Exhibit No.:
Issue(s): *Normalized Residential Customer Usage and Consolidated Tariff Books*
Witness: *Jarrod J. Robertson*
Sponsoring Party: *MoPSC Staff*
Type of Exhibit: *Direct Testimony*
Case No.: *WR-2024-0104*
Date Testimony Prepared: *August 20, 2024*

MISSOURI PUBLIC SERVICE COMMISSION

INDUSTRY ANALYSIS DIVISION

WATER, SEWER AND STEAM DEPARTMENT

DIRECT TESTIMONY

OF

JARROD J. ROBERTSON

LIBERTY UTILITIES (Missouri Water), LLC,
d/b/a Liberty

CASE NO. WR-2024-0104

Jefferson City, Missouri
August 2024

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DIRECT TESTIMONY

OF

JARROD J. ROBERTSON

LIBERTY UTILITIES (Missouri Water), LLC,
d/b/a Liberty

CASE NO. WR-2024-0104

Q. Please state your name and business address.

A. My name is Jarrod J. Robertson. My business address is 200 Madison Street, Jefferson City, Missouri 65101.

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

A. I am employed by the Missouri Public Service Commission ("Commission") as a Senior Research/Data Analyst with the Water, Sewer & Steam Department. My credentials and a listing of cases in which I have filed testimony previously before the Commission are attached to this direct testimony as Schedule JJR-d1.

EXECUTIVE SUMMARY

Q. What is the purpose of your direct testimony?

A. The purpose of my testimony is to describe why Commission Staff ("Staff") did not utilize the method of a five-year average to normalize residential customer usage, in this case, to calculate annual revenues, and to present Staff's proposal to consolidate both Liberty Utilities (Missouri Water), LLC, d/b/a Liberty's ("Liberty Water") water and sewer tariff books.

The method Staff utilized to calculate annual revenues is explained in the direct testimony of Staff witness Angela Niemeier.

NORMALIZED RESIDENTIAL CUSTOMER USAGE

Q. What is data normalization?

A. Data or in this case, customer usage, normalization is the method utilized in organizing data in order to fit into a specific field or standardized form. This is an advantageous process, by creating homogeneous data sets, it allows for a thorough and interconnected view of a specific subject and simplifies the data for continued analysis. Adjusting for customer usage in this manner affords for different sets of heterogeneous source data to be compared. Not all sources of customer usage are alike. Customer usage data stems from individual systems, each with its own particular characteristics, such as location of the system, number of customers on the system, differences in climate, and system-specific water rates which may affect discretionary customer use.

Q. Why is it necessary to normalize customer usage data when calculating annual revenues?

A. One of the main billing determinants utilized by the Commission when establishing commodity rates is normalized customer usage. In general, billing determinants are customer usage data utilized to calculate customers' bills or to determine the collective revenue from rates for the whole of a customer base. If normalized usage levels do not correspond to actual usage, the utility may not collect its Commission-authorized revenue. For example, if normalized usage levels are too high compared to actual usage, the result will be a lower commodity/usage rate, and the utility may under-earn, meaning the utility may earn less than its Commission-authorized revenues. Likewise, if normalized usage levels are too low, the result would be a higher commodity/usage rate, and the utility may over-earn, meaning the utility may earn more than its Commission-authorized revenues. While there are

many variables that affect if the utility collects more or less than its Commission-authorized revenues, it is important to establish a fair commodity/usage rate in order to lessen the effect this has to alter revenues.

Therefore, a normalized level of customer usage is generally calculated in order to establish normalized revenues.

Q. Please explain how the Commission sets rates.

A. Generally, in a rate case, the Commission determines the annual amount of revenues essential for the utility to collect in order to cover its cost of service, in addition to receiving a reasonable return on investment. This amount is designated as the revenue requirement, and is then utilized to calculate rates. For most residential customers there are two components in a water utility's rate structure; a monthly customer rate/charge, or fixed rate, and a commodity rate/charge, or usage rate. For unmetered water customers, a flat rate is calculated that is designed to recover the same revenue as metered water customers.

Q. How is the monthly customer rate, or the fixed rate, calculated?

A. The customer or fixed rate, is typically calculated by dividing the portion of the water utility's Commission-ordered revenue requirement that is not dependent on usage by the total number of customers. In situations where the calculation results in an unreasonably low or high customer rate, some of the cost recovery may be shifted to or from the costs recovered in the commodity charge.

Q. How is the commodity rate, or usage rate, calculated?

A. The commodity rate, or usage rate, is calculated by dividing the remaining portion of the Commission-ordered revenue requirement by the normalized usage levels.

