BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

Roman Dzhurinskiy,	)	
	)	
Complainant,	)	
	)	**Case No. WC-2010-0215**
v.	)	
	)	
Missouri-American Water Company,	)	
	)	
Respondent.	)	

STAFF'S BRIEF WITH ATTACHED
PROPOSED FINDINGS OF FACT AND CONCLUSIONS OF LAW

COMES NOW the Staff of the Missouri Public Service Commission (Staff), by and through the undersigned counsel, and respectfully states the following to the Commission:

Introduction

On January 19, 2010, Mr. Roman Dzhurinskiy (Complainant) filed a *Complaint* against Missouri-American Water Company (Missouri-American or Respondent) with the Commission, asserting inaccurate billing due to a "ratcheting" issue with the meter and customer service issues. After several pre-hearing motions and pleadings, the Commission convened an evidentiary hearing in this matter on November 15, 2010. Mr. Dzhurinskiy, Missouri-American and the Staff, known together herein as "the Parties", offered testimony and exhibits for the record. To assist the Commission during the evidentiary hearing, the Parties set forth two lists of issues within the November 1, 2010 *Joint List Of Issues, List Of Witnesses And Order Of Cross Examination.* Both Missouri-American and the Staff adopted the following list of issues for the Commission's consideration: Was the Complainant overbilled; was there a ratcheting or a backward movement on the flow indicator of the meter owned by the Company and located at the Complainant's residence to measure his water usage, and if so, what was the cause of it; who

has the responsibility to install a device to prevent water from leaving a customer's service line backwards through the meter; and did Missouri-American violate any provision of its tariff, any law, or any Commission order or rule in respect to the allegations contained in the *Complaint*? On December 3, 2010, the Commission issued a *Briefing Schedule* that directed the Parties to file briefs, including proposed findings of fact and conclusions of law from the evidence admitted at the evidentiary hearing. The *Briefing Schedule* directed the Staff to file its brief and proposed findings and conclusions no later than February 2, 2011. The Staff's Brief follows below herein. The Staff has attached its Proposed Findings of Fact and Conclusions of Law hereto as Attachment A.

Jurisdiction

The Commission has jurisdiction to hear and determine Mr. Dzhurinskiy's *Complaint* against Missouri-American, a public utility subject to the jurisdiction of the Commission. Pursuant to Section 386.390.1 RSMo (2000)[1]:

> Complaint may be made by...any...person...by petition or complaint in writing, setting forth any act or thing done or omitted to be done by any...public utility, including any rule, regulation or charge heretofore established or fixed by or for any corporation, person or public utility, in violation, or claimed to be in violation, of any provision of law, or of any rule or order or decision of the commission....

Pursuant to Section 386.390.5 RSMo, "[t]he commission shall fix the time when and the place where a hearing will be had upon the complaint...." The parties admitted evidence into the record at the November 15, 2010 hearing, from which the parties shall file briefs and the Commission issue an order.

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[1] All statutory references are to RSMo (2000) as currently supplemented unless otherwise specified.

Statement of Facts

Mr. Dzhurinskiy claims he was overbilled by Missouri-American, due to the water meter located on his property not deducting properly, or at all, backflow water through the meter[2]. The Complainant has observed his Neptune T10 meter[3] for at least ten months[4] and has never seen the water meter deduct back flow[5]. The meter has a dial that spins clockwise to record how much water the Complainant uses[6]. The meter also has a leak indicator that ordinarily moves counter-clockwise to identify when water is moving through the meter towards the Complainant's home[7]. The Complainant has observed the leak indicator moving in the clockwise (opposite) direction[8], but has not observed the meter dial moving to the left (counter-clockwise) to subtract the amount of backflow water from the registered usage[9]. On December 4, 2009, Missouri-American performed a high bill inspection at the Complainant's residence[10]. The report reads in part:

> During our inspection we examined (timed) the meter for signs of movement for 15 minutes. The meter did show registration. This indicated you may have a leak, although we cannot find the cause of the registration. You may want to hire a plumbing contractor to further investigate a possible leak[11].

On the inspection form, the Missouri-American Associate associate noted registration of "7/100 of Cubic ft." during the 15 minute observation.[12] The Missouri-American associate also noted "I cannot find leak will send crew to pump out box"[13].

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[2] Tr. 23, lines 7-11; 25, lines16-22.
[3] Tr. 27, lines 23-24.
[4] Tr. 26, lines 9-10.
[5] Tr. 27, lines 4-5.
[6] Tr. 28, line 25; Tr. 29, lines 1, 6-10.
[7] Tr. 29, lines 14-20; 30, line 25; 31, lines 1-6.
[8] Tr. 31, lines 7-12.
[9] Tr. 31, lines 22-25; Tr. 32, lines 1-7.
[10] Complainant's Exhibit A.
[11] Id.
[12] Id.
[13] Id.

In September 2009, the Complainant replaced his hot water heater.[14] The Complainant also installed an expansion tank[15]. During the Staff's investigation of the *Complaint* in February 2010, the Complainant stated that the Company personnel expressed that the expansion tank was the cause of the fluctuation in flow on the meter[16].

On March 9, 2010, the Staff installed a digital pressure recorder around 4 p.m., and allowed the device to record any fluctuations in water pressure through 9 a.m. March 10, 2010[17]. At the evidentiary hearing, Mr. Dzhurinskiy stated the recording showed the pressure in his home pipes fluctuated at times throughout the night[18]. The Complainant also introduced recordings of water pressure taken by Missouri-American at various points in the distribution mains on December 4, 2009[19]. According to the Complainant, the graphic recordings indicated that water from his service line cannot re-enter the Company's main because of the lack of pressure, and that it is impossible for him to have backflow[20].

Missouri-American also presented evidence at the hearing. Peter Matschiner testified on behalf of the Company.[21] Mr. Matschiner read meters for approximately seven years, reading approximately 8,000 meters per month before he was promoted to his current Superintendent position[22]. Mr. Matschiner explained how a meter works as follows:

> The water would enter the meter through the inlet side, go through the chamber, and move the disk in a fashion that spins a magnet that is picked up. There is a magnet inside the register that picks up here. And as that magnet is picked up by the register, it spins the gear train inside the register. And as that gear train is turned, in a forward motion, that what we called flow indicator or sometimes it's

[14] Tr. 49, lines 20-22.
[15] Staff Exhibit 1, pg. 1.
[16] Staff Exhibit 1, pg. 1.
[17] Tr. 53, lines 24-25; Tr. 55, lines 12-16; Complainant Exhibit F.
[18] Tr, 57, lines 6- 8; Tr. 58, lines 4-9. Complainant Exhibit F.
[19] Tr. 62, lines 6-11. Complainant Exhibit H.
[20] Tr. 64, lines 16-24.
[21] Tr. 78, lines 16-19.
[22] Tr. 79, lines 5-6, 24,

called leak indicator will also move. That is the, I'll say, the smallest gear on the train. And if that's moving it moves all the other wheels in succession[23].

