Exhibit No.:
Witness: Michael Gorman
Type of Exhibit: Direct Testimony
Issue: Revenue Requirement
Sponsoring Parties: Missouri Industrial Energy Consumers
Case No.: WR-2008-0311

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of Missouri-American Water Company's Request for Authority to Implement a General Rate Increase for Water and Sewer Service Provided in Missouri Service Areas	)))))	**Case No. WR-2008-0311**

Direct Testimony and Schedules of

Michael Gorman
on Revenue Requirement Issues

On Behalf of

Missouri Industrial Energy Consumers

BRUBAKER & ASSOCIATES, INC.
ST. LOUIS, MO 63141-2000

August 18, 2008
Project 8980

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of Missouri-American Water Company's Request for Authority to Implement a General Rate Increase for Water and Sewer Service Provided in Missouri Service Areas	)))))	**Case No. WR-2008-0311**

STATE OF MISSOURI)
) SS
COUNTY OF ST. LOUIS)

Affidavit of Michael Gorman

Michael Gorman, being first duly sworn, on his oath states:

1. My name is Michael Gorman. I am a consultant with Brubaker & Associates, Inc., having its principal place of business at 1215 Fern Ridge Parkway, Suite 208, St. Louis, Missouri 63141. We have been retained by the Missouri Industrial Energy Consumers in this proceeding on their behalf.

2. Attached hereto and made a part hereof for all purposes are my direct testimony and schedules on revenue requirement issues, which were prepared in written form for introduction into evidence in Missouri Public Service Commission Case No. WR-2008-0311.

3. I hereby swear and affirm that the testimony and schedules are true and correct and that they show the matters and things they purport to show.

Michael Gorman

Subscribed and sworn to before me this 18th day of August, 2008.

MARIA E. DECKER
Notary Public, State of Missouri
St. Louis City
Commission # 05706793
My Commission Expires May 05, 2009

Notary Public

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of Missouri-American Water Company's Request for Authority to Implement a General Rate Increase for Water and Sewer Service Provided in Missouri Service Areas	)))))	**Case No. WR-2008-0311**

Direct Testimony of Michael Gorman

Q PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A My name is Michael Gorman and my business address is 1215 Fern Ridge Parkway, Suite 208, St. Louis, MO 63141.

Q WHAT IS YOUR OCCUPATION?

A I am an energy advisor and a consultant in the field of public utility regulation, and a managing principal with the firm of Brubaker & Associates, Inc. (BAI).

Q PLEASE SUMMARIZE YOUR EDUCATIONAL BACKGROUND AND EXPERIENCE.

A These are set forth in Appendix A to my testimony.

Q ON WHOSE BEHALF ARE YOU APPEARING IN THIS PROCEEDING?

A I am appearing on behalf of the Missouri Industrial Energy Consumers (MIEC). Member companies purchase substantial amounts of water from Missouri-American Water Company (Missouri-American or Company).

Q WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?

A I am proposing certain adjustments to the Company's claimed revenue deficiency. I make the following recommendations for the St. Louis Metro District:

1. The Company has overstated the annual amount of chemical expense.

2. The Company's cost of service includes an excessive lost and unaccounted for water ("lost water") factor. This excessive lost water adjustment results in an inflated and unreasonable chemical expense, and fuel and power expense.

3. The Company's projected revenue at current rates is understated by $3.810 million. The Company understated revenues at current rates because it significantly understated expected average use for residential customers relative to actual usage in recent periods.

Q PLEASE DESCRIBE WHAT YOU MEAN BY THE TERM "ST. LOUIS METRO DISTRICT."

A The Company in this case is proposing to merge the St. Charles and Warren County Water Operating Districts into the St. Louis District. I will, for purposes in this testimony, refer to the new merged district as the "St. Louis Metro District."

Q PLEASE SUMMARIZE THE PROPOSED REVENUE REQUIREMENT ADJUSTMENT TO MISSOURI-AMERICAN'S CLAIMED REVENUE DEFICIENCY.

A As shown in Table 1, Missouri-American claimed a revenue deficiency of $37.815 million for the St. Louis Metro District. After adjusting only for the issues which MIEC contends should be adopted by the Commission, the resulting revenue deficiency would be at most $24.074 million. In addition, Staff and other parties may recommend additional adjustments, which would further reduce the claimed deficiency.

