

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

APPLICATION OF BUTLER COUNTY WATER)	
SYSTEM, INC. FOR A GENERAL RATE)	CASE NO.
ADJUSTMENT PURSUANT TO THE)	2003-00486
PROVISIONS OF KRS 278.030 AND)	
807 KAR 5:001)	

ORDER

On March 25, 2004, Butler County Water System, Inc. ("Butler") filed its application for Commission approval of proposed water rates. Commission Staff, having performed a limited financial review of Butler's operations, has prepared the attached Staff Report containing Staff's findings and recommendations regarding the proposed rates. All parties should review the report carefully and provide any written comments or requests for a hearing or informal conference no later than 10 days from the date of this Order.

IT IS THEREFORE ORDERED that all parties shall have no more than 10 days from the date of this Order to provide written comments regarding the attached Staff Report or requests for a hearing or informal conference. If no request for a hearing or informal conference is received, this case will be submitted to the Commission for a decision.

Done at Frankfort, Kentucky, this 21st day of December, 2004.

By the Commission

ATTEST:



Executive Director

STAFF REPORT
ON
BUTLER COUNTY WATER SYSTEM, INC.
CASE NO. 2003-00486

On February 12, 2004 Butler County Water System, Inc. ("Butler") submitted an application seeking to increase its rates for water service pursuant to 807 KAR 5:001, Section 10. The Case was considered filed on March 25, 2004 when all filing deficiencies were cured.

To establish the basis for its application Butler selected the twelve months ended October 31, 2003 as its test year. Butler determined its revenue requirement from rates to be \$1,694,814 in annual revenues, an increase of \$235,150, or 16.11 percent, over normalized test year revenues from rates of \$1,459,664. Butler's requested rates would increase the monthly bill of a residential customer using 5,000 gallons from \$27.76 to \$31.82, an increase of \$4.06 or 14.63 percent.

Staff conducted a field review to gather information concerning Butler's test year operating results and the pro forma information presented in its application. The scope of Staff's review was limited to obtaining information as to whether test period operating revenues and expenses were representative of normal operations. All pro forma adjustments to test year operations are required to be known and measurable pursuant to 807 KAR 5001 Section 10 (7). Insignificant or immaterial discrepancies were not pursued and are not addressed herein.

This report summarizes Staff's review and recommendations. Scott Lawless is responsible for the revenue requirement determination while Jason Green determined pro forma revenues and developed the cost of service study.

Attachment A of this report is Butler's pro forma adjusted operating income statement as determined by Butler and included in its application. Staff compiled the adjusted income statement as shown at Attachment B. Attachment B also includes explanation of Staff's proposed adjustments as well as discussion of the adjustments made by Butler in Attachment A.

Attachment C of this report compares Butler's revenue requirement as determined by Butler and Staff. Staff calculated Butler's revenue requirements from rates to be \$1,687,740 based on the 120 percent debt service coverage as requirement by Butler's outstanding loan resolutions. The amount recommended by Staff represents a \$228,076, or 15.63 percent, increase over normalized revenues from rates of \$1,459,664.

Butler filed in its application a Cost of Service Study performed by Butler's Manager of Engineering, Alan Vilines. The study was performed following the procedures recommended by the American Water Works Association (AWWA) in Principles of Water Rates, Fees and Charges, AWWA Manual M1 (5th Ed. 2000), for the Base-Extra Capacity Method. The Commission recognizes the AWWA Manual M1 recommendations as proper rate making procedures for water systems. Staff agrees with Butler's proposed allocation and distribution factors included in their Cost of Service Study.

Staff used Butler's proposed cost of service study to allocate its recommended revenue requirements. Staff's Cost of Service Study is shown at Attachment E of this report. Staff recommends the rates contained in table 13 of the Cost of Service Study. The recommended rates will increase the bill of a residential customer using 5,000 gallons from \$27.76 to \$31.69 or 14 percent.

The rates recommended herein were determined independent of Case No. 2002-00040, An Investigation into Butler County Water Association, Inc.'s Rate Schedule for Services with Private Fire Protection Facilities, which examines Butler's fire protection rates and is still pending before this Commission. In that case Butler may be required to change its fire protection rates. In this case there were no adjustments made to test year revenues for the potential change in those rates.

Signatures

Prepared by: Jack Scott Lawless, CPA
Public Utility Financial Analyst
Water and Sewer Revenue
Requirements Branch
Division of Financial Analysis

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

ATTACHMENT A
 STAFF REPORT CASE NO. 2003-00486
 BUTLER'S PROPOSED ADJUSTED OPERATING STATEMENT

	Test Year	Adjustment	Pro forma
Operating Revenue			
Water Sales	\$ 1,453,229	\$ 6,435	\$ 1,459,664
Other Operating Income	56,260		56,260
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Total Operating Revenue	1,509,489	6,435	1,515,924
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Operating Expenses			
Operation and Maintenance			
Source of Supply - Power	5,444	403	5,847
Source of Supply - Other	7,705	32	7,737
Water Treatment - Power	58,543	4,338	62,881
Water Treatment - Other	180,407	738	181,145
Trans. & Dist. - Power	31,592	2,340	33,932
Trans. & Dist. - Meters and Services	62,468	349	62,817
Trans. & Dist. - Other	230,490	4,576	235,066
Cust. Accounts - Meter Testing	9,134	51	9,185
Cust. Accounts - Other	178,728	999	179,727
Admin. & General	102,501	573	103,074
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Total Operation and Maintenance Expenses	867,012	14,399	881,411
Depreciation	347,821	23,000	370,821
PSC Assessment	2,765		2,765
Taxes Other Than Income	2,372		2,372
Customer Deposit Interest	2,518		2,518
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Total Operating Expenses	1,222,488	37,399	1,259,887
	<hr/>		
Net Operating Income	287,001	(30,964)	256,037
Plus: Interest Income	8,342		8,342
	<hr/>		
Income Available to Service Debt	\$ 295,343	\$ (30,964)	\$ 264,379
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ATTACHMENT B
STAFF REPORT CASE NO. 2003-00486
STAFF'S RECOMMENDED ADJUSTED OPERATING STATEMENT

