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|---|---|
| Exhibit No.: | |
| Issues: | UPIS Additions, Blendville Water Treatment Plant (BWTP) Improvements |
| Witness: | Kevin H. Dunn |
| Exhibit Type: | Direct |
| Sponsoring Party: | Missouri-American Water Company |
| Case No.: | WR-2008-XXXX<br>SR-2008-XXX |
| Date: | March 31, 2008 |

**MISSOURI PUBLIC SERVICE COMMISSION**

**CASE NO. WR-2008-XXXX**
**CASE NO. SR-2008-XXX**

# DIRECT TESTIMONY

**OF**

**KEVIN H. DUNN**

**ON BEHALF OF**

**MISSOURI-AMERICAN WATER COMPANY**

**BEFORE THE PUBLIC SERVICE COMMISSION**

**OF THE STATE OF MISSOURI**

| | | |
|---|---|---|
| **IN THE MATTER OF MISSOURI-AMERICAN WATER COMPANY FOR AUTHORITY TO FILE TARIFFS REFLECTING INCREASED RATES FOR WATER AND SEWER SERVICE** | ) ) ) ) ) | **CASE NO. WR-2008-XXXX** **CASE NO. SR-2008-XXX** |

## AFFIDAVIT OF KEVIN H. DUNN

Kevin H. Dunn, being first duly sworn, deposes and says that he is the witness who sponsors the accompanying testimony entitled "Direct Testimony of Kevin H. Dunn"; that said testimony and schedules were prepared by him and/or under his direction and supervision; that if inquires were made as to the facts in said testimony and schedules, he would respond as therein set forth; and that the aforesaid testimony and schedules are true and correct to the best of his knowledge.

Kevin H. Dunn

**State of Missouri**
**County of St. Louis**
**SUBSCRIBED and sworn to**
**Before me this** 19th **day of** March **2008.**

**Notary Public**

**My commission expires:**

**Staci A. Olsen**
**Notary Public - Notary Seal**
**State of Missouri**
**St. Charles County**
**Commission # 05519210**
**My Commission Expires:** March 20, 2009

**DIRECT TESTIMONY**
**KEVIN H. DUNN**
**MISSOURI-AMERICAN WATER COMPANY**
**CASE NO.WR.2008.XXXX**
**CASE NO.SR.2008.XXXX**

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**DIRECT TESTIMONY**

**Kevin H. Dunn**

## WITNESS INTRODUCTION

**Q. State your name and business address.**

A. My name is Kevin H. Dunn and my business address is 727 Craig Rd., St. Louis, MO 63141.

**Q. By whom are you employed and in what capacity?**

A. I am employed by Missouri-American Water Company ("MAWC" or "Company") as Director, Engineering.

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

A. I received my Bachelor of Science degree in Civil Engineering from the University of Missouri - Columbia in 1984.

**Q. Are you a licensed professional engineer?**

A. Yes, I am a registered Professional Engineer in Missouri.

**Q. Do you hold other related water certificates?**

A. Yes, I have Class A and DSIII Public Water Supply Operator Certificates from the Missouri Department of Natural Resources.

**Q. Please describe your business experience in the water utility industry.**

A. In 1984, I began work with St. Louis County Water Company as a System Engineer. This work included the various designs and relocations and installations of mains throughout St. Louis County. From 1989 to 1994, I was in charge of various water treatment plant facility operations, maintenance and capital projects, leading to being Superintendent of all St. Louis County water treatment facilities. In August of 1994, I was transferred back into Engineering, first as Special Projects Engineer and then Superintendent of Production Engineering where I oversaw or performed the project management of various major water treatment facility upgrades, depreciation studies, planning studies to match future growth, and maintenance studies to determine life cycle replacements. With the merger with Missouri-American Water Company in 1999, I performed this similar role under the title of Engineering Manager and I was responsible for the eastern districts in Missouri which were St. Louis County, St. Charles, Mexico, and Jefferson City. In 2002, I was promoted to Director of Engineering for Missouri and became responsible for all the capital projects and planning for all of the Missouri Districts. In 2004, I was promoted to American Water, Central Region Director, Production, where I was responsible for all water and waste water treatment facilities in the Central Region. This mainly consisted of directing the treatment operations and maintenance work for the American Water districts located in Missouri, Illinois, Iowa, Indiana, Ohio, and Michigan. In late 2007, I was transferred to my current role as Director, Engineering for MAWC.

