

[4]: $[1] + ([2] \times [3])$.

[5]: $([1] + 1\%) + [2] \times ([3] - 1\%)$.

[6]: $([1] + 2\%) + [2] \times ([3] - 2\%)$.

[7]: $([1] + 3\%) + [2] \times ([3] - 3\%)$.

Workpaper # 1 to Table No. MJV-10

Water Sample

Value Line Unadjusted Betas

Company	Value Line Betas [1]	Value Line Unadjusted Betas [2]
American States Water Co	1.00	0.97
Aqua America Inc	0.90	0.82
California Water Service Group	1.15	1.19
Connecticut Water Service Inc	0.85	0.75
Middlesex Water Co	0.90	0.82
SJW Corp	1.10	1.12
Southwest Water Co	1.00	0.97
York Water Co	0.50	0.22
Average	0.91	0.84

Sources and Notes:

[1]: Most recent Value Line Standard Edition, dated January 25, 2008.

[2]: {[1] - 0.35}/0.67.

Table No. MJV-11
Overall Cost of Capital of the Water Sample
Panel A: CAPM Cost of Equity Based on the Long-Term Risk-Free Rate

Company		CAPM Cost of Equity [1]	5-Year Average Common Equity to Market Value Ratio [2]	Weighted - Average Cost of Preferred Equity [3]	5-Year Average Preferred Equity to Market Value Ratio [4]	Weighted- Average Cost of Debt [5]	5-Year Average Debt to Market Value Ratio [6]	Tennessee- American Water's Income Tax Rate [7]	Overall After-Tax Cost of Capital [8]
American States Water Co	*	10.6%	0.61	-	-	6.1%	0.39	39.2%	7.9%
Aqua America Inc	*	9.6%	0.72	6.2%	0.00	6.1%	0.28	39.2%	8.0%
California Water Service Group	*	12.1%	0.68	6.2%	0.00	6.1%	0.32	39.2%	9.4%
Connecticut Water Service Inc	*	9.2%	0.73	6.2%	0.00	6.1%	0.27	39.2%	7.7%
Middlesex Water Co	*	9.6%	0.63	6.2%	0.01	6.1%	0.36	39.2%	7.5%
SJW Corp	*	11.6%	0.72	-	-	6.1%	0.28	39.2%	9.4%
Southwest Water Co		10.6%	0.69	6.2%	0.00	6.1%	0.31	39.2%	8.5%
York Water Co	*	5.8%	0.72	-	-	6.1%	0.28	39.2%	5.2%
Average [a]		10.5%	0.68	6.2%	0.00	6.1%	0.31	39.2%	8.3%
Average [b]		10.4%	0.68	6.2%	0.00	6.1%	0.31	39.2%	8.3%

Sources and Notes:

[1]: Table No. MJV-10; Panel A, [4].

[2]: Table No. MJV-4, [4].

[3]: Workpaper #2 to Table No. MJV-11 ; Panel B, [7].

[4]: Table No. MJV-4, [5].

[5]: Workpaper #2 to Table No. MJV-11 ; Panel A, [7].

[6]: Table No. MJV-4, [6].

[7]: Provided by Tennessee-American Water.

[8]: $([1] \times [2]) + ([3] \times [4]) + \{[5] \times [6] \times (1 - [7])\}$.

[a]: Average for all companies whose CAPM cost of equity exceeds their cost of debt by at least 25 basis points.

[b]: Average for companies in sample [a] and with an asterisk.

* Represents companies that have revenues from regulated activities greater than 85%.

Table No. MJV-11

Overall Cost of Capital of the Water Sample

Panel B: ECAPM (0.5%) Cost of Equity Based on the Long-Term Risk-Free Rate

Company		ECAPM (0.5%) Cost of Equity [1]	5-Year Average Common Equity to Market Value Ratio [2]	Weighted - Average Cost of Preferred Equity [3]	5-Year Average Preferred Equity to Market Value Ratio [4]	Weighted- Average Cost of Debt [5]	5-Year Average Debt to Market Value Ratio [6]	Tennessee- American Water's Income Tax Rate [7]	Overall After-Tax Cost of Capital [8]
American States Water Co	*	10.6%	0.61	-	-	6.1%	0.39	39.2%	7.9%
Aqua America Inc	*	9.7%	0.72	6.2%	0.00	6.1%	0.28	39.2%	8.1%
California Water Service Group	*	12.0%	0.68	6.2%	0.00	6.1%	0.32	39.2%	9.3%
Connecticut Water Service Inc	*	9.3%	0.73	6.2%	0.00	6.1%	0.27	39.2%	7.8%
Middlesex Water Co	*	9.7%	0.63	6.2%	0.01	6.1%	0.36	39.2%	7.5%
SJW Corp	*	11.5%	0.72	-	-	6.1%	0.28	39.2%	9.3%
Southwest Water Co		10.6%	0.69	6.2%	0.00	6.1%	0.31	39.2%	8.5%
York Water Co	*	6.1%	0.72	-	-	6.1%	0.28	39.2%	5.5%
Average [a]		10.5%	0.68	6.2%	0.00	6.1%	0.31	39.2%	8.3%
Average [b]		10.5%	0.68	6.2%	0.00	6.1%	0.31	39.2%	8.3%

Sources and Notes:

[1]: Table No. MJV-10; Panel A, [5].

[2]: Table No. MJV-4, [4].

[3]: Workpaper #2 to Table No. MJV-11 ; Panel B, [7].

[4]: Table No. MJV-4, [5].

[5]: Workpaper #2 to Table No. MJV-11 ; Panel A, [7].

[6]: Table No. MJV-4, [6].

[7]: Provided by Tennessee-American Water.

[8]: $([1] \times [2]) + ([3] \times [4]) + \{[5] \times [6] \times (1 - [7])\}$.

[a]: Average for all companies whose CAPM cost of equity exceeds their cost of debt by at least 25 basis points.

[b]: Average for companies in sample [a] and with an asterisk.

* Represents companies that have revenues from regulated activities greater than 85%.

Table No. MJV-11

Overall Cost of Capital of the Water Sample

Panel C: ECAPM (1.5%) Cost of Equity Based on the Long-Term Risk-Free Rate

Company		ECAPM (1.5%) Cost of Equity [1]	5-Year Average Common Equity to Market Value Ratio [2]	Weighted - Average Cost of Preferred Equity [3]	5-Year Average Preferred Equity to Market Value Ratio [4]	Weighted- Average Cost of Debt [5]	5-Year Average Debt to Market Value Ratio [6]	Tennessee- American Water's Income Tax Rate [7]	Overall After-Tax Cost of Capital [8]
American States Water Co	*	10.7%	0.61	-	-	6.1%	0.39	39.2%	8.0%
Aqua America Inc	*	9.9%	0.72	6.2%	0.00	6.1%	0.28	39.2%	8.2%
California Water Service Group	*	11.8%	0.68	6.2%	0.00	6.1%	0.32	39.2%	9.2%
Connecticut Water Service Inc	*	9.5%	0.73	6.2%	0.00	6.1%	0.27	39.2%	8.0%
Middlesex Water Co	*	9.9%	0.63	6.2%	0.01	6.1%	0.36	39.2%	7.6%
SJW Corp	*	11.4%	0.72	-	-	6.1%	0.28	39.2%	9.2%
Southwest Water Co		10.7%	0.69	6.2%	0.00	6.1%	0.31	39.2%	8.5%
York Water Co	*	6.9%	0.72	-	-	6.1%	0.28	39.2%	6.0%
Average [a]		10.5%	0.68	6.2%	0.00	6.1%	0.31	39.2%	8.4%
Average [b]		10.5%	0.68	6.2%	0.00	6.1%	0.31	39.2%	8.4%

Sources and Notes:

[1]: Table No. MJV-10; Panel A, [6].

[2]: Table No. MJV-4, [4].

[3]: Workpaper #2 to Table No. MJV-11 ; Panel B, [7].

[4]: Table No. MJV-4, [5].

[5]: Workpaper #2 to Table No. MJV-11 ; Panel A, [7].

[6]: Table No. MJV-4, [6].

[7]: Provided by Tennessee-American Water.

[8]: $([1] \times [2]) + ([3] \times [4]) + \{[5] \times [6] \times (1 - [7])\}$.

[a]: Average for all companies whose CAPM cost of equity exceeds their cost of debt by at least 25 basis points.

[b]: Average for companies in sample [a] and with an asterisk.

* Represents companies that have revenues from regulated activities greater than 85%.

Table No. MJV-11
Overall Cost of Capital of the Water Sample
Panel D: CAPM Cost of Equity Based on the Short-Term Risk-Free Rate

Company		CAPM Cost of Equity [1]	5-Year Average Common Equity to Market Value Ratio [2]	Weighted - Average Cost of Preferred Equity [3]	5-Year Average Preferred Equity to Market Value Ratio [4]	Weighted- Average Cost of Debt [5]	5-Year Average Debt to Market Value Ratio [6]	Tennessee- American Water's Income Tax Rate [7]	Overall After-Tax Cost of Capital [8]
American States Water Co	*	9.5%	0.61	-	-	6.1%	0.39	39.2%	7.2%
Aqua America Inc	*	8.3%	0.72	6.2%	0.00	6.1%	0.28	39.2%	7.0%
California Water Service Group	*	11.3%	0.68	6.2%	0.00	6.1%	0.32	39.2%	8.8%
Connecticut Water Service Inc	*	7.7%	0.73	6.2%	0.00	6.1%	0.27	39.2%	6.6%
Middlesex Water Co	*	8.3%	0.63	6.2%	0.01	6.1%	0.36	39.2%	6.6%
SJW Corp	*	10.7%	0.72	-	-	6.1%	0.28	39.2%	8.7%
Southwest Water Co		9.5%	0.69	6.2%	0.00	6.1%	0.31	39.2%	7.7%
York Water Co	*	3.5%	0.72	-	-	6.1%	0.28	39.2%	3.5%
Average [a]		9.3%	0.68	6.2%	0.00	6.1%	0.31	39.2%	7.5%
Average [b]		9.3%	0.68	6.2%	0.00	6.1%	0.31	39.2%	7.5%

Sources and Notes:

[1]: Table No. MJV-10; Panel B, [4].

[2]: Table No. MJV-4, [4].

[3]: Workpaper #2 to Table No. MJV-11 ; Panel B, [7].

[4]: Table No. MJV-4, [5].

[5]: Workpaper #2 to Table No. MJV-11 ; Panel A, [7].

[6]: Table No. MJV-4, [6].

[7]: Provided by Tennessee-American Water.

[8]: $([1] \times [2]) + ([3] \times [4]) + \{[5] \times [6] \times (1 - [7])\}$.

[a]: Average for all companies whose CAPM cost of equity exceeds their cost of debt by at least 25 basis points.

[b]: Average for companies in sample [a] and with an asterisk.

* Represents companies that have revenues from regulated activities greater than 85%.

Table No. MJV-11
Overall Cost of Capital of the Water Sample
Panel E: ECAPM (1%) Cost of Equity Based on the Short-Term Risk-Free Rate

Company		ECAPM (1%) Cost of Equity [1]	5-Year Average Common Equity to Market Value Ratio [2]	Weighted - Average Cost of Preferred Equity [3]	5-Year Average Preferred Equity to Market Value Ratio [4]	Weighted- Average Cost of Debt [5]	5-Year Average Debt to Market Value Ratio [6]	Tennessee- American Water's Income Tax Rate [7]	Overall After-Tax Cost of Capital [8]
American States Water Co	*	9.5%	0.61	-	-	6.1%	0.39	39.2%	7.3%
Aqua America Inc	*	8.4%	0.72	6.2%	0.00	6.1%	0.28	39.2%	7.1%
California Water Service Group	*	11.1%	0.68	6.2%	0.00	6.1%	0.32	39.2%	8.7%
Connecticut Water Service Inc	*	7.9%	0.73	6.2%	0.00	6.1%	0.27	39.2%	6.8%
Middlesex Water Co	*	8.4%	0.63	6.2%	0.01	6.1%	0.36	39.2%	6.7%
SJW Corp	*	10.5%	0.72	-	-	6.1%	0.28	39.2%	8.6%
Southwest Water Co		9.5%	0.69	6.2%	0.00	6.1%	0.31	39.2%	7.7%
York Water Co	*	4.3%	0.72	-	-	6.1%	0.28	39.2%	4.1%
Average [a]		9.3%	0.68	6.2%	0.00	6.1%	0.31	39.2%	7.6%
Average [b]		9.3%	0.68	6.2%	0.00	6.1%	0.31	39.2%	7.5%

Sources and Notes:

[1]: Table No. MJV-10; Panel B, [5].

[2]: Table No. MJV-4, [4].

[3]: Workpaper #2 to Table No. MJV-11 ; Panel B, [7].

[4]: Table No. MJV-4, [5].

[5]: Workpaper #2 to Table No. MJV-11 ; Panel A, [7].

[6]: Table No. MJV-4, [6].

[7]: Provided by Tennessee-American Water.

[8]: $([1] \times [2]) + ([3] \times [4]) + \{[5] \times [6] \times (1 - [7])\}$.

[a]: Average for all companies whose CAPM cost of equity exceeds their cost of debt by at least 25 basis points.

[b]: Average for companies in sample [a] and with an asterisk.

* Represents companies that have revenues from regulated activities greater than 85%.

Table No. MJV-11
Overall Cost of Capital of the Water Sample
Panel F: ECAPM (2%) Cost of Equity Based on the Short-Term Risk-Free Rate

Company		ECAPM (2%) Cost of Equity [1]	5-Year Average Common Equity to Market Value Ratio [2]	Weighted - Average Cost of Preferred Equity [3]	5-Year Average Preferred Equity to Market Value Ratio [4]	Weighted- Average Cost of Debt [5]	5-Year Average Debt to Market Value Ratio [6]	Tennessee- American Water's Income Tax Rate [7]	Overall After-Tax Cost of Capital [8]
American States Water Co	*	9.5%	0.61	-	-	6.1%	0.39	39.2%	7.3%
Aqua America Inc	*	8.6%	0.72	6.2%	0.00	6.1%	0.28	39.2%	7.3%
California Water Service Group	*	10.9%	0.68	6.2%	0.00	6.1%	0.32	39.2%	8.6%
Connecticut Water Service Inc	*	8.2%	0.73	6.2%	0.00	6.1%	0.27	39.2%	7.0%
Middlesex Water Co	*	8.6%	0.63	6.2%	0.01	6.1%	0.36	39.2%	6.8%
SJW Corp	*	10.4%	0.72	-	-	6.1%	0.28	39.2%	8.5%
Southwest Water Co		9.5%	0.69	6.2%	0.00	6.1%	0.31	39.2%	7.7%
York Water Co	*	5.0%	0.72	-	-	6.1%	0.28	39.2%	4.7%
Average [a]		9.4%	0.68	6.2%	0.00	6.1%	0.31	39.2%	7.6%
Average [b]		9.4%	0.68	6.2%	0.00	6.1%	0.31	39.2%	7.6%

Sources and Notes:

[1]: Table No. MJV-10; Panel B, [6].

[2]: Table No. MJV-4, [4].

[3]: Workpaper #2 to Table No. MJV-11 ; Panel B, [7].

[4]: Table No. MJV-4, [5].

[5]: Workpaper #2 to Table No. MJV-11 ; Panel A, [7].

[6]: Table No. MJV-4, [6].

[7]: Provided by Tennessee-American Water.

[8]: $((1) \times (2)) + ((3) \times (4)) + \{(5) \times (6) \times (1 - [7])\}$.

[a]: Average for all companies whose CAPM cost of equity exceeds their cost of debt by at least 25 basis points.

[b]: Average for companies in sample [a] and with an asterisk.

* Represents companies that have revenues from regulated activities greater than 85%.

Table No. MJV-11

Overall Cost of Capital of the Water Sample

Panel G: ECAPM (3%) Cost of Equity Based on the Short-Term Risk-Free Rate

Company		ECAPM (3%) Cost of Equity [1]	5-Year Average Common Equity to Market Value Ratio [2]	Weighted - Average Cost of Preferred Equity [3]	5-Year Average Preferred Equity to Market Value Ratio [4]	Weighted- Average Cost of Debt [5]	5-Year Average Debt to Market Value Ratio [6]	Tennessee- American Water's Income Tax Rate [7]	Overall After-Tax Cost of Capital [8]
American States Water Co	*	9.6%	0.61	-	-	6.1%	0.39	39.2%	7.3%
Aqua America Inc	*	8.8%	0.72	6.2%	0.00	6.1%	0.28	39.2%	7.4%
California Water Service Group	*	10.7%	0.68	6.2%	0.00	6.1%	0.32	39.2%	8.4%
Connecticut Water Service Inc	*	8.4%	0.73	6.2%	0.00	6.1%	0.27	39.2%	7.2%
Middlesex Water Co	*	8.8%	0.63	6.2%	0.01	6.1%	0.36	39.2%	6.9%
SJW Corp	*	10.3%	0.72	-	-	6.1%	0.28	39.2%	8.4%
Southwest Water Co		9.6%	0.69	6.2%	0.00	6.1%	0.31	39.2%	7.8%
York Water Co	*	5.8%	0.72	-	-	6.1%	0.28	39.2%	5.2%
Average [a]		9.4%	0.68	6.2%	0.00	6.1%	0.31	39.2%	7.6%
Average [b]		9.4%	0.68	6.2%	0.00	6.1%	0.31	39.2%	7.6%

Sources and Notes:

[1]: Table No. MJV-10; Panel B, [7].

[2]: Table No. MJV-4, [4].

[3]: Workpaper #2 to Table No. MJV-11 ; Panel B, [7].

[4]: Table No. MJV-4, [5].

[5]: Workpaper #2 to Table No. MJV-11 ; Panel A, [7].

[6]: Table No. MJV-4, [6].

[7]: Provided by Tennessee-American Water.

[8]: $([1] \times [2]) + ([3] \times [4]) + \{[5] \times [6] \times (1 - [7])\}$.

[a]: Average for all companies whose CAPM cost of equity exceeds their cost of debt by at least 25 basis points.

[b]: Average for companies in sample [a] and with an asterisk.

* Represents companies that have revenues from regulated activities greater than 85%.

Workpaper #1 to Table No. MJV-11

Water Sample

Panel A: Rating to Yield Conversion

Rating	Bond Yield	Preferred Yield
A	6.09%	6.20%
BBB	6.31%	6.51%

Sources and Notes:

Bond Yields from Bloomberg as of February 07, 2008.

Preferred Yields from Mergent Bond Record, January 2008
Edition.

Workpaper #1 to Table No. MJV-11

Water Sample

Panel B: Bond Rating Summary

Company	3rd Quarter,					
	2007 [1]	2006 [2]	2005 [3]	2004 [4]	2003 [5]	2002 [6]
American States Water Co	A	A	A	A	A	A
Aqua America Inc	A	A	A	A	A	A
California Water Service Group	A	A	A	A	A	A
Connecticut Water Service Inc	A	A	A	A	A	A
Middlesex Water Co	A	A	A	A	A	A
SJW Corp	A	A	A	A	A	A
Southwest Water Co	A	A	A	A	A	A
York Water Co	A	A	A	A	A	A

Sources and Notes:

[1] - [6]: Bloomberg as of February 07, 2008.

Workpaper #1 to Table No. MJV-11

Water Sample

Panel C: Preferred Equity Rating Summary

Company	3rd Quarter,					
	2007	2006	2005	2004	2003	2002
	[1]	[2]	[3]	[4]	[5]	[6]
American States Water Co	-	-	-	-	-	-
Aqua America Inc	-	-	-	-	-	A
California Water Service Group	A	A	A	A	A	A
Connecticut Water Service Inc	A	A	A	A	A	A
Middlesex Water Co	A	A	A	A	A	A
SJW Corp	-	-	-	-	-	-
Southwest Water Co	A	A	A	A	A	A
York Water Co	-	-	-	-	-	-

Sources and Notes:

[1] - [6]: Preferred equity ratings are assumed equal to the company's bond ratings reported in Workpaper #1 to Table No. MJV-11, Panels A and B.

Workpaper #2 to Table No. MJV-11

Water Sample

Panel B: Bond Yield Summary

Company	3rd Quarter, 2007 [1]	2006 [2]	2005 [3]	2004 [4]	2003 [5]	2002 [6]	5-Year Weighted Average [7]
American States Water Co	6.09%	6.09%	6.09%	6.09%	6.09%	6.09%	6.09%
Aqua America Inc	6.09%	6.09%	6.09%	6.09%	6.09%	6.09%	6.09%
California Water Service Group	6.09%	6.09%	6.09%	6.09%	6.09%	6.09%	6.09%
Connecticut Water Service Inc	6.09%	6.09%	6.09%	6.09%	6.09%	6.09%	6.09%
Middlesex Water Co	6.09%	6.09%	6.09%	6.09%	6.09%	6.09%	6.09%
SJW Corp	6.09%	6.09%	6.09%	6.09%	6.09%	6.09%	6.09%
Southwest Water Co	6.09%	6.09%	6.09%	6.09%	6.09%	6.09%	6.09%
York Water Co	6.09%	6.09%	6.09%	6.09%	6.09%	6.09%	6.09%

Sources and Notes:

[1] - [6]: Ratings based on Workpaper #1 to Table No. MJV-11, Panel A. Bond yields from Bloomberg as of February 07, 2008.

[7]: $\{([1] \times 0.75) + [2] + [3] + [4] + [5] + ([6] \times 0.25)\} / 5$.

Workpaper #2 to Table No. MJV-11

Water Sample

Panel A: 15 Day Average Utility Yields and Mergent Preferred Yields

Date	A Rated Utility [1]	BBB Rated Utility [2]	A Preferred [3]	BBB Preferred [4]
1/18/2008	6.08	6.27	-	-
1/21/2008	6.08	6.27	-	-
1/22/2008	5.91	6.12	-	-
1/23/2008	6.19	6.35	-	-
1/24/2008	6.17	6.34	-	-
1/25/2008	5.90	6.20	-	-
1/28/2008	6.05	6.28	-	-
1/29/2008	6.12	6.32	-	-
1/30/2008	6.14	6.33	-	-
1/31/2008	6.05	6.31	-	-
2/1/2008	6.07	6.27	-	-
2/4/2008	6.17	6.40	-	-
2/5/2008	6.09	6.27	-	-
2/6/2008	6.09	6.35	-	-
2/7/2008	6.22	6.51	-	-
Average	6.09	6.31	6.20	6.51

Sources and Notes:

[1] - [2]: Bloomberg as of February 07, 2008.

[3] - [4]: Mergent Bond Record, January 2008 Edition.

Workpaper #2 to Table No. MJV-11

Water Sample

Panel C: Preferred Equity Yield Summary

Company	3rd Quarter, 2007 [1]	2006 [2]	2005 [3]	2004 [4]	2003 [5]	2002 [6]	5-Year Weighted Average [7]
American States Water Co	-	-	-	-	-	-	-
Aqua America Inc	-	-	-	-	-	6.20%	6.20%
California Water Service Group	6.20%	6.20%	6.20%	6.20%	6.20%	6.20%	6.20%
Connecticut Water Service Inc	6.20%	6.20%	6.20%	6.20%	6.20%	6.20%	6.20%
Middlesex Water Co	6.20%	6.20%	6.20%	6.20%	6.20%	6.20%	6.20%
SJW Corp	-	-	-	-	-	-	-
Southwest Water Co	6.20%	6.20%	6.20%	6.20%	6.20%	6.20%	6.20%
York Water Co	-	-	-	-	-	-	-

Sources and Notes:

[1] - [6]: Ratings based on Workpaper #1 to Table No. MJV-11, Panel A are assumed to equal preferred ratings. Preferred equity yields are from Mergent Bond Record, January 2008 Edition.

[7]: $\{([1] \times 0.75) + [2] + [3] + [4] + [5] + ([6] \times 0.25)\} / 5$.

Table No. MJV-12
Risk Positioning Cost of Equity at Tennessee-American Water's Capital Structure
Water Sample
Panel A: Using All Companies

	Overall Cost of Capital [1]	Tennessee- American Water's Regulatory % Debt [2]	Tennessee- American Water's Cost of Debt [3]	Tennessee- American Water's Income Tax Rate [4]	Tennessee- American Water's Regulatory % Preferred Equity [5]	Tennessee- American Water's Cost of Preferred Equity [6]	Tennessee- American Water's Regulatory % Equity [7]	Estimated Return on Equity [8]
Using Long-Term Risk-Free Rates:								
CAPM using Value Line Unadjusted Betas	8.3%	0.53	6.1%	39.2%	0.01	6.2%	0.45	13.8%
ECAPM (0.50%) using Value Line Unadjusted Betas	8.3%	0.53	6.1%	39.2%	0.01	6.2%	0.45	13.9%
ECAPM (1.50) using Value Line Unadjusted Betas	8.4%	0.53	6.1%	39.2%	0.01	6.2%	0.45	14.0%
Using Short-Term Risk-Free Rates:								
CAPM using Value Line Unadjusted Betas	7.5%	0.53	6.1%	39.2%	0.01	6.2%	0.45	12.1%
ECAPM (1%) using Value Line Unadjusted Betas	7.6%	0.53	6.1%	39.2%	0.01	6.2%	0.45	12.1%
ECAPM (2%) using Value Line Unadjusted Betas	7.6%	0.53	6.1%	39.2%	0.01	6.2%	0.45	12.2%
ECAPM (3%) using Value Line Unadjusted Betas	7.6%	0.53	6.1%	39.2%	0.01	6.2%	0.45	12.3%

Sources and Notes:

[1]: Table No. MJV-11; Panels A - G, [8].

[2]: Provided by Tennessee-American Water.

[3]: Based on an A rating, as provided by Tennessee-American Water. Yield from Bloomberg as of February 07, 2008.

[4]: Provided by Tennessee-American Water.

[5]: Provided by Tennessee-American Water.

[6]: From Mergent Bond Record, January 2008 Edition.

[7]: Provided by Tennessee-American Water.

[8]: $\{[1] - ([2] \times [3] \times (1 - [4]) + [5] \times [6])\} / [7]$.

Table No. MJV-12
Risk Positioning Cost of Equity at Tennessee-American Water's Capital Structure
Water Sample
Panel B: Using Companies With 2006 Revenues from Regulated Activities Greater Than 75%

	Overall Cost of Capital [1]	Tennessee- American Water's Regulatory % Debt [2]	Tennessee- American Water's Cost of Debt [3]	Tennessee- American Water's Income Tax Rate [4]	Tennessee- American Water's Regulatory % Preferred Equity [5]	Tennessee- American Water's Cost of Preferred Equity [6]	Tennessee- American Water's Regulatory % Equity [7]	Estimated Return on Equity [8]
Using Long-Term Risk-Free Rates:								
CAPM using Value Line Unadjusted Betas	8.3%	0.53	6.1%	39.2%	0.01	6.2%	0.45	13.8%
ECAPM (0.50%) using Value Line Unadjusted Betas	8.3%	0.53	6.1%	39.2%	0.01	6.2%	0.45	13.8%
ECAPM (1.50) using Value Line Unadjusted Betas	8.4%	0.53	6.1%	39.2%	0.01	6.2%	0.45	13.9%
Using Short-Term Risk-Free Rates:								
CAPM using Value Line Unadjusted Betas	7.5%	0.53	6.1%	39.2%	0.01	6.2%	0.45	12.0%
ECAPM (1%) using Value Line Unadjusted Betas	7.5%	0.53	6.1%	39.2%	0.01	6.2%	0.45	12.1%
ECAPM (2%) using Value Line Unadjusted Betas	7.6%	0.53	6.1%	39.2%	0.01	6.2%	0.45	12.2%
ECAPM (3%) using Value Line Unadjusted Betas	7.6%	0.53	6.1%	39.2%	0.01	6.2%	0.45	12.3%

Sources and Notes:

[1]: Table No. MJV-11; Panels A - G, [8].

[2]: Provided by Tennessee-American Water.

[3]: Based on an A rating, as provided by Tennessee-American Water. Yield from Bloomberg as of February 07, 2008.

[4]: Provided by Tennessee-American Water.

[5]: Provided by Tennessee-American Water.

[6]: From Mergent Bond Record, January 2008 Edition.

[7]: Provided by Tennessee-American Water.

[8]: $\{[1] - ([2] \times [3] \times (1 - [4]) + [5] \times [6])\} / [7]$.

Table No. MJV-13

Gas LDC Sample

Classification of Companies by Assets

Company	Company Category
AGL Resources Inc	MR
Atmos Energy Corp	R
Nicor Inc	R
Laclede Group Inc	R
New Jersey Resources Corp	MR
Northwest Natural Gas Co	R
Piedmont Natural Gas Co	R
South Jersey Industries Inc	MR
Southwest Gas Corp	R
WGL Holdings Inc	R

Sources and Notes:

Workpaper #1 to Table No. MJV-2, Panels A-K.

R = Regulated (greater than 80 percent of total assets are regulated).

MR = Mostly Regulated (50 to 80 percent of total assets are regulated).

Workpaper #1 to Table No. MJV-13
Gas LDC Sample: Percentage of Regulated Assets
Panel A: AGL Resources Inc (thousands)

		2006	% of Total Assets
Assets Attributed to Utility	[1]	4,565,000	74.3%
Total	[2]	6,147,000	

Sources and Notes:

[1]-[2]: AGL Resources Inc's 2006 Form 10-K.

Workpaper #1 to Table No. MJV-13
Gas LDC Sample: Percentage of Regulated Assets
Panel B: Atmos Energy Corp (thousands)

		2006	% of Total Assets
Assets Attributed to Utility	[1]	5,462,301	95.5%
Total	[2]	5,719,547	

Sources and Notes:

[1]-[2]: Atmos Energy Corp's 2006 Form 10-K.

Workpaper #1 to Table No. MJV-13
Gas LDC Sample: Percentage of Regulated Assets
Panel C: Nicor Inc (thousands)

		2006	% of Total Assets
Assets Attributed to Utility	[1]	2,580,700	95.1%
Total	[2]	2,714,700	

Sources and Notes:

[1]-[2]: Nicor Inc's 2006 Form 10-K.

Workpaper #1 to Table No. MJV-13
Gas LDC Sample: Percentage of Regulated Assets
Panel D: Laclede Group Inc (thousands)

		2006	% of Total Assets
Assets Attributed to Utility	[1]	763,827	89.5%
Total	[2]	853,515	

Sources and Notes:

[1]-[2]: Laclede Group Inc's 2006 Form 10-K.

Workpaper #1 to Table No. MJV-13
Gas LDC Sample: Percentage of Regulated Assets
Panel E: New Jersey Resources Corp (thousands)

		2006	% of Total Assets
Assets Attributed to Utility	[1]	1,586,934	66.2%
Total	[2]	2,398,928	

Sources and Notes:

[1]-[2]: New Jersey Resources Corp's 2006 Form 10-K.

Workpaper #1 to Table No. MJV-13
Gas LDC Sample: Percentage of Regulated Assets
Panel F: Northwest Natural Gas Co (thousands)

		2006	% of Total Assets
Assets Attributed to Utility	[1]	see footnote	98.0%
Total	[2]	see footnote	

Sources and Notes:

[1]-[2]: Northwest Natural Gas Co's 2006 Form 10-K, p. 3 explicitly states the percentage of regulated assets.

Workpaper #1 to Table No. MJV-13
Gas LDC Sample: Percentage of Regulated Assets
Panel G: Piedmont Natural Gas Co (thousands)

		2006	% of Total Assets
Assets Attributed to Utility	[1]	2,600,411	97.2%
Total	[2]	2,676,288	

Sources and Notes:

[1]-[2]: Piedmont Natural Gas Co's 2006 Form 10-K.

Workpaper #1 to Table No. MJV-13
Gas LDC Sample: Percentage of Regulated Assets
Panel H: South Jersey Industries Inc (thousands)

		2006	% of Total Assets
Assets Attributed to Utility	[1]	1,228,076	78.1%
Total	[2]	1,573,032	

Sources and Notes:

[1]-[2]: South Jersey Industries Inc's 2006 Form 10-K.

Workpaper #1 to Table No. MJV-13
Gas LDC Sample: Percentage of Regulated Assets
Panel I: Southwest Gas Corp (thousands)

		2006	% of Total Assets
Assets Attributed to Utility	[1]	3,352,074	96.2%
Total	[2]	3,484,965	

Sources and Notes:

[1]-[2]: Southwest Gas Corp's 2006 Form 10-K.

Workpaper #1 to Table No. MJV-13
Gas LDC Sample: Percentage of Regulated Assets
Panel J: WGL Holdings Inc (thousands)

		2006	% of Total Assets
Assets Attributed to Utility	[1]	2,944,100	99.8%
Total	[2]	2,950,000	

Sources and Notes:

[1]-[2]: WGL Holdings Inc's 2006 Form 10-K.

Table No. MJV-14
Market Value of the Gas LDC Sample

Panel A: AGL Resources Inc

(\$MM)

	DCF Capital Structure	3rd Quarter, 2007	Year End, 2006	Year End, 2005	Year End, 2004	Year End, 2003	Year End, 2002	Notes
MARKET VALUE OF COMMON EQUITY								
Book Value, Common Shareholder's Equity	\$1,661	\$1,623	\$1,609	\$1,499	\$1,385	\$945	\$710	[a]
Shares Outstanding (in millions) - Common	76	77	78	78	77	65	57	[b]
Price per Share - Common	\$37.39	\$39.71	\$39.24	\$34.75	\$33.24	\$28.95	\$24.41	[c]
Market Value of Common Equity	\$2,857	\$3,053	\$3,049	\$2,703	\$2,549	\$1,867	\$1,384	[d] = [b] x [c].
Market to Book Value of Common Equity	1.72	1.88	1.89	1.80	1.84	1.98	1.95	[e] = [d] / [a].
MARKET VALUE OF PREFERRED EQUITY								
Book Value of Preferred Equity	\$0	\$0	\$0	\$0	\$0	\$0	\$227	[f]
Market Value of Preferred Equity	\$0	\$0	\$0	\$0	\$0	\$0	\$227	[g] = [f].
MARKET VALUE OF DEBT								
Current Assets	\$1,811	\$1,428	\$1,822	\$2,041	\$1,457	\$742	\$586	[h]
Current Liabilities	\$1,645	\$1,375	\$1,627	\$1,968	\$1,477	\$1,048	\$1,016	[i]
Current Portion of Long-Term Debt	\$0	\$0	\$0	\$0	\$0	\$77	\$30	[j]
Net Working Capital	\$166	\$53	\$195	\$73	(\$20)	(\$229)	(\$399)	[k] = [h] - ([i] - [j]).
Notes Payable (Short-Term Debt)	\$580	\$576	\$539	\$522	\$334	\$306	\$389	[l]
Adjusted Short-Term Debt	\$0	\$0	\$0	\$0	\$20	\$229	\$389	[m] = See Sources and Notes.
Long-Term Debt	\$1,674	\$1,548	\$1,622	\$1,615	\$1,623	\$956	\$767	[n]
Book Value of Long-Term Debt	\$1,674	\$1,548	\$1,622	\$1,615	\$1,643	\$1,262	\$1,186	[o] = [n] + [j] + [m].
Adjustment to Book Value of Long-Term Debt	\$83	\$83	\$83	\$169	\$193	\$133	\$87	[p] = See Sources and Notes.
Market Value of Long-Term Debt	\$1,757	\$1,631	\$1,705	\$1,784	\$1,836	\$1,395	\$1,273	[q] = [p] + [o].
Market Value of Debt	\$1,757	\$1,631	\$1,705	\$1,784	\$1,836	\$1,395	\$1,273	[r] = [q].
MARKET VALUE OF FIRM								
	\$4,614	\$4,684	\$4,754	\$4,487	\$4,385	\$3,262	\$2,884	[s] = [d] + [g] + [r].
DEBT AND EQUITY TO MARKET VALUE RATIOS								
Common Equity - Market Value Ratio	61.92%	65.18%	64.13%	60.24%	58.13%	57.23%	47.99%	[t] = [d] / [s].
Preferred Equity - Market Value Ratio	-	-	-	-	-	-	7.88%	[u] = [g] / [s].
Debt - Market Value Ratio	38.08%	34.82%	35.87%	39.76%	41.87%	42.77%	44.13%	[v] = [r] / [s].

Sources and Notes:

Bloomberg as of February 07, 2008

Capital structure from 3rd Quarter, 2007 calculated using respective balance sheet information and 15-day average prices ending at period end.

The DCF Capital structure is calculated using 3rd Quarter, 2007 balance sheet information and a 15-trading day average closing price ending on 2/7/2008.

Prices are reported in Workpaper #1 to Table No. MJV-17.

[m] =

(1): 0 if [k] > 0.

(2): The absolute value of [k] if [k] < 0 and |[k]| < [l].

(3): [l] if [k] < 0 and |[k]| > [l].

[p]: Difference between fair value of Long-Term debt and carrying amount of Long-Term debt per company 10-K. Data for adjustment is from 2006 10-K. Companies do not report the fair value of Long-Term debt in quarterly reports, so end-of-year 2006 data is used instead.

Table No. MJV-14
Market Value of the Gas LDC Sample

Panel B: Atmos Energy Corp

(\$MM)

	DCF Capital Structure	3rd Quarter, 2007	Year End, 2006	Year End, 2005	Year End, 2004	Year End, 2003	Year End, 2002	Notes
MARKET VALUE OF COMMON EQUITY								
Book Value, Common Shareholder's Equity	\$2,032	\$1,966	\$1,648	\$1,602	\$1,133	\$858	\$573	[a]
Shares Outstanding (in millions) - Common	90	89	82	81	63	51	42	[b]
Price per Share - Common	\$27.90	\$28.08	\$32.04	\$26.35	\$27.13	\$24.54	\$23.27	[c]
Market Value of Common Equity	\$2,508	\$2,508	\$2,619	\$2,122	\$1,704	\$1,263	\$970	[d] = [b] x [c].
Market to Book Value of Common Equity	1.23	1.28	1.59	1.32	1.50	1.47	1.69	[e] = [d] / [a].
MARKET VALUE OF PREFERRED EQUITY								
Book Value of Preferred Equity	\$0	\$0	\$0	\$0	\$0	\$0	\$0	[f]
Market Value of Preferred Equity	\$0	\$0	\$0	\$0	\$0	\$0	\$0	[g] = [f].
MARKET VALUE OF DEBT								
Current Assets	\$1,520	\$1,069	\$1,118	\$1,264	\$677	\$458	\$331	[h]
Current Liabilities	\$1,336	\$920	\$1,119	\$1,113	\$414	\$442	\$464	[i]
Current Portion of Long-Term Debt	\$4	\$4	\$3	\$3	\$6	\$9	\$22	[j]
Net Working Capital	\$188	\$153	\$2	\$155	\$269	\$26	(\$111)	[k] = [h] - ([i] - [j]).
Notes Payable (Short-Term Debt)	\$202	\$151	\$382	\$145	\$0	\$119	\$146	[l]
Adjusted Short-Term Debt	\$0	\$0	\$0	\$0	\$0	\$0	\$111	[m] = See Sources and Notes.
Long-Term Debt	\$2,125	\$2,126	\$2,180	\$2,183	\$861	\$863	\$670	[n]
Book Value of Long-Term Debt	\$2,129	\$2,130	\$2,184	\$2,186	\$867	\$872	\$804	[o] = [n] + [j] + [m].
Adjustment to Book Value of Long-Term Debt	(\$126)	(\$126)	(\$126)	(\$105)	\$75	\$141	\$105	[p] = See Sources and Notes.
Market Value of Long-Term Debt	\$2,002	\$2,004	\$2,057	\$2,082	\$943	\$1,013	\$909	[q] = [p] + [o].
Market Value of Debt	\$2,002	\$2,004	\$2,057	\$2,082	\$943	\$1,013	\$909	[r] = [q].
MARKET VALUE OF FIRM								
	\$4,510	\$4,512	\$4,676	\$4,204	\$2,646	\$2,276	\$1,879	[s] = [d] + [g] + [r].
DEBT AND EQUITY TO MARKET VALUE RATIOS								
Common Equity - Market Value Ratio	55.61%	55.59%	56.01%	50.48%	64.39%	55.49%	51.63%	[t] = [d] / [s].
Preferred Equity - Market Value Ratio	-	-	-	-	-	-	-	[u] = [g] / [s].
Debt - Market Value Ratio	44.39%	44.41%	43.99%	49.52%	35.61%	44.51%	48.37%	[v] = [r] / [s].

Sources and Notes:

Bloomberg as of February 07, 2008

Capital structure from 3rd Quarter, 2007 calculated using respective balance sheet information and 15-day average prices ending at period end.

The DCF Capital structure is calculated using 3rd Quarter, 2007 balance sheet information and a 15-trading day average closing price ending on 2/7/2008.

Prices are reported in Workpaper #1 to Table No. MJV-17.

[m] =

(1): 0 if [k] > 0.

(2): The absolute value of [k] if [k] < 0 and |[k]| < [l].

(3): [l] if [k] < 0 and |[k]| > [l].

[p]: Difference between fair value of Long-Term debt and carrying amount of Long-Term debt per company 10-K. Data for adjustment is from 2006 10-K. Companies do not report the fair value of Long-Term debt in quarterly reports, so end-of-year 2006 data is used instead.

Table No. MJV-14
Market Value of the Gas LDC Sample
Panel C: Nicor Inc
(\$MM)

	DCF Capital Structure	3rd Quarter, 2007	Year End, 2006	Year End, 2005	Year End, 2004	Year End, 2003	Year End, 2002	Notes
MARKET VALUE OF COMMON EQUITY								
Book Value, Common Shareholder's Equity	\$909	\$909	\$873	\$811	\$749	\$755	\$728	[a]
Shares Outstanding (in millions) - Common	45	45	45	44	44	44	44	[b]
Price per Share - Common	\$40.03	\$42.15	\$48.18	\$40.64	\$37.42	\$34.02	\$34.01	[c]
Market Value of Common Equity	\$1,807	\$1,902	\$2,163	\$1,795	\$1,650	\$1,498	\$1,497	[d] = [b] x [c].
Market to Book Value of Common Equity	1.99	2.09	2.48	2.21	2.20	1.99	2.05	[e] = [d] / [a].
MARKET VALUE OF PREFERRED EQUITY								
Book Value of Preferred Equity	\$0	\$0	\$0	\$0	\$0	\$0	\$4	[f]
Market Value of Preferred Equity	\$0	\$0	\$0	\$0	\$0	\$0	\$4	[g] = [f].
MARKET VALUE OF DEBT								
Current Assets	\$734	\$734	\$911	\$1,346	\$1,021	\$916	\$708	[h]
Current Liabilities	\$1,007	\$1,007	\$1,142	\$1,623	\$1,171	\$1,069	\$1,099	[i]
Current Portion of Long-Term Debt	\$75	\$75	\$0	\$50	\$0	\$0	\$100	[j]
Net Working Capital	(\$199)	(\$199)	(\$232)	(\$227)	(\$150)	(\$153)	(\$291)	[k] = [h] - ([i] - [j]).
Notes Payable (Short-Term Debt)	\$162	\$162	\$350	\$586	\$490	\$575	\$315	[l]
Adjusted Short-Term Debt	\$162	\$162	\$232	\$227	\$150	\$153	\$291	[m] = See Sources and Notes.
Long-Term Debt	\$423	\$423	\$498	\$486	\$497	\$497	\$396	[n]
Book Value of Long-Term Debt	\$660	\$660	\$730	\$764	\$647	\$650	\$787	[o] = [n] + [j] + [m].
Adjustment to Book Value of Long-Term Debt	\$18	\$18	\$18	\$25	\$30	\$30	\$32	[p] = See Sources and Notes.
Market Value of Long-Term Debt	\$678	\$678	\$748	\$789	\$677	\$680	\$819	[q] = [p] + [o].
Market Value of Debt	\$678	\$678	\$748	\$789	\$677	\$680	\$819	[r] = [q].
MARKET VALUE OF FIRM								
	\$2,485	\$2,580	\$2,911	\$2,584	\$2,328	\$2,178	\$2,320	[s] = [d] + [g] + [r].
DEBT AND EQUITY TO MARKET VALUE RATIOS								
Common Equity - Market Value Ratio	72.70%	73.71%	74.31%	69.48%	70.90%	68.79%	64.52%	[t] = [d] / [s].
Preferred Equity - Market Value Ratio	-	-	-	-	-	-	0.19%	[u] = [g] / [s].
Debt - Market Value Ratio	27.30%	26.29%	25.69%	30.52%	29.10%	31.21%	35.29%	[v] = [r] / [s].

Sources and Notes:

Bloomberg as of February 07, 2008

Capital structure from 3rd Quarter, 2007 calculated using respective balance sheet information and 15-day average prices ending at period end.

The DCF Capital structure is calculated using 3rd Quarter, 2007 balance sheet information and a 15-trading day average closing price ending on 2/7/2008.

Prices are reported in Workpaper #1 to Table No. MJV-17.

[m] =

(1): 0 if [k] > 0.

(2): The absolute value of [k] if [k] < 0 and |[k]| < [l].

(3): [l] if [k] < 0 and |[k]| > [l].

[p]: Difference between fair value of Long-Term debt and carrying amount of Long-Term debt per company 10-K. Data for adjustment is from 2006 10-K. Companies do not report the fair value of Long-Term debt in quarterly reports, so end-of-year 2006 data is used instead.

Table No. MJV-14
Market Value of the Gas LDC Sample
Panel D: Laclede Group Inc
(\$MM)

	DCF Capital Structure	3rd Quarter, 2007	Year End, 2006	Year End, 2005	Year End, 2004	Year End, 2003	Year End, 2002	Notes
MARKET VALUE OF COMMON EQUITY								
Book Value, Common Shareholder's Equity	\$440	\$428	\$403	\$367	\$356	\$299	\$286	[a]
Shares Outstanding (in millions) - Common	22	22	21	21	21	19	19	[b]
Price per Share - Common	\$33.59	\$32.20	\$35.54	\$29.45	\$31.30	\$28.99	\$23.78	[c]
Market Value of Common Equity	\$731	\$697	\$759	\$624	\$657	\$553	\$450	[d] = [b] x [c].
Market to Book Value of Common Equity	1.66	1.63	1.89	1.70	1.85	1.85	1.57	[e] = [d] / [a].
MARKET VALUE OF PREFERRED EQUITY								
Book Value of Preferred Equity	\$1	\$1	\$1	\$1	\$1	\$1	\$1	[f]
Market Value of Preferred Equity	\$1	\$1	\$1	\$1	\$1	\$1	\$1	[g] = [f].
MARKET VALUE OF DEBT								
Current Assets	\$562	\$467	\$460	\$424	\$338	\$288	\$222	[h]
Current Liabilities	\$552	\$474	\$431	\$366	\$263	\$366	\$337	[i]
Current Portion of Long-Term Debt	\$0	\$40	\$0	\$40	\$25	\$0	\$25	[j]
Net Working Capital	\$10	\$34	\$29	\$99	\$100	(\$78)	(\$89)	[k] = [h] - ([i] - [j]).
Notes Payable (Short-Term Debt)	\$294	\$211	\$207	\$71	\$71	\$218	\$162	[l]
Adjusted Short-Term Debt	\$0	\$0	\$0	\$0	\$0	\$78	\$89	[m] = See Sources and Notes.
Long-Term Debt	\$356	\$356	\$395	\$340	\$380	\$305	\$260	[n]
Book Value of Long-Term Debt	\$356	\$396	\$396	\$380	\$405	\$383	\$374	[o] = [n] + [j] + [m].
Adjustment to Book Value of Long-Term Debt	\$18	\$18	\$18	\$31	\$35	\$31	\$31	[p] = See Sources and Notes.
Market Value of Long-Term Debt	\$374	\$414	\$414	\$412	\$440	\$414	\$405	[q] = [p] + [o].
Market Value of Debt	\$374	\$414	\$414	\$412	\$440	\$414	\$405	[r] = [q].
MARKET VALUE OF FIRM								
	\$1,106	\$1,112	\$1,174	\$1,036	\$1,098	\$969	\$856	[s] = [d] + [g] + [r].
DEBT AND EQUITY TO MARKET VALUE RATIOS								
Common Equity - Market Value Ratio	66.11%	62.69%	64.66%	60.18%	59.81%	57.11%	52.57%	[t] = [d] / [s].
Preferred Equity - Market Value Ratio	0.06%	0.06%	0.07%	0.09%	0.10%	0.13%	0.15%	[u] = [g] / [s].
Debt - Market Value Ratio	33.83%	37.25%	35.27%	39.73%	40.09%	42.76%	47.28%	[v] = [r] / [s].

