

MISSOURI PUBLIC SERVICE COMMISSION

STAFF REPORT

COST OF SERVICE

APPENDIX 1

Staff Credentials

MISSOURI-AMERICAN WATER COMPANY

CASE NO. WR-2017-0285

*Jefferson City, Missouri
November 2017*

Exhibit No. 101-P
Date 3/8/18 Reporter MT
File No. WR-2017-0285

APPENDIX 1
STAFF CREDENTIALS
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Ali Arabian

Utility Regulatory Auditor II

Educational, Employment Background and Credentials

I am a Utility Regulatory Auditor II in the Auditing Department for the Missouri Public Service Commission. I was hired by the Commission in September 2017. Prior to joining the Commission, I was employed the Missouri Department of Corrections from 2013 to 2017 as an Auditor. Also, I have worked for the Missouri State Auditor's office as a Staff Auditor.

I earned a Bachelor of Science degree in Accounting from Lincoln University in Jefferson City, MO in May 2004. I earned a Masters of Business Administration (MBA) with an emphasis in Accounting from Lincoln University in Jefferson City, MO in May 2007.

Kimberly K. Bolin
Utility Regulatory Auditor V

EDUCATION

Bachelors of Business Administration
Central Missouri State University, Warrensburg, MO – May 1993

PROFESSIONAL EXPERIENCE

Missouri Public Service Commission
Utility Regulatory Auditor V
January 2008-Present
Utility Regulatory Auditor IV
November 2006 – January 2008
Utility Regulatory Auditor III
March 2006 – November 2006
Accountant I
April 2005 – February 2006

Missouri Office of the Public Counsel
Public Utility Accountant
September 1994 – April 2005

Missouri Department of Revenue, Taxation
Tax Processing Technician
July 1993 – August 1994

I graduated from Central Missouri State University in Warrensburg, Missouri, with a Bachelor of Science in Business Administration, major emphasis in Accounting, in May 1993. Before coming to work at the Missouri Public Service Commission, I was employed by the Missouri Office of the Public Counsel as a Public Utility Accountant from September 1994 to April 2005. I commenced employment with the Missouri Public Service Commission in April 2005.

I am responsible for performing audits and examinations of the books and records of public utilities operating within the state of Missouri. Please refer to Schedule KKB 1, for a list of the cases in which I have filed testimony before the Missouri Public Service Commission.

**CASE PARTICIPATION
OF
KIMBERLY K. BOLIN**

<u>Company Name</u>	<u>Case Number</u>	<u>Testimony/Issues</u>	<u>Contested or Settled</u>
Missouri-American Water Company	WO-2018-0059	<u>Direct</u> – ISRS Overview, Accumulated Deferred Income Taxes, Reconciliation	
Missouri Gas Energy and Laclede Gas Company	GO-2016-0332 and GO-2016-0333	<u>Rebuttal</u> – Inclusion of Plastic Main and Service Line Replacements	Contested
Empire District Electric Company/Liberty Utilities	EM-2016-0213	<u>Rebuttal</u> – Overview of Transaction, Ratemaking /Accounting Conditions, Access to Records <u>Surrebuttal</u> – OPC Recommended Conditions, SERP	Settled
Hillcrest Utility Operating Company, Inc.	WR-2016-0064	<u>Direct</u> – Partial Disposition Agreement	Contested
Empire District Electric Company	ER-2016-0023	<u>Requirement Report</u> – Riverton Conversion Project and Asbury Air Quality Control System <u>Direct</u> – Overview of Staff’s Revenue Requirement Report and Overview of Staff’s Rate Design Filing	Settled
Missouri-American Water Company	WR-2015-0301	<u>Report on Cost of Service</u> – Corporate Allocation, District Allocations <u>Rebuttal</u> – District Allocations, Business Transformation <u>Surrebuttal</u> – District Allocations, Business Transformation, Service Company Costs	Settled
Empire District Electric Company	ER-2014-0351	<u>Direct</u> – Overview of Staff’s Filing <u>Rebuttal</u> - ITC Over-Collection, Cost of Removal Deferred Tax Amortization, State Flow-Through <u>Surrebuttal</u> – Unamortized Balance of Joplin Tornado, ITC Over-Collections, Cost of Removal Deferred Tax Amortization, State Flow-Through, Transmission Revenues and Expenses	Settled
Brandco Investments/Hillcrest Utility Operating Company, Inc.	WO-2014-0340	<u>Rebuttal</u> – Rate Base and Future Rates	Settled

**CASE PARTICIPATION
OF
KIMBERLY K. BOLIN**

<u>Company Name</u>	<u>Case Number</u>	<u>Testimony/Issues</u>	<u>Contested or Settled</u>
Lake Region Water & Sewer	WR-2013-0461	<p><u>Direct</u> – Overview of Staff’s Filing <u>Report on Cost of Service</u> – True-Up, Availability Fees, Sewer Operating Expense, Sewer Equipment Maintenance Expense</p> <p><u>Surrebuttal</u> – Availability Fees</p> <p><u>True-Up Direct</u> – Overview of True-Up Audit</p> <p><u>True-Up Rebuttal</u> – Corrections to True-Up</p>	Contested
Empire District Electric Company	ER-2012-0345	<p><u>Direct</u> - Overview of Staff’s Filing <u>Report on Cost of Service</u> – SWPA Hydro Reimbursement, Joplin Tornado AAO Asset, SPP Revenues, SPP Expenses, Regulatory Plan Amortization Impacts, SWPA Amortization, Tornado AAO Amortization</p> <p><u>Rebuttal</u> – Unamortized Balance of Joplin Tornado AAO, Rate Case Expense, True-Up and Uncontested Issues</p> <p><u>Surrebuttal</u> – Unamortized Balance of Joplin Tornado AAO, SPP Transmission Expense, True-Up, Advanced Coal Investment Tax Credit</p>	Settled
Missouri-American Water Company	WR-2011-0337	<p><u>Direct</u> – Overview of Staff’s Filing <u>Report on Cost of Service</u> - True-Up Recommendation, Tank Painting Tracker, Tank Painting Expense</p> <p><u>Rebuttal</u> - Tank Painting Expense, Business Transformation</p> <p><u>Surrebuttal</u> – Tank Painting Tracker, Acquisition Adjustment</p>	Settled
Missouri-American Water Company	WR-2010-0131	<p><u>Report on Cost of Service</u> - Pension/OPEB Tracker, Tank Painting Tracker, Deferred Income Taxes, FAS 87 Pension Costs, FAS 106 – Other Post-Employment Benefits, Incentive Compensation, Group Insurance and 401(k) Employer Costs, Tank Painting Expense, Dues and Donations, Advertising Expense, Promotional Items, Current and Deferred Income Tax Expense</p>	Settled

**CASE PARTICIPATION
OF
KIMBERLY K. BOLIN**

<u>Company Name</u>	<u>Case Number</u>	<u>Testimony/Issues</u>	<u>Contested or Settled</u>
Empire District Gas Company	GR-2009-0434	<u>Report on Cost of Service</u> – Prepaid Pension Asset, Pension Tracker Asset/Liability, Unamortized Accounting Authority Order Balances, Pension Expense, OPEBs, Amortization of Stock Issuance Costs, Amortization of Accounting Authority Orders <u>Direct</u> – Overview of Staff's Filing	Settled
Laclede Gas Company	GT-2009-0056	<u>Surrebuttal Testimony</u> – Tariff	Contested
Missouri-American Water Company	WR-2008-0311 & SR-2008-0312	<u>Report on Cost of Service</u> – Tank Painting Tracker, Lobbying Costs, PSC Assessment <u>Direct</u> – Overview of Staff's Filing <u>Rebuttal</u> – True-Up Items, Unamortized Balance of Security AAO, Tank Painting Expense, Fire Hydrant Painting Expense <u>Surrebuttal</u> – Unamortized Balance of Security AAO, Cedar Hill Waste Water Plant, Tank Painting Expense, Fire Hydrant Painting Expense	Settled
Missouri Gas Utility, Inc.	GR-2008-0060	<u>Report on Cost of Service</u> – Plant-in Service/Capitalization Policy, Plant-in Service/Purchase Price Valuation, Depreciation Reserve, Revenues, Uncollectible Expense	Settled
Laclede Gas Company	GR-2007-0208	<u>Direct</u> - Test Year and True-Up, Environmental costs, AAOs, Revenue, Miscellaneous Revenue, Gross receipts Tax, Gas Costs, Uncollectibles, EWCR, AMR, Acquisition Adjustment	Settled

**CASE PARTICIPATION
OF
KIMBERLY K. BOLIN**

<u>Company Name</u>	<u>Case Number</u>	<u>Testimony/Issues</u>	<u>Contested or Settled</u>
Kansas City Power and Light Company	ER-2006-0314	<u>Direct</u> - Gross Receipts Tax, Revenues, Weather Normalization, Customer Growth/Loss Annualization, Large Customer Annualization, Other Revenue, Uncollectible (Bad Debt) Expense, Payroll, A&G Salaries Capitalization Ratio, Payroll Taxes, Employer 401 (k) Match, Other Employee Benefits <u>Surrebuttal</u> - Uncollectible (Bad Debt) Expense, Payroll, A&G Salaries Capitalization Ratio, Other Employee Benefits	Contested
Missouri Gas Energy	GR-2006-0204	<u>Direct</u> - Payroll, Incentive Compensation, Payroll Taxes, Employee Benefits, Lobbying, Customer & Governmental Relations Department, Collections Contract	Settled

**CASE PARTICIPATION
OF
KIMBERLY K. BOLIN**

WHILE EMPLOYED WITH THE OFFICE OF THE PUBLIC COUNSEL

<u>Company Name</u>	<u>Case Number</u>	<u>Testimony/Issues</u>	<u>Contested or Settled</u>
Missouri Gas Energy	GU-2005-0095	<u>Rebuttal</u> - Accounting Authority Order <u>Surrebuttal</u> - Accounting Authority Order	Contested
The Empire District Electric Company	ER-2004-0570	<u>Direct</u> - Payroll	Settled
Missouri American Water Company & Cedar Hill Utility Company	SM-2004-0275	<u>Direct</u> - Acquisition Premium	Settled
Missouri Gas Energy	GR-2004-0209	<u>Direct</u> - Safety Line Replacement Program; Environmental Response Fund; Dues & Donations; Payroll; Customer & Governmental Relations Department Disallowance; Outside Lobbyist Costs <u>Rebuttal</u> - Customer Service; Incentive Compensation; Environmental Response Fund; Lobbying/Legislative Costs <u>True-Up</u> - Rate Case Expense	Contested
Osage Water Company	ST-2003-0562 / WT-2003-0563	<u>Direct</u> - Payroll <u>Rebuttal</u> - Payroll; Lease Payments to Affiliated Company; alleged Legal Requirement of a Reserve	Case Dismissed
Missouri American Water Company	WR-2003-0500	<u>Direct</u> - Acquisition Adjustment; Water Treatment Plant Excess Capacity; Retired Treatment Plan; Affiliated Transactions; Security AAO; Advertising Expense; Customer Correspondence	Settled
Empire District Electric	ER-2002-424	<u>Direct</u> - Dues & Donations; Memberships; Payroll; Security Costs <u>Rebuttal</u> - Energy Traders' Commission <u>Surrebuttal</u> - Energy Traders' Commission	Settled

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WHILE EMPLOYED WITH THE OFFICE OF THE PUBLIC COUNSEL

<u>Company Name</u>	<u>Case Number</u>	<u>Testimony/Issues</u>	<u>Contested or Settled</u>
Laclede Gas Company	GR-2002-356	<u>Direct</u> - Advertising Expense; Safety Replacement Program and the Copper Service Replacement Program; Dues & Donations; Rate Case Expense <u>Rebuttal</u> - Gas Safety Replacement Program / Deferred Income Taxes for AAOs	Settled
Missouri-American Water Company	WO-2002-273	<u>Rebuttal</u> - Accounting Authority Order <u>Cross-Surrebuttal</u> - Accounting Authority Order	Contested
Environmental Utilities	WA-2002-65	<u>Direct</u> - Water Supply Agreement <u>Rebuttal</u> - Certificate of Convenience & Necessity	Contested
Warren County Water & Sewer	WC-2002-160 / SC-2002-155	<u>Direct</u> - Clean Water Act Violations; DNR Violations; Customer Service; Water Storage Tank; Financial Ability; Management Issues <u>Surrebuttal</u> - Customer Complaints; Poor Management Decisions; Commingling of Regulated & Non-Related Business	Contested
Laclede Gas Company	GR-2001-629	<u>Direct</u> - Advertising Expense; Safety Replacement Program; Dues & Donations; Customer Correspondence	Settled
Gateway Pipeline Company	GM-2001-585	<u>Rebuttal</u> - Acquisition Adjustment; Affiliated Transactions; Company's Strategic Plan	Contested
Empire District Electric	ER-2001-299	<u>Direct</u> - Payroll; Merger Expense <u>Rebuttal</u> - Payroll <u>Surrebuttal</u> - Payroll	Settled
Osage Water Company	SR-2000-556/ WR-2000-557	<u>Direct</u> - Customer Service	Contested

**CASE PARTICIPATION
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WHILE EMPLOYED WITH THE OFFICE OF THE PUBLIC COUNSEL

<u>Company Name</u>	<u>Case Number</u>	<u>Testimony/Issues</u>	<u>Contested or Settled</u>
St. Louis County Water Company	WR-2000-844	<u>Direct</u> - Main Incident Expense	Settled
Missouri American Water Company	WR-2000-281/ SR-2000-282	<u>Direct</u> - Water Plant Premature Retirement; Rate Case Expense <u>Rebuttal</u> - Water Plant Premature Retirement <u>Surrebuttal</u> - Water Plant Premature Retirement	Contested
Laclede Gas Company	GR-99-315	<u>Direct</u> - Advertising Expense; Dues & Donations; Miscellaneous Expense; Items to be Trued-up	Contested
St. Joseph Light & Power	HR-99-245	<u>Direct</u> - Advertising Expense; Dues & Donations; Miscellaneous Expense; Items to be Trued-up <u>Rebuttal</u> - Advertising Expense <u>Surrebuttal</u> - Advertising Expense	Settled
St. Joseph Light & Power	ER-99-247	<u>Direct</u> - Merger Expense; Rate Case Expense; Deferral of the Automatic Mapping/Facility Management Costs <u>Rebuttal</u> - Merger Expense; Rate Case Expense; Deferral of the Automatic Mapping/Facility Management Costs <u>Surrebuttal</u> - Merger Expense; Rate Case Expense; Deferral of the Automatic Mapping/Facility Management Costs	Settled
Laclede Gas Company	GR-98-374	<u>Direct</u> - Advertising Expense; Gas Safety Replacement AAO; Computer System Replacement Costs	Settled
Missouri Gas Energy	GR-98-140	<u>Direct</u> - Payroll; Advertising; Dues & Donations; Regulatory Commission Expense; Rate Case Expense	Contested

**CASE PARTICIPATION
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WHILE EMPLOYED WITH THE OFFICE OF THE PUBLIC COUNSEL

<u>Company Name</u>	<u>Case Number</u>	<u>Testimony/Issues</u>	<u>Contested or Settled</u>
Gascony Water Company, Inc.	WA-97-510	<u>Rebuttal</u> - Rate Base; Rate Case Expense; Cash Working Capital	Settled
Union Electric Company	GR-97-393	<u>Direct</u> - Interest Rates for Customer Deposits	Settled
St. Louis County Water Company	WR-97-382	<u>Direct</u> - Interest Rates for Customer Deposits, Main Incident Expense	Settled
Associated Natural Gas Company	GR-97-272	<u>Direct</u> - Acquisition Adjustment; Interest Rates for Customer Deposits <u>Rebuttal</u> - Acquisition Adjustment; Interest Rates for Customer Deposits <u>Surrebuttal</u> - Interest Rates for Customer Deposits	Contested
Missouri-American Water Company	WA-97-45	<u>Rebuttal</u> - Waiver of Service Connection Charges	Contested
Imperial Utility Corporation	SC-96-427	<u>Direct</u> - Revenues, CIAC <u>Surrebuttal</u> - Payroll; Uncollectible Accounts Expense; Rate Case Expense, Revenues	Settled
St. Louis Water Company	WR-96-263	<u>Direct</u> -Main Incident Repairs <u>Rebuttal</u> - Main Incident Repairs <u>Surrebuttal</u> - Main Incident Repairs	Contested
Steelville Telephone Company	TR-96-123	<u>Direct</u> - Depreciation Reserve Deficiency	Settled

**CASE PARTICIPATION
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KIMBERLY K. BOLIN**

WHILE EMPLOYED WITH THE OFFICE OF THE PUBLIC COUNSEL

<u>Company Name</u>	<u>Case Number</u>	<u>Testimony/Issues</u>	<u>Contested or Settled</u>
Missouri-American Water Company	WR-95-205/ SR-95-206	<u>Direct</u> - Property Held for Future Use; Premature Retirement of Sewer Plant; Depreciation Study Expense; Deferred Maintenance <u>Rebuttal</u> - Property Held for Future Use; Premature Retirement of Sewer Plant; Deferred Maintenance <u>Surrebuttal</u> - Property Held for Future Use; Premature Retirement of Sewer Plant	Contested
St. Louis County Water Company	WR-95-145	<u>Rebuttal</u> - Tank Painting Reserve Account; Main Repair Reserve Account <u>Surrebuttal</u> - Main Repair Reserve Account	Contested

James A. Busch

Brief Work History

I am the Manager of the Water and Sewer Department of the Missouri Public Service Commission (PSC or Commission). I have 20 years of experience in the field of public utility regulation. I spent two and a half years working as an Economist I in the PSC's Procurement Analysis Department working primarily on hedging programs for natural gas procurement and reviewing and designing incentive plans. I then worked for almost five and a half years with the Missouri Office of the Public Counsel (Public Counsel) as a Public Utility Economist. During my tenure at Public Counsel, I worked on numerous issues in the electric, natural gas, and water/sewer industries. I then transferred back to the PSC as an Economist III in the Commission's Energy Department. While employed in the Energy Department, I worked exclusively on electric industry issues including conducting rate design/class cost of service studies, demand-side management, and integrated resource planning. For the past ten years, I have been the Manager of the Water and Sewer Department supervising a staff of seven technical experts. My duties as the Manager of Water and Sewer involve all aspects of the Commission's regulation of the water and sewer industries including customer complaints, reviewing testimony, setting policy, and working with the utilities to promote best practices in their provision of safe and adequate service at just and reasonable rates.

Furthermore, I have been a member of the Adjunct Faculty at Columbia College and Stephens College. I have been teaching at Columbia College since 2000. Courses that I teach or have taught include introductory micro- and macroeconomics, Intermediate Microeconomics, and Managerial Economics. These courses are taught either on-site or over the internet. I was the developer of the Intermediate Microeconomics course currently being offered at Columbia College. At Stephens College, I taught a macroeconomics course and an Entrepreneurial Finance Course in 2007.