Table 1

Revenue Deficiency Summary

Description	Amount (000s)
Claimed Revenue Deficiency	$37,815
Adjustments:	
Rate of Return	$4,647
Chemical Expense	$369
Fuel and Power Expense	$321
Lost Water @ 15%	$769
Revenue Sales	$3,810
Tank Painting	$379
Operating District Subsidy	$2,029
Hydrant Maintenance	$1,417
Total Adjustments	$13,741
Adjusted Revenue Deficiency	$24,074

Q WILL MIEC SPONSOR OTHER WITNESSES IN THIS PROCEEDING?

A Yes. In addition to myself, MIEC will be presenting the testimony of Brian Janous and Brian Collins. Mr. Janous will sponsor MIEC's testimony on Missouri-American's rate of return. Mr. Collins will sponsor MIEC's adjustments to tank painting, operating district subsidy and hydrant maintenance issues.

Chemical Expense and Fuel and Power Expense Annualization

Q PLEASE DESCRIBE THE CHEMICAL EXPENSE AND FUEL AND POWER EXPENSE ANNUALIZATION ADJUSTMENT YOU ARE SPONSORING.

A The Company overstated the chemical expense and fuel and power expense estimate for the combination of the St. Louis and St. Charles Districts. The Company estimated chemical expense as follows. First, using the actual system delivery for the

St. Louis Operating District excluding St. Charles, it calculated a chemical expense per 1,000 gallons (k gallons) of delivery volume. Next, it estimated the combined delivery volume of St. Louis and St. Charles. Finally, the Company multiplied the chemical expense per k gallons to this increased delivery volume. This produced the revised chemical expense. The Company utilized the same methodology for fuel and power expense.

Q WHY IS THIS AN ERROR?

A The St. Charles Operating District currently receives all of its water supply from the St. Louis Operating District.[1] As such, all the chemical expense incurred in St. Louis already included the production of water chemical cost incurred to serve both the St. Louis and St. Charles Districts, i.e., before the two districts were combined. For example, on Schedule CAS-15 at page 7, the Company shows total chemical expense incurred across all districts. Importantly, St. Charles does not incur any chemical expense because it does not produce any water. As a result, there is no need to increase the chemical expense allocated to the St. Louis District, to reflect the combination of St. Louis and St. Charles Districts, because St. Louis chemical expense already reflects all the production cost of water delivered to both the St. Louis and St. Charles Districts.

The Company recorded minimal costs for fuel and power expense in the St. Charles District. I summed the per book amount in the St. Charles District with the amount recorded in the St. Louis District to calculate the cost per k gallons of water. The approach used for fuel and power expense was the same as explained above for chemicals.

[1] Grubb Direct at 26.

Q HOW DID YOU DERIVE AN ADJUSTMENT TO THE COMPANY'S CHEMICAL EXPENSE TO REFLECT AN ADJUSTMENT TO THE AMOUNT OF CHEMICAL EXPENSE NEEDED FOR THE METRO ST. LOUIS DISTRICT?

A This is shown on my attached Schedule MPG-1. As shown on this schedule, the Company's proposal to increase the chemical expense to reflect St. Charles delivery system water is unjust and unreasonable. Removing this erroneous adjustment to chemical expense and fuel and power expense to combine the St. Louis and St. Charles Districts, reduces the chemical expense and fuel and power expense for this district by $369,000 and $321,000, respectively.

Unaccounted For Water

Q WHAT AMOUNT OF UNACCOUNTED FOR WATER IS INCLUDED IN MISSOURI-AMERICAN'S COST OF SERVICE FOR THE ST. LOUIS DISTRICT?

A The Company recorded a 20.26% lost and unaccounted water ("lost water") factor for the 12 months ending December 31, 2007 for the St. Louis District. I believe this lost water factor is excessive. I propose that Missouri-American's cost of service be reduced to reflect a more reasonable lost water factor of 15%.

Q HOW DOES MODIFYING MISSOURI-AMERICAN'S LOST WATER FACTOR CHANGE ITS COST OF SERVICE IN THIS PROCEEDING?

