

**MISSOURI PUBLIC SERVICE COMMISSION**

**FILED<sup>2</sup>**

NOV 09 2009

Missouri Public  
Service Commission

**STAFF REPORT**

**COST OF SERVICE**

**APPENDICES**

**MISSOURI GAS ENERGY**

**A division of Southern Union Company**

**CASE NO. GR-2009-0355**

*Jefferson City, Missouri  
August 2009*

*Staff* Exhibit No. *41*  
Case No(s). *GR-2009-0355*  
Date *10-26-09* Rptr *KE*

**MISSOURI PUBLIC SERVICE COMMISSION**

**STAFF REPORT  
COST OF SERVICE**

**APPENDIX 1  
Staff Credentials**

**MISSOURI GAS ENERGY**  
**A division of Southern Union Company**

**CASE NO. GR-2009-0355**

# **APPENDIX 1**

## **STAFF CREDENTIALS**

<b>Ensrud, Michael J. ....</b>	<b>1</b>
<b>Foster, Keith D. ....</b>	<b>3</b>
<b>Herrington, Karen ....</b>	<b>5</b>
<b>Lakhanpal, Manisha ....</b>	<b>6</b>
<b>McMellen, Amanda C. ....</b>	<b>7</b>
<b>Murray, David ....</b>	<b>10</b>
<b>Oligschlaeger, Mark L. ....</b>	<b>15</b>
<b>Prenger, Bret G. ....</b>	<b>18</b>
<b>Ross, Anne E. ....</b>	<b>19</b>
<b>Schad. Rosella L., PE, CPA ....</b>	<b>21</b>
<b>Warren, Henry E., Ph.D ....</b>	<b>25</b>

## **MICHAEL J. ENSRUD**

My educational and professional experience is as follows:

I have a Bachelor of Science from Drake University. I attended the NARUC Annual Regulatory Studies Program at Michigan State University. In the regulatory field, I've worked for CompTel Missouri, and CommuniGroup, Inc., Teleconnect, TeleCom\* USA, and General Telephone Company of the Midwest in the private sector. In addition, I have four-years of experience with the Iowa Public Utility Board – Iowa's equivalent to the Missouri Commission.

I have filed written testimony and have testified in several cases before Missouri Public Service Commission. Schedule 1 lists the cases where I have filed testimony (or otherwise materially participated) as a Staff witness before this Commission. (There are numerous cases going back to the mid-1980s where I filed testimony on behalf of Teleconnect (TeleCom\*USA), CompTel of Missouri & CommuniGroup, Inc. - various private entities or trade associations - that are not listed). I have also testified in other jurisdictions.

**MICHAEL J. ENSRUD**

**Schedule 1**

Cases that I have testified (or otherwise materially participated) in as a Staff witness:

**Atmos Energy Corporation - GR-2006-0387 - Miscellaneous Rate Issues & Seasonal Reconnection Charge.**

**Missouri Gas Energy (a Division of Southern Union Company) - GR-2006-0422 - Miscellaneous Rate Issues & Seasonal Reconnection Charge.**

**AmerenUE (Union Electric Company) - GR- 2007-0003 - Miscellaneous Rate Issues & Seasonal Reconnection Charge.**

**Laclede Gas Company - GR-2005-0284 - Miscellaneous Rate Issues & Credit Scoring / GR - 2007-0208 - Miscellaneous Rate Issues & Credit Scoring & Rate Switching Customers**

**Southern Missouri Natural Gas Company (Southern Missouri Natural Gas Company) - GE-2005-0189 - Promotional Practices**

**Empire District Electric Company of Joplin - ER-2006-0315 - Street Lighting**

**Missouri Gas Utilities, Inc. (MGU) - GR-2008-0060 - Miscellaneous Rate Issues**

**Trigen Kansas City Energy Corporation - HR-2008-0300 - Miscellaneous Rate Issues**

**Union Electric Company d/b/a AmerenUE - ER-2008-0318 – Renewable Energy Certificates**

**Kansas City Power & Light – KCP&L Greater Missouri Operations Company (“GMO”) – HR-2009-0092 – Contract Adjustment & Imputation – AG Processing (AGP)**

## **Keith D. Foster**

### **Educational and Employment Background and Credentials**

I am currently employed as a Utility Regulatory Auditor II for the Missouri Public Service Commission (Commission). I was employed by the Commission in January 2008. After a 27-year career in the Information Systems (IS) industry, I returned to college and earned a Bachelor of Science degree in Business Administration, major in Accounting from Columbia College. I graduated summa cum laude in October 2007.

Most recently, I was employed by IBM as a Project Manager from March 1991 to December 1998 and as a Project Executive from January 1999 until April 2002. In my capacity as Project Executive, I managed the development and implementation of welfare reform and other system enhancements, ongoing operations and maintenance activities, warranty support, application help desk, and system turnover for the Missouri Automated Child Support System (MACSS), a statewide integrated financial and case management system. I managed all budget, revenue, and profit objectives; developed and maintained detailed spreadsheets to prepare project budgets and revenue projections, to track and manage project costs and revenue daily, and to reconcile with corporate accounting.

I am a member of the Institute of Internal Auditors (IIA) as well as the Project Management Institute (PMI) including the local chapters. I am currently a board member of the Mid-Missouri PMI chapter, serving as Vice-President of Financial Affairs. In addition, I am a PMI-certified Project Management Professional (PMP), a credential originally earned in January 2000.

As a Utility Regulatory Auditor, I perform rate audits and prepare miscellaneous filings as ordered by the Commission. In addition, I review all exhibits and testimony on assigned issues, develop accounting adjustments and issue positions which are supported

## **Keith D. Foster**

by workpapers and written testimony. For cases that do not require prepared testimony, I prepare Staff Recommendation Memorandums.

Other cases I have been assigned are listed below:

<b>Case/Tracking Number</b>	<b>Company Name - Issue</b>
GO-2009-0302	<b>Missouri Gas Energy - Infrastructure Service Replacement Surcharge (ISRS)</b>
WR-2008-0311	<b>Missouri-American Water Company - Advertising &amp; Promotional Items; Dues and Donations; Cash Working Capital; Plant in Service; Depreciation Expense; Depreciation Reserve; Franchise Tax; Property Taxes; Fuel &amp; Electricity Expense; Telephone Expense; Postage Expense; Purchased Water; Prepayments; Materials &amp; Supplies; Customer Advances; Contributions in Aid of Construction (CIAC)</b>
WR-2009-0098	<b>Raytown Water Company - Materials &amp; Supplies; Prepayments; Customer Deposits; Revenues; Insurance Expense; Utilities Expense; Directors Fees; Office Supplies Expense; Postage Expense; Laboratory Fees; Transportation Expenses; Rate Case Expense; Regulatory Commission Expense</b>
QW-2008-0010	<b>Tri-States Utility, Inc. - Property Taxes; Fuel &amp; Electricity Expense; Telephone Expense; Rent Expense; Plant in Service; Depreciation Schedule, Reserve, Rates, and Expense; Transportation Expense; Chemicals Expense; Waste Disposal; Insurance Expense; Contractual Services; Bad Debt Expense; Miscellaneous Expenses</b>

**Educational and Employment Background and Credentials**  
**of**  
**Karen K. Herrington**

I am currently employed as a Utility Regulatory Auditor III for the Missouri Public Service Commission (Commission). I was employed by the Commission in April 2007. Previously, I was employed by AT&T as a Regulatory Complaint Manager from December 1999 to February 2007. In that capacity I was responsible for addressing consumer and business complaints filed with various state and federal regulatory agencies. I earned a Bachelor of Science degree in Management Accounting and a Masters in Business Administration from Park University.

As a Utility Regulatory Auditor, III perform rate audits and prepare miscellaneous filings as ordered by the Commission. In addition, I review all exhibits and testimony on assigned issues, develop accounting adjustments and issue positions which are supported by workpapers and written testimony. For cases that do not require prepared testimony, I prepare Staff Recommendation Memorandums.

Cases I have been assigned are shown in the following table:

<b>Case/Tracking Number</b>	<b>Company Name - Issue</b>
QW-2008-0003	Spokane Highlands Water Company
GO-2008-0113	Missouri Gas Energy - Infrastructure Service Replacement Surcharge (ISRS).
ER-2008-0089	Kansas City Power and Light
ER-2008-0090 and HR-2008-0092	Kansas City Power and Light, Greater Missouri Operations



## **Manisha Lakhanpal**

### **Present Position:** Regulatory Economist III

I joined Missouri Public Service Commission in August 2007 as a Regulatory Economist II in the Economic Analysis Section of the Energy Department, Operations Division.

### **Educational Background:**

In December 2005, I graduated with a Masters of Science in Applied Economics, specializing in Electricity, Natural Gas and Telecommunication, from Illinois State University, Normal, Illinois. I have a Post Graduate Diploma in Business Management from Chetana's Institute of Management and Research, Mumbai, India and an undergraduate degree in Political Science and History from University of Delhi, New Delhi, India.

### **Work Experience:**

I first joined Missouri Public Service Commission as an intern in 2006 (May 2006 - August 2006). Prior to returning to PSC I was employed by the Indiana Utility Regulatory Commission, Indianapolis, as a Utility Analyst (September 2006- August 2007). During my time in Indiana I worked on a variety of cases and projects, including a major rate case, wholesale power cost trackers for municipal utilities, environmental cost recovery cases, a certificate of need for the first wind power project in Indiana as well as a related case involving the purchase of output from the facility, and annual report to the legislature on the state of the industry in Indiana.

In the summer of 2005 (May 2005-July 2005), I worked as an Intern at Commonwealth Edison (ComEd), Chicago, on projects related to deregulation of electric markets in Illinois.

In India I have worked as an Operations Executive for an insurance company (June 2001 - December 2003).

### **Case Proceeding Participation**

<b>Company</b>	<b>Case Number</b>	<b>Issue</b>
Missouri Gas Utility	GR-2008-0060	Weather normal variables for weather normalization
Empire District Electric Company	ER-2008-0093	Weather normal variables for weather normalization, Large Customer Analysis
Trigen-Kansas City Energy Corporation-(Steam/Heat)	HR-2008-0300	Weather normal variables and weather normalization factors
Ameren UE	ER-2008-0318	Weather normal variables for weather normalization, Revenue for Large Power Class
Kansas City Power & Light Company	ER-2009-0089	Weather normal variables for weather normalization, Retail Rate Revenue
KCP&L GMO Company	ER-2009-0090	Weather normal variables for weather normalization

**Amanda C. McMellen**  
**Utility Regulatory Auditor IV**

**EDUCATION**

Bachelors of Science  
DeVry Institute of Technology, Kansas City, MO-June 1998

**PROFESSIONAL EXPERIENCE**

Missouri Public Service Commission  
Utility Regulatory Auditor IV  
November 2006 – Present  
Utility Regulatory Auditor III  
June 2002 – November 2006  
Utility Regulatory Auditor II  
June 2000 – June 2002  
Utility Regulatory Auditor I  
June 1999 – June 2000

I am a Utility Regulatory Auditor for the Missouri Public Service Commission (Commission). I graduated from the DeVry Institute of Technology in June 1998 with a Bachelor of Science degree in Accounting. Before coming to work at the Commission, I worked as an accounts receivable clerk. I commenced employment with the Commission Staff in June 1999. As a Utility Regulatory Auditor, I am responsible for assisting in the audits and examinations of the books and records of utility companies operating within the state of Missouri.

## SUMMARY OF RATE CASE TESTIMONY FILED

**Amanda C. McMellen**

<u>COMPANY</u>	<u>CASE NO.</u>	<u>ISSUES</u>
Osage Water Company	SR-2000-556	Plant in Service Depreciation Reserve Depreciation Expense Operation & Maintenance Expense
Osage Water Company	WR-2000-557	Plant in Service Depreciation Reserve Depreciation Expense Operation & Maintenance Expense
Empire District Electric Company	ER-2001-299	Plant in Service Depreciation Reserve Depreciation Expense Cash Working Capital Other Working Capital Rate Case Expense PSC Assessment Advertising Dues, Donations & Contributions
UtiliCorp United, Inc./ d/b/a Missouri Public Service	ER-2001-672	Insurance Injuries and Damages Property Taxes Lobbying Outside Services Maintenance SJLP Related Expenses
BPS Telephone Company	TC-2002-1076	Accounting Schedules Separation Factors Plant in Service Depreciation Reserve Revenues Payroll Payroll Related Benefits Other Expenses
Aquila, Inc. d/b/a Aquila Networks-MPS & Aquila Networks-L&P	ER-2004-0034	Revenue Annualizations Uncollectibles
Fidelity Telephone Company	IR-2004-0272	Revenue Revenue Related Expenses

## SUMMARY OF RATE CASE TESTIMONY FILED

**Amanda C. McMellen**

<u>COMPANY</u>	<u>CASE NO.</u>	<u>ISSUES</u>
Aquila, Inc. d/b/a Aquila Networks-MPS & Aquila Networks-L&P	ER-2005-0436	Revenue Annualizations Uncollectibles
Empire District Electric Company	ER-2006-0315	Payroll Payroll Taxes 401(k) Plan Health Care Costs Incentive Compensation Depreciation Expense Amortization Expense Customer Demand Program Deferred State Income Taxes Income Taxes
Aquila, Inc. d/b/a Aquila Networks-MPS & Aquila Networks-L&P	ER-2007-0004	Revenue Annualizations Uncollectibles Maintenance Expenses Turbine Overhaul Maintenance
Empire District Electric Company	ER-2008-0093	Revenues Bad Debts Employee Benefits Tree Trimming Storm Costs Customer Programs Amortizations Current Income Taxes Deferred Income taxes Jurisdictional Allocations Corporate Allocations

## **DAVID MURRAY**

### **Educational and Employment Background and Credentials**

I am currently the Acting Utility Regulatory Manager of the Financial Analysis Department for the Missouri Public Service Commission (Commission). I accepted the position of a Public Utility Financial Analyst in June 2000 and my position was reclassified in August 2003 to an Auditor III. I was promoted to the position of Auditor IV, effective July 1, 2006. I was employed by the Missouri Department of Insurance in a regulatory position before I began my employment at the Missouri Public Service Commission.

In May 1995, I earned a Bachelor of Science degree in Business Administration with an emphasis in Finance and Banking, and Real Estate from the University of Missouri-Columbia. I earned a Masters in Business Administration from Lincoln University in December 2003.

I have been awarded the professional designation Certified Rate of Return Analyst (CRRRA) by the Society of Utility and Regulatory Financial Analysts (SURFA). This designation is awarded based upon experience and successful completion of a written examination, which I completed during my attendance at a SURFA conference in April 2007.

I am pursuing the Chartered Financial Analyst (CFA) designation. I passed the examinations for Levels I and II of the CFA Program. In order to receive the CFA designation, I must pass the Level III examination and also have four years of relevant professional work experience.

# CASE PROCEEDING PARTICIPATION

## DAVID MURRAY

Date Filed	Case Number	Company Name	Testimony Type	Issue(s)
04/09/09	HR-2009-0092	KCP&L Greater Missouri Operations Company	Surrebuttal	Rate of Return Capital Structure
04/09/09	ER-2009-0090	KCP&L Greater Missouri Operations Company	Surrebuttal	Rate of Return Capital Structure
04/07/09	ER-2009-0089	Kansas City Power & Light Company	Surrebuttal	Rate of Return Capital Structure
03/13/09	HR-2009-0092	KCP&L Greater Missouri Operations Company	Rebuttal	Rate of Return Capital Structure
03/13/09	ER-2009-0090	KCP&L Greater Missouri Operations Company	Rebuttal	Rate of Return Capital Structure
03/11/09	ER-2009-0089	Kansas City Power & Light Company	Rebuttal	Rate of Return Capital Structure
02/13/09	HR-2009-0092	KCP&L Greater Missouri Operations Company	Cost of Service Report	Rate of Return Capital Structure
02/13/09	ER-2009-0090	KCP&L Greater Missouri Operations Company	Cost of Service Report	Rate of Return Capital Structure
02/11/09	ER-2009-0089	Kansas City Power & Light Company	Cost of Service Report	Rate of Return Capital Structure
08/01/2008	HR-2008-0300	Trigen-Kansas City Energy Corporation	Cost of Service Report	Rate of Return Capital Structure
01/18/2008	GR-2008-0060	Missouri Gas Utility, Inc.	Cost of Service Report	Rate of Return Capital Structure
07/31/2007	WR-2007-0216	Missouri-American Water Company	Surrebuttal	Rate of Return Capital Structure
07/13/2007	WR-2007-0216	Missouri-American Water Company	Rebuttal	Rate of Return Capital Structure
06/05/2007	WR-2007-0216	Missouri-American Water Company	Direct	Rate of Return Capital Structure
12/27/2006	GR-2006-0422	Missouri Gas Energy	True-up Direct	Rate of Return Capital Structure
12/11/2006	GR-2006-0422	Missouri Gas Energy	Surrebuttal	Rate of Return Capital Structure

# CASE PROCEEDING PARTICIPATION

## DAVID MURRAY

Date Filed	Case Number	Company Name	Testimony Type	Issue(s)
11/21/2006	GR-2006-0422	Missouri Gas Energy	Rebuttal	Rate of Return Capital Structure
10/13/2006	GR-2006-0422	Missouri Gas Energy	Direct	Rate of Return Capital Structure
08/18/2006	ER-2006-0315	Empire District Electric Co.	Surrebuttal	Rate of Return Capital Structure
07/28/2006	ER-2006-0315	Empire District Electric Co.	Rebuttal	Rate of Return Capital Structure
06/23/2006	ER-2006-0315	Empire District Electric Co.	Direct	Rate of Return Capital Structure
12/13/2005	ER-2005-0436	Aquila, Inc. dba Aquila Networks-MPS and Aquila Networks-L&P	Surrebuttal	Rate of Return Capital Structure
11/18/2005	ER-2005-0436	Aquila, Inc. dba Aquila Networks-MPS and Aquila Networks-L&P	Rebuttal	Rate of Return Capital Structure
10/14/2005	ER-2005-0436	Aquila, Inc. dba Aquila Networks-MPS and Aquila Networks-L&P	Direct	Rate of Return Capital Structure
11/24/2004	ER-2004-0570	Empire District Electric Co.	Surrebuttal	Rate of Return Capital Structure
11/04/2004	ER-2004-0570	Empire District Electric Co.	Rebuttal	Rate of Return Capital Structure
09/20/2004	ER-2004-0570	Empire District Electric Co.	Direct	Rate of Return
07/19/2004	GR-2004-0209	Missouri Gas Energy	True-Up Direct	Rate of Return Capital Structure
06/14/2004	GR-2004-0209	Missouri Gas Energy	Surrebuttal	Rate of Return Capital Structure
05/24/2004	GR-2004-0209	Missouri Gas Energy	Rebuttal	Rate of Return Capital Structure
04/15/2004	GR-2004-0209	Missouri Gas Energy	Direct	Rate of Return Capital Structure
03/11/2004	IR-2004-0272	Fidelity Telephone Company	Direct	Rate of Return Capital Structure
02/13/2004	GR-2004-0072	Aquila, Inc. dba Aquila Networks-MPS and Aquila Networks-L&P	Rebuttal	Rate of Return Capital Structure

# CASE PROCEEDING PARTICIPATION

## DAVID MURRAY

Date Filed	Case Number	Company Name	Testimony Type	Issue(s)
02/13/2004	ER-2004-0034	Aquila, Inc. dba Aquila Networks-MPS and Aquila Networks-L&P	Surrebuttal	Rate of Return Capital Structure
02/13/2004	HR-2004-0024	Aquila, Inc. dba Aquila Networks-MPS and Aquila Networks-L&P	Surrebuttal	Rate of Return Capital Structure
01/26/2004	HR-2004-0024	Aquila, Inc. dba Aquila Networks-MPS and Aquila Networks L&P	Rebuttal	Rate of Return Capital Structure
01/26/2004	ER-2004-0034	Aquila, Inc. dba Aquila Networks-MPS and Aquila Networks L&P	Rebuttal	Rate of Return Capital Structure
01/09/2004	WT-2003-0563	Osage Water Company	Rebuttal	Rate of Return Capital Structure
01/09/2004	ST-2003-0562	Osage Water Company	Rebuttal	Rate of Return Capital Structure
01/06/2004	GR-2004-0072	Aquila, Inc.	Direct	Rate of Return Capital Structure
12/19/2003	ST-2003-0562	Osage Water Company	Direct	Rate of Return Capital Structure
12/19/2003	WT-2003-0563	Osage Water Company	Direct	Rate of Return Capital Structure
12/09/2003	ER-2004-0034	Aquila, Inc.	Direct	Rate of Return Capital Structure
12/09/2003	HR-2004-0024	Aquila, Inc.	Direct	Rate of Return Capital Structure
12/05/2003	WC-2004-0168	Missouri-American Water Co	Surrebuttal	Rate of Return Capital Structure
12/05/2003	WR-2003-0500	Missouri-American Water Co	Surrebuttal	Rate of Return Capital Structure
11/10/2003	WR-2003-0500	Missouri-American Water Company	Rebuttal	Rate of Return Capital Structure
11/10/2003	WC-2004-0168	Missouri-American Water Company	Rebuttal	Rate of Return Capital Structure
10/03/2003	WC-2004-0168	Missouri-American Water Company	Direct	Rate of Return Capital Structure



# CASE PROCEEDING PARTICIPATION

## DAVID MURRAY

Date Filed	Case Number	Company Name	Testimony Type	Issue(s)
10/03/2003	WR-2003-0500	Missouri-American Water Company	Direct	Rate of Return Capital Structure
03/17/2003	GM-2003-0238	Southern Union Co. dba Missouri Gas Energy	Rebuttal	Insulation
10/16/2002	ER-2002-424	The Empire District Electric Company	Surrebuttal	Rate of Return Capital Structure
09/24/2002	ER-2002-424	The Empire District Electric Company	Rebuttal	Rate of Return Capital Structure
08/16/2002	ER-2002-424	The Empire District Electric Company	Direct	Rate of Return Capital Structure
08/06/2002	TC-2002-1076	BPS Telephone Company	Direct	Rate of Return Capital Structure
01/22/2002	EC-2002-265	UtiliCorp United Inc. dba Missouri Public Service	Surrebuttal	Rate of Return Capital Structure
01/22/2002	ER-2001-265	UtiliCorp United Inc. dba Missouri Public Service	Surrebuttal	Rate of Return Capital Structure
01/08/2002	ER-2001-672	UtiliCorp United Inc. dba Missouri Public Service	Rebuttal	Rate of Return Capital Structure
01/08/2002	EC-2002-265	UtiliCorp United Inc. dba Missouri Public Service	Rebuttal	Rate of Return Capital Structure
12/06/2001	ER-2001-672	UtiliCorp United Inc. dba Missouri Public Service	Direct	Rate of Return Capital Structure
12/06/2001	EC-2002-265	UtiliCorp United Inc. dba Missouri Public Service	Direct	Rate of Return Capital Structure
05/22/2001	GR-2001-292	Missouri Gas Energy, A Division of Southern Union Company	Rebuttal	Rate of Return Capital Structure
04/19/2001	GR-2001-292	Missouri Gas Energy, A Division of Southern Union Company	Direct	Rate of Return Capital Structure
03/01/2001	TT-2001-328	Oregon Farmers Mutual Telephone Company	Rebuttal	Rate of Return Capital Structure
02/28/2001	TR-2001-344	Northeast Missouri Rural Telephone Company	Direct	Rate of Return Capital Structure
01/31/2001	TC-2001-402	Ozark Telephone Company	Direct	Rate of Return Capital Structure