Education

Masters of Science – Economics
Southern Illinois University at Edwardsville

Bachelors of Science – Economics
Southern Illinois University at Edwardsville

James A. Busch

Cases of Filed Testimony

<u>Company</u>	<u>Case No.</u>
Union Electric Company	GR-97-393
Missouri Gas Energy	GR-98-140
Laclede Gas Company	GO-98-484
Laclede Gas Company	GR-98-374
St. Joseph Light & Power	GR-99-246
Laclede Gas Company	GT-99-303
Laclede Gas Company	GR-99-315
Fiber Four Corporation	TA-2000-23; et al
Missouri-American Water Company	WR-2000-281/SR-2000-282
Union Electric Company d/b/a AmerenUE	GR-2000-512
St. Louis County Water	WR-2000-844
Empire District Electric Company	ER-2001-299
Missouri Gas Energy	GR-2001-292
Laclede Gas Company	GT-2001-329
Laclede Gas Company	GO-2000-394
Laclede Gas Company	GR-2001-629
UtiliCorp United, Inc.	ER-2001-672
Union Electric Company d/b/a AmerenUE	EC-2001-1
Laclede Gas Company	GR-2002-356
Empire District Electric Company	ER-2002-424
Southern Union Company	GM-2003-0238
Aquila, Inc.	EF-2003-0465
Missouri-American Water Company	WR-2003-0500
Union Electric Company d/b/a AmerenUE	GR-2003-0517
Aquila, Inc.	ER-2004-0034
Aquila, Inc.	GR-2004-0072
Missouri Gas Energy	GR-2004-0209
Empire District Electric Company	ER-2004-0570
Aquila, Inc.	EO-2002-0384
Aquila, Inc.	ER-2005-0436
Empire District Electric Company	ER-2006-0315
Kansas City Power & Light	ER-2006-0314
Union Electric Company d/b/a AmerenUE	ER-2007-0002
Aquila, Inc.	EO-2007-0395
Missouri-American Water Company (Live)	WC-2009-0277
Missouri-American Water Company	WR-2010-0131
Review of Economic, Legal and Policy Considerations Of District Specific Pricing and Single Tariff Pricing (Live)	SW-2011-0103

cont'd James A. Busch

<u>Company</u>	<u>Case No.</u>
Timber Creek Sewer Company	SR-2011-0320
Missouri-American Water Company	WR-2011-0337
Emerald Pointe Utility Company	SR-2013-0016
City of Pevely and CPWSD C-1 of Jefferson County	WC-2014-0018
Hickory Hills Water and Sewer Company, Inc	SR-2014-0166/WR-2014-0167
Peaceful Valley Service Company (Live)	SR-2014-0153/WR-2014-0154
Central Rivers Wastewater Utility	SR-2014-0247
Missouri-American Water Company	WR-2015-0301
Ridge Creek Water, LLC	WO-2017-0236
Missouri-American Water Company	WO-2018-0059

Keith D. Foster

Educational and Employment Background and Credentials

I am currently employed as a Utility Regulatory Auditor IV for the Missouri Public Service Commission (“Commission”) within the Auditing Department of the Commission Staff Division. I have been employed by the Commission since 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.

Prior to my work at the Commission, I was most recently employed by IBM as a Project Manager and Project Executive. 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 was most recently a board member of the Mid-Missouri PMI chapter, serving two two-year terms as Vice-President of Financial Affairs. In addition, I am a PMI-certified Project Management Professional (PMP), a credential I have held since 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

Keith D. Foster

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.

Other cases I have been assigned are listed below:

Case/Tracking Number	Company Name - Issue
QW-2008-0010	Tri-States Utility, Inc. - Property Taxes; Fuel & 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
WR-2008-0311	Missouri-American Water Company - Advertising & Promotional Items; Dues and Donations; Cash Working Capital; Plant in Service; Depreciation Expense; Depreciation Reserve; Franchise Tax; Property Taxes; Fuel & Electricity Expense; Telephone Expense; Postage Expense; Purchased Water; Prepayments; Materials & Supplies; Customer Advances; Contributions in Aid of Construction (CIAC)
WR-2009-0098	Raytown Water Company - Materials & 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
GO-2009-0302	Missouri Gas Energy - Infrastructure Service Replacement Surcharge (ISRS)
SA-2009-0319	Mid-MO Sanitation, LLC – Certificate Case; All Revenue and Expenses; Plant in Service; Depreciation Reserve; Other Rate Base Items
GR-2009-0355	Missouri Gas Energy – Payroll, Payroll Taxes, 401(k), and Other Employee Benefit Costs; Incentive Compensation and Bonuses; Medical and Dental Expense; Bad Debt Expense; Rate Case Expense; Pension Expense; FAS106/OPEBs; Prepaid Pension Asset (PPA); Franchise Tax Expense; Income Tax Expense
SR-2010-0095	Mid-MO Sanitation, LLC – Full Audit of All Revenue and Expenses; Plant in Service; Depreciation Reserve; Other Rate Base Items

Keith D. Foster

Case/Tracking Number	Company Name - Issue
ER-2010-0130	Empire District Electric – Fuel and Purchased Power; Fuel Inventories; Gas Stored Underground; Off-System Sales; Transmission Revenue; Payroll, Payroll Taxes, and 401(k) Benefit Costs; Incentive Compensation; Maintenance Normalization Adjustments
WR-2010-0304	Raytown Water Company – Revenues; Rate Case Expense; Regulatory Commission Expense; Utilities Expense; Purchased Water; Insurance Expense; Laboratory Fees; Communication Expense; Transportation Expense
GO-2011-0003	Missouri Gas Energy - Infrastructure Service Replacement Surcharge (ISRS)
ER-2011-0004	Empire District Electric – Fuel and Purchased Power; Fuel Inventories; Gas Stored Underground; Maintenance Normalization Adjustments; Miscellaneous Revenues (SO2 Allowances and Renewable Energy Credits); Operations and Maintenance (O&M) Expenses for Iatan 2 and Plum Point; Transmission Revenue; Entergy Transmission Contract; Reconciliation
WR-2011-0337	Missouri-American Water Company – Belleville Lab Allocations; Chemical Expense; Corporate and District Allocations; Fuel & Electricity Expense; Service Company Management Fees; Business Transformation Program; Reconciliation
WR-2012-0300	Empire District Electric (Water) – Plant-in-Service; Depreciation Reserve; Depreciation Expense; Materials and Supplies; Property Tax Expense; Customer Advances; Operations and Maintenance (O&M) Adjustment
WM-2012-0335	Moore Bend Water Company – Acquisition Case – Plant-in-Service; Depreciation Reserve; Depreciation Expense
ER-2012-0345	Empire District Electric – Fuel and Purchased Power; Fuel Inventories; Gas Stored Underground; Maintenance Normalization Adjustments (Operations and Maintenance Expense); Operations and Maintenance (O&M) Expense Trackers for Iatan 2, Iatan Common, and Plum Point; Entergy Transmission Contract; Reconciliation
WR-2013-0461 SR-2013-0459	Lake Region Water & Sewer – Executive Management Fees; Current Income Taxes; Deferred Income Taxes; Payroll and Benefits; Payroll Taxes; Allocation Factors; Sludge Removal; Accounting Fees; Legal Fees (Other Than Rate Case Expense); Billing Expense; Outside Services; Travel & Entertainment Expense; Transportation Expense

Keith D. Foster

Case/Tracking Number	Company Name - Issue
GR-2014-0086	Summit Natural Gas – Acquisition Costs; Affiliate Transactions; Fuel Expense; Property Taxes; Other Miscellaneous Expenses; Income Taxes; Deferred Taxes; and Reconciliation
WA-2015-0049 SA-2015-0107	Branson Cedars Resort – Certificate Case - All Revenue and Expenses; Plant in Service; Depreciation Reserve; Other Rate Base Items
WA-2015-0108	Missouri-American Water Company (Redfield Water) – Acquisition Case – Plant-in-Service; Depreciation Reserve; Depreciation Expense
WO-2015-0077	Woodland Manor Water Company – Acquisition Case – Plant-in-Service; Depreciation Reserve; Depreciation Expense; CIAC; Customer Deposits
WR-2015-0192	Ozark International, Inc. – Plant-in-Service; Depreciation Reserve; Depreciation Expense; CIAC; Customer Deposits; Chemicals Expense; Legal Expense; Office Expense; Postage; Water Testing Expense; Gas & Oil Expense
ER-2016-0023	Empire District Electric – Fuel and Purchased Power; Fuel Inventories; Gas Stored Underground; Software Maintenance Expense; Corporate Allocations; Outside Services; Iatan and Plum Point Carrying Costs
WR-2017-0110 SR-2017-0109	Terre Du Lac Utilities Corporation – Maintenance Expense; Rate Case Expense; Internet Service Expense; Telephone Expense; Payroll and Benefits; Payroll Taxes; Outside Services; Mileage Expense

Jennifer K. Grisham
Utility Regulatory Auditor II

Present Position:

I am a Utility Regulatory Auditor II in the Auditing Department of the Commission Staff Division for the Missouri Public Service Commission (“Commission”). My employment with the Commission commenced on December 21, 2015.

Education and Employment Background:

I earned a Bachelor of Science in Business Administration from Central Methodist (College) University (“CMU”) in Fayette, Missouri in May 1997. I also earned a Bachelor in Accountancy from CMU in May 2016.

Case Participation:

Company	Case Number	Issues/Testimony
The Empire District Electric	ER-2016-0023	Rate Base, Plant in Service, Depreciation, Amortization, CWC
Missouri American Water Company/Woodland Manor Water Company, LLC	WM-2016-0169	Rate Base Recommendation
Missouri Gas Energy	GO-2016-0197	ISRS Recommendation/Direct Testimony
Laclede Gas Company	GO-2016-0333	ISRS Recommendation/Direct Testimony
Summit Natural Gas of Missouri	GA-2017-0016	Recommendation for CCN
Missouri American Water Company/EMC of St. Charles County, LLC	SM-2017-0069	Recommendation for Acquisition
Missouri American Water Company	WA-2017-0181 & SA-2017-0182	Recommendation for Acquisition and CCN
Laclede Gas Company	GO-2017-0202	ISRS Recommendation
Missouri American Water Company	WA-2017-0278 & SA-2017-0279	Recommendation for Acquisition
Indian Hills Utility Operating Company, Inc.	WA-2017-0259	Employee Benefits, Hydrant Painting, Incentive Compensation, Lobbying, Main Break Expense, Payroll & Payroll Taxes, and Relocation Expense
Environmental Utilities	WR-2018-0001	Rate Base

Amanda C. McMellen

SUMMARY OF RATE CASE TESTIMONY FILED

<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

Amanda C. McMellen

SUMMARY OF RATE CASE TESTIMONY FILED

<u>COMPANY</u>	<u>CASE NO.</u>	<u>ISSUES</u>
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
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

Amanda C. McMellen

SUMMARY OF RATE CASE TESTIMONY FILED

<u>COMPANY</u>	<u>CASE NO.</u>	<u>ISSUES</u>
Missouri Gas Energy, a Division of Southern Union Company	GR-2009-0355	Staff Report Cost of Service Revenues-Customer Growth Corporate Allocations Other Rate Base Items Amortization Expense Interest expense on customer Deposits Rents and Leases
Missouri-American Water Company	WR-2010-0131	Staff Report Cost of Service Corporate and District Allocations Lobbying Costs Net Negative Salvage Amortization of Regulatory Assets Belleville Lab Expenses Comprehensive Planning Study Payroll Payroll Taxes
Kansas City Power & Light Company	ER-2010-0355	Staff Report Cost of Service Revenues-Customer Growth In-Field Service Fees Gross Receipts Taxes Forfeited Discounts Other Revenues Credit Card Acceptance Program Bad Debts
KCP&L Greater Missouri Operations Company	ER-2010-0356	Staff Report Cost of Service Revenues-Customer Growth Other Revenues Credit Card Acceptance Program Bad Debts
Empire District Electric Company	ER-2011-0004	Staff Report Cost of Service Plant in Service Depreciation Reserve Depreciation Expense Pensions & OPEBs Customer Programs Amortizations Carrying Costs Revenue Annualizations

Amanda C. McMellen

SUMMARY OF RATE CASE TESTIMONY FILED

<u>COMPANY</u>	<u>CASE NO.</u>	<u>ISSUES</u>
Empire District Electric Company	ER-2012-0345	Staff Report Cost of Service Plant in Service Depreciation Reserve Depreciation Expense Prepayments Materials and Supplies Customer Demand Programs Amortization of Electric Plant Customer Deposits Customer Advances Carrying Costs Customer Programs Customer Deposit Interest Expense Franchise Taxes Amortizations Banking Fees Lease Expense Pay Station Fees Amortizations
Summit Natural Gas Company of Missouri, Inc.	ER-2014-0086	Corporate Allocations Capitalization Policy MGU Purchase Price SMNG Legacy Asset Valuation Energy Efficiency Programs
Empire District Electric Company	ER-2016-0023	Staff Report Cost of Service Test Year/Update/True-Up Accumulated Deferred Income Taxes SWPA Hydro Reimbursement SPP Revenues and Expenses SPP Transmission Expenses ASM Revenue and Expense Miscellaneous SPP Related Revenues and Expenses Off-System Sales Revenue and Expense Current Income Taxes Deferred Income Taxes Rate Case Expense-Sharing Advertising Dues and Donations SWPA Amortization Tomado AAO Amortization Corporate Expenses Capitalized Depreciation Proposed Acquisition
Terre Du Lac utilities Corporation	WR-2017-0110	Rate Base

Caroline Newkirk

Educational, Employment Background and Credentials

I am a Utility Regulatory Auditor II in the Auditing Department, Commission Staff Division for the Missouri Public Service Commission. I accepted the position of the Utility Regulatory Auditor I/II/III in October 2016. I promoted to a Utility Regulatory Auditor II In October 2017.

I earned a Bachelor of Science degree in Accounting from University of Central Missouri in Warrensburg, MO in December 2011. In earning this degree I completed numerous core Accounting and business classes. Prior to joining the Commission, I have worked in tax accounting, cost accounting, and bookkeeping.

Case Participation

Company Name	Case Number(s)	Testimony/Issues
Missouri American Water Company	WO-2018-0059	ISRS Recommendation/ Direct Testimony
Missouri American Water Company	WO-2017-0297	ISRS Recommendation
Missouri Gas Energy	GO-2017-0201	ISRS Recommendation
Missouri Gas Energy	GO-2016-0332	ISRS Recommendation/ Direct Testimony
Terre Du Lac Utilities Corporation	WR-2017-0110 SR-2017-0109	Chemical Expense, Insurance, Postage Expense, Real Estate and Personal Property Tax, Outside Services, Uncollectibles, Permits and Licenses, MoPSC Assessment, Fuel Expense, Billing and Collections Expense, Electric Expense, Dues

Mark L. Oligschlaeger

Education, Background and Case Participation

I attended Rockhurst College in Kansas City, Missouri, and received a Bachelor of Science degree in Business Administration, with a major in Accounting, in 1981. I have been employed by the Missouri Public Service Commission (Commission) since September 1981 within the Auditing Department.

In November 1981, I passed the Uniform Certified Public Accountant examination and, since February 1989, have been licensed in the state of Missouri as a CPA. The Uniform CPA examination consisted of four parts: Accounting Practice, Accounting Theory, Auditing and Business Law. I received a passing score in all four of these components the first time that I took the test.

I have been employed by this Commission as a Regulatory Auditor for approximately 36 years, and have submitted testimony on ratemaking matters numerous times before the Commission. I have also been responsible for the supervision of other Commission employees in rate cases and other regulatory proceedings many times. I have received continuous training at in-house and outside seminars on technical ratemaking matters since I began my employment at the Commission.

**CASE PARTICIPATION OF
MARK L. OLIGSCHLAEGER**

Company Name	Case Number	Issues
Spire Missouri, Inc., d/b/a Spire (Laclede Gas Company / Missouri Gas Energy)	GR-2017-0215 and GR-2017-0216	Rebuttal: Tracker Proposals; Other Policy Proposals; Software Costs
Missouri-American Water Company	WU-2017-0351	Rebuttal: Property Tax AAO Surrebuttal: Property Tax AAO
Missouri Gas Energy and Laclede Gas Company	GO-2016-0332 and GO-2016-0333	Rebuttal: ISRS Updates; Capitalized Incentive Compensation; Hydrostatic Testing
Kansas City Power & Light Company	ER-2016-0285	Rebuttal: Tracker Proposals; Use of Projected Expenses; Expense Trackers in Rate Base
Laclede Gas Company and Missouri Gas Energy	GO-2016-0196 and GO-2016-0197	Rebuttal: ISRS True-ups
Union Electric Company d/b/a Ameren Missouri	ER-2016-0179	Rebuttal: Transmission Tracker; Noranda Deferral; Regulatory Reform
KCP&L Greater Missouri Operations Company	ER-2016-0156	Rebuttal: Tracker Proposals; Use of Projected Expenses; Tracker Balances in Rate Base; Deferral Policy
Missouri-American Water Company	WR-2015-0301	Rebuttal: Environmental Coast Adjustment Mechanism; Energy Efficiency and Water Loss Reduction Deferral Mechanism Tracker
Laclede Gas Company	GO-2015-0178	Direct: ISRS True-ups
Kansas City Power & Light Company	EU-2015-0094	Direct: Accounting Order – Department of Energy Nuclear Waste Fund Fees
Union Electric Company d/b/a Ameren Missouri	EO-2015-0055	Rebuttal: Demand-Side Investment Mechanism
Kansas City Power & Light Company	ER-2014-0370	Rebuttal: Trackers Surrebuttal: Trackers; Rate Case Expense
Kansas City Power & Light Company	EO-2014-0255	Rebuttal: Continuation of Construction Accounting
Union Electric Company d/b/a Ameren Missouri	EC-2014-0223	Rebuttal: Complaint Case – Rate Levels
Kansas City Power & Light Company	EO-2014-0095	Rebuttal: DSIM
Union Electric Company d/b/a Ameren Missouri	ET-2014-0085	Surrebuttal: RES Retail Rate Impact