A The lost water factor estimates the amount of water produced relative to the amount of water sales. In effect, a reduced lost water factor means Missouri-American can produce less water in order to meet the demands of its customers. By reducing the volume of water production needed to meet sales volumes, Missouri-American will incur lower chemical expense, and fuel and power expense.

Q WHY DO YOU BELIEVE A LOST WATER FACTOR OF 20.26% IS EXCESSIVE AND THAT A LOST WATER FACTOR OF 15% IS REASONABLE?

A The American Water Works Association (AWWA) published "Survey of State Agency Water Loss Reporting Practices."[2] This document included the results of an industry survey of various standards for unaccounted for water for companies in its membership. The survey found that an unaccounted water factor of 10% to 15% is common.

Furthermore, in a document entitled "Benchmarking Performance Indicators, Distribution System Water Loss," published by the AWWA, the industry group concluded that (median range in the 25th to 75th percentile of companies reported) typically utility distribution system water losses are 15% or less. This sample included utility companies in the West, South, Midwest and Northeast regions.

Based on this information, I believe a 15% lost water factor reasonably reflects a conservative high-end estimate of the lost water factor used to develop Missouri-American's water rates in this proceeding. Again, this lost water factor puts Missouri-American at the high-end of the median estimate for distribution water losses as reported by the AWWA and therefore reflects a reasonably maintained and efficient water distribution system.

Q WHAT HAS BEEN THE LOST WATER FACTOR IN THE ST. LOUIS DISTRICT HISTORICALLY?

A Table 2 lists the lost water factor for the St. Louis District since 1998. As can be seen from the table, water losses have been a problem in this district for many years.

[2] AWWA: Benchmarking Performance Indicators for Water and Waste Water Utilities: Survey Data and Analysis Report, 2005.

Table 2

Water Losses for St. Louis District

Year	District	System Delivery (CCF)	Water Sales (CCF)	Water Loss
1998	St. Louis County	55,530,600	47,489,517	14.48%
1999	St. Louis County	61,027,580	50,950,626	16.51%
2000	St. Louis County	57,810,702	49,207,889	14.88%
2001	St. Louis County	59,340,883	50,348,833	15.15%
2002	St. Louis County	60,682,400	49,614,556	18.24%
2003	St. Louis County	56,398,105	43,396,410	23.05%
2004	St. Louis County	59,115,493	47,714,651	19.29%
2005	St. Louis County	63,884,210	51,803,216	18.91%
2006	St. Louis County	65,459,319	54,674,339	16.48%
2007	St. Louis County	65,049,627	51,873,333	20.26%

As shown in the table above, the St. Louis District has had lost water factors of more than 15% over the last five years. However, the St. Louis District is subject to an infrastructure replacement surcharge, which is systematically replacing mains throughout the system. These main replacements are at significant cost to the St. Louis District's customers. These main replacements should reduce lost water cost by repairing or replacing older leaking mains.

Since St. Louis customers are incurring significant main replacement cost in this district, they should receive the benefit associated with replacing old mains with new, more efficient, mains. Adjusting the expected lost water factor captures, in part, the benefit of main replacement.

Q HOW DID YOU ESTIMATE THE REVENUE IMPACT OF REDUCING THE LOST WATER FACTOR TO 15% FROM THE COMPANY'S PROPOSED 20.26%?

A This is developed on my Schedule MPG-2. As shown on this schedule, based on the Company's pro forma adjustment, I estimated an adjusted water production volume in

the Company's test year cost of service. I then estimated the amount of chemical expense, and fuel and power expense, associated with this lower amount of production volume needed to meet retail customer sale volumes. The amount of chemical expense, and fuel and power expense, on a volumetric basis was estimated from the Company's workpapers.

As shown on my Schedule MPG-2, this adjustment lowers the Company's claimed revenue deficiency by another $769,000.

Residential Revenue

Q PLEASE DESCRIBE THE ADJUSTMENTS YOU ARE PROPOSING FOR RESIDENTIAL GROWTH FOR QUARTERLY BILLED CUSTOMERS.

