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Company, Inc.  
File Nos.: WA-2019-0185 and SA-2019-0186  
Date: July 11, 2019

**Missouri Public Service Commission**

**Direct Testimony**

**of**

**Todd Thomas**

**On Behalf of**

**Osage Utility Operating Company, Inc.**

**July 11, 2019**

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**DIRECT TESTIMONY OF  
TODD THOMAS  
OSAGE UTILITY OPERATING COMPANY, INC.**

**WITNESS INTRODUCTION**

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**Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

A. My name is Todd Thomas. My business address is 500 Northwest Plaza Drive, Suite 500, St. Ann, Missouri, 63074.

**Q. WHAT IS YOUR POSITION WITHIN THE CENTRAL STATES WATER RESOURCES FAMILY OF COMPANIES?**

A. I hold the office of Senior Vice President of Central States Water Resources, Inc., (“Central States”) the affiliated company that will have operational oversight of Osage Utility Operating Company, Inc. (“OUOC”). Central States is part of an affiliated group of companies, we internally refer to all corporate operations as “CSWR.”

**Q. PLEASE DESCRIBE YOUR EDUCATIONAL AND PROFESSIONAL EXPERIENCE.**

A. My education includes a Bachelor of Science in Civil Engineering from the Missouri University of Science and Technology, and a Master of Business Administration from Washington University in St. Louis.

Before joining CSWR, I was President of Brotcke Well and Pump (the 2<sup>nd</sup> largest well driller and service provider in the Midwest), Vice President of Operations and Business Development of the Midwest for American Water Contract Operations, and General Manager of Midwest Operations for

1 Environmental Management Corporation. I currently serve on the Technical  
2 Advisory Team for the Public Water Supply District 2 of St. Charles County,  
3 Missouri.

4 Brotcke Well and Pump serves municipal potable, regulated potable, and  
5 industrial ground water suppliers in the states of Missouri, Illinois, Kansas,  
6 Tennessee, Kentucky, and Arkansas. Its total number of clients exceeds 200  
7 and they range in size from the City of Bloomington, Illinois, with 31,000 water  
8 customers, to 230 customers in the City of Eminence, Missouri. Brotcke Well  
9 and Pump drills wells, cleans and treats wells, installs pumps, services pumps,  
10 rebuilds pumps, tests wells for regulatory compliance, and installs and services  
11 well controls. As President of Brotcke Well and Pump, I was involved in the  
12 design, maintenance, and repair of all client well systems. I have firsthand  
13 experience with how much damage can be done by lack of maintenance on a  
14 well system and how much money and effort is required to restore a well system  
15 after neglect.

16 As Vice President of Operations and Business Development of the  
17 Midwest for American Water Contract Operations, I was responsible for the water  
18 and wastewater operations and maintenance contracts for municipal and  
19 industrial clients. These clients included wastewater systems owned and  
20 operated by the City of St. Charles, in Missouri, and the cities of Godfrey, Mount  
21 Vernon, Quincy, Litchfield, Lincoln, Pittsfield, and Elwood in Illinois. These  
22 clients also included water and wastewater systems owned and operated by the  
23 City of Foristell, Missouri, and the Illinois cities of Brighton, and Monmouth. At

1 one time I had responsibility for operating water and wastewater systems serving  
2 approximately 64,000 residential connections. My responsibilities included the  
3 direction and management of annual budgeting for each plant's operations and  
4 maintenance, design and planning of plant upgrades and maintenance projects,  
5 regulatory reporting, plant operations, and regulatory compliance of these  
6 systems.

7 My position as General Manager of Midwest Operations for Environmental  
8 Management Corporation (EMC) was similar to that of my position with American  
9 Water Contract Operations with regard to the size and scope of the systems the  
10 company managed.

11 **Q. PLEASE DESCRIBE YOUR CURRENT POSITION.**

12 A. As Senior Vice President of Central States, my main responsibilities include the  
13 acquisition, development, and rate stabilization of CSWR-affiliated utilities.  
14 These duties include maintenance, capital planning, and regulatory compliance  
15 for all CSWR-affiliated facilities. I am responsible for the management and  
16 maintenance service providers, customer service and billing service providers,  
17 and engineering firms.

18 **PURPOSE**

19 **Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?**

20 A. I will provide the Missouri Public Service Commission ("Commission") with a  
21 description of the water and sewer systems that OUOC seeks to acquire,  
22 improve, and operate on an ongoing basis.

1           **SYSTEMS TO BE ACQUIRED**

2   **Q.   WHAT WATER AND WASTEWATER SYSTEMS DOES OUOC SEEK TO**  
3   **ACQUIRE IN THIS CASE?**

4   A.   OUOC proposes to acquire substantially all the water and wastewater system  
5   assets of Osage Water Company, including its Certificates of Convenience and  
6   Necessity (“CCN”).   OUOC also proposes to acquire all the water and  
7   wastewater system assets that serve Reflections Subdivision Master Association,  
8   Inc., and Reflections Condominium Owners Association, Inc. (jointly referred to  
9   as “Reflections”). OUOC also requests the Commission grant it CCNs to operate  
10   the acquired systems and provide service to the public.

11           **Osage Water Company**

12   **Q.   IS OSAGE WATER COMPANY AN INDEPENDENTLY OPERATED UTILITY?**

13   A.   No. As explained in Mr. Cox’s direct testimony, on October 27, 2017, the United  
14   States Bankruptcy Court approved the appointment of Jill D. Olsen as Trustee to  
15   manage the business affairs of Osage Water Company during the pendency of  
16   the company’s bankruptcy case. Before that, the system was in interim  
17   receivership from December 10, 2002, until a permanent receivership was  
18   ordered by the Camden County Circuit Court on October 21, 2005. From 2005  
19   until the filing of the bankruptcy, the system was operated under the permanent  
20   receivership.