As water moves from the main to the customer's premise and through the meter, the leak indicator moves counterclockwise as the disk is moved by the water[24]. The sweep hand will rotate clockwise through the numbers one through nine and turn the usage odometer over[25]. The sweep hand is connected to the flow indicator by a gear[26]. If the flow indicator is moving, then the sweep hand is also moving, although it may be difficult to detect with slow water movement[27]. Mr. Matschiner also testified that water can also move backwards through a meter[28]. If that occurs, the flow indicator would then rotate clockwise, and the sweep hand would start to rotate counterclockwise removing usage from the odometer[29]. This may be prevented by installing a back flow prevention device[30].

On December 27, 2009, Missouri-American tested the accuracy of the meter removed from the Complainant's property[31]. At a high flow of ten (10) gallons per minute (gpm), the meter tested at 99.7 percent; at a minimum flow of two (2) gpm, the meter tested at 100.6 percent; at one-eighth (1/8) gpm, the meter tested at 99 percent accuracy[32]. Staff requested the Company test the meter in reverse flow, which resulted in 98 percent accuracy at ten (10) gpm, the meter tested at; at two (2) gpm, it tested at 99.7 percent; and at one-eighth (1/8) gpm, it tested at zero[33]. Again on November 10, 2010, Missouri-American tested the meter in reverse flow at

[23] Tr. 82, lines 14-25
[24] Tr. 83, lines 14-17
[25] Tr. 83, lines 19, 21-23
[26] Tr. 84, line1
[27] Tr. 84, lines 8-9, 21-24
[28] Tr. 84, lines 13-15
[29] Tr. 84, lines 18-20
[30] Tr. 85, lines 2-3
[31] Tr. 85, lines 20, 23-25, Tr. 86, lines 1-2
[32] Tr. 87, lines 12-18.
[33] Tr. 88, lines 6-9

different flows and pressures[34]. At 60 psi and a flow of twenty (20) gpm, the meter tested at 97.2 percent; at ten (10) gpm, the meter tested at 98.6 percent; at five (5) gpm, the meter tested at 99 percent; at a pressure of 100 psi and at a flow of two (2) gpm, the meter tested 99.5 percent accurate; at one (1) gpm, 98 percent accurate; and at one-eighth (1/8) gpm, the meter tested at ten percent accuracy[35]. There are no rules for backwards flow rates however the test results show accuracy within five percent in reverse flow for all flows and pressures except one-eighth (1/8) flows [36].

Mr. Derek Linam also testified at the evidentiary hearing on behalf of Missouri-American[37]. Mr. Linam has 19 years of experience in the water industry, is a licensed professional engineer in the state of Missouri, and has been employed with Missouri-American since 1991[38]. He has overseen and operated Missouri-American's Saint Louis County distribution system, approximately 4,200 miles in length serving over 350,000 customers[39]. He has also operated tank sites and pump stations through-out the distribution center that manage the amount of flow of water into the system from the treatment plants[40]. In 2008, Mr. Linam assumed his current position of Engineering Manager of the Saint Louis County distribution system[41].

Mr. Linam testified that differences in pressure occur throughout the distribution system because of changes in elevation[42]. Missouri-American maintains 30 PSI as a minimum in the

[34] Tr. 88, line 21
[35] Tr. 88, line 25, Tr. 89, lines 1-17
[36] Tr. 91, lines 10-24; Tr. 94, lines 4-7
[37] Tr. 122, line 23
[38] Tr. 123, lines 15-24
[39] Tr. 124, lines 12-13, 20-22, 25
[40] Tr. 125, lines 10-12
[41] Tr. 126, lines 4-5
[42] Tr. 127, lines 11-18

Saint Louis County system[43]. Based on changes in elevation, pressure at a residence may range from 30 to 80 psi[44]. Most residences in Saint Louis County have a pressure regulation valve, which will maintain the pressure below 80 psi[45]. If there is no backflow preventer at a residence, a higher water pressure in the customer's home compared to that in the Company's main will equalize to the pressure in the main[46]. Water could backflow into the Company's main even when no appliance is at use. If the water heater is filling up with cooler water, the hot water heater will turn on and heat the water in the reserve tank[47]. Water expands when it is heated, increasing the pressure on the system if you are not currently using the water[48]. The pressure will continue to rise until it reaches the pressure in the main[49]. Mr. Linam was not aware of any other factual scenario that causes backflow in a residential service line besides a hot water heater[50].

Staff expert, Mr. Steve Loethen, testified on behalf of the Commission's Staff[51]. Mr. Loethen has eleven years of experience as a Utility Operations Technical Specialist in the Commission's Water and Sewer Department[52]. He also has eight years prior experience in the water and wastewater industries managing operations and the expansion of treatment plants[53].

On February 11 2010, Mr. Loethen, on behalf of the Commission's Staff visited Mr. Dzhurinskiy's home on 32 Crabapple Court, Saint Louis, Missouri, to investigate the

[43] Tr. 129, lines 8-10
[44] Tr. 129, lines 23-25
[45] Tr. 130, lines 2-3
[46] Tr. 130, lines 11-14
[47] Tr. 141, lines 23-25; 142, lines 4-18.
[48] Tr. 139, lines 7-10
[49] Tr. 142, lines 5-14
[50] Tr. 142, lines 15-18
[51] Tr. 144, line 16
[52] Tr. 145, lines 4-5
[53] Tr. 145, lines17-18

Complaint[54]. Upon arrival, Mr. Loethen met the Complainant and observed the meter pit[55]. Mr. Loethen observed the leak indicator movement in both directions as indicated in the *Complaint*. The investigation led into the home, where the Complainant shut off a valve in a utility closet believed to be where water service enters the home[56]. Mr. Loethen followed the direction of Mr. Dzhurinskiy while in the home and did not leave his presence, nor turn any valves himself[57]. After Mr. Dzhurinskiy closed the valve, Mr. Loethen and Mr. Dzhurinskiy went back outside to observe the meter pit and did not observe any movement in the leak indicator[58]. Mr. Loethen concluded that either the water heater or another mechanical device in the Complainant's home is causing water to overcome the pressure in the Company's main and backflow through the Complainant's meter[59]. Mr. Loethen testified that when Complainant turned off a valve in his home, the ratcheting action in the meter stopped[60].