A Missouri-American understated the number of residential customers in its filing. Missouri-American projected to have 315,550 residential customers on September 30, 2008. I conclude that a more reasonable projection of residential customers is 316,500.

Q WHY IS UNDERSTATING THE NUMBER OF RESIDENTIAL CUSTOMERS IMPORTANT IN DETERMINING MISSOURI-AMERICAN'S REVENUE DEFICIENCY FOR THE ST. LOUIS METRO DISTRICT?

A Identifying the number of residential customers is necessary in order to properly estimate the amount of revenue at current rates. Because Missouri-American understated the number of residential customers in this district, it has understated the revenue at current rates and overstated its claimed revenue deficiency.

Q WHY DO YOU CONCLUDE MISSOURI-AMERICAN UNDERSTATED RESIDENTIAL CUSTOMERS?

A The Company cost of service is based on 315,550 of St. Louis District customers on December 31, 2007. However, the Company is estimating that it will add 100 customers per month while the rates from this proceeding are in effect. Hence, the number of customers that will be on the Company system at September 30, 2008, the rate effective period where the Company is making cost adjustments, will result in 316,500 customers being on the Company system. It is necessary and reasonable to adjust the revenue for the same time period the Company is proposing cost adjustments. Therefore, I have adjusted the Company's calendar year 2007 number of customers, to advance it to September 30, 2008 to coincide with its proposed adjustments to its operating costs.

Q WHAT IS THE REVENUE IMPACT FROM MORE CUSTOMERS?

A This level of customers will increase Missouri-American revenues at current rates by $238,614 and chemical expense, and fuel and power expense by $10,292 and $9,969, respectively. These increased sales would result in a further net reduction to Missouri-American's claimed revenue deficiency of $218,297, as shown on Schedule MPG-3.

Sales Revenue at Current Rates

Q DID MISSOURI-AMERICAN ACCURATELY ESTIMATE SALES REVENUES AT CURRENT RATES?

A No. Missouri-American underestimated revenues at current rates by overestimating reduced sales per customer. More reasonable sales projections per customer

increased Missouri-American revenues at current rates by $4,001,468. This sales level will also increase chemical expense, and fuel and power expense by $207,397 and $200,885, respectively. These increased sales would result in a further net reduction to Missouri-American's claimed St. Louis Metro District revenue deficiency of $3,592,047 as shown on Schedule MPG-4.

Q HOW DO YOU BELIEVE MISSOURI-AMERICAN UNDERSTATED SALES AND REVENUE AT CURRENT RATES?

A Missouri-American witness Mr. Edward Spitznagel, Jr. estimated pro forma sales and reflected expected conservation of water for the residential group class of the St. Louis District. Mr. Spitznagel's sales projection was based on an estimate of the average daily usage of water for residential customers. The daily water usage estimate used by Mr. Spitznagel for the residential group class was unreasonably low.

Q WHY DO YOU BELIEVE MR. SPITZNAGEL'S DAILY USAGE ESTIMATE UNDERSTATES MISSOURI-AMERICAN'S ACTUAL RECENT HISTORICAL SALES LEVEL?

A This conclusion is clearly evident when an analysis is performed of the historical usage of the St. Louis residential group. Mr. Spitznagel is proposing a usage level of 248 gallons per day for this customer group. The historical usage of this residential group would not support such a level.

An analysis of the historical usage levels for these customers continues to suggest that 263 gallons is the more accurate estimate. As shown in Table 3 below, utilizing multiple year averages from 2 years through 10 years clearly demonstrates that 263 gallons per day is a reasonable estimate.

Table 3
Historical Yearly Average Losses

Years	Yearly Average
2	263.8
3	267.0
4	263.2
5	259.2
6	261.2
7	264.1
8	265.4
9	267.9
10	267.8

Source:
Missouri-American Water Company St. Louis Operating (Quarterly Accounts) History of Water Sales (Thousand Gallons).

Q DOES THIS CONCLUDE YOUR DIRECT TESTIMONY ON REVENUE REQUIREMENT ISSUES?

A Yes, it does.

Appendix A

Qualifications of Michael Gorman

Q PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A Michael P. Gorman. My business mailing address is P. O. Box 412000, 1215 Fern Ridge Parkway, Suite 208, St. Louis, Missouri 63141-2000.