	Test Year	Adjustment	Ref.	Pro forma
Operating Revenue				
Water Sales	\$ 1,453,229	\$ 6,435	A	\$ 1,459,664
Other Operating Income	56,260			56,260
Total Operating Revenue	1,509,489	6,435		1,515,924
Operating Expenses				
Operation and Maintenance				
Source of Supply - Power	5,444	403	B	5,847
Source of Supply - Other	7,705	244	C	7,949
Water Treatment - Power	58,546	4,338	B	62,884
Water Treatment - Other	180,404		C	180,404
Trans. & Dist. - Power	31,592	2,340	B	33,932
Trans. & Dist. - Meters and Services	62,469		D	62,469
Trans. & Dist. - Other	230,489		E	230,489
Cust. Accounts - Meter Testing	9,134		D	9,134
Cust. Accounts - Other	178,728		D	178,728
Admin. & General	102,501		D	102,501
Total Operation and Maintenance Expenses	867,012	7,325		874,337
Depreciation	347,821	23,000	F	370,821
PSC Assessment	2,765			2,765
Taxes Other Than Income	2,372			2,372
Customer Deposit Interest	2,518			2,518
Total Operating Expenses	1,222,488	30,325		1,252,813
Net Operating Income	287,001	(23,890)		263,111
Plus: Interest Income	8,342			8,342
Income Available to Service Debt	\$ 295,343	\$ (23,890)		\$ 271,453

Subsequent to the end of the test year Butler began construction of additional distribution facilities that will provide water service to 25 new customers. To show the impact of those additional customers in its pro forma operations, Butler made certain adjustments to test year operating revenues and expenses as shown in its application at Exhibit 13, Table 1.

807 KAR 5:001, Section 10 (7) allows a utility to request pro forma adjustments to its historical test year operations for known and measurable changes. Traditionally, this Commission has limited customer growth adjustments to revenues, purchased power and chemicals for water utilities that produce their own water. In previous orders this Commission has found that there is a distinct correlation between the amount of water sold and revenues, purchased power, and chemicals and that adjustments to those accounts satisfy the known and measurable requirement of the regulation. However, the Commission has further found that adjustments to other expenses do not meet the known and measurable requirement stating that there is no distinct correlation between those expenses and the additional water to be produced.¹

Staff recommends that this Commission adjust test year revenues, purchased power and chemicals to reflect the addition of these 25 customers but reject all other adjustments to test year expenses related to customer growth. Staff will describe, in more complete detail, all the adjustments proposed by Butler and recommended by Staff in the following sections of this report.

(A) Water Sales. Staff's adjustment of \$6,435 in additional revenue is based upon Butler County's response to the Attorney General's first information request concerning the line extension project which will result in the addition of 25 new customers. Butler

¹ Case No. 2003-00034, The Application of Ohio County Water District for (1) Issuance of a Certificate of Public Convenience and Necessity for Construction of the Series III Water System Improvements; (2) Authorization to Issue Series III Revenue Bonds in the Amount of \$1,890,000; and (3) Authorization to Adjust Rates to Pay for the Additional Indebtedness, Order issued November 12, 2003.

County stated that the increased revenue is based upon the 25 additional customers using an average of 3,613 gallons per month.

(B) Purchased Power. Test year purchased power expense was reported as follows:

Purchased Power	Source	<u>\$ 5,443.56</u>
Purchased Power	Water Treatment	\$ 53,227.09
Purchased Power	WTP Struct.	<u>5,319.01</u>
Total		<u>\$ 58,546.10</u>
Purchased Power	T & D	2,937.48
Purchased Power	Master Meters	571.54
Purchased Power	Pump Stations	<u>28,083.36</u>
Total		<u>\$ 31,592.38</u>

Butler proposed to increase the test year amounts by 7.409 percent to reflect a price increase from its supplier and the addition of 25 new customers as previously discussed.

Butler purchases power from Warren RECC. To support a portion of its adjustment to test year purchased power, Butler supplied Staff with a letter from Warren RECC dated May 21, 2004, supporting an average increase in electric rates of 7 percent. Staff recommends that the Commission accept this portion of the adjustment.

Butler also proposed to increase the test year amounts by .409 percent to reflect the increase in purchased power necessary to provide service to the 25 new customers. In calculating its adjustment Butler determined that the test year average residential monthly usage, through a 5/8" meter, was 4,226 gallons (214,749,334 gallons / 50,812 bills, See Application, Exhibit 13, Table 6) resulting in additional sales of 1,266,530

gallons (4,226 gallons x 25 customers x 12 months, difference due to rounding) annually to the new customers. Butler then determined that the required increase in water sales was .409 percent (1,266,530 annual demand of new customers / 309,511,100 total test year gallons produced and released into distribution system) of the total test year gallons produced for sale. Butler therefore requests that test year purchased power be increase by .409 percent to reflect the increased pumping costs of the additional water.

Butler's proposed adjustment does not take into consideration water loss that will result from the addition of the 25 customers. However, the impact on the pro forma operating statement taken as a whole will not be materially affected by this omission. Staff therefore recommends that the Commission accept Butler's proposed increase to test year purchased power of 7.409 percent (7 percent cost increase from supplier + .409 percent customer growth).

(C) Source of Supply - Other and Water Treatment – Other. Butler reported test year Source of Supply – Other and Water Treatment – Other as follows:

Source of Supply - Other

Wages	Source - Oper.	\$ 848.85
Wages	Source - Maint.	1,638.21
Benefits	Source - Oper.	248.54
Benefits	Source - Maint.	772.60
Materials and Supplies	Source - Maint.	35.21
Contract Acct.	Source - Oper.	527.40
Contract Acct.	Source - Maint.	527.40
Contract Other	Source - Maint.	535.72
Rent and Utilities	Source - Oper.	1,005.16
Equipment Expense	Source - Oper.	17.50
Equipment Expense	Source - Maint.	294.50
Insurance General Liability	Source - Oper.	1,253.50
		<hr/>
Total		<u><u>\$ 7,704.59</u></u>

Water Treatment – Other.

