

COMMONWEALTH OF KENTUCKY  
BEFORE THE PUBLIC SERVICE COMMISSION

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OCT 27 2006

PUBLIC SERVICE  
COMMISSION

In the Matter of:

The Joint Application of Sandy Valley )  
Water District, Southern Water and ) Case No. 2006-00327  
Sewer District and the city of Pikeville )  
for approval of the transfer of facilities )  
and for the assumption of debt by Southern )  
Water and Sewer District )

**RESPONSE TO COMMISSION'S ORDER OF OCTOBER 6, 2006**

Volume 2

12. Identify and state the qualifications of Veolia Water employees who currently manage and operate Pikeville's water system.

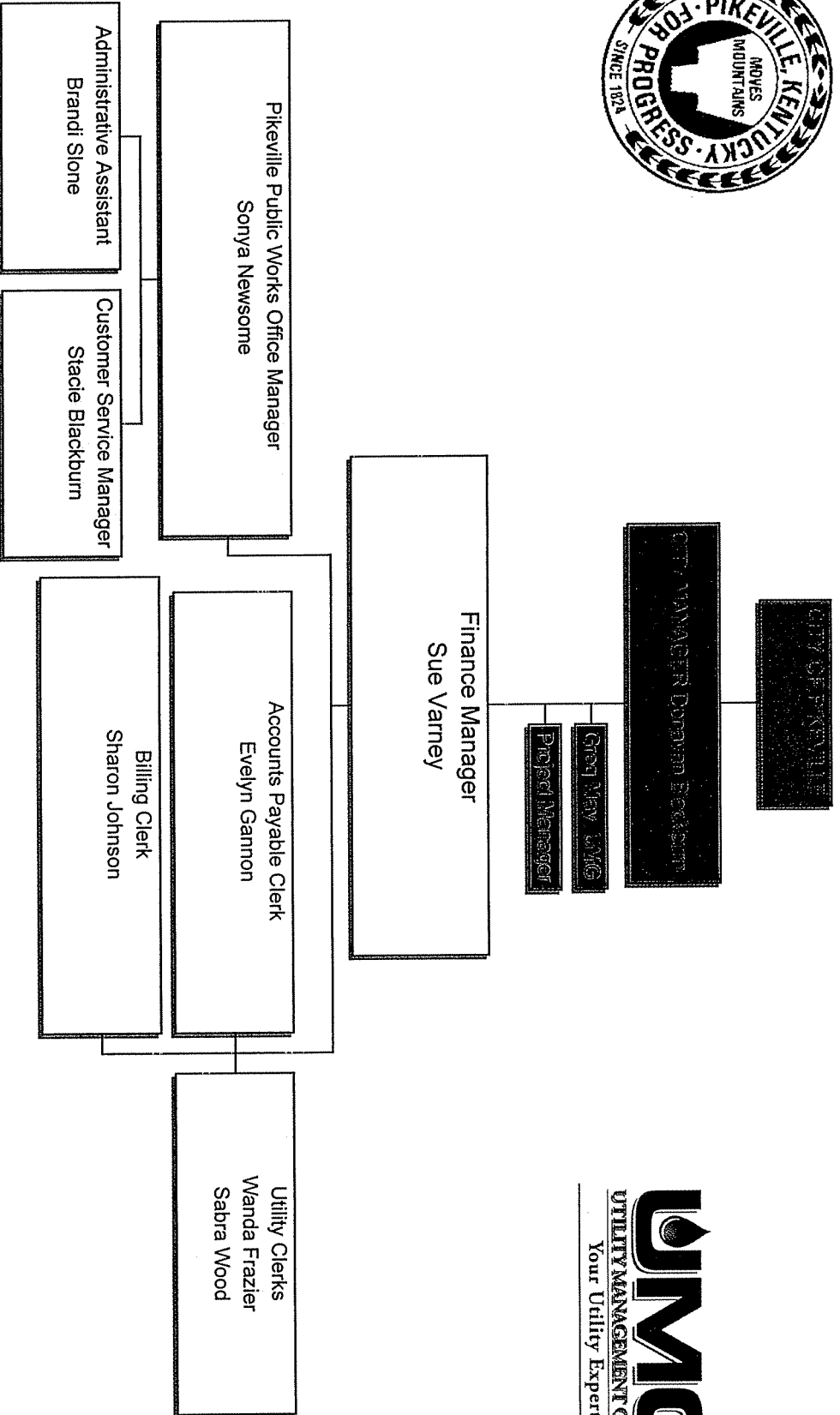
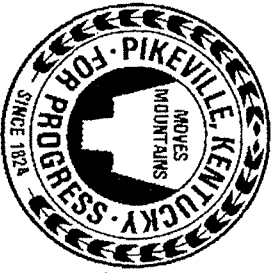
As cited in response to Item 11, above, the City of Pikeville's public works, including its water treatment plant and distribution system is currently operated by Utility Management Group, of Pikeville, KY.

The City retains financial management of its utilities, having staff dedicated to accounting, billing and customer service and relations. UMG performs all routine operations duties, including response to utility emergencies, customer meter reading and non-billing related customer service requests.

UMG's full staffing at Pikeville includes approximately 70 employees with a wide array of skills. Depending upon the specific circumstance, water system personnel are support with additional staff to the degree necessary to respond appropriately to the need. For special engineering related technical issues, UMG retains the services of O'Brian and Gere, Consulting Engineers, Lexington, Kentucky.

A listing of UMG water plant, field services and office staff involved in operations of the Pikeville water system is attached. Note: a listing of City employees involved in system accounting, billing and customer service is also attached.

# Administration



WTP				CERTIFICATIONS, LICENSE, EDUCATION, ETC.
NAME	JOB CODE	JOB TITLE		
Miles, Dempsey M	170020	PL. OP. 2	Class IVA Water, Class A CDL	
Pennington, Gregory O	170021	PL. OP. 2	Class IVA Water, Class IID Dist	
Varney, Ralph	170031	PL. OP. MGR. 2	Bachelor's degree, Class IVA Water, Class III WWTP, Class IIID Dist, Landfarm Operator, Class B(N) CDL	

WATER				CERTIFICATIONS, LICENSE, EDUCATION, ETC.
NAME	JOB CODE	JOB TITLE		
Coleman, Larry	270012	FIELD SER. TECH. 3	Master HVAC, Journeyman, KY Elec. Contractor, CDL-DA	
Howell, Bruce E	270012	FIELD SER. TECH. 3	Class II-D Water	
Stone, Donnie	270030	FIELD SERV. MGR.	Class II-D Water, CDL, Water Meter Testing, Electrical/Contractor License, KY Gas Assoc., Water Camera,	

\*NOTE:

Additional equipment and personnel can be used in situations that may require more personnel

Public Service Commission Data Request  
 ITEM 13: Southern District Employee Qualifications

**SOUTHERN WATER & SEWER DISTRICT**  
 LISTING OF EXISTING PERSONNEL

NAME	POSITION	YRS. EXPERIENCE	CERTIFICATION
<b>ADMINISTRATIVE PERSONNEL</b>			
BOB MEYER	DISTRICT MANAGER	6 YEARS	(15 years previous experience in public administration)
MARIBETH MCKINNEY	OFFICE MANAGER	19 YEARS	
CAROL MOORE	CLERK	4 YEARS	
TINA MOSLEY	BILLING CLERK	2 YEARS	
<b>WATER TREATMENT PLANT PERSONNEL</b>			
BOBBY HACKWORTH, JR	WTP MANAGER	24 YEARS	CLASS IVA & CLASS IV DIST.
GARY HOLBROOK	PLANT OPERATOR	13 YEARS	CLASS IIIA & CLASS II WWTP
CHRIS FRANCIS	PLANT OPERATOR	10 YEARS	CLASS IIIA
ROY KELSAY	PLANT OPERATOR	15 YEARS	CLASS IIIA & CLASS IID (DISTR)
<b>DISTRIBUTION PERSONNEL</b>			
GARY BLANKENSHIP	FIELD SUPERVISOR	14 YEARS	CLASS IID
DEAN HALL	FIELD SUPERVISOR	13 YEARS	CLASS IIBD & CLASS IIID (DISTR)
BOB HACKWORTH	UTILITY WORKER	26 YEARS	CLASS IID
REECE SALYER	UTILITY WORKER	10 YEARS	
DALE MCKINNEY	UTILITY WORKER	3 YEARS	
RODNEY FRASURE	UTILITY WORKER	2 YEARS	(12 years previous experience with another water utility)
JOSH PERKINS	UTILITY WORKER	8 MONTHS	
CHARLIE KENDRICK	UTILITY WORKER	8 MONTHS	
STEVE SHORTRIDGE	ELECTRICIAN	8 MONTHS	(5 years previous experience as electrician)
CHRIS ROBINSON	UTILITY WORKER	2 MONTHS	(8 years previous experience in water line construction)

**WASTEWATER TREATMENT PLANT PERSONNEL**

ROY KELSAY	PLANT OPERATOR	2 YEARS	CLASS III WWTP (12 years previous experience operating WWTP's)
GARY HOLBROOK	PLANT OPERATOR	3 YEARS (WWTP)	CLASS IIIA & CLASS II WWTP

## Public Service Commission Data Request

### ITEM 14: Regarding Southern District's termination of management agreement with Veolia Water:

ITEM 14 a: Southern Water & Sewer District entered into a management agreement with Veolia Water (Previously US Filter Operating Services) in May, 2000, just after the merger of Beaver Elkhorn Water District and Mud Creek Water District into Southern Water & Sewer District. That decision was made based on the increased size and complexity of the merged systems, the intent to construct major expansions of the system, the need for more experienced management personnel, and US Filter's assurance that it could provide these services more efficiently than it could on its own. After five years of contracted management services (and several changes in ownership of US Filter – most recently Veolia Water), the District's commissioners made the determination that the District's facilities could be managed on its just as effectively and more cost-efficiently than through an independent management company. Specific reasons for termination of the contract were:

1. The primary reason was the District's determination that it would be able to achieve cost savings by operating the district on its own and not through a management contract.
2. The Commissioners; perception that Veolia Water's primary focus (in the context of management personnel in Houston, Texas and Paris, France) was primarily on profits and not on the best interests of the District.
3. The fact that operational issues and concerns (ie: continued high water loss) had not been effectively addressed during the tenure of the contract with Veolia.

### Item 14 b: Impact that the termination of the contract has had on Southern District's operations:

1. All direct project personnel previously employed by Veolia Water were retained as employees of Southern District.
2. The District procured various fringe benefits for these employees (health & dental insurance, life insurance, workman's compensation, retirement plan, etc.).
3. The District drafted and adopted a new set of personnel policies for its employees.
4. As most of the vehicles used in routine operations were owned by Veolia, the District had to obtain new vehicles. Five new service vehicles were procured and purchased by the District and three of the existing Veolia vehicles were purchased from Veolia. The balance of the remaining vehicle fleet was turned back over to Veolia. Likewise, the District had to procure and obtain new vehicle fleet insurance.
5. In order to repay outstanding payments due to Veolia for management fees, the District procured a \$600,000.00 bank note which will be repaid over a 6 year term.
6. With regard to daily operation of plants and distribution/collection systems, the only change was that the District's administrative and operational personnel are no longer subject to the management directives and personnel policies of Veolia Water. There has been more of a focus internally on leak detection and water loss control.
7. The termination of the management contract has had no impact on the District's relationship with various regulatory and funding agencies.

Item 14 c: See attached analysis

Public Service Commission Data Request  
ITEM 14 c: July 31,2006 Revenues & Expense Analysis

**TOTAL OPERATING EXPENSES YTD, Per Financial Statement: 1,682,678.64**

**Less Operating Expenses That were not included  
in Primary Management Contract with Veolia Water:**

Water Purchases:	102,434.28 (a)
Fuel for Power Production	3,142.82 (a)
Utilities T&D (Electricity for operations)	103,904.73 (a)
Legal Fees	1,657.00
Accounting	16,048.00
Property Insurance	24,062.51
Commissioners Bond	710.50
Commissioners Fees	5,000.00
Railroad Easements	1,500.00
Depreciation Expense	568,897.00
Depreciation Expense	24,815.00
PSC Taxes	3,478.40
Repairs - Pumping	3,173.85 (b)
Supplies - T&D	58,426.42 (b)
Repairs Pump T&D	48,520.41 (b)
Repairs T&D	7,248.52 (b)

**TOTAL YTD OPER EXPENSES LESS EXPENSES NOT PREVIOUSLY  
INCLUDED IN PRIMARY MANAGEMENT CONTRACT W/VEOLIA:: 709,659.20**

**Total Operating Expense through 7/31/06, based on Veolia  
Management Contract: \$106,762/month for 7 months. 747,334.00**

**YTD Cost Reduction- Actual vs: Costs based on Veolia Contract: 37,674.80**

**NOTES:**

Southern District's termination with Veolia Water has had and will have no impact on total revenues generated by Southern Water.

Veolia Water's contract with Southern District stipulated a management fee of \$106,762 per month. This excluded water purchases and power for plants and pump stations that were paid through Veolia but reimbursed to Veolia by Southern District (in addition to the \$106,762 / month mgmt fee). It also excluded repair & maintenance costs for plants and distribution system, that were paid through Veolia, but, again, reimbursed to Veolia by Southern District (in addition to operations contract fee).

- (a) Water & electric expenses YTD paid by Southern District.
- (b) Repair & Maintenance expenses YTD paid by Southern District.



## Public Service Commission Data Request

ITEM 15: Regarding Southern District's Net Loss at 12/31/05:

*ITEM 15 a:* Southern District recognizes that it shows a net loss for the year ending 12/31/05 of \$945,467. It has always been the District's position to keep water and sewer rates as low as possible for customers while keeping its cash flow position positive. On the District's audit report for 12/31/05, it should be noted that there was a total of \$1,082,900 in depreciation and amortization expense for the year (non-cash expense). Taking the net loss of \$945,687, deducting the non-cash expense of \$1,082,900 for depreciation/amortization and adding back in the principal on debt payments, the District is still in a positive cash flow position.

*ITEM 15 b:* Southern District continues to make efforts to reduce its current operating expenses, including keeping operating personnel costs to a minimum, allocating personnel and other resources to identifying and correcting water leaks/losses, and keeping administrative costs to a minimum. It is still in an expansion mode, currently finalizing the construction of 8 new lines that will increase its customer base by approximately 140 new customers. This expansion will increase its operating revenues, and, at the same time, increase its operating costs minimally.

*ITEM 15 c:* Southern District is in compliance with its current debt service requirements. Payments on KIA Notes are due on a semi-annual basis, as well as payments on Rural Development Bonds. Each month the District automatically transfers payments from its operations account into escrow accounts for both KIA and Rural Development. As semi-annual payments come due, payments are made from escrow accounts to the funding agency. Likewise, reserve accounts are funded on a monthly basis (for both KIA and RD), transferring amounts from the operations account into the appropriate reserve accounts. Attached is a current bank account summary of operations account, escrow accounts, and reserve accounts.

**SOUTHERN WATER & SEWER DISTRICT  
MONTHLY OPERATIONS REPORT**

*MONTH OF:* **September-06**

**OPERATING & RESERVE ACCOUNT BALANCES:**

			<u>CURRENT BALANCE</u>
<u>OPERATIONS ACCOUNT</u>	Beginning Bal	\$141,722.80	-
	Receipts	\$256,985.55	
	Disbursed	\$210,743.60	
	Interest Earned	\$35.64	
	Ending Bal.		<b>\$188,000.39</b>
<u>CONSTRUCTION ACCOUNT:</u>	Beginning Bal	\$8,285.22	
	Receipts		
	Disbursed		
	Interest Earned	\$1.70	
	Ending Bal.		<b>\$8,286.92</b>
<u>KIA ESCROW ACCOUNT</u>	Beginning Bal	\$83,556.73	
	Receipts	\$18,700.00	
	Disbursed		
	Interest Earned	\$19.99	
	Ending Bal.		<b>\$102,276.72</b>
<u>KIA RESERVE ACCOUNT #3</u>	Beginning Bal	\$133,023.64	
	Receipts	\$1,300.00	
	Disbursed	\$0.00	
	Interest Earned	\$27.53	
	Ending Bal.		<b>\$134,351.17</b>
<u>KIA RESERVE ACCOUNT</u>	Beginning Bal	\$68,295.51	
	Receipts		
	Disbursed	\$0.00	
	Interest Earned	\$14.03	
	Ending Bal.		<b>\$68,309.54</b>
<u>USDA-RD DEPR RESERVE</u>	Beginning Bal	\$21,680.72	
	Receipts	\$1,165.00	
	Disbursed	\$0.00	
	Interest Earned	\$13.90	
	Ending Bal.		<b>\$22,859.62</b>
<u>USDA-RD ESCROW ACCOUNT</u>	Beginning Bal	\$13,541.83	
	Receipts	\$36,840.00	
	Disbursed		
	Interest Earned	\$7.58	
	Ending Bal.		<b>\$50,389.41</b>
<b>TOTAL CHECKING/RESERVE ACCOUNT BALANCES:</b>			<b>\$574,473.77</b>

**ITEM 16: 7/31/06 Water Income Statement for Southern District**

**Copy of 7/31/06 Water Division Income Statement Attached.**

**Southern Water and Sewer District**  
**INCOME STATEMENT - WATER**  
**For the 1 Month and 7 Months Ended July 31, 2006**

	1 Month Ended July 31, 2006	%	7 Months Ended July 31, 2006	%
<b>Sales</b>				
Metered Sales - Residential	\$ 208,148.06	86.80	\$ 1,197,631.84	84.96
Metered Sales - Business	10,502.90	4.38	61,003.10	4.33
Sales for Resale	5,064.00	2.11	28,824.80	2.04
Penalties	5,716.40	2.38	32,726.84	2.32
Meter Service	1,250.00	0.52	11,515.08	0.82
Tap fees	2,175.00	0.91	25,737.70	1.83
Less Returns & Allowances	0.00	0.00	0.00	0.00
<b>Total Sales</b>	<u>232,856.36</u>	<u>97.10</u>	<u>1,357,439.36</u>	<u>96.29</u>
<b>Gross Profit</b>	<u>232,856.36</u>	<u>97.10</u>	<u>1,357,439.36</u>	<u>96.29</u>
<b>Operating Expenses</b>				
Solid Waste Payments	0.00	0.00	0.00	0.00
Water Purchases	13,849.55	5.78	102,434.28	7.27
Management Fees	0.00	0.00	241,259.28	17.11
Operations Labor - Pumping	10,165.51	4.24	58,897.54	4.18
Fuel for Power Production	0.00	0.00	3,142.82	0.22
Supplies - Pumping	0.00	0.00	2,293.61	0.16
Repairs - Pumping	0.00	0.00	3,173.85	0.23
Telephone & Utilities - Pumping	4,874.46	2.03	15,987.85	1.13
LAB SERVICES	937.55	0.39	3,021.30	0.21
Chemicals	9,233.96	3.85	36,219.71	2.57
Fuel	162.00	0.07	703.55	0.05
Lawn Service	1,250.00	0.52	2,750.00	0.20
Operations Labor - T & D	21,922.64	9.14	119,164.55	8.45
Uniform Rental - T & D	0.00	0.00	1,878.46	0.13
Supplies - T & D	8,469.02	3.53	58,426.42	4.14
Vehicle Repairs - T & D	2,067.03	0.86	4,975.80	0.35
Utilities - T & D	30,582.50	12.75	103,904.73	7.37
Repairs Pump - T & D	2,636.86	1.10	48,520.41	3.44
Uniform Rental - T & D	373.31	0.16	702.01	0.05
Vehicle Repairs - T & D	0.00	0.00	571.10	0.04
Repairs - T & D	93.51	0.04	7,248.52	0.51
Fuel-Gasoline	0.00	0.00	16,248.73	1.15
Truck Lease	3,226.73	1.35	3,226.73	0.23
Equip. Rental	0.00	0.00	3,700.00	0.26
Billing Postage	4,950.33	2.06	13,313.17	0.94
Billing Postage	0.00	0.00	0.00	0.00
Wages - Office	12,802.00	5.34	79,241.54	5.62
Rent	0.00	0.00	3,119.40	0.22
Office Postage	0.00	0.00	111.51	0.01
Office Supplies	0.00	0.00	6,936.79	0.49
Telephone & Utilities - Office	619.47	0.26	6,090.92	0.43
Bank Charges	(20.00)	(0.01)	(108.25)	(0.01)
Health Insurance	16,277.82	6.79	40,866.15	2.90

**Southern Water and Sewer District**  
**INCOME STATEMENT - WATER**  
**For the 1 Month and 7 Months Ended July 31, 2006**

	1 Month Ended July 31, 2006	%	7 Months Ended July 31, 2006	%
SHIPPING	0.00	0.00	194.67	0.01
DENTAL INS	550.60	0.23	2,753.00	0.20
Workers Comp	0.00	0.00	10,690.50	0.76
Life Ins.	1,257.72	0.52	1,257.72	0.09
Legal	0.00	0.00	1,657.00	0.12
Accounting	4,743.00	1.98	16,048.00	1.14
Engineering	0.00	0.00	0.00	0.00
Professional Fees	0.00	0.00	4,068.12	0.29
Legal	0.00	0.00	0.00	0.00
Property Insurance	0.00	0.00	24,062.51	1.71
Commissioners Bond	0.00	0.00	507.50	0.04
Bonds	0.00	0.00	0.00	0.00
Commissioner's Bond	0.00	0.00	0.00	0.00
Bonds	0.00	0.00	203.00	0.01
Commissioner's Fee	500.00	0.21	5,000.00	0.35
Railroad Rent/Easements	1,500.00	0.63	1,500.00	0.11
Misc. Expenses	5,119.50	2.13	8,774.26	0.62
Misc. Expenses	0.00	0.00	0.00	0.00
Travel Reimbursement	0.00	0.00	0.00	0.00
Travel Reimbursement	0.00	0.00	0.00	0.00
Travel Reimbursement	0.00	0.00	0.00	0.00
Training	160.00	0.07	715.60	0.05
Advertising	17.27	0.01	1,015.77	0.07
Depreciation Expense	81,271.00	33.89	568,897.00	40.36
Depreciation Expense	3,545.00	1.48	24,815.00	1.76
Payroll Taxes	13,730.73	5.73	19,018.11	1.35
PSC Taxes	3,478.40	1.45	3,478.40	0.25
Sales Taxes	0.00	0.00	0.00	0.00
<b>Total Operating Expenses</b>	<u>260,347.47</u>	<u>108.56</u>	<u>1,682,678.64</u>	<u>119.37</u>
<b>Operating Income (Loss)</b>	<u>(27,491.11)</u>	<u>(11.46)</u>	<u>(325,239.28)</u>	<u>(23.07)</u>
<b>Other Income (Expense)</b>				
Interest Expense - TFB	0.00	0.00	(11,480.62)	0.81
Interest Expense - KIA	(18,311.00)	7.64	(128,177.00)	9.09
Interest Income - Now	0.00	0.00	65.37	0.00
Interest Income - Escrow	81.67	0.03	537.85	0.04
<b>Total Other Income (Expense)</b>	<u>(18,229.33)</u>	<u>(7.60)</u>	<u>(139,054.40)</u>	<u>(9.86)</u>
<b>Net Income (Loss) Before Taxes</b>	<u>(45,720.44)</u>	<u>(19.07)</u>	<u>(464,293.68)</u>	<u>(32.94)</u>
<b>Net Income (Loss)</b>	<u>\$ (45,720.44)</u>	<u>(19.07)</u>	<u>\$ (464,293.68)</u>	<u>(32.94)</u>

See Accountants' Compilation Report

17. Refer to Applicants' response to Commission's Order of July 31, 2006, Item 3, Sandy Valley's income statement for the 7 month period ending July 31, 2006.

a. Provide a breakdown of the items that are included in revenues of \$580,405. In breakdown,

Customer deposits	\$ 5375.00
Tap-on fees	\$ 12886.00
Water collections	\$471445.00
Sewer collections	\$ 3838.00
Garbage collections	\$ 86861.00

TOTAL	\$580405.00
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b. Given that Sandy Valley is only a collection agency for the "garbage billing," explain in detail why the amounts collected and remitted would be recorded as operating revenues and expenses of the District.