Q PLEASE STATE YOUR OCCUPATION.

A I am a consultant in the field of public utility regulation and a managing principal with Brubaker & Associates, Inc., energy, economic and regulatory consultants.

Q PLEASE SUMMARIZE YOUR EDUCATIONAL BACKGROUND AND WORK EXPERIENCE.

A In 1983 I received a Bachelors of Science Degree in Electrical Engineering from Southern Illinois University, and in 1986, I received a Masters Degree in Business Administration with a concentration in Finance from the University of Illinois at Springfield. I have also completed several graduate level economics courses.

In August of 1983, I accepted an analyst position with the Illinois Commerce Commission (ICC). In this position, I performed a variety of analyses for both formal and informal investigations before the ICC, including: marginal cost of energy, central dispatch, avoided cost of energy, annual system production costs, and working capital. In October of 1986, I was promoted to the position of Senior Analyst. In this position, I assumed the additional responsibilities of technical leader on projects, and my areas of responsibility were expanded to include utility financial modeling and financial analyses.

In 1987, I was promoted to Director of the Financial Analysis Department. In this position, I was responsible for all financial analyses conducted by the staff. Among other things, I conducted analyses and sponsored testimony before the ICC on rate of return, financial integrity, financial modeling and related issues. I also supervised the development of all Staff analyses and testimony on these same issues. In addition, I supervised the Staff's review and recommendations to the Commission concerning utility plans to issue debt and equity securities.

In August of 1989, I accepted a position with Merrill-Lynch as a financial consultant. After receiving all required securities licenses, I worked with individual investors and small businesses in evaluating and selecting investments suitable to their requirements.

In September of 1990, I accepted a position with Drazen-Brubaker & Associates, Inc. In April 1995 the firm of Brubaker & Associates, Inc. (BAI) was formed. It includes most of the former DBA principals and Staff. Since 1990, I have performed various analyses and sponsored testimony on cost of capital, cost/benefits of utility mergers and acquisitions, utility reorganizations, level of operating expenses and rate base, cost of service studies, and analyses relating industrial jobs and economic development. I also participated in a study used to revise the financial policy for the municipal utility in Kansas City, Kansas.

At BAI, I also have extensive experience working with large energy users to distribute and critically evaluate responses to requests for proposals (RFPs) for electric, steam, and gas energy supply from competitive energy suppliers. These analyses include the evaluation of gas supply and delivery charges, cogeneration and/or combined cycle unit feasibility studies, and the evaluation of third-party asset/supply management agreements. I have also analyzed commodity pricing

indices and forward pricing methods for third party supply agreements, and have also conducted regional electric market price forecasts.

In addition to our main office in St. Louis, the firm also has branch offices in Phoenix, Arizona and Corpus Christi, Texas.

Q HAVE YOU EVER TESTIFIED BEFORE A REGULATORY BODY?

A Yes. I have sponsored testimony on cost of capital, revenue requirements, cost of service and other issues before the Federal Energy Regulatory Commission and numerous state regulatory commissions including: Arkansas, Arizona, California, Colorado, Delaware, Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Louisiana, Michigan, Missouri, Montana, New Jersey, New Mexico, New York, North Carolina, Oklahoma, Oregon, South Carolina, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, Wyoming, and before the provincial regulatory boards in Alberta and Nova Scotia, Canada. I have also sponsored testimony before the Board of Public Utilities in Kansas City, Kansas; presented rate setting position reports to the regulatory board of the municipal utility in Austin, Texas, and Salt River Project, Arizona, on behalf of industrial customers; and negotiated rate disputes for industrial customers of the Municipal Electric Authority of Georgia in the LaGrange, Georgia district.

Q PLEASE DESCRIBE ANY PROFESSIONAL REGISTRATIONS OR ORGANIZATIONS TO WHICH YOU BELONG.

A I earned the designation of Chartered Financial Analyst (CFA) from the CFA Institute. The CFA charter was awarded after successfully completing three examinations which covered the subject areas of financial accounting, economics, fixed income and

equity valuation and professional and ethical conduct. I am a member of the CFA Institute's Financial Analyst Society.