Q. What data was utilized by Staff in its attempt to calculate normalized residential customer usage for the purpose of computing annual revenues?

A. As mentioned previously, one aspect investigated in determining annual revenues is customer usage. In this rate case, Staff gathered data related to residential customer usage, within specific Liberty Water service areas, in which Liberty Water provides metered water service.

Q. Where did Staff obtain the residential customer usage Staff utilized in its attempt to calculate normalized usage?

A. Staff analyzed historical residential customer usage data Liberty Water provided in its response to Staff Data Request ("DR") Nos. 0025.1, 0025.2 and an update to DR 0025, filed by Liberty Water on June 14, 2024. Staff also analyzed customer count information Liberty Water provided in its response to Staff DR Nos. 0026.1, 0026.2, 0026.3 and 0026.4. This data provided Staff with monthly customer usage and monthly customer counts, per Liberty Water service area.

Q. Were any service areas or customer counts related to the provision of water excluded from this analysis?

A. No.

Q. What method did Staff utilize in order to attempt to normalize residential customer usage to calculate Liberty Water's annual revenues?

A. Generally, where normalization of residential customer usage is necessary, Staff's position is that the most reasonable method to determine annual customer usage would be to use a five-year average of actual usage for the period January, 2019 through December, 2023 to calculate per residential customer, per day, and per district averages.

Averaging the data over the most recent five-year period represents reliable data and provides evidence of current and recent trends in customer usage. Many factors can influence usage, including water rates, installation of more efficient appliances, and changes in discretionary practices, such as reduced lawn sprinkling/irrigation. Usage may also be affected by external factors, such as climate change and the impacts of the COVID-19 pandemic. The impact of these factors change over time; therefore, using the most recent five years of data is a reasonable approach that uses actual data to support an annualized level of usage, while also providing for a reasonable determination of customers' usage habits.

Q. Why is Staff's method of a five-year average to normalize residential customer water usage the appropriate method?

A. Staff's method is a reasonable approach that utilizes actual data to support an annualized level of usage. Averaging the data over the most recent five-year period produces reliable data and evidence of recent trends in customer usage. As discussed above, many factors, such as more efficient appliances, conservation, and lawn sprinkling/irrigation, impact water usage. Similarly, climate change and the COVID-19 pandemic have affected usage. These factors change over time; therefore, using the most recent five years of data provides for a reasonable determination of customers' usage habits, while avoiding using data too old to reflect the current situation. Furthermore, Staff's utilization of each service area's unique data is reasonable because the usage characteristics of each service area are different from the other service areas.

Q. Why is focusing on recent customer usage patterns important?

A. It is important to rely on recent usage behavior as rates for Liberty Water are generally set for a two to four-year period.

Q. Although it is typically Staff's preferred method to normalize residential customer usage utilizing a five-year average in the calculation of annual revenues, did Staff utilize this method in the current case?

A. No.

Q. Why did Staff not perform a normalization of residential customer usage to calculate annual revenues?

A. It is Staff's position that this type of effort is more appropriate for larger companies with much larger amounts of usage, a historic track record for adequate record keeping (as it pertains to customer usage/counts) and potential for variation as discussed above. In addition, during its analysis of the data provided by Liberty Water, Staff discovered many irregularities with the usage data and concluded any normalization based on this questionable data would be invalid.

Q. What are the irregularities in data that prevented a valid determination of normalized residential customer usage to be utilized in the calculation of annual revenues?

A. Utilizing the residential customer usage data provided in response to Staff DR Nos. 0025.1, 0025 and the update to DR No. 0025, Staff calculated an annual usage sold for all metered usage as recorded by Liberty Water for the years 2019 through 2023, both by service area and annually overall.

Q. Why did Liberty Water submit updates to its initial DR responses?

A. Liberty Water updated the responses based on Staff's initial questions regarding the data provided, which will be discussed further in rebuttal testimony. Examples included multiple billing records for a single customer within a given month across multiple systems, disagreements between usage values and customer numbers reported by Liberty Water in their

annual reports versus the DR responses, the number of estimated meter reads versus actual meter reads reported in the DR responses, usage sold data reported on a monthly basis across multiple systems reported as a negative volume, customer types listed as 'unknown' and even rates Liberty Water charged that were not authorized in its tariff.

Q. What was Staff's response when it learned that Liberty Water was charging rates not authorized in its tariffs?

A. As of the date of this filing, Staff continues to investigate this violation and to determine if there are additional tariff violations.

Q. Did the updates to the DRs improve the data quality?

A. Staff identified no difference between the residential customer water usage as reported in Liberty Water's original response when compared to Liberty Water's update.

