



Oregon

Theodore R. Kulongoski, Governor

Public Utility Commission

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February 15, 2007

OREGON PUBLIC UTILITY COMMISSION
ATTENTION: FILING CENTER
PO BOX 2148
SALEM OR 97308-2148

RE: **Docket No. UG 173** - In the Matter of PUBLIC UTILITY COMMISSION OF
OREGON Staff Request to Open an Investigation into the Earnings of Cascade
Natural Gas.

Enclosed for electronic filing in the above-captioned docket is the Public Utility
Commission Staff's Direct Testimony.

/s/ Kay Barnes

Kay Barnes

Regulatory Operations Division

Filing on Behalf of Public Utility Commission Staff

(503) 378-5763

Email: kay.barnes@state.or.us

c: UG 173 Service List (parties)

**PUBLIC UTILITY COMMISSION
OF OREGON**

UG 173

STAFF DIRECT TESTIMONY OF

**Ed Durrenberger
Judy Johnson
Michael Dougherty
Thomas D. Morgan
Steve W. Chriss**

**In the Matter of
PUBLIC UTILITY COMMISSION OF OREGON
Staff Request to Open an Investigation into the
Earnings of Cascade Natural Gas.**

February 15, 2007

CASE: UG 173
WITNESS: Ed Durrenberger

**PUBLIC UTILITY COMMISSION
OF
OREGON**

STAFF EXHIBIT 100

Direct Testimony

February 15, 2007

1 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

2 A. My name is Ed Durrenberger. I am a Senior Revenue Requirement Analyst for
3 the Rates and Tariffs Section in the Electric and Natural Gas Division at the
4 Public Utility Commission of Oregon. My business address is 550 Capitol
5 Street NE Suite 215, Salem, Oregon 97301-2551.

6 **Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND WORK
7 EXPERIENCE.**

8 A. My Witness Qualification Statement is found in Exhibit Staff/101

9 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

10 A. As the revenue requirement summary witness for the Commission staff (Staff)
11 in this proceeding, I am generally familiar with the recommendations made by
12 other Staff analysts. The purpose of my testimony is to speak in a general way
13 about Staff's recommended revenue requirement for Cascade Natural Gas
14 Company (Cascade or Company) and rate reduction.

15 **Q. DID YOU PREPARE AN EXHIBIT FOR THIS DOCKET?**

16 A. Yes. I prepared two exhibits. The first, Exhibit Staff/101 is my one page
17 witness qualification. The second, Exhibit Staff /102, is the revenue
18 requirement model showing Staff's recommended revenue requirement.

19
20

RATE CASE SUMMARY

21 **Q. WHAT IS STAFF'S RECOMMENDATION IN THIS DOCKET?**

22 A. Staff recommends that the Commission reduce Cascade's revenue
23 requirement by \$1.4 million, which would result in a 1.9 percent rate decrease.

1 Staff recommends that the Commission consider an appropriate rate decrease
2 to spread the benefit to Cascade's Oregon retail customers.

3 **Q. WHY DOES STAFF RECOMMEND THAT THE COMMISSION REDUCE**
4 **CASCADE'S OREGON RATES?**

5 A. In the Staff Report asking the Commission to open an investigation into
6 Cascade's rates, Staff noted that Cascade has had excessive earnings for the
7 past several years, and would likely continue to earn excessively absent a rate
8 reduction. Based on our review of Cascade's adjusted test period results in
9 this proceeding, we found that, on a going forward basis under its current rates,
10 the Company would earn significantly more than a reasonable rate of return.

11 **Q. WHO IS PROVIDING TESTIMONY IN THIS CASE?**

12 A. Staff witnesses include Judy Johnson; Witness Staff/ 200, Mike Dougherty;
13 Witness Staff/ 300 Thomas Morgan; Witness Staff/ 400 and Steve Chriss;
14 Witness Staff 500.

15 **Q. HOW DID STAFF ARRIVE AT ITS RECOMMENDED REVENUE**
16 **REQUIREMENT?**

17 A. Staff bases its revenue requirement on a test year ended September 30, 2005.
18 The foundation of Staff's analysis is Cascade's revenues and expenses during
19 that period as reported in Cascade's Spring Earnings Review and Statement of
20 Operations and Rate of Return- Twelve Months ended September 30, 2005
21 ("2005 RoO). The RoO is an annual report prepared by the Company that
22 contains an annual statement of earnings and expenses and the rate of return
23 for the twelve months representing the Company's fiscal year (FY).

1 **Q. IS IT UNUSUAL TO USE A HISTORIC TEST YEAR TO REPRESENT**
2 **OPERATIONS GOING FORWARD?**

3 A. Not at all. Historic test years have been used for natural gas general rate
4 cases before this Commission in the past. Additionally, Cascade's 2005 RoO
5 has undergone a thorough review and audit by Staff. Staff believes these
6 results are representative of the Company's current income and costs and
7 representative of operations for the period that rates would be in effect.

8 **Q. DO THE ADJUSTMENTS THAT STAFF PROPOSES TO THE HISTORIC**
9 **TEST YEAR REPRESENT ONE TIME EVENTS THAT ARE NOT**
10 **APPLICABLE GOING FORWARD?**

11 A. No, staff has applied the same standards of cost management and earnings
12 review to the historic test year Results that it would apply to the Company's
13 future operations. Notably, the Company's 2005 RoO includes a number of
14 adjustments that Staff accepts for the purposes of its recommendations in this
15 Docket.

16 **Q. CAN YOU GIVE SOME EXAMPLES OF CASCADE'S ADJUSTMENTS TO**
17 **ITS RESULTS OF OPERATIONS REPORT THAT STAFF ACCEPTED?**

18 A. Cascade adjusted the earnings report for an Oregon earnings sharing accrual
19 booked the previous year and not paid and for a number of other one time
20 expenses, the treatment of which are directed by Commission Order. The
21 Company also made some normalizing adjustments, such as a weather
22 normalization adjustment, to adjust revenues and costs to levels that would
23 have been realized under normal weather and a wage rate adjustment to

1 reflect the effect of a general wage increase as if it had been in effect the entire
2 reporting period.

3 **Q. PLEASE SUMMARIZE STAFF'S ADJUSTMENTS.**

4 A. Staff witness Judy Johnson is sponsoring an adjustment to Federal and State
5 Income taxes resulting from the change in revenue requirement. Staff witness
6 Mike Dougherty is proposing some adjustments to Administrative and General
7 Costs resulting from the annual audit findings. And Staff witness Thomas
8 Morgan is proposing a change to the allowed return on common equity and a
9 change to the capital structure.

10 **Q. HAVE YOU PROPOSED ANY ADJUSTMENTS?**

11 A. No, not specifically. The Company reported revenue from "Other Operating
12 Revenue" in their 2005 RoO. Staff does not currently have sufficient data to be
13 able to determine, with certainty, if the "Other Operating Revenue" reported is
14 representative of expected annual other revenue. Staff will be reviewing this
15 revenue category to assure that revenues contained in the report are
16 representative of what can reasonable be expected going forward.

17 **Q. CAN YOU EXPLAIN YOUR EXHIBIT STAFF/ 102?**

18 A. Yes. Exhibit Staff/102 is a series of interlinked spreadsheets containing six
19 separate elements that, together, summarize Staff's position on issues and the
20 revenue requirement adjustments for UG 173. More specifically:

21 1. Page 1 is a summary sheet that shows the Company's original
22 adjusted results of operations as filed for the year ended September 30, 2005.
23 It also shows the total adjustments that Staff has made to the numbers

1 reported in the filing and how these adjustments affect Staff's recommended
2 revenue requirement. Column (a) contains the Company's original Oregon-
3 allocated results of operations as filed. Column (b) contains all Staff's
4 adjustments to revenue and rate base. The next column, column (c), is the
5 adjusted results of operations (column (a) plus column (b)). Column (d) shows
6 the required change in revenues (Revenue Requirement) necessary for a
7 reasonable rate of return. Column (e) shows the results of operations with a
8 reasonable rate of return.

9 2. The Adjustment Narrative, Page 2, contains the individual adjustment
10 numbers (**S-1 and S-2**), the initials of the Staff initiator, a brief narrative
11 description of the adjustment and its effect on the Cascade's 200 RoO. The
12 Adjustment Narrative also contains a total revenue requirement number that is
13 the total rate change that Staff proposes. A positive number is an increase in
14 rates. A negative number is a decrease in rates.

15 3. Page 3 contains the overall income tax calculation for the results of
16 operations.

17 4. Page 4 shows the revenue sensitive costs and the Staff proposed
18 capital structure.

19 5. Page 5 and 6 show Staff's adjustments to Cascade's 2005 RoO. On
20 page 5 each adjustment is detailed by individual revenue and/or rate base
21 effects.

1 6. Page 6 calculates the tax consequence for each individual
2 adjustment.

3 7. Page 7 is a summary of the adjustments proposed by Staff Witness,
4 Mike Dougherty resulting from an audit of Cascade's Administrative and
5 General overhead expenses.

6 8. Page 8 shows the details of the adjustment proposed by Staff
7 Witness Judy Johnson adjusting the effects of State and Federal Income taxes
8 to the Staff proposed cost of capital.

9 **Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

10 A. Yes it does.

CASE: UG 173
WITNESS: Ed Durrenberger

**PUBLIC UTILITY COMMISSION
OF
OREGON**

STAFF EXHIBIT 101

Witness Qualification Statement

February 15, 2007

WITNESS QUALIFICATION STATEMENT

NAME: Ed Durrenberger

EMPLOYER: Public Utility Commission of Oregon

TITLE: Senior Revenue Requirement Analyst

ADDRESS: 550 Capitol St. NE, Ste. 215, Salem, Oregon 97301

EDUCATION: B.S. Mechanical Engineering
Oregon State University, Corvallis, Oregon

EXPERIENCE: I have been employed at the Public Utility Commission of Oregon since February of 2004. My current responsibilities include staff research, analysis and technical support on a wide range of electric and natural gas cost recovery issues.