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Missouri-American Water Company

Chemical Expense Annualization

Line	Description	Company Proposal (1)	MIEC Correction (2)	Reference (3)
1	Actual System Delivery 2007	65,049,627	68,646,221	Page 3
	Repriced Chemical Expense[1]			
2	St. Louis	$ 6,983,323	$ 6,983,323	
3	St. Charles	-	-	
4	Total	$ 6,983,323	$ 6,983,323	
5	Cost per 1000 Gallons Water	$ 0.10735	$ 0.10173	Line 4 / Line 1
6	Proforma System Delivery	65,620,902	65,620,942	Page 3
7	Proforma Chemical Expense	$ 7,044,652	$ 6,675,564	Line 5 * Line 6
8	Adjustment for Including St Charles Test Year System Delivery		$ (369,088)	Line 7 (2) - (1)

[1] Missouri-American Proforma Adjustment for Chemicals Workpaper.

Missouri-American Water Company

Fuel & Power Expense Annualization

Line	Description	Company Proposed (1)	MIEC Correction (2)	Reference (3)
1	Actual System Delivery	65,049,627	68,646,221	Page 3
	Pro Forma Fuel & Power Cost[1]			
2	St. Louis	$ 6,764,048	$ 6,764,048	
3	St. Charles	-	38,321	
4	Total	$ 6,764,048	$ 6,802,369	
5	Fuel & Power Expense per K gallon	$ 0.10398	$ 0.09909	Line 4 / Line 1
6	Pro Forma System Delivery	65,620,902	65,620,902	Page 3
7	Pro Forma Expense	$ 6,823,451	$ 6,502,581	Line 5 * Line 6
8	Adjustment		$ (320,870)	Line 7 (2) - (1)

[1] Missouri-American Water Company Fuel_Power Workpaper 1.

Missouri-American Water Company

Chemical Expense and Fuel & Power Expense Annualization

Line	Company Proposal	St. Charles	St. Louis	Combined
1	Pro Forma Sales (K gallons)	3,328,438	49,896,362	
2	Water Loss Ratio	94.84%	79.74%	
3	Pro Forma System Delivery (K gallons)	3,509,567	62,570,522	66,080,088
4	Purchased from City of St. Louis		(459,147)	
5	Revised Proforma System Delivery	3,509,567	62,111,375	65,620,942
6	Actual System Delivery 2007	3,596,594	65,049,627	68,646,221

Source: Missouri-American Water Company Pro-Forma System Delivery Workpaper

Missouri-American Water Company

St Louis District
Lost Water Expense

Chemicals

Line	Description		Amount (1)	Reference (2)
1	Normalized Chemical Expense Corrected	$	6,675,564	Chemicals Expense Annualization
2	BAI Normalized Chemical Expense Reflecting 15% Unaccounted for Water	$	6,285,995	Chemicals Expense
3	Adjustment to Company Proposed Expenses	$	389,568	Line 1 - Line 2

Fuel and Power

Line	Description		Amount (1)	Reference (2)
4	Normalized Fuel & Power Expense Corrected	$	6,502,581	Fuel & Power Expense Annualization
5	BAI Normalized Test Year With 15% Losses	$	6,122,917	
6	Adjustment to Company Proposed Expenses	$	379,664	Line 4 - Line 5
7	Total Loss Water Expense Reduction	$	769,232	Line 3 + Line 6

Missouri-American Water Company

Chemicals - 15% Lost Water

Line	Description		Amount	Reference
1	Company System Delivery (K gallons)	$	65,620,942	Page 4
2	BAI Adjusted System Delivery 15% Lost Water (K gallons)	$	61,791,476	Page 4
3	Difference	$	3,829,465	Line 1 - Line 2
4	Chemicals Expense per K gallon	$	0.10173	Chemicals Expense Annualization
5	Adjustment	$	389,568	Line 3 * Line 4

Missouri-American Water Company

Fuel & Power - 15% Lost Water

Line	Description	Amount	Reference
1	Company System Delivery (K gallons)	$ 65,620,942	Page 4
2	BAI Adjusted System Delivery 15% Lost Water (K gallons)	$ 61,791,476	Page 4
3	Difference	$ 3,829,465	Line 1 - Line 2
4	Fuel & Power Expense per K gallon	$ 0.09909	Fuel & Power Expense Annualization
5	Adjustment	$ 379,474	Line 3 * Line 4

