Exhibit No.:	
Issue:	*Rate Design* *Tariff Review*
Witness:	*Curtis B. Gateley*
Sponsoring Party:	*MoPSC Staff*
Type of Exhibit:	*Direct Testimony*
Case No.:	*SR-2016-0202*
Date Testimony Prepared:	*September 30, 2016*

Missouri Public Service Commission

Commission Staff Division
Water and Sewer Department

Direct Testimony
of
Curtis B. Gateley

Raccoon Creek Utility Operating Company, Inc.

Case No. SR-2016-0202

Jefferson City, Missouri
September 2016

TABLE OF CONTENTS

DIRECT TESTIMONY OF

CURTIS B. GATELEY

RACCOON CREEK UTILITY OPERATING COMPANY, INC.

CASE NO. ER-2016-0156

DIRECT TESTIMONY

OF

CURTIS B. GATELEY

RACCOON CREEK UTILITY OPERATING COMPANY, INC.

CASE NO. SR-2016-0202

Q. Please state your name and business address.

A. Curtis B. Gateley, P.O. Box 360, Jefferson City, Missouri 65102.

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

A. I am a Utility Policy Analyst II in the Water and Sewer Department of the Missouri Public Service Commission (PSC or Staff).

Q. What is the purpose of your direct testimony?

A. The purpose of my direct testimony is to provide rate design alternatives to the Commission for consideration in determining the ultimate rates for Raccoon Creek Utility Operating Company, Inc. (Raccoon Creek), and Staff's review of Raccoon Creek's proposed tariff.

BACKGROUND OF WITNESS

Q. What are your education and work experience backgrounds?

A. Please refer to Schedule CBG – 1 attached to this testimony for a summary of my education and work experience backgrounds.

Q. Have you previously filed testimony before this Commission?

A. Yes, please refer to Schedule CBG – d1 attached to this testimony for a summary of my previous testimony.

COMPANY OVERVIEW

Q. Please provide a brief history of the Company.

A. On July 14, 2014, a joint application was filed by the West 16th Street Sewer Company ("WSS"), W.P.C. Sewer Company ("WPC"), Village Water and Sewer Company, Inc. ("Village"), and Raccoon Creek, for transfer of assets from WSS, WPC and Village to Raccoon Creek (Case No. SM-2015-0014). The Commission approved the transfer and granted Raccoon Creek a Certificate of Convenience and Necessity on November 24, 2014. Raccoon Creek closed on the assets and assumed operation of Village on March 13, 2015, and WSS and WPC on March 16, 2015. Raccoon Creek adopted the three existing tariffs for the three sewer companies, with the accompanying three different rates. Raccoon Creek did not obtain any water utilities as part of these transactions.

At the time of acquisition, the Village wastewater and WPC wastewater treatment facilities were both subject to Schedules of Compliance from the Department of Natural Resources (DNR). The operating permit for the WSS wastewater treatment facility was set to expire in five months, at which time it would also receive a Schedule of Compliance. Schedules of Compliance in an operating permit are allotments of time for a facility to be brought into compliance with new requirements. When associated with new or revised effluent limitations they provide time for treatment facilities to be upgraded, or, in the absence of existing performance data, demonstrate they can attain compliance with the new limits without upgrades. If a facility fails to achieve compliance with the new requirements within the given time frame they will have violated their permit conditions and are subject to enforcement action. In this case, all three facilities would be required to meet effluent limitations for ammonia, which was the primary driver of necessary upgrades at the treatment facilities. Ammonia is a toxic pollutant present in typical domestic wastewater, and is generally removed through biological treatment

processes. In order to achieve biological treatment for ammonia, in which is converted to nitrate, a treatment facility must be constructed to create the appropriate physical and chemical conditions.

Q. Did Raccoon Creek complete these upgrades?

A. Yes, Raccoon Creek successfully completed upgrades to the three facilities. Staff's investigation is summarized in Schedule CBG-d2 attached to this testimony. Raccoon Creek has provided Discharge Monitoring Report data submitted to DNR that shows the facilities have attained compliance with permit effluent limitations. Requests for information under the Sunshine Law revealed no recent Notices of Violation issued to Raccoon Creek.