Q. What calculations did Staff perform in its attempt to normalize residential customer usage?

A. When utilizing the residential customer usage data provided by Liberty Water, Staff calculated:

- volume of residential usage sold for all "read" and "estimated" meters on a per service area, by month, as well as annually;
- an overall company total annual volume of residential "read" and "estimated" meters, by month, as well as annually;

and compared these figures to the per service area and annual pumping totals as reported by Liberty Water in its Annual Reports submitted via the Commission's Electronic Filing and Information System ("EFIS").

Q. What are the differences between the previously mentioned, "read" and "non-read/estimated" meter reads?

A. The usage data related to "read" refers to usage data recorded by Liberty Water via actual meter reads. The usage data related to "non-read/estimated" refers to data recorded by Liberty Water as a result of estimations, due to various reasons as defined by Liberty Water within the recoded usage data, (i.e. weather complications, safety concerns, faulty meters, lack of access to meters, etc.).

Q. What were the results of Staff's analysis of Liberty Water's residential customer water usage, which lead to Staff determining not to perform normalization on the residential customer water usage?

A. Regarding questionable data, the following tables, A-E, correspond to the years 2019 through 2023, and provides a summary of Staff's analysis:

	Sold Greater Volume than Pumped
	~20% or Greater Unaccounted for Water

A

2019	Sold	Pumped	% of Unaccounted for water
Holiday Hills	12,785,040	31,300,000	59.15
Timber Creek	3,277,904	4,457,225	26.46
Ozark Mountain	3,426,022	3,770,000	9.12
Noel	79,268,654	175,468,000	54.82
KMB	14,511,178	36,015,910	59.71
Midland	4,422,000	7,529,700	41.27
Bilyeu Ridge	2,876,000	5,150,300	44.16
Moore Bend	712,000	705,918	(0.86)
Riverfork	9,885,000	10,524,600	6.08
Taney County	20,102,000	22,951,402	12.41
Valley Woods	1,965,000	2,011,800	2.33
Franklin County	1,217,827	1,380,400	11.78
Empire	308,371,000	539,983,000	42.89
Lakeland	0	0	0
Whispering Hills	0	0	0
Oakbrier	0	0	0
Bolivar	0	0	0

B

2020	Sold	Pumped	% of Unaccounted for water
Holiday Hills	18,305,798	27,324,721	33.01
Timber Creek	2,963,823	3,595,306	17.56
Ozark Mountain	3,501,943	4,029,230	13.09
Noel	128,322,032	176,399,000	27.25
KMB	24,223,126	26,210,211	7.58
Midland	4,966,000	6,233,900	20.34
Bilyeu Ridge	3,127,000	6,374,800	50.95
Moore Bend	795,000	1,573,850	49.49
Riverfork	11,668,000	12,480,600	6.51
Taney County	19,609,000	15,321,300	(27.99)
Valley Woods	2,563,000	2,800,864	8.49
Franklin County	8,239,840	9,580,810	14.00
Empire	344,731,000	551,396,850	37.48
Lakeland	280,287	545,000	48.57
Whispering Hills	378,144	324,000	(16.71)
Oakbrier	275,785	412,000	33.06
Bolivar	0	0	0

C			
2021	Sold	Pumped	% of Unaccounted for water
Holiday Hills	25,708,469	24,921,900	(3.16)
Timber Creek	3,397,292	3,532,257	3.82
Ozark Mountain	5,678,833	6,125,204	7.29
Noel	131,560,157	155,692,000	15.50
KMB	24,540,430	28,015,751	12.40
Midland	5,425,000	5,516,105	1.65
Bilyeu Ridge	3,280,000	3,639,900	9.89
Moore Bend	1,177,000	1,262,832	6.80
Riverfork	13,309,000	13,659,313	2.56
Taney County	18,695,000	19,631,274	4.77
Valley Woods	2,339,000	2,342,779	0.16
Franklin County	8,034,000	8,399,745	4.35
Empire	369,968,000	370,834,680	0.23
Lakeland	2,137,865	4,113,891	48.03
Whispering Hills	984,459	894,622	(10.04)
Oakbrier	2,147,617	2,718,782	21.01
Bolivar	0	0	0