This should have not been included with operating revenue or expense; this should have been a pass thr operation. Per Lynn @ Sandy Valley Water

18. In its explanation of the Southern Transaction at (d), Applicants state that, "(T)he transfer is in the public interest in that Southern will be able to provide combined water and wastewater services to a large number of customers, which should provide economies of scale and offset potential rate increases." Provide an analysis and/or study that will support the above statement.

The current service area of Southern District is contiguous with that of Sandy Valley in Floyd County in the Harold community. At present, each system has a modest fleet of trucks, backhoes, hand tools as well as experienced operators, administrative personnel and contracted services for accounting. To respond to any major line break, Sandy Valley contracts with a local firm.

Consolidation will permit certain economies by eliminating the capital and maintenance cost of two backhoes or the need to rent a second backhoe or other similar equipment for service in that section of Floyd County. Similarly, sharing personnel resources, tools and all other elements that account for the cost of operation can be reasonably expected to reduce overall cost of operation that must be supported by the rate payers in the Harold-Betsy Layne and Mud Creek communities in Floyd County.

In similar fashion, such economies will be gained once this area of Floyd County is sewerred, by dual-tasking personnel and equipment, while reducing outside or contracted services to deal with line breaks and other emergencies.

From another perspective, it should be noted that a large percentage of the 12" and other large diameter mains in both the Sandy Valley and Southern District's systems are AC pipe, now in the ground for nearly 40 years. Additionally, one of the tanks in the Floyd County area of Sandy Valley's system is an "original" dating it in the 40 year period as well. It is reasonable to anticipate the need for systematic replacement of these and other facilities to assure continued service throughout this region. The ability for either existing system, individually, to secure and pay for financing for this replacement in the future is known to be a greater difficulty than if these systems were consolidated. While not a panacea, this consolidation gives area ratepayers the best chance at quality, long term service. In this context, the attached excerpt from an NRRI report (99-16) by Patrick C. Mann, Ph.D. cites, in part, "Regionalization, consolidation, or merger/acquisition can be the solution to the problem of small water systems in financing capital investment to replace aging infrastructure, comply with the amended Safe Drinking Water Act, or facilitate the development of regional water supplies."

**FINANCING MECHANISMS FOR CAPITAL  
IMPROVEMENTS FOR REGULATED WATER UTILITIES**

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**December 1999**

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revenues, perhaps by increasing the rates for the residential and commercial users, the long-term effect is increased uncertainty and financial risk for the regulated water utility. Furthermore, the higher rates for the other users, given the price elasticity effect, is another factor which increases uncertainty and financial risk for the regulated water utility.

### **Regionalization and Financing**

Regionalization and/or consolidation constitutes an important change in the manner that water services are provided. In addition to the potential efficiencies in both operation and capacity planning, regionalization has important implications for the financing of capital expenditures. Regionalization mitigates some of the financing obstacles for water utilities. For example, more financing options are available to the larger consolidated water utility than are generally available to the several smaller water utilities prior to consolidation. Regionalization, consolidation, or merger/acquisition can be the solution to the problem of small water systems in financing capital investment to replace aging infrastructure, comply with the amended Safe Drinking Water Act, or facilitate the development of regional water supplies.

More specifically, regionalization allows capital to be diverted or freed up in small water systems. This capital can then be deployed to improve delivery system infrastructure.<sup>32</sup> Similarly, regionalization can free up the bonding capacity of small municipalities. Regionalization can make small, financially nonviable water utilities into viable water firms. In brief, regionalization can solve, in part, the nonviability problem for small water systems as well as improve operational efficiency and compliance with environmental regulations.<sup>33</sup>

### **Privatization and Financing**

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<sup>32</sup> William L. Sankpill and James A. Merciel, "Regionalization/Consolidation of Water Systems in Missouri," *NAWC Water* 36 (Spring 1995): 22-23.

<sup>33</sup> Janice A. Beecher, *The Regionalization of Water Utilities* (Columbus, Ohio: The National Regulatory Research Institute, 1996).

**Public Service Commission Data Request**

**ITEM 19 (a), (b), and (c): Detailed Income Statement for Southern District and Sandy Valley; Compliance with Bond requirements:**

**See attached spreadsheets & analyses:**

**BUDGET PROJECTIONS  
SOUTHERN WATER & SEWER DISTRICT**

<b>SOUTHERN WATER BUDGET SUMMARY</b>		<b>2006 PROJECTED TOTAL (SWSD)</b>	<b>PROJECTED BUDGET 2007 (SWSD)</b>		<b>PROJECTED BUDGET SV - 2007</b>	<b>COMBINED BUDGET SWSD &amp; SV</b>
<b>REVENUES</b>						
	WATER SALES	2,280,320	2,318,531	(A)	322,653	2,641,184
	SEWER SALES	67,282	70,646	(B)	0	70,646
	LATE CHARGES	0	0			
	SERVICE FEES	71,483	72,681	(C)	13,039	85,720
	MISCELLANEOUS	0				
	<b>TOTAL REVENUES</b>	<b>2,419,085</b>	<b>2,461,858</b>		<b>335,692</b>	<b>2,797,550</b>
<b>EXPENSES</b>						
	CONTRACT MGMT FEES	241,259	0	(D)		0
	OPERATIONS EXPENSES	1,564,327	1,680,570	(E)	285,684	1,966,254
	COMMISSIONER FEES	30,000	30,000	(F)		30,000
	PAYROLL TAXES (Comm Fees)	1,620	1,620			1,620
	SALES TAX	5,723	5,819	(G)		5,819
	<b>TOTAL OPERATING EXPENSES</b>	<b>1,842,929</b>	<b>1,718,009</b>		<b>285,684</b>	<b>2,003,693</b>
<b>DEBT SERVICE PAYMENTS:</b>						
	KIA 252-1-1 (Interest Exp)	29,611	30,308	(H)		30,308
	KIA 252-1-3 (Interest Exp)	68,550	70,692	(H)		70,692
	RD (2003 - 2,515,000) (Interest Exp)	112,005	110,790	(H)		110,790
	RD Loan (Dec 2004) (Interest Exp)	9,563	9,563	(H)		9,563
	KIA Loan: Wayland (Interest Exp)	781	744	(H)		744
	Bank Loan (Veolia Debt) (Interest)	24,348	25,114	(H)		25,114
	Floyd County Bond Issue (Prin & Int)	100,000	100,000	(I)		100,000
	<b>SUBTOTAL INTEREST EXPENSE</b>	<b>344,858</b>	<b>347,211</b>			<b>347,211</b>
	<b>PRINCIPAL / RESERVE PMTS</b>					
	KIA 252-1-1 (Principal)	39,605	40,801	(H)		40,801
	KIA 252-1-1 (Reserve)	0	0	(H)		0
	KIA 252-1-3 (Principal)	75,246	77,521	(H)		77,521
	KIA 252-1-3 (Reserve)	14,866	14,866	(H)		14,866
	KIA A04-06 (Wayland) (Principal)	3,074	3,105	(H)		3,105
	KIA A04-06 (Wayland) (Reserve)	4,400	4,400	(H)		4,400
	RD (2003 - 2,515,000) (Principal)	27,000	29,000	(H)		29,000
	RD (2003 - 2,515,000) (Reserve)	13,980	13,980	(H)		13,980
	RD (Sandy Valley- Prin & Interest)				37,579	37,579
	Bank Loan (Veolia Debt) (Principal)	72,748	91,401	(H)		91,401
	<b>TOTAL PRINCIPAL / DEBT SVC</b>	<b>250,919</b>	<b>275,074</b>		<b>37,579</b>	<b>312,653</b>
	<b>TOTAL DEBT SERVICE:</b>	<b>595,777</b>	<b>622,285</b>		<b>37,579</b>	<b>659,864</b>
	<b>TOTAL EXPENSES &amp; D/S</b>	<b>2,438,706</b>	<b>2,340,294</b>		<b>323,263</b>	<b>2,663,557</b>
<b>REVENUE OVER / (UNDER)</b>						
	<b>EXPENSES</b>	<b>-19,621</b>	<b>121,564</b>		<b>12,429</b>	<b>133,993</b>
	<b>DEPRECIATION (NON-CASH EXPENSE)</b>	<b>1,082,900</b>	<b>1,082,900</b>	(J)		<b>1,082,900</b>
	<b>TOTAL EXPENSE INCLUDING DEPRECIATION</b>	<b>3,521,606</b>	<b>3,423,194</b>		<b>323,263</b>	<b>3,746,457</b>
	<b>Net Revenue Plus Princ Pmts Minus Depr.</b>	<b>-851,602</b>	<b>-686,262</b>		<b>50,008</b>	<b>-636,254</b>

(NOTE: See separate Schedules & assumptions for Sandy Valley)

## Public Service Commission Data Request

ITEM 19 (a) and (b): Detailed Income Statement for Southern District and Sandy Valley; Compliance with Bond requirements:

NOTES TO FINANCIAL ANALYSES:

### BUDGET PROJECTIONS FOR SOUTHERN WATER & SEWER DISTRICT:

- (A) Water Sales: Refer to separate spreadsheet calculating projected 2007 water sales.
- (B) Sewer Sales: Refer to separate spreadsheet illustrating actual sewer sales in 2006 and 2007 projections (5% increase over 2006).
- (C) Service Fees: Based on actual fees generated in 2006; 2007 projected as a percentage of total water sales.
- (D) Management Fee: 2006 included payments for 2 months in 2006; there will be no management fees in 2007.
- (E) Operations Expenses: See separate schedule of operations expenses.
- (F) Commissioners Fees: Based on \$500/month for five commissioners.
- (G) Sales Tax: Based on percentage of total sales.
- (H) All Interest, principal, and reserve payments based on amortization schedules provided by various funding agencies, all of whom the District is currently in compliance with.
- (I) Floyd County Bond Issue: Floyd County Fiscal Court issued approximately \$2.4 million in bonds two years ago to assist with various expansions of Southern Water's service area. Subsequently, the county judge-executive requested that Southern Water assist the County with repayment of those bonds. Southern Water's commissioners agreed to pay the fiscal court \$100,000 per year to assist the county with repayment of those bonds.
- (J) Depreciation Expense: Based on actual depreciation and amortization expense for 2005.

**SWS REVENUE PROJECTIONS: 2006 ACTUAL / 2007 PROJECTED**

**REVENUE PROJECTIONS:**

	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT (Est)	NOV(Est)	DEC(Est)	TOTAL YEAR
Actual Water \$ Sales by month 2006	\$226,426	\$179,104	\$201,295	\$201,381	\$183,478	\$214,221	\$215,088	\$203,106	\$217,032	\$212,483	\$197,184	\$210,783	\$2,461,582
Actual Water Revenues Collected 2006	\$197,516	\$194,534	\$178,553	\$179,851	\$191,974	\$175,554	\$187,391	\$215,661	\$184,523	\$196,837	\$182,664	\$195,262	\$2,280,320
Total gal sold by month (1,000 gal)	33,905	24,432	28,858	29,172	24,600	30,137	31,724	29,107	31,919	31,250	29,000	31,000	355,104
Number of water customers 2006	6,172	6,168	6,160	6,186	6,203	6,244	6,253	6,268	6,287	6,290	6,295	6,300	
Average gal per customer by month	5.5	4.0	4.7	4.7	4.0	4.8	5.1	4.6	5.1	5.0	4.6	4.9	
Average revenue per customer 2006	\$36.69	\$29.04	\$32.68	\$32.55	\$29.58	\$34.31	\$34.40	\$32.40	\$34.52	\$33.78	\$31.32	\$33.46	
Average revenue per 1,000 gal sold	\$6.68	\$7.33	\$6.98	\$6.90	\$7.46	\$7.11	\$6.78	\$6.98	\$6.80	\$6.80	\$6.80	\$6.80	
<b>2007 PROJECTIONS</b>													
Projected customers by month 2007	6,350	6,350	6,350	6,350	6,350	6,350	6,350	6,350	6,350	6,350	6,350	6,350	
Projected gallons sold per month 2007	34,883	25,153	29,748	29,945	25,183	30,649	32,216	29,488	32,239	31,548	29,253	31,246	361,551
Proj rev based on customers	\$232,956	\$184,389	\$207,504	\$206,720	\$187,826	\$217,858	\$218,425	\$205,763	\$219,207	\$214,510	\$198,907	\$212,456	2,506,520
Proj revenue less 7.5% uncoll.	\$215,484	\$170,560	\$191,941	\$191,216	\$173,739	\$201,518	\$202,043	\$190,331	\$202,766	\$198,422	\$183,989	\$196,522	\$2,318,531
<b>SEWER SALES: 2006 (Collections)</b>													
Projected: 2007 (5% Increase over 2006)	\$5,191	\$6,550	\$5,103	\$5,214	\$5,634	\$5,259	\$4,928	\$6,656	\$5,547	\$5,500	\$5,500	\$6,200	\$67,282
	\$5,451	\$6,878	\$5,358	\$5,475	\$5,916	\$5,522	\$5,174	\$6,989	\$5,824	\$5,775	\$5,775	\$6,510	\$70,646

SWSD OPERATIONS EXPENSE DETAIL	2006 YTD Aug-06	Projected Sept-Dec 06	Proj Total 2006	2007 BUDG O&M SWSD	NOTES	2007 BUDG SANDY VALLEY
<b>SALARIES &amp; WAGES (INCL OT)</b>	<b>\$312,644</b>	<b>\$208,429</b>	<b>\$521,073</b>	<b>\$558,501</b>	(A)	<b>\$80,336</b>
<b>FRINGE BENEFITS:</b>						
P/R Taxes (FICA/Unemployment)	\$22,292	\$16,987	\$39,279	\$45,518	(B)	\$6,829
Health Insurance	\$42,398	\$31,308	\$73,706	\$93,924	(C)	\$29,340
Dental Insurance	\$3,854	\$2,460	\$6,314	\$7,381	(C)	
Other Insurance (Life/Disability)	\$2,725	\$920	\$3,645	\$2,765	(C)	
Retirement Plan	\$0	\$3,000	\$3,000	\$10,800	(D)	
Employee Relations				\$0		
Regulatory Training	\$1,021	\$200	\$1,221	\$1,600	(E)	
<b>Subtotal Fringe Benefits</b>	<b>\$72,290</b>	<b>\$54,875</b>	<b>\$127,165</b>	<b>\$161,988</b>		
<b>Subtotal S&amp;W &amp; Benefits</b>	<b>\$384,934</b>	<b>\$263,305</b>	<b>\$648,239</b>	<b>\$720,488</b>		
<b>COMMISSIONERS FEES</b>	<b>\$6,000</b>					
<b>TRAVEL (Comm/Emp)</b>	<b>\$0</b>	<b>\$1,200</b>	<b>\$1,200</b>	<b>\$1,500</b>	(F)	
<b>VEHICLE EXPENSE:</b>						
Lease Costs:	\$7,295	\$15,704	\$22,999	\$47,118	(G)	
Maintenance:	\$5,547	\$3,698	\$9,245	\$15,000	(H)	
Gasoline/Diesel	\$23,096	\$19,040	\$42,136	\$52,800	(I)	
Other Vehicle Exp	\$0	\$0	\$0	\$0		
<b>Subtotal Vehicle Expense:</b>	<b>\$35,938</b>	<b>\$38,442</b>	<b>\$74,380</b>	<b>\$114,918</b>		<b>\$15,000</b>
<b>OFFICE SUPPLIES / EQUIPMENT:</b>	<b>\$7,725</b>	<b>\$1,400</b>	<b>\$9,125</b>	<b>\$7,200</b>	(J)	<b>\$9,310</b>
<b>BILLING SERVICES</b>	<b>\$0</b>	<b>\$15,336</b>	<b>\$15,336</b>	<b>\$46,008</b>	(K)	
<b>POSTAGE/DELIVERY:</b>	<b>\$17,511</b>	<b>\$320</b>	<b>\$17,831</b>	<b>\$900</b>	(L)	
<b>PROMOTIONAL/ADVERTISING</b>	<b>\$1,016</b>	<b>\$0</b>	<b>\$1,016</b>	<b>\$1,200</b>		
<b>DUES/SUBSCRIPTIONS:</b>	<b>\$1,303</b>	<b>\$0</b>	<b>\$1,303</b>	<b>\$1,500</b>		
<b>BUSINESS INSURANCE:</b>						
General Liability/Property	\$24,063	\$16,441	\$40,504	\$42,529	(M)	\$2,500
Workmans Comp:	\$10,691	\$10,690	\$21,381	\$22,450	(M)	\$3,044
Bonds (Commissioners)	\$711	\$0	\$711	\$750		
<b>Subtotal Business Insurance:</b>	<b>\$35,465</b>	<b>\$27,131</b>	<b>\$62,596</b>	<b>\$65,729</b>		
<b>TELEPHONE:</b>	<b>\$7,342</b>	<b>\$4,356</b>	<b>\$11,698</b>	<b>\$13,068</b>		
<b>OUTSIDE SERVICES:</b>						
Grass Cutting:	\$3,750	\$1,000	\$4,750	\$5,000	(N)	
Uniforms	\$4,078	\$2,070	\$6,148	\$5,980	(O)	
Equipment Rental:	\$3,700	\$4,000	\$7,700	\$11,600	(P)	
<b>Subtotal Outside Services:</b>	<b>\$11,528</b>	<b>\$7,070</b>	<b>\$18,598</b>	<b>\$22,580</b>		
<b>LABORATORY:</b>						
Lab Supplies:	\$0	\$1,000	\$1,000	\$1,500	(Q)	
Contract Lab Services: McCoy/McC	\$4,359	\$6,000	\$10,359	\$18,000	(R)	
Contract Lab Services: ASA	\$5,742	\$2,000	\$7,742	\$5,400	(R)	
Health/Safety Supplies:	\$296	\$1,500	\$1,796	\$2,500	(S)	
<b>Subtotal Laboratory Expenses:</b>	<b>\$10,397</b>	<b>\$10,500</b>	<b>\$20,897</b>	<b>\$27,400</b>		
<b>CHEMICALS:</b>						
WTP Chemicals	\$42,192	\$28,128	\$70,320	\$69,542	(T)	
WWTP Chemicals	\$1,104	\$736	\$1,840	\$2,208	(T)	
<b>Subtotal Chemical Expense:</b>	<b>\$43,296</b>	<b>\$28,864</b>	<b>\$72,160</b>	<b>\$71,750</b>		
<b>OTHER EXPENSES</b>						
<b>SLUDGE HAULING:</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$1,200</b>	(U)	
<b>HAND TOOLS:</b>	<b>\$0</b>	<b>\$500</b>	<b>\$500</b>	<b>\$2,000</b>	(V)	
<b>ELECTRICITY (Office)</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$1,800</b>	(W)	
NATURAL GAS (Office/plant)	\$1,478	\$2,000	\$3,478	\$6,000	(W)	
<b>GARBAGE</b>	<b>\$251</b>	<b>\$720</b>	<b>\$971</b>	<b>\$2,220</b>	(X)	
<b>LICENSES</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>		
<b>PHYSICAL EXAMS</b>	<b>\$433</b>	<b>\$250</b>	<b>\$683</b>	<b>\$750</b>		
<b>MEETINGS</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>		
<b>RENT (Office)</b>	<b>\$13,369</b>	<b>\$8,000</b>	<b>\$21,369</b>	<b>\$24,000</b>	(Y)	
<b>LEGAL</b>	<b>\$1,707</b>	<b>\$400</b>	<b>\$2,107</b>	<b>\$2,000</b>		<b>\$1,500</b>
<b>ACCOUNTING</b>	<b>\$18,950</b>	<b>\$0</b>	<b>\$18,950</b>	<b>\$18,950</b>	(Z)	
<b>SC ASSESSMENT</b>	<b>\$3,478</b>	<b>\$0</b>	<b>\$3,478</b>	<b>\$3,600</b>		<b>\$871</b>
<b>ISC EXPENSES</b>	<b>\$4,560</b>	<b>\$400</b>	<b>\$4,960</b>	<b>\$5,000</b>		<b>\$500</b>
<b>SUBTOTAL OTHER EXPENSES</b>	<b>\$44,226</b>	<b>\$12,270</b>	<b>\$56,496</b>	<b>\$67,520</b>		
<b>SUBTOTAL</b>	<b>\$606,681</b>	<b>\$410,194</b>	<b>\$1,010,875</b>	<b>\$1,161,761</b>		
<b>PURCHASED WATER</b>	<b>\$134,886</b>	<b>\$47,320</b>	<b>\$182,206</b>	<b>\$162,240</b>	(AA)	<b>\$115,254</b>
<b>ELECTRIC-Water</b>	<b>\$134,379</b>	<b>\$67,190</b>	<b>\$201,569</b>	<b>\$201,569</b>	(BB)	<b>\$1,200</b>
<b>ELECTRIC-Sewer</b>	<b>\$11,569</b>	<b>\$5,785</b>	<b>\$17,354</b>	<b>\$17,354</b>	(CC)	
<b>REPAIR &amp; MAINTENANCE-Water</b>	<b>\$130,296</b>	<b>\$20,000</b>	<b>\$150,296</b>	<b>\$155,000</b>	(DD)	<b>\$20,000</b>
<b>REPAIR &amp; MAINTENANCE-Sewer</b>	<b>\$1,278</b>	<b>\$750</b>	<b>\$2,028</b>	<b>\$3,000</b>	(EE)	
<b>O&amp;M CONTRACT FEE (VEOLIA)</b>	<b>\$241,259</b>	<b>\$0</b>	<b>\$241,259</b>	<b>\$0</b>		
<b>TOTAL O&amp;M EXPENSE</b>	<b>\$1,260,348</b>	<b>\$551,238</b>	<b>\$1,805,586</b>	<b>\$1,680,570</b>		<b>\$285,684</b>