**CASE PARTICIPATION OF  
MARK L. OLIGSCHLAEGER**

<b>Company Name</b>	<b>Case Number</b>	<b>Issues</b>
Western Resources	GR-90-40 and GR-91-149	Take-Or-Pay Costs
Missouri-American Water Company	WR-91-211	True-up; Known and Measurable
Missouri Public Service	EO-91-358 and EO-91-360	AAO
Generic Telephone	TO-92-306	Revenue Neutrality; Accounting Classification
Generic Electric	EO-93-218	Preapproval
Western Resources & Southern Union Company	GM-94-40	Regulatory Asset Transfer
St. Louis County Water	WR-95-145	Policy
Union Electric Company	EM-96-149	Merger Savings; Transmission Policy
St. Louis County Water	WR-96-263	Future Plant
Missouri Gas Energy	GR-96-285	Riders; Savings Sharing
The Empire District Electric Company	ER-97-82	Policy
Missouri Public Service	ER-97-394	Stranded/Transition Costs; Regulatory Asset Amortization; Performance Based Regulation
Western Resources & Kansas City Power & Light	EM-97-515	Regulatory Plan; Ratemaking Recommendations; Stranded Costs
United Water Missouri	WA-98-187	FAS 106 Deferrals
Laclede Gas Company	GR-99-315 (remand)	Depreciation and Cost of Removal
Missouri-American Water	WM-2000-222	Conditions
UtiliCorp United & St. Joseph Light & Power	EM-2000-292	Staff Overall Recommendations
UtiliCorp United & The Empire District Electric Company	EM-2000-369	Overall Recommendations
Green Hills Telephone	TT-2001-115	Policy
IAMO Telephone Company	TT-2001-116	Policy

**CASE PARTICIPATION OF  
MARK L. OLIGSCHLAEGER**

<b>Company Name</b>	<b>Case Number</b>	<b>Issues</b>
Ozark Telephone Company	TT-2001-117	Policy
Peace Valley Telephone	TT-2001-118	Policy
Holway Telephone Company	TT-2001-119	Policy
KLM Telephone Company	TT-2001-120	Policy
Missouri Gas Energy	GR-2001-292	SLRP Deferrals; Y2K Deferrals; Deferred Taxes; SLRP and Y2K CSE/GSIP
The Empire District Electric Company	ER-2001-299	Prudence/State Line Construction/Capital Costs
Ozark Telephone Company	TC-2001-402	Interim Rate Refund
Gateway Pipeline Company	GM-2001-585	Financial Statements
Missouri Public Service	ER-2001-672	Purchased Power Agreement; Merger Savings/Acquisition Adjustment
Union Electric Company	EC-2002-1	Merger Savings; Criticisms of Staff's Case; Injuries and Damages; Uncollectibles
Laclede Gas Company	GA-2002-429	AAO Request
Aquila, Inc., d/b/a Aquila Networks-MPS-Electric and Aquila Networks-L&P-Electric and Steam	ER-2004-0034 and HR-2004-0024 (Consolidated)	Aries Purchased Power Agreement; Merger Savings
Missouri Gas Energy	GR-2004-0209	Revenue Requirement Differences; Corporate Cost Allocation Study; Policy; Load Attrition; Capital Structure
Empire District Electric	ER-2006-0315	Fuel/Purchased Power; Regulatory Plan Amortizations; Return on Equity; True-Up
Missouri Gas Energy	GR-2006-0422	Unrecovered Cost of Service Adjustment; Policy
Laclede Gas Company	GR-2007-0208	Case Overview; Depreciation Expense/Depreciation Reserve; Affiliated Transactions; Regulatory Compact

**CASE PARTICIPATION OF  
MARK L. OLIGSCHLAEGER**

<b>Company Name</b>	<b>Case Number</b>	<b>Issues</b>
Missouri Gas Utility	GR-2008-0060	Report on Cost of Service; Overview of Staff's Filing
The Empire District Electric Company	ER-2008-0093	Case Overview; Regulatory Plan Amortizations; Asbury SCR; Commission Rules Tracker; Fuel Adjustment Clause; ROE and Risk; Depreciation; True-up; Gas Contract Unwinding

**Cases prior to 1990 include:**

Kansas City Power and Light Company	ER-82-66
Kansas City Power and Light Company	HR-82-67
Southwestern Bell Telephone Company	TR-82-199
Missouri Public Service Company	ER-83-40
Kansas City Power and Light Company	ER-83-49
Southwestern Bell Telephone Company	TR-83-253
Kansas City Power and Light Company	EO-84-4
Kansas City Power and Light Company	ER-85-128 & EO-85-185
KPL Gas Service Company	GR-86-76
Kansas City Power and Light Company	HO-86-139
Southwestern Bell Telephone Company	TC-89-14

## **Bret G. Prenger**

### **Education and Employment Background and Credentials**

I am currently employed as a Utility Regulatory Auditor II for the Missouri Public Service Commission (Commission). I began my employment with the Commission on June 2<sup>nd</sup>, 2008. I earned a Bachelor of Science in Accounting from Missouri State University, in Springfield, MO in May 2008. In earning this degree I completed numerous core Accounting and business classes. I look forward to earning my Masters in Business Administration in the near future.

As a Utility Regulatory Auditor, I perform rate audits and prepare miscellaneous filings as ordered by the Public Service Commission. In addition, I review all exhibits and testimony on my assigned issues, develop adjustments and issue positions which I then support by work papers and written testimony. For those cases that do not require prepared testimony, I prepare Staff Recommendation Memorandums.

Other cases I have been assigned to or participated are:

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HR-2009-0092	KCP&L Greater Missouri Operations Company (GMO) - L&P (Steam)
ER-2009-0090	KCP&L Greater Missouri Operations Company (GMO) - MPS and L&P (Electric)
ER-2009-0089	Kansas City Power & Light Company – Direct Report- Material and Supplies, Prepayments, Advertising and Rate Case Expenses
GO-2009-0009	Missouri Gas Energy (MGE) – Infrastructure Service Replacement Surcharge (ISRS)
SR-2008-0389	West 16 <sup>th</sup> Sewer Company
SR-2008-0388	WPC Sewer Company

## **Anne E. Ross**

### **EDUCATION**

Bachelor of Science – Business Administration  
University of Missouri, Columbia, MO – May 1986

Master of Science – Business Administration  
University of Missouri, Columbia, MO – May 1989

### **PROFESSIONAL EXPERIENCE**

Missouri Public Service Commission  
Regulatory Economist II  
September 1989 – Present

Member – Missouri Weatherization Policy Advisory Committee  
2004 - Present

### **CASE PARTICIPATION**

Case Number	Company Name	Testimony Issues
GR-90-50	Kansas Power and Light	Class Cost-of-Service
GR-90-120	Laclede Gas Company	Class Cost-of-Service
GR-90-152	Associated Natural Gas	Class Cost-of-Service
GR-90-198	Missouri Public Service	Class Cost-of-Service
GR-91-249	United Cities Gas Company	Class Cost-of-Service
GR-91-291	Kansas Power and Light	Class Cost-of-Service
GR-92-165	Laclede Gas Company	Class Cost-of-Service
GR-93-42	St. Joseph Light and Power	Class Cost-of-Service
GR-93-47	United Cities Gas Company	Class Cost-of-Service
GR-93-172	Missouri Public Service	Class Cost-of-Service
GR-93-240	Western Resources	Class Cost-of-Service
GR-94-0220	Laclede Gas Company	Class Cost-of-Service
GA-94-0127	Tartan Energy Company	Reviewed Application
GR-95-0160	United Cities Gas Company	Class Cost-of-Service
GR-96-0193	Laclede Gas Company	Class Cost-of-Service

## Anne E. Ross

### CASE PARTICIPATION (cont'd)

Case Number	Company Name	Testimony Issues
GR-96-0285	Missouri Gas Energy	Class Cost-of-Service
GR-99-0042	St. Joseph Light and Power	Class Cost-of-Service
GR-2002-0356	Laclede Gas Company	Class Cost-of-Service, Large Customer Analysis
GR-2003-517	Union Electric Company d/b/a AmerenUE	Class Cost-of-Service, Large Customer Analysis, Low-Income Customer Assistance
GR-2004-0072	Aquila Networks	Class Cost-of-Service, Large Customer Analysis, Low-Income Customer Assistance
GR-2004-0209	Missouri Gas Energy	Class Cost-of-Service, Large Customer Analysis, Low-Income Customer Assistance
GR-2005-0284	Laclede Gas Company	Class Cost-of-Service, Large Customer Analysis, Low-Income Customer Assistance
GR-2006-0387	Atmos Energy Corporation	Large Customer Analysis, Rate Design, Customer Conservation Programs
GR-2006-0422	Missouri Gas Energy	Large Customer Analysis, Rate Design, Customer Conservation Programs
GR-2007-0003	Union Electric Company d/b/a AmerenUE	Large Customer Analysis, Rate Design, Customer Conservation Programs
GR-2007-0208	Laclede Gas Company	Large Customer Analysis, Rate Design, Low- Income Customer Assistance
GR-2008-0060	Missouri Gas Utilities	Rate Design, Low-Income Customer Assistance, Customer Conservation Programs
HR-2008-0030	Trigen – Kansas City Energy Corporation	Large Customer Annualization
ER-2009-0089	Kansas City Power & Light Company	Low-Income Customer Assistance
ER-2009-0090	KCP&L Greater Missouri Operations Company	Low-Income Customer Assistance

## **ROSELLA SCHAD, PE, CPA**

.....

### **Education**

#### **University of Missouri**

**The Gordon E. Crosby, Jr., MBA Program**  
Master's of Business Administration, May 2008  
Emphasis: Finance

#### **The Truman School of Public Affairs**

Master's of Public Administration, May 2004  
Emphasis: Public Management

#### **College of Engineering**

Bachelor's of Science in Mechanical Engineering, Honors Scholar, May 1978

**Columbia College**  
27-hours Accounting

### **Professional Experience**

3/99 to Present **Engineer, Missouri Public Service Commission, Jefferson City, Missouri**

- Perform depreciation reserve studies using statistical analysis techniques, engineering judgment, familiarity of the regulated industries, and knowledge of company specific operations and maintenance resulting in equitable utility rates for the Missouri consumers
- Prepare recommendations and provide written and oral testimony supporting staff regulated utility depreciation rates
- Facilitate engineering "quality of service" inspections and audits
- Review other staff depreciation analyses, including auditing documentation
- Develop a telecommunications industry seminar to address technical issues for legislators, regulators, businesses, educators, and other state agencies

6/78 to 11/80 **Engineer, Union Electric, Callaway Nuclear Plant, Fulton, Missouri**

- Evaluated procurement contracts with construction contractors and equipment and material suppliers resulting in substantial savings for the construction project.
- Audited construction projects for adherence to applicable standards and codes
- Surveyed equipment and materials specifications for manufacturing, distribution, and installation requirements and criteria

### **Certifications and Professional Memberships**

**Missouri: Professional Engineer (P.E.) and Certified Public Accountant (C.P.A.)**  
National/Missouri Society of Professional Engineers  
Missouri Society of Certified Public Accountants  
Institute of Internal Auditors  
Society of Depreciation Professionals

### **Advisory Boards and Committees**

- Dean's Engineering Advisory Council (DEAC), University of Missouri
- Staff member of the National Association of National Regulatory Commissioners (NARUC) Subcommittee on Accounting and Finance



**CASE PROCEEDING PARTICIPATION****ROSELLA L. SCHAD, PE, CPA**

<b>COMPANY</b>	<b>CASE NO./ FILING</b>	<b>ISSUES</b>
KCP&L Greater Missouri Operations Company	HR-2009-0092 Direct (Report), Surrebuttal	Depreciation
KCP&L Greater Missouri Operations Company	ER-2009-0090 Direct (Report), Surrebuttal	Depreciation
Kansas City Power & Light Company	ER-2009-0089 Direct (Report)	Depreciation
Union Electric Company d/b/a AmerenUE	ER-2008-0318 Direct (Report)	Depreciation
Missouri-American Water Company	WR-2008-0311 Direct (Report)	Depreciation
The Empire District Electric Company	ER-2008-0093 Direct (Report), Rebuttal	Depreciation
Missouri Gas Utility, Inc.	GR-2008-0060 Direct (Report)	Depreciation
Kansas City Power & Light Company	ER-2007-0291 Direct (Report)	Depreciation
Aquila, Inc. d/b/a Aquila Networks-MPS and Aquila Networks-L&P	ER-2007-0004 Direct	Depreciation
Algonquin Water Resources of Missouri, LLC	WR-2006-0425 & SR-2006-0426 (Consolidated) Direct, Rebuttal, Surrebuttal	Depreciation
Kansas City Power & Light Company	ER-2006-0314 Direct and Surrebuttal	Depreciation
Silverleaf Resorts, Inc. and Algonquin Water Resources of Missouri, LLC	WO-2005-0206 Rebuttal	Depreciation
Laclede Gas Company	GR-99-315 Supplemental Rebuttal	Depreciation, Cost of Removal, and Net Salvage
Laclede Gas Company	GR-99-315 Supplemental Direct	Depreciation, Cost of Removal, and Net Salvage

**CASE PROCEEDING PARTICIPATION****ROSELLA L. SCHAD, PE, CPA**

<b>COMPANY</b>	<b>CASE NO./ FILING</b>	<b>ISSUES</b>
Aquila, Inc. d/b/a Aquila Networks-MPS (Electric) and Aquila Networks-L&P (Electric and Steam)	ER-2004-0034 and HR-2004-0024 (Consolidated) Surrebuttal	Production Plant Retirement Dates; Accumulated Depreciation; Cost of Removal and Depreciation
Aquila, Inc. d/b/a Aquila Networks-MPS and Aquila Networks-L&P	GR-2004-0072 Rebuttal	Depreciation; Accumulated Depreciation; Cost of Removal and Production Plant Retirement Dates
Aquila, Inc. d/b/a Aquila Networks-MPS (Electric) and Aquila Networks-L&P (Electric and Steam)	ER-2004-0034 and HR-2004-0024 (Consolidated) Rebuttal	Production Plant Retirement Dates; Accumulated Depreciation Reserve Balances; Cost of Removal and Depreciation
Aquila, Inc. d/b/a Aquila Networks-MPS and Aquila Networks-L&P	GR-2004-0072 Direct	Depreciation and Accumulated Depreciation Reserve
Aquila, Inc. d/b/a Aquila Networks-MPS and Aquila Networks-L&P	ER-2004-0034 and HR-2004-0024 (Consolidated) Direct	Depreciation and Accumulated Depreciation Reserve
Laclede Gas Company	GR-2002-356 Rebuttal	Decommissioning
Laclede Gas Company	GR-2002-356 Direct	Depreciation
Union Electric Company d/b/a AmerenUE	EC-2002-1 Surrebuttal	Depreciation; Steam Production Plant Retirement Dates; Decommissioning Costs; Callaway Interim Additions
Laclede Gas Company	GR-2001-629 Direct	Depreciation
Ozark Telephone Company	TC-2001-402 Direct	Depreciation Rates
Northeast Missouri Rural Telephone Company	TR-2001-344 Direct, Surrebuttal	Depreciation Rates
Oregon Farmers Mutual Telephone Company	TT-2001-328 Rebuttal	Depreciation Rates
KLM Telephone Company	TT-2001-120 Rebuttal	Depreciation Rates

**CASE PROCEEDING PARTICIPATION**

**ROSELLA L. SCHAD, PE, CPA**

<b>COMPANY</b>	<b>CASE NO./ FILING</b>	<b>ISSUES</b>
Holway Telephone Company	TT-2001-119 Rebuttal	Depreciation Rates
Peace Valley Telephone Company	TT-2001-118 Rebuttal	Depreciation Rates
Iamo Telephone Company	TT-2001-116 Rebuttal	Depreciation Rates
Osage Water Company	WR-2000-557 Direct	Depreciation
Osage Water Company	SR-2000-556 Direct	Depreciation

**HENRY E. WARREN, PhD**  
**REGULATORY ECONOMIST**  
**UTILITY OPERATIONS DIVISION**  
**ENERGY DEPARTMENT**

**EDUCATION AND EXPERIENCE**

I received my Bachelor of Arts and my Master of Arts in Economics from the University of Missouri-Columbia, and a Doctor of Philosophy (PhD) in Economics from Texas A&M University. Prior to joining the PSC Staff (Staff), I was an Economist with the U.S. National Oceanic and Atmospheric Administration (NOAA). At NOAA I conducted research on the economic impact of climate and weather. I began my employment at the Commission on October 1, 1992 as a Research Economist in the Economic Analysis Department. My duties consisted of calculating adjustments to test-year energy use based on test-year weather and normal weather, and I also assisted in the review of Electric Resource Plans for investor owned utilities in Missouri. From December 1, 1997, until May 2001, I was a Regulatory Economist II in the Commission's Gas Department, where my duties included analysis of issues in natural gas rate cases and were expanded to include reviewing tariff filings, applications and various other matters relating to jurisdictional gas utilities in Missouri. On June 1, 2001 the Commission organized an Energy Department and I was assigned to the Tariff/Rate Design Section of the Energy Department. My duties in the Energy Department include analysis of issues in rate cases of natural gas and electric utilities, tariff filings, applications, and various other matters relating to jurisdictional gas and electric utilities in Missouri, including review of Electric Resource Plans and Regulatory Plans for investor owned electric utilities in Missouri. I have also served on various task forces, collaboratives, and working groups dealing with issues relating to jurisdictional natural gas and electric utilities.

**MISSOURI PUBLIC SERVICE COMMISSION**  
**CASES IN WHICH PREPARED TESTIMONY,**  
**REPORT, OR REVIEW WAS SUBMITTED BY:**  
**HENRY E. WARREN, PHD**

<u>COMPANY NAME</u>	<u>CASE NUMBER</u>
St. Joseph Light and Power Company	GR-93-042 <sup>1</sup>
Laclede Gas Co.	GR-93-149
Missouri Public Service	GR-93-172 <sup>1</sup>
Western Resources	GR-93-240 <sup>1</sup>
Laclede Gas Co.	GR-94-220 <sup>1</sup>
Kansas City Power & Light Company	EO-94-3601 <sup>2</sup>
United Cities Gas Co.	GR-95-160 <sup>1</sup>
UtiliCorp United, Inc.	EO-95-187 <sup>2</sup>
The Empire District Electric Company	ER-95-279 <sup>1</sup>
The Empire District Electric Company	EO-96-56 <sup>2</sup>
St. Joseph Light and Power Company	EO-96-198 <sup>2</sup>
Laclede Gas Company	GR-96-193 <sup>1</sup>
Missouri Gas Energy	GR-96-285 <sup>1</sup>
The Empire District Electric Company	ER-97-081 <sup>1</sup>
Union Electric Company	GR-97-393 <sup>1</sup>
Missouri Gas Energy	GR-98-140 <sup>1</sup>
Laclede Gas Company	GR-98-374 <sup>1</sup>
St. Joseph Light & Power Company	GR-99-246 <sup>1</sup>
Laclede Gas Company	GR-99-315 <sup>1</sup>
Union Electric Company (d/b/a AmerenUE)	GR-2000-512 <sup>1</sup>
Missouri Gas Energy	GR-2001-292 <sup>1</sup>
Laclede Gas Company	GR-2001-629 <sup>1</sup>

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<sup>1</sup>Testimony includes computations to adjust test year volumes, therms, or kWh to normal weather.

<sup>2</sup>Staff Report or Review

**MISSOURI PUBLIC SERVICE COMMISSION**  
**CASES IN WHICH PREPARED TESTIMONY,**  
**REPORT OR REVIEW WAS SUBMITTED BY:**

**HENRY E. WARREN, PhD**

**(CONTINUED)**

<u>COMPANY NAME</u>	<u>CASE NUMBER</u>
Laclede Gas Company	GC-2002-0110 <sup>2</sup>
Laclede Gas Company	GR-2002-0356 <sup>1</sup>
Aquila, Inc.	GC-2003-0131 <sup>2</sup>
Laclede Gas Company	GC-2003-0212 <sup>2</sup>
Laclede Gas Company	GT-2003-0117
Aquila, Inc., (d/b/a Aquila Networks MPS and L&P)	GR-2004-0072 <sup>1</sup>
Missouri Gas Energy	GR-2004-0209
Laclede Gas Company	GC-2004-0240 <sup>2</sup>
Kansas City Power & Light Company	EO-2005-0329 <sup>2</sup>
Union Electric Company (d/b/a AmerenUE)	EO-2006-0240 <sup>2</sup>
The Empire District Electric Company	ER-2006-0315
The Atmos Energy Corporation	GR-2006-0387 <sup>1</sup>
Missouri Gas Energy	GR-2006-0422 <sup>1</sup>
Union Electric Company (d/b/a AmerenUE)	GR-2007-0003 <sup>1</sup>
Kansas City Power & Light Company	EO-2007-0008 <sup>2</sup>
Aquila, Inc., (d/b/a Aquila Networks MPS and L&P)	EO-2007-0298 <sup>2</sup>
Laclede Gas Company	GR-2007-0208 <sup>2</sup>
Missouri Gas Energy – The Empire District Gas Company	GA-2007-0289, et al
Union Electric Company (d/b/a AmerenUE)	EO-2007-0409 <sup>2</sup>
The Empire District Electric Company	EO-2008-0069 <sup>2</sup>
Union Electric Company (d/b/a AmerenUE)	ER-2008-0318 <sup>2</sup>

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<sup>1</sup>Testimony includes computations to adjust test year volumes, therms, or kWh to normal weather.

<sup>2</sup>Staff Report or Review

**MISSOURI PUBLIC SERVICE COMMISSION**

**STAFF REPORT  
COST OF SERVICE**

**APPENDIX 2  
Support for Staff Cost  
of  
Capital Recommendations**

**MISSOURI GAS ENERGY**  
**A division of Southern Union Company**

**CASE NO. GR-2009-0355**

## Attachment A

The DCF model is a market-oriented approach for deriving the cost of common equity. The cost of common equity calculated from the DCF model is inherently capable of attracting capital. This results from the theory that security prices adjust continually over time, so that an equilibrium price exists and the stock is neither undervalued nor overvalued. It can also be stated that stock prices continually fluctuate to reflect the required and expected return for the investor.

The constant-growth form of the DCF model was used in this analysis. This model relies upon the fact that a company's common stock price is dependent upon the expected cash dividends and upon cash flows received through capital gains or losses that result from stock price changes. The interest rate which discounts the sum of the future expected cash flows to the current market price of the common stock is the calculated cost of common equity. This can be expressed algebraically as:

$$\text{Present Price} = \frac{\text{Expected Dividends}}{\text{Discounted by } k} + \frac{\text{Expected Price in 1 year}}{\text{Discounted by } k} \quad (1)$$

where  $k$  equals the cost of equity. Since the expected price of a stock in one year is equal to the present price multiplied by one plus the growth rate, equation (1) can be restated as:

$$\text{Present Price} = \frac{\text{Expected Dividends}}{(1 + k)} + \frac{\text{Present Price } (1+g)}{(1 + k)} \quad (2)$$

where  $g$  equals the growth rate and  $k$  equals the cost of equity. Letting the present price equal  $P_0$  and expected dividends equal  $D_1$ , the equation appears as:

$$P_0 = \frac{D_1}{(1 + k)} + \frac{P_0(1+g)}{(1 + k)} \quad (3)$$



The cost of equity equation may also be algebraically represented as:

$$k = \frac{D_1}{P_0} + g \quad (4)$$

Thus, the cost of common stock equity,  $k$ , is equal to the expected dividend yield ( $D_1/P_0$ ) plus the expected growth in dividends ( $g$ ) continuously summed into the future. The growth in dividends and implied growth in earnings will be reflected in the current price. Therefore, this model also recognizes the potential of capital gains or losses associated with owning a share of common stock.

The discounted cash flow method is a continuous stock valuation model. The DCF theory is based on the following assumptions:

1. Market equilibrium;
2. Perpetual life of the company;
3. Constant payout ratio;
4. Payout of less than 100% earnings;
5. Constant price/earnings ratio;
6. Constant growth in cash dividends;
7. Stability in interest rates over time;
8. Stability in required rates of return over time; and,
9. Stability in earned returns over time.

Flowing from these, it is further assumed that an investor's growth horizon is unlimited and that earnings, book values and market prices grow hand-in-hand. Although the entire list of the above assumptions is rarely met, the DCF model is a reasonable working model describing an actual investor's expectations and resulting behaviors.

## Attachment B

The CAPM describes the relationship between a security's investment risk and its market rate of return. This relationship identifies the rate of return which investors expect a security to earn so that its market return is comparable with the market returns earned by other securities that have similar risk. The general form of the CAPM is as follows:

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

where:

- $k$  = the expected return on equity for a specific security;
- $R_f$  = the risk-free rate;
- $\beta$  = beta; and
- $R_m - R_f$  = the market risk premium.