While in the home, the Complainant also showed Mr. Loethen a new hot water heater and expansion tank that was installed on September 14, 2009, by Uhrlich Plumbing.[61] Because of the similar timing between the installation of the hot water heater (September 2009) and the Complainant noticing the higher usage on the bill (November 2009), Company personnel expressed to the Complainant that the cause of the fluctuation in flow on the meter is from the expansion tank[62].

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[54] Exhibit Staff -01 (Memorandum)
[55] Exhibit Staff-01 (Memorandum)
[56] Exhibit Staff-01 (Memorandum); Tr. 153, Lines 16
[57] Tr. 183, lines 3-18.
[58] Exhibit Staff-01 (Memorandum)
[59] Tr. 155, lines 13-16
[60] Tr. 172, lines 5-8
[61] Exhibit Staff -01 (Memorandum)
[62] Exhibit Staff -01 (Memorandum)

Mr. Loethen requested that the Company perform tests with a meter installed in the tester properly, and then "backward" to test the accuracy of the meter with flows forward and reverse[63]. The findings are that the meter read with more accuracy in normal flows than it did with a reverse flow, but that both directional flows registered within allowed limits[64].

Mr. Loethen visited the Complainant's home again on March 9, 2010[65]. Mr. Loethen installed a pressure recorder at a position that would record any fluctuations in the Company's main and the Complainant's home at 3 p.m.[66]. Mr. Loethen disconnected the pressure recorder at 9 a.m. the following morning.[67]. The recorder did not show any significant signs of pressure variations and recorded a constant pressure of 45 psi at all times[68]. There was nothing on the pressure recording to give any indication of fluctuating pressures occurring, it was normal[69].

After Staff filed its Recommendation including results of Mr. Loethen's investigation,, Mr. Dzhurinskiy claimed that his neighbors were experiencing similar issues, so Mr. Loethen investigated several surrounding houses on the opposite and same side of the street[70]. Mr. Loethen believed the houses to be on the same main as Mr. Dzhurinskiy's premises[71]. Mr. Loethen did not observe any other meters having ratcheting motion or leak/flow detector movement similar to that observed on Mr. Dzhurinskiy's meter[72]. Mr. Loethen's recommendation was for Complainant to hire a licensed plumber to install a back flow preventer[73].

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[63] Tr. 155, lines 24-25
[64] Tr. 156, lines 1-4
[65] Exhibit Staff-01 (Memorandum)
[66] Tr. 174, line 25, Tr. 175, lines 1-5; Exhibit, Staff-01 (Memorandum); Complainant Exhibit F
[67] Complainant Exhibit F
[68] Exhibit Staff-01 (Memorandum); Complainant Exhibit F
[69] Tr. 176, lines 7-10
[70] Tr. 147, lines 23-25, Tr. 148, line 1
[71] Tr. 148, lines 1-2
[72] Tr. 148, lines 2-4
[73] Tr. 162, lines 8-9, 12, Tr. 163, lines 16-23; Tr. 181, lines 1-4

Applicable Statutes, Regulations, Tariff Provisions and Analysis

Mr. Dzhurinskiy has the burden of proving every charge within his *Complaint* is more likely true than not true[74]. Proof means evidence entered into the record[75]. With respect to the *Complaint*, the Commission has before it the following issues for decision:

A. Was the Complainant overbilled; was there a ratcheting or a backward movement on the flow indicator of the meter owned by the Company and located at the Complainant's residence to measure his water usage, and if so, what was the cause of it?

4 CSR 240-10.030 (37) provides:

> No water service meter shall be allowed in service which has an incorrect gear ratio or dial train or is mechanically defective or shows an error in measurement in excess of five percent (5%) when registering water at stream flow equivalent to approximately one-tenth (1/10) and full normal ration under the average service pressure.

In regard to meter testing and adjustments for meter error, Missouri-American's current on-file tariff, Rule 7.0 provides:

> Customers shall accept the meter installed by the Company as the standard of measurement for water service. If the meter, when inspected and tested using the Company's intermediate and maximum flow rate testing procedures, shall be found to be more than five (5%) defective or incorrect to the prejudice of the customer or the Company, the Company, as a basis for adjusting the billing to the customer, will determine the quantity of water used....

Commission Rule 4 CSR 240-13.025 (D) Billing Adjustments provides "[w]here upon test, an error in measurement is found to be within the limits prescribed by commission rules, no billing adjustment will be made...."

Taking the cause of the ratcheting/movement of the flow or "leak" indicator first, both the Staff's expert and the Company's expert testified that only a mechanical device inside the home could make the flow indicator function in such a way[76]. These experts have several years

[74] Section 536.070, RSMo 2000.
[75] Section 490.065, RSMo 2000.
[76] Exhibit Staff-01 (Memorandum); Tr. 178, lines 17-25; 179, lines 1-4, 7-14.

of extensive experience in the water and wastewater industries and the operation of plant and distribution mains. When the Complainant turned off either the intake valve or the valve to the hot water heater, both of which are inside the home, the movement on the flow or leak indicator ceased. The pressure recording taken by the Staff shows proper psi maintained both in the Company's main and inside the Complainant's home during the hours of observation. The pressure recordings entered into the record by the Complainant showed that the Company maintained proper pressures throughout its different distribution mains for the referenced dates. No other customers on the same main and adjacent to Mr. Dzhurinskiy's premise are experiencing the same ratcheting issues on their meters.

Although the Complainant attempts to separate the timing of the hot water heater's replacement and the backflow issues, the close proximity of these two events is very telling. If backflow is occurring, the question becomes whether the Complainant's meter is recording the backflow within prescribed limits. While there is no Commission rule prescribing requirements for meter accuracy for backward flow, both Commission Rule 4 CSR 240-10.030 and the Company's tariff are illustrative. The Complainant's meter tested within the allowed forward limits for both forward and backward flows. As the Complainant's meter is tested for forward and backward flow within the allowed limits for forward flow, no billing adjustment is necessary pursuant to 4 CSR 240-13.025 (D).

B. Who has the responsibility to install a device to prevent water from leaving a customer's service line backwards through the meter?