Sources and Notes:

Bloomberg as of February 07, 2008

Capital structure from 3rd Quarter, 2007 calculated using respective balance sheet information and 15-day average prices ending at period end.

The DCF Capital structure is calculated using 3rd Quarter, 2007 balance sheet information and a 15-trading day average closing price ending on 2/7/2008.

Prices are reported in Workpaper #1 to Table No. MJV-17.

[m] =

(1): 0 if [k] > 0.

(2): The absolute value of [k] if [k] < 0 and |[k]| < [l].

(3): [l] if [k] < 0 and |[k]| > [l].

[p]: Difference between fair value of Long-Term debt and carrying amount of Long-Term debt per company 10-K. Data for adjustment is from 2006 10-K. Companies do not report the fair value of Long-Term debt in quarterly reports, so end-of-year 2006 data is used instead.

Table No. MJV-14
Market Value of the Gas LDC Sample
Panel E: New Jersey Resources Corp
(\$MM)

	DCF Capital Structure	3rd Quarter, 2007	Year End, 2006	Year End, 2005	Year End, 2004	Year End, 2003	Year End, 2002	Notes
MARKET VALUE OF COMMON EQUITY								
Book Value, Common Shareholder's Equity	\$669	\$645	\$622	\$438	\$468	\$419	\$361	[a]
Shares Outstanding (in millions) - Common	28	28	28	28	28	27	27	[b]
Price per Share - Common	\$46.96	\$48.36	\$49.94	\$43.07	\$43.42	\$38.50	\$32.40	[c]
Market Value of Common Equity	\$1,310	\$1,342	\$1,380	\$1,214	\$1,204	\$1,048	\$872	[d] = [b] x [c].
Market to Book Value of Common Equity	1.96	2.08	2.22	2.77	2.57	2.50	2.41	[e] = [d] / [a].
MARKET VALUE OF PREFERRED EQUITY								
Book Value of Preferred Equity	\$0	\$0	\$0	\$0	\$0	\$0	\$0	[f]
Market Value of Preferred Equity	\$0	\$0	\$0	\$0	\$0	\$0	\$0	[g] = [f].
MARKET VALUE OF DEBT								
Current Assets	\$937	\$800	\$966	\$1,073	\$686	\$450	\$434	[h]
Current Liabilities	\$839	\$703	\$897	\$1,097	\$688	\$524	\$436	[i]
Current Portion of Long-Term Debt	\$35	\$4	\$4	\$3	\$28	\$2	\$27	[j]
Net Working Capital	\$133	\$101	\$72	(\$20)	\$26	(\$71)	\$25	[k] = [h] - ([i] - [j]).
Notes Payable (Short-Term Debt)	\$289	\$256	\$281	\$174	\$260	\$186	\$60	[l]
Adjusted Short-Term Debt	\$0	\$0	\$0	\$20	\$0	\$71	\$0	[m] = See Sources and Notes.
Long-Term Debt	\$359	\$383	\$332	\$317	\$316	\$258	\$371	[n]
Book Value of Long-Term Debt	\$394	\$388	\$336	\$341	\$344	\$332	\$398	[o] = [n] + [j] + [m].
Adjustment to Book Value of Long-Term Debt	\$2	\$2	\$2	\$2	\$6	\$9	\$10	[p] = See Sources and Notes.
Market Value of Long-Term Debt	\$396	\$390	\$338	\$343	\$349	\$341	\$407	[q] = [p] + [o].
Market Value of Debt	\$396	\$390	\$338	\$343	\$349	\$341	\$407	[r] = [q].
MARKET VALUE OF FIRM								
	\$1,706	\$1,731	\$1,718	\$1,557	\$1,554	\$1,389	\$1,280	[s] = [d] + [g] + [r].
DEBT AND EQUITY TO MARKET VALUE RATIOS								
Common Equity - Market Value Ratio	76.78%	77.50%	80.32%	77.99%	77.52%	75.45%	68.15%	[t] = [d] / [s].
Preferred Equity - Market Value Ratio	-	-	-	-	-	-	0.02%	[u] = [g] / [s].
Debt - Market Value Ratio	23.22%	22.50%	19.68%	22.01%	22.48%	24.55%	31.83%	[v] = [r] / [s].

Sources and Notes:

Bloomberg as of February 07, 2008

Capital structure from 3rd Quarter, 2007 calculated using respective balance sheet information and 15-day average prices ending at period end.

The DCF Capital structure is calculated using 3rd Quarter, 2007 balance sheet information and a 15-trading day average closing price ending on 2/7/2008.

Prices are reported in Workpaper #1 to Table No. MJV-17.

[m] =

(1): 0 if [k] > 0.

(2): The absolute value of [k] if [k] < 0 and |[k]| < [l].

(3): [l] if [k] < 0 and |[k]| > [l].

[p]: Difference between fair value of Long-Term debt and carrying amount of Long-Term debt per company 10-K. Data for adjustment is from 2006 10-K. Companies do not report the fair value of Long-Term debt in quarterly reports, so end-of-year 2006 data is used instead.

Table No. MJV-14
Market Value of the Gas LDC Sample
Panel F: Northwest Natural Gas Co
(\$MM)

	DCF Capital Structure	3rd Quarter, 2007	Year End, 2006	Year End, 2005	Year End, 2004	Year End, 2003	Year End, 2002	Notes
MARKET VALUE OF COMMON EQUITY								
Book Value, Common Shareholder's Equity	\$585	\$585	\$600	\$587	\$569	\$506	\$482	[a]
Shares Outstanding (in millions) - Common	27	27	27	28	27	26	26	[b]
Price per Share - Common	\$47.86	\$45.97	\$42.24	\$34.89	\$33.36	\$30.54	\$27.17	[c]
Market Value of Common Equity	\$1,272	\$1,222	\$1,151	\$962	\$901	\$794	\$695	[d] = [b] x [c].
Market to Book Value of Common Equity	2.17	2.09	1.92	1.64	1.59	1.57	1.44	[e] = [d] / [a].
MARKET VALUE OF PREFERRED EQUITY								
Book Value of Preferred Equity	\$0	\$0	\$0	\$0	\$0	\$0	\$8	[f]
Market Value of Preferred Equity	\$0	\$0	\$0	\$0	\$0	\$0	\$8	[g] = [f].
MARKET VALUE OF DEBT								
Current Assets	\$205	\$205	\$309	\$324	\$237	\$200	\$193	[h]
Current Liabilities	\$299	\$299	\$339	\$327	\$267	\$214	\$205	[i]
Current Portion of Long-Term Debt	\$5	\$5	\$30	\$8	\$15	\$0	\$20	[j]
Net Working Capital	(\$89)	(\$89)	(\$1)	\$5	(\$15)	(\$15)	\$8	[k] = [h] - ([i] - [j]).
Notes Payable (Short-Term Debt)	\$112	\$112	\$100	\$127	\$103	\$85	\$70	[l]
Adjusted Short-Term Debt	\$89	\$89	\$1	\$0	\$15	\$15	\$0	[m] = See Sources and Notes.
Long-Term Debt	\$512	\$512	\$517	\$522	\$484	\$500	\$446	[n]
Book Value of Long-Term Debt	\$606	\$606	\$548	\$530	\$514	\$515	\$466	[o] = [n] + [j] + [m].
Adjustment to Book Value of Long-Term Debt	\$49	\$49	\$49	\$50	\$69	\$62	\$53	[p] = See Sources and Notes.
Market Value of Long-Term Debt	\$655	\$655	\$597	\$579	\$583	\$578	\$518	[q] = [p] + [o].
Market Value of Debt	\$655	\$655	\$597	\$579	\$583	\$578	\$518	[r] = [q].
MARKET VALUE OF FIRM								
	\$1,927	\$1,877	\$1,748	\$1,542	\$1,484	\$1,371	\$1,222	[s] = [d] + [g] + [r].
DEBT AND EQUITY TO MARKET VALUE RATIOS								
Common Equity - Market Value Ratio	66.01%	65.10%	65.86%	62.42%	60.72%	57.88%	56.89%	[t] = [d] / [s].
Preferred Equity - Market Value Ratio	-	-	-	-	-	-	0.68%	[u] = [g] / [s].
Debt - Market Value Ratio	33.99%	34.90%	34.14%	37.58%	39.28%	42.12%	42.43%	[v] = [r] / [s].

Sources and Notes:

Bloomberg as of February 07, 2008

Capital structure from 3rd Quarter, 2007 calculated using respective balance sheet information and 15-day average prices ending at period end.

The DCF Capital structure is calculated using 3rd Quarter, 2007 balance sheet information and a 15-trading day average closing price ending on 2/7/2008.

Prices are reported in Workpaper #1 to Table No. MJV-17.

[m] =

(1): 0 if [k] > 0.

(2): The absolute value of [k] if [k] < 0 and |[k]| < [l].

(3): [l] if [k] < 0 and |[k]| > [l].

[p]: Difference between fair value of Long-Term debt and carrying amount of Long-Term debt per company 10-K. Data for adjustment is from 2006 10-K. Companies do not report the fair value of Long-Term debt in quarterly reports, so end-of-year 2006 data is used instead.

Table No. MJV-14
Market Value of the Gas LDC Sample
Panel G: Piedmont Natural Gas Co
(\$MM)

	DCF Capital Structure	3rd Quarter, 2007	Year End, 2006	Year End, 2005	Year End, 2004	Year End, 2003	Year End, 2002	Notes
MARKET VALUE OF COMMON EQUITY								
Book Value, Common Shareholder's Equity	\$878	\$878	\$883	\$884	\$855	\$630	\$590	[a]
Shares Outstanding (in millions) - Common	74	74	75	77	77	67	66	[b]
Price per Share - Common	\$25.15	\$25.35	\$27.47	\$23.97	\$23.44	\$21.30	\$18.02	[c]
Market Value of Common Equity	\$1,867	\$1,881	\$2,049	\$1,838	\$1,797	\$1,434	\$1,193	[d] = [b] x [c].
Market to Book Value of Common Equity	2.13	2.14	2.32	2.08	2.10	2.28	2.02	[e] = [d] / [a].
MARKET VALUE OF PREFERRED EQUITY								
Book Value of Preferred Equity	\$0	\$0	\$0	\$0	\$0	\$0	\$0	[f]
Market Value of Preferred Equity	\$0	\$0	\$0	\$0	\$0	\$0	\$0	[g] = [f].
MARKET VALUE OF DEBT								
Current Assets	\$435	\$435	\$476	\$505	\$391	\$323	\$176	[h]
Current Liabilities	\$425	\$425	\$400	\$529	\$336	\$740	\$205	[i]
Current Portion of Long-Term Debt	\$0	\$0	\$0	\$35	\$0	\$2	\$47	[j]
Net Working Capital	\$11	\$11	\$76	\$11	\$55	(\$414)	\$18	[k] = [h] - ([i] - [j]).
Notes Payable (Short-Term Debt)	\$196	\$196	\$170	\$159	\$110	\$555	\$47	[l]
Adjusted Short-Term Debt	\$0	\$0	\$0	\$0	\$0	\$414	\$0	[m] = See Sources and Notes.
Long-Term Debt	\$825	\$825	\$825	\$625	\$660	\$460	\$462	[n]
Book Value of Long-Term Debt	\$825	\$825	\$825	\$660	\$660	\$876	\$509	[o] = [n] + [j] + [m].
Adjustment to Book Value of Long-Term Debt	\$89	\$89	\$89	\$93	\$115	\$45	\$81	[p] = See Sources and Notes.
Market Value of Long-Term Debt	\$914	\$914	\$914	\$753	\$775	\$921	\$590	[q] = [p] + [o].
Market Value of Debt	\$914	\$914	\$914	\$753	\$775	\$921	\$590	[r] = [q].
MARKET VALUE OF FIRM								
	\$2,780	\$2,795	\$2,963	\$2,592	\$2,572	\$2,355	\$1,782	[s] = [d] + [g] + [r].
DEBT AND EQUITY TO MARKET VALUE RATIOS								
Common Equity - Market Value Ratio	67.14%	67.31%	69.16%	70.93%	69.86%	60.88%	66.92%	[t] = [d] / [s].
Preferred Equity - Market Value Ratio	-	-	-	-	-	-	-	[u] = [g] / [s].
Debt - Market Value Ratio	32.86%	32.69%	30.84%	29.07%	30.14%	39.12%	33.08%	[v] = [r] / [s].

Sources and Notes:

Bloomberg as of February 07, 2008

Capital structure from 3rd Quarter, 2007 calculated using respective balance sheet information and 15-day average prices ending at period end.

The DCF Capital structure is calculated using 3rd Quarter, 2007 balance sheet information and a 15-trading day average closing price ending on 2/7/2008.

Prices are reported in Workpaper #1 to Table No. MJV-17.

[m] =

(1): 0 if [k] > 0.

(2): The absolute value of [k] if [k] < 0 and |[k]| < [l].

(3): [l] if [k] < 0 and |[k]| > [l].

[p]: Difference between fair value of Long-Term debt and carrying amount of Long-Term debt per company 10-K. Data for adjustment is from 2006 10-K. Companies do not report the fair value of Long-Term debt in quarterly reports, so end-of-year 2006 data is used instead.

Table No. MJV-14
Market Value of the Gas LDC Sample
Panel H: South Jersey Industries Inc
(\$MM)

	DCF Capital Structure	3rd Quarter, 2007	Year End, 2006	Year End, 2005	Year End, 2004	Year End, 2003	Year End, 2002	Notes
MARKET VALUE OF COMMON EQUITY								
Book Value, Common Shareholder's Equity	\$472	\$472	\$443	\$394	\$343	\$298	\$238	[a]
Shares Outstanding (in millions) - Common	30	30	29	29	28	26	24	[b]
Price per Share - Common	\$35.49	\$34.44	\$33.21	\$29.84	\$25.79	\$20.01	\$16.40	[c]
Market Value of Common Equity	\$1,048	\$1,017	\$974	\$865	\$716	\$529	\$400	[d] = [b] x [c].
Market to Book Value of Common Equity	2.22	2.15	2.20	2.20	2.09	1.78	1.68	[e] = [d] / [a].
MARKET VALUE OF PREFERRED EQUITY								
Book Value of Preferred Equity	\$0	\$0	\$0	\$0	\$2	\$2	\$2	[f]
Market Value of Preferred Equity	\$0	\$0	\$0	\$0	\$2	\$2	\$2	[g] = [f].
MARKET VALUE OF DEBT								
Current Assets	\$309	\$309	\$372	\$362	\$284	\$266	\$212	[h]
Current Liabilities	\$328	\$328	\$423	\$406	\$285	\$268	\$316	[i]
Current Portion of Long-Term Debt	\$0	\$0	\$2	\$2	\$5	\$5	\$11	[j]
Net Working Capital	(\$19)	(\$19)	(\$49)	(\$42)	\$4	\$3	(\$93)	[k] = [h] - ([i] - [j]).
Notes Payable (Short-Term Debt)	\$146	\$146	\$195	\$147	\$92	\$113	\$167	[l]
Adjusted Short-Term Debt	\$19	\$19	\$49	\$42	\$0	\$0	\$93	[m] = See Sources and Notes.
Long-Term Debt	\$358	\$358	\$358	\$319	\$329	\$309	\$274	[n]
Book Value of Long-Term Debt	\$377	\$377	\$409	\$363	\$334	\$314	\$378	[o] = [n] + [j] + [m].
Adjustment to Book Value of Long-Term Debt	\$21	\$21	\$21	\$13	\$16	\$25	\$43	[p] = See Sources and Notes.
Market Value of Long-Term Debt	\$397	\$397	\$430	\$376	\$350	\$339	\$421	[q] = [p] + [o].
Market Value of Debt	\$397	\$397	\$430	\$376	\$350	\$339	\$421	[r] = [q].
MARKET VALUE OF FIRM								
	\$1,446	\$1,415	\$1,404	\$1,241	\$1,068	\$870	\$823	[s] = [d] + [g] + [r].
DEBT AND EQUITY TO MARKET VALUE RATIOS								
Common Equity - Market Value Ratio	72.52%	71.92%	69.38%	69.69%	67.05%	60.87%	48.65%	[t] = [d] / [s].
Preferred Equity - Market Value Ratio	-	-	-	-	0.16%	0.19%	0.21%	[u] = [g] / [s].
Debt - Market Value Ratio	27.48%	28.08%	30.62%	30.31%	32.79%	38.94%	51.14%	[v] = [r] / [s].

Sources and Notes:

Bloomberg as of February 07, 2008

Capital structure from 3rd Quarter, 2007 calculated using respective balance sheet information and 15-day average prices ending at period end.

The DCF Capital structure is calculated using 3rd Quarter, 2007 balance sheet information and a 15-trading day average closing price ending on 2/7/2008.

Prices are reported in Workpaper #1 to Table No. MJV-17.

[m] =

(1): 0 if [k] > 0.

(2): The absolute value of [k] if [k] < 0 and |[k]| < [l].

(3): [l] if [k] < 0 and |[k]| > [l].

[p]: Difference between fair value of Long-Term debt and carrying amount of Long-Term debt per company 10-K. Data for adjustment is from 2006 10-K. Companies do not report the fair value of Long-Term debt in quarterly reports, so end-of-year 2006 data is used instead.

Table No. MJV-14
Market Value of the Gas LDC Sample

Panel I: Southwest Gas Corp

(\$MM)

	DCF Capital Structure	3rd Quarter, 2007	Year End, 2006	Year End, 2005	Year End, 2004	Year End, 2003	Year End, 2002	Notes
MARKET VALUE OF COMMON EQUITY								
Book Value, Common Shareholder's Equity	\$942	\$942	\$901	\$751	\$706	\$630	\$596	[a]
Shares Outstanding (in millions) - Common	43	43	42	39	37	34	33	[b]
Price per Share - Common	\$28.31	\$29.15	\$38.33	\$26.74	\$25.49	\$22.61	\$23.14	[c]
Market Value of Common Equity	\$1,205	\$1,240	\$1,601	\$1,052	\$938	\$774	\$770	[d] = [b] x [c].
Market to Book Value of Common Equity	1.28	1.32	1.78	1.40	1.33	1.23	1.29	[e] = [d] / [a].
MARKET VALUE OF PREFERRED EQUITY								
Book Value of Preferred Equity	\$0	\$0	\$0	\$0	\$0	\$0	\$0	[f]
Market Value of Preferred Equity	\$0	\$0	\$0	\$0	\$0	\$0	\$0	[g] = [f].
MARKET VALUE OF DEBT								
Current Assets	\$292	\$292	\$502	\$543	\$432	\$281	\$262	[h]
Current Liabilities	\$399	\$399	\$496	\$621	\$483	\$310	\$313	[i]
Current Portion of Long-Term Debt	\$37	\$37	\$28	\$83	\$30	\$6	\$9	[j]
Net Working Capital	(\$71)	(\$71)	\$33	\$5	(\$21)	(\$23)	(\$43)	[k] = [h] - ([i] - [j]).
Notes Payable (Short-Term Debt)	\$0	\$0	\$0	\$24	\$100	\$52	\$53	[l]
Adjusted Short-Term Debt	\$0	\$0	\$0	\$0	\$21	\$23	\$43	[m] = See Sources and Notes.
Long-Term Debt	\$1,328	\$1,328	\$1,386	\$1,325	\$1,263	\$1,221	\$1,152	[n]
Book Value of Long-Term Debt	\$1,365	\$1,365	\$1,414	\$1,408	\$1,314	\$1,250	\$1,204	[o] = [n] + [j] + [m].
Adjustment to Book Value of Long-Term Debt	\$80	\$80	\$80	\$145	\$154	\$126	\$66	[p] = See Sources and Notes.
Market Value of Long-Term Debt	\$1,445	\$1,445	\$1,494	\$1,553	\$1,468	\$1,377	\$1,269	[q] = [p] + [o].
Market Value of Debt	\$1,445	\$1,445	\$1,494	\$1,553	\$1,468	\$1,377	\$1,269	[r] = [q].
MARKET VALUE OF FIRM								
	\$2,650	\$2,685	\$3,096	\$2,605	\$2,406	\$2,151	\$2,040	[s] = [d] + [g] + [r].
DEBT AND EQUITY TO MARKET VALUE RATIOS								
Common Equity - Market Value Ratio	45.46%	46.19%	51.73%	40.37%	38.98%	35.99%	37.77%	[t] = [d] / [s].
Preferred Equity - Market Value Ratio	-	-	-	-	-	-	-	[u] = [g] / [s].
Debt - Market Value Ratio	54.54%	53.81%	48.27%	59.63%	61.02%	64.01%	62.23%	[v] = [r] / [s].

Sources and Notes:

Bloomberg as of February 07, 2008

Capital structure from 3rd Quarter, 2007 calculated using respective balance sheet information and 15-day average prices ending at period end.

The DCF Capital structure is calculated using 3rd Quarter, 2007 balance sheet information and a 15-trading day average closing price ending on 2/7/2008.

Prices are reported in Workpaper #1 to Table No. MJV-17.

[m] =

(1): 0 if [k] > 0.

(2): The absolute value of [k] if [k] < 0 and |[k]| < [l].

(3): [l] if [k] < 0 and |[k]| > [l].

[p]: Difference between fair value of Long-Term debt and carrying amount of Long-Term debt per company 10-K. Data for adjustment is from 2006 10-K. Companies do not report the fair value of Long-Term debt in quarterly reports, so end-of-year 2006 data is used instead.

Table No. MJV-14
Market Value of the Gas LDC Sample
Panel J: WGL Holdings Inc
(\$MM)

	DCF Capital Structure	3rd Quarter, 2007	Year End, 2006	Year End, 2005	Year End, 2004	Year End, 2003	Year End, 2002	Notes
MARKET VALUE OF COMMON EQUITY								
Book Value, Common Shareholder's Equity	\$1,013	\$981	\$922	\$894	\$853	\$818	\$766	[a]
Shares Outstanding (in millions) - Common	49	49	49	49	49	49	49	[b]
Price per Share - Common	\$32.35	\$33.16	\$32.88	\$30.41	\$30.95	\$27.69	\$23.98	[c]
Market Value of Common Equity	\$1,599	\$1,635	\$1,607	\$1,481	\$1,506	\$1,345	\$1,164	[d] = [b] x [c].
Market to Book Value of Common Equity	1.58	1.67	1.74	1.66	1.76	1.64	1.52	[e] = [d] / [a].
MARKET VALUE OF PREFERRED EQUITY								
Book Value of Preferred Equity	\$28	\$28	\$28	\$28	\$28	\$28	\$28	[f]
Market Value of Preferred Equity	\$28	\$28	\$28	\$28	\$28	\$28	\$28	[g] = [f].
MARKET VALUE OF DEBT								
Current Assets	\$897	\$574	\$562	\$481	\$433	\$409	\$341	[h]
Current Liabilities	\$916	\$557	\$561	\$412	\$413	\$386	\$338	[i]
Current Portion of Long-Term Debt	\$46	\$21	\$61	\$50	\$61	\$12	\$42	[j]
Net Working Capital	\$27	\$38	\$62	\$120	\$81	\$35	\$46	[k] = [h] - ([i] - [j]).
Notes Payable (Short-Term Debt)	\$301	\$184	\$177	\$41	\$96	\$167	\$91	[l]
Adjusted Short-Term Debt	\$0	\$0	\$0	\$0	\$0	\$0	\$0	[m] = See Sources and Notes.
Long-Term Debt	\$594	\$616	\$576	\$584	\$590	\$637	\$668	[n]
Book Value of Long-Term Debt	\$640	\$638	\$637	\$634	\$651	\$649	\$710	[o] = [n] + [j] + [m].
Adjustment to Book Value of Long-Term Debt	\$17	\$17	\$17	\$43	\$56	\$86	\$58	[p] = See Sources and Notes.
Market Value of Long-Term Debt	\$657	\$655	\$654	\$677	\$707	\$735	\$768	[q] = [p] + [o].
Market Value of Debt	\$657	\$655	\$654	\$677	\$707	\$735	\$768	[r] = [q].
MARKET VALUE OF FIRM								
	\$2,284	\$2,318	\$2,289	\$2,186	\$2,241	\$2,108	\$1,960	[s] = [d] + [g] + [r].
DEBT AND EQUITY TO MARKET VALUE RATIOS								
Common Equity - Market Value Ratio	70.02%	70.54%	70.19%	67.75%	67.19%	63.81%	59.40%	[t] = [d] / [s].
Preferred Equity - Market Value Ratio	1.23%	1.22%	1.23%	1.29%	1.26%	1.34%	1.44%	[u] = [g] / [s].
Debt - Market Value Ratio	28.75%	28.24%	28.58%	30.96%	31.55%	34.85%	39.17%	[v] = [r] / [s].

Sources and Notes:

Bloomberg as of February 07, 2008

Capital structure from 3rd Quarter, 2007 calculated using respective balance sheet information and 15-day average prices ending at period end.

The DCF Capital structure is calculated using 3rd Quarter, 2007 balance sheet information and a 15-trading day average closing price ending on 2/7/2008.

Prices are reported in Workpaper #1 to Table No. MJV-17.

[m] =

(1): 0 if [k] > 0.

(2): The absolute value of [k] if [k] < 0 and |[k]| < [l].

(3): [l] if [k] < 0 and |[k]| > [l].

[p]: Difference between fair value of Long-Term debt and carrying amount of Long-Term debt per company 10-K. Data for adjustment is from 2006 10-K. Companies do not report the fair value of Long-Term debt in quarterly reports, so end-of-year 2006 data is used instead.

Table No. MJV-15
Gas LDC Sample
Capital Structure Summary

Company	DCF Capital Structure			5-Year Average Capital Structure		
	Common Equity - Value	Preferred Equity - Value	Debt - Value	Common Equity - Value	Preferred Equity - Value	Debt - Value
	Ratio [1]	Ratio [2]	Ratio [3]	Ratio [4]	Ratio [5]	Ratio [6]
AGL Resources Inc	0.62	-	0.38	0.60	0.00	0.39
Atmos Energy Corp	0.56	-	0.44	0.56	-	0.44
Nicor Inc	0.73	-	0.27	0.71	0.00	0.29
Laclede Group Inc/The	0.66	0.00	0.34	0.60	0.00	0.40
New Jersey Resources Corp	0.77	-	0.23	0.77	0.00	0.23
Northwest Natural Gas Co	0.66	-	0.34	0.62	0.00	0.38
Piedmont Natural Gas Co	0.67	-	0.33	0.68	-	0.32
South Jersey Industries Inc	0.73	-	0.27	0.67	0.00	0.33
Southwest Gas Corp	0.45	-	0.55	0.42	-	0.58
WGL Holdings Inc	0.70	0.01	0.29	0.67	0.01	0.31
Average	0.65	0.00	0.34	0.63	0.00	0.37

Sources and Notes:

[1], [4]:Workpaper #1 to Table No. MJV-15.

[2], [5]:Workpaper #2 to Table No. MJV-15.

[3], [6]:Workpaper #3 to Table No. MJV-15.

Values in this table may not add up exactly to 1.0 because of rounding.

Workpaper #1 to Table No. MJV-15

Gas LDC Sample

Calculation of the Average Common Equity - Market Value Ratio

Company	DCF Capital Structure [1]	3rd Quarter, 2007 [2]	2006 [3]	2005 [4]	2004 [5]	2003 [6]	2002 [7]	5-Year Average [8]
AGL Resources Inc	0.62	0.65	0.64	0.60	0.58	0.57	0.48	0.60
Atmos Energy Corp	0.56	0.56	0.56	0.50	0.64	0.55	0.52	0.56
Nicor Inc	0.73	0.74	0.74	0.69	0.71	0.69	0.65	0.71
Laclede Group Inc/The	0.66	0.63	0.65	0.60	0.60	0.57	0.53	0.60
New Jersey Resources Corp	0.77	0.77	0.80	0.78	0.78	0.75	0.68	0.77
Northwest Natural Gas Co	0.66	0.65	0.66	0.62	0.61	0.58	0.57	0.62
Piedmont Natural Gas Co	0.67	0.67	0.69	0.71	0.70	0.61	0.67	0.68
South Jersey Industries Inc	0.73	0.72	0.69	0.70	0.67	0.61	0.49	0.67
Southwest Gas Corp	0.45	0.46	0.52	0.40	0.39	0.36	0.38	0.42
WGL Holdings Inc	0.70	0.71	0.70	0.68	0.67	0.64	0.59	0.67

Sources and Notes:

[1] - [7]: Table No. MJV-14; Panels A - J, [t].

[8]: $\{([2] \times 0.75) + [3] + [4] + [5] + [6] + ([7] \times 0.25)\} / 5$.

Workpaper #2 to Table No. MJV-15

Gas LDC Sample

Calculation of the Average Preferred Equity - Market Value Ratio

Company	DCF Capital Structure [1]	3rd Quarter, 2007 [2]	2006 [3]	2005 [4]	2004 [5]	2003 [6]	2002 [7]	5-Year Average [8]
AGL Resources Inc	-	-	-	-	-	-	0.08	0.00
Atmos Energy Corp	-	-	-	-	-	-	-	-
Nicor Inc	-	-	-	-	-	-	0.00	0.00
Laclede Group Inc/The	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
New Jersey Resources Corp	-	-	-	-	-	-	0.00	0.00
Northwest Natural Gas Co	-	-	-	-	-	-	0.01	0.00
Piedmont Natural Gas Co	-	-	-	-	-	-	-	-
South Jersey Industries Inc	-	-	-	-	0.00	0.00	0.00	0.00
Southwest Gas Corp	-	-	-	-	-	-	-	-
WGL Holdings Inc	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01

Sources and Notes:

[1] - [7]: Table No. MJV-14; Panels A - J, [u].

[8]: $\{([2] \times 0.75) + [3] + [4] + [5] + [6] + ([7] \times 0.25)\} / 5$.

Workpaper #3 to Table No. MJV-15

Gas LDC Sample

Calculation of the Average Debt - Market Value Ratio

Company	DCF Capital Structure [1]	3rd Quarter, 2007 [2]	2006 [3]	2005 [4]	2004 [5]	2003 [6]	2002 [7]	5-Year Average [8]
AGL Resources Inc	0.38	0.35	0.36	0.40	0.42	0.43	0.44	0.39
Atmos Energy Corp	0.44	0.44	0.44	0.50	0.36	0.45	0.48	0.44
Nicor Inc	0.27	0.26	0.26	0.31	0.29	0.31	0.35	0.29
Laclede Group Inc/The	0.34	0.37	0.35	0.40	0.40	0.43	0.47	0.40
New Jersey Resources Corp	0.23	0.23	0.20	0.22	0.22	0.25	0.32	0.23
Northwest Natural Gas Co	0.34	0.35	0.34	0.38	0.39	0.42	0.42	0.38
Piedmont Natural Gas Co	0.33	0.33	0.31	0.29	0.30	0.39	0.33	0.32
South Jersey Industries Inc	0.27	0.28	0.31	0.30	0.33	0.39	0.51	0.33
Southwest Gas Corp	0.55	0.54	0.48	0.60	0.61	0.64	0.62	0.58
WGL Holdings Inc	0.29	0.28	0.29	0.31	0.32	0.35	0.39	0.31

Sources and Notes:

[1] - [7]: Table No. MJV-14; Panels A - J, [v].

[8]: $\{([2] \times 0.75) + [3] + [4] + [5] + [6] + ([7] \times 0.25)\} / 5$.

Table No. MJV-16

Gas LDC Sample

Combined Bloomberg Estimated and Value Line Estimated Growth Rates

Company	Bloomberg Estimate		Value Line			Combined BEst and Value Line Growth Rate
	BEst Long-Term Growth Rate	Number of Estimates	EPS Year 2007 Estimate	EPS Year 2010 - 2012 Estimate	Annualized Growth Rate	
	[1]	[2]	[3]	[4]	[5]	
AGL Resources Inc	5.8%	2	\$2.65	\$3.10	4.0%	5.2%
Atmos Energy Corp	5.2%	6	\$1.94	\$2.35	4.9%	5.1%
Nicor Inc	4.3%	4	\$2.80	\$2.90	0.9%	3.6%
Laclede Group Inc/The	3.5%	1	\$2.31	\$2.55	2.5%	3.0%
New Jersey Resources Corp	5.1%	4	\$3.15	\$3.40	1.9%	4.5%
Northwest Natural Gas Co	4.9%	5	\$2.65	\$3.30	5.6%	5.0%
Piedmont Natural Gas Co	5.4%	4	\$1.45	\$1.60	2.5%	4.8%
South Jersey Industries Inc	6.2%	3	\$2.00	\$2.90	9.7%	7.1%
Southwest Gas Corp	5.0%	3	\$2.08	\$2.60	5.7%	5.2%
WGL Holdings Inc	4.0%	3	\$2.10	\$2.25	1.7%	3.4%

Sources and Notes:

[1] - [2]: Bloomberg as of February 07, 2008.

[3] - [4]: Most recent Value Line Plus Edition, dated December 14, 2007 and December 28, 2007.

[5]: $([4] / [3])^{(1/4)} - 1$.[6]: $([1] \times [2] + [5]) / ([2] + 1)$.

Table No. MJV-17
DCF Cost of Equity of the Gas LDC Sample
Panel A: Simple DCF Method (Quarterly)

Company	Stock Price [1]	Most Recent Dividend [2]	Quarterly Dividend Yield [3]	Combined BEst and Value Line Long- Term Growth Rate [4]	Quarterly Growth Rate [5]	DCF Cost of Equity [6]
AGL Resources Inc	\$37.39	\$0.41	1.10%	5.2%	1.3%	9.9%
Atmos Energy Corp	\$27.90	\$0.33	1.16%	5.1%	1.3%	10.1%
Nicor Inc	\$40.03	\$0.47	1.16%	3.6%	0.9%	8.5%
Laclede Group Inc/The	\$33.59	\$0.38	1.12%	3.0%	0.7%	7.7%
New Jersey Resources Corp	\$46.96	\$0.40	0.85%	4.5%	1.1%	8.1%
Northwest Natural Gas Co	\$47.86	\$0.38	0.78%	5.0%	1.2%	8.4%
Piedmont Natural Gas Co	\$25.15	\$0.25	0.99%	4.8%	1.2%	9.1%
South Jersey Industries Inc	\$35.49	\$0.27	0.76%	7.1%	1.7%	10.4%
Southwest Gas Corp	\$28.31	\$0.22	0.76%	5.2%	1.3%	8.4%
WGL Holdings Inc	\$32.35	\$0.34	1.06%	3.4%	0.8%	7.9%

Sources and Notes:

[1]: Workpaper #1 to Table No. MJV-17.

[2]: Workpaper #2 to Table No. MJV-17.

[3]: [2] / [1].

[4]: Table No. MJV-16, [6].

[5]: $\{(1 + [4])^{(1/4)}\} - 1$.

[6]: $\{([2] / [1]) \times (1 + [5]) + [5] + 1\}^{(1/4)} - 1$.

Table No. MJV-17

DCF Cost of Equity of the Gas LDC Sample

Panel B: Multi-Stage DCF (Using Blue Chip Long-Term GDP Growth Forecast as the Perpetual Rate)

Company	Stock Price [1]	Most Recent Dividend [2]	Combined BESt and <i>Value Line</i> Long-Term Growth		Growth Rate: FY 2013 [4]	Growth Rate: FY 2014 [5]	Growth Rate: FY 2015 [6]	Growth Rate: FY 2016 [7]	Growth Rate: FY 2017 [8]	GDP Long- Term Growth Rate [9]	DCF Cost of Equity [10]
			Rate [3]	Rate [3]							
AGL Resources Inc	\$37.39	\$0.41	5.2%	5.2%	5.1%	5.1%	5.0%	5.0%	4.9%	4.9%	9.6%
Atmos Energy Corp	\$27.90	\$0.33	5.1%	5.1%	5.1%	5.1%	5.0%	5.0%	4.9%	4.9%	9.8%
Nicor Inc	\$40.03	\$0.47	3.6%	3.6%	3.8%	4.0%	4.2%	4.5%	4.7%	4.9%	9.3%
Laclede Group Inc/The	\$33.59	\$0.38	3.0%	3.0%	3.3%	3.6%	4.0%	4.3%	4.6%	4.9%	9.0%
New Jersey Resources Corp	\$46.96	\$0.40	4.5%	4.5%	4.6%	4.6%	4.7%	4.8%	4.8%	4.9%	8.3%
Northwest Natural Gas Co	\$47.86	\$0.38	5.0%	5.0%	5.0%	5.0%	5.0%	4.9%	4.9%	4.9%	8.2%
Piedmont Natural Gas Co	\$25.15	\$0.25	4.8%	4.8%	4.8%	4.9%	4.9%	4.9%	4.9%	4.9%	9.0%
South Jersey Industries Inc	\$35.49	\$0.27	7.1%	7.1%	6.7%	6.3%	6.0%	5.6%	5.3%	4.9%	8.5%
Southwest Gas Corp	\$28.31	\$0.22	5.2%	5.2%	5.1%	5.1%	5.0%	5.0%	4.9%	4.9%	8.1%
WGL Holdings Inc	\$32.35	\$0.34	3.4%	3.4%	3.7%	3.9%	4.2%	4.4%	4.7%	4.9%	8.9%

Sources and Notes:

[1]: Workpaper #1 to Table No. MJV-17.

[2]: Workpaper #2 to Table No. MJV-17.

[3]: Table No. MJV-16, [6].

[4]: [3] - {[3] - [9]}/ 6}.

[5]: [4] - {[3] - [9]}/ 6}.

[6]: [5] - {[3] - [9]}/ 6}.

[7]: [6] - {[3] - [9]}/ 6}.

[8]: [7] - {[3] - [9]}/ 6}.

[9]: Blue Chip Economic Indicators published October 10, 2007. This number is assumed to be the perpetual growth rate. (See Appendix D).

[10]: Workpaper #3 to Table No. MJV-17.

Worksheet #1 to Table No. MJV-17

Gas LDC Sample

Common Stock Prices from January 17, 2008 to February 7, 2008

Company	2/7/2008	2/6/2008	2/5/2008	2/4/2008	2/1/2008	1/31/2008	1/30/2008	1/29/2008	1/28/2008	1/25/2008	1/24/2008	1/23/2008	1/22/2008	1/18/2008	1/17/2008	Average
AGL Resources Inc	\$36.76	\$37.63	\$37.84	\$39.03	\$38.46	\$37.85	\$36.98	\$37.49	\$37.22	\$36.88	\$36.82	\$37.69	\$36.38	\$36.69	\$37.13	\$37.39
Atmos Energy Corp	\$27.46	\$27.63	\$28.33	\$28.91	\$28.96	\$28.74	\$28.25	\$28.32	\$27.80	\$27.47	\$27.56	\$27.85	\$26.91	\$26.92	\$27.36	\$27.90
Nicor Inc	\$39.31	\$39.75	\$40.84	\$42.32	\$41.64	\$40.94	\$39.85	\$39.71	\$39.14	\$38.68	\$39.28	\$40.73	\$38.81	\$39.26	\$40.26	\$40.03
Laclede Group Inc/The	\$33.58	\$33.17	\$34.01	\$34.99	\$34.41	\$33.77	\$32.88	\$33.17	\$33.63	\$33.64	\$33.26	\$34.25	\$32.51	\$32.94	\$33.71	\$33.59
New Jersey Resources Corp	\$49.08	\$48.24	\$47.26	\$48.56	\$47.24	\$46.83	\$45.69	\$46.41	\$46.50	\$45.67	\$45.86	\$47.18	\$45.19	\$46.64	\$48.10	\$46.96
Northwest Natural Gas Co	\$47.44	\$46.88	\$46.83	\$47.97	\$47.18	\$47.34	\$46.34	\$47.30	\$48.13	\$47.91	\$48.51	\$49.88	\$48.22	\$48.49	\$49.44	\$47.86
Piedmont Natural Gas Co	\$25.16	\$24.94	\$25.05	\$25.66	\$25.52	\$25.07	\$24.32	\$24.93	\$24.92	\$24.54	\$24.72	\$26.29	\$25.11	\$25.16	\$25.93	\$25.15
South Jersey Industries Inc	\$35.36	\$34.99	\$35.08	\$36.08	\$35.79	\$35.03	\$34.51	\$35.34	\$35.46	\$34.99	\$35.33	\$36.49	\$34.94	\$36.14	\$36.84	\$35.49
Southwest Gas Corp	\$28.75	\$28.50	\$28.49	\$29.87	\$29.25	\$28.55	\$28.14	\$28.36	\$28.17	\$27.75	\$27.57	\$28.14	\$27.25	\$27.59	\$28.23	\$28.31
WGL Holdings Inc	\$32.24	\$32.08	\$32.12	\$32.80	\$32.33	\$32.24	\$31.79	\$32.05	\$32.21	\$31.81	\$32.26	\$33.14	\$32.22	\$32.62	\$33.28	\$32.35

Sources and Notes:

Bloomberg as of February 07, 2008.

The prices chosen are the daily closing prices from Bloomberg starting from the most recent prices available in Bloomberg as of February 07, 2008 and ending fifteen trading days before.

Workpaper #2 to Table No. MJV-17

Gas LDC Sample

Most Recent Paid Dividends

Company	Most Recent Dividend
AGL Resources Inc	\$0.41
Atmos Energy Corp	\$0.33
Nicor Inc	\$0.47
Laclede Group Inc/The	\$0.38
New Jersey Resources Corp	\$0.40
Northwest Natural Gas Co	\$0.38
Piedmont Natural Gas Co	\$0.25
South Jersey Industries Inc	\$0.27
Southwest Gas Corp	\$0.22
WGL Holdings Inc	\$0.34

Sources and Notes:

Bloomberg as of February 07, 2008.

Workpaper #3 to Table No. MJV-17

DCF Cost of Equity of the Gas LDC Sample

Multi - Stage DCF (using Blue Chip Economic Indicator Long-Term GDP Growth Forecast as the Perpetual Growth Rate)

Year	Company	AGL Resources Inc	Atmos Energy Corp	Nicor Inc	Laclede Group Inc	New Jersey Resources Corp	Northwest Natural Gas Co	Piedmont Natural Gas Co	South Jersey Industries Inc	Southwest Gas Corp	WGL Holdings Inc
	Current Stock Price	(\$37.39)	(\$27.90)	(\$40.03)	(\$33.59)	(\$46.96)	(\$47.86)	(\$25.15)	(\$35.49)	(\$28.31)	(\$32.35)
	Current Dividend	\$0.41	\$0.33	\$0.47	\$0.38	\$0.40	\$0.38	\$0.25	\$0.27	\$0.22	\$0.34
YEAR 2008	Dividend Q1 Estimate	\$0.42	\$0.33	\$0.47	\$0.38	\$0.40	\$0.38	\$0.25	\$0.27	\$0.22	\$0.34
YEAR 2008	Dividend Q2 Estimate	\$0.42	\$0.33	\$0.47	\$0.38	\$0.40	\$0.38	\$0.25	\$0.28	\$0.22	\$0.35
YEAR 2008	Dividend Q3 Estimate	\$0.43	\$0.34	\$0.47	\$0.38	\$0.41	\$0.38	\$0.26	\$0.28	\$0.22	\$0.35
YEAR 2008	Dividend Q4 Estimate	\$0.43	\$0.34	\$0.48	\$0.38	\$0.41	\$0.39	\$0.26	\$0.29	\$0.23	\$0.35
YEAR 2009	Dividend Q1 Estimate	\$0.44	\$0.35	\$0.48	\$0.39	\$0.42	\$0.39	\$0.26	\$0.29	\$0.23	\$0.35
YEAR 2009	Dividend Q2 Estimate	\$0.44	\$0.35	\$0.49	\$0.39	\$0.42	\$0.40	\$0.27	\$0.30	\$0.23	\$0.36
YEAR 2009	Dividend Q3 Estimate	\$0.45	\$0.35	\$0.49	\$0.39	\$0.43	\$0.40	\$0.27	\$0.30	\$0.23	\$0.36
YEAR 2009	Dividend Q4 Estimate	\$0.45	\$0.36	\$0.49	\$0.39	\$0.43	\$0.41	\$0.27	\$0.31	\$0.24	\$0.36
YEAR 2010	Dividend Q1 Estimate	\$0.46	\$0.36	\$0.50	\$0.40	\$0.44	\$0.41	\$0.27	\$0.31	\$0.24	\$0.37
YEAR 2010	Dividend Q2 Estimate	\$0.47	\$0.37	\$0.50	\$0.40	\$0.44	\$0.42	\$0.28	\$0.32	\$0.24	\$0.37
YEAR 2010	Dividend Q3 Estimate	\$0.47	\$0.37	\$0.51	\$0.40	\$0.45	\$0.42	\$0.28	\$0.33	\$0.25	\$0.37
YEAR 2010	Dividend Q4 Estimate	\$0.48	\$0.38	\$0.51	\$0.41	\$0.45	\$0.43	\$0.28	\$0.33	\$0.25	\$0.38
YEAR 2011	Dividend Q1 Estimate	\$0.48	\$0.38	\$0.52	\$0.41	\$0.46	\$0.43	\$0.29	\$0.34	\$0.25	\$0.38
YEAR 2011	Dividend Q2 Estimate	\$0.49	\$0.39	\$0.52	\$0.41	\$0.46	\$0.44	\$0.29	\$0.34	\$0.26	\$0.38
YEAR 2011	Dividend Q3 Estimate	\$0.50	\$0.39	\$0.53	\$0.42	\$0.47	\$0.45	\$0.29	\$0.35	\$0.26	\$0.39
YEAR 2011	Dividend Q4 Estimate	\$0.50	\$0.40	\$0.53	\$0.42	\$0.47	\$0.45	\$0.30	\$0.35	\$0.26	\$0.39
YEAR 2012	Dividend Q1 Estimate	\$0.51	\$0.40	\$0.54	\$0.42	\$0.48	\$0.46	\$0.30	\$0.36	\$0.27	\$0.39
YEAR 2012	Dividend Q2 Estimate	\$0.51	\$0.41	\$0.54	\$0.43	\$0.48	\$0.46	\$0.31	\$0.37	\$0.27	\$0.40
YEAR 2012	Dividend Q3 Estimate	\$0.52	\$0.41	\$0.54	\$0.43	\$0.49	\$0.47	\$0.31	\$0.37	\$0.27	\$0.40
YEAR 2012	Dividend Q4 Estimate	\$0.53	\$0.42	\$0.55	\$0.43	\$0.49	\$0.47	\$0.31	\$0.38	\$0.28	\$0.40
YEAR 2013	Dividend Q1 Estimate	\$0.53	\$0.42	\$0.55	\$0.43	\$0.50	\$0.48	\$0.32	\$0.39	\$0.28	\$0.41
YEAR 2013	Dividend Q2 Estimate	\$0.54	\$0.43	\$0.56	\$0.44	\$0.50	\$0.49	\$0.32	\$0.39	\$0.28	\$0.41
YEAR 2013	Dividend Q3 Estimate	\$0.55	\$0.43	\$0.56	\$0.44	\$0.51	\$0.49	\$0.32	\$0.40	\$0.29	\$0.41
YEAR 2013	Dividend Q4 Estimate	\$0.55	\$0.44	\$0.57	\$0.45	\$0.52	\$0.50	\$0.33	\$0.41	\$0.29	\$0.42
YEAR 2014	Dividend Q1 Estimate	\$0.56	\$0.44	\$0.58	\$0.45	\$0.52	\$0.50	\$0.33	\$0.41	\$0.29	\$0.42
YEAR 2014	Dividend Q2 Estimate	\$0.57	\$0.45	\$0.58	\$0.45	\$0.53	\$0.51	\$0.34	\$0.42	\$0.30	\$0.42
YEAR 2014	Dividend Q3 Estimate	\$0.58	\$0.46	\$0.59	\$0.46	\$0.53	\$0.52	\$0.34	\$0.42	\$0.30	\$0.43
YEAR 2014	Dividend Q4 Estimate	\$0.58	\$0.46	\$0.59	\$0.46	\$0.54	\$0.52	\$0.34	\$0.43	\$0.31	\$0.43
YEAR 2015	Dividend Q1 Estimate	\$0.59	\$0.47	\$0.60	\$0.47	\$0.54	\$0.53	\$0.35	\$0.44	\$0.31	\$0.44
YEAR 2015	Dividend Q2 Estimate	\$0.60	\$0.47	\$0.60	\$0.47	\$0.55	\$0.53	\$0.35	\$0.44	\$0.31	\$0.44
YEAR 2015	Dividend Q3 Estimate	\$0.60	\$0.48	\$0.61	\$0.47	\$0.56	\$0.54	\$0.36	\$0.45	\$0.32	\$0.45
YEAR 2015	Dividend Q4 Estimate	\$0.61	\$0.48	\$0.62	\$0.48	\$0.56	\$0.55	\$0.36	\$0.46	\$0.32	\$0.45
YEAR 2016	Dividend Q1 Estimate	\$0.62	\$0.49	\$0.62	\$0.48	\$0.57	\$0.55	\$0.37	\$0.46	\$0.33	\$0.46
YEAR 2016	Dividend Q2 Estimate	\$0.63	\$0.50	\$0.63	\$0.49	\$0.58	\$0.56	\$0.37	\$0.47	\$0.33	\$0.46
YEAR 2016	Dividend Q3 Estimate	\$0.63	\$0.50	\$0.64	\$0.49	\$0.58	\$0.57	\$0.37	\$0.48	\$0.33	\$0.47
YEAR 2016	Dividend Q4 Estimate	\$0.64	\$0.51	\$0.64	\$0.50	\$0.59	\$0.57	\$0.38	\$0.48	\$0.34	\$0.47
YEAR 2017	Dividend Q1 Estimate	\$0.65	\$0.51	\$0.65	\$0.50	\$0.60	\$0.58	\$0.38	\$0.49	\$0.34	\$0.48
YEAR 2017	Dividend Q2 Estimate	\$0.66	\$0.52	\$0.66	\$0.51	\$0.60	\$0.59	\$0.39	\$0.50	\$0.35	\$0.48
YEAR 2017	Dividend Q3 Estimate	\$0.67	\$0.53	\$0.67	\$0.52	\$0.61	\$0.60	\$0.39	\$0.50	\$0.35	\$0.49
YEAR 2017	Dividend Q4 Estimate	\$0.67	\$0.53	\$0.67	\$0.52	\$0.62	\$0.60	\$0.40	\$0.51	\$0.35	\$0.49
YEAR 2018 Q1	Year 10 Stock Price	\$62.42	\$46.57	\$65.55	\$54.68	\$77.74	\$79.60	\$41.80	\$60.20	\$47.15	\$52.93
	Trial COE: Quarterly Rate	2.3%	2.4%	2.3%	2.2%	2.0%	2.0%	2.2%	2.1%	2.0%	2.2%
	Trial COE: Annual Rate	9.6%	9.8%	9.3%	9.0%	8.3%	8.2%	9.0%	8.5%	8.1%	8.9%
	Cost of Equity	9.6%	9.8%	9.3%	9.0%	8.3%	8.2%	9.0%	8.5%	8.1%	8.9%
	(Trial COE - COE) x 100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Sources and Notes:

All Growth Rate Estimates: Table No. MJV-17; Panel B.