The first term of the CAPM is the risk-free rate ( $R_f$ ). The risk-free rate reflects the level of return that can be achieved without accepting any risk. In reality, there is no such risk-free asset, but it is generally represented by U.S. Treasury securities.

The second term of the CAPM is beta ( $\beta$ ). Beta is an indicator of a security's investment risk. It represents the relative movement and relative risk between a particular security and the market as a whole (where beta for the market equals 1.00). Securities with betas greater than 1.00 exhibit greater volatility than do securities with betas less than 1.00. This causes a higher beta security to be less desirable to a risk-averse investor and therefore requires a higher return in order to attract investor capital away from a lower beta security.

The final term of the CAPM is the market risk premium ( $R_m - R_f$ ). The market risk premium represents the expected return from holding the entire market portfolio less the expected return from holding a risk-free investment.

**AN ANALYSIS OF THE COST OF CAPITAL**

**FOR**

**MISSOURI GAS ENERGY**

**CASE NO. GR-2009-0355**

**SCHEDULES**

**BY**

**DAVID MURRAY**

**UTILITY SERVICES DIVISION**

**MISSOURI PUBLIC SERVICE COMMISSION**

**AUGUST 2009**

**MISSOURI GAS ENERGY  
CASE NO. GR-2009-0355**

*List of Schedules*

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2-2	Graph of Federal Reserve Discount Rates and Federal Funds Rates
3-1	Rate of Inflation
3-2	Graph of Rate of Inflation
4-1	Average Yields on Mergent's Public Utility Bonds
4-2	Average Yields on Thirty-Year U.S. Treasury Bonds
4-3	Graph of Average Yields on Mergent's Public Utility Bonds and Thirty-Year U.S. Treasury Bonds
4-4	Graph of Monthly Spreads Between Yields on Mergent's Public Utility Bonds and Thirty-Year U.S. Treasury Bonds
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10-3	Calculation of the Composite Cost Rate of Long-Term Debt Outstanding for New Jersey Resources Corp. as of June 30, 2009.
10-4	Calculation of the Composite Cost Rate of Long-Term Debt Outstanding for Northwest Natural Gas Company as of June 30, 2009.
10-5	Calculation of the Composite Cost Rate of Long-Term Debt Outstanding for Piedmont Natural Gas Co. as of April 30, 2009.
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20-4	Costs of Equity Used in Equity Research Reports for Northwest Natural Gas Company
20-5	Costs of Equity Used in Equity Research Reports for Piedmont Natural Gas Company
20-6	Costs of Equity Used in Equity Research Reports for South Jersey Industries, Inc.
20-7	Costs of Equity Used in Equity Research Reports for WGL Holdings, Inc.

**MISSOURI GAS ENERGY  
CASE NO. GR-2009-0355**

**Federal Reserve Discount Rate Changes and Federal Reserve Funds Rate Changes**

Date	Federal Reserve Discount Rate	Federal Reserve Funds Rate
01/01/83	8.50%	
12/31/83	8.50%	
04/09/84	9.00%	
11/21/84	8.50%	
12/24/84	8.00%	
05/20/85	7.50%	
03/07/86	7.00%	
04/21/86	6.50%	
07/11/86	6.00%	
08/21/86	5.50%	
09/04/87	6.00%	
08/09/88	6.50%	
02/24/89	7.00%	
07/13/90		8.00%
10/29/90		7.75%
11/13/90		7.50%
12/07/90		7.25%
12/18/90		7.00%
12/19/90	6.50%	
01/09/91		6.75%
02/01/91	6.00%	6.25%
03/08/91		6.00%
04/30/91	5.50%	5.75%
08/06/91		5.50%
09/13/91	5.00%	5.25%
10/31/91		5.00%
11/06/91	4.50%	4.75%
12/06/91		4.50%
12/20/91	3.50%	4.00%
04/09/92		3.75%
07/02/92	3.00%	3.25%
09/04/92		3.00%
01/01/93		
12/31/93	No Changes	No Changes
02/04/94		3.25%
03/22/94		3.50%
04/18/94		3.75%
05/17/94	3.50%	4.25%
08/16/94	4.00%	4.75%
11/15/94	4.75%	5.50%
02/01/95	5.25%	6.00%
07/06/95		5.75%
12/19/95		5.50%
01/31/96	5.00%	5.25%
03/25/97		5.50%
12/12/97	5.00%	
01/09/98	5.00%	
03/06/98	5.00%	
09/29/98		5.25%
10/15/98	4.75%	5.00%
11/17/98	4.50%	4.75%

Date	Federal Reserve Discount Rate	Federal Reserve Funds Rate
06/30/99	4.50%	5.00%
08/24/99	4.75%	5.25%
11/16/99	5.00%	5.50%
02/02/00	5.25%	5.75%
03/21/00	5.50%	6.00%
05/19/00	6.00%	6.50%
01/03/01	5.75%	6.00%
01/04/01	5.50%	6.00%
01/31/01	5.00%	5.50%
03/20/01	4.50%	5.00%
04/18/01	4.00%	4.50%
05/15/01	3.50%	4.00%
06/27/01	3.25%	3.75%
08/21/01	3.00%	3.50%
09/17/01	2.50%	3.00%
10/02/01	2.00%	2.50%
11/06/01	1.50%	2.00%
12/11/01	1.25%	1.75%
11/06/02	0.75%	1.25%
01/09/03	2.25%**	1.25%
06/25/03	2.00%	1.00%
06/30/04	2.25%	1.25%
08/10/04	2.50%	1.50%
09/21/04	2.75%	1.75%
11/10/04	3.00%	2.00%
12/14/04	3.25%	2.25%
02/02/05	3.50%	2.50%
03/22/05	3.75%	2.75%
05/03/05	4.00%	3.00%
06/30/05	4.25%	3.25%
08/09/05	4.50%	3.50%
09/20/05	4.75%	3.75%
11/01/05	5.00%	4.00%
12/13/05	5.25%	4.25%
01/31/06	5.50%	4.50%
03/28/06	5.75%	4.75%
05/10/06	6.00%	5.00%
06/29/06	6.25%	5.25%
08/17/07	5.75%	5.25%
09/18/07	5.25%	4.75%
10/31/07	5.00%	4.50%
12/11/07	4.75%	4.25%
01/22/08	4.00%	3.50%
01/30/08	3.50%	3.00%
03/16/08	3.25%	
03/18/08	2.50%	2.25%
04/30/08	2.25%	2.00%
10/08/08	1.75%	1.50%
10/29/08	1.25%	1.00%
12/16/08	0.50%	0.00-0.25%

\* Staff began tracking the Federal Funds Rate.

\*\*Revised discount window program begins. Reflects rate on primary credit. This revised discount window policy results in incomparability of the discount rates after January 9, 2003 to discount rates before January 9, 2003.

Source:

Federal Reserve Discount rate

<http://www.newyorkfed.org/markets/statistics/dlyrates/fedrate.html>

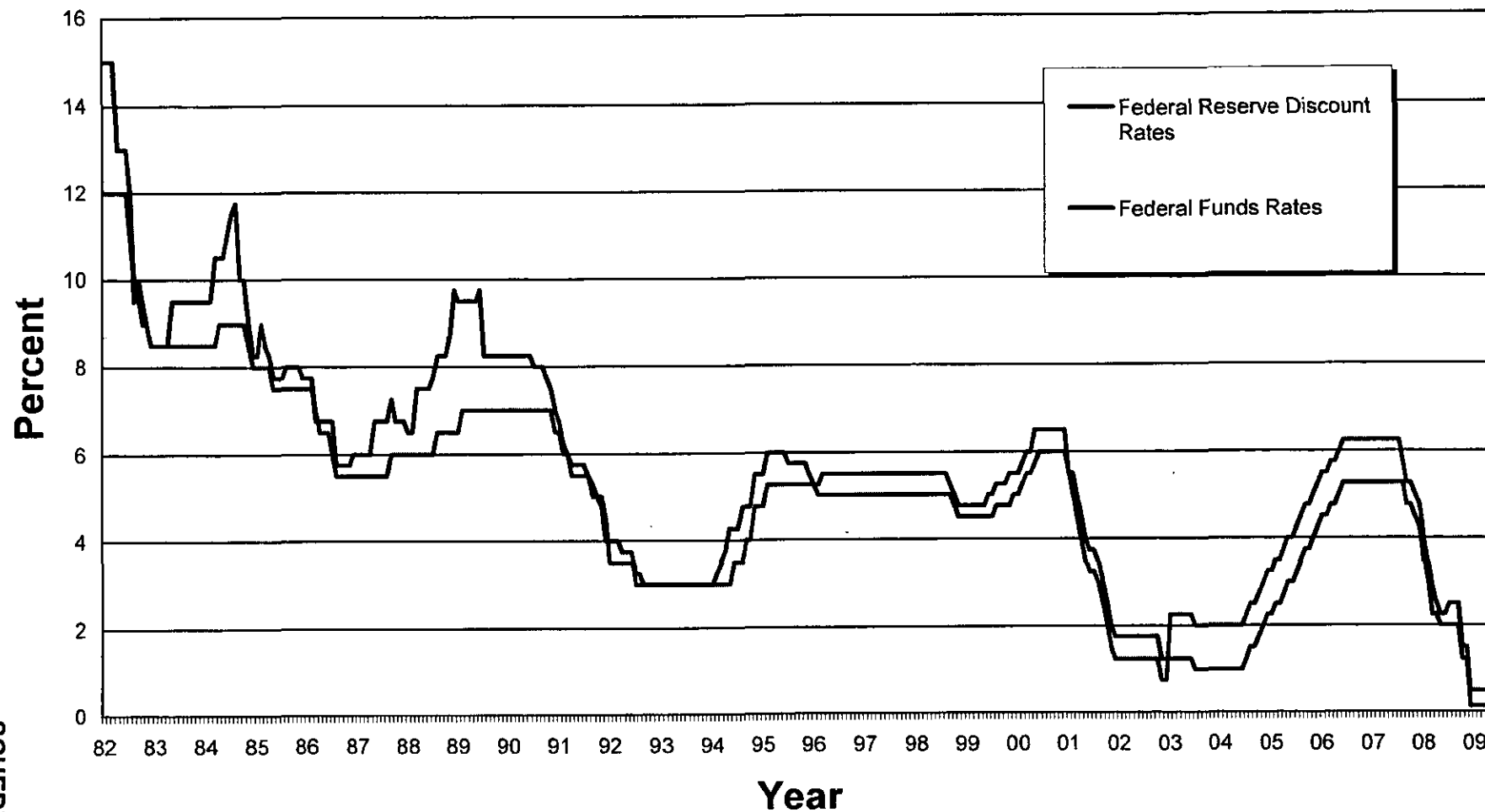
Federal Reserve Funds rate

<http://www.newyorkfed.org/markets/statistics/dlyrates/fedrate.html>

Note: Interest rates as of December 31 for each year are underlined.

MISSOURI GAS ENERGY  
CASE NO. GR-2009-0355

Federal Reserve Discount Rates and Federal Funds Rates  
1982 - 2009



**MISSOURI GAS ENERGY  
CASE NO. GR-2009-0355**

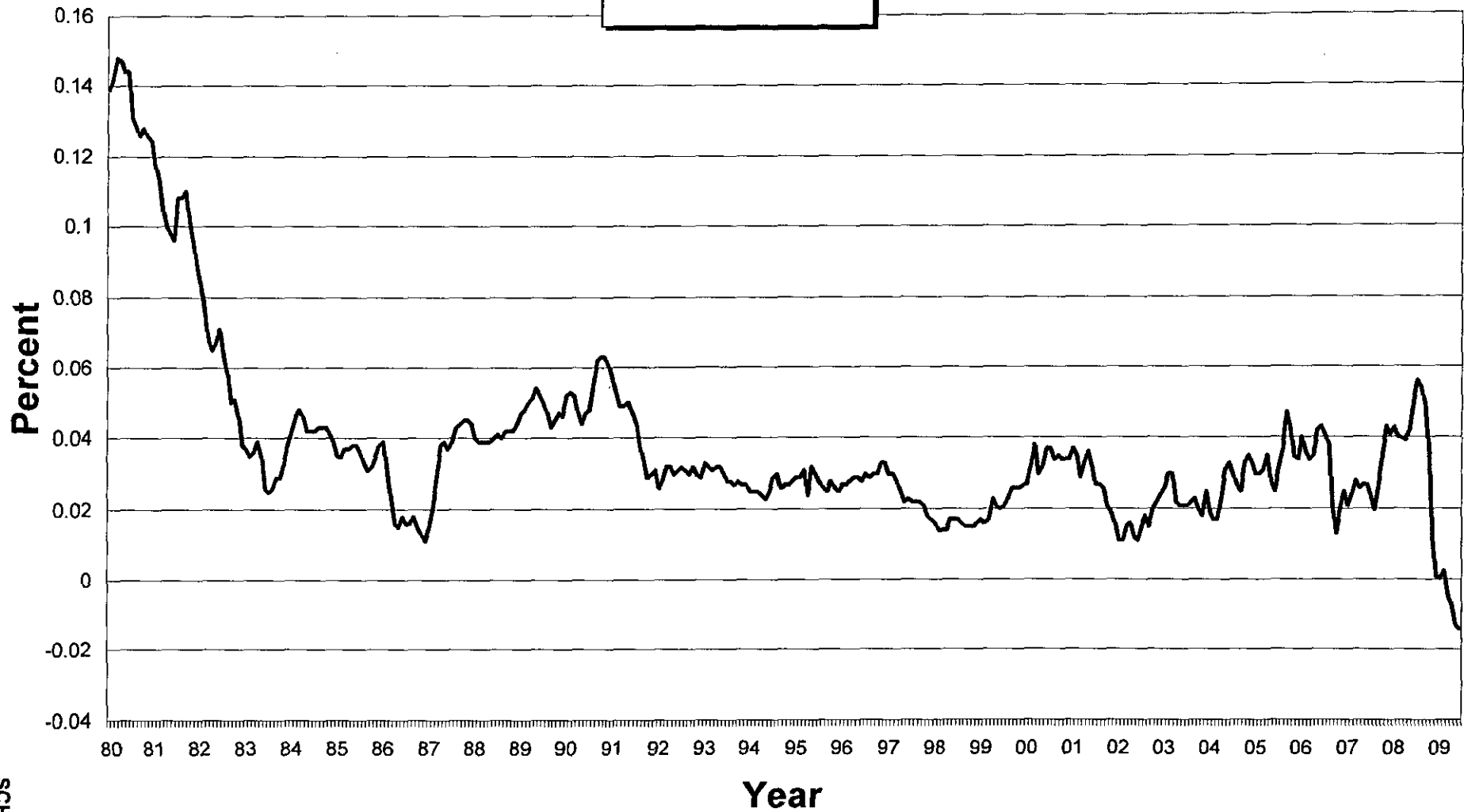
**Rate of Inflation**

Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)
Jan 1980	13.90	Jan 1984	4.20	Jan 1988	4.00	Jan 1992	2.60	Jan 1996	2.70	Jan 2000	2.70	Jan 2004	1.90	Jan 2008	4.30
Feb	14.20	Feb	4.60	Feb	3.90	Feb	2.80	Feb	2.70	Feb	3.20	Feb	1.70	Feb	4.00
Mar	14.80	Mar	4.80	Mar	3.90	Mar	3.20	Mar	2.80	Mar	3.70	Mar	1.70	Mar	4.00
Apr	14.70	Apr	4.60	Apr	3.90	Apr	3.20	Apr	2.90	Apr	3.00	Apr	2.30	Apr	3.90
May	14.40	May	4.20	May	3.90	May	3.00	May	2.90	May	3.20	May	3.10	May	4.20
Jun	14.40	Jun	4.20	Jun	4.00	Jun	3.10	Jun	2.80	Jun	3.70	Jun	3.30	Jun	5.00
Jul	13.10	Jul	4.20	Jul	4.10	Jul	3.20	Jul	3.00	Jul	3.70	Jul	3.00	Jul	5.60
Aug	12.90	Aug	4.30	Aug	4.00	Aug	3.10	Aug	2.90	Aug	3.40	Aug	2.70	Aug	5.40
Sep	12.60	Sep	4.30	Sep	4.20	Sep	3.00	Sep	3.00	Sep	3.50	Sep	2.50	Sep	4.90
Oct	12.80	Oct	4.30	Oct	4.20	Oct	3.20	Oct	3.00	Oct	3.40	Oct	3.30	Oct	3.70
Nov	12.60	Nov	4.10	Nov	4.20	Nov	3.00	Nov	3.30	Nov	3.40	Nov	3.50	Nov	1.10
Dec	12.50	Dec	3.90	Dec	4.40	Dec	2.90	Dec	3.30	Dec	3.40	Dec	3.30	Dec	0.10
Jan 1981	11.80	Jan 1985	3.50	Jan 1989	4.70	Jan 1993	3.30	Jan 1997	3.00	Jan 2001	3.70	Jan 2005	3.00	Jan 2009	0.00
Feb	11.40	Feb	3.50	Feb	4.80	Feb	3.20	Feb	3.00	Feb	3.50	Feb	3.00	Feb	0.20
Mar	10.50	Mar	3.70	Mar	5.00	Mar	3.10	Mar	2.80	Mar	2.90	Mar	3.10	Mar	-0.40
Apr	10.00	Apr	3.70	Apr	5.10	Apr	3.20	Apr	2.50	Apr	3.30	Apr	3.50	Apr	-0.70
May	9.80	May	3.80	May	5.40	May	3.20	May	2.20	May	3.60	May	2.80	May	-1.28
Jun	9.60	Jun	3.80	Jun	5.20	Jun	3.00	Jun	2.30	Jun	3.20	Jun	2.50	June	-1.40
Jul	10.80	Jul	3.60	Jul	5.00	Jul	2.80	Jul	2.20	Jul	2.70	Jul	3.20		
Aug	10.80	Aug	3.30	Aug	4.70	Aug	2.80	Aug	2.20	Aug	2.70	Aug	3.60		
Sep	11.00	Sep	3.10	Sep	4.30	Sep	2.70	Sep	2.20	Sep	2.60	Sep	4.70		
Oct	10.10	Oct	3.20	Oct	4.50	Oct	2.80	Oct	2.10	Oct	2.10	Oct	4.30		
Nov	9.60	Nov	3.50	Nov	4.70	Nov	2.70	Nov	1.80	Nov	1.90	Nov	3.50		
Dec	8.90	Dec	3.80	Dec	4.60	Dec	2.70	Dec	1.70	Dec	1.60	Dec	3.40		
Jan 1982	8.40	Jan 1986	3.90	Jan 1990	5.20	Jan 1994	2.50	Jan 1998	1.60	Jan 2002	1.10	Jan 2006	4.00		
Feb	7.60	Feb	3.10	Feb	5.30	Feb	2.50	Feb	1.40	Feb	1.10	Feb	3.60		
Mar	6.80	Mar	2.30	Mar	5.20	Mar	2.50	Mar	1.40	Mar	1.50	Mar	3.40		
Apr	6.50	Apr	1.60	Apr	4.70	Apr	2.40	Apr	1.40	Apr	1.60	Apr	3.50		
May	6.70	May	1.50	May	4.40	May	2.30	May	1.70	May	1.20	May	4.20		
Jun	7.10	Jun	1.80	Jun	4.70	Jun	2.50	Jun	1.70	Jun	1.10	June	4.30		
Jul	6.40	Jul	1.60	Jul	4.80	Jul	2.90	Jul	1.70	Jul	1.50	July	4.10		
Aug	5.90	Aug	1.60	Aug	5.60	Aug	3.00	Aug	1.60	Aug	1.80	Aug	3.80		
Sep	5.00	Sep	1.80	Sep	6.20	Sep	2.60	Sep	1.50	Sep	1.50	Sep	2.10		
Oct	5.10	Oct	1.50	Oct	6.30	Oct	2.70	Oct	1.50	Oct	2.00	Oct	1.30		
Nov	4.60	Nov	1.30	Nov	6.30	Nov	2.70	Nov	1.50	Nov	2.20	Nov	2.00		
Dec	3.80	Dec	1.10	Dec	6.10	Dec	2.80	Dec	1.60	Dec	2.40	Dec	2.50		
Jan 1983	3.70	Jan 1987	1.50	Jan 1991	5.70	Jan 1995	2.90	Jan 1999	1.70	Jan 2003	2.60	Jan 2007	2.10		
Feb	3.50	Feb	2.10	Feb	5.30	Feb	2.90	Feb	1.60	Feb	3.00	Feb	2.40		
Mar	3.60	Mar	3.00	Mar	4.90	Mar	3.10	Mar	1.70	Mar	3.00	Mar	2.80		
Apr	3.90	Apr	3.80	Apr	4.90	Apr	2.40	Apr	2.30	Apr	2.20	Apr	2.60		
May	3.50	May	3.90	May	5.00	May	3.20	May	2.10	May	2.10	May	2.70		
Jun	2.60	Jun	3.70	Jun	4.70	Jun	3.00	Jun	2.00	Jun	2.10	Jun	2.70		
Jul	2.50	Jul	3.90	Jul	4.40	Jul	2.80	Jul	2.10	Jul	2.10	Jul	2.40		
Aug	2.60	Aug	4.30	Aug	3.80	Aug	2.60	Aug	2.30	Aug	2.20	Aug	2.00		
Sep	2.90	Sep	4.40	Sep	3.40	Sep	2.50	Sep	2.60	Sep	2.30	Sep	2.80		
Oct	2.90	Oct	4.50	Oct	2.90	Oct	2.80	Oct	2.60	Oct	2.00	Oct	3.50		
Nov	3.30	Nov	4.50	Nov	3.00	Nov	2.60	Nov	2.60	Nov	1.80	Nov	4.30		
Dec	3.80	Dec	4.40	Dec	3.10	Dec	2.50	Dec	2.70	Dec	1.90	Dec	4.10		

Source: U.S. Dept of Labor, Bureau of Labor Statistics, Consumer Price Index - All Urban Consumers,  
Change for 12-Month Period, Bureau of Labor Statistics,  
[http://www.bls.gov/schedule/archives/cpi\\_nr.htm](http://www.bls.gov/schedule/archives/cpi_nr.htm)

