COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

THE APPLICATION OF U.S. 60 WATER DISTRICT OF SHELBY AND FRANKLIN COUNTIES, KENTUCKY FOR A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY TO CONSTRUCT PURSUANT TO THE PROVISIONS OF KRS 278.020 AND KRS 278.300	)	NO. 2014-00101

RESPONSES TO COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION

Comes U.S. 60 Water District of Shelby and Franklin Counties, Kentucky ("U.S. 60"), by counsel, and respectfully submits the following Responses to Commission Staff's Second Request for Information.

Respectfully submitted,

Mathis, Riggs, Prather & Ratliff, P.S.C.

By: _____

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I, the undersigned David Hedges, being the Manager of U.S. 60 Water District of Shelby and Franklin Counties, Kentucky, certify that the Answers contained herein are true and accurate to the best of my knowledge, information and belief formed after a reasonable inquiry.

_____
David Hedges

5-19-14
Date

1. State the number of pressure zones in the U.S. 60 system.

Response: One pressure zone.

Responsible Witness:

Warner A. Broughman, III

2. For each pressure zone, provide the corresponding maximum day and fire demands.

Response: The maximum daily demand is 725 gpm. The fire demand is 500 gpm and 250 gpm for the Peytona and Driscoll service zones, respectively.

Responsible Witness:

Warner A. Broughman, III

3. For each existing storage tank in the system, provide the name of the tank, type of the tank, whether it is elevated or a standpipe, total storage volume and effective storage capacity in gallons, and the pressure zone to which it belongs. Tabulate the results.

Response:

TANK NAME	TYPE	NOMINAL VOLUME	EFFECTIVE VOLUME	PRESSURE ZONE
Driscoll	Elevated	200,000 gallons	200,000 gallons	Same
Clay Village	Standpipe	97,167 gallons	7,773 gallons	Same
Waddy	Standpipe	177,000 gallons	60,685 gallons	Same
Peytona	Standpipe	132,200 gallons	40,982 gallons	Same

Responsible Witness:

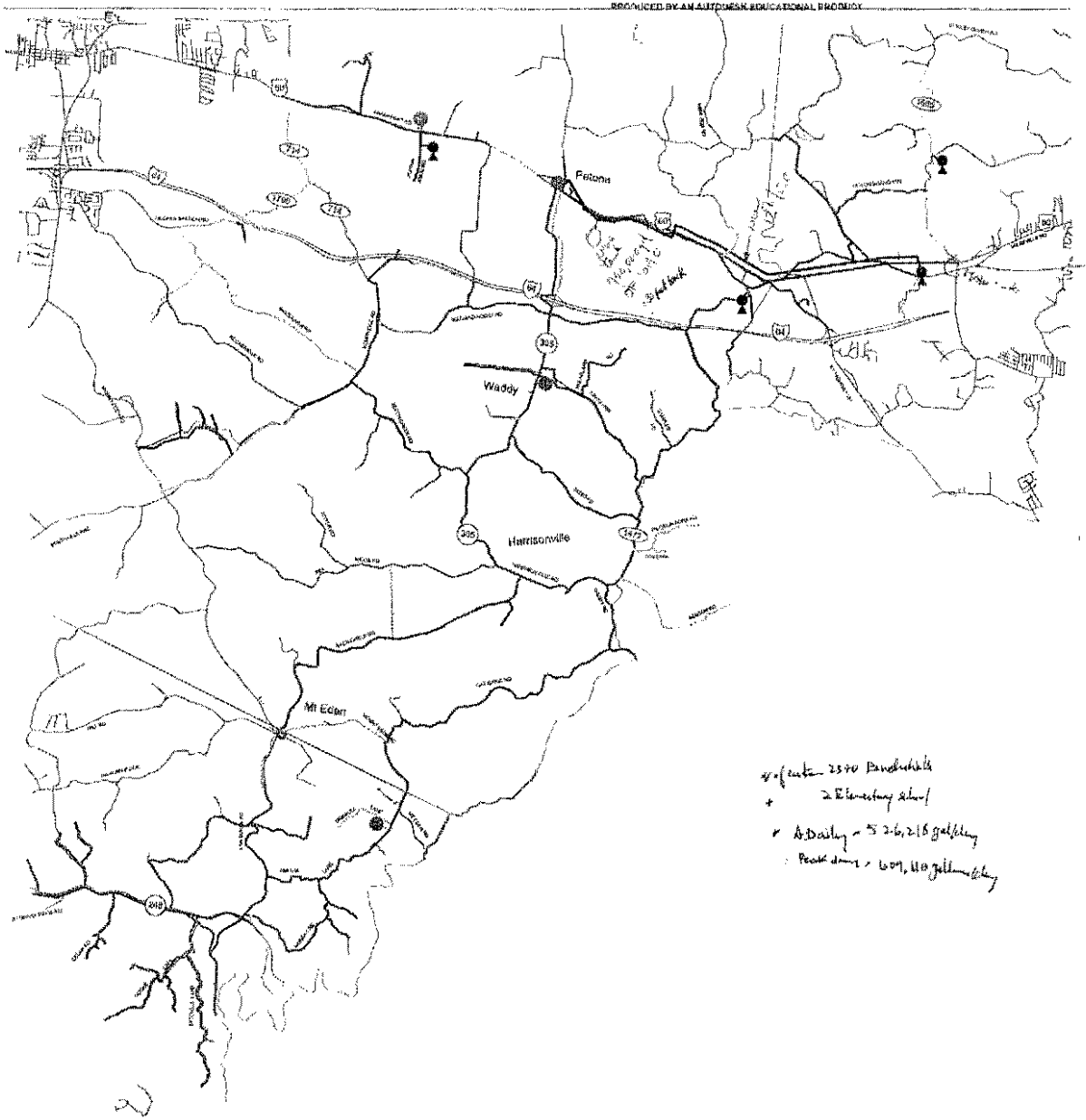
Warner A. Broughman, III

4. Provide a system map that shows the locations of the existing storage tanks, the proposed tank, and associated pressure zones.

Response: System map is attached.

Responsible Witness:

Warner A. Broughman, III



LEGEND	
WATERLINE	COLOR
12"	
10"	
8"	
6"	
4"	
3"	
2"	
Water Tanks	
Fire Hydrant	
Pump Station	

Warner A. Broughman III and Associates

Concept: WAB
Drawn: BJC
Checked:
File: 11/12

U.S. 60 WATER DISTRICT

PIPELINE LOCATION

0 5,000 10,000 15,000 20,000

Sheet No. 1

PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT

5. The application states that U.S. 60 has a current storage capacity of 360,000 gallons. Provide justification for that insertion.

Response: The current effective storage capacity of US 60 is 309,440 gallons as shown in answer #3 above, not 360,000 gallons.

Responsible Witness:

Warner A. Broughman, III

6. Refer to the response to question 2 of the Commission Staff's Initial Request for Information:

a. The response states that U.S. 60 has 488,367 gallons of storage. Explain how this number has been reached. Is it total storage or effective storage?

Response: The attorney made a mathematical error in the answer to question No. 2 the Commission Staff's Initial Request for Information. The correct total existing storage is 606,367 gallons and the correct effective storage is 309,440.

b. In footnote 1, the Clay Village standpipe is listed at 97,167 gallons with an effective size of about 8,000 gallons. Explain.

Response: 807 KAR 5:066, Section 5. Pressures states in part: "In no event, however, shall the pressure at the customers service pipe under normal conditions fall below thirty (30) psig . . ."

The Clay village stand pipe is 75 feet tall at the overflow. In order to meet the requirements of 807 KAR 5:066, the water above the 69 foot level is the only water that will give the pressure needed to meet the regulation. Therefore, the top 6 feet of the tank is all that will provide that pressure. The top 6 feet of the tank contains approximately 8,000 gallons. The 8,000 gallons was arrived by multiplying the 6 feet times 1296 gallons per foot of tank, giving an actual calculation of 7773 gallons available at the prescribed 30 psig minimum pressure. The volume was then rounded off to 8,000 gallons.

c. Provide the basis, assumptions, and any supporting documentation for the fire storage volume calculations provided.

Response: The fire storage volume is a two part calculation. The two buildings protected by fire suppression systems are both elementary schools. One determines the flow demand by adding the area/density demand and the hose stream demand. We used the "ordinary hazard group one" classification to be on the safe side. The calculation is 0.15 gpm per square foot over 1500 square feet, or 225 gpm. The hose stream for "ordinary hazard group one" is 250 gpm. The total anticipated flow for the school would be 475 gpm. This was rounded up to 500 gpm.