Within the Company's on-file tariff with the Commission, P.S.C. MO. No. 6 First Revised Sheet No. R19.1 states:

> All Water Service Line installations, including a "Master Water Service Line," meter yokes, gate valves, corporation cocks, stop cocks, stop and waste valves

> stop boxes, meter boxes, check valves, pressure reducing valves, *backflow preventers* or other appurtenances, *are not the property of the Company and must be kept operational, maintained and repaired by the owner or customer as a condition of service.* It is the responsibility of the owner or customer to keep all remote meter reading devices and all Water Service Line appurtenances, except for the corporation cock, readily accessible to the Company.

(emphasis added). Further, the DNR 10 CSR 60-11.010 (3)(A)(1) states:

> A Class I backflow hazards presents an actual or potential health hazard to customers of the public water system should backflow occur. *The customer or the customer's authorized representative shall* construct a department-approved air-gap separation or *install a reduced pressure principle backflow prevention assembly* on the customer service line, in accordance with section (4) of this rule....

(emphasis added). Finally, the Company's tariff Rule 2.0 Discontinuance of Service provides:

> When the Company becomes aware of the existence of a cross-connection, the Company shall attempt to notify the customer, but regardless of the success of the attempt, the Company shall discontinue service to such customer unless all physical connection creating the cross-connection are immediately severed. The term cross-connection includes but is not limited to any physical connection between: a) a water service line from main of the Company...and a) any source, pipe, tank...or other appurtenance know to contain polluted or otherwise questionable substances...*Service will not be restored until the appropriate backflow prevention control assembly has been installed.* Requirements for backflow prevention control assemblies shall be in accordance with the provisions of the DNR set forth in Chapter 11, 10 CSR 60-11.010. In addition, the Company shall discontinue water service for violation of any of the provision of DNR regulation relating to cross-connection....

(emphasis added).

Mr. Loethen's testimony and investigation support that either the water heater or another mechanical device in the Complainant's home is causing water to overcome the pressure in the Company's main and backflow through the Complainant's meter[77]. Mr. Linam testified that Missouri-American maintains 30 psi as a minimum in the Saint Louis County system, which is where Mr. Dzhurinskiy lives. Based on changes in elevation, pressure at the Complainant's

[77] Tr. 179, lines 20-23

residence may range from 30 to 80 psi. Most residences in Saint Louis County have a pressure regulation valve, which will maintain the pressure below 80 psi. Further, Mr. Linam testified that if there is no backflow preventer at a residence, a higher water pressure in the customer's home compared to that in the Company's main will equalize to the pressure in the main and cause water to backflow into the main.

Water could backflow into the Company's main even when no appliance is at use. Mr. Linam testified that if one has used hot water and the water heater is filling up with cooler water, the hot water heater will turn on and heat the water in the reserve tank. When the water is heated, the water expands and increases the pressure on the system even if water is not currently being used. The pressure will continue to rise until it reaches the pressure in the main. Mr. Linam was not aware of any other factual scenario that causes backflow in a residential service line besides a hot water heater. As the testimony supports a finding that something within Mr. Dzhurinskiy's home is creating the backflow, it is his responsibility to install a backflow preventer. Should a cross-connection of "polluted or otherwise questionable substances[78]" be found entering the Company's main from the service line, the Company rules allow discontinuance of service until Mr. Dzhurinskiy installs a backflow preventer.

C. Did Missouri-American violate any provision of its tariff, any law, or any Commission order or rule in respect to the allegations contained in the *Complaint*?

The Staff recommends that the Commission issue an order that finds that Missouri-American did not violate any provision of its tariff, any law, or any Commission order or rule in respect to the allegations contained in the *Complaint*, and close this matter. While the Staff is sympathetic to Mr. Dzhurinskiy's issue, the Staff can only recommend to the Commission appropriate relief as found by its expert and supported by the testimony, and relief that is within

[78] 4 CSR 240-10.030 (37)

the Commission's authority to grant. The Complainant has not overcome his burden to prove every allegation within his *Complaint* as more likely true than not true.

Conclusion

WHEREFORE, the Staff submits this Brief in compliance with the Commission's *Briefing Schedule* and recommends that the Commission issue an order that adopts the Staff's Proposed Findings of Facts and Conclusions of Law as attached hereto, dismisses the *Complaint* with prejudice, and closes this case.

Respectfully submitted,

/s/ Jennifer Hernandez
Jennifer Hernandez
Associate Staff Counsel
Missouri Bar No. 59814

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CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing was served via first class U.S. postal mail, postage prepaid, on Roman Dzurinskiy, 32 Crabapple Ct. St. Louis MO 63132; electronic mail on Kenneth Jones, attorney for Missouri American Water Company at kenneth.jones@amwater.com; and the Office of Public Counsel at opcservice@ded.mo.gov this 4th day of February 2011.

/s/ Jennifer Hernandez

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

Roman Dzhurinskiy,	)	
	)	
Complainant,	)	
	)	**Case No. WC-2010-0215**
v.	)	
	)	
Missouri-American Water Company,	)	
	)	
Respondent.	)	

PROPOSED FINDINGS OF FACT AND CONCLUSIONS OF LAW

The Missouri Public Service Commission (Commission), having considered all of the competent and substantial evidence upon the whole record, makes the following findings of fact:

Findings of Fact

1. On January 19, 2010, Mr. Roman Dzhurinskiy (Complainant) filed a *Complaint* against Missouri American Water Company (Missouri-American or Respondent) with the Commission, asserting inaccurate billing due to a "ratcheting" issue with the meter, and customer service issues.

2. Missouri-American is a Missouri corporation and public utility, subject to the jurisdiction of the Commission[1].

3. After several pre-hearing motions and pleadings, the Commission convened an evidentiary hearing in this matter on November 15, 2010.

4. Mr. Dzhurinskiy, Missouri-American and the Staff, known together herein as "the Parties", offered testimony and exhibits for the record.

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[1] Missouri-American's *Answer*.

5. To assist the Commission during the evidentiary hearing, the Parties set forth two lists of issues within the November 1, 2010 *Joint List Of Issues, List Of Witnesses And Order Of Cross Examination.*

6. Both Missouri-American and the Staff adopted the following list of issues for the Commission's consideration:

> Was the Complainant overbilled; was there a ratcheting or a backward movement on the flow indicator of the meter owned by the Company and located at the Complainant's residence to measure his water usage, and if so, what was the cause of it; who has the responsibility to install a device to prevent water from leaving a customer's service line backwards through the meter; and did Missouri-American violate any provision of its tariff, any law, or any Commission order or rule in respect to the allegations contained in the *Complaint*?