Missouri-American Water Company

Pro Forma System Delivery

Line	Company Proposal	St. Charles	St. Louis	Combined
1	Pro Forma Sales	3,328,438	49,896,362	
2	Water Loss Ratio	94.84%	79.74%	
3	Pro Forma System Delivery	3,509,567	62,570,522	66,080,088
4	Purchased from City of St. Louis		(459,147)	
5	Revised Proforma System Delivery	3,509,567	62,111,375	65,620,942
6	Actual System Delivery 2007	3,596,594	65,049,627	68,646,221

MIEC Proposal
With 15% Water Loss Ratio- St. Louis

Line	Company Proposal	St. Charles	St. Louis	Combined
7	Pro Forma Sales	3,328,438	49,929,898	
8	Water Loss Ratio	94.84%	85.00%	
9	Pro Forma System Delivery	3,509,567	58,741,056	62,250,623
10	Purchased from City of St. Louis		(459,147)	
11	Revised Proforma System Delivery	3,509,567	58,281,909	61,791,476

* Pro Forma Sales reflects the omission of quarterly sales volumes from Rate F of 44,715 CCF's

Missouri-American Water Company

Customer Growth Annualization

Line	Description	Amount	Reference
1	Additional Revenues Reflecting Residential Customers @ 316,500	$ 238,614	Missouri-American Customer Annualization Weather Normalization WP
	Less:		
2	Additional Chemicals Expense	$ 10,292	Chemicals - Customer Growth
3	Additional Fuel & Power Expense	$ 10,025	Fuel & Power - Customer Growth
5	Net Increase in Revenues at Current Rates	$ 218,297	Line 1 - Lines 2 & 3

Missouri-American Water Company

Chemicals Expense - Customer Growth

Line	Description		Amount	Reference
1	Additional CCF's of Sales		114,659	Missouri-American Customer Annualization Weather Normalization WP
2	Equivalent K gallons		85,994	Line 1 * 0.750
3	Loss Water Factor Up		85%	
4	Additional Sales with 15% Losses (K gallons)		101,170	Line 2 / Line 3
5	Chemicals Cost per K gallon	$	0.10173	Chemical Expense Annualization
6	Additional Chemical Expense	$	10,292	Line 4 * Line 5

Missouri-American Water Company

Fuel & Power Expense - Customer Growth

Line	Description		Amount	Reference
1	Additional CCF's of Sales		114,659	Missouri-American Customer Annualization Weather Normalization WP
2	Equivalent K gallons		85,994	Line 1 * 0.750
3	Loss Water Factor Up		85%	
4	Additional Sales with 15% Losses (K gallons)		101,170	Line 2 / Line 3
5	Fuel & Power Cost per K gallon	$	0.09909	Fuel & Power Expense Annualization
6	Additional Fuel & Power Expense	$	10,025	Line 4 * Line 5

Missouri-American Water Company

Residential Daily Usage

Line	Description	Amount (1)	Reference (2)
1	BAI Adjustment for Conservation	$4,001,468	Missouri-American Customer Annualization Weather Normalization WP
Less:			
2	Additional Chemicals	$207,397	Chemicals Conservation
3	Additional Fuel & Power	$202,023	Fuel & Power Conservation
4	**Revenue Reduction**	$3,592,047	Line 1 - Lines 2 & 3

Missouri-American Water Company

Residential Daily Usage
Chemicals - Conservation

Line	Description		Amount	Reference
1	Additional CCF's of Sales		2,310,550	Missouri-American Customer Annualization Weather Normalization WP
2	Equivalent K gallons		1,732,913	Line 1 * 0.750
3	Loss Water Factor Up		85%	
4	Additional Sales with 15% Losses (K gallons)		2,038,721	Line 2 / Line 3
5	Chemicals Cost per K gallon	$	0.10173	Chemical Expense Annualization
6	Additional Chemicals Expense	$	207,397	Line 4 * Line 5