**CASE PARTICIPATION OF
MARK L. OLIGSCHLAEGER**

Company Name	Case Number	Issues
Kansas City Power & Light Company & KCP&L Greater Missouri Operations Co.	EU-2014-0077	Rebuttal: Accounting Authority Order
Kansas City Power & Light Company	ET-2014-0071	Rebuttal: RES Retail Rate Impact Surrebuttal: RES Retail Rate Impact
KCP&L Greater Missouri Operations Company	ET-2014-0059	Rebuttal: RES Retail Rate Impact Surrebuttal: RES Retail Rate Impact
Missouri Gas Energy, A Division of Laclede Gas Company	GR-2014-0007	Surrebuttal: Pension Amortizations
The Empire District Electric Company	ER-2012-0345	Direct (Interim): Interim Rate Request Rebuttal: Transmission Tracker, Cost of Removal Deferred Tax Amortization; State Income Tax Flow-Through Amortization Surrebuttal: State Income Tax Flow-Through Amortization
KCP&L Greater Missouri Operations Company	ER-2012-0175	Surrebuttal: Transmission Tracker Conditions
Kansas City Power & Light Company	ER-2012-0174	Rebuttal: Flood Deferral of off-system sales Surrebuttal: Flood Deferral of off-system sales, Transmission Tracker conditions
Union Electric Company d/b/a Ameren Missouri	ER-2012-0166	Responsive: Transmission Tracker
Union Electric Company d/b/a Ameren Missouri	EO-2012-0142	Rebuttal: DSIM
Union Electric Company d/b/a Ameren Missouri	EU-2012-0027	Rebuttal: Accounting Authority Order Cross-Surrebuttal: Accounting Authority Order
KCP&L Greater Missouri Operations Company	EO-2012-0009	Rebuttal: DSIM
Missouri Gas Energy, A Division of Southern Union	GU-2011-0392	Rebuttal: Lost Revenues Cross-Surrebuttal: Lost Revenues
Missouri-American Water Company	WR-2011-0337	Surrebuttal: Pension Tracker
The Empire District Electric Company	ER-2011-0004	Staff Report on Cost of Service: Direct: Report on Cost of Service; Overview of the Staff's Filing Surrebuttal: SWPA Payment, Ice Storm Amortization Rebasing, SO2 Allowances, Fuel/Purchased Power and True-up

**CASE PARTICIPATION OF
MARK L. OLIGSCHLAEGER**

Company Name	Case Number	Issues
The Empire District Electric Company, The-Investor (Electric)	ER-2010-0130	Staff Report Cost of Service: Direct Report on Cost of Service; Overview of the Staff's Filing; Regulatory Plan Amortizations; Surrebuttal: Regulatory Plan Amortizations
Missouri Gas Energy, a Division of Southern Union	GR-2009-0355	Staff Report Cost of Service: Direct Report on Cost of Service; Overview of the Staff's Filing; Rebuttal: Kansas Property Taxes/AAO; Bad Debts/Tracker; FAS 106/OPEBs; Policy; Surrebuttal: Environmental Expense, FAS 106/OPEBs
KCP&L Greater Missouri Operations Company	EO-2008-0216	Rebuttal: Accounting Authority Order Request
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
Missouri Gas Utility	GR-2008-0060	Report on Cost of Service; Overview of Staff's Filing
Laclede Gas Company	GR-2007-0208	Case Overview; Depreciation Expense/Depreciation Reserve; Affiliated Transactions; Regulatory Compact
Missouri Gas Energy	GR-2006-0422	Unrecovered Cost of Service Adjustment; Policy
Empire District Electric	ER-2006-0315	Fuel/Purchased Power; Regulatory Plan Amortizations; Return on Equity; True-Up
Missouri Gas Energy	GR-2004-0209	Revenue Requirement Differences; Corporate Cost Allocation Study; Policy; Load Attrition; Capital Structure
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
Laclede Gas Company	GA-2002-429	Accounting Authority Order Request
Union Electric Company	EC-2002-1	Merger Savings; Criticisms of Staff's Case; Injuries and Damages; Uncollectibles
Missouri Public Service	ER-2001-672	Purchased Power Agreement; Merger Savings/Acquisition Adjustment
Gateway Pipeline Company	GM-2001-585	Financial Statements

**CASE PARTICIPATION OF
MARK L. OLIGSCHLAEGER**

Company Name	Case Number	Issues
Ozark Telephone Company	TC-2001-402	Interim Rate Refund
The Empire District Electric Company	ER-2001-299	Prudence/State Line Construction/Capital Costs
Missouri Gas Energy	GR-2001-292	SLRP Deferrals; Y2K Deferrals; Deferred Taxes; SLRP and Y2K CSE/GSIP
KLM Telephone Company	TT-2001-120	Policy
Holway Telephone Company	TT-2001-119	Policy
Peace Valley Telephone	TT-2001-118	Policy
Ozark Telephone Company	TT-2001-117	Policy
IAMO Telephone Company	TT-2001-116	Policy
Green Hills Telephone	TT-2001-115	Policy
UtiliCorp United & The Empire District Electric Company	EM-2000-369	Overall Recommendations
UtiliCorp United & St. Joseph Light & Power	EM-2000-292	Staff Overall Recommendations
Missouri-American Water	WM-2000-222	Conditions
Laclede Gas Company	GR-99-315 (remand)	Depreciation and Cost of Removal
United Water Missouri	WA-98-187	FAS 106 Deferrals
Western Resources & Kansas City Power & Light	EM-97-515	Regulatory Plan; Ratemaking Recommendations; Stranded Costs
Missouri Public Service	ER-97-394	Stranded/Transition Costs; Regulatory Asset Amortization; Performance Based Regulation
The Empire District Electric Company	ER-97-82	Policy
Missouri Gas Energy	GR-96-285	Riders; Savings Sharing
St. Louis County Water	WR-96-263	Future Plant

**CASE PARTICIPATION OF
MARK L. OLIGSCHLAEGER**

Company Name	Case Number	Issues
Union Electric Company	EM-96-149	Merger Savings; Transmission Policy
St. Louis County Water	WR-95-145	Policy
Western Resources & Southern Union Company	GM-94-40	Regulatory Asset Transfer
Generic Electric	EO-93-218	Preapproval
Generic Telephone	TO-92-306	Revenue Neutrality; Accounting Classification
Missouri Public Service	EO-91-358 and EO-91-360	Accounting Authority Order
Missouri-American Water Company	WR-91-211	True-up; Known and Measurable
Western Resources	GR-90-40 and GR-91-149	Take-Or-Pay Costs

CASE PARTICIPATION OF
MARK L. OLIGSCHLAEGER

Cases prior to 1990 include:

<u>COMPANY NAME</u>	<u>CASE NUMBER</u>
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

KEENAN B. PATTERSON, PE

Education and Employment Background and Credentials

I am currently employed as a Utility Regulatory Engineer for the Missouri Public Service Commission (Commission). I have been employed by the Commission in this position since December 2016. From August 2015 to December 2016, I was employed by the commission as a Utility Engineering Specialist.

I am a graduate of the University of Missouri where I earned the degrees of Bachelor of Science in Agricultural Engineering and Master of Public Administration. In addition, I am licensed as a Professional Engineer in Missouri.

Prior to working for the Commission, I was employed as an Environmental, Health and Safety Coordinator by Pittsburgh Corning Corporation from 2013 to 2015. I have also been employed as an Associate at The Cadmus Group from 2010 to 2013, an Environmental Engineer at GREDELL Engineering Resources in 2009, the owner of Infra Consulting LC from 2006 to 2013, and various environmental engineering positions at the Missouri Department of Natural Resources from 1994 to 2006.

Other cases I have been assigned to or that I have participated in are listed below.

Case Number	Company
WM-2018-0023	Liberty Utilities
WM-2018-0018 SM-2018-0017	Seges Partners Mobile Home Park
WR-2018-0001	Environmental Utilities
WR-2017-0259	Indian Hills Utility Operating Company
GR-2017-0216	Missouri Gas Energy
GR-2017-0215	Laclede Gas Company
SM-2017-0187 WM-2017-0186	Lake Region Water & Sewer Company
WA-2017-0181	Missouri-American Water Company
SM-2017-0150	Elm Hills Utility Operating Company, Inc.
WF-2017-0143 WR-2017-0110	Terre Du Lac Utilities Corporation
WR-2017-0139	Stockton Hills Water Company
SR-2017-0130	Gladlo Water and Sewer Company, Inc.

cont'd Keenan B. Patterson, PE

Case Number	Company
SR-2017-0099	Seges Partners Mobile Home Park, L.L.C.
WO-2017-0236 WC-2017-0200 WR-2017-0042	Ridge Creek Water Company LLC
ER-2016-0285	Kansas City Power & Light Company
SR-2016-0202	Raccoon Creek Utility Operating Company, Inc.
EM-2016-0213	Empire District Electric Company
ER-2016-0179	Ameren Missouri
WM-2016-0169	Woodland Manor Water Company, LLC
SR-2016-0110 WR-2016-0109	Roy-L Utilities, Inc.
WM-2016-0094	Foxfire Utilities Company
WA-2016-0054	Missouri-American Water Company
WA-2016-0031 SA-2016-0030	Peaceful Valley Service Company
WR-2015-0301	Missouri-American Water Company

Jarrold J. Robertson

As a Utility Policy Analyst I, with the Water and Sewer Department of the Commission Staff Division my core duties revolve around being a Case Manager for Small Company Rate Cases filed with the Commission. These duties include, but are not limited to: setting up the case Activities Timeline; authoring Customer Notice(s); coordinating meetings and correspondence between Staff, Office of the Public Counsel (“OPC”), and the utilities; disseminating information between Staff, OPC and the utilities; reviewing and if necessary, revising utilities’ tariff(s), as well as performing rate design.

Educational Background and Work Experience

Prior to starting at the Commission, in July of 2015, I worked as an Environmental Specialist at the Missouri Department of Natural Resources (DNR) for both the Hazardous and Solid Waste Management Programs, from October 2008 – July 2015. I worked for the University of Missouri, Columbia as a Research Specialist from 1998 – October 2008, in the Agronomy, Animal Science and Biochemistry Departments, respectively.

While at DNR, as Project Manager in both the Hazardous and Solid Waste Management Programs, I analyzed data related to the release/spill of gasoline/petroleum, such as Light Non-Aqueous Phase Liquids (LNAPL) and Non-Aqueous Phase Liquids (NAPL), at Underground/Aboveground Storage Tanks and violations which occurred at Permitted Landfills and Infectious Waste Disposal, respectfully. The data analysis involved volatile and non-volatile chemical concentration(s), their toxic; carcinogenic; flammability and other health hazards and the subsequent “desired” remedial levels of said chemicals. While with the Hazardous Waste Management Program, I also performed qualitative data analysis of concentration vs time and/or distance and point by point analysis using both the Mann-Kendall and Linear Regression statistical methods.

While at the University of Missouri, I analyzed data as it relates to the genetic and biological study/manipulation of various organisms: maize (corn); bovine and bacteria. I worked on the “Maize Project,” mapping the genetic structure of corn, using Simple Sequence Repeat (SSR) DNA Marker Technique; studied heat stress in bovine using microarray analysis; and in conjunction with the Department of Energy, I created mutagenic strains of bacteria by deletion of a single gene or an operon (a cluster of genes) combined with cloning sequence(s) and amplification by way of a Poly Chain Reaction (PCR), to study the bacteria’s possible uses in the natural breakdown of Uranium, as well as a possible alternative energy source due to the bacteria’s ability to break down, and reduce sulfate into energy for mobility; in the Agronomy, Animal Science and Biochemistry Departments, respectively.

Previous Testimony Before the Public Service Commission

Case Number	Company	Type of Filing	Issue
WR-2016-0064	Hillcrest Utility Operating Company, Inc.	Direct, Rebuttal, and Live Testimony	Rate Design

Ashley Sarver

Educational, Employment Background and Credentials

I am a Utility Regulatory Auditor IV in the Auditing Department, Commission Staff Division for the Missouri Public Service Commission (Commission). I transferred to the position January 2017. I promoted to a Utility Regulatory Auditor IV in August 2016 in the Energy Resources Department, Commission Staff Division for the Commission. I accepted the position of the Utility Regulatory Auditor I/II/III in July 2013 with the Auditing Department.

I earned a Bachelor of Science degree in Accounting from Missouri State University in Springfield, MO in July 2009. In earning this degree I completed numerous core Accounting and business classes. Prior to joining the Commission, I was employed by the State of Missouri - Department of Corrections from 2009 to 2013 as an Auditor.

Case Participation

Company Name	Case Number(s)	Testimony/Issues
Elm Hills Utility Operating Company, Inc., to Acquire Missouri Utilities Company	SM-2017-0150	Certificate of Convenience and Necessity
Empire District Electric Company	EO-2017-0065	Sixth Prudence Review of Fuel Adjustment Clause
Kansas City Power & Light Company	ER-2016-0285	Fuel Adjustment Clause Base Factor
Empire District Electric Company	EO-2017-0094 ER-2017-0092	Fuel Adjustment Rate, Accumulation Period 16 of its Fuel Adjustment Clause
KCP&L Greater Missouri Operations Company	ER-2016-0156	Miscellaneous Revenues and Customer Growth
Hillcrest Utility Operating Company, Inc.	WR-2016-0064 SR-2016-0065	Revenue, Expenses, and Rate Base
The Empire District Electric Company	ER-2016-0023	Property Tax Expense, Rate Case Expense, Injuries and Damages, Workman's Compensation, Bad Debt Expense, Amortization of Stock Issuance Expense Amortization, Lease Expense, DSM/PRE-MEEIA, Solar Rebate, Revenue, Customer Growth
Indian Hills Utility Operating Company, Inc. to Acquire I.H. Utilities, Inc.	WO-2016-0045	Acquisition Case: Rate Base determination

Cont'd Ashley Sarver

Company Name	Case Number(s)	Testimony/Issues
The Empire District Electric Company	ER-2014-0351	Revenue, Customer Growth, Common Stock Issuance Expense Amortization, Uncollectible Accounts, Cash Working Capital, Injuries and Damages, Workman's Compensation, Insurance Expense, Lease Expense, Property Tax Expense, Regulatory Commission Expense
Summit Natural Gas of Missouri, Inc.	GR-2014-0086	Plant in Service, Depreciation Reserve, Gas Stored Inventory, Prepayments and Materials and Supplies Inventory, Customer Advances, Customer Deposits, Payroll, Payroll Taxes, 401(k), and Other Employee Benefit Costs, Incentive Compensation and Bonuses, Customer Deposit Interest Expense, Maintenance Normalization Adjustments, Advertising Expense, Regulatory Expenses, Dues, Rent Expense
Lake Region Water and Sewer	WR-2013-0461 SR-2013-0459	Plant in Service, Depreciation Reserve, Materials and Supplies Inventory, Customer Advances, Contributions in Aid of Construction, Purchase Power, Chemicals, Testing Expense, Supplies and Materials, Tools and Shop Supplies, Insurance, Office Supplies, Telephone, License and Permits, Property Tax

Jeffrey L. Smith
 Utility Regulatory Auditor II

EDUCATION

Bachelors of Science Criminal Justice
 Central Missouri State University, Warrensburg, MO – July 2007

Master of Science Criminal Justice
 University of Central Missouri, Warrensburg, MO – December 2010

Bachelors of Science Economics
 University of Central Missouri, Warrensburg, MO – December 2015

Bachelors of Science and Business Administration
 University of Central Missouri, Warrensburg, MO – December 2016

Certified Rate of Return Analyst
 Society of Regulatory and Financial Analysts, Richmond, VA – April 2017

Candidate in the CFA Institute CFA Program
 CFA Institute, Charlottesville, VA – March 2017

PROFESSIONAL EXPERIENCE

Missouri Public Service Commission
 Utility Regulatory Auditor II
 August 2017-Present
 Utility Regulatory Auditor I
 August 2016 – August 2017

CASE INVOLVEMENT

MO PSC Case No.	Utility Name	Subject
WF-2017-0110	Terre Du Lac Utilities	Cost of Capital
WR-2017-0143	Terre Du Lac Utilities	Finance Authority
EF-2017-0242	Kansas City Power & Light Company	Finance Authority
GR-2017-0215	Laclede Gas Company	Assisted in Developing Cost of Capital Schedules
GR-2017-0216	Missouri Gas Energy	Assisted in Developing Cost of Capital Schedules
WF-2017-0349	Missouri-American Water Company	Finance Authority
EO-2018-0062	Kansas City Power & Light Company	Triennial Decommissioning Trust Fund Adequacy
WF-2017-0143	Terre Du Lac Utilities	Finance Authority

MISSOURI PUBLIC SERVICE COMMISSION

STAFF REPORT

COST OF SERVICE

APPENDIX 2

**Support for Staff
Cost of
Capital Recommendations**

MISSOURI-AMERICAN WATER COMPANY

CASE NO. WR-2017-0285

*Jefferson City, Missouri
November 2017*

AN ANALYSIS OF THE COST OF CAPITAL

FOR

MISSOURI-AMERICAN WATER COMPANY

CASE NO. WR-2017-0285

SCHEDULES

BY

Jeffrey Smith

Financial Analysis

MISSOURI PUBLIC SERVICE COMMISSION

November 2017

Missouri American Water Company
Case No. WR-2017-0285

List of Schedules

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2-2	Graph of Federal Reserve Discount Rates and Federal Funds Rates Changes
3-1	Rate of Inflation
3-2	Graph of Rate of Inflation
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4-2	Average Yields on Thirty-Year U.S. Treasury Bonds
4-3	Graph of Average Yields on Moody'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	Comparable Water Utility Companies for Missouri-American Water Company
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11-2	Five-Year Dividends Per Share, Earnings Per Share & Book Value Per Share Growth Rates for the Comparable Water Utility Companies
11-3	Average of Ten and Five-Year Dividends Per Share, Earnings Per Share & Book Value Per Share for the Comparable Water Utility Companies
11-4	Value Line Projected EPS, DPS, & BVPS Growth Rates for the Comparable Water Utility Companies
11-5	Value Line & Reuters Projected Growth Rates for the Comparable Water Utility Companies
11-6	Historical and Projected Growth Rates for the Comparable Water Utility Companies
12	Average High / Low Stock Price from August 2017 through October 2017 for the Comparable Water Utility Companies
13	Constant-Growth Discount Cash Flow (DCF) Estimated Costs of Common Equity for the Comparable Water Utility Companies
14	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 Comparable Water Utility Companies
15-1	Multiple-Stage Discounted Cash Flow (DCF) Estimated Costs of Common Equity for the Comparable Water Utility Companies, Growth in Perpetuity of 4.00%
15-2	Multiple-Stage Discounted Cash Flow (DCF) Estimated Costs of Common Equity for the Comparable Water Utility Companies, Growth in Perpetuity of 4.20%
15-3	Multiple-Stage Discounted Cash Flow (DCF) Estimated Costs of Common Equity for the Comparable Water Utility Companies, Growth in Perpetuity of 4.40%
16-1	Multiple-Stage Discounted Cash Flow (DCF) Estimated Costs of Common Equity for the Comparable Electric Utility Companies, Growth in Perpetuity of 3.50%
16-2	Multiple-Stage Discounted Cash Flow (DCF) Estimated Costs of Common Equity for the Comparable Electric Utility Companies, Growth in Perpetuity of 4.00%
16-3	Multiple-Stage Discounted Cash Flow (DCF) Estimated Costs of Common Equity for the Comparable Electric Utility Companies, Growth in Perpetuity of 4.40%
17	Recommended Allowed Rate of Return as of June 30, 2017 for Missouri-American Water Company
18	Allowed Returns for AWK in Other Jurisdictions