7. On December 3, 2010, the Commission issued a *Briefing Schedule* that directed the Parties to file briefs, including proposed findings of fact and conclusions of law from the evidence admitted at the evidentiary hearing.

Testimony of Mr. Dzhurinskiy

8. Mr. Dzhurinskiy is currently employed as support staff in a retirement community[2].

9. Mr. Dzhurinskiy is trained as a construction engineer, but is not licensed to practice in the United States[3].

10. Mr. Dzhurinskiy is not a water industry professional[4].

11. Mr. Dzhurinskiy claims he was overbilled by Missouri-American, due to the water meter located on his property not deducting properly, or at all, backflow water through the meter[5].

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[2] Tr. 65, lines 21-22.
[3] Tr. 65, lines 4-9.
[4] Tr. 65, lines 10-12.
[5] Tr. 23, lines 7-11; 25, lines16-22.

12. The Complainant has observed his Neptune T10 meter[6] for at least ten months[7] and has never seen the water meter deduct back flow[8].

13. The meter has a dial that spins clockwise to record how much water the Complainant uses[9].

14. The meter also has a leak indicator that ordinarily moves counter-clockwise to identify when water is moving through the meter towards the Complainant's home[10].

15. The Complainant has observed the leak indicator moving in the clockwise (opposite) direction[11], but has not observed the meter dial moving to the left (counter-clockwise) to subtract the amount of backflow water from the registered usage[12].

16. On December 4, 2009, Missouri-American performed a high bill inspection at the Complainant's residence[13]. The report reads in part:

> During our inspection we examined (timed) the meter for signs of movement for 15 minutes. The meter did show registration. This indicated you may have a leak, although we cannot find the cause of the registration. You may want to hire a plumbing contractor to further investigate a possible leak[14].

17. On the inspection form, the Missouri-American associate noted registration of "7/100 of Cubic ft." during the 15 minutes[15].

18. The Missouri-American associate also noted "I cannot find leak will send crew to pump out box"[16].

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[6] Tr. 27, lines 23-24.
[7] Tr. 26, lines 9-10.
[8] Tr. 27, lines 4-5.
[9] Tr. 28, line 25; Tr. 29, lines 1, 6-10.
[10] Tr. 29, lines 14-20; 30, line 25; 31, lines 1-6.
[11] Tr. 31, lines 7-12.
[12] Tr. 31, lines 22-25; Tr. 32, lines 1-7.
[13] Complainant's Exhibit A.
[14] Id.
[15] Id.
[16] Id.

19. The Premise Usage Transaction Report[17] for the Complainant's address shows historical usage comparable to the usage billed during the *Complaint* period[18].

20. The Complainant's bill shows usage of 600 cubic feet during the quarterly billing period of February 19, 2010, through May 19, 2010[19].

21. The usage charge for water during the February through May 2010 quarter was $12.50[20].

22. The Complainant's yearly usage charge is approximately $50.00[21].

23. The Complainant agreed during the hearing that if there is backflow through his meter, that his bill ought to be zero[22].

24. The Complainant also agreed that his bill usage is about one quarter of the average Saint Louis County customer's usage[23].

25. During September 2009, the Complainant replaced his hot water heater[24].

26. At the same time, the Complainant also installed an expansion tank[25].

27. At hearing, the Complainant did not know the efficiency of the new water heater compared to the replaced model[26].

28. On March 9, 2010, the Staff installed a pressure recorder around 4 p.m., and allowed the device to record any fluctuations in water pressure through 9 a.m. March 10, 2010[27].

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[17] Complainant's Exhibit B.
[18] Complainant's Exhibit C.
[19] Id.
[20] Tr. 72, lines1-6.
[21] Tr. 72, lines 10-17.
[22] Tr. 47, lines 17-22.
[23] Tr. 66, lines 17-21.
[24] Tr. 49, lines 20-22.
[25] Staff Exhibit 1, pg. 1.
[26] Tr. 53, lines1-5.
[27] Tr. 53, lines 24-25; Tr. 55, lines 12-16, 21; Complainant Exhibit F.

29. At hearing, Mr. Dzhurinskiy stated the recording showed the pressure in his home pipes fluctuated at times throughout the night and caused ratcheting[28].

30. The Complainant also used recordings of water pressure taken by Missouri-American at various points in the distribution mains on December 4, 2009[29].

31. The Complainant stated that the readings did not record pressure within the main at the point water enters his service line, but that he needed to add six or eight PSI to the station pressure recording[30].

32. According to the Complainant, the graphic recordings indicated that water from his service line cannot re-enter the Company's main because of the lack of pressure, and that it is impossible for him to have backflow[31].

Testimony of Missouri-American Witness Peter Matschiner

33. Mr. Peter Matschiner is the current Operations Superintendent for Field Customer Service[32].

34. In 1996, he began working for the Company as a substitute Operations Operator[33], but in 1997, became a meter reader[34].

35. Mr. Matschiner read meters for approximately six and a half or seven years, reading approximately 8,000 meters per month[35].

36. In 2004, Mr. Matschiner moved into Field Customer Service operations, and in 2008[36], promoted to his current Superintendent position[37].

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[28] Tr, 57, lines 6- 8; Tr. 58, lines 4-9. Complainant Exhibit F.
[29] Tr. 62, lines 6-11. Complainant Exhibit H.
[30] Tr. 62, lines 13-21. Complainant Exhibit H.
[31] Tr. 64, lines 16-24.
[32] Tr. 79, lines 5-6.
[33] Tr. 79, lines 13-15.
[34] Tr. 79, lines 22-23.
[35] Tr. 79, lines 5-6, 24.

37. At hearing, Mr. Matschiner explained how a meter works as follows:

> The water would enter the meter through the inlet side, go through the chamber, and move the disk in a fashion that spins a magnet that is picked up. There is a magnet inside the register that picks up here. And as that magnet is picked up by the register, it spins the gear train inside the register. And as that gear train is turned, in a forward motion, that what we called flow indicator or sometimes it's called leak indicator will also move. That is the, I'll say, the smallest gear on the train. And if that's moving it moves all the other wheels in succession[38].

38. As water moves from the main to the customer's premise and through the meter, the leak indicator moves counterclockwise as the disk is moved by the water[39].

39. The sweep hand will rotate clockwise through the numbers one through nine and turn the usage odometer over[40].

40. The sweep hand is connected to the flow indicator by a gear[41]. If the flow indicator is moving, then the sweep hand is also moving, although it may be difficult to detect with slow water movement[42].

