

**COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION**

In the Matter of:

**ELECTRONIC INVESTIGATION)
INTO THE MEASURING,)
RECORDING, AND REPORTING OF) CASE NO. 2018-00394
WATER LOSS BY KENTUCKY'S)
JURISDICTIONAL WATER)
UTILITIES)**

**RESPONSE OF
MARION COUNTY WATER DISTRICT
TO
COMMISSION'S REQUEST FOR INFORMATION
DATED DECEMBER 18, 2018**

FILED: January 14, 2019

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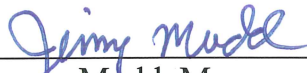
**CERTIFICATION OF RESPONSE OF
MARION COUNTY WATER DISTRICT**

TO

COMMISSION'S REQUEST FOR INFORMATION

This is to certify that I have supervised the preparation of Marion County Water District's Response to the Commission's Request for Information. The response submitted on behalf of Marion County Water District is true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.

Date: 1-14-2019



Jimmy Mudd, Manager
Marion County Water District

MARION COUNTY WATER DISTRICT

CASE NO. 2018-00394

Response to Commission's Request for Information

Question No. 1

Responding Witness: Jimmy Mudd

- Q-1. Explain in detail the manner in which you measure, calculate, and track water loss, and:
- a. Identify whether you use any manual form (including Excel spreadsheet) or electronic or mechanized system to calculate and track water loss.
 - b. Provide a copy of any form used (including Excel spreadsheet).
 - c. Identify the source of any form or system used.
- A-1. The Marion County Water District (MCWD) utilizes a Monthly Water Accountability Report Excel spreadsheet to manually calculate and track water loss for the system. The spreadsheet allows system personnel to enter values for water purchased, water sold (by customer type), water used but not sold (flushing and fire department use), and water loss (tank overflows, line breaks and line leaks). MCWD does not produce water and purchases all water for re-sale to our customers from the Lebanon Water Works Company and Campbellsville Municipal Water & Sewer. Information regarding water purchased is obtained from readings taken at purchase point master meters which are read daily. The total monthly usage for all purchase points is combined to give the total amount of water purchased for the system.

Likewise, information regarding water sold is obtained from readings taken at all active customer meters once per month. The total usage for all customer meters is totaled via our billing software to determine the total amount of water sold for the system. Regarding water which is used but not sold, the spreadsheet allows for system personnel to input of various conditions which then populates an estimate of the amount of water which is used for both system flushing and fire department use. In the case of flushing, the inputs are recorded in the field by the service technician who is performing the flushing. The inputs are recorded on a "Flushing of Lines" worksheet which is then taken back to the office for input into the spreadsheet at the end of the month. Similarly, inputs relative to fire department usage are recorded in the field by fire department personnel on a "Fire Station Monthly Report" worksheet which is delivered to the MCWD office monthly as applicable for input into the spreadsheet. Regarding water loss, the spreadsheet also allows system personnel to input various conditions relative to line breaks, leaks and tank overflows and then populates an estimate of the amount of water lost due to the event. Known water loss events are recorded in field on "Service Order" forms by service technicians and then taken back to the office for input into the spreadsheet before the end of the month.

- a. MCWD utilizes a Monthly Water Accountability Report Excel spreadsheet to manually calculate and track water loss for the system.

b. See attached the following:

- Monthly Water Accountability Report Excel spreadsheet
- “Flushing of Lines” worksheet
- "Fire Station Monthly Report” worksheet
- “Service Order” form

c. The Monthly Water Accountability Report Excel spreadsheet was sourced from the Kentucky Rural Water Association. All other forms referenced were created by MCWD.