**SOUTHERN WATER OPERATIONS EXPENSE DETAIL SPREADSHEET – EXPLANATORY NOTES:**

- (A) Salaries & Wages: See separate spreadsheet analysis attached.
- (B) P/R Taxes: Based on 7.65% of budgeted S&W for FICA and .05% for Unemployment.
- (C) Health Insurance / Dental Insurance / Other Insurance: Based on actual premium rates for each employee.
- (D) Retirement Plan: Based on estimated District cost, pursuant to retirement just adopted by the Commissioners.
- (E) Regulatory Training: Based on historical cost, and assuming there will be an increase in number of employees pursuing certification in 2007.
- (F) Travel: Travel primarily for commissioners (PSC training) and a minimal amount of staff travel.
- (G) Vehicle Lease Costs: Based on actual amount of lease/vehicle payments (\$3,926 per month)
- (H) Vehicle Maintenance: Based on historical costs and assuming maintenance costs will increase, as all District vehicles will be a year older in 2007.
- (I) Gasoline & Diesel: Based on historical costs, but assuming gas/diesel prices will increase in 2007. Budgeted at \$4,400 per month.
- (J) Office supplies & equipment: During 2006, the District made a decision to contract out its billing services. Consequently, during the first half of 2006, internal office supplies (and postage) were significantly higher than they will be in 2007. Estimated expense for internal office supplies, copier machine maintenance, printer supplies etc is \$600/month for 2007
- (K) Billing Services: As indicated above, during 2006 billing services were contracted out (to Statement Rendering Solutions). For 2007, billing services are budgeted at \$.54 per individual billing (including postage) for an estimated 7,100 bills per month.
- (L) Postage: Estimated at \$75/month for 2007
- (M) Liability, Property & Workmans Comp Insurance: Based on actual premiums for 2006, with a projected increase of 5% for 2007.
- (N) Grass cutting: Based on estimated contracted service for keeping grass & weeds mowed at the WTP and Tank Sites.
- (O) Uniforms: Based on current pricing of \$115/week for uniform rental (Aramark).
- (P) Equipment Rental: Based on \$800/month for mini-excavator rental (used every day) and an additional \$2,000 for supplemental equipment rental throughout year.
- (Q) Lab Supplies: Based on assumption that in addition to lab supplies to be purchased in 2006, an additional 50% increase will be needed in 2007.
- (R) Contract Lab Services: Based on analysis of actual external lab costs for both WTP, WWTP, and distribution.
- (S) Health & Safety Supplies: Primarily safety boots, safety glasses, cones, and signs utilized in distribution system operations.
- (T) Chemicals: Based on analysis of projected chemical consumption and pricing (from CI Thornburg) for 2007.
- (U) Sludge Hauling: Although the WWTP is new and there has not been enough sludge to warrant hauling sludge from the plant to a landfill in current year, we anticipated that there will be a need to haul sludge in 2007.
- (V) Hand Tools: Anticipated that we will need to replace several hand tools in 2007 (drills, saws, socket wrenches, etc.)
- (W) Electricity (Office & Plant): Electricity expense for McDowell office, as well as natural gas expense for office and the WTP are included in this item. Some of these

expenses were misclassified in 2006. 2007 expense based on analysis of actual electric and gas expenses (excluding electric costs associated with actual operation of pumps and motors at WTP).

- (X) Garbage: Solid waste pickup expense for McDowell office and WTP (\$185 per month for both locations for dumpster rental & pickup).
- (Y) Rent: Actual rent charge for McDowell office building (\$2,000 per month).
- (Z) Accounting: Based on actual fees assessed by independent accounting firm for annual audit, PSC report preparation, and accounting assistance throughout year.
- (AA) Purchased Water: The amount of water purchased from Pikeville has been reduced in the last several months. 2007 budget is based on purchasing an average of 8,000,000 gallons per month at the rate of \$1.69 per thousand.
- (BB) Electric – Water: The cost of electricity purchased for plant operation and all pump stations. Based on an average of \$16,797 per month.
- (CC) Electric – Sewer: The cost of electricity purchased for WWTP operation and 4 lift stations. Based on an average of \$1,446. per month.
- (DD) Repair & Maintenance – Water: The cost of all parts, supplies, contract costs, etc. for maintenance of the WTP and distribution system, including all pumping stations, PRV's, tanks, etc.
- (EE) Repair & Maintenance – Sewer: The cost of all parts, supplies, contract costs, etc. for maintenance of the WWTP, 4 lift stations, and 45 grinder pumps.



**SOUTHERN WATER & SEWER DISTRICT  
PROJECTED SALARIES & WAGES BUDGET 2007**

SALARIES / WAGES	PER 2006 SWSW ACTUAL			SALARIES / WAGES 2007 Proposed Budget				
	Sal / Hry	Current SW	Annual	Annual Sal	Hry Rate	Annual Base	OT	Total S&W
R Meyer (Project Mgr)	S	\$77,168	\$77,168	\$77,168		\$77,168	\$0	\$77,168
D Hall (Field Supervisor)	S	\$45,864	\$45,864	\$47,240		\$47,240	\$0	\$47,240
G Blankenship (Field Supervisor)	S	\$40,498	\$40,498	\$41,713		\$41,713	\$0	\$41,713
B Hackworth (Plant Mgr)	S	\$42,390	\$42,390	\$43,662		\$43,662	\$0	\$43,662
B Hackworth (Field Worker)	Hry	\$17,49	\$36,379		\$18.01	\$37,471	\$3,747	\$41,218
R Salver (Field Worker)	Hry	\$10.04	\$20,883		\$10.34	\$21,510	\$2,151	\$23,661
R Fasare (Field Worker)	Hry	\$8.24	\$17,139		\$8.49	\$17,653	\$1,765	\$19,419
D McKinney (Field Worker)	Hry	\$8.00	\$16,640		\$8.24	\$17,139	\$1,714	\$18,853
S Shortridge (Field Worker / Electr)	Hry	\$9.50	\$19,760		\$9.79	\$20,353	\$1,018	\$21,370
J Perkins	Hry	\$8.00	\$16,640		\$8.24	\$17,139	\$857	\$17,996
C Kendrick	Hry	\$8.00	\$16,640		\$8.24	\$17,139		\$17,139
C Robinson	Hry	\$14.00	\$29,120		\$14.00	\$29,120	\$1,456	\$30,576
G Holbrook (Plant Operator)	Hry	\$14.68	\$30,534		\$15.12	\$31,450	\$3,145	\$34,595
C Francis (Plant Operator)	Hry	\$11.00	\$22,880		\$11.33	\$23,566	\$1,178	\$24,745
M McKinney (Adm Asst/Off Mgr)	Hry	\$17.06	\$35,485		\$17.57	\$36,549		\$36,549
C Meade	Hry	\$8.24	\$17,139		\$8.49	\$17,653		\$17,653
T Mosely	Hry	\$8.00	\$16,640		\$8.24	\$17,139		\$17,139
R Kelsay (WWTP Operator)	Hry	\$12.36	\$25,709		\$12.73	\$26,480	\$1,324	\$27,804
<b>TOTAL SALARIES &amp; WAGES</b>			<b>\$527,509</b>			<b>\$540,145</b>	<b>\$18,355</b>	<b>\$558,501</b>

**SANDY VALLEY WATER DISTRICT**

**BUDGET PROJ: 2007**

	2003 Audited	2004 Pro- Forma (PSC)		2005 Data (SV)	Pike Budget	Floyd Budget	NOTES
Metered Water Sales	1,009,921	780,956		758,692	433,599	322,653	(A)
Sales for Resale		92,723		56,693		0	
Mtn Wtr Sewer Adm Fees				6,200		0	
Service Revenues		6,630		30,323		13,039	(B)
<b>TOTAL REVENUES</b>	<b>1,009,921</b>	<b>880,309</b>		<b>851,908</b>	<b>433,599</b>	<b>335,692</b>	
<b>OPERATING EXPENSES</b>							
S&W - Employees	158,530	199,444		200,870	37,835	80,336	C
S&W - Commissioners		6,000		6,000		0	
Employee Benefits	24,435	35,556		33,853	7,700	29,340	(D)
Purchased Water	423,201	493,005	Actual	411,340		115,254	(E)/(L)
Purchased Electric	9,192	6,595			12,000	1,200	Est
Materials & Supp	7,793	27,454		41,221	42,000	20,000	Est
Contract - Acct		12,146				0	
Bldg Rental	7,104	6,139		6,000		0	
Transportation	7,475	16,784		14,001	25,000	15,000	Est
Insurance - Liab	10,753	10,687		3,405	4,000	2,500	Est
Insurance - WC		4,810		13,190	1,600	3,044	(F)
Advertising		2,120		1,618		0	
Legal/Prof	10,200			13,279	2,500	1,500	Est
Contract Labor	17,559			5,649	150,000	0	
Office Expense				25,475	24,250	9,310	(G)
Misc	151,767	30,033		31,606	2,500	500	Est
<b>TOTAL O&amp;M EXPENSES</b>	<b>828,009</b>	<b>850,773</b>		<b>807,507</b>	<b>309,385</b>	<b>277,984</b>	
Depreciation	78,121	82,939		82,939			
Amortization		0					
Solid Waste Prmts							
PSC Assessment		1,743		1,741		871	(H)
P/R Taxes	10,993	16,780		7,444	3,500	6,829	(I)
<b>TOTAL EXPENSES</b>	<b>917,123</b>	<b>952,235</b>		<b>899,631</b>	<b>312,885</b>	<b>285,683</b>	
<b>NET OPERATING INCOME</b>	<b>92,798</b>	<b>-71,926</b>		<b>-47,723</b>	<b>120,714</b>	<b>50,009</b>	
<b>OTHER INCOME / DED</b>							
Interest Income	1,103	726					
Non-utility income	0	3,147					
Interest Expense	-97,895						
<b>TOTAL OTHER INC/DED</b>	<b>-96,792</b>	<b>3,873</b>		<b>0</b>			
<b>NET AVAILABLE FOR D/S</b>	<b>-3,994</b>	<b>-68,053</b>		<b>-47,723</b>	<b>120,714</b>	<b>50,009</b>	
<b>DEBT SERVICE (ANNUAL)</b>							
RD LOAN		87,396		87,392	49,814	37,579	(J)
EDA BONDS		33,360		33,361	0	0	(K)
<b>TOTAL DEBT SERVICE</b>		<b>120,756</b>		<b>120,753</b>	<b>49,814</b>	<b>37,579</b>	
<b>NOI PLUS DEPR - D/S</b>		<b>-105,870</b>		<b>-85,537</b>	<b>70,900</b>	<b>12,431</b>	

**SANDY VALLEY WATER DISTRICT / BUDGET PROJECTION - FLOYD  
NOTES TO BUDGET PROJECTIONS (FLOYD)**

(A) Metered Water Sales	2005 Rev per SV	756,253
	Floyd portion sales (Per Schedule)	322,653
(B) Service Revenues		
	Total Svc Rev 2005 Per SV	30,323
	% Sales 2005 Floyd	43.0%
	Projected Svc Revenues Floyd	13038.89
(C) Salaries: Employees:		
	1 Exist Field SV @ \$12.30/hr	25,584
	1 Exist Field SV @ \$12.30/hr	25,584
	1 Office Empl @ \$26,610/yr	26,610
	OT Field Pers. @ 5%	2,558
	Total S&W	80,336
(D) Benefits (Med Insur)		
	3 Employees (Family Plan) Net Cost/Mon	815
	3 Employ for 12 months	29,340
(E) Purchased Water:		
	Total Gallons Purchased 2005 per SV	231,801,000
	Minus Total Gal sold to Mtn Water per SV	-21,217,200
	Total Gal for Pike/Floyd less Mtn Water	210,583,800
	% Water Sold to Floyd Customers 2005	41.0%
	Total Water purchased for Floyd Customers 2005	86,339,358
	Projected Water to be purchased from Prestonsb.	36,000,000
	Cost of Water purch from Pburg @ \$2.36/1,000	84,960
	Projected Water to be purchased from Pikeville	50,339,358
	Cost of Water purch from Pville @ \$1.69/1,000	85,073
	Total Cost for projected Water Purchased:	170,033
(F) WC Insurance	Projected S/W Rate	80,336
		3.8%
	Projected WC Cost	3,044
(G) Office Expense:		
	# Customers	1135
	Monthly cost postage/bill supp	0.5
	Annual postage/billing exp	6,810
	Additional Office Supplies	2,500
	Total Office Expenses	9,310
(H) PSC Assess based on 50% 2005 Cost		871
(I) Payroll Taxes		
	Estimated Gross P/R	80,336
	Est P/R tax exp @ 8.5%	6,829
(J) Debt Svc RD Loan:		
	Total Current annual RD D/S prmts per SV	87,392
	Floyd portion @ 43%	37,579
(K) EDA Debt Service		
	\$0 Annual cost assuming Pikeville pays off current EDA debt of \$53,469	
(L) Alternative Calculation of Water Costs:		
	Assumptions:	
	a. SWSD provides 100,000 gpd to Sandy Valley cust.	
	b. Balance of SV water needed purch from Pikeville	
	c. Pburg used only as emergency backup	
	Total Annual Gal needed:	86,339,358
	GPD from Southern Water:	100,000
	Total Annual Gal from Southern	36,500,000
	Production costs/SWSD	\$0.85
	Annual cost / SWSD water	31,025
	Total gal/yr from Pikeville	49,839,358
	Cost/1,000 from Pikeville:	\$1.69
	Annual cost/Pikeville	84,229
	Total cost per year for water:	115,254

**Southern Water and Sewer District**  
**INCOME STATEMENT - CONSOLIDATED**  
**For the 1 Month and 8 Months Ended August 31, 2006**

	1 Month Ended August 31, 2006	%	8 Months Ended August 31, 2006	%
<b>Sales</b>				
Metered Sales - Residential	\$ 188,376.57	85.01	\$ 1,386,008.41	84.96
Metered Sales - Business	9,959.70	4.49	70,962.80	4.35
Metered Sales - Sewer	6,757.19	3.05	58,995.90	3.62
Sales for Resale	3,609.60	1.63	32,434.40	1.99
Penalties	4,701.65	2.12	37,428.49	2.29
Meter Service	2,450.00	1.11	13,965.08	0.86
Tap fees	5,750.00	2.59	31,487.70	1.93
Less Returns & Allowances	0.00	0.00	0.00	0.00
<b>Total Sales</b>	<u>221,604.71</u>	<u>100.00</u>	<u>1,631,282.78</u>	<u>100.00</u>
<b>Gross Profit</b>	<u>221,604.71</u>	<u>100.00</u>	<u>1,631,282.78</u>	<u>100.00</u>
<b>Operating Expenses</b>				
Solid Waste Payments	0.00	0.00	0.00	0.00
Water Purchases	31,054.24	14.01	133,488.52 ✓	8.18
Management Fees	0.00	0.00	241,259.28 ✓	14.79
Operations Labor - Pumping	9,845.83	4.44	68,743.37 ✓	4.21
CHEMICALS-SEWER	0.00	0.00	1,104.30 ✓	0.07
Fuel for Power Production	0.00	0.00	3,142.82 ✓	0.19
Supplies - Pumping	500.45	0.23	2,794.06 ✓	0.17
Repairs - Pumping	1,207.50	0.54	4,381.35 ✓	0.27
Telephone & Utilities - Pumping	1,229.49	0.55	17,217.34	1.06
LAB SERVICES	1,337.50	0.60	4,358.80 ✓	0.27
Chemicals	5,972.78	2.70	42,192.49 ✓	2.59
Fuel	248.00	0.11	951.55 ✓	0.06
Sewer Supplies	0.00	0.00	41.40 ✓	0.00
Lawn Service	1,000.00	0.45	3,750.00 ✓	0.23
Power-WTP	0.00	0.00	0.00	0.00
LAB-SEWER	376.00	0.17	5,741.50 ✓	0.35
SUPPLIES	0.00	0.00	0.00	0.00
Natural Gas-WTP	0.00	0.00	0.00	0.00
Operations Labor - T & D	20,846.78	9.41	140,011.33 ✓	8.58
WAGES-SEWER	1,977.60	0.89	11,865.60 ✓	0.73
Uniform Rental - T & D	1,242.52	0.56	3,120.98 ✓	0.19
Supplies - T & D	7,927.72	3.58	66,354.14 ✓	4.07
Vehicle Repairs - T & D	0.00	0.00	4,975.80 ✓	0.31
Utilities - T & D	14,989.90	6.76	118,894.63 ✓	7.29
Repairs Pump - T & D	450.00	0.20	48,970.41 ✓	3.00
Uniform Rental - T & D	0.00	0.00	702.01 ✓	0.04
Vehicle Repairs - T & D	0.00	0.00	571.10 ✓	0.04
Repairs - T & D	548.80	0.25	7,797.32 ✓	0.48
Fuel-Gasoline	5,895.65	2.66	22,144.38 ✓	1.36
LAB-DIST	0.00	0.00	0.00	0.00
UTILITIES-SEWER	1,090.52	0.49	11,569.23 ✓	0.71
Truck Lease	0.00	0.00	3,226.73 ✓	0.20

See Accountants' Compilation Report

**Southern Water and Sewer District**  
**INCOME STATEMENT - CONSOLIDATED**  
**For the 1 Month and 8 Months Ended August 31, 2006**