D			
2022	Sold	Pumped	% of Unaccounted for water
Holiday Hills	40,217,539	40,715,846	1.22
Timber Creek	5,263,915	5,292,360	0.54
Ozark Mountain	4,740,911	4,785,900	0.94
Noel	132,314,248	142,693,000	7.27
KMB	24,758,158	26,998,211	8.30
Midland	5,154,000	5,242,800	1.69
Bilyeu Ridge	3,454,000	3,781,120	8.65
Moore Bend	855,000	938,330	8.88
Riverfork	14,939,000	14,620,137	(2.18)
Taney County	26,680,000	20,622,124	(29.38)
Valley Woods	2,819,000	2,875,219	1.96
Franklin County	8,595,642	9,176,282	6.33
Empire	394,618,000	399,452,530	1.21
Lakeland	1,499,898	1,689,350	11.21
Whispering Hills	1,205,039	1,261,646	4.49
Oakbrier	2,922,468	3,259,720	10.35
Bolivar	246,783,417	365,782,394	32.53

E			
2023	Sold	Pumped	% of Unaccounted for water
Holiday Hills	31,893,397	33,698,924	5.36
Timber Creek	4,870,666	5,309,561	8.27
Ozark Mountain	4,871,690	5,269,872	7.56
Noel	145,101,529	158,444,000	8.42
KMB	25,357,267	28,471,413	10.94
Midland	5,439,000	5,946,556	8.54
Bilyeu Ridge	3,453,000	3,897,900	11.41
Moore Bend	1,131,000	1,549,140	26.99
Riverfork	14,101,000	15,241,973	7.49
Taney County	23,452,000	32,220,095	27.21
Valley Woods	3,307,000	3,413,444	3.12
Franklin County	9,245,804	10,406,113	11.15
Empire	387,368,000	403,958,956	4.11
Lakeland	1,694,666	2,166,766	21.79
Whispering Hills	1,614,042	1,717,715	6.04
Oakbrier	3,012,970	3,585,317	15.96
Bolivar	289,524,728	345,791,534	16.27

- 2019;
  - Moore Bend reported selling more water than pumped to the system in the provision of service;
  - Holiday Hills, Timber Creek, Noel, KMB, Midland, Bilyeu Ridge and Empire reported an approximate unaccounted water volume percentage equal to or greater than 26%;
- 2020;
  - Taney County reported selling more water than pumped to the system in the provision of service;
  - Holiday Hills, Noel, Midland, Bilyeu Ridge, Moore Bend, Empire and Lakeland reported an approximate unaccounted water volume percentage equal to or greater than 27%;

- 2021;
  - Holiday Hills and Whispering Hills reported selling more water than pumped to the system in the provision of service;
  - Lakeland reported an approximate unaccounted water volume percentage equal to or greater than 48%;
- 2022;
  - River Fork and Taney County reported selling more water than pumped to the system in the provision of service:
  - Bolivar reported an approximate unaccounted water volume percentage equal to or greater than 33%;
- 2023;
  - Moore Bend, Taney County and Lakeland reported an approximate unaccounted water volume percentage equal to or greater than 22%.

Q. Regarding its attempt to normalize usage, did Staff perform any other analysis of residential customer usage?

A. Yes. As mentioned previously, Staff analyzed the combined read, and estimated meter recordings for residential customer usage associated with each individual system. Staff also utilized this information to evaluate the percentage difference between read and estimated usage in order to calculate if there was a statistically relevant difference between the two data sets.

Q. What was the conclusion of this analysis?

A. The information provided data related to the percentage difference between read and estimated usage being reported as sold, as follows:

- 2019;
  - 2 (two) of Liberty Water's 13 individual systems reported an estimated volume of overall residential usage sold of approximately 5 (five)%;
  - 2 (two) of Liberty Water's 13 individual systems reported an estimated volume of overall residential usage sold between approximately 6 (six) and 10 (ten)%;
  - 3 (three) of Liberty Water's 13 individual systems reported an estimated volume of overall residential usage sold between approximately 10 (ten) and 15%;

- 2021;
  - 1 (one) of Liberty Water's 15 individual systems reported an estimated volume of overall residential usage of approximately 5 (five)%;
- 2022;
  - 2 (two) of Liberty Water's 16 individual systems reported an estimated volume of overall residential usage sold of approximately 5 (five)%;
  - 1 (one) of Liberty Water's 16 individual systems reported an estimated volume of overall residential usage sold of approximately 7 (seven)%;
- 2023;
  - 1 (one) of Liberty Water's 16 individual systems reported an estimated volume of overall residential usage of approximately 5 (five)%;
  - 2 (two) of Liberty Water's 16 individual systems reported an estimated volume of overall residential usage sold between approximately 16 and 27%.

Q. With there being no industry acknowledged standard for an acceptable level of estimation regarding usage, did Staff investigate this annual usage issue on a monthly basis, and if so, what impact did this data have on the decision to not normalize usage?

A. While the previously mentioned analysis resulted in questions regarding if the data should be considered valid, the monthly breakdown of usage across all customer classes, when combined with the previously outlined questionable data pertaining to usage sold versus usage pumped, only added to the prospect of the data being invalid.

