

COMMONWEALTH OF KENTUCKY  
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

APPLICATION OF BIG SANDY WATER	)	CASE NO.
DISTRICT FOR AN ADJUSTMENT IN RATES	)	2012-00152
PURSUANT TO THE ALTERNATIVE RATE	)	
FILING PROCEDURE FOR SMALL UTILITIES	)	

NOTICE OF FILING OF COMMISSION STAFF REPORT

Notice is hereby given that, in accordance with the Commission's Order of June 7, 2012, the attached report containing the findings and recommendations of Commission Staff regarding the Applicant's proposed rate adjustment has been filed in the record of the above-styled proceeding.

  
\_\_\_\_\_  
Jeff Derouen  
Executive Director  
Public Service Commission  
P.O. Box 615  
Frankfort, KY 40602

DATE JUL 16 2012

cc: Parties of Record

STAFF REPORT  
ON  
BIG SANDY WATER DISTRICT  
CASE NO. 2012-00152

On April 24, 2012, Big Sandy Water District ("Big Sandy District") filed an application with the Commission requesting to adjust its rates for water service in order to produce additional annual revenues from water sales of \$250,499, an increase of 11.7 percent over normalized revenues from water sales of \$2,136,489. The monthly bill for an average residential customer would increase from \$30.21 to \$33.30, or approximately 10.2 percent.

The application was prepared with the assistance of Commission Staff ("Staff") pursuant to a written request from Big Sandy District dated August 3, 2011. To prepare the application, Staff, with assistance from Big Sandy District's personnel, performed a limited financial review of Big Sandy District's test-year operations, the year ending December 31, 2010. The scope of the review was limited to determining whether operations reported for the test-year were representative of normal operations. Known and measurable changes to test-year operations were identified and adjustments were made when their effects were deemed to be material. Insignificant or immaterial discrepancies were not pursued and were not addressed.

After completing the financial review, Staff assisted Big Sandy District in calculating its revenue requirements and developing a cost-of-service study using ratemaking methods and principles historically used by the Commission. The rates requested by Big Sandy District are supported by the cost-of-service study.

After Big Sandy District filed its application, Staff identified additional adjustments to Big Sandy District’s test-year operations. These adjustments are summarized below showing their impact on Big Sandy District’s revenue requirements. These adjustments, along with all the adjustments proposed in Big Sandy District’s application, are included on the Adjusted Operating Statement shown in Table B1 of Appendix B and are explained in Appendix B. The adjustments shown below for the Purchased Water Adjustment (“PWA”) do not appear on Table B1 exactly as they are shown below. In Table B1, these adjustments are netted with other adjustments to the same revenue and expense accounts.

Adjustments Recommended by Staff in  
Addition to those included in the Application

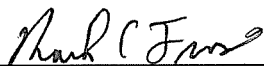
	Amount	Ref.
Revenues Adjustments		
Purchased Water Adjustment	\$ (224,988)	(A)
Other Operating Revenues	(71,563)	(B)
Expense Adjustments		
Purchased Water Adjustment	169,978	(E)
Purchased Power to Pump Excess Water Loss	(4,491)	(F)
Net Effect on Revenue Requirement	\$ (131,064)	

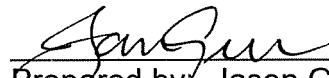
After making the four additional adjustments shown above, Staff calculated Big Sandy District’s overall revenue requirements to be \$2,555,884 using the same method applied in Big Sandy District’s application, the Debt Service Coverage (“DSC”) method. The revenue required from rates is \$2,480,912, which requires a revenue increase of \$119,436, or 5.06 percent, over normalized water sales of \$2,361,476. These

calculations are detailed in Table A1 of Appendix A and are shown in comparison to those included in Big Sandy District's application. These revenue requirements were entered into the cost-of-service study as shown in Appendix C to formulate the rates shown in Appendix D. If the Commission were to approve these rates, the average residential customer's monthly bill would increase from \$32.90<sup>1</sup> to \$35.03, or approximately 6.47 percent.

Staff members Mark Frost and Jason Green performed the limited financial review of Big Sandy District's test-year operations. This report summarizes Staff's review and recommendations. Mr. Frost is responsible for Appendix A, Determination of Overall Revenue Requirement and Required Revenue Increase; and Appendix B, Determination of Adjusted Operations and Explanation of Adjustments. Mr. Green is responsible for Appendix C, Staff's Cost-of-Service Study; and Appendix D, Staff's Recommended Rates.

Signatures

  
Prepared by: Mark C. Frost  
Financial Analyst, Water and Sewer  
Revenue Requirements Branch  
Division of Financial Analysis

  
Prepared by: Jason Green  
Rate Analyst, Communications, Water  
and Sewer Rate Design Branch  
Division of Financial Analysis

---

<sup>1</sup> The current rates used to calculate the minimum bill were the rates approved in Case No. 2012-00161 to reflect the pass-through of the increase in the City of Kenova's wholesale rate.

APPENDIX A  
STAFF REPORT CASE NO. 2012-00152

DETERMINATION OF OVERALL REVENUE REQUIREMENT  
AND REQUIRED REVENUE INCREASE

Big Sandy District proposed to use the Debt Service Coverage (“DSC”) method to calculate its revenue requirement and required revenue increase. These calculations are shown below in Table A1 along with Staff’s calculations using the DSC method.