MISSOURI GAS ENERGY  
CASE NO. GR-2009-0355

Rate of Inflation  
1980 - 2009





**MISSOURI GAS ENERGY  
CASE NO. GR-2009-0355**

**Average Yields on Mergent's Public Utility Bonds**

Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)
Jan 1980	12.12	Jan 1984	13.40	Jan 1988	10.75	Jan 1992	8.67	Jan 1996	7.20	Jan 2000	8.22	Jan 2004	6.23	Jan 2008	6.08
Feb	13.48	Feb	13.50	Feb	10.11	Feb	8.77	Feb	7.37	Feb	8.10	Feb	6.17	Feb	6.28
Mar	14.33	Mar	14.03	Mar	10.11	Mar	8.84	Mar	7.72	Mar	8.14	Mar	6.01	Mar	6.29
Apr	13.50	Apr	14.30	Apr	10.53	Apr	8.79	Apr	7.88	Apr	8.14	Apr	6.38	Apr	6.36
May	12.17	May	14.95	May	10.75	May	8.72	May	7.99	May	8.55	May	6.68	May	6.38
Jun	11.87	Jun	15.16	Jun	10.71	Jun	8.64	Jun	8.07	Jun	8.22	Jun	6.53	Jun	6.50
Jul	12.12	Jul	14.92	Jul	10.96	Jul	8.46	Jul	8.02	Jul	8.17	Jul	6.34	Jul	6.50
Aug	12.82	Aug	14.29	Aug	11.09	Aug	8.34	Aug	7.84	Aug	8.05	Aug	6.18	Aug	6.48
Sep	13.29	Sep	14.04	Sep	10.56	Sep	8.32	Sep	8.01	Sep	8.16	Sep	6.01	Sep	6.59
Oct	13.53	Oct	13.68	Oct	9.92	Oct	8.44	Oct	7.76	Oct	8.08	Oct	5.95	Oct	7.70
Nov	14.07	Nov	13.15	Nov	9.89	Nov	8.53	Nov	7.48	Nov	8.03	Nov	5.97	Nov	7.80
Dec	14.48	Dec	12.96	Dec	10.02	Dec	8.36	Dec	7.58	Dec	7.79	Dec	5.93	Dec	6.87
Jan 1981	14.22	Jan 1985	12.88	Jan 1989	10.02	Jan 1993	8.23	Jan 1997	7.79	Jan 2001	7.76	Jan 2005	5.80	Jan 2009	6.77
Feb	14.84	Feb	13.00	Feb	10.02	Feb	8.00	Feb	7.68	Feb	7.69	Feb	5.64	Feb	6.72
Mar	14.86	Mar	13.66	Mar	10.16	Mar	7.85	Mar	7.92	Mar	7.59	Mar	5.86	Mar	6.85
Apr	15.32	Apr	13.42	Apr	10.14	Apr	7.76	Apr	8.08	Apr	7.81	Apr	5.72	Apr	6.90
May	15.84	May	12.89	May	9.92	May	7.78	May	7.94	May	7.88	May	5.60	May	6.83
Jun	15.27	Jun	11.91	Jun	9.49	Jun	7.68	Jun	7.77	Jun	7.75	Jun	5.39	June	6.54
Jul	15.87	Jul	11.88	Jul	9.34	Jul	7.53	Jul	7.52	Jul	7.71	Jul	5.50		
Aug	16.33	Aug	11.93	Aug	9.37	Aug	7.21	Aug	7.57	Aug	7.57	Aug	5.51		
Sep	16.89	Sep	11.95	Sep	9.43	Sep	7.01	Sep	7.50	Sep	7.73	Sep	5.54		
Oct	16.76	Oct	11.84	Oct	9.37	Oct	6.99	Oct	7.37	Oct	7.64	Oct	5.79		
Nov	15.50	Nov	11.33	Nov	9.33	Nov	7.30	Nov	7.24	Nov	7.61	Nov	5.88		
Dec	15.77	Dec	10.82	Dec	9.31	Dec	7.33	Dec	7.16	Dec	7.86	Dec	5.83		
Jan 1982	16.73	Jan 1986	10.66	Jan 1990	9.44	Jan 1994	7.31	Jan 1998	7.03	Jan 2002	7.69	Jan 2006	5.77		
Feb	16.72	Feb	10.16	Feb	9.66	Feb	7.44	Feb	7.09	Feb	7.62	Feb	5.83		
Mar	16.07	Mar	9.33	Mar	9.75	Mar	7.83	Mar	7.13	Mar	7.83	Mar	5.98		
Apr	15.82	Apr	9.02	Apr	9.87	Apr	8.20	Apr	7.12	Apr	7.74	Apr	6.28		
May	15.60	May	8.52	May	9.89	May	8.32	May	7.11	May	7.76	May	6.39		
Jun	16.18	Jun	9.51	Jun	9.69	Jun	8.31	Jun	6.99	Jun	7.87	June	6.39		
Jul	16.04	Jul	9.19	Jul	9.66	Jul	8.47	Jul	6.99	Jul	7.54	July	6.37		
Aug	15.22	Aug	9.15	Aug	9.84	Aug	8.41	Aug	6.96	Aug	7.34	Aug	6.20		
Sep	14.56	Sep	9.42	Sep	10.01	Sep	8.65	Sep	6.88	Sep	7.23	Sep	6.03		
Oct	13.88	Oct	9.39	Oct	9.94	Oct	8.88	Oct	6.88	Oct	7.43	Oct	6.01		
Nov	13.58	Nov	9.15	Nov	9.76	Nov	9.00	Nov	6.96	Nov	7.31	Nov	5.82		
Dec	13.55	Dec	8.96	Dec	9.57	Dec	8.79	Dec	6.84	Dec	7.20	Dec	5.83		
Jan 1983	13.46	Jan 1987	8.77	Jan 1991	9.56	Jan 1995	8.77	Jan 1999	6.87	Jan 2003	7.13	Jan 2007	5.96		
Feb	13.60	Feb	8.81	Feb	9.31	Feb	8.56	Feb	7.00	Feb	6.92	Feb	5.91		
Mar	13.28	Mar	8.75	Mar	9.39	Mar	8.41	Mar	7.18	Mar	6.80	Mar	5.87		
Apr	13.03	Apr	9.30	Apr	9.30	Apr	8.30	Apr	7.16	Apr	6.68	Apr	6.01		
May	13.00	May	9.82	May	9.29	May	7.93	May	7.42	May	6.35	May	6.03		
Jun	13.17	Jun	9.87	Jun	9.44	Jun	7.62	Jun	7.70	Jun	6.21	June	6.34		
Jul	13.28	Jul	10.01	Jul	9.40	Jul	7.73	Jul	7.66	Jul	6.54	July	6.28		
Aug	13.50	Aug	10.33	Aug	9.16	Aug	7.86	Aug	7.86	Aug	6.78	Aug	6.28		
Sep	13.35	Sep	11.00	Sep	9.03	Sep	7.62	Sep	7.87	Sep	6.58	Sep	6.24		
Oct	13.19	Oct	11.32	Oct	8.99	Oct	7.46	Oct	8.02	Oct	6.50	Oct	6.17		
Nov	13.33	Nov	10.82	Nov	8.93	Nov	7.40	Nov	7.86	Nov	6.44	Nov	6.04		
Dec	13.48	Dec	10.99	Dec	8.76	Dec	7.21	Dec	8.04	Dec	6.36	Dec	6.23		

Source:  
Mergent Bond Record

**MISSOURI GAS ENERGY  
CASE NO. GR-2009-0355**

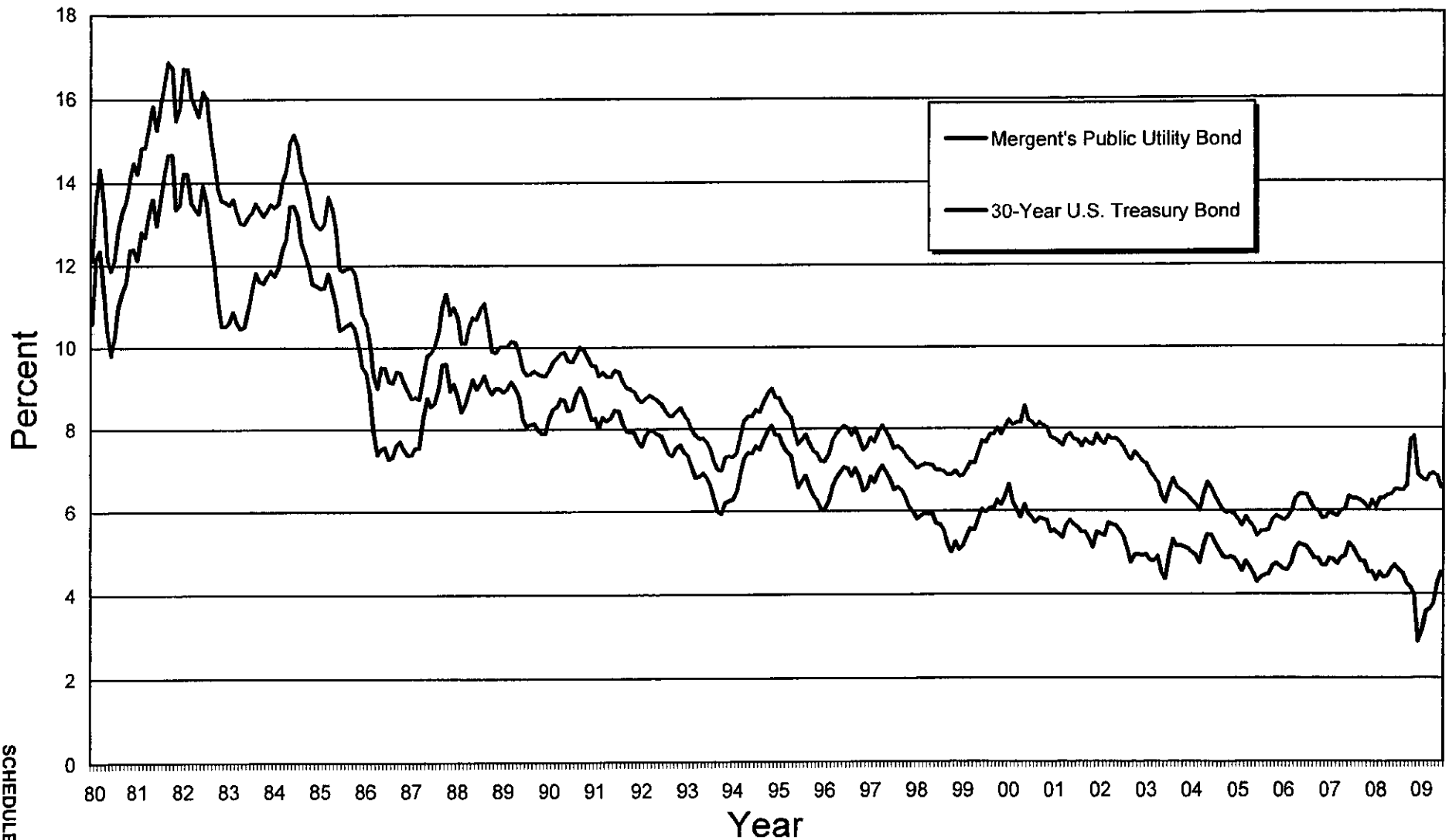
**Average Yields on Thirty-Year U.S. Treasury Bonds**

<u>Mo/Year</u>	<u>Rate (%)</u>	<u>Mo/Year</u>	<u>Rate (%)</u>	<u>Mo/Year</u>	<u>Rate (%)</u>	<u>Mo/Year</u>	<u>Rate (%)</u>	<u>Mo/Year</u>	<u>Rate (%)</u>	<u>Mo/Year</u>	<u>Rate (%)</u>	<u>Mo/Year</u>	<u>Rate (%)</u>	<u>Mo/Year</u>	<u>Rate (%)</u>
Jan 1980	10.60	Jan 1984	11.75	Jan 1988	8.83	Jan 1992	7.58	Jan 1996	6.05	Jan 2000	6.63	Jan 2004	4.99	Jan 2008	4.33
Feb	12.13	Feb	11.95	Feb	8.43	Feb	7.85	Feb	6.24	Feb	6.23	Feb	4.93	Feb	4.52
Mar	12.34	Mar	12.38	Mar	8.63	Mar	7.97	Mar	6.60	Mar	6.05	Mar	4.74	Mar	4.39
Apr	11.40	Apr	12.65	Apr	8.85	Apr	7.96	Apr	6.79	Apr	5.85	Apr	5.14	Apr	4.44
May	10.36	May	13.43	May	9.23	May	7.89	May	6.93	May	6.15	May	5.42	May	4.60
Jun	9.81	Jun	13.44	Jun	9.00	Jun	7.84	Jun	7.06	Jun	5.93	Jun	5.41	Jun	4.69
Jul	10.24	Jul	13.21	Jul	9.14	Jul	7.60	Jul	7.03	Jul	5.85	Jul	5.22	Jul	4.57
Aug	11.00	Aug	12.54	Aug	9.32	Aug	7.39	Aug	6.84	Aug	5.72	Aug	5.06	Aug	4.50
Sep	11.34	Sep	12.29	Sep	9.06	Sep	7.34	Sep	7.03	Sep	5.83	Sep	4.90	Sep	4.27
Oct	11.59	Oct	11.98	Oct	8.89	Oct	7.53	Oct	6.81	Oct	5.80	Oct	4.86	Oct	4.17
Nov	12.37	Nov	11.56	Nov	9.02	Nov	7.61	Nov	6.48	Nov	5.78	Nov	4.89	Nov	4.00
Dec	12.40	Dec	11.52	Dec	9.01	Dec	7.44	Dec	6.55	Dec	5.49	Dec	4.86	Dec	2.87
Jan 1981	12.14	Jan 1985	11.45	Jan 1989	8.93	Jan 1993	7.34	Jan 1997	6.83	Jan 2001	5.54	Jan 2005	4.73	Jan 2009	3.13
Feb	12.80	Feb	11.47	Feb	9.01	Feb	7.09	Feb	6.69	Feb	5.45	Feb	4.55	Feb	3.59
Mar	12.69	Mar	11.81	Mar	9.17	Mar	6.82	Mar	6.93	Mar	5.34	Mar	4.78	Mar	3.64
Apr	13.20	Apr	11.47	Apr	9.03	Apr	6.85	Apr	7.09	Apr	5.65	Apr	4.65	Apr	3.76
May	13.60	May	11.05	May	8.83	May	6.92	May	6.94	May	5.78	May	4.49	May	4.23
Jun	12.96	Jun	10.44	Jun	8.27	Jun	6.81	Jun	6.77	Jun	5.67	Jun	4.29	June	4.52
Jul	13.59	Jul	10.50	Jul	8.08	Jul	6.63	Jul	6.51	Jul	5.61	Jul	4.41		
Aug	14.17	Aug	10.56	Aug	8.12	Aug	6.32	Aug	6.58	Aug	5.48	Aug	4.46		
Sep	14.67	Sep	10.61	Sep	8.15	Sep	6.00	Sep	6.50	Sep	5.48	Sep	4.47		
Oct	14.68	Oct	10.50	Oct	8.00	Oct	5.94	Oct	6.33	Oct	5.32	Oct	4.67		
Nov	13.35	Nov	10.06	Nov	7.90	Nov	6.21	Nov	6.11	Nov	5.12	Nov	4.73		
Dec	13.45	Dec	9.54	Dec	7.90	Dec	6.25	Dec	5.99	Dec	5.48	Dec	4.66		
Jan 1982	14.22	Jan 1986	9.40	Jan 1990	8.26	Jan 1994	6.29	Jan 1998	5.81	Jan 2002	5.44	Jan 2006	4.59		
Feb	14.22	Feb	8.93	Feb	8.50	Feb	6.49	Feb	5.89	Feb	5.39	Feb	4.58		
Mar	13.53	Mar	7.96	Mar	8.56	Mar	6.91	Mar	5.95	Mar	5.71	Mar	4.73		
Apr	13.37	Apr	7.39	Apr	8.76	Apr	7.27	Apr	5.92	Apr	5.67	Apr	5.06		
May	13.24	May	7.52	May	8.73	May	7.41	May	5.93	May	5.64	May	5.20		
Jun	13.92	Jun	7.57	Jun	8.46	Jun	7.40	Jun	5.70	Jun	5.52	Jun	5.16		
Jul	13.55	Jul	7.27	Jul	8.50	Jul	7.58	Jul	5.68	Jul	5.38	July	5.13		
Aug	12.77	Aug	7.33	Aug	8.86	Aug	7.49	Aug	5.54	Aug	5.08	Aug	5.00		
Sep	12.07	Sep	7.62	Sep	9.03	Sep	7.71	Sep	5.20	Sep	4.76	Sep	4.85		
Oct	11.17	Oct	7.70	Oct	8.86	Oct	7.94	Oct	5.01	Oct	4.93	Oct	4.85		
Nov	10.54	Nov	7.52	Nov	8.54	Nov	8.08	Nov	5.25	Nov	4.95	Nov	4.69		
Dec	10.54	Dec	7.37	Dec	8.24	Dec	7.87	Dec	5.06	Dec	4.92	Dec	4.68		
Jan 1983	10.63	Jan 1987	7.39	Jan 1991	8.27	Jan 1995	7.85	Jan 1999	5.16	Jan 2003	4.94	Jan 2007	4.85		
Feb	10.88	Feb	7.54	Feb	8.03	Feb	7.61	Feb	5.37	Feb	4.81	Feb	4.82		
Mar	10.63	Mar	7.55	Mar	8.29	Mar	7.45	Mar	5.58	Mar	4.80	Mar	4.72		
Apr	10.48	Apr	8.25	Apr	8.21	Apr	7.36	Apr	5.55	Apr	4.90	Apr	4.66		
May	10.53	May	8.78	May	8.27	May	6.95	May	5.81	May	4.53	May	4.90		
Jun	10.93	Jun	8.57	Jun	8.47	Jun	6.57	Jun	6.04	Jun	4.37	Jun	5.20		
Jul	11.40	Jul	8.64	Jul	8.45	Jul	6.72	Jul	5.98	Jul	4.83	July	5.11		
Aug	11.82	Aug	8.97	Aug	8.14	Aug	6.86	Aug	6.07	Aug	5.30	Aug	4.93		
Sep	11.63	Sep	8.59	Sep	7.95	Sep	6.55	Sep	6.07	Sep	5.14	Sep	4.79		
Oct	11.58	Oct	9.61	Oct	7.93	Oct	6.37	Oct	6.26	Oct	5.16	Oct	4.77		
Nov	11.75	Nov	8.95	Nov	7.92	Nov	6.26	Nov	6.15	Nov	5.13	Nov	4.52		
Dec	11.88	Dec	9.12	Dec	7.70	Dec	6.06	Dec	6.35	Dec	5.08	Dec	4.53		

Sources:  
<http://finance.yahoo.com/q/hp?s=^TYX>  
<http://research.stlouisfed.org/fred2/data/GS30.txt>

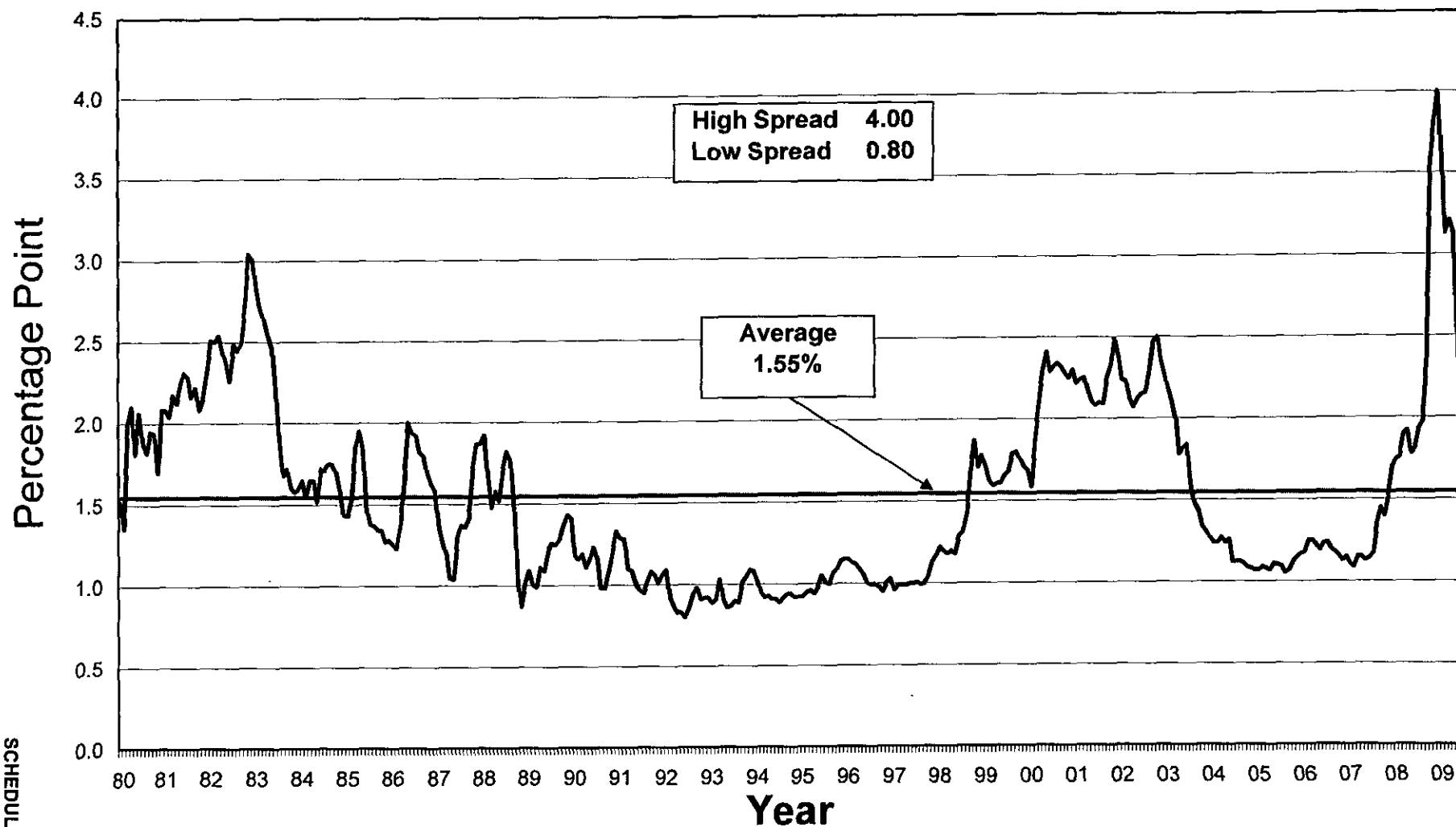
MISSOURI GAS ENERGY  
CASE NO. GR-2009-0355

Average Yields on Mergent's Public Utility Bonds and  
Thirty-Year U.S. Treasury Bonds (1980 - 2009)



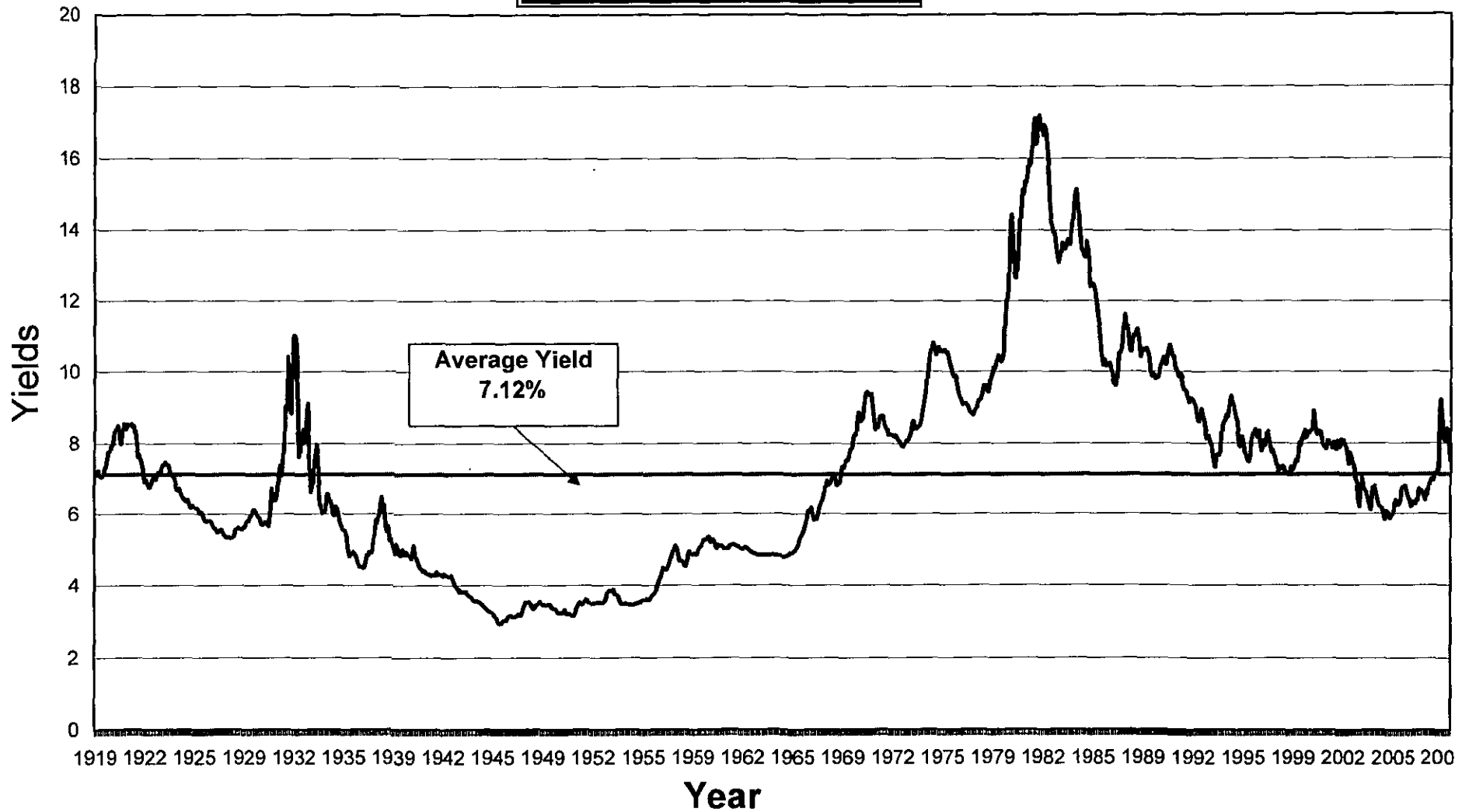
MISSOURI GAS ENERGY  
CASE NO. GR-2009-0355