Wages	Water Treat - Oper.	\$ 50,806.81
Benefits	Water Treat - Oper.	24,583.19
Chemicals		59,636.26
Materials and Supplies	Water - Oper.	3,286.67
Contract Other	Water - Oper.	441.78
Rent and Utilities	Water - Oper.	1,005.16
Equipment Expense	Water - Oper.	4,732.51
Insurance General Liability	Water - Oper.	2,507.24
Wages	Water Treat - Maint.	10,109.91
Benefits	Water Treat - Maint.	5,257.38
Materials and Supplies	Water - Maint.	8,486.42
Contract Other	Water - Maint.	8,504.82
Equipment Expense	Water - Maint.	1,045.50
		<hr/>
Total		<u><u>\$ 180,403.65</u></u>

Butler proposed to increase these accounts by .409 percent to reflect the increase in water production and distribution to the 25 new customers. As discussed previously Staff recommends that this adjustment be denied except for that attributable to chemicals expense. While certain items in these accounts may or may not increase or decrease as a result of the new customers, the amounts are not known and measurable and should not be reflected in pro forma operations except for chemicals

expense. Staff recommends that the proposed adjustment be denied except for the portion related to chemicals expense. Staff has increased test year chemical expenses by \$244 (59,636 test year chemical expense x .409 percent).

(D) Transmission and Distribution – Meters and Services, Customer Accounts – Meter Testing, Customer Accounts – Other, and Administrative and General. Butler reported the following in test year expenses:

Transmission and Distribution – Meters and Services.

Reclassified from Transmission and Distribution Other	
Wages and Benefits	36,171
Materials and Supplies	15,226
Contractual Other	833
Equipment Expense	10,239
	<hr/>
Total	<u>\$ 62,469</u>

Customer Accounts – Meter Testing.

Reclassified from Customer Accts - Other	
Wages & Benefits - Meter Testing	\$ 8,677.00
Contractual Other - Meter Testing	19.00
Equipment - Meter Testing	438.00
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Total	<u>\$ 9,134.00</u>

Customer Accounts – Other.

Wages	Customer Accts.	\$ 90,133.15
Benefits	Customer Accts.	44,366.26
Materials and Supplies	Customer Accts.	1,234.40
Contract Acct.	Customer Accts.	1,055.04
Contract Other	Customer Accts.	31,365.57
Rent and Utilities	Customer Accts.	4,983.99
Rent and Utilities	Customer Accts.	2,052.00
Equipment Expense	Customer Accts.	9,464.27
Insurance General Liability	Customer Accts.	626.80
Bad Debt Expense		1,737.24
Miscellaneous Expense	Customer Accts.	848.79
Miscellaneous Expense	Cash over / short	(5.00)
		<hr/>
Sub - Total		187,862.51
Reclassify to Customer Accts. - Meter Testing		(9,134.00)
		<hr/>
Total		<u>\$ 178,728.51</u>

Administrative and General.

Wages	Admin. General	\$ 47,093.53
Benefits	Admin. General	22,812.86
Materials and Supplies	Admin. General	5,355.21
Contract Acct.	Admin. General	1,008.32
Contract Other	Admin. General	16,821.70
Rent and Utilities	Admin. General	1,206.17
Equipment Expense	Admin. General	97.50
Insurance General Liability	Admin. General	2,174.06
Insurance Other	Admin. General	913.51
Miscellaneous Expense	Admin. General	3,203.87
Miscellaneous Expense	Employee Relation	1,814.65
		<u>\$ 102,501.38</u>

Butler proposed to increase each of these accounts by .559 percent (25 new customers / 4,473 test year customers) based on the percentage of new customers to those existing in the test year. For the reasons previously discussed Staff recommends that the proposed customer growth adjustments to these accounts be denied as they are not known and measurable.

(E) Transmission and Distribution – Other. Butler reported the following account balances in test year operating expenses:

Transmission and Distribution – Other.

Wages	Trans Dist - Oper.	\$ 59,311.69
Benefits	Trans Dist - Oper.	28,048.98
Materials and Supplies	T & D Oper.	1,626.08
Contract Acct.	T & D Oper.	527.40
Contract Other	T & D Oper.	12,899.86
Rent and Utilities	T & D Oper.	3,618.50
Rent and Utilities	T & D Oper.	201.03
Equipment Expense	T & D Oper.	18,193.76
Insurance General Liability	T & D Oper.	5,432.18
Wages	Trans Dist - Maint.	58,338.03
Benefits	Trans Dist - Maint.	27,280.80
Materials and Supplies	T & D Maint.	24,378.85
Contract Acct.	T & D Maint.	527.76
Contract Other	T & D Maint.	31,913.04
Equipment Expense	T & D Maint.	<u>20,660.00</u>
Sub - Total		292,957.96
Reclass to Trans. & Dist - Meter Services		<u>(62,469)</u>
Total		<u><u>\$ 230,488.96</u></u>

Butler proposed to increase each account by 1.985 percent (9.5 miles of proposed main / 478.5 miles of existing main) based on the percentage of miles of new main to existing main. As previously discussed this adjustment does not meet the known and measurable requirement and should therefore be excluded from pro forma operations. Staff recommends that the proposed customer growth adjustment be denied.

(F) Depreciation. Butler reported test year depreciation expense in the amount of \$347,821. Butler has requested that the test year amount be increased by \$23,000 to reflect the 50 year depreciable life of the following construction projects: 1) Water Treatment Plant Sludge Handling Facility Improvement, 2) 9.5 miles of new water main and new water pumping facilities, 3) 50,000 gallon Elevated Tank, and 4) Water treatment plant facilities.

A detailed description of each project is included in this report at Attachment D. The Commission's Division of Engineering has reviewed the information related to these projects and has determined that they fall within Butler's ordinary course of business and do not require a certificate of public convenience and necessity pursuant to KRS 278.020 and that the requested provision for depreciation is reasonable. Staff recommends that the Commission accept Butler's requested adjustment to depreciation expense and has included it in Staff's recommended pro forma operations.