Stock Prices and Dividends are from Bloomberg as of February 07, 2008.

1. See Workpaper #1 to Table No. MJV-17 for the average closing stock price obtained from Bloomberg.
2. See Workpaper #2 to Table No. MJV-17 for the for the quarterly dividend obtained from Bloomberg.
3. The Blue Chip Economic Indicator Long-Term GDP Growth Rate is used to calculate the Year 10 Stock Price.

$$\{(\text{the Dividend Year 2017 Q3 Estimate}) \times ((1 + \text{the Perpetual Growth Rate})^{(1/2)})\} /$$

$$\{(\text{Trial COE} - \text{Quarterly Rate}) - ((1 + \text{the Perpetual Growth Rate})^{(1/4)} - 1)\}.$$

Table No. MJV-18
Overall Cost of Capital of the Gas LDC Sample
Panel A: Simple DCF Method (Quarterly)

Company	3rd Quarter, 2007 Bond Rating [1]	3rd Quarter, 2007 Preferred Equity Rating [2]	DCF Cost of Equity [3]	DCF Common Equity to Market Value Ratio [4]	Cost of Preferred Equity [5]	DCF Preferred Equity to Market Value Ratio [6]	DCF Cost of Debt [7]	DCF Debt to Market Value Ratio [8]	Tennessee- American Water's Income Tax Rate [9]	Overall After- Tax Cost of Capital [10]
AGL Resources Inc	A	-	9.9%	0.62	-	-	6.1%	0.38	39.2%	7.5%
Atmos Energy Corp	BBB	-	10.1%	0.56	-	-	6.3%	0.44	39.2%	7.3%
Nicor Inc	AA	-	8.5%	0.73	-	-	6.0%	0.27	39.2%	7.2%
Laclede Group Inc/The	A	A	7.7%	0.66	6.2%	0.00	6.1%	0.34	39.2%	6.3%
New Jersey Resources Corp	A	-	8.1%	0.77	-	-	6.1%	0.23	39.2%	7.1%
Northwest Natural Gas Co	AA	-	8.4%	0.66	-	-	6.0%	0.34	39.2%	6.7%
Piedmont Natural Gas Co	A	-	9.1%	0.67	-	-	6.1%	0.33	39.2%	7.3%
South Jersey Industries Inc	BBB	-	10.4%	0.73	-	-	6.3%	0.27	39.2%	8.6%
Southwest Gas Corp	BBB	-	8.4%	0.45	-	-	6.3%	0.55	39.2%	5.9%
WGL Holdings Inc	AA	AA	7.9%	0.70	6.0%	0.01	6.0%	0.29	39.2%	6.6%
Average			8.8%	0.65	6.1%	0.01	6.1%	0.34	39.2%	7.1%

Sources and Notes:

[1]: Bloomberg as of February 07, 2008.

[2]: Preferred ratings were assumed equal to debt ratings.

[3]: Table No. MJV-17; Panel A, [5].

[4]: Table No. MJV-15, [1].

[5]: Workpaper #2 to Table No. MJV-11, Panel B, [1].

[6]: Table No. MJV-15, [2].

[7]: Workpaper #2 to Table No. MJV-11, Panel A, [1].

[8]: Table No. MJV-15, [3].

[9]: Provided by Tennessee-American Water.

[10]: $([3] \times [4]) + ([5] \times [6]) + ([7] \times [8] \times (1 - [9]))$.

Table No. MJV-18

Overall Cost of Capital of the Gas LDC Sample

Panel B: Multi-Stage DCF (Using Blue Chip Long-Term GDP Growth Forecast as the Perpetual Rate)

Company	3rd Quarter, 2007 Bond Rating [1]	3rd Quarter, 2007 Preferred Equity Rating [2]	DCF Cost of Equity [3]	DCF Common Equity to Market Value Ratio [4]	Cost of Preferred Equity [5]	DCF Preferred Equity to Market Value Ratio [6]	DCF Cost of Debt [7]	DCF Debt to Market Value Ratio [8]	Tennessee- American Water's Income Tax Rate [9]	Overall After- Tax Cost of Capital [10]
AGL Resources Inc	A	-	9.6%	0.62	-	-	6.1%	0.38	39.2%	7.3%
Atmos Energy Corp	BBB	-	9.8%	0.56	-	-	6.3%	0.44	39.2%	7.2%
Nicor Inc	AA	-	9.3%	0.73	-	-	6.0%	0.27	39.2%	7.8%
Laclede Group Inc/The	A	A	9.0%	0.66	6.2%	0.00	6.1%	0.34	39.2%	7.2%
New Jersey Resources Corp	A	-	8.3%	0.77	-	-	6.1%	0.23	39.2%	7.2%
Northwest Natural Gas Co	AA	-	8.2%	0.66	-	-	6.0%	0.34	39.2%	6.6%
Piedmont Natural Gas Co	A	-	9.0%	0.67	-	-	6.1%	0.33	39.2%	7.3%
South Jersey Industries Inc	BBB	-	8.5%	0.73	-	-	6.3%	0.27	39.2%	7.3%
Southwest Gas Corp	BBB	-	8.1%	0.45	-	-	6.3%	0.55	39.2%	5.8%
WGL Holdings Inc	AA	AA	8.9%	0.70	6.0%	0.01	6.0%	0.29	39.2%	7.3%
Average			8.9%	0.65	6.1%	0.01	6.1%	0.34	39.2%	7.1%

Sources and Notes:

[1]: Bloomberg as of February 07, 2008.

[2]: Preferred ratings were assumed equal to debt ratings.

[3]: Table No. MJV-17; Panel B, [10].

[4]: Table No. MJV-15, [1].

[5]: Workpaper #2 to Table No. MJV-11, Panel B, [1].

[6]: Table No. MJV-15, [2].

[7]: Workpaper #2 to Table No. MJV-11, Panel A, [1].

[8]: Table No. MJV-15, [3].

[9]: Provided by Tennessee-American Water.

[10]: $([3] \times [4]) + ([5] \times [6]) + ([7] \times [8] \times (1 - [9]))$.

Table No. MJV-19
DCF Cost of Equity at Tennessee-American Water Capital Structure
Gas LDC Sample

	Overall Cost of Capital [1]	Tennessee- American Water's Regulatory % Debt [2]	Tennessee- American Water's Cost of Debt [3]	Tennessee- American Water's Income Tax Rate [4]	Tennessee- American Water's Regulatory % Preferred Equity [5]	Tennessee- American Water's Cost of Preferred Equity [6]	Tennessee- American Water's Regulatory % Equity [7]	Estimated Return on Equity [8]
Using All Companies with Bloomberg Forecast								
Simple DCF Quarterly	7.1%	0.53	6.1%	39.2%	1.2%	6.2%	0.45	11.0%
Multi-Stage DCF - Using the Blue Chip Economic Indicator Long-Term GDP Growth Forecast as the Perpetual Rate	7.1%	0.53	6.1%	39.2%	1.2%	6.2%	0.45	11.1%

Sources and Notes:

[1]: Table No. MJV-18; Panels A-B, [10].

[2]: Provided by Tennessee-American Water.

[3]: Based on an A rating, as provided by Tennessee-American Water. Yield from Bloomberg as of February 07, 2008.

[4]: Provided by Tennessee-American Water.

[5]: Provided by Tennessee-American Water.

[6]: From Mergent Bond Record, January 2008 Edition.

[7]: Provided by Tennessee-American Water.

[8]: $\{[1] - ([2] \times [3] \times (1 - [4]) + [5] \times [6])\} / [7]$.

Table No. MJV-20
Risk Positioning Cost of Equity of the Gas LDC Sample
Panel A: Using the Long-Term Risk-Free Rate

Company	Long-Term Risk-Free Rate [1]	Value Line Unadjusted Betas [2]	Long-Term Market Risk Premium [3]	CAPM Cost of Equity [4]	ECAPM (0.5%) Cost of Equity [5]	ECAPM (1.5%) Cost of Equity [6]
AGL Resources Inc	4.3%	0.75	6.50%	9.2%	9.3%	9.5%
Atmos Energy Corp	4.3%	0.75	6.50%	9.2%	9.3%	9.5%
Nicor Inc	4.3%	0.97	6.50%	10.6%	10.6%	10.7%
Laclede Group Inc/The	4.3%	0.90	6.50%	10.1%	10.2%	10.3%
New Jersey Resources Corp	4.3%	0.75	6.50%	9.2%	9.3%	9.5%
Northwest Natural Gas Co	4.3%	0.82	6.50%	9.6%	9.7%	9.9%
Piedmont Natural Gas Co	4.3%	0.75	6.50%	9.2%	9.3%	9.5%
South Jersey Industries Inc	4.3%	0.75	6.50%	9.2%	9.3%	9.5%
Southwest Gas Corp	4.3%	0.82	6.50%	9.6%	9.7%	9.9%
WGL Holdings Inc	4.3%	0.75	6.50%	9.2%	9.3%	9.5%

Sources and Notes:

[1]: Table No. MJV-9 - Interest Rates, Panel A, Row [A].

[2]: Workpaper # 1 to Table No. MJV-20, column [1].

[3]: Vilbert Direct Testimony, Appendix B.

[4]: $[1] + ([2] \times [3])$.

[5]: $([1] + 0.5\%) + [2] \times ([3] - 0.5\%)$.

[6]: $([1] + 1.5\%) + [2] \times ([3] - 1.5\%)$.

Table No. MJV-20
Risk Positioning Cost of Equity of the Gas LDC Sample
Panel B: Using the Short-Term Risk-Free Rate.

Company	Short-Term Risk-Free Rate [1]	Value Line Unadjusted Betas [2]	Short-Term Market Risk Premium [3]	CAPM Cost of Equity [4]	ECAPM (1%) Cost of Equity [5]	ECAPM (2%) Cost of Equity [6]	ECAPM (3%) Cost of Equity [7]
AGL Resources Inc	1.7%	0.75	8.0%	7.7%	7.9%	8.2%	8.4%
Atmos Energy Corp	1.7%	0.75	8.0%	7.7%	7.9%	8.2%	8.4%
Nicor Inc	1.7%	0.97	8.0%	9.5%	9.5%	9.5%	9.6%
Laclede Group Inc/The	1.7%	0.90	8.0%	8.9%	9.0%	9.1%	9.2%
New Jersey Resources Corp	1.7%	0.75	8.0%	7.7%	7.9%	8.2%	8.4%
Northwest Natural Gas Co	1.7%	0.82	8.0%	8.3%	8.4%	8.6%	8.8%
Piedmont Natural Gas Co	1.7%	0.75	8.0%	7.7%	7.9%	8.2%	8.4%
South Jersey Industries Inc	1.7%	0.75	8.0%	7.7%	7.9%	8.2%	8.4%
Southwest Gas Corp	1.7%	0.82	8.0%	8.3%	8.4%	8.6%	8.8%
WGL Holdings Inc	1.7%	0.75	8.0%	7.7%	7.9%	8.2%	8.4%

Sources and Notes:

[1]: Table No. MJV-9 - Interest Rates, Panel B, Row [I].

[2]: Workpaper # 1 to Table No. MJV-20, column [1].

[3]: Vilbert Direct Testimony, Appendix B.

[4]: [1] + ([2] x [3]).

[5]: ([1] + 1%) + [2] x ([3] - 1%).

[6]: ([1] + 2%) + [2] x ([3] - 2%).

[7]: ([1] + 3%) + [2] x ([3] - 3%).

Workpaper # 1 to Table No. MJV-20

Gas LDC Sample

Value Line Unadjusted Betas

Company	Value Line Betas [1]	Value Line Unadjusted Betas [2]
AGL Resources Inc	0.85	0.75
Atmos Energy Corp	0.85	0.75
Nicor Inc	1.00	0.97
Laclede Group Inc/The	0.95	0.90
New Jersey Resources Corp	0.85	0.75
Northwest Natural Gas Co	0.90	0.82
Piedmont Natural Gas Co	0.85	0.75
South Jersey Industries Inc	0.85	0.75
Southwest Gas Corp	0.90	0.82
WGL Holdings Inc	0.85	0.75
Average	0.89	0.80

Sources and Notes:

[1]: Most recent Value Line Plus Edition, dated December 14, 2007 and December 28, 2007.

[2]: {[1] - 0.35}/0.67.

Table No. MJV-21
Overall Cost of Capital of the Gas LDC Sample
Panel A: CAPM Cost of Equity Based on the Long-Term Risk-Free Rate

Company	CAPM Cost of Equity [1]	5-Year Average Common Equity to Market Value Ratio [2]	Weighted - Average Cost of Preferred Equity [3]	5-Year Average Preferred Equity to Market Value Ratio [4]	Weighted- Average Cost of Debt [5]	5-Year Average Debt to Market Value Ratio [6]	Tennessee- American Water's Income Tax Rate [7]	Overall After-Tax Cost of Capital [8]
AGL Resources Inc	9.2%	0.60	6.2%	0.00	6.1%	0.39	39.2%	7.0%
Atmos Energy Corp	9.2%	0.56	-	-	6.3%	0.44	39.2%	6.8%
Nicor Inc	10.6%	0.71	6.0%	0.00	6.0%	0.29	39.2%	8.6%
Laclede Group Inc/The	10.1%	0.60	6.2%	0.00	6.1%	0.40	39.2%	7.6%
New Jersey Resources Corp	9.2%	0.77	6.2%	0.00	6.1%	0.23	39.2%	7.9%
Northwest Natural Gas Co	9.6%	0.62	6.0%	0.00	6.0%	0.38	39.2%	7.4%
Piedmont Natural Gas Co	9.2%	0.68	-	-	6.1%	0.32	39.2%	7.4%
South Jersey Industries Inc	9.2%	0.67	6.5%	0.00	6.3%	0.33	39.2%	7.4%
Southwest Gas Corp	9.6%	0.42	-	-	6.3%	0.58	39.2%	6.3%
WGL Holdings Inc	9.2%	0.67	6.0%	0.01	6.0%	0.31	39.2%	7.4%
Average	9.5%	0.63	6.2%	0.00	6.1%	0.37	39.2%	7.4%

[1]: Table No. MJV-20; Panel A, [4].

[2]: Table No. MJV-15, [4].

[3]: Workpaper #2 to Table No. MJV-21 ; Panel B, [7].

[4]: Table No. MJV-15, [5].

[5]: Workpaper #2 to Table No. MJV-21 ; Panel A, [7].

[6]: Table No. MJV-15, [6].

[7]: Provided by Tennessee-American Water.

[8]: $(([1] \times [2]) + ([3] \times [4]) + \{[5] \times [6] \times (1 - [7])\})$.

Table No. MJV-21

Overall Cost of Capital of the Gas LDC Sample

Panel B: ECAPM (0.5%) Cost of Equity Based on the Long-Term Risk-Free Rate

Company	ECAPM (0.5%) Cost of Equity [1]	5-Year Average Common Equity to Market Value Ratio [2]	Weighted - Average Cost of Preferred Equity [3]	5-Year Average Preferred Equity to Market Value Ratio [4]	Weighted- Average Cost of Debt [5]	5-Year Average Debt to Market Value Ratio [6]	Tennessee- American Water's Income Tax Rate [7]	Overall After-Tax Cost of Capital [8]
AGL Resources Inc	9.3%	0.60	6.2%	0.00	6.1%	0.39	39.2%	7.1%
Atmos Energy Corp	9.3%	0.56	-	-	6.3%	0.44	39.2%	6.9%
Nicor Inc	10.6%	0.71	6.0%	0.00	6.0%	0.29	39.2%	8.6%
Laclede Group Inc/The	10.2%	0.60	6.2%	0.00	6.1%	0.40	39.2%	7.6%
New Jersey Resources Corp	9.3%	0.77	6.2%	0.00	6.1%	0.23	39.2%	8.0%
Northwest Natural Gas Co	9.7%	0.62	6.0%	0.00	6.0%	0.38	39.2%	7.4%
Piedmont Natural Gas Co	9.3%	0.68	-	-	6.1%	0.32	39.2%	7.5%
South Jersey Industries Inc	9.3%	0.67	6.5%	0.00	6.3%	0.33	39.2%	7.5%
Southwest Gas Corp	9.7%	0.42	-	-	6.3%	0.58	39.2%	6.3%
WGL Holdings Inc	9.3%	0.67	6.0%	0.01	6.0%	0.31	39.2%	7.5%
Average	9.6%	0.63	6.2%	0.00	6.1%	0.37	39.2%	7.4%

Sources and Notes:

[1]: Table No. MJV-20; Panel A, [5].

[2]: Table No. MJV-15, [4].

[3]: Workpaper #2 to Table No. MJV-21 ; Panel B, [7].

[4]: Table No. MJV-15, [5].

[5]: Workpaper #2 to Table No. MJV-21 ; Panel A, [7].

[6]: Table No. MJV-15, [6].

[7]: Provided by Tennessee-American Water.

[8]: $([1] \times [2]) + ([3] \times [4]) + \{[5] \times [6] \times (1 - [7])\}$.

Table No. MJV-21

Overall Cost of Capital of the Gas LDC Sample

Panel C: ECAPM (1.5%) Cost of Equity Based on the Long-Term Risk-Free Rate

Company	ECAPM (1.5%) Cost of Equity [1]	5-Year Average Common Equity to Market Value Ratio [2]	Weighted - Average Cost of Preferred Equity [3]	5-Year Average Preferred Equity to Market Value Ratio [4]	Weighted- Average Cost of Debt [5]	5-Year Average Debt to Market Value Ratio [6]	Tennessee- American Water's Income Tax Rate [7]	Overall After-Tax Cost of Capital [8]
AGL Resources Inc	9.5%	0.60	6.2%	0.00	6.1%	0.39	39.2%	7.2%
Atmos Energy Corp	9.5%	0.56	-	-	6.3%	0.44	39.2%	7.0%
Nicor Inc	10.7%	0.71	6.0%	0.00	6.0%	0.29	39.2%	8.6%
Laclede Group Inc/The	10.3%	0.60	6.2%	0.00	6.1%	0.40	39.2%	7.7%
New Jersey Resources Corp	9.5%	0.77	6.2%	0.00	6.1%	0.23	39.2%	8.2%
Northwest Natural Gas Co	9.9%	0.62	6.0%	0.00	6.0%	0.38	39.2%	7.5%
Piedmont Natural Gas Co	9.5%	0.68	-	-	6.1%	0.32	39.2%	7.6%
South Jersey Industries Inc	9.5%	0.67	6.5%	0.00	6.3%	0.33	39.2%	7.6%
Southwest Gas Corp	9.9%	0.42	-	-	6.3%	0.58	39.2%	6.4%
WGL Holdings Inc	9.5%	0.67	6.0%	0.01	6.0%	0.31	39.2%	7.6%
Average	9.8%	0.63	6.2%	0.00	6.1%	0.37	39.2%	7.6%

Sources and Notes:

[1]: Table No. MJV-20; Panel A, [6].

[2]: Table No. MJV-15, [4].

[3]: Workpaper #2 to Table No. MJV-21 ; Panel B, [7].

[4]: Table No. MJV-15, [5].

[5]: Workpaper #2 to Table No. MJV-21 ; Panel A, [7].

[6]: Table No. MJV-15, [6].

[7]: Provided by Tennessee-American Water.

[8]: $([1] \times [2]) + ([3] \times [4]) + \{[5] \times [6] \times (1 - [7])\}$.

Table No. MJV-21
Overall Cost of Capital of the Gas LDC Sample
Panel D: CAPM Cost of Equity Based on the Short-Term Risk-Free Rate

Company	CAPM Cost of Equity [1]	5-Year Average Common Equity to Market Value Ratio [2]	Weighted - Average Cost of Preferred Equity [3]	5-Year Average Preferred Equity to Market Value Ratio [4]	Weighted- Average Cost of Debt [5]	5-Year Average Debt to Market Value Ratio [6]	Tennessee-American Water's Income Tax Rate [7]	Overall After-Tax Cost of Capital [8]
AGL Resources Inc	7.7%	0.60	6.2%	0.00	6.1%	0.39	39.2%	6.1%
Atmos Energy Corp	7.7%	0.56	-	-	6.3%	0.44	39.2%	6.0%
Nicor Inc	9.5%	0.71	6.0%	0.00	6.0%	0.29	39.2%	7.8%
Laclede Group Inc/The	8.9%	0.60	6.2%	0.00	6.1%	0.40	39.2%	6.8%
New Jersey Resources Corp	7.7%	0.77	6.2%	0.00	6.1%	0.23	39.2%	6.8%
Northwest Natural Gas Co	8.3%	0.62	6.0%	0.00	6.0%	0.38	39.2%	6.5%
Piedmont Natural Gas Co	7.7%	0.68	-	-	6.1%	0.32	39.2%	6.4%
South Jersey Industries Inc	7.7%	0.67	6.5%	0.00	6.3%	0.33	39.2%	6.4%
Southwest Gas Corp	8.3%	0.42	-	-	6.3%	0.58	39.2%	5.7%
WGL Holdings Inc	7.7%	0.67	6.0%	0.01	6.0%	0.31	39.2%	6.4%
Average	8.1%	0.63	6.2%	0.00	6.1%	0.37	39.2%	6.5%

Sources and Notes:

[1]: Table No. MJV-20; Panel B, [4].

[2]: Table No. MJV-15, [4].

[3]: Workpaper #2 to Table No. MJV-21 ; Panel B, [7].

[4]: Table No. MJV-15, [5].

[5]: Workpaper #2 to Table No. MJV-21 ; Panel A, [7].

[6]: Table No. MJV-15, [6].

[7]: Provided by Tennessee-American Water.

[8]: $(([1] \times [2]) + ([3] \times [4]) + \{[5] \times [6] \times (1 - [7])\})$.

Table No. MJV-21

Overall Cost of Capital of the Gas LDC Sample

Panel E: ECAPM (1%) Cost of Equity Based on the Short-Term Risk-Free Rate

Company	ECAPM (1%) Cost of Equity [1]	5-Year Average Common Equity to Market Value Ratio [2]	Weighted - Average Cost of Preferred Equity [3]	5-Year Average Preferred Equity to Market Value Ratio [4]	Weighted- Average Cost of Debt [5]	5-Year Average Debt to Market Value Ratio [6]	Tennessee- American Water's Income Tax Rate [7]	Overall After-Tax Cost of Capital [8]
AGL Resources Inc	7.9%	0.60	6.2%	0.00	6.1%	0.39	39.2%	6.2%
Atmos Energy Corp	7.9%	0.56	-	-	6.3%	0.44	39.2%	6.1%
Nicor Inc	9.5%	0.71	6.0%	0.00	6.0%	0.29	39.2%	7.8%
Laclede Group Inc/The	9.0%	0.60	6.2%	0.00	6.1%	0.40	39.2%	6.9%
New Jersey Resources Corp	7.9%	0.77	6.2%	0.00	6.1%	0.23	39.2%	7.0%
Northwest Natural Gas Co	8.4%	0.62	6.0%	0.00	6.0%	0.38	39.2%	6.6%
Piedmont Natural Gas Co	7.9%	0.68	-	-	6.1%	0.32	39.2%	6.6%
South Jersey Industries Inc	7.9%	0.67	6.5%	0.00	6.3%	0.33	39.2%	6.6%
Southwest Gas Corp	8.4%	0.42	-	-	6.3%	0.58	39.2%	5.8%
WGL Holdings Inc	7.9%	0.67	6.0%	0.01	6.0%	0.31	39.2%	6.5%
Average	8.3%	0.63	6.2%	0.00	6.1%	0.37	39.2%	6.6%

Sources and Notes:

[1]: Table No. MJV-20; Panel B, [5].

[2]: Table No. MJV-15, [4].

[3]: Workpaper #2 to Table No. MJV-21 ; Panel B, [7].

[4]: Table No. MJV-15, [5].

[5]: Workpaper #2 to Table No. MJV-21 ; Panel A, [7].

[6]: Table No. MJV-15, [6].

[7]: Provided by Tennessee-American Water.

[8]: $((1) \times (2)) + ((3) \times (4)) + \{ (5) \times (6) \times (1 - [7]) \}$.

Table No. MJV-21

Overall Cost of Capital of the Gas LDC Sample

Panel F: ECAPM (2%) Cost of Equity Based on the Short-Term Risk-Free Rate

Company	ECAPM (2%) Cost of Equity [1]	5-Year Average Common Equity to Market Value Ratio [2]	Weighted - Average Cost of Preferred Equity [3]	5-Year Average Preferred Equity to Market Value Ratio [4]	Weighted- Average Cost of Debt [5]	5-Year Average Debt to Market Value Ratio [6]	Tennessee- American Water's Income Tax Rate [7]	Overall After-Tax Cost of Capital [8]
AGL Resources Inc	8.2%	0.60	6.2%	0.00	6.1%	0.39	39.2%	6.4%
Atmos Energy Corp	8.2%	0.56	-	-	6.3%	0.44	39.2%	6.3%
Nicor Inc	9.5%	0.71	6.0%	0.00	6.0%	0.29	39.2%	7.8%
Laclede Group Inc/The	9.1%	0.60	6.2%	0.00	6.1%	0.40	39.2%	6.9%
New Jersey Resources Corp	8.2%	0.77	6.2%	0.00	6.1%	0.23	39.2%	7.2%
Northwest Natural Gas Co	8.6%	0.62	6.0%	0.00	6.0%	0.38	39.2%	6.7%
Piedmont Natural Gas Co	8.2%	0.68	-	-	6.1%	0.32	39.2%	6.7%
South Jersey Industries Inc	8.2%	0.67	6.5%	0.00	6.3%	0.33	39.2%	6.7%
Southwest Gas Corp	8.6%	0.42	-	-	6.3%	0.58	39.2%	5.9%
WGL Holdings Inc	8.2%	0.67	6.0%	0.01	6.0%	0.31	39.2%	6.7%
Average	8.5%	0.63	6.2%	0.00	6.1%	0.37	39.2%	6.7%

Sources and Notes:

[1]: Table No. MJV-20; Panel B, [6].

[2]: Table No. MJV-15, [4].

[3]: Workpaper #2 to Table No. MJV-21 ; Panel B, [7].

[4]: Table No. MJV-15, [5].

[5]: Workpaper #2 to Table No. MJV-21 ; Panel A, [7].

[6]: Table No. MJV-15, [6].

[7]: Provided by Tennessee-American Water.

[8]: $([1] \times [2]) + ([3] \times [4]) + \{[5] \times [6] \times (1 - [7])\}$.

Table No. MJV-21

Overall Cost of Capital of the Gas LDC Sample

Panel G: ECAPM (3%) Cost of Equity Based on the Short-Term Risk-Free Rate

Company	ECAPM (3%) Cost of Equity [1]	5-Year Average Common Equity to Market Value Ratio [2]	Weighted - Average Cost of Preferred Equity [3]	5-Year Average Preferred Equity to Market Value Ratio [4]	Weighted- Average Cost of Debt [5]	5-Year Average Debt to Market Value Ratio [6]	Tennessee- American Water's Income Tax Rate [7]	Overall After-Tax Cost of Capital [8]
AGL Resources Inc	8.4%	0.60	6.2%	0.00	6.1%	0.39	39.2%	6.6%
Atmos Energy Corp	8.4%	0.56	-	-	6.3%	0.44	39.2%	6.4%
Nicor Inc	9.6%	0.71	6.0%	0.00	6.0%	0.29	39.2%	7.8%
Laclede Group Inc/The	9.2%	0.60	6.2%	0.00	6.1%	0.40	39.2%	7.0%
New Jersey Resources Corp	8.4%	0.77	6.2%	0.00	6.1%	0.23	39.2%	7.4%
Northwest Natural Gas Co	8.8%	0.62	6.0%	0.00	6.0%	0.38	39.2%	6.9%
Piedmont Natural Gas Co	8.4%	0.68	-	-	6.1%	0.32	39.2%	6.9%
South Jersey Industries Inc	8.4%	0.67	6.5%	0.00	6.3%	0.33	39.2%	6.9%
Southwest Gas Corp	8.8%	0.42	-	-	6.3%	0.58	39.2%	5.9%
WGL Holdings Inc	8.4%	0.67	6.0%	0.01	6.0%	0.31	39.2%	6.9%
Average	8.7%	0.63	6.2%	0.00	6.1%	0.37	39.2%	6.9%

Sources and Notes:

[1]: Table No. MJV-20; Panel B, [7].

[2]: Table No. MJV-15, [4].

[3]: Workpaper #2 to Table No. MJV-21 ; Panel B, [7].

[4]: Table No. MJV-15, [5].

[5]: Workpaper #2 to Table No. MJV-21 ; Panel A, [7].

[6]: Table No. MJV-15, [6].

[7]: Provided by Tennessee-American Water.

[8]: $([1] \times [2]) + ([3] \times [4]) + \{[5] \times [6] \times (1 - [7])\}$.

Workpaper #1 to Table No. MJV-21

Gas LDC Sample

Panel A: Rating to Yield Conversion

Rating	Bond Yield	Preferred Yield
AA	5.98%	6.05%
A	6.09%	6.20%
BBB	6.31%	6.51%

Sources and Notes:

Bond Yields from Bloomberg as of February 07, 2008.

Preferred Yields from Mergent Bond Record, January 2008
Edition..

AA estimated as $A - 0.5 * (BBB - A)$.

Workpaper #1 to Table No. MJV-21

Gas LDC Sample

Panel B: Bond Rating Summary

Company	3rd Quarter,					
	2007	2006	2005	2004	2003	2002
	[1]	[2]	[3]	[4]	[5]	[6]
AGL Resources Inc	A	A	A	A	A	A
Atmos Energy Corp	BBB	BBB	BBB	BBB	A	A
Nicor Inc	AA	AA	AA	AA	AA	AA
Laclede Group Inc/The	A	A	A	A	A	A
New Jersey Resources Corp	A	A	A	A	A	A
Northwest Natural Gas Co	AA	AA	A	A	A	A
Piedmont Natural Gas Co	A	A	A	A	A	A
South Jersey Industries Inc	BBB	BBB	BBB	BBB	BBB	BBB
Southwest Gas Corp	BBB	BBB	BBB	BBB	BBB	BBB
WGL Holdings Inc	AA	AA	AA	AA	AA	AA

Sources and Notes:

[1] - [6]: Bloomberg as of February 07, 2008.

Workpaper #1 to Table No. MJV-21

Gas LDC Sample

Panel C: Preferred Equity Rating Summary

Company	3rd Quarter, 2007 [1]	2006 [2]	2005 [3]	2004 [4]	2003 [5]	2002 [6]
AGL Resources Inc	-	-	-	-	-	A
Atmos Energy Corp	-	-	-	-	-	-
Nicor Inc	-	-	-	-	-	AA
Laclede Group Inc/The	A	A	A	A	A	A
New Jersey Resources Corp	-	-	-	-	-	A
Northwest Natural Gas Co	-	-	-	-	-	AA
Piedmont Natural Gas Co	-	-	-	-	-	-
South Jersey Industries Inc	-	-	-	BBB	BBB	BBB
Southwest Gas Corp	-	-	-	-	-	-
WGL Holdings Inc	AA	AA	AA	AA	AA	AA

Sources and Notes:

[1] - [6]: Preferred equity ratings are assumed equal to the company's bond ratings reported in Workpaper #1 to Table No. MJV-21, Panels A and B.

Workpaper #2 to Table No. MJV-21

Gas LDC Sample

Panel A: 15 Day Average Utility Yields and Mergent Preferred Yields

Date	A Rated Utility [1]	BBB Rated Utility [2]	A Preferred [3]	BBB Preferred [4]
1/18/2008	6.08	6.27	-	-
1/21/2008	6.08	6.27	-	-
1/22/2008	5.91	6.12	-	-
1/23/2008	6.19	6.35	-	-
1/24/2008	6.17	6.34	-	-
1/25/2008	5.90	6.20	-	-
1/28/2008	6.05	6.28	-	-
1/29/2008	6.12	6.32	-	-
1/30/2008	6.14	6.33	-	-
1/31/2008	6.05	6.31	-	-
2/1/2008	6.07	6.27	-	-
2/4/2008	6.17	6.40	-	-
2/5/2008	6.09	6.27	-	-
2/6/2008	6.09	6.35	-	-
2/7/2008	6.22	6.51	-	-
Average	6.09	6.31	6.20	6.51

Sources and Notes:

[1] - [2]: Bloomberg as of February 07, 2008.

[3] - [4]: Mergent Bond Record, January 2008 Edition..

Workpaper #2 to Table No. MJV-21

Gas LDC Sample

Panel B: Bond Yield Summary

Company	3rd Quarter, 2007 [1]	2006 [2]	2005 [3]	2004 [4]	2003 [5]	2002 [6]	5-Year Weighted Average [7]
AGL Resources Inc	6.09%	6.09%	6.09%	6.09%	6.09%	6.09%	6.09%
Atmos Energy Corp	6.31%	6.31%	6.31%	6.31%	6.09%	6.09%	6.25%
Nicor Inc	5.98%	5.98%	5.98%	5.98%	5.98%	5.98%	5.98%
Laclede Group Inc/The	6.09%	6.09%	6.09%	6.09%	6.09%	6.09%	6.09%
New Jersey Resources Corp	6.09%	6.09%	6.09%	6.09%	6.09%	6.09%	6.09%
Northwest Natural Gas Co	5.98%	5.98%	6.09%	6.09%	6.09%	6.09%	6.05%
Piedmont Natural Gas Co	6.09%	6.09%	6.09%	6.09%	6.09%	6.09%	6.09%
South Jersey Industries Inc	6.31%	6.31%	6.31%	6.31%	6.31%	6.31%	6.31%
Southwest Gas Corp	6.31%	6.31%	6.31%	6.31%	6.31%	6.31%	6.31%
WGL Holdings Inc	5.98%	5.98%	5.98%	5.98%	5.98%	5.98%	5.98%

Sources and Notes:

[1] - [6]: Ratings based on Workpaper #1 to Table No. MJV-21, Panel A. Bond yields from Bloomberg as of February 07, 2008.

[7]: $\{([1] \times 0.75) + [2] + [3] + [4] + [5] + ([6] \times 0.25)\} / 5$.

The report does not publish yield data for AA-rated preferred bonds. Therefore, I assumed:

Yield on AA-rated debt = Yield on A-rated bond - $\{(1/2) \times (\text{Yield on BBB-rated bond} - \text{Yield on A-rated bond})\}$.

Workpaper #2 to Table No. MJV-21
Gas LDC Sample
Panel C: Preferred Equity Yield Summary

Company	3rd Quarter, 2007 [1]	2006 [2]	2005 [3]	2004 [4]	2003 [5]	2002 [6]	5-Year Weighted Average [7]
AGL Resources Inc	-	-	-	-	-	6.20%	6.20%
Atmos Energy Corp	-	-	-	-	-	-	-
Nicor Inc	-	-	-	-	-	6.05%	6.05%
Laclede Group Inc/The	6.20%	6.20%	6.20%	6.20%	6.20%	6.20%	6.20%
New Jersey Resources Corp	-	-	-	-	-	6.20%	6.20%
Northwest Natural Gas Co	-	-	-	-	-	6.05%	6.05%
Piedmont Natural Gas Co	-	-	-	-	-	-	-
South Jersey Industries Inc	-	-	-	6.51%	6.51%	6.51%	6.51%
Southwest Gas Corp	-	-	-	-	-	-	-
WGL Holdings Inc	6.05%	6.05%	6.05%	6.05%	6.05%	6.05%	6.05%

Sources and Notes:

[1] - [6]: Ratings based on Workpaper #1 to Table No. MJV-21, Panel A are assumed to equal preferred ratings. Preferred equity yields are from Mergent Bond Record, January 2008 Edition.

[7]: $\{([1] \times 0.75) + [2] + [3] + [4] + [5] + ([6] \times 0.25)\} / 5$.

The report does not publish yield data for AA-rated preferred equity. Therefore, I assumed:

Yield on AA-rated preferred equity = Yield on A-rated preferred - $\{(1/2) \times (\text{Yield on BBB-rated preferred} - \text{Yield on A-rated preferred})\}$.

Table No. MJV-22
Risk Positioning Cost of Equity at Tennessee-American Water's Capital Structure
Gas LDC Sample
Using All Companies

	Overall Cost of Capital [1]	Tennessee- American Water's Regulatory % Debt [2]	Tennessee- American Water's Cost of Debt [3]	Tennessee- American Water's Income Tax Rate [4]	Tennessee- American Water's Regulatory % Preferred Equity [5]	Tennessee- American Water's Cost of Preferred Equity [6]	Tennessee- American Water's Regulatory % Equity [7]	Estimated Return on Equity [8]
Using Long-Term Risk-Free Rates:								
CAPM using Value Line Unadjusted Betas	7.4%	0.53	6.1%	39.2%	0.01	6.2%	0.45	11.7%
ECAPM (0.50%) using Value Line Unadjusted Betas	7.4%	0.53	6.1%	39.2%	0.01	6.2%	0.45	11.9%
ECAPM (1.50) using Value Line Unadjusted Betas	7.6%	0.53	6.1%	39.2%	0.01	6.2%	0.45	12.1%
Using Short-Term Risk-Free Rates:								
CAPM using Value Line Unadjusted Betas	6.5%	0.53	6.1%	39.2%	0.01	6.2%	0.45	9.8%
ECAPM (1%) using Value Line Unadjusted Betas	6.6%	0.53	6.1%	39.2%	0.01	6.2%	0.45	10.0%
ECAPM (2%) using Value Line Unadjusted Betas	6.7%	0.53	6.1%	39.2%	0.01	6.2%	0.45	10.3%
ECAPM (3%) using Value Line Unadjusted Betas	6.9%	0.53	6.1%	39.2%	0.01	6.2%	0.45	10.6%

Sources and Notes:

[1]: Table No. MJV-21; Panels A - G, [8].

[2]: Provided by Tennessee-American Water.

[3]: Based on an A rating, as provided by Tennessee-American Water. Yield from Bloomberg as of February 07, 2008.

[4]: Provided by Tennessee-American Water.

[5]: Provided by Tennessee-American Water.

[6]: From Mergent Bond Record, January 2008 Edition.

[7]: Provided by Tennessee-American Water.

[8]: $\{[1] - ([2] \times [3] \times (1 - [4]) + [5] \times [6])\} / [7]$.

BEFORE THE
TENNESSEE REGULATORY AUTHORITY

DIRECT TESTIMONY OF
PAUL R. HERBERT

ON BEHALF OF TENNESSEE-AMERICAN WATER COMPANY

CASE NO. - _____

CONCERNING

COST OF SERVICE ALLOCATION

AND

CUSTOMER RATE DESIGN

MARCH 2008

BEFORE THE TENNESSEE REGULATORY AUTHORITY

RE: TENNESSEE-AMERICAN WATER COMPANY

CASE NO. _____

DIRECT TESTIMONY OF PAUL R. HERBERT

Line
No.

1 Q. Please state your name and address.

2 A. My name is Paul R. Herbert. My business address is 207 Senate Avenue,
3 Camp Hill, Pennsylvania.

4 Q. By whom are you employed?

5 A. I am employed by Gannett Fleming, Inc.

6 Q. Please describe your position with Gannett Fleming, Inc. and briefly state
7 your general duties and responsibilities.

8 A. I am President of the Valuation and Rate Division. My duties and
9 responsibilities include the preparation of accounting and financial data for
10 revenue requirement and cash working capital claims, the allocation of cost of
11 service to customer classifications, and the design of customer rates in
12 support of public utility rate filings.

13 Q. Have you presented testimony in rate proceedings before a regulatory
14 agency?

15 A. Yes. I have testified before the Pennsylvania Public Utility Commission, the
16 New Jersey Board of Public Utilities, the Public Utilities Commission of Ohio,
17 the Public Service Commission of West Virginia, the Kentucky Public Service
18 Commission, the Iowa State Utilities Board, the Virginia State Corporation
19 Commission, the Tennessee Regulatory Authority, the California Public

1 Utilities Commission, New Mexico Public Regulation Commission and the
2 Missouri Public Service Commission concerning revenue requirements, cost
3 of service allocation, rate design and cash working capital claims. A list of
4 the cases in which I have testified is provided at the end of my direct
5 testimony.

6 Q. What is your educational background?

7 A. I have a Bachelor of Science Degree in Finance from the Pennsylvania State
8 University, University Park, Pennsylvania.

9 Q. Would you please describe your professional affiliations?

10 A. I am a member of the American Water Works Association and served as a
11 member of the Management Committee for the Pennsylvania Section. I am
12 also a member of the Pennsylvania Municipal Authorities Association. In
13 1998, I became a member of the National Association of Water Companies
14 as well as a member of its Rates and Revenue Committee.

15 Q. Briefly describe your work experience.

16 A. I joined the Valuation Division of Gannett Fleming Corddry and Carpenter,
17 Inc., predecessor to Gannett Fleming, Inc., in September 1977, as a Junior
18 Rate Analyst. Since then, I advanced through several positions and was
19 assigned the position of Manager of Rate Studies on July 1, 1990. On June
20 1, 1994, I was promoted to Vice President of the Valuation and Rate Division
21 and on July 1, 2007, I was promoted to my current position as President.

22 While attending Penn State, I was employed during the summers of
23 1972, 1973 and 1974 by the United Telephone System - Eastern Group in its
24 accounting department. Upon graduation from college in 1975, I was

1 employed by Herbert Associates, Inc., Consulting Engineers (now Herbert
2 Rowland and Grubic, Inc.), as a field office manager until September 1977.

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

4 A. The purpose of my testimony is to explain Tennessee-American Water
5 Company's cost of service allocation study and proposed rate design set
6 forth in Exhibit No. PRH-1.

7 COST OF SERVICE ALLOCATION

8 Q. Briefly describe the purpose of your cost allocation study.

9 A. The purpose of the study was to allocate the total cost of service, which is
10 the total revenue requirement, to the several customer classifications. In the
11 study, the total costs were allocated to the residential, commercial, industrial,
12 public authorities, sales for resale, private fire protection and public fire
13 protection classifications in accordance with generally accepted principles
14 and procedures. The cost of service allocation results in indications of the
15 relative cost responsibilities of each class of customers. The allocated cost
16 of service is one of several criteria appropriate for consideration in designing
17 customer rates to produce the required revenues. The results of my
18 allocation of the pro forma cost of service as of November 30, 2007, and
19 proposed customer rates to produce the pro forma revenue requirement as
20 of that date are presented in the study.

21 Q. Please describe the method of cost allocation that was used in your study.

22 A. The base-extra capacity method, as described in 2000 and prior Water
23 Rates Manuals published by the American Water Works Association
24 (AWWA), was used to allocate the pro forma costs. Base-extra capacity is a

1 recognized method for allocating the cost of providing water service to
2 customer classifications in proportion to the classifications' use of the
3 commodity, facilities, and services. It is generally accepted as a sound
4 method for allocating the cost of water service and was used by the
5 Company in the Company's previous studies.