Q. What about this data analysis on a monthly basis resulted in this conclusion?

A. While on an annual basis, the difference between read and estimated usage didn't seem statistically relevant, the variations between pumped and sold on a monthly basis was too great to consider any further analysis. Staff will further address this subject in rebuttal testimony.

Q. Were there any other irregularities related to Liberty Water's usage data?

A. Yes, Staff will further address data irregularities in direct rate design testimony, and in rebuttal testimony.

Q. Did Staff perform a normalization calculation at all?

A. Staff prepared a simplified normalization for residential usage with the limited information available, as described in the direct testimony of Staff witness Mrs. Niemeier.

CONSOLIDATED TARIFF BOOKS

Q. You previously mentioned addressing the consolidation of Liberty Water's water and sewer tariff books. What is Liberty Water proposing?

A. Liberty Water proposes to consolidate all its individual water tariffs into one single book and all its individual sewer tariffs into one single book, while ensuring that all rates and rules specific to individual systems be retained therein. Staff supports this consolidation of the tariff books so that the rules are consistent among customers.

Q. What are the reasons supporting the proposal of consolidating the tariff books?

A. Consolidation of the tariff books would eliminate the need for multiple tariff books related to each specific service area, thus removing customer confusion related to identifying which tariff book is pertinant to their individual system, as well as cut down on costs related to duplication and future revisions/acquisitions.

Q. What does Staff recommend?

A. Staff recommends the consolidation of both Liberty Water's water and sewer tariff books, and due to the lack of valid residential customer water usage data, Staff recommends the utilization of Staff witness Mrs. Niemeier and the Auditing Department's alternative approach to calculating annual revenues.

Q. Does this conclude your direct testimony?

A. Yes it does.

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of the Request of Liberty Utilities (Missouri Water) LLC d/b/a Liberty for Authority to Implement a General Rate Increase for Water and Wastewater Service Provided in its Missouri Service Areas	)))))	Case No. WR-2024-0104

AFFIDAVIT OF JARROD J. ROBERTSON

STATE OF MISSOURI)
) ss.
COUNTY OF COLE)

COMES NOW JARROD J. ROBERTSON and on his oath declares that he is of sound mind and lawful age; that he contributed to the foregoing *Direct Testimony of Jarrod J. Robertson*; and that the same is true and correct according to his best knowledge and belief.

Further the Affiant sayeth not.

JARROD J. ROBERTSON

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 15th day of August 2024.

D. SUZIE MANKIN
Notary Public - Notary Seal
State of Missouri
Commissioned for Cole County
My Commission Expires: April 04, 2025
Commission Number: 12412070

Notary Public

Jarrod J. Robertson

As a Senior Research/Data Analyst, with the Water, Sewer and Steam Department of the Commission Staff Division my core duties revolve around being a Case Manager for small and large company rate Cases, requests for Certificate of Convenience and Necessity (”CCN”) related to acquisitions, mergers/sales, and/or transfer to non-profit, as well as tariff variances filed with the Commission. These duties include, but are not limited to: setting up the case Activities Timeline; authoring Customer Notice(s); coordinating meetings and correspondence between Staff, Office of the Public Counsel (“OPC”), and the utilities; disseminating information between Staff, OPC and the utilities; reviewing and if necessary, revising utilities’ tariff(s), as well as performing rate design and authoring testimony when appropriate. I also hold both a Water Distribution Level – 1 and Wastewater Treatment Level – D, Operations Certification, in order to perform site inspections, where applicable.

Educational Background and Work Experience

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

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

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

Previous Testimony Before the Public Service Commission

Case Number	Company	Type of Filing	Issue
WR-2022-0303	Missouri American Water, Inc.	Direct, Rebuttal & Surrebuttal	Normalized & Declining Usage
WM-2022-0186	Foxfire Utility Company & Ozark Clean Water Company	Rebuttal Testimony	Merger Rationale
SA-2021-0017	Missouri American Water Company, Inc.	Surrebuttal & Live Testimony	General Info & Misc.
WR-2020-0344	Missouri American Water Company, Inc.	Direct, Rebuttal & Surrebuttal	Normalized, Declining Usage & Covid
WR-2017-0343	Gascony Water Company, Inc.	Rebuttal, Surrebuttal, & Live Testimony	Rate Design
WR-2017-0285	Missouri American Water Company, Inc.	Direct, Rebuttal & Surrebuttal	Normalized & Declining Usage
WR-2016-0064	Hillcrest Utility Operating Company, Inc.	Direct, Rebuttal & Live Testimony	Rate Design