Water Loss. Staff calculated Butler's test year water loss percentage to be 16.34 percent as follows:

Month (Col. A)	Gallons Produced (Col. B)	Gallons Sold (Col. C)	Used by Company (Col. D)	Fire Protection (Col. E)	Total Sold / Used (Col. F) C + D + E	Gallons Lost (Col. G) B - F	Percent Lost (Col. H) G / B
11/02	24,814,300	20,780,687	93,700	5,000	20,879,387	3,934,913	15.86%
12/02	23,698,200	19,879,733	-	-	19,879,733	3,818,467	16.11%
1/03	25,684,300	20,025,579	154,300	-	20,179,879	5,504,421	21.43%
2/03	28,464,200	22,293,610	254,765	-	22,548,375	5,915,825	20.78%
3/03	24,355,400	18,082,700	618,383	2,000	18,703,083	5,652,317	23.21%
4/03	23,868,200	18,738,010	225,645	10,000	18,973,655	4,894,545	20.51%
5/03	25,076,000	20,840,390	18,300	7,000	20,865,690	4,210,310	16.79%
6/03	24,700,500	21,042,440	60,000	2,000	21,104,440	3,596,060	14.56%
7/03	27,354,900	24,063,660	12,000	-	24,075,660	3,279,240	11.99%
8/03	29,097,800	25,199,660	31,080	-	25,230,740	3,867,060	13.29%
9/03	27,543,400	24,300,740	138,634	-	24,439,374	3,104,026	11.27%
10/03	24,951,900	22,090,210	36,200	-	22,126,410	2,825,490	11.32%
	<u>309,609,100</u>	<u>257,337,419</u>	<u>1,643,007</u>	<u>26,000</u>	<u>259,006,426</u>	<u>50,602,674</u>	<u>16.34%</u>

Pursuant to 807 KAR 5:066, Section 6 (3) a water district's water loss may not exceed 15 percent. An adjustment to test year purchased power and chemicals is generally warranted where water loss by a water production facility exceeds that allowed by regulation. However, in this case a reduction of these expenses by 1.34 percent (16.34 water loss percentage – 15 percent allowed) would not have a material

effect on the revenue requirements recommended by Staff in this Case. Therefore, Staff has not recommended an adjusted to test year operations. Staff recommends that the Commission require Butler to report all current policies and procedures employed by Butler to control its water loss to this Commission's Division of Engineering and work with the Commission's Engineering Staff on improving those policies and procedures so that future water loss of Butler may be minimized.

ATTACHMENT C
 STAFF REPORT CASE NO. 2003-00486
 COMPARISON OF BUTLER'S REQUESTED AND STAFF'S RECOMMENDED
 REVENUE REQUIREMENTS

	Requested By Butler	Recommended By Staff	Difference
Operating Expenses	\$ 1,259,887	\$ 1,252,813	\$ 7,074
Annual Debt Principal and Interest Payments	416,274	416,274	-
20 Percent Debt Coverage	83,255	83,255	-
Total Revenue Required	1,759,416	1,752,342	7,074
Less: Other Operating Income	(56,260)	(56,260)	-
Interest Income	(8,342)	(8,342)	-
Revenue Required from Rates	1,694,814	1,687,740	7,074
Less: Normalized Revenues from Rates	(1,459,664)	(1,459,664)	-
Required Revenue Increase	\$ 235,150	\$ 228,076	\$ 7,074

Butler calculated its revenue requirement using a 120 percent debt service coverage ("DSC") as required by its long-term debt resolutions. Butler currently has 14 Rural Development loans and 1 GMAC loan outstanding. Annual principal and interest payments on all loans total \$416,274. Butler requested recovery of this amount plus 20 percent to meet its required DSC. Staff agrees with Butler's use and calculation of the debt service principal, interest, and coverage requirements and recommends they be accepted by the Commission.

ATTACHMENT D
 STAFF REPORT CASE NO. 2003-00486
 DETAIL OF CAPITAL PROJECTS

PROJECT DESCRIPTION
WATER SYSTEM ADDITIONS - PROJECT 14
 Butler County Water System, Inc.
 June 8, 2004

Project 14 includes construction of distribution, transmission, storage and treatment facilities. It is funded with a 100% state grant through KIA using Coal Severance Funds. Construction on Contracts 1 & 2 began in early 2004 and is continuing now. All facilities will be in service by the end of July 2004. The Water Treatment Plant work will begin this summer and be complete before the end of 2004. Twenty-five new customers receive service on the project.

PROJECT ESTIMATE AFTER BIDS ON CONTRACTS 1 AND 2

	<u>Totals</u>	<u>Contracts 1 & 2</u>	<u>WTP</u>
1. Construction			
a. Contract 1 - Water Lines & Stations	\$406,302	\$406,302	
b. Contract 2 - 50,000 gal. Elev. Tank	181,617	181,617	
b. Water Treatment Plant Additions	<u>290,000</u>		<u>290,000</u>
	<u>\$877,919</u>	<u>\$587,919</u>	<u>\$290,000</u>
2. Engineering			
a. Design & Engr. During Construction	49,100	29,460	19,640
b. Inspection	<u>30,900</u>	<u>20,085</u>	<u>10,815</u>
	80,000	49,545	30,455
3. Administrative Expenses	1,500	1,000	500
4. Easement and Site Acquisition	10,000	10,000	0
5. Legal Costs	500	500	0
6. Contingency	<u>30,081</u>	<u>1,036</u>	<u>29,045</u>
TOTAL PROJECT COST	<u>\$1,000,000</u>	<u>\$650,000</u>	<u>\$350,000</u>

PROJECT DESCRIPTION
SLUDGE HANDLING FACILITIES - WTP
Butler County Water System, Inc.
June 8, 2004

The project to improve the sludge handling facilities at the water treatment plant is funded with a state grant through KIA for approximately 50 percent of the project cost with the remainder from Water System funds. Construction on this project began in September 2003 and is now complete. The facilities were placed in service in May 2004. No new customers were added on this project.

PROJECT ESTIMATE AFTER BIDS

1. Construction		\$118,813
2. Engineering		
a. Preliminary Design	4,500	
b. Design & Engr. During Construction	12,000	
c. Inspection	<u>9,000</u>	
		25,500
3. Administrative Expenses		500
4. Contingency		<u>5,187</u>
TOTAL PROJECT COST		<u>\$150,000</u>

