

Exhibit No.:
Issue(s): *Quality of Service*
Witness: *Andrew Harris*
Sponsoring Party: *MoPSC Staff*
Type of Exhibit: *Rebuttal Testimony*
Case No.: *WR-2023-0006*
Date Testimony Prepared: *June 29, 2023*

MISSOURI PUBLIC SERVICE COMMISSION

INDUSTRY ANALYSIS DIVISION

WATER, SEWER & STEAM DEPARTMENT

REBUTTAL TESTIMONY

OF

ANDREW HARRIS

CONFLUENCE RIVERS UTILITY OPERATING COMPANY, INC.

CASE NO. WR-2023-0006

Jefferson City, Missouri
June 2023

1 why Confluence should develop and implement a five-year capital expenditure plan. Staff
2 witness Curt B. Gateley discussed the Auburn issue in his direct testimony,¹ and Staff witness
3 David C. Roos recommends in his direct testimony that Confluence develop and implement a
4 five-year capital plan.² I conclude with a brief discussion of complaints recently received from
5 Confluence customers during local public hearings that Staff is currently working to address.

6 Q. What part of Mr. Thomas' testimony will you address in your rebuttal
7 testimony?

8 A. In his direct testimony, Mr. Thomas states:

9 Utility Cloud ensures that Confluence Rivers systems are
10 well-maintained; property, plant, and equipment records are maintained;
11 and customer service needs are systematically and expeditiously
12 addressed with appropriate record keeping of customer service needs.
13 Further, CSWR is able to monitor its Missouri O&M contractors to
14 ensure that the contractors are doing work for which they were hired; are
15 doing that work on a timely and competent basis; and are meeting the
16 needs of the Company and its customers.³

17 Q. Do you agree with Mr. Thomas that using a software program, by itself, ensures
18 that Confluence's systems are well-maintained?

19 A. I do not. Water and sewer utility systems must be physically visited by
20 operators to ensure most aspects of proper maintenance and operation are ensured, and then
21 what an operator sees when they visit a system must be communicated to Confluence. In the
22 example I describe below, not only were preventative maintenance tasks not conducted
23 despite Utility Cloud, but the failure to complete these tasks also appears to have delayed
24 Confluence's understanding of the needs for capital investment.

¹ Curt B. Gateley Direct beginning page 8, line 6.

² David C. Roos Direct page 5 line 4 - page 6 line 7

³ Todd Thomas Direct page 13, lines 2 through 7.

1 Q. What is Utility Cloud, and how does the company allege it ensures the systems
2 are well maintained?

3 A. As I understand it, Utility Cloud is a program that tracks work tasks, and
4 establishes preventative maintenance task assignments. I agree that software programs are
5 useful, beneficial tools that lead toward a process of ensuring that systems are well-maintained.
6 However, it is the harvesting of information, the evaluation and questioning of this information,
7 and follow-up communication between system operators and Confluence's operations and
8 engineering resources that ensures that Confluence's systems are well-maintained and capital
9 investments happen as needed.

10 Q. Do you have an example of the consequences of Confluence's failure
11 to communicate with its system operators, and failure to understand when investments
12 were needed?

13 A. Yes. In December 2022, Staff received multiple customer service complaints
14 concerning water quality and air in the water line at its Auburn subdivision system. WSS Staff
15 investigated by meeting with Confluence (including discussing proposed capital improvements
16 with Confluence engineering personnel), reviewing engineering reports, interviewing
17 customers, inspecting the system, and submitting several data requests to Confluence.

18 During the inspection, Staff observed that the Auburn subdivision had built out to
19 approximately 75 homes, that the constructed hydropneumatic tank storage capacity matched
20 the records from initial construction when the subdivision had only five homes, and that
21 distribution system flushing assemblies were not adequate for the system's needs. For most
22 Confluence systems, flushing is conducted on an as-needed basis, but among water systems it
23 is not uncommon for routine flushing to be necessary to maintain adequate service. Flushing of

1 water mains is a pipe wall scouring process in which a high velocity water flow of
2 approximately 3 feet per second is charged through each section of main toward a flushing
3 assembly for removing impurities accumulated over time in the distribution system.⁴ Staff
4 spoke with customers and were informed that Confluence had historically flushed the system,
5 with the last approximately one year prior to Staff's inspection.

6 Q. What did Confluence's engineering report recommend at the time of the
7 acquisition?

8 A. 21 Design Group, an engineering firm hired by Confluence, evaluated the
9 system in late 2018, and at that time, Auburn subdivision had approximately five (5) constructed
10 homes. 21 Design Group confirmed that the water supply and storage was adequate for the
11 number of constructed homes at the time. 21 Design Group recommended that the owner
12 monitor the customer base, the number of people served, and operation of the hydropneumatic
13 tank for excessive well starts.