Missouri-American Water Company
CASE NO. WR-2017-0285

Federal Reserve Discount Rates Changes and Federal Reserve Funds Rates Changes

Date	Federal Reserve Discount Rate	Federal Reserve Funds Rate	Date	Federal Reserve Discount Rate	Federal Reserve Funds Rate
01/01/83	8.50%		02/02/00	5.25%	5.75%
12/31/83	8.50%		03/21/00	5.50%	6.00%
04/03/84	9.00%		05/19/00	6.00%	6.50%
11/21/84	8.50%		01/03/01	5.75%	6.00%
12/24/84	8.00%		01/04/01	5.50%	6.00%
05/20/85	7.50%		01/31/01	5.00%	5.50%
03/07/86	7.00%		03/20/01	4.50%	5.00%
04/21/86	6.50%		04/16/01	4.00%	4.50%
07/11/86	6.00%		05/15/01	3.50%	4.00%
08/21/86	5.50%		06/27/01	3.25%	3.75%
09/04/87	6.00%		08/21/01	3.00%	3.50%
06/09/88	6.50%		09/17/01	2.50%	3.00%
02/24/89	7.00%		10/02/01	2.00%	2.50%
07/13/90		8.00%	11/06/01	1.50%	2.00%
10/29/90		7.75%	12/11/01	1.25%	1.75%
11/13/90		7.50%	11/05/02	0.75%	1.25%
12/07/90		7.25%	01/09/03	2.25%**	1.25%
12/18/90		7.00%	06/25/03	2.00%	1.00%
12/19/90	6.50%		06/30/04	2.25%	1.25%
01/09/91		6.75%	08/10/04	2.50%	1.50%
02/01/91	6.00%	6.25%	09/21/04	2.75%	1.75%
03/08/91		6.00%	11/10/04	3.00%	2.00%
04/30/91	5.50%	5.75%	12/14/04	3.25%	2.25%
08/06/91		5.50%	02/02/05	3.50%	2.50%
09/13/91	5.00%	5.25%	03/22/05	3.75%	2.75%
10/31/91		5.00%	05/03/05	4.00%	3.00%
11/06/91	4.50%	4.75%	06/30/05	4.25%	3.25%
12/06/91		4.50%	08/09/05	4.50%	3.50%
12/20/91	3.50%	4.00%	09/20/05	4.75%	3.75%
04/09/92		3.75%	11/01/05	5.00%	4.00%
07/02/92	3.00%	3.25%	12/13/05	5.25%	4.25%
09/04/92		3.00%	01/31/06	5.50%	4.50%
01/01/93			03/28/06	5.75%	4.75%
12/31/93	No Changes	No Changes	05/10/06	6.00%	5.00%
02/04/94		3.25%	06/29/06	6.25%	5.25%
03/22/94		3.50%	08/17/07	5.75%	5.25%
04/18/94		3.75%	09/18/07	5.25%	4.75%
05/17/94	3.50%	4.25%	10/31/07	5.00%	4.50%
08/16/94	4.00%	4.75%	12/11/07	4.75%	4.25%
11/15/94	4.75%	5.50%	01/22/08	4.00%	3.50%
02/01/95	5.25%	6.00%	01/30/08	3.50%	3.00%
07/06/95		5.75%	03/16/08	3.25%	
12/19/95		5.50%	03/18/08	2.50%	2.25%
01/31/96	5.00%	5.25%	04/30/08	2.25%	2.00%
03/25/97		5.50%	10/08/08	1.75%	1.50%
12/12/97	5.00%		10/28/08	1.25%	1.00%
01/09/98	5.00%		12/16/08	0.50%	0% - .25%
03/06/98	5.00%		02/19/10	0.75%	
09/29/98		5.25%	12/17/15	1.00%	.25% - .50%
10/15/98	4.75%	5.00%	12/15/16	1.25%	.50% - .75%
11/17/98	4.50%	4.75%	03/16/17	1.50%	.75% - 1.00%
06/30/99	4.50%	5.00%	06/15/17	1.75%	1.25% - 1.50%
08/24/99	4.75%	5.25%			
11/16/99	5.00%	5.50%			

* 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/dlvrates/fedrate.html>

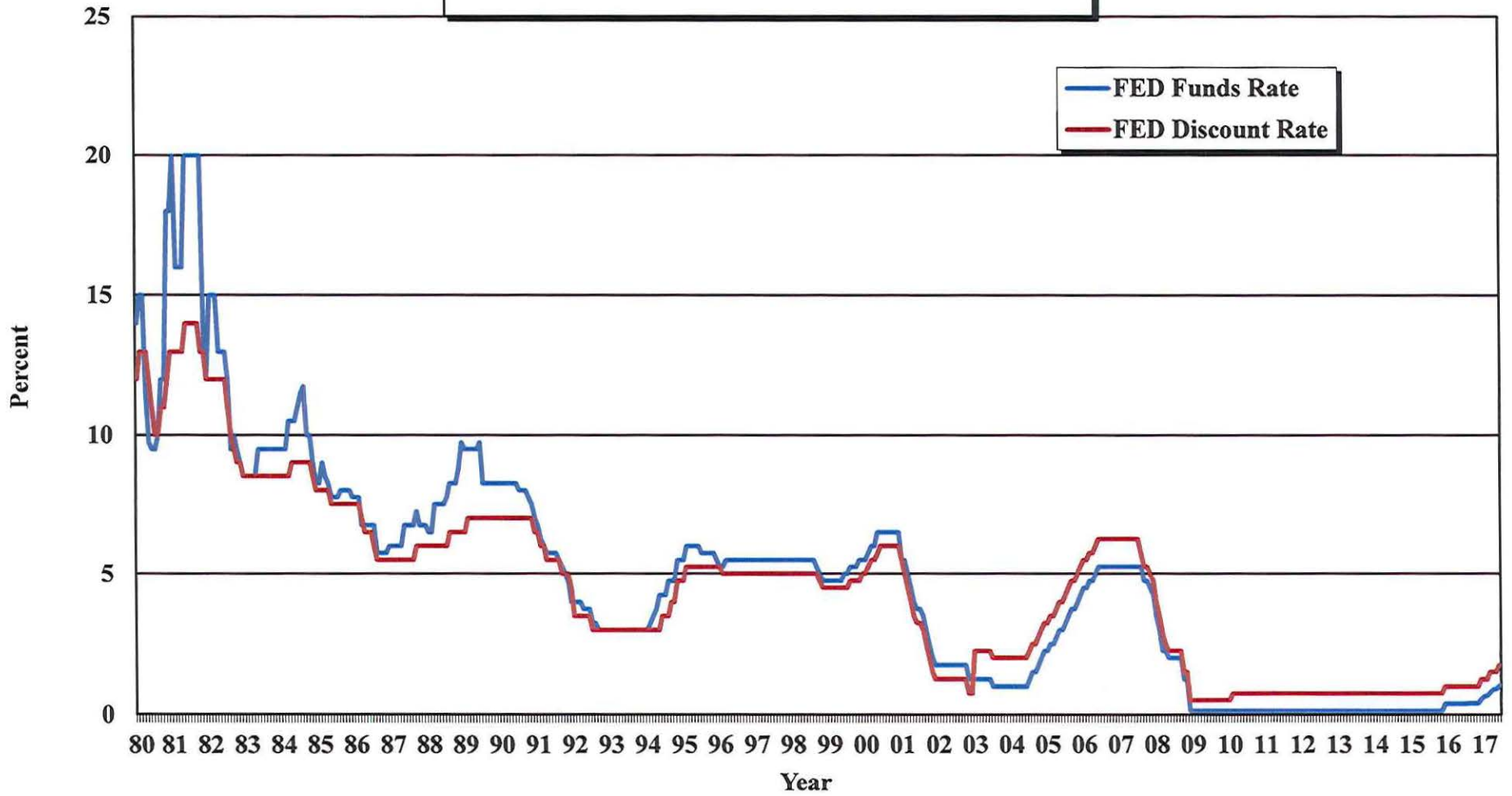
Federal Reserve Funds rate

<https://fred.stlouisfed.org/series/FEDFUNDS>

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

Missouri-American Water Company
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Federal Reserve Discount Rates and Federal Funds Rates
1982 - 2017



Missouri-American Water Company
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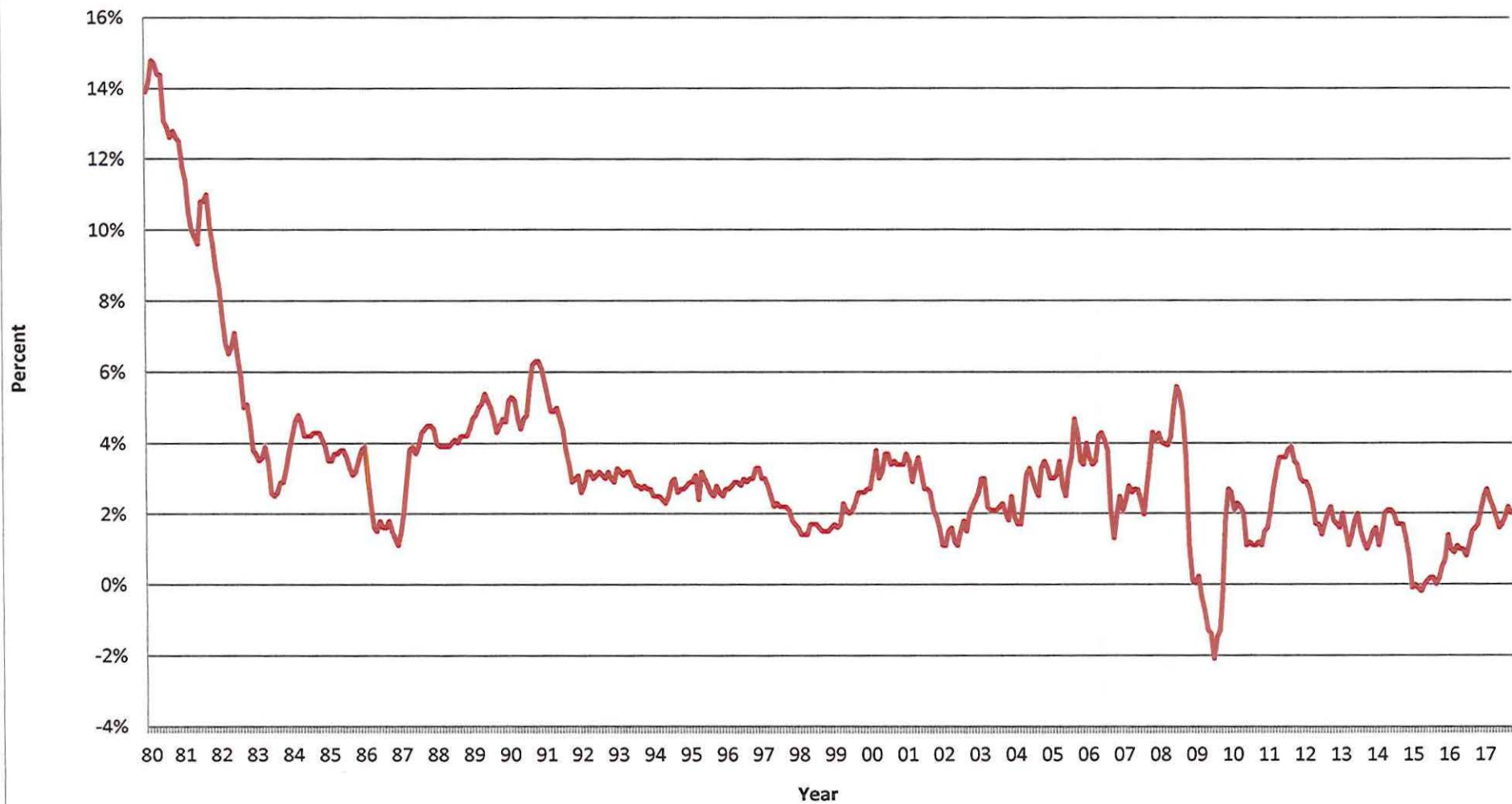
Rate of Inflation

Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)
Jan 1990	13.90	Jan 1993	3.90	Jan 1992	2.60	Jan 1998	1.60	Jan 2004	1.90	Jan 2010	2.60	Jan 2016	1.43
Feb	14.20	Feb	3.10	Feb	2.80	Feb	1.40	Feb	1.70	Feb	2.10	Feb	1.60
Mar	14.80	Mar	2.30	Mar	3.20	Mar	1.40	Mar	1.70	Mar	2.30	Mar	0.90
Apr	14.70	Apr	1.60	Apr	3.20	Apr	1.40	Apr	2.30	Apr	2.20	Apr	1.16
May	14.40	May	1.50	May	3.00	May	1.70	May	3.10	May	2.00	May	1.00
Jun	14.40	Jun	1.80	Jun	3.10	Jun	1.70	Jun	3.30	Jun	1.10	Jun	1.60
Jul	13.10	Jul	1.60	Jul	3.20	Jul	1.70	Jul	3.00	Jul	1.20	Jul	0.90
Aug	12.90	Aug	1.60	Aug	3.10	Aug	1.60	Aug	2.70	Aug	1.10	Aug	1.10
Sep	12.60	Sep	1.80	Sep	3.00	Sep	1.50	Sep	2.50	Sep	1.10	Sep	1.50
Oct	12.80	Oct	1.50	Oct	3.20	Oct	1.50	Oct	3.30	Oct	1.20	Oct	1.60
Nov	12.80	Nov	1.30	Nov	3.00	Nov	1.50	Nov	3.50	Nov	1.10	Nov	1.70
Dec	12.50	Dec	1.10	Dec	2.90	Dec	1.60	Dec	3.30	Dec	1.60	Dec	2.10
Jan 1991	11.80	Jan 1997	1.50	Jan 1999	3.30	Jan 2005	1.70	Jan 2011	3.00	Jan 2017	1.60	Jan 2017	2.50
Feb	11.40	Feb	2.10	Feb	3.20	Feb	1.60	Feb	3.00	Feb	2.10	Feb	2.70
Mar	10.50	Mar	3.00	Mar	3.10	Mar	1.70	Mar	3.10	Mar	2.70	Mar	2.40
Apr	10.00	Apr	3.80	Apr	3.20	Apr	2.30	Apr	3.50	Apr	3.20	Apr	2.20
May	9.80	May	3.00	May	3.20	May	2.10	May	2.60	May	3.60	May	1.90
Jun	9.60	Jun	3.70	Jun	3.00	Jun	2.00	Jun	2.50	Jun	3.60	Jun	1.60
Jul	10.80	Jul	3.80	Jul	2.80	Jul	2.10	Jul	3.20	Jul	3.60	Jul	1.70
Aug	10.80	Aug	4.30	Aug	2.80	Aug	2.30	Aug	3.60	Aug	3.80	Aug	1.50
Sep	11.00	Sep	4.40	Sep	2.70	Sep	2.60	Sep	4.70	Sep	3.90	Sep	2.20
Oct	10.10	Oct	4.50	Oct	2.80	Oct	2.60	Oct	4.30	Oct	3.50	Oct	2.00
Nov	9.60	Nov	4.50	Nov	2.70	Nov	2.60	Nov	3.50	Nov	3.40	Nov	
Dec	8.90	Dec	4.40	Dec	2.70	Dec	2.70	Dec	3.40	Dec	3.00	Dec	
Jan 1992	8.40	Jan 1998	4.00	Jan 1994	2.50	Jan 2000	2.70	Jan 2006	4.00	Jan 2012	2.90	Jan 2012	3.80
Feb	7.60	Feb	3.90	Feb	2.50	Feb	3.20	Feb	3.60	Feb	2.90	Feb	2.90
Mar	6.80	Mar	3.90	Mar	2.50	Mar	3.70	Mar	3.40	Mar	2.70	Mar	2.70
Apr	6.50	Apr	3.90	Apr	2.40	Apr	3.00	Apr	3.50	Apr	2.30	Apr	2.30
May	6.70	May	3.90	May	2.30	May	3.20	May	4.20	May	1.70	May	1.70
Jun	7.10	Jun	4.00	Jun	2.50	Jun	3.70	Jun	4.30	Jun	1.70	Jun	1.70
Jul	6.40	Jul	4.10	Jul	2.90	Jul	3.70	Jul	4.10	Jul	1.40	Jul	1.40
Aug	5.90	Aug	4.00	Aug	3.00	Aug	3.40	Aug	3.80	Aug	1.70	Aug	1.70
Sep	5.00	Sep	4.20	Sep	2.60	Sep	3.50	Sep	2.10	Sep	2.00	Sep	2.00
Oct	5.10	Oct	4.20	Oct	2.70	Oct	3.40	Oct	1.30	Oct	2.20	Oct	2.20
Nov	4.60	Nov	4.20	Nov	2.70	Nov	3.40	Nov	2.00	Nov	1.80	Nov	1.80
Dec	3.80	Dec	4.40	Dec	2.80	Dec	3.40	Dec	2.50	Dec	1.70	Dec	1.70
Jan 1993	3.70	Jan 1999	4.70	Jan 1995	2.90	Jan 2001	3.70	Jan 2007	2.10	Jan 2013	1.60	Jan 2013	2.00
Feb	3.50	Feb	4.80	Feb	2.90	Feb	3.50	Feb	2.40	Feb	2.00	Feb	2.00
Mar	3.60	Mar	5.00	Mar	3.10	Mar	2.90	Mar	2.80	Mar	1.50	Mar	1.50
Apr	3.90	Apr	5.10	Apr	2.40	Apr	3.30	Apr	2.60	Apr	1.10	Apr	1.10
May	3.50	May	5.40	May	3.20	May	3.60	May	2.70	May	1.40	May	1.40
Jun	2.60	Jun	5.20	Jun	3.00	Jun	3.20	Jun	2.70	Jun	1.80	Jun	1.80
Jul	2.50	Jul	5.00	Jul	2.80	Jul	2.70	Jul	2.40	Jul	2.00	Jul	2.00
Aug	2.60	Aug	4.70	Aug	2.60	Aug	2.70	Aug	2.00	Aug	1.50	Aug	1.50
Sep	2.90	Sep	4.30	Sep	2.50	Sep	2.60	Sep	2.60	Sep	1.20	Sep	1.20
Oct	2.90	Oct	4.50	Oct	2.80	Oct	2.10	Oct	3.50	Oct	1.00	Oct	1.00
Nov	3.30	Nov	4.70	Nov	2.60	Nov	1.90	Nov	4.30	Nov	1.20	Nov	1.20
Dec	3.60	Dec	4.60	Dec	2.50	Dec	1.60	Dec	4.10	Dec	1.50	Dec	1.50
Jan 1994	4.20	Jan 1990	5.20	Jan 1996	2.70	Jan 2002	1.10	Jan 2008	4.30	Jan 2014	1.60	Jan 2014	1.60
Feb	4.60	Feb	5.30	Feb	2.70	Feb	1.10	Feb	4.00	Feb	1.10	Feb	1.10
Mar	4.80	Mar	5.20	Mar	2.80	Mar	1.50	Mar	4.00	Mar	1.50	Mar	1.50
Apr	4.60	Apr	4.70	Apr	2.90	Apr	1.60	Apr	3.90	Apr	2.00	Apr	2.00
May	4.20	May	4.40	May	2.90	May	1.20	May	4.20	May	2.10	May	2.10
Jun	4.20	Jun	4.70	Jun	2.80	Jun	1.10	Jun	5.00	Jun	2.10	Jun	2.10
Jul	4.20	Jul	4.80	Jul	3.00	Jul	1.50	Jul	5.60	Jul	2.00	Jul	2.00
Aug	4.30	Aug	5.60	Aug	2.90	Aug	1.80	Aug	5.40	Aug	1.70	Aug	1.70
Sep	4.30	Sep	6.20	Sep	3.00	Sep	1.50	Sep	4.90	Sep	1.70	Sep	1.70
Oct	4.30	Oct	6.30	Oct	3.00	Oct	2.00	Oct	3.70	Oct	1.70	Oct	1.70
Nov	4.10	Nov	6.30	Nov	3.30	Nov	2.20	Nov	1.10	Nov	1.30	Nov	1.30
Dec	3.90	Dec	6.10	Dec	3.30	Dec	2.40	Dec	0.10	Dec	0.80	Dec	0.80
Jan 1995	3.50	Jan 1991	5.70	Jan 1997	3.00	Jan 2003	2.60	Jan 2009	0.00	Jan 2015	-0.10	Jan 2015	-0.10
Feb	3.50	Feb	5.30	Feb	3.00	Feb	3.00	Feb	0.20	Feb	0.00	Feb	0.00
Mar	3.70	Mar	4.90	Mar	2.80	Mar	3.00	Mar	-0.40	Mar	-0.10	Mar	-0.10
Apr	3.70	Apr	4.90	Apr	2.50	Apr	2.20	Apr	-0.70	Apr	-0.20	Apr	-0.20
May	3.80	May	5.00	May	2.20	May	2.10	May	-1.28	May	0.00	May	0.00
Jun	3.80	Jun	4.70	Jun	2.30	Jun	2.10	Jun	-1.40	Jun	0.10	Jun	0.10
Jul	3.80	Jul	4.40	Jul	2.20	Jul	2.10	Jul	-2.10	Jul	0.20	Jul	0.20
Aug	3.30	Aug	3.60	Aug	2.20	Aug	2.20	Aug	-1.50	Aug	0.20	Aug	0.20
Sep	3.10	Sep	3.40	Sep	2.20	Sep	2.30	Sep	-1.30	Sep	0.00	Sep	0.00
Oct	3.20	Oct	2.90	Oct	2.10	Oct	2.00	Oct	-0.20	Oct	0.20	Oct	0.20
Nov	3.50	Nov	3.00	Nov	1.80	Nov	1.80	Nov	1.80	Nov	0.50	Nov	0.50
Dec	3.80	Dec	3.10	Dec	1.70	Dec	1.90	Dec	2.70	Dec	0.70	Dec	0.70