MARION COUNTY WATER DISTRICT

CASE NO. 2018-00394

Response to Commission's Request for Information

Question No. 2

Responding Witness: Jimmy Mudd

- Q-2. Explain in detail your understanding of the information to be provided in each of the categories on the Water Statistics page (reference page 30) of the annual report required of jurisdictional water utilities, accessed through the Commission's website.
- A-2. MCWD's understanding of the information to be provided in each of the categories on the Water Statistics page of the annual report is as follows:
1. "Water Produced, Purchased, and Distributed" – Heading
 2. "Water Produced" – The total volume of water produced by MCWD. Not applicable for MCWD.
 3. "Water Purchased" – The total volume of water purchased by MCWD from our suppliers.
 4. "Total Produced and Purchased" – The sum of Line 2 "Water Produced" and Line 3 "Water Purchased". More specifically, this is the total volume of water which enters the MCWD system.
 6. "Water Sales:" – Heading
 7. "Residential" – The total volume of water sold by MCWD to residential customers.

8. “Commercial” – The total volume of water sold by MCWD to commercial customers.
9. “Industrial” – The total volume of water sold by MCWD to industrial customers.
10. “Bulk Loading Stations” – The total volume of water sold by MCWD to customers at bulk loading stations, automatic water sales stations, or similar type sales. Not applicable to MCWD
11. “Resale” – The total of volume of water sold by MCWD to other water utilities or customers for resale to their customers or users. Not applicable to MCWD.
12. “Other Sales” – The total of volume of water sold by the MCWD to customers which are not considered residential, commercial, or industrial type users. For MCWD this includes multi-family dwellings, mobile home parks, temporary users such as contractors, and other similar unusual customer categories.
13. “Total Water Sales” – The sum of Line 7 “Residential”, Line 8 “Commercial”, Line 9 “Industrial”, Line 10 “Bulk Loading Stations”, Line 11, “Resale”, and Line 12 “Other Sales”. More specifically, this is the total volume of water which is sold by MCWD.
15. “Other Water Used” – Heading

16. “Utility/water treatment plant” – The total of volume of water used by MCWD at a water treatment plant or similar type facility. Not applicable to MCWD.
17. “Wastewater plant” – The total of volume of water used by MCWD at a wastewater treatment plant or similar type facility. Not applicable to MCWD.
18. “System flushing” – The total of volume of water used by MCWD to flush transmission and distribution mains throughout the system. This includes routine system flushing, flushing related to leak and break repairs, flushing of newly constructed mains, and flushing related to the control of Disinfection Byproducts.
19. “Fire Department” – The total of volume of water used by fire departments within the MCWD system for firefighting and fire hydrant testing and maintenance.
20. “Other” – The total of volume of water used by MCWD within the system for purposes other than Utility/Water Treatment Plant, Wastewater plant, System Flushing, and Fire Department. Not applicable to MCWD.
21. “Total Other Water Used” – The sum of Line 16 “Utility/water treatment plant”, Line 17 “Wastewater plant”, Line 18 “System flushing”, Line 19 “Fire Department”, and Line 20 “Other”. More specifically, this is the total volume of water which MCWD uses but is not sold to customers.
23. “Water Loss” – Heading

24. “Tank Overflows” – The total of volume of water lost by MCWD due to water storage tank overflows. Not typically applicable to MCWD.
25. “Line Breaks” – The total of volume of water lost by MCWD due to known water line breaks. This includes accidental breaks due to excavation damage by others as well as other spontaneous regular breaks within the system that are found and repaired.
26. “Line Leaks” – The total of volume of water lost by MCWD due to line leaks within the system. MCWD considers all lost water which cannot be account for by known tank overflows or line breaks to be the result of line leaks.
27. “Other” – The total of volume of water lost by MCWD within the system due to causes other than Tank Overflows, Line Breaks, and Line Leaks. Not typically applicable to MCWD.
28. “Total Line Loss” – The sum of Line 24 “Tank Overflows”, Line 25 “Line Breaks”, Line 26 “Line Leaks”, and Line 27 “Other”. More specifically, this is the total volume of water which MCWD lost within the system.
32. “Water Loss Percentage” – Heading
33. “Line 28 divided by Line 4” – This is the amount Line 28 “Total Line Loss” divided by Line 4 “Total Produced and Purchased”. More specifically, this is the percentage of the amount of water which was lost within the MCWD system as compared the amount of water which entered the MCWD system.