Monthly Spreads Between Yields on Mergent's Public Utility Bonds and  
Thirty-Year U.S. Treasury Bonds (1980 - 2009)



MISSOURI GAS ENERGY  
CASE NO. GR-2009-0355

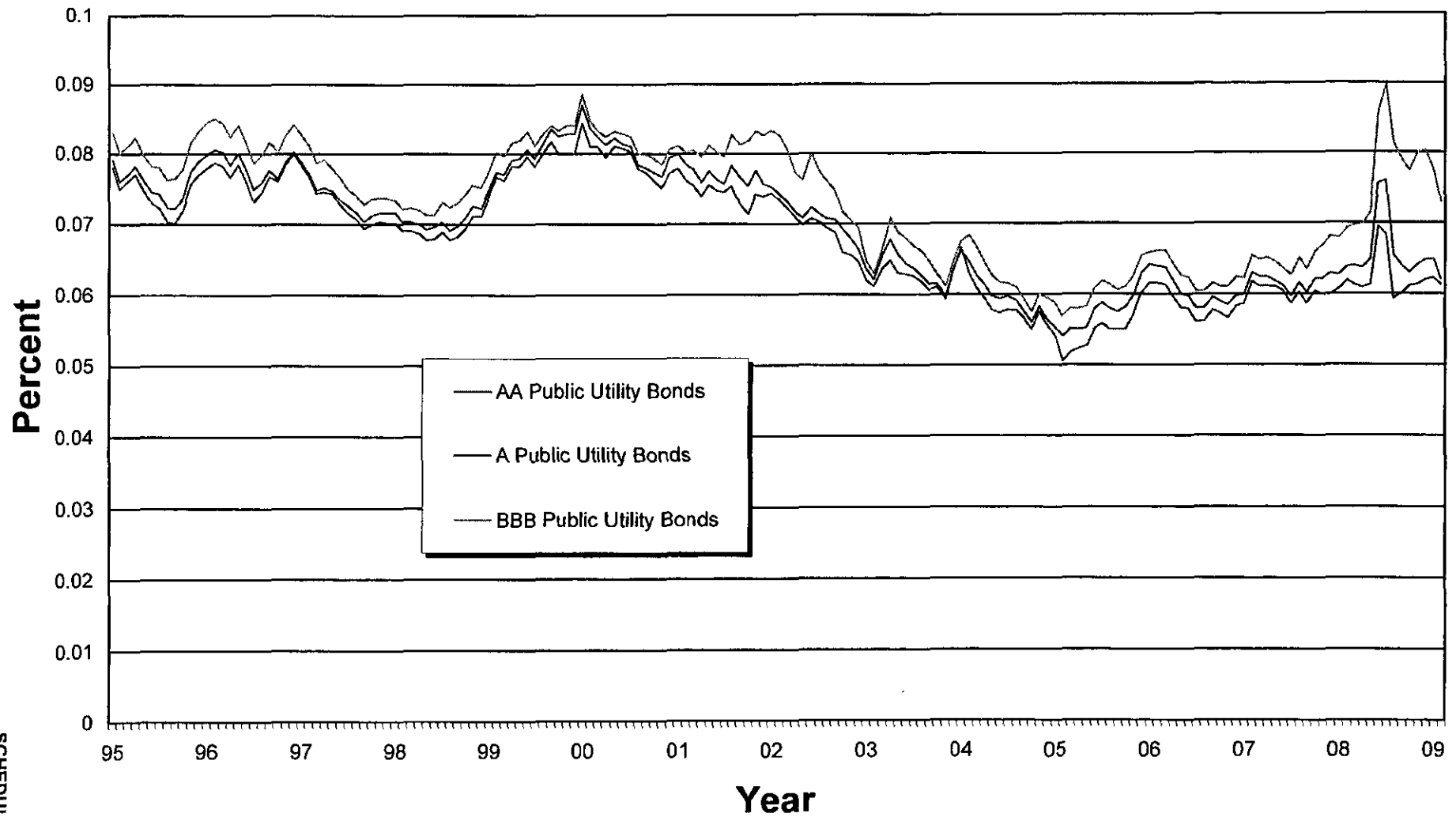
Moody's Baa Corporate  
Bond Yields 1919-2009



SCHEDULE 4-5

MISSOURI GAS ENERGY  
CASE NO. GR-2009-0355

Public Utility Bond Yield Spreads  
1995-2009



**MISSOURI GAS ENERGY  
CASE NO. GR-2009-0355**

**Economic Estimates and Projections, 2009-2011**

Source	Inflation Rate			Real GDP			Unemployment			3-Mo. T-Bill Rate			30-Year T-Bond Rate		
	2009	2010	2011	2009	2010	2011	2009	2010	2011	2009	2010	2011	2009	2010	2011
Value Line Investment Survey -- Selection & Opinion (5-29-09, page 3507)	0.00%	2.00%	2.30%	-3.10%	1.40%	2.80%	9.20%	9.90%	9.00%	0.20%	0.50%	2.00%	4.00%	4.30%	4.50%
The Budget and Economic Outlook FY2009-2019 (January 2009)	0.10%	1.70%	1.80%	-2.20%	1.50%	4.20%	8.30%	9.00%	8.00%	0.20%	0.60%	2.10%	N.A.	N.A.	N.A.
Current rate	-1.40%			-1.00%			9.50%			0.18%			4.52%		

Notes: N.A. = Not Available.

Value Line data for 2009-2010 are estimated.

CBO data values for 2009 and 2010 are forecasted, data for 2011 is projected.

Sources of Current Rates:

Inflation:	The Bureau of Labor Statistics, Consumer Price Index - All Urban Consumers, unadjusted 6-Month Period Ending, June 30, 2009 (see first paragraph). <a href="http://www.bls.gov/schedule/archives/cpi_nr.htm">http://www.bls.gov/schedule/archives/cpi_nr.htm</a>
GDP:	U.S. Department of Commerce, Bureau of Economic Analysis. Percentage change for the second Quarter 2009 (see first paragraph). <a href="http://www.bea.gov/newsreleases/national/gdp/gdpnewsrelease.htm">http://www.bea.gov/newsreleases/national/gdp/gdpnewsrelease.htm</a>
Unemployment:	The Bureau of Labor Statistics, Economy Situation Summary - Unemployment Rate, June 2009. <a href="http://www.bls.gov/news.release/empsit.nr0.htm">http://www.bls.gov/news.release/empsit.nr0.htm</a>
3-Month Treasury:	St. Louis Federal Reserve website for August 7, 2009 (Weekly). <a href="http://research.stlouisfed.org/fred2/series/TB3MS/22">http://research.stlouisfed.org/fred2/series/TB3MS/22</a>
30-Yr. T-Bond:	St. Louis Federal Reserve website for August 7, 2009 (Weekly). <a href="http://research.stlouisfed.org/fred2/series/WGS30YR">http://research.stlouisfed.org/fred2/series/WGS30YR</a>
Other Sources:	ValueLine Investment Survey Selection & Opinion, May 29, 2009, page 3507. The Congressional Budget Office, The Budget and Economic Outlook: Fiscal Years 2009-2019, January 2009. <a href="http://www.cbo.gov/publications/bvsubject.cfm?cat=0">http://www.cbo.gov/publications/bvsubject.cfm?cat=0</a>

**MISSOURI GAS ENERGY**  
**CASE NO. GR-2009-0355**

**Historical Capital Structures for Southern Union Company**  
**Consolidated Basis**  
(Thousands of Dollars)

Capital Components	2004	2005	2006	2007	2008
Common Equity	\$1,267,557	\$1,624,069	\$1,820,408	\$1,975,806	\$2,252,952
Preferred Stock	\$230,000	\$230,000	\$230,000	\$230,000	\$115,000
Long-Term Debt	\$2,160,003 <sup>1</sup>	\$2,175,789 <sup>1</sup>	\$3,150,667 <sup>1</sup>	\$3,395,006 <sup>1</sup>	\$3,318,057 <sup>1</sup>
Short-Term Debt	\$699,000	\$420,000	\$100,000	\$123,000	\$401,459
Total	<u>\$4,356,560</u>	<u>\$4,449,858</u>	<u>\$5,301,075</u>	<u>\$5,723,812</u>	<u>\$6,087,468</u>

Capital Structure	2004	2005	2006	2007	2008	5-Year Average
Common Equity	29.10%	36.50%	34.34%	34.52%	37.01%	34.29%
Preferred Stock	5.28%	5.17%	4.34%	4.02%	1.89%	4.14%
Long-Term Debt	49.58%	48.90%	59.43%	59.31%	54.51%	54.35%
Short-Term Debt	16.04%	9.44%	1.89%	2.15%	6.59%	7.22%
Total	<u>100.00%</u>	<u>100.00%</u>	<u>100.00%</u>	<u>100.00%</u>	<u>100.00%</u>	<u>100.00%</u>

Notes:

1. The amount of long-term debt includes current maturities.

Source: Southern Union Company's Stockholders 2004, 2005, 2006, 2007 and 2008 Annual Reports.



**MISSOURI GAS ENERGY  
CASE NO. GR-2009-0355**

**Criteria for Selecting Comparable Natural Gas Distribution Companies**

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Natural Gas Distribution Companies	Stock Publicly Traded	Information Printed In Value Line	10-Year Value Line Historical Data Available	No Reduced Dividend since 2006	Projected Growth Available from Value Line and IBES	At Least Investment Grade Credit Rating	Comparable Company Met All Criteria
<b>AGL Resources, Inc.</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>
<b>Atmos Energy Corporation</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>
Delta Natural Gas Company, Inc.	Yes	Yes	Yes	Yes	No		
Energy West	Yes	Yes	Yes	No			
Laclede Group	Yes	Yes	Yes	Yes	No		
<b>Piedmont Natural Gas Company, Inc.</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>
<b>Northwest Natural Gas Company</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>
<b>New Jersey Resources Corp.</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>
RGC Resources, Inc.	Yes	Yes	Yes	Yes	No		
<b>South Jersey Industries, Inc.</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>
<b>WGL Holdings, Inc.</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>

Sources: Column 1 = Edward Jones' Natural Gas Industry Summary, June 30, 2009.

Columns 2, 3, 4, 5 and 6 = The Value Line Investment Survey: Ratings & Reports, June 12, 2009.

Column 6 = I/B/E/S Estimates, July 2009

Column 7 = Standard & Poor's RatingsDirect

**MISSOURI GAS ENERGY**  
**CASE NO. GR-2009-0355**

**Seven Comparable Natural Gas Distribution Companies**  
**For Missouri Gas Energy**

<b>Number</b>	<b>Ticker Symbol</b>	<b>Company Name</b>
1	ATG	AGL Resources, Inc.
2	ATO	Atmos Energy Corporation.
3	NJR	New Jersey Resources Corporation
4	NWN	Northwest Natural Gas
5	PNY	Piedmont Natural Gas Company, Inc.
6	SJI	South Jersey Industries, Inc.
7	WGL	WGL Holdings, Inc.

**MISSOURI GAS ENERGY  
CASE NO. GR-2009-0355**

**Proxy Group Capital Structures for Most Recently Available 2009 Fiscal Quarter Balance Sheets**

(In Thousands of Dollars)

Capital Components	AGL	Atmos	Piedmont	New Jersey Resources	NW Natural Gas	South Jersey	WGL
Common Equity	\$1,759,000	\$2,191,520	\$969,852	\$721,239	\$657,247	\$539,615	\$1,131,378
Long-Term Debt <sup>1</sup>	\$1,675,000	\$2,169,526	\$823,471	\$463,666	\$587,000	\$357,824	\$706,681
Short-Term Debt <sup>2</sup>	\$291,000	\$97,784	\$249,905	\$96,311	\$117,813	\$152,209	\$125,637
Total	<u>\$3,725,000</u>	<u>\$4,458,830</u>	<u>\$2,043,228</u>	<u>\$1,281,216</u>	<u>\$1,362,060</u>	<u>\$1,049,648</u>	<u>\$1,963,696</u>

(In Percentages)

Capital Structure	AGL	Atmos	Piedmont	New Jersey Resources	NW Natural Gas	South Jersey	WGL	Simple Average
Common Equity	47.22%	49.15%	47.47%	56.29%	48.25%	51.41%	57.61%	51.06%
Long-Term Debt <sup>1</sup>	44.97%	48.66%	40.30%	36.19%	43.10%	34.09%	35.99%	40.47%
Short-Term Debt <sup>2</sup>	7.81%	2.19%	12.23%	7.52%	8.65%	14.50%	6.40%	8.47%
Total	<u>100.00%</u>	<u>100.00%</u>	<u>100.00%</u>	<u>100.00%</u>	<u>100.00%</u>	<u>100.00%</u>	<u>100.00%</u>	<u>100.00%</u>

Notes:

1. The amount of long-term debt includes current maturities.
2. The amount of short-term debt is based on a 4-quarter average and was reduced for each comparable company's CWIP balance.

**MISSOURI GAS ENERGY  
CASE NO. GR-2009-0355**

**Cost of Long-Term Debt  
for the Seven Comparable Gas Utilities  
as of Most Recent Fiscal Quarter**

<u>Company Name</u>	<u>Amount Outstanding</u>	<u>Interest Expense</u>	<u>Stated Cost of Long-term Debt</u>
AGL Resources, Inc.	\$ 1,671,000	\$ 93,382	5.59%
Atmos Energy Corp.	\$ 2,172,303	\$ 141,051	6.49%
New Jersey Resources Corp.	\$ 399,845	\$ 17,127	4.28%
Northwest Natural Gas Co.	\$ 587,000	\$ 37,446	6.38%
Piedmont Natural Gas Co.	\$ 823,471	\$ 55,510	6.74%
South Jersey Industries, Inc.	\$ 332,896	\$ 17,318	5.20%
WGL Holdings, Inc.	\$ 689,000	\$ 41,838	6.07%
<b>Total</b>	<b>\$ 6,675,515</b>	<b>\$ 403,672</b>	<b>5.82%</b>

Stated Cost of Long-Term Debt 5.82%

plus issuance costs 0.10%<sup>1</sup>

Total Embedded Cost of Debt **5.92%**

Notes: <sup>1</sup>Based on issuance costs from last Laclede rate case, Case No. GR-2007-0208

**MISSOURI GAS ENERGY**  
**CASE NO. GR-2009-0355**

**Calculation of the Composite Cost Rate of Long-Term Debt Outstanding**  
**for AGL Resources Inc.**  
**as of June 30, 2009**

	<u>Amount Outstanding</u> (\$ 000s)	<u>Effective Cost Rate</u>	<u>Annualized Cost</u> (\$ 000s)	<u>Composite Interest Rate</u>
<b>Medium-term Notes</b>				
Issue June 1992 Maturity at June 2012	\$ 5,000	8.40%	\$ 420	
Issue June 1992 Maturity at June 2012	5,000	8.30%	415	
Issue June 1992 Maturity at July 2012	5,000	8.30%	415	
Issue July 1997 Maturity July 2017	22,000	7.20%	1,584	
Issue February 1991 Maturity Feb. 2021	30,000	9.10%	2,730	
Issue April 1992 Maturity April 2022	5,000	8.55%	428	
Issue April 1992 Maturity April 2022	25,000	8.70%	2,175	
Issue April 1992 Maturity April 2022	6,000	8.55%	513	
Issue May 1992 Maturity May 2022	10,000	8.55%	855	
Issue Nov. 1996 Maturity Nov. 2026	30,000	6.55%	1,965	
Issue July 1997 Maturity July 2027	53,000	7.30%	3,869	
<b>Senior Notes</b>				
Issue Feb. 2001 Maturity Jan. 2011	300,000	7.13%	21,375	
Issue July 2003 Maturity April 2013	225,000	4.45%	10,013	
Issue Dec. 2004 Maturity Jan 2015	200,000	4.95%	9,900	
Issue June 2006 Maturity July 2016	175,000	6.38%	11,156	
Issue Dec 2007 Maturity July 2016	125,000	6.38%	7,969	
Issue Sep 2004 Maturity Oct 2034	250,000	6.00%	15,000	
Gas facility revenue bonds <sup>1</sup>	200,000	1.3%	2,600	
Total Long-Term Debt	<u>\$ 1,671,000</u>		<u>\$ 93,382</u>	<u>5.59%</u>

Notes: <sup>1</sup>Based on weighted average interest rate provided in Note 6. to AGL's Financial Statements in its June 30, 2009 SEC Form 10-Q Filing.

Sources of Information: 2008 Annual Form 10-K and 2009 Form 10-Q for Quarterly Period Ended June 30, 2009.

**MISSOURI GAS ENERGY**  
**CASE NO. GR-2009-0355**

**Calculation of the Composite Cost Rate of Long-Term Debt Outstanding**  
**for Atmos Energy Corporation**  
**as of June 30, 2009**

<u>Series</u>	<u>Amount Outstanding</u> (\$ 000s)	<u>Effective Cost Rate</u>	<u>Annualized Cost</u> (\$ 000s)	<u>Composite Interest Rate</u>
<u>Long-Term Debt</u>				
Unsecured 7.375% Senior Notes, due 2011	350,000	7.375%	25,814	
Unsecured 10% Unsecured Notes, due 2011	2,303	10.000%	230	
Unsecured 5.125% Senior Notes, due 2013	250,000	5.125%	12,813	
Unsecured 4.95% Senior Notes, due 2014	500,000	4.950%	24,750	
Unsecured 6.35% Senior Notes, due 2017	250,000	6.350%	15,875	
Unsecured 8.50% Senior Notes, due 2019	450,000	8.500%	38,250	
Unsecured 5.95% Senior Notes, due 2034	200,000	5.950%	11,900	
Medium Term Notes				
Series A, 1995-2, 6.27%, due 2010	10,000	6.270%	627	
Series A, 1995-1, 6.67%, due 2025	10,000	6.670%	667	
Unsecured 6.75% Debentures, due 2028	150,000	6.750%	10,125	
Total Long-Term Debt	<u>\$ 2,172,303</u>		<u>\$ 141,051</u>	<u>6.49%</u>

Sources of Information: 2008 Annual Form 10-K and 2009 Form 10-Q for Quarterly Period Ended June 30, 2009

**MISSOURI GAS ENERGY  
CASE NO. GR-2009-0355**

**Calculation of the Composite Cost Rate of Long-Term Debt Outstanding  
for New Jersey Resources Corp.  
as of June 30, 2009**

<u>Series</u>	<u>Amount Outstanding (\$ 000s)</u>	<u>Effective Cost Rate (1)</u>	<u>Annualized Cost (\$ 000s)</u>	<u>Composite Interest Rate</u>
<u>New Jersey Natural Gas</u>				
<u>First Mortgage Bonds</u>				
Variable Series AA, due 2030	25,000	0.600% <sup>1</sup>	150	
Variable Series BB, due 2030	16,000	0.600% <sup>1</sup>	96	
6.88% Series CC, due 2010	20,000	6.880%	1,376	
Variable Series DD, due 2027	13,500	0.600% <sup>1</sup>	81	
Variable Series EE, due 2028	9,545	0.600% <sup>1</sup>	57	
Variable Series FF, due 2028	15,000	0.600% <sup>1</sup>	90	
Variable Series GG, due 2033	18,000	0.600% <sup>1</sup>	108	
5% Series HH, due 2038	12,000	5.000%	600	
4.5% Series II, due 2023	10,300	4.500%	464	
4.6% Series JJ, due 2024	10,500	4.600%	483	
4.9% Series KK, due 2040	15,000	4.900%	735	
5.6% Series LL, due 2018	125,000	5.600%	7,000	
4.77% Unsecured senior notes, due 2014	60,000	4.770%	2,862	
<u>New Jersey Resources</u>				
6.05% Unsecured senior notes, due 2017	50,000	6.050%	3,025	
<b>Total Long-Term Debt</b>	<b>\$ 399,845</b>		<b>\$ 17,127</b>	<b>4.28%</b>

Notes: <sup>1</sup>Based on weighted average interest rate provided in Note 7. to the Financial Statements in New Jersey Resources June 30, 2009 SEC Form 10-Q Filing.

Sources of Information: 2008 Annual Form 10-K and 2009 Form 10-Q for Quarterly Period Ended June 30, 2009

**MISSOURI GAS ENERGY**  
**CASE NO. GR-2009-0355**

**Calculation of the Composite Cost Rate of Long-Term Debt Outstanding**  
**for Northwest Natural Gas Company**  
**as of June 30, 2009**

<u>Series</u>	<u>Amount Outstanding (\$ 000s)</u>	<u>Effective Cost Rate</u>	<u>Annualized Cost (\$ 000s)</u>	<u>Composite Interest Rate</u>
<b>First Mortgage Bonds</b>				
4.110% Series B due 2010	10,000	4.110%	411	
7.450% Series B due 2010	25,000	7.450%	1,863	
6.665% Series B due 2011	10,000	6.665%	667	
7.130% Series B due 2012	40,000	7.130%	2,852	
8.260% Series B due 2014	10,000	8.260%	826	
4.700% Series B due 2015	40,000	4.700%	1,880	
5.150% Series B due 2016	25,000	5.150%	1,288	
7.000% Series B due 2017	40,000	7.000%	2,800	
6.600% Series B due 2018	22,000	6.600%	1,452	
8.310% Series B due 2019	10,000	8.310%	831	
7.630% Series B due 2019	20,000	7.630%	1,526	
5.370% Series B due 2020	75,000	5.370%	4,028	
9.050% Series A due 2021	10,000	9.050%	905	
5.620% Series B due 2023	40,000	5.620%	2,248	
7.720% Series B due 2025	20,000	7.720%	1,544	
6.520% Series B due 2025	10,000	6.520%	652	
7.050% Series B due 2026	20,000	7.050%	1,410	
7.000% Series B due 2027	20,000	7.000%	1,400	
6.650% Series B due 2027	20,000	6.650%	1,330	
6.650% Series B due 2028	10,000	6.650%	665	
7.740% Series B due 2030	20,000	7.740%	1,548	
7.850% Series B due 2030	10,000	7.850%	785	
5.820% Series B due 2032	30,000	5.820%	1,746	
5.660% Series B due 2033	40,000	5.660%	2,264	
5.250% Series B due 2035	10,000	5.250%	525	
<b>Total Long-Term Debt</b>	<b>\$ 587,000</b>		<b>\$ 37,446</b>	<b>6.38%</b>

Sources of Information: 2008 Annual Form 10-K and 2009 Form 10-Q for Quarterly Period Ended June 30, 2009



**MISSOURI GAS ENERGY**  
**CASE NO. GR-2009-0355**

**Calculation of the Composite Cost Rate of Long-Term Debt Outstanding**  
**for Piedmont Natural Gas Co.**  
**as of April 30, 2009**

<u>Series</u>	<u>Amount Outstanding (\$ 000s)</u>	<u>Effective Cost Rate</u>	<u>Annualized Cost (\$ 000s)</u>	<u>Composite Interest Rate</u>
Senior Notes				
8.51%, due 2017	\$ 35,000	8.51%	\$ 2,979	
Insured Quarterly Notes:				
6.25%, due 2036	198,471	6.25%	12,404	
Medium-Term Notes				
7.35%, due 2009	30,000	7.35%	2,205	
7.80%, due 2010	60,000	7.80%	4,680	
6.55%, due 2011	60,000	6.55%	3,930	
5.00%, due 2013	100,000	5.00%	5,000	
6.87%, due 2023	45,000	6.87%	3,092	
8.45%, due 2024	40,000	8.45%	3,380	
7.40%, due 2025	55,000	7.40%	4,070	
7.50%, due 2026	40,000	7.50%	3,000	
7.95% due, 2029	60,000	7.95%	4,770	
6.00%, due 2033	100,000	6.00%	6,000	
Total Long-Term Debt	<u>\$ 823,471</u>		<u>\$ 55,510</u>	<u>6.74%</u>

Sources of Information: 2008 Annual Form 10-K and 2009 Form 10-Q for Quarterly Period Ended April 30, 2009

**MISSOURI GAS ENERGY  
CASE NO. GR-2009-0355**

**Calculation of the Composite Cost Rate of Long-Term Debt Outstanding  
for South Jersey Industries, Inc.  
as of June 30, 2009**

<u>Series</u>	<u>Amount Outstanding (\$ 000s)</u>	<u>Effective Cost Rate</u>	<u>Annualized Cost (\$ 000s)</u>	<u>Composite Interest Rate</u>
<u>First Mortgage Bonds</u>				
6.12% Series due 2010	10,000	6.12%	612	
6.74% Series due 2011	10,000	6.74%	674	
6.57% Series due 2011	15,000	6.57%	986	
4.46% Series due 2013	10,500	4.46%	468	
5.027% Series due 2013	14,500	5.027%	729	
4.52% Series due 2014	11,000	4.52%	497	
5.115% Series due 2014	10,000	5.115%	512	
5.387% Series due 2015	10,000	5.387%	539	
5.437% Series due 2016	10,000	5.437%	544	
6.50% Series due 2016	9,873	6.50%	642	
4.60% Series due 2016	17,000	4.60%	782	
4.657% Series due 2017	15,000	4.657%	699	
7.97% Series due 2018	10,000	7.97%	797	
7.125% Series due 2018	20,000	7.125%	1,425	
5.587% Series due 2019	10,000	5.587%	559	
7.7% Series due 2027	35,000	7.70%	2,695	
5.55% Series due 2033	32,000	5.55%	1,776	
6.213% Series due 2034	10,000	6.213%	621	
5.45% Series due 2035	10,000	5.45%	545	
<u>Marina Energy LLC</u>				
Series A 2001 Bonds at variables rates due 2031	20,000	1.68% <sup>1</sup>	336	
Series B 2001 Bonds at variables rates due 2021	25,000	2.57% <sup>1</sup>	643	
Series A 2006 Bonds at variables rates due 2036	16,400	0.98% <sup>1</sup>	161	
<u>AC Landfill Energy, LLC</u>				
Bank Term Loan, 6% due 2014	442	6.00%	27	
Mortgage Bond, 4.19% due 2019	1,181	4.19%	49	
Total Long-Term Debt	<u>\$ 332,896</u>		<u>\$ 17,318</u>	<u>5.20%</u>

Notes: <sup>1</sup> As of December 31, 2008 due to lack of information available in June 30, 2009 SEC Form 10-Q Filing.