Table A1  
Comparison of Revenue Requirements

	Big Sandy District Application	Commission Staff
Pro Forma Operating Expenses, See Table B1	\$ 1,975,542	\$ 2,141,029
Three-Year Average Principal and Interest Payment		
RD	124,227	124,227
KIA and KRWFC	241,621	241,621
Debt Service Coverages:		
RD at 20 Percent	24,845	24,845
KIA and KRWFC at 10 Percent	24,162	24,162
Total Revenue Requirement	2,390,397	2,555,884
Less: Other Operating Revenues, See Table B1		(71,563)
Other Income and Deductions, See Table B1	(3,409)	(3,409)
Total Revenue Requirement from Rates	2,386,988	2,480,912
Less: Normalized Revenues at Present rates, See Table B1	(2,136,489)	(2,361,476)
Required Revenue Increase	\$ 250,499	\$ 119,436
Percentage Increase	11.725%	5.058%

DSC Method. Historically, the Commission has used the DSC method to determine the revenue requirement of water districts and water associations that have long-term debt. This approach is used primarily because a bond ordinance or loan agreement requires that a water district or water association maintain a predetermined DSC level. Pursuant to this approach, the Commission calculates the revenue requirement by summing a utility’s operating expenses; average annual debt

principal and interest payments; and the DSC requirements of the utility's debt agreements.

Big Sandy District reports the following outstanding long-term debt issuances: Rural Development ("RD") Waterworks Revenue Bonds of 1993; RD Waterworks Revenue Bonds, Series 2000; RD Waterworks Revenue Bonds, series 2001; Kentucky Infrastructure Authority ("KIA"), C89-16 Loan; Kentucky Rural Water Financing Corporation ("KRWFC"), 2001 Loan; KRWFC, 2004 Loan; and KRWC, 2007 Loan.<sup>2</sup> Using the amortization schedules for these long-term debts, Big Sandy District calculates a total three-year average debt service payment of \$365,848 as shown in Table A2.

	2012	2013	2014	3-Year Avg.
RD 91-07	\$ 67,093	\$ 67,490	\$ 67,320	\$ 67,301
RD 91-10	27,423	28,040	27,613	27,692
RD 91-11	28,920	29,583	29,200	29,234
Subtotal RD	123,436	125,113	124,133	124,227
KIA C89-16	101,001	70,293	19,824	63,706
KRWA 2001	65,846	64,915	66,776	65,845
KRWA 2004	48,242	48,369	46,422	47,678
KRWA 2007	54,410	69,412	69,354	64,392
Subtotal KIA & KRWA	269,499	252,989	202,376	241,621
Totals	\$ 392,935	\$ 378,102	\$ 326,509	\$ 365,848

Big Sandy District's RD Bonds require a DSC ratio of 1.2 and its KIA loans and KRWFC loans require a DSC ratio of 1.1. By applying the 1.2 ratio to the average RD

<sup>2</sup> Application, Outstanding Debt Instruments.

debt service of \$124,227 and the 1.1 ratio to the average loan payments of \$241,621, Staff calculated Big Sandy District's total annual revenue requirement to be \$2,555,884 and an annual revenue requirement from water sales of \$2,480,912, an increase of \$119,436, or 5.06 percent above normalized revenue from water sales of \$2,361,476.

APPENDIX B

STAFF REPORT CASE NO. 2012-00152

DETERMINATION OF ADJUSTED OPERATIONS  
AND EXPLANATION OF ADJUSTMENTS

Table B1  
Staff's Adjusted Operating Statement

	Test Year	Adjustments	Ref.	Pro forma
Operating Revenue				
Water Sales	\$ 2,104,849	\$ 256,627	(A)	\$ 2,361,476
Other Operating Revenue		71,563	(B)	71,563
Total Operating Revenue	<u>2,104,849</u>	<u>328,190</u>		<u>2,433,039</u>
Operating Expenses				
Operation and Maintenance				
Salaries and Wages - Employees	309,202	6,349	(C)	315,551
Salaries and Wages - Commissioners	30,000			30,000
Employee Pensions and Benefits	124,033	24,957	(D)	148,990
Purchased Water	795,787	159,349	(E)	955,136
Purchased Power	61,674	(4,491)	(F)	57,183
Materials and Supplies	115,746	(37,614)	(G)	78,132
Contractual Services - Accounting	4,620			4,620
Contractual Services - Legal	4,188			4,188
Contractual Services - Water Testing	4,978			4,978
Contractual Services - Other	26,580	(3,090)	(H)	23,490
Transportation	26,673			26,673
Insurance	19,103	(5,399)	(I)	13,704
Advertising	190			190
Bad Debt Expense	8,680			8,680
Miscellaneous	52,568			52,568
Total Operation and Maintenance Expense	<u>1,584,022</u>	<u>140,061</u>		<u>1,724,083</u>
Deprecation	393,195	(388)	(J)	392,807
Taxes Other Than Income	28,771	(4,632)	(K)	24,139
Total Operating Expenses	<u>2,005,988</u>	<u>135,041</u>		<u>2,141,029</u>
Net Operating Income	98,861	193,149		292,010
Interest Income	3,409			3,409
Income Available to Service Debt	<u>\$ 102,270</u>	<u>\$ 193,149</u>		<u>\$ 295,419</u>



(A) Water Sales and Other Operating Revenues. Big Sandy District reported test-year revenue from Water Sales of \$2,104,849. As a part of its application, Big Sandy District verified this level of revenue by presenting a billing analysis. In the analysis, test-year sales were recalculated by applying water service rates to test-year meter readings. The results of the billing analysis demonstrate that test-year water sales should be restated to \$2,136,489. Accordingly, Big Sandy District requested to increase reported sales by \$31,640.