MARION COUNTY WATER DISTRICT

CASE NO. 2018-00394

Response to Commission's Request for Information

Question No. 3

Responding Witness: Jimmy Mudd

- Q-3. State any questions you have regarding how to use the updated Commission Form described and attached as Appendix A to this Order.
- A-3. The Marion County Water District currently has no questions.

MARION COUNTY WATER DISTRICT

CASE NO. 2018-00394

Response to Commission's Request for Information

Question No. 4

Responding Witness: Jimmy Mudd

- Q-4. State any suggestions or improvements you have for the updated Commission Form described and attached as Appendix A to this Order.
- A-4. The Marion County Water District currently has no suggestions or improvements.

MARION COUNTY WATER DISTRICT

CASE NO. 2018-00394

Response to Commission's Request for Information

Question No. 5

Responding Witness: Jimmy Mudd

- Q-5. State any questions you have regarding how the information in the updated Commission Form described and attached as Appendix A to this Order is to be incorporated into annual reports.

- A-5. The Marion County Water District currently has no questions.

MARION COUNTY WATER DISTRICT

CASE NO. 2018-00394

Response to Commission's Request for Information

Question No. 6

Responding Witness: Jimmy Mudd

- Q-6. State any concerns you have regarding the use of the updated Commission Form described and attached as Appendix A to this Order.
- A-6. The Marion County Water District currently has no concerns.

MARION COUNTY WATER DISTRICT

CASE NO. 2018-00394

Response to Commission's Request for Information

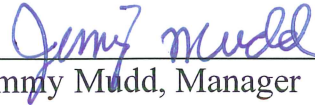
Question No. 7

Responding Witness: Jimmy Mudd

- Q-7. State whether you believe it is reasonable, proper, and appropriate for the Commission to require jurisdictional water utilities to maintain and use the updated Commission Form described and attached as Appendix A to this Order. Fully explain your answer
- A-7. The Marion County Water District **does** believe it is reasonable, proper, and appropriate for the Commission to require jurisdictional water utilities to maintain and use the updated Commission Form. The updated Commission Form includes all appropriate categories to measure, calculate, and track water loss for all water systems, regardless of the size and type. As the Commission continues to emphasize water loss in rate making and other proceedings, it is logical that all utilities should be required to use the same form to report the information to the Commission.

CERTIFICATE OF SERVICE

In accordance with 807 KAR 5:001, Section 8, I certify that Marion County Water District's electronic filing of this Response is a true and accurate copy of the same document being filed in paper medium; that the electronic filing was transmitted to the Public Service Commission on January 14, 2019; that there are currently no parties that the Public Service Commission has excused from participation by electronic means in this proceeding; and that an original paper medium of this Response will be delivered to the Public Service Commission within two business days.



Jimmy Mudd, Manager
Marion County Water District

Monthly Water Accountability Reports

Month: Year:

Water System: PWSID:

Contact Person: Phone:

Mailing Address:
City: State: Zip:

Cubic Feet Conversion:	<input type="text"/>	cubic feet equals	<input type="text" value="0"/>	gallons
	<input type="text"/>	gallons equals	<input type="text" value="0"/>	cubic feet
	<input type="text"/>	ft ³ costing <input type="text"/>	equals	<input type="text"/>

Regulations

All Utilities

401 KAR 8:150

Section 4:

(2) Line repairs due to breaks or ruptures.

(a) The system shall thoroughly flush the break area and maintain at least a minimum disinfectant residual, pursuant to Section 1(1) of this administrative regulation.

(b) The system may leave the line in service or return the line to service before receiving bacteriological results and may forego a boil water advisory if:

1. Pressure is maintained;
2. The break area is thoroughly flushed; and
3. At least the minimum disinfectant residual is maintained, pursuant to Section 1(1) of this administrative regulation.