RATE DESIGN

Q. What is the current rate design of Raccoon Creek?

A. Currently, each district in Raccoon Creek's service territory has its own separate rates. All three have the same rate structure.

Q. What is the current rate structure for Raccoon Creek?

A. The rate structure for all service areas consist of a flat monthly fee for wastewater service.

Q. What are the currently effective rates for each of Raccoon Creek's service areas?

A. For WSS, each customer is charged $26.42 per month. For WPC, each customer is charged $38.12 per month. For Village, the monthly charge is $23.48.

Q. Did the company propose changes to its rate design?

A. Yes, Raccoon Creek proposed a single combined rate for all three facilities owned by Raccoon Creek in the rate increase request letter filed on February 3, 2016.

Q. Did the Company propose to change the rate structure?

A. No. The Company did not propose any changes to the structure of a flat, monthly fee.

Q. Does Staff support a single combined rate?

A. Yes, Staff supports the rate design proposed by Raccoon Creek.

Q. Is there a different type of pricing strategy that can be used to develop rates?

A. Yes, there are several ways to design utility rates that are just and reasonable, with varying levels of complexity. Generally, the two most common types of rate structures are flat monthly charges or a monthly customer charge with a usage charge. For Raccoon Creek, there are no water meters with which to determine usage data. All customers are residential with similar use characteristics; therefore a single rate class with a flat customer charge is the most logical.

Q. What methods exist for this grouping of customers?

A. Raccoon Creek has proposed Single Tariff Pricing (STP) where all customers of the three different treatment facilities are charged a single rate, thereby spreading the cost of service among the largest possible number of customers. The opposite of STP is District Specific Pricing (DSP), where customers being served by different treatment facilities are charged different rates based on the cost of service associated with that treatment facility. Between the STP and DSP methods lies a continuum of hybrid rates where some costs can be allocated among districts in a variety of ways. For the purposes of this rate case, WPC, WSS and Village can be considered ‘districts’. But as discussed below, not all costs can be directly attributed to each facility.

Q. Please explain the similarities/differences in costs among the three districts.

A. All three treatment facilities underwent significant upgrades in order to comply with new operating permit requirements from DNR. The three-cell lagoon serving the Village was converted to a moving bed bioreactor, with the former lagoon cells serving as aerated primary treatment and storage for high flows caused by inflow and infiltration. At WPC and WSS, the existing obsolete mechanical plants were each replaced with new mechanical treatment plants. Due to site-specific conditions, the cost to upgrade each facility is different, but all of the costs were high relative to the number of customers served. This will result in a significant rate increase for each 'district' no matter what pricing model is adopted. The calculation of cost of service can be found in the Direct Testimony of Paul Harrison.

In addition to these capital costs, operating costs for the systems are similar. Raccoon Creek has hired one contract operator as the certified operator of all three facilities. Overhead expenses are devoted to the operations of all three districts. Since all three facilities are of similar size and location, one rate for all three service areas is the most just and reasonable outcome.

Q. How are rates calculated from the total cost of service?

A. Because of the relatively simple nature of the rate design in this case, rates are calculated by dividing the cost to recover in rates by the annualized number of customers, and then dividing by the 12 monthly bills per year.

Q. Please provide a quick example of how rates would be calculated.

A. Assume the cost to be recovered in rates was $100,000, and you had 100 customers, the rate would be 100,000/100/12=$83.33.

Q. What is Staff's proposed rate for Raccoon Creek customers?

A. Staff proposes a STP rate of $88.50 for all Raccoon Creek customers. As shown in the table below, if rates were calculated for each district separately a significant cost disparity would exist between WPC and WSS. Less than a mile separates these two districts, and they have nearly identical treatment facilities. The same service is provided to the single customer class each of these systems services. Yet, because of a difference in the number of customers connected to each of the relative treatment facilities, separating the districts would create rates for WPC that are 47% higher than WSS and 55% higher than Village.