Sources of Information: 2008 Annual Form 10-K and 2009 Form 10-Q for Quarterly Period Ended June 30, 2009

**MISSOURI GAS ENERGY  
CASE NO. GR-2009-0355**

**Calculation of the Composite Cost Rate of Long-Term Debt Outstanding  
for WGL Holdings, Inc.  
as of June 30, 2009**

<u>Series</u>	<u>Amount Outstanding</u> (\$ 000s)	<u>Effective Cost Rate</u>	<u>Annualized Cost</u> (\$ 000s)	<u>Composite Interest Rate</u>
<u>Washington Gas Light Company</u> <u>Unsecured Medium-Term Notes</u>				
Due fiscal year 2009, 6.92%	50,000	6.92%	3,460	
Due fiscal year 2010, 3.61%	50,000	3.61%	1,805	
Due fiscal year 2010, 7.50% to 7.70%	24,000	7.60% <sup>1</sup>	1,824	
Due fiscal year 2011, 6.64%	30,000	6.64%	1,992	
Due fiscal year 2012, 5.90% to 6.05%	77,000	5.98% <sup>2</sup>	4,605	
Due fiscal year 2014, 4.88% to 5.17%	67,000	5.03% <sup>3</sup>	3,370	
Due fiscal year 2015, 4.83%	20,000	4.83%	966	
Due fiscal year 2016, 5.17%	25,000	5.17%	1,293	
Due fiscal year 2018, 7.46%	50,000	7.46%	3,730	
Due fiscal year 2023, 6.65%	20,000	6.65%	1,330	
Due fiscal year 2025, 5.44%	40,500	5.44%	2,203	
Due fiscal year 2027, 6.40% to 6.82%	125,000	6.61% <sup>4</sup>	8,263	
Due fiscal year 2028, 6.57% to 6.85%	52,000	6.71% <sup>5</sup>	3,489	
Due fiscal year 2030, 7.50%	8,500	7.50%	638	
Due fiscal year 2036, 5.70% to 5.78%	50,000	5.74% <sup>6</sup>	2,870	
Total Long-Term Debt	<u>\$ 689,000</u>		<u>\$ 41,838</u>	<u>6.07%</u>

Notes: <sup>1</sup> Midpoint of 7.50% and 7.70%, ( 7.60% = ( 7.50% + 7.70% ) / 2 ).

<sup>2</sup> Midpoint of 5.90% and 6.05%, ( 5.98% = ( 5.90% + 6.05% ) / 2 ).

<sup>3</sup> Midpoint of 4.88% and 5.17%, ( 5.03% = ( 4.88% + 5.17% ) / 2 ).

<sup>4</sup> Midpoint of 6.40% and 6.82%, ( 6.61% = ( 6.40% + 6.82% ) / 2 ).

<sup>5</sup> Midpoint of 6.57% and 6.85%, ( 6.71% = ( 6.57% + 6.85% ) / 2 ).

<sup>6</sup> Midpoint of 5.70% and 5.78%, ( 5.74% = ( 5.70% + 5.78% ) / 2 ).

Sources of Information: 2008 Annual Form 10-K and 2009 Form 10-Q for Quarterly Period Ended June 30, 2009.

**MISSOURI GAS ENERGY  
CASE NO. GR-2009-0355**

**Ten-Year Dividends Per Share, Earnings Per Share, & Book Value Per Share Growth Rates  
for the Seven Comparable Natural Gas Distribution Companies**

----- 10-Year Annual Compound Growth Rates -----				Average of 10 Year Annual Compound Growth Rates
<u>Company Name</u>	<u>DPS</u>	<u>EPS</u>	<u>BVPS</u>	
AGL Resources, Inc.	4.00%	7.00%	7.00%	6.00%
Atmos Energy Corporation	2.50%	2.50%	6.50%	3.83%
New Jersey Resources Corp.	4.00%	7.50%	8.50%	6.67%
Northwest Natural Gas Co.	2.00%	5.00%	3.50%	3.50%
Piedmont Natural Gas Co.	5.00%	4.50%	5.50%	5.00%
South Jersey Industries, Inc.	3.50%	11.50%	9.00%	8.00%
WGL Holdings, Inc.	<u>1.50%</u>	<u>2.00%</u>	<u>4.00%</u>	<u>2.50%</u>
Average	<u>3.21%</u>	<u>5.71%</u>	<u>6.29%</u>	<u>5.07%</u>
Standard Deviation	1.16%	3.03%	1.94%	1.80%

Source: The Value Line Investment Survey: Ratings & Reports, June 12, 2009.

**MISSOURI GAS ENERGY**  
**CASE NO. GR-2009-0355**

**Five-Year Dividends Per Share, Earnings Per Share, & Book Value Per Share Growth Rates  
for the Seven Comparable Natural Gas Distribution Companies**

<u>Company Name</u>	<u>5-Year Annual Compound Growth Rates</u>			<u>Average of 5 Year Annual Compound Growth Rates</u>
	<u>DPS</u>	<u>EPS</u>	<u>BVPS</u>	
AGL Resources, Inc.	8.00%	8.50%	10.00%	8.83%
Atmos Energy Corp.	1.50%	5.00%	7.50%	4.67%
New Jersey Resources Corp.	5.00%	7.50%	11.50%	8.00%
Northwest Natural Gas Co.	3.00%	8.00%	3.50%	4.83%
Piedmont Natural Gas Co.	4.50%	6.50%	6.00%	5.67%
South Jersey Industries, Inc.	6.00%	13.00%	11.00%	10.00%
WGL Holdings, Inc.	<u>1.50%</u>	<u>4.00%</u>	<u>4.50%</u>	<u>3.33%</u>
<b>Average</b>	<b><u>4.21%</u></b>	<b><u>7.50%</u></b>	<b><u>7.71%</u></b>	<b><u>6.48%</u></b>
Standard Deviation	2.22%	2.70%	2.96%	2.29%

Source: The Value Line Investment Survey: Ratings & Reports, June 12, 2009.

**MISSOURI GAS ENERGY**  
**CASE NO. GR-2009-0355**

**Average of Ten and Five-Year Dividends Per Share, Earnings Per Share, & Book Value Per Share  
Growth Rates for the Seven Comparable Natural Gas Distribution Companies**

<b>Company Name</b>	<b>10-Year Average DPS, EPS &amp; BVPS</b>	<b>5-Year Average DPS, EPS &amp; BVPS</b>	<b>Average of 5-Year &amp; 10-Year Averages</b>
AGL Resources, Inc.	6.00%	8.83%	7.42%
Atmos Energy Corp.	3.83%	4.67%	4.25%
New Jersey Resources Corporation	6.67%	8.00%	7.33%
Northwest Natural Gas	3.50%	4.83%	4.17%
Piedmont Natural Gas Company, Inc.	5.00%	5.67%	5.33%
South Jersey Industries, Inc.	8.00%	10.00%	9.00%
WGL Holdings, Inc.	<u>2.50%</u>	<u>3.33%</u>	<u>2.92%</u>
<b>Average</b>	<b><u>5.07%</u></b>	<b><u>6.48%</u></b>	<b><u>5.77%</u></b>

**MISSOURI GAS ENERGY  
CASE NO. GR-2009-0355**

**Five-Year Projected Dividends Per Share, Earnings Per Share, & Book Value Per Share Growth Rates  
for the Seven Comparable Natural Gas Distribution Utility Companies**

<u>Company Name</u>	<u>5-Year Projected Compound Growth Rates</u>				<u>Average of 5 Year Annual Compound Growth Rates</u>
	<u>DPS</u>	<u>EPS</u>	<u>BVPS</u>		
AGL Resources, Inc.	2.50%	3.50%	1.50%		2.50%
Atmos Energy Corp.	1.50%	4.00%	4.00%		3.17%
New Jersey Resources Corporation	5.50%	6.00%	9.50%		7.00%
Northwest Natural Gas	5.50%	5.00%	5.00%		5.17%
Piedmont Natural Gas Company, Inc.	3.50%	6.00%	4.00%		4.50%
South Jersey Industries, Inc.	7.00%	5.50%	6.00%		6.17%
WGL Holdings, Inc.	2.50%	4.00%	5.00%		3.83%
<b>Average</b>	<b><u>4.00%</u></b>	<b><u>4.86%</u></b>	<b><u>5.00%</u></b>		<b><u>4.62%</u></b>
Standard Deviation	1.87%	0.95%	2.25%		1.49%

Source: The Value Line Investment Survey: Ratings & Reports, June 12, 2009.

**MISSOURI GAS ENERGY  
CASE NO. GR-2009-0355**

**Historical and Projected Growth Rates for the  
Seven Comparable Natural Gas Distribution Companies**

	(1)	(2)	(3)	(4)
<b>Company Name</b>	<b>Historical Growth Rate (DPS, EPS and BVPS)</b>	<b>Projected Growth Rate (DPS, EPS and BVPS)</b>	<b>Projected 5-Year EPS Growth IBES (Mean)</b>	<b>Projected 3-5 Year EPS Growth Value Line</b>
AGL Resources, Inc.	7.42%	2.50%	5.00%	3.50%
Atmos Energy Corp.	4.25%	3.17%	4.25%	4.00%
New Jersey Resources Corporation	7.33%	7.00%	7.00%	6.00%
Northwest Natural Gas	4.17%	5.17%	5.17%	5.00%
Piedmont Natural Gas Company, Inc.	5.33%	4.50%	6.20%	6.00%
South Jersey Industries, Inc.	9.00%	6.17%	9.67%	5.50%
WGL Holdings, Inc.	2.92%	3.83%	4.00%	4.00%
	<u><b>5.77%</b></u>	<u><b>4.62%</b></u>	<u><b>5.90%</b></u>	<u><b>4.86%</b></u>

**Proposed Range of Growth: 4.75%-5.75%**

Sources: Column 1 = Average of 10-Year and 5-Year Annual Compound Growth Rates from Schedule 11-3.

Column 2 = Schedule 12.

Column 3 = Reuters Website, July 2009

Column 4 = The Value Line Investment Survey: Ratings and Reports, June 12, 2009.



**MISSOURI GAS ENERGY  
CASE NO. GR-2009-0355**

**Average High / Low Stock Price for April 2009 through June 2009  
for the Seven Comparable Natural Gas Distribution Companies**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	-- April 2009 --		-- May 2009 --		-- June 2009 --		Average
	High	Low	High	Low	High	Low	High/Low
Company Name	Stock	Stock	Stock	Stock	Stock	Stock	Stock
	Price	Price	Price	Price	Price	Price	Price
							(4/09 - 6/09)
AGL Resources, Inc.	\$31.500	\$26.000	\$31.970	\$28.120	\$32.380	\$29.150	<b>\$29.853</b>
Atmos Energy Corp.	\$25.300	\$22.520	\$26.430	\$23.440	\$25.510	\$24.200	<b>\$24.567</b>
New Jersey Resources Corp.	\$34.840	\$30.790	\$33.600	\$30.950	\$37.570	\$33.570	<b>\$33.553</b>
Northwest Natural Gas Co.	\$44.160	\$39.580	\$43.790	\$39.630	\$46.070	\$42.670	<b>\$42.650</b>
Piedmont Natural Gas Co.	\$26.750	\$24.110	\$24.860	\$21.650	\$25.500	\$22.710	<b>\$24.263</b>
South Jersey Industries, Inc.	\$36.200	\$33.700	\$36.200	\$33.040	\$35.130	\$33.230	<b>\$34.583</b>
WGL Holdings, Inc.	\$33.290	\$30.210	\$31.700	\$28.590	\$32.600	\$29.910	<b>\$31.050</b>

Notes:

Column 7 = [ ( Column 1 + Column 2 + Column 3 + Column 4 + Column 5 + Column 6 ) / 6 ].

Source: <http://finance.yahoo.com>

**MISSOURI GAS ENERGY  
CASE NO. GR-2009-0355**

**Discounted Cash Flow (DCF) Estimated Costs of Common Equity  
for the Seven Comparable Natural Gas Distribution Companies**

	(1)	(2)	(3)
<b>Company Name</b>	<b>Expected Annual Dividend</b>	<b>Average High/Low Stock Price</b>	<b>Projected Dividend Yield</b>
AGL Resources, Inc.	\$1.74	\$29.853	5.83%
Atmos Energy Corp.	\$1.33	\$24.567	5.41%
New Jersey Resources Corp.	\$1.26	\$33.553	3.76%
Northwest Natural Gas Co.	\$1.62	\$42.650	3.80%
Piedmont Natural Gas Co.	\$1.09	\$24.263	4.49%
South Jersey Industries, Inc.	\$1.24	\$34.583	3.59%
WGL Holdings, Inc.	\$1.48	\$31.050	4.75%
<b>Average</b>			<b><u>4.52%</u></b>

**Proposed Dividend Yield:** 4.50%

**Proposed Range of Growth:** 4.75% - 5.75%

**Estimated Proxy Cost of Common Equity:** 9.25%-10.25%

**Recommended Cost of Common Equity** 9.25%-9.75%

Notes: Column 1 = Estimated Dividends Declared per share represents the average projected dividend for 2009 and 2010.

Column 3 = ( Column 1 / Column 2 ).

Sources: Column 1 = The Value Line Investment Survey: Ratings and Reports, June 12, 2009.

Column 2 = Schedule 14.

**MISSOURI GAS ENERGY  
CASE NO. GR-2009-0355**

**Capital Asset Pricing Model (CAPM) Costs of Common Equity Estimates  
Based on Historical Return Differences Between Common Stocks and Long-Term U.S. Treasuries  
for the Seven Comparable Natural Gas Distribution Companies**

	(1)	(2)	(3)	(4)	(5)	(6)
			Arithmetic Average Market Risk Premium (1926-2008)	Geometric Average Market Risk Premium (1926-2008)	Arithmetic CAPM Cost of Common Equity (1926-2008)	Geometric CAPM Cost of Common Equity (1926-2008)
Company Name	Risk Free Rate	Company's Value Line Beta				
AGL Resources, Inc.	4.41%	0.75	5.60%	3.90%	8.61%	7.34%
Atmos Energy Corp.	4.41%	0.65	5.60%	3.90%	8.05%	6.95%
New Jersey Resources Corp.	4.41%	0.65	5.60%	3.90%	8.05%	6.95%
Northwest Natural Gas Co.	4.41%	0.60	5.60%	3.90%	7.77%	6.75%
Piedmont Natural Gas Co.	4.41%	0.65	5.60%	3.90%	8.05%	6.95%
South Jersey Industries, Inc.	4.41%	0.65	5.60%	3.90%	8.05%	6.95%
WGL Holdings, Inc.	4.41%	0.65	5.60%	3.90%	8.05%	6.95%
<b>Average</b>		<u><u>0.66</u></u>			<u><u>8.09%</u></u>	<u><u>6.97%</u></u>

Sources:

Column 1 = The appropriate yield is equal to the average 30-year U.S. Treasury Bond yield for July 2009 which was obtained from the St. Louis Federal Reserve website at <http://research.stlouisfed.org/fred2/series/GS30/22>.

Column 2 = Beta is a measure of the movement and relative risk of an individual stock to the market as a whole as reported by the Value Line Investment Survey Ratings & Reports, June 12, 2009.

Column 3 = The Market Risk Premium represents the expected return from holding the entire market portfolio less the expected return from holding a risk free investment. The appropriate Market Risk Premium for the period 1926 - 2008 was determined to be 5.60% based on an arithmetic average as calculated in Ibbotson Associates, Inc.'s Stocks, Bonds, Bills, and Inflation: 2009 Yearbook.

Column 4 = The Market Risk Premium represents the expected return from holding the entire market portfolio less the expected return from holding a risk free investment. The appropriate Market Risk Premium for the period 1926 - 2008 was determined to be 3.90% based on a geometric average as calculated in Ibbotson Associates, Inc.'s Stocks, Bonds, Bills, and Inflation: 2009 Yearbook.

Column 5 = (Column 1 + (Column 2 \* Column 3)).

Column 6 = (Column 1 + (Column 2 \* Column 4)).

**MISSOURI GAS ENERGY**  
**CASE NO. GR-2009-0355**

**Selected Financial Ratios for the Seven Comparable Natural Gas Distribution Companies**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<b>Company Name</b>	<b>2008 Common Equity Ratio</b>	<b>2008 Long-Term Debt Ratio</b>	<b>Funds From Operations to Interest</b>	<b>Funds From Operations to Total Debt</b>	<b>Market- to-Book Value</b>	<b>2008 Return on Common Equity</b>	<b>2009 Projected Return on Common Equity</b>	<b>Bond Rating</b>
AGL Resources, Inc.	49.70%	50.30%	4.30 x	18.3%	1.42 x	12.60%	12.00%	A-
Atmos Energy Corp.	49.20%	50.80%	4.20 x	21.7%	1.07 x	8.80%	8.50%	BBB+
New Jersey Resources Corp.	61.50%	38.50%	5.3 <sup>1</sup> x	21.4% <sup>1</sup>	2.14 x	15.70%	13.50%	A
Northwest Natural Gas Co.	55.10%	44.90%	5.30 x	21.5%	1.75 x	10.90%	11.00%	AA-
Piedmont Natural Gas Co.	52.80%	47.20%	4.90 x	24.7%	1.79 x	12.40%	12.50%	A
South Jersey Industries, Inc.	60.80%	39.20%	4.40 <sup>2</sup> x	20.8% <sup>2</sup>	1.94 x	13.10%	13.00%	BBB+
WGL Holdings, Inc.	62.40%	35.90%	5.40 x	26.0%	1.39 x	11.60%	12.00%	AA-
<b>Average</b>	<b>55.93%</b>	<b>43.83%</b>	<b>4.83 x</b>	<b>22.1%</b>	<b>1.64 x</b>	<b>12.16%</b>	<b>11.79%</b>	<b>A</b>

**Sources:**

The Value Line Investment Survey Ratings & Reports, June 12, 2009: for columns (1), (2), (6) and (7).

Standard & Poor's RatingsDirect for columns (3), (4) and (8).

AUS Utility Reports, August 2009 for column (5).

**Notes:**

<sup>1</sup> Ratios of subsidiary New Jersey Natural Gas Co.

<sup>2</sup> Ratios of subsidiary South Jersey C

**MISSOURI GAS ENERGY  
CASE NO. GR-2009-0355**

**Public Utility Revenue Requirement**

**or**

**Cost of Service**

The formula for the revenue requirement of a public utility may be stated as follows :

Equation 1 :                    **Revenue Requirement = Cost of Service**

**or**

Equation 2 :                     **$RR = O + (V - D)R$**

The symbols in the second equation are represented by the following factors :

<b>RR</b>	<b>=</b>	<b>Revenue Requirement</b>
<b>O</b>	<b>=</b>	<b>Prudent Operating Costs, including Depreciation and Taxes</b>
<b>V</b>	<b>=</b>	<b>Gross Valuation of the Property Serving the Public</b>
<b>D</b>	<b>=</b>	<b>Accumulated Depreciation</b>
<b>(V - D)</b>	<b>=</b>	<b>Rate Base (Net Valuation)</b>
<b>(V - D) R</b>	<b>=</b>	<b>Return Amount (\$\$) or Earnings Allowed on Rate Base</b>
<b>R</b>	<b>=</b>	<b><math>iL + dP + kE</math> or Overall Rate of Return (%)</b>
<b>i</b>	<b>=</b>	<b>Embedded Cost of Debt</b>
<b>L</b>	<b>=</b>	<b>Proportion of Debt in the Capital Structure</b>
<b>d</b>	<b>=</b>	<b>Embedded Cost of Preferred Stock</b>
<b>P</b>	<b>=</b>	<b>Proportion of Preferred Stock in the Capital Structure</b>
<b>k</b>	<b>=</b>	<b>Required Return on Common Equity (ROE)</b>
<b>E</b>	<b>=</b>	<b>Proportion of Common Equity in the Capital Structure</b>

**MISSOURI GAS ENERGY  
CASE NO. GR-2009-0355**

**Weighted Cost of Capital  
for Missouri Gas Energy**

Capital Component	Percentage of Capital	Embedded Cost	Weighted Cost of Capital Using Common Equity Return of:		
			9.25%	9.50%	9.75%
Common Stock Equity	51.06%	----	4.72%	4.85%	4.98%
Long-Term Debt	40.47%	5.92%	2.40%	2.40%	2.40%
Short-Term Debt	8.47%	0.89%	0.07%	0.07%	0.07%
	<u>100.00%</u>		<u>7.19%</u>	<u>7.32%</u>	<u>7.45%</u>

**Notes:**

See Schedule 9 for the Capital Structure Ratios.

See Schedule 10 for the Embedded Cost of Long-Term Debt.