ATTACHMENT E
STAFF REPORT CASE NO. 2003-00486
STAFF'S RECOMMENDED RATE

Table 1
Revenue & Expense Adjustments

	Test Year Operations (11/02 - 10/03)	Proposed Adjustment Ref.	Adjusted Test Year Operations
OPERATING INCOME			
Water Sales	\$1,453,229 (1)	\$6,435 (2)	\$1,459,664
Misc. Service Rev. & Misc.	27,903		27,903
Forfeited Discounts	28,357		28,357
Interest Income & Other Rev.	8,342		8,342
Total Operating Income	\$1,517,831	\$6,435	\$1,524,266
OPERATION & MAINT. EXPENSES			
Source of Supply - Power	5,444	403 (3)	5,847
Source of Supply - Other	7,705	244 (4)	7,949
Water Treatment - Power	58,543	4,338 (3)	62,881
Water Treatment - Other	180,407	0 (4)	180,407
Trans. & Dist. - Power	31,592	2,340 (3)	33,932
Trans. & Dist. - Meters & Services	62,468	0 (5)	62,468
Trans. & Dist. - Other	230,490	0 (6)	230,490
Cust. Accounts - Meter Testing	9,134	0 (5)	9,134
Cust. Accounts - Other	178,728	0 (5)	178,728
Admin. & General	102,501	0 (5)	102,501
Total Operating Expenses	\$867,012	\$7,326	\$874,338
OTHER EXPENSES			
Depreciation	347,821	23,000 (7)	370,821
PSC Assessment	2,765		2,765
Tax Expense	2,372		2,372
Interest Expense - Deposits	2,518		2,518
Total Other Expenses	\$355,476	\$23,000	\$378,476
DEBT REPAYMENT			
Interest	285,662		285,662
Principal	130,612		130,612
Total Debt Repayment	\$416,274	\$0	\$416,274
TOTAL EXPENSES & PRINCIPAL	\$1,638,762	\$30,326	\$1,669,088
NET INCOME AFTER PRINCIPAL	<u>-\$120,931</u>	<u>-\$23,891</u>	<u>-\$144,822</u>
COVERAGE	0.71		0.65

Table 2
Usage Factors

Maximum Day Usage	1,180,500
Maximum Hour	88,331
Average Day	847,976
Base Factor (avg day / max. day)	0.718
Max Day Factor (max day - avg day) / max day	0.282
Max. Hour Factor	
To Base (avg day / (max hr x 24))	0.400
To max day ((max day - avg day) / (max hr x	0.157
To max hour ((max hr - max day) / (max hr x	0.443

Allocation of Plant Value					
Item	Total \$	Base \$	Maximum Day \$	Maximum Hour \$	Customer, Meters and Services \$
Land and Land Rights					
Source of Supply & Pumping	7,847	5,634	2,213		
Water Treatment Plant	60,677	43,566	17,111		
Transmission & Distribution	12,130	4,852	1,904	5,374	
Structures & Improvements					
Source of Supply & Pumping	205,228	147,354	57,874		
Water Treatment Plant	326,595	234,495	92,100		
River Intake	5,340	3,834	1,506		
Pumping Equipment	563,304	404,452	158,852		
Water Treatment Equipment	1,415,640	1,016,430	399,210		
Distribution Reservoir and Standpipes	1,420,424	568,170	223,007	629,248	
Transmission and Distribution Mains	10,138,999	4,055,600	1,591,823	4,491,577	
Services	827,589				827,589
Meters and Installations	1,137,560				1,137,560
Hydrants	54,731	54,731			
Other Plant and Misc Equipment	2,569	1,845	724		
Subtotal	16,178,633	6,540,962	2,546,324	5,126,198	1,965,149
Factors		0.4043	0.1574	0.3168	0.1215
General Plant					
Office Furniture and Equipment	58,836	23,787	9,260	18,642	7,147
Transportation Equipment	38,358	15,508	6,037	12,154	4,659
Tools, Shop, and Etc.	7,898	3,193	1,243	2,502	959
Communication Equipment	348	141	55	110	42
Miscellaneous Equipment	1,240	501	195	393	151
Other Tangible Plant	6,888	2,785	1,084	2,182	837
Subtotal	113,568	45,915	17,874	35,984	13,795
Total	16,292,201	6,586,877	2,564,198	5,162,182	1,978,944
Percentage of Total		40.43%	15.74%	31.68%	12.15%

Table 4					
Allocation of Depreciation					
Item	Total \$	Base \$	Maximum Day \$	Maximum Hour \$	Customer \$
Structures and Improvements	10,640	7,640	3,000		
River Intake & Supply Mains	169	121	48		
Pumping Equipment	11,264	8,088	3,176		
Water Treatment Equipment	37,498	26,924	10,574		
Distribution Reservoirs and Standpipes	32,606	13,042	5,119	14,444	
Transmission and Distribution Mains	220,044	88,018	34,547	97,479	
Services	16,366				16,366
Meters	23,639				23,639
Hydrants	2,125	2,125			
Other Plant and Miscellaneous	50	50			
Subtotal	354,401	146,007	56,465	111,924	40,005
Factors		0.4120	0.1593	0.3158	0.1129
Office Furniture and Equipment	10,123	4,170	1,613	3,197	1,143
Transportation Equipment	5,455	2,247	869	1,723	616
Tools, Shop and Etc.	579	239	92	183	65
Misc. Equipment & Other	263	108	42	83	30
Subtotal	16,420	6,765	2,616	5,186	1,853
Total	370,821	152,772	59,081	117,110	41,858

Table 5						
Allocation of Operation and Maintenance Expense						
Item	Total \$	Base \$	Maximum Day \$	Maximum Hour \$	Meters and Services \$	Billing and Collecting \$
Source of Supply & Treatment	257,084	184,586	72,498			
Transmission and Distribution	326,890	105,769	41,514	117,139	62,468	
Customer Accounts	187,862				9,134	178,728
Subtotal	771,836	290,355	114,012	117,139	71,602	178,728
Percentages		0.3762	0.1477	0.1518	0.0928	0.2316
Administrative and General	102,501	38,560	15,141	15,556	9,509	23,735
Taxes, PSC Ass'mt. & Int. Exp.	7,655	2,880	1,131	1,162	710	1,773
Total Operation and Maint.	881,992	331,794	130,284	133,857	81,821	204,236
Depreciation	370,821	152,772	59,081	117,110	41,858	
Debt - Principle and Interest	416,274	168,298	65,517	131,896	50,563	
1.2 Debt Coverage	83,255	33,660	13,103	26,379	10,113	
Total Expenses	\$1,752,342	\$686,523	\$267,985	\$409,242	\$123,679	\$264,912