OTHER EXPERIENCE: I have over twenty years of operations and maintenance experience managing a boiler plant in a heavy industrial manufacturing environment. I have also managed manufacturing and production in high tech equipment manufacturing.

CASE: UG 173
WITNESS: Ed Durrenberger

**PUBLIC UTILITY COMMISSION
OF
OREGON**

STAFF EXHIBIT 102

Exhibits in Support of Testimony

February 15, 2007

Cascade Natural Gas
Results of Operations
Twelve months ending September 30, 2005
(\$000)

	2005 Company Adjusted Results (a)	Staff Rate Case And Audit Adjustments (b)	Staff Adjusted Results (c)	Required Change for Reasonable Return of Equity (d)	Results at Reasonable Return (e)
1	Operating Revenues				
2	Retail Sales (Natural Gas Sales)	0	73,643	-1.9% -\$1,401	72,242
3	Gas Transportation Revenue	0	2,743	0	2,743
4	Other Revenues	0	233	0	233
5	Total Operating Revenues	\$0	\$76,619	-\$1,401	\$75,218
6	Operating Revenue Deductions				
7	Gas Purchases (Nat. Gas/ Prod. Costs)	0	51,054	0	51,054
8	Revenue Taxes	0	2,477	-26	2,451
9	Total Operating Revenue	\$0	\$23,087	-\$1,375	\$21,713
10	Operating Expenses				
11	Distribution	-224	2,239	0	2,239
12	Customer Accounts	0	1,375	-4	1,371
13	Customer Service	0	157	0	157
14	Sales	0	185	0	185
15	Administration and General	-19	5,374	0	5,374
16	Depreciation & Amortization	0	3,642	0	3,642
17	Taxes Other than Income, Other Taxes	0	1,631	0	1,605
18	State and Federal Income Taxes	84	2,379	-480	1,899
19	Total Operating Expenses	-\$159	\$16,982	-\$484	\$16,472
20	Net Operating Income	\$159	\$6,105	-\$891	\$5,241
21	Rate Base				
22	Utility Plant in Service	0	122,529	0	122,529
23	Accumulated Depreciation	0	-51,438	0	-51,438
24	Net Utility Plant	\$0	\$71,091	\$0	\$71,091
25	Contributions in Aid of Construction	0	0	0	0
26	Customers Advances for Construction	0	-1,296	-1,296	-1,296
27	Accumulated Deferred Income Taxes	0	-10,976	-10,976	-10,976
28	Deferred Debits	0	0	0	0
29	Working Capital Allowance	0	1,679	0	1,679
30	Total Average Rate Base	\$0	\$60,498	\$0	\$60,498
31	Rate of Return	9.83%	10.09%		8.66%
32	Implied Return on Equity	12.23%	12.82%		10.00%

Cascade Natural Gas
 Narrative Summary
 Twelve Months Ending September 30, 2005
 (\$000)

		Company-Filed Test Period Results		\$0
Item	Staff	Proposed Staff Adjustments		Proposed Revenue Requirement Change
S-0	TM/BC	Rate of Return		-\$1,143
S-1	MD	Labor and O&M Adjustments		-\$239
S-2	JJ	FIT and SIT Adjustment		-\$19
				\$0
				\$0
				\$0
				\$0

Total Staff-Proposed Adjustments	-\$1,401
Proposed Staff Case	-\$1,401

Cascade Natural Gas
Results of Operations
Twelve Months ending September 30, 2005
(\$000)

	Taxes Per Company Filing (1)	Adjustments (2)	Adjusted (3)	Required Change for Reasonable Return on Equity (4)	Results at Reasonable Return (5)
Income Tax Calculations					
1 Book Revenues	\$23,087	\$0	\$23,087	-\$1,401	\$21,686
2 Book Expenses Other than Depreciation	11,204	-243	10,961	-4	10,957
3 State Tax Depreciation	3,642	0	3,642	0	3,642
4 Interest	2,659	30	2,689	0	2,689
5 Book-Tax (Schedule M) Differences		0	0		0
6 State Taxable Income	\$5,582	\$213	\$5,795	-\$1,397	\$4,398
7 State Income Tax @ 6.6%	\$368	\$14	\$382	-\$87	\$295
8 State Tax Credits	\$368	0	\$382	-\$87	\$295
9 Net State Income Tax		\$14	\$382	-\$87	\$295
10 Additional Tax Depreciation	0	0	0	0	0
11 Other Schedule M Differences	0	0	0	0	0
12 Federal Taxable Income	\$5,213	\$199	\$5,413	-\$1,310	\$4,103
13 Current Federal Tax @ 35%	\$1,825	\$70	\$1,895	-\$458	\$1,437
14 Provision for Deferred Taxes	\$102	\$0	\$102	\$65	\$167
15 Total Income Tax	\$2,295	\$84	\$2,379	-\$480	\$1,899

Cascade Natural Gas
 Revenue Sensitive Costs and Cost of Capital
 Results of Operations
 Twelve Months Ending September 30, 2005

REVENUE SENSITIVE COSTS	
Revenues	1.00000
Operating Revenue Deductions	
Uncollectible Accounts	0.00286
Taxes Other - Franchise	0.01835
- Gross Revenue fee	0.00250
State Taxable Income	<u>0.97629</u>
State Income Tax @ 6.60%	0.06444
Federal Taxable Income	<u>0.91185</u>
Federal Income Tax @ 35%	0.31915
ITC	0.00000
Current FIT	<u>0.31915</u>
Total Excise Taxes	<u>0.38358</u>
Total Revenue Sensitive Costs	<u>0.40729</u>
Utility Operating Income	0.59271
Net-to-Gross Factor	<u>1.62228</u>

COST OF CAPITAL (Staff Values)		WEIGHTED COST	
Long Term Debt	55.00%	7.571%	4.164%
Preferred Stock	0.00%	0.000%	0.000%
Common Equity	45.00%	10.000%	4.500%
Total	<u>100.00%</u>		<u>8.664%</u>

Cascade Natural Gas
Adjustments to Results of Operations
Twelve Months Ending September 30, 2005
(\$000)

	Labor, A&G and Audit Adjustment (S-1)	FIT and SIT Adjustment (S-2)			Total Adjustments
1					
2					
3					
3					
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7					
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11					
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30					
31					

Cascade Natural Gas
Results of Operations
Twelve Months Ending September 30, 2005
(\$000)

	Income Tax Calculations	Labor, A&G and Audit Adjustment (S-1)	FIT and SIT Adjustment (S-2)			Total Adjustments
1	Book Revenues	0	0	0	0	0
2	Book Expenses Other than Depreciation	-243	0	0	0	-243
3	State Tax Depreciation	0	0	0	0	0
4	Interest	0	30	0	0	30
5	Book-Tax (Schedule M) Differences	0	0	0	0	0
6	State Taxable Income	\$243	-\$30	\$0	\$0	\$213
7	State Income Tax @ 6.6%	\$16	-\$2	\$0	\$0	\$14
8	State Tax Credits					
9	Net State Income Tax	\$16	-\$2	\$0	\$0	\$14
10	Additional Tax Depreciation	0	0	0	0	0
11	Other Schedule M Differences					
12	Federal Taxable Income	\$227	-\$28	\$0	\$0	\$199
13	Current Federal Tax @ 35%	\$80	-\$10	\$0	\$0	\$70
14	Provision for Deferred Taxes	\$0	\$0	\$0	\$0	\$0
15	Total Income Tax	\$96	-\$12	\$0	\$0	\$84

**UG 173
Cascade Natural Gas FIT & SIT Adjustment
Staff Initiator: Judy Johnson
Test Period, 12 Mo. Ended Sept. 30, 2005**

S-2

	Company	Staff	Adjustment	Company ROO	Staff Adjustment
Rate Base	60,497,892	60,497,892			
Weighted Average Cost of Debt	4.40%	4.16%	*		
Interest	2,661,907	2,516,712			
SIT Rate	6.60%	6.60%			
SIT	175,686	166,103	(9,583)	(7,573)	(2,010)
Interest Applied to FIT	2,486,221	2,350,609			
FIT Rate	35.00%	35.00%			
FIT	870,177	822,713	(47,464)	(37,506)	(9,958)
Total Adjustment			(57,047)	(45,079)	(11,968)

* Uses 7.57% for debt and 55% for capital structure

CASE: UG 173
WITNESS: Judy Johnson

**PUBLIC UTILITY COMMISSION
OF
OREGON**

STAFF EXHIBIT 200

Direct Testimony

February 15, 2007

1 **Q. PLEASE STATE YOUR NAME, OCCUPATION, AND BUSINESS**
2 **ADDRESS.**

3 A. My name is Judy Johnson. I am Program Manager of the Rates and Tariffs
4 Section in the Electric and Natural Gas Division at the Public Utility
5 Commission of Oregon. My business address is 550 Capitol Street NE Suite
6 215, Salem, Oregon 97301-2551.

7 **Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND WORK**
8 **EXPERIENCE.**

9 A. My Witness Qualification Statement is found in Exhibit Staff/201.

10 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

11 A. The purpose of my testimony is to recommend the Federal Income Tax and
12 State Income Tax expense for Cascade Natural Gas Company (Cascade or
13 the Company) based on Mr. Morgan's weighted average cost of debt..