District	Cost to Recover in Rates	Annualized Number of Customers	Resulting Rate
Village	$250,693	262	$79.74
WPC	$127,987	86	$124.02
WSS	$174,631	173	$84.12
Total	**$553,311**	**521**	**$88.50**

Combining the WPC and WSS into a district (leaving Village as a separate district with a rate of $79.74) would create a rate of $97.37 for WPC/WSS. While the Village is farther away at approximately 15 miles, the same service is again being rendered to a single customer class. Keeping the Village as a separate district from WPC and WSS would again discriminate against customers supported by the same company, living nearby and receiving the same service, by creating an 18% higher rate for WPC/WSS simply because their houses are connected to a different Raccoon Creek treatment facility.

An additional consideration is that not all costs associated with providing service are directly associated with the sewers and treatment facilities. As shown in Paul Harrison's Direct Testimony, thousands of dollars in corporate administrative and general expenses are attributable to Raccoon Creek, but cannot be directly charged to a particular district. Therefore if the DSP

method were employed, some allocation method would have to be used to approximately distribute these costs among the districts. Raccoon Creek's actual costs to serve a particular district remain unclear.

Q. So Staff proposes STP for rate design?

A. Yes. The STP rate structure proposed by Staff ensures that no preference or discrimination is placed on an individual rate payer. The company's cost to serve the customers is one factor, but it is not the only cost factor to be considered. The needs of the customers must be met no matter where that customer lives, and combining all of the customers under one rate provides the most equitable and affordable solution. Staff has calculated a cost of service that is significantly lower than the amount calculated by the company. This results in a rate that is lower than that proposed by Raccoon Creek at $88.50.

Q. Are there any other benefits to STP?

A. Yes. It should be noted that STP has the rather obvious potential to reduce a small amount of administrative costs associated with tracking and billing of multiple rates, although the amount of potential reduction was not investigated in this rate case. STP also simplifies tariffs, making rates easier for customers to understand. STP reduces the potential for confusion of Raccoon Creek staff when dealing with new customers, complains, etc.

Q. Has the Commission recently considered the consolidation of rate districts?

A. Yes. In the recent general rate case for Missouri-American Water Company (WR-2015-0301), the Commission found that consolidated rates created by grouping customers together to form districts is just and reasonable, and that rates should not be based exclusively on individual costs for particular districts. The Commission also stated its preference for

consolidation of rates among facilities owned by the same company, particularly for small water or sewer utilities.

TARIFF REVIEW

Q. Has Raccoon Creek proposed changes to its tariffs?

A. Yes. Raccoon Creek has filed a proposed consolidated sewer tariff that would replace the three existing tariffs. For Staff's direct filing, Staff is not proposing any changes to Raccoon Creek's tariff with the exception of the sewer rate. However, Staff reserves the right to make further recommendations in its rebuttal testimony and will review the compliance tariffs ultimately filed by Raccoon Creek to ensure they comply with the Commission's final decision.

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of the Application of a Rate Increase for Raccoon Creek Utility Operating Company Inc.	))))	Case No. SR-2016-0202

AFFIDAVIT OF CURTIS B. GATELEY

STATE OF MISSOURI	)	
	)	ss.
COUNTY OF COLE	)	

COMES NOW Curtis B. Gateley and on his oath declares that he is of sound mind and lawful age; that he contributed to the foregoing Direct Testimony and that the same is true and correct according to his best knowledge and belief.

Further the Affiant sayeth not.

C B Gateley

CURTIS B. GATELEY

JURAT

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 29th day of August, 2016.

DIANNA L. VAUGHT
Notary Public - Notary Seal
State of Missouri
Commissioned for Cole County
My Commission Expires: June 28, 2019
Commission Number: 15207377

Dianna L. Vaught

Notary Public

Curtis B. Gateley

I am a Utility Policy Analyst II in both the Energy Resource Analysis Section and the Water & Sewer Department, in the Commission Staff Division of the Missouri Public Service Commission. I have been employed by the Missouri Public Service Commission since July of 2014. In the Water & Sewer Department my primary duties are Case Coordinator for rate cases and transfer of assets cases, Rate Design, and Tariff Review.

Educational Background and Work Experience

I have a Bachelor of Science degree in Fisheries and Wildlife from the University of Missouri-Columbia. Prior to joining the Public Service Commission I was employed by the Missouri Department of Natural Resources from 2000-2014, as an Environmental Specialist and a Unit Chief. During my time with the agency I worked in compliance and enforcement, industrial and domestic wastewater permits, industrial stormwater permits, and eventually oversaw a staff of eight Permit Writers. I have served as expert witness before the Administrative Hearing Commission in permit appeal cases, as well as expert witness in State and Federal enforcement cases.