41. Mr. Matschiner testified that water can also move backwards through a meter[43].

42. If backflow occurs, the flow indicator would then rotate clockwise, and the sweep hand would start to rotate counterclockwise removing usage from the odometer[44].

43. On December 27, 2009, Missouri-American tested the accuracy of the meter removed from the Complainant's property[45].

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[36] Tr. 80, lines 7-11.
[37] Tr. 81, lines 6-8.
[38] Tr. 82, lines14-25.
[39] Tr. 83, lines 14-16.
[40] Tr. 83, lines19, 21-23.
[41] Tr.84, line 1
[42] Tr. 84, lines 8-9, 21-24
[43] Tr. 84, lines 13-15
[44] Tr. 84, lines 18-20.
[45] Tr. 85, lines 20, 23-25 - Tr.86, lines 1-2.

44. For forward flow at a high flow of ten (10) gallons per minute (gpm), the meter tested at 99.7 percent; at a minimum flow of two (2) gpm, the meter tested at 100.6 percent; at one-eighth (1/8) gpm, the meter tested at 99 percent accuracy[46].

45. Testing backward flow at ten gpm, the meter tested at 98 percent; at two gpm, it tested at 99.7 percent; and at one-eighth gpm, it tested at zero[47].

46. Again on November 10, 2010, Missouri-American tested the meter in reverse flow at different pressures and flow rates[48].

47. At 60 psi and a flow of twenty (20) gpm, the meter tested at 97.2 percent; at a flow of ten (10) gpm, the meter tested at 98.6 percent; at five gpm, the meter tested at 99 percent; at 100 psi and a flow rate of two (2) gpm, the meter tested at 99.5 percent accurate; at one gpm, 98 percent accurate; and at one-eighth gpm, the meter tested at ten percent accuracy[49].

Testimony of Missouri-American Witness Derek Linam

48. Mr. Derek Linam has 19 years of experience in the water industry, is a licensed professional engineer in the state of Missouri, and has been employed with Missouri-American since 1991[50].

49. He has overseen and operated Missouri-American's Saint Louis County distribution system, approximately 4200 miles in length serving over 350,000 customers[51].

50. He has also operated tank sites and pump stations thought the distribution center that manage the amount of flow of water into the system from the treatment plants[52].

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[46] Tr. 87, lines 12-18.
[47] Tr. 88, lines 6-9.
[48] Tr. 88, line 21.
[49] Tr. 88, line 25 - Tr. 89, lines 1-17.
[50] Tr. 123, lines 15-24.
[51] Tr. 124, lines 12-13, 20-22, 25.
[52] Tr. 125, lines 10-12.

51. In 2008, Mr. Linam assumed his current position of Engineering Manager of the Saint Louis County distribution system[53].

52. Mr. Linam testified that differences in pressure occur throughout the distribution system because of changes in elevation[54].

53. For every 2.31 feet difference in elevation, the water pressure in the water main will change by one psi[55].

54. Missouri-American maintains 30 psi as a minimum in the Saint Louis County system[56].

55. Based on changes in elevation, pressure at a residence may range from 30 to 80 PSI[57].

56. Most residences in Saint Louis County have a pressure regulation valve, which will maintain the pressure below 80psi[58].

57. Mr. Linam further testified that if there is no backflow preventer at a residence, a higher water pressure in the customer's home compared to that in the Company's main will equalize to the pressure in the main[59].

58. Mr. Linam testified that water could backflow into the Company's main even when no appliance is at use, such as if you have used hot water and the water heater is filling up with cooler water, the hot water heater will turn on and heat the water in the reserve tank[60].

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[53] Tr. 126, lines 4-5.
[54] Tr. 127, lines 11-18.
[55] Tr. 128, lines 4-6.
[56] Tr. 129, lines 8-10.
[57] Tr. 129, lines 23-25.
[58] Tr. 130, lines 2-3.
[59] Tr. 130, lines 11-14
[60] Tr. 141, lines 23-25; 142, lines 4-18.

59. Water expands when it is heated, increasing the pressure on the system if you are not currently using the water[61].

60. The pressure will continue to rise until it reaches and overcomes the pressure in the main causing water to backflow into the main[62].

61. Mr. Linam was not aware of any other factual scenario that causes backflow in a residential service line besides a hot water heater[63].

Testimony of Staff Expert Steve Loethen

62. Mr. Steve Loethen has eleven years of experience as a Utility Operations Technical Specialist in the Commission's Water and Sewer Department[64].

63. He also has eight years prior experience in the water and wastewater industries managing operations and the expansion of treatment plants[65].

64. On February 11, 2010, Mr. Loethen visited Mr. Dzhurinskiy's home on 32 Crabapple Court, Saint Louis, Missouri, to investigate the *Complaint*[66].

65. Upon arrival, Mr. Loethen met the Complainant and observed the meter pit[67].

66. Mr. Loethen observed leak indicator movement in both directions as indicated in the *Complaint*[68].

67. At the invitation of the Complainant, Mr. Loethen entered the Complainant's home, where the Complainant shut off a valve in a utility closet believed to be where water service enters the home[69].

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[61] Tr. 139, lines 7-10
[62] Tr. 142, lines 5-14.
[63] Tr. 142, lines 15-18
[64] Tr. 145, lines 4-5.
[65] Tr. 145, lines 17-18.
[66] Exhibit Staff-01 (Memorandum).
[67] Exhibit Staff-01 (Memorandum).
[68] Exhibit Staff-01 (Memorandum).

68. While in the home, Mr. Loethen followed the direction of the Complainant and did not leave his presence, nor turn off any valves himself[70].

69. After Complainant closed the valve, Mr. Loethen returned outside and observed no movement of the leak indicator[71].

70. Mr. Loethen understands that either the water heater or another mechanical device in the Complainant's home is causing water to overcome the pressure in the Company's main and backflow through the Complainant's meter[72].

71. While in the home, the Complainant also showed Mr. Loethen the new hot water heater and expansion tank that was installed on September 14, 2009, by Uhrlich Plumbing[73].

72. Because of the similar timing between the installation of the hot water heater (September 2009) and the Complainant noticing the higher usage on the bill (November 2009), Company personnel expressed to the Complainant that the cause of the fluctuation in flow on the meter is from the expansion tank[74].

73. Mr. Loethen reviewed Complainant's bill and service records that were provided by the Company as part of the investigation of this *Complaint* [75].

74. The records indicate that the Company visited the property on December 4 and December 17, 2009 to investigate the informal complaint launched by the Complainant. On December 17, the Company exchanged the meter and noted in its records that the leak indicator on the new meter also moved in both directions[76].