14 **Q. DID YOU PREPARE AN EXHIBIT FOR THIS DOCKET?**

15 A. Yes. I prepared Exhibit Staff/202, consisting of 1 page.

ISSUE 1, FEDERAL AND STATE INCOME TAXES-**Q. PLEASE DESCRIBE HOW YOU ARRIVED AT YOUR****RECOMMENDATION.**

A. I took the Company's rate base from its September 1995 Results of Operations (ROO) and multiplied to by Staff's weighted average cost of debt, which is used to calculate the interest expense deductions as seen on Staff/502, Johnson/1. I then calculated both the federal and state income tax effects of using this new weighted average cost of debt and compared it to Cascade's federal and state income tax effect of their own weighted average cost of debt. The difference between the two calculations is the Federal Income Tax and State Income Tax Adjustment.

Q. WHY DO YOU CHANGE THE WEIGHTED AVERAGE COST OF DEBT?

A. I use the weighted average cost of debt as calculated by Staff witness Mr. Morgan. It is appropriate to use staff's weighted average cost of debt to recalculate interest in order to be consistent with Staff's case.

Q. HOW DOES CHANGING THE WEIGHTED AVERAGE COST OF DEBT CHANGE THE INTEREST CALCULATION?

A. The Staff's weighted average cost of debt is multiplied by the company's rate base and the result is a new figure for interest expense that reflects Staff's new cost of debt and/or capital structure. Then the Federal and State Income Tax effect is calculated based on this new interest figure.

Q. WHAT IS THE RESULT OF USING STAFF'S WEIGHTED AVERAGE COST OF DEBT?

1 A. The result is a decrease in State Income Taxes of \$2,010 and a decrease in
2 Federal Income Taxes of \$9,958 as reported in Cascade's 2005 ROO.

3 **Q. IS THIS ADJUSTMENT SUBJECT TO CHANGE AT THE CONCLUSION**
4 **OF THE RATE CASE?**

5 A. Yes. This adjustment should be updated for the Commission-approved
6 weighted average cost of debt at the conclusion of the rate case.

7 **Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

8 A. Yes.

CASE: UG 173
WITNESS: Judy Johnson

**PUBLIC UTILITY COMMISSION
OF
OREGON**

STAFF EXHIBIT 201

Witness Qualifications Statement

February 15, 2007

WITNESS QUALIFICATION STATEMENT

NAME: JUDY A. JOHNSON
EMPLOYER: PUBLIC UTILITY COMMISSION OF OREGON
TITLE: PROGRAM MANAGER – RATES & TARIFFS
ADDRESS: 550 CAPITOL ST. N.E., SUITE 215, SALEM, OREGON 97301

EDUCATION: MBA with an emphasis in Statistics from
Eastern Washington University
Cheney, Washington

BA in Accounting from
Eastern Washington University
Cheney, Washington

EXPERIENCE:

3/95-Present I have been employed by the Oregon Public Utility Commission since March of 1995. My current position is Program Manager of Rates & Tariffs. I was previously a Senior Analyst for the Revenue Requirements Section. I have prepared testimony and exhibits in numerous electric and natural gas rate cases, primarily in the area of results of operations.

6/77-2/95 I was employed by Avista Corporation, an electric and natural gas utility located in Spokane, Washington. The majority of my employment was spent in the Rates and Regulatory Affairs Department as a Senior Rate Analyst. I have prepared testimony and exhibits in numerous electric and natural gas rate cases, primarily in the area of results of operations and cost of service.

CASE: UG 173
WITNESS: Judy Johnson

**PUBLIC UTILITY COMMISSION
OF
OREGON**

STAFF EXHIBIT 202

Exhibits in Support of Testimony

February 15, 2007

UG 173
Cascade Natural Gas FIT & SIT Adjustment
Staff Initiator: Judy Johnson
Test Period, 12 Mo. Ended Sept. 30, 2005

Staff/202
 Johnson/1

	Company	Staff	Adjustment	Company ROO	Staff Adjustment
Rate Base	60,497,892	60,497,892			
Weighted Average Cost of Debt	4.40%	4.16% *			
Interest	2,661,907	2,516,712			
SIT Rate	6.60%	6.60%			
SIT	175,686	166,103	(9,583)	(7,573)	(2,010)
Interest Applied to FIT	2,486,221	2,350,609			
FIT Rate	35.00%	35.00%			
FIT	870,177	822,713	(47,464)	(37,506)	(9,958)
Total Adjustment			(57,047)	(45,079)	(11,968)

* Uses 7.57% for debt and 55% for capital structure

CASE: UG 173
WITNESS: Michael Dougherty

**PUBLIC UTILITY COMMISSION
OF
OREGON**

STAFF EXHIBIT 300

Direct Testimony

February 15, 2007

1 **Q. PLEASE STATE YOUR NAME, OCCUPATION, AND BUSINESS**
2 **ADDRESS.**

3 A. My name is Michael Dougherty. I am employed at the Oregon Public Utility
4 Commission as the Program Manager, Corporate Analysis and Water
5 Regulation Section of the Utility Program. My business address is 550 Capitol
6 Street NE Suite 215, Salem, Oregon 97301-2551.

7 **Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND WORK**
8 **EXPERIENCE.**

9 A. My Witness Qualification Statement is found in Exhibit Staff/301.

10 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

11 A. The purpose of my testimony is to recommend the revenue requirement for
12 Cascade Natural Gas' (Cascade) administrative and general (A&G) operating
13 expenses. My recommendation is based on Staff's Audit of Cascade Natural
14 Gas, Audit No. 2006-001, dated May 22, 2006, a further review of 2005 test
15 year expenses resulting from Cascade's responses to Staff's UG 173 data
16 requests, and Cascade expenses in other years.

17 **Q. DID YOU PREPARE EXHIBITS FOR THIS DOCKET?**

18 A. Yes. I prepared Exhibit Staff/302 consisting of 10 pages and Exhibit Staff/303
19 consisting of 3 pages.

20 **Q. HOW IS YOUR TESTIMONY ORGANIZED?**

21 A. My testimony is organized as follows:

22	Issue 1, Staff's Adjustments from Audit 2006-001	2
23	Issue 2, 2005 A & G Non-Labor Adjustments	17

ISSUE 1, STAFF'S ADJUSTMENTS FROM AUDIT 2006-001**Q. PLEASE DESCRIBE HOW YOU ARRIVED AT YOUR ADJUSTMENTS TO CASCADE'S A&G EXPENSES.**

A. I started with the expense adjustment recommendations in Staff's Audit of Cascade Natural Gas, Audit No. 2006-001, dated May 22, 2006. I then reviewed these adjustments against the A&G expense reported by Cascade in its Spring Earnings Review and Statement of Operations and Rate of Return – Twelve Months Ended September 30, 2005 (ROO), and made adjustments to remove certain expense that is not appropriately included in a test year for ratemaking purposes.

Q. PLEASE SUMMARIZE YOUR ADJUSTMENTS.

A. The following table summarizes my adjustments:

Table 1 – Summary of Adjustments

Item	Description	Amount
<i>Audit Adjustments</i>		
Account 920	Cascade Reorganization Severance	\$206,460
Account 930.2	Director Stock Awards	\$17,985
Account 901	Bellingham Moving Expenses	\$0
Account 920	Bellingham Call Center Severance	\$0
<i>A&G Adjustments</i>		
A&G – System	Various A&G Adjustments	\$12,522
A&G – Oregon Direct	Various A&G Adjustments	\$6,860
Total		\$243,827

Q. PLEASE DISCUSS THE CASCADE REORGANIZATION SEVERANCE ADJUSTMENT.

A. Cascade reorganized in fiscal year 2005. The reorganization included, among other things, a reduction in operational regions from five to four. Cascade

1 incurred approximately \$900 thousand in costs associated with severance and
 2 outplacement services provided to employees impacted by the reorganization.
 3 Cascade allocated approximately \$206 thousand of these costs to Oregon in
 4 accordance with Cascade's allocation ratio for Washington and Oregon. Staff
 5 recommends that these costs be removed from Cascade's test year expense
 6 for the following reasons:

- 7 1. This is an extraordinary one-time expense that will likely not be repeated
 8 going forward; and
- 9 2. The reorganization did not result in an overall savings in labor costs.

10 **Q. WHAT EFFECT DID THESE SEVERANCE PAYMENTS HAVE ON TOTAL**
 11 **SAVINGS IN LABOR COSTS FROM THE 2004 LEVELS TO THE 2006**
 12 **LEVELS?**

- 13 A. As the following table highlights, total labor costs in 2006 were greater than the
 14 levels in 2004. The following table shows the difference in A&G and
 15 Operations and Maintenance (O&M) labor costs from 2004 through 2006.
 16

17 **Table 2 – Comparison of Labor Costs From 2004 to 2006¹**

	FY 2004	FY 2005	FY 2006	Percent Change from 2004 to 2006
Oregon Direct Labor – A&G (Accts 901 – 935)	\$1,203,436	\$890,362	\$729,846	-39.53%
Oregon Allocated Labor– A&G (Accts 901 – 935)	\$1,599,045	\$2,347,575	\$2,481,125	55.16%
Oregon Direct Labor – O&M (Accts 870 – 894)	\$1,532,302	\$1,539,051	\$1,691,458	10.37%
Oregon Allocated Labor – O&M (Accts 870 – 894)	\$241,597	\$259,645	\$204,816	-15.22%
Oregon Total	\$4,576,380	\$5,036,633	\$5,107,245	11.6%

18
 19
 1 ¹ Cascade Response to Staff Data UM 1283 Request No. 85.

1 As can be seen from the table, actual overall labor costs increased from
2 2004 to 2006. The increase (11.6 percent) was actually higher than the
3 Consumer Price Index for all Urban Consumers (CPI-U)² of 6.85 percent for
4 the same time period (September 2004 through September 2006) and the
5 Employment Cost Index³, total compensation increase in 2004 and 2005 (two
6 year period), of 5.0 percent.

7 Additionally, based on information received from Cascade during the 2006
8 Operational Audit of Cascade, Cascade stated that there weren't any
9 severance or workforce reduction programs being implemented or considered
10 by the Company.⁴ As a result, no additional future savings would be
11 anticipated, further demonstrating the one-time nature of these costs.