The minimum time required is 2 hours times 500 gpm for a total fire volume of 60,000 gallons. The minimum time of 2 hours is found in the Municipal Grading Schedule of the Insurance Services Office.

Responsible Witness:

Warner A. Broughman, III

7. Describe the location of the new tank in relation to the locations of the two existing tanks that U.S. 60 intends to decommission, and state whether the current customers served by these two tanks can be served by the new tank at the new location.

Response: The proposed new tank is located approximately 3300 feet southeast of the existing Peytona standpipe, and approximately 3 ½ miles west of the existing Clay Village standpipe. It is proposed to connect the new tank to the same main to feed the system. The hydraulic analysis attached to the answer to Question 7 in US 60's Supplemental Answers to Commission Staff's First Request for Information shows the pressures to be sufficient to serve all the customers currently being served.

Responsible Witness:

Warner A. Broughman, III

8. Refer to the response to question 6 of Commission Staff's Initial Request for Information. Provide an explanation of the apparent incline in the average daily use from 2009 through 2011 and the apparent decline from 2011 through 2013. Provide any reasons that may have influenced such changes. Include any supporting documentation.

Response: The response to Question No. 6 had a typographical error in the average daily usage for 2011. The correct average daily uses for the previous five years are as follow:

2013: 439,501 gallons

2012: 461,312 gallons

2011: 457,493 gallons

2010: 503,882 gallons

2009: 441,032 gallons

The summer of 2010 was very dry and is the likely reason for the high average daily use for that year. 2013 was a very wet year, which is the likely reason the average daily use declined for that year.

Responsible Witness:

David Hedges

9. Refer to the response to question 9 of the Commission Staff's Initial Request for Information. It was asserted by Sandy Broughman that the expected future growth rate per year is 4 percent. Provide documentation supporting this assertion. Explain in light of the average daily use pattern presented in U.S. 60's response to Commission Staff's Initial Request for Information No. 6.

Response: We have been following the growth of the system since 1983. The attached exhibit shows the system growth over that time. As you can see, the long term growth has been fairly consistent. Several times over that period the growth has slowed, but the growth resumed.

Responsible Witness:

Warner A. Broughman, III

YEAR	WATER BOUGHT (1000 GAL)	WATER SOLD (1000 GAL)	% DIFFERENCE BOUGHT VS SOLD	NUMBER OF CUSTOMERS
1983	54,412.30	36,456.24	33.00	596
1984	52,790.10	36,966.62	30.38	604
1985	53,559.90	37,290.48	33.87	609
1986	62,367.85	41,245.40	21.69	674
1987	59,502.30	46,596.19	13.05	740
1988	60,151.90	52,299.20	19.31	765
1989	58,968.90	47,581.60	20.51	777
1990	60,833.60	48,355.82	23.46	790
1991	67,370.90	51,564.55	23.12	843
1992	76,170.40	58,563.42	21.78	930
1993	86,443.10	67,618.60	12.49	1095
1994	91,984.90	80,496.37	15.28	1254
1995	98,455.60	83,411.20	18.59	1334
1996	101,984.90	83,017.80	17.50	1372
1997	110,344.00	90,773.00	17.74	1452
1998	121,985.00	97,026.00	20.46	1508
1999	127,968.80	103,294.40	19.28	1548
2000	134,287.50	105,419.60	19.27	1739
2001	142,466.20	115,032.10	19.26	1896
2002	156,190.40	124,830.00	20.08	1974
2003	173,006.40	121,679.20	29.67	2046
2004	175,445.20	128,011.60	27.04	2092
2005	187,741.40	144,557.10	23.00	2144
2006	178,983.00	133,885.00	25.20	2097
2007	163,916.00	144,111.00	12.08	2255
2008	160,428.00	138,325.00	13.78	2227
2009	160,977.00	129,960.00	19.27	2309
2010	183,917.00	155,740.00	15.32	2339
2011	166,985.00	142,026.00	14.95	2357
2012	168,379.00	140,236.00	16.71	2366
2013	175,114.00	145,845.44	17.00	
2014	182,118.00	151,679.26	17.00	
2015	189,403.00	157,746.43	17.00	
2016	196,979.00	164,056.29	17.00	
2017	204,358.00	170,618.54	17.00	
2018	213,052.00	177,443.28	17.00	
2019	221,575.00	184,541.01	17.00	
2020	230,438.00	191,922.65	17.00	

10. State Sandy Broughman's qualifications to render an opinion on population growth estimates.

Response: Mr. Broughman's engineering and mathematical background and training give him the expertise to plot the water usage and make a prediction as to growth of the system.