14 Q. Was Confluence monitoring the number of customers in the subdivision and the
15 hydropneumatic tank?

16 A. It does not appear that it was. If it was, Confluence should have been aware that
17 the Auburn customer base was exceeding the constructed available water storage capacity.
18 With this knowledge, Confluence engineering personnel could have taken actions to develop
19 plans, acquire necessary construction permit(s), and move forward with the necessary increase
20 to water storage capacity for the system sooner than this year.

⁴ Revision of AWWA C651-14: The Water Main Disinfection Standard; REILLEY ET AL. | 107:10 • JOURNAL
AWWA | OCTOBER 2015; 2015 © American Water Works Association

Rebuttal Testimony of
Andrew Harris

1 Q. So the number of customers had grown to more than 15 times the number that
2 Confluence's engineer determined the system was suitable to serve?

3 A. The system's adequacy degraded as customer numbers grew. The deficiencies
4 at this system became increasingly apparent to customers.

5 Q. What problems were the customers witnessing?

6 A. As I mentioned above, customers began experiencing water quality issues and
7 air in their water lines more and more frequently.

8 Q. Was Confluence's contract operator trying to manage this problem?

9 A. Yes. Initially, the contract operator was flushing the water lines to improve
10 delivered water quality.

11 Q. How often was Auburn's system flushed?

12 A. In response to a Staff Data Request⁵ for maintenance records specific to
13 distribution system flushing, I estimate there are twelve records for system flushing and
14 flushing-related complaints between October 2020 and March 2022.⁶ The flushing-related
15 complaints are that there was air in the lines or air in the water. These flushing records end
16 abruptly in March 2022, and flushing appears to discontinue with no additional action taken
17 until the Auburn customers reached out to Staff for assistance in December 2022.

18 Q. Who was flushing the Auburn system?

19 A. Confluence's contract system operators flushed the system. Staff does not know
20 whether the contract operators told Confluence about flushing issues and the number of homes
21 in the subdivision. What is known is that Confluence should have been aware sooner of issues

⁵ WR-2023-0006 Data Request No. 0043.1.

⁶ I can only estimate how many records there are, because the contract operators' notes leave room for interpretation.

1 with air in the lines and air in the water, and if it was, its response could have come sooner.
2 Based on continuing communication both by email and in person with Confluence personnel,
3 and by email with Missouri Department of Natural Resources (“DNR”) personnel, Staff is
4 aware that Confluence recently replaced the flushing assemblies and began converting the air
5 driven system pressurization to a pumping system. Limited flushing with the existing system
6 is scheduled to resume in June.⁷

7 Q. Why is additional flushing not a remedy now?

8 A. Because of the customer growth, the expansion of the distribution system, and
9 usage by those customers, the existing hydropneumatic tank design is inadequate to flush the
10 distribution system and remove air from the lines.

11 Q. How is the air getting into the distribution system?

12 A. When water is drawn rapidly from the tank, the compressed air that occupies the
13 upper portion of the tank for system pressurization is also drawn into the distribution system.
14 This air will remain in the distribution system until drawn out through customer taps, or
15 otherwise flushed out of the system.

16 Q. So the contract operator could no longer conduct routine flushing because the
17 system no longer has the capacity to do so?

18 A. Yes, under the existing design. Confluence is working with DNR to attempt to
19 make modifications to mitigate the problem.

20 Q. So is the existing storage and well production adequate for the expected number
21 of customers on this system?

⁷ June 7, 2023 email from Brad Thibault, Confluence Director of Asset Management

1 A. According to DNR, the original plan for the system included the addition of a
2 ground storage tank before additional phases of home construction began.⁸ It is Staff's
3 understanding that the existing storage may be able to meet current average demand, but it is
4 not adequate to conduct routine maintenance. Therefore it is Staff's position that additional
5 storage is necessary.

6 Q. How is this infrastructure need connected to your early statements about Utility
7 Cloud and communications between the operator and Confluence?

8 A. Confluence's stated reliance on tracking information with Utility Cloud did not
9 result in necessary upgrades conducted in a timely manner. When Staff began investigating
10 this situation, Confluence did not appear to be aware of the infrastructure need at all. When the
11 operator was no longer able to conduct maintenance activities, this should have been
12 communicated to Confluence and investigated. If such an investigation had occurred, then the
13 needed upgrades would have been identified and scheduled for construction.

14 Q. But shouldn't Confluence have also investigated the need for upgrades due to
15 customer growth and the number of new billing accounts?

16 A. Yes, this should have been tracked for capital planning by Confluence.

17 Q. So, there are multiple problems with Confluence's oversight and management
18 of this system?

19 A. Yes. Confluence needs to improve communications and oversight with its
20 contractors. Confluence needs to better track customer growth and system capacities. And
21 Confluence needs to conduct appropriate capital planning regardless of whether upgrades are

⁸ Multiple telephone conversations between Staff and DNR personnel

Rebuttal Testimony of
Andrew Harris

1 needed due to customer growth, components of systems that have exceeded their useful life, or
2 requirements of DNR for system capabilities as regulations change.