12 **Q. ALTHOUGH THE TWO-YEAR DIFFERENCE IN OREGON LABOR COSTS**
13 **EXCEEDED THE CPI-U AND ECI, IS THE 2005 TO 2006 INCREASE**
14 **LOWER THAN THE CPI-U AND ECI FOR THE ONE-YEAR TIME PERIOD?**

15 A. Yes. The 2005 to 2006 increase was 1.4 percent, which is lower than the
16 September 2005 to September 2006 CPI-U of 2.1 percent and the fourth
17 quarter 2005 ECI of 2.6 percent.

18 **Q. SINCE THE PERCENT INCREASE IN LABOR COSTS FROM 2005 TO**
19 **2006 WAS LOWER THAN THE CPI-U AND ECI REFLECTING A**

² The CPI-U includes expenditures by urban wage earners and clerical workers, professional, managerial, and technical workers, the self-employed, short-term workers, the unemployed, retirees and others not in the labor force. CPI is sometimes referred to as "headline inflation."

³ The ECI is the Employment Cost Index measured by the Bureau of Labor Statistics. The ECI is a measure of the change in the cost of labor, free from the influence of employment shifts among occupations and industries. The series measures changes in compensation costs (wages and salaries and employer costs for employee benefits).

⁴ Staff's 2006 Operational Audit of Cascade, Audit 2006-001, page 45.

1 **POSSIBLE SAVINGS IN LABOR COSTS, SHOULD THE COMMISSION**
2 **STILL ACCEPT YOUR REORGANIZATION SEVERANCE ADJUSTMENT?**

3 A. Yes. The Commission should still remove the severance costs from test year
4 expense because:

- 5 1. The severance cost is still greater than the increase in labor costs if labor
6 costs increased by the CPI-U or ECI. If the 2005 labor costs are
7 escalated using the higher ECI (2.6 percent), the 2006 cost would equal
8 \$5,167,585. Although this amount is \$60,340 greater than the 2006
9 Oregon total labor costs reflected in Table 1, it is considerably less
10 (\$146,120) than the recommended adjustment for the 2005 reorganization
11 costs of \$206,460.
- 12 2. As explained later in testimony, Staff did not adjust the approximately
13 \$72 thousand in Bellingham Call Center severance costs. If this cost is
14 added to the 2005 reorganization severance costs, than total 2005
15 severance costs would equal approximately \$278,460. These combined
16 severance costs are \$218,120 greater than the 2006 Oregon total labor
17 costs if the 2005 labor costs were escalated using the ECI.
- 18 3. Cascade included a Type "2" adjustment in its 2005 ROO for an
19 annualized wage rate.⁵ The annualized wage rate adjusts the reporting
20 period operating expenses to reflect the effects of the general wage

⁵ "Type 2" adjustments are intended to provide results of operations on a more forward-looking basis, by reflecting the full effect of known and measurable changes occurring before the end of the 12-month reporting period. These adjusted results provide a more accurate assessment of the utility's current earnings situation.

1 increase (3 percent) as if it had been in effect for the entire period.⁶ The
2 annualized wage adjustment was included in the ROO was \$43,585. So
3 in essence, Cascade is recovering the full 3 percent wage increase as a
4 result of the wage adjustment being included in the ROO.

- 5 4. As Table 1 reflects, the majority of Oregon total savings resulted from
6 savings in Oregon direct labor. These savings appear to be partially
7 attributable to various reasons including the establishment of the
8 Bellingham Call Center and the implementation of the Automated Meter
9 Reading (AMR) program. Although there were labor savings resulting
10 from these projects, there were also corresponding costs that would offset
11 a portion of these savings. As an example, Cascade reported that the
12 total expenditures for the AMR project were \$15.7 million system wide.⁷
13 So when considering the return on and return of this project, customers
14 are replacing one category of costs (Oregon direct O&M labor) with
15 another (plant).

16 **Q. BUT ISN'T IT TRUE THAT THE OREGON ALLOCATION FACTORS**
17 **CHANGED FROM 2004 TO 2006?**

- 18 A. Yes. The Oregon allocation factor was 22.70 percent in 2004; 22.94 percent in
19 2005; and 23.44 percent in 2006.

⁶ Cascade's Spring Earnings Review and Statement of Operations and Rate of Return – Twelve Months Ended September 30, 2005.

⁷ Staff's 2006 Operational Audit of Cascade, Audit 2006-001, page 22.

1 **Q. WHAT WOULD HAVE BEEN THE EFFECT ON TOTAL LABOR COSTS**
 2 **FROM 2004 THROUGH 2006 IF THE ALLOCATION FACTOR WAS HELD**
 3 **CONSTANT AT THE 2004 LEVEL?**

4 A. The following table shows the effect on labor costs if the 2004 allocation factor
 5 of 22.70 percent was held constant over the three-year period.

6 **Table 3 – Comparison of Labor Costs From 2004 to 2006. Allocation**
 7 **Factor Set at the 2004 level.⁸**

	FY 2004	FY 2005	FY 2006	Percent Change from 2004 to 2006
Oregon Direct Labor – A&G (Accts 901 – 935)	\$1,203,436	\$890,362	\$729,846	-39.53%
Oregon Allocated Labor– A&G (Accts 901 – 935)	\$1,599,045	\$2,323,014	\$2,402,796	50.26%
Oregon Direct Labor – O&M (Accts 870 – 894)	\$1,532,302	\$1,539,051	\$1,691,458	10.37%
Oregon Allocated Labor – O&M (Accts 870 – 894)	\$241,597	\$256,928	\$198,350	-17.90%
Oregon Total	\$4,576,380	\$5,009,355	\$5,022,450	9.75%

8
 9 As can be seen from the above table, total costs increased from the 2004
 10 levels to the 2006 levels and the increase was above the levels for the CPI-U
 11 and ECI for the same time period. Even after the reorganization in 2005, total
 12 labor costs were greater in 2006 than in 2005. As previously mentioned, it is
 13 difficult to state the overall savings to Cascade's customers based on the
 14 reorganization; however, total labor costs in 2006 were greater than the levels
 15 in 2004. Since customers are not experiencing an overall savings in labor

⁸ Cascade Response to Staff Data UM 1283 Request No. 85.

1 costs, it is appropriate to remove one-time costs associated with the
2 reorganization.

3 **Q. PLEASE DISCUSS THE BELLINGHAM CALL CENTER SEVERANCE AND**
4 **MOVING ADJUSTMENTS.**

5 A. The Bellingham Call Center severance payments and moving expenses
6 resulted from Cascade's consolidation of its multiple call centers into one call
7 center located in Bellingham, Washington. Cascade began implementation of a
8 centralized Call Center to handle customer service functions on January 10,
9 2005. Prior to implementation, Cascade had forty-six Customer Service
10 Representatives (CSRs) in sixteen different offices that handled various
11 customer service responsibilities. As a result of the consolidation, a workforce
12 reduction reduced CSRs to thirty employees working in two offices. In addition
13 to a reduction in personnel, the CSR position was down classed to a grade 6
14 position from a grade 7 position resulting in an average salary reduction of
15 approximately \$5,000 per year.⁹

16 Severance payments to those employees whose positions were eliminated
17 and incentive bonuses to employees who stayed with the Company and moved
18 to Bellingham equaled approximately \$313 thousand with \$72 thousand
19 allocated to Oregon operations. Additionally, relocation expenses for
20 personnel moving to the Bellingham Call Center equaled approximately \$26
21 thousand with \$6 thousand allocated to Oregon.

⁹ Staff's Audit of Cascade Natural Gas Corporation, Audit 2006-001, page 45.

1 **Q. DID YOU MAKE AN ADJUSTMENT FOR BELLINGHAM CALL CENTER**
2 **SEVERANCE AND MOVING EXPENSES?**

3 A. No. Although this was an adjustment I reviewed during the 2006 Cascade
4 Audit, I do not recommend removing these costs from Cascade's test year
5 expense. Based on information received from Cascade, Oregon total labor
6 costs for Account 908, Customer Assistance Expenses, declined from
7 \$141,320 in 2004 to \$18,263 in 2006.¹⁰ This was a reduction of \$123,057 in
8 this expense. Since this reduction amount is greater than the \$77,670 Oregon
9 allocated amount for severance and moving expenses, I believe it is
10 appropriate to include the costs in rates, even though it is non-recurring. This
11 is a symmetrical approach to the 2005 reorganizations.

12 **Q. PLEASE EXPLAIN THE EXECUTIVE TRANSITION COSTS.**

13 A. Also in 2005, Cascade incurred approximately \$1.4 million system-allocated,
14 \$334 thousand allocated to Oregon, in expenses relating to the changes in the
15 Chief Executive Officer (CEO) and Chief Financial Officer (CFO), and the
16 elimination of the Chief Operating Officer (COO) positions.

17 **Q. DID YOU MAKE AN ADJUSTMENT FOR EXECUTIVE TRANSITION**
18 **COSTS?**

19 A. No. Cascade actually adjusted this expense in its ROO as a Type 2
20 adjustment. As a result, I did not need to make this adjustment.

¹⁰ Cascade Response to Staff Data UM 1283 Request No. 85.