(c)1. The system shall take at least two (2) bacteriological tests, one (1) located before, or just upstream of, the break or rupture, and one (1) located behind, or just downstream of, the break or rupture, as close to the break or rupture as practical pursuant to 40 C.F.R. 141.21. Additional samples may be required, if necessary to be representative of the area affected by the break.

2. Sample bottles shall be clearly identified as "special" tests, and the results submitted to the cabinet shall be clearly marked as "special" samples

(d)1. Records of results shall be submitted to the cabinet with routine monthly compliance samples, unless the samples are required to lift a boil water advisory, and shall be maintained for one (1) year. 2. Samples needed to remove a boil water advisory shall be submitted to the cabinet as soon as the results are known.

(e) A water system shall notify the cabinet immediately if:

1. The pressure drops below twenty (20) pounds per square inch in the distribution system surrounding the break; or
2. A break or rupture occurs that requires more than eight (8) hours to repair, with the eight (8) hours beginning when the water system becomes aware of the break.

(f) Boil Water Advisories shall be issued in accordance with 401 KAR 8:020, Section 2(9).

(g) Reports pursuant to 401 KAR 8:020, Section 2(7)(c) shall not be required for a loss of pressure, break, or rupture occurring in service lines serving only one (1) single family residence.

(h)1. A community or nontransient noncommunity public water system shall maintain a log of all breaks or ruptures, which shall include the:

- a. Date and location of the break or rupture;
 - b. Time it was discovered;
 - c. Population affected;
 - d. Length of time required to repair the break or rupture;
 - e. Date and time disinfectant residuals are detected; and
 - f. Date and time bacteriological samples are taken.
2. The log shall be available for inspection by the cabinet.

Utilities under PSC jurisdiction

807 KAR 5:006. General Rules.

Section 27. Reporting of Accidents, Property Damage or Loss of Service. (1) Within two (2) hours following discovery each utility, other than a natural gas utility, shall notify the commission by telephone or electronic mail of any utility related accident which results in:

(a) Death; or shock or burn requiring medical treatment at a hospital or similar medical facility, or any accident requiring inpatient overnight hospitalization;

(b) Actual or potential property damage of \$25,000 or more; or

(c) Loss of service for four (4) or more hours to ten (10) percent or 500 or more of the utility's customers, whichever is less.

(2) A summary written report shall be submitted by the utility to the commission within seven (7) calendar days of the utility related accident. For good cause shown, the executive director of the commission, may, upon application in writing, allow a reasonable extension of time for submission of this report.

807 KAR 5:066. Water.

Section 3. (4) (b) Report to the commission. If a utility is required by the Natural Resources Cabinet to make a public notification pursuant to administrative regulations of the Natural Resources Cabinet, the utility shall provide the commission with a copy of the

DOW:	502-564-3410	(normal hours)
	502-564-2380	(after hours)
	800-928-2380	(chemical spills)

PSC:	502-564-3940	
	1-800-772-4636	(Hotline)

Monthly Line Break Log

(water system) 0

Month 0
 Year 0

PWSID 0

Date	Location	Time Found	Population Affected	Time for Repair	Disinfectant Residuals			Bact Samples		
					Date	Time	Result	Date	Time	Result

Boil Water Advisory

This consumer advisory is being issued by:
0

What should you do?

Although **NO CONTAMINATION HAS BEEN CONFIRMED** we recommend: Bring all water to a rolling boil, let it boil for three (3) minutes, and let it cool before using, or use bottled water. Boiled or bottled water should be used for drinking, making ice, brushing teeth, washing dishes, and food preparation until further notice. Boiling kills bacteria and other organisms in the water.

What are the areas being affected? (insert areas)

People with severely compromised immune systems, infants, and some elderly may be at increased risk. These people should seek advice from their health care providers about drinking water.