21   **Q.   IS THERE AN AGREEMENT CONCERNING THE SALE AND PURCHASE OF**  
22   **OSAGE WATER COMPANY’S WATER AND SEWER SYSTEMS?**

1 A. Yes. The *Agreement For Sale of Utility System between OUOC and the Trustee*  
2 *of Osage Water Company* (“Asset Purchase Agreement”) is attached to the  
3 Direct Testimony of Mr. Cox. Pursuant to the Asset Purchase Agreement,  
4 OUOC proposes to acquire substantially all the water and wastewater assets of  
5 Osage Water Company from the bankruptcy estate. Those assets include Osage  
6 Water Company’s CCN.

7 **Q. PLEASE DESCRIBE THE WATER AND WASTEWATER SYSTEMS OUOC**  
8 **PROPOSES TO ACQUIRE FROM OSAGE WATER COMPANY?**

9 A. Osage’s Water Company’s assets consist of four water and wastewater service  
10 areas: Chelsea Rose Water and Sewer Service Area, Cimarron Bay Water and  
11 Sewer Service Area, Cedar Glen Water and Sewer Service Area, and Eagle  
12 Woods Water and Sewer Service Area.

13 **Osage Water Company—Chelsea Rose Water Service Area:**

14 **Q. PLEASE DESCRIBE CHELSEA ROSE WATER SYSTEM.**

15 A. Chelsea Rose is a residential community with approximately 42 water  
16 connections, with townhomes developed in the greater Lake of the Ozarks area  
17 in and around Camden County, Missouri.

18 **Q. WERE THERE ANY ISSUES WITH THE CHELSEA ROSE WATER SYSTEM**  
19 **WHILE IT WAS OPERATED BY OSAGE WATER COMPANY OR THE**  
20 **RECEIVERS?**

21 A. There are leaks in the system putting unneeded demand on the well. Typically,  
22 this would not be a major concern, but the system’s hydropneumatic storage tank  
23

1 is drastically undersized. The hydropneumatic tank's lack of size has the  
2 imminent potential to fail providing pressure during peak water usage, leaving the  
3 system without sufficient pressure to: (1) provide any water service; or (2)  
4 provide water service with the MDNR minimum of 21 psi of energized water line  
5 pressure required to protect customers from pathogen infiltration. In addition, the  
6 lack of hydropneumatic storage causes the well pump to engage much more  
7 than typical design standards, which will cause the well pump and motor to fail  
8 prematurely. Because the system has only one well in operation, and almost no  
9 backup storage, the entire system is at risk of being out of water for an extended  
10 period.

11 **Q. WHAT IS THE CURRENT CONDITION OF THE CHELSEA ROSE WATER**  
12 **ASSETS?**

13 A. The system has two well house structures. One well house is completely  
14 inoperable. The active well house has deteriorated structurally and has unsafe  
15 wiring posing a significant danger to operations personnel and has the potential  
16 to prevent the system from being able to provide water service to customers at  
17 all. In addition, the active well house is extremely unsanitary with mold, rotting  
18 walls, and a visibly corroded well head casing. A well head casing serves to  
19 protect a drinking water source. This toxic combination of failing structure,  
20 unsanitary conditions, and corroding well head can lead to pathogen  
21 contamination putting customers at a potential health risk.

22 The tank in the active well house is a hydropneumatic tank, approximately  
23 250 gallons in capacity, that does not meet the MDNR standard that requires



1 such tanks to provide 2,730 gallons of hydropneumatic storage. Having only  
2 one-tenth the minimum hydropneumatic storage means the system is at risk of  
3 not being able to provide water service at all to customers. The system also  
4 lacks any remote water supply monitoring and there are minimal flushing  
5 hydrants and isolation valves in the distribution system. The lack of monitoring,  
6 adequate flushing hydrants, and isolation valves creates a situation in the water  
7 distribution system where sediments can collect, potentially stopping water  
8 service for customers.

9 **Q. DOES OUOC HAVE A PLAN TO REMEDY THESE RELIABILITY AND**  
10 **SAFETY ISSUES?**

11 A. Yes. OUOC proposes to install a Mission remote monitoring system and  
12 magnetic flow meter, repair the failing building, clean and properly maintain the  
13 well house, fix the electrical problems to mitigate hazards, install a much larger  
14 hydropneumatic tank to meet DNR requirements, demolish the old inoperable  
15 well house, and install three flushing hydrants in the distribution system as well  
16 as additional system valving.

17 **Q. WHAT IS THE PROJECTED COST OF THOSE IMPROVEMENTS?**

18 A. The estimated cost of such additional improvements is approximately \$143,100.

19 **Osage Water Company—Chelsea Rose Sewer Service Area:**

20  
21 **Q. PLEASE DESCRIBE THE CHELSEA ROSE SEWER SYSTEM.**

22 A. Chelsea Rose is a residential community with approximately 38 wastewater  
23 residential connections serving townhomes developed in the greater Lake of the

1 Ozarks area in and around Camden County, Missouri. The community is  
2 serviced by an extended aeration mechanical plant.