	1 Month Ended August 31, 2006	%	8 Months Ended August 31, 2006	%
Equip. Rental	0.00	0.00	3,700.00 ✓	0.23
Repairs-Sewer	1,145.90	0.52	1,236.83 ✓	0.08
UNIFORMS - SEWER	78.10	0.04	254.90 ✓	0.02
Billing Postage	3,838.03	1.73	17,151.20 ✓	1.05
Billing Postage	0.00	0.00	0.00	0.00
Wages - Office	12,782.00	5.77	92,023.54 ✓	5.64
Rent	5,000.00	2.26	8,119.40 ✓	0.50
Office Postage	0.00	0.00	111.51 ✓	0.01
Office Supplies	788.00	0.36	7,724.79 ✓	0.47
Telephone & Utilities - Office	576.30	0.26	6,667.22 ✓	0.41
Bank Charges	(60.00)	(0.03)	(168.25)	(0.01)
Health Insurance	(1,643.12)	(0.74)	39,223.03 ✓	2.40
SHIPPING	53.46	0.02	248.13 ✓	0.02
DENTAL INS	1,101.20	0.50	3,854.20 ✓	0.24
Workers Comp	0.00	0.00	10,690.50 ✓	0.66
Life Ins.	1,467.34	0.66	2,725.06 ✓	0.17
HEALTH INSURANCE - SEWER	(147.70)	(0.07)	3,175.05 ✓	0.19
Legal	50.00	0.02	1,707.00 ✓	0.10
Accounting	2,902.00	1.31	18,950.00 ✓	1.16
Engineering	0.00	0.00	0.00	0.00
Professional Fees	0.00	0.00	4,068.12 ✓	0.25
Legal	0.00	0.00	0.00	0.00
Property Insurance	0.00	0.00	24,062.51 ✓	1.48
Commissioners Bond	0.00	0.00	507.50 ✓	0.03
Bonds	0.00	0.00	0.00	0.00
Commissioner's Bond	0.00	0.00	0.00	0.00
Bonds	0.00	0.00	203.00 ✓	0.01
Commissioner's Fee	1,000.00	0.45	6,000.00 ✓	0.37
Railroad Rent/Easements	0.00	0.00	1,500.00	0.09
Misc. Expenses	661.25	0.30	9,435.51	0.58
Misc. Expenses	0.00	0.00	0.00	0.00
Travel Reimbursement	0.00	0.00	0.00	0.00
Travel Reimbursement	0.00	0.00	0.00	0.00
Travel Reimbursement	0.00	0.00	0.00	0.00
Training	305.00	0.14	1,020.60 ✓	0.06
Advertising	0.00	0.00	1,015.77 ✓	0.06
Depreciation Expense	81,271.00	36.67	650,168.00	39.86
Depreciation Expense	3,545.00	1.60	28,360.00	1.74
Payroll Taxes	3,274.09	1.48	22,292.20 ✓	1.37
PSC Taxes	0.00	0.00	3,478.40 ✓	0.21
Sales Taxes	0.00	0.00	0.00	0.00
<b>Total Operating Expenses</b>	<b>225,729.13</b>	<b>101.86</b>	<b>1,938,876.16</b>	<b>118.86</b>
<b>Operating Income (Loss)</b>	<b>(4,124.42)</b>	<b>(1.86)</b>	<b>(307,593.38)</b>	<b>(18.86)</b>
<b>Other Income (Expense)</b>				
Interest Expense - TFB	0.00	0.00	(11,480.62)	0.70
Interest Expense - KIA	(18,311.00)	8.26	(146,488.00)	8.98

See Accountants' Compilation Report

**Southern Water and Sewer District**  
**INCOME STATEMENT - CONSOLIDATED**  
**For the 1 Month and 8 Months Ended August 31, 2006**

	<b>1 Month Ended August 31, 2006</b>	<b>%</b>	<b>8 Months Ended August 31, 2006</b>	<b>%</b>
Interest Income - Now	23.61	0.01	88.98	0.01
Interest Income - Escrow	77.46	0.03	615.31	0.04
<b>Total Other Income (Expense)</b>	<b>(18,209.93)</b>	<b>(8.22)</b>	<b>(157,264.33)</b>	<b>(9.64)</b>
<b>Net Income (Loss) Before Taxes</b>	<b>(22,334.35)</b>	<b>(10.08)</b>	<b>(464,857.71)</b>	<b>(28.50)</b>
<b>Net Income (Loss)</b>	<b>\$ (22,334.35)</b>	<b>(10.08)</b>	<b>\$ (464,857.71)</b>	<b>(28.50)</b>

See Accountants' Compilation Report

20. Refer to Exhibit 1 of the Application, the Interlocal Cooperation Agreement at 1. Applicants state, "(t)o further assure that the Project has the lowest possible customer rates to provide for appropriate management control of the wastewater system, it is reasonable to have a single utility own and operate both water and wastewater services."

- a. Provide an analysis, study or explanation that will support the above statement..

As to the issue of 'lowest possible customer rates':

By mutual agreement of the parties, rates to be charged shall be cost based. In such an arrangement, any significant reduction in a system's cost of operation can be expected to have a similar effect on system rates. To assure that the consumer benefits from this correlation of costs and rates falls, obviously, to intervention by the Commission in circumstances involving regulated utilities, to the respective municipal government(s), to the Attorney General's Office and to the courts, usually in that order.

As to the reasonableness of a single utility operating both services:

The parties seek to act in accord with KRS 74.361 (1) that states, in part, " The General Assembly of the Commonwealth of Kentucky determines as a legislative finding of fact that reduction of the number of operating water districts in the Commonwealth will be in the public interest, ...will tend to eliminate wasteful duplication of cost and efforts, result in a sounder and more businesslike degree of management ...result in greater economies, less cost, and a higher degree of service to the general public;...."

- b. Explain why single control of the wastewater and water systems result in lowest possible rates to the consumer.

As cited elsewhere in the Agreement, referenced in Item 20, above, parties have agreed that customer rates are to be cost based. This coupled with the economies to be gained by use of existing equipment and personnel to accomplish the work associated with operation of both water distribution and sewage collection in contiguous communities along US 23 will best assure lowest possible rates.

Another and significant issue is the operability of a sewer system without direct access to the 'collecting wretch' namely the corp-stop and/or the water meter. Despite agreements regarding cooperation, historical experience teaches that joint control of both services is the more workable arrangement, and ultimately is the more equitable arrangement for all paying customers on the sewer system, allowing enforcement of payment via capacity to withhold water service.

#### **74.361 Merger of water districts -- Hearing -- Orders.**

- (1) The General Assembly of the Commonwealth of Kentucky determines as a legislative finding of fact that reduction of the number of operating water districts in the Commonwealth will be in the public interest, in that mergers of such districts will tend to eliminate wasteful duplication of costs and efforts, result in a sounder and more businesslike degree of management, and ultimately result in greater economies, less cost, and a higher degree of service to the general public; and that the public policy favors the merger of water districts wherever feasible.
- (2) The Public Service Commission of Kentucky is authorized and empowered to initiate, carry out, and complete such investigations, inquiries, and studies as may be reasonably necessary to determine the advisability as to the merger of water districts. Prior to ordering a hearing with reference to the merger of any water district into one (1) or more additional water districts, the Public Service Commission shall cause to be prepared in writing a feasibility report and study regarding the proposed merger, containing such studies, investigations, facts, historical data, and projections as in the circumstances may be required in order to enable the commission to formulate a proper decision regarding such merger.
- (3) Based upon the written report and study required to be made incident to any water district merger, the Public Service Commission may propose by order that a merger of water districts be accomplished, and, upon the issuance of such order, shall give actual notice to all water districts proposed to be merged. Said order shall provide for a formal public hearing to be held before the Public Service Commission on the subject of such proposed merger. Actual notice of such merger hearing shall also be furnished to the county judges/executive of each county containing a water district proposed to be merged, and each water commissioner of a water district proposed to be merged, and notice of such public hearing shall be afforded to the public served by the respective water districts sought to be merged, by newspaper notice in accordance with the provisions of KRS Chapter 424.
- (4) A formal hearing before the Public Service Commission shall be held with reference to such merger proposal, and, upon such occasion, all water districts which are sought to be merged into a single entity shall be afforded the right to appear, to present evidence, to examine all exhibits and testimony, to cross-examine all witnesses, and to submit such memoranda, written evidence, and briefs as may be desired. Such public hearing may be adjourned from time to time by the Public Service Commission, and notice of such adjournments may, but need not, be afforded as with reference to the initial public hearing. At the conclusion of such proceedings, the Public Service Commission shall enter its order, either merging the water districts which are the subject of the merger proceedings into a single water district, or abandoning the merger proposal.
- (5) Outstanding obligations of any water district merged in accordance with the provisions of this section which are secured by the right to levy an assessment as provided by KRS 74.130 to 74.230, inclusive, or secured by a pledge of the income and revenues of the systems operated by any such merged water district, shall continue to be retired from such moneys and funds as shall be collected from the



users of facilities operated by such merged water districts in the original water district area in accordance with the terms and provisions of the enabling laws and the authorizing resolutions or indentures under which the outstanding obligations were issued, until all such obligations have been retired.

- (6) In any order ordering the merger of water districts, the Public Service Commission shall make such additional orders as may be required in connection with the schedule of rates, rentals and charges for services rendered to be levied by the water district which remains in existence following such merger, having due regard to contractual commitments made and entered into by the constituent merged water districts in connection with the issuance of obligations by such districts.
- (7) Upon the effective date of any merger of water districts, the water commissioners of the merged water districts shall continue to serve as water commissioners for the remainder of the terms for which they were appointed, and, following the expiration of the terms of such water commissioners, the appropriate county judge/executive or county judges/executive shall appoint and reappoint water commissioners to manage the business and affairs of the resultant water district, in the manner provided by KRS 74.020.
- (8) Any order of merger entered by the Public Service Commission in accordance with this section shall be subject to all of the provisions of KRS Chapter 278, with reference to petitions for rehearing, and appeal.
- (9) Using the authority of this section the Public Service Commission can also cause mergers of water associations into water associations or mergers of water associations into water districts.
- (10) Nothing contained herein shall be construed to prohibit or limit in any respect the acquisition by water utilities subject to the jurisdiction of the commission or by municipally owned water utilities of the assets of water districts or water associations or the merger of water districts or water associations and water utilities subject to the jurisdiction of the commission or municipally owned water utilities.

**Effective:** June 17, 1978

**History:** Amended 1978 Ky. Acts ch. 384, sec. 189, effective June 17, 1978. -- Created 1972 Ky. Acts ch. 310, sec. 4.

21. a. Describe the internal standards and policies of Pikeville regarding service reliability and quality of its water utility operations.

The City maintains high standards of service reliability and quality by continuous evaluation, assessment and planning for each of its utility services. The firm contracted to provide system operation is required to provide routine upgrade training for personnel, provide constant monitoring of operations and service quality and comply with all water quality standards.

Historically, Pikeville has grown from an area water supplier in the mid 1950s to become a regional water supplier, extending from the early 1970s through the present. The City currently supplies the major portion of Pike County via contracts with Mountain Water District as well as large portions of Floyd County, via contracts with Southern Water and Sewer District and Sandy Valley Water District.

The City's 6mgd intake and water treatment plant is located on the Levisa Fork of the Big Sandy and operates with assurance of raw water availability due to agreement with the US Army Corps of Engineers at Fishtrap Lake that allows for controlled releases of impounded water above the intake when and if river flows are not sufficient to maintain required supply.

The City has never experienced a complete outage affecting all water customers, although large sections have been affected due to loss of a river crossing during severe flooding, most recently in 1977. However, since the relocation of the wtp near the mouth of Island Creek the system has not had even sectional outages during flood events and, to the contrary during such event it increases its hours of operation to provide additional service as an aide to customers seeking to clean-up during the aftermath.

In short, by its service record, by budgeted inclusion of annual capital expenditures from its general fund and aggressive pursuit of system upgrading and improvement projects, the City is proud of the service history of its water system, both in regard to reliability and quality.

The City's Utility Rules and Regulations are contained in municipal ordinances, included below. The City is presently revising its Standard Specifications and Drawings, set out to regulate the type and quality of materials and workmanship allowed by contractors for facilities to be accepted into the system.

21. b. Provide all written standards or policies related to service quality and reliability of water utility operations.

See attached City ordinances and policy summary sheet.

ORDINANCE RELATING TO THE ADOPTION OF  
UTILITY RULES AND REGULATIONS

ORDINANCE NO. 0-91-014

WHEREAS, the Commission for the City of Pikeville has determined that it is desirable to adopt certain rules and regulations which concern the operation of utilities by the City of Pikeville including a water service, gas service, sanitary sewage disposal service and trash pick-up and further to set rates and charges for such utilities.

NOW, THEREFORE, IT IS HEREBY ORDAINED by the City of Pikeville that the following utility rules and regulations, copies of which are attached hereto, are hereby adopted by the City of Pikeville.

The above ordinance was given first reading on JULY 2, 1991, and will be on file in the office of the City Clerk for a period of at least ten (10) days for public inspection. The ordinance was given second reading on the twenty-second of July, 1991. The ordinance shall be in full force and effect immediately after it is passed and published as required by law.

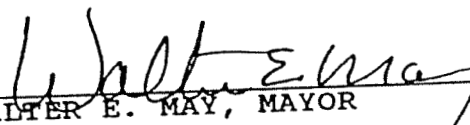
Passed this 22nd day of July, 1991.

Commissioner Walter Blankenship moved the adoption of the foregoing ordinance. Commissioner Johnny Mounts, seconded the motion.

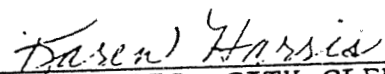
Upon roll call, the votes were as follows:

	<u>Yes</u>	<u>No</u>
WALTER E. MAY, MAYOR	<u>X</u>	_____
GENE DAVIS, COMMISSIONER	_____	ABSENT _____
FRANK MORRIS, COMMISSIONER	<u>X</u>	_____
JOHNNY MOUNTS, COMMISSIONER	<u>X</u>	_____
WALTER BLANKENSHIP, COMMISSIONER	<u>X</u>	_____

The Mayor declared the within ordinance adopted.

  
WALTER E. MAY, MAYOR

ATTEST:

  
KAREN HARRIS, CITY CLERK

# Utility Rules and Regulations

## Highlights

- ◆ All connections on fully metered basis.
- ◆ Service connections installed only on approval of City.
- ◆ Utility meters read on or about the first through the seventeenth of the month. Provisions for discontinuing service to delinquent accounts.
- ◆ Description of utility deposit required for service.
- ◆ Point of delivery and specifications of utility service lines.
- ◆ Right of way access to City property (meters, lines, etc.) located on private property.
- ◆ Breach of contract liability disclaimer in case of service interruptions.
- ◆ Customer to pay costs beyond standard tap requirements.
- ◆ Customer reimburse City for relocation and/or change in existing equip which is requested by the customer.
- ◆ One leak adjustment per customer per twelve month period. Formula presented for computation of adjustment.
- ◆ Provisions for meter error determinations.
- ◆ Disconnection of service to property which has not complied with City's Wastewater Treatment Ordinance.
- ◆ Disconnection of service to property with delinquent garbage or trash collection fees.
- ◆ Provision for meter testing at customers request.
- ◆ Maintenance of appurtenances beyond City point of delivery is responsibility of the customer.
- ◆ Rates and charges table.

1. All connections and all service shall be made on a fully metered basis and free water service shall not be allowed or permitted to any customer, including the City itself. Each place of residence and/or commercial entity shall have separate meters and billing accounts.

2. No connections to the water, gas or sewer pipes of the system shall be made except by or under supervision of a duly authorized officer, agent or employee of the City and after approval of an application submitted with required tap-on fee which may be applicable. No service will be installed unless there is a main distribution line existing along the road from which service is required. If service is desired on the same side of the road as the water main, the meter shall be installed within 5 feet of the water main, if feasible; or immediately adjacent to City easement on customer side. If service is desired on the opposite side of the road from the water main the service line will be run under the road and a meter installed on the right of way at no additional cost other than the tap-on and connection fee.

3. The utility meters shall be read by the City monthly on or about the first through the seventeenth of each month, or as soon thereafter as may be practical and feasible. Bills shall be mailed to customers for services on or about the first day of each month after the reading of the meters, or as soon thereafter as may be practical and feasible. All customers are and shall be required to pay the amount of their bill in full and without discount on or before the fifteenth day following the rendering of the bill for service; after the close of ordinary business hours on the twentieth day of the month the City shall charge a penalty of 5%. After forty-five days and notification to customer by mail and by the tagging of customer's door the City shall discontinue service to the delinquent customer and service shall not be restored until the account is paid in full, plus a service charge for discontinuing service and for restoring service. *what about*

4. The City may discontinue service to customer for the theft of water or for the appearance of water theft devices on premises of customer. The city shall not be required to restore service until the customer has complied with all rules of the utilities and regulation of the Commission and the City has been reimbursed for the estimated amount of service rendered and for any cost incurred including service charges by reason of the fraudulent use as my be determined by Court of proper jurisdiction.

5. Customers who wish to have service discontinued must give at least three days written notice to that effect; service will be discontinued (meter removed only during working hours Mon - Fri)

6. A deposit for water and/or gas service as set by Ordinance is required for customers occupying rental property before service

is supplied. If a customer is moving from one rental property to another the deposit shall (at customer request) be transferred to the new rental property and the unpaid balance from the prior bill be posted to the current bill. Upon termination of service, this deposit plus 6% interest after the first year will be applied to any unpaid bills of the customer, and if any balance or credit remains on the bill that amount will be billed or refunded to the customer.

7. The point of delivery is the point where the meter is located on the customer's premises or public right of way. All water and gas lines, and equipment beyond the meter shall be installed and maintained by the customer. All water service lines beyond the meter setting should be installed of material consisting of copper, polyethylene or PVC pipe with a rating of not less than 200 psi. The size of service line beyond the point of delivery shall not be less than 3/4". All gas service lines beyond the meter shall consist of vinyl coated steel on polyethylene pipe (ASTM D-2513, PE2406 or PE3406). Polyethylene pipe shall not be permitted beyond point of entry into the building wall or foundation. The size of the service line beyond the point of delivery shall not be less than 1 1/4". A shut off valve immediately adjacent to the meter on the customer's side shall be installed by the customer. If the customer's point of use is at a higher elevation than the point of delivery, the customer should consult with a reputable engineering firm to size the service line from the point of delivery. System operator shall determine the best location for meter, line, etc., and need for new or replacement of meter equipment.

8. The customer must agree to permit the City to lay, maintain, repair, or remove such lines and meters which are the property of the City's located on the customer's property with the right of ingress and egress over customer's property. The customer shall maintain the meter location, keeping it free of debris and accessible to the meter readers or service personnel at all times. If meters are not accessible to the meter readers the customer will be notified in writing and his bill will be estimated no more than three times before being disconnected. The customer will be responsible for service charges for disconnect and reconnect and the actual amount of usage registered on the meter.

9. The City will use reasonable consistency in supplying service, but shall not be liable for breach of contract in the event of, or for loss, injury or damage to persons or property resulting from interruptions in service, excessive or inadequate water pressure, or otherwise unsatisfactory service, whether or not caused by negligence, as may be determined by Court of proper jurisdiction.

10. As noted in #2 above and by Ordinance metered service connections are required by the City for each residential or commercial building and no additional taps on the customer's side of the meter is allowed. Additions or changes in load are considered illegal taps and shall render the customer liable for

theft of service as well as for any damage to any of the City's lines or equipment caused by the additional or changed installation.

11. The customer shall notify the City immediately should the service be unsatisfactory for any reason, or should there be any defects, trouble or accidents affecting the supply of water.

12. The customer shall pay the cost of any special installation necessary to meet his peculiar requirements for service other than the standard tap.

13. No person shall maliciously, willfully, or negligently break, damage, destroy, uncover, deface, or tamper with any structure or equipment which is part of the City's public works including specifically metering equipment. Any person violating this provision shall be subject to immediate discontinuation of water service and shall pay the cost of repairing or replacing the equipment.

14. The City may, at the customer's request relocate and/or change existing system-owned equipment. Customer shall reimburse City for such changes at actual cost.

15. ~~There shall be one leak adjustment per customer per twelve month period.~~ The customer must provide proof that a leak was present and repaired. An adjustment shall be made for no longer than a one month period. The adjustment will be computed by the following formulas:

Water

Total usage \_\_\_\_\_ \$ \_\_\_\_\_  
Normal usage (\_\_\_\_\_) \_\_\_\_\_ \*average of prior twelve months  
Leak usage \_\_\_\_\_/2 \_\_\_\_\_ = adjusted amount \$ \_\_\_\_\_

Gas

Total usage \_\_\_\_\_ \$ \_\_\_\_\_  
Normal usage (\_\_\_\_\_) \_\_\_\_\_  
Leak usage \_\_\_\_\_  
Leak usage X \*C/Gas Rate(\_\_\_\_\_) \*Columbia Gas of Ky  
Adjustment amount \_\_\_\_\_

15A. Whenever a meter in service is found upon periodic request or complaint test to be more than 2% fast, additional tests shall be made at once to determine the average error of the meter. If the result of the test shows an average error greater than 2% (fast) or 2% (slow), then the customer's bill will be computed for the period in which the meter error occurred. If the period in which the meter error existed is unknown, then the bill will be computed for one-half of the elapsed time since the last previous test, but in



no case to exceed twelve months. When a meter is tested and it is found necessary to make a refund or back bill a customer, the customer shall be given written notification of the date, location, and results of the test, as well as the amount to be deducted from or added to his regular bill.