What happened? (explain details)

How are we correcting the problem? (explain)

We apologize for any inconvenience this may have caused you. This advisory was issued as a precautionary action and can only be lifted with the approval of the Kentucky Division of Water. When all appropriate laboratory testing is completed and the Kentucky Division of Water allows us to lift the advisory, we will inform you when you no longer need to boil your water.

For more information, please contact: 0
0
0
0 0 0

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice is being sent to you by: 0
Public Water System ID #: 0

Date _____

Monthly Excavation Break Report

(name of Water System)

(PWSID)

Month
Year

diameter in inches

Hole =

Area = sq. in.

length (in) width (in)

Crack =

Area = sq. in.

Area Calculator

Insert the approximate dimensions of the hole or crack to determine the area of the break. Insert the area in the spreadsheet below.

Date	Excavation Break Location	Excavator	Minutes	Hole or Crack?	Area of hole or crack	Normal PSI	GPM	Gallons Lost During Break

Total Gallons Lost Due to Excavation Breaks

Monthly Leak Repair Report

(Water System)

(PWSID)

Month

Year

diameter in inches
 Hole=
 Area= sq. in.

length (in) width (in)
 Crack=
 Area= sq. in.

Area Calculator

Insert the approximate dimensions of the hole or crack to determine the area of the break. Insert the area in the spreadsheet below.

Date of Repair	Location of Leak or Line Break	Days Line Leaked?	Hole or Crack?	Area of hole or crack	Normal PSI	GPM	Calculated Loss for Month	Estimated Loss for Month

Total Gallons Lost Due to Line Breaks

DBP Maintenance Flushing (Hydrants and Tanks)

0 (name of Water System)

Month 0
Year 0

0 (PWSID)

Formula: $GPM = 29.83 \text{ cd}^2 \sqrt{p}$ unit conversion factor 29.83
 coefficient value 0.95

Date	Indicate Water Storage Tank Name or Hydrant Location and/or Number	Total Minutes Operated	Nozzle size (typically 2.5 or 4.5)	Pitot Pressure	GPM	Gallons Flowed	Estimated or Metered Flow

Total Gallons for Month 0

Monthly Hydrant Flushing Report (Flushing for other than DBP maintenance)

(name of Water System)

Month
Year

(PWSID)

unit conversion factor
coefficient value

Formula: $GPM = 29.83 \cdot cd^2 \cdot \sqrt{p}$

Date	Hydrant Location and/or Number	Reason Operated	Total Minutes Operated	Nozzle size (typically 2.5 or 4.5)	Pitot Pressure	GPM	Gallons Flowed	Estimated Flow if Pitot not used

Total Gallons for Month

Fire Department - Water Usage Report Form

KRS 278.170(3) 807 KAR 5:095 Section 9

Any city, county, urban-county, charter county, fire protection district, or volunteer fire protection district ("User") may withdraw water from the utility's water distribution system for the purpose of fighting fires or training firefighters at no charge on the condition that it maintains estimates of the amount of water used for fire protection and training during the calendar month and reports the amount of this water usage to the utility no later than the 15th day of the following calendar month.

Any city, county, urban-county, charter county, fire protection district, or volunteer fire protection district that withdraws water from the utility's water distribution system for fire protection or training purposes and fails to submit the required report on water usage in a timely manner shall be assessed the cost of this water.

A non-reporting user's usage shall be presumed to be 0.3 percent of the utility's total water sales for the calendar month.