3 **Q. WERE THERE ANY ISSUES WITH THE SYSTEM WHILE IT WAS OPERATED**  
4 **BY OSAGE WATER COMPANY OR THE RECEIVERS?**

5 A. During a recent CSWR site visit and inspection, there was sludge that had  
6 overflowed the treatment plant's tankage and discharged on the ground beside  
7 the plant. Sludge overflow poses multiple potential human health risks such as  
8 direct contact with pathogens, and/or surface water contamination as untreated  
9 waste migrates to receiving waters. Additionally, the Environmental Protection  
10 Agency's ("EPA") Echo website lists violations of effluent limits at the facility for 6  
11 of the last 7 quarters. This indicates the treatment plant has consistently  
12 discharged effluent, i.e. wastewater, back into the receiving waterbody that  
13 exceeded pollutant limits designed to protect public health and welfare and water  
14 quality. The last quarter was listed as "Undetermined," often used by EPA when  
15 a facility fails to submit Discharge Monitoring Reports (DMRs), a violation of  
16 MDNR and EPA requirements in and of itself.

17 Also, at the time visit, the facility had large amounts of sludge on the  
18 surface of the clarifier. The clarifier is the primary settlement tank of an extended  
19 aeration plant. Sludge floating in the clarifier in this type of plant is indicative of  
20 major plant failures. A sample of the effluent was tested by a third-party  
21 contractor around May 1, 2019. The result for *E. coli* indicated a level higher  
22 than 2419.6 colony forming units (cfu) per 100 mL of water. MDNR's regulations  
23 contain a range of limitations for *E. coli* depending on the designated uses of the

1 receiving stream, ranging from 126 cfu/100 mL for whole body contact recreation,  
2 to 1,134 cfu/100 mL for secondary contact recreation. The level of *E. coli*  
3 detected at Chelsea Rose suggests the plant was not disinfecting the wastewater  
4 at all before the final effluent was discharged from the plant into the receiving  
5 stream.

6 **Q. WHAT IS THE CURRENT CONDITION OF THE CHELSEA ROSE**  
7 **WASTEWATER ASSETS OUOC PROPOSES TO ACQUIRE?**

8 A. The wastewater treatment facility is a standard extended aeration activated  
9 sludge facility. In general, the plant had a large amount of visible electrical  
10 deterioration, mechanical degradation, and structural weathering with a  
11 seemingly correspondent lack of basic maintenance. The clarifier and contact  
12 chamber have excessive floating sludge and leaves present. The clarifier airlifts  
13 and aeration diffusers require replacement as they appeared inoperable. Lack of  
14 aeration and airlifts prevents an extended aeration plant from providing basic  
15 treatment to waste, which poses a significant environmental risk to receiving  
16 water ways.

17 Overgrown vegetation is hampering plant operations. Leaves and other  
18 vegetative debris were visible in the plant's tanks. This can prevent an extended  
19 aeration plant from meeting permit limits by adding biological material and/or  
20 clogging internal transfer processes. The road to the plant has washed out  
21 making access for basic routine operations and maintenance difficult to  
22 impossible during inclement weather. The plant's current design and operation  
23 cannot consistently meet permit limits in the winter due to a reduction of loading--

1 high summer flow rates of over 10,000 gpd fall to 1,000 gpd or lower. A new  
2 aeration and tankage configuration is needed to allow the plant to deal with  
3 significant variations in seasonal flow volume. Finally, replacement of the effluent  
4 pipe is necessary because the pipe is discharging into a small ditch instead of  
5 transferring the effluent to the permitted discharge site.

6 **Q. DOES OUOC HAVE A PLAN TO REMEDY THESE SAFETY ISSUES?**

7 A. Yes. OUOC proposes to install an overhead removable canopy roof over the  
8 treatment plant to keep leaves and debris from falling into the plant, replace  
9 aeration piping and diffusers, replace the clarifier returns, regrade and repair the  
10 roadway into treatment facility site, replace the existing controls with an electrical  
11 panel that meets code/safety requirements, and install a sludge pumping/waste  
12 line along the road to allow for sludge to be hauled.

13 **Q. WHAT IS THE PROJECTED COST OF THOSE IMPROVEMENTS?**

14 A. The estimated cost of such additional improvements is approximately \$336,175.

15 **Osage Water Company—Cimarron Bay Water Service Area:**

16  
17 **Q. PLEASE DESCRIBE THE CIMARRON BAY WATER SYSTEM.**

18 A. Cimarron Bay is a residential community with approximately 110 residential water  
19 connections developed in the greater Lake of the Ozarks area in and around  
20 Camden County, Missouri. Cimarron Bay, a residential town home subdivision,  
21 and Harbour Bay, a condominium community, collectively known as the Cimarron  
22 Bay service area, are all served by one water system.

1 **Q. WERE THERE ANY ISSUES WITH THE SYSTEM WHILE IT WAS OPERATED**  
2 **BY OSAGE WATER COMPANY OR THE RECEIVERS?**

3 A. In October 2017, the system had two consecutive sets of samples that had at  
4 least one test come back present for Total Coliform, indicating a sanitary defect  
5 that could allow fecal contamination to enter the drinking water distribution  
6 system.

7 **Q. WHAT IS THE CURRENT CONDITION OF THE ASSETS?**

8 A. The well house is dilapidated and requires significant rehabilitation inside and  
9 out. Structural failure could lead to the system being unable to provide even  
10 basic water service. The electrical system is substandard and poses a safety  
11 hazard in its current state. An electrical failure would prevent the system from  
12 being able to provide water service. The 35,000-gallon hydropneumatic tank is  
13 sufficient on capacity if it remains in use as a pressure tank, but requires cleaning  
14 and inspection. There are no flushing hydrants in place in the distribution  
15 system. The system also lacks any remote water supply monitoring. The lack of  
16 monitoring, flushing hydrants, and isolation valves creates a situation in the water  
17 distribution system where sediments can collect potentially stopping water  
18 service for customers.