1 **Q. IF UM 1283 IS APPROVED BY THE COMMISSION, WOULD THERE BE**
2 **POSSIBLE REORGANIZATIONS AND CONCOMITANT COSTS AS A**
3 **RESULT OF THE MDU RESOURCES ACQUISITION?**

4 A. There will be at least one organization change. In Docket UM 1283, Cascade
5 states that the positions of CEO and CFO will be eliminated.¹¹ Additionally, in
6 Docket UM 1283, the MDU Resource witness states:

7 There may be a reduction or consolidation of other
8 administrative personnel over time as Cascade's corporate
9 and administrative functions are integrated with those of
10 MDU Resources and its utility divisions. We do not
11 anticipate reductions in the labor force within operational
12 personnel.¹²

13
14 MDU Resources also states that it will abide by the existing labor contracts
15 as well as other Cascade contracts.¹³

16 As a result, the reorganization costs experienced in 2005 will likely not be
17 repeated in subsequent years, with or without the proposed acquisition of
18 Cascade by MDU Resources, and should be adjusted out when determining
19 customer rates. If the MDU Resources acquisition is approved by the
20 Commission, Staff as it did in Docket UM 1209, would recommend certain
21 merger commitments to hold customers harmless from any increase in costs
22 due to the transaction, including any transition and integration costs. These
23 recommended commitments would include an Administrative & General stretch
24 goal based on a baseline amount agreed to by Parties in the docket.

¹¹ UM 1283, MDU/100; Imsdahl/17.

¹² UM 1283, MDU/100; Imsdahl/18.

¹³ UM 1283, MDU/100; Imsdahl/18.

1 **Q. PLEASE EXPLAIN THE ADJUSTMENT FOR THE DIRECTORS' STOCK**
2 **INCENTIVES.**

3 A. The following table highlights Cascade's Directors' Fees for fiscal year 2003
4 through fiscal year 2005:

5 **Table 4 – Cascade Directors' Fees¹⁴**

	2003	2004	2005
Chair Fees	\$86,500	\$79,000	\$97,792
Meetings	\$78,750	\$82,000	\$109,450
Stock Awards	\$75,320	\$83,865	\$78,400
Total	\$240,570	\$244,865	\$285,642
Oregon Total	\$54,609	\$49,463	\$65,526

6
7 As can be seen from the table, \$78,400 was paid as Stock Awards. A Stock
8 Award is a grant of the Company's stock and Staff considers Stock Awards to
9 be akin to a bonus since if the price of a stock increases, the amount received
10 as a result of the Stock Award will also increase. Cascade's Stock Incentive
11 Plan actually states:

12 The purpose of the Plan is to promote and advance the
13 interests of shareholders by enabling Corporation to attract,
14 retain, and reward key employees and directors of
15 Corporation and its subsidiaries. It is also intended to
16 strengthen the mutuality of interests between Corporation's
17 shareholders and its employees and directors. The Plan is
18 designed to serve these purposes by offering stock options
19 and other equity-based incentive awards, thereby providing
20 a proprietary interest in pursuing the long-term growth,
21 profitability, and financial success of Corporation and
22 increasing shareholder value.¹⁵

23
24 As the Plan statement indicates, the Stock Awards are intended to promote
25 and advance the interest of shareholders and increase shareholder value.

¹⁴ Staff's Audit of Cascade Natural Gas Corporation, Audit 2006-001, dated May 22, 2006, page 45.

¹⁵ Cascade Natural Gas Corporation, SEC Form 8-K, dated February 17, 2006.

1 Additionally, at the 2006 Annual Meeting of Shareholders held on February 17,
2 2006, Shareholders approved the First Amendment to the Cascade Natural
3 Gas Corporation Director Stock Award Plan, increasing the Annual Director
4 Stock Award to 1,000 shares of common stock from 500 shares, effective April
5 2006.¹⁶

6 Current Staff policy is to recommend disallowance of 100 percent of officers'
7 bonuses (incentives) from test year expense. These Stock Awards are in
8 essence bonuses, and accordingly, should not be included in Cascade's test
9 year expense.

10 **Q. DID CASCADE HAVE THE OPPORTUNITY TO EXAMINE AND COMMENT**
11 **ON YOUR AUDIT FINDINGS?**

12 A. Yes.

13 **Q. DOES CASCADE BELIEVE THAT YOUR CHARACTERIZATION OF**
14 **EARNINGS AND COSTS ARE ACCURATE?**

15 A. No. Cascade submitted a letter to the Commission in response to the Audit
16 report in which the Company stated:

17 Of primary concern is Staff's characterization of the audit
18 results as showing the Company to be over-earning. As
19 discussed below, the Company takes issue with this
20 conclusion.¹⁷

21
22 Additionally, the Company stated:

23 Moreover, the Company does not agree with many of the
24 ratemaking adjustments offered by Staff in reaching its
25 "adjusted" calculations. The Company has been able to
26 achieve its exemplary record of cost savings by pursuing
27

¹⁶ *Ibid.*

¹⁷ Cascade Natural Gas Corporation, RE: OPUC Staff Audit 2006-001, dated May, 22, 2006.

1 initiatives such as the Call Center consolidation and the
2 September 2005 reorganization. Yet Staff's proposed
3 ratemaking adjustments would disallow the costs incurred by
4 the Company to achieve the savings associated with these
5 initiatives, which will continue well into the future. Similarly
6 Staff proposes to disallow certain Director stock awards
7 (*Audit Report at 46*) without examining the reasonableness
8 of the Company's overall Director compensation, which is
9 low by industry standards.¹⁸

10
11 **Q. DO YOU AGREE WITH CASCADE'S CHARACTERIZATION OF YOUR**
12 **AUDIT FINDINGS?**

13 A. No. As page 2 of the letter (Exhibit Staff/303) highlights, I was very
14 complimentary of Cascade's operations. Additionally, in the Audit Report, I
15 stated that Cascade's record keeping was excellent. However, just because
16 Cascade has taken numerous steps to cut and control costs, they should not
17 be held immune to recommended ratemaking adjustments. The adjustments
18 to one-time expenses and officer bonuses that I recommend in this docket are
19 consistent with recommendations that were accepted by the Commission in
20 recent rate applications including UE 170 (Order No. 05-1050),¹⁹ UE 179
21 (Order No. 06-530),²⁰ and UE 180 (Order No. 07-015).²¹

22 Even though Cascade represents that these cost reductions have benefited
23 customers, due to the lag in rate cases, it was shareholders who actually have
24 benefited from the cost reductions since Cascade's last general rate was
25 UG 88, Commission Order No. 90-200.

¹⁸ Cascade Natural Gas Corporation, RE: OPUC Staff Audit 2006-001, dated May, 22, 2006.

¹⁹ Revenue requirement for non-labor administrative and general costs were reduced by \$6.123 million and revenue requirement for fulltime employee benefits were reduced by \$2.44 million.

²⁰ Revenue requirement for non-labor administrative and general costs were reduced by \$7.5 million.

²¹ A reduction of non-labor administrative and general (A&G) and operations and maintenance (O&M) expenses by \$6.551 million, which includes a \$34,000 reduction in transmission O&M, \$1.6 million in distribution O&M, and \$4.9 million in A&G expense.

1 Additionally, in Docket UM 1283, the Cascade witness states:

2 The price offered by MDU Resources represented a
3 premium of approximately 23 percent over Cascade's per
4 share price at the time of the offer.²²

5
6 This would indicate that MDU Resources perceived enough marginal
7 economic value in the Company to offer a premium. In addition, as reported in

8 Audit 2006-001:

9 Despite varying net income, earnings growth, and earnings per
10 share, Cascade has historically maintained a stable level of
11 dividends. As a result of the stable dividends and varying
12 earnings, Cascade's dividend payout ratio²³ has varied from
13 62 percent to 117 percent during the five-year historical period
14 of the Strategic Plan.²⁴

15
16 The stable level of dividends resulted in Cascade shareholders receiving
17 quarterly dividends of \$0.24 per share (\$0.98 per annum) during 2005 and
18 2006. This indicates that the cost savings has had a direct benefit to
19 shareholders, but did not result in any cost benefits to customers. These
20 adjustments, coupled with additional recommendations of Staff involved in this
21 docket, will result in the Cascade stated benefits to Cascade customers.

22 **Q. DO YOU THINK THAT CASCADE WOULD HAVE REQUESTED A RATE**
23 **INCREASE ABSENT ITS COST REDUCTIONS?**

24 A. It is not clear. However, as reported in Staff's Operational Audit of Cascade,
25 Cascades Develop Pricing Strategy states:

26 Cascade's process begins with a yearly analysis of earnings.
27 Earnings are then normalized to a Commission viewpoint
28 taking into account typical cost adjustments. Cascade than

²² UM 1283, MDU/200, Stevens/7.

²³ Dividend payout ratio is computed by dividing dividends over earnings.

²⁴ Staff Audit Report of Cascade Natural Gas, Audit 2005-001, dated April 4, 2005, page 13.

1 compares the return on equity with the most recent
2 authorized rate. If Cascade is under earning, Cascade's
3 Officers will weigh the costs and benefits of presenting a rate
4 case to the Commission.

5
6 Per the Cascade Pricing Strategy, because of the expenses
7 and efforts of putting a rate case together, the likelihood of
8 achieving the desired results needs to be high. As a result
9 of Cascade's conservative stance, Cascade will wait until
10 costs have risen to the extent that actual return on equity
11 has fallen far under the return authorized in the most recent
12 rate case. Only rarely will Cascade request a higher
13 authorized return on equity.²⁵
14

15 Because Cascade's actual Oregon return on equity has not fallen far under
16 the return authorized in its last rate case,²⁶ it would appear that Cascade may
17 not have submitted an application for a rate change in Oregon. The following
18 table highlights Cascade's authorized return on equity compared to the actual
19 return on equity for the previous five years:

20 **Table 5 – Cascade Fiscal Year Return on Equity (ROE)²⁷**

YEAR	Oregon Authorized	Oregon Actual	Oregon Adjusted
2005	11.20%	10.90%	12.22%
2004	11.20%	11.42%	12.12%
2003	11.20%	9.97%	11.88%
2002	11.20%	13.27%	12.27%

21
22 As can be seen from the above table, Cascade's actual results for return on
23 equity (not normalized for Commission adjustments) have exceeded its
24 authorized 11.20 percent return on equity (ROE)²⁸ two of the past four years.