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

Missouri-American Water Company
CASE NO. WR-2017-0285

Rate of Inflation
1980 - 2017



Missouri-American Water Company
CASE NO. WR-2017-0285

Average Yields on Moody'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 (%)
Jan 1950	12.12	Jan 1985	10.85	Jan 1992	8.67	Jan 1998	7.03	Jan 2004	6.25	Jan 2010	5.63	Jan 2016	4.62
Feb	13.46	Feb	10.16	Feb	8.77	Feb	7.09	Feb	6.17	Feb	5.94	Feb	4.44
Mar	14.33	Mar	9.33	Mar	8.84	Mar	7.13	Mar	6.01	Mar	5.90	Mar	4.40
Apr	13.50	Apr	9.02	Apr	8.79	Apr	7.12	Apr	6.38	Apr	5.87	Apr	4.16
May	12.17	May	9.52	May	8.72	May	7.11	May	6.68	May	5.59	May	4.05
Jun	11.87	Jun	9.51	Jun	8.64	Jun	6.99	Jun	6.53	Jun	5.62	Jun	3.93
Jul	12.12	Jul	9.19	Jul	8.46	Jul	6.99	Jul	6.34	Jul	5.41	Jul	3.70
Aug	12.82	Aug	9.15	Aug	8.34	Aug	6.96	Aug	6.18	Aug	5.10	Aug	3.73
Sep	13.29	Sep	9.42	Sep	8.32	Sep	6.88	Sep	6.01	Sep	5.10	Sep	3.80
Oct	13.53	Oct	9.39	Oct	8.44	Oct	6.88	Oct	5.95	Oct	5.20	Oct	3.90
Nov	14.07	Nov	9.15	Nov	8.53	Nov	6.86	Nov	5.97	Nov	5.45	Nov	4.21
Dec	14.48	Dec	8.96	Dec	8.36	Dec	6.84	Dec	5.93	Dec	5.61	Dec	4.39
Jan 1951	14.22	Jan 1987	8.77	Jan 1993	8.23	Jan 1999	6.87	Jan 2005	5.80	Jan 2011	5.66	Jan 2017	4.24
Feb	14.84	Feb	8.81	Feb	8.00	Feb	7.00	Feb	5.64	Feb	5.82	Feb	4.25
Mar	14.89	Mar	8.75	Mar	7.85	Mar	7.18	Mar	5.85	Mar	5.74	Mar	4.30
Apr	15.32	Apr	9.30	Apr	7.76	Apr	7.16	Apr	5.72	Apr	5.76	Apr	4.19
May	15.84	May	9.82	May	7.78	May	7.42	May	5.60	May	5.57	May	4.19
Jun	15.27	Jun	9.87	Jun	7.68	Jun	7.70	Jun	5.39	Jun	5.52	Jun	4.01
Jul	15.87	Jul	10.01	Jul	7.53	Jul	7.65	Jul	5.50	Jul	5.61	Jul	4.03
Aug	16.33	Aug	10.33	Aug	7.21	Aug	7.85	Aug	5.51	Aug	5.28	Aug	3.92
Sep	16.89	Sep	11.00	Sep	7.01	Sep	7.87	Sep	5.54	Sep	5.01	Sep	3.93
Oct	16.76	Oct	11.32	Oct	6.99	Oct	8.02	Oct	5.79	Oct	5.11	Oct	3.97
Nov	15.50	Nov	10.82	Nov	7.30	Nov	7.88	Nov	5.88	Nov	5.00		
Dec	15.77	Dec	10.99	Dec	7.33	Dec	8.04	Dec	5.83	Dec	4.96		
Jan 1952	16.73	Jan 1988	10.75	Jan 1994	7.31	Jan 2000	8.22	Jan 2006	5.77	Jan 2012	4.97		
Feb	16.72	Feb	10.11	Feb	7.44	Feb	8.10	Feb	5.83	Feb	4.99		
Mar	16.07	Mar	10.11	Mar	7.83	Mar	8.14	Mar	5.98	Mar	5.13		
Apr	15.82	Apr	10.53	Apr	8.20	Apr	8.14	Apr	6.28	Apr	5.05		
May	15.60	May	10.75	May	8.32	May	8.55	May	6.39	May	4.84		
Jun	16.18	Jun	10.71	Jun	8.31	Jun	8.22	Jun	6.39	Jun	4.67		
Jul	16.04	Jul	10.96	Jul	8.47	Jul	8.17	Jul	6.37	Jul	4.56		
Aug	15.22	Aug	11.09	Aug	8.41	Aug	8.05	Aug	6.20	Aug	4.71		
Sep	14.56	Sep	10.56	Sep	8.65	Sep	8.16	Sep	6.03	Sep	4.75		
Oct	13.88	Oct	9.92	Oct	8.88	Oct	8.08	Oct	6.01	Oct	4.69		
Nov	13.58	Nov	9.89	Nov	9.00	Nov	8.03	Nov	5.82	Nov	4.53		
Dec	13.55	Dec	10.02	Dec	8.77	Dec	7.79	Dec	5.83	Dec	4.28		
Jan '53	13.46	Jan 1989	10.02	Jan 1995	8.77	Jan 2001	7.76	Jan 2007	5.95	Jan 2013	4.45		
Feb	13.60	Feb	10.02	Feb	8.56	Feb	7.69	Feb	5.91	Feb	4.49		
Mar	13.28	Mar	10.16	Mar	8.41	Mar	7.59	Mar	5.87	Mar	4.45		
Apr	13.03	Apr	10.14	Apr	8.30	Apr	7.81	Apr	6.01	Apr	4.19		
May	13.00	May	9.92	May	7.93	May	7.88	May	6.03	May	4.35		
Jun	13.17	Jun	9.49	Jun	7.62	Jun	7.75	Jun	6.34	Jun	4.70		
Jul	13.28	Jul	9.34	Jul	7.73	Jul	7.71	Jul	6.28	Jul	4.90		
Aug	13.50	Aug	9.37	Aug	7.85	Aug	7.57	Aug	6.28	Aug	5.00		
Sep	13.35	Sep	9.43	Sep	7.62	Sep	7.73	Sep	6.24	Sep	5.05		
Oct	13.19	Oct	9.37	Oct	7.45	Oct	7.64	Oct	6.17	Oct	4.94		
Nov	13.33	Nov	9.33	Nov	7.40	Nov	7.51	Nov	6.04	Nov	5.04		
Dec	13.48	Dec	9.31	Dec	7.21	Dec	7.66	Dec	6.23	Dec	4.89		
Jan 1984	13.40	Jan 1990	9.44	Jan 1996	7.20	Jan 2002	7.69	Jan 2008	6.08	Jan 2014	4.72		
Feb	13.50	Feb	9.65	Feb	7.37	Feb	7.52	Feb	6.28	Feb	4.84		
Mar	14.03	Mar	9.75	Mar	7.72	Mar	7.83	Mar	6.29	Mar	4.83		
Apr	14.30	Apr	9.87	Apr	7.88	Apr	7.74	Apr	6.36	Apr	4.52		
May	14.85	May	9.89	May	7.99	May	7.76	May	6.38	May	4.37		
Jun	15.16	Jun	9.69	Jun	8.07	Jun	7.67	Jun	6.50	Jun	4.42		
Jul	14.92	Jul	9.66	Jul	8.02	Jul	7.54	Jul	6.50	Jul	4.35		
Aug	14.29	Aug	9.84	Aug	7.84	Aug	7.34	Aug	6.48	Aug	4.29		
Sep	14.04	Sep	10.01	Sep	8.01	Sep	7.23	Sep	6.59	Sep	4.40		
Oct	13.66	Oct	9.94	Oct	7.76	Oct	7.43	Oct	7.70	Oct	4.24		
Nov	13.15	Nov	9.76	Nov	7.48	Nov	7.31	Nov	7.80	Nov	4.29		
Dec	12.96	Dec	9.57	Dec	7.58	Dec	7.20	Dec	6.87	Dec	4.16		
Jan 1985	12.88	Jan 1991	9.56	Jan 1997	7.79	Jan 2003	7.13	Jan 2009	6.77	Jan 2015	3.83		
Feb	13.00	Feb	9.31	Feb	7.68	Feb	6.92	Feb	6.72	Feb	3.91		
Mar	13.66	Mar	9.39	Mar	7.92	Mar	6.80	Mar	6.85	Mar	3.97		
Apr	13.42	Apr	9.30	Apr	8.08	Apr	6.68	Apr	6.90	Apr	3.95		
May	12.89	May	9.29	May	7.94	May	6.35	May	6.83	May	4.38		
Jun	11.91	Jun	9.44	Jun	7.77	Jun	6.21	Jun	6.54	Jun	4.60		
Jul	11.88	Jul	9.40	Jul	7.52	Jul	6.54	Jul	6.15	Jul	4.63		
Aug	11.93	Aug	9.16	Aug	7.57	Aug	6.78	Aug	5.80	Aug	4.54		
Sep	11.95	Sep	9.03	Sep	7.50	Sep	6.58	Sep	5.60	Sep	4.68		
Oct	11.84	Oct	8.99	Oct	7.37	Oct	6.50	Oct	5.64	Oct	4.63		
Nov	11.33	Nov	8.93	Nov	7.24	Nov	6.44	Nov	5.71	Nov	4.73		
Dec	10.82	Dec	8.76	Dec	7.16	Dec	6.36	Dec	5.85	Dec	4.69		

Source: Mergent Bond Record (through November 2010); BonisOnline (December 2010 - November 2013); Mergent Bond Record (December 2013 - Present).

Missouri-American Water Company
CASE NO. WR-2017-0285

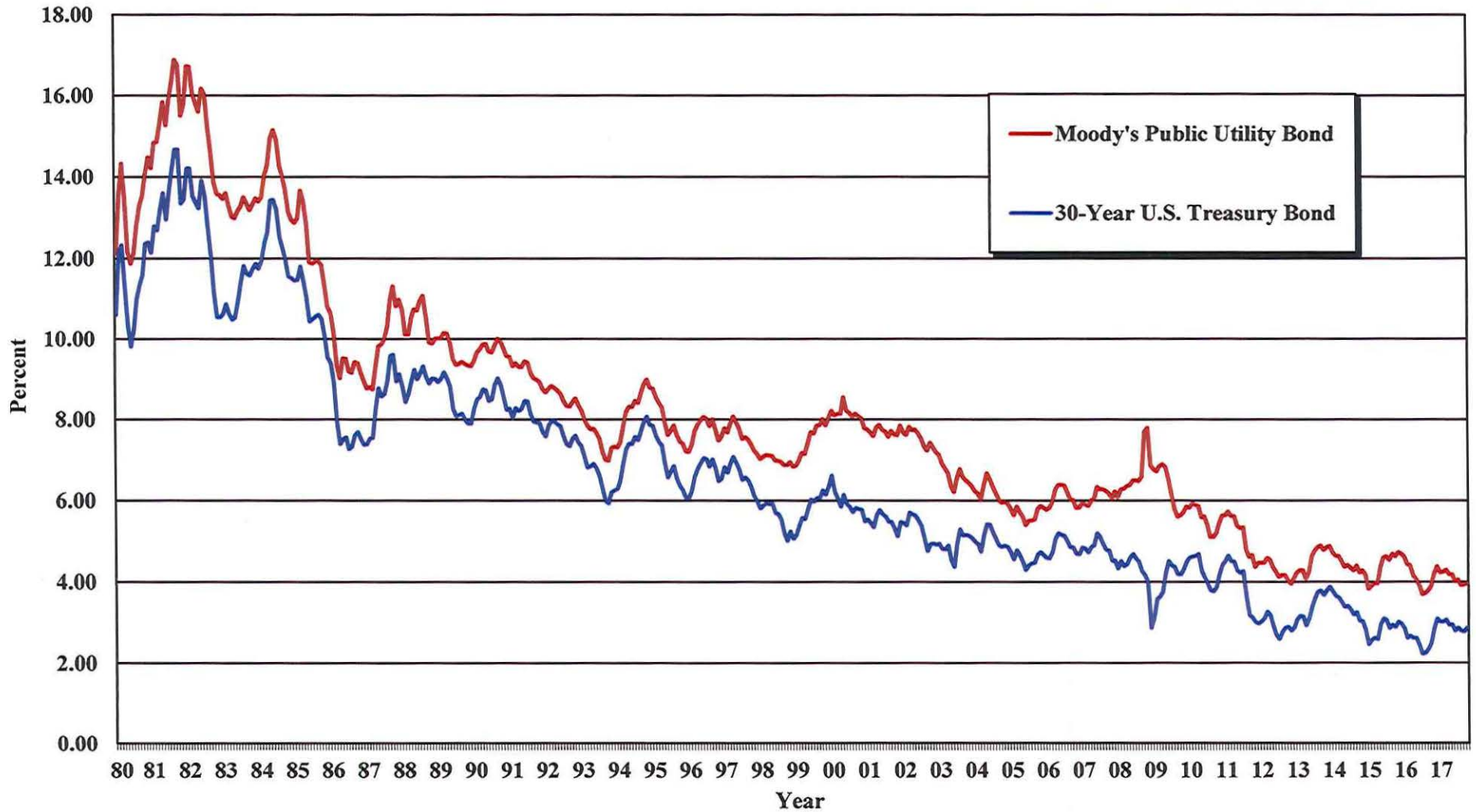
Average Yields on Thirty-Year U.S. Treasury Bonds

Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)
Jan 1980	10.60	Jan 1986	9.40	Jan 1992	7.58	Jan 1998	5.81	Jan 2004	4.99	Jan 2010	4.60	Jan 2016	2.85
Feb	12.13	Feb	8.93	Feb	7.85	Feb	5.89	Feb	4.93	Feb	4.62	Feb	2.62
Mar	12.34	Mar	7.96	Mar	7.97	Mar	5.95	Mar	4.74	Mar	4.64	Mar	2.63
Apr	11.40	Apr	7.39	Apr	7.63	Apr	5.92	Apr	5.14	Apr	4.69	Apr	2.62
May	10.36	May	7.62	May	7.89	May	5.93	May	5.42	May	4.29	May	2.63
Jun	9.81	Jun	7.57	Jun	7.84	Jun	5.70	Jun	5.41	Jun	4.13	Jun	2.45
Jul	10.24	Jul	7.27	Jul	7.60	Jul	5.68	Jul	5.22	Jul	3.99	Jul	2.23
Aug	11.00	Aug	7.33	Aug	7.39	Aug	5.54	Aug	5.05	Aug	3.80	Aug	2.26
Sep	11.34	Sep	7.62	Sep	7.34	Sep	5.20	Sep	4.90	Sep	3.77	Sep	2.35
Oct	11.59	Oct	7.70	Oct	7.53	Oct	5.01	Oct	4.66	Oct	3.87	Oct	2.50
Nov	12.37	Nov	7.52	Nov	7.61	Nov	5.25	Nov	4.63	Nov	4.19	Nov	2.66
Dec	12.40	Dec	7.37	Dec	7.44	Dec	5.06	Dec	4.66	Dec	4.42	Dec	3.11
Jan 1981	12.14	Jan 1987	7.39	Jan 1993	7.34	Jan 1999	5.16	Jan 2005	4.73	Jan 2011	4.52	Jan 2017	3.02
Feb	12.60	Feb	7.64	Feb	7.09	Feb	5.37	Feb	4.55	Feb	4.65	Feb	3.03
Mar	12.69	Mar	7.55	Mar	6.82	Mar	5.58	Mar	4.78	Mar	4.51	Mar	3.03
Apr	13.20	Apr	6.25	Apr	6.85	Apr	5.55	Apr	4.65	Apr	4.50	Apr	2.94
May	13.60	May	6.78	May	6.92	May	5.81	May	4.49	May	4.29	May	2.96
Jun	12.95	Jun	6.57	Jun	6.81	Jun	6.04	Jun	4.29	Jun	4.23	Jun	2.80
Jul	13.59	Jul	6.64	Jul	6.63	Jul	5.93	Jul	4.41	Jul	4.27	Jul	2.88
Aug	14.17	Aug	6.97	Aug	6.32	Aug	6.07	Aug	4.46	Aug	3.65	Aug	2.83
Sep	14.67	Sep	9.59	Sep	6.00	Sep	6.07	Sep	4.47	Sep	3.18	Sep	2.80
Oct	14.68	Oct	9.61	Oct	5.94	Oct	6.26	Oct	4.67	Oct	3.13	Oct	2.78
Nov	13.35	Nov	8.95	Nov	6.21	Nov	6.15	Nov	4.73	Nov	3.02	Nov	2.83
Dec	13.45	Dec	9.12	Dec	6.26	Dec	6.35	Dec	4.66	Dec	2.98	Dec	2.83
Jan 1982	14.22	Jan 1988	8.83	Jan 1994	6.29	Jan 2000	5.63	Jan 2006	4.59	Jan 2012	3.63	Jan 2018	3.03
Feb	14.22	Feb	8.43	Feb	6.49	Feb	6.23	Feb	4.58	Feb	3.11	Feb 2019	3.11
Mar	13.53	Mar	6.63	Mar	6.91	Mar	6.05	Mar	4.73	Mar	3.28	Mar 2020	3.28
Apr	13.37	Apr	8.95	Apr	7.27	Apr	5.65	Apr	5.06	Apr	3.16	Apr 2021	3.16
May	13.24	May	9.23	May	7.41	May	6.15	May	5.20	May	2.93	May 2022	2.93
Jun	13.92	Jun	9.00	Jun	7.40	Jun	5.93	Jun	5.16	Jun	2.70	Jun 2023	2.70
Jul	13.55	Jul	9.14	Jul	7.58	Jul	5.85	Jul	5.13	Jul	2.59	Jul 2024	2.59
Aug	12.77	Aug	9.32	Aug	7.49	Aug	5.72	Aug	5.00	Aug	2.77	Aug 2025	2.77
Sep	12.07	Sep	9.06	Sep	7.71	Sep	5.83	Sep	4.85	Sep	2.88	Sep 2026	2.88
Oct	11.17	Oct	8.89	Oct	7.94	Oct	5.80	Oct	4.85	Oct	2.90	Oct 2027	2.90
Nov	10.54	Nov	9.02	Nov	8.08	Nov	5.78	Nov	4.69	Nov	2.80	Nov 2028	2.80
Dec	10.54	Dec	9.01	Dec	7.87	Dec	5.49	Dec	4.68	Dec	2.88	Dec 2029	2.88
Jan 1983	10.63	Jan 1989	8.93	Jan 1995	7.85	Jan 2001	5.54	Jan 2007	4.85	Jan 2013	3.08	Jan 2030	3.08
Feb	10.86	Feb	9.01	Feb	7.61	Feb	5.45	Feb	4.82	Feb	3.17	Feb 2031	3.17
Mar	10.63	Mar	9.17	Mar	7.45	Mar	5.34	Mar	4.72	Mar	3.16	Mar 2032	3.16
Apr	10.48	Apr	9.03	Apr	7.38	Apr	5.65	Apr	4.86	Apr	2.93	Apr 2033	2.93
May	10.53	May	8.83	May	6.95	May	5.78	May	4.90	May	3.11	May 2034	3.11
Jun	10.93	Jun	8.27	Jun	6.57	Jun	5.67	Jun	5.20	Jun	3.40	Jun 2035	3.40
Jul	11.40	Jul	8.08	Jul	6.72	Jul	5.61	Jul	5.11	Jul	3.61	Jul 2036	3.61
Aug	11.82	Aug	8.12	Aug	6.85	Aug	5.48	Aug	4.93	Aug	3.76	Aug 2037	3.76
Sep	11.63	Sep	8.15	Sep	6.55	Sep	5.48	Sep	4.79	Sep	3.79	Sep 2038	3.79
Oct	11.58	Oct	8.00	Oct	6.37	Oct	5.32	Oct	4.77	Oct	3.68	Oct 2039	3.68
Nov	11.75	Nov	7.90	Nov	6.26	Nov	5.12	Nov	4.52	Nov	3.80	Nov 2040	3.80
Dec	11.88	Dec	7.90	Dec	6.05	Dec	5.48	Dec	4.53	Dec	3.89	Dec 2041	3.89
Jan 1984	11.75	Jan 1990	8.26	Jan 1996	6.05	Jan 2002	5.44	Jan 2008	4.33	Jan 2014	3.77	Jan 2042	3.77
Feb	11.95	Feb	8.50	Feb	6.24	Feb	5.39	Feb	4.52	Feb	3.66	Feb 2043	3.66
Mar	12.38	Mar	8.56	Mar	6.60	Mar	5.71	Mar	4.39	Mar	3.62	Mar 2044	3.62
Apr	12.65	Apr	8.76	Apr	6.79	Apr	5.67	Apr	4.44	Apr	3.52	Apr 2045	3.52
May	13.43	May	8.73	May	6.95	May	5.64	May	4.60	May	3.39	May 2046	3.39
Jun	13.44	Jun	8.46	Jun	7.06	Jun	5.52	Jun	4.69	Jun	3.42	Jun 2047	3.42
Jul	13.21	Jul	8.50	Jul	7.03	Jul	5.38	Jul	4.57	Jul	3.33	Jul 2048	3.33
Aug	12.54	Aug	8.86	Aug	6.84	Aug	5.08	Aug	4.50	Aug	3.20	Aug 2049	3.20
Sep	12.29	Sep	9.03	Sep	7.05	Sep	4.76	Sep	4.27	Sep	3.26	Sep 2050	3.26
Oct	11.98	Oct	8.86	Oct	6.81	Oct	4.93	Oct	4.17	Oct	3.04	Oct 2051	3.04
Nov	11.56	Nov	8.54	Nov	6.48	Nov	4.95	Nov	4.00	Nov	3.04	Nov 2052	3.04
Dec	11.52	Dec	8.24	Dec	6.55	Dec	4.92	Dec	2.87	Dec	2.83	Dec 2053	2.83
Jan 1985	11.45	Jan 1991	8.27	Jan 1997	6.83	Jan 2003	4.94	Jan 2009	3.13	Jan 2015	2.46	Jan 2054	2.46
Feb	11.47	Feb	8.03	Feb	6.69	Feb	4.81	Feb	3.59	Feb	2.57	Feb 2055	2.57
Mar	11.81	Mar	8.29	Mar	6.93	Mar	4.80	Mar	3.64	Mar	2.63	Mar 2056	2.63
Apr	11.47	Apr	8.21	Apr	7.09	Apr	4.90	Apr	3.76	Apr	2.59	Apr 2057	2.59
May	11.05	May	8.27	May	6.94	May	4.53	May	4.23	May	2.96	May 2058	2.96
Jun	10.44	Jun	8.47	Jun	6.77	Jun	4.37	Jun	4.52	Jun	3.11	Jun 2059	3.11
Jul	10.50	Jul	8.45	Jul	6.51	Jul	4.93	Jul	4.41	Jul	3.07	Jul 2060	3.07
Aug	10.56	Aug	8.14	Aug	6.58	Aug	5.30	Aug	4.37	Aug	2.85	Aug 2061	2.85
Sep	10.61	Sep	7.95	Sep	6.50	Sep	5.14	Sep	4.19	Sep	2.65	Sep 2062	2.65
Oct	10.50	Oct	7.93	Oct	6.33	Oct	5.16	Oct	4.19	Oct	2.69	Oct 2063	2.69
Nov	10.06	Nov	7.92	Nov	6.11	Nov	5.13	Nov	4.31	Nov	3.03	Nov 2064	3.03
Dec	9.54	Dec	7.70	Dec	5.99	Dec	5.08	Dec	4.49	Dec	2.97	Dec 2065	2.97

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

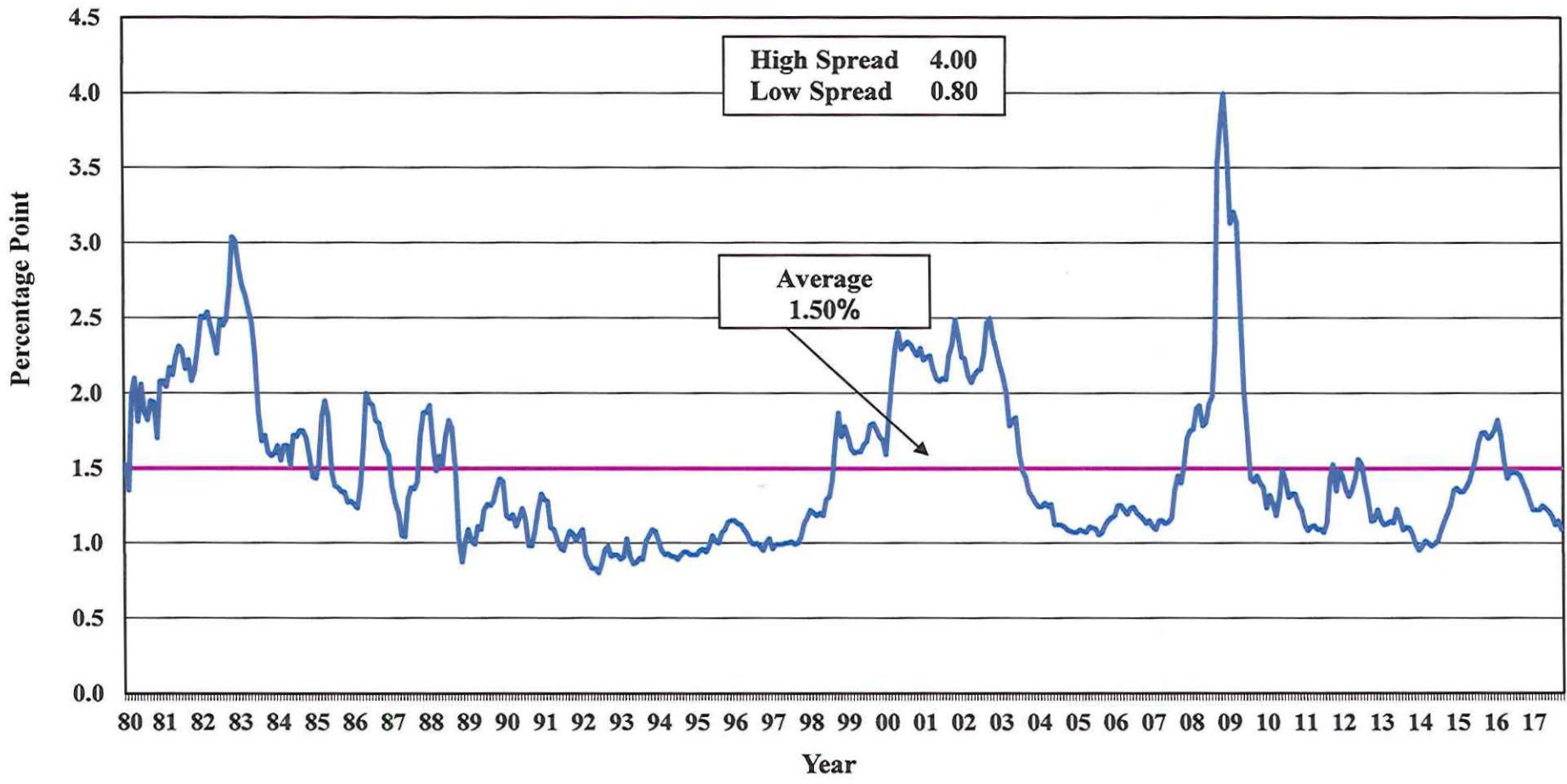
Missouri-American Water Company
CASE NO. WR-2017-0285

Average Yields on Moody's Public Utility Bonds and
Thirty-Year U.S. Treasury Bonds (1980 - 2017)



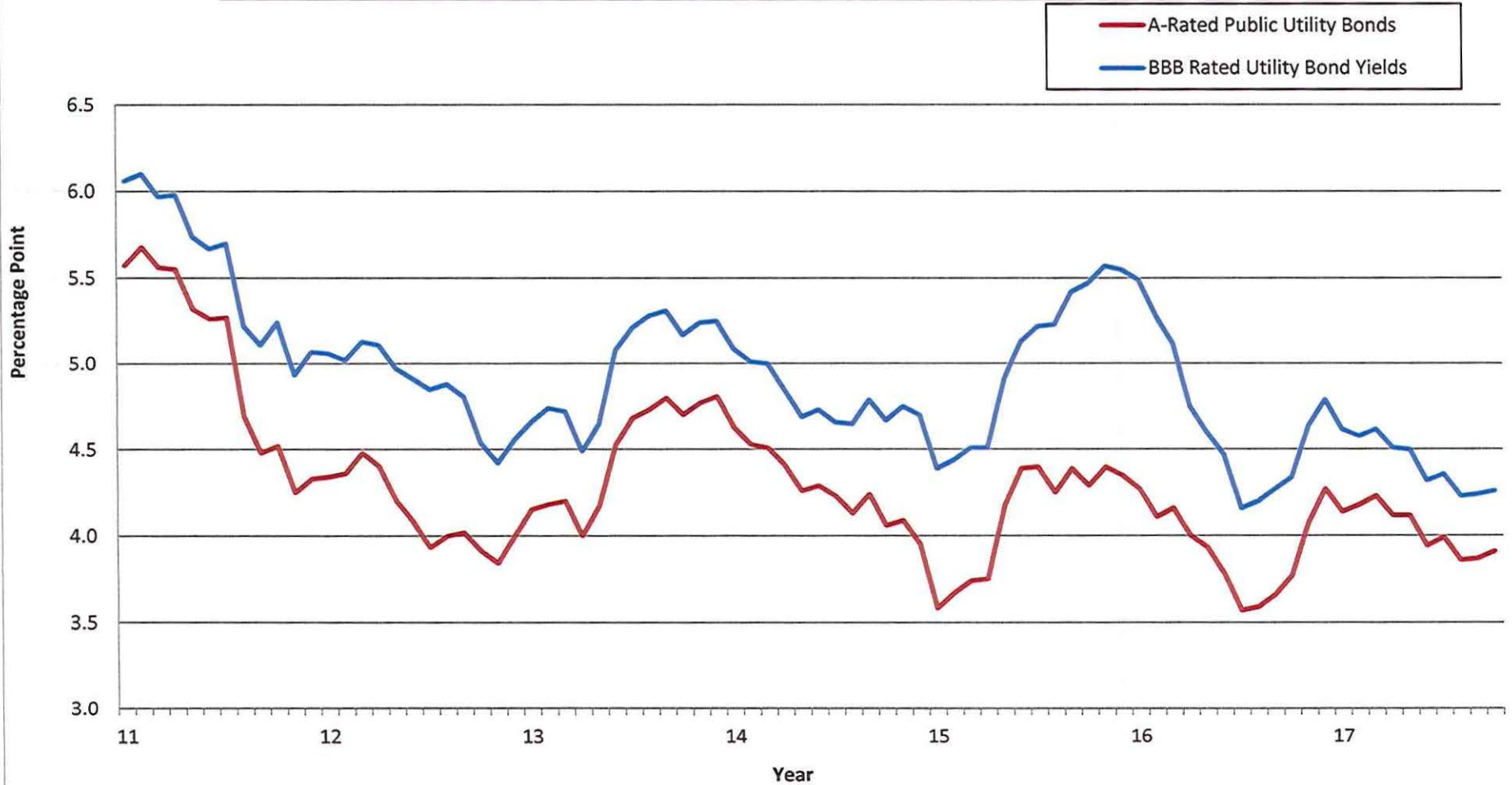
Missouri-American Water Company
CASE NO. WR-2017-0285

Monthly Spreads Between Yields on Moody's Public Utility Bonds and
Thirty-Year U.S. Treasury Bonds (1980 - 2017)



Missouri-American Water Company
CASE NO. WR-2017-0285

**Average Yields on A-rated Utility Bonds and BBB-rated Utility Bonds
From (2011- 2017)**



Missouri-American Water Company
Case No. WR-2017-0285

Historical Consolidated Capital Structures for
American Water
(Dollars in thousands)

Capital Components	2007	2008	2009	2010	2011
Common Equity	\$4,542,046.0	\$4,102,001.0	\$4,000,859.0	\$4,127,725.0	\$4,235,837.0
Preferred Stock	\$28,864.0 ^{2,3}	\$28,707.0 ^{2,3}	\$28,503.0 ^{2,3}	\$27,818.0 ^{2,3}	\$25,684.0 ^{2,3}
Long-Term Debt	\$4,771,292.0 ¹	\$4,799,885.0 ¹	\$5,342,248.0 ¹	\$5,455,031.0 ¹	\$5,368,805.0 ¹
	<u>\$9,342,202.0</u>	<u>\$8,930,593.0</u>	<u>\$9,371,610.0</u>	<u>\$9,610,574.0</u>	<u>\$9,630,326.0</u>
Capital Components	2012	2013	2014	2015	2016
Common Equity	\$4,443,268.0	\$4,727,804.0	\$4,915,591.0	\$5,049,000.0	\$5,218,000.0
Preferred Stock	\$20,581.0 ^{2,3}	\$17,177.0 ^{2,3}	\$15,501.0 ^{2,3}	\$12,000.0 ^{2,3}	\$10,000.0 ^{2,3}
Long-Term Debt	\$5,306,428.0 ¹	\$5,227,055.0 ¹	\$5,493,876.0 ¹	\$5,916,000.0 ¹	\$6,323,000.0 ¹
	<u>\$9,770,277.0</u>	<u>\$9,972,036.0</u>	<u>\$10,424,968.0</u>	<u>\$10,977,000.0</u>	<u>\$11,551,000.0</u>

Historical Consolidated Capital Structures for
Missouri-American
(Dollars in thousands)

Capital Components	2007	2008	2009	2010	2011
Common Equity	\$298,926.0	\$336,785.0	\$377,129.0	\$413,150.0	\$435,152.0
Preferred Stock	\$2,620.0 ³	\$2,620.0 ³	\$2,608.0 ³	\$2,596.0 ³	\$2,295.0 ³
Long-Term Debt	\$316,037.0 ¹	\$385,870.0 ¹	\$410,156.0 ¹	\$409,276.0 ¹	\$433,834.0 ¹
Total	<u>\$617,583.0</u>	<u>\$725,275.0</u>	<u>\$789,893.0</u>	<u>\$825,022.0</u>	<u>\$871,281.0</u>
Capital Components	2012	2013	2014	2015	2016
Common Equity	\$446,793.0	\$474,431.0	\$485,204.0	\$526,454.00	\$569,572.4
Preferred Stock	\$2,000.0 ³	\$1,750.0 ³	\$1,500.0 ³	\$1,250.00 ³	\$1,000.0 ³
Long-Term Debt	\$448,494.0 ¹	\$468,450.0 ¹	\$468,461.0 ¹	\$517,822.00 ¹	\$566,963.9 ¹
Total	<u>\$897,287.0</u>	<u>\$944,631.0</u>	<u>\$955,165.0</u>	<u>\$1,045,526.0</u>	<u>\$1,137,536.3</u>

- Note: 1. Includes current maturities on long-term debt.
2. Includes redeemable preferred stock.
3. Includes current maturities on preferred stock.

Sources: Missouri-American Water Company's response to Staff Data Request Nos. 159 and 229, as well as Schedule 6-1 in the Appendices to Staff's Cost of Service Report in Case No. WR-2015-0301.