19 **Q. DOES OUOC HAVE A PLAN TO REMEDY THESE SAFETY ISSUES?**

20 A. Yes. OUOC proposes to install a Mission remote monitoring system that will  
21 allow OUOC to have real time information to ensure the water system is  
22 providing service, install a magnetic flow meter, rehab the well house building,  
23 and install a new electrical system to eliminate any electrical hazards. OUOC

1 also proposes to install two new booster pumps and building expansion for  
2 additional equipment, install three flushing hydrants, some system valving, and  
3 remote shutoff meters.

4 **Q. WHAT IS THE PROJECTED COST OF THOSE IMPROVEMENTS?**

5 A. The estimated cost of such additional improvements is approximately \$336,175.

6 **Osage Water Company—Cimarron Bay Sewer Service Area:**

7

8 **Q. PLEASE DESCRIBE THE CIMARRON BAY SEWER SYSTEM.**

9 A. Cimarron Bay is a residential community with approximately 110 wastewater  
10 connections developed in the greater Lake of the Ozarks area in and around  
11 Camden County, Missouri. Cimarron Bay, a residential town home subdivision,  
12 and Harbour Bay, a condominium community, collectively known as the Cimarron  
13 Bay service area, are served by one wastewater treatment system. The  
14 wastewater treatment plant is a recirculating sand filtration system.

15 **Q. WERE THERE ANY ISSUES WITH THE SYSTEM WHILE IT WAS OPERATED**  
16 **BY OSAGE WATER COMPANY OR THE RECEIVERS?**

17 A. During a CSWR site visit and inspection in April 2019, a large amount of the  
18 existing plant's sand bed walls were failing. Structural failure of the plant's walls  
19 will eventually lead to complete plant failure as sand media will migrate out of the  
20 plant (an environmental violation) and prevent the waste from being properly  
21 filtered.

22 Additionally, EPA's Echo website lists violations of effluent limits at the  
23 facility for 6 of the last 7 quarters. This indicates the treatment plant has

1 consistently discharged effluent, i.e. wastewater, back into the receiving  
2 waterbody that exceeded pollutant limits designed to protect public health and  
3 welfare and water quality. The last quarter was listed as “Undetermined,” often  
4 used by EPA when a facility fails to submit Discharge Monitoring Reports  
5 (DMRs), a violation of MDNR and EPA requirements in and of itself. A sample  
6 of the effluent was tested by a third-party around May 1, 2019. The sample  
7 exceeded permit limits for *E. coli*, Biochemical Oxygen Demand, Ammonia as N,  
8 and Total Suspended Solids. The only parameter this system met was the Total  
9 Residual Chlorine, at less than 0.02 mg/l.

10 When chlorine is used to disinfect pathogens in waste, the chlorine must  
11 be sufficiently removed from the effluent to prevent polluting the receiving water  
12 way. Given that the plant exceeded limits for *E. coli*, while meeting Total  
13 Residual Chlorine suggests the plant was not properly chlorinating to disinfect  
14 the plant effluent before its discharge from the plant. The lack of pathogen  
15 removal in effluent presents significant public health risks.

16 **Q. WHAT IS THE CURRENT CONDITION OF THE ASSETS?**

17 A. The wastewater treatment facility is a recirculating sand plant. Three beds exist  
18 for wastewater treatment, but only two of the beds are in use. In general,  
19 recirculating sand filters cannot treat waste sufficiently to meet MDNR minimum  
20 nutrient removal requirements. Another biological process is required. The  
21 plant’s inability to remove nutrients corresponds with the testing CSWR has  
22 performed and the reported permit limit exceedances. The plywood walls  
23 containing the filter media sand have failed, and piping is exposed. It is difficult

1 to determine the quality of the media that is currently in place, but, based on  
2 visual inspection, it does not seem to be operable. With the sand bed walls  
3 failing and internal piping exposed, the plant may be discharging untreated raw  
4 waste directly onto the adjoining property. This poses significant environmental  
5 risks for receiving water bodies as well as potential human health risks for  
6 pathogen exposure. The seasonal fluctuations in waste volume that are part of  
7 recreational lake communities adds to the difficulty in meeting limits in winter  
8 months.

9 **Q. DOES OUOC HAVE A PLAN TO REMEDY THESE SAFETY ISSUES?**

10 **A.** Yes. OUOC proposes to abandon the sand bed in place and replace that portion  
11 of the facility treatment with a Moving Bed Bio-Reactor (MBBR) and aerate the  
12 influent tank. The MBBR will allow the plant to meet MDNR mandated nutrient  
13 removal requirements. Aerating the influent tank changes the entire plant  
14 process to an aerobic process which will work in tandem with the MBBR. OUOC  
15 also proposes to install a Mission remote monitoring unit at the two main lift  
16 stations to monitor plant operations and provide constant service. The  
17 disinfection system will also be repaired and brought back into compliance to  
18 disinfect waste.

19 **Q. WHAT IS THE PROJECTED COST OF THOSE IMPROVEMENTS?**

20 **A.** The estimated cost of such additional improvements is approximately \$181,850.

21 **Osage Water Company—Cedar Glen Water Service Area:**

22  
23 **Q. PLEASE DESCRIBE THE CEDAR GLEN WATER SYSTEM.**



1 A. Cedar Glen is a residential condominium community with approximately 216  
2 water connections located in Camdenton, Camden County, Missouri. The  
3 community is serviced by a single well with a hydropneumatic tank.