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[69] Tr. 183, lines 3-6.
[70] Tr. 183, lines 6-18.
[71] Tr. 155, lines 13-16
[72] Exhibit Staff-01 (Memorandum); Tr. 178, lines 17-25; 179, lines 1-4, 7-14.
[73] Exhibit Staff-01 (Memorandum).
[74] Exhibit Staff-01 (Memorandum).
[75] Exhibit Staff-01(Memorandum).
[76] Exhibit Staff-01 (Memorandum).

75. Mr. Loethen requested that the Company perform the tests with a meter installed in the tester properly, and then "backward" to test the accuracy of the meter with flows forward and reverse[77].

76. The findings are that the meter did read with more accuracy in normal flows than it did with a reverse flow[78].

77. Mr. Loethen visited the Complainant's home again on March 9, 2010, and installed a pressure recorder on the outside of the Complainant's home where the water service line exits the home[79].

78. Mr. Loethen returned to the Complainant's home on March 11, 2010, to disconnect the pressure recorder[80].

79. The pressure recording did not show any significant signs of pressure variations, and recorded a constant pressure of 45 psi or higher from the hours of approximately 3 p.m. and 9 a.m.[81].

80. After Staff filed its Recommendation, including the results of Mr. Loethen's investigation, Complainant reported that his neighbors were experiencing similar issues, so Mr. Loethen investigated several surrounding houses on the opposite and same side of the street[82]. The additional houses investigated were on the same main as Mr. Dzhurinskiy's premises[83].

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[77] Tr. 155, lines 24-25.
[78] Tr. 156, lines 1-4.
[79] Exhibit Staff-01 (Memorandum),
[80] Exhibit Staff-01 (Memorandum).
[81] Complainant's Exhibit F; Exhibit Staff-01 (Memorandum).
[82] Tr. 147, lines 23-25 – Tr. 148, line 1.
[83] Tr. 147, lines 23-2 – Tr. 148, line 1.

81. Mr. Loethen observed the meter behavior at each of these additional homes and did not observe any other meters having ratcheting motion or leak/flow detector movement similar to that observed on Mr. Dzhurinskiy's meter during the same investigation[84].

The Missouri Public Service Commission has reached the following conclusions of law:

Jurisdiction and Authority

Missouri-American is a water corporation and a public utility as defined in 386.020 (43) RSMo, and is subject to the jurisdiction of the Commission pursuant to Sections 386.250 and 393.140 RSMo. Commission regulated utilities must operate within certain boundaries. The Public Service Commission Law, Chapter 393 RSMo, Missouri American's Certificate of Convenience and Necessity (CCN), the Company's approved tariff[85] and the Commission's regulations provide the parameters within which the Company must operate.

The Commission has jurisdiction to hear and determine Mr. Dzhurinskiy's *Complaint* against Missouri-American. A "[c]omplaint may be made by...any...person...by petition or complaint in writing, settling forth any act or thing done or omitted to be done by any...public utility...in violation, or claimed to be in violation, of any provision of law, or of any rule or order or decision of the commission...."[86] Pursuant to Section 386.390.5 RSMo, "[t]he commission shall fix the time when and the place where a hearing will be had upon the complaint...." The parties admitted evidence into the record at the November 15, 2010 hearing, from which the parties filed briefs and the Commission issues an order.

Burden of Proof

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[84] Tr. 148, lines 2-4.
[85] The Court in *State ex rel. Mo. Gas Energy v. Pub. Serv. Comm'n,* 210 S.W.3d 330, 337 (Mo. App. W.D. 2006) stated "a tariff is a document which lists a public utility['s] services and the rates for those services. A tariff has the same force and effect as a statute, and it becomes state law." (internal citations omitted).
[86] Section 386.390 RSMo.

Mr. Dzhurinskiy has the burden of proving every charge within his *Complaint* is more likely true than not true[87]. Proof means evidence entered into the record[88].

Expert Testimony

The Missouri Rules of Evidence statutorily prescribe who may testify as an expert witness. Section 490.065.1 RSMo (2000) provides:

> [i]n any civil action, if scientific, technical or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education may testify thereto in the form of an opinion or otherwise.

When making findings of fact, the Commission assigns the appropriate weight to the testimony of each witness based upon that witness' qualifications, expertise, and credibility with regard to the attested subject matter. *In re C.W.*, 211 S.W.3d 93, 99 (Mo. banc 2007).

Issue List

With respect to the *Complaint*, the Commission has before it the following issues for decision:

A. Was the Complainant overbilled; was there a ratcheting or a backward movement on the flow indicator of the meter owned by the Company and located at the Complainant's residence to measure his water usage, and if so, what was the cause of it?

B. Who has the responsibility to install a device to prevent water from leaving a customer's service line backwards through the meter?

C. Did Missouri-American violate any provision of its tariff, any law, or any Commission order or rule in respect to the allegations contained in the *Complaint*?

[87] Section 536.070, RSMo 2000.
[88] Section 490.065, RSMo 2000.

A. Was the Complainant overbilled; was there a ratcheting or a backward movement on the flow indicator of the meter owned by the Company and located at the Complainant's residence to measure his water usage, and if so, what was the cause of it?

The Commission determines that the cause of the ratcheting cannot be attributed to the meter owned by the Company and located at the Complainant's residence and therefore determines that Complainant was not overbilled.

Commission Rule 4 CSR 240-10.030 (37) provides, in pertinent part,:

> No water service meter shall be allowed in service which has an incorrect gear ratio or dial train or is mechanically defective or shows an error in measurement in excess of five percent (5%) when registering water at stream flow equivalent to approximately one-tenth (1/10) and full normal ration under the average service pressure. ...

In regard to meter testing and adjustments for meter error, Missouri-American's current on-file tariff, Rule 7.0 provides:

> Customers shall accept the meter installed by the Company as the standard of measurement for water service. If the meter, when inspected and tested using the Company's intermediate and maximum flow rate testing procedures, shall be found to be more than five (5%) defective or incorrect to the prejudice of the customer or the Company, the Company, as a basis for adjusting the billing to the customer, will determine the quantity of water used....

Commission Rule 4 CSR 240-13.025 (D) Billing Adjustments provides "[w]here upon test, an error in measurement is found to be within the limits prescribed by commission rules, no billing adjustment will be made...."