6 Q. Please describe the procedure followed in the cost allocation study.

7 A. Each identified classification of cost in the pro forma cost of service was
8 allocated to the customer classifications through the use of appropriate
9 factors. These allocations are presented in Schedule B on pages 8 through
10 14. The items of cost, which include operation and maintenance expenses,
11 depreciation expense, taxes and income available for return, are identified in
12 columns 1 and 2 of Schedule B. The cost of each item, shown in column 4,
13 is allocated to the several customer classifications based on allocation
14 factors referenced in column 3. The development of the allocation factors is
15 presented in Schedule C. I will use some of the larger cost items to illustrate
16 the principles and considerations used in the cost allocation methodology.
17 Purchased water, purchased electric power, treatment chemicals and waste
18 disposal are examples of costs that tend to vary with the amount of water
19 consumed and are thus considered base costs. They are allocated to the
20 several customer classifications in direct proportion to the average daily
21 consumption of those classifications through the use of Factor 1. The
22 development of Factor 1 is shown in Schedule C on page 15.

23 Other source of supply, water treatment and transmission costs are
24 associated with meeting usage requirements in excess of the average,

1 generally to meet maximum day requirements. Costs of this nature were
2 allocated to customer classifications partially as base costs, proportional to
3 average daily consumption, partially as maximum day extra capacity costs,
4 in proportion to maximum day extra capacity, and, in the case of certain
5 pumping stations and transmission mains, partially as fire protection costs,
6 through the use of Factors 2 and 3. The development of the allocation
7 factors, referenced as Factors 2 and 3, is shown in Schedule C, on pages 15
8 through 17.

9 Costs associated with storage facilities and the capital costs of
10 distribution mains were allocated partly on the basis of average consumption
11 and partly on the basis of maximum hour extra demand, including the
12 demand for fire protection service, because these facilities are designed to
13 meet maximum hour and fire demand requirements. The development of
14 the factors, referenced as Factors 4 and 5, used for these allocations is
15 shown in Schedule C, on pages 18 through 22.

16 Factor 4, used to allocate distribution mains, is based on the same
17 volumes used in Factors 1 through 3 except that the consumption for the
18 larger industrial customers and sales for resale classifications are excluded.
19 This is to recognize that larger industrial and sales for resale customers are
20 served primarily from larger mains. Factor 5, Allocation of Storage Facilities,
21 uses the same basic methodology as Factor 4, although Factor 1 volumes
22 are used and the fire demand weighting is based on the storage capacity for
23 fire service as compared to the total storage capacity.

1 Fire demand costs were allocated to public and private fire protection
2 service in proportion to the relative potential demands on the system by
3 public fire hydrants and private service lines as presented in Schedule C on
4 page 38.

5 Costs associated with pumping facilities and the operation and
6 maintenance of mains were allocated on combined bases of maximum day
7 and maximum hour extra capacity because these facilities serve both
8 functions. For pumping facilities, the relative weightings of Factor 2
9 (maximum day), Factor 3 (maximum day and fire) and Factor 4 (maximum
10 hour) were based on horsepower of pumps serving maximum day, maximum
11 day and fire and maximum hour functions. The development of this
12 weighted factor, referenced as Factor 6, is presented on page 23.

13 For operation and maintenance of mains, the relative weightings of
14 Factor 3 (maximum day and fire) and Factor 5 (maximum hour) were based
15 on the footage of transmission and distribution mains. For cost allocation
16 purposes, mains larger than 10-inch were classified as serving a
17 transmission function and mains 10-inch and smaller were classified as
18 serving a distribution function. The development of this weighted factor,
19 referenced as Factor 7, is presented on page 24.

20 Costs associated with meters were allocated to customer
21 classifications in proportion to the capacity requirements of the sizes and
22 quantities of meters serving each classification. The development of the
23 factor for meters, referenced as Factor 10, is presented on page 26. Factor
24 11, Allocation of Services, was developed in a similar manner as Factor 10,

1 except that the relative unit cost per foot by service size was used in order to
2 weight the number of services by classification. Costs associated with public
3 fire hydrants were assigned directly to the public fire protection class (Factor
4 21).

5 Costs for customer accounting, billing and collecting were allocated
6 on the basis of the number of customers for each classification, and costs
7 for meter reading were allocated on the basis of metered customers. The
8 development of these factors, referenced as Factor 12 and Factor 13, is
9 presented on page 30.

10 Administrative and general costs were allocated on the basis of
11 allocated direct costs, excluding those costs such as purchased water,
12 power, chemicals and waste disposal which require little administrative and
13 general expense. The development of factors for this allocation, referenced
14 as Factor 14, is presented on page 31.

15 Annual depreciation accruals were allocated on the basis of the
16 function of the facilities represented by the depreciation expense for each
17 depreciable plant account. The original cost less depreciation of utility plant
18 in service was similarly allocated for the purpose of developing factors,
19 referenced as Factor 17, for allocating items such as income taxes and
20 return. The development of Factor 17 is presented on pages 32 through 35.

21 Factors 14 and 17, as well as Factors 8, 9, 15, 16 and 18, are
22 composite allocation factors. These factors are based on the result of
23 allocating other costs and are computed internally in the cost allocation

1 program. Refer to Schedule C for a description of the bases for each
2 composite allocation factor.

3 Q. What was the source of the total cost of service data set forth in column 3 of
4 Schedule B?

5 A. The pro forma costs of service were furnished by the Company, and are set
6 forth in various Company exhibits.

7 Q. Refer to Schedule C, pages 16 and 19, and explain the source of the system
8 maximum day and maximum hour ratios used in the development of factors
9 referenced as Factors 2, 3 and 4.

10 A. The ratios were based on a review of historic Company data. The maximum
11 day ratio of 1.45 times the average day approximates the ratio of maximum
12 daily send-out experienced by the Company in the last five years. The
13 maximum hour ratio of 1.9 times the average hour was estimated based on
14 the relationship of system maximum hour ratios compared to system
15 maximum day ratios for other similar systems.

16 Q. What factors were considered in estimating the maximum day extra capacity
17 and maximum hour extra capacity demands used for the customer
18 classifications in the development of Factors 2, 3 and 4?

19 A. The estimated demands were based on judgment which considered field
20 studies of actual customer class demands conducted for other American
21 Companies, field observations of the service areas of the Company, field
22 studies of similar service areas, and generally-accepted customer class
23 maximum day and maximum hour demand ratios.

24 Q. Have you summarized the results of your cost allocation study?

1 A. Yes. The results are summarized in columns 1, 2 and 3 of Schedule A on
2 page 6. Column 2 sets forth the total allocated pro forma cost of service as
3 of November 30, 2007, for each customer classification identified in column
4 1. Column 3 presents each customer classification's cost responsibility as a
5 percent of the total cost.

6 Q. Have you compared these cost responsibilities with the proportionate
7 revenue under existing rates for each customer classification?

8 A. Yes. A comparison of the allocated cost responsibilities and the percentage
9 revenue under existing rates can be made by comparing columns 3 and 5 of
10 Schedule A. A similar comparison of the percentage cost responsibilities
11 (relative cost of service) and the percentage of pro forma revenues (relative
12 revenues) under proposed rates can be made by comparing columns 3 and
13 7 of Schedule A .

14 CUSTOMER RATE DESIGN

15 Q. What are the appropriate factors to be considered in the design of the rate
16 structure?

17 A. In preparing a rate structure, one should consider the allocated costs of
18 service, the impact of radical changes from the present rate structure, the
19 understandability and ease of application of the rate structure, community
20 and social influences, and the value of service. General guidelines should
21 be developed with management to determine the extent to which each of
22 these criteria is to be incorporated in the rate structure to be designed,
23 inasmuch as the pricing of a commodity or service is a function of
24 management.

1 Q. Did management discuss rate design guidelines with you?

2 A. Yes, they did. The guidelines were to increase service charges and
3 volumetric rates so that each class receives approximately the same
4 percentage increase. In addition, the Company proposes to merge the
5 Lookout Mountain and Lakeview Tariffs into one Mountain Tariff and begin
6 the process of merging Lone Oak and Suck Creek to the Mountain Tariff.

7 Q. Does the proposed rate design follow these guidelines?

8 A. Yes, it does. The revenues under proposed rates reflects increases by class
9 ranging from 21.3% to 21.7%, with the exception of Other Water Utilities
10 which reflects one customer with no increase due to contract restrictions.
11 Also, merging the mountain service areas into one tariff reflects the similar
12 service characteristics of these areas. The tariffs for Lone Oak and Suck
13 Creek will begin to merge to the Mountain Tariff by adopting the basic
14 blocking structure while remaining revenue neutral.

15 Q. Have you prepared comparisons of present and proposed rates for each
16 classification and each rate zone?

17 A. Yes. Schedule D on page 40 of the cost allocation study presents
18 comparisons of the present and proposed rates.

19 Q. Does this conclude your direct testimony?

20 A. Yes, it does.

LIST OF CASES IN WHICH PAUL R. HERBERT TESTIFIED

<u>Year</u>	<u>Jurisdiction</u>	<u>Docket No.</u>	<u>Client/Utility</u>	<u>Subject</u>
1. 1983	Pa. PUC	R-832399	T. W. Phillips Gas and Oil Co.	Pro Forma Revenues
2. 1989	Pa. PUC	R-891208	Pennsylvania-American Water Company	Bill Analysis and Rate Application
3. 1991	PSC of W. Va.	91-106-W-MA	Clarksburg Water Board	Revenue Requirements (Rule 42)
4. 1992	Pa. PUC	R-922276	North Penn Gas Company	Cash Working Capital
5. 1992	NJ BPU	WR92050532J	The Atlantic City Sewerage Company	Cost Allocation and Rate Design
6. 1994	Pa. PUC	R-943053	The York Water Company	Cost Allocation and Rate Design
7. 1994	Pa. PUC	R-943124	City of Bethlehem	Revenue Requirements, Cost Allocation, Rate Design and Cash Working Capital
8. 1994	Pa. PUC	R-943177	Roaring Creek Water Company	Cash Working Capital
9. 1994	Pa. PUC	R-943245	North Penn Gas Company	Cash Working Capital
10. 1994	NJ BPU	WR94070325	The Atlantic City Sewerage Company	Cost Allocation and Rate Design
11. 1995	Pa. PUC	R-953300	Citizens Utilities Water Company of Pennsylvania	Cost Allocation and Rate Design
12. 1995	Pa. PUC	R-953378	Apollo Gas Company	Revenue Requirements and Rate Design
13. 1995	Pa. PUC	R-953379	Carnegie Natural Gas Company	Revenue Requirements and Rate Design
14. 1996	Pa. PUC	R-963619	The York Water Company	Cost Allocation and Rate Design
15. 1997	Pa. PUC	R-973972	Consumers Pennsylvania Water Company - Shenango Valley Division	Cash Working Capital
16. 1998	Ohio PUC	98-178-WS-AIR	Citizens Utilities Company of Ohio	Water and Wastewater Cost Allocation and Rate Design
17. 1998	Pa. PUC	R-984375	City of Bethlehem - Bureau of Water	Revenue Requirement, Cost Allocation and Rate Design
18. 1999	Pa. PUC	R-994605	The York Water Company	Cost Allocation and Rate Design
19. 1999	Pa. PUC	R-994868	Philadelphia Suburban Water Company	Cost Allocation and Rate Design
20. 1999	PSC of W.Va.	99-1570-W-MA	Clarksburg Water Board	Revenue Requirements (Rule 42), Cost Allocation and Rate Design
21. 2000	Ky. PSC	2000-120	Kentucky-American Water Company	Cost Allocation and Rate Design
22. 2000	Pa. PUC	R-00005277	PPL Gas Utilities	Cash Working Capital
23. 2000	NJ BPU	WR00080575	Atlantic City Sewerage Company	Cost Allocation and Rate Design
24. 2001	Ia. St Util Bd	RPU-01-4	Iowa-American Water Company	Cost Allocation and Rate Design
25. 2001	Va. St. Corp Cm	PUE010312	Virginia-American Water Company	Cost Allocation and Rate Design
26. 2001	WV PSC	01-0326-W-42T	West-Virginia American Water Company	Cost Allocation and Rate Design
27. 2001	Pa. PUC	R-016114	City of Lancaster	Cost Allocation and Rate Design
28. 2001	Pa. PUC	R-016236	The York Water Company	Tapping Fee Study
29. 2001	Pa. PUC	R-016339	Pennsylvania-American Water Company	Cost Allocation and Rate Design
30. 2001	Pa. PUC	R-016750	Philadelphia Suburban Water Company	Cost Allocation and Rate Design

LIST OF CASES IN WHICH PAUL R. HERBERT TESTIFIED, cont.

	<u>Year</u>	<u>Jurisdiction</u>	<u>Docket No.</u>	<u>Client/Utility</u>	<u>Subject</u>
32.	2003	Pa. PUC	R-027975	The York Water Company	Cost Allocation and Rate Design
33.	2003	Tenn Reg. Auth	03-	Tennessee-American Water Company	Cost Allocation and Rate Design
34.	2003	Pa. PUC	R-038304	Pennsylvania-American Water Company	Cost Allocation and Rate Design
35.	2003	NJ BPU	WR03070511	New Jersey-American Water Company	Cost Allocation and Rate Design
36.	2003	Mo. PSC	WR-2003-0500	Missouri-American Water Company	Cost Allocation and Rate Design
37.	2004	Va. St. Corp Cm	PUE-200 -	Virginia-American Water Company	Cost Allocation and Rate Design
38.	2004	Pa. PUC	R-038805	Pennsylvania Suburban Water Company	Cost Allocation and Rate Design
39.	2004	Pa. PUC	R-049165	The York Water Company	Cost Allocation and Rate Design
40.	2004	NJ BPU	WRO4091064	The Atlantic City Sewerage Company	Cost Allocation and Rate Design
41.	2005	WV PSC	04-1024-S-MA	Morgantown Utility Board	Cost Allocation and Rate Design
42.	2005	WV PSC	04-1025-W-MA	Morgantown Utility Board	Cost Allocation and Rate Design
43.	2005	Pa. PUC	R-051030	Aqua Pennsylvania, Inc.	Cost Allocation and Rate Design
44.	2006	Pa. PUC	R-051178	T. W. Phillips Gas and Oil Co.	Cost Allocation and Rate Design
45.	2006	Pa. PUC	R-061322	The York Water Company	Cost Allocation and Rate Design
46.	2006	NJ BPU	WR-06030257	New Jersey American Water Company	Cost Allocation and Rate Design
47.	2006	Pa. PUC	R-061398	PPL Gas Utilities, Inc.	Cost Allocation and Rate Design
48.	2006	NM PRC	06-00208-UT	New Mexico American Water Company	Cost Allocation and Rate Design
49.	2006	Tenn. Reg Auth	06-00290	Tennessee American Water Company	Cost Allocation and Rate Design
50.	2007	Ca. PUC	U-339-W	Suburban Water Systems	Water Conservation Rate Design
51.	2007	Ca. PUC	U-168-W	San Jose Water Company	Water Conservation Rate Design
52.	2007	Pa. PUC	R-00072229	Pennsylvania American Water Company	Cost Allocation and Rate Design
53.	2007	Ky. PSC	2007-00143	Kentucky American Water Company	Cost Allocation and Rate Design
54.	2007	Mo. PSC	WR-2007-0216	Missouri American Water Company	Cost Allocation and Rate Design
55.	2007	Oh. PUC	07-1112-WS-AIR	Ohio American Water Company	Cost Allocation and Rate Design
56.	2007	Il. CC	07-0507	Illinois American Water Company	Customer Class Demand Study
57.	2007	Pa. PUC	R-00072711	Aqua Pennsylvania, Inc.	Cost Allocation and Rate Design
58.	2007	NJ BPU		The Atlantic City Sewerage Company	Cost Allocation and Rate Design
59.	2007	Pa. PUC	R-00072492	City of Bethlehem – Bureau of Water	Revenue Requirements, Cost Alloc.
60.	2007	WV PSC	07-0541-W-MA	Clarksburg Water Board	Cost Allocation and Rate Design
61.	2007	WV PSC	07-0998-W-42T	West Virginia American Water Company	Cost Allocation and Rate Design
62.	2008	NJ BPU		New Jersey American Water Company	Cost Allocation and Rate Design

TENNESSEE REGULATORY AUTHORITY

COMMONWEALTH OF PENNSYLVANIA

COUNTY OF CUMBERLAND

BEFORE ME, the undersigned authority, duly commissioned and qualified in and for the State and County aforesaid, personally came and appeared Paul R. Herbert, being by me first duly sworn deposed and said that:

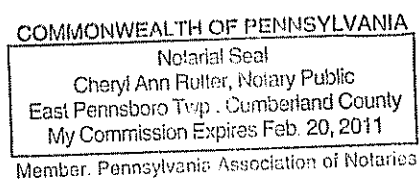
He is appearing as a witness on behalf of Tennessee-American Water Company before the Tennessee Regulatory Authority, and if present before the Authority and duly sworn, his testimony would set forth in the annexed transcript consisting 13 of pages.


Paul R. Herbert

Sworn to and subscribed before me
this 11th day of March 2008.


Notary Public

My commission expires February 20, 2011.



TENNESSEE AMERICAN WATER COMPANY

Chattanooga, Tennessee

COST OF SERVICE ALLOCATION STUDY

AS OF NOVEMBER 30, 2007

AND

PROPOSED CUSTOMER RATES

GANNETT FLEMING, INC. - VALUATION AND RATE DIVISION

Harrisburg, Pennsylvania



Gannett Fleming

GANNETT FLEMING, INC.

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March 6, 2008

Tennessee American Water Company
P.O. Box 6638
Chattanooga, TN 37401

Attention John S. Watson
President

Gentlemen:

Pursuant to your request, we have conducted a cost of service allocation study based on pro forma revenue requirements estimated for the test year ended November 30, 2007, and have prepared proposed rate schedules designed to produce the pro forma revenue requirements.

The attached report presents the results of the study, as well as supporting schedules which set forth the detailed cost allocation calculations. Schedule A on page 6 presents a comparison of the cost of service by customer classification with the pro forma revenues produced by each classification under present and proposed rates.

Respectfully submitted,

GANNETT FLEMING, INC.

PAUL R. HERBERT

President

Valuation and Rate Division

PRH/krm

A Tradition of Excellence

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TENNESSEE AMERICAN WATER COMPANY

COST OF SERVICE ALLOCATION STUDY AS OF NOVEMBER 30, 2007 AND PROPOSED CUSTOMER RATES

PART I. INTRODUCTION

PLAN OF REPORT

The report sets forth the results of the cost of service allocation study as of November 30, 2007, prepared for Tennessee American Water Company. Part I, Introduction, contains statements with respect to the basis of the study, the procedures employed, and a summary of the results of the study. Part II, Cost of Service by Customer Classification, presents detailed schedules of the allocation of costs to customer classifications, as well as the bases for the allocations. Part III, Proposed Customer Rates, sets forth the proposed rate structure.

BASIS OF THE STUDY

The purpose of the study was to allocate costs to several customer classifications based on considerations of quantity of water consumed, variability of rate of flow, and costs associated with metering, billing and accounting. The allocation study was based on recognized procedures for allocating the several categories of costs to customer classifications in proportion to each classification's use of the facilities, commodities and services which entail the total cost of providing water service.

ALLOCATION PROCEDURES

The allocation study was based on the Base-Extra Capacity Method for allocating costs to customer classifications. The method is described in the 2000 and prior editions

of the Water Rates Manual, published by the American Water Works Association. The four basic categories of cost responsibility are base, extra capacity, customer and fire protection costs. The following discussions present a brief description of these costs and the manner in which they were allocated.

Base Costs are costs that tend to vary with the quantity of water used, plus costs associated with supplying, treating, pumping and distributing water to customers under average load conditions, without the elements necessary to meet peak demands. Base costs were allocated to customer classifications on the basis of average daily usage.

Extra Capacity Costs are costs associated with meeting usage requirements in excess of the average. They include operating and capital costs for additional plant and system capacity beyond that required for average use. The extra capacity costs in this study are subdivided into costs necessary to meet maximum day extra demand and costs to meet maximum hour extra demand. The extra capacity costs were allocated to customer classifications on the bases of each classification's maximum day and hour usage in excess of average usage. (Extra capacity costs related to fire protection are allocated directly to the fire protection classifications.)

Customer Costs are costs associated with serving customers regardless of their usage or demand characteristics. Customer costs include the operating and capital costs related to meters and services, meter reading costs, and billing and collecting costs. The customer costs were allocated on the bases of the relative cost of meters and services, the number of meter readings and the number of bills.

Fire Protection Costs are costs associated with providing the facilities to meet the potential peak demand of fire protection service. Fire protection costs are subdivided into

costs to meet Public Fire Protection and Private Fire Protection demands. Operating and capital costs for hydrants were assigned directly to Public Fire Protection. The extra capacity costs assigned to fire protection service were allocated to Public and Private Fire Protection on the basis of the total relative demands of the hydrants and fire service lines.

RESULTS OF STUDY

The data summarized in Schedule A, "Comparison of Pro Forma Cost of Service with Revenues Under Present and Proposed Rates for the Twelve Months Ended November 30, 2007," constitute the principal results of the allocation study.

The cost of service by customer classification, shown in column 2 of Schedule A, is developed in Schedule B, "Allocation of Cost of Service to Customer Classifications for the Twelve Months Ended November 30, 2007". The allocation of the total cost of service to the several customer classifications was performed by applying the allocation factors referenced in column 3 to the cost of service by account in column 4. The bases of the allocation factors are presented in Schedule C.

DESIGN OF PROPOSED RATES

The results of the cost of service allocation study were discussed with Company management in order that it be afforded the opportunity of performing its role in the design of proposed rates. The rate design guidelines developed during the discussion were to increase service charges and volumetric rates so that each classification receives approximately the same increase.

In addition, the rates for Lookout Mountain and Lakeview will be merged into the proposed Mountain service area tariff. The tariffs for Lone Oak and Suck Creek will begin a phase-in to the Mountain Tariff by adopting the same blocking structure in this case.

The proposed rate structure, as presented in Part III, Proposed Customer Rates, Schedule D, consists of service charges by meter size and volumetric rates by class and service area. The revenues resulting from the proposed rate structure are shown in columns 6 and 7 of Schedule A, and reflect a closer alignment with the cost of service shown in columns 2 and 3.

TENNESSEE-AMERICAN WATER COMPANY

COMPARISON OF PRO FORMA COST OF SERVICE WITH REVENUES UNDER PRESENT AND PROPOSED RATES
FOR THE TWELVE MONTHS ENDED NOVEMBER 30, 2007

Customer Classification (1)	Pro Forma Cost of Service, as of November 30, 2007		Pro Forma Revenues Under Present Rates		Pro Forma Revenues Under Proposed Rates		Proposed Increase	
	Amount (2)	Percent of Total (3)	Amount (4)	Percent of Total (5)	Amount (6)	Percent of Total (7)	Amount (8)	Percent Increase (9)
Residential	\$21,421,847	49.5%	\$14,994,956	42.0%	\$18,185,522	42.0%	\$3,190,566	21.3%
Commercial	11,892,231	27.4%	11,460,266	32.0%	13,925,196	32.1%	2,464,930	21.5%
Industrial	4,771,465	11.0%	3,914,733	10.9%	4,762,993	11.0%	848,260	21.7%
Other Public Authority	2,925,662	6.7%	2,603,078	7.2%	3,164,294	7.3%	561,216	21.6%
Other Water Utilities	1,759,162	4.1%	1,310,628	3.7%	1,505,479	3.4%	194,851	14.9%
Private Fire Protection	583,545	1.3%	1,489,608	4.2%	1,810,465	4.2%	320,857	21.5%
Total Sales of Water	43,353,912	100.0%	35,773,269	100.0%	43,353,949	100.0%	7,580,680	21.2%
Other Water Revenues	1,433,404		1,369,193		1,433,404		64,211	4.7%
Total	\$44,787,316		\$37,142,462		\$44,787,353		\$7,644,891	20.6%

PART II. COST OF SERVICE BY CUSTOMER CLASSIFICATION

TENNESSEE-AMERICAN WATER COMPANY

ALLOCATION OF COST OF SERVICE TO CUSTOMER CLASSIFICATIONS
FOR THE TWELVE MONTHS ENDED NOVEMBER 30, 2007

Account Number (1)	Account Description (2)	Factor Ref. (3)	Cost of Service (4)	Residential (5)	Commercial (6)	Industrial (7)	Other Public Authority (8)	Other Water Utilities (9)	Private Fire Protection (10)	Public Fire Protection (11)
OPERATION AND MAINTENANCE EXPENSES										
Source of Supply										
----Operation----										
601.1	Operating Labor	2	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
601.1	Operating Expense	2	0	0	0	0	0	0	0	0
610.1	Purchased Water	1	52,110	16,055	14,940	11,329	4,018	5,414	120	234
----Maintenance----										
620.2	OR MN SS STRUCT & IMP MAT	2	146,762	48,593	43,574	28,134	11,726	14,045	235	455
	Subtotal Source of Supply		198,872	64,648	58,514	39,463	15,744	19,459	355	689
Power and Pumping Expenses										
----Operation----										
601.1	Gen Sup & Eng Lab Oper PU	6	0	0	0	0	0	0	0	0
601.1	Labor Oper PU	6	1,369,459	453,703	407,140	246,913	109,694	118,595	11,503	21,911
601.1	Pump Oper Sup and Eng Elec	6	0	0	0	0	0	0	0	0
615.1	Purch Power PU	1	1,625,736	500,890	466,098	353,435	125,344	168,914	3,739	7,316
6152	Purch Power PU - Lookout Mtn. Tariff	19	264,172	208,485	45,939	0	9,748	0	0	0
6153	Purch Power PU - Lakeview Tariff	20	91,302	78,109	11,203	0	1,990	0	0	0
616.1	Fuel For Power Production	1	1,826	563	523	397	141	190	4	8
620.1	Misc Pumping Exp. Current	6	0	0	0	0	0	0	0	0
650.2	SS & PUMP Transportation	6	0	0	0	0	0	0	0	0
675.1	Misc Pumping Exp. Electric	6	104	34	31	19	8	9	1	2
	Subtotal Power and Pumping		3,352,599	1,241,784	930,934	600,764	246,925	287,708	15,247	29,237
Water Treatment Expenses										
----Operation----										
601.3	Wt Operation Superv & Eng	2	0	0	0	0	0	0	0	0
601.3	General Wt Labor	2	420	138	125	81	34	40	1	1
618.3	General Chemicals	1	1,049,272	323,281	300,826	228,112	80,899	109,019	2,413	4,722
620.3	Misc Wt Expenses-Current	2	49,901	16,521	14,816	9,566	3,987	4,776	80	155
631.3	WT Contract Services	2	0	0	0	0	0	0	0	0
635.3	Other Wt Oper Contract Services	2	42,402	14,040	12,589	8,128	3,368	4,058	68	131
641.3	Wt Rents	2	0	0	0	0	0	0	0	0
650.3	Wt Oper Transportation	2	0	0	0	0	0	0	0	0
675.3	Waste Disposal Exp (Cur)	1	179,088	55,176	51,345	38,934	13,808	18,607	412	806
675.3	General Wt Expenses	2	108,829	36,034	32,311	20,863	8,695	10,415	174	337
675.3	Misc Wt Expenses-Current	2	62,381	20,655	18,521	11,958	4,984	5,970	100	193

TENNESSEE-AMERICAN WATER COMPANY

ALLOCATION OF COST OF SERVICE TO CUSTOMER CLASSIFICATIONS
FOR THE TWELVE MONTHS ENDED NOVEMBER 30, 2007

Account Number (1)	Account Description (2)	Factor Ref. (3)	Cost of Service (4)	Residential (5)	Commercial (6)	Industrial (7)	Other Public Authority (8)	Other Water Utilities (9)	Private Fire Protection (10)	Public Fire Protection (11)
---Maintenance---										
620.4	Or Mn Wt Struct & Imp Mat	2	142,813	47,285	42,401	27,377	11,411	13,667	229	443
635.4	Other Wt Maint Contract Services	2	7,820	2,589	2,322	1,499	625	748	13	24
675.4	Misc. Expense Maint. WT	2	0	0	0	0	0	0	0	0
6504	Wt Maint Transportation	2	0	0	0	0	0	0	0	0
	Subtotal Water Treatment		1,642,926	515,719	475,256	346,518	127,831	167,300	3,490	6,812
Transmission & Distribution Expenses										
---Operation---										
601.5	T&D Operation Super & Eng	8	118,242	69,242	29,135	8,017	6,350	3,263	757	1,478
601.5	Storage Facilities Labor	5	147,457	47,098	42,305	25,746	11,369	12,313	2,934	5,692
601.5	Misc Meter Labor	10	309,207	220,310	70,221	5,226	13,172	278	0	0
601.5	Maps and Records Labor	7	0	0	0	0	0	0	0	0
615.5	Storage Facilities Expense	5	3,223	1,029	925	563	249	269	64	124
620.5	Misc T & D Expenses-Current	7	19,424	7,464	6,715	1,970	1,808	319	390	758
635.5	Other T & D Oper Contract Services	7	106,648	40,985	36,868	10,814	9,929	1,749	2,144	4,159
641.5	T&D Rents	8	300	176	74	20	16	8	2	4
650.5	Td Oper Transportation	8	11	6	3	1	1	0	0	0
675.5	T&D Lines Expense	7	1,643	631	568	167	153	27	33	64
675.5	Misc Meter Expenses	10	3,339	2,380	758	56	142	3	0	0
675.5	Misc T&D Expenses-Current	8	93,306	54,640	22,991	6,326	5,011	2,575	597	1,166
---Maintenance---										
601.6	Or Mn T&D Supr & Eng	9	67,934	32,846	17,384	4,239	4,226	666	1,990	6,583
601.6	Or Mn T&D Mains Lab	7	702,553	269,990	242,873	71,239	65,408	11,522	14,121	27,400
601.6	Or Mn Services Lab	11	293,677	230,272	37,503	1,116	4,053	29	20,704	0
601.6	Or Mn Meters Lab	10	103,228	73,549	23,443	1,745	4,398	93	0	0
601.6	Or Mn Hydrants Lab	21	87,623	0	0	0	0	0	0	87,623
601.6	Or Mn Other T&D Plant Lab	9	0	0	0	0	0	0	0	0
620.6	Or Mn T&D Struct & Imp-Mat	7	315,656	121,306	109,122	32,007	29,388	5,177	6,345	12,311
635.6	Other T & D Maint Contract Services	9	2,142	1,035	548	134	133	21	63	208
650.6	Td Maint Transportation	9	5,379	2,599	1,377	336	335	53	158	521
675.6	Maps And Records Expenses	9	0	0	0	0	0	0	0	0
675.6	Or Mn Meters Mat	10	8,715	6,210	1,979	147	371	8	0	0
675.6	Or Mn Other T&D Plant Mat	10	200,881	143,127	45,620	3,395	8,558	181	0	0
	Subtotal Transmission & Distribution		2,590,587	1,324,895	690,412	173,264	165,070	38,554	50,302	148,091

TENNESSEE-AMERICAN WATER COMPANY

ALLOCATION OF COST OF SERVICE TO CUSTOMER CLASSIFICATIONS
FOR THE TWELVE MONTHS ENDED NOVEMBER 30, 2007

Account Number (1)	Account Description (2)	Factor Ref. (3)	Cost of Service (4)	Residential (5)	Commercial (6)	Industrial (7)	Other Public Authority (8)	Other Water Utilities (9)	Private Fire Protection (10)	Public Fire Protection (11)
Customer Accounting Expenses										
601.7	Meter Reading Labor	13	463,354	402,237	55,649	973	4,495	0	0	0
601.7	Contracts & Orders Labor	12	178	154	21	0	2	0	1	0
601.7	Billing & Acctg Salaries	12	0	0	0	0	0	0	0	0
604.7	Employee Benefits Ca	12	0	0	0	0	0	0	0	0
620.7	Misc Ca Expenses-Current	12	2,072	1,789	248	4	20	0	11	0
632.7	Ca Contract Services	12	0	0	0	0	0	0	0	0
635.7	Other Ca Contract Services	12	0	0	0	0	0	0	0	0
642.7	Ca Rents	12	2,247	1,939	269	5	22	0	12	0
650.7	Ca Transportation	12	0	0	0	0	0	0	0	0
670.7	Uncollectible Accounts	12	531,590	459,029	63,525	1,116	5,156	0	2,764	0
675.7	Meter Reading Expenses	13	5,251	4,558	631	11	51	0	0	0
675.7	Collecting Expenses	12	22,750	19,644	2,719	48	221	0	118	0
675.7	Billing & Acctg Computer	12	253,662	219,036	30,313	533	2,461	0	1,319	0
675.7	Cust Acctg-Billing/Telephone	12	11,561	9,983	1,382	24	112	0	60	0
675.7	Cust Acctg-Billing/Postage	12	333,080	287,615	39,803	699	3,231	0	1,732	0
675.7	Misc Cust Acctg Expenses	12	105,875	91,423	12,652	222	1,027	0	551	0
675.7	Misc Oper Ca Cust Serv	12	-1,810	-1,563	-216	-4	-18	0	-9	0
	Subtotal Customer Accounting		1,729,811	1,495,844	206,996	3,631	16,780	0	6,559	0
Administrative and General Expenses										
601.8	Adm & General Salaries	14	1,395,655	772,633	328,398	118,631	75,086	47,034	15,492	38,381
601.8	Employee Pensions & Benefits	15	3,042,756	1,546,936	754,299	291,192	179,523	116,538	40,469	113,799
604.8	401K Contributions Expense	15	94,206	47,894	23,354	9,016	5,558	3,608	1,253	3,523
620.8	Or Mn General Ag Plant	14	0	0	0	0	0	0	0	0
632.8	Auditing Services	14	70,683	39,129	16,632	6,008	3,803	2,382	785	1,944
633.8	Legal Services	14	69,875	38,682	16,442	5,939	3,759	2,355	776	1,922
634.8	Management Fees - Water Quality	1	85,549	26,357	24,527	18,598	6,596	8,889	197	385
634.8	Management Fees - Cust. Billing/Service	12	602,112	519,925	71,952	1,264	5,840	0	3,131	0
634.8	Management Fees - Administration	14	3,469,657	1,920,802	816,410	294,921	186,668	116,927	38,513	95,416
634.8	Management Fees - Empl. Service	15	177,872	90,432	44,094	17,022	10,494	6,812	2,366	6,652
635.8	Contract Services - Other	14	4,796	2,655	1,128	408	258	162	53	132
635.8	Other WT Contract Services	2	0	0	0	0	0	0	0	0
635.8	Other WT Contract Services	2	0	0	0	0	0	0	0	0
641.8	AG Rents	14	-16,628	-9,205	-3,913	-1,413	-895	-560	-185	-457
642.8	Adm & General Rents	14	25,417	14,071	5,981	2,160	1,367	857	282	699
650.8	AG Transportation	14	479,775	265,604	112,891	40,781	25,812	16,168	5,325	13,194
657.8	General Liability	14	360,036	199,316	84,717	30,603	19,370	12,133	3,996	9,901
658.8	Workmens Comp Premium Exp	15	146,092	74,274	36,216	13,981	8,619	5,595	1,943	5,464
659.8	Insurance Other	14	77,364	42,828	18,204	6,576	4,162	2,607	859	2,128
660.8	Advertising Exp	14	57,885	32,045	13,620	4,920	3,114	1,951	643	1,592
666.8	Regulatory Commission Expenses	18	543,384	255,553	141,932	56,947	34,940	22,061	7,336	24,615

TENNESSEE-AMERICAN WATER COMPANY

ALLOCATION OF COST OF SERVICE TO CUSTOMER CLASSIFICATIONS
FOR THE TWELVE MONTHS ENDED NOVEMBER 30, 2007

Account Number (1)	Account Description (2)	Factor Ref. (3)	Cost of Service (4)	Residential (5)	Commercial (6)	Industrial (7)	Other Public Authority (8)	Other Water Utilities (9)	Private Fire Protection (10)	Public Fire Protection (11)
675.8	Expenses Of Employees	15	39,161	19,909	9,708	3,748	2,310	1,500	521	1,465
675.8	Misc Office Expenses	14	68,161	37,734	16,038	5,794	3,667	2,297	757	1,874
6758	Injuries & Damages Exp	14	0	0	0	0	0	0	0	0
6758	Research & Dev-Service Co	14	0	0	0	0	0	0	0	0
6758	Or Mn A&G Struc & Imp Mat	14	0	0	0	0	0	0	0	0
675.8	Misc. General Expense - Current	14	362,111	200,465	85,205	30,779	19,482	12,203	4,019	9,958
657.8	Miscellaneous General Exp	14	421,971	233,603	99,290	35,868	22,702	14,220	4,684	11,604
657.8	AFUDC Adjustment	14	(463,690)	(256,699)	(109,106)	(39,414)	(24,947)	(15,626)	(5,147)	(12,751)
	Subtotal Administrative and General		11,114,199	6,114,943	2,608,019	954,329	597,288	380,113	128,068	331,440
	Total Operation & Maintenance Expenses		20,628,994	10,757,833	4,970,131	2,117,969	1,169,638	893,134	204,021	516,269

TENNESSEE-AMERICAN WATER COMPANY

ALLOCATION OF COST OF SERVICE TO CUSTOMER CLASSIFICATIONS
FOR THE TWELVE MONTHS ENDED NOVEMBER 30, 2007

Account Number (1)	Account Description (2)	Factor Ref. (3)	Cost of Service (4)	Residential (5)	Commercial (6)	Industrial (7)	Other Public Authority (8)	Other Water Utilities (9)	Private Fire Protection (10)	Public Fire Protection (11)
DEPRECIATION EXPENSE										
Intangible										
339600	Comprehensive Planning Study	14	0	0	0	0	0	0	0	0
Source of Supply										
303.00	Land & Land Rights	2	0	0	0	0	0	0	0	0
306000	Lakes, Rivers, & Other Intakes	2	4,060	1,345	1,205	778	324	389	6	13
339200	Other P/E SS	2	0	0	0	0	0	0	0	0
309000	Supply Mains	2	11,292	3,738	3,353	2,165	902	1,081	18	35
Pumping Equipment										
304200	Pumping Structures	6	75,903	25,147	22,566	13,685	6,080	6,573	638	1,214
	Lookout Mountain Tariff	19	547	432	95	0	20	0	0	0
	Lakeview Tariff	20	49	42	6	0	1	0	0	0
310100	Power Generation Equipment -other	6	28,041	9,289	8,337	5,056	2,246	2,428	236	449
311200	Electric Pumping Equipment	6	130,210	43,139	38,711	23,477	10,430	11,276	1,094	2,083
	Lookout Mountain Tariff	19	7,563	5,969	1,315	0	279	0	0	0
	Lakeview Tariff	20	2,302	1,970	282	0	50	0	0	0
311300	Diesel Pumping Equipment	6	2,982	987	887	538	239	258	25	48
311500	Other Pumping Equipment	6	5,803	1,922	1,725	1,046	465	503	49	93
Water Treatment										
303.00	Land & Land Rights	2	0	0	0	0	0	0	0	0
304300	Water Treatment Structures	2	121,859	40,347	36,180	23,360	9,737	11,662	195	378
304301	Water Treatment Structures-Painting	2	204,394	67,674	60,685	39,182	16,331	19,561	327	634
320100	Water Treatment Equipment	2	138,724	45,932	41,187	26,593	11,084	13,276	222	430
320200	Granular Activated Carbon	2	0	0	0	0	0	0	0	0
Transmission & Distribution										
303.00	Land & Land Rights	7	0	0	0	0	0	0	0	0
304400	T & D Structures	7	11,178	4,296	3,864	1,133	1,041	183	225	436
330000	T & D Reservoirs & Standpipes	5	111,567	35,634	32,009	19,480	8,602	9,316	2,220	4,306
	Lookout Mountain Tariff	19	4,185	3,303	728	0	154	0	0	0
	Lakeview Tariff	20	0	0	0	0	0	0	0	0
330003	T & D Reservoirs & Standpipes-Painting	5	203,048	64,853	58,254	35,452	15,655	16,955	4,041	7,838
	Lookout Mountain Tariff	19	0	0	0	0	0	0	0	0
	Lakeview Tariff	20	17,950	15,357	2,202	0	391	0	0	0
330100	Elevated Tanks & Standpipes	5	51,789	16,542	14,858	9,042	3,993	4,324	1,031	1,999
330400	Clearwells	2	11,233	3,719	3,335	2,153	898	1,075	18	35
331001	T & D Mains not Classified	4	33,268	13,213	11,887	2,765	3,200	0	749	1,454
331100	T & D Mains - Mains (4" or less)	4	70,173	27,872	25,073	5,831	6,751	0	1,579	3,067

TENNESSEE-AMERICAN WATER COMPANY

ALLOCATION OF COST OF SERVICE TO CUSTOMER CLASSIFICATIONS
FOR THE TWELVE MONTHS ENDED NOVEMBER 30, 2007

Account Number	Account Description	Factor Ref.	Cost of Service	Residential	Commercial	Industrial	Other Public Authority	Other Water Utilities	Private Fire Protection	Public Fire Protection
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
331200	T & D Mains - Mains (6" - 8")	4	22	9	8	2	2	0	0	1
331210	T & D Mains - Mains (6" - 10") TN	4	962,123	382,155	343,767	79,952	92,556	0	21,648	42,045
331300	T & D Mains - Mains (10" - 16")	3	101,184	32,764	29,424	19,002	7,923	9,471	890	1,710
331350	T & D Mains - Mains (12" or More)	3	388,755	125,879	113,050	73,008	30,440	36,387	3,421	6,570
333000	Services	11	333,477	261,480	42,585	1,267	4,602	33	23,510	0
334100	Meters	10	323,473	230,474	73,461	5,467	13,780	291	0	0
33442	Meters-Metal Case/Old Style	10	91,490	65,188	20,777	1,546	3,897	82	0	0
334120	Meters - Plastic Case	10	0	0	0	0	0	0	0	0
334131	Meters - Metal Case/New Style	10	57,562	41,013	13,072	973	2,452	52	0	0
334200	Meter Installations	10	349,187	248,797	79,300	5,901	14,875	314	0	0
335000	Hydrants	21	212,447	0	0	0	0	0	0	212,447
General Plant										
303.00	Land & Land Rights AG	14	0	0	0	0	0	0	0	0
304600	Office Structures	14	3,465	1,919	815	295	186	117	38	95
304700	Stores , Shop, & Garage Structures	14	2,282	1,263	537	194	123	77	25	63
304.53	Structures and Imp. Misc.	14	0	0	0	0	0	0	0	0
304800	Miscellaneous Structures	14	3,222	1,783	758	274	173	109	36	89
340100	Office Furniture	14	8,445	4,675	1,987	718	454	285	94	232
340200	Computer & Peripheral Equipment	14	6,750	3,737	1,588	574	363	227	75	186
340210	Computer and Mainfram Equipment	14	13,216	7,317	3,110	1,123	711	445	147	363
340220	Computer & Periph Personal	14	9,042	5,005	2,128	769	486	305	100	249
340230	Computer & Periph Other	14	4,183	2,316	984	356	225	141	46	115
340300	Computer Software	14	7,301	4,041	1,718	621	393	246	81	201
340310	Computer Software Mainframe	14	64,692	35,814	15,222	5,499	3,480	2,180	718	1,779
340320	Computer Software Personal	14	3,504	1,940	824	298	189	118	39	96
340330	Computer Software Other	14	260	144	61	22	14	9	3	7
340400	Data Handling Equipment	14	755	418	178	64	41	25	8	21
340500	Other Office Equipment	14	1,288	715	303	109	69	43	14	35
341100	Light Trucks	14	221,057	122,376	52,015	18,790	11,893	7,450	2,454	6,079
341200	Heavy Trucks	14	158,398	87,689	37,271	13,464	8,522	5,338	1,758	4,356
341300	Automobiles	14	34,028	18,837	8,007	2,892	1,831	1,147	378	936
341400	Transportation-Other	14	17,176	9,508	4,042	1,460	924	579	191	472
342000	Stores Equipment	14	0	0	0	0	0	0	0	0
343000	Tools, Shop, & Garage Equipment	14	90,605	50,159	21,319	7,701	4,875	3,053	1,006	2,492
344000	Laboratory Equipment	2	3,854	1,276	1,144	739	308	369	6	12
345000	Power Operated Equipment	14	0	0	0	0	0	0	0	0
346100	Communication Equipment Non telephone	14	16,434	9,098	3,867	1,397	884	554	182	452
346200	Communication Equipment-Telephone	14	3,241	1,795	763	275	174	109	36	89
347000	Miscellaneous Equipment	14	69,452	38,448	16,342	5,903	3,737	2,341	771	1,910
348000	Other Tangible Plant	14	251	139	59	21	14	8	3	7
Total Depreciation Expense			4,810,741	2,230,893	1,259,230	462,412	309,469	170,765	70,351	307,621

TENNESSEE-AMERICAN WATER COMPANY
ALLOCATION OF COST OF SERVICE TO CUSTOMER CLASSIFICATIONS
FOR THE TWELVE MONTHS ENDED NOVEMBER 30, 2007

Account Number (1)	Account Description (2)	Factor Ref. (3)	Cost of Service (4)	Residential (5)	Commercial (6)	Industrial (7)	Other Public Authority (8)	Other Water Utilities (9)	Private Fire Protection (10)	Public Fire Protection (11)
AMORTIZATIONS										
680.51	Amort of CIAC	4	(186,427)	(74,049)	(66,610)	(15,492)	(17,934)	-	(4,195)	(8,147)
680.52	Amort of Capital Leases	14	106,033	58,699	24,950	9,013	5,705	3,573	1,177	2,916
	Total Depreciation & Amortization		4,730,347	2,215,543	1,217,570	455,933	297,240	174,338	67,333	302,390
TAXES OTHER THAN INCOME TAXES										
685.20	Property Taxes	16	2,853,180	1,235,428	804,311	276,473	204,573	85,310	53,354	193,731
685.32	FUTA Oper AG	15	5,089	2,587	1,262	487	300	195	68	190
685.33	FICA Oper AG	15	378,917	192,641	93,934	36,262	22,356	14,513	5,040	14,171
685.35	SUTA Oper AG	15	2,545	1,294	631	244	150	97	34	95
685.43	Franchise Taxes	18	344,020	161,794	89,858	36,053	22,120	13,967	4,644	15,584
685.00	PSC Fee	18	74,295	34,941	19,406	7,786	4,777	3,016	1,003	3,366
	Franchise Tax - Lookout Mtn	19	0	0	0	0	0	0	0	0
685.00	Filing Fee	18	0	0	0	0	0	0	0	0
685.44	Gross Receipts Tax	18	762,617	358,659	199,196	79,922	49,036	30,962	10,295	34,547
	Total Taxes Other Than Income Taxes		4,420,663	1,987,344	1,208,598	437,227	303,312	148,060	74,438	261,684
INCOME TAXES										
409.15	Federal and State Income Taxes	17	4,800,605	2,075,301	1,332,168	506,464	337,483	180,023	79,690	289,476
	Total Income Taxes		4,800,605	2,075,301	1,332,168	506,464	337,483	180,023	79,690	289,476
UTILITY OPERATING INCOME										
	Total Cost of Service	17	10,206,710	4,412,360	2,832,362	1,076,808	717,532	382,752	169,431	615,485
	Less:		44,787,319	21,448,381	11,560,829	4,594,401	2,825,205	1,778,307	594,913	1,985,284
	Other Fees	18	(471,563)	(221,776)	(123,172)	(49,420)	(30,322)	(19,145)	(6,366)	(21,362)
	Billing Services and Misc. Revenues	12	(961,841)	(830,549)	(114,940)	(2,020)	(9,330)	-	(5,002)	-
	Total Cost of Service Related to Sales		43,353,915	20,396,056	11,322,717	4,542,961	2,785,553	1,759,162	583,545	1,963,922
	Allocation of Public Fire			1,025,840	569,487	228,493	140,102	0	0	(1,963,922)
	Total		43,353,915	\$21,421,896	\$11,892,204	\$4,771,454	\$2,925,655	\$1,759,162	\$583,545	\$0

TENNESSEE-AMERICAN WATER COMPANY

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS

FACTOR 1. ALLOCATION OF COSTS WHICH VARY WITH THE AMOUNT OF WATER CONSUMED.