Missouri-American Water Company
Case No. WR-2017-0285

Historical Consolidated Capital Structures for
American Water
(in percentages)

Capital Components	2007	2008	2009	2010	2011
Common Equity	48.62%	45.93%	42.69%	42.95%	43.98%
Preferred Stock	0.31% ^{2,3}	0.32% ^{2,3}	0.30% ^{2,3}	0.29% ^{2,3}	0.27% ^{2,3}
Long-Term Debt	51.07% ¹	53.75% ¹	57.00% ¹	56.76% ¹	55.75% ¹
	<u>100.00%</u>	<u>100.00%</u>	<u>100.00%</u>	<u>100.00%</u>	<u>100.00%</u>

Capital Components	2012	2013	2014	2015	2016	Average
Common Equity	45.46%	47.41%	47.15%	46.00%	45.17%	45.54%
Preferred Stock	0.21% ^{2,3}	0.17% ^{2,3}	0.15% ^{2,3}	0.11% ^{2,3}	0.09% ^{2,3}	0.22%
Long-Term Debt	54.31% ¹	52.42% ¹	52.70% ¹	53.89% ¹	54.74% ¹	54.24%
	<u>100.00%</u>	<u>100.00%</u>	<u>100.00%</u>	<u>100.00%</u>	<u>100.00%</u>	<u>100.00%</u>

Historical Consolidated Capital Structures for
Missouri-American
(in percentages)

Capital Components	2007	2008	2009	2010	2011
Common Equity	48.40%	46.44%	47.74%	50.08%	49.94%
Preferred Stock	0.42% ³	0.36% ³	0.33% ³	0.31% ³	0.26% ³
Long-Term Debt	51.17% ¹	53.20% ¹	51.93% ¹	49.61% ¹	49.79% ¹
Total	<u>100.00%</u>	<u>100.00%</u>	<u>100.00%</u>	<u>100.00%</u>	<u>100.00%</u>

Capital Components	2012	2013	2014	2015	2016	Average
Common Equity	49.79%	50.22%	50.80%	50.35%	50.07%	49.38%
Preferred Stock	0.22%	0.19%	0.16%	0.12%	0.09% ³	0.25%
Long-Term Debt	49.98%	49.59%	49.05%	49.53%	49.84% ¹	50.37%
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>

- Note:
1. Includes current maturities on long-term debt.
 2. Includes redeemable preferred stock.
 3. Includes current maturities on preferred stock.

Sources: Missouri-American Water Company's response to Staff Data Request Nos. 159 and 229, as well as Schedule 6-1 in the Appendices to Staff's Cost of Service Report in Case No. WR-2015-0301.

Missouri-American Water Company
Case No. WR-2017-0285

Capital Structure as of June 30, 2017
for American Water

Capital Component	Amount (in millions)	Percentage of Capital
Common Stock Equity ¹	\$5,384	43.99%
Preferred Stock ²	10	0.09%
Long-Term Debt ²	6,244	51.02%
Short-Term Debt ³	600	4.91%
Total Capitalization	\$12,239.17	100.00%

Capital Structure as of June 30, 2017
for Missouri-American Water

Capital Component	Amount (in millions)	Percentage of Capital
Common Stock Equity ⁴	579	49.41%
Preferred Stock ²	1	0.08%
Long-Term Debt ²	567	48.41%
Short-Term Debt ³	25	2.09%
Total Capitalization	1,171	100%

- Notes: 1. Based on American Water's Form 10-Q for the quarter period ended June 30, 2017.
2. Based on MAWC's response to Staff DR No. 0182
3. Based on short-term debt shown in excess of construction work in progress balance as of June 30, 2017. Net balance based on MAWC's response to Staff DR No. 175.
4. Based on Missouri-American Water's response to Staff DR No. 0193

Missouri-American Water Company
Case No. WR-2017-0285

Embedded Cost of Long-Term Debt as of June 30, 2017
for American Water

Total Annual Cost:	\$334,319,657
Total Carrying Value:	\$6,244,359,505
Embedded Cost = Total Annual Cost/Total Carrying Value	5.35%

Source: Missouri-American Water Company's response to Staff's Data Requests No. 0182.

Embedded Cost of Long-Term Debt as of June 30, 2017
for Missouri-American Water

Total Annual Cost:	\$28,566,435
Total Carrying Value:	\$559,214,522
Embedded Cost = Total Annual Cost/Total Carrying Value	5.11%

Source: Missouri-American Water Company's response to Staff's Data Requests No. 0182.

Missouri-American Water Company
Case No. WR-2017-0285

Embedded Cost of Preferred Stock as of June 30, 2017
for American Water

Total Annual Cost:	\$905,643
Total Carrying Value:	\$10,446,017
Embedded Cost = Total Annual Cost/Total Carrying Value	8.67%

Sources: Missouri-American Water Company's response to Staff's Data Request No. 0182.

Embedded Cost of Preferred Stock as of June 30, 2017
for Missouri-American Water

Total Annual Cost:	91,636
Total Carrying Value:	979,860
Embedded Cost = Total Annual Cost/Total Carrying Value	9.35%

Sources: Missouri-American Water Company's response to Staff's Data Request No. 0182.

Missouri-American Water Company
Case No. WR-2017-0285

Criteria for Selecting Comparable Water Utility Companies

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Water Utility Companies (Ticker)	Stock Publicly Traded	Information Provided by Value Line	5-Years of Data Available	At Least Investment Grade Credit Rating	Projected Growth Rate Available from Value Line or Reuters	At least 80% of Income from Regulated Utility Operations	At Least 50% of Regulated Income from Water Utility Operations	No Reduced Dividend Since 2015	Comparable Company Met All Criteria
American States Water Company (AWR)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
American Water Works Co. Inc. (AWK)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Aqua America Inc. (WTR)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Artesian Resources Corporation (ARTNA)	Yes	Yes	Yes	NR					
California Water Service Group (CWT)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Connecticut Water Service, Inc. (CTWS)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Middlesex Water Company (MSEX)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SJW Corporation (SJW)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
York Water Company (YORW)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Sources: Columns 1, 2, 3, 4, 5, 6, and 9 = The Value Line Investment Survey: Ratings & Reports, July 14, 2017.
 Column 5 = Standard & Poor's RatingsDirect.
 Column 6 = Reuters and The Value Line Investment Survey: Ratings & Reports, July 14, 2017.
 Column 7 and 8 = SEC Form 10-K Filings.

Notes: N.R. = Not Rated by Standard and Poor's

Missouri-American Water Company
Case No. WR-2017-0285

Comparable Water Utility Companies
for Missouri-American Water Company

Number	Ticker Symbol	Company Name
1	AWR	American States Water Company
2	AWK	American Water Works Company
3	WTR	Aqua America
4	CWT	California Water Service Group
5	CTWS	Connecticut Water Service, Inc.
6	MSEX	Middlesex Water Company
7	SJW	SJW Corporation
8	YORW	York Water Company

Missouri-American Water Company
Case No. WR-2017-0285

Ten-Year Dividends Per Share, Earnings Per Share & Book Value Per Share Growth Rates
for the Comparable Water Utility Companies

----- 10-Year Annual Compound Growth Rates -----				
Company Name	DPS	EPS	BV/PS	Average of 10 Year Annual Compound Growth Rates
American States Water Company	7.00%	10.00%	5.50%	7.50%
American Water Works Company	NA	NA	1.50%	NA
Aqua America	8.00%	8.50%	7.00%	7.83%
California Water Service Group	1.50%	4.00%	5.00%	3.50%
Connecticut Water Service, Inc.	2.50%	8.00%	6.00%	5.50%
Middlesex Water Company	1.50%	5.00%	4.00%	3.50%
SJW Corporation	4.00%	8.00%	5.50%	5.83%
York Water Company	3.50%	5.50%	5.00%	4.67%
Average	<u>4.00%</u>	<u>7.00%</u>	<u>4.94%</u>	<u>5.48%</u>

Source: The Value Line Investment Survey, October 13, 2017.

NA = Not Available

Missouri-American Water Company
Case No. WR-2017-0285

Five-Year Dividends Per Share, Earnings Per Share & Book Value Per Share Growth Rates
for the Comparable Water Utility Companies

Company Name	5-Year Annual Compound Growth Rates			Average of 5 Year Annual Compound Growth Rates
	DPS	EPS	BVPS	
American States Water Company	10.50%	9.50%	5.00%	8.33%
American Water Works Company	9.00%	11.00%	4.00%	8.00%
Aqua America	8.00%	11.00%	7.50%	8.83%
California Water Service Group	2.00%	3.00%	5.00%	3.33%
Connecticut Water Service, inc.	3.00%	12.00%	9.00%	8.00%
Middlesex Water Company	1.50%	8.00%	3.00%	4.17%
SJW Corporation	3.00%	20.50%	6.50%	10.00%
York Water Company	3.00%	6.00%	3.50%	4.17%
Average	5.00%	10.13%	5.44%	6.85%

Source: The Value Line Investment Survey, October 13, 2017.

**Missouri-American Water Company
Case No. WR-2017-0285**

**Average of Ten- and Five-Year Dividends Per Share, Earnings Per Share &
Book Value Per Share Growth Rates for the Comparable Water Utility Companies**

Company Name	10-Year Average DPS, EPS & BVPS	5-Year Average DPS, EPS & BVPS	Average of 5-Year & 10-Year Averages
American States Water Company	7.50%	8.33%	7.92%
American Water Works Company	NA	8.00%	8.00%
Aqua America	7.83%	8.83%	8.33%
California Water Service Group	3.50%	3.33%	3.42%
Connecticut Water Service, Inc.	5.50%	8.00%	6.75%
Middlesex Water Company	3.50%	4.17%	3.83%
SJW Corporation	5.83%	10.00%	7.92%
York Water Company	4.67%	4.17%	4.42%
Average	<u><u>5.48%</u></u>	<u><u>6.85%</u></u>	<u><u>6.17%</u></u>

NA = Not Available

Missouri-American Water Company
Case No. WR-2017-0285

**Five-Year Projected Dividends Per Share, Earnings Per Share & Book Value Per Share Growth Rates
for the Comparable Water 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>	
American States Water Company	7.50%	6.50%	4.00%	6.00%
American Water Works Company	10.00%	8.50%	5.50%	8.00%
Aqua America	9.00%	7.00%	6.50%	7.50%
California Water Service Group	6.50%	9.00%	3.00%	6.17%
Connecticut Water Service, Inc.	4.50%	4.50%	2.50%	3.83%
Middlesex Water Company	4.50%	8.50%	4.50%	5.83%
SJW Corporation	6.00%	4.50%	4.00%	4.83%
York Water Company	7.00%	7.00%	4.50%	6.17%
Average	<u>6.88%</u>	<u>6.94%</u>	<u>4.31%</u>	<u>6.04%</u>

Source: The Value Line Investment Survey, October 13, 2017.

Missouri-American Water Company
Case No. WR-2017-0285

Projected EPS Growth Rates
for the Comparable Water Utility Companies

Company Name	(1) Projected 5-Year EPS Growth Reuters (Mean)	(2) Projected 3-5 Year EPS Growth Value Line	Average Projected EPS Growth
American States Water Company	4.90%	6.50%	5.70%
American Water Works Company	8.52%	8.50%	8.51%
Aqua America	6.87%	7.00%	6.94%
California Water Service Group	9.80%	9.00%	9.40%
Connecticut Water Service, Inc.	5.45%	4.50%	4.98%
Middlesex Water Company	NA	8.50%	8.50%
SJW Corporation	NA	4.50%	4.50%
York Water Company	NA	7.00%	7.00%
Average	<u><u>7.11%</u></u>	<u><u>6.94%</u></u>	<u><u>6.94%</u></u>

Sources:

Column 1 = Analyst Estimates Accessed from Reuters on September 7, 2017.

Column 2 = The Value Line Investment Survey, October 13, 2017.

**Missouri-American Water Company
Case No. WR-2017-0285**

**Historical and Projected Growth Rates
for the Comparable Water Utility Companies**

Company Name	(1) 10-Year Average DPS, EPS & BVPS	(2) 5-Year Average DPS, EPS & BVPS	(3) Projected Growth Rate (DPS, EPS and BVPS)	(4) Projected 5-Year EPS Growth Consensus Estimates (Mean)	(5) Projected 3-5 Year EPS Growth Value Line	Average Projected EPS Growth
American States Water Company	7.50%	8.33%	6.00%	4.90%	6.50%	5.70%
American Water Works Company	NA	8.00%	8.00%	8.52%	8.50%	8.51%
Aqua America	7.83%	8.83%	7.50%	6.87%	7.00%	6.94%
California Water Service Group	3.50%	3.33%	6.17%	9.80%	9.00%	9.40%
Connecticut Water Service, Inc.	5.50%	8.00%	3.83%	5.45%	4.50%	4.98%
Middlesex Water Company	3.50%	4.17%	5.83%	NA	8.50%	8.50%
SJW Corporation	5.83%	10.00%	4.83%	NA	4.50%	4.50%
York Water Company	4.67%	4.17%	6.17%	NA	7.00%	7.00%
Average	<u>5.48%</u>	<u>6.85%</u>	<u>6.04%</u>	<u>7.11%</u>	<u>6.94%</u>	<u>6.94%</u>

Proposed Range of Growth for Comparables: 4.0% - 5.0%

Sources: Column 1 = Schedule 11-1
 Column 2 = Schedule 11-2
 Column 3 = Schedule 11-4
 Column 4 = Schedule 11-5
 Column 5 = Schedule 11-5

Missouri-American Water Company
Case No. WR-2017-0285

Average High / Low Stock Price for August 2017 through October 2017.
for the Comparable Water Utility Companies

Company Name	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	-- Aug 2017 --		-- Sep 2017 --		-- Oct 2017 --		Average
	High Stock Price	Low Stock Price	High Stock Price	Low Stock Price	High Stock Price	Low Stock Price	High/Low Stock Price (9/8/17 - 10/17)
American States Water Company	51.45	48.44	51.53	48.15	55.85	50.40	50.97
American Water Works Company	82.19	80.65	82.92	80.82	87.75	81.75	82.68
Aqua America	34.25	33.40	34.62	33.19	36.03	33.63	34.19
California Water Service Group	39.15	36.60	38.60	36.85	43.35	39.60	39.02
Connecticut Water Service, Inc.	58.03	54.04	59.47	53.59	63.50	60.38	58.17
Middlesex Water Company	40.08	37.51	40.15	37.63	45.83	40.47	40.28
SJW Corporation	56.23	53.51	57.43	55.08	65.38	57.60	57.54
York Water Company	35.05	32.35	35.20	32.45	36.80	34.95	34.47

Notes:

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

Source: Yahoo Finance

Missouri-American Water Company
Case No. WR-2017-0285

**Constant-Growth Discounted Cash Flow (DCF) Estimated Costs of Common Equity
for the Comparable Water Utility Companies**

Company Name	(1) Expected Annual Dividend	(2) Average High/Low Stock Price	(3) Projected Dividend Yield
American States Water Company	\$1.03	\$50.97	2.03%
American Water Works Company	\$1.72	\$82.68	2.08%
Aqua America	\$0.84	\$34.19	2.45%
California Water Service Group	\$0.74	\$39.02	1.90%
Connecticut Water Service, Inc.	\$1.23	\$58.17	2.11%
Middlesex Water Company	\$0.86	\$40.28	2.14%
SJW Corporation	\$0.92	\$57.54	1.59%
York Water Company	\$0.69	\$34.47	2.00%
Average			<u><u>2.04%</u></u>

Proposed Dividend Yield: 2.04%

Proposed Range of Growth: 4.00% - 5.00%

Indicated Cost of Common Equity: 6.14%-7.14%

Notes: Column 1 = Estimated Dividend Declared per share is weighted by 1/4 for 2017 and 3/4 for 2018.

Column 3 = (Column 1 / Column 2).

Sources: Column 1 = The Value Line Investment Survey, October 13, 2017

Column 2 = Schedule 12.

Missouri-American Water Company
Case No. WR-2017-0285

Capital Asset Pricing Model (CAPM) Costs of Common Equity Estimates
Based on Historical Return Differences Between Common Stocks and Long-Term U.S. Treasury
for the Comparable Water Utility Companies

	(1)	(2)	(3)	(4)	(5)	(6)
			Arithmetic Average Market Risk Premium (1926-2016)	Geometric Average Market Risk Premium (1926-2016)	Arithmetic CAPM Cost of Common Equity (1926-2016)	Geometric CAPM Cost of Common Equity (1926-2016)
Company Name	Risk Free Rate	Company's Value Line Beta				
American States Water Company	2.82%	0.75	6.00%	4.50%	7.32%	6.20%
American Water Works Company	2.82%	0.60	6.00%	4.50%	6.42%	5.52%
Aqua America	2.82%	0.70	6.00%	4.50%	7.02%	5.97%
California Water Service Group	2.82%	0.75	6.00%	4.50%	7.32%	6.20%
Connecticut Water Service, Inc.	2.82%	0.65	6.00%	4.50%	6.72%	5.75%
Middlesex Water Company	2.82%	0.75	6.00%	4.50%	7.32%	6.20%
SJW Corporation	2.82%	0.70	6.00%	4.50%	7.02%	5.97%
York Water Company	2.82%	0.80	6.00%	4.50%	7.62%	6.42%
Average		<u>0.71</u>			<u>7.19%</u>	<u>6.93%</u>

Column 1 = The appropriate yield is equal to the average 30-year U.S. Treasury Bond yield for August, September, and October 2017 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, October 13, 2017.

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 - 2016 was determined to be 6.00% based on an arithmetic average as calculated in Duff & Phelps' 2017 Valuation Handbook: Guide to Cost of Capital.

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 - 2016 was determined to be 4.50% based on a geometric average as calculated in Duff & Phelps' 2017 Valuation Handbook: Guide to Cost of Capital.

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

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

**Missouri-American Water Company
Case No. WR-2017-0285**

**Multiple-Stage Discounted Cash Flow (DCF) Estimated Costs of Common Equity
for the Comparable Water Utility Companies**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Company Name	Annualized Quarterly Dividend	Growth Years 1-5	6	7	Growth Years 8	9	10	Growth in Perpetuity	Cost of Equity
American States Water Company	\$0.97	5.70%	5.42%	5.13%	4.85%	4.57%	4.28%	4.00%	6.18%
American Water Works Company	\$1.66	8.51%	7.76%	7.01%	6.26%	5.50%	4.75%	4.00%	6.79%
Aqua America	\$0.77	6.94%	6.45%	5.96%	5.47%	4.98%	4.49%	4.00%	6.81%
California Water Service Group	\$0.72	9.40%	8.50%	7.60%	6.70%	5.80%	4.90%	4.00%	6.71%
Connecticut Water Service, Inc.	\$1.19	4.98%	4.81%	4.65%	4.49%	4.33%	4.16%	4.00%	6.24%
Middlesex Water Company	\$0.85	8.50%	7.75%	7.00%	6.25%	5.50%	4.75%	4.00%	6.91%
SJW Corporation	\$0.87	4.50%	4.42%	4.33%	4.25%	4.17%	4.08%	4.00%	5.54%
York Water Company	\$0.64	7.00%	6.50%	6.00%	5.50%	5.00%	4.50%	4.00%	6.33%
								Average:	6.44%

Sources: Column 1 = The Value Line Investment Survey: Ratings and Reports, October 13, 2017.