**Q. What is the purpose of your testimony?**

A. The purpose of this testimony is to describe the Company's investments in and additions to Plant in Service since MAWC's last rate case. In addition, I will discuss the status of the Company's Joplin Production Improvement Project.

## UPIS ADDITIONS

**Q. What are MAWC's expected investments in Plant In Service through September 30, 2008?**

A. The anticipated investments in capital additions, by District, are indicated in the table below:

| | Anticipated Investments thru September 2008 |
|---|---|
| Brunswick | 395,573 |
| Jefferson City | 2,692,519 |
| Joplin | 32,506,677 |
| Mexico | 1,899,594 |
| Platte County | 6,953,888 |
| St. Charles | 5,872,188 |
| St. Joseph | 5,571,915 |
| St. Louis County | 91,503,333 |
| Warrensburg | 2,181,081 |
| Warren County Water | 148,370 |
| Cedar Hill Sewer | 20,619 |
| Parkville Sewer | 1,231 |
| Warren County Sewer | 28,502 |
| TOTAL | 149,775,492 |

**Q. Please list the significant capital projects that are or will be completed during this proceeding.**

A. Significant individual projects at each district are as follows:

Brunswick

- Replace Lime Feeder
- Replace Well #1 Pump Motor
- Complete 6" & 8" main on Mulberry Street
- Replace 6" main on S. Small Street with 350 ft of 6" main.

Jefferson City

- Install Treatment Plant Standby Generator
- Purchase of Distribution Building
- Replace Filter Media for Filters 7 & 8
- Replace 2" main on Bolton Dr with 1695 ft of 8" main
- Replace 6" main on Riverside Dr with 1400 ft of 8" main
- Replace Dust Collector System for Carbon and Lime
- Replace Low Service Pump #5

Joplin

- Blendville Water Treatment Plant Improvements
    - Construct Plant Chemical Feed Building, which includes:
        - On-site Hypochlorite Generation System
        - Aqua Ammonia System
        - Alum System
        - Fluoride System
        - Liquid Lime System
        - Carbon Slurry System
        - Filter Aid Polymer System

- Construct Water Treatment Plant 2, which includes:
  - Stage 1 Flocculator tank with mixers
  - Stage 1 clarifier tank with plate settlers
  - Stage 2 Flocculator tank with mixers
  - Stage 2 clarifier tank with plate settlers
  - Two 2.75 MGD Dual Media Filters with air scour wash system
- Construct Administration Building housing the Operator Control Room, the Wet Chemistry and Bacteriological Laboratories, and Supervisory Offices.
- Construct One MG Clearwell No. 2
- Install New Incoming Electrical Service, which includes:
  - Incoming Switchgear
  - 1.25 MW Generator
- Install Vertical Turbine Transfer Pump Station
- Install Four - Nine MGD Ultraviolet reactors
- Rehabilitate High Service Pumps and Electrical Service
- Replace Aldrich Units Filter Gallery valves.
- Construct Washwater Equalization Basin and Pump Station
- Install Aldrich Units De-Icing system
- Construct an Additional Water Treatment Residual Lagoon

- Install 1694 ft of 12" main on St. Louis Ave from Falcon Road to Hwy 171
- Replace 2" main on Salem Road with1373 ft of 8" main

- Install Fluoride Feed at the Well Sites

Mexico

- Install Residuals Basin No. 2
- Install Settling Basin Effluent Improvements
- Replace 6" main on Randy Street with 950 ft of 6" main
- Replace 4" main on S. Clark Street with 3,277 ft of 8" main
- Replace 6" main on Eagle Drive with 950 ft of 8" main
- Replace 6" main on Falcon Drive with 975 ft of 8" main
- Replace two lime feed machines at the water treatment plant