4 **Q. WERE THERE ANY ISSUES WITH THE SYSTEM WHILE IT WAS OPERATED**  
5 **BY OSAGE WATER COMPANY OR THE RECEIVERS?**

6 A. The system has lack of records and actual plans to address distribution system  
7 issues, does not have minimum MDNR emergency water storage, and does not  
8 have MDNR mandated emergency power operations.

9 **Q. WHAT IS THE CURRENT CONDITION OF THE ASSETS?**

10 A. The system consists of one well house. The well house has 3 unused 250-gallon  
11 pressure tanks and one 35,000-gallon hydropneumatic tank. This well house is  
12 in a significant state of disrepair and is in danger of structural failures. Such  
13 failures could lead to the temporary cessation of water service to customers. The  
14 electrical system is significantly substandard with exposed wiring hanging and  
15 stapled to the ceiling and walls. The electrical panels are all in need of significant  
16 repair or replacement. This existing electrical system poses a safety risk to  
17 operations personnel and puts the entire water system at risk for failure and  
18 cessation of service. The well pumps ground water directly in the 35,000-gallon  
19 pressure tank acting as a hydropneumatic tank, with no booster pumps at this  
20 facility. The water system has 216 water customers serving approximately 432  
21 people. Under MDNR regulations, systems with over 50 customers cannot have  
22 system storage consisting of 100% hydropneumatic tanks and must have ground  
23 storage. Per conversations with MDNR, the ground storage tank capacity needs

1 to be at least 1.5 times the average daily use. Based on usage, 28,500 gallons  
2 of storage is required. This ground water storage is required by MDNR to allow  
3 emergency service. There is no source of backup power on the system, so in a  
4 power outage the customers will lose all water service. The hydropneumatic tank  
5 should be power washed and cleaned. Finally, there is no remote monitoring in  
6 place. Manual inspection is currently the only way to determine if the plant is  
7 consistently providing water service.

8 **Q. DOES OUOC HAVE A PLAN TO REMEDY THESE SAFETY ISSUES?**

9 A. Yes. OUOC proposes to install a Mission remote monitoring and magnetic flow  
10 meter, repair the well house building, repair or replace the electrical systems to  
11 eliminate electrical hazard, convert the hydropneumatic storage tank to ground  
12 storage to provide MDNR mandated emergency storage, install booster pumps  
13 with variable frequency drives to control pump speed to meet water demand  
14 needed at any time, install a quick connect for back up electrical service meeting  
15 minimum MDNR requirements for emergency service, power wash and clean the  
16 hydropneumatic tank to ensure it is sanitary, install at least two flushing hydrants  
17 and at least five system valves in the distribution system to remove any situations  
18 in the water distribution system where sediments can collect potentially stopping  
19 water service for customers, install meters in units that are not metered, and  
20 replace all existing meters with remote shutoff meters.

21 **Q. WHAT IS THE PROJECTED COST OF THOSE IMPROVEMENTS?**

22 A. The estimated cost of such additional improvements is approximately \$377,750.

1        **Osage Water Company—Cedar Glen Sewer Service Area:**

2  
3        **Q. PLEASE DESCRIBE THE CEDAR GLEN SEWER SYSTEM.**

4        A. Cedar Glen is a residential condominium community with approximately 216  
5        wastewater connections, located in Camdenton, Camden County, Missouri. The  
6        community is serviced by a recirculating sand filter plant.

7        **Q. WERE THERE ANY ISSUES WITH THE SYSTEM WHILE IT WAS OPERATED**  
8        **BY OSAGE WATER COMPANY OR THE RECEIVERS?**

9        A. CSWR reviewed EPAs Echo website for violations on wastewater facilities. This  
10       facility had 2 of the last 11 quarters as violations identified on the effluent DMRs.  
11       This indicates the treatment plant has discharged effluent into the receiving  
12       waterbody that exceeded pollutant limits designed to protect public health and  
13       welfare and water quality. A sample of the effluent was tested by a third-party  
14       around May 1, 2019. The sample significantly exceeded permit limits for  
15       Ammonia as N and Total Suspended Solids.

16       **Q. WHAT IS THE CURRENT CONDITION OF THE ASSETS?**

17       A. The wastewater system consists of a gravity collection system, lift stations, and a  
18       recirculating sand filter treatment facility with a central septic tank. In general,  
19       recirculating sand filters cannot treat waste sufficiently to meet MDNR minimum  
20       nutrient removal requirements. Another biological process is required. The  
21       plant's inability to remove nutrients corresponds with the testing CSWR has  
22       performed and the reported permit limit exceedances.

23                The sand plant consists of four beds, with the northeast most bed  
24       appearing to have integrity issues and some failed piping. Two of the eight filter

1 pumps are not functioning. Failed dosing pumps can lead to overloading of  
2 some of the zones, which can cause either permit violations or sanitary spills.  
3 Such conditions typically also lead to premature failure of the filtration media.  
4 The plant's control panel has caught on fire a couple of times putting the entire  
5 system at risk for a cessation in basic sanitary sewer service to customers. The  
6 system has difficulty dealing with the irregular flows due to the seasonality of the  
7 residents associated with the recreational lake communities. Flows in the  
8 summer are sometimes more than what the lift stations' pumps can operationally  
9 handle. This increases the potential for overflow spills from the pump stations to  
10 the lake, posing environmental and health risks.