16. The City may disconnect water service to any property which has failed to comply with the City's Wastewater Treatment Ordinance. At such time as a public sewer becomes available to a property served by a private wastewater disposal system a direct connection shall be made to the public sewer. No unauthorized person shall uncover, make any connections with or opening into, use, alter or disturb any public sewer or appurtenance thereof without first obtaining a written permit from the City or City agency.

17. A separate sewer shall be provided for every building; except where one building stands at the rear of another on an interior lot.

18. The charge for collection of garbage and trash shall be billed either to the occupant of the property or the owner of property as reflected in the Pike County Property Valuation Administrator's Office. The City may disconnect utility services to any property for which there is an unpaid garbage and/or trash collection fee. The City may include the charge to any other utility service bill issued by the City to owner of the property in the event that the occupant does not pay the fee, regardless of whether the utility service bill in which the fee is added for other utilities being supplied to the property. The City may also disconnect any utility service to any person or concern regardless of whether those utility services are connected to the property in which the outstanding fee incurred.

19. All extensions to the systems transmission or service mains required to service a private development shall be subject to a Line Extension Agreement executed between the Developer and the City.

19a. In cases where a private developer transfers or assigns line extensions and or appurtenances to the City of Pikeville, the developer agrees to permit an on-site inspector designated by the City of Pikeville to inspect such lines and appurtenances during the construction phase of the project. Such proposed plans of line extensions shall be submitted to proper state authority for approval.

← 20. A charge will be assessed for a trip to recheck a meter reading when the customer requests the meter to be rechecked for a correct reading and the reading was found to be correct.

21. Upon request and payment, a customer may have his meter tested provided request by the customer is not more frequent than once each twelve months. If such test shows the meter to be more than

two percent fast the bill will be credited or adjusted accordingly.

22. A charge per trip shall be made for service investigation during regular working hours if interruption of service is not caused by failure of City's facilities. Any maintenance and repair of facilities beyond the City's delivery point is the responsibility of the customer.

Rates and Charges

WATER DEPOSIT	25.00
GAS DEPOSIT	75.00
SERVICE CHARGE FOR STANDARD READ IN SERVICE	20.00
MON - FRIDAY AFTER 5:00PM HOLIDAYS & WEEKENDS	30.00
SERVICE CHARGE FOR STANDARD RECONNECT OF NON PAYMENT	30.00
MON - FRIDAY AFTER 5:PM HOLIDAYS & WEEKENDS	40.00
SERVICE CHARGE FOR METER READING RECHECK	20.00
SERVICE CHARGE FOR TEST REQUEST	COST PLUS 20.00
SERVICE CHARGE FOR INVESTIGATION	20.00
GAS TAPS	
STANDARD 1"	150.00
ALL ABOVE 1"	AT COST
WATER TAPS	
5/8"X 3/4" STANDARD	300.00
1" AND ABOVE	AT COST
SPRINKLER TAPS	AT COST BUT NOT LESS THAN \$1000
SEWER TAPS	
4" TAP	300.00
6"	350.00
8"	400.00
COMMERCIAL	500.00

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Pikeville, KY Code of Ordinances

TITLE V: PUBLIC WORKS

CHAPTER 53: WATER

## CHAPTER 53: WATER

### *Cross-reference:*

*Disconnection upon noncompliance with sewer regulations, see § 52.88*

## GENERAL PROVISIONS

### § 53.01 FIRE HYDRANTS; STANDARDS.

All subdividers, contractors, developers, private businesses, or public agencies having responsibility for providing fire hydrants within the city limits shall conform to the following specifications:

(A) Hydrants shall be Mueller Centurion with a 5 ¼-inch hydrant valve and 6-inch mechanical joint boot. The hydrant drain orifice shall be located so that no water remains in the barrel to freeze or corrode. All threads are to be national standard threads with seven threads per inch.

(B) Thrust restraints for all hydrants, valves, tees, and plugs shall be provided in accordance with Pages 347-350 of the Fifth Edition of Cast Iron Pipe Research Association Handbook.

(C) Valves shall be Mueller catalog number C-500 with mechanical joints. Each valve shall have a precast box.

(D) Each fire hydrant shall have two 2 ½-inch outlets and one 4 ½-inch outlet.

(E) All hydrants shall be served by at least a minimum 6-inch water line. In the event a larger water line should be available, the Mueller hydrants of a larger size, as is practical considering the availability of the water line, shall be substituted for the above specifications.

(F) Each subdivider, contract, or other individual installing fire hydrants in the city shall provide the Fire Department, at no cost, one breakaway kit for each two hydrants and also two suitable operating wrenches for the valve on that hydrant.

(Ord. 310.3, passed 3-9-81) Penalty, see § 10.99

### § 53.02 WATER METERS.

(A) The Public Works Department shall not furnish water to more than one customer or user on the same meter or the same water line connection except in those cases where the property owner or landlord requests such services for his tenants or his property, carries the account in his name, and agrees and contracts to pay for all water furnished through that meter or water line connection.

(B) In all cases of multiple-family units or apartment houses, the Department of Public Works shall furnish a meter to, or make a connection on the city water line for each customer

or user residing in that building or apartment house, but the connection shall be made only at the city water line. However, the Department shall not furnish the pipe or install the line from the city water line to that building or apartment house.

(Ord. 610.1, passed 2-22-51)

**§ 53.03 RATES AND CHARGES.**

(A) Service fees shall be as follows:

Service	Fees and Charges
Deposit	\$15.00
Business water taps	
Regular one-inch meter	\$112.50
Meters between one inch and two inches	\$225.00
Two inch meters	250.00
Tap fee for all places of business or other places using sprinkling systems	\$1,000.00
Cut-offs and other charges	\$15.00

(Ord. 610.2, passed 10-10-77)

(B) Water rates shall be as follows:

(1) The monthly water service rates and charges for each customer inside the city shall be as follows:

Gallons per Month	Monthly Charge
First 2,000	\$7.00 (min. mo. bill)
Next 3,000	\$0.350 per 100 gallons
Next 5,000	\$0.345 per 100 gallons
Next 10,000	\$0.340 per 100 gallons
Next 30,000	\$0.335 per 100 gallons
Next 950,000	\$0.325 per 100 gallons
Over 1,000,000	\$0.152 per 100 gallons

(2) From and after May 1, 1991, the monthly water service rates and charges for

each retail customer outside the city, other than the wholesale users named in division (3) below, shall be as set forth in the following schedule:

Gallons per Month	Monthly Charge
First 2,000	\$15.23 (min. mo. bill)
Next 3,000	\$0.370 per 100 gallons
Next 5,000	\$0.365 per 100 gallons
Next 10,000	\$0.360 per 100 gallons
Next 30,000	\$0.355 per 100 gallons
Next 950,000	\$0.345 per 100 gallons
Over 1,000,000	\$0.173 per 100 gallons

(Ord. 610.3, passed 5-22-78; Am. Ord. 19, passed 10-21-85; Am. Ord. 0-91-005, passed 3-25-91; Am. Ord. 0-99-013, passed 11-22-99; Am Ord. 0-00-009, passed 5-22-00)

(3) From and after November 1, 2001, the water service rates and charges for all wholesale users shall be one dollar and ninety cents (\$1.90) per one thousand (1,000) gallons unless otherwise agreed by contract.

(Ord. 610.2, passed 5-22-78; Am. Ord. 19, passed 10-21-85; Am. Ord. 0-87-001, passed 1-27-87; Am. Ord. 0-89-005, passed 5-22-89; Am. Ord. 0-91-010, passed 5-29-91; Am. Ord. 0-2001-027, passed 10-22-01)

#### § 53.04 BILLINGS; WHEN DUE.

All charges for water and sewer service shall be billed and payable in accordance with the provisions of Chapter 54.

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Pikeville, KY Code of Ordinances
<b>TITLE V: PUBLIC WORKS</b>
<b>CHAPTER 54: UTILITY REGULATIONS</b>

## CHAPTER 54: UTILITY REGULATIONS

### *Cross reference:*

*Garbage collection billing procedures, see § 50.20*

## UTILITY BILLING PROCEDURES

### **§ 54.05 DISCONNECTION DUE TO PAYMENT DISHONORED FOR NON-SUFFICIENT FUNDS.**

(A) When a check, draft, note or other negotiable instrument received by the utility department as a deposit for a utility account is returned without payment and/or dishonored for payment for non-sufficient funds or any other reason, the utility account for which check, draft, note or other negotiable instrument was received shall be subject to immediate termination and immediate disconnection of the utility(s) without any notice to the account holder.

(B) When a check, draft, note or other negotiable instrument is received by the utility department for payment of a utility account and is returned without payment and/or dishonored for payment for non-sufficient funds or any other reason, the account shall be treated as if no payment had been received and the delinquent penalty shall be assessed pursuant to the provisions of § 55.06 of the utility rules and regulations and final notice issued (and tagging of the customer's door) immediately if one has not been issued. If a final notice and/or a disconnect notice tagged to the customer's door was issued before receipt of the dishonored payment, no notice or tagging of the customer's door will be issued before the utilities are disconnected.

(Ord. 0-2000-020, passed 11-27-00)

## UTILITY CONSTRUCTION REQUIREMENTS

### **§ 54.10 REQUIREMENTS FOR CONSTRUCTION OF UTILITIES.**

(A) No person, partnership, public or private corporation or other governmental agency or combination thereof shall begin the construction of any plant, equipment, property or facility for the furnishing to the public of water services or natural gas services or sanitary sewage disposal services within the corporate limits of the city or extensions of such existing systems within the corporate limits of the city without first obtaining the approval and waiver of the city.

(B) Any person, partnership, public or private corporation or other governmental agency who has obtained the right and authority to construct any plant, equipment, property or facility for furnishing to the public of any water services, natural gas services or sanitary sewer disposal services shall prior to

construction of the same within the corporate limits of the city submit to the City Engineer its plans and specifications, certified by an engineer or architect. The designs and plans must conform with the existing utility construction regulations adopted by the city. Before commencing construction, the City Engineer must certify that the construction of any such plant, equipment, property, facility or extension of the same does conform with the city's existing utility construction regulations.

(Ord. 0-92-009, passed 4-27-92)

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ITEM 22: Internal standards & policies regarding service reliability:

ITEM 22a: Southern District utilizes the following policies & procedures regarding service reliability and quality of water:

1. District personnel adhere to all regulations promulgated by both the Public Service Commission and the Division of Water regarding testing, sampling, and reporting same to the appropriate regulatory agency. Likewise, inspections are made routinely by district personnel of tanks, pump stations, PRV's, and treatment plant equipment. Logs are kept accordingly.
2. Office personnel keep a log of all customer calls, including service complaints. Customer complaints (including reported leaks) are transferred to a work order which is given to a field supervisor. We attempt to respond to every customer complaint on the same day it is received.
3. A separate leak log is maintained for all leaks, both on mains and service lines.
4. Meter readers have a standing directive to check for any potential leaks as they are reading meters. If a leak is found, they immediately contact a field supervisor who dispatches personnel to make any necessary repairs.
5. After hours calls from customers are directed to the water treatment plant. The District has an established procedure of having three field personnel on call (one supervisor, on-call number one and on-call number two – rotated on a weekly basis). On-call personnel are available for service calls on a twenty-four seven basis. If a call is received at the water plant after hours, the shift operator either calls the supervisor or the number one on-call individual to respond to the call. If there is a major line break, other personnel will be called out to assist with repairs.
6. The District also has several written policies related to service reliability, as noted below in Item 22b.

ITEM 22b: Written standards & policies:

1. Southern District's Tariff (already on file with the Commission).
2. Water Shortage Response Plan (copy attached).
3. Vulnerability Assessment (February 2004) (copy attached).
4. Emergency Plan (Prepared by Veolia Water)
5. Water Loss Prevention & Leak Detection Program

# WATER SHORTAGE RESPONSE PLAN

SOUTHERN WATER + SEWER DISTRICT  
(Name of Utility)

Section 1. **Purpose.** The purpose of this Plan is to provide for the declaration of official phases of water supply shortages and the implementation of voluntary and mandatory water conservation measures throughout the Utility's service area in the event a shortage is declared.

Section 2. **Definitions.** These terms are applicable only for this Plan unless specifically noted.

- A. "Customer" shall mean any person or entity using water for any purpose from the Utility's water distribution system and for which either a regular charge is made or, in the case of bulk sales, a cash charge is made at the site of delivery.
- B. "Raw Water Supplies" shall mean all water potentially available to persons in the Utility's service area.
- C. "Treated Water" shall mean water that has been introduced by the Utility into its water distribution system, including water offered for sale. Uses of treated water are classified as follows:

Class 1 – Essential Water Uses:

The following uses of water, listed by site or user type, are essential.

*Domestic:*

- water necessary to sustain human life and the lives of domestic pets, and to maintain minimum standards of hygiene and sanitation.

*Health Care Facilities:*

- patient care and rehabilitation, including related filling and operation of swimming pools.

*Water Hauling:*

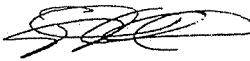
- sales of domestic use where not reasonably available elsewhere.

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*Public Use:*

- firefighting,
- health and public protection purposes, if specifically approved by health officials.

Class 2 – Socially or Economically Important Uses:

The following uses of water, listed by site or user type, are socially or economically important.

*Domestic:*

- personal, in-house water use including kitchen, bathroom and laundry.

*Water Hauling:*

- non-domestic, when other sources are not reasonably available elsewhere.

*Commercial and Civic Use:*

- commercial car and truck washes,
- laundromats,
- restaurants, clubs and eating places,
- schools, churches, motels/hotels and similar commercial establishments.

*Outdoor Non-Commercial Watering:*

- minimal watering of vegetable gardens,
- minimal watering of trees where necessary to preserve them.

*Outdoor Commercial or Public Watering (using conservation methods and when other sources of water are not available or feasible to use):*

- agricultural irrigation for the production of food and fiber or the maintenance of livestock,

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- watering by arboretums and public gardens of national, state, regional or community significance where necessary to preserve specimens,
- watering by commercial nurseries at a minimum level necessary to maintain stock,
- watering at a minimum rate necessary to establish or maintain revegetation or landscape plantings required pursuant to law or regulation,
- watering of woody plants where necessary to preserve them,
- minimal watering of golf course greens.

*Recreational:*

- operation of municipal swimming pools and residential pools that serve more than 25 dwelling units.

*Air Conditioning:*

- refilling for startup at the beginning of the cooling season,
- makeup of water during the cooling season,
- refilling specifically approved by health officials where the system has been drained for health protection or repair services.

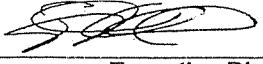
Class 3 – Non-Essential Uses:

Any waste of water, as defined herein, is non-essential. The following uses of water, listed by site or user type, are non-essential.

*Public Use:*

- use of fire hydrants (excluding Class 1 and Class 2 uses), including use of sprinkler caps, testing fire apparatus and fire department drills.
- flushing of sewers and hydrants except as needed to ensure public health and safety as approved by health officials

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*Commercial and Civic Use:*

- serving water in restaurants, clubs, or eating places, except by customer request,
- failure to repair a controllable leak,
- increasing water levels in scenic and recreational ponds and lakes, except for the minimum amount required to support fish and wildlife.

*Ornamental Purposes:*

- of fountains, reflecting pools and artificial waterfalls.

*Outdoor Non-Commercial Watering:*

- use of water for dirt control or compaction,
- watering of annual or non-woody plants, lawns, parks, golf course fairways, playing fields and other recreational areas,
- washing sidewalks, walkways, driveways, parking lots, tennis courts or other hard-surface areas,
- washing down buildings or structures for purposes other than immediate fire protection,
- flushing gutters or permitting water to run or accumulate in any gutter or street.

*Outdoor Commercial or Public Watering:*

- expanding nursery facilities, placing new irrigated agricultural land in production, or planting of landscaping except when required by a site design review process,
- use of water for dirt control or compaction,
- watering of lawns, parks, golf course fairways, playing fields and other recreational areas,
- washing down buildings or structures for purposes other than immediate fire protection,

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- flushing gutters or permitting water to run or accumulate in any gutter or street.

*Recreational uses other than those specified in Class 2.*

*Non-commercial washing of motor and other vehicles.*

*Air Conditioning (see also Class 2 purposes):*

- refilling cooling towers after draining.

- D. "Base Entitlement" shall mean the monthly usage for a customer during the same month of the preceding calendar year or the average per customer usage for each class of service during the same month of the preceding year.
- E. "Curtailed Entitlement" shall mean the monthly usage for a customer after any curtailment percentage has been applied.
- F. "Curtailment" shall mean the reduction in entitlement by some percentage to meet anticipated water shortages.
- G. Water Shortage Response Phases:

"Advisory" shall mean that conditions exist which indicate the potential for serious raw or treated water supply shortages.

"Alert" shall mean the raw or treated water supplies are consistently below seasonal averages, and if they continue to decline, may not be adequate to meet normal needs.

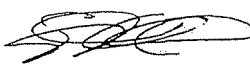
"Emergency" shall mean that raw or treated water supplies are below the level necessary to meet normal needs and that serious shortages exist in the area.

"Rationing" shall mean that procedures must be established to provide for the equitable distribution of critically-limited raw or treated water supplies, in order to balance demand and limited available supplies, and to assure that sufficient water is available to preserve public health and safety.

Section 3.

**Applicability.** The provisions of this Plan shall apply to all retail and wholesale customers of the Utility. When implemented, this Plan becomes the Utility's Water Shortage Response Regulation.

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Section 4. **Entitlements.** Entitlements shall be established for each customer by adjusting the base entitlement to reflect any known change in usage pattern.

Section 5. **Determination of Water Shortage.** Water supply and usage shall be monitored on a continuous basis. Unrestricted demand shall be projected from past records and adjusted for changes such as new developments and weather conditions on a regular basis. (Note: A sample calculation page is attached as Appendix A to assist in determining overall water levels. It is important that accurate water measurements be used.) Water shortages generally occur for two reasons, a reduction in available supplies or a system failure. Each of these has a distinct influence on the nature and duration of the conservation program implemented. Official declaration of a water shortage stage and implementation of the measures necessary to curtail water use shall be approved by the Utility's board, manager, or commissioners.

Section 6. **Term of Water Shortage Declaration.** Any water shortage declaration shall remain in effect until water supplies of service conditions have returned to normal. A final determination as to terminating a water shortage declaration shall be made by the Utility's board, manager, or commissioners.

Section 7. **Water Shortage State, Criteria, Conservation and Curtailment Measures.**

A. Advisory Stage:

1. *Criteria.* A water advisory shall be declared when the amount of treated water or raw water available for treatment is projected to be up to 15 percent above demand, or there are periods of low water pressure in one or more areas of the distribution system due to system failure or inadequacies or the State Division of Water issues a Water shortage Watch that includes the areas from which the Utility draws water. (Note: Additional conditions may be added based on local conditions.)

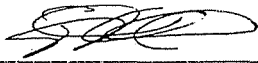
2. *Conservation and Curtailment Measures:*

(a) Declare a Water Shortage Advisory.

(b) Provide proper notice to all customers and to all local news media.

(c) Eliminate all water leaks.

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- (d) Request voluntary conservation of all non-essential (Class 3) water use.
- (e) Request wholesale customers also issue request for voluntary conservation by their customers of all non-essential (Class 3) water use.

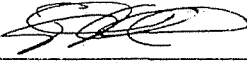
B. Alert Stage:

1. *Criteria:* A water alert shall be declared when the amount of treated water available is projected to be up to 10 percent above demand, or raw water supplies are consistently below seasonal averages and if they continue to decline, may not be adequate to meet normal needs. (Note: Additional conditions may be added based on local conditions.)
2. *Conservation and Curtailment Measures:*
  - (a) Declare Water Shortage Alert.
  - (b) Provide proper notice to all customers and to all local news media.
  - (c) Eliminate all water leaks.
  - (d) Prohibit all non-essential Class 3 uses of water.
  - (e) Curtail entitlements to all customers by the same percentage as the projected shortage.
  - (f) Begin billing all customer water usage in excess of curtailed entitlement at the normal rate plus an excess usage charge of \$10.00 per thousand gallons.

C. Emergency Stage:

1. *Criteria.* A Water Emergency Stage shall be declared when the amount of treated water available is projected to be up to 5 percent above demand, or there are periods of no water in one or more areas of the distribution system due to low water supply or raw water supplies below the level necessary to meet normal needs. (Note: Additional conditions may be added based on local conditions.)

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2. Conservation and Curtailment Measures:

- (a) Declare Water Shortage Emergency.
- (b) Provide proper notice to all customers and to all local news media.
- (c) Eliminate all water leaks.
- (d) Prohibit all Class 3 uses of water.
- (e) Prohibit all Class 2 uses of water except domestic uses for kitchens, bathrooms and laundries.
- (f) Curtail all commercial and industrial entitlements (except health care facilities) by 100 percent.
- (g) Curtail residential entitlements by the same percentage as the projected shortage.
- (h) Curtail entitlements to all wholesale customers by the same percentage as the projected shortage.
- (i) Begin billing all customer water usage in excess of curtailed entitlement at the normal rate plus an excess usage charge of \$20.00 per 1,000 gallons.