Previous Testimony Before the Public Service Commission

Case No.	Company	Type of Filing	Issue
SR-2014-0153	Peaceful Valley	Live Testimony in Evidentiary Hearing	Compliance with Dept. of Natural Resources regulations
WR-2015-0301	Missouri American Water Company	Direct and Rebuttal Testimony	Class Cost of Service Report

Disposition Agreement Attachment F

Water and Sewer Department Report

REPORT OF WATER AND SEWER UNIT
FIELD OPERATIONS AND TARIFF REVIEW
Raccoon Creek Utility Operating Company, Inc.
Case No. SR-2016-0202
Jon Dallas / David Spratt / Curt Gateley

Background

Raccoon Creek Utility Operating Company, Inc. (Company) received its certificate of convenience and necessity from the Missouri Public Service Commission (Commission) November 24, 2014 in case number SM-2015-0014. This Company was formed by purchasing Village Water and Sewer Company, Inc. (near Whiteman Air Force Base in Knob Noster in Johnson County); W.P.C. Sewer Company; and West 16th Street Sewer Company, Inc. (in Sedalia in Pettis County). These three systems collectively provide service to approximately 500 sewer customers. The Commission's Water and Sewer Staff (Staff) performed an inspection on the sewer systems. Staff's findings and recommendations for the Company are listed below.

The Villages at Whiteman

Treatment Facility

The sewer system at the Villages near Whiteman Air Force Base in Knob Noster in Johnson County is a three-cell lagoon. The Missouri Department of Natural (DNR) issued a notice of violation (NOV) in September of 2012 for a variety of issues which required the lagoon to be upgraded. The Company has addressed the following issues included in the NOV:

- 10 CSR 20-8.180 (4) (C) 3 – Failed to furnish at least two operational blowers which provide adequate/uniform mixing.
- Sections 644.051.1(3) and 644.076.1, RSMo, and 10 CSR 6.010 (8) (A) 4 – Failed to operate and maintain facilities (remove sludge, reseed disturbed areas, maintain equipment) to comply with the Missouri Clean Water Law and Special Conditions #6, Water Quality Standards, of MSOP MO-0109142.
- Sections 644.051.1 (1) and 644.076.1, RSMo, 10 CSR 20-7.015(8), and 10 CSR 20-7.031(3) – Caused pollution of a tributary to Long Branch Creek, waters of the state, by reducing the dissolved oxygen below levels that can support aquatic life.
- Sections 644.051.1 (2) and 644.076.1, RSMo, 10 CSR 20-7.031 (3) – Discharged water contaminants into waters of the state, which reduced the quality of such waters below the Water Quality Drinking Standards established by the Missouri Clean Water Commission by making the downstream portion of the tributary to Long Branch Creek uninhabitable to aquatic life and preventing full maintenance of beneficial uses.
- 10 CSR 8.020(11) (C) 7 – Failed to protect the outfall sewer from structural instability, stoppage, and the effects of floodwater, ice, and other hazards (the outfall pipe was partially buried).

After acquisition, the Company installed a moving bed biofilm reactor (MBBR) between the second and third cells of the lagoon for the treatment and removal of nutrients like ammonia and nitrogen that could not be removed by the lagoon treatment process. A lift station was also installed to pump the

partially treated effluent from the second cell to the MBBR. After the waste water is treated in the MBBR it flows into the third cell of the lagoon to receive additional biological treatment. The effluent is chlorinated and dechlorinated before it is discharged into the receiving stream. The Company is keeping the three-cell lagoon in place to allow for primary treatment of waste water and overflow storage in the event of a large storm or power outage.

At the time of the inspection, the sludge was being pumped out of the lagoon to lower the level of the lagoon's cells to allow for more detention time and better treatment of the waste water.