11 **Q. DOES OUOC HAVE A PLAN TO REMEDY THESE SAFETY ISSUES?**

12 A. OUOC proposes to repair the treatment piping as needed, replace two filter  
13 pumps, clear the trees from around the facility, investigate the issue for the  
14 electrical panel catching fire and address it, install a MBBR for nutrient pollutant  
15 removal capability, add additional storage volume at each pump station, and  
16 replace pumps with newer/higher capacity units at the lift stations where needed  
17 to prevent environmental spills out of the lift stations.

18 **Q. WHAT IS THE PROJECTED COST OF THOSE IMPROVEMENTS?**

19 A. The estimated cost of such additional improvements is approximately \$281,950.

20 **Osage Water Company—Eagle Woods Water Service Area:**

21  
22 **Q. PLEASE DESCRIBE THE EAGLE WOODS WATER SYSTEM.**

1 A. The Eagle Woods subdivision is a residential development located in Camden  
2 County, Missouri with approximately 34 drinking water connections serviced by a  
3 single well.

4 **Q. WERE THERE ANY ISSUES WITH THE SYSTEM WHILE IT WAS OPERATED**  
5 **BY OSAGE WATER COMPANY OR THE RECEIVERS?**

6 A. The system has lack of records and actual plans to address distribution system  
7 issues. The system was noted by MDNR in 2014 as operating without a permit  
8 to dispense. The system was also listed on the MDNR website as having an  
9 illegal well agreement. An additional MDNR Notice of Violation was listed later in  
10 2014 but no additional information was provided. There also is a lawsuit  
11 pending against Eagle Woods for refusing to provide service to customers within  
12 the system's certificated service area.

13 **Q. WHAT IS THE CURRENT CONDITION OF THE ASSETS?**

14 A. The system has one small well house, approximately 6'x6' inside dimensions.  
15 This system does chlorinate the water, however, the chlorine is stored in the  
16 same room with the treatment equipment and is corroding the metal components.  
17 Water is pumped from the one ground well into two ground storage tanks having  
18 a total of 9,000 gallons of storage. The system utilizes a 357-gallon  
19 hydropneumatic tank for system pressure. Per MDNR minimum requirements,  
20 the system should have of at least 35 gallons per person served. Based on this  
21 guidance, the system should have 2,975 gallons of storage capacity. The 357-  
22 gallon hydropneumatic tank serving this purpose is over 8x short of minimum  
23 storage capacity. The system also lacks any remote water supply monitoring.

1 The lack of monitoring, flushing hydrants, and isolation valves creates a situation  
2 in the water distribution system where sediments can collect, potentially stopping  
3 water service for customers.

4 **Q. DOES OUOC HAVE A PLAN TO REMEDY THESE SAFETY ISSUES?**

5 A. Yes. OUOC proposes to install a Mission remote monitoring system to ensure  
6 the system is providing reliable water service, install a magnetic flow meter,  
7 repair the well house, repair the electrical systems to eliminate any hazards,  
8 remove the hydropneumatic tank from operation, the ground storage tanks will be  
9 power washed and cleaned and variable frequency drives will be installed to  
10 control pump speed to meet water demand needed at any time and meet DNR  
11 minimum requirements.

12 **Q. WHAT IS THE PROJECTED COST OF THOSE IMPROVEMENTS?**

13 A. The estimated cost of such additional improvements is approximately \$123,300.

14 **Osage Water Company—Eagle Woods Sewer Service Area:**

15

16 **Q. PLEASE DESCRIBE THE EAGLE WOODS SEWER SYSTEM.**

17 A. The sewer service area consists of the Eagle Woods subdivision with 33  
18 wastewater connections, and the Golden Glade subdivision, currently with 23  
19 customers, both located in Camden County, Missouri. The treatment facility  
20 serving Golden Glade and Eagle Woods is known as the Highway KK facility.  
21 This community is serviced by a recirculating sand filtration plant.

22 **Q. WERE THERE ANY ISSUES WITH THE SYSTEM WHILE IT WAS OPERATED**  
23 **BY OSAGE WATER COMPANY OR THE RECEIVERS?**

1 A. The facility is not listed on EPA's Echo website under its current name, which  
2 initially led to issues for CSWR to review the plants historical performance. The  
3 plant was issued a general operating permit with corresponding limits, but  
4 according to EPA's Echo system the plant has not submitted any DMRs for two  
5 years and is administratively terminated at the federal level.

6 **Q. WHAT IS THE CURRENT CONDITION OF THE ASSETS?**

7 A. The wastewater treatment facility is made up of a recirculating sand facility with  
8 chlorine disinfection. In general, recirculating sand filters cannot treat waste  
9 sufficiently to meet MDNR minimum nutrient removal requirements. Another  
10 biological process is required in addition to, or in lieu of, the sand filtration  
11 process. The existing sand plant consists of two concrete beds with a total  
12 footprint of 33'x 88'. Both beds have cracks in the walls and are structurally  
13 failing putting the community at risk for a cessation in sewerage service. Both  
14 beds also have some issues with failing distribution piping, which could be  
15 leading to the discharge of untreated waste into a receiving streams that passes  
16 through a nearby conservation area with hiking trails, the Mansfield Forest State  
17 Wildlife Management Area. It is difficult to determine the quality of sand media in  
18 place. A make shift chlorine disinfection system is in place that consists of a  
19 plastic storage container that was converted to a contact chamber with blocks for  
20 travel path requirements of MDNR. A large quantity of algae/moss growth is  
21 present on the inside of the substandard chlorine contact chamber indicating the  
22 disinfection system is not currently removing pathogens, a public health risk.