Factors are based on the pro forma test year average daily consumption for each customer classification.

Customer Classification (1)	Average Daily Consumption, 100 Cu. Ft. (2)	Allocation Factor (3)
Residential	12,206	0.3081
Commercial	11,357	0.2867
Industrial	8,616	0.2174
Other Public Authority	3,057	0.0771
Other Water Utilities	4,119	0.1039
Private Fire Protection	92	0.0023
Public Fire Protection	178	0.0045
Total	<u>39,625</u>	<u>1.0000</u>

FACTOR 2. ALLOCATION OF COSTS ASSOCIATED WITH FACILITIES SERVING BASE AN MAXIMUM DAY EXTRA CAPACITY FUNCTIONS.

Factors are based on the weighting of the factors for average daily consumption (Factor 1) and the factors derived from maximum day extra capacity demand for each customer classification, as follows:

Customer Classification (1)	Average Daily Consumption		Maximum Day Extra Capacity		Allocation Factor (6)=(3)+(5)
	Allocation Factor 1 (2)	Weighted Factor (3)=(2)x 0.6897	Allocation Factor (4)	Weighted Factor (5)=(4)x 0.3103	
Residential	0.3081	0.2125	0.382	0.1186	0.3311
Commercial	0.2867	0.1977	0.3198	0.0992	0.2969
Industrial	0.2174	0.1499	0.1348	0.0418	0.1917
Other Public Authority	0.0771	0.0532	0.0861	0.0267	0.0799
Other Water Utilities	0.1039	0.0717	0.0773	0.024	0.0957
Private Fire Protection	0.0023	0.0016			0.0016
Public Fire Protection	0.0045	0.0031			0.0031
Total	<u>1.0000</u>	<u>0.6897</u>	<u>1.0000</u>	<u>0.3103</u>	<u>1.0000</u>

TENNESSEE-AMERICAN WATER COMPANY

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 2. ALLOCATION OF COSTS ASSOCIATED WITH FACILITIES SERVING BASE AND
MAXIMUM DAY EXTRA CAPACITY FUNCTIONS, cont.

Customer Classification (1)	Average Daily Consumption, 100 Cu. Ft. (2)	Maximum Day Extra Capacity		Allocation Factor (5)
		Factor* (3)	Rate of Flow, 100 Cu. Ft. Per Day (4)=(2)x(3)	
Residential	12,206	1.0	12,206	0.3820
Commercial	11,357	0.9	10,221	0.3198
Industrial	8,616	0.5	4,308	0.1348
Other Public Authority	3,057	0.9	2,751	0.0861
Other Water Utilities	4,119	0.6	2,471	0.0773
Subtotal	<u>39,355</u>		<u>31,958</u>	<u>1.0000</u>

The weighting of the factors is based on the maximum day ratio of 1.45, based on a review of maximum day ratios experienced during the period 1995 through 2007.

	Maximum Day Ratio	Weight
Average Day	1.00	0.6897
Maximum Day Extra Capacity	0.45	0.3103
Total	<u>1.45</u>	<u>1.0000</u>

* Ratio of maximum day to average day minus 1.0.

TENNESSEE-AMERICAN WATER COMPANY

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 3. ALLOCATION OF COSTS ASSOCIATED WITH FACILITIES SERVING BASE, MAXIMUM DAY AND FIRE SERVICE FUNCTIONS.

Factors are based on the weighting of the factors for average daily consumption (Factor 1), the factors derived from maximum day extra capacity demand and the fire protection demand by each customer classification, as follows:

Customer Classification (1)	Average Daily Consumption		Maximum Day Extra Capacity		Fire Protection		Allocation Factor (8)=(3)+(5)+(7)
	Allocation Factor 1 (2)	Weighted Factor (3)=(2)x 0.6751	Allocation Factor (4)	Weighted Factor (5)=(4)x 0.3038	Allocation Factor (6)	Weighted Factor (7)=(6)x 0.0211	
Residential	0.3081	0.2079	0.3820	0.1159			0.3238
Commercial	0.2867	0.1936	0.3198	0.0972			0.2908
Industrial	0.2174	0.1468	0.1348	0.0410			0.1878
Other Public Authority	0.0771	0.0521	0.0861	0.0262			0.0783
Other Water Utilities	0.1039	0.0701	0.0773	0.0235			0.0936
Private Fire Protection	0.0023	0.0016			0.3399	0.0072	0.0088
Public Fire Protection	0.0045	0.0030			0.6601	0.0139	0.0169
Subtotal	1.0000	0.6751	1.0000	0.3038	1.0000	0.0211	1.0000

The weighting of the factors is based on the maximum day ratio of 1.45 and the system demand for fire protection, as shown below. The fire protection factors in column 6 are developed on the following page.

Maximum Day Ratio		System Delivery, GPD		Weight	
Average Day					
Maximum Day Extra Capacity	1.00	40,297,797		0.6751	
Subtotal	0.45	18,134,009		0.3038	
	1.45	58,431,806		0.9789	
Fire Protection		1,260,000		0.0211	
Total		59,691,806		1.0000	

TENNESSEE-AMERICAN WATER COMPANY

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 4. ALLOCATION OF COSTS ASSOCIATED WITH FACILITIES SERVING BASE, MAXIMUM HOUR AND FIRE SERVICE FUNCTIONS.

Factors are based on the weighting of the factors for the adjusted average hour consumption, the factors derived from maximum hour extra capacity demand and the fire protection demand by each customer classification, as follows:

Customer Classification (1)	Average Hour Consumption		Maximum Hour Extra Capacity		Fire Protection		Allocation Factor (8)=(3)+(5)+(7)
	Allocation Factor (2)	Weighted Factor (3)=(2)x 0.4938	Allocation Factor (4)	Weighted Factor (5)=(4)x 0.4444	Allocation Factor (6)	Weighted Factor (7)=(6)x 0.0618	
Residential	0.4049	0.2000	0.4438	0.1972			0.3972
Commercial	0.3767	0.1860	0.3854	0.1713			0.3573
Industrial	0.1080	0.0533	0.0670	0.0298			0.0831
Other Public Authority	0.1014	0.0501	0.1038	0.0461			0.0962
Other Water Utilities	0.0000	0.0000	0.0000	0.0000			0.0000
Private Fire Protection	0.0031	0.0015			0.3399	0.0210	0.0225
Public Fire Protection	0.0059	0.0029			0.6601	0.0408	0.0437
Subtotal	1.0000	0.4938	1.0000	0.4444	1.0000	0.0618	1.0000

The weighting of the factors and the maximum hour extra capacity factors in column 4 are shown on the following page.

TENNESSEE-AMERICAN WATER COMPANY

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 4. ALLOCATION OF COSTS ASSOCIATED WITH FACILITIES SERVING BASE,
MAXIMUM HOUR AND FIRE SERVICE FUNCTIONS.

Customer Classification (1)	Average Hour Consumption, 100 Cu. Ft. (2)	Maximum Hour Extra Capacity		Allocation Factor (5)
		Factor* (3)	Rate of Flow, 100 Cu. Ft. Per Hour (4)=(2)x(3)	
Residential	509	3.0	1,526	0.4438
Commercial	473	2.8	1,325	0.3854
Industrial	136	1.7	231	0.0670
Other Public Authority	127	2.8	357	0.1038
Other Water Utilities	0	1.7	0	0.0000
Total	<u>1,245</u>		<u>3,438</u>	<u>1.0000</u>

The weighting of the factors is based on the maximum hour ratio of 1.90 and the system demand for fire protection, as follows:

	Maximum Hour Ratio	System Delivery, GPM	Weight
Average Hour	1.0	27,985	0.4938
Maximum Hour Extra Capacity	0.9	25,187	0.4444
Subtotal	1.9	53,172	0.9382
Fire Protection		3,500	0.0618
Total		<u>56,672</u>	<u>1.0000</u>

* Ratio of maximum hour to average day minus 1.0.

TENNESSEE-AMERICAN WATER COMPANY

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 5. ALLOCATION OF COSTS ASSOCIATED WITH STORAGE FACILITIES.

Factors are based on the weighting of the factors for average hour consumption (Factor 1), the factors derived from maximum hour extra capacity demand and the fire protection demand by each customer classification, as follows:

Customer Classification (1)	Average Hour Consumption		Maximum Hour Extra Capacity		Fire Protection		Allocation Factor (8)=(3)+(5)+(7)
	Allocation Factor 1 (2)	Weighted Factor (3)=(2)x 0.4973	Allocation Factor (4)	Weighted Factor (5)=(4)x 0.4475	Allocation Factor (6)	Weighted Factor (7)=(6)x 0.0552	
Residential	0.3081	0.1533	0.3713	0.1661			0.3194
Commercial	0.2867	0.1426	0.3224	0.1443			0.2869
Industrial	0.2174	0.1081	0.1485	0.0665			0.1746
Other Public Authority	0.0771	0.0383	0.0868	0.0388			0.0771
Other Water Utilities	0.1039	0.0517	0.0710	0.0318			0.0835
Private Fire Protection	0.0023	0.0011			0.3399	0.0188	0.0199
Public Fire Protection	0.0045	0.0022			0.6601	0.0364	0.0386
Subtotal	1.0000	0.4973	1.0000	0.4475	1.0000	0.0552	1.0000

The weighting of the factors and the maximum hour extra capacity factors in column 4 are shown on the following page.

TENNESSEE-AMERICAN WATER COMPANY

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 5. ALLOCATION OF COSTS ASSOCIATED WITH STORAGE FACILITIES.

Customer Classification	Average Hour Consumption, 100 Cu. Ft.	Maximum Hour Extra Capacity		Allocation Factor
		Factor*	Rate of Flow, 100 Cu. Ft. Per Hour	
(1)	(2)	(3)	(4)=(2)x(3)	(5)
Residential	509	3.0	1,526	0.3713
Commercial	473	2.8	1,325	0.3224
Industrial	359	1.7	610	0.1485
Other Public Authority	127	2.8	357	0.0868
Other Water Utilities	172	1.7	292	0.0710
Total	<u>1,640</u>		<u>4,110</u>	<u>1.0000</u>

* Ratio of maximum hour to average day minus 1.0.

TENNESSEE-AMERICAN WATER COMPANY

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 5. ALLOCATION OF COSTS ASSOCIATED WITH STORAGE FACILITIES.

The weighting of the factors is based on the ratio of the capacity required for a 6-hour demand of fire flow, as related to total storage capacity.

$$\text{Fire Protection Weight} = \frac{3500 \text{ GPM} \times 60 \text{ min.} \times 6 \text{ Hours}}{22,806,000 \text{ Gallons Storage}} = 0.0552$$

$$\text{General Service Weight} \quad 1 \quad - \quad 0.0552 \quad = \quad 0.9448$$

The weighting of the average hourly consumption and maximum hour extra demand for general service is based on the maximum hour ratio, as follows.

	<u>Maximum Hour Ratio</u>	<u>Percent</u>	<u>Weight</u>
Average Hour	1.0	52.63	0.4973
Extra Capacity Maximum Hour	<u>0.9</u>	<u>47.37</u>	<u>0.4475</u>
Total	1.9	100.00	0.9448

TENNESSEE-AMERICAN WATER COMPANY

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 6. ALLOCATION OF COSTS ASSOCIATED WITH POWER AND PUMPING FACILITIES.

Factors are based on the weighting of the factors for maximum daily demand (Factor 2), maximum day extra capacity and fire demand (Factor 3) and maximum hour extra capacity and fire demand (Factor 4) for each customer classification.

Customer Classification	Maximum Day Extra Capacity		Maximum Day Extra Capacity and Fire		Maximum Hour Extra Capacity and Fire		Allocation Factor (8)=(3)+(5)+(7)
	Allocation Factor 2	Weighted Factor	Allocation Factor 3	Weighted Factor	Allocation Factor 4	Weighted Factor	
	(1)	(2)	(3)=(2)x 0.2200	(4)	(5)=(4)x 0.7001	(6)	
Residential	0.3311	0.0727	0.3238	0.2267	0.3972	0.0319	0.3313
Commercial	0.2969	0.0653	0.2908	0.2036	0.3573	0.0284	0.2973
Industrial	0.1917	0.0422	0.1878	0.1315	0.0831	0.0066	0.1803
Other Public Authority	0.0799	0.0176	0.0783	0.0548	0.0962	0.0077	0.0801
Other Water Utilities	0.0957	0.0211	0.0936	0.0655	-	-	0.0866
Private Fire Protection	0.0016	0.0004	0.0088	0.0062	0.0225	0.0018	0.0084
Public Fire Protection	0.0031	0.0007	0.0169	0.0118	0.0437	0.0035	0.0160
Subtotal	1.0000	0.2200	1.0000	0.7001	1.0000	0.0799	1.0000

The weighting of the factors is based on an analysis of pumping equipment by function, as follows:

	Horse Power of Pumps	Weight
Maximum Day Extra Capacity	2,700	0.2200
Maximum Day Extra Capacity and Fire	8,590	0.7001
Maximum Hour Extra Capacity and Fire	980	0.0799
Total	12,270	1.0000

TENNESSEE-AMERICAN WATER COMPANY

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 7. ALLOCATION OF COSTS ASSOCIATED WITH TRANSMISSION AND DISTRIBUTION MAINS.

Factors are based on the weighting of the factors for maximum day extra capacity and fire demand (Factor 3) and maximum hour extra capacity and fire demand (Factor 4) for each customer classification, as follows:

Customer Classification	Maximum Day Extra Capacity and Fire		Maximum Hour Extra Capacity and Fire		Allocation Factor
	Allocation Factor 3	Weighted Factor	Allocation Factor 4	Weighted Factor	
(1)	(2)	(3)=(2)x 0.1751	(4)	(5)=(4)x 0.8249	(6)=(3)+(5)
Residential	0.3238	0.0566	0.3972	0.3277	0.3843
Commercial	0.2908	0.0510	0.3573	0.2947	0.3457
Industrial	0.1878	0.0329	0.0831	0.0685	0.1014
Other Public Authority	0.0783	0.0137	0.0962	0.0794	0.0931
Other Water Utilities	0.0936	0.0164	-	-	0.0164
Private Fire Protection	0.0088	0.0015	0.0225	0.0186	0.0201
Public Fire Protection	0.0169	0.0030	0.0437	0.0360	0.0390
Total	<u>1.0000</u>	<u>0.1751</u>	<u>1.0000</u>	<u>0.8249</u>	<u>1.0000</u>

The weighting of the factors is based on the footage of transmission and distribution mains as set forth below:

	Footage of Mains	Weight
Transmission Mains	1,180,594	0.1751
Distribution Mains	<u>5,563,554</u>	<u>0.8249</u>
Total	6,744,148	1.0000

TENNESSEE-AMERICAN WATER COMPANY

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 8. ALLOCATION OF TRANSMISSION AND DISTRIBUTION OPERATIONS AND SUPERVISION EXPENSES.

Factors are based on the allocation of transmission and distribution operation labor, as follows:

Customer Classification	Transmission & Distribution Operating Labor	Allocation Factor
(1)	(2)	(3)
Residential	\$267,408	0.5856
Commercial	112,526	0.2464
Industrial	30,972	0.0678
Other Public Authority	24,541	0.0537
Other Water Utilities	12,591	0.0276
Private Fire Protection	2,934	0.0064
Public Fire Protection	5,692	0.0125
Total	<u>\$456,664</u>	<u>1.0000</u>

FACTOR 9. ALLOCATION OF TRANSMISSION AND DISTRIBUTION MAINTENANCE SUPERVISION EXPENSES.

Factors are based on the allocation of transmission and distribution maintenance labor, as follows:

Customer Classification	Transmission & Distribution Maintenance Labor	Allocation Factor
(1)	(2)	(3)
Residential	\$573,811	0.4835
Commercial	303,819	0.2559
Industrial	74,100	0.0624
Other Public Authority	73,859	0.0622
Other Water Utilities	11,644	0.0098
Private Fire Protection	34,825	0.0293
Public Fire Protection	115,023	0.0969
Total	<u>\$1,187,081</u>	<u>1.0000</u>

TENNESSEE-AMERICAN WATER COMPANY

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 10. ALLOCATION OF COSTS ASSOCIATED WITH METERS.

Factors are based on the relative cost of meters by size as developed on the following page and summarized below:

<u>Customer Classification</u> (1)	<u>Meter Equivalents</u> (2)	<u>Allocation Factor</u> (3)
Residential	66,462	0.7125
Commercial	21,179	0.2271
Industrial	1,578	0.0169
Other Public Authority	3,971	0.0426
Other Water Utilities	<u>83</u>	<u>0.0009</u>
Subtotal	<u><u>93,273</u></u>	<u><u>1.0000</u></u>

TENNESSEE-AMERICAN WATER COMPANY

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 11. ALLOCATION OF COSTS ASSOCIATED WITH SERVICES.

Factors are based on the relative cost of services by size as developed on the following page and summarized below:

<u>Customer Classification</u> (1)	<u>Service Equivalents</u> (2)	<u>Allocation Factor</u> (3)
Residential	65,870	0.7841
Commercial	10,722	0.1277
Industrial	309	0.0038
Other Public Authority	1,156	0.0138
Other Water Utilities	11	0.0001
Private Fire Protection	<u>5,923</u>	<u>0.0705</u>
Subtotal	<u>83,991</u>	<u>1.0000</u>

TENNESSEE-AMERICAN WATER COMPANY

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.
BASIS FOR ALLOCATING METER COSTS TO CUSTOMER CLASSIFICATIONS

Meter Size (1)	5/8" Equivalent (2)	Residential		Commercial		Industrial		Other Public Authority		Other Water Utilities	
		Number of Meters (3)	Weighting (4)=(2)x(3)	Number of Meters (5)	Weighting (6)=(2)x(5)	Number of Meters (7)	Weighting (8)=(2)x(7)	Number of Meters (9)	Weighting (10)=(2)x(9)	Number of Meters (11)	Weighting (12)=(2)x(11)
5/8-inch	1	65,329	65,329	6,115	6,115	23	23	182	182	-	-
3/4-inch	1.5	134	201	136	204	2	3	12	18	-	-
1-inch	2.5	291	728	1,475	3,688	24	60	152	380	-	-
1-1/2-inch	5	20	100	312	1,560	7	35	66	330	-	-
2-inch	8	13	104	994	7,952	79	632	297	2,376	1	8
3-inch	15	-	-	42	630	-	-	4	60	-	-
4-inch	25	-	-	18	450	21	525	21	525	3	75
6-inch	50	-	-	10	500	6	300	2	100	-	-
8-inch	80	-	-	1	80	-	-	-	-	-	-
Total		65,787	66,462	9,103	21,179	162	1,578	736	3,971	4	83

TENNESSEE-AMERICAN WATER COMPANY

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.
BASIS FOR ALLOCATING SERVICES COSTS TO CUSTOMER CLASSIFICATIONS

Meter Size (1)	3/4" Equivalent (2)	Residential		Commercial		Industrial		Other Public Authority		Other Water Utilities		Private Fire Service	
		Number of Services (3)	Weighting (4)=(2)x(3)	Number of Services (5)	Weighting (6)=(2)x(5)	Number of Services (7)	Weighting (8)=(2)x(7)	Number of Services (9)	Weighting (10)=(2)x(9)	Number of Services (11)	Weighting (12)=(2)x(11)	Number of Services (13)	Weighting (14)=(2)x(13)
3/4-inch	1	65,463	65,463	6,251	6,251	25	25	194	194	0	0	0	0
1-inch	1.2	291	349	1,475	1,770	24	29	152	182	0	0	0	0
1-1/2-inch	1.6	20	32	312	499	7	11	66	106	0	0	1	2
2-inch	2	13	26	994	1,988	79	158	297	594	1	2	14	28
3-inch	2.7	0	0	42	113	0	0	4	11	0	0	2	5
4-inch	2.9	0	0	18	52	21	61	21	61	3	9	83	241
6-inch	4.2	0	0	10	42	6	25	2	8	0	0	757	3,179
8-inch	7	0	0	1	7	0	0	0	0	0	0	299	2,093
10-inch	9.5	0	0	0	0	0	0	0	0	0	0	15	143
12-inch	12.2	0	0	0	0	0	0	0	0	0	0	19	232
Total		65,787	65,870	9,103	10,722	162	309	736	1,156	4	11	1,190	5,923

TENNESSEE-AMERICAN WATER COMPANY

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 12. ALLOCATION OF CUSTOMER ACCOUNTING COSTS.

Factors are based on the number of bills by classification, as follows:

<u>Customer Classification</u> (1)	<u>Number of Bills</u> (2)	<u>Allocation Factor</u> (3)
Residential	789,452	0.8635
Commercial	109,244	0.1195
Industrial	1,939	0.0021
Other Public Authority	8,830	0.0097
Other Water Utilities	43	0.0000
Private Fire Protection	4,760	0.0052
Public Fire Protection	0	0.0000
Total	<u>914,268</u>	<u>1.0000</u>

FACTOR 13. ALLOCATION OF METER READING COSTS.

Factors are based on the number of meter readings by classification, as follows:

<u>Customer Classification</u> (1)	<u>Number of Meter Readings</u> (2)	<u>Allocation Factor</u> (3)
Residential	789,452	0.8681
Commercial	109,244	0.1201
Industrial	1,939	0.0021
Other Public Authority	8,830	0.0097
Other Water Utilities	43	0.0000
Total	<u>909,508</u>	<u>1.0000</u>

TENNESSEE-AMERICAN WATER COMPANY

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 14. ALLOCATION OF ADMINISTRATIVE AND GENERAL EXPENSE.

Factors are based on the allocation of operation and maintenance expenses excluding power and chemicals, as follows:

<u>Customer Classification</u> (1)	<u>Operation and Maintenance Expenses</u> (2)	<u>Allocation Factor</u> (3)
Residential	\$3,460,331	0.5536
Commercial	1,471,238	0.2353
Industrial	531,433	0.0850
Other Public Authority	336,402	0.0538
Other Water Utilities	210,877	0.0337
Private Fire Protection	69,265	0.0111
Public Fire Protection	171,743	0.0275
Total	<u>\$6,251,289</u>	<u>1.0000</u>

FACTOR 15. ALLOCATION OF LABOR RELATED TAXES AND BENEFITS.

Factors are based on the allocation of operation and maintenance labor expense, as follows:

<u>Customer Classification</u> (1)	<u>Labor Expense</u> (2)	<u>Allocation Factor</u> (3)
Residential	\$2,572,172	0.5084
Commercial	1,254,197	0.2479
Industrial	483,926	0.0957
Other Public Authority	298,287	0.0590
Other Water Utilities	193,833	0.0383
Private Fire Protection	67,503	0.0133
Public Fire Protection	189,069	0.0374
Total	<u>\$5,058,987</u>	<u>1.0000</u>

TENNESSEE-AMERICAN WATER COMPANY

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 16. ALLOCATION OF INTANGIBLE PLANT AND OTHER RATE BASE ELEMENTS.

Factors are based on the allocation of utility plant in service less depreciation, follows:

Customer Classification	Utility Plant in Service Less Depreciation Reserve	Allocation Factor
(1)	(2)	(3)
Residential	\$60,835,533	0.4330
Commercial	39,602,472	0.2819
Industrial	13,619,915	0.0969
Other Public Authority	10,069,415	0.0717
Other Water Utilities	4,193,835	0.0299
Private Fire Protection	2,633,077	0.0187
Public Fire Protection	9,535,601	0.0679
Total	<u>\$140,489,848</u>	<u>1.0000</u>

FACTOR 17. ALLOCATION OF INCOME TAXES AND INCOME AVAILABLE FOR RETURN.

Factors are based on the allocation of original cost rate base, as shown on the following pages and summarized below.

Customer Classification	Original Cost Rate Base	Allocation Factor
(1)	(2)	(3)
Residential	\$51,809,866	0.4323
Commercial	33,264,513	0.2775
Industrial	12,652,428	0.1055
Other Public Authority	8,432,373	0.0703
Other Water Utilities	4,499,138	0.0375
Private Fire Protection	1,993,231	0.0166
Public Fire Protection	7,229,973	0.0603
Total	<u>\$119,881,522</u>	<u>1.0000</u>

TENNESSEE-AMERICAN WATER COMPANY

ALLOCATION OF COST OF SERVICE TO CUSTOMER CLASSIFICATIONS
FOR THE TWELVE MONTHS ENDED NOVEMBER 30, 2007

Account Number (1)	Account Description (2)	Factor Ref. (3)	Cost of Service (4)	Residential (5)	Commercial (6)	Industrial (7)	Other Public Authority (8)	Other Water Utilities (9)	Private Fire Protection (10)	Public Fire Protection (11)
UTILITY PLANT IN SERVICE LESS DEPRECIATION										
Intangible										
339600	Comprehensive Planning Study	16	(54,656)	(23,666)	(15,408)	(5,296)	(3,919)	(1,634)	(1,022)	(3,711)
Source of Supply										
303.00	Land & Land Rights	2	73,444	24,317	21,806	14,079	5,868	7,029	118	228
304.21	Struct & Improv SS	2	0	-	-	-	-	-	-	-
305.00	Collecting and Impound Res	2	0	-	-	-	-	-	-	-
306.20	Lakes, Rivers, & Other Intakes	2	234,576	77,668	69,646	44,968	18,743	22,449	375	727
307.00	Wells and Springs	2	0	-	-	-	-	-	-	-
308.00	Infiltration Galleries and Tunnels	2	0	-	-	-	-	-	-	-
309.00	Supply Mains	2	515,341	170,630	153,005	98,791	41,176	49,318	825	1,598
339.00	Other P/E SS	2	-7,352	(2,434)	(2,183)	(1,409)	(587)	(704)	(12)	(23)
Pumping Equipment										
304.22	Pumping Structures	6	2,635,948	873,290	783,667	475,261	211,139	228,273	22,142	42,175
	Lookout Mountain Tariff	19	3,890	3,070	676	-	144	-	-	-
	Lakeview Tariff	20	1,150	984	141	-	25	-	-	-
310.20	Power Generation Equipment	6	179,144	59,350	53,260	32,300	14,349	15,514	1,505	2,865
311.22	Electric Pumping Equipment	6	2,926,752	969,633	870,123	527,693	234,433	253,457	24,585	46,828
	Lookout Mountain Tariff	19	239,014	188,630	41,565	-	8,820	-	-	-
	Lakeview Tariff	20	50,144	42,898	6,153	-	1,093	-	-	-
311.23	Diesel Pumping Equipment	6	65,088	21,564	19,351	11,735	5,214	5,637	547	1,041
311.27	Other Pumping Equipment	6	225,048	74,558	66,907	40,576	18,026	19,489	1,890	3,601
Water Treatment										
303.00	Land & Land Rights	2	18,009	5,963	5,347	3,452	1,439	1,723	29	56
304.31	Water Treatment Structures	2	1,597,871	529,055	474,408	306,312	127,670	152,916	2,557	4,953
304.32	Water Treatment Structures-Painting	2	267,897	88,701	79,539	51,356	21,405	25,638	429	830
320.31	Water Treatment Equipment	2	2,841,415	940,793	843,616	544,699	227,029	271,923	4,546	8,808
320.33	Granular Activated Carbon	2	0	-	-	-	-	-	-	-
Transmission & Distribution										
303.00	Land & Land Rights	7	555,021	213,295	191,871	56,279	51,672	9,102	11,156	21,646
304.40	T & D Structures	7	118,256	45,446	40,881	11,991	11,010	1,939	2,377	4,612
330.40	Clearwell	2	472,780	156,537	140,368	90,632	37,775	45,245	756	1,466
330.41	T & D Reservoirs & Standpipes	5	3,639,200	1,162,360	1,044,086	635,404	280,582	303,873	72,420	140,473
	Lookout Mountain Tariff	19	100,106	79,004	17,408	-	3,694	-	-	-
	Lakeview Tariff	20	0	-	-	-	-	-	-	-

TENNESSEE-AMERICAN WATER COMPANY
ALLOCATION OF COST OF SERVICE TO CUSTOMER CLASSIFICATIONS
FOR THE TWELVE MONTHS ENDED NOVEMBER 30, 2007

Account Number	Account Description	Factor Ref.	Cost of Service	Residential	Commercial	Industrial	Other Public Authority	Other Water Utilities	Private Fire Protection	Public Fire Protection
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
330.42	T & D Reservoirs & Standpipes-Painting	5	1,183,647	378,057	339,588	206,665	91,259	98,835	23,555	45,689
	Lookout Mountain Tariff	19	0	-	-	-	-	-	-	-
	Lakeview Tariff	20	136,063	116,402	16,695	-	2,966	-	-	-
330.43	Elevated Tanks & Standpipes	5	1,335,115	426,436	383,045	233,111	102,937	111,482	26,569	51,535
331.40	T & D Mains not Classified	4	1,837,780	729,966	656,639	152,719	176,794	-	41,350	80,311
331.41	T & D Mains - Mains (4" or less)	4	3,658,721	1,453,244	1,307,261	304,040	351,969	-	82,321	159,886
331.44	T & D Mains - Mains (6" - 8")	4	1,012	402	362	84	97	-	23	44
331.42	T & D Mains - Mains (6" - 10")	4	51,359,460	20,399,978	18,350,735	4,267,971	4,940,780	-	1,155,588	2,244,408
331.45	T & D Mains - Mains (10" - 16")	3	4,774,541	1,545,997	1,388,437	896,659	373,847	446,897	42,016	80,690
331.43	T & D Mains - Mains (12" or More)	3	20,995,095	6,798,212	6,105,374	3,942,879	1,643,916	1,965,141	184,757	354,817
333.40	Services	11	12,537,910	9,830,975	1,601,091	47,644	173,023	1,254	883,923	-
334.41	Meters	10	5,325,772	3,794,613	1,209,483	90,006	226,878	4,793	-	-
334.42	Meters-Metal Case/Old Style	10	0	-	-	-	-	-	-	-
334.43	Meters - Plastic Case	10	-	-	-	-	-	-	-	-
334.44	Meters - Metal Case/New Style	10	740,525	527,624	168,173	12,515	31,546	666	-	-
334.45	Meter Installations	10	9,506,578	6,773,437	2,158,944	160,661	404,980	8,556	-	-
335.40	Hydrants	21	6,120,574	-	-	-	-	-	-	6,120,574
General										
303.00	Land & Land Rights AG	14	25,022	13,852	5,888	2,127	1,346	843	278	688
304.51	Office Structures	14	166,220	92,020	39,112	14,129	8,943	5,602	1,845	4,571
304.52	Stores, Shop, & Garage Structures	14	27,858	15,422	6,555	2,368	1,499	939	309	766
304.53	Miscellaneous Structures	14	52,385	29,000	12,326	4,453	2,818	1,765	581	1,441
340.51	Office Furniture	14	203,431	112,619	47,867	17,292	10,945	6,856	2,258	5,594
340.53	Computer & Peripheral Equipment	14	(13,485)	(7,466)	(3,173)	(1,146)	(725)	(454)	(150)	(371)
340.56	Computer and Mainframe Equipment	14	(43,816)	(24,257)	(10,310)	(3,724)	(2,357)	(1,477)	(486)	(1,205)
340.57	Computer & Periph Personal	14	156,320	86,539	36,782	13,287	8,410	5,268	1,735	4,299
340.57	Computer & Periph Other	14	(7,941)	(4,396)	(1,868)	(675)	(427)	(268)	(88)	(218)
340.55	Computer Software	14	(58,838)	(32,572)	(13,844)	(5,001)	(3,165)	(1,983)	(653)	(1,618)
340.58	Computer Software Mainframe	14	(262,726)	(145,445)	(61,820)	(22,332)	(14,135)	(8,854)	(2,916)	(7,225)
340.59	Computer Software Personal	14	(18,820)	(10,418)	(4,428)	(1,600)	(1,012)	(634)	(209)	(518)
340.54	Computer Software Other	14	(3,309)	(1,832)	(779)	(281)	(178)	(112)	(37)	(91)
340.54	Other Office Equipment	14	18,829	10,424	4,431	1,600	1,013	635	209	518
340.54	Data Handling Equipment	14	4,271	2,364	1,005	363	230	144	47	117
341.52	Light Trucks	14	1,057,695	585,540	248,876	89,904	56,904	35,644	11,740	29,087
341.53	Heavy Trucks	14	666,399	368,919	156,804	56,644	35,852	22,458	7,397	18,326
341.54	Automobiles	14	196,062	108,540	46,133	16,665	10,548	6,607	2,176	5,392
341.55	Transportation-Other	14	192,885	106,781	45,386	16,395	10,377	6,500	2,141	5,304
342.50	Stores Equipment	14	(5,433)	(3,008)	(1,278)	(462)	(292)	(183)	(60)	(149)
343.50	Tools, Shop, & Garage Equipment	14	873,159	483,381	205,454	74,219	46,976	29,425	9,692	24,012

TENNESSEE-AMERICAN WATER COMPANY

ALLOCATION OF COST OF SERVICE TO CUSTOMER CLASSIFICATIONS
FOR THE TWELVE MONTHS ENDED NOVEMBER 30, 2007

Account Number	Account Description	Factor Ref.	Cost of Service	Residential	Commercial	Industrial	Other Public Authority	Other Water Utilities	Private Fire Protection	Public Fire Protection
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
344.50	Laboratory Equipment	2	16,628	5,506	4,937	3,188	1,329	1,591	27	52
345.50	Power Operated Equipment	14	(14,754)	(8,168)	(3,472)	(1,254)	(794)	(497)	(164)	(406)
346.51	Communication Equipment	14	111,718	61,847	26,287	9,496	6,010	3,765	1,240	3,072
346.53	Communication Equipment-Telephone	14	24,089	13,336	5,668	2,048	1,296	812	267	662
347.51	Miscellaneous Equipment	14	856,018	473,892	201,421	72,762	46,054	28,848	9,502	23,540
348.00	Other Tangible Plant	14	4,438	2,457	1,044	377	239	150	49	122
	Total Utility Plant in Service (Net)		140,435,188	60,811,867	39,587,064	13,614,619	10,065,496	4,192,201	2,632,055	9,531,890
Other Rate Base Elements										
16	Accumulated Deferred ITC	16	(37,993)	(16,451)	(10,710)	(3,682)	(2,724)	(1,136)	(710)	(2,580)
2	Accumulated Amortization of Capital Leas	2	(1,139,858)	(377,407)	(338,424)	(218,511)	(91,075)	(109,084)	(1,824)	(3,534)
4	CIAC - Mains	4	(12,704,576)	(5,046,258)	(4,539,345)	(1,055,750)	(1,222,180)	-	(285,853)	(555,190)
11	CIAC - Services	11	(1,535,630)	(1,204,087)	(196,100)	(5,835)	(21,192)	(154)	(108,262)	-
10	CIAC - Meters	10	(159,295)	(113,498)	(36,176)	(2,692)	(6,786)	(143)	-	-
21	CIAC - Hydrants	21	(793,450)	-	-	-	-	-	-	-
16	Deferred Taxes	16	(16,931,771)	(7,331,456)	(4,773,066)	(1,640,689)	(1,214,008)	(506,260)	(316,624)	(793,450)
16	Utility Plant Acquisition Adjustment	16	(67,365)	(29,169)	(18,990)	(6,528)	(4,830)	(2,014)	(1,260)	(1,149,667)
4	CWIP - Mains not classified	4	15,000	5,958	5,360	1,247	1,443	-	338	656
4	CWIP - Mains 6"-10"	4	555,000	220,446	198,302	46,121	53,391	-	12,488	24,254
3	CWIP - Mains 12" and Greater	3	130,000	42,094	37,804	24,414	10,179	12,168	1,144	2,197
2	CWIP - Water treatment Structures	2	8,142,500	2,695,982	2,417,508	1,560,917	650,586	779,237	13,028	25,242
6	CWIP -Pumping Structures	6	2,000	663	595	361	160	173	17	32
5	CWIP -Elevated Tanks and Standpipes	5	100,000	31,940	28,690	17,460	7,710	8,350	1,990	3,860
2	CWIP -Water Treatment Equipment	2	5,000	1,656	1,485	959	400	479	8	16
11	CWIP - Services	11	58,000	45,478	7,407	220	800	6	4,089	-
10	CWIP - Meters	10	32,000	22,800	7,267	541	1,363	29	-	-
21	CWIP - Hydrants	21	42,000	-	-	-	-	-	-	-
14	CWIP - Office Furniture	14	1,500	830	353	128	81	51	-	42,000
14	CWIP - Tools, Shop, & Garage Equip.	14	-	-	-	-	-	-	17	41
16	RWIP	16	151,351	65,535	42,666	14,666	10,852	4,525	2,830	10,277
14	Deferred Maintenance	14	-	-	-	-	-	-	-	-
14	Utility Plant Capital lease	14	1,590,500	880,501	374,245	135,193	85,569	53,600	17,655	43,739
16	Limited Term Utility Plant - Net	16	-	-	-	-	-	-	-	-
14	Working Capital Allowance	14	1,991,406	1,102,442	468,578	169,269	107,138	67,110	22,105	54,764
	Subtotal Other Rate Base Elements		(20,553,682)	(9,002,001)	(6,322,551)	(962,191)	(1,633,123)	306,937	(638,824)	(2,301,917)
	Total Original Cost Rate Base		119,881,506	51,809,866	33,264,513	12,652,428	8,432,373	4,499,138	1,993,231	7,229,973

TENNESSEE-AMERICAN WATER COMPANY

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 18. ALLOCATION OF OTHER REVENUES.

Factors are based on the allocation of total cost of service.

Customer Classification (1)	Total Cost of Service (2)	Allocation Factor (3)
Residential	\$19,806,885	0.4703
Commercial	10,995,497	0.2612
Industrial	4,411,673	0.1048
Other Public Authority	2,705,002	0.0643
Other Water Utilities	1,708,301	0.0406
Private Fire Protection	566,633	0.0135
Public Fire Protection	1,907,172	0.0453
Total	<u>\$42,101,163</u>	<u>1.0000</u>

TENNESSEE-AMERICAN WATER COMPANY

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS

FACTOR 19. ALLOCATION OF COSTS WHICH VARY WITH THE AMOUNT OF WATER CONSUMED IN THE LOOKOUT MOUNTAIN SERVICE AREA.

Factors are based on the pro forma test year average daily consumption for each customer classification.

Customer Classification (1)	Average Daily Consumption, 100 Cu. Ft. (2)	Allocation Factor (3)
Residential	749	0.7892
Commercial	165	0.1739
Other Public Authority	35	0.0369
Total	949	1.0000

FACTOR 20. ALLOCATION OF COSTS WHICH VARY WITH THE AMOUNT OF WATER CONSUMED IN THE LAKEVIEW SERVICE AREA.

Factors are based on the pro forma test year average daily consumption for each customer classification.

Customer Classification (1)	Average Daily Consumption, 100 Cu. Ft. (2)	Allocation Factor (3)
Residential	509	0.8555
Commercial	73	0.1227
Other Public Authority	13	0.0218
Total	595	1.0000

FACTOR 21. ALLOCATION OF COSTS ASSOCIATED WITH FIRE HYDRANTS.

These costs are assigned directly to the public fire protection classification.

Customer Classification (1)	Allocation Factor (3)
Public Fire Protection	1.0000

TENNESSEE-AMERICAN WATER COMPANY

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

BASIS FOR ALLOCATION OF DEMAND-RELATED COSTS OF
FIRE SERVICE TO PRIVATE AND PUBLIC FIRE PROTECTION

Description (1)	Restrictive Diameter(s) Squared (2)	Number of Units (3)	Relative Demand (4)=(2)X(3)	Allocation Factor (5)
<u>Private Fire Protection</u>				
1 -Inch Fire Line	1	0	0	
1.5 -Inch Fire Line	2.25	1	2	
2 -Inch Fire Line	4	13	52	
2.5 -Inch Fire Line	6.25	1	6	
3 -Inch Fire Line	9	2	18	
4 -Inch Fire Line	16	83	1,328	
6 -Inch Fire Line	36	757	27,252	
8 -Inch Fire Line	64	299	19,136	
10 -Inch Fire Line	100	15	1,500	
12 -Inch Fire Line	144	19	2,736	
Total Private Fire Protection		1,190	52,031	0.3399
<u>Public Fire Protection</u>				
4-1/2 inch, 3 way	20.25	4,989	101,027	
Total Public Fire Protection		4,989	101,027	0.6601
Total Fire Protection Service		6,179	153,058	1.0000

PART III. PROPOSED CUSTOMER RATES

Tennessee-American Water Company
Comparison of Present and Proposed Rates

Line No.		Rates Effective May 22, 2007			Proposed Rates			Percent Increase		
		Lookout			Lookout			Lookout		
		Chattanooga	Mountain	Lakeview	Chattanooga	Mountain	Lakeview	Chattanooga	Mountain	Lakeview
1										
2										
3										
4										
5	Service Charges:									
6	5/8 - inch meter	\$ 10.42	\$ 11.70	\$ 11.70	\$ 12.80	\$ 12.80	\$ 12.80	22.84%	9.40%	9.40%
7	3/4 - inch meter	17.51	17.51	17.51	21.51	21.51	21.51	22.84%	22.84%	22.84%
8	1 - inch meter	29.14	29.14	29.14	35.80	35.80	35.80	22.86%	22.86%	22.86%
9	1 1/2 - inch meter	58.30	58.30	58.30	71.62	71.62	71.62	22.85%	22.85%	22.85%
10	2 - inch meter	93.27	93.27	93.27	114.57	114.57	114.57	22.84%	22.84%	22.84%
11	3 - inch meter	174.89	174.89	174.89	214.84	214.84	214.84	22.84%	22.84%	22.84%
12	4 - inch meter	291.49	291.49	291.49	358.07	358.07	358.07	22.84%	22.84%	22.84%
13	6 - inch meter	582.99	582.99	582.99	716.15	716.15	716.15	22.84%	22.84%	22.84%
14	8 - inch meter	932.77	932.77	932.77	1,145.82	1,145.82	1,145.82	22.84%	22.84%	22.84%
15	Volumetric Rates:									
16	First 400 Cubic Feet	0.194	0.721	0.356	0.236	0.963	0.963	21.65%	33.56%	170.51%
17	Next 6,100 Cubic Feet	3.073	3.958	3.386	3.705	4.432	4.432	20.57%	11.98%	30.89%
18	Next 43,500 Cubic Feet	1.931	2.816	2.244	2.349	3.076	3.076	21.65%	9.23%	37.08%
19	Next 450,000 Cubic Feet	1.443	1.969	1.604	1.755	2.482	2.482	21.62%	26.05%	54.74%
20	Next 1,000,000 Cubic Feet	1.103	1.630	1.265	1.342	2.069	2.069	21.67%	26.93%	63.56%
21	All Over 1,500,000 Cubic Feet	0.655	1.181	0.816	0.797	1.524	1.524	21.68%	29.04%	86.76%
22	Ft. Oglethorpe; Catoosa	0.8961			1.090			21.64%		
23	Signal Mountain	0.7960			0.796			0.00%		
24										
25	Suck Creek									
26	First 1500 gal or 200 cubic feet	22.85	meter charge		First 400 Cubic Feet		18.50	(Minimum)		
27	Next 8000 gal or 1067 cubic feet	4.40	/thousand	3.30 /ccf	Next 6,100 Cubic Feet		6.286			
28	All over 9500 gal or 1267 cubic feet	3.30	/thousand	2.48 /ccf	Next 43,500 Cubic Feet		4.930			
29					Next 450,000 Cubic Feet		2.482			
30					Next 1,000,000 Cubic Feet		2.069			
31					Over 1,500,000 Cubic Feet		1.524			
32										
33	Lone Oak									
34	First 2000 gal or 267 cubic feet	31.39	meter charge		First 400 Cubic Feet		29.00	(Minimum)		
35	All over 2000 gal or 267 cubic feet	5.25	/thousand	3.95 /ccf	Next 6,100 Cubic Feet		6.286			
36					Next 43,500 Cubic Feet		4.930			
37					Next 450,000 Cubic Feet		2.482			
38					Next 1,000,000 Cubic Feet		2.069			
39					Over 1,500,000 Cubic Feet		1.524			

Tennessee-American Water Company
Comparison of Present and Proposed Rates

Line No.	Rates Effective May 22, 2007			Proposed Rates			Percent Increase		
	Lookout			Lookout			Lookout		
	Chattanooga	Mountain	Lakeview	Chattanooga	Mountain	Lakeview	Chattanooga	Mountain	Lakeview
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
	<u>Private Fire Service</u>								
	1	- Inch Service		\$	33.02			21.63%	
	1 1/2	- Inch Service			74.49			21.63%	
	2	- Inch Service			132.48			21.63%	
	2 1/2	- Inch Service			202.02			21.63%	
	3	- Inch Service			297.79			21.63%	
	4	- Inch Service			596.33			21.63%	
	6	- Inch Service			1,191.73			21.63%	
	8	- Inch Service			2,385.47			21.63%	
	10	- Inch Service			3,578.49			21.63%	
	12	- Inch Service			4,771.70			21.63%	

TENNESSEE-AMERICAN WATER COMPANY
CASE NO. _____
DIRECT TESTIMONY
Robert A. Shiltz

1. Q. WILL YOU PLEASE STATE YOUR NAME AND BUSINESS ADDRESS FOR THE RECORD?

A. My name is Robert A. Shiltz and my business address is 1600 Pennsylvania Avenue, Charleston, WV 25302.

2. Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am employed by American Water Works Service Company as a Senior Financial Analyst.

3. Q. WHAT ARE YOUR RESPONSIBILITIES IN THIS POSITION?

A. My responsibilities include the preparation and presentation of rate filings requested by three operating companies in the Southeast Region. I provide the monthly financial and statistical information to the TRA. I also assist in the preparation of budgets, revenue analysis, and reconciliations.

4. Q. WOULD YOU PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND BUSINESS EXPERIENCE?

A. In 1982, I graduated with a Bachelor of Science Degree from West Virginia State University with a major in accounting. In 1996, I graduated with an Associate in Applied Science Degree from West Virginia State University in Computer Science.

1
2 I have worked with the American Water System for 22 years and
3 started my career as an Accountant in the Finance department. In
4 1989 I transferred to the IT department as a PC Specialist and
5 was promoted to Senior PC Specialist in 1991. In 1999 I accepted
6 a position as a Business Support Specialist and was assigned to a
7 project team at the corporate level to develop a system-wide
8 uniform process to consolidate all information systems and
9 financial functions into a shared services company using JD
10 Edward's software. At the conclusion of the project I relocated to
11 New Jersey and was promoted to project manager. In 2003 I
12 moved back to West Virginia as an Intermediate Financial
13 Analyst. In 2007 I was promoted to Senior Financial Analyst
14 (Rates) and am currently involved with preparation of rate case
15 filings for Tennessee, Kentucky, and West Virginia.
16

17 5. Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS
18 CASE?