After Big Sandy District filed its application, the Commission issued an Order on May 18, 2012, in Case No. 2012-00161<sup>3</sup> allowing Big Sandy District an increase to its water service rates to pass-through an increase in its wholesale purchased water costs. Staff recommends that test-year revenues be increased to \$2,361,476 to account for this increase. To calculate this amount, Staff applied the rates approved in Case No. 2012-00161 to the customer usages shown in Big Sandy District's billing analysis. Purchased water expense was also increased. This adjustment is discussed in detail at Reference Item (E).

Also, as discussed in Reference Item (B), Staff found that test-year Other Operating Revenues of \$71,563 were incorrectly reported as revenues from Water Sales. Therefore, test-year revenues from water sales should have been reported as \$2,033,286. Correcting this reporting error would restate Big Sandy's requested billing analysis adjustment from \$31,640 to \$103,203 (\$2,136,489, revenue per billing analysis - \$2,033,286, corrected test-year water sales); however, this restatement has no effect

---

<sup>3</sup> Case No. 2012-00161, Purchased Water Adjustment Filing of Big Sandy Water District (Ky. PSC May 18, 2012).

on Staff's normalized revenues from water sales of \$2,361,476. This level of revenue was determined by applying current rates to test-year usages and is not affected by the reporting error.

(B) Other Operating Revenues. After Big Sandy District's application was filed, it came to Staff's attention that Big Sandy District inappropriately reported test-year Other Operating Revenues in the amount of \$71,563 in the Water Sales account. These revenues were collected for late payment penalties and other nonrecurring charges. Staff recommends that these revenues be reclassified to the appropriate account, Other Operating Revenues. Accordingly, Other Operating Revenues has been increased by \$71,563.

(C) Salaries and Wages – Employee. Big Sandy District proposes to increase its test-year Salaries and Wages – Employee expenses of \$309,202 by \$6,349. Using Big Sandy District's current staff level, the actual hours worked in the calendar year 2010, and the 2011 employee wage rates, Commission Staff calculates a pro forma Salaries and Wages - Employees expense of \$315,551 as shown in Table A4. Commission Staff is of the opinion that the proposed adjustment is reasonable and that it meets the ratemaking criteria of known and measurable. Accordingly, Commission Staff recommends the Commission accept Big Sandy District's proposed adjustment.

**Table B2**  
**Pro forma Salaries and Wages**

Position Title	2011 Wages		2010 Hours		Pro Forma Salaries
	Regular	Overtime	Regular	Overtime	
Manager	\$ 22.00	\$ 33.00	2,060	208.00	\$ 52,184
Assistant Manager	\$ 19.41	\$ 29.12	2,060	226.00	46,566
Meter Reader/Operator	\$ 16.24	\$ 24.36	2,060	206.50	38,484
Office Manager	\$ 17.50	\$ 26.25	2,060	151.50	40,027
Clerk	\$ 12.50	\$ 18.75	2,060	0.00	25,750
Laborer	\$ 10.50	\$ 15.75	2,060	315.50	26,599
Meter Reader	\$ 13.50	\$ 20.25	2,060	218.50	32,235
Meter Reader/Operator	\$ 15.74	\$ 23.61	2,060	72.50	34,136
Clerk	\$ 9.50	\$ 14.25	2,060	0.00	19,570
Totals					<u>\$ 315,551</u>

(D) Employee Pensions and Benefits. Big Sandy District proposes to increase its test-year employee pensions and benefits expense of \$148,993 by \$24,957 to reflect the 2011 employee insurance premiums and the 2011 County Employees Retirement System (“CERS”) employer contribution rate.

By memorandum dated June 21, 2011, Big Sandy District was informed that the CERS employer contribution rate would increase to 18.96 percent on July 1, 2011. Using the employee benefit premiums effective in the calendar year 2011, the pro forma Salaries and Wages - Employees expense, and the July 1, 2011 CERS contribution rate, Commission Staff calculates a pro forma level of Employee Pensions and Benefits expense of \$148,990 as shown in Table B3. Staff recommends the Commission accept Big Sandy District’s proposed increase.