Responsible Witness:

Warner A. Broughman, III

11. State whether U.S. 60 has utilized or examined any population growth information, including, but not limited to, census data, in estimating the future system demand growth. If so, provide supporting documentation.

Response: US 60 did not utilize or examine any population growth information.

Responsible Witness:

Warner A. Broughman, III

12. Confirm that the District is aware that 807 KAR 5:066, Section 4(4), requires only a minimum storage amount "equal to the average daily consumption".

Response: US 60 has long been aware of the MINIMUM storage requirements. US 60 is aware that its effective storage total of 309,667 violates this regulation. Should the aging standpipes fail or be taken out of service prematurely, US 60 will have only a total of 260,685 gallons of effective storage for daily demands AND fire reserve. US 60 is not aware of any regulation that prohibits US 60 from constructing facilities that provide more than the minimum storage.

Responsible Witness:

Warner A. Broughman, III

13. State whether there is any future development planned within proximity of the proposed tank location.

Response: US 60 is aware of two potential developments that would be serviced by the proposed tank. One is a residential development on Jeptha Knob with 75-85 homes. This plat has been submitted to US 60. No construction has taken place. The second development is a 600-acre tract west of Waddy. This has been proposed as an industrial site that would consume a large volume of water. No plans have been submitted to US 60 and no work has taken place. In addition to the two proposed large local projects, US 60 is fully aware of more than 150 lots already in existence in Spencer County along existing water lines that are unbuilt. Among these are three subdivisions that are not built out, but have the entire infrastructure in place. Shelby County has one subdivision that is not built out.

Responsible Witness:

Warner A. Broughman, III

14. State the rationale for the intent to maintain storage in excess of two days' average daily consumption and whether a 500,000-gallon storage tank would provide sufficient storage for current and future use.

Response: Conventional wisdom has always been to construct two day's storage and let the system grow into one day's storage; then start the process again. With a total proposed effective storage of 1,010,695 gallons, US 60 will have two day's demand of 878,000 gallons plus 60,000 gallons of fire reserve at the proposed tank and 30,000 gallons of fire reserve at the Driscoll tank in Spencer County. The Driscoll tank serves only the hydrants in Spencer County and requires (in accordance with 807 KAR 5:066 Section 10(b)1.b.) a hose stream of 250 gallons per minute for two hours or 30,000 gallons. The total proposed effective storage of 1,010,695 gallons for both fire and domestic exceeds the two day's demand figure of 878,000 gallons by only 42,695 gallons.

A 500,000 gallon storage tank will give US 60 an effective storage volume of 760,695 gallons. The growth rate of the US 60 has been 3.5% - 4.0% over the years. One would expect the storage to fall below one day's supply in approximately 15 years. This means that the tank will need to be replaced with 5 years of payments remaining on the new tank construction loan.

Responsible Witness:

Warner A. Broughman, III

15. Provide the estimated service life in years for the proposed 750,000-gallon tank until U.S. 60's system storage becomes out of compliance with minimum storage requirement of 807 KAR 5:066, Section 4. Provide the same for a proposed 500,000-gallon tank. Explain and provide any supporting calculations made.

Response: The estimated life of an elevated storage tank is 50 years. A 750,000 gallon storage tank will allow US 60 to remain in compliance with 807 KAR 5:066 for approximately 20 years, which is the duration of the loan that will finance the project.

See the answer to Question 14 for the information for a 500,000 gallon tank.

Responsible Witness:

Warner A. Broughman, III

16. Provide U.S. 60's storage deficit if the two 50-year old tanks were to be decommissioned in light of the PSC's storage requirement of 807 KAR 5:066, Section 4.

Response: Removing the two 50-year-old tanks will give US 60 a total effective storage volume of 260,695 gallons. The needed volume at current consumption levels to meet 807 KAR 5:066 is 529,000 gallons. The current deficit would be 268,305 gallons.

Responsible Witness:

Warner A. Broughman, III