Platte County

- Install 11,000 ft of 12" main to improve the Northwestern portion of the system
- Install Well Field and Plant Standby Generator
- Install 14,000 ft of 24" and 6,465 ft of 20" to improve the system from the plant to the City of Riverside
- Replace Treatment Plant Backwash Pump

St. Charles

- Relocate 4280 ft of 12" main on St. Peters Howell Rd
- Several Main Relocations resulting from Public Works Improvements
- Replace roof at the Weldon Springs Booster Station
- Install new pump with VFD at the Camelot Booster Station

St. Joseph

- Install Lime Softening System Slaker Addition

- Install approximately 18,250 ft of 12" main to the Agency Zone
- Purchase five portable generators for various booster stations
- Replace 2" main on W. Buddy Street with 1125 ft of 8" main
- Replace 1-1/2" main on E. Buddy Street with 570 ft of 8" 45 ft of 6" and 413 ft of 2" main
- Replace 6" and 2" main on Colorado Street with 890 ft of 8" main
- Install 381 ft of 8" main on LaVina Drive to tie in two dead-end subdivisions
- Construct improvements to Well Pumps # 1, 4, 5, 6, and 7

St. Louis County

- Complete several Main Relocations resulting from Public Works Improvements
- Complete various main relocations in conjunction with the Rte 40/I-64 Missouri Department of Transportation project
- Replace mains as part of the obsolete main replacement program
- Install Meramec and South Plant On-site Hypochlorite Generation System
- Construct Central Plant Coagulation Basin #4 Flocculation and Clarifier Equipment Replacement
- Install North Plant Incoming Electrical Switchgear Improvements
- Install Standby Generator at North Plant
- Install Central Plant Incoming Electrical Switchgear Improvements
- Install Service Center Site Improvements

Warrensburg

- Install 1588 ft of 16" and 500 ft of 12" main on Holden Street and Russell Avenue
- Replace roof at the plant
- Install 1584 ft of 8" main on W. Hale Lake Road
- Replace 6" main on Burkarth Road with 2400 ft of 8" main
- Upgrade communication to well sites
- Install 400 ft of 12" main on Enterprise Drive.

Warren County Water

- Install Standby Generator at Well House

Cedar Hill Sewer

- Construct Waste Water Treatment Plant Improvements

Warren County Sewer

- Install Sewer Grinder system on Waste Water Treatment Plant No. 1 & 2
- Rebuild Lift Station No. 1 at Golf Course
- Relocate blowers on Waster Water Treatment Plant No. 1 & 2
- Install Standby Generators at various Lift Stations

**Q. Could you provide an explanation of those items involved with the Joplin Production Improvement Project?**

A. Yes. Mr. Alan DeBoy previously discussed the need for these items in his Direct Testimony in the Company's last rate case (Case No. WR-2007-0216). Briefly, the primary drivers for the Joplin Production improvements are to enhance reliability of aging production infrastructure, meet the increase in system demand,

and meet environmental and source water regulations. This project addresses these needs by rehabilitating or rebuilding existing infrastructure at both the source of supply and the treatment plant and installing new treatment facilities at the plant. This project will replace the worn and aged equipment of the existing plant to increase reliability and increase production capacity to meet the projected maximum day demands through 2021. The total cost for this project was estimated at $44 million.

**Q. Which items of this Project were completed in time to be included in the previous rate case?**

A. Items completed in the previous rate case included those items at the source supply and the connection between the source and the treatment plant, along with distribution system improvements. This would be the replacement of the Shoal Creek intake with a new intake pumping station, replacement of the intake cribs in Shoal Creek, the suction piping from the crib to the pump station, the addition of a raw water transmission main, and distribution piping configuration that allows the well system the ability to provide water into the main pressure zone when needed. The total cost of these projects which were included in utility plant, in the previous case, was $10,016,781.