**Table 6
ANALYSIS OF WATER USAGE ON FUTURE SYSTEM**

5/8" METERS:								
				<u>RESIDENTIAL</u>				<u>COMMERCIAL</u>
<u>USAGE/MON</u>			<u>AVG</u>	<u>NO. BILLS</u>	<u>USAGE</u>		<u>NO. BILLS</u>	<u>USAGE</u>
0	to	2,000	900	12,691	12,099,292		1,609	763,990
2	to	3,000	2,516	7,992	20,111,670		136	337,340
3	to	4,000	3,498	7,981	27,921,363		101	351,110
4	to	5,000	4,480	6,747	30,225,780		107	478,990
5	to	6,000	5,475	4,923	26,953,827		74	406,450
6	to	8,000	6,872	5,691	39,105,736		123	850,680
8	to	10,000	8,885	2,336	20,753,785		46	409,150
10	to	12,000	10,862	1,014	11,003,690		40	444,970
12	to	16,000	13,645	835	11,380,460		45	626,710
16	to	20,000	17,745	276	4,895,660		20	356,960
20	to	25,000	22,304	148	3,309,050		24	527,210
25	to	50,000	32,616	148	4,813,870		63	2,068,090
50	to	100,000	67,706	20	1,300,930		29	2,016,680
100	&	Above	117,555	10	874,221		15	2,064,650
SUBTOTALS				50,812	214,749,334		2,432	11,702,980
1" METERS								
				<u>RESIDENTIAL</u>				<u>COMMERCIAL</u>
<u>USAGE/MON</u>			<u>AVG</u>	<u>NO. BILLS</u>	<u>USAGE</u>		<u>NO. BILLS</u>	<u>USAGE</u>
0	to	5,000	1,713	111	249,770		123	151,000
5	to	6,000	5,542	43	238,110		5	27,890
6	to	7,000	6,546	30	196,310		3	19,700
7	to	8,000	7,599	16	121,580		3	22,810
8	to	9,000	8,610	10	85,810		3	26,120
9	to	10,000	9,644	8	77,210		4	38,520
10	to	12,000	10,836	9	96,960		4	43,910
12	to	16,000	13,509	18	241,720		6	82,500
16	to	20,000	17,753	11	191,870		13	234,200
20	to	25,000	22,489	5	117,750		10	219,590
25	to	50,000	32,915	6	198,360		17	558,690
50	to	100,000	70,666	7	465,530		16	1,159,780
100	&	Above	279,476	2	446,260		26	7,379,070
SUBTOTALS				276	2,727,240		233	9,963,780
1 1/2" METERS:								
				<u>RESIDENTIAL</u>				<u>COMMERCIAL</u>
<u>USAGE/MON</u>			<u>AVG</u>	<u>NO. BILLS</u>	<u>USAGE</u>		<u>NO. BILLS</u>	<u>USAGE</u>
0	to	10,000	2,500	0	0		12	30,000
10	to	12,000	0	0	0		0	0
12	to	14,000	0	0	0		0	0
14	to	16,000	0	0	0		0	0
16	to	18,000	0	0	0		0	0
18	to	20,000	0	0	0		0	0
20	to	25,000	0	0	0		0	0
25	to	50,000	42,700	0	0		5	213,500
50	to	100,000	78,810	0	0		10	788,100
100	&	Above	144,167	0	0		9	1,297,500
SUBTOTALS				0	0		36	2,329,100

Table No. 6 - Continued

<u>2" METERS:</u>							
				<u>RESIDENTIAL</u>		<u>COMMERCIAL</u>	
<u>USAGE/MON</u>			<u>AVG</u>	<u>NO. BILLS</u>	<u>USAGE</u>	<u>NO. BILLS</u>	<u>USAGE</u>
0	to	16,000	7,559	0	0	34	257,000
16	to	18,000	16,500	0	0	1	16,500
18	to	20,000	19,340	0	0	5	96,700
20	to	25,000	21,725	0	0	4	86,900
25	to	50,000	36,104	0	0	23	830,400
50	to	100,000	68,323	0	0	13	888,200
100	&	Above	453,800	0	0	26	11,798,800
SUBTOTALS				0	0	106	13,974,500
<u>3" METERS:</u>							
				<u>COMMERCIAL</u>			
<u>USAGE/MON</u>			<u>AVG</u>	<u>NO. BILLS</u>	<u>USAGE</u>	<u>NO. BILLS</u>	<u>USAGE</u>
0	to	25,000	15,240	0	0	5	76,200
25	to	30,000	25,700	0	0	1	25,700
30	to	40,000	36,500	0	0	1	36,500
40	to	50,000	44,500	0	0	4	178,000
50	to	75,000	57,900	0	0	1	57,900
75	to	100,000	0	0	0	0	0
100	&	Above	0	0	0	0	0
SUBTOTALS				0	0	12	374,300
<u>6" METERS:</u>							
				<u>COMMERCIAL</u>			
<u>USAGE/MON</u>			<u>AVG</u>	<u>NO. BILLS</u>	<u>USAGE</u>	<u>NO. BILLS</u>	<u>USAGE</u>
0	to	60,000	23,523	0	0	22	517,500
60	to	70,000	64,500	0	0	2	129,000
70	to	80,000	76,500	0	0	1	76,500
80	to	90,000	83,500	0	0	2	167,000
90	to	100,000	93,500	0	0	1	93,500
100	&	Above	163,750	0	0	8	1,310,000
SUBTOTALS				0	0	36	2,293,500
					63,708		
TOTALS				51,088	217,476,574	2,855	40,638,160

**Table 7
Units of Service**

Water Usage Patterns:

Usage Block	Base				Maximum Day			
	Annual Sales (gals x 1000)	Adj. for Min. (gals x 1000)	Adjusted Sales (gals x 1000)	Avg. Day (gpd x 1000)	Capacity Factor	Total Capacity (gpd x 1000)	Extra Capacity (gpd x 1000)	Capacity Factor
0 - 6,000	188,074.6	16,595.9	204,670.5	560.7	1.42	796.2	235.5	2.0
6 - 50,000	47,626.5	1,132.3	48,758.8	133.6	1.35	180.4	46.8	2.3
50 - 100,000	6,843.1	6.0	6,849.1	18.8	1.28	24.1	5.3	1.9
100 & above	15,570.5		15,570.5	42.7	1.20	51.2	8.5	1.5
Totals	258,114.7	17,734.2	275,849.0	755.8	1.39	1,051.9	296.1	2.5