3 Q. What does Staff recommend to remedy this situation?

4 A. The task tracking in the Utility Cloud program alone is not a substitute
5 for a five-year capital expenditure plan. Staff recommends that Confluence develop and
6 implement a five-year capital expenditure plan as stated in Staff witness David C. Roos's Direct
7 Testimony, and Staff recommends designation of personnel dedicated to overseeing operations
8 in Missouri as stated in Staff witness Curt B. Gateley's Direct Testimony. Capital planning is
9 needed not just to establish what must be done, but also for prioritization of spending on the
10 most urgent needs of Confluence's systems. The communication flow between the contract
11 operators, Confluence operations personnel, and Confluence engineering personnel must be
12 improved to prevent recurrence of situations like the one described above.

13 Q. Is Staff aware of any other shortcomings to Confluence operations?
14

15 A. Yes, Staff is aware of customer complaints brought up during the LPHs. At this
16 time Staff is investigating customer complaints including odor, metering accuracy, and service
17 calls, and intends to report its findings in surrebuttal.

18 Q. Does this conclude your rebuttal testimony?

19 A. Yes it does.

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of Confluence Rivers Utility)
Operating Company, Inc.'s Request for)
Authority to Implement a General Rate)
Increase for Water Service and Sewer)
Service Provided in Missouri Service Areas)

Case No. WR-2023-0006

AFFIDAVIT OF ANDREW HARRIS

STATE OF MISSOURI)
)
COUNTY OF COLE) ss.

COMES NOW ANDREW HARRIS and on his oath declares that he is of sound mind and lawful age; that he contributed to the foregoing *Rebuttal Testimony of Andrew Harris*; and that the same is true and correct according to his best knowledge and belief.

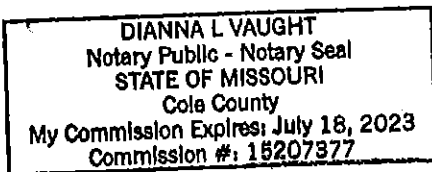
Further the Affiant sayeth not.

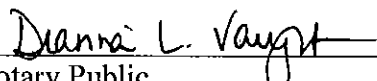


ANDREW HARRIS

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 27th day of June 2023.





Notary Public

ANDREW HARRIS

CREDENTIALS AND CASE PARTICIPATION

I am employed by the Missouri Public Service Commission as a Senior Professional Engineer, in the Water, Sewer & Steam Department. My duties include the review, inspection, and investigation of water and sewer systems and the development and preparation of recommendations and testimony regarding those systems. Specifically included are technical issues associated with water and sewer utility rate and acquisition cases including quality of service matters, utility plant utilization, costs incurred for providing utility service, and tariff rules. In addition to formal case work, I handle informal customer complaints that are of a technical nature, and informally assist water and sewer utility companies with respect to day-to-day operations, planning, and customer service issues.

Educational Background and Work Experience

I graduated from University of Missouri – Rolla in 1997 with a Bachelor of Science degree in Chemical Engineering. I am a Registered Professional Engineer in the State of Missouri and have been continuously licensed in Missouri since 2003. Previous employment includes experience in water and sewer operations and engineering with municipal, industrial, and consulting organizations. I hold certificates of competency at the highest level available from Missouri Department of Natural Resources for water and wastewater treatment as well as distribution system operations.

Case Participation

<u>Company</u>	<u>Case No.</u>
Missouri American Water Company (MAWC)	SA-2019-0334
Timber Creek	SA-2020-0013
Liberty Utilities	SA-2020-0067
MAWC	SA-2020-0132
Elm Hills	SA-2020-0152
Liberty Utilities	SA-2020-0216
Liberty Utilities	SA-2020-0398
MAWC	SA-2021-0017
MAWC	SA-2021-0074
Mid-MO Sanitation	SA-2022-0029
MAWC	SA-2022-0294

Confluence	SA-2023-0187
Elm Hills	SM-2020-0146
TUK, LLC	SM-2022-0131
MAWC	SR-2020-0345
Mid-MO Sanitation	SR-2021-0372
MAWC	WA-2019-0259
MAWC	WA-2021-0376
Liberty Utilities	WA-2020-0397
MAWC	WA-2022-0293
MAWC	WA-2022-0361
I-70 Mobile City	WC-2022-0295
Liberty Utilities	WM-2020-0156
Middlefork	WM-2021-0003
Liberty Utilities	WO-2022-0253
Raytown Water Company	WR-2020-0264
Elm Hills	WR-2020-0275
MAWC	WR-2020-0344
MAWC	WR-2022-0303
MAWC	WT-2020-0353