1           The site in general is in complete disarray. Waste materials from old  
2 repairs, trash, pumps, and broken pipes are laying all over the site and present a  
3 safety hazard. The site is not fully fenced presenting a public safety risk. The  
4 road has washed out and the plant is not accessible at this time with having a 2'  
5 deep rut through the road likely preventing operations and maintenance in  
6 inclement weather. The sand bed sits in a valley and run off water is directed to  
7 the plant walls washing media out. The walls are cracking and nearing failure.  
8 The influent pipe is exposed along the edge of the plant due to the erosion issues  
9 and it actually is not fully connected and under high flows discharges on the  
10 ground which is a MDNR violation and presents environmental and health risks  
11 to potential receiving water bodies.

12           The collection system is all gravity sewer, with no manholes, that flows to  
13 four lift stations that feed the plant. Not having a manhole at all breaks in grade  
14 and bends does not meet MDNR current design standards. There is a section of  
15 gravity line that was constructed with a sag to go under the drainage creek of the  
16 dam. Solids will settle in the bottom of this pipe and potentially clog over time. A  
17 booster pump station serving some homes needs additional storage capacity in  
18 order to keep up without overflowing which also poses environmental and safety  
19 risks.

20 **Q. DOES OUOC HAVE A PLAN TO REMEDY THESE ISSUES?**

21 A. OUOC proposes to re-pour concrete in sections that are failing. The entire  
22 facility site needs regrading to improve drainage. OUOC also proposes to install  
23 a culvert and reconstruct the roadway as needed to enter the plant for operations



1 and maintenance. The current disinfection tankage will be replaced with a more  
2 conventional installation to avoid recontamination of effluent. OUOC proposes to  
3 repair the sand bed distribution piping as needed, replace piping as needed and  
4 bury to protect from freezing, install new fencing around the perimeter, install  
5 (MBBR for additional treatment, and provide additional storage at pump stations  
6 serving multiple homes. OUOC proposes to complete smoke testing as soon as  
7 possible to determine the extent of Inflow and Infiltration, as well as assist in  
8 plant capacity analysis.

9 **Q. WHAT IS THE PROJECTED COST OF THOSE IMPROVEMENTS?**

10 A. The estimated cost of such additional improvements is approximately \$303,175.

11 **Reflections Water and Wastewater Systems**

12  
13 **Q. PLEASE DESCRIBE THE REFLECTIONS WATER AND SEWER SYSTEM.**

14 A. The Reflections systems serve a condominium development located on the Lake  
15 of the Ozarks in Camden County, Missouri.

16 **Q. ARE THE SYSTEMS AN INDEPENDENTLY OPERATIONAL UTILITY?**

17 A. No. On or about November 12, 2012, Abba Development defaulted on the  
18 development loan it had with Great Southern Bank. Great Southern Bank took  
19 title to the real estate in Reflections Subdivision, including the parcels that the  
20 utility systems are located on.

21 **Q. IS THERE AN AGREEMENT CONCERNING THE SALE AND PURCHASE OF**  
22 **THE SYSTEMS?**

1 A. On December 4, 2018, Great Southern Bank, Reflections Subdivision Master  
2 Association, Inc., Reflections Condominium Owners Association, Inc., and  
3 CSWR entered into an *Amended and Restated Agreement For Sale of Utility*  
4 *System*, for CSWR to purchase the water and wastewater systems in the  
5 Reflections subdivision, which is attached to Mr. Cox's Direct Testimony.

6 **Q. WERE THERE ANY ISSUES WITH THE WATER SYSTEM UNDER THE**  
7 **CURRENT AND PAST OPERATORS?**

8 A. The system has been listed on DNR's website for a number of Notices of  
9 Violations. The violations included failure to pay laboratory service fees and also  
10 operation without a permit to dispense. A September 2016 engineering report  
11 developed for the water system submitted to MDNR required adding pressure  
12 storage.

13 **Q. WHAT IS THE CURRENT CONDITION OF THE WATER ASSETS?**

14 A. The water system consists of one well house. The well house has seven 119-  
15 gallon pressure tanks. The system is lacking pressure storage, which could lead  
16 to a lack of water service during peak usage or a drop in waterline pressure that  
17 could expose the water system to pathogen infiltration. Additional tanks will be  
18 needed. The system does not disinfect the drinking water prior to distribution.  
19 There are electrical issues inside the well house presenting safety issues to  
20 operations personnel when present, which could lead to an interruption in  
21 service. The exterior of the well house has not been maintained and will lead to  
22 premature failure of the well house structure. The main water line feeding the  
23 condominium units is exposed but has some form of insulation. This will be an

1 ongoing concern of pipes freezing in the winter when usage is low and the  
2 temperature drops. Such event could cut off water service to the customers.

3 **Q. DOES OUOC HAVE A PLAN TO REMEDY THESE SAFETY ISSUES?**

4 A. Yes. OUOC proposes to install a Mission remote monitoring system, magnetic  
5 flow meter, install fencing around the well house, perform maintenance around  
6 the exterior of building, replace interior piping per MDNR permits, and fix the  
7 electrical systems to eliminate hazards, power wash and clean the exterior of the  
8 building, insulate the exposed water line, and install remote shut-off meters.