Number of Services and Equivalents:

Meter Size	Service Cost	Service Ratios	No. of Services	No. of Equivalents
5/8 x 3/4"	450	1.00	53,244	53,244
1"	550	1.22	509	622
1-1/2"	1,150	2.56	36	92
2"	1,300	2.89	106	306
3"	4,000	8.89	12	107
4"	10,200	22.67	0	0
6"	13,600	30.22	36	1,088
8"	16,400	36.44	0	0
Annual Totals			53,943	55,459
Average Monthly Totals			4,495	4,622

Table 8					
Unit Cost of Service per 1,000 Gallons or Meter					
Item	Base	Maximum Day	Maximum Hour	Meters and Services \$	Billing and Collecting \$
Total System Units of Service					
Number	275,849.0	296.1	841.1	55,459	53,943
Units	thou. gals.	thou. gals.	thou. gals.	equiv. mtrs.	no. of bills
Total Expenses	\$686,523	\$267,985	\$409,242	\$123,679	\$264,912
less Misc. Revenue	-64,602				
less Private Fire Serv. Revenue	-6,790				
Cost of Service to be Allocated	\$615,132	\$267,985	\$409,242	\$123,679	\$264,912
Unit Cost of Service	\$2.23	\$905.05	\$486.56	\$2.23	\$4.91

Table 9
Cost Distribution to Rate Blocks

Item	Base	Maximum Day	Maximum Hour	Total Cost of Service by Block	Rate per Thou. Gals. by Block
Unit Cost of Service Units	\$2.23 thou. gals.	\$905.05 thou. gals.	\$486.56 thou. gals.		
Rate Blocks:					
0 - 6,000 gals.					
Units of Service	204,670.5	235.5	689.7		
Allocated Costs	\$456,415	\$213,139	\$335,580	\$1,005,134	\$4.91
6 - 50,000 gals.					
Units of Service	48,758.8	46.8	126.9		
Allocated Costs	\$108,732	\$42,356	\$61,744	\$212,832	\$4.36
50 - 100,000 gals.					
Units of Service	6,849.1	5.3	11.6		
Allocated Costs	\$15,274	\$4,797	\$5,644	\$25,715	\$3.75
100,000 & above					
Units of Service	15,570.5	8.5	12.9		
Allocated Costs	\$34,722	\$7,693	\$6,277	\$48,692	\$3.13

Table 10
Customer Charges

Unit Cust. Cost - Billing & Collecting				\$4.91			
Unit Cust. Cost - Meters & Services				\$2.23			
Service Size	Annual Connections	Monthly Billing & Col. Costs	Service Ratio	Monthly Service Costs	Total Monthly Customer Charge	Total Annual Customer Charges	
5/8 x 3/4"	53,244	4.91	1.00	2.23	7.14	\$380,162	
1"	509	4.91	1.22	2.73	7.64	3,889	
1-1/2"	36	4.91	2.56	5.70	10.61	382	
2"	106	4.91	2.89	6.44	11.35	1,203	
3"	12	4.91	8.89	19.82	24.73	297	
4"	0	4.91	22.67	50.55	55.46	0	
6"	36	4.91	30.22	67.40	72.31	2,603	
8"	0	4.91	36.44	81.27	86.18	0	
Total	53,943					\$388,536	

Table 11
Calculation of Minimum Bills and Summary of Charges

Minimum Bills

Meter Size	Cust. Charge	Proposed 1,000 gals. in min.	Water Charges	Proposed Min. Bills	Existing Min. Bills	Existing 1,000 gals. in Min.
5/8 x 3/4"	7.14	2.0	\$9.82	\$16.96	\$14.11	2.0
1"	7.64	5.0	24.55	32.19	30.05	5.0
1-1/2"	10.61	10.0	46.90	57.51	53.87	10.0
2"	11.35	16.0	73.06	84.41	81.61	16.0
3"	24.73	25.0	112.30	137.03	141.90	30.0
4"	55.46	30.0	134.10	189.56	231.67	50.0
6"	72.31	60.0	258.80	331.11	426.21	100.0
8"	86.18	80.0	333.80	419.98		

Water Usage Charges

Usage	Proposed Rate	Existing Rate
0 - 6,000	\$4.91	\$4.55
6 - 50,000	4.36	4
50 - 100,000	3.75	3
100 & above	3.13	2

EXISTING RATE ANALYSIS:

Usage Block	Annual Sales (gals x 1000)	Gals. Incl'd. in Min. Bills	Gals Sold Above Min.	Rate per 1000 gals.	Rev. from Usage Charges
0 - 6,000	187,058.8	13,225	173,833.9	\$4.55	\$790,944
6 - 50,000	47,558.5	876	46,682.1	3.96	184,861
50 - 100,000	6,843.1	466	6,377.1	3.37	21,491
100 & above	15,570.5		15,570.5	2.01	31,297
Totals	257,030.9		242,463.7		<u>\$1,028,593</u>

Meter Size	No. of Minimum Bills	No. of Bills Above Min.	Minimum Bills	Rev. from Min. Bills	Customer Charges	Rev. From Cust. Chgs.
5/8 x 3/4"	14,221	38,723	\$14.11	\$200,658	\$5.01	\$194,002
1"	234	275	30.05	7,032	7.30	2,008
1-1/2"	12	24	53.87	646	10.73	258
2"	34	72	81.61	2,775	14.71	1,059
3"	6	6	141.90	851	19.56	117
4"	0	0	231.67	0	30.13	0
6"	28	8	426.21	11,934	56.17	449
Totals	14,535	39,108		<u>\$223,896</u>		<u>\$197,893</u>

Total Sales Revenue from Operating Reports \$1,453,229
Less Existing Private Fire Service Revenue -6,790
Actual Revenue from General Service Rates \$1,446,439

Total Existing Revenue Calculated Above \$1,450,383

* Difference is less than 0.3 percent.