Column 2 = Schedule JLS-11-6.

Column 8 = Mid Point of Low End of Projected GDP Growth Rates Cited in Staff Cost of Service Report.

**Missouri-American Water Company
Case No. WR-2017-0285**

**Multiple-Stage Discounted Cash Flow (DCF) Estimated Costs of Common Equity
for the Comparable Water Utility Companies**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Company Name	Annualized Quarterly Dividend	Growth Years 1-5	6	7	Growth Years 8	9	10	Growth in Perpetuity	Cost of Equity
American States Water Company	\$0.97	5.70%	5.45%	5.20%	4.95%	4.70%	4.45%	4.20%	6.35%
American Water Works Company	\$1.66	8.51%	7.79%	7.07%	6.36%	5.64%	4.92%	4.20%	6.96%
Aqua America	\$0.77	6.94%	6.48%	6.02%	5.57%	5.11%	4.66%	4.20%	6.97%
California Water Service Group	\$0.72	9.40%	8.53%	7.67%	6.80%	5.93%	5.07%	4.20%	6.88%
Connecticut Water Service, Inc.	\$1.19	4.98%	4.85%	4.72%	4.59%	4.46%	4.33%	4.20%	6.41%
Middlesex Water Company	\$0.85	8.50%	7.78%	7.07%	6.35%	5.63%	4.92%	4.20%	7.08%
SJW Corporation	\$0.87	4.50%	4.45%	4.40%	4.35%	4.30%	4.25%	4.20%	5.72%
York Water Company	\$0.64	7.00%	6.53%	6.07%	5.60%	5.13%	4.67%	4.20%	6.50%
								Average:	6.61%

Sources: Column 1 = The Value Line Investment Survey: Ratings and Reports, October 13, 2017.
Column 2 = Schedule JLS-11-6.
Column 8 = Mid Range of Projected GDP Growth Rates Cited in Staff Cost of Service Report.

**Missouri-American Water Company
Case No. WR-2017-0285**

**Multiple-Stage Discounted Cash Flow (DCF) Estimated Costs of Common Equity
for the Comparable Water Utility Companies**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Company Name	Annualized Quarterly Dividend	Growth Years 1-5	6	7	Growth Years 8	9	10	Growth in Perpetuity	Cost of Equity
American States Water Company	\$0.97	5.70%	5.48%	5.27%	5.05%	4.83%	4.62%	4.40%	6.52%
American Water Works Company	\$1.66	8.51%	7.83%	7.14%	6.46%	5.77%	5.09%	4.40%	7.12%
Aqua America	\$0.77	6.94%	6.51%	6.09%	5.67%	5.25%	4.82%	4.40%	7.14%
California Water Service Group	\$0.72	9.40%	8.57%	7.73%	6.90%	6.07%	5.23%	4.40%	7.05%
Connecticut Water Service, Inc.	\$1.19	4.98%	4.88%	4.78%	4.69%	4.59%	4.50%	4.40%	6.58%
Middlesex Water Company	\$0.85	8.50%	7.82%	7.13%	6.45%	5.77%	5.08%	4.40%	7.25%
SJW Corporation	\$0.87	4.50%	4.48%	4.47%	4.45%	4.43%	4.42%	4.40%	5.90%
York Water Company	\$0.64	7.00%	6.57%	6.13%	5.70%	5.27%	4.83%	4.40%	6.67%
								Average:	6.78%

Sources: Column 1 = The Value Line Investment Survey: Ratings and Reports, October 13, 2017.
 Column 2 = Schedule JLS-11-6.
 Column 8 = High Range of Currently Projected GDP Growth Rate.
 *Also, Growth Rate Used in 2016 Electric Utility Rate Cases.

**Missouri-American Water Company
Case No. WR-2017-0285**

**Multiple-Stage Discounted Cash Flow (DCF) Estimated Costs of Common Equity
for the Comparable Electric Utility Companies¹**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Company Name	Annualized Quarterly Dividend	Growth Years 1-5	6	7	Growth Years 8	9	10	Growth in Perpetuity	Cost of Equity
Alliant Energy	\$1.26	6.36%	5.88%	5.41%	4.93%	4.45%	3.98%	3.50%	7.19%
Ameren Corp.	\$1.76	6.37%	5.89%	5.41%	4.94%	4.46%	3.98%	3.50%	7.19%
American Electric Power	\$2.36	4.70%	4.50%	4.30%	4.10%	3.90%	3.70%	3.50%	7.14%
CMS Energy Corp.	\$1.33	7.13%	6.53%	5.92%	5.32%	4.71%	4.11%	3.50%	7.15%
DTE Energy Company	\$3.30	5.77%	5.39%	5.01%	4.64%	4.26%	3.88%	3.50%	7.09%
Pinnacle West Capital	\$2.62	5.48%	5.15%	4.82%	4.49%	4.16%	3.83%	3.50%	7.01%
PNM Resources, Inc.	\$0.97	6.20%	5.75%	5.30%	4.85%	4.40%	3.95%	3.50%	6.36%
Portland General Electric Co	\$1.36	3.96%	3.88%	3.81%	3.73%	3.65%	3.58%	3.50%	6.62%
Xcel Energy	\$1.44	5.56%	5.22%	4.87%	4.53%	4.19%	3.84%	3.50%	7.00%
								Average	6.97%

Sources: 1. See Schedule 14 in electric rate case Case No. ER-2016-0156
Column 1 = SNL Financial
Column 2 = SNL Financial
Column 8 = See range of averages from Schedules 14-1 through Schedule 14-4.

**Missouri-American Water Company
Case No. WR-2017-0285**

**Multiple-Stage Discounted Cash Flow (DCF) Estimated Costs of Common Equity
for the Comparable Electric Utility Companies**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Company Name	Annualized Quarterly Dividend	Growth Years 1-5	6	7	Growth Years 8	9	10	Growth in Perpetuity	Cost of Equity
Alliant Energy	\$1.26	6.36%	5.97%	5.57%	5.18%	4.79%	4.39%	4.00%	7.59%
Ameren Corp.	\$1.76	6.37%	5.98%	5.58%	5.19%	4.79%	4.40%	4.00%	7.59%
American Electric Power	\$2.36	4.70%	4.58%	4.47%	4.35%	4.23%	4.12%	4.00%	7.54%
CMS Energy Corp.	\$1.33	7.13%	6.61%	6.09%	5.57%	5.04%	4.52%	4.00%	7.55%
DTE Energy Company	\$3.30	5.77%	5.48%	5.18%	4.89%	4.59%	4.30%	4.00%	7.49%
Pinnacle West Capital	\$2.62	5.48%	5.23%	4.99%	4.74%	4.49%	4.25%	4.00%	7.41%
PNM Resources, Inc.	\$0.97	6.20%	5.83%	5.47%	5.10%	4.73%	4.37%	4.00%	6.78%
Portland General Electric Co.	\$1.36	3.96%	3.97%	3.97%	3.98%	3.99%	3.99%	4.00%	7.03%
Xcel Energy	\$1.44	5.56%	5.30%	5.04%	4.78%	4.52%	4.26%	4.00%	7.41%
								Average	7.38%

Sources: 1. See Schedule 14 in electric rate case Case No. ER-2016-0156

Column 1 = SNL Financial

Column 2 = SNL Financial

Column 8 = Mid Point of Low End of Projected GDP Growth Rates Cited in Staff Cost of Service Report.

**Missouri-American Water Company
Case No. WR-2017-0285**

**Multiple-Stage Discounted Cash Flow (DCF) Estimated Costs of Common Equity
for the Comparable Electric Utility Companies**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Company Name	Annualized Quarterly Dividend	Growth Years 1-5	6	7	Growth Years 8	9	10	Growth in Perpetuity	Cost of Equity
Alliant Energy	\$1.26	6.36%	6.03%	5.71%	5.38%	5.05%	4.73%	4.40%	7.91%
Ameren Corp.	\$1.76	6.37%	6.04%	5.71%	5.39%	5.06%	4.73%	4.40%	7.91%
American Electric Power	\$2.36	4.70%	4.65%	4.60%	4.55%	4.50%	4.45%	4.40%	7.87%
CMS Energy Corp.	\$1.33	7.13%	6.68%	6.22%	5.77%	5.31%	4.86%	4.40%	7.87%
DTE Energy Company	\$3.30	5.77%	5.54%	5.31%	5.09%	4.86%	4.63%	4.40%	7.82%
Pinnacle West Capital	\$2.62	5.48%	5.30%	5.12%	4.94%	4.76%	4.58%	4.40%	7.73%
PNM Resources, Inc.	\$0.97	6.20%	5.90%	5.60%	5.30%	5.00%	4.70%	4.40%	7.12%
Portland General Electric Company	\$1.36	3.96%	4.03%	4.11%	4.18%	4.25%	4.33%	4.40%	7.36%
Xcel Energy	\$1.44	5.56%	5.37%	5.17%	4.98%	4.79%	4.59%	4.40%	7.73%
								Average	7.78%

Sources: 1. See Schedule 14 in electric rate case Case No. ER-2016-0156
Column 1 = SNL Financial
Column 2 = SNL Financial
Column 8 = High Range of Currently Projected GDP Growth Rate.
*Also, Growth Rate Used in 2016 Electric Utility Rate Cases.

Missouri-American Water Company
Case No. WR-2017-0285

Recommended Allowed Rate of Return as of June 30, 2017
for Missouri-American Water Company

Capital Component	Percentage of Capital	Embedded Cost	Allowed Rate of Return Common Equity Return of:		
			8.50%	9.25%	9.50%
Common Stock Equity	43.99%	-----	3.74%	4.07%	4.18%
Preferred Stock	0.09%	8.67%	0.01%	0.01%	0.01%
Long-Term Debt	51.02%	5.35%	2.73%	2.73%	2.73%
Short-Term Debt	4.91%	0.99%	0.05%	0.05%	0.05%
Total	<u>100.00%</u>		<u>6.53%</u>	<u>6.86%</u>	<u>6.97%</u>

Sources:

See Schedule 6 for the Capital Structure Ratios.

Missouri-American Water Company
Case No. WR-2017-0285

Company/State	Authorized ROE%	Authorized ROR%	Docket/Case No.	Effective Date
New York-American Water Company	9.10%	6.56%	16-W-0259	June 1, 2017
Iowa-American Water Company	9.60%	8.28%	RPU-2016-0002	March 24, 2017
Illinois-American Water Company	9.79%	7.47%	16-0093	January 1, 2017
West Virginia-American Water Company	9.75%	7.31%	15-0676-W-42T	February 25, 2016
New Jersey-American Water Company	9.75%	7.55%	WR15010035	September 21, 2015
Maryland-American Water Company	10.00%	8.29%	9372	June 19, 2015

MISSOURI PUBLIC SERVICE COMMISSION

STAFF REPORT

COST OF SERVICE

APPENDIX 3

Other Staff Schedules

MISSOURI-AMERICAN WATER COMPANY

CASE NO. WR-2017-0285

*Jefferson City, Missouri
November 2017*

Missouri-American Water Company

Case No. WR-2017-0285

Customer Usage Per Day

<u>Service Area</u>	<u>Usage Per Day</u>
District No. 1	0.2245
District No. 2	0.1541
District No. 3	0.1508

MISSOURI-AMERICAN WATER COMPANY - Water
 SCHEDULE of DEPRECIATION RATES
 DIVISIONS: ALL
 WR-2015-0301

NARUC USOA ACCOUNT NUMBER	ACCOUNT DESCRIPTION	Remaining Life Depreciation Rate %	AVERAGE SERVICE LIFE (YEARS)	IOWA CURVES	% NET SALVAGE
Source of Supply					
311.0	Structures & Improvements	1.97%	60	R4	-25%
312.0	Collecting & Impoundment Reservoirs	0.35%	85	R3	0%
313.0	Lake, River & Other Intakes	3.57%	70	S0.5	-10%
314.0	Wells & Springs	2.52%	55	R1.5	-5%
315.0	Infiltration Galleries and Tunnels	1.77%	60	R2.5	0%
316.0	Supply Mains	1.45%	80	R3	-25%
317.0	Miscellaneous Source of Supply - Other	4.97%	25	SQ	0%
Pumping Plant					
321.0	Structures & Improvements	3.95%	75	R2.5	-15%
322.0	Boiler Plant Equipment	3.05%	37	R3	-5%
323.0	Power Generation Equipment	3.05%	37	R3	-5%
324.0	Steam Pumping Equipment	1.89%	47	R1	-10%
325.0	Electric Pumping Equipment	1.89%	47	R1	-10%
326.0	Diesel Pumping Equipment	1.89%	47	R1	-10%
327.0	Hydraulic Pumping Equipment	1.89%	47	R1	-10%
328.0	Other Pumping Equipment	1.89%	47	R1	-10%
Water Treatment Plant					
331.0	Structures & Improvements	2.34%	80	R2.5	-15%
332.0	Water Treatment Equipment	2.18%	48	R1.5	-20%
333.0	Miscellaneous Water Treat, Other	3.33%	30	SQ	0%
Transmission and Distribution					
341.0	Structures & Improvements	1.49%	55	R2.5	-20%
341.1	Structures & Improve - Special Crossing	1.49%	55	R2.5	-20%
342.0	Distribution Reservoirs & Standpipes	1.70%	65	R2.5	-25%
343.0,1,2,3	Transmission & Distribution Mains	1.39%	90	R2.0	-30%
344.0	Fire Mains	1.56%	85	S1	-30%
345.0	Customer Services	2.92%	65	R2.0	-100%
346.0	Customer Meters	2.40%	42	R1.5	-10%
347.0	Customer Meter Pits & Installation	2.40%	42	R1.5	-10%
348.0	Fire Hydrants	1.85%	65	R1.5	-30%
349.0	Misc Trans & Dist - Other	2.96%	50	R3	0%
GENERAL PLANT					
390.0	Structures & Improve - Shop & Garage	3.02%	55	R2.5	-20%
390.1	Structures & Improve - Office Buildings	2.09%	47	S0	-20%
390.3	Structures & Improve - Miscellaneous	3.72%	55	R2.0	-20%
390.9	Structures & Improve - Leasehold	2.75%	25	R4	0%
391.0	Office Furniture	3.49%	20	SQ	0%
391.1	Computer & Peripheral Equipment	19.06%	5	SQ	0%
391.2	Computer Hardware & Software	19.06%	5	SQ	0%
391.25	Computer Software	5.00%	20	SQ	0%
391.26	Personal Computer Software	10.00%	10	SQ	0%
391.3	Other Office Equipment	10.46%	15	SQ	0%
391.4	BTS Initial Investment	5.00%	20		0%
392.1	Transportation Equipment - Light trucks	5.57%	9	L1.5	15%
392.2	Transportation Equipment - Heavy trucks	0.00%	10	L1.5	15%
392.3	Transportation Equipment - Autos	0.00%	6	L1.5	15%
392.4	Transportation Equipment - Other	6.15%	15	S3	5%
393.0	Stores Equipment	3.88%	25	SQ	0%
394.0	Tools, Shop, Garage Equipment	3.73%	20	SQ	0%
395.0	Laboratory Equipment	3.90%	15	SQ	0%
395.0	Power Operated Equipment	3.79%	12	L1	20%
397.1	Communication Equip - Non Telephone	5.76%	15	SQ	0%
397.2	Communication Equip - Telephone	8.94%	10	SQ	0%
398.0	Miscellaneous Equip	6.48%	15	SQ	0%
399.0	Other Tangible Equipment	2.43%	20	SQ	0%

MISSOURI-AMERICAN WATER COMPANY- Sewer
 SCHEDULE of DEPRECIATION RATES
 DIVISIONS: All
 SR-2015-0302

<u>NARUC</u> <u>ACCOUNT</u> <u>NUMBER</u>	<u>ACCOUNT DESCRIPTION</u>	<u>%</u> <u>Remaining Life</u> <u>DEPRECIATION</u>	<u>AVERAGE</u> <u>SERVICE LIFE</u> <u>(YEARS)</u>	<u>IOWA</u> <u>Curves</u>	<u>%</u> <u>NET</u> <u>SALVAGE</u>
COLLECTION PLANT					
351	Structures & Improvements	2.03%	50	R3	-5%
352.1	Collection Sewers (Force)	1.64%	60	R2.5	-10%
352.2	Collection Sewers (Gravity)	1.58%	70	R3	-20%
353	Services To Customers	2.87%	55	R2.0	-40%
354	Flow Measuring Devices	3.38%	25	S2.5	0%
355	Other Collection Equipment	3.15%	50		0%
357	Communication Equipment	6.67%	15	SQ	0%
PUMPING PLANT					
361	Structures & Improvements	2.17%	45	R3	0%
362	Receiving Wells	2.87%	30	L2.5	0%
363	Electric Pumping Equip, (includes Generators)	4.31%	15	L1.5	-5%
364	Diesel Pumping Equipment	4.31%	15	L1.5	-5%
365	Other Pumping Equipment	4.31%	15	L1.5	-5%
TREATMENT & DISPOSAL PLANT					
371	Structures & Improvements Treatment & Disposal Equipment,	1.43%	60	R2.5	-5%
372	(includes pumps, blowers, generators)	3.97%	30	S0.5	-20%
373	Plant Sewers	1.60%	50	R2.5	0%
374	Outfall Sewer Lines	3.04%	35	L2.0	0%
GENERAL PLANT					
390.0	Structures & Improve - General	3.11%	35	R2.5	-5%
390.9	Structures & Improve - Leasehold	0.00%	20	R4	0%
391.0	Office Furniture	5.00%	20	SQ	0%
391.1	Computer & Peripheral Equipment	20.00%	5	SQ	0%
391.2	Computer Hardware & Software	20.00%	5	SQ	0%
391.25	Computer Software	5.00%	20	SQ	0%
391.26	Personal Computer Software	10.00%	10	SQ	0%
391.3	Other Office Equipment	6.67%	15		0%
391.4	BTS Initial Investment	5.00%	20		0%
392.0	WW Transportation Equipment	3.45%	10	L2.5	5%
392.1	Transportation Equipment - Light trucks	3.45%	10	L2.5	5%
392.2	Transportation Equipment - Heavy trucks	3.45%	10	L2.5	5%
392.3	Transportation Equipment - Autos	3.45%	10	L2.5	5%
392.4	Transportation Equipment - Other	3.45%	10	L2.5	5%
393.0	Stores Equipment	4.00%	25	SQ	0%
394.0	Tools, Shop, Garage Equipment	5.00%	20	SQ	0%
395.0	Laboratory Equipment	6.67%	15	SQ	0%
396.0	Power Operated Equipment	7.71%	15	L2.5	0%
397.1	Communication Equip - Non Telephone	6.67%	15	SQ	0%
397.2	Communication Equip - Telephone	6.67%	15	SQ	0%
398.0	Miscellaneous Equip	6.43%	15	SQ	0%
399.0	Other Tangible Equipment	0.00%	30	R2.0	0%