D. Rationing Stage:

- 1. *Criteria:* Treated water available is greater than 1 percent above demand or raw water supplies are below the level necessary to meet essential needs, and in the opinion of the Utility, mandatory rationing is required to ensure adequate water is available to maintain public health and safety.

2. Conservation and Curtailment Measures:

- (a) Declare Water Shortage Rationing.
- (b) Provide proper notice to all customers and to all local news media.
- (c) Eliminate all water leaks.
- (d) Prohibit all Class 3 and Class 2 uses of water.

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- (e) Curtail all commercial and industrial entitlement (except health care facilities) by 100 percent.
- (f) Curtail all residential and wholesale entitlements by the same percentage as the projected shortage.
- (g) Implement service interruptions to portions of system in accordance with approved published schedule. The schedule shall be provided to all local media.
- (h) Begin billing customer water usage in excess of curtailment entitlement at the normal rate plus an excess usage charge of \$25.00 per 1,000 gallons.


Section 8. **Enforcement of Water Restriction.** Any person who violates the provisions of this Plan, who fails to carry out the duties and responsibilities imposed by this Plan, or who impedes or interferes with any action undertaken or ordered pursuant to this Plan shall be subject to the following:

- A. If the utility official charged with implementation and enforcement of this Plan learns of any violation of any water use restriction imposed, a written notice of the violation occurred and mailed to the customer of record. Said notice shall describe the violation and order that it be corrected, cured, or abated immediately or within 48 hours.
- B. The notice will inform the customer of his or her right to appeal by requesting a hearing before the utility's designee. If a hearing is requested by the customer, he or she shall be given full opportunity to be heard before termination. The governing body shall make findings of fact and decide whether service should continue or terminate.
- C. Any customer whose water service is terminated for violating provisions of this water curtailment Plan shall be subject to the approved reconnection fee prior to reconnection of service.
- D. The excess usage charge billing provisions of this Plan shall not be put in effect if a county or city ordinance containing penalty provisions is in effect to assist enforcement of this Plan.

Section 9. **Request for Exception:**

- A. *Exception to Water Use Restrictions:* If compliance with any curtailment measure authorized herein would cause a customer to bear extraordinary hardship, that individual or entity may apply to the Utility for an exception. For these purposes, "extraordinary hardship" shall be defined as a

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condition that may threaten health and safety, or cause property or economic losses, each of which must be shown to be substantially more severe than the sacrifices borne by other users. If extraordinary hardship is found to exist, then an exception shall be granted and a written waiver issued to the customer. If an appeal is made water service shall be continued until a decision is announced. Any person aggrieved by the decision may file a complaint with the Public Service Commission.

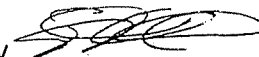
B. *Exception to Curtailment Surcharge:* Exceptions to excess use charges shall not be considered or granted.

Section 10. **Severability.** If any provision of this Plan is declared invalid by the courts, the remainder of the Plan and its applicability to other persons and circumstances shall not be affected by that declaration.

Section 11. **Effective Date.** This Plan shall take effect immediately upon approval by the Public Service Commission.

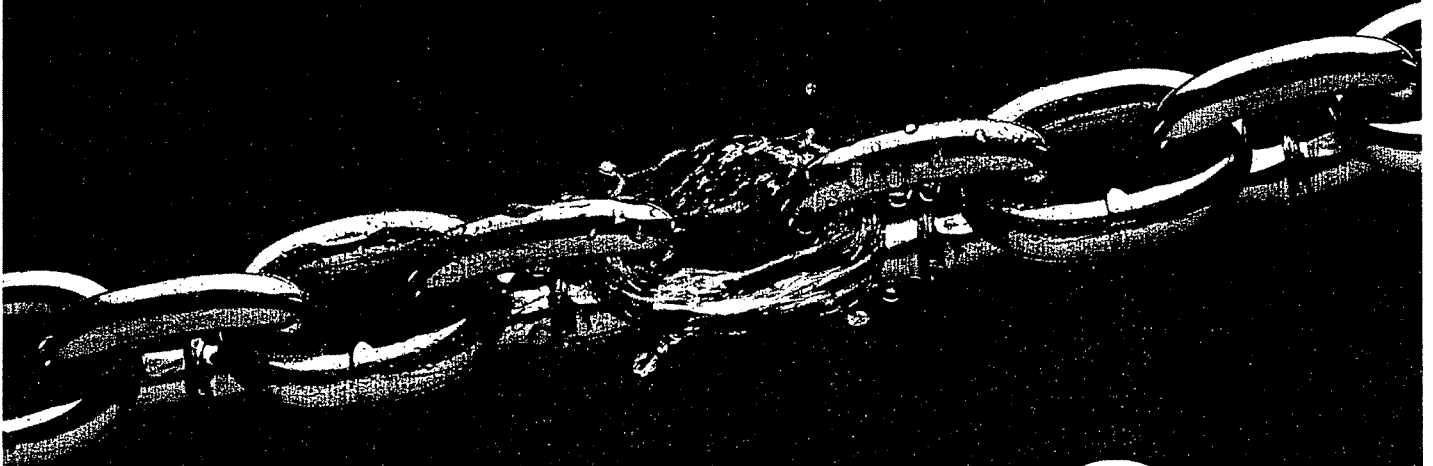
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***Vulnerability Assessment  
February 2004***



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**Southern Water & Sewer  
PO Box 610  
McDowell, Kentucky 41647  
606-377-9296**

**February 17, 2004**

## **Overview**

The primary objective for the operation of the utility is the provision of safe, dependable, and inexpensive water to the customers it serves. Key to the continued provision of this vital service is the security of the utility, its personnel and facilities.

Security analysis must begin with a determination of what threat or threats are to be mitigated. Once the risks are identified, then countermeasures can be designed for those risks, and a response plan can be crafted to address the consequences of an incident.

Congress passed legislation, which amended the Clean Water Act during 2002 in response to the terrorist attacks on September 11, 2001. These amendments require all water utilities serving more than 3,300 persons to perform a vulnerability assessment. This requirement has spurred much activity within the industry, but most utilities, including Southern Water & Sewer district Water, had already completed some analysis prior to the attacks.

## **Employees**

Security is best treated as the responsibility of every employee. Mail clerks, receiving personnel, reception staff, and plant personnel (depending on location) are likely to be the first line of detection and response to incidents and events. Since water utilities produce products that are consumed, personnel have typically been more sensitive to contamination threats, and weather threats than they have to trained adversaries.

Employees are routinely briefed, have complete authority to challenge unusual or inappropriate behavior, and have an outstanding record of interdicting vandalism, burglary, and trespass. Employees are periodically trained in specific hazards (ie. Anthrax, suspicious mail/packages, and telephone threats). Field employees have been trained to protect themselves and are trained and equipped to identify and report criminal and other suspicious activity.

Background and criminal history checks are conducted during the hiring process, and periodically on incumbents. Employees are subject to random drug screening. There

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is also a policy that allows drug and alcohol testing based on reasonable suspicion. Additionally contractors with access to sensitive areas (ie. Janitors) are contractually required to wear identification and are subjected to criminal history and background checks. Contractor activity is monitored and restricted. As necessary, contractors are briefed about specific risks, threats, issues, and safety.

### **System Design And Operation**

The system is designed for capacity, reliability, and redundancy. The system has a number of monitoring capabilities, and has established response protocols for systemic interruptions, pressure drops, and treatment anomalies. The system has also been designed in a modular way seeking to minimize the impact of any failure in the system on the balance of the system. Recent advances in pipe technology and installation methods have helped to further limit exposure and have added emergency response options that did not previously exist.

### **Public Access**

While a number of utility structures have substantial public access, those utility assets, which have been deemed critical or especially vulnerable, have been restricted. Tours are limited to accredited educational institutions and media interviews are not conducted in sensitive areas. The utility has no website and only limited customer service information is available through other governmental sites.

System diagrams are routinely made available to trusted agents, developers and contractors, but are not available to the general public. The utility has broad experience with the local, and regional development and construction community and has carefully scrutinized data production requests.

Sensitive documents, including vulnerability assessments, emergency plans, and response protocols are protected both by document control policies and by confidentiality agreements.

### **Data And Network Security**

The various data networks are physically protected, are backed up in off-site, secure vaults, and have a variety of electronic safeguards built in. Master databases, control systems, and other electronic systems and sub-systems have been regularly evaluated and penetration tested.

### **Physical Security**

The main treatment plant is alarmed and lighted. Most storage facilities are fenced and some are lighted.

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## **Threats**

Staff has all been trained in the proper management of threatening callers. Personnel that handle mail have been trained in the proper management and handling of suspicious mail and packages. Deliveries have been restricted to known shippers and all deliveries are accepted during controlled times. Utility staff knows all routine delivery personnel and companies are required to notify the utility if there are changes to any delivery personnel.

## **Emergency Response**

The utility has robust response capabilities. These capacities are necessary due to regulations governing outages and service interruptions. The utility also has a comprehensive emergency operations plan that was updated significantly in conjunction with this assessment.

## **Audit And Testing**

In conjunction with this assessment an unannounced site visit was performed to several facilities. The utility personnel challenged the assessment team at each attempted penetration. Additionally the Environmental Protection Agency has required the performance of a vulnerability assessment. The assessments have been conducted using both the Sandia Laboratories RAM-W<sub>SM</sub> methodology, the FEMA (Federal Emergency Management Agency) matrix, and several additional methodologies employed by law enforcement. The assessment team consisted of security and public safety professionals, engineering staff, and plant operation personnel.



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## **The Threat of Terrorism**

On January 21, 2001, a two-sentence letter was discovered in a New York apartment threatening to poison the water systems of 28 major United States cities, including New York. The letter had been prepared by someone with ties to Al-Qaeda, a shadowy group of Islamic extremists largely unknown to a nation preoccupied with other matters. The events which unfolded related to this letter served to highlight the vulnerability of the nation's water supply, highlight the need for a threat assessment and warning matrix within the water industry, illustrate the need for relationships to share and manage information by and between law enforcement agencies and within the water industry, and highlighted the political exposure associated with the failure to share information in a timely manner.

Threats to attack, or more commonly, contaminate, water systems are not unusual. There are hundreds of threats against municipal water systems each year. Estimates of water threats vary widely. This is due in part to the lack of a comprehensive reporting mechanism, failure to recognize incidents as malicious, a tendency for utilities to dismiss incidents as "vandalism", a lack of interest from academia, and a general lack of interest from law enforcement agencies. Water managers are very familiar with the "natural" threats from bacteria, viruses, protozoa, coliforms, and algae; they are generally less familiar with the threat from criminals and terrorists. Movies, television, and novels often depict water supplies as "the ultimate terrorist target". Raw water supplies, wells, reservoirs, dams, intake structures, treatment plants, finished water reservoirs, tanks, water towers, and even distribution systems represent vast and almost indefensible targets.

The range of potential attackers, the array of weapons available to them, and their ruthless creativity complicate terrorism in the new millennium. Technology, particularly the Internet, has eliminated many of the engineering barriers that historically have helped to limit the effectiveness of attacks. Weapons that were once the province of nations now exist in the hands of individual terrorists. Chemical, biological, and potentially even nuclear weapons in the hands of someone bent on creating death, destruction, or fear are indeed daunting concepts, particularly for the local utility operator whose greatest concern has traditionally been taste, odor, or system pressure.

Terrorism has traditionally been relegated to "far away places". Prior to September 11, 2001, an attack against Americans on our soil was inconceivable to most people. But it happened, and is likely to happen again. There are a variety of organizations and even nation states that are our adversaries. Terrorism scholars typically divide the groups of terrorists into state sponsored and non-state sponsored, although these lines are blurred and becoming more so as time passes. Throughout military history, some nations, particularly those whose traditional military means have been crippled, have engaged in terrorism to either buttress or supplant their military strategies. The

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Nazis attempted several terrorist attacks during various stages of combat with the United States during World War II. For some countries, an asymmetric engagement is the only viable option. For others, a covert attack with the associated difficulties of attribution is very appealing. Covert attack is particularly attractive to adversaries because it limits the need to import the weapons of the attack, and provides the attacker with the element of surprise, both in target selection and in timing. Water systems, because of their critical nature, are almost always included in a group's list of targets. Nations hostile towards the United States, including a number of Middle Eastern nations, are known to support terrorism. The former Soviet Union was engaged in an active effort to cultivate chemical and biological weapons. When the Soviet Union fell apart, much of its technology and many highly sophisticated scientists were available to the free market. The resulting "Russian Garage Sale" had many eager purchasers who trimmed weapon development time lines significantly and eliminated many engineering hurdles they would otherwise have faced.

Explosives have been a favorite tool of terrorists for decades. Explosive detonation may represent the greatest threat to utilities since they can be effectively used to damage key structures. Some scholars suggest that we are now entering a period that will be defined by the suicide bomber. These measures were used against United States interests during the attacks on the Marine Barracks in Beirut, the simultaneous attacks against the United States Embassies in Kenya and Tanzania, the first attack on the World Trade Center in 1993, and against the USS Cole in the Yemen harbor, November 2000. Explosives must be a concern for utility operators due to their ease of acquisition and use.

The threats from Osama Bin Laden and Al-Qaeda, have existed for some time, but have been largely ignored. The September attacks represented only the most recent attack on United States soil, but were significant because they represented the first successful act of super terrorism. Super terrorism seeks to create acts that garner attention, typically from the media, to inflict terror on the targeted population. Bin Laden himself has spoken of carrying out acts so significant that the United States would have to "take notice". In the same statement, he spoke of poisoning water mains. A threat made more credible by the discovery of water plant diagrams, CAD software, and system maps of a number of American water companies in Afghanistan. New threats made by Al-Qaeda in late May 2003 specifically threaten the introduction of potent toxins into water supplies. These threats speak of backflow introduction. Several Al-Qaeda "cells" operating in various countries are known to have produced these toxins, which have not been recovered by law enforcement.

Al-Qaeda and Osama Bin Laden have a great number of ties to a variety of nations hostile to the United States. The hallmark of Al-Qaeda has been its ruthlessly creative use of the victim country's own systems. Explosives, hazardous chemicals, and a variety of potential weapons are widely available in any industrialized country. Contemporary terrorists have become quite adept at choosing weapons and targets. The

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weapons may not even look like weapons and probably aren't illegal to obtain (however suspicious their acquisition may be). The attackers may not look like criminals.

Militias, patriots, survivalists, and white supremacists also present significant threats to water utilities. These groups often recruit blue-collar employees, particularly those who believe they have lost significant opportunity or economic gain to a minority employee. Sometimes these groups misconstrue religion and attempt to engage in their own crusade to carry out their view of God's will, or to rid the world of people they describe as less deserving than they believe themselves to be. In 1985 survivalist group Covenant Sword and Arm of the Lord acquired thirty gallons of potassium cyanide, which they intended to use to contaminate the water systems of Chicago, New York, or Washington.

Environmental terrorists can also wreak havoc for utilities. Many water and sewer officials have tangled with environmentalists when seeking to expand reservoirs, construct dams, or treat reservoirs with algaecides. For some of these people, the fish in the reservoir, regardless of how they got there, have greater importance than the humans it (the reservoir) was built to support. While not specifically targeting water utilities, ELF, the Earth Liberation Front, has engaged in violent acts ranging from "sit-ins" blocking construction equipment, tree spiking, and arson to prevent development from impacting the Bloomington, Indiana watershed. (Tree spiking is the act of driving a long nail or similar piece of metal into a tree trunk to interfere with the operation of a chainsaw. Such actions create significant hazards for the chainsaw operator and are treated as felonies by most states.)

Sometimes terrorists are not interested in protecting the water, but using it as a delivery mechanism for a contaminant. In 1972 the eco-terror group R.I.S.E. obtained *salmonella typhi* (typhoid fever), *Shigella sonnei* (dysentery), *Corynebacterium diphtheriae* (diphtheria), *Clostridium botulinum* (botulism), and *Neisseria meningitidis* (bacterial meningitis) from a variety of hospital and university sources. The group intended to kill the population of the world using aerosol dispersal of the biological organisms in the air and water. The group scaled back their plans to attack only major Midwestern cities. Chicago police recovered maps from the group that detailed the plans to release contaminants into reservoirs serving millions. If R.I.S.E. had access to the Internet it may have been able to overcome the engineering obstacles that interfered with the attack.

Disgruntled employees are also a source of legitimate concern for utility managers. Utility systems, as automated as they are, are still heavily dependent on people. Plant operators, maintenance crews, and other employees have access to critical parts of the system, and also have the knowledge of how to interfere with it. A disgruntled employee can also falsify records, taint samples, or disrupt control equipment. It is critical for utility managers to have adequate measures in place to

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identify and deal with troubled employees. Union disputes are also known to produce acts of vandalism, interference, and even sabotage.

Analysis of significant terrorist acts, particularly those of the past decade, show startling similarities. The adversaries are typically economically marginalized and very angry. Economic difficulty and its attendant hardships breed anger. Young, typically male, recruits discover food, fame, and promise of great reward in other lives, all tied to martyrdom. Lack of acceptance, repeated failure, frustration, and social ostracism are capable of producing monsters. Motivations include distress over perceived or actual government or military actions, social, or economic policy, employment trauma, technological advance, or other substantial personal challenge. Many functions, particularly data entry and computer programming have been out-sourced to companies over whom utility managers have little or no control. Many utilities have limited background information about contractors and even their own employees due to past policies concerning employee privacy

Assessing the vulnerability to any given threat is a function of weighing the probability of the threat against the consequences of the threatened action. Given the size and nature of utility infrastructure, the interrelationships and dependencies between utilities, the analysis of consequences becomes one of prioritizing responses, identifying critical components, hardening or securing those that can be reasonably hardened or secured, and developing response plans for those which cannot be hardened.



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## McDowell and Floyd County Kentucky<sup>1</sup>

McDowell is located in Floyd County, nestled in the Central Appalachian Mountains, two-and-a-half hours from Lexington. McDowell is a typical rural town. The people are friendly, everybody knows everyone, and the pace is a bit slower than what you'd find in the hustle-bustle of city living. McDowell itself is home to less than a 1,000 residents. Floyd County's population is approximately 44,000. The main industry in Floyd County, like much of Eastern Kentucky, is coal mining.

Floyd County offers a wide range of public schools ranging from pre-school to college. The consolidation of McDowell and Wheelwright high schools in 1993 brought new technology and new excitement to the region in the form of South Floyd High School. Mountain Christian Academy in Martin provides private education for grades K - 12. Higher education is available in the county through Prestonsburg Community College and an extension branch of Morehead State University. Pikeville College, a four-year private institution located in neighboring Pike County, is approximately a one-hour drive away.

McDowell and Floyd County offer numerous options for the outdoor enthusiast. Within minutes of McDowell, Minnie Park offers basketball, Little League and Pee-Wee League baseball, tennis courts, a walking track, and playground equipment. Stumbo Park, 20 minutes north of McDowell, offers many of the same features as Minnie Park with the addition of high school and Babe Ruth League baseball, a swimming pool, and a nine-hole golf course. Prestonsburg, the county seat of Floyd County, is home to Jenny Wiley State Resort Park and Dewey Lake, offering camping, swimming, golfing, boating, summer outdoor theatre in an amphitheater setting, the Mountain Arts Center, and lodging.

A wide variety of entertainment is located in nearby Prestonsburg and Pikeville. Shopping centers, bowling, and restaurants are available in both towns.



McDowell is named for Ephraim McDowell was born in Rockbridge County, Virginia on November 11, 1771, the ninth of eleven

<sup>1</sup> McDowell Website

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children. He came to Kentucky as a boy of twelve when his father, Samuel, was asked to serve as one of the original judges for the land court. He probably suffered hardships in these early years on the frontier, as did every one moving into this new land. Historians think that the challenges he met at this time prepared him to think independently and act quickly later in his medical career.

Little is known about Ephraim's education in Kentucky. In 1791 he went to Staunton, Virginia to begin an apprenticeship to Dr. Alexander Humphreys. From there he traveled to the University of Edinburgh, Scotland, the seat of medical learning at the time. After 2 years in Scotland, he returned to open his practice of medicine in Danville in 1795. In 1797 he purchased the apothecary shop.

In 1802, Ephraim married Sarah Shelby, daughter of Isaac Shelby, the first governor of Kentucky. They purchased a house adjacent to his shop. The McDowells had nine children in this house, with five living to adulthood.



"The Dawn of Abdominal Surgery"  
by Dean Cornell, N.A.  
Commissioned by Wyeth Laboratories, Philadelphia

In 1809, Dr. McDowell was called to Green County, Kentucky, to see a patient, Mrs. Jane Crawford. Mrs. Crawford thought she was expecting twins. Upon examination, Dr. McDowell realized she had an ovarian tumor. After consultation with Mrs. Crawford, Dr. McDowell told her if she would travel to his home in Danville, he would perform the experimental surgery. Dr. McDowell returned home. Mrs. Crawford followed a few days later, sixty miles on horseback. She rested several days after her arrival.