Table B3  
Pro forma Employee Pensions and Benefits

Position Title	Emp. Health Insurance	Emp. Dental Premium	Retirement 18.9%	Totals
Manager	\$ 15,861	\$ 781	\$ 9,863	\$ 26,505
Assistant Manager	15,394	678	8,801	24,873
Meter Reader/Operator	16,067	537	7,273	23,877
Office Manager	0	0	7,565	7,565
Clerk	7,234	0	4,867	12,101
Laborer	5,661	396	5,027	11,084
Meter Reader	18,512	603	6,092	25,207
Meter Reader/Operator Clerk	10,816 0	510 0	6,452 0	17,778 0
Totals	<u>\$ 89,545</u>	<u>\$ 3,505</u>	<u>\$ 55,940</u>	<u>\$ 148,990</u>

(E) Purchased Water. In its 2010 Annual Report, Big Sandy District reported a test-year level of purchased water expense of \$795,787 and unaccounted-for water of 88,960,000 gallons or 23.48 percent. Big Sandy District proposes to decrease its purchased water expense by \$10,629 to reflect reducing its unaccounted-for water to 15 percent.

Using the number of gallons of water sold as shown on the billing analysis and the gallons recorded on the purchased water invoices, Staff determined that the test-year unaccounted-for water was actually 81,257,193<sup>4</sup> or 21.31 percent.<sup>5</sup> Big Sandy District's test-year line loss of 21.31 percent exceeds the Commission's allowable limit of 15 percent.<sup>6</sup> Further, effective with water purchased on and after April

---

<sup>4</sup> 381,312,693 (Water Purchases) – 298,578,500 (Water Sales) – 20,000 (Water Used at Office) – 859,000 (System Flushing) – 245,000 (Fire Department Uses) – 353,000 (Other Uses) = 81,257,193.

<sup>5</sup> Although the unaccounted-for water loss differs from the percentage referenced in the cost-of-service study, there is no impact to Staff's recommended rates because unaccounted-for water is held to the 15 percent allowable limit.

<sup>6</sup> 807 KAR 5:066, Section 6(3).

13, 2012, the City of Kenova is increasing the wholesale water rate it charges to Big Sandy District from \$1.79 per 1,000 gallons to \$2.55 per 1,000 gallons.

As shown in Table B4, limiting Big Sandy District's unaccounted-for water to 15 percent and using the current wholesale rates, Staff calculates a purchased water expense of \$955,136, \$159,349 above reported test-year purchased water expense of \$795,787. Staff recommends the Commission deny Big Sandy District's adjustment and increase purchased water expense by \$159,349.

Table B4  
Pro Forma Purchased Water Expense

	Current Wholesale Rates		Water Purchases	=	Allowable Purchases
Cannonsburg Water District	\$ 3.67	x	47,395.019	=	\$ 173,940
City of Kenova	\$ 2.55	x	220,483.734	=	562,234
Rattlesnake Ridge Water District	\$ 2.96	x	4,747.621	=	14,053
Louisa Water Company	\$ 2.55	x	80,356.567	=	204,909
Pro Forma Purchased Water Expense					\$ 955,136

(F) Purchased Power. Big Sandy District reports a test-year level of purchased power expense of \$61,674. The amount of electricity used by Big Sandy District is dependent on the amount of water that is purchased and pumped through its distribution system. Limiting unaccounted-for water to 15 percent impacts the amount of electricity used which will result in a reduction to the annual cost.

Dividing the test-year purchased power expense of \$61,674 by the test year water purchases of 381,312,693 gallons results in a variable cost of electricity of \$0.162 per 1,000 gallons.<sup>7</sup> Applying the variable cost of electricity to the allowable water purchases of 352,982,941 gallons, Staff calculates a pro forma purchased power

<sup>7</sup> \$61,674 (Purchased Power) ÷ 381,312,693 (Purchases - Gallons) = \$0.162 cost per 1,000 Gallons.

expense of \$57,183,<sup>8</sup> which is \$4,491 below the test-year level. Accordingly, Staff is recommending the Commission reduce purchased power expense by this amount to reflect the impact on purchased power expense of limiting unaccounted-for water to 15 percent.

(G) Materials and Supplies. Big Sandy District reports a test-year level of Materials and Supplies expense of \$115,746. In reviewing the test-year invoices, Staff discovered that \$37,614 of capital expenditures were incorrectly recorded as expenses. To eliminate the capital expenditures listed in Table B5 below, Staff recommends that Big Sandy District's Materials and Supplies expense be reduced by \$37,614.

Vendor	Descriptions	Amount
Consolidated Pip & Supply	Meter Installations	\$ (2,472)
Consolidated Pip & Supply	Meter Installations	(2,110)
Consolidated Pip & Supply	Meter Installations	(3,621)
Consolidated Pip & Supply	Meter Installations	(4,480)
Consolidated Pip & Supply	Meter Installations	(3,121)
Consolidated Pip & Supply	Meter Installations	(2,820)
IT Technologies	Mole for Service Lines	(4,116)
Neptune Equipment Company	Automated Meter Reading Equip.	(2,693)
Neptune Equipment Company	Automated Meter Reading Equip.	(920)
Neptune Equipment Company	Automated Meter Reading Equip.	(5,804)
Cannonsburg Water District	28 Setters	(2,800)
CI Thornburg	Check Valve	(330)
CI Thornburg	4" Meter	(1,319)
CI Thornburg	4" Meter	(1,008)
Total Capital Expenditures		<u>\$ (37,614)</u>

(H) Contractual Services - Other. Big Sandy District reports a test-year level Contractual Services - Other expense of \$26,580. In reviewing the test-year invoices,

<sup>8</sup> \$0.162 (Variable Cost of Electricity per 1,000 gallons) x 352,982,941 (Allowable Purchases - Gallons) = \$57,183.