**MISSOURI GAS ENERGY  
CASE NO. GR-2009-0355**

**Costs of Equity Used in Equity Research Reports for AGL Resources Inc.**

<u>Investment Company</u>	<u>Date of Report</u>	<u>Discount Rate (Cost of Equity)</u>	<u>Terminal Growth</u>	<u>Equity Risk Premium</u>	<u>Risk-free rate</u>	<u>Beta</u>
Goldman Sachs	3/9/2009	8.50%	2.00%	NA	NA	NA
	7/17/2008	8.50%	2.00%	NA	NA	NA
Citigroup	3/29/2009	8.34%	NA	6.45%	3.50%	0.75
	10/15/2008	8.25%	NA	5.00%	4.50%	0.75

Notes:  
NA = Not available

**MISSOURI GAS ENERGY  
CASE NO. GR-2009-0355**

**Costs of Equity Used in Equity Research Reports for Atmos Energy Corp.**

<u>Investment Company</u>	<u>Date of Report</u>	<u>Discount Rate (Cost of Equity)</u>	<u>Single-stage DDM Growth Rate</u>	<u>Equity Risk Premium</u>	<u>Risk-free rate</u>	<u>Beta</u>
Citigroup	3/29/2009	8.34%	NA	6.45%	3.50%	0.75
	10/15/2008	8.25%	NA	5.00%	4.50%	0.75
Brean Murray	2/5/2009	8.40%	3.50%	4.40%	4.00%	NA
	8/6/2008	8.20%	4.00%	3.70%	4.50%	NA

Notes:

NA = Not available



MISSOURI GAS ENERGY  
CASE NO. GR-2009-0355

**Costs of Equity Used in Equity Research Reports for New Jersey Resources Corp.**

<u>Investment Company</u>	<u>Date of Report</u>	<u>Discount Rate (Cost of Equity)</u>	<u>Single-stage DDM Growth Rate</u>	<u>Equity Risk Premium</u>	<u>Risk-free rate</u>	<u>Beta</u>
Brean Murray	7/29/2009	8.00%	5.00%	4.00%	4.00%	NA
	11/14/2008	7.45%	4.50%	3.20%	4.25%	NA
	8/6/2008	7.80%	4.50%	3.30%	4.50%	NA

Notes:

NA= Not Available

**MISSOURI GAS ENERGY  
CASE NO. GR-2009-0355**

**Costs of Equity Used in Equity Research Reports for Northwest Natural Gas Company**

<u>Investment Company</u>	<u>Date of Report</u>	<u>Discount Rate (Cost of Equity)</u>	<u>Single-stage DDM Growth Rate</u>	<u>Equity Risk Premium</u>	<u>Risk-free rate</u>	<u>Beta</u>
Brean Murray	8/4/2009	7.75%	5.00%	3.50%	4.25%	NA
	10/13/2008	7.75%	5.00%	3.50%	4.25%	NA

Notes:

NA= Not Available

**MISSOURI GAS ENERGY  
CASE NO. GR-2009-0355**

**Costs of Equity Used in Equity Research Reports for Piedmont Natural Gas Company**

<u>Investment Company</u>	<u>Date of Report</u>	<u>Discount Rate (Cost of Equity)</u>	<u>Single-stage DDM Growth Rate</u>	<u>Equity Risk Premium</u>	<u>Risk-free rate</u>	<u>Beta</u>
Brean Murray	7/30/2009	7.30%	4.00%	3.30%	4.00%	NA
	1/6/2009	7.80%	4.50%	3.80%	4.00%	NA
	10/13/2008	7.45%	4.50%	3.20%	4.25%	NA
	2/5/2008	7.70%	4.00%	3.20%	4.50%	NA

Notes:

NA= Not Available

**MISSOURI GAS ENERGY  
CASE NO. GR-2009-0355**

**Costs of Equity Used in Equity Research Reports for South Jersey Industries, Inc.**

<u>Investment Company</u>	<u>Date of Report</u>	<u>Discount Rate (Cost of Equity)</u>	<u>Single-stage DDM Growth Rate</u>	<u>Equity Risk Premium</u>	<u>Risk-free rate</u>	<u>Beta</u>
Brean Murray	8/7/2009	8.00%	5.00%	4.00%	4.00%	NA
	8/8/2008	8.30%	5.50%	3.80%	4.50%	NA

Notes:  
NA= Not Available

**MISSOURI GAS ENERGY  
CASE NO. GR-2009-0355**

**Costs of Equity Used in Equity Research Reports for WGL Holdings, Inc.**

<u>Investment Company</u>	<u>Date of Report</u>	<u>Discount Rate (Cost of Equity)</u>	<u>Single-stage DDM Growth Rate</u>	<u>Equity Risk Premium</u>	<u>Risk-free rate</u>	<u>Beta</u>
Brean Murray	11/14/2008	7.75%	4.00%	3.50%	4.25%	NA
	8/5/2008	8.00%	4.00%	3.50%	4.50%	NA

Notes:

NA= Not Available

**MISSOURI PUBLIC SERVICE COMMISSION**

**STAFF REPORT  
COST OF SERVICE**

**APPENDIX 3  
Summary of Rate Revenue**

**MISSOURI GAS ENERGY  
A division of Southern Union Company**

**CASE NO. GR-2009-0355**

**Missouri Gas Energy - Case No. GR-2009-0355**  
**Margin Revenue Summary**

	<b>Actual Margin Revenue</b>	<b>Weather Adjustment</b>	<b>Normalized Sales</b>	<b>Growth/Days/ Switching Annualization Adjustment</b>	<b>Total Revenue Including Growth/ Annualization</b>
<b>Residential Service</b>	\$ 130,103,150	\$ -	\$ 130,103,147	\$ 959,635	\$ 131,062,782
<b>Small General Service</b>	\$ 43,191,027	\$ (1,292,198)	\$ 41,898,829	\$ (6,009,621)	\$ 35,889,208
<b>Large General Service</b>	\$ 2,407,216	\$ (100,359)	\$ 2,306,856	\$ (184,687)	\$ 2,122,169
<b>Transportation Service</b>	\$ 10,838,452	\$ (42,105)	\$ 10,796,347	\$ 2,241	\$ 10,798,588
<b>Miscellaneous</b>	\$ 4,789,682	\$ -	\$ 4,789,682	\$ -	\$ 4,789,682
<b>Total Margin Revenue</b>	\$ 191,329,527	\$ (1,434,662)	\$ 189,894,861	\$ (5,232,432)	\$ 184,662,429

**MISSOURI PUBLIC SERVICE COMMISSION**

**STAFF REPORT  
COST OF SERVICE**

**APPENDIX 4  
Summary of Heating Degree Days**

**MISSOURI GAS ENERGY**  
**A division of Southern Union Company**

**CASE NO. GR-2009-0355**



**STATION: KANSAS\_CITY\_WSMO\_AP, MO (Station ID: 234358)**  
**Actual Heating Degree-Days (HDD) and Normal Heating Degree-Days (NHDD)**  
**For The 12 Calendar Months Beginning January 01, 2008 And Ending December 31, 2008**

YEAR	MONTH	TOTAL HDD BY MONTH			PEAK DAY HDD		
		OBSERVED TOTALS HDD	NORMAL TOTALS NHDD	ADJUSTMENT, ACTUAL TO NORMAL	OBSERVED COLDEST DAY HDD	NORMAL COLDEST DAY NHDD	ADJUSTMENT, ACTUAL TO NORMAL
2008	1	1164	1182	18	61.50	65.99	4.49
2008	2	1081	905	(176)	50.00	62.57	12.57
2008	3	726	661	(65)	44.50	48.08	3.58
2008	4	408	340	(68)	27.00	31.17	4.17
2008	5	116	106	(10)	13.50	16.98	3.48
2008	6	0	8	8	0.00	5.66	5.66
2008	7	0	1	1	0.00	0.82	0.82
2008	8	0	2	2	0.00	1.73	1.73
2008	9	57	72	15	7.50	16.83	9.33
2008	10	313	282	(31)	27.00	28.57	1.57
2008	11	658	669	11	41.00	45.86	4.86
2008	12	1125	1047	(78)	60.00	66.63	6.63
12 MONTHS		5647	5273	(374)	61.50	66.63	5.13

Exhibit ML-1

**STATION: SPRINGFIELD\_WSO\_AP, MO (Station ID: 237976)**  
**Actual Heating Degree-Days (HDD) and Normal Heating Degree-Days (NHDD)**  
**For The 12 Calendar Months Beginning January 01, 2008 And Ending December 31, 2008**

YEAR	MONTH	TOTAL HDD BY MONTH			PEAK DAY HDD		
		OBSERVED TOTALS HDD	NORMAL TOTALS NHDD	ADJUSTMENT, ACTUAL TO NORMAL	OBSERVED COLDEST DAY HDD	NORMAL COLDEST DAY NHDD	ADJUSTMENT, ACTUAL TO NORMAL
2008	1	978	1031	54	51.00	62.51	11.51
2008	2	870	788	(82)	43.50	57.51	14.01
2008	3	590	582	(8)	36.00	43.73	7.73
2008	4	370	300	(70)	29.50	28.78	(0.73)
2008	5	114	96	(17)	15.00	16.30	1.30
2008	6	1	8	8	0.50	5.55	5.05
2008	7	0	1	1	0.00	0.65	0.65
2008	8	0	1	1	0.00	1.19	1.19
2008	9	32	59	27	6.50	15.58	9.08
2008	10	270	237	(33)	28.00	26.25	(1.75)
2008	11	617	576	(41)	40.00	41.45	1.45
2008	12	987	907	(79)	54.00	59.70	5.70
<b>12 MONTHS</b>		<b>4826</b>	<b>4585</b>	<b>(241)</b>	<b>54.00</b>	<b>62.51</b>	<b>8.51</b>

Exhibit ML-2

**MISSOURI GAS ENERGY**  
**CASE NO. GR-2009-0355**  
**WEATHER & DAYS NORMALIZATION**

**DISTRICT: JOPLIN**

**CLASS : Residential (RSM)**

**Normalized Sales per Customer**

Billing Month	Ccf Actual	Ccf Adjustment	Ccf Normal	Customers	Normal Usage per Customer
Jan	9,867,605	0	9,867,605	67,377	146.4536
Feb	10,105,887	0	10,105,887	67,632	149.4246
Mar	7,791,534	0	7,791,534	67,489	115.4489
Apr	4,606,998	0	4,606,998	66,677	69.0943
May	2,439,285	0	2,439,285	65,574	37.1990
Jun	1,026,836	0	1,026,836	64,709	15.8685
Jul	833,561	-2,546	831,015	64,306	12.9228
Aug	744,479	-866	743,613	64,159	11.5902
Sep	880,175	-30,679	849,496	64,301	13.2112
Oct	1,164,043	0	1,164,043	64,814	17.9597
Nov	3,690,095	0	3,690,095	66,195	55.7458
Dec	8,565,321	0	8,565,321	67,248	127.3692
	51,715,819	-34,091	51,681,728	790,481	784.5612
		-0.07%			

Billing Month	DAYS Adjustment	HDD Adjustment	SUMMED Adjustment
Jan	0	0	0
Feb	0	0	0
Mar	0	0	0
Apr	0	0	0
May	0	0	0
Jun	0	0	0
Jul	-2,546	0	-2,546
Aug	-866	0	-866
Sep	-30,679	0	-30,679
Oct	0	0	0
Nov	0	0	0
Dec	0	0	0
	-34,091	0	-34,091
	-0.07%	0.00%	-0.07%

**MISSOURI GAS ENERGY**  
**CASE NO. GR-2009-0355**  
**WEATHER & DAYS NORMALIZATION**

**DISTRICT: KANSAS CITY**

**CLASS : Residential (RSM)**

**Normalized Sales per Customer**

Billing Month	Ccf Actual	Ccf Adjustment	Ccf Normal	Customers	Normal Usage per Customer
Jan	60,465,801	0	60,465,801	352,908	171.3359
Feb	63,515,164	0	63,515,164	354,154	179.3433
Mar	49,435,090	0	49,435,090	354,687	139.3767
Apr	28,917,373	0	28,917,373	351,715	82.2182
May	14,695,101	0	14,695,101	346,989	42.3503
Jun	6,722,847	0	6,722,847	343,184	19.5896
Jul	5,565,549	-4,726	5,560,823	340,294	16.3412
Aug	4,941,745	-1,764	4,939,981	338,850	14.5787
Sep	5,678,235	-212,365	5,465,870	339,034	16.1219
Oct	6,892,503	0	6,892,503	341,593	20.1775
Nov	19,964,109	0	19,964,109	346,442	57.6261
Dec	48,999,738	0	48,999,738	351,094	139.5630
	315,793,255	-218,855	315,574,400	4,160,944	910.1042
		-0.07%			

Billing Month	DAYS Adjustment	HDD Adjustment	SUMMED Adjustment
Jan	0	0	0
Feb	0	0	0
Mar	0	0	0
Apr	0	0	0
May	0	0	0
Jun	0	0	0
Jul	-4,726	0	-4,726
Aug	-1,764	0	-1,764
Sep	-212,365	0	-212,365
Oct	0	0	0
Nov	0	0	0
Dec	0	0	0
	-218,855	0	-218,855
	-0.07%	0.00%	-0.07%

**MISSOURI GAS ENERGY**  
**CASE NO. GR-2009-0355**  
**WEATHER & DAYS NORMALIZATION**

**DISTRICT: ST. JOSEPH**

**CLASS : Residential (RSM)**

**Normalized Sales per Customer**

Billing Month	Ccf Actual	Ccf Adjustment	Ccf Normal	Customers	Normal Usage per Customer
Jan	4,576,082	0	4,576,082	25,217	181.4681
Feb	4,858,579	0	4,858,579	25,303	192.0159
Mar	3,702,835	0	3,702,835	25,240	146.7050
Apr	2,185,678	0	2,185,678	24,869	87.8877
May	1,116,565	0	1,116,565	24,560	45.4627
Jun	478,844	0	478,844	24,246	19.7494
Jul	386,694	0	386,694	24,090	16.0521
Aug	353,875	-671	353,204	23,963	14.7396
Sep	409,820	-18,278	391,542	24,055	16.2769
Oct	490,959	0	490,959	24,204	20.2842
Nov	1,478,064	0	1,478,064	24,544	60.2210
Dec	3,597,869	0	3,597,869	24,945	144.2321
	23,635,864	-18,949	23,616,915	295,236	959.9201
		-0.08%			

Billing Month	DAYS Adjustment	HDD Adjustment	SUMMED Adjustment
Jan	0	0	0
Feb	0	0	0
Mar	0	0	0
Apr	0	0	0
May	0	0	0
Jun	0	0	0
Jul	0	0	0
Aug	-671	0	-671
Sep	-18,278	0	-18,278
Oct	0	0	0
Nov	0	0	0
Dec	0	0	0
	-18,949	0	-18,949
	-0.08%	0.00%	-0.08%

**MISSOURI GAS ENERGY**  
**CASE NO. GR-2009-0355**  
**WEATHER & DAYS NORMALIZATION**

**DISTRICT: JOPLIN**

**CLASS : SGSM**

**Normalized Sales per Customer**

Billing Month	Ccf Actual	Ccf Adjustment	Ccf Normal	Customers	Normal Usage per Customer
Jan	4,976,646	372,592	5,349,238	12,658	422.5974
Feb	5,086,966	-57,286	5,029,680	12,604	399.0543
Mar	3,980,577	-431,301	3,549,276	12,477	284.4655
Apr	2,255,010	-127,831	2,127,179	12,164	174.8749
May	1,357,872	-208,234	1,149,638	11,857	96.9586
Jun	774,362	33,014	807,376	11,664	69.2195
Jul	646,545	6,448	652,993	11,501	56.7771
Aug	645,820	1,296	647,116	11,403	56.7496
Sep	729,420	-17,764	711,656	11,374	62.5686
Oct	799,017	127,826	926,843	11,442	81.0036
Nov	1,765,144	-143,875	1,621,269	11,827	137.0820
Dec	4,144,346	-510,392	3,633,954	12,223	297.3046
	27,161,725	-955,508	26,206,217	143,194	2196.1437
		-3.52%			

Billing Month	DAYS Adjustment	HDD Adjustment	SUMMED Adjustment
Jan	0	372,592	372,592
Feb	0	-57,286	-57,286
Mar	0	-431,301	-431,301
Apr	0	-127,831	-127,831
May	0	-208,234	-208,234
Jun	0	33,014	33,014
Jul	-1,815	8,263	6,448
Aug	-737	2,033	1,296
Sep	-28,917	11,153	-17,764
Oct	0	127,826	127,826
Nov	0	-143,875	-143,875
Dec	0	-510,392	-510,392
	-31,470	-924,038	-955,508
	-0.12%	-3.40%	-3.52%

**MISSOURI GAS ENERGY**  
**CASE NO. GR-2009-0355**  
**WEATHER & DAYS NORMALIZATION**

**DISTRICT: KANSAS CITY**

**CLASS : SGSM**

**Normalized Sales per Customer**

Billing Month	Ccf Actual	Ccf Adjustment	Ccf Normal	Customers	Normal Usage per Customer
Jan	23,117,740	326,835	23,444,575	49,628	472.4062
Feb	24,118,114	-1,152,628	22,965,486	49,643	462.6128
Mar	18,972,004	-2,986,132	15,985,872	49,268	324.4676
Apr	11,005,372	-1,068,065	9,937,307	48,317	205.6690
May	6,009,699	-688,191	5,321,508	47,004	113.2139
Jun	3,315,174	161,917	3,477,091	45,994	75.5988
Jul	2,858,270	31,447	2,889,717	45,276	63.8245
Aug	2,661,641	10,020	2,671,661	44,703	59.7647
Sep	3,082,572	-277,969	2,804,603	44,613	62.8651
Oct	3,464,946	616,133	4,081,079	44,829	91.0366
Nov	7,600,458	-57,757	7,542,701	45,909	164.2968
Dec	17,956,013	-1,293,735	16,662,278	47,494	350.8291
	124,162,003	-6,378,127	117,783,876	562,678	2511.9278
		-5.14%			

Billing Month	DAYS Adjustment	HDD Adjustment	SUMMED Adjustment
Jan	0	326,835	326,835
Feb	0	-1,152,628	-1,152,628
Mar	0	-2,986,132	-2,986,132
Apr	0	-1,068,065	-1,068,065
May	0	-688,191	-688,191
Jun	0	161,917	161,917
Jul	-6,319	37,766	31,447
Aug	-1,052	11,072	10,020
Sep	-107,003	-170,967	-277,969
Oct	0	616,133	616,133
Nov	0	-57,757	-57,757
Dec	0	-1,293,735	-1,293,735
	-114,373	-6,263,754	-6,378,127
	-0.09%	-5.04%	-5.14%

**MISSOURI GAS ENERGY**  
**CASE NO. GR-2009-0355**  
**WEATHER & DAYS NORMALIZATION**

**DISTRICT: ST. JOSEPH**

**CLASS : SGSM**

**Normalized Sales per Customer**

Billing Month	Ccf Actual	Ccf Adjustment	Ccf Normal	Customers	Normal Usage per Customer
Jan	2,048,716	2,168	2,050,884	3,551	577.5512
Feb	2,171,168	-140,732	2,030,436	3,550	571.9538
Mar	1,575,837	-277,921	1,297,916	3,547	365.9194
Apr	906,383	-98,893	807,490	3,454	233.7839
May	445,258	-45,066	400,192	3,389	118.0856
Jun	241,387	23,582	264,969	3,390	78.1620
Jul	211,916	1,900	213,816	3,356	63.7117
Aug	197,667	1,061	198,728	3,327	59.7319
Sep	222,700	-19,158	203,542	3,302	61.6421
Oct	260,282	41,459	301,741	3,310	91.1606
Nov	656,847	-16,672	640,175	3,372	189.8504
Dec	1,619,726	-115,920	1,503,806	3,449	436.0122
	10,557,887	-644,190	9,913,697	40,997	2901.7822
		-6.10%			

Billing Month	DAYS Adjustment	HDD Adjustment	SUMMED Adjustment
Jan	0	2,168	2,168
Feb	0	-140,732	-140,732
Mar	0	-277,921	-277,921
Apr	0	-98,893	-98,893
May	0	-45,066	-45,066
Jun	0	23,582	23,582
Jul	0	1,900	1,900
Aug	-27	1,088	1,061
Sep	-9,332	-9,825	-19,158
Oct	0	41,459	41,459
Nov	0	-16,672	-16,672
Dec	0	-115,920	-115,920
	-9,360	-634,830	-644,190
	-0.09%	-6.01%	-6.10%



**MISSOURI GAS ENERGY**  
**CASE NO. GR-2009-0355**  
**WEATHER & DAYS NORMALIZATION**

**DISTRICT: JOPLIN**

**CLASS : LGSM**

<b>Normalized Sales per Customer</b>					
Billing Month	Ccf Actual	Ccf Adjustment	Ccf Normal	Customers	Normal Usage per Customer
Jan	430,162	34,166	464,328	31	14,978.32
Feb	492,558	-2,447	490,111	32	15,315.97
Mar	273,736	-38,731	235,005	30	7,833.49
Apr	177,751	-7,604	170,147	32	5,317.08
May	150,110	-18,221	131,889	32	4,121.52
Jun	96,169	1,978	98,147	32	3,067.08
Jul	88,064	737	88,801	31	2,864.56
Aug	82,742	-67	82,675	31	2,666.92
Sep	94,216	-5,151	89,065	31	2,873.07
Oct	95,358	15,847	111,205	31	3,587.25
Nov	140,771	-8,215	132,556	30	4,418.54
Dec	290,674	-45,506	245,168	31	7,908.66
	2,412,311	-73,215	2,339,096	374	75,051.22
		-3.04%			

Billing Month	DAYS Adjustment	HDD Adjustment	SUMMED Adjustment
Jan	0	34,166	34,166
Feb	0	-2,447	-2,447
Mar	0	-38,731	-38,731
Apr	0	-7,604	-7,604
May	0	-18,221	-18,221
Jun	0	1,978	1,978
Jul	0	737	737
Aug	-218	151	-67
Sep	-4,295	-856	-5,151
Oct	0	15,847	15,847
Nov	0	-8,215	-8,215
Dec	0	-45,506	-45,506
	-4,513	-68,702	-73,215
	-0.19%	-2.85%	-3.04%

**MISSOURI GAS ENERGY**  
**CASE NO. GR-2009-0355**  
**WEATHER & DAYS NORMALIZATION**

**DISTRICT: KANSAS CITY**

**CLASS : LGSM**

**Normalized Sales per Customer**

Billing Month	Ccf Actual	Ccf Adjustment	Ccf Normal	Customers	Normal Usage per Customer
Jan	2,040,670	34,153	2,074,823	248	8,366.22
Feb	2,030,385	-157,834	1,872,551	246	7,612.00
Mar	1,632,798	-237,604	1,395,194	247	5,648.56
Apr	1,058,040	-97,934	960,106	243	3,951.05
May	584,025	-54,721	529,304	242	2,187.21
Jun	334,868	18,948	353,816	244	1,450.07
Jul	284,063	2,670	286,733	244	1,175.14
Aug	260,726	1,211	261,937	245	1,069.13
Sep	315,924	-26,974	288,950	245	1,179.39
Oct	404,363	21,952	426,315	243	1,754.38
Nov	857,856	-6,011	851,845	244	3,491.17
Dec	1,742,352	-111,950	1,630,402	245	6,654.70
	11,546,070	-614,095	10,931,975	2,936	44,681.10
		-5.32%			

Billing Month	DAYS Adjustment	HDD Adjustment	SUMMED Adjustment
Jan	0	34,153	34,153
Feb	0	-157,834	-157,834
Mar	0	-237,604	-237,604
Apr	0	-97,934	-97,934
May	0	-54,721	-54,721
Jun	0	18,948	18,948
Jul	-654	3,325	2,670
Aug	-65	1,276	1,211
Sep	-14,888	-12,086	-26,974
Oct	0	21,952	21,952
Nov	0	-6,011	-6,011
Dec	0	-111,950	-111,950
	-15,608	-598,487	-614,095
	-0.14%	-5.18%	-5.32%

**MISSOURI GAS ENERGY**  
**CASE NO. GR-2009-0355**  
**WEATHER & DAYS NORMALIZATION**

**DISTRICT: ST. JOSEPH**

**CLASS : LGSM**

**Normalized Sales per Customer**

Billing Month	Ccf Actual	Ccf Adjustment	Ccf Normal	Customers	Normal Usage per Customer
Jan	240,020	822	240,842	27	8,920.07
Feb	255,484	-14,408	241,076	26	9,272.16
Mar	233,036	-42,088	190,948	27	7,072.13
Apr	120,509	-9,602	110,907	27	4,107.65
May	83,782	-7,489	76,293	27	2,825.68
Jun	30,321	-156	30,165	27	1,117.22
Jul	36,590	475	37,065	26	1,425.57
Aug	31,811	113	31,924	26	1,227.84
Sep	37,143	-5,807	31,336	26	1,205.23
Oct	40,936	5,216	46,152	26	1,775.09
Nov	75,304	3,787	79,091	26	3,041.95
Dec	178,023	-12,982	165,041	26	6,347.74
	1,362,959	-82,120	1,280,839	317	48,486.03
		-6.03%			