19 A. My testimony will support various expense categories that include
20 Customer Accounting, Rents, General Office Expense,
21 Miscellaneous Expense, Other Maintenance Expense, AFUDC,
22 and Uncollectible Expense.
23
24

25 6. Q. MR. SHILTZ, PLEASE DISCUSS THE ADJUSTMENTS THAT
26 YOU MADE TO THE EXPENSE CATEGORIES?
27

1 **A. Each of the expense categories were reviewed for the test year and**
2 **adjusted to reflect a normalized test year and further adjusted to**
3 **an appropriate level of expense for the attrition year. Some of the**
4 **expense categories were adjusted using an inflation factor of**
5 **2.3%.**

6
7 **7. Q. HOW DID YOU ARRIVE AT THE 2.3% INFLATION**
8 **FACTOR?**

9
10 **A. I used the Value Line Forecast for the US Economy Consumer**
11 **Price Index estimated inflation rate. For the attrition year, I used**
12 **4/12 of the 2008 rate of 2.1 % and the 8/12 of the 2009 rate of**
13 **2.4% to arrive at the 2.3%.**

14
15 **8. Q. CAN YOU EXPLAIN THE ADJUSTMENTS THAT YOU**
16 **MADE FOR EACH LINE?**

17
18 **A. CUSTOMER ACCOUNTING EXPENSE**
19 **Customer accounting expense for the historical test year was**
20 **\$704,362. The Company applied the inflation factor of 2.3% to**
21 **these expenses, excluding uncollectibles and postage to arrive at**
22 **an increase of \$8,978. The postage increase of \$21,131 is largely**
23 **due to an increase in postage costs as of May 2007 and a second**
24 **increase in May 2008. One additional adjustment was made to**
25 **annualize the Wireless Service First billing. This resulted in a**
26 **decrease of \$2,029 for the year. As a result, the net effect of the**
27 **customer accounting expense for the attrition year is an increase**
28 **of \$28,079.**

29
30 **This category includes costs associated with the customer billing**
31 **and collecting function. It includes costs for office supplies, report**
32 **forms, computer supplies, postage, collection agency fees, lock box**

1 expenses, janitorial service, telephone expense, and other
2 miscellaneous customer accounting expense.

3
4 **UNCOLLECTIBLE EXPENSE**

5 The uncollectible percentage of 1.489% was derived by taking a
6 three year average of the net charge offs, less recoveries as a
7 percentage of total revenues. That percentage was applied to the
8 proposed revenue increase of \$7,644,859 to arrive at the attrition
9 year adjustment to uncollectible expense of \$113,834.

10
11 **RENTS**

12 Rent expense for the historical test year was \$30,037. The
13 Company is proposing four adjustments to this category. The
14 first eliminates the extra quarterly payment for the easement of
15 the Brainard Road Tank \$75.

16
17 The second adjustment eliminates expenses for a pager, postage
18 equipment, and truck radios in the amount of \$23,767. These
19 leases were not renewed.

20
21 The third adjustment is an elimination of miscellaneous office
22 equipment that was moved to general office expense in the
23 amount of \$439 and a correction of three quarterly payments for
24 copier rental that was charged to maintenance expense in the
25 amount of \$5,405. The net effect is an increase of \$4,967.

26
27 The fourth adjustment of \$175 annualizes a new lease agreement
28 for postage equipment.

29
30 This results in an attrition year expense of \$11,336. This category
31 includes the costs associated with the renting of postage
32 equipment, copiers, and land.

33
34 **GENERAL OFFICE EXPENSE**

35 General office expense for the historical test year was \$244,966.
36 The Company made adjustments to eliminate the business change
37 cost in the amount of \$11,124, normalize postage expense in the
38 amount of \$402, and the remaining adjustment totaling \$2,494
39 was made to correct charges applied to rents and miscellaneous
40 expense in error. The inflation factor of 2.3% was applied to the
41 remaining expenses (excluding postage) to arrive at an attrition

1 year expense of \$242,101. This expense category includes costs
2 associated with the general expenses for the office. These include
3 report forms, office supplies, computer supplies, overnight mail
4 expenses, janitorial services, telephone expense, electrical expense,
5 employee expenses, credit line fees, bank service charges, and
6 other miscellaneous general office expenses.

7
8 **MISCELLANEOUS EXPENSE**

9 Miscellaneous expense for the historical test year totaled
10 \$1,931,046. The Company is proposing seven adjustments to this
11 category. The first adjustment reflects the inflation factor
12 adjustment of 2.3%. This results in an increase of \$39,858. The
13 Company did not apply the inflation factor to the 401K expense,
14 Defined Contribution expense, or the Retiree Medical
15 Reimbursement Plan.

16
17 The second adjustment applies to the 401K expense, Defined
18 Contribution, and Retiree Medical Reimbursement. The net
19 result of these adjustments is \$52,949.

20
21 The third adjustment eliminates the penalties in the amount of
22 \$124,992 and lobbying expense of \$15,601.

23
24 The fourth adjustment includes a five year amortization of the
25 management audit in the amount of \$57,000 annually.

26
27 The fifth adjustment is an increase in expense to annualize the
28 maintenance fee to the Tennessee Department of Environment
29 and Conservation in the amount of \$22,645.

30
31 The sixth adjustment totaling \$27,000 recalculates the 2007 fuel
32 cost at current fuel prices.

33
34 The seventh adjustment reflects a security charge transferred
35 from general office in the amount of \$504.

36
37 The proposed miscellaneous expense for the attrition year is
38 \$1,990,204 which includes net adjustments totaling \$59,158.

39
40 **MAINTENANCE EXPENSE**

41 Maintenance expense for the historical test year was \$1,211,604.

1 Adjustments were made to eliminate the net negative salvage
2 expense of \$367,615 and \$5,404 which was copier rental
3 transferred to rents. Paving costs were increased by \$12,267 to
4 allow for a recent increase in the contracted asphalt prices. An
5 additional \$50,000 was added to cover preventive maintenance.
6 This will be addressed by Mr. John Watson in his testimony. The
7 inflation factor was applied to the remaining balance to arrive at
8 an adjustment of \$20,720 resulting in an attrition year balance of
9 \$921,572.

10
11 This expense category includes costs associated with maintaining
12 the property of the Company. This would include repair parts,
13 tools, maintenance supplies, contracted services, paving,
14 maintenance agreements, and other miscellaneous maintenance
15 expenses.

16
17 **AFUDC**

18 The Company's proposed amount for AFUDC is \$463,690 and is
19 based upon the 2007/2008 budget. This adjustment was made to
20 reflect the AFUDC as an above the line item for ratemaking
21 purposes.

22
23
24 **9. Q. MR. SHILTZ, DOES THIS CONCLUDE YOUR TESTIMONY?**

25 **A. Yes.**

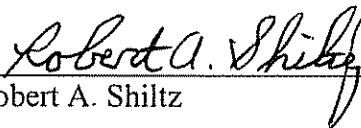
TENNESSEE REGULATORY AUTHORITY

STATE OF WEST VIRGINIA

COUNTY OF KANAWHA

BEFORE ME, the undersigned authority, duly commissioned and qualified in and for the State and County aforesaid, personally came and appeared Robert A. Shiltz, being by me first duly sworn deposed and said that:

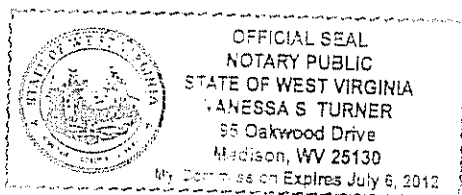
He is appearing as a witness on behalf of Tennessee-American Water Company before the Tennessee Regulatory Authority, and if present before the Authority and duly sworn, his testimony would set forth in the annexed transcript consisting of 6 pages.


Robert A. Shiltz

Sworn to and subscribed before me
this 11th day of March 2008.


Notary Public

My commission expires July 6, 2012



TENNESSEE-AMERICAN WATER COMPANY
CASE NO. _____
DIRECT TESTIMONY
Sheila A. Miller

1. Q. WILL YOU PLEASE STATE YOUR NAME AND BUSINESS ADDRESS FOR THE RECORD?

A. My name is Sheila A. Miller and my business address is 1600 Pennsylvania Avenue, Charleston, WV 25302.

2. Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am employed by American Water Works Service Company as an Assistant Manager of Rates and Regulation.

3. Q. WHAT ARE YOUR RESPONSIBILITIES IN THIS POSITION?

A. My responsibilities include the preparation and presentation of rate filings requested by three operating companies comprising the Southeast Region of the American Water Works Service Company. I present testimony in formal rate cases and other regulatory proceedings. I am also responsible for various accounting duties including budget preparation, account reconciliation, and financial statement analysis.

4. Q. WOULD YOU PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND BUSINESS EXPERIENCE?

A. In 1983, I graduated Summa Cum Laude with a Bachelor of Arts degree from Glenville State College with a major in Accounting and Management, and a minor in Economics. In 1988, I received

1 my Certified Public Accountant (CPA) license.

2
3 I have worked with the American Water System for 23 years and
4 began my career in December 1984, as a Junior Accountant. In
5 that capacity I worked in the Construction Accounting
6 Department for American Water Works Service Company. In
7 1985 I was promoted to Accountant, Construction Accounting
8 Supervisor for the Southeast Region in 1988, Construction
9 Accounting Superintendent for West Virginia American Water
10 Company in 1992, Assistant Director of Accounting for West
11 Virginia American in 1995, Director of Accounting for West
12 Virginia American in 1997, Director of Accounting for the
13 Southeast Region in 2000, transferred to Senior Financial Analyst
14 (Rates) for the Southeast Region in 2002 and promoted to my
15 current position of Assistant Manager Rates & Regulation in
16 2007. I have vast accounting knowledge and expertise in the
17 financial aspects of the company.

18
19 In addition, I assisted with the system-wide acquisition integration
20 of Citizens Water by serving on the Acquisition Team. I was
21 instrumental in the set up of a system-wide conversion process for
22 the Shared Services Center by assisting the team with the
23 integrity and comparative reports that were created and used by
24 the American System. I also served in the communication link as
25 a member of the Customer Advisory Team throughout the
26 transition phase. I assisted with the implementation of our
27 financial software system (JDEdwards), prepared source

1 documentation, and trained employees in the areas of general
2 ledger, purchase orders, fixed assets, accounts payable, and
3 reporting.

4
5 I have previously prepared testimony and rate case exhibits for
6 Tennessee American Water, Kentucky American Water, Virginia
7 American Water, and West Virginia American Water.

8
9 5. Q. WERE THE COMPANY'S ACCOUNTING EXHIBITS
10 PREPARED BY YOU OR UNDER YOUR SUPERVISION?

11 A. Yes, they were.

12
13 6. Q. WHAT IS THE SOURCE OF THE INFORMATION USED IN
14 THE COMPANY'S ACCOUNTING EXHIBITS?

15 A. The information contained in the Accounting Exhibits was
16 prepared from the financial and operational records of the
17 company.

18
19 7. Q. PLEASE EXPLAIN THE INCREASE IN RATES THAT THE
20 COMPANY IS SEEKING IN THIS PROCEEDING.

21 A. The Company is seeking a rate increase that would produce
22 additional annual revenues of \$7.645 million or 20.58%. The
23 Company last filed for a rate increase in November 2006.

24
25 8. Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS
26 CASE?

27 A. My testimony will 1) sponsor the Company's Accounting Exhibits

Nos. 1, 2, 3, and 4 which support the proposed revenue increase of \$7,644,859 and 2) support the Company's attrition year level of Labor, Fuel and Power, Chemicals, Waste Disposal, Group Insurance, Insurance Other than Group, General Taxes, and Rate Base. I will also address the Company's Operating Revenues per books for the test year and for the attrition year under both present and proposed rates, except for average daily usages for both the residential and commercial customer classes.

9. Q. WHO WILL ADDRESS THE COMPANY'S PROPOSED AVERAGE DAILY USAGE FOR THE RESIDENTIAL AND COMMERCIAL CUSTOMER CLASSES?

A. The Company has retained the services of Dr. Edward L. Spitznagel, Jr., Professor, Washington University in St. Louis, Missouri, to provide weather normalizations for both the residential and commercial customer classes. I will explain how Dr. Spitznagel's averages were used in the Company's bill analysis.

10. Q. WHAT IS THE TEST PERIOD REFLECTED IN THIS CASE?

A. The Company has used a historical test period of twelve months ending November 30, 2007. The Company has adjusted the test period for two levels of adjustments. The first adjustment normalizes the test year. The second level adjusts the normalized year to arrive at the attrition year which is the twelve months ended August 31, 2009.

1 **11. Q. MS. MILLER, ARE THERE ANY EXHIBITS YOU WISH TO**
2 **SPONSOR BEFORE YOU CONTINUE?**

3 **A. Yes, I would like to give a brief description of the accounting**
4 **schedules which detail and support the rate base, revenues,**
5 **expenses, capitalization and bill analysis for the test year and**
6 **attrition year.**

7
8 **Exhibit 1 is a financial summary of the filing which details how**
9 **the Company arrived at the amount of the requested revenue**
10 **increase. There is also a rate base summary for the test year and**
11 **attrition year with supporting schedules.**

12
13 **Exhibit 2 is an operating income summary for the test year and**
14 **attrition year with supporting schedules broken down by major**
15 **account group.**

16
17 **Exhibit 3 provides a cost of capital summary for the attrition year**
18 **and supporting schedules which provide detail on each component**
19 **of the capital structure.**

20
21 **Exhibit 4 provides a bill analysis for the attrition year at both**
22 **present and proposed rates.**

23
24 **12. Q. HOW DID THE COMPANY DETERMINE THE OPERATING**
25 **REVENUES SHOWN IN ITS ACCOUNTING EXHIBIT?**

26 **A. The Company's operating revenues are obtained from (i) metered**
27 **sales, (ii) private fire service, and (iii) miscellaneous, service**
28 **revenues, rents from property, and other water revenues. The**
29 **Company uses a bill analysis reflecting the actual billing**
30 **determinants for the test year, twelve months ended November**
31 **30, 2007. Exhibit No. 4, Schedules 1 and 2, set forth the individual**
32 **bill analysis by customer class. This schedule multiplies attrition**
33 **year billing determinants by present and proposed rates.**

1 **13. Q. DID THE COMPANY MAKE ANY ADJUSTMENTS TO PER**
2 **BOOK REVENUES FOR THE TEST YEAR?**

3 **A. Yes, the Company made a total of five adjustments, as follows:**

4 **(1) normalized test year adjustments which include eliminating**
5 **the extra month of billing on routes with 13 bills; eliminated**
6 **revenues for Velsicol Chemical Corporation due to the closing of**
7 **the plant; annualized the rate increase for the Catoosa Utility**
8 **District that was effective June 2007 and Fort Oglethorpe**
9 **effective May 2008; and annualized the rate increase effective**
10 **May 22, 2007 for TAWC customers; (2) weather normalization**
11 **adjustment for the residential and commercial customer classes;**
12 **(3) eliminated net change in accrued revenues; (4) eliminated**
13 **Walden's Ridge revenues from the filing, and (5) added revenue**
14 **for the estimated number of new customers to be added during**
15 **the attrition year. The estimate is based on historical results.**

16
17 **14. Q. HOW WERE THE OPERATING EXPENSE ADJUSTMENTS**
18 **IN THE ACCOUNTING EXHIBIT CALCULATED?**

19 **A. The adjustments reflect an ongoing level of operating expenses**
20 **consistent with the test year matching principles. Known and**
21 **measurable price adjustments have been included to restate test**
22 **year expense levels to rate year levels, the first 12 month period in**
23 **which new rates will be in effect.**

24
25 **15. Q. WHAT METHODOLOGY DID THE COMPANY UTILIZE IN**
26 **CALCULATING GOING-LEVEL LABOR EXPENSE IN ITS**
27 **COST OF SERVICE?**

1 **A. The Company calculated labor expense by individual employee.**
2 **Each employee's wages during the twelve months ended**
3 **November 30, 2007 were adjusted to account for the wage level to**
4 **be paid during the first twelve-months in which the new rates will**
5 **be in effect. This is the same approach the Company has used in**
6 **prior filings. Since 20.28% of the labor expense is capitalized, this**
7 **amount is eliminated from the O & M expenses.**

8
9 **16. Q. HOW WERE THE WAGE LEVELS FOR THE ATTRITION**
10 **YEAR DETERMINED?**

11 **A. Hours worked during the historical test year were obtained from**
12 **the Company's actual payroll records for union employees.**
13 **Adjustments were then made to overtime hours to restate those**
14 **hours to a level equivalent to the employee's hourly pay rate. For**
15 **example, the hours paid at time and a half wage rates were**
16 **multiplied by 1.5 to yield hours that could be applied to the**
17 **employee's hourly wage rate. Similar adjustments were made for**
18 **other premium overtime hours. Each employee's equivalent**
19 **hours were then applied to their average attrition year wage rate**
20 **to determine going-level wages.**

21
22 **17. Q. HOW WERE THE AVERAGE RATE YEAR WAGE RATES**
23 **CALCULATED?**

24 **A. For union employees, the Company's existing bargaining**
25 **agreements were examined. The agreements contain negotiated**
26 **wage rates through the attrition year. The wage rates for each pay**
27 **class in effect for the attrition year were pro-rated based upon the**

1 number of days in the attrition year. The result is an average
2 attrition year wage rate for each union employee.

3
4 For non-union hourly and clerical employees, current wage rates
5 that became effective on April 1, 2007 were adjusted for wage
6 increases of 3.6% on April 1, 2008 and April 1, 2009. The test
7 year wage rate was calculated based upon the number of days
8 each of those wages were in effect, just as the union wage rates
9 were calculated.

10
11 **18. Q. HOW WERE THE ATTRITION YEAR WAGE LEVELS FOR**
12 **SALARIED EMPLOYEES DETERMINED?**

13 **A. Salaried employees are exempt from overtime pay. For that**
14 **reason, the current annual salary for each employee has been**
15 **adjusted for wage increases that would become effective April 1,**
16 **2008 and April 1, 2009. Consistent with the other employee**
17 **classes, the 2008 and 2009 salaries were calculated based upon the**
18 **number of days each of the salary amounts would be in effect.**

19
20 **19. Q. WHAT IS THE BASIS UPON WHICH FUEL AND POWER**
21 **COST WAS CALCULATED FOR THIS RATE ADJUSTMENT?**

22 **A. Fuel and power is based upon expected water pumped to the**
23 **system during the attrition year (system delivery), and its cost to**
24 **pump and treat. Attrition year water sales, non-revenue usage**
25 **water (which is water used for system flushing, street cleaning,**
26 **sewer flushing, etc.) and an estimated unaccounted for water is**
27 **combined to arrive at system delivery. Fuel and power is based**

1 on kilowatt hours (KWH's) per million gallons system delivery.

2
3 Fuel and power costs are based on estimated KWH usage and
4 kilowatt demand (KWD) required to produce the projected
5 system delivery and deliver the water to the customer for the
6 attrition year. The attrition year system delivery is multiplied by
7 the KWH's per thousand gallons to arrive at total kilowatt hours.
8 Total kilowatt hours are priced at the rates charged by the
9 Chattanooga Electric Power Board to arrive at the attrition year
10 energy charges. An adjustment was made for the increase in rates
11 that will be effective April 1, 2008, as well as the increase in the
12 fuel cost adjustment amount. The KWH's per thousand gallons
13 required is based on the latest 12 months actual, with adjustments
14 for any known changes that will affect KWH usage. KWD usage
15 is also priced at the rates charged by the Chattanooga Electric
16 Power Board. The total energy charges plus the demand charges
17 equate to the fuel and power cost. The total attrition year fuel
18 and power expense is \$1,986,259 which represents a decrease of
19 \$288,609 over the test year expense. This is due to a decrease in
20 system delivery in the attrition period and the elimination of
21 Walden's Ridge fuel & power expense from the rate filing.

22
23 20. Q. WHAT IS THE BASIS FOR THE CHEMICAL COSTS?

24 A. Chemical costs are based upon expected water pumped to the
25 system (system delivery) for the attrition year and the cost to treat
26 that water. Attrition year water sales, non-revenue usage (used
27 for street cleaning, sewer flushing, etc.) and an estimated

unaccounted for water is combined to arrive at system delivery. System delivery, plus water used at the treatment plant, is combined to produce total treatment rate. Historical chemical usage per pound is priced at the current contract chemical costs to arrive at a total chemical cost for the historical test year. The total cost of each chemical is divided by the historical system delivery to arrive at an average cost per pound of chemical per CCF. The average costs per pound of chemical are then applied to the normalized system delivery and attrition year system delivery to arrive at the appropriate adjustments for chemical expense. The total attrition year chemical expense is \$1,049,272 which is a decrease of \$25,900 over the test year expense due to the decrease in system delivery.

21. Q. WHAT IS THE BASIS FOR THE COST OF WASTE DISPOSAL?

A. Waste disposal is based upon the 2007 actual expenditures paid to the City of Chattanooga Sanitary Board to treat the water plant residuals adjusted for a 3% increase which was effective October 2007 and another 3% increase effective April 2008.

22. Q. PLEASE EXPLAIN THE ADJUSTMENT FOR GROUP INSURANCE.

A. The group insurance expense for the normalized test year was calculated first by determining the annualized group insurance cost. The cost is determined by applying the group insurance rates in effect at November 30, 2007 to the proforma insurance

1 coverages based upon the employee complement and salary and
2 wage information. From this number, an amount representing
3 the employee contribution for their healthcare coverage is
4 subtracted. The result is the Company's annualized group
5 insurance cost.

6
7 Since group insurance is an employee benefit, the cost for group
8 insurance is charged based upon direct labor charges. Since
9 20.28% of labor was not charged to expense (as previously
10 explained) this percentage of group insurance cost is excluded
11 from the Company's claim for group insurance expense.

12
13 **23. Q. ARE THERE ANY OTHER PAYROLL-RELATED**
14 **EXPENSES?**

15 **A. Yes, there are. The Company's claim for payroll taxes is based on**
16 **historic and future test year salary and wage expense. As is the**
17 **case with group insurance, 20.28% of the calculated payroll taxes**
18 **are eliminated, representing the portion not charged to**
19 **operations.**

20
21 **24. Q. PLEASE EXPLAIN THE ADJUSTMENT FOR OTHER**
22 **GENERAL TAXES.**

23
24 **A. Certainly. I will address them individually.**

25
26 **PROPERTY TAXES**

27 **Property taxes for the test year were \$2,901,497. This amount was**
28 **actually over-accrued which created a normalized adjustment of**
29 **(\$317,200). An effective property tax rate based on the latest**
30 **property tax returns was applied to the attrition year rate base to**

arrive at the attrition year adjustment of \$268,883.

GROSS RECEIPTS TAXES

Gross receipts tax was based on projected jurisdictional revenues for Tennessee American Water including Other Operating revenues. The revenues, adjusted for the Franchise Tax, Excise Tax, and a \$5,000 exemption, were multiplied by the current 3% tax rate to arrive at the attrition year level. The forecasted amount was prepared using 83% of the Gross Receipts Tax Return based on 2007 revenues. This return is due August 2008 and is for the taxable period ending June 2009. The remaining 17% is based on 2008 budgeted revenues and adjusted for any rate increase included in this filing. This properly matches the Gross Receipts Tax with the attrition period in this case.

PSC FEES

The PSC Inspection Fee is paid in advance and based on the previous years' revenues. This calculation was also matched to the attrition period in this rate filing. One third (September 2008 thru December 2008) was based on 2007 revenues and two thirds (January 2009 thru August 2009) was based on projected 2008 jurisdictional revenues. The revenues were reduced by uncollectibles and a \$5,000 exemption to arrive at taxable revenues. The result was multiplied by the Tennessee statutory rates that were taken from the 2007 return.

FRANCHISE TAX

Franchise tax, as imposed by the state of Tennessee, applies to the

1 company's apportioned net worth or value of property owned and
2 used in Tennessee, whichever is greater, as shown at the close of
3 the corporation's fiscal year. The Franchise Tax is paid in
4 arrears and is based on the previous years original cost of assets.
5 For this filing, we utilized the balances as of December 2007 as a
6 basis for one third of the attrition year tax and two thirds was
7 calculated using the projected balance at December 2008. Those
8 values were then multiplied by the statutory rate of \$.25 per \$100.

9
10 **RATE BASE:**

11 **25. Q. HAS THE COMPANY CHANGED THE METHODOLOGY IN**
12 **CALCULATING REQUESTED RATE BASE FROM THE**
13 **APPROACH ADVOCATED IN ITS LAST CASE?**

14 **A. Yes. The Company utilized a thirteen month average rate base**
15 **calculation as approved in Case No. 06-00290. Shown on Exhibit**
16 **No.1, Schedule 2, Column No. 1 of the Company's Accounting**
17 **Exhibit, is the rate base for the historical test year totaling**
18 **\$108,531,513. In Column No. 2, the Company has summarized its**
19 **requested ratemaking adjustments to rate base totaling**
20 **\$11,349,993. In column 3, the Company has shown its requested**
21 **rate base of \$119,881,506.**

22
23 **26. Q. PLEASE DETAIL THE COMPONENTS THAT COMPRISE**
24 **RATE BASE SHOWN ON EXHIBIT 1, SCHEDULE 2.**

25 **A. UTILITY PLANT IN SERVICE**

26 **Includes the original cost of all land, land rights, easements,**
27 **structures and improvements, together with equipment in service**

1 at November 30, 2007. The Utility Plant balance was calculated
2 through August 31, 2009 by adding net additions and retirements
3 through the end of the attrition period. The 13 month average of
4 the Utility Plant balances from August 1, 2008 through August 31,
5 2009 was calculated to arrive at the utility plant balance for the
6 attrition period. These additions and retirements are summarized
7 on Exhibit 1, Schedule 2, page 3 of 3 and are addressed in greater
8 detail in Mr. Watson's direct testimony. As with the revenues
9 and expenses, we eliminated utility plant associated with
10 Walden's Ridge.

11 12 CONSTRUCTION WORK IN PROGRESS

13 This amount shown in Exhibit 1, Schedule 2 is the November 30,
14 2007 actual balance adjusted to arrive at the August 31, 2009
15 forecast. These amounts represent the actual or forecasted
16 project work for utility plant that is not in service as of August 31,
17 2009.

18 19 WORKING CAPITAL

20 Working capital shown on Exhibit 2, Schedule 2, is further
21 detailed on Exhibit 2, Schedule 3, and I will explain each of those
22 components.

23 Average Cash represents a monthly average which is computed
24 based on 12 monthly averages of daily cash balances per bank
25 statements for the year ended November 30, 2007. The monthly
26 average was computed by dividing the total daily balances for the
27 month by the same month's total days.

1 **Prepaid Insurance, Prepaid Taxes, and Materials and Supplies**
2 represent an average of the thirteen month end balances for the
3 test year ending November 30, 2007.

4 **Deferred Regulatory Expense** consists of an average of the
5 unamortized balances at August 31, 2009, the attrition year end.
6 The amounts included in rate base include \$962,885 for rate case
7 expense, \$30,384 for the cost of service study expense, and \$27,000
8 for depreciation study expense.

9 **Unamortized Debt Expense** was calculated by starting with the
10 November 30, 2007 unamortized debt expense and subtracting the
11 cumulative amortizations to arrive at the balances of the
12 beginning and ending of the attrition year. The average of these
13 two balances, plus the unamortized debt expense of the proposed
14 new debt issue, result in a \$290,559 balance.

15 **Other Deferred Debits** consist of three items which include the
16 thirteen month average of the unamortized transition costs of the
17 Customer Call Center totaling \$433,326, the unamortized
18 transition costs of the Shared Services Center in the amount of
19 \$162,358, and the unamortized balance of the management audit
20 totaling \$256,500.

21 **Lead-Lag Study** – The Company is utilizing a Lead/Lag Study
22 that was performed based on historical data for the twelve months
23 ending July 31, 2002.

24 25 **ACCUMULATED DEPRECIATION**

26 The accumulated depreciation balance as shown on Exhibit 1,
27 Schedule 2 begins with the historical test year balance as of

1 **November 30, 2007. Accumulated depreciation was calculated**
2 **through the end of the attrition period utilizing current**
3 **depreciation rates through August 31, 2008 and the new**
4 **depreciation rates as prepared by Mr. John Spanos through**
5 **August 31, 2009. A thirteen month average was then calculated**
6 **using the month end accumulated depreciation balances from**
7 **August 1, 2008 to August 31, 2009 to arrive at the accumulated**
8 **depreciation at the end of the attrition period.**

9
10 **27. Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

11 **A. Yes.**

TENNESSEE REGULATORY AUTHORITY

STATE OF WEST VIRGINIA

COUNTY OF KANAWHA

BEFORE ME, the undersigned authority, duly commissioned and qualified in and for the State and County aforesaid, personally came and appeared Sheila A. Miller, being by me first duly sworn deposed and said that:

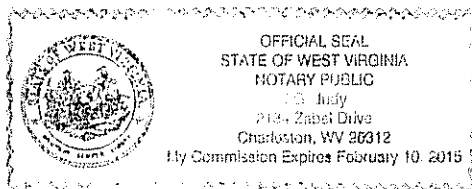
She is appearing as a witness on behalf of Tennessee-American Water Company before the Tennessee Regulatory Authority, and if present before the Authority and duly sworn, her testimony would set forth in the annexed transcript consisting of 16 pages.


Sheila A. Miller

Sworn to and subscribed before me
this 11th day of March 2008.


Notary Public

My commission expires February 10, 2015



TENNESSEE-AMERICAN WATER COMPANY
CASE NO. _____
DIRECT TESTIMONY
MICHAEL A. MILLER

1. Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Michael A. Miller, 1600 Pennsylvania Avenue, Charleston,
West Virginia.

2. Q. WHAT POSITION DO YOU HOLD WITH TENNESSEE AMERICAN
WATER?

A. I am the Treasurer/Comptroller of the Company. In this position I am
responsible for the financial statements, accounting, finance, budgets and
regulatory filings for the Company.

3. Q. PLEASE DESCRIBE YOUR PROFESSIONAL EDUCATION AND
EXPERIENCE.

A. Please see my resume attached to this testimony as Appendix A.

4. Q. WHAT OTHER POSITIONS DO YOU HOLD WITH AMERICAN
WATER?

A. I am the Director of Rates for the Southeast Region of American Water
Works Service Company, Inc. In that position, I am responsible for
overseeing the rates and revenue functions for the operating companies
located in West Virginia, Kentucky, Pennsylvania, Maryland, Virginia, as
well as, Tennessee American.

1 5. Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

2 A. I will address (i) the factors driving the need to seek increased rates, (ii) the
3 Capital Structure and overall cost of capital that includes the return on
4 equity which will be addressed by Dr. Vilbert, (iii) cost of service
5 allocations, (iv) management fees, (v) employee benefit costs, (vi) rate case
6 expense, and (vii) depreciation rates.

7
8 **RATE CASE DRIVERS**

9
10 6. Q. WHAT IS THE OVERALL INCREASE IN RATES REQUESTED IN
11 THIS CASE?

12 A. The overall increase requested is \$7.645, million or 21.2% to tariff
13 customers.

14
15 7. Q. WHAT HAS BEEN THE RECENT HISTORY OF RATE INCREASES
16 FOR THE COMPANY?

17 A. I have a schedule attached to this testimony identified as Exhibit MAM-1
18 that shows the average residential water bill for the Company since 1995.
19 The schedule indicates that since 1995 (including the proposed rate increase
20 in this case), the residential water bill will have increased on average 4.60%
21 per year. This compares to an average increase for the Consumer Price
22 Index of 2.6% per year. The Company has been able to hold rates to
23 reasonable increases, while investing \$106.2 million (a 99.1% increase in
24 Utility Plant) in capital improvements to maintain and improve its

1 exceptional service since 1995.

2
3 8. Q. OTHER THAN THE COST OF CAPITAL DESCRIBED BELOW WHAT
4 IS THE COST OF SERVICE COMPONENTS THAT ARE THE
5 PRIMARY DRIVERS OF THE REQUESTED RATE INCREASE IN
6 THIS CASE?

7 A. The summary of the increased costs supporting the requested increase in
8 rates is provided as Exhibit MAM-2 attached to this testimony. The
9 Company's rate base has increased by \$15.599 million above the level
10 approved in the Company's 2006 rate case, and is a primary driver of the
11 need to increase rates. The increase in rate base and the associated
12 increases in property taxes account for approximately 32% of the requested
13 increase in rates. John Watson, President of Tennessee-American will
14 discuss in his direct testimony the Company's significant capital investment
15 since the prior rate case. Operation and Maintenance expenses have
16 increased by \$2.883 million from the level recognized in the 2006 rate case.
17 This increase accounts for approximately 38% of the increased rates
18 requested in this case. The primary increases for O&M expenses relate to
19 labor (both company labor and service company labor) and benefits
20 (including over \$1.0 million to reflect the federal government mandated
21 contribution to the employee's pension plan); water production costs for
22 fuel, power and chemicals; and maintenance costs. As discussed by Mr.
23 Watson, there have been significant increases in energy prices from the
24 TVA, which are passed through to the Company by the Chattanooga

1 Electric Power Board. The increased price of gasoline has impacted
2 delivery costs for materials, as well as, the transportation cost to provide
3 service to the customers. Mr. Watson, Mr. Shiltz, and Ms. Miller will
4 discuss various O&M costs in their direct testimony, as will I later in this
5 testimony.

6
7 **CAPITAL STRUCTURE AND OVERALL COST OF CAPITAL**

8
9 9. Q. WHAT CAPITAL STRUCTURE DID THE COMPANY USE IN
10 CALCULATING THE RATES IN THIS CASE?

11 A. The Company used a forecasted capital structure for the midpoint of the
12 attrition year, March, 2009. The capital structure includes the permanent
13 financing that will be consummated in early 2009 and the level of short-
14 term debt that will be in place after the permanent debt financing is
15 completed. The proposed capital structure is included in the filing and is
16 attached to this testimony as Exhibit MAM-3.

17
18 10. Q. WHY IS THIS LEVEL OF SHORT-TERM DEBT APPROPRIATE FOR
19 SETTING RATES IN THIS CASE?

20 A. The Company uses short-term debt to finance capital improvements and
21 meet other short-term cash requirements. This type of financing is used to
22 bridge the gap between permanent financings. This permits the Company
23 to time permanent financings in a cost-effective manner and to take
24 advantage of the optimum permanent debt market conditions as they occur.

1 The Company believes the capital structure included in this case reflects the
2 capital components that will be in place to finance the rate base on which
3 rates will be set in this case.
4

5 11. Q. HOW WERE THE WEIGHTED COSTS OF LONG-TERM DEBT AND
6 PREFERRED STOCK DETERMINED?

7 A. The face value of each LT debt and preferred stock issue was reduced by
8 the unamortized issuance cost and the result was divided by the total capital
9 cost to arrive at the overall cost rate for both long-term debt and preferred
10 stock. These calculations are shown on pages 2 and 3 of Exhibit MAM-3
11

12 12. Q. HOW WAS THE COST RATE FOR SHORT-TERM DEBT
13 DETERMINED?

14 A. The Company reviewed its recent Short-term debt rates from American
15 Water Capital Corporation ("AWCC") and market forecasts for 2009 to
16 determine a cost rate for short-term debt that will likely be in place during
17 the rate year.
18

19 13. Q. IN WHAT MANNER IS THE COMPANY CURRENTLY OBTAINING
20 ITS LONG-TERM AND SHORT-TERM DEBT?

21 A. The Company is currently utilizing the services of AWCC to place its
22 required financing needs. AWCC is an American Water Works Company
23 affiliate and was created to consolidate the financing activities of the
24 operating subsidiaries to effect economies of scale on debt issuance and

1 legal costs, and to attract lower debt interest rates through larger debt issues
2 in the public market. The Company believes the use of AWCC has
3 accomplished the goal of reducing issuance costs and attracting capital at
4 lower interest rates though the purchasing power of the entire American
5 System.

6
7 14. Q. HAS THE COMMISSION APPROVED PLACING THE COMPANY'S
8 FINANCING NEEDS WITH AWCC?

9 A. Yes. By Order entered June 14, 2007 in Case No. 06-00305, the
10 Commission authorized the Company to enter into a Financial Services
11 Agreement with AWCC to issue up to \$44.9 million of Long-term debt
12 obligations.

13
14 15. Q. WHAT FACTORS REQUIRE THE COMPANY TO SEEK
15 ADDITIONAL CAPITAL?

16 A. The Company has documented in past rate cases and in this filing that
17 capital improvements it has made in order to meet the new and changing
18 regulations in the water industry, replace aged treatment and distribution
19 facilities, and provide quality, reliable water service to its customers have
20 driven and will continue to drive the need for new capital. In addition, the
21 Company will be required to replace several maturing debt series in the
22 next five years. It is important that the Company maintain a strong
23 financial position to attract this capital at the lowest possible price in order
24 to provide those service improvements at the least possible cost to its

1 customers.

2
3 16. Q. WILL THE COMPANY ISSUE NEW LT DEBT IN EARLY 2009?

4 A. Yes. The Company plans to issue \$16.0 million of LT Debt in early 2009
5 to replace a portion of its short term debt outstanding. This LT debt issue
6 has been incorporated into the capital structure proposed for this case.
7

8 17. Q. WHAT INTEREST RATE IS THE COMPANY PROPOSING FOR THE
9 NEW LONG-TERM DEBT?

10 A. The Company included the \$16.0 million series note in its capital structure
11 at an interest rate of 6.00%. Given the current favorable bond market
12 conditions and forecasts the Company will likely issue that note for a 10-
13 year term.
14

15 18. Q. HOW DID THE COMPANY ARRIVE AT THAT INTEREST RATE?

16 A. As shown on Exhibit MAM-4 attached to this testimony, the Company
17 calculated the latest two and four-quarter spread between 10-year A-rated
18 bonds and 10-year T-bonds. The two and four quarter spreads (148.3 and
19 119.3 basis points, respectively) were applied to the 2009 Value Line
20 Publication Forecast (publication of November 23, 2007) for 10-year T-
21 bonds to arrive at a reasonable projection for the interest rates on this note.
22 The Company used 6.00% based on this analysis as a reasonable estimate
23 of the interest rate.
24

1 19. Q. WHAT IS THE OVERALL COST OF CAPITAL REQUESTED IN THIS
2 CASE?

3 A. The overall weighted cost of capital being requested is 8.514%. The
4 weighted cost of Long-term debt is 6.26% a decrease of 51 basis points
5 from the weighted cost of Long-term Debt approved in the Company's
6 2006 rate case. The 51 basis point decrease results from favorable
7 experience in the debt markets over the last two years and the favorable
8 impact on the new and refinanced LT Debt issued by the Company in early
9 2007 and to be issued in the first quarter of 2009.

10
11 20. Q. HAVE YOU REVIEWED THE TESTIMONY OF COMPANY WITNESS
12 VILBERT IN THIS CASE REGARDING THE COST OF EQUITY?

13 A. Yes. The Company has elected to base its filing on a requested ROE of
14 11.75%, which is within the range of ROE determined by Dr. Vilbert. The
15 Company has incorporated the 11.75% ROE into the capital structure and
16 weighted cost of capital utilized by the Company in its filing

17
18 **COST OF SERVICE (TARIFF) ALLOCATIONS**

19
20 21. Q. HAS THE COMPANY PREPARED A COST OF SERVICE STUDY AS
21 PART OF THIS CASE?

22 A. Yes. The Company has asked Paul Herbert, from the firm Gannett/Fleming
23 to review the cost of service and tariffs of the Company. Mr. Herbert has
24 filed testimony in this case supporting the Company's proposed tariff and

1 cost of service allocations.

2
3 22. Q. HOW IS THE COMPANY PROPOSING TO ALLOCATE THE
4 INCREASED RATES IN THIS CASE?

5 A. The Company is generally proposing to increase rates to all classes of
6 customers (except public fire protection) in an across the board percentage
7 increase of 21.2% to the metered tariffs. The Company is also proposing to
8 merge the Lookout Mountain and Lakeview tariffs into one "Mountain
9 Tariff" and begin the process of merging the Suck Creek and Lone Oak
10 tariffs into the Mountain Tariff. The Company is proposing to move to one
11 "Mountain Tariff" over time due to the similar characteristics of the service
12 areas and requirements to boost the water service to the higher elevations in
13 the Lookout Mountain, Lakeview, Suck Creek and Lone Oak service areas.

14
15 23. Q. WHAT IS THE COMPANY'S PROPOSAL REGARDING PUBLIC FIRE
16 PROTECTION IN THIS CASE?

17 A. The Company did not include in the tariffs in this filing a public fire service
18 fee and allocated that portion of the cost of service to the remaining
19 customer classifications. The public fire protection was a major issue in the
20 Company's 2003 rate case. The Company was able to reach agreement
21 with the parties to that case on an overall revenue requirement and all other
22 issues except for the handling of public fire protection charges. This issue
23 went before the TRA which eventually set the public fire protection fees at
24 the approximate mid-point of the tariffs at the time of the hearing and the

1 full cost of service determination, allocating the remaining cost of public
2 fire protection to the other customer classifications. In the 2004 rate case
3 the Company proposed to eliminate the public fire protection fees, and
4 allocate those fees proportionately to the remaining customer
5 classifications.

6
7 24. Q. WHY DID THE COMPANY PROPOSE TO ELIMINATE THE PUBLIC
8 FIRE PROTECTION FEES CHARGED TO THE VARIOUS
9 MUNICIPALITIES?

10 A. On May 18, 2004 the Tennessee Legislature enacted an amendment to
11 Tennessee Code Annotated, Section 65-5-201 relative to Public Utilities
12 that prohibits the Company from collecting the cost of public fire protection
13 from the municipalities in its service area.

14
15 25. Q. DID THE TRA APPROVE THE ELIMINATION OF THE PUBLIC FIRE
16 SERVICE FEES IN CASE NO. 04-00288?

17 A. Yes. The TRA approved the tariffs of the Company in that case which
18 eliminated public fire protection fees.

19
20 26. Q. IS THE COMPANY'S FILING IN THIS CASE IN COMPLIANCE WITH
21 THE LEGISLATION?

22 A. Yes. The Company does not believe the public fire service fees should be
23 an issue in this case.

1 **MANAGEMENT FEES**

2
3 27. Q. PLEASE DESCRIBE THE COMPANY’S FILING REGARDING
4 MANAGEMENT FEES.

5 A. The Company’s filing includes management fees of \$4.335 million. The
6 Company started with the historical test-year expenses of \$4.790 million
7 and eliminated non-reoccurring expenses of \$729,713 for the STEP project,
8 the STAR project, the Business Change project, the Divestiture, and
9 implementation costs related to Sarbanes Oxley compliance. American
10 Water has undertaken these initiatives to improve service and growth
11 opportunities for its operating companies; however, they are expenses that
12 will not be reoccurring during the attrition year for this case. In addition,
13 the Company eliminated the labor and labor related overheads for the Non-
14 Revenue Water (“NRW”) Manager from the SE Region Service Company
15 charges. The NRW Manager has been added to the direct employee cost at
16 Tennessee American. To that adjusted historical test-year base period
17 (twelve months ended November 2007), the Company used an inflation
18 factor of 3.5% per year to reflect the expected salary and salary related
19 overhead increases to management fee cost for the attrition year in this
20 case, the twelve months ended August 2009.

21
22 28. Q. WHAT HAS BEEN THE INCREASE IN MANAGAEMENT FEES FROM
23 THE COMPANY’S PREVIOUS RATE CASE TO THE LEVEL
24 REQUESTED IN THIS CASE?

1 A. The Company is requesting management fees of \$4.335 in this case which
2 represents an increase of approximately \$355,000 or 8.9% over the level
3 currently embedded in rates. This increase represents approximately a
4 4.4% per year increase over the nearly two years between the effective
5 dates of rates and is driven primarily by salary increases and significant
6 increases in pension and OPEB costs.

7
8 29. Q. ARE THERE OTHER ADJUSTMENTS TO THE HISTORICAL TEST-
9 YEAR MANAGEMENT FEES?

10 A. Yes. For the historical test-year, the 12 months ended November 2007,
11 AWWSC billed to Tennessee American pension expense based on the FAS
12 87 accrual method. The TRA has historically regulated Tennessee
13 American using the ERISA (or cash basis) for pension expense recovery in
14 rates. To properly reflect the ERISA pension expense for rate recovery,
15 Tennessee American has added \$148,212 to management fees in the
16 attrition year to reflect the difference between the FAS 87 pension expense
17 billed to Tennessee American by AWWSC and the pension expense under
18 ERISA. The ERISA pension used in this case is based on the Minimum
19 ERISA pension contribution per the 2008 American Water Actuarial Study
20 performed by the firm Towers/Perrin. The 2008 Towers/Perrin Actuarial
21 Study is for the pension year ended June 30, 2008. I will provide more
22 detail about the ERISA pension expense later in this testimony.

1 30. Q. PLEASE DESCRIBE WHAT COMPRISES MANAGEMENT FEES?

2 A. Management fees are the charges from American Water Works Service
3 Company for services provided under the 1989 Service Company contract.
4 Those services consist of services related to accounting, administration,
5 communication, corporate secretarial, engineering, finance, human
6 resources, information systems, operations, rates and revenue, risk
7 management, water quality and other services as agreed to by the
8 Company. These services are billed at cost to Tennessee American.

9
10 31. Q. WHAT IS THE BENEFIT TO TENNESSEE AMERICAN'S
11 CUSTOMERS FROM UTILIZING THE SERVICE COMPANY?

12 A. The Service Company permits American Water Works to utilize its size to
13 generate economies of scale. Highly qualified employees in specialized
14 fields are available to each operating company which is more cost effective
15 than maintaining the same level of expertise at each operating company.
16 The Service Company format permits that expertise to be shared by each
17 operating company through the cost allocations and direct charges as
18 outlined in the Service Company contract. In addition, the Service
19 Company is able to take advantage of the size of American Water to utilize
20 its purchasing power for materials, capital, and other services on a national
21 basis bringing lower costs to each operating company, including Tennessee
22 American.

1 32. Q. IS THERE FURTHER SUPPORT FOR THE BENEFIT OF THE
2 SERVICE COMPANY?

3 A. Yes. In the verbal order in the Company's Case No. 06-00290, the
4 Company was ordered by the TRA: "TAWC is directed to have a
5 management audit performed in compliance with Sarbanes-Oxley
6 requirements and submit the audit results concurrent with any future rate
7 case filing. This audit should determine whether all costs allocated to
8 TAWC were incurred as a result of prudent or imprudent management
9 decisions by TAWC's parent and should address the reasonableness of the
10 methodology used to allocate costs to TAWC."
11

12 33. Q. HAS TAWC PERFORMED SUCH AN AUDIT OF THE AMERICAN
13 WATER WORKS SERVICE COMPANY CHARGES?

14 A. Yes. The Company retained the firm of Booz Allen Hamilton ("Booz
15 Allen") to perform the management audit of the AWWSC charges. The
16 Booz Allen management audit of AWWSC has been filed with the
17 Company's petition in this case. That audit is being sponsored by the
18 testimony by Mr. Joseph Vandenberg. Mr. Vandenberg's testimony and
19 the Booz Allen report will indicate that the AWWSC costs allocated to
20 TAWC were prudent, were allocated to TAWC by a reasonable
21 methodology and the costs of AWWSC are very reasonable when
22 compared or benchmarked on several key elements to other utilities.
23
24

1 **EMPLOYEE BENEFIT COSTS.**

2
3 34. Q. WAS PENSION EXPENSE AN ISSUE IN THE COMPANY'S LAST
4 RATE CASE?