Commission Staff discovered that Big Sandy District had incorrectly expensed the purchase of automated meter reading equipment of \$3,090, which is a capital expenditure. Big Sandy District proposes to reduce Contractual Services – Other expense by \$3,090 to eliminate the capital expenditure, which Staff recommends the Commission accept.

(I) Insurance. Big Sandy District reports a test-year level of Insurance expense of \$19,103. The total of the 2011 insurance premiums is \$13,704, which is \$5,399 below the reported expense. Big Sandy District proposes to reduce its insurance expense by \$5,399 to reflect the 2011 invoices. Staff recommends that the Commission accept the proposed adjustment.

(J) Depreciation. Big Sandy District reports a test-year level of Depreciation Expense of \$393,195. As shown in Table B6, Commission Staff calculates a pro forma depreciation expense of \$392,807 to remove the depreciation of the items that were fully depreciated in 2011, to include depreciation for the capital expenditures removed from operating expenses, and to include post-test-year capital expenditures.

**Table B6  
Depreciation Expense**

Account		Depreciation Lives	UPIS 12/31/10	Accumulated Depreciation 12/31/10	Pro Forma Depreciation Expense
No.	Title				
303.00	Land		\$ 25,529	\$ 0	\$ 0
304.00	Structures & Improvements	10	64,512	61,397	3,115
311.00	Pumping Equipment	50	292,307	105,120	5,846
330.00	Distribution Reservoir	50	1,223,302	451,488	24,466
331.00	Transmission & Distribution	50	9,077,248	2,634,801	181,545
333.00	Pipe Acces.	50	3,855,964	1,053,815	77,119
334.00	Meters/Installations	20	1,171,436	571,667	58,572
335.00	Hydrants	30	227,402	19,910	7,580
340.00	Office Equipment	10	36,077	36,077	0
341.00	Transportation Equipment	5	52,218	5,222	10,444
343.00	Tools/Equipment	5	46,120	46,120	0
345.00	Backhoe/Equipment	5	74,003	74,003	0
346.00	Communication	5	6,014	6,014	0
347.00	Other Equipment	5	11,484	11,484	0
348.00	Telemetry Equipment	20	154,543	154,543	0
349.00	Digital Mapping	5	14,583	14,583	0
304.20	Office Building	10	57,018	53,062	3,956
340.00	Computers	5	81,825	78,538	3,287
Capital Expenditures Expensed in Test Period:					
	Meter Installations	20	21,424		1,071
	Check Valve	30	330		11
	Automated Meter Reading Equip.	5	9,417		1,883
	Mole for Service Lines	20	4,116		206
	4" Meters	20	2,327		116
Post-Test-Period Capital Expenditures:					
	River Crossing - City of Kenova	50	117,000		2,340
	30 Main Meter with Bypass - Zone System	20	225,000		11,250
Pro Forma Depreciation Expense					\$ 392,807
Less: Reported Depreciation Expense					393,195
Pro Forma Adjustment					\$ (388)

(K) Payroll Taxes. Big Sandy District reports a test-year payroll tax expense of \$28,771. Applying the current "FICA" rate of 7.65 percent to the pro forma salaries, Big Sandy District proposes to reduce payroll tax expense by \$4,632, a proposal which Staff recommends the Commission accept.



APPENDIX C  
STAFF REPORT CASE NO. 2012-00152  
STAFF'S COST-OF-SERVICE STUDY

BIG SANDY WATER DISTRICT

WATER PURCHASED AND SOLD

Total Produced	381,312,693	
Fire Department and Sewer	245,000	0.0006
System Use	1,232,000	0.0031
Line Loss	101,767,193	0.2533
Bulk Sales	-	0.0000
Retail Sales	288,464,000	0.7179
Wholesale Sales	10,114,500	0.0252
Total	401,822,693	1.00

Note: Information was derived from Annual Report & Staff Billing Analysis

BIG SANDY WATER DISTRICT  
INCH MILE RATIO

Size	Total System			Jointly Used		
	Feet	Miles	Inch Miles	Feet	Miles	Inch Miles
12		2.09	25.08	-	2.09	25.08
8		27.58	220.64	-	6.50	52.00
6		118.20	709.20	-	-	0.00
4		71.20	284.80	-	-	0.00
3		189.00	567.00	-	-	0.00
2		9.50	19.00	-	-	0.00
1		2.20	2.20	-	-	0.00
3/4"		3.75	2.81	-	-	0.00
Total	-	423.52	1830.73	-	-	77.08
Inch Mile Ratio		0.0421				