Billing Month	DAYS Adjustment	HDD Adjustment	SUMMED Adjustment
Jan	0	822	822
Feb	0	-14,408	-14,408
Mar	0	-42,088	-42,088
Apr	0	-9,602	-9,602
May	0	-7,489	-7,489
Jun	0	-156	-156
Jul	0	475	475
Aug	0	113	113
Sep	-1,990	-3,817	-5,807
Oct	0	5,216	5,216
Nov	0	3,787	3,787
Dec	0	-12,982	-12,982
	-1,990	-80,130	-82,120
	-0.15%	-5.88%	-6.03%

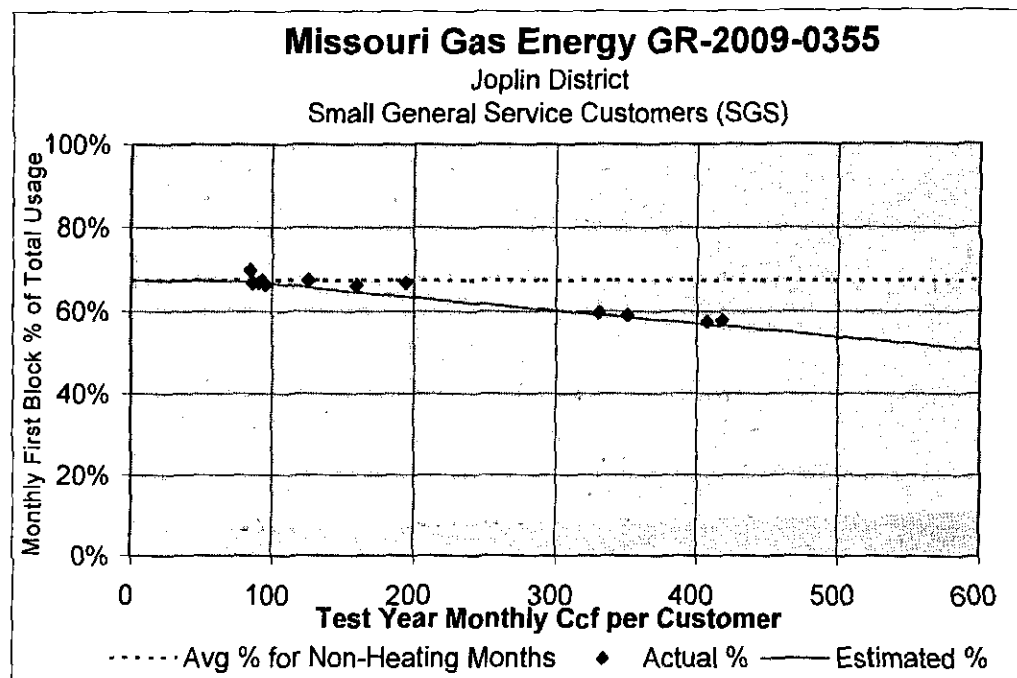
MISSOURI GAS ENERGY  
CASE NO. GR-2009-0355

Constant	0.69754783
Std Err of Y Est	0.00740149
R Squared	0.90865735
No. of Observations	12
Degrees of Freedom	10

X Coefficient(s)	-0.000317
Std Err of Coef.	3.013E-05

t statistic  
94.2443

-10.5084



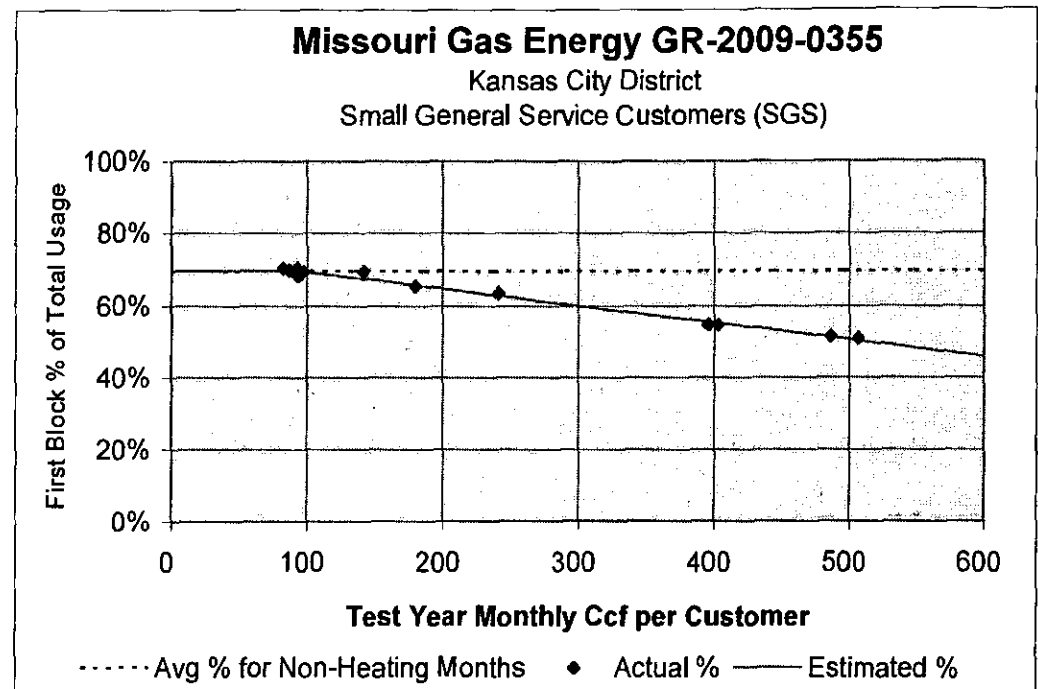
**MISSOURI GAS ENERGY**  
**CASE NO. GR-2009-0355**

Constant	0.74068512
Std Err of Y Est	0.00459841
R Squared	0.98681261
No. of Observations	12
Degrees of Freedom	10

t statistic  
161.0743

X Coefficient(s)	-0.000466
Std Err of Coef.	1.622E-05

-28.7077



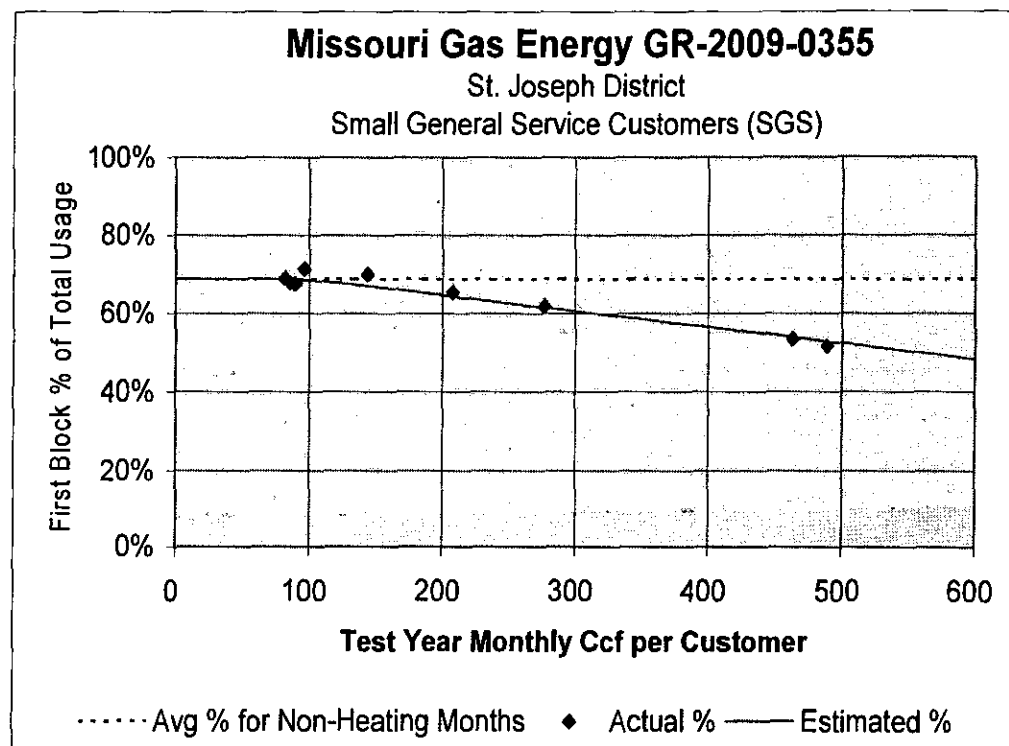
**MISSOURI GAS ENERGY**  
**CASE NO. GR-2009-0355**

Constant	0.72932469
Std Err of Y Est	0.00773288
R Squared	0.9673887
No. of Observations	12
Degrees of Freedom	10

X Coefficient(s)	-0.00041
Std Err of Coef.	2.264E-05

t statistic  
94.3147

-18.0916



MISSOURI GAS ENERGY  
CASE NO. GR-2009-0355

Joplin Division

Test Year January - December 2008

SMALL GENERAL GAS SERVICE (SGS)  
ACTUAL VOLUMES

SGS Commercial and Industrial Actual Ccf				
Month	Customer Meters	1st Block 0 - 600 Ccf	Tail Block Over 600 Ccf	Total Ccf
Jan	12,225	2,859,496	2,117,150	4,976,646
Feb	12,181	2,939,887	2,147,079	5,086,966
Mar	12,049	2,380,470	1,600,107	3,980,577
Apr	11,609	1,506,111	748,899	2,255,010
May	10,829	915,542	442,330	1,357,872
Jun	8,557	517,567	256,795	774,362
Jul	7,686	451,381	195,164	646,545
Aug	7,495	431,335	214,485	645,820
Sep	7,644	484,787	244,633	729,420
Oct	8,619	537,923	261,094	799,017
Nov	11,037	1,169,693	595,451	1,765,144
Dec	11,819	2,449,264	1,695,082	4,144,346
ANNUAL	121,750	16,643,456	10,518,269	27,161,725
%		61%	39%	
NOV-MAR	59,311	11,798,810	8,154,869	19,953,679
%	49%	71%	78%	73%
APR-OCT	62,439	4,844,646	2,363,400	7,208,046
%	51%	29%	22%	27%

MISSOURI GAS ENERGY  
CASE NO. GR-2009-0355

Joplin Division

Test Year January - December 2008

SMALL GENERAL GAS SERVICE (SGS)  
NORMAL VOLUMES

SGS Commercial and Industrial Normal Ccf				
Month	Customer Meters	1st Block 0 - 600 Ccf	Tail Block > 600 Ccf	Total Ccf
Jan	12,225	3,019,770	2,329,467	5,349,238
Feb	12,181	2,914,989	2,114,691	5,029,680
Mar	12,049	2,164,943	1,384,334	3,549,276
Apr	11,609	1,432,218	694,961	2,127,179
May	10,829	785,553	364,085	1,149,638
Jun	8,557	538,664	268,712	807,376
Jul	7,686	455,534	197,459	652,993
Aug	7,495	432,168	214,948	647,116
Sep	7,644	473,456	238,200	711,656
Oct	8,619	618,985	307,858	926,843
Nov	11,037	1,083,308	537,961	1,621,269
Dec	11,819	2,199,575	1,434,379	3,633,954
ANNUAL	121,750	16,119,161	10,087,056	26,206,217
%		62%	38%	
NOV-MAR	59,311	11,382,584	7,800,833	19,183,417
%	49%	71%	77%	73%
APR-OCT	62,439	4,736,577	2,286,223	7,022,800
%	51%	29%	23%	27%

MISSOURI GAS ENERGY  
CASE NO. GR-2009-0355

Joplin Division

Test Year January - December 2008

SMALL GENERAL GAS SERVICE (SGS)  
ADJUSTMENTS TO VOLUMES

SGS Commercial and Industrial Adjustment Ccf				
Month	Customer Meters	1st Block 0 - 600 Ccf	Tail Block > 600 Ccf	Total Ccf
Jan	0	160,274	212,317	372,592
Feb	0	(24,898)	(32,388)	(57,286)
Mar	0	(215,527)	(215,773)	(431,301)
Apr	0	(73,893)	(53,938)	(127,831)
May	0	(129,989)	(78,245)	(208,234)
Jun	0	21,097	11,917	33,014
Jul	0	4,153	2,295	6,448
Aug	0	833	463	1,296
Sep	0	(11,331)	(6,433)	(17,764)
Oct	0	81,062	46,764	127,826
Nov	0	(86,385)	(57,490)	(143,875)
Dec	0	(249,689)	(260,703)	(510,392)
ANNUAL	0	(524,295)	(431,213)	(955,508)
%		55%	45%	
NOV-MAR	0	(416,226)	(354,036)	(770,262)
%		79%	82%	81%
APR-OCT	0	(108,069)	(77,177)	(185,246)
%		21%	18%	19%

MISSOURI GAS ENERGY  
CASE NO. GR-2009-0355

Kanas City Division  
Test Year January - December 2008  
SMALL GENERAL GAS SERVICE (SGS)  
ACTUAL VOLUMES

SGS Commercial and Industrial Actual Ccf				
Month	Customer Meters	1st Block 0 - 600 Ccf	Tail Block > 600 Ccf	Total Ccf
Jan	47,493	11,913,680	11,204,060	23,117,740
Feb	47,559	12,307,152	11,810,962	24,118,114
Mar	47,083	10,376,099	8,595,905	18,972,004
Apr	45,568	6,981,289	4,024,083	11,005,372
May	42,457	4,169,616	1,840,083	6,009,699
Jun	35,744	2,331,151	984,023	3,315,174
Jul	32,918	1,995,055	863,215	2,858,270
Aug	32,219	1,870,010	791,631	2,661,641
Sep	33,041	2,104,560	978,012	3,082,572
Oct	35,697	2,397,115	1,067,831	3,464,946
Nov	42,266	4,968,436	2,632,022	7,600,458
Dec	45,353	9,844,766	8,111,247	17,956,013
ANNUAL	487,398	71,258,929	52,903,074	124,162,003
%		57%	43%	
NOV-MAR	229,754	49,410,133	42,354,196	91,764,329
%	47%	69%	80%	74%
APR-OCT	257,644	21,848,796	10,548,878	32,397,674
%	53%	31%	20%	26%

MISSOURI GAS ENERGY  
CASE NO. GR-2009-0355

Kanas City Division  
Test Year January - December 2008  
SMALL GENERAL GAS SERVICE (SGS)  
NORMAL VOLUMES

SGS Commercial and Industrial Normal Ccf			
Customer Meters	1st Block 0 - 600 Ccf	Tail Block > 600 Ccf	Total Ccf
47,493	12,006,599	11,437,976	23,444,575
47,559	11,984,613	10,980,873	22,965,486
47,083	9,196,406	6,789,465	15,985,872
45,568	6,418,695	3,518,612	9,937,307
42,457	3,745,383	1,576,125	5,321,508
35,744	2,443,740	1,033,351	3,477,091
32,918	2,016,922	872,795	2,889,717
32,219	1,876,977	794,683	2,671,661
33,041	1,911,274	893,329	2,804,603
35,697	2,793,360	1,287,719	4,081,079
42,266	4,935,289	2,607,412	7,542,701
45,353	9,346,214	7,316,064	16,662,278
487,398	68,675,472	49,108,404	117,783,876
	58%	42%	
229,754	47,469,121	39,131,790	86,600,911
	69%	80%	74%
257,644	21,206,351	9,976,614	31,182,964
	31%	20%	26%

MISSOURI GAS ENERGY  
CASE NO. GR-2009-0355

Kanas City Division  
Test Year January - December 2008  
SMALL GENERAL GAS SERVICE (SGS)  
ADJUSTMENTS TO VOLUMES

SGS Commercial and Industrial Adjustment Ccf			
Customer Meters	1st Block 0 - 600 Ccf	Tail Block > 600 Ccf	Total Ccf
0	92,919	233,916	326,835
0	(322,539)	(830,089)	(1,152,628)
0	(1,179,693)	(1,806,440)	(2,986,132)
0	(562,594)	(505,471)	(1,068,065)
0	(424,233)	(263,958)	(688,191)
0	112,589	49,328	161,917
0	21,867	9,580	31,447
0	6,967	3,052	10,020
0	(193,286)	(84,683)	(277,969)
0	396,245	219,888	616,133
0	(33,147)	(24,610)	(57,757)
0	(498,552)	(795,183)	(1,293,735)
0	(2,583,457)	(3,794,670)	(6,378,127)
	41%	59%	
0	(1,941,012)	(3,222,406)	(5,163,418)
	75%	85%	81%
0	(642,445)	(572,264)	(1,214,710)
	25%	15%	19%



MISSOURI GAS ENERGY  
CASE NO. GR-2009-0355

St. Joseph Division

Test Year January - December 2008

SMALL GENERAL GAS SERVICE (SGS)  
ACTUAL VOLUMES

SGS Commercial and Industrial Actual Ccf				
Month	Customer Meters	1st Block 0 - 600 Ccf	Tail Block > 600 Ccf	Total Ccf
Jan	3,409	991,270	1,057,446	2,048,716
Feb	3,405	1,029,571	1,141,597	2,171,168
Mar	3,405	842,101	733,736	1,575,837
Apr	3,277	560,424	345,959	906,383
May	3,098	311,729	133,529	445,258
Jun	2,688	163,278	78,109	241,387
Jul	2,472	143,664	68,252	211,916
Aug	2,412	136,317	61,350	197,667
Sep	2,499	150,660	72,040	222,700
Oct	2,708	185,842	74,440	260,282
Nov	3,161	430,123	226,724	656,847
Dec	3,314	836,246	783,480	1,619,726
ANNUAL	35,848	5,781,225	4,776,662	10,557,887
%		55%	45%	
NOV-MAR	16,694	4,129,311	3,942,983	8,072,294
%	47%	71%	83%	76%
APR-OCT	19,154	1,651,914	833,679	2,485,593
%	53%	29%	17%	24%

MISSOURI GAS ENERGY  
CASE NO. GR-2009-0355

St. Joseph Division

Test Year January - December 2008

SMALL GENERAL GAS SERVICE (SGS)  
NORMAL VOLUMES

SGS Commercial and Industrial Normal Ccf			
Customer Meters	1st Block 0 - 600 Ccf	Tail Block > 600 Ccf	Total Ccf
3,409	991,784	1,059,101	2,050,884
3,405	998,047	1,032,389	2,030,436
3,405	735,463	562,453	1,297,916
3,277	509,479	298,010	807,490
3,098	283,898	116,294	400,192
2,688	179,490	85,479	264,969
2,472	144,974	68,843	213,816
2,412	137,048	61,680	198,728
2,499	137,458	66,084	203,542
2,708	212,780	88,961	301,741
3,161	420,765	219,410	640,175
3,314	796,446	707,360	1,503,806
35,848	5,547,633	4,366,064	9,913,697
	56%	44%	
16,694	3,942,505	3,580,713	7,523,218
47%	71%	82%	76%
19,154	1,605,128	785,351	2,390,479
53%	29%	18%	24%

MISSOURI GAS ENERGY  
CASE NO. GR-2009-0355

St. Joseph Division

Test Year January - December 2008

SMALL GENERAL GAS SERVICE (SGS)  
ADJUSTMENTS TO VOLUMES

SGS Commercial and Industrial Adjustment Ccf			
Customer Meters	1st Block 0 - 600 Ccf	Tail Block > 600 Ccf	Total Ccf
0	514	1,655	2,168
0	(31,524)	(109,208)	(140,732)
0	(106,638)	(171,283)	(277,921)
0	(50,945)	(47,949)	(98,893)
0	(27,831)	(17,235)	(45,066)
0	16,212	7,370	23,582
0	1,310	591	1,900
0	731	330	1,061
0	(13,202)	(5,956)	(19,158)
0	26,938	14,521	41,459
0	(9,358)	(7,314)	(16,672)
0	(39,800)	(76,120)	(115,920)
0	(233,592)	(410,598)	(644,190)
	36%	64%	
0	(186,806)	(362,270)	(549,076)
	80%	88%	85%
0	(46,786)	(48,328)	(95,114)
	20%	12%	15%

**MISSOURI PUBLIC SERVICE COMMISSION**

**STAFF REPORT  
COST OF SERVICE**

**APPENDIX 5  
Summary of Staff Adjustments to Sales**

**MISSOURI GAS ENERGY  
A division of Southern Union Company**

**CASE NO. GR-2009-0355**

**Missouri Gas Energy - Case No. GR-2009-0355**  
**Summary of Sales (Ccf)**

	<b>Actual Sales (CCF)</b>	<b>Weather Adjustment</b>	<b>Normalized Sales(CCF)</b>	<b>Growth/Days/ Switching Annualization Adjustment</b>	<b>Total CCF Sales Including Growth Annualization</b>
<b>Small General Service</b>	161,881,615	(7,822,622)	154,058,993	(15,618,159)	138,440,834
<b>Large General Service</b>	15,321,340	(747,318)	14,574,022	(1,269,273)	13,304,749
<b>Transportation</b>	264,408,541	(4,437,662)	259,970,879	-	510,440
<b>Total Sales (Ccf)</b>	441,611,496	(13,007,602)	428,603,894	(16,887,432)	152,256,023

**MISSOURI PUBLIC SERVICE COMMISSION**

**STAFF REPORT  
COST OF SERVICE**

**APPENDIX 6  
Staff Recommended Depreciation Rates**

**MISSOURI GAS ENERGY**  
**A division of Southern Union Company**

**CASE NO. GR-2009-0355**

**Missouri Gas Energy  
Case No. GR-2009-0355  
Depreciation Rate Schedule**

<b>Account Number</b>	<b>Description</b>	<b>Depreciation Rate</b>	<b>ASL (Years)</b>	<b>Net Salvage (%)</b>	<b>Life Only Rate</b>	<b>Net Salvage Rate</b>
<b><u>Distribution</u></b>						
375.00	Structures and Improvements	1.49%	60.5	10.00%	1.65%	-0.16%
376.00	Mains	2.16%	44.0	5.00%	2.27%	-0.11%
378.00	Measuring and Regulating Eq.	2.86%	35.0	0.00%	2.86%	0.00%
379.00	Measuring and Regulating Eq.-City Gate	2.13%	47.0	0.00%	2.13%	0.00%
380.00	Services	3.13%	40.0	-25.00%	2.50%	0.63%
381.00	Meters	2.89%	35.0	-1.00%	2.86%	0.03%
382.00	Meter Installation	2.86%	35.0	0.00%	2.86%	0.00%
383.00	House Regulators	2.44%	41.0	0.00%	2.44%	0.00%
385.00	Measuring and Regulating Eq.-Industrial	3.33%	30.0	0.00%	3.33%	0.00%
<b><u>General (Including Corporate)</u></b>						
390.00	Structures and Improvements	2.00%	50.0	0.00%	2.00%	0.00%
391.00	Office Furniture and Eq.	8.06%	12.4	0.00%	8.06%	0.00%
392.10	Transportation Eq. [Cars & Small Trucks]	13.33%	6.0	20.00%	16.67%	-3.34%
392.20	Transportation Eq. [Large Trucks]	7.83%	11.5	10.00%	8.70%	-0.87%
393.00	Stores Eq.	2.70%	37.0	0.00%	2.70%	0.00%
394.00	Tool, Shop, and Garage Eq.	5.30%	18.9	0.00%	5.30%	0.00%
396.00	Power Operated Eq.	6.25%	12.0	25.00%	8.33%	-2.08%
397.10	Electronic Reading - ERT	5.00%	20.0	0.00%	5.00%	0.00%
397.20	Communication Eq.	6.25%	16.0	0.00%	6.25%	0.00%
398.00	Miscellaneous Eq.	3.85%	26.0	0.00%	3.85%	0.00%

MGE is required to keep separate accounting of its amounts accrued for its initial investment in plant from the amounts accrued for net cost of removal/net salvage.