25 In addition, the adjusted ROE actually exceeds the authorized return on equity

²⁵ Staff's 2006 Operational Audit of Cascade, Audit 2006-001, page 11.

²⁶ Cascade's ROE in UG 88, Commission Order No. 90-200 was revised in UM-863, Commission Order No. 97-396.

²⁷ Staff's 2006 Operational Audit of Cascade, Audit 2006-001, page 12.

²⁸ UM-863, Commission Order No. 97-396.

1 for four years running. Also, it is important to consider that Cascade's cost
2 reductions were to a relatively small component of Cascade's overall costs
3 since natural gas costs represent 65 percent to 75 percent of retail rates.²⁹ If
4 Cascade complied with its Develop Pricing Strategy, it is unlikely the Company
5 would have submitted an application to the Commission for a rate increase. As
6 a result, customers would not benefit from these cost reductions, without these
7 recommended adjustments.

²⁹ Staff's 2006 Operational Audit of Cascade, Audit 2006-001, page 50.

ISSUE 2, 2005 A&G NON-LABOR ADJUSTMENTS**Q. PLEASE DISCUSS THE VARIOUS A & G NON-LABOR SYSTEM****ADJUSTMENTS?**

- A. The various A&G Adjustments, which are specifically detailed in Staff Exhibit/302; Dougherty/1 through 10, are summarized in the following table:

Table 6 – Various A & G Non-Labor System Adjustments (Includes Oregon-Direct and System-Allocated)

Description	Amount
Miscellaneous A&G Expenses	\$17,963
Property Tax Consulting Services	\$10,376
Excess Directors & Officers Liability Insurance	\$15,599
Supplemental Executive Retirement Pension	(\$31,416)
Total	\$12,522

Q. PLEASE EXPLAIN THE ADJUSTMENT FOR MISCELLANEOUS A & G EXPENSES.

- A. I made numerous miscellaneous adjustments to Cascade's A&G non-labor expense reported in Cascade's 2005 ROO. These adjustments are standard adjustments typically made by Staff in a rate case. The majority of the \$17,963 of miscellaneous expense is associated with the following adjustments:
- 1) 50 percent of certain meal & entertainment expenses; 2) 50 percent of office refreshments and catering; 3) 50 percent of gifts such as flowers and awards; and 4) 100 percent of employee club memberships.

Meals and Entertainment Expenses

I removed 50 percent of all meals and entertainment expenses that were subject to a 50 percent federal tax deduction. The amount allowable as a federal deduction for business meal and entertainment is generally limited to

1 50 percent of the total expense. Entertainment generally includes any activity
2 engaged in for amusement or recreation and must be ordinary and necessary
3 incurred in the operation of a business.³⁰ Since the Internal Revenue Service
4 only allows a 50 percent deduction, it is reasonable that customers would only
5 share 50 percent of these costs. Additionally, these costs are not core to
6 Cascade's business and are not directly related to the distribution of natural
7 gas. As such, customers should not have to assume the full burden of these
8 costs and a 50 percent sharing with shareholders should be accepted by the
9 Commission. As previously mentioned, the Commission has ordered
10 significant reductions in A&G costs (which would include adjustments to meals
11 and entertainment expenses) in UE 170, UE 179, and UE 180.

12 Office Refreshments, Catering, and Gifts

13 Although Cascade, in many cases, was able to fully deduct the meals and
14 entertainment expenses associated with catering, these costs as well as gifts
15 (including flowers and awards) and office refreshments, are not core to
16 Cascade's business and are not directly related to the distribution of natural
17 gas. As such, customers should not have to assume the full burden of these
18 costs and a 50 percent sharing with shareholders should be accepted by the
19 Commission. As previously mentioned, the Commission has ordered
20 significant reductions in A&G costs (which would include adjustments to office
21 refreshments, catering, and gifts) in UE 170, UE 179, and UE 180.

³⁰ 2006-2007, Car, Travel, Entertainment and Home Office Deductions CPE Course. CCH.

1 Club Memberships

2 I removed 100 percent of employee club membership costs including costs
3 associated with the Rainier Club.³¹ Private club membership is akin to a bonus
4 and should not be apportioned to customers.

5 **Q. PLEASE EXPLAIN THE PROPERTY TAX CONSULTING ADJUSTMENT.**

6 A. Cascade experienced property tax consulting fees for services rendered by
7 Paradigm Tax Group. Cascade's negotiated contract included a conditional
8 fee basis that was 40 percent of any property tax savings resulting from
9 achieved reductions in Cascade's state property tax assessments. The cost
10 for these services in 2005 were \$76,330 System-allocated; \$17,510 Oregon-
11 allocated.

12 All properties adjusted for property taxes are located in Washington;
13 however, the costs associated with two properties (the Seattle Office and the
14 Bellingham Call Center) are also Oregon-allocated. The total savings for
15 properties allocated to Oregon was \$7,134. As a result, the Oregon-allocated
16 cost of the analysis was \$10,376 more than the savings. Since Oregon
17 customers should not have to subsidize savings for Washington customers, I
18 removed the \$10,376 difference between costs of the tax consulting services
19 and property tax savings from Cascade's 2005 ROO for purposes of
20 determining Cascade's revenue requirement.

³¹ According to its web-site, the Rainier Club is a home-away-from-home for business, cultural and civic leaders, diplomats, and other professionals. <http://www.therainierclub.com/>

1
2 **Q. PLEASE EXPLAIN THE EXCESS DIRECTORS AND OFFICERS**
3 **LIABILITY INSURANCE ADJUSTMENT.**

4 A. I removed Cascade's Excess Directors & Officers (D&O) Liability Insurance.
5 Excess liability insurance (1) overlays a specific liability insurance policy that
6 an organization already owns by increasing the per person and per accident or
7 per occurrence limits of liability in that particular policy; (2) incorporates all the
8 provisions of the specific underlying policy, such as its insuring agreements,
9 definitions, exclusions, and limitations (or "follows form" with the underlying
10 policy); but (3) does not have any effect on any other liability insurance policies
11 that the insured organization may have.³²

12 I removed this amount from Cascade's revenue requirement because:

- 13 1. According to a 1999 Directors and Officers (D&O) Liability Survey by
14 Tillinghast-Towers Perrin, shareholders continue to be the most common
15 plaintiff group in public company D&O claims, contributing to 47 percent
16 of all reported claims.³³
17
18 2. According to a 2001 D&O claims analysis conducted by Aon Risk
19 Services of the Americas, in 1999, 88 percent of federal class actions
20 contained allegations of either accounting fraud or insider trading.³⁴
21
22 3. A more updated survey, taken from a report compiled by Tillinghurst,
23 shows that the source of claims for private companies still has a large
24 percentage of shareholder suits as shown in the following table.

³² Increasing Your Liability Protection, Excess vs. umbrella limits, George L. Head, Ph.D., Special Advisor, Nonprofit Risk Management Center, Nonprofit Risk Management Center Newsletter, www.nonprofitrisk.org/nwsltr/archive/liability071105.htm.

³³ AICPA, Insurance Programs, *So You've Been Asked to sit on a Board of Directors: Are you Aware of Your Personal liability*, March 2003, <http://www.cpai.com/show-article?id=96>.

³⁴ *Ibid.*

1 **Table 7 – Sources of D&O Lawsuits³⁵**

Class	Percentage of Claims
Employees	48%
Shareholders	31%
Competitors	10%
Customers and clients	8%
All other	3%

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Because a large number of claims are brought by shareholders or related to insider trading and accounting, customers should not have to pay the full costs of total D&O insurance. The excess insurance should be considered a shareholder cost. Staff has previously made adjustments to excess D&O insurance in UE 180 (Commission Order No. 07-015).³⁶ It is important to note that I did not adjust the primary D&O insurance costs (\$341,052 total system). The excess D&O liability insurance cost only represents 16.6 percent of total D&O liability insurance costs. This was a balanced approach for adjusting costs.

Q. PLEASE EXPLAIN THE SUPPLEMENTAL EXECUTIVE RETIREMENT (SERP) PLAN ADJUSTMENT.

A. The Commission routinely does not allow recovery of SERP expenses in utility rate cases (Order 01-787 at 44). In this case, Staff's proposed adjustment removing the SERP expenses from the revenue requirement is a benefit to the Company since the SERP was an actual credit to expenses. If Staff did not

³⁵ Private Company D&O, Two for Tuesday, March 15, 2005, <http://na.iaa.org/TFT/Web%20Archives/03.15.05.htm>

³⁶ Although Staff had presented Excess D&O Liability Insurance adjustments in UE 180, the Parties stipulated on the total amount of OMAG reduction of non-labor administrative and general (A&G) and operations and maintenance (O&M) expenses by \$6.551 million, which included a \$34,000 reduction in transmission O&M, \$1.6 million in distribution O&M, and \$4.9 million in A&G expense.

1 adjust this credit out, the adjustment for A&G expenses would be \$43,938
2 instead of the recommended adjustment of \$12,522.

3 **Q. WAS YOUR REVIEW OF CASCADE'S NON-LABOR A & G COSTS**
4 **ONE-SIDED AS STATED BY CASCADE IN ITS LETTER, RE: OPUC**
5 **STAFF AUDIT 2006-001, DATED MAY 22, 2006?**

6 A. No. As can be seen from the SERP adjustment, I adjusted Cascade's 2005 in
7 both directions to achieve consistency. My review was balanced. As
8 previously mentioned, just because Cascade has taken numerous steps to cut
9 and control costs, they should not be held immune to recommended
10 ratemaking adjustments.