BIG SANDY WATER DISTRICT

WHOLESALE ALLOCATION FACTORS

		Factor
Line Loss Percentage *		0.1500
Plant Use Percentage		0.0031
Allowable Line Loss & Plant Use	$0.1500 + 0.0032$	0.1531
Production Multiplier	$1/1-0.0032$	1.0031
Inch Mile Ratio	$77.08 / 1830.73$	0.0421
Wholesale Share of Line Loss	$0.0421 \times 0.1500$	0.0063
Joint Share Line Loss / Plant Use	$0.0063 + 0.0032$	0.0094
Wholesale Production Multiplier	$1/1-0.0095$	1.0095
Production Allocation Factor	$10,114,500/298,578,500 \times (1.0096/1.0032)$	0.0341
Pipeline Transmission Factor	$10,114,500/298,578,500 \times 0.0421$	0.0014
Use Factor	$10,114,500/298,578,500$	0.0339

\*Note: Big Sandy's line loss is being held to the amount allowable by the PSC

BIG SANDY WATER DISTRICT

WHOLESALE ALLOCATION FACTORS

			Factor
Line Loss Percentage		Amount Allowable by PSC	0.1500
Plant Use Percentage			0.0031
Allowable Line Loss & Plant Use	$0.1500 + 0.0032$	= Line Loss % + Plant Use %	0.1531
Production Multiplier	$1/1-0.0032$	= $1/(1 - \text{Plant Use \%})$	1.0031
Inch Mile Ratio	$77.08 / 1830.73$	= Total Jointly Used Inch Miles / Total Inch Miles	0.0421
Wholesale Share of Line Loss	$0.0421 * 0.1500$	= Inch Mile Ratio X Line Loss %	0.0063
Joint Share Line Loss / Plant Use	$0.0063 + 0.0032$	= Wholesale Share of Line Loss + Plant Use %	0.0094
Wholesale Production Multiplier	$1/1-0.0095$	= $1/1 - \text{Joint Share Line Loss / Plant Use}$	1.0095
Production Allocation Factor	$10,114,500/298,578,500 * (1.0095/1.0032)$	= $(\text{Sales to Wholesale customers} / \text{Total Water Sold}) * (\text{Wholesale Production Multiplier} / \text{Production Multiplier})$	0.0341
Pipeline Transmission Factor	$10,114,500/298,578,500 * 0.0421$	= $(\text{Sales to Wholesale customers} / \text{Total Water Sold}) * \text{Inch Mile Ratio}$	0.0014
Use Factor	$10,114,500/298,578,500$	= Sales to Wholesale Customers / Total Water Sold	0.0339

BIG SANDY WATER DISTRICT  
ALLOCATION OF EXPENSES

Expense	Total	Pumping and Treatment	Transmission and Distribution	Customer
Purchased Power *	\$ 57,183	\$ 57,183		
Purchased Water *	955,136	955,136		
Employee Salaries	315,551	87,382	59,516	168,654
Employee Pension & Benefits	148,990	48,367	28,210	72,413
Materials & Supplies (Meters)	78,132			78,132
Advertising	190			190
Bad Debts Expense	8,680			8,680
Contractual Services - Other	23,490			23,490
Contractual Services - Water Testing *	4,978	4,978		
Subtotal Less Commodity*	\$ 575,033	\$ 135,749	\$ 87,726	\$ 351,558
Percentage		0.2361	0.1526	0.6114
<i>Administrative and General</i>				
Commissioners Salaries	30,000	7,082	4,577	18,341
Contractual Services - Accounting	4,620	1,091	705	2,825
Contractual Services - Legal	4,188	989	639	2,560
Insurance	13,704	3,235	2,091	8,378
Miscellaneous	52,568	12,410	8,020	32,139
Transportation Expense	26,673	6,297	4,069	16,307
Payroll Taxes	24,139	5,699	3,683	14,758
Subtotal	\$ 1,748,222	\$ 1,189,848	\$ 111,508	\$ 446,866
Depreciation	\$ 392,807	\$ 92,731	\$ 59,926	\$ 240,151
Debt Service plus Coverage	\$ 414,855	\$ 97,935	\$ 63,289	\$ 253,630
Total Expenses	\$ 2,555,884	\$ 1,380,514	\$ 234,723	\$ 940,648

\*Commodity Costs designated by (\*)

BIG SANDY WATER DISTRICT

WHOLESALE RATE

Expense	Total	Allocation Factor	Amount to Wholesale	Rate to Wholesale
Commodity				
Purchased Power & Water	\$1,012,319	0.0339	\$ 34,293	3.3905
Water Testing	\$ 4,978	0.0339	\$ 169	0.0167
Operation and Maintenance				
Pumping and Treatment	172,551	0.0341	5,883	0.5816
Transmission and Distribution	111,508	0.0014	159	0.0157
Customer	446,866			
Depreciation				
Pumping and Treatment	92,731	0.0341	3,161	0.3126
Transmission and Distribution	59,926	0.0014	85	0.0085
Customer	240,151			
Debt Service				
Pumping and Treatment	97,935	0.0341	3,339	0.3301
Transmission and Distribution	63,289	0.0014	90	0.0089
Customer	253,630			
Total Expenses	\$2,555,884		\$ 47,179	
Less: Interest Income	3,409	0.0014	\$ 5	0.0005
Less: Other Operating Revenue	71,563	0.0014	\$ 102	0.0101
Wholesale Rate	2,480,912		\$ 47,072	\$ <b>4.65</b>