The treatment facility is fenced for security. At the time of Staff's inspection some new sections of fence were being replaced that had been damaged by storms

Collection System

The collection system is composed of PVC pipe of varying sizes. The homes to the North and to the West of the lagoon are at a higher elevation than the treatment plant so all sewage flows through the collecting sewer to the treatment plant by gravity. The homes on the South side are at a lower elevation than the treatment plant. Each of these homes has customer owned septic tanks and effluent pumps. The customer's service sewer is connected to a pressure sewer system and the effluent is pumped uphill to the treatment plant. (Spratt/Dallas)

Hunter's Ridge

Treatment Facility

The Company has replaced the old extended aeration waste water treatment plant with a new one near the location of the old plant in the Hunter's Ridge service area, formerly owned by West 16th Street Sewer Company, Inc.

As part of its inspection Staff sent data requests (DRs) to the Company requesting copies of the engineering report and feasibility studies to see what alternatives the Company and engineering firm considered prior to installing the new plant to determine if there were other more cost effective methods for treatment or to update the existing facility to perform satisfactorily. Staff did not receive engineering studies or cost analysis studies from the Company but did receive a letter from the engineering firm, 21 Design Group, explaining why it believed that a prudent decision had been made in replacing the facilities. The letter states: "[T]he wastewater facility was exhibiting multiple signs of failure and had currently surpassed its useful life." Issues cited were the need for flow equalization due to large amounts of inflow and infiltration (I & I), poor condition of the steel frame of the structure, age and poor condition of piping and mechanical blowers due to poor maintenance, current design was not properly configured for nutrient removal, lack of sludge holding, and safety concerns. [C]onsideration was given to repairing the facility, but due to structural failures precluding adding new equipment, the history of floating due to hydrostatic pressure which could not be anchored due to structural failure risk or internal weighting which would reduce required tankage contact surface area for watse water treatment, the need for a new plant configuration to meet MDNR nutrient removal criteria, the need for flow equalization tank to accommodate the high flows experienced during rain event SSO's, and the need for aerated sludge storage refurbishment was determined to be unfeasible. Therefore, and in order to avoid the costs of phasing of the existing facility, the most cost effective route was to construct a new facility and utilize the old treatment plant for flow equalization and sludge holding."

The Company states in its construction permit submitted to DNR that the new plant was installed "to replace aging infrastructure" and to "allow the facility to meet ammonia effluent limits." The Company further states "[W]ith the construction of the new extended aeration plant, better control and operation of the aeration zone is expected." The new plant has been placed at a higher elevation than the former plant to reduce the likelihood of being inundated by the receiving stream during flood conditions. This placement above the water table will also prevent the treatment plant from "floating", being hydrostatically lifted by pressure from ground water, out of the ground as the old plant had done.

The shell of the former plant has been retained as a flow equalization basin. The bottom has been filled with gravel and capped with concrete, leaving a basin with a concrete floor and metal sides. The flow equalization basin is intended as overflow storage due to reported inflow and infiltration (I&I) problems with the system prior to acquisition or in the event of a large storm or power outage. The Company states in its construction permit that "[F]low equalization will assist the plant to maintain a better effluent and also allow less clarification to meet the proposed limits" for ammonia and E. coli. Because of the room for storage, this system will not require a backup electric source.

Collection System

The Company's sewer collection system consists of mostly eight-inch gravity sewer. There is a lift station at the end of a cul-de-sac which pumps waste water a short distance through a pressure collecting sewer until it reaches the treatment plant. At the time of Staff's visit, the lift station lock had been cut by a service person and had not been replaced. The Company told Staff that a new lock would be installed on the lift station.

The Company has smoke tested the collecting sewers looking for water infiltration points in the collection system, and has reportedly made a significant number of repairs, but still has a large amount of I&I entering the treatment plant. Excessive 'clean' stormwater entering the system reduces plant capacity, can interfere with proper treatment, and in extreme cases can wash sludge from the treatment plant into the receiving stream.

(Spratt/Dallas)

South Walnut Hills

Treatment Facility

The Company has installed a new extended aeration waste water treatment plant near the location of the old plant in the South Walnut Hills service area, formerly owned by W.P.C. Sewer Company. The new plant has been placed next to the former plant and the fencing around the facility has been replaced.