11 **Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

12 A. Yes.

CASE: UG 173
WITNESS: Michael Dougherty

**PUBLIC UTILITY COMMISSION
OF
OREGON**

STAFF EXHIBIT 301

Witness Qualification Statement

February 15, 2007

WITNESS QUALIFICATION STATEMENT

NAME: MICHAEL DOUGHERTY

EMPLOYER: PUBLIC UTILITY COMMISSION OF OREGON

TITLE: PROGRAM MANAGER, CORPORATE ANALYSIS AND WATER REGULATION

ADDRESS: 550 CAPITOL ST. NE, SALEM, OR 97310-1380

EDUCATION: Master of Science, Transportation Management, Naval Postgraduate School, Monterey CA (1987)

Bachelor of Science, Biology and Physical Anthropology, City College of New York (1980)

EXPERIENCE: Employed with the Oregon Public Utility Commission as the Program Manager, Corporate Analysis and Water Regulation. Also serve as Lead Auditor for the Commission's Audit Program.

Performed a five-month job rotation as Deputy Director, Department of Geology and Mineral Industries, March through August 2004.

Employed by the Oregon Employment Department as Manager - Budget, Communications, and Public Affairs from September 2000 to June 2002.

Employed by Sony Disc Manufacturing, Springfield, Oregon, as Manager - Manufacturing, Manager - Quality Assurance, and Supervisor - Mastering and Manufacturing from April 1995 to September 2000.

Retired as a Lieutenant Commander, United States Navy. Qualified naval engineer.

CASE: UG 173
WITNESS: Michael Dougherty

**PUBLIC UTILITY COMMISSION
OF
OREGON**

STAFF EXHIBIT 302

Exhibit in Support of Testimony

February 15, 2007

CASCADE UG 173 ADJUSTMENTS - SUMMARY

<u>Account</u>	<u>Amount - Oregon Direct</u>	<u>Comment</u>	<u>Amount - Oregon Allocated</u>	<u>Comment</u>
Audit Adjustments				
920			\$206,460	Cascade Reorganization Severance - Cascade Audit - Page 36
930.2	\$0		\$17,985	Stock Awards - Cascade Audit - Page 47
			\$224,445	
Additional A&G				
901	\$0		\$0	
902	\$0		\$14	
903	\$142	Cascade Response No. 10. (Please see Detail Sheet)	\$0	Cascade Response No. 10. (Please see Detail Sheet)
904	\$0		\$0	
905	\$663		\$13	
920	\$0		\$13,604	
921	\$1,806	Cascade Response No. 10. (Please see Detail Sheet)	\$10,376	Cascade Responses No. 10, No. 95, and No. 128. (Please see Detail Sheet).
921			\$0	
923	\$0		\$0	
924	\$0		\$15,599	DR. 93; Removed Excess D&O Liability as a Shareholder Cost (Allowed 100% of primary coverage) since two main reasons for claims are financial statements issues and insider trading. Additionally, a large percentage of D&O claims are brought by shareholders.
925	\$0		(\$31,416)	Cascade Response No. 10. (Please see Detail Sheet)
926	\$4,249	Cascade Response No. 10. (Please see Detail Sheet)	\$3,888	
926	\$0		\$0	
928	\$0		\$0	
930.1	\$0		\$444	
930.2	\$0	Cascade Response No. 10. (Please see Detail Sheet)		Cascade Response No. 10 (Please see Detail sheet).
931	\$0		\$0	
935	\$0		\$0	
Sub-Total Additional A&G	\$6,860		\$12,522	
Total Labor & Non	\$6,860		\$236,967	
Final Total	\$243,827	Allocated and Direct		

FERC - SYSTEM	50%	100%	25%	Other	Amount of transaction	Cost Description	Supplier Name
9030	\$25				\$49	Meals & Entertainment - 50% Deductible	
9030	\$36				\$71	Meals & Entertainment - 50% Deductible	
Total	\$60				\$14		
9200	\$56				\$111	Meals & Entertainment - 50% Deductible	US BANK - VISA PYMTS
Total	\$56				\$13		
9210	(\$191)	(\$541)			(\$541)	Club MEMBERSHIP (Employee)	
9210	(\$1,042)				(\$382)	Meals & Entertainment - 50% Deductible	
9210	(\$130)				(\$2,085)	Meals & Entertainment - 50% Deductible	
9210	(\$613)				(\$259)	Meals & Entertainment - 50% Deductible	
9210	\$108				(\$1,227)	Meals & Entertainment - 50% Deductible	
9210	(\$163)				\$216	Meals & Entertainment - 50% Deductible	
9210	\$191				(\$326)	Meals & Entertainment - 50% Deductible	
9210	(\$16)				\$382	Meals & Entertainment - 50% Deductible	
9210	\$155				(\$32)	Meals & Entertainment - 50% Deductible	
9210	(\$317)				\$309	Meals & Entertainment - 50% Deductible	
9210	(\$8)				(\$634)	Office Refreshments	
9210	\$40				(\$17)	Office Refreshments	
9210	\$8				\$81	Office Refreshments	
9210					\$17	Office Refreshments	
9210				\$45,231	\$76,330	Professional Services - Tax	
9210					\$205	Association Memberships & Dues	
9210					\$116	Association Memberships & Dues	
9210					\$395	Association Memberships & Dues	
9210					15,624	Association Memberships & Dues	
9210		\$150			\$150	Club MEMBERSHIP (Employee)	NORTHWEST FOOD PROCESSORS ASSN
9210		\$541			\$541	Club MEMBERSHIP (Employee)	NORTHWEST GAS ASSOCIATION
9210		\$54			\$54	Donations & Contributions	NUWEST GROUP INC
9210	\$36				\$71	Employee related expenses	US BANK - VISA PYMTS
9210	\$52				\$103	Employee related expenses	MORRIS FLORAL & GIFTS INC
9210	\$42				\$85	Employee related expenses	THE COMPLEAT COMPANY
9210	\$33				\$66	Employee related expenses	THE FLOWER SHOP
9210	\$30				\$61	Employee related expenses	THE FLOWER SHOP
9210	\$23				\$47	Employee related expenses	THE FLOWER SHOP

FERC - SYSTEM	Amount of				Supplier Name
	50%	100%	25%	Other	
9210	\$39				THE FLOWER SHOP
9210	\$25				THE FLOWER SHOP
9210	\$29				THE FLOWER SHOP
9210	\$28				THE FLOWER SHOP
9210	\$51				THE FLOWER SHOP
9210	\$39				THE FLOWER SHOP
9210	\$29				THE FLOWER SHOP
9210	\$67				THE FLOWER SHOP
9210	\$237	5,181			THE RAINIER CLUB
9210	\$51				THE FLOWER SHOP
9210	\$124				GRETCHEN'S SHOEBOX EXPRESS
9210	\$34				INGALLINA'S BOX LUNCH INC
9210	\$190				INGALLINA'S BOX LUNCH INC
9210	\$57				INGALLINA'S BOX LUNCH INC
9210	\$58				INGALLINA'S BOX LUNCH INC
9210	\$26				INGALLINA'S BOX LUNCH INC
9210	\$426				INGALLINA'S BOX LUNCH INC
9210	\$34				INGALLINA'S BOX LUNCH INC
9210	\$229				INGALLINA'S BOX LUNCH INC
9210	\$263				INGALLINA'S BOX LUNCH INC
9210	\$111				INGALLINA'S BOX LUNCH INC
9210	\$249				INGALLINA'S BOX LUNCH INC
9210	\$41				INGALLINA'S BOX LUNCH INC
9210	\$709				INGALLINA'S BOX LUNCH INC
9210	\$599				INGALLINA'S BOX LUNCH INC
9210	\$49				INGALLINA'S BOX LUNCH INC
9210	\$18				INGALLINA'S BOX LUNCH INC
9210	\$138				INGALLINA'S BOX LUNCH INC
9210	\$583				INGALLINA'S BOX LUNCH INC
9210	\$108				INGALLINA'S BOX LUNCH INC
9210	\$75				M & M CATERING SERVICES
9210	\$81				MEL'S MARKET
9210	\$101				MEL'S MARKET
9210	\$97				MEL'S MARKET
9210	\$129				MEL'S MARKET
9210	\$129				AMERICAN EXPRESS
9210	\$129				AMERICAN EXPRESS
9210	\$129				AMERICAN EXPRESS
9210	\$129				AMERICAN EXPRESS

FISC - SYSTEM	Amount of				Supplier Name
	50%	100%	25%	Other	
9210	\$79				AMERICAN EXPRESS
9210	\$21				Meals & Entertainment - 50% Deductible
9210	\$69				Meals & Entertainment - 50% Deductible
9210	\$20				Meals & Entertainment - 50% Deductible
9210	\$35				Meals & Entertainment - 50% Deductible
9210	\$3				Meals & Entertainment - 50% Deductible
9210	\$36				Meals & Entertainment - 50% Deductible
9210	\$46				Meals & Entertainment - 50% Deductible
9210	\$35				Meals & Entertainment - 50% Deductible
9210	\$64				Meals & Entertainment - 50% Deductible
9210	\$85				Meals & Entertainment - 50% Deductible
9210	\$267				Meals & Entertainment - 50% Deductible
9210	\$141				Meals & Entertainment - 50% Deductible
9210	\$119				Meals & Entertainment - 50% Deductible
9210	\$1,516				Meals & Entertainment - 50% Deductible
9210	\$22				Meals & Entertainment - 50% Deductible
9210	\$97				Meals & Entertainment - 50% Deductible
9210	\$411				Meals & Entertainment - 50% Deductible
9210	\$726				Meals & Entertainment - 50% Deductible
9210	\$75				Meals & Entertainment - 50% Deductible
9210	\$19				Meals & Entertainment - 50% Deductible
9210	\$82				Meals & Entertainment - 50% Deductible
9210	\$18				Meals & Entertainment - 50% Deductible
9210	\$87				Meals & Entertainment - 50% Deductible
9210	\$16				Meals & Entertainment - 50% Deductible
9210	\$8				Meals & Entertainment - 50% Deductible
9210	\$541				Meals & Entertainment - 50% Deductible
9210	\$14				Meals & Entertainment - 50% Deductible
9210	\$1,773				Meals & Entertainment - 50% Deductible
9210	\$85				Meals & Entertainment - 50% Deductible
9210	\$271				Meals & Entertainment - 50% Deductible
9210	\$12				Meals & Entertainment - 50% Deductible
9210	\$69				Meals & Entertainment - 50% Deductible
9210	\$3				Meals & Entertainment - 50% Deductible
9210	\$225				Meals & Entertainment - 50% Deductible
9210	\$2,003				Meals & Entertainment - 50% Deductible
9210	\$67				Meals & Entertainment - 50% Deductible
9210	\$67				Meals & Entertainment - 50% Deductible
9210	\$179				Meals & Entertainment - 50% Deductible
9210	\$242				Meals & Entertainment - 50% Deductible
9210	\$16				Meals & Entertainment - 50% Deductible
9210	\$293				Meals & Entertainment - 50% Deductible
9210	\$1,086				Meals & Entertainment - 50% Deductible
9210	\$773				Meals & Entertainment - 50% Deductible
9210	\$11				Meals & Entertainment - 50% Deductible
9210	\$15				Meals & Entertainment - 50% Deductible
9210	\$103				Meals & Entertainment - 50% Deductible