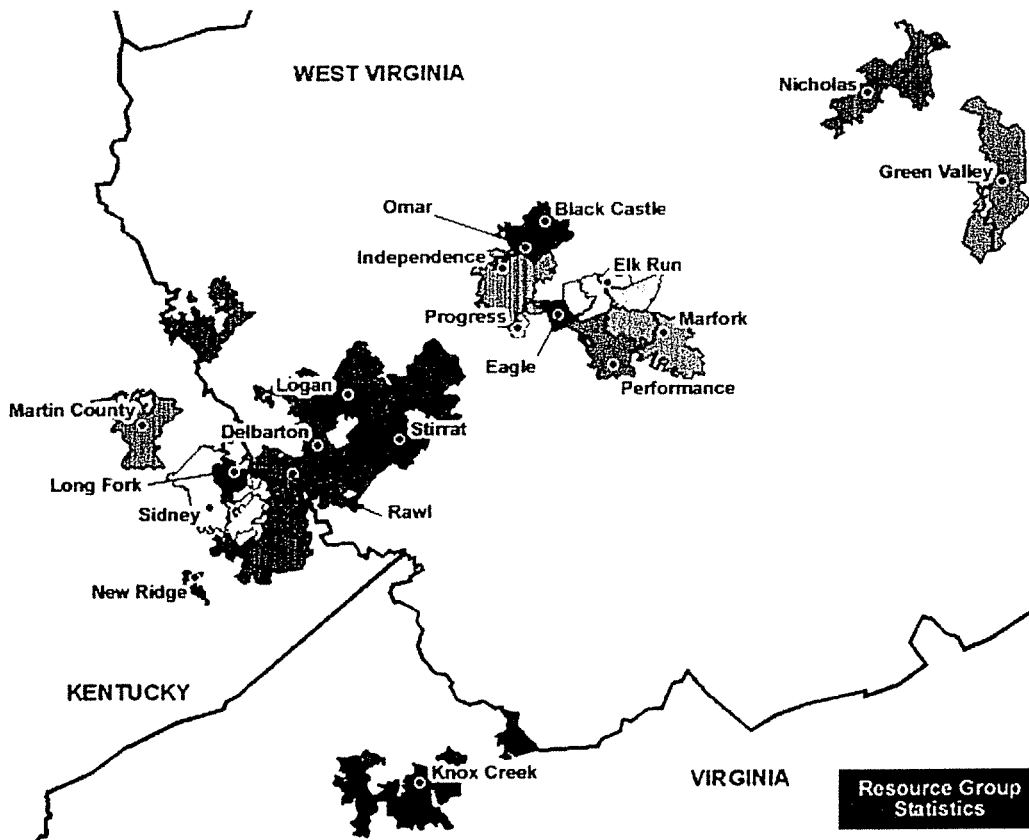
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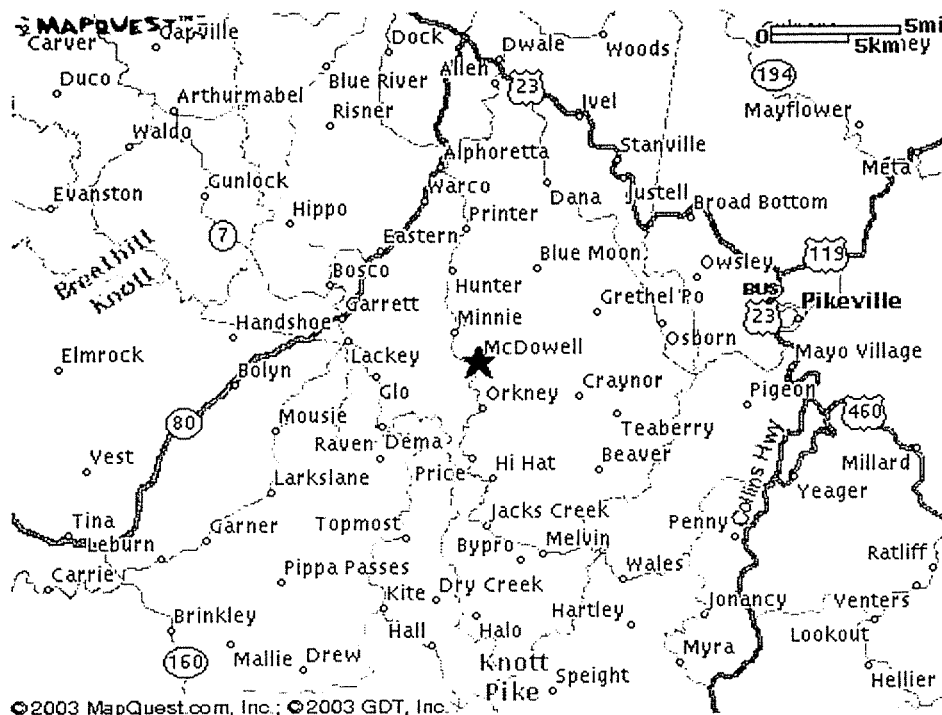
On Christmas morning, 1809, Dr. McDowell began his historic operation. The ovarian tumor he removed from Mrs. Crawford weighed twenty-two and one-half pounds. The surgery was performed without benefit of anesthetic or antiseptics, neither of which was known to the medical profession at the time. Mrs. Crawford's surgery was successful. She returned to her home in Green County twenty-five days after the operation and lived another thirty-two years. This was the first successful removal of an ovarian tumor in the world.

Coal has figured prominently in the economy of the region. Both deep shaft and strip mining are prevalent in the area. Massey Energy, the largest area employer, operates five mines in proximity to McDowell. These mines represent an important economic engine for the region, though the coal industry is in a long-term decline.



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### Area Risk Factors



McDowell is an established community located near the border of West Virginia and Kentucky. (The Tug River serves as the border) The local economy is based largely on coal, though there are a few local service businesses, some retail, and some tourism/recreation. The area is generally thought to be in decline, though the state is attempting to re-cast itself with petrochemicals. Several of the region’s large organizations, including Massey Energy are themselves potentially appealing targets for malevolent actors. Utility and local authorities reported no particular “persons of concern” but there have been recent arrests of known Al-Qaeda operatives and sympathizers in West Virginia and Kentucky. There are also several active militia groups known to be operating in the area. There also continue to be active methamphetamine and moonshine operations in the region.

McDowell is surrounded by a number of other larger cities—themselves also potential targets. The location and the highways that converge and cross the community add dimensions to the threat of malevolent acts due to the ease of ingress and egress. The community may also serve as a target due to the importance of the highway in transport of coal. Located within easy driving distance of several larger West Virginia and Kentucky communities, Williamson could serve as the location to plan an attack on the

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larger communities. It might also become a target of opportunity due to its proximity and because a hardened community may have pushed the threat to the area. Environmentalists must also be considered due to the volatile nature of some mining operations.

### **Purpose and Legislative Requirements**

This assessment is intended to identify critical assets used in the production and delivery of clean, safe water and provide recommendations to make those assets more secure.

The potential threat of malevolent acts that contaminate municipal water supplies or interrupt service has created a sense of urgency and a need among water utilities to secure and protect their supplies, processes, and products. This activity is not only sound utility and business practice, it is also required by federal law. The Bioterrorism Preparedness Act, HR 3448 (June 2002), requires such assessments. A vulnerability assessment is a comprehensive review of the process associated with the production of clean water, including: wells, tanks, reservoirs, pipelines, plant operations, power supply procedures and other system interdependencies.

### **RAM-W<sub>SM</sub> Methodology**

The RAM-W<sub>SM</sub> (Risk Assessment Methodology Water) methodology was developed by Sandia National Laboratories and the AWWA Research Foundation. The methodology is based upon proven principles of physical, process, and procedural security used for some time in the nuclear energy industry. The assessment tools are licensed to limited organizations and individuals only after security checks have been completed. Personnel trained and licensed in the methodology conducted the assessments documented herein.

Assessment personnel from USFilter visited the various operations of the system to conduct vulnerability assessments and to perform penetration tests. USFilter representatives toured the facilities, reviewed plant processes, policies and procedures, and spoke with plant personnel to gather data.





## Southern Water System Overview

Southern Water and Sewer serves a population of approximately 25,000 including McDowell and southern Floyd County and eastern Knott Counties. The treatment plant has a rated capacity of 2 MGD drawing raw water from the Levisa Fork of the Big Sandy River. The system uses liquid bleach disinfection. The utility has approximately 400 miles of main, 300 valves, and 565 hydrants. The utility has 3,131,000 gallons of finished water storage split among 23 tanks. The system has 25 booster stations.

### *Facilities*

- **Water Treatment Plant**

### *Booster Stations*

- **Arkansas Creek** – located at Arkansas Creek road and Picklebean Hollow Junction Martin, KY. Located in a locked underground vault, it is located 25 ft. from the road. It has telemetry. (Big Sandy RECC provides power)
- **Wilson Creek** – located at the Junction of KY Route 777 and Wilson Creek, Langley. Located in a locked underground vault, it is located 10 ft. from the road and has bollards protecting it. (American Electric Power (AEP) provides power)
- **Johns Branch** – located at Langley just past the Fish and Game Club. Located in a locked underground vault, it is located 20 ft. from the road and has bollards protecting it. (American Electric Power (AEP) provides power). It has a hydro pneumatic type pump and no telemetry.
- **Brush Creek** – located on Route 50 at Hippo. Located in a locked underground vault, it is located 15 ft. from the road. It has no telemetry. (Big Sandy RECC provides power)
- **Rock Fork** – located on KY Route 80 at Garrett. Located in a locked underground vault, it is located 20 ft. from the road and has bollards protecting it. (American Electric Power (AEP) provides power).
- **Fisher Hollow** – located on KY Route 122 at Printer, KY. Located in a locked underground vault, it is located 15 ft. from the road. (American Electric Power (AEP) provides power).
- **Spurlock** – located on Route 2030 at Printer, KY. Located in a locked underground vault, it is located 20 ft. from the road. (American Electric Power (AEP) provides power).

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- **Doty Branch** – located near the end of Doty Branch, McDowell, KY. The pump is housed in a locked building. It has no telemetry. (American Electric Power (AEP) provides power).
- **Bill Hall Branch** – located on KY Route 680, McDowell, KY. The pump is housed in a locked building. It has no telemetry. (American Electric Power (AEP) provides power).
- **Frasures Creek** – located at Route 1929, near the Greenbury Hall Estates. Located in a locked underground vault, it is located 15 ft. from the road and is protected by a wall fabricated from gabion baskets. It has telemetry. (American Electric Power (AEP) provides power).
- **Spewing Camp** – located at the junction of KY Route 122 and Spewing Camp Branch, McDowell, KY. Located in a locked underground vault, it is located 10 ft. from the road. It has bollards protecting it and is controlled with telemetry. (American Electric Power (AEP) provides power).
- **Hi Hat** – located at the KY Route 122 – KY Route 979 junction at Hi Hat, KY. Located in a locked underground vault it has bollards protecting it and is controlled with telemetry. (American Electric Power (AEP) provides power).
- **Reynolds Branch** – located at KY Route 979, Ligon, KY. Located in a locked underground vault, it is located 30 ft. from the road. It and is controlled with telemetry. (American Electric Power (AEP) provides power).
- **Jacks Creek** – located at KY Route 1498, Bevinsville, KY. Located in a locked underground vault approximately 20 feet from the road, it has bollards protecting it and is controlled with telemetry. (American Electric Power (AEP) provides power).
- **Wheelwright** – located at the KY Route 122 Wheelwright junction. Located in a locked underground vault approximately 15 feet from the road and is controlled with telemetry. (American Electric Power (AEP) provides power).
- **Abner #1** – located at KY Route 122, Melvin, KY. Located in a locked underground vault it is approximately 15 feet from the road and has bollards protecting it and is controlled with telemetry. (American Electric Power (AEP) provides power).

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- **Abner #2** – located at Abner Mountain, Melvin, KY. Located in a locked underground vault it has bollards protecting it is located approximately 15 feet from the road and is controlled with telemetry. (American Electric Power (AEP) provides power). The pump is Hydropnuematic type.
- **Weeksbury** – located at the KY Route 466 – Number one junction at Weeksbury, KY. Located in a locked underground vault it has bollards protecting it is located approximately 25 feet from the road and is controlled with telemetry. (American Electric Power (AEP) provides power).
- **Morg Branch** – located at KY Route 979, teaberry, KY. Located in a locked underground vault it has bollards protecting it and is controlled with telemetry. (American Electric Power (AEP) provides power).
- **Mink Branch** – located at KY Route 979 – Mink Branch Junction. Located in a locked underground vault it has bollards protecting it, is located approximately 15 feet from the road and is controlled with telemetry. (American Electric Power (AEP) provides power).
- **John Hall Branch** – located at KY Route 979 and KY Route 680 junction, Grethel, KY Located in a locked underground vault it has bollards protecting it is controlled with telemetry. (American Electric Power (AEP) provides power).
- **Branhams Creek Route 979** – located at Route 979 adjacent to housing authority (one mile below Route 3379); Located in a locked underground vault it is located approximately 40 feet from the road and is controlled with telemetry. (American Electric Power (AEP) provides power).
- **Branhams Creek Russell Clark** – located on Route 3379, Grethel KY, Located in a locked underground vault it has bollards protecting it is located approximately 40 feet from the road and is controlled with telemetry. (American Electric Power (AEP) provides power).
- **Branhams Creek Pigeon Roost** -- located on Route 3379 near Pigeon Roost Junction. Located in a locked underground vault it has bollards protecting it is located approximately 15 feet from the road and is controlled with telemetry. (American Electric Power (AEP) provides power). The pump is hydropnuematic type.
- **Tackett Fork** – located at Beech Spring Road, Beaver KY . Located in a locked building approximately 10 feet from the road. (American Electric Power (AEP) provides power).

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### *Finished Water Storage*

- **Arkansas Creek** – 43,000-gallon glass lined storage tank, located at Picklebean Hollow Road, Martin KY. It is approximately One mile from the main road. There is no fencing around the tank; there are locks on the ladder guard and tank roof hatch. Tank also has telemetry.
- **Martin** – 1,039,000 gallon steel welded storage tank, located near the Martin Y, at junction 122-KY 1428 intersection. The road to the tank is located on Charby Hollow Road approximately 1,000 feet up the hill. Tank is fenced, and locked, and has locks on the ladder guard and roof hatch. Tank also has telemetry.
- **Allen Central** – 209,000-gallon glass lined storage tank, located at Eastern, KY behind Allen Central High School, it is approx. 1,500 feet up the hill behind the school. Tank is fenced, and locked. It has locks on the ladder guard and roof hatch. Tank also has telemetry.
- **Brush Creek** – 60,000-gallon steel welded storage tank, located on KY Route 850 Hippo, KY. It is on top of Hippo Mountain, approximately 250 ft. From Route 850. Tank has no fencing, ladder guard, or telemetry, but it does have a locked roof hatch and half style ladder.
- **Lackey** – 200,000-gallon steel welded storage tank, located at Baptist Bottom (Ralph's Road) Lackey, KY Approximately 3,000 feet up the hill at end of the road. Tank has no fencing or telemetry or ladder guard, but it has half style ladder and locked roof hatch.
- **Rock Fork** - 100,000-gallon steel welded storage tank, located just off KY Route 80 at Miller Bros. Mining entrance at Garrett KY It is approximately 1,500 feet up the hill. Tank has no fencing, no ladder guard but does have half style ladder and locked roof hatch, also has telemetry.
- **Spurlock** – 104,000-gallon steel welded storage tank, located on Route 2030 Printer, KY. It is located near the top of Trace Fork Mountain approximately 600 feet up the hill. Tank is fenced and locked, it has a locked ladder guard and locked roof hatch, and it also has telemetry.
- **Minnie** – 246,000-gallon glass lined storage tank, located on KY Route 680 Minnie, KY. Approx. 1,000 feet up the hill from Route 680. Tank has no fencing, it does have a locked ladder guard and locked roof hatch, and it also has telemetry.
- **Bill Hall Branch** – 20,000-gallon steel skid tank, located just off KY

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Route 680 McDowell, KY Approx 1,500 feet from main road. It has no fencing but does have a locked roof hatch and telemetry.

- **Neds Fork** – 38,000-gallon steel welded storage tank located in Frasures Creek, McDowell, KY Approximately 3,500 ft. From the main road. Tank is fenced and locked; it has a locked ladder guard and locked roof hatch. It also has telemetry.
- **McCreary Branch** – 6,000-gallon steel skid tank located at Price, KY Located on hill at the end of McReary Branch. Approximately 1,000 feet up the hill. Tank has no fencing, but does have a locked roof hatch and floats to prevent overflow.
- **Price** – 100,000-gallon steel welded tank located at Bryant Branch, Price, KY Approximately 1,500 feet up the hill. Tank has no fencing. But it does have a half style ladder and locked roof hatch and telemetry.
- **Buckingham** – 209,000-gallon glass lined storage tank, located at Hi Hat, KY It is on the hill above the Buckingham Cemetery. Approximately 1,500 ft. From main road. Tank is fenced and locked, has locked ladder guard and locked roof hatch, and also has telemetry.
- **Ligon** – 25,000-gallon glass lined storage tank, located at Route 979 Ligon, KY It is approximately 1,000 ft. From main Road. Tank is fenced and locked; it has two separate ladder guard locks and a locked roof hatch. It also has telemetry.
- **Jacks Creek** – 56,000-gallon glass lined storage tank, located at the top of the hill on KY Route 1498 Bevinville, KY. Tank is fenced and locked; it has a locked ladder guard and locked roof hatch. Tank also has telemetry.
- **Melvin** – 105,000-gallon glass lined storage tank, located at dairy hollow road, Melvin, KY Approximately 1,500 ft from main road. Tank has no fencing, but does have a locked ladder guard, and locked roof hatch. Tank also has telemetry.
- **Abner** – 25,000-gallon glass lined storage tank, located at Abner Mountain, Melvin, KY approximately 200 feet from Main Road. Tank is fenced and locked and has a locked ladder guard and locked roof hatch. It does not have telemetry.
- **Weeksbury** – 56,000-gallon steel welded storage tank, not in service yet, but it is fenced, with a ladder guard and roof hatch. And will have telemetry. Approximately one mile up the hill.

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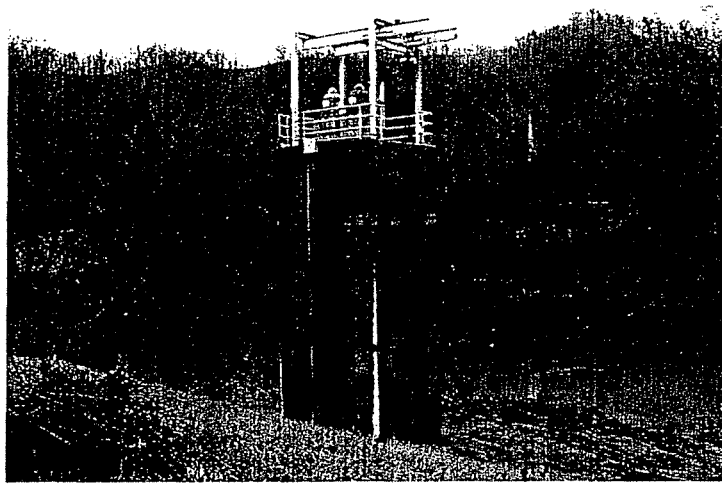


- **Main Mink Branch** – 150,000-gallon steel welded storage tank, located at the KY Route 979 – Mink Branch junction at Craynor, KY Approx. 1,000 ft up the hill. Tank has no fencing, ladder guard or telemetry - it has the half style ladder and locked roof hatch.
- **Mink Branch (Ray Hall)** – 32,000-gallon steel welded storage tank, located at the left fork of Mink Branch. Craynor, KY Approximately 1,500 ft up the hill. Tank is fenced and locked, tank has a locked ladder guard and locked roof hatch. The tank also has telemetry.
- **John Hall Branch** – 25,000-gallon steel welded storage tank, located at KY Route 680 Grethel, KY. The tank is on top of the hill, approx. 1,000 ft. From the main road. Tank is fenced and locked. It also has a locked ladder guard and locked roof hatch. It has telemetry.
- **Tackett Fork** – 25,000-gallon steel welded storage tank, located near top of the hill at Tackett Fork at Beaver, KY. Tank is fenced and locked. It has the half style ladder and locked roof hatch. It has no ladder guard or telemetry.
- **Branhams Creek** – 28,000-gallon glass lined storage tank, located at Rogers Branch, Grethel, KY. Tank has a locked ladder guard and locked roof hatch. Has no telemetry.