5 A. Yes. While the Company demonstrated that in its previous rate case it was
6 making contributions to the American Water Pension Trust Fund in 2007,
7 the TRA order in Case No. 06-00290 recognized no pension expense for
8 rate recovery. The TRA based its decision on a Towers/Perrin actuarial
9 study from August 2006 for the 2006 Pension plan year (twelve months
10 ended June 30, 2007) which indicated the required minimum ERISA
11 pension expense was zero.
12

13 35. Q. WHAT IS THE POLICY OF AMERICAN WATER REGARDING ERISA
14 PENSION CONTRIBUTIONS?

15 A. American Water's funding policy is to contribute an amount equal to the
16 minimum required contribution under ERISA, except that American Water
17 may increase its contribution above the minimum if appropriate to its tax
18 and cash position and the plan's funded position.
19

20 36. Q. WHY DID AMERICAN WATER FUND IN EXCESS OF THE
21 MINIMUM PENSION EXPENSE IN 2007?

22 A. In 2004 through 2006 American Water funded in excess of the ERISA
23 required minimum level because its funded position at that time had
24 declined due to market conditions and changes in demographics and

1 discount rates to the point that notification requirements to its employees
2 and additional insurance requirements would have been required if only the
3 ERISA minimum level had been funded. This would have added additional
4 costs to the Plan. In addition, based on actuarial projections, significant
5 increases in ERISA contributions were forecasted for the 2007-2009
6 timeframe. In order to avoid the notification and insurance requirements
7 and to smooth the impact on ERISA pension contributions in future years,
8 American Water funded in excess of the minimum requirements. Under
9 ERISA law those payments in excess of the minimum requirements for
10 2004-2006 were used to offset future ERISA minimum payments in the
11 2006 plan year actuarial report.

12
13 37. Q. FOR 2007 HOW MUCH DID AMERICAN WATER CONTRIBUTE TO
14 THE PENSION PLAN FUND?

15 A. In 2007 American Water Contributed \$49.6 million (\$855,492 for
16 Tennessee American), even when the actuarial report determined the
17 minimum ERISA contribution was zero. The payments in excess of the
18 minimum for 2004-2006 were credited against the ERISA minimum
19 contribution for the 2006 plan year. The ERISA pension contributions in
20 2007 were made in order to smooth the expected ERISA contributions for
21 2008-2010, which would have increased significantly if the ERISA
22 contribution had not been made in 2007.

1 38. Q. DID THE COMPANY IN FACT MAKE AN ERISA CONTRIBUTION TO
2 THE AMERICAN WATER PENSION TRUST IN 2007?

3 A. As stated earlier the Company did make ERISA contributions in 2007 of
4 855,492, although it is not currently recovering any of the ERISA pension
5 expense in currently approved rates. This situation has been very harmful
6 to the Company's financial condition, and is one of the major reasons the
7 Company is seeking to increase rates at this time.
8

9 39. Q. WHAT LEVEL OF PENSION COST IS THE COMPANY REQUESTING
10 IN THIS CASE?

11 A. The Company is requesting pension cost of \$1,456,476 of which
12 \$1,161,108 is charged to O&M expense in this case for the ERISA
13 contribution related to the defined benefit portion of the American Water
14 Pension Plan.
15

16 40. Q. HOW WAS THAT COST DETERMINED?

17 A. I am attaching to this testimony Exhibit MAM-5 which is the ERISA
18 pension contributions for American Water for 2008 (the 2007 Plan Year,
19 the twelve months ending June 30, 2008). That schedule indicates that
20 Tennessee American will contribute \$1.456 million to the American Water
21 Pension Trust Fund.
22

23 41. Q. DOES THE ACTUARIAL REPORT FOR 2008 SUPPORT THIS
24 PAYMENT?

1 A. Yes. American Water employs the actuarial firm of Towers Perrin to
2 evaluate its Pension Plan. Towers Perrin provided the ERISA contributions
3 for American Water for the 2007 plan year (twelve months ended June 30,
4 2008). I have attached the latest Towers/Perrin Actuarial Report for the
5 2007 plan year dated February 2008 as Exhibit MAM-6. . On page MS-9
6 of that actuarial report it indicates that a minimum ERISA contribution of
7 \$75.996 million is required for the 2008. This report fully supports the
8 Company's requested ERISA pension expense in this case.

9
10 42. Q. YOU MENTIONED EARLIER THAT THE COSTS IDENTIFIED IN
11 THE RESPONSE TO QUESTION 37 ABOVE APPLIED TO THE
12 AMERICAN WATER DEFINED BENEFIT PLAN. DOES AMERICAN
13 WATER HAVE PENSION COSTS OTHER THAN THOSE IN THE
14 DEFINED BENEFIT PLAN?

15 A. Yes. As part of its national employee benefit negotiations, American Water
16 moved to a defined contribution plan for pension costs for union employees
17 hired after January 1, 2001 and non-union employees hired after January 1,
18 2006.

19
20 43. Q. WHAT LEVEL OF EXPENSE IS INCLUDED IN THE COMPANY'S
21 REQUEST RELATED TO THE DEFINED CONTRIBUTION PLAN FOR
22 PENSIONS?

23 A. The Company included \$115,696 of defined contribution costs as shown in
24 the workpapers for account 604.8. This amount was determined by

1 applying the contribution rate of 5.25% to the attrition year wages of the
2 Company's employees covered by this portion of the plan.

3
4 44. Q. WHAT LEVEL OF POST RETIREMENT BENEFIT COSTS (OPEB'S)
5 DID THE COMPANY INCLUDE IN ITS FILING?

6 A. The Company is requesting OPEB cost of \$793,221 of which \$632,356 is
7 charged to O&M expense.

8
9 45. Q. HOW WAS THAT COST DETERMINED?

10 A. American Water employs the actuarial firm of Towers Perrin to evaluate its
11 OPEB Plan. Towers Perrin provided the expected OPEB expense for
12 American Water for 2008. The summary of those projections are included
13 in the workpapers under the payroll tab made a part of the Company's
14 filing in this case. The Company determined the attrition year level
15 expense by conservatively using the 2008 cost to match the attrition year in
16 this case.

17
18 46. Q. DID AMERICAN WATER ALSO CHANGE ITS OPEB PLAN FOR
19 EMPLOYEES HIRED AFTER JANUARY 1, 2006?

20 A. Yes. The employees hired after January 1, 2006 no longer are provided
21 OPEB's. Instead, American Water provides a defined contribution plan for
22 retiree's health costs.

23
24 47. Q. WHAT LEVEL OF EXPENSE IS INCLUDED IN THE COMPANY'S

1 REQUEST RELATED TO THE DEFINED CONTRIBUTION PLAN FOR
2 OPEB'S?

3 A. The Company included \$7,500 of defined contribution costs as shown in
4 the workpapers for account 604.8. This amount was determined by
5 applying the contribution rate of \$500 per employee to the Company's
6 employees covered by this plan.

7
8 **RATE CASE EXPENSE:**

9
10 48. Q. WHAT LEVEL OF RATE CASE EXPENSE IS THE COMPANY
11 SEEKING IN THIS RATE CASE?

12 A. The Company is seeking amortization of various rate case expenses in the
13 aggregate of \$543,384.

14
15 49. Q. HOW WAS THAT LEVEL DETERMINED?

16 A. The Company has estimated the cost to process this case at \$550,000 and is
17 requesting that amount be amortized over thirty-six months. In addition,
18 the Company has included twelve months of the amortization of the 2006
19 rate case expense for rate recovery in this case. The Company is also
20 requesting that the cost of service study for this case estimated to cost
21 \$16,000 be amortized over five years, one years amortization of the cost of
22 service from the 2006 rate case approved for a five year amortization, and
23 the estimated cost of the depreciation study provided in this case estimated
24 to cost \$30,000 be amortized over five years.

1 50. Q. WHAT LEVEL OF RATE CASE EXPENSE FROM THE 2006 RATE
2 CASE IS CURRENTLY EMBEDDED IN RATE RECOVERY?

3 A. The Company estimated the cost of the 2006 rate case to be \$400,000 and
4 the TRA approved a three-year amortization of the estimated cost. Due to
5 certain unusual and unanticipated events, including the significant
6 discovery put forth by the CAPD, the City of Chattanooga, and the
7 Chattanooga Manufacturers Association in the 2006 case, along with the
8 added cost of moving the hearing to Chattanooga, the cost of the 2006
9 exceeded the estimate. Even though the TRA only approved rates at the
10 estimated cost of \$400,000 the Company has amortized the entire cost on
11 its books and records. This resulted in the Company amortizing \$283,520
12 more than approved in rates between May 2007 and the beginning of the
13 attrition year in this case, September 2008. The Company is not seeking to
14 recover the additional amortization between the date of new rates in the last
15 case and the date new rates are expected to be approved in this case.

16
17 **DEPRECIATION RATES:**

18
19 51. Q. WAS DEPRECIATION EXPENSE ON CERTAIN ASSETS AN ISSUE
20 IN THE COMPANY'S PREVIOUS RATE CASE?

21 A. Yes, there was considerable disagreement among the parties regarding rate
22 recovery of the E-CIS software and related depreciation expense, as well as,
23 depreciation expense on various office furniture and equipment
24 classifications of utility plant.

1 52. Q. HAS THE COMPANY ADDRESSED THOSE ISSUES IN THIS CASE?

2 A. Yes. The Company has asked the firm of Gannett/Fleming to perform a
3 depreciation study. The depreciation study is being filed with this rate case
4 and will be addressed in the testimony of Mr. John Spanos.
5

6 53. Q. PLEASE SUMMARIZE THE RESULTS OF THE DEPRECIATION
7 STUDY?

8 A. Mr. Spanos will cover the details of his study and calculations, however,
9 the depreciation rates proposed by Mr. Spanos will generate \$518,675 less
10 depreciation expense than would the currently approved depreciation rates.
11 The issues raised by the CAPD in the previous Company rate case
12 regarding mainframe computer software and office furniture & equipment
13 should not be issues if the proposed depreciation rates are approved. Mr.
14 Spanos has used the remaining life approach in determining his proposed
15 depreciation rates. For all utility plant accounts, including mainframe
16 computer software and office furniture & equipment to the extent the utility
17 plant is nearly or completely depreciated, the depreciation rates have been
18 adjusted appropriately. For the computer mainframe software and office
19 furniture & equipment accounts the proposed depreciation rates are
20 significantly less than current rates.
21

22 54. Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

23 A. Yes.

TENNESSEE REGULATORY AUTHORITY

STATE OF WEST VIRGINIA

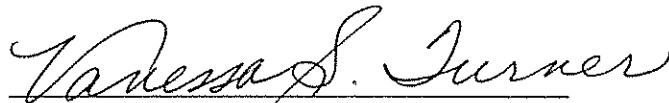
COUNTY OF KANAWHA

BEFORE ME, the undersigned authority, duly commissioned and qualified in and for the State and County aforesaid, personally came and appeared Michael A. Miller, being by me first duly sworn deposed and said that:

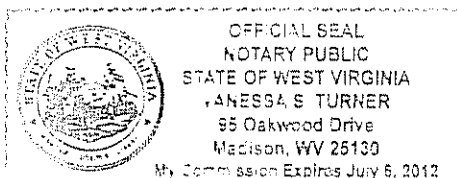
He is appearing as a witness on behalf of Tennessee-American Water Company before the Tennessee Regulatory Authority, and if present before the Authority and duly sworn, his testimony would set forth in the annexed transcript consisting of 22 pages.


Michael A. Miller

Sworn to and subscribed before me
this 11th day of March 2008.


Notary Public

My commission expires July 6, 2012



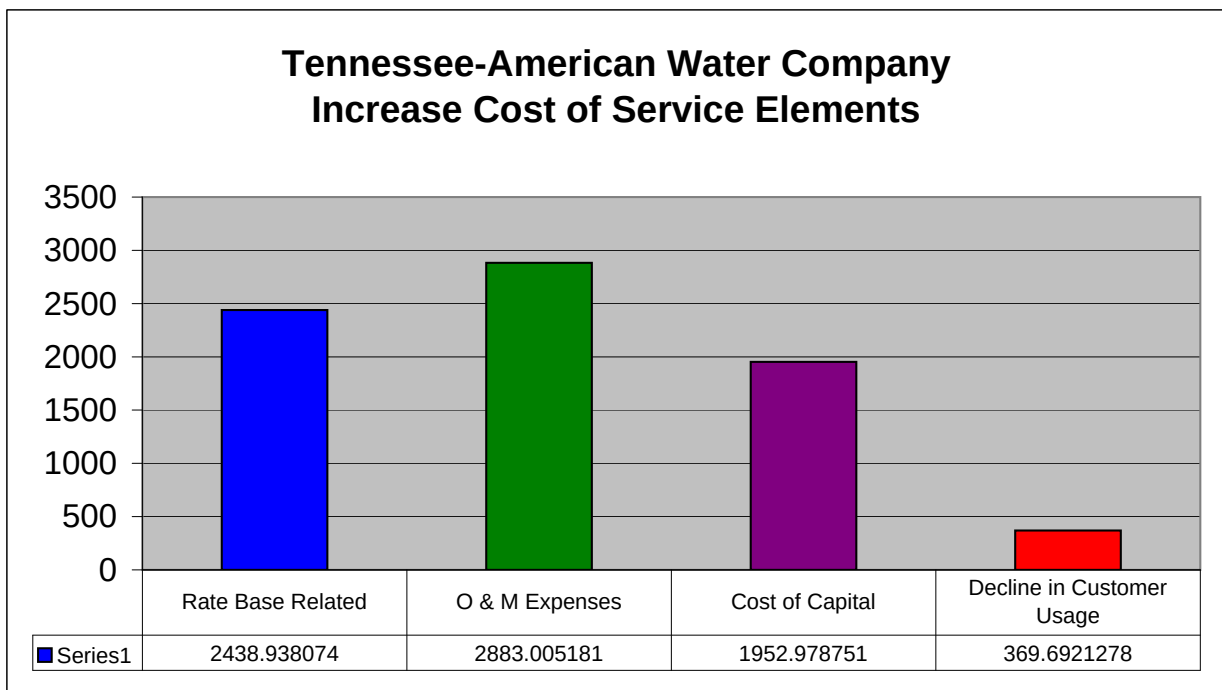
**Tennessee-American Water Company
Average Usage and Revenue Per Residential Customer**

<u>Year</u>	<u>Average Revenue per Customer</u>	<u>% Change</u>
1995	156.22	
1996	164.23	5.10%
1997	164.23	0.00%
1998	164.23	0.00%
1999	164.23	0.00%
2000	164.23	0.00%
2001	164.23	0.00%
2002	164.23	0.00%
2003	177.53	8.10%
2004	177.53	0.00%
2005	184.30	3.80%
2006	184.30	0.00%
2007	198.52	7.70%
Rate Case	242.29	22.05%
	Average	4.60%

Tennessee-American Water Company
Increase Cost of Service Elements

Rate Base and Related Items (in million dollars):

Increase in rate base of \$15.599 million	\$	2.117	
Depreciation expense on add'l rate base	\$	(0.207)	
Add'l General Taxes	\$	0.529	
Total increase attributable to rate base and related items	\$	2.439	32% of total increase
O & M Expense	\$	2.883	38% of total increase
Increase in cost of capital	\$	1.953	25% of total increase
Decline in customer usage	\$	0.370	5% of total increase
TOTAL INCREASE		<u>7.645</u>	



Line No.	<u>Class of Capital</u>	<u>Reference</u>	<u>Amount</u>	<u>Percent of Total</u>	<u>Cost Rate</u>	<u>Weighted Cost of Capital</u>
1						
2						
3	Long-term Debt	Schedule 2	\$60,559,797	50.66%	6.26%	3.171%
4						
5	Short-term Debt		6,222,000	5.20%	4.50%	0.234%
6						
7	Preferred Equity	Schedule 3	1,381,600	1.16%	5.00%	0.058%
8						
9	Common Equity					
10	Common Stock		29,543,153	24.71%	11.75%	2.904%
11	Retained Earnings		21,845,457	18.27%	11.75%	2.147%
12						
13	Total Capitalization		<u>119,552,007</u>	<u>100.00%</u>		<u>8.514%</u>
14						
15						
16						
17						
18	Total Common Equity Return Proposed		<u>11.75%</u>			
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

**Embedded Cost of Long-Term Debt
At the Mid-Point of the Attrition Year**

Tennessee Regulatory Authority
Company: Tennessee-American Water Company
Case No:

Test Year: Twelve Months Ended November 30, 2007
Exhibit No. 3, Schedule 2
Page 1 of 1

Line No.	Debt Issue Type, Coupon Rate	Interest Rate	Issue Date	Maturity Date	Principal Amount	Face Amount Outstanding	Unamortized (Issuance) Debt Exp.	Carrying Value	Annual Interest Expense	Annual Amortization of Issue Expense	Total Cost
5	General Mortgage Bonds										
7	9.25% Series	9.25%	01/12/90	12/01/19	2,500,000	2,500,000	16,270	2,483,730	231,250	1,525	232,775
8	7.84% Series	7.84%	09/04/96	09/01/26	5,700,000	5,700,000	39,665	5,660,335	446,880	2,278	449,158
9	6.50% Series-matured 6/08	6.50%	05/31/98	06/01/08	0	0	0	0	0	7,434	7,434
10	6.87% Series	6.87%	03/31/01	03/29/11	5,100,000	2,040,000	10,010	2,029,990	140,148	5,004	145,152
11	5.39% Series	5.39%	01/31/07	12/21/13	15,000,000	15,000,000	34,585	14,965,415	808,500	3,458	811,958
12	5.62% Series	5.62%	03/29/07	03/29/19	19,000,000	19,000,000	51,691	18,948,309	1,067,800	5,169	1,072,969
13	6.00% Series (proposed)	6.00%	03/01/09	02/28/19	16,000,000	16,000,000	160,000	15,840,000	960,000	16,000	976,000
14											
15											
16	Capital Lease 9.489%	9.489%	06/01/98	05/31/13	1,590,500	632,018		632,018	97,432	0	97,432
17											
18											
19	Total				\$64,890,500	\$60,872,018	\$312,221	\$60,559,797	\$3,752,010	\$40,868	\$3,792,878
20											
21											
22	Embedded Cost of Long-Term Debt										
23											
24											
25											
26											
27											
28											
29											
30											

6.26%

Embedded Cost of Preferred Stock
At the Mid-Point of the Attrition Year

Tennessee Regulatory Authority
Company: Tennessee-American Water Company
Case No: Test Year: Twelve Months Ended November 30, 2007
Exhibit No. 3, Schedule 3
Page 1 of 1

Line No.	Debt Issue Type, Coupon Rate	Issue Date	Face Amount Outstanding	Premium or Discount	Unamortized (Issuance) Pfd Stk Exp	Net Proceeds	Annual Dividends	Annual Amort. of Issuance Expense	Total Annual Cost
1									
2									
3									
4	Cumulative Preferred								
5	5% Series	12/20/40	\$1,381,600	\$0	\$0	\$1,381,600	\$69,080	\$0	\$69,080
6	4-1/2% Series	7/29/54	0	0	0	0	0	0	0
7									
8									
9	Total		1,381,600	0	0	1,381,600	69,080	0	69,080
10									
11									
12	Embedded Cost of Preferred Stock								5.00%

30

Tennessee American Water Analysis of Interest Rates of Past Year

Value Line Publication Date	As of Market Date	"A" Rated Utility Bonds	30-year Treasury Bonds	Spread	10-year Corporate Bonds	10-year Treasury Bonds	Spread	13-Week Treasury Bills	Federal Reserve Rate
1/12/2007	1/3/2007	5.790%	4.760%	1.030%	5.500%	4.650%	0.850%	5.040%	5.250%
1/19/2007	1/10/2007	5.760%	4.780%	0.980%	5.530%	4.680%	0.850%	5.080%	5.250%
1/26/2007	1/17/2007	5.860%	4.870%	0.990%	5.620%	4.780%	0.840%	5.100%	5.250%
2/2/2007	1/24/2007	5.870%	4.910%	0.960%	5.620%	4.810%	0.810%	5.120%	5.250%
2/9/2007	1/31/2007	5.880%	4.910%	0.970%	5.630%	4.810%	0.820%	5.100%	5.250%
2/16/2007	2/7/2007	5.810%	4.850%	0.960%	5.560%	4.740%	0.820%	5.150%	5.250%
2/23/2007	2/14/2007	5.770%	4.830%	0.940%	5.520%	4.740%	0.780%	5.150%	5.250%
3/2/2007	2/21/2007	5.740%	4.790%	0.950%	5.510%	4.690%	0.820%	5.170%	5.250%
3/9/2007	2/28/2007	5.650%	4.680%	0.970%	5.380%	4.570%	0.810%	5.120%	5.250%
3/16/2007	3/7/2007	5.590%	4.630%	0.960%	5.310%	4.490%	0.820%	5.080%	5.250%
3/23/2007	3/14/2007	5.850%	4.700%	1.150%	5.400%	4.530%	0.870%	5.040%	5.250%
3/30/2007	3/21/2007	5.860%	4.720%	1.140%	5.400%	4.540%	0.860%	5.030%	5.250%
4/6/2007	3/28/2006	5.990%	4.830%	1.160%	5.510%	4.620%	0.890%	5.040%	0.053%
Quarterly Average		5.802%	4.789%	1.012%	5.499%	4.665%	0.834%	5.094%	4.850%
4/13/2007	4/4/2007	5.980%	4.840%	1.140%	5.540%	4.650%	0.890%	5.030%	5.250%
4/20/2007	4/11/2007	6.110%	4.910%	1.200%	5.670%	4.730%	0.940%	5.010%	5.250%
4/27/2007	4/18/2007	6.010%	4.820%	1.190%	5.630%	4.650%	0.980%	4.970%	5.250%
5/4/2007	4/25/2007	6.030%	4.830%	1.200%	5.620%	4.650%	0.970%	4.950%	5.250%
5/11/2007	5/2/2007	6.010%	4.820%	1.190%	5.610%	4.640%	0.970%	4.870%	5.250%
5/18/2007	5/9/2007	6.040%	4.840%	1.200%	5.630%	4.660%	0.970%	4.850%	5.250%
5/25/2007	5/16/2007	6.070%	4.880%	1.190%	5.690%	4.710%	0.980%	4.730%	5.250%
6/1/2007	5/23/2007	6.180%	5.000%	1.180%	5.800%	4.850%	0.950%	4.890%	5.250%
6/8/2007	5/30/2007	6.180%	5.000%	1.180%	5.840%	4.870%	0.970%	4.830%	5.250%
6/15/2007	6/6/2007	6.240%	5.080%	1.160%	5.920%	4.960%	0.960%	4.780%	5.250%
6/22/2007	6/13/2007	6.430%	5.280%	1.150%	6.210%	5.200%	1.010%	4.640%	5.250%
6/29/2007	6/20/2007	6.410%	5.240%	1.170%	6.160%	5.130%	1.030%	4.720%	5.250%
7/6/2007	6/27/2006	6.360%	5.190%	1.170%	6.090%	5.080%	1.010%	4.770%	5.250%
Quarterly Average		6.158%	4.979%	1.178%	5.801%	4.829%	0.972%	4.849%	5.250%
7/13/2007	7/3/2007	6.310%	5.140%	1.170%	6.040%	5.040%	1.000%	4.950%	5.250%
7/20/2007	7/11/2007	6.370%	5.190%	1.180%	6.150%	5.090%	1.060%	4.940%	5.250%
7/27/2007	7/18/2007	6.250%	5.120%	1.130%	6.080%	5.030%	1.050%	4.950%	5.250%
8/3/2007	7/25/2007	6.140%	5.020%	1.120%	5.970%	4.900%	1.070%	4.970%	5.250%
8/10/2007	8/1/2007	6.130%	4.920%	1.210%	5.950%	4.790%	1.160%	4.880%	5.250%
8/17/2007	8/8/2007	6.210%	5.040%	1.170%	6.070%	4.880%	1.190%	4.940%	5.250%
8/24/2007	8/15/2007	6.280%	5.030%	1.250%	6.000%	4.720%	1.280%	4.090%	5.250%
8/31/2007	8/22/2007	6.280%	4.960%	1.320%	6.040%	4.650%	1.390%	3.650%	5.250%
9/7/2007	8/29/2007	6.220%	4.880%	1.340%	6.140%	4.560%	1.580%	4.000%	5.250%
9/14/2007	9/5/2007	6.110%	4.770%	1.340%	5.990%	4.470%	1.520%	4.390%	5.250%
9/21/2007	9/12/2007	6.050%	4.770%	1.280%	5.820%	4.470%	1.350%	4.380%	5.250%
9/28/2007	9/19/2007	6.310%	4.840%	1.470%	6.010%	4.550%	1.460%	3.900%	4.750%
10/5/2007	9/28/2007	6.310%	4.890%	1.420%	6.090%	4.620%	1.470%	3.690%	4.750%
Quarterly Average		6.228%	4.967%	1.262%	6.027%	4.752%	1.275%	4.441%	5.173%
10/12/2007	10/3/2007	6.220%	4.800%	1.420%	5.970%	4.560%	1.410%	3.940%	4.750%
10/19/2007	10/10/2007	6.270%	4.870%	1.400%	5.970%	4.650%	1.320%	4.040%	4.750%
10/26/2007	10/17/2007	6.210%	4.830%	1.380%	5.930%	4.550%	1.380%	3.990%	4.750%
11/2/2007	10/24/2007	6.030%	4.640%	1.390%	5.680%	4.340%	1.340%	3.870%	4.750%
11/9/2007	10/31/2007	6.130%	4.750%	1.380%	5.880%	4.470%	1.410%	3.910%	4.500%
11/16/2007	11/7/2007	6.070%	4.650%	1.420%	5.810%	4.310%	1.500%	3.440%	4.500%
11/23/2007	11/14/2007	6.090%	4.600%	1.490%	5.950%	4.250%	1.700%	3.390%	4.500%
11/30/2007	11/20/2007	6.040%	4.500%	1.540%	6.010%	4.100%	1.910%	3.280%	4.500%
12/7/2007	11/27/2007	6.030%	4.420%	1.610%	5.940%	4.040%	1.900%	3.030%	4.500%
12/14/2007	12/5/2007	6.070%	4.400%	1.670%	5.920%	3.960%	1.960%	3.050%	4.500%
12/21/2007	12/12/2007	6.250%	4.540%	1.710%	6.260%	4.090%	2.170%	2.860%	4.250%
12/28/2007	12/21/2007	6.140%	4.450%	1.690%	6.010%	4.030%	1.980%	2.890%	4.250%
1/4/2008	12/26/2007	6.280%	4.670%	1.610%	6.270%	4.280%	1.990%	3.310%	4.250%
Quarterly Average		6.141%	4.625%	1.516%	5.969%	4.279%	1.690%	3.462%	4.519%

	2008 Projected 30-Yr. "A" Rated Util. <u>Bond Rate</u>	2008 Value Line <u>Forecast</u>	Average <u>Spread</u>	2008 Projected 10-Yr. "A" Rated Util. <u>Bond Rate</u>	2008 Value Line <u>Forecast</u>	Average <u>Spread</u>		
2008 Value Line Projection (11-23-07):								
"A" Rated Utility Bonds 30-Yr. & 10-Yr.								
Corp. Bonds based on:								
Latest 2 Qtr. Avg. Spread	6.09%	4.70%	1.389%	5.98%	4.50%	1.483%	3.951%	4.846%
Latest 4 Qtr. Avg. Spread	5.94%	4.70%	1.242%	5.69%	4.50%	1.193%	4.461%	4.948%
March 2008 to date	5.85%	4.20%	1.653%	5.81%	3.80%	2.007%	2.958%	4.063%

AMERICAN WATER SYSTEM
QUALIFIED PENSION PLAN
2008 FUNDING SCHEDULE

COMPANY	A ALLOCATION OF 20087 PENSION FUNDING	B ESTIMATED FUNDING ON February 15	C ESTIMATED FUNDING ON May 15	D ESTIMATED FUNDING ON August 15	E ESTIMATED FUNDING ON November 14
AMERICAN WATER WORKS COMPANY	\$ 17,822	\$ 5,393	\$ 5,393	\$ 3,518	\$ 3,518
AMERICAN WATER RESOURCES	298,421	90,311	90,312	58,899	58,899
AMERICAN WATER SERVICES	17,524,162	5,303,365	5,303,365	3,458,716	3,458,716
AMERICAN WATER WORKS SERVICE COMPANY	1,712,512	518,260	518,260	337,996	337,996
ARIZONA-AMERICAN	3,167,040	958,446	958,446	625,074	625,074
CALIFORNIA-AMERICAN	2,783,898	842,495	842,495	549,454	549,454
ELIZABETHTOWN	250,043	75,670	75,671	49,351	49,351
HAWAII-AMERICAN	5,734,111	1,735,324	1,735,323	1,131,732	1,131,732
ILLINOIS-AMERICAN	3,941,777	1,192,907	1,192,906	777,982	777,982
INDIANA-AMERICAN	848,724	256,851	256,851	167,511	167,511
IOWA-AMERICAN	1,589,000	480,882	480,882	313,618	313,618
KENTUCKY-AMERICAN	1,614,755	488,675	488,675	318,702	318,702
LONG ISLAND	100,564	30,434	30,434	19,848	19,848
MARYLAND-AMERICAN	91,671	27,742	27,743	18,093	18,093
MICHIGAN-AMERICAN	8,082,706	2,446,082	2,446,082	1,595,271	1,595,271
MISSOURI-AMERICAN	6,761,404	2,046,214	2,046,214	1,334,488	1,334,488
NEW JERSEY-AMERICAN	298,394	90,303	90,303	58,894	58,894
NEW MEXICO-AMERICAN	1,133,360	342,991	342,991	223,689	223,689
OHIO-AMERICAN	13,054,683	3,950,760	3,950,759	2,576,582	2,576,582
PENNSYLVANIA-AMERICAN	1,456,476	440,776	440,776	287,462	287,462
TENNESSEE-AMERICAN	149,026	45,100	45,100	29,413	29,413
TEXAS-AMERICAN	993,420	300,640	300,640	196,070	196,070
VIRGINIA-AMERICAN	95,235	28,822	28,821	18,796	18,796
VIRGINIA EASTERN	4,300,796	1,301,557	1,301,557	848,841	848,841
WEST VIRGINIA-AMERICAN					
	\$ 76,000,000	\$ 23,000,000	\$ 23,000,000	\$ 15,000,000	\$ 15,000,000
		23,000,000	23,000,000	15,000,000	15,000,000

American Water Works Company, Inc.
Pension Plan

Actuarial Valuation Report

Pension Cost for Fiscal Year Ending December 31, 2008

Employer Contributions for Plan Year Beginning July 1, 2007

February 2008

This report is confidential and intended solely for the information and benefit of the immediate recipient thereof. It may not be distributed to a third party unless expressly allowed under the "Actuarial Certification, Reliances and Distribution" section herein.

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Management Summary of Valuation Results

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Financial Results

This report summarizes financial results for the American Water Works Company, Inc. Pension Plan based on actuarial valuations as of January 1, 2008 and January 1, 2007 for determination of pension accounting cost, and valuations as of July 1, 2007 and July 1, 2006 for determination of plan contributions.

	January 1, 2008 ⁽¹⁾	January 1, 2007 ⁽¹⁾
FAS 87 Pension Cost ⁽²⁾		
Amount	\$ 39,625,996	\$ 38,968,697
Percent of covered pay ⁽³⁾	13.4%	13.5%
FAS 87 Funded Position		
Accumulated benefit obligation [ABO]	\$ 772,542,892	\$ 749,311,739
Fair value of assets [FV]	627,988,678	578,280,462
ABO funded percentage [FV ÷ ABO]	81.3%	77.2%
Prepaid (accrued) pension cost	\$ (90,483,238)	\$ (102,302,391)
	July 1, 2007	July 1, 2006
Employer Contributions ⁽³⁾		
Minimum required	\$ 75,996,105	\$ 0
Percent of covered pay ⁽⁴⁾	25.8%	0.0%
Maximum deductible	\$ 673,880,639	\$ 539,127,891
Percent of covered pay	228.5%	186.7%
ERISA Funded Position ⁽⁵⁾		
Actuarial accrued liability [AAL]	\$ 687,475,512	\$ 556,822,415
Actuarial value of assets [AV]	591,972,484	518,247,375
AAL funded percentage [AV ÷ AAL]	86.1%	93.1%
Current liability funded percentage:		
▶ Selected interest rate	73.9%	80.0%
▶ Highest allowable interest rate	73.9%	80.0%

(1) Pension costs for fiscal year 2007 and 2008 reflect the merger of the Elizabethtown Water Company Pension Plan into the American Water Pension Plan. Results are prior to FAS 158.

(2) All FAS 87 results shown in this report were prepared before application of purchase accounting due to the sale of American Water to RWE.

(3) All results reflect the merger of Elizabethtown Water Company Pension Plan into the American Water Pension Plan as of January 1, 2007.

(4) For fiscal year 2007 and the plan year beginning July 1, 2007, covered pay is based on the most recent valuation data received from the client (Elizabethtown covered compensation of \$22,483,921 expected in fiscal year 2006 and American Water covered compensation of \$266,216,479 expected in plan year 2006).

(5) July 1, 2006 values shown are before the merger of Elizabethtown Water Company pension plan.

Discussion of Financial Results

The financial results of American Water Works Company, Inc.'s Pension Plan were affected by the following factors:

- ▶ Effective December 31, 2006, the Elizabethtown Pension Plan was merged into the American Water Works Plan. Funding and expense results in this report reflect the merged plan.
- ▶ Investment returns during the prior fiscal year were lower than expected, which decreased the funded percentage and increased the pension cost.
- ▶ Long-term bond yields increased during the prior year resulting in a higher FAS 87 discount rate, which increased the funded percentage and decreased the pension cost.
- ▶ The mortality table used for the calculation of current liability was changed from 1983 GAM to RP-2000 to reflect final IRS regulations issued in February 2007, which increased the minimum required contribution and decreased the current liability funded percentage.
- ▶ The interest rate used for calculating Actuarial Accrued Liability and Normal Cost under ERISA was changed from 8.25% in the prior year to 8.00% in the current year to reflect expected long term plan returns. This increased the minimum required contribution and decreased funded percentage.
- ▶ On August 17, 2006 the Pension Protection Act (PPA) was signed into law. Among other provisions, the PPA:
 - Extended current liability interest rate relief for the 2006 and 2007 plan years
 - Modified several aspects of the calculation of the maximum tax deductible contribution for 2006 and 2007 (most notably, increased the maximum deductible amount from 100% of the plan's unfunded current liability to 150%)
 - Made permanent the increased statutory limits on pensionable earnings and pension benefits that were temporarily increased under EGTRRA
 - Beginning with 2008, made extensive changes in the determination of both the minimum required contribution and the maximum tax deductible limit. This did not impact the 2007 valuation results.

Note that there is some uncertainty regarding how the 25% of pay limitation is to be applied for 2006 and 2007 due to the PPA. Deductibility should be reviewed prior to any contributions being made.

Highlights

Economic Assumptions

The discount rate for pension cost purposes is the rate at which the pension obligations could be effectively settled. This rate is developed from yields on available high-quality bonds and reflects the plan's expected cash flows. The following bond yields provide information on the general interest rate environment:

	December 31, 2007	December 31, 2006
30-year Treasury	4.45%	4.81%
Merrill Lynch 10+ High Quality	6.18%	5.85%
Moody's Aa	5.80%	5.72%
Moody's Baa	6.56%	6.35%

The assumed rate of return on assets for pension cost purposes is the weighted average of expected long-term asset return assumptions. The salary increase rate is a long-term rate based on current expectations of future pay increases. The assumptions for pension cost purposes are:

	December 31, 2007	December 31, 2006
Discount rate	6.27%	5.90%
Rate of return on assets	7.90%	8.00%
Salary increase rate	Age-graded scale averaging 4.25%	Age-graded scale averaging 4.25%

Assumptions used to determine statutory contribution limits must be reasonable taking into account the experience of the plan and reasonable expectations. The discount rate used to determine the normal cost and actuarial accrued liability is based on the long-term expected return on assets. The current liability interest rates must be within permissible ranges as issued by the IRS. These ranges and assumptions for contribution purposes are:

	July 1, 2007	July 1, 2006
Discount rate for normal cost and actuarial accrued liability	8.00%	8.25%
Current liability interest rates:		
▶ Permissible range	5.25% to 5.83%	5.19% to 5.77%
▶ Selected rate	5.83%	5.77%
Salary increase rate	Age-graded scale averaging 4.25%	Age-graded scale averaging 4.25%

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Assets

In fiscal 2007, the fund recorded a 4.7% investment return, while the capital markets performed as follows:

Large equities [S&P 500]	5.49%
Intermediate/small equities [Russell 2500]	1.38%
Non-U.S. equities [EAFE]	11.63%
Bonds [Lehman Brothers Aggregate]	6.97%
Cash equivalents [Citi 3 Month T-Bill]	4.74%

Demographic Assumptions

The cost of providing plan benefits depends on demographic factors such as retirement, mortality, and turnover. With the exception of the IRS-required mortality basis used to calculate current liability, demographic assumptions used in the valuation were selected to reflect the experience of the covered population and reasonable expectations. If actual experience is more favorable than assumed, future plan costs will be lower. Alternatively, if actual experience is less favorable than assumed, future plan costs will be higher.

Demographic assumptions have been changed since the prior valuation. The mortality basis used to calculate current liability was changed from 1983 GAM to RP-2000 to reflect final IRS regulations issued in February 2007. Plans were given the option to use separate non-annuitant and annuitant mortality tables, or to use a single combined table of non-annuitant and annuitant mortality. For purposes of the 2007 plan year valuation, the separate non-annuitant and annuitant tables were used. In addition, the termination rate assumptions were aligned for prior Elizabethtown Plan participants and American Water Plan participants.

American Water Works Company, Inc. had 5,053 active participants covered under this pension plan as of July 1, 2007 versus 4,745 for the prior year. Covered payroll increased 10.8% from the prior year.

The average compensation increase for the participants who remained active since July 1, 2006 was about 4.7%.

Changes in Benefits Valued

There were no changes in benefits valued since the prior year other than to reflect increases in the statutory limits on pay and benefits, including the elimination of the sunset provision for the IRS pay and benefit limits under the Pension Protection Act.

Legislative Changes

On August 17, 2006 the Pension Protection Act (PPA) was signed into law, as discussed on page MS-2.

In February 2007, the IRS issued final regulations regarding the selection of the mortality basis used to calculate current liability. These regulations updated the basis from 1983 GAM sex-distinct mortality to RP-2000 sex-distinct mortality.

PBGC Reporting Requirements

Beginning in 2007, the PPA eliminated the PBGC participant notification requirements for plans that are required to pay a PBGC variable premium and have a funded percentage below a specified “gateway” percentage. The PPA stipulates that all defined benefit plans are required to issue annual funding notices (due 120 days after the end of the plan year) for plan years beginning in 2008.

Additional financial and actuarial information must be provided to the PBGC if, at the end of the year, all defined benefit plans within the controlled group have an unfunded vested liability of \$50 million or more using assumptions mandated by the PBGC. In February 2007, the IRS updated the interest rate assumption and asset valuation method used to calculate the \$50 million “gateway test.” The interest rate assumption was updated from 85% to 100% of the applicable PFEA corporate bond rate, and the asset valuation method was updated from actuarial value to market value for all calculations.

As of June 30, 2006, unfunded vested liabilities for all defined benefit plans within the controlled group were more than \$50 million. Consequently, additional financial and actuarial information will be provided to the PBGC.

Plan Merger

Effective December 31, 2006, the Elizabethtown Pension Plan was merged into the American Water Works Pension Plan. Results shown in this report generally reflect the plan merger.

FAS 87 Pension Cost and Funded Position

Pension cost is the amount recognized in AW's financial statement as the cost of the pension plan and is determined in accordance with Financial Accounting Standard No. 87. The fiscal 2008 pension cost for the plan is \$39,825,996, or 13.4% of covered pay.

Under FAS 87, one measure of funded position is a comparison of the fair value of assets to the accumulated benefit obligation (ABO). The ABO is the present value of accumulated benefits based on service and pay as of the measurement date.

American Water's ABO funded percentage is 81.3% as of January 1, 2008, based on the fair value of assets of \$627,988,678 and an ABO of \$772,542,892.

Change in Pension Cost and Funded Position

The pension cost increased from \$38,968,697 in fiscal 2007 to \$39,625,996 in fiscal 2008 because:

- ▶ Expected changes, based on prior year's assumptions, methods, plan provisions, and contributions, decreased the pension cost \$2,555,740.
- ▶ Noninvestment experience increased the pension cost \$6,511,120.
- ▶ The return on the fair value of plan assets was 4.7% in fiscal 2007, which increased the pension cost \$3,105,575.
- ▶ Assumption changes decreased the pension cost \$6,565,802.
- ▶ Plan changes increased the pension cost \$162,146.

The ABO funded percentage increased from 77.2% to 81.3%.

History of Pension Cost and ABO Funded Percentage

----- *Pension cost* -----

<i>Fiscal year</i>	<i>Amount</i>	<i>Percent of covered pay</i>	<i>ABO funded percentage</i>	<i>Discount rate</i>
2008*	\$ 39,625,996	13.4%	81.3%	6.27%
2007*	38,968,697	13.5	77.2	5.90
2006	40,327,960	16.7	67.6	5.65
2005	36,845,672	15.5	78.9	6.00
2004	35,623,816	14.9	80.8	6.25

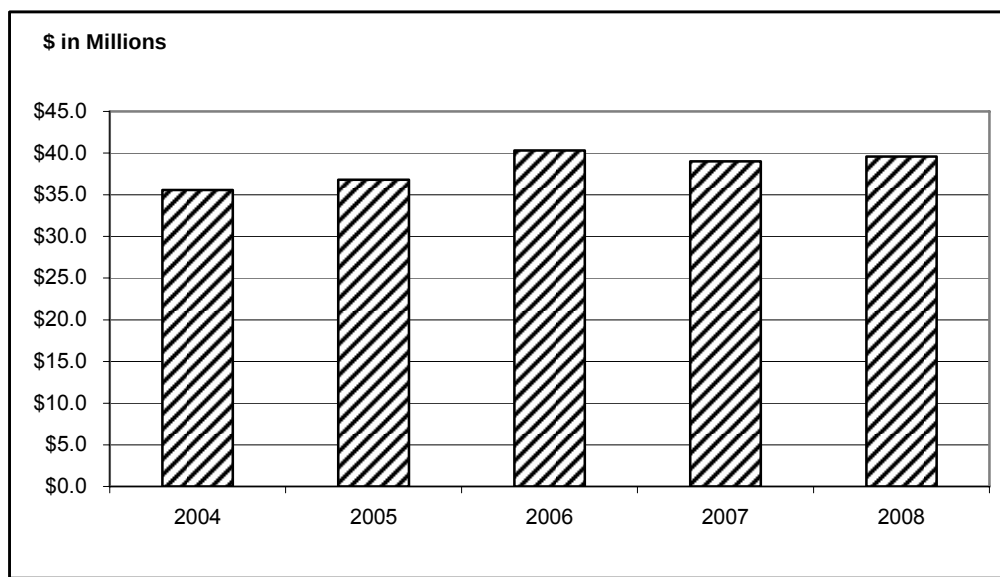
* All 2007 and 2008 values reflect the merger of Elizabethtown Water Company Pension Plan as of December 31, 2006.

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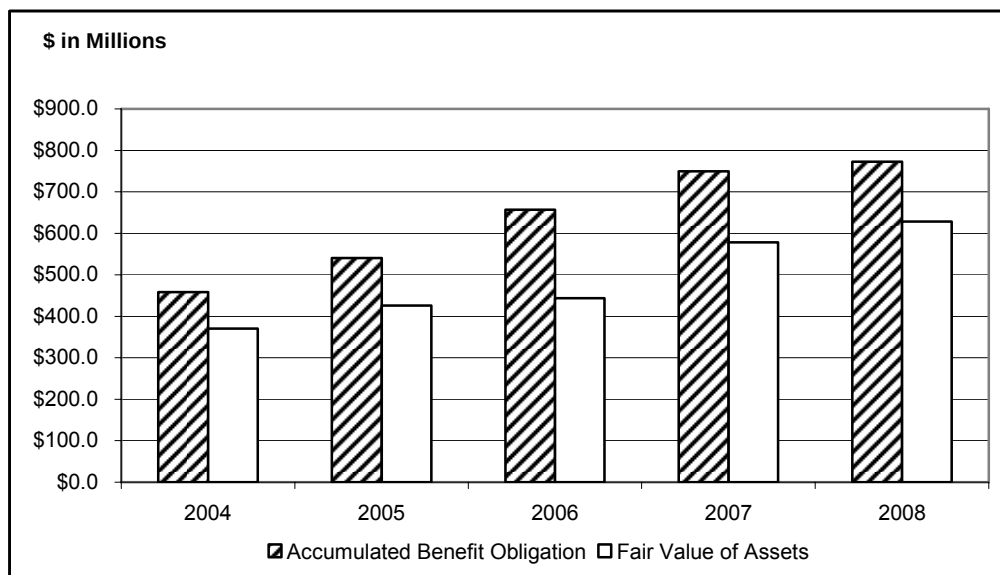
History of Pension Cost and Funded Position

The following charts show the history of the plan's pension cost and ABO funded position:

History of Pension Cost*



History of the Accumulated Benefit Obligation and Fair Value of Assets*



* All 2007 and 2008 values reflect the merger of Elizabethtown Water Company Pension Plan as of December 31, 2006.

Employer Contributions and ERISA Funded Position

American Water's funding policy is to contribute an amount equal to the minimum required contribution under ERISA. American Water may increase its contribution above the minimum if appropriate to its tax and cash position and the plan's funded position. For 2007, the minimum required contribution is \$75,996,105, or 25.8% of covered pay. The maximum deductible contribution under the Internal Revenue Code is \$673,880,639, or 228.5% of covered pay.

The funded position, on a contribution basis, is measured by comparing the actuarial value of assets with the actuarial accrued liability (AAL). The actuarial value of assets is a smoothed value that recognizes investment gains and losses over time. The AAL is the funding target, under ERISA, on which the employer contribution limits are based. As the funded percentage for a plan approaches or exceeds 100%, contributions to the plan may be restricted.

The plan's funded percentage (actuarial value of assets divided by AAL) is 86.1% as of July 1, 2007. This percentage is based on an actuarial value of assets of \$591,972,484 and an AAL of \$687,475,512.

Change in Contribution Requirements and Funded Position

The minimum required contribution increased from \$0 for 2006 to \$75,996,105 for 2007.

Current Liability

An alternative measure of funded position compares the actuarial value of assets with the plan's current liability. The current liability is the present value of benefits accrued to the valuation date reflecting IRS restrictions on interest and mortality assumptions.

The Pension Protection Act of 2006 (PPA) extended interest rate relief through the 2007 plan year. The PPA also raised the maximum deductible contribution level to 150% of the current liability funding target for the 2006 and 2007 plan years.

Current liability for minimum funding requirements is measured in two ways. The first measure is used to determine whether quarterly contribution requirements apply and to determine the amount of any applicable Additional Funding Requirements. The second measure is used to determine whether Additional Funding Requirements apply.