**Q. Please list and provide additional detail concerning the components that are to be completed during this case.**

A. Following are descriptions of those components that are expected to be in-service by the end of September 2008:

## BLENDVILLE WATER TREATMENT PLANT (BWTP) IMPROVEMENTS

**Pretreatment and Filtration – Existing Plant**

The existing flocculation, sedimentation basin, and purification units will provide treatment as in the past. A static mixer will be provided to improve coagulant addition, a filter aid system will be constructed for the existing filters, and the existing filter gallery valves and valve operators, flow meters, and controls will be replaced.

**Chemical Building and Mixing Improvements**

A chemical building will be constructed to house a raw water flow control valve, flow meter, bulk storage of chemicals, day tanks, transfer pump, chemical metering pumps, feed piping and controls, and static mixer.

**Administrative Building**

An Administration section was added between the chemical feed building and Plant 2 that houses the Operator Control Room, the Wet Chemistry Laboratory, the Bacteriological Laboratory, Supervisory Staff Offices, and the Break Room/Training Room.

**Transfer Pumping and UV Facilities**

The Company proposes to integrate the UV facilities downstream of filtration. A transfer pumping step is proposed at BWTP to provide adequate head for the UV disinfection process and to enable full use of the existing clearwell.

**Clearwater Storage and High Service Pumping**

A 1,000,000 gallon ground storage tank will be installed for additional finished water storage and improved service delivery reliability. The tank will be a ground tank located after the transfer pump station and this will ensure a positive head on the existing high service pumps.

The existing high service pumps #7 and #10 will be replaced to provide approximately 22 MGD of reliable pumping capacity.

**Electrical Improvements**

The existing 480 volt electrical service will be replaced and upgraded to accommodate the projected loads of the facilities. The existing switchgear will be replaced. A diesel powered generator will be installed to provide auxiliary electrical power for distributive pumps, transfer pumps, UV, and ancillary loads during power interruptions so that 12 MGD can be delivered to the system.

**Process Control**

A new instrumentation and control system will be installed at BWTP to monitor and control the raw water pumping facilities, treatment processes, and allow monitoring of the distribution system. Each of the facilities will include flow meters, pressure transmitters, level transmitters and other baseline type monitoring equipment to allow the operations staff to monitor and control facilities at BWTP and Shoal Creek facilities. Continuous water quality monitoring equipment will also be provided to track water quality trends.

**Treatment Residuals**

Basin blowdown, filter backwash, and other treatment residual streams will be transferred to the Shoal Creek lagoon(s) through the existing 16" raw water main. The 16 inch main will be converted from raw water service to permanent residuals handling service.

A second lagoon will be constructed at Shoal Creek to allow for filter wash water storage and clarification prior to recycling the decant back to the head of the treatment process.

**Treatment Capacity Improvements**

Treatment capacity improvements will be constructed on property adjacent to the new chemical building. The new flocculation/sedimentation basins and filtration facility (Water Treatment Plant 2) operates in parallel with the existing BWTP.

Flocculation and Clarification

This basin will consist of two stage treatment (mixing, flocculation, and sedimentation), stage one contains two stages of flocculation followed by plate settlers with automated sludge removal. Stage two is identical to the first stage. The effluent of the first stage will be returned to the second stage. The basin inlet can be directed to either stage and either can be by-passed to allow for maintenance.

Filtration

Two new 2.75 mgd filters will be installed.

Housing

Due to the relatively small size of the flocculation and sedimentation facilities and desire for improved security and prevention of basin ice cover, the basins and filters shall be enclosed within a building.

**Q. What is the expected cost and schedule for these projects?**

A. The above work is scheduled to be completed and in service by the end of September 2008, at a total cost of approximately $31.8 million.

**Q. Will this work complete the Joplin Production Improvement Project?**

A. No, there remains approximately $2.2 million of work that will likely not be completed by the end of September. This work includes high service pump and valve replacements, clearwell #1 tie-ins, Plant 1 filter aid feed and de-icing system, the distribution building to replace the space now used by production, and final site clean-up, landscaping, and paving. The current schedule is to have most of the work completed by November 2008, with the possible exception of landscaping and paving being completed in spring 2009.

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

A. Yes.