9 **Q. WHAT IS THE PROJECTED COST OF THOSE IMPROVEMENTS?**

10 A. The estimated cost of such additional water system improvements is  
11 approximately \$165,213.

12 **Q. WERE THERE ANY ISSUES WITH THE SEWER SYSTEM UNDER THE  
13 CURRENT OR PREVIOUS OPERATORS?**

14 A. The current owner is currently operating without a permit. The permit has been  
15 expired since 2009 per DNR's latest permit available. A June 29, 2016  
16 inspection report found the system to be out of compliance for failing to renew  
17 the discharge permit, failure to submit an Annual Sludge Report, failure to submit  
18 all required Discharge Monitoring Reports, failure to provide waste stream flow  
19 measurements, failure to maintain valid continuing authority for a wastewater  
20 treatment plant discharger, and in general MDNR found that the plant has  
21 caused pollution to the Lake of the Ozarks. Additionally, EPA's Echo website  
22 lists violations of effluent limits at the facility for 6 of the last 7 quarters. This  
23 indicates the treatment plant has consistently discharged effluent, i.e.

1 wastewater, back into the receiving waterbody that exceeded pollutant limits  
2 designed to protect public health and welfare and water quality. The last quarter  
3 was listed as “Undetermined,” often used by EPA when a facility fails to submit  
4 Discharge Monitoring Reports (DMRs), a violation of MDNR and EPA  
5 requirements in and of itself.

6 **Q. WHAT IS THE CURRENT CONDITION OF THE SEWER ASSETS?**

7 A. The wastewater system is a series of interconnected, above-ground, poured-in-  
8 place concrete basins, consisting of flow equalization, extended aeration,  
9 clarification, chlorination, and sludge holding. The gravity collection system  
10 collects wastewater from the three condo buildings, and two pump stations assist  
11 in conveying the wastewater to the treatment plant. Sludge is hauled off and  
12 disposed of by a contract hauler. The treatment facility has serious structural  
13 and operational concerns. The concrete structure is in poor shape and seems to  
14 be constructed without the necessary internal structure support required of an  
15 above ground facility of this type.. The walls are nearing failure due to the steel  
16 corroding. Various corners are crumbling, and chunks of concrete have already  
17 separated and fallen from the walls. The entire system is a risk for complete  
18 structural failure, which would result in pollution to the Lake of the Ozarks and a  
19 cessation of sewerage service for the community. The walls are also leaking,  
20 allowing wastewater to bypass basic treatment, and will continue to expedite the  
21 concrete deterioration until the leakage is addressed. The outside plant decking  
22 is starting to warp and is becoming unsafe for operators. Additionally, the facility  
23 at the time of the visit had large amounts of sludge on the surface of the clarifier,

1 the primary settlement tank of an extended aeration plant. Sludge floating in a  
2 clarifier with this type of plant configuration is typically indicative of major plant  
3 failures. This will lead to washout and potential for contamination of the lake.

4 **Q. DOES OUOC HAVE A PLAN TO REMEDY THESE SAFETY ISSUES?**

5 A. OUOC proposes to repair the concrete walls, install structural supports, replace  
6 decking material, and install structural/process control steel walls in the aeration,  
7 install a Mission remote monitoring system at the wastewater facility, and install  
8 Mission remote monitoring systems at each pump station.

9 **Q. WHAT IS THE PROJECTED COST OF THOSE IMPROVEMENTS?**

10 A. The estimated cost of such additional sewer system improvements is  
11 approximately \$310,800.

12 **CERTIFICATES OF CONVENIENCE AND NECESSITY**

13  
14 **Q. WHAT DOES OUOC NEED FROM THE COMMISSION TO PROVIDE SERVICE  
15 TO WATER AND SEWER SYSTEMS OF OSAGE WATER COMPANY?**

16 A. As requested in the Amended Application, OUOC asks the Commission to allow  
17 it to acquire the CCNs of Osage Water Company, or grant OUOC new CCNs to  
18 provide water and sewer service in the area now served by Osage Water  
19 Company, and cancel the certificates of Osage Water Company. OUOC also  
20 requests the Commission authorize Osage Water Company and OUOC to  
21 execute and perform in accordance with the terms described in the *Agreement  
22 For Sale of Utility System between OUOC and the Trustee of Osage Water  
23 Company* attached to the Direct Testimony of Mr. Cox and to take any and all

1 other actions which may be reasonably necessary and incidental to the  
2 performance of the acquisitions.

3 **Q. WHAT DOES OUOC NEED FROM THE COMMISSION TO PROVIDE SERVICE**  
4 **TO THE WATER AND SEWER SYSTEMS OF REFLECTIONS?**

5 A. As requested in the Amended Application, OUOC asks the Commission to grant  
6 it Certificates of Convenience and Necessity authorizing it to install, acquire,  
7 build, construct, own, operate, control, manage and maintain a water and sewer  
8 system for the public within the area currently served by Reflections, as set forth  
9 on the legal description attached to Mr. Cox's Direct Testimony. OUOC also  
10 requests the Commission authorize Great Southern Bank, Reflections  
11 Subdivision Master Association, Inc., and Reflections Condominium Owners  
12 Association, Inc. and OUOC to execute and perform in accordance with the  
13 terms described in the *Amended and Restated Agreement For Sale of Utility*  
14 *System* attached to the Direct Testimony of Mr. Cox and to take any and all other  
15 actions which may be reasonably necessary and incidental to the performance of  
16 the acquisitions.

17 **Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

18 A. Yes, it does.

**AFFIDAVIT**

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

I, Todd Thomas, state that I am the Senior Vice President of Central States Water Resources, Inc.; that the Direct Testimony and schedules attached hereto have been prepared by me or under my direction and supervision; and, that the answers to the questions posed therein are true to the best of my knowledge, information and belief.

Todd Thomas

Subscribed and sworn to before me this 10th day of July, 2019.

Brenda Eaves  
Notary Public

My Commission Expires:

01/31/2021  
(SEAL)