Timing of Contributions

If the current liability funded percentage measured using the selected interest rate is below 100%, quarterly contributions may be required in the following plan year. The plan's current liability funded percentage on this basis is 73.9% as of July 1, 2007. This percentage is based on an actuarial value of assets of \$592.0 million and a current liability of \$801.4 million. Quarterly contributions may be required for the 2008 plan year based on this year's valuation results and current understanding of applicable legislation.

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Additional Funding Requirements

If the current liability funded percentage measured using the highest allowable interest rate is below 90%, additional funding requirements may be triggered. The plan's current liability funded percentage on this basis is 73.9% as of July 1, 2007.

Actuarial Certification, Reliances and Distribution

American Water Works Company, Inc. retained Towers Perrin to perform a valuation of its pension plan for the purpose of determining (1) the value of benefit obligations and its pension cost in accordance with FAS 87 and (2) the minimum required and maximum tax-deductible contributions in accordance with ERISA and allowed by the Internal Revenue code. This valuation has been conducted in accordance with generally accepted actuarial principles and practices.

The consulting actuaries are members of the Society of Actuaries and other professional actuarial organizations and meet their "General Qualification Standard for Prescribed Statements of Actuarial Opinions" relating to pension plans.

In preparing the results presented in this report, we have relied upon information provided to us regarding plan provisions, plan participants, and plan assets. We have reviewed this information for overall reasonableness and consistency, but have neither audited nor independently verified this information. The accuracy of the results presented in this report is dependent upon the accuracy and completeness of the underlying information.

The actuarial assumptions and the accounting policies and methods employed in the development of the pension cost have been selected by the plan sponsor, with the concurrence of Towers Perrin. FAS 87 requires that each significant assumption "individually represent the best estimate of a particular future event."

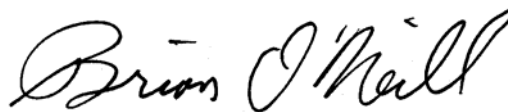
The actuarial assumptions and methods employed in the development of the contribution limits have been selected by Towers Perrin, with the concurrence of the plan sponsor. The Internal Revenue Code requires the use of assumptions "each of which is reasonable (taking into account the experience of the plan and reasonable expectations)" and "which, in combination, offer the actuary's best estimate of anticipated experience under the plan."

The results shown in this report have been developed based on actuarial assumptions that are considered to be reasonable and within the "best-estimate range" as described by the Actuarial Standards of Practice. Other actuarial assumptions could also be considered to be reasonable and within the best-estimate range. Thus, reasonable results differing from those presented in this report could have been developed by selecting different points within the best-estimate ranges for various assumptions.

The information contained in this report was prepared for the internal use of American Water Works Company, Inc. and its auditors in connection with our actuarial valuation of the pension plan. It is neither intended nor necessarily suitable for other purposes. American Water Works Company, Inc. may also distribute this actuarial valuation report to the appropriate authorities who have the legal right to require American Water Works Company, Inc. to provide them this report, in which case American Water Works Company, Inc. will use best efforts to notify Towers Perrin in advance of this distribution. Further distribution to, or use by, other parties of all or part of this report is expressly prohibited without Towers Perrin's prior written consent.



Roy Costa, FSA, EA



Brian J. O'Neill, FSA, EA

Towers Perrin
February 2008

Supplemental Information

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<i>Basic Results for Pension Cost.....</i>	<i>SI-2</i>
<i>Pension Cost.....</i>	<i>SI-4</i>
<i>Present Value of Accumulated Plan Benefits for FAS 35</i>	<i>SI-5</i>
<i>Basic Results for Employer Contributions.....</i>	<i>SI-6</i>
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Asset Values

Asset Values for Calculating Pension Cost

Fair value, excluding
contributions receivable:

▶ As of January 1, 2007	\$ 578,280,462
▶ Contributions	50,787,850
▶ Disbursements	(28,331,669)
▶ Investment return	<u>27,252,035</u>
▶ As of January 1, 2008	\$ 627,988,678
▶ Rate of return	4.7%

Market-related value:

▶ As of January 1, 2007	\$ 578,280,462
▶ As of January 1, 2008	627,988,678
▶ Rate of return	4.7%

Asset Values for Calculating Employer Contributions

Market value, including
contributions receivable:

▶ As of July 1, 2006	\$ 511,588,284
▶ Contributions	956,000
▶ Disbursements	(29,659,522)
▶ Investment return	74,586,134
▶ Elizabethtown transfer (asset values as of December 31, 2006)	<u>55,831,168</u>
▶ As of July 1, 2007	\$ 613,302,064
▶ Rate of return	14.2%

Actuarial value:

▶ As of July 1, 2006	\$ 518,247,375
▶ As of July 1, 2007	591,972,484
▶ Rate of return	8.9%
▶ Rate of return (assuming mid-year cash flow) for Schedule B of Form 5500	8.8%

SI-2

Basic Results for Pension Cost

	January 1, 2008 ⁽¹⁾	January 1, 2007 ⁽¹⁾
Service Cost	\$ 25,892,330	\$ 25,214,558
Obligations		
Accumulated benefit obligation [ABO]:		
▶ Participants currently receiving benefits	\$ 305,427,668	\$ 295,371,687
▶ Deferred inactive participants	77,443,963	79,720,120
▶ Active participants	<u>389,671,261</u>	<u>374,219,932</u>
Total ABO	\$ 772,542,892	\$ 749,311,739
Obligation due to future salary increases	<u>120,580,851</u>	<u>114,781,487</u>
Projected benefit obligation [PBO]	\$ 893,123,743	\$ 864,093,226
Assets		
Fair value [FV]	\$ 627,988,678	\$ 578,280,462
Unrecognized investment losses (gains)	<u>0</u>	<u>0</u>
Market-related value	\$ 627,988,678	\$ 578,280,462
Funded Position		
Unfunded PBO	\$ 265,135,065	\$ 285,812,764
Minimum liability [ABO – FV, minimum zero] ⁽²⁾	144,554,214	171,031,277
Key Economic Assumptions		
Discount rate	6.27%	5.90%
Rate of return on assets	7.90%	8.00%
Salary increase rate	Age-graded scale averaging 4.25%	Age-graded scale averaging 4.25%

(1) All values reflect the merger of Elizabethtown Water Company Pension Plan as of December 31, 2006.

(2) Does not reflect FAS 158.

Fiscal 2007

Development of Prepaid (Accrued)
Pension Cost as of January 1, 2008

Prepaid (accrued) pension cost, as of January 1, 2007	\$ (102,302,391)
Change during fiscal 2006	
▶ Income (cost) recognized	(38,968,697)
▶ Employer contributions	50,787,850
▶ Effect of curtailments, settlements, and termination benefits	0
▶ Adjustment	0
Prepaid (accrued) pension cost as of January 1, 2008 (before FAS 158)	\$ (90,483,238)

	January 1, 2008 ⁽¹⁾	January 1, 2007 ⁽¹⁾
Reconciliation of Funded Status		
Funded status [FV – PBO]	\$ (265,135,065)	\$ (285,812,764)
Unrecognized net actuarial loss (gain)	171,339,010	180,409,625
Unrecognized prior service cost (credit)	3,312,817	3,100,748
Unrecognized transition obligation (asset)	0	0
Prepaid (accrued) pension cost	\$ (90,483,238)	\$ (102,302,391)
Balance Sheet Effects		
Prepaid pension cost	\$ 0	\$ 0
Accrued pension cost	(90,483,238)	(102,302,391)
Additional minimum liability	(54,070,976)	(68,728,886)
Intangible asset	3,312,817	3,100,748
Accumulated other comprehensive income	50,758,159	65,628,138
Balance sheet effect	\$ (90,483,238)	\$ (102,302,391)

(1) All values reflect the merger of Elizabethtown Water Company Pension Plan as of December 31, 2006.

The results above do not reflect FAS 158. The accumulated other comprehensive income was developed based on FAS 87 prior to FAS 158 and has not been tax effected. Any tax effect should be separately recognized.

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Pension Cost

	Fiscal 2008 ⁽¹⁾	Fiscal 2007 ⁽¹⁾
Pension Cost		
Service cost	\$ 25,892,330	\$ 25,214,558
Interest cost	56,675,301	51,613,587
Expected return on assets	(51,701,245)	(47,052,194)
Amortization:		
▶ Transition obligation (asset)	0	0
▶ Prior service cost (credit)	707,521	637,931
▶ Net loss (gain)	<u>8,052,089</u>	<u>8,554,815</u>
Pension cost	\$ 39,625,996	\$ 38,968,697
Percent of covered pay ⁽²⁾	13.4%	13.5%
Per active participant ⁽³⁾	\$ 7,842	\$ 7,700

Change in Pension Cost

Pension cost for fiscal 2007	\$ 38,968,697
Change from fiscal 2007 to fiscal 2008:	
▶ Expected based on prior valuation	(2,555,740)
▶ Loss (gain) from noninvestment experience	6,511,120
▶ Loss (gain) from asset experience	3,105,575
▶ Assumption changes	(6,565,802)
▶ Plan amendments	<u>162,146</u>
Pension cost for fiscal 2008	\$ 39,625,996

(1) All values reflect the merger of Elizabethtown Water Company Pension Plan as of December 31, 2006.

(2) For Fiscal 2007, covered pay is based on the most recent valuation data received from the client (Elizabethtown covered compensation of \$22,483,921 as of January 1, 2006 and American Water covered compensation of \$266,216,479 as of July 1, 2006).

(3) For Fiscal 2007, the number of active participants is based on the most recent valuation data received from the client (Elizabethtown had 316 active participants as of January 1, 2006 and American Water had 4,745 active participants as of July 1, 2006).

Present Value of Accumulated Plan Benefits for FAS 35

	July 1, 2007	July 1, 2006 ⁽¹⁾
Actuarial Present Value of Accumulated Plan Benefits		
Vested benefits:		
▶ Participants currently receiving benefits	\$ 311,969,354	\$ 220,940,005
▶ Other participants	<u>287,334,674</u>	<u>262,001,205</u>
▶ Total vested benefits	\$ 599,304,028	\$ 482,941,210
Nonvested benefits	<u>5,011,162</u>	<u>12,220,390</u>
Total accumulated benefits	\$ 604,315,190	\$ 495,161,600
Market value of assets	613,302,064	511,588,284

Key Assumptions

Interest rate	8.00%	8.25%
Average retirement age	62	62
Mortality	RP-2000	RP-2000

Change in Actuarial Present Value of Accumulated Plan Benefits

Actuarial present value of accumulated plan benefits as of July 1, 2006 \$ 495,161,600

Change from 2006 to 2007:

▶ Additional benefits accumulated (including the effect of noninvestment experience)	27,449,357
▶ Interest due to decrease in the discount period	39,808,355
▶ Benefits paid	(25,783,090)
▶ Assumption changes	17,087,825
▶ Plan amendments	0
▶ Merger of Elizabethtown Water	<u>50,591,143</u>

Actuarial present value of accumulated plan benefits as of July 1, 2007 \$ 604,315,190

(1) The assets and liabilities as of July 1, 2006 shown above are before the Elizabethtown Water Company Pension Plan merger and include only the American Water Pension Plan.

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Basic Results for Employer Contributions

	July 1, 2007	July 1, 2006 ⁽¹⁾
Normal Cost and Liabilities		
Normal cost	\$ 18,351,357	\$ 14,614,358
Actuarial accrued liability [AAL]	687,475,512	556,822,415
Current liability [CL]:		
▶ Selected interested rate	801,432,166	647,682,990
▶ Highest allowable interest rate	801,432,166	647,682,990
Assets		
Market value	\$ 613,302,064	\$ 511,588,284
Unrecognized investment losses (gains)	<u>(21,329,580)</u>	<u>6,659,091</u>
Actuarial value [AV]	\$ 591,972,484	\$ 518,247,375
Funded Position		
Unfunded actuarial accrued liability [AAL – AV]	\$ 95,503,028	\$ 38,575,040
AAL funded percentage [AV ÷ AAL]	86.1%	93.1%
CL funded percentage:		
▶ Selected interest rate	73.9%	80.0%
▶ Highest allowable interest rate	73.9%	80.0%
Key Economic Assumptions		
Discount rate for normal cost and actuarial accrued liability	8.00%	8.25%
Current liability interest rate:		
▶ Selected	5.83%	5.77%
▶ Highest allowable	5.83%	5.77%
Salary increase rate	Age-graded scale averaging 4.25%	Age-graded scale averaging 4.25%

(1) The assets and liabilities as of July 1, 2006 shown above are before the Elizabethtown Water Company Pension Plan merger and include only the American Water Pension Plan.

The results reflect extension of current liability interest rate relief.

Minimum Required Employer Contribution

	July 1, 2007	July 1, 2006 ⁽¹⁾⁽²⁾
Minimum Required Employer Contribution		
Normal cost	\$ 18,351,357	\$ 15,252,843
Amortization amounts	25,938,181	19,393,438
Interest adjustments	3,543,162	2,831,734
Additional funding charge	53,265,597	
Credit balance with interest	<u>(25,102,192)</u>	<u>(60,702,787)</u>
Minimum required contribution before full funding limit	\$ 75,996,105	\$ 0
Minimum required contribution after full funding limit	75,996,105	0

(1) Contribution amounts reflect the merger of Elizabethtown Water Company Pension Plan as of December 31, 2006.

(2) Amounts reflect Final Funding Standard Account adjustments due to merger of Elizabethtown Water Company Pension Plan.

Additional details regarding the calculation of the minimum required employer contribution may be obtained from the Form 5500 Schedule B filings and attachments.

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Maximum Deductible Employer Contribution

	July 1, 2007 ⁽¹⁾	July 1, 2006 ⁽¹⁾
Maximum Deductible Employer Contribution		
Maximum deductible contribution before adjustments	\$ 33,430,023	\$ 22,418,851
Allowable deduction, the greatest of:		
▶ Maximum deductible contribution after full funding limit	33,430,023	22,418,851
▶ Contribution necessary to satisfy minimum funding standards	0	0
▶ Contribution necessary to fund maximum allowable percentage of current liability ⁽²⁾	673,880,639	539,127,891
Maximum deductible contribution	673,880,639	539,127,891

(1) Contribution amounts reflect the merger of Elizabethtown Water Company Pension Plan as of December 31, 2006.

(2) Contribution necessary to fund 150% of current liability.

Deductibility of contributions to a defined contribution plan maintained for the same employees may be affected by the 25% of pay limitation for defined benefit and defined contribution plans combined.

Note that there is some uncertainty regarding how the 25% of pay combined deductible limit for DB and DC plans is to be applied when the plan year and tax year differ.

Actuarial Assumptions and Methods

	Pension Cost	Contributions
Economic Assumptions		
Discount rate	6.27%	8.00%
Return on assets	7.90%	N/A
Current liability interest rates:		
▶ Selected	N/A	5.83%
▶ Highest allowable	N/A	5.83%
Lump sum conversion interest rate	5.27%	6.00%*
* 5.83% for current liability		
Annual rates of increase in:		
▶ Compensation		
Sample rates:		
	<i>Age</i>	<i>% Increase</i>
	25	5.85%
	35	4.45%
	40	4.15%
	45	3.95%
	55	3.65%
	Average rate	4.25%
▶ Future Social Security wage bases	3.75%	3.75%
▶ Indexed limits on compensation and benefits	3.25%	N/A

SI-10

Demographic Assumptions

Mortality

- ▶ Pension cost For healthy participants, sex-distinct RP-2000 table projected to 2015 using scale AA with phase-out without any collar adjustment.
- ▶ Contributions For healthy participants, sex-distinct RP-2000 table projected to 2015 using scale AA with phase-out without any collar adjustment.

For disabled participants, select and ultimate mortality rates from the PBGC disabled mortality for Social Security recipients.

For current liability purposes, the separate IRS non-annuitant and annuitant mortality tables were used.

Termination

Rates varying by age

Sample rates:

Age	<u>Service</u>			
	0-4	5-9	10-14	Ultimate
25	0.100	0.090	0.080	0.060
35	0.070	0.065	0.060	0.040
40	0.065	0.055	0.050	0.040
45	0.060	0.050	0.040	0.030
55	0.000	0.000	0.000	0.000

Sample termination rates for Alton and Pensacola Call Center Employees:

Age	<u>Service</u>						Ultimate
	0-1	2	3	4-5	6-7	8-9	
25	0.35	0.30	0.25	0.20	0.15	0.10	0.05
35	0.35	0.30	0.25	0.20	0.15	0.10	0.05
40	0.35	0.30	0.25	0.20	0.15	0.10	0.05
45	0.35	0.30	0.25	0.20	0.15	0.10	0.05
55	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Disability

50% of 1987 CGDT (shown below)

Sample annual rates of disablement:

Age	Male	Female
25	.0005	.0006
35	.0007	.0012
40	.0010	.0015
45	.0018	.0023
55	.0059	.0053

None for Elizabethtown

Retirement

Rates varying by age averaging 61; terminated vested participants, age 65

<i>Age</i>	<i>Rate</i>	<i>Age</i>	<i>Rate</i>
55	.10	61	.10
56	.07	62	.60
57	.07	63	.40
58	.07	64	.40
59	.10	65	.45
60	.10	66	1.00

Elizabethtown:

Rates varying by age averaging 63; terminated vested participants, age 65

Sample rates:

<i>Age</i>	<i>Rate</i>
55-59	.025
60-61	.075
62	.35
63	.30
64	.20
65	.60
66-69	.20
70	1.00

Form of payment

Life annuity. Normal cost and actuarial accrued liability have been increased by .2% for the two-year "pop-up" provision.

Administrative expense

\$300,000 is added to the plan's normal cost

Percent married

100% males and 100% females are assumed married.

Spouse age

Wife three years younger than husband

Valuation pay

Annualized target pay rate plus bonus.

Annual rates of pay are increased 3% for those without a bonus to approximate total company overtime.

Maximum benefit

For contribution purposes: \$180,000 for 2007, payable at age 62.

For accounting purposes: \$180,000 for 2007, increasing with inflation.

Maximum pensionable earnings

For contribution purposes: \$225,000 for 2007

For accounting purposes: \$225,000 for 2007, increasing with inflation.

SI-12

Methods

Pension cost:

- ▶ Measurement date January 1, 2008 based on July 1, 2007 participant data
- ▶ Service cost and projected benefit obligation Projected unit credit
- ▶ Market-related value of assets Fair value
- ▶ Amortization of unrecognized amounts:
 - Prior service cost (credit) Increase in PBO resulting from a plan amendment is amortized on a straight-line basis over the expected average remaining service of active participants.
 - Net loss (gain) Net loss (gain) in excess of 10% of the greater of the PBO or the market-related value of assets is amortized on a straight-line basis over the expected average remaining service of active participants.

Contributions:

- ▶ Valuation date July 1, 2007
- ▶ Normal cost and actuarial accrued liability Projected unit credit
- ▶ Actuarial value of assets A preliminary actuarial value of assets as of the valuation date is determined as the market value of assets as of the valuation date less the following percentage applied to investment gains (losses) from previous years:
 - 80% for the year ending on the valuation date
 - 60% for the previous year
 - 40% for the second previous year
 - 20% for the third previous year

The preliminary actuarial value is then adjusted to be within a corridor of 80% to 120% of the market value.
- ▶ Funding policy The company's funding policy is to contribute an amount at least equal to the minimum required contribution under ERISA. American Water Works may increase its contribution above the minimum, if appropriate to its tax and cash position and the plan's funded status.

Benefits Not Valued

All benefits described in the Plan Provisions section of this report were valued. Towers Perrin has reviewed documentation provided by American Water Works and is not aware of any significant benefits that were not valued.

Change in Assumptions and Methods Since Prior Valuation

Pension cost	The discount rate for benefit obligations was changed from 5.90% to 6.27%.
	The lump sum conversion interest rate changed from 4.90% to 5.27%.
	The Elizabethtown termination rates were changed to the AW termination rates.
Contributions	The current liability interest rate was changed from 5.77% to 5.83%, which is within the permissible range.
	The discount rate was changed from 8.25% to 8.00%.
	The lump sum conversion interest rate was changed from 6.25% to 6.00% (it was changed from 5.77% to 5.83% for current liability).
	The mortality tables for current liability were changed as described above.
	The Elizabethtown termination rates were changed to the AW termination rates.

Data Sources

Towers Perrin used asset data supplied by the trustee. American Water Works furnished participant data as of July 1, 2007. In addition, accrued pension costs were furnished as of December 31, 2007. Data were reviewed for reasonableness and consistency. Towers Perrin is not aware of any errors or omissions in the data that would have a significant effect on the results of our calculations.

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Participant Data

	July 1, 2007	July 1, 2006 ⁽¹⁾
Active		
Number	5,053	4,745
Average age	46.1	45.8
Average past service	13.6	14.5
Average future service	10.2	11.0
Covered pay:		
▸ Total	\$ 294,901,541	\$ 266,216,479
▸ Average	58,362	56,105
Deferred Inactive		
Number	1,957	1,801
Average age	49.3	48.8
Annual benefits:		
▸ Total	\$ 17,141,403	\$ 15,344,148
▸ Average	8,759	8,520
Currently Receiving Benefits		
Number	1,803	1,495
Average age	68.2	67.3
Annual benefits:		
▸ Total	\$ 28,473,534	\$ 23,363,331
▸ Average	15,792	15,628
Total Participants Included in Valuation		
Number	8,813	8,041

(1) The July 1, 2006 Participant Data does not reflect the Elizabethtown plan merger as of December 31, 2006. As of January 1, 2006, the Elizabethtown Pension Plan had 316 active participants, 117 deferred inactive participants and 196 participants currently receiving benefits.

Analysis of Inactive Participant Data

Deferred Inactive

<i>Age last birthday</i>	<i>Number</i>	<i>Annual benefit</i>	<i>Average annual benefit</i>
< 40	205	\$ 1,146,388	\$ 5,592
40 – 49	813	6,606,771	8,126
50 – 54	441	4,870,275	11,044
55 – 59	289	3,124,332	10,811
60 – 64	154	1,088,198	7,066
> 64	<u>55</u>	<u>305,439</u>	5,553
Total	1,957	\$ 17,141,403	\$ 8,759

Currently Receiving Benefits

<i>Age last birthday</i>	<i>Number</i>	<i>Annual benefit</i>	<i>Average annual benefit</i>
< 55	45	\$ 488,229	\$ 10,850
55 – 59	208	3,385,711	16,277
60 – 64	444	8,290,767	18,673
65 – 69	484	8,697,445	17,970
70 – 74	218	3,474,539	15,938
75 – 79	143	2,066,318	14,450
> 79	<u>261</u>	<u>2,070,525</u>	7,933
Total	1,803	\$ 28,473,534	\$ 15,792

ANALYSIS OF ACTIVE PARTICIPANT DATA BY AGE, SERVICE AND EARNINGS AS OF 07/01/2007

Age Nearest Birthday	Completed Years of Service									Total
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	Over 34		
15 to 24	Count	56	1	0	0	0	0	0	0	57
	Total Earnings	2,020,953	60,051	0	0	0	0	0	0	2,081,004
	Average Earnings	36,088	60,051	0	0	0	0	0	0	36,509
25 to 29	Count	208	44	0	0	0	0	0	0	252
	Total Earnings	8,487,883	2,112,590	0	0	0	0	0	0	10,600,472
	Average Earnings	40,807	48,013	0	0	0	0	0	0	42,065
30 to 34	Count	227	142	14	1	0	0	0	0	384
	Total Earnings	10,272,323	7,504,235	736,615	46,747	0	0	0	0	18,559,920
	Average Earnings	45,253	52,847	52,615	46,747	0	0	0	0	48,333
35 to 39	Count	235	183	89	35	1	0	0	0	543
	Total Earnings	12,729,249	10,679,723	5,105,595	2,092,946	53,346	0	0	0	30,660,859
	Average Earnings	54,167	58,359	57,366	59,798	53,346	0	0	0	56,466
40 to 44	Count	209	183	145	163	73	4	0	0	777
	Total Earnings	11,075,483	10,874,913	8,261,866	10,469,388	4,540,666	254,116	0	0	45,476,432
	Average Earnings	52,993	59,426	56,978	64,229	62,201	63,529	0	0	58,528
45 to 49	Count	155	171	152	190	188	111	13	0	980
	Total Earnings	8,932,549	9,760,532	9,495,225	11,708,328	12,868,827	7,154,849	819,144	0	60,739,453
	Average Earnings	57,629	57,079	62,469	61,623	68,451	64,458	63,011	0	61,979
50 to 54	Count	122	142	128	157	162	236	80	9	1,036
	Total Earnings	8,081,586	8,233,160	7,597,556	9,705,455	10,061,324	15,835,710	4,960,927	471,939	64,947,657
	Average Earnings	66,243	57,980	59,356	61,818	62,107	67,100	62,012	52,438	62,691
55 to 59	Count	86	88	81	71	78	130	89	81	704
	Total Earnings	5,788,912	5,434,635	4,469,547	4,026,327	4,325,870	7,959,476	5,654,100	5,374,983	43,033,851
	Average Earnings	67,313	61,757	55,180	56,709	55,460	61,227	63,529	66,358	61,128
60 to 64	Count	28	50	30	23	23	29	32	66	281
	Total Earnings	1,659,758	2,817,977	1,549,725	1,403,290	1,325,831	1,632,677	1,791,501	4,357,735	16,538,493
	Average Earnings	59,277	56,360	51,658	61,013	57,645	56,299	55,984	66,026	58,856
65 to 69	Count	5	9	2	1	0	8	0	5	30
	Total Earnings	431,148	547,903	103,092	52,478	0	416,697	0	273,392	1,824,710
	Average Earnings	86,230	60,878	51,546	52,478	0	52,087	0	54,678	60,824
Over 69	Count	0	4	0	0	0	0	1	4	9
	Total Earnings	0	153,880	0	0	0	0	44,883	239,927	438,691
	Average Earnings	0	38,470	0	0	0	0	44,883	59,982	48,743
Total	Count	1,331	1,017	641	641	525	518	215	165	5,053
	Total Earnings	69,479,842	58,179,600	37,319,220	39,504,960	33,175,864	33,253,525	13,270,554	10,717,976	294,901,541
	Average Earnings	52,201	57,207	58,220	61,630	63,192	64,196	61,724	64,957	58,362
		Average Age: 46.1		Average Service: 13.6						

Average Age: 46.1 Average Service: 13.6

Reconciliation of Participant Data

	<i>Active</i>	<i>Deferred inactive</i>	<i>Currently receiving benefits</i>	<i>Total</i>
Included in July 1, 2006 valuation	4,745	1,801	1,495	8,041
Elizabethtown Merger (counts as of January 1, 2006)	316	117	196	629
Change due to:				
▶ New hire and rehire	285	0	0	285
▶ Nonvested termination	(103)	0	0	(103)
▶ Vested termination	(98)	98	0	0
▶ Retirement	(62)	(47)	109	0
▶ Disability	(11)	0	11	0
▶ Death without beneficiary	(1)	0	(13)	(14)
▶ Death with beneficiary	(9)	2	7	0
▶ Cashout	(1)	(1)	0	(2)
▶ Miscellaneous	(8)	(13)	(2)	(23)
▶ Net change	308	156	308	772
Included in July 1, 2007 valuation	5,053	1,957	1,803	8,813

Plan Provisions

Plan Provisions as of July 1, 2007

1. Effective Date: July 1, 1952. Most recent amendment/restatement effective January 1, 2007.
2. Definitions:
 - (a) Average Social Security Wage Base: Average of the maximum amounts subject to Social Security taxation for the year of retirement or termination and the nine preceding years.
 - (b) Earnings: Total compensation for services paid as an annual salary or as an hourly wage (including overtime and shift differentials) plus annual incentive awards paid in cash during the period, plus amounts paid under the company's business development incentive plan, plus amounts deferred under Sections 401(k), 125 or 132(f)(4) of the Internal Revenue Code. Earnings are subject to a maximum amount as set forth in Section 401(a)(17)(B) of the Internal Revenue Code.
 - (c) Final Average Earnings: The highest average monthly Earnings during the 60 consecutive months of the final 120 months (or lesser period of employment) preceding termination from employment or retirement.
 - (d) Year of Service:
 - (i) For periods prior to the first anniversary of employment after July 1, 1975: A Year of Service is credited for each year of continuous service during which the employee's customary employment was for more than 1,000 hours per year, subject to the following exceptions:
 - (a) California-American Water Company: Only continuous service accrued beginning December 28, 1970 is credited for the purpose of determining the amount of benefits payable under the Plan (in addition to any prior plan benefits).
 - (b) West Virginia Water Company and Yardley Water Company: Only service accrued beginning December 1, 1970 is credited for the purpose of determining the amount of benefits accrued under the Plan (in addition to any prior plan benefits). Service for eligibility purposes and for the schedule of early retirement factors is measured from the original date of hire.

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- (ii) For periods beginning on or after the first anniversary of employment after July 1, 1975: In general, a Year of Service is credited for each 12-month period commencing on the employee's anniversary date of employment during which the employee completes 1,000 hours of service. For the purpose of determining the amount of benefits of any participant (other than a part-time employee) who completes at least 1,000 but fewer than 2,080 hours of service in this 12-month period, the participant is credited with the fraction of a Year of Service determined by dividing his actual hours of service by 2,080. The following exceptions apply:
- (a) Hershey Water Company: Employees on April 19, 1977 who were vested in benefits accrued under the prior plan receive credit only for service beginning April 19, 1977.
 - (b) Pekin Water Company: Nonunion participants who were members of the prior plan get credit for all service less any prior plan benefit. Other nonunion employees get credit for periods of service beginning January 1, 1982. Union employees' service is credited for periods beginning April 1, 1982 for the purposes of determining the amount of benefits payable under the Plan (in addition to any prior plan benefits).
 - (c) Seymour Water Company: Only service accrued beginning March 16, 1982 is credited for the purpose of determining the amount of benefits payable under the Plan (in addition to any prior plan benefits).
 - (d) New Mexico-American: All service is credited, including periods before the August 1, 1986 acquisition. The prior plan benefit is a minimum.
 - (e) Indiana-American Terre Haute Plan: Only service accrued beginning May 11, 1987 is credited for the purpose of determining the amount of benefits payable under the Plan (in addition to any prior plan benefits).
 - (f) Brownsville Water Company: Only service accrued beginning July 1, 1990 is credited for the purpose of determining the amount of benefits payable under the Plan (in addition to any prior plan benefits).
 - (g) California Water Company: Only service accrued beginning July 1, 1990 is credited for the purpose of determining the amount of benefits payable under the Plan (in addition to any prior plan benefits).
 - (h) Avatar Utilities Inc: Only service accrued beginning August 31, 1993 is credited for the purpose of determining the amount of benefits payable under the Plan (in addition to any prior plan benefits).

- (i) PG Energy: Only service accrued beginning February 16, 1996 is credited for the purpose of determining the amount of benefits accrued under the Plan (in addition to any prior plan benefits). Service for eligibility and vesting purposes and for the schedule of early retirement factors is measured from the original date of hire.

- (j) United Water Resources, Inc.: Dates of acquisition are shown below:

<u>Location</u>	<u>Date</u>
United Water of Indiana	February 1, 2000
United Water of West Lafayette	February 1, 2000
United Water of Virginia	February 29, 2000
United Water of Missouri	May 1, 2000
United Water of Illinois	May 31, 2000

- (i) Nonunion employees: Service for eligibility purposes and for the schedule of early retirement factors is measured from the original date of hire. Service for benefit accrual is measured from the date of acquisition.
- (ii) Union employees: Service for all purposes is measured from the original date of hire. All benefits are determined under the United Waterworks Plan formula in effect on the date of acquisition.
- (k) City of Coatesville Authority: Only service accrued beginning March 23, 2001 is credited for the purpose of determining the amount of benefits accrued under the Plan. Service for eligibility to participate, vesting and early retirement eligibility is measured from the original date of hire.
- (l) Citizens Utilities Companies: Only service accrued beginning January 15, 2002 is credited for the purpose of determining the amount of benefits payable under the Plan. Service for eligibility and vesting purpose and for the schedule of early retirement factors is measured from the original date of hire.
- (m) Cessation of Years of Service for Benefit Accrual for Certain Employee Groups: Union participants hired or rehired on or after January 1, 2001 cease to be credited with years of service for benefit accrual after December 31, 2005. Likewise, all accrued benefits for those participants are frozen as of December 31, 2005.

The following union groups are excluded from this benefit freeze provision:

- ▶ Union employees at Sterling or Alton, Illinois
- ▶ Union employees at Pensacola, Florida
- ▶ Union employees as of January 15, 2002 who were included in the Citizens Utility acquisition
- ▶ Elizabethtown Water Company employees of Local 423 hired before April 1, 2006 or Local 68 hired before May 1, 2006

Note: Years of service for purposes of determining eligibility for benefits (vesting, disability, early retirement and preretirement death benefits) continue to accrue for all union participants whose benefits are frozen as of December 31, 2005.

(n) Recent acquisitions — service credit from dates shown below:

<u>Location</u>	<u>Date</u>
Country Place Water	June 30, 1995
Hawaii American Water	July 1, 1998
City of Florissant, MO (nonunion employees)	November 1, 2001
Texas American Water	July 1, 2002
City of Webster Groves, MO	February 8, 2002
LP Water and Sewer Company (nonunion employees)	April 3, 2002

3. Eligibility for Participation: Each employee commences participation on the first day of the calendar month next following completion of one Year of Service. The following groups of employees are not eligible to participate in the plan:

- (a) Nonunion employees hired or rehired on or after January 1, 2006
- (b) Union employees hired or rehired on or after January 1, 2006 (April 1, or May 1, 2006 for employees of Elizabethtown Water unions 423 and 68 respectively)
- (c) Any employee who was not eligible to accrue a benefit as of January 1, 2006 (with noted exceptions for certain union groups).

4. Benefits:

- (a) Normal Retirement Benefit:

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- (i) Normal retirement date: The first day of the calendar month next following the participant's 65th birthday.
- (ii) Basic monthly benefit: The sum of (A) and (B) below. Union employees hired on or after January 1, 2001 have their accrued benefit frozen as of December 31, 2005.
- (A1) For service before July 1, 2001 for American Water employees (other than former NEI plan participants), the larger of (1) or (2) below:
- (1) The sum of (a) plus (b) plus (c):
- (a) 1.85% of Final Average Earnings not in excess of the Average Social Security Wage Base multiplied by Years of Service up to 25 years.
- (b) 2.10% of Final Average Earnings in excess of the Average Social Security Wage Base multiplied by Years of Service up to 25 years.
- (c) 0.70% of Final Average Earnings multiplied by Years of Service in excess of 25 years.
- (2) The benefit accrued under the Plan formula as of June 30, 1989.
- (A2) For former NEI participants and Elizabethtown Water nonunion participants, the benefit formula in effect under the provisions of the former respective NEI plans using the Final Average Earnings described in 2(c) above, and service (determined under the provisions of the former plan) prior to the dates described below:

<u>Nonbargaining participants of</u>	<u>service before</u>
▶ Northern Illinois	July 1, 2001
▶ Long Island	July 1, 2001
▶ Northwest Indiana	July 1, 2001
▶ St. Louis	July 1, 2001
▶ Elizabethtown Water	January 1, 2006

<u>Bargaining participants of</u>	<u>service before</u>
▶ Northwest Indiana	January 1, 2003
▶ St. Louis	January 1, 2004
▶ Northern Illinois	July 1, 2004
▶ Long Island	July 1, 2004*

- * The applicable benefit formula is 1.75% of Final Average Earnings as of the earlier of December 31, 2007 or termination date times credited service through June 30, 2004.

(B) For service on or after July 1, 2001 for AW participants*, and after dates described above for former NEI and Elizabethtown Water nonbargaining participants, sum of (1) + (2) + (3):

- (1) 1.6% of Final Average Earnings not in excess of the Average Social Security Wage Base multiplied by Years of Service up to 25 years.**
- (2) 2.1% (1.6% for Union Associates, former NEI participants, former Elizabethtown Water participants and all participants hired after July 1, 2001) of Final Average Earnings in excess of the Average Social Security Wage Base multiplied by Years of Service up to 25 years.**
- (3) 1.6% of Final Average Earnings multiplied by Years of Service in excess of 25 years**

* For participants hired on or after July 1, 2001, 1.6% of Final Average Earnings multiplied by Years of Service.

** The threshold of 25 years of service is based on total service, including Years of Service credited prior to July 1, 2001.

The following groups represent variances from the above benefit formulas:

- ▶ IBEW Local 51 members employed at Sterling, Illinois — the former Northern Illinois plan's benefit provisions continued unchanged. The formula is 1.33% of Final 5-year Average Earnings (based on the highest five consecutive out of the last 10 plan years, where plan years are from April 1 to March 31) multiplied by Years of Service.
- ▶ United Water (acquired in 2000) union employees previously covered under the United Waterworks Plan — the former plan's benefit provisions continue unchanged.
- ▶ Union employees of Long Island — 1.60% multiplied by Years of Service from July 1, 2004 to January 1, 2008 multiplied by final 60-month average pay as of December 31, 2007. 1.60% for each Year of Service after December 31, 2007 multiplied by average pay from January 1, 2008 to date of retirement.
- ▶ Union employees of Elizabethtown Water Company hired before the effective date of the most recent bargaining agreement — the former Elizabethtown retirement plan's provisions continue unchanged. The formula is 1.6% of Final 4-year Average Base Earnings times Years of Service (maximum 40 years).

In addition to the above amounts, benefits are payable under prior plans that have been merged into this Plan: for the Pekin, Seymour, California-American, West Virginia Water Companies and the Indiana-American Terre Haute Plan, the Brownsville Water Company, California Water Company, Avatar Utilities Inc. and PG Energy. Also, any benefits payable through a purchased annuity are subtracted from the above amounts (under Metropolitan contracts #153 and #369).

(b) Early Retirement Benefit:

(i) Early retirement date:

- ▶ For American Water employees, former St. Louis County employees and Long Island employees, the first day of any month on which the employee elects to retire provided that:
 - (a) the participant has attained age 55, and
 - (b) the sum of the individual's age and Years of Service totals at least 70.
- ▶ For former non-bargaining employees of Northwest Indiana hired prior to July 1, 2001 and former bargaining employees of Northwest Indiana hired prior to January 1, 2003, the first day of any month on which the employee elects to retire provided that the participant has attained age 55 and completed five Years of Service.
- ▶ For former employees of Northern Illinois hired prior to July 1, 2001 and for all Local 51 union employees at Sterling, Illinois, the first day of any month on which the employee elects to retire provided that the employee has attained age 55.
- ▶ For former employees of Elizabethtown Water Company, the first day of any month on which an employee elects to retire after he has attained age 55 and completed 10 Years of Service.

- (ii) Basic monthly benefit: Except for those employees whose benefits continue to be determined under the provisions of their prior plan, the benefit as in (a)(ii) above based upon Earnings and Years of Service to the date of early retirement, multiplied by the appropriate factors from the Schedule of Early Retirement Factors contained in the American Water Plan document. For benefits attributable to service prior to the dates described below under the former NEI plans' provisions, the applicable early retirement factors are those set forth in the respective former plans, except for Long Island bargaining participants, whose entire benefit will be subject to the American Water early retirement factors..

<u>Nonbargaining participants of</u>	<u>service before</u>
▶ Northern Illinois	July 1, 2001
▶ Long Island	July 1, 2001
▶ Northwest Indiana	July 1, 2001
▶ St. Louis	July 1, 2001

<u>Bargaining participants of</u>	<u>service before</u>
▶ Northwest Indiana	January 1, 2003
▶ St. Louis	January 1, 2004
▶ Northern Illinois	July 1, 2004
▶ Long Island	July 1, 2004

Note: All benefits which continue to accrue under the provisions of a prior plan (e.g., United Waterworks, Elizabethtown Water, Sterling union at Northern Illinois) will be subject to the early retirement factors from those prior plans.

- (iii) Supplemental Early Retirement Income: For Long Island non-union employees hired prior to July 1, 2001 who retire and whose age plus service at retirement is at least 90 points, benefit is \$100 per month reduced by 5% for each point below 90. This benefit is available to the Long Island union employees only if they retired before July 1, 2004. This benefit is payable until age 65.
- (c) Late Retirement: Effective July 1, 2006 an active participant who works beyond age 65 shall receive a Suspension of Benefits notice. Benefits payable upon retirement will be determined based on actual earnings and service credited through the date of retirement.
- (d) Vested Benefit:
- (i) Eligibility: Completion of five Years of Service.
- (ii) Basic monthly benefit: The benefit as in (a)(ii), based upon Earnings and Years of Service to date of termination.
- (e) Disability Benefit:
- (i) Disability retirement date: The first day of the month following the submission of evidence that the employee qualifies for disability benefits from the Social Security Administration, provided that the employee has completed 10 Years of Service.
- (ii) Basic monthly benefit: The benefit in (a) below, plus any frozen benefit payable under the prior plans for former employees of Pekin Water Company, Seymour Water Company and West Virginia Water Company:
- (a) the benefit accrued under section (4)(a)(ii) based on Earnings and Years of Service at the date of disability without reduction for early commencement.

(f) Preretirement Death Benefit:

(i) Eligibility: Monthly benefits under (ii) depend on the status of the participant as follows:

- (a) All active and former employees eligible for early retirement as of the date of death, provided the employee is married or has designated a contingent annuitant.
- (b) All employees not eligible for early retirement with at least 10 Years of Service on the date of death, provided the employee is married or has designated a contingent annuitant.
- (c) All active employees not eligible for early retirement with at least five Years of Service but less than 10 on the date of death and all former employees who had completed at least five Years of Service but were not eligible for Early Retirement at termination and have not begun to receive retirement benefits, provided the employee is married or has designated a contingent annuitant.

(ii) Monthly benefit:

- (a) The benefit that would have been payable to the employee if the participant had retired early on the date of death and elected to receive a 100% contingent annuity (50% for Elizabethtown Water union employees).
- (b) An immediate benefit, based on the amount that would have been payable to the employee had the employee retired on the date of death and elected to receive a 100% contingent annuity. Such benefit will be based upon the Early Retirement Factor for the employee's age at death (or, if greater, age 55) and the number of Years of Service at death. Such benefit will also be based upon the 100% Contingent Annuity Factor for the employee's age at death (or, if greater, age 55) with a spouse's age that bears the same relation as to that at death. (This benefit is not applicable for Elizabethtown Water union employees.)
- (c) A benefit, equal to 50% of the amount that would have been payable to the participant had he survived to age 55 (if death is before age 55) and elected a 50% contingent annuity. Such benefit will be based upon the Early Retirement Factor and the 50% Contingent Annuity Factor for an employee age 55 (if death is before age 55), the number of Years of Service completed at death or termination, and the spouse's then attained age. Benefit is payable immediately or at the employee's age 55, if later.

(iii) Duration of benefit: Monthly benefits are payable during the lifetime of the survivor.

(g) Special Prior Plan Preretirement Death Benefits:

- (i) California-American Water Works: All former employees not eligible for early retirement on the date of death will receive the amount of their accumulated contributions with interest.
- (ii) West Virginia Water Works: All former employees not eligible for early retirement on the date of death will have the accrued frozen benefit without reduction payable for 10 years.

5. Form of Retirement and Disability Benefits:

(a) Normal Form:

- (i) Married participants: 50% contingent annuity (with two-year “pop-up”), with monthly payment equal to the actuarial equivalent of the basic benefit.
- (ii) Single participants: Life annuity, with monthly payment equal to the basic benefit.
- (iii) For former employees of Pekin Water Company, Seymour Water Company and West Virginia Water Company, 10 years certain and continuous annuities are payable with regard to amounts due from prior plan.

- (b) Optional Forms: Life annuity; 100%, 66 2/3% or 50% contingent annuity (with two-year “pop-up”); 5-year, 10-year, or 15 year certain and continuous annuity; and a lump sum*.

6. Maximum Benefits: Maximum benefits payable conform to those set forth in the Employee Retirement Income Security Act of 1974 and the Tax Reform Act of 1986.

- * Effective January 1, 2006 for union employees hired on or after January 1, 2001. In addition, all Elizabethtown Water participants are eligible for a lump sum if the actuarially equivalent present value of the retirement benefit does not exceed \$15,000.

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Changes in Plan Provisions Since Prior Year

There were no changes in benefits valued since the prior year other than to reflect increases in the statutory limits on pay and benefits, including the elimination of the sunset provision for the IRS pay and benefit limits under the Pension Protection Act.

Future Plan Changes

The Long Island union plan change, extending the final average pay formula to December 31, 2011, was reflected for FAS 87 but not for ERISA or FAS 35.

Glossary of Selected Terms

Actuarial Accrued Liability — The cost allocated to years prior to the valuation date under the plan's funding method (contribution basis).

Accumulated Benefit Obligation (ABO) — The present value of benefits earned by participants prior to the measurement date. The benefits are based on compensation earned prior to the valuation date (pension cost basis).

Accrued/Prepaid Pension Cost — Cumulative employer contributions less than/in excess of pension cost (pension cost basis).

Actuarial Asset Value — A smoothed value of assets, used in calculating the plan's contributions (contribution basis).

Current Liability Rate — The interest rate used to calculate the current liability. The rate is determined by the IRS (contribution basis).

Current Liability — The value of accrued benefits calculated using the current liability rate (contribution basis).

Discount Rate — The interest rate used to adjust liabilities and obligations for the time value of money. It is used in calculating the service cost and benefit obligations (pension cost basis).

Expected Rate of Return — The assumption as to the rate of return on plan assets reflecting the average long-term rate of earnings expected on the funds invested (pension cost basis).

Full Funding Limitation — A plan contribution is not required, nor is it deductible, if either:

- (i) the plan's expected assets exceed the plan's expected actuarial accrued liability at the end of the year, or
- (ii) the plan's expected assets exceed 90% of the expected current liability at the end of the year.

Funded Status — A comparison of the plan's assets and liabilities at a particular point in time.

Gain or Loss — A change in the value of the projected benefit obligation, actuarial accrued liability or plan assets resulting from experience different from that assumed. On the pension cost basis, a change in these values arising from a change in actuarial assumptions is also considered a gain or loss.

Market Value of Assets — The value of assets reported by the trustee, adjusted for plan receivables and payables.

Market-Related Value of Assets — At the option of the plan sponsor, a smoothed value of assets may be used in calculating the expected return on plan assets component of pension cost.

Maximum Deductible Contribution — The largest amount the plan sponsor may contribute to the plan and deduct for tax purposes without incurring a penalty.

Measurement Date — The date as of which assets and obligations are measured in determining pension cost.

Minimum Required Contribution — The smallest amount the plan sponsor may contribute to the plan without incurring a penalty.

Normal Cost — The cost allocated to the current year by the plan's funding method (contribution basis).

Pension Cost — The annual accounting cost recognized in the plan sponsor's financial statements as the cost of the pension plan. The pension cost is determined in accordance with Financial Accounting Standard No. 87.

Projected Benefit Obligation (PBO) — The present value of benefits earned by participants prior to the measurement date. The benefits are based on the employee's projected compensation (pension cost basis).

Service Cost — The present value of benefits earned by employees during the year covered by this valuation. The benefits are based on the employee's projected compensation (pension cost basis).

Valuation Date — The date as of which assets and liabilities are measured.

10% Corridor — Gains or losses that, in the aggregate, are less than 10% of the greater of the projected benefit obligation or the plan's market-related value of assets may be excluded from the determination of pension cost.