First, looking at the cause of the ratcheting/movement of the flow or "leak" indicator, both the Staff's expert and the Company's expert testified that only a mechanical device inside the home could make the flow indicator function in such a way. These experts have several years of extensive experience in the water and wastewater industries, operation of plant and distribution mains. Although the Complainant attempts to separate the timing of the replacement

of a hot water heater and the backflow issues, the close proximity of these two events is very telling. During the investigation, when the Complainant turned off either the intake valve or the valve to the hot water heater, both inside the home, the movement on the flow or leak indicator ceased. Additionally, the pressure recording taken by Mr. Loethen shows proper psi maintained both in the Company's main and inside the Complainant's home during the hours of observation. Complainant even introduced into the record pressure recordings that show proper pressures maintained throughout different distribution mains of the Company. Finally, no other customers on the same main and adjacent to Mr. Dzhurinskiy's premise are experiencing the same ratcheting issues on their meters. These factors combine to conclude that the ratcheting that occurred on Complainant's meter is (or is most likely) due to something inside Complainant's home.

If backflow is occurring, the questions becomes whether the Complainant's meter is recording the backflow within prescribed limits. While there is no Commission Rule prescribing requirements for meter accuracy for backward flow, both the provisions of Commission Rule 4 CSR 240-10.030 and the Company's tariff are illustrative. Worthwhile repeating here, the Complainant's meter tested forward and backward flows as follows: At high forward flow of ten gallons per minute (gpm), the meter tested at 99.7 percent; at minimum flow of two gpm, the meter tested at 100.6 percent; at one-tenth gpm, the meter tested at 99 percent accuracy. Testing backward flow of ten gpm, the meter tested at 98 percent; at two gpm, it tested at 99.7 percent; and at one-eighth gpm, it tested at zero. Missouri-American tested the meter in reverse flow a second time on November 10, 2010. At 60 psi and a flow of twenty (20) gpm, the meter tested at 97.2 percent; at a flow of ten (10) gpm, the meter tested at 98.6 percent; at five (5) gpm, the meter tested at 99 percent; at 100 psi and a flow of two (2) gpm, 99.5 percent accurate; at one (1)

gpm, 98 percent accurate; and at one-eighth (1/8) gpm, the meter tested at ten percent accuracy. As the Complainant's meter tests for forward and backward flow were within the allowed limits for forward flow, the Commission concludes no billing adjustment is necessary pursuant to 4 CSR 240-13.025 (D).

B. Who has the responsibility to install a device to prevent water from leaving a customer's service line backwards through the meter?

The Commission finds that the responsibility belongs to the Complainant to install a device to prevent water from leaving a customer's service line backwards through the meter. Within the Company's on-file tariff with the Commission, P.S.C. MO. No. 6 First Revised Sheet No. R19.1 states:

> All Water Service Line installations, including a "Master Water Service Line," meter yokes, gate valves, corporation cocks, stop cocks, stop and waste valves stop boxes, meter boxes, check valves, pressure reducing valves, *backflow preventers* or other appurtenances, *are not the property of the Company and must be kept operational, maintained and repaired by the owner or customer as a condition of service.* It is the responsibility of the owner or customer to keep all remote meter reading devices and all Water Service Line appurtenances, except for the corporation cock, readily accessible to the Company.

(emphasis added). Further, the Missouri Department of Natural Resources (MDNR) 10 CSR 60-11.010 (3)(A)(1) states:

> A Class I backflow hazards presents an actual or potential health hazard to customers of the public water system should backflow occur. *The customer or the customer's authorized representative shall* construct a department-approved air-gap separation or *install a reduced pressure principle backflow prevention assembly* on the customer service line, in accordance with section (4) of this rule....

(emphasis added). Finally, the Company's tariff Rule 2.0 Discontinuance of Service provides:

> When the Company becomes aware of the existence of a cross-connection, the Company shall attempt to notify the customer, but regardless of the success of the attempt, the Company shall discontinue service to such customer unless all physical connection creating the cross-connection are immediately severed. The

> term cross-connection includes but is not limited to any physical connection between: a) a water service line from main of the Company...and a) any source, pipe, tank...or other appurtenance know to contain polluted or otherwise questionable substances...*Service will not be restored until the appropriate backflow prevention control assembly has been installed.* Requirements for backflow prevention control assemblies shall be in accordance with the provisions of the DNR set forth in Chapter 11, 10 CSR 60-11.010. In addition, the Company shall discontinue water service for violation of any of the provision of DNR regulation relating to cross-connection....

(emphasis added).

The Commission finds Mr. Loethen's testimony credible and supportive that either the water heater or another mechanical device in the Complainant's home is causing water to overcome the pressure in the Company's main and backflow through the Complainant's meter. Mr. Linam was not aware of any other factual scenario that causes backflow in a residential service line besides a hot water heater.

Mr. Linam testified that Missouri-American maintains 30 psi as a minimum in the Saint Louis County system. Based on changes in elevation, pressure at the Complainant's residence may range from 30 to 80 PSI. Most residences in Saint Louis County have a pressure regulation valve, which will maintain the pressure below 80 PSI. Further, Mr. Linam testified that if there is no backflow preventer at a residence, a higher water pressure in the customer's home compared to that in the Company's main will equalize to the pressure in the main.

The Commission finds that it is even possible that water could backflow into the Company's main even when no appliance is at use. For example, if you used hot water and the water heater is filling up with cooler water, the hot water heater will turn on and heat the water in the reserve tank. Water expands when it is heated, increasing the pressure on the system if you are not currently using the water. The pressure can continue to rise until it overcomes the pressure in the main causing water to backflow into the main from the Complainant's home.

As the testimony supports a finding that something within Mr. Dzhurinskiy's home is creating the backflow, it is his responsibility to install a backflow preventer. Should a cross-connection of "polluted or otherwise questionable substances[89]" be found entering the Company's main from the service line, the Company rules allow discontinuance of service until Mr. Dzhurinskiy installs a backflow preventer.

C. Did Missouri-American violate any provision of its tariff, any law, or any Commission order or rule in respect to the allegations contained in the *Complaint*?

The Commission finds that the Complainant has not overcome his burden to prove every allegation within his *Complaint* as more likely true than not true. Complainant did not present any evidence to establish that Missouri-American has acted unlawfully in any manner. The Company presented competent and substantial evidence that it tested the Complainant's meter and found it to be within the allowed limits. As such, the Commission finds that Missouri-American did not violate any provision of its tariff, any law, or any Commission order or rule in respect to the allegations contained in the *Complaint*, and shall close this matter.

[89] Company tariff, Rule 2.0