<input type="text"/>	(name of Fire Department)	Month	<input type="text"/>
<input type="text"/>	(name of Water System)	Year	<input type="text"/>

unit conversion factor
coefficient value

29.83
0.95

Date	Hydrant Location and/or Number	Reason Operated	Total Minutes Operated	Nozzle size (typically 2.5 or 4.5)	Pitot Pressure	GPM	Gallons Flowed	Estimated Flow if Pitot not used

Total Gallons for Month

Monthly Water Use Report

Water Utility: PWSID:

For the Month of: Year:

1 PRODUCTION COST PER THOUSAND (insert cost)
 2 PURCHASE COST PER THOUSAND (insert cost)

GALLONS

WATER PRODUCED or PURCHASED

3 Water Produced
 4 Water Purchased
 5 **TOTAL PRODUCED AND PURCHASED** 0
 6 **TOTAL COST**

WATER SOLD

7 Residential
 8 Commercial
 9 Industrial
 10 Bulk Loading Stations
 11 Wholesale
 12 Other Sales (explain)

13 **TOTAL WATER SOLD** 0
 14 **TOTAL WATER NOT SOLD** 0

BREAKDOWN OF WATER USAGE

15 Water Treatment Plant
 16 Wastewater Treatment Plant
 17 System Flushing
 18 Fire Department Usage
 19 DBP Flushing DBP Maintenance

20 **TOTAL USAGE** 0

21 **WATER LOSS PERCENTAGE FOR RATE PURPOSES**

BREAKDOWN OF WATER LOST

22 Tank Overflows (other than for DBP maintenance)
 23 Excavation Breaks
 24 Repaired Line Breaks
 25 Unknown Loss

26 **TOTAL WATER NOT SOLD OR USED** 0

27 **COST OF WATER NOT SOLD OR USED**

"UNKNOWN LOSS" FLOW RATE AND COST:

28 "Unknown Loss" 0
 29 % "Unknown Loss"
 30 (insert days of operation during month) Number of Days in Period
 31 "Unknown Loss" per Day (Gallons per Day)
 32 "Unknown Loss" per Minute (GPM)
 33 "Unknown Loss" Cost for Month

Monthly Water Use Report

Water Utility: PWSID:

For the Month of: Year:

Line #	Item	Gallons
1	Water Produced, Purchased and Distributed	
2	Water Produced	0
3	Water Purchased	0
4	Water Produced & Purchased	0
5		
6	Water Sales	
7	Residential	0
8	Commercial	0
9	Industrial	0
10	Bulk Loading Stations	0
11	Wholesale	0
12	Other Sales (explain) _____ 0	0
13	Total Water Sales	0
14		
15	Other Water Used	
16	Utility and/or Water Treatment Plant	0
17	Wastewater Treatment Plant	0
18	System Flushing	0
19	Fire Department Usage	0
20	Other Usage (explain) _____ DBP Maintenance	0
21	Total Other Water Used	0
22		
23	Water Loss	
24	Tank Overflows	0
25	Line Breaks	0
26	Line Leaks	0
27	Other _____	
28	Total Line Loss	0 #DIV/0!
29		
30	Note: Line 13 + Line 21 + Line 28 Must Equal Line 4	
31		
32	Water Loss Percentage	
33	Unaccounted-For Water (Line 28 Divided by Line 4)	#DIV/0!

Comments and Adjustments

0

PWSID: 0

0

0

In the areas below list any comments, adjustments, etc. to explain monthly water accountability entries.

MARION COUNTY WATER DISTRICT
1835 CAMPBELLSVILLE ROAD
P O BOX 528
LEBANON, KY 40033

•
Telephone: 270-692-2004
Fax: 270-692-1010
TTY 1-800-648-6956 or 711

FIRE STATION MONTHLY REPORT

Month of _____

Department Name _____

Chief/Contact _____

DATE	LOCATION	ESTIMATED GALLONS USED

TOTAL GALLONS (ESTIMATED) _____

Marion County Water District

Make Slip _____

SERVICE ORDER

Date: _____

Time: _____ AM PM

Phone #: _____

Account No.: _____ Name: _____

Address: _____

Reported by: _____ Received by: _____

Conditions Reported: CUSTOMER I.D. NO. _____ METER NO. _____

Work Done: _____

Date Completed: _____ Time: _____ AM PM By: _____