# BIG SANDY WATER DISTRICT

## ALLOCATION OF PLANT VALUE

	TOTAL	COMMODITY	DEMAND	CUSTOMER
Land & Land Rights	\$25,529		\$25,529	
Distribution Reservoirs & Standpipes	1,223,301		1,223,301	
Transmission & Distribution Mains	9,077,247		9,077,247	
Hydrants	227,402			\$227,402
Structures & Improvements	121,530		121,530	
Pumping Equipment	292,308		292,308	
Meters & Meter Installations	1,171,436			1,171,436
Services	3,855,964			3,855,964
<b>SUBTOTAL</b>	<b>\$15,994,717</b>	<b>\$0</b>	<b>\$10,739,915</b>	<b>\$5,254,802</b>
<b>PERCENT</b>	<b>100.00%</b>	<b>0</b>	<b>67.15%</b>	<b>32.85%</b>
General Plant (1)				
Communication Equipment	6,014		4,038	1,976
Power Operated Equipment	74,003		49,691	24,312
Tools, Shop & Garage	60,704		40,761	19,943
Transportation Equipment	184,275		123,734	60,541
Miscellaneous	11,484		7,711	3,773
Office Furniture & Equipment	117,904		79,169	38,735
Other Tangible Plant	154,544		103,771	50,773
<b>TOTAL VALUE</b>	<b>\$16,603,645</b>	<b>\$0</b>	<b>\$11,148,790</b>	<b>\$5,454,855</b>

(1) General Plant allocated based on overall weighted allocation of all other plant.

Note: Figures used were derived from 2010 annual report

# BIG SANDY WATER DISTRICT

## ALLOCATION OF DEPRECIATION EXPENSE

	TOTAL	COMMODITY	DEMAND	CUSTOMER
Distribution Reservoirs & Standpipes	\$451,488		\$451,488	
Transmission & Distribution Mains	2,634,802		2,634,802	
Hydrants	20,109			\$20,109
Structures & Improvements	114,459		114,459	
Pumping Equipment	105,120		105,120	
Meters & Meter Installations	571,668			571,668
Services	1,053,715			1,053,715
<b>SUBTOTAL</b>	<b>\$4,951,361</b>	<b>\$0</b>	<b>\$3,305,869</b>	<b>\$1,645,492</b>
<b>PERCENT</b>	<b>100.00%</b>	<b>0</b>	<b>66.77%</b>	<b>33.23%</b>
General Plant (1)				
Power Operated Equipment	74,003		49,409	24,594
Tools, Shop & Garage	60,703		40,529	20,174
Transportation Equipment	137,279		91,657	45,622
Miscellaneous	11,484		7,668	3,816
Communication Equipment	6,014		4,015	1,999
Office Furniture & Equipment	114,617		76,526	38,091
Other Tangible Plant	154,543		103,184	51,359
<b>TOTAL DEPRECIATION</b>	<b>\$5,510,004</b>	<b>\$0</b>	<b>\$3,678,857</b>	<b>\$1,831,147</b>

Note: Figures were derived from 2010 annual report



# BIG SANDY WATER DISTRICT

## ALLOCATION OF OPERATION AND MAINTENANCE EXPENSE

	TOTAL	COMMODITY	DEMAND	CUSTOMER
Purchased Power *	\$55,246	\$55,246		
Purchased Water *	922,780	922,780		
Employee Salaries	312,487		\$143,833	\$168,654
Employee Pension & Benefits	147,301		74,888	72,413
Materials & Supplies (Meters)	78,132			78,132
Advertising	190			190
Bad Debt	8,680			8,680
Contractual Services - Other	23,490			23,490
Contractual Services - Water Testing *	4,809	4,809		
<b>SUBTOTAL</b>	<b>\$1,553,116</b>	<b>\$982,836</b>	<b>\$218,722</b>	<b>\$351,558</b>
<b>LESS COMMODITY</b>	<b>-\$982,836</b>			
<b>SUBTOTAL</b>	<b>\$570,280</b>		<b>\$218,722</b>	<b>\$351,558</b>
<b>PERCENT</b>	<b>100.00%</b>		<b>38.35%</b>	<b>61.65%</b>
Commissioner Fees	29,752		11,411	18,341
Contractual Services - Accounting	4,582		1,757	2,825
Contractual Services - Legal	4,153		1,593	2,560
Insurance	13,591		5,213	8,378
Miscellaneous Expense	52,133		19,995	32,139
Transportation	26,453		10,145	16,307
Payroll Taxes	23,939		9,182	14,758
<b>TOTAL</b>	<b>\$1,707,720</b>	<b>\$982,836</b>	<b>\$278,017</b>	<b>\$446,866</b>