Staff sent data requests (DRs) to the Company requesting the engineering report and feasibility studies to see what alternatives the Company and engineering firm considered prior to installing the new plant to determine if there were other more cost effective methods for treatment or updating the existing facility to perform satisfactorily.

In a report from 21 Design Group Engineering and Surveying, "[T]he wastewater facility was exhibiting multiple signs of failure and had currently surpassed its useful life." Issues cited were the

need for flow equalization due to large amounts of inflow and infiltration (I & I), poor condition of the steel frame of the structure, age and poor condition of piping and mechanical blowers due to poor maintenance, current design was not properly configured for nutrient removal, lack of sludge holding, and safety concerns. [C]onsideration was given to repairing the facility, but due to structural failures precluding adding new equipment, the history of floating due to hydrostatic pressure which could not be anchored due to structural failure risk or internal weighting which would reduce required tankage contact surface area for waste water treatment, the need for a new plant configuration to meet MDNR nutrient removal criteria, the need for flow equalization tank to accommodate the high flows experienced during rain event SSO's, and the need for aerated sludge storage refurbishment was determined to be unfeasible. Therefore, and in order to avoid the costs of phasing of the existing facility, the most cost effective route was to construct a new facility and utilize the old treatment plant for flow equalization and sludge holding."

The Company states in its construction permit submitted to DNR that "construction of the new treatment plant is to meet final ammonia limits. With the construction of the new extended aeration plant, better control and operation of the aeration zone is expected."

The shell of the former plant has been kept in place to be used as flow equalization as well as overflow storage due to reported I&I problems prior to acquisition or in the event of a large storm or power outage. The Company states in its construction permit that "[F]low equalization will assist the plant to maintain a better effluent and also allow less clarification to meet the proposed limits" for ammonia and E. coli. Because of the amount of storage, this system will not require a backup electric source.

Collection System

The Company's sewer collection system consists of mostly eight-inch gravity sewer. A separate sewer system that was owned by a small home owner's association that was inside of the Company's certificated area has been acquired by the Company and connected to its South Walnut Hills sewer system. These 30 customers were connected due to the association's previous sewer treatment facility, a recirculating sand filter, being in dire need of maintenance and not being equipped to meet future effluent limits. Therefore the old sand filter was removed from service after the new connection was made. A short extension of the pressure collecting sewer was installed to connect to the existing system for South Walnut Hills. In the area where the 30 customers were added, each home has its own grinder pump and the effluent is sent through a pressure collecting sewer.

The Company has smoke tested the collecting sewer looking for infiltration points for storm water and has reportedly made a number of repairs but still has a significant amount of I&I entering the treatment plant.

The outfall from the treatment plant travels under the nearby golf course and flows out into the receiving stream some distance from the treatment plant. We recommend the Company check with the Department of Natural Resources to ensure the location would be adequate for the outfall.

(Spratt/Dallas)

Tariff Review

Staff routinely works with utilities to update water and/or sewer tariffs of the individual companies using a generic tariff that is modified for specific operations of the individual companies as they file rate cases with the Commission. Because there are currently three separate tariffs for the three former companies, which are inconsistent and not up to date with current statutes and regulations, Staff will be working with the Company to create a new consolidated tariff and to determine appropriate miscellaneous fees.

(Gateley)

Rate Design

Staff also reviewed the Company's current rate design in its investigation. The current rate structure for all three service areas consists of a flat monthly service charge for sewer service, with different charges for the different service areas. The Company has proposed a single monthly service charge among the three service areas. Staff will review the Company's proposal when the Auditing Unit has completed its report.

(Gateley)

Conclusion and Recommendation

Based on the information from DNR, it seems that modifications needed to be made to the facility at Knob Noster. Staff submitted DRs to the Company asking for engineering studies and information to indicate why the new facilities were a prudent expense but the information received did not adequately satisfy Staff's inquiry. The DR response from 21 Design Group presents evidence that the facilities in Sedalia were failing and the Company made an executive decision to replace the aging facilities all at once rather than phasing it in over time. Staff did not receive any physical numbers or engineering studies that showed what other options were reviewed or what costs were associated with using the existing plant and making some modifications.

Staff recommends:

1) Replace the three existing tariffs with a single consolidated tariff that is updated to comply with current statutes and regulations.