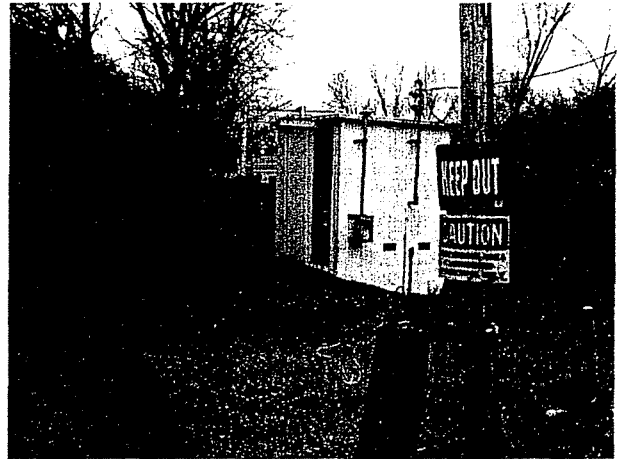


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### Big Sandy River Intake



The utility draws from the Levisa Fork of the Big Sandy River. The intake is located along the river in a reinforced concrete structure. The intake is not lighted or under surveillance, but can be visually monitored from the water treatment plant which is located on top of the hill. Pumps to move raw water to the plant are located on top of the intake structure. Access to the structure is via gravel road blocked by a locked chain. There are no other vehicle barriers in the area.



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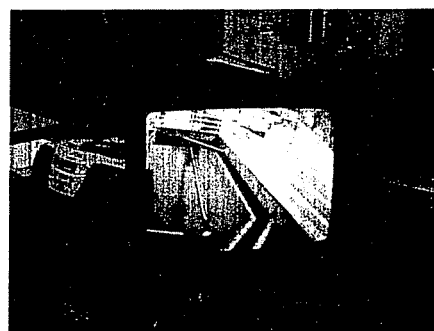


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### Allen Treatment Plant



The Allen water treatment plant is located atop a hill overlooking Allen, KY. The plant has a rated capacity of 2 MGD drawing raw water from the Levisa Fork of the Big Sandy River. The system uses liquid bleach disinfection. The plant uses a gravity filtration/treatment process. Finished water storage at the plant is provided by a clear well. The plant has a standby generator that is used to supply power during outages and emergencies. The plant is staffed approximately 20 hours/day, with an emergency call procedure after hours.



The plant entrance is gated with a gate monitored by a surveillance camera. There are no vehicle barriers protecting the entrance.

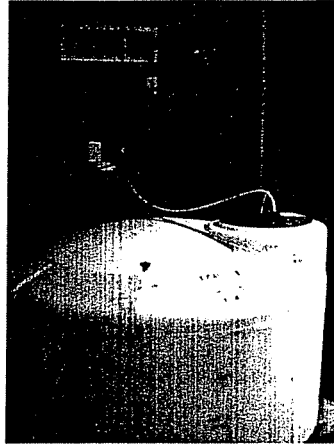
Access to the plant operations area is restricted to plant personnel. Authorized visitors must be escorted at all times.

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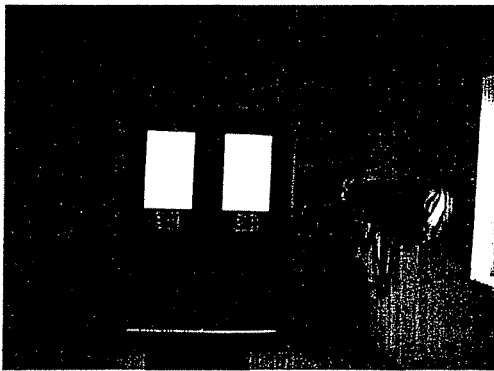




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The filtration and chemical addition processes are modular in design. Containment dikes surround hazardous chemicals. Disinfection chemicals are stored in locked rooms with very limited access.



Exterior doors are not alarmed and the plant interior is not protected with motion detectors. The exterior windows are located in the front door and west loading dock doors of the plant. The glass in the doors and windows is not security glass, lexan, or ballistic laminate. A surveillance camera does not monitor the side entry doors.

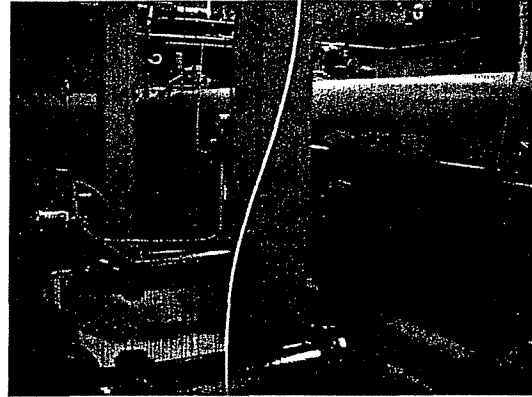
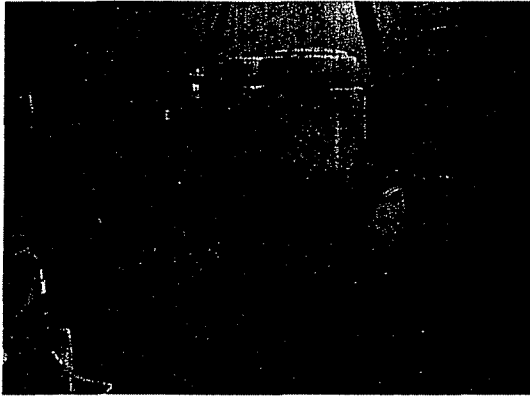
The clear well is secured both on the inside of the plant and on the plant exterior. Access hatches are locked. They are not alarmed or monitored by surveillance equipment.

The plant has a small laboratory which allows preliminary testing for water quality. The lab is designed to conduct regulatory compliance tests; it is not equipped to perform definitive identifications of suspected contaminants.

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High service pumps are located in the pump gallery. This is located in the basement of the plant and is protected from intrusion and weather threats.



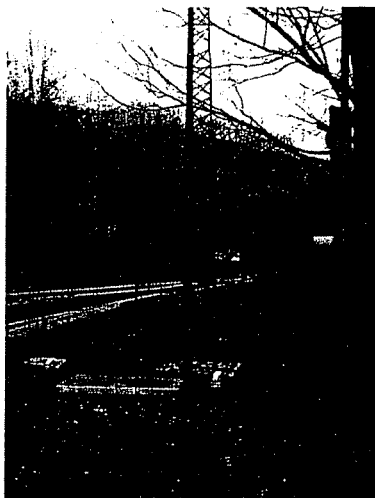
The plant perimeter is fenced but the fence is not topped with barbed or razor wire and is in poor condition.

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### **Booster Pump Stations**



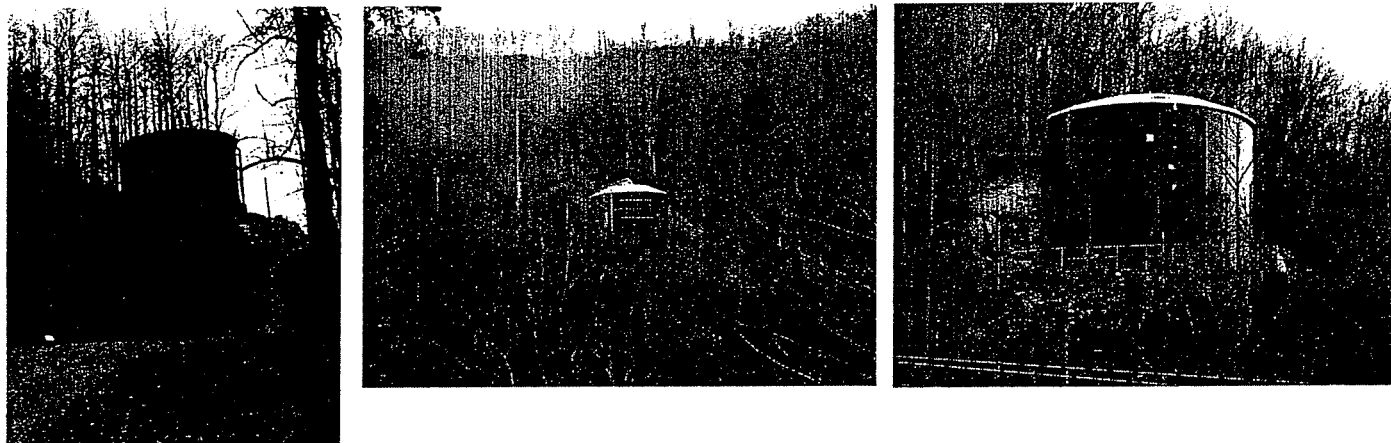
The modular nature of the system requires many booster pumps and tanks to maintain pressure in the various pressure zones. The majority of booster pumps are located in locked, underground vaults that are controlled with telemetry. Other than visible telemetry antennas there is little to call attention to the sites. Most sites close to roadways are equipped with bollards or some vehicle barrier.

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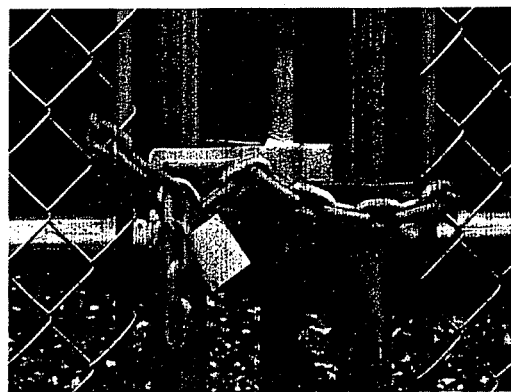
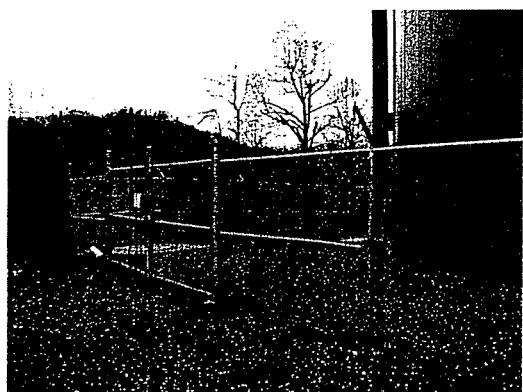


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### Finished Water Storage Tanks



Finished water is stored in a variety of above-ground tanks similar to those shown here. The tanks are generally situated on or on top of mountains in the service area. The tanks are generally only accessible with all-terrain-vehicles or on foot. The largest tank in the system (right photo above) is plainly visible from the main roadway and utilizes a digital level readout. This tank is fenced with chain link fence topped with barbed wire. The utility has made very effective use of fluorescent security chain that can be seen from great distances to alert utility staff of tampering. Tanks are controlled and monitored with telemetry. Utility and law enforcement personnel visually inspect tanks periodically.



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## Facility Prioritization

The vulnerability analysis began with a thorough review of the hydraulic model and operation of the entire system. This review was performed in close conjunction with operations personnel. The review also included interfaces with public safety and law enforcement personnel familiar with the facilities comprising the system. The results were a series of determinations as to which facilities were critical to the operation of the utility.

To prioritize the major facilities, a pair wise comparison was used which employed the Sandia National Laboratories RAM-W<sub>SM</sub> methodology. The various utility facilities and structures were then compared producing the following relative ranking of facilities. These rankings enable security improvements to be prioritized for vulnerability mitigation and countermeasure development.

Factors considered in this analysis include the volume of potable water stored by the plant or asset, the number and nature of customers served by the asset, the relative vulnerability to various forms of attack, the ability of the utility to repair or replace the asset, the ability of the utility to wheel potable water to or from other parts of the system, and the relative redundancy of the system.

The following assets are the most critical assets in the system:

1. River Intake and Treatment Plant
2. Finished Water Storage
3. Booster Sites

Southern Water has a robust response capacity, which allows it to respond in a timely and effective manner to a variety of emergencies. This capacity is well rehearsed and the utility has an excellent emergency response plan, which has been reviewed and updated in conjunction with this assessment. The utility has a sophisticated series of response procedures in place.



## Threat Assessment

There are a variety of threats faced by any utility. The effort to determine which countermeasures and mitigation strategies are most appropriate hinges on a thorough understanding of the threats the utility faces. In arriving at the threat profile for the utility, the assessment team met with public safety, law enforcement, and local intelligence officials to determine the nature and character of likely adversaries known or suspected to be in the region. Included in the analysis was a review of the history of malevolent acts in the region both directed at infrastructure targets and other non-infrastructure targets. The analysis included a review of single-issue extremist groups and individuals, extremist and sectarian religious organizations, various right and left wing extremist groups, and also considered the ramifications of potential military (or covert) actions by groups affiliated with nation states.

The operative assumptions in the threat analysis is that some adversary would seek to interfere with the delivery of potable water to the attacked population, use the system to deliver a contaminant to sicken the attacked population, to interfere with the delivery of water for fire suppression, or to threaten any of these acts to frighten, destabilize, or manipulate the targeted population. Also considered in the threat analysis is the prospect of using the system or impacting the system to conduct an attack upon a third party customer of the utility.

The threat scenarios under consideration are as follows:

1. Three or more outsiders having knowledge of the water system and potentially using force to enter a facility to damage assets and to impede delivery of water for an extended period of time, and/or to potentially contaminate the air and water system.
2. A single, disgruntled employee with authorized access, possessing knowledge of the water system. The employee's goal is to damage assets of the system to impede delivery of water or introduce substances into the water supply to scare and harm end users.
3. A single disgruntled individual notifies the news media that a contaminant has been introduced into the water system.

Security planning for utility infrastructures involves responses that are combinations of structures and procedures. Operational objectives include Deterring potential adversaries, preventing attacks before they occur, and protecting the health of utility employees and the customers they serve.



## Recommendations

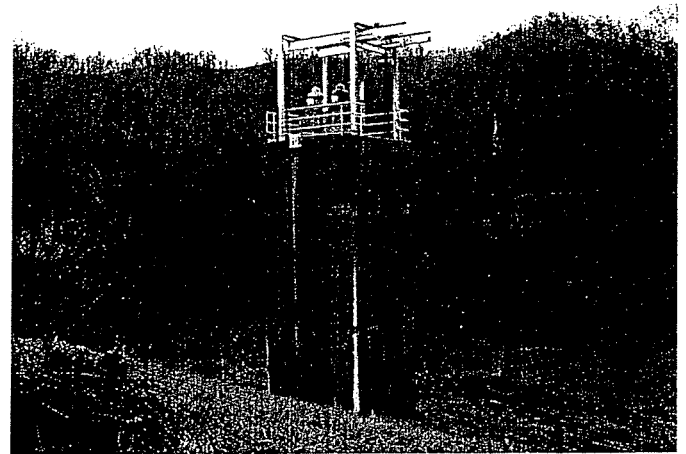
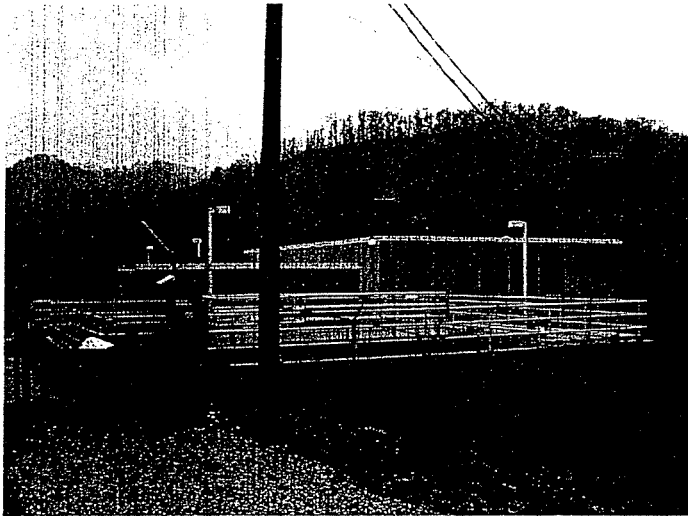
The objective of this assessment and these recommendations is to reduce the risk of an adversaries' success by making it harder to attack a particular target, or by decreasing the impact of a potential attack. Given the tremendous costs associated with security, these recommendations have been prioritized to address the most important facilities and assets of the utilities. Many of these recommendations offer dual benefit by enhancing both security and operational capacity.

### General

- Employee awareness and adherence to security procedures is good and should be reinforced with annual training.
- Alarm monitoring, dispatch, and central control functions should be reconfigured to add capacities and to increase monitoring activity.
- A training program should be conducted on the revised emergency plan.
- A television with cable service should be installed at the administrative offices to allow the continuous monitoring of cable news networks.
- As real-time monitoring technology for contaminants matures, it should be installed in key points of the system.
- Public access to critical facilities should remain restricted.
- Surveillance technologies and monitoring should be significantly enhanced.
- Distribution system sampling and testing should be implemented for normal operational needs and at facilities likely to be targeted.
- Utility personnel should continue to maintain their relationships with law enforcement, fire, and other municipal personnel.
- Review training and policies concerning locks and security features with employees.



## River Intake and Treatment Plant



- Consider increasing staffing to allow 24-hour coverage at the plant and or adding SCADA capabilities.
- Consider upgrades to the alarm system to include motion detection.
- Install additional surveillance cameras on doors, approaches, and the intake.
- Consider the installation of a proximity or similar card access system that would allow access and track locations, times of ingress and egress, and access to various facilities.
- Install an automatic gate and vehicle barriers at the plant entrance.
- Repair or replace the perimeter fence and add barbed or razor wire to the top of the fence.







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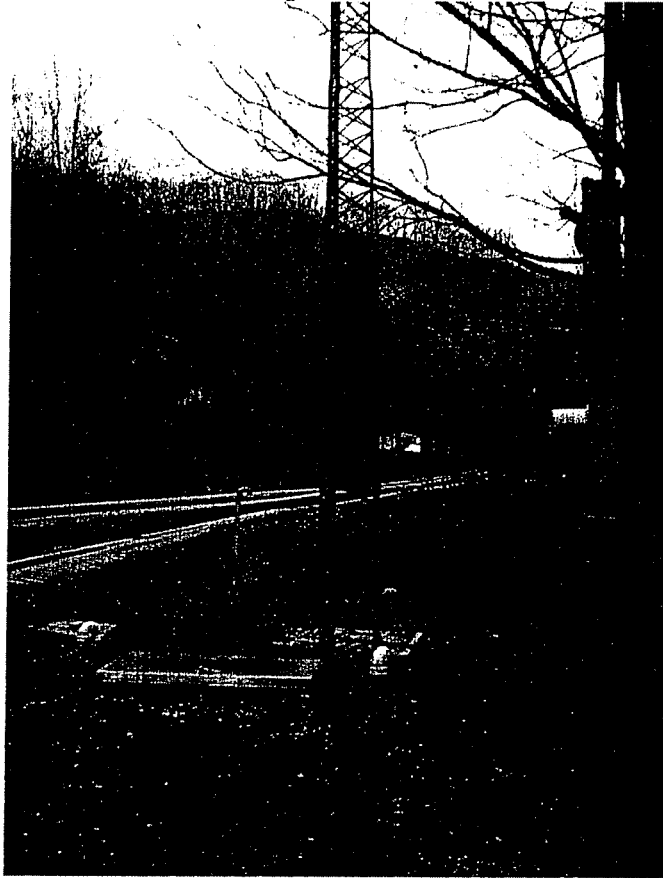
## Tank Sites



- Install site lighting where possible.
- Install surveillance cameras to monitor tanks.
- Inspect access hatches, vents, and valve structures regularly to ensure they are secure.

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### Booster Pump Vaults and Stations



- Install surveillance cameras to monitor the sites and approaches.
- Inspect the facilities regularly.
- Install vehicle barriers where appropriate.



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### **Information Technology**

Information technology systems and system controls reside on separate systems. Each is password protected and has an interface that requires substantial training prior to operation. The interface has been designed (and is maintained to) prevent unauthorized access to system controls.

Billing is conducted at other facilities using computer systems that are not connected in any way to the operating systems of water or wastewater.

Remote access to computer and operating systems is strictly controlled and monitored.

Information about the water system available on the Internet is very limited. There is no website and the municipal website only lists administrative contact information.

- Require regular password changes on all networks and systems
- Consider the preparation of customer service information for the municipal website, including information about backflow prevention, water theft, and security.
- Add customer information about security on the websites including information about what the utility considers suspicious, how to make reports, and what actions to take if a boil water order is issued.



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### **Distribution System Monitoring And Backflow**

Samples are routinely drawn from various points in the system. These samples are analyzed, primarily for regulatory compliance.

The utility has a backflow program, local ordinances, and a dedicated position to manage the backflow program to protect the system from accidental backflow from residences, fire suppression, irrigation, and industry. Law enforcement personnel and customers should be encouraged to report unauthorized fire hydrant use.

- Continue active system monitoring of both raw and finished water, particularly during heightened national alerts.
- Continue to monitor industry developments on real-time contaminant monitoring and detection.
- Provide key customers and critical facilities with contact information to report system anomalies.
- Consider the use of bill stuffers or messages to educate the public about unauthorized hydrant use.
- During periods of heightened national alert, draw additional samples from potential target locations.



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### **Conclusion**

The Southern Water Utility has taken the threats posed by terrorism seriously. The relationship they have with city leadership and law enforcement is enviable by similarly situated utilities. The utility and the community have overcome budgetary challenges by educating one-another and their constituencies.

The implementation of the recommendations contained in this report, while not a guarantee of prevention, will serve to further limit the likelihood of or the impact from a terrorist attack. Concurrently, these recommendations will serve a dual benefit of better protecting the community from the more mundane emergencies which may occur.

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