OK *

PROPOSED RATE ANALYSIS:

Usage Block	Annual Sales (gals x 1000)	Gals. Incl'd. in Min. Bills	Gals Sold Above Min.	Rate per 1000 gals.	Rev. from Usage Charges
0 - 6,000	188,074.6	13,294	174,780.5	\$4.91	\$858,172
6 - 50,000	47,626.5	851	46,775.8	4.36	203,943
50 - 100,000	6,843.1		6,843.1	3.75	25,662
100 & above	15,570.5		15,570.5	3.13	48,736
Totals	258,114.7				<u>\$1,136,512</u>

Meter Size	No. of Minimum Bills	No. of Bills Above Min.	Minimum Bills	Rev. from Min. Bills	Customer Charges	Other Cust. Chgs.
5/8 x 3/4"	14,300	38,944	\$16.96	\$242,528	\$7.14	\$278,060
1"	234	275	32.19	7,532	7.64	2,101
1-1/2"	12	24	57.51	690	10.61	255
2"	34	72	84.41	2,870	11.35	817
3"	5	7	137.03	685	24.73	173
4"	0	0	189.56	0	55.46	0
6"	22	14	331.11	7,284	72.31	1,012
Totals	14,607	39,336		<u>\$261,590</u>		<u>\$282,418</u>

Total General Service Revenue Calculated Above \$1,680,521
Plus Misc. & Private Fire Service Revenue 71,392
Total Projected Revenue with Proposed Rates \$1,751,913

Total Expense from Table 5 \$1,752,342

**Table 13
RATE SCHEDULE COMPARISON**

Existing Water Rates		Proposed Water Rates		Percent Change
<u>5/8" x 3/4" Meters</u>		<u>5/8" x 3/4" Meters</u>		
First 2,000 gallons	\$14.11 Minimum Bill	First 2,000 gallons	\$16.96 Minimum Bill	20.2%
Next 4,000 gallons	4.55 per 1,000 gallons	Next 4,000 gallons	4.91 per 1,000 gallons	7.9%
Next 44,000 gallons	3.96 per 1,000 gallons	Next 44,000 gallons	4.36 per 1,000 gallons	10.1%
Next 50,000 gallons	3.37 per 1,000 gallons	Next 50,000 gallons	3.75 per 1,000 gallons	11.3%
Over 100,000 gallons	2.01 per 1,000 gallons	Over 100,000 gallons	3.13 per 1,000 gallons	55.7%
<u>1" Meters</u>		<u>1" Meters</u>		
First 5,000 gallons	\$30.05 Minimum Bill	First 5,000 gallons	\$32.19 Minimum Bill	7.1%
Next 1,000 gallons	4.55 per 1,000 gallons	Next 1,000 gallons	4.91 per 1,000 gallons	7.9%
Next 44,000 gallons	3.96 per 1,000 gallons	Next 44,000 gallons	4.36 per 1,000 gallons	10.1%
Next 50,000 gallons	3.37 per 1,000 gallons	Next 50,000 gallons	3.75 per 1,000 gallons	11.3%
Over 100,000 gallons	2.01 per 1,000 gallons	Over 100,000 gallons	3.13 per 1,000 gallons	55.7%
<u>1-1/2" Meters</u>		<u>1-1/2" Meters</u>		
First 10,000 gallons	\$53.87 Minimum Bill	First 10,000 gallons	\$57.51 Minimum Bill	6.8%
Next 40,000 gallons	3.96 per 1,000 gallons	Next 40,000 gallons	4.36 per 1,000 gallons	10.1%
Next 50,000 gallons	3.37 per 1,000 gallons	Next 50,000 gallons	3.75 per 1,000 gallons	11.3%
Over 100,000 gallons	2.01 per 1,000 gallons	Over 100,000 gallons	3.13 per 1,000 gallons	55.7%
<u>2" Meters</u>		<u>2" Meters</u>		
First 16,000 gallons	\$81.61 Minimum Bill	First 16,000 gallons	\$84.41 Minimum Bill	3.4%
Next 34,000 gallons	3.96 per 1,000 gallons	Next 34,000 gallons	4.36 per 1,000 gallons	10.1%
Next 50,000 gallons	3.37 per 1,000 gallons	Next 50,000 gallons	3.75 per 1,000 gallons	11.3%
Over 100,000 gallons	2.01 per 1,000 gallons	Over 100,000 gallons	3.13 per 1,000 gallons	55.7%
<u>3" Meters</u>		<u>3" Meters</u>		
First 30,000 gallons	\$141.90 Minimum Bill	First 25,000 gallons	\$137.03 Minimum Bill	-3.4%
Next 20,000 gallons	3.96 per 1,000 gallons	Next 25,000 gallons	4.36 per 1,000 gallons	10.1%
Next 50,000 gallons	3.37 per 1,000 gallons	Next 50,000 gallons	3.75 per 1,000 gallons	11.3%
Over 100,000 gallons	2.01 per 1,000 gallons	Over 100,000 gallons	3.13 per 1,000 gallons	55.7%
<u>4" Meters</u>		<u>4" Meters</u>		
First 50,000 gallons	\$231.67 Minimum Bill	First 30,000 gallons	\$189.56 Minimum Bill	-18.2%
Next 50,000 gallons	3.37 per 1,000 gallons	Next 20,000 gallons	4.36 per 1,000 gallons	10.1%
Over 100,000 gallons	2.01 per 1,000 gallons	Next 50,000 gallons	3.75 per 1,000 gallons	11.3%
		Over 100,000 gallons	3.13 per 1,000 gallons	55.7%
<u>6" Meters</u>		<u>6" Meters</u>		
First 100,000 gallons	\$426.21 Minimum Bill	First 60,000 gallons	\$331.11 Minimum Bill	-22.3%
Over 100,000 gallons	2.01 per 1,000 gallons	Next 40,000 gallons	3.75 per 1,000 gallons	11.3%
		Over 100,000 gallons	3.13 per 1,000 gallons	55.7%
		<u>8" Meters</u>		
		First 80,000 gallons	\$419.98 Minimum Bill	n/a
		Next 20,000 gallons	3.75 per 1,000 gallons	n/a
		Over 100,000 gallons	3.13 per 1,000 gallons	n/a

Table 14
Effect on Average Consumer Bills

<u>Customer Class</u>	<u>Average Usage (gals)</u>	<u>Existing Monthly Bill</u>	<u>Proposed Monthly Bill</u>	<u>Increase</u>	<u>Percent Increase</u>
Residential *	4,300	\$24.58	\$28.25	\$3.68	15.0%
Commercial **	14,200	\$67.07	\$72.85	\$5.78	8.6%

* Calculation based on a 5/8" x 3/4" meter
** Calculation based on a 1" meter