# BIG SANDY WATER DISTRICT

## SUMMARY OF ALLOCATIONS

	<b>TOTAL</b>	<b>COMMODITY</b>	<b>DEMAND</b>	<b>CUSTOMER</b>
Plant Percentages	100.00%		67.15%	32.85%
Available For Debt Service	\$411,426		\$276,259	\$135,167
Depreciation Percentages	100.00%		66.77%	33.23%
Total Depreciation	389,560		260,097	129,463
Total Operation & Maintenance	1,707,720	982,836	278,017	446,866
<b>REVENUE REQUIREMENT</b>	<b>\$2,508,706</b>			
<i>Less: Other Operating Revenue</i>				-71,461
<i>Less: Interest Income</i>				-3,404
<b>COST TO PROVIDE WATER SERVICE</b>	<b>\$2,433,840</b>	<b>\$982,836</b>	<b>\$814,373</b>	<b>\$636,632</b>
<b>REVENUE REQUIRED FROM RATES</b>	<b>\$2,433,840</b>			

# BIG SANDY WATER DISTRICT

## CALCULATION OF WATER RATES

	TOTAL	FIRST 2,000	NEXT 8,000	NEXT 20,000	NEXT 20,000	OVER 50,000
FROM BILLING ANALYSIS:						
COMMODITY PERCENTS	100.00%	31.80%	36.19%	4.50%	0.96%	26.55%
<b>ACTUAL COMMODITY SALES</b>	<b>288,464,000</b>	<b>91,736,700</b>	<b>104,401,700</b>	<b>12,981,600</b>	<b>2,768,300</b>	<b>76,575,700</b>
PEAK DEMAND WEIGHTED FACTOR		2	1.75	1.5	1.25	1
PEAK DEMAND WEIGHTED SALES	465,684,850	183,473,400	182,702,975	19,472,400	3,460,375	76,575,700
<b>DEMAND PERCENTS</b>	<b>100.00%</b>	<b>39.40%</b>	<b>39.23%</b>	<b>4.18%</b>	<b>0.74%</b>	<b>16.44%</b>
COMMODITY COSTS	\$982,836	\$312,559	\$355,711	\$44,230	\$9,432	\$260,904
DEMAND COSTS	\$814,373	\$320,852	\$319,504	\$34,053	\$6,051	\$133,913
CUSTOMER COSTS	\$636,632	\$636,632				
<b>TOTAL COSTS</b>	<b>\$2,433,840</b>	<b>\$1,270,043</b>	<b>\$675,215</b>	<b>\$78,283</b>	<b>\$15,483</b>	<b>\$394,817</b>
DIVIDE BY BILLS/GALLONS		53,686	104,401,700	12,981,600	2,768,300	76,575,700
<b>CALCULATED RATES</b>		<b>\$23.66</b>	<b>\$6.47</b>	<b>\$6.03</b>	<b>\$5.59</b>	<b>\$5.16</b>
		FIRST 2,000	NEXT 8,000	NEXT 20,000	NEXT 20,000	OVER 50,000
<b>RECOMMENDED RATES</b>		<b>\$23.41</b>	<b>\$6.15</b>	<b>\$5.67</b>	<b>\$5.25</b>	<b>\$5.02</b>
		FIRST 2,000	NEXT 8,000	NEXT 20,000	NEXT 20,000	OVER 50,000

**Big Sandy Water District  
Verification of Rates**

Meter Size	Gallons Sold	Revenue
5/8 inch	207,604,200	1,956,774.44
1 inch	2,177,800	17,300.97
1.5 inch	110,500	2,232.12
2 inch	112,500	13,968.48
3 inch	9,043,700	62,807.11
4 inch	69,415,300	380,848.36
Cannonsburg	2,841,500	13,212.98
Overland	7,273,000	33,819.45
Totals	298,578,500	\$2,480,963.91

APPENDIX D  
 STAFF REPORT CASE NO. 2012-00152  
 STAFF'S RECOMMENDED RATES

Monthly Water Rates

5/8" X 3/4" Meter

First	2,000 Gallons	\$23.41	Minimum Bill
Next	8,000 Gallons	6.15	per 1,000 Gallons
Next	20,000 Gallons	5.67	per 1,000 Gallons
Next	20,000 Gallons	5.25	per 1,000 Gallons
Over	50,000 Gallons	5.02	per 1,000 Gallons

1" Meter

First	10,000 Gallons	\$72.61	Minimum Bill
Next	20,000 Gallons	5.67	per 1,000 Gallons
Next	20,000 Gallons	5.25	per 1,000 Gallons
Over	50,000 Gallons	5.02	per 1,000 Gallons

1 1/2" Meter

First	30,000 Gallons	\$186.01	Minimum Bill
Next	20,000 Gallons	5.25	per 1,000 Gallons
Over	50,000 Gallons	5.02	per 1,000 Gallons

2" Meter

First	50,000 Gallons	\$291.01	Minimum Bill
Over	50,000 Gallons	5.02	per 1,000 Gallons

3" Meter

First	100,000 Gallons	\$542.01	Minimum Bill
Over	100,000 Gallons	5.02	per 1,000 Gallons

4" Meter

First	200,000 Gallons	\$1,044.01	Minimum Bill
Over	200,000 Gallons	5.02	per 1,000 Gallons

Wholesale Customer

Overland Development	\$4.65	Per 1,000 Gallons
Cannonsburg Water District	4.65	Per 1,000 Gallons

Mr. Jimmy Blanton  
Superintendent  
Big Sandy Water District  
18200 Kentucky Route #3  
Catlettsburg, KY 41129