FERC - SYSTEM	Amount of			Cost Description	Supplier Name
	50%	100%	25%		
9210	\$87			\$175 Meals & Entertainment - 50% Deductible	
9210	\$101			\$203 Meals & Entertainment - 50% Deductible	
9210	\$97			\$193 Meals & Entertainment - 50% Deductible	
9210	\$70			\$141 Meals & Entertainment - 50% Deductible	
9210	\$157			\$314 Meals & Entertainment - 50% Deductible	
9210	\$627			\$1,255 Meals & Entertainment - 50% Deductible	
9210	\$6			\$12 Meals & Entertainment - 50% Deductible	
9210	\$44			\$89 Meals & Entertainment - 50% Deductible	
9210	\$164			\$328 Meals & Entertainment - 50% Deductible	
9210	\$617			\$1,234 Meals & Entertainment - 50% Deductible	
9210	\$32			\$64 Meals & Entertainment - 50% Deductible	
9210	\$256			\$511 Meals & Entertainment - 50% Deductible	
9210	\$152			\$305 Meals & Entertainment - 50% Deductible	
9210	\$489			\$978 Meals & Entertainment - 50% Deductible	
9210	\$68			\$136 Meals & Entertainment - 50% Deductible	
9210	\$415			\$831 Meals & Entertainment - 50% Deductible	
9210	\$970			\$1,940 Meals & Entertainment - 50% Deductible	
9210	\$118			\$236 Meals & Entertainment - 50% Deductible	
9210	\$47			\$94 Meals & Entertainment - 50% Deductible	
9210	\$1,851			\$3,701 Meals & Entertainment - 50% Deductible	
9210	\$73			\$146 Meals & Entertainment - 50% Deductible	
9210	\$208			\$415 Meals & Entertainment - 50% Deductible	
9210	\$39			\$78 Meals & Entertainment - 50% Deductible	
9210	\$272			\$544 Meals & Entertainment - 50% Deductible	
9210	\$839			\$1,679 Meals & Entertainment - 50% Deductible	
9210	\$93			\$186 Meals & Entertainment - 50% Deductible	
9210	\$96			\$193 Meals & Entertainment - 50% Deductible	
9210	\$119			\$238 Meals & Entertainment - 50% Deductible	
9210	\$81			\$162 Meals & Entertainment - 50% Deductible	
9210	\$77			\$154 Meals & Entertainment - 50% Deductible	
9210	\$600			\$1,200 Meals & Entertainment - 50% Deductible	
9210	\$304			\$609 Meals & Entertainment - 50% Deductible	
9210	\$313			\$626 Meals & Entertainment - 50% Deductible	
9210	\$30			\$60 Meals & Entertainment - 50% Deductible	
9210	\$425			\$851 Meals & Entertainment - 50% Deductible	
9210	\$64			\$128 Meals & Entertainment - 50% Deductible	
9210	\$634			\$1,268 Meals & Entertainment - 50% Deductible	
9210	\$20			\$40 Meals & Entertainment - 50% Deductible	
9210	\$169			\$339 Meals & Entertainment - 50% Deductible	
9210	\$23			\$46 Meals & Entertainment - 50% Deductible	
9210	\$72			\$145 Meals & Entertainment - 50% Deductible	
9210	\$868			\$1,736 Meals & Entertainment - 50% Deductible	
9210	\$205			\$410 Meals & Entertainment - 50% Deductible	
9210	\$156			\$312 Meals & Entertainment - 50% Deductible	
9210	\$193			\$386 Meals & Entertainment - 50% Deductible	
9210	\$13			\$25 Meals & Entertainment - 50% Deductible	
9210	\$23			\$46 Meals & Entertainment - 50% Deductible	

GRETCHEN'S SHOEBOX EXPRESS
HAGGEN MARKET STREET CATERING
HINZLERLING WINERY &

INGALLINA'S BOX LUNCH INC
INGALLINA'S BOX LUNCH INC
J D WESSLING

FERC - SYSTEM	Amount of transaction				Supplier Name
	50%	100%	25%	Other	
9210	\$56			\$112	Meals & Entertainment - 50% Deductible
9210	\$944			\$1,888	Meals & Entertainment - 50% Deductible
9210	\$302			\$604	Meals & Entertainment - 50% Deductible
9210	\$1,346			\$2,692	Meals & Entertainment - 50% Deductible
9210	\$12			\$25	Meals & Entertainment - 50% Deductible
9210	\$1,012			\$2,025	Meals & Entertainment - 50% Deductible
9210	\$640			\$1,280	Meals & Entertainment - 50% Deductible
9210	\$168			\$336	Meals & Entertainment - 50% Deductible
9210	\$103			\$207	Meals & Entertainment - 50% Deductible
9210	\$765			\$1,531	Meals & Entertainment - 50% Deductible
9210	\$51			\$102	Meals & Entertainment - 50% Deductible
9210	\$92			\$183	Meals & Entertainment - 50% Deductible
9210	\$2			\$3	Meals & Entertainment - 50% Deductible
9210	\$136			\$272	Meals & Entertainment - 50% Deductible
9210	\$14			\$27	Meals & Entertainment - 50% Deductible
9210	\$10			\$20	Meals & Entertainment - 50% Deductible
9210	\$271			\$542	Meals & Entertainment - 50% Deductible
9210	\$7			\$15	Meals & Entertainment - 50% Deductible
9210	\$184			\$367	Meals & Entertainment - 50% Deductible
9210	\$712			\$1,423	Meals & Entertainment - 50% Deductible
9210	\$19			\$38	Meals & Entertainment - 50% Deductible
9210	\$26			\$51	Meals & Entertainment - 50% Deductible
9210	\$608			\$1,216	Meals & Entertainment - 50% Deductible
9210	\$61			\$123	Meals & Entertainment - 50% Deductible
9210	\$119			\$239	Meals & Entertainment - 50% Deductible
9210	\$8			\$17	Meals & Entertainment - 50% Deductible
9210	\$55			\$110	Meals & Entertainment - 50% Deductible
9210	\$151			\$302	Meals & Entertainment - 50% Deductible
9210	\$422			\$845	Meals & Entertainment - 50% Deductible
9210	\$33			\$66	Meals & Entertainment - 50% Deductible
9210	\$743			\$1,487	Meals & Entertainment - 50% Deductible
9210	\$931			\$1,861	Meals & Entertainment - 50% Deductible
9210	\$1,594			\$3,187	Meals & Entertainment - 50% Deductible
9210	\$48			\$96	Meals & Entertainment - 50% Deductible
9210	\$15			\$30	Meals & Entertainment - 50% Deductible
9210	\$74			\$147	Meals & Entertainment - 50% Deductible
9210	\$1,262			\$2,524	Meals & Entertainment - 50% Deductible
9210	\$325			\$650	Office Refreshments
9210	\$11			\$23	Office Refreshments
9210	\$144			\$288	Office Refreshments
9210	\$169			\$338	Office Refreshments
9210	\$5			\$10	Office Refreshments
9210	\$66			\$133	Office Refreshments
9210	\$36			\$72	Office Refreshments
9210	\$17			\$33	Office Refreshments
9210	\$60			\$120	Office Refreshments

US BANK - VISA PYMTS
 US BANK - VISA PYMTS
 US BANK - VISA PYMTS
 US BANK - VISA PYMTS
 WESTERN ENERGY INSTITUTE
 ADVANTAGE VENDING & DIST
 AMERICAN EXPRESS

FERC - SYSTEM	Amount of transaction				Cost Description	Supplier Name
	50%	100%	25%	Other		
9210	\$11				\$22 Office Refreshments	
9210	\$59				\$118 Office Refreshments	
9210	\$14				\$27 Office Refreshments	
9210	\$7				\$14 Office Refreshments	
9210	\$20				\$39 Office Refreshments	
9210	\$55				\$109 Office Refreshments	
9210	\$159				\$317 Office Refreshments	
9210	\$53				\$105 Office Refreshments	
9210	\$8,636				\$17,273 Office Refreshments	FIRST CHOICE SERVICES
9210	\$75				\$150 Office Refreshments	HAGGEN INC
9210	\$349				\$698 Office Refreshments	INGALLINA'S BOX LUNCH INC
9210	\$42				\$84 Office Refreshments	
9210	\$8				\$17 Office Refreshments	MEL'S MARKET
9210	\$56				\$112 Office Refreshments	
9210	\$27				\$54 Office Refreshments	
9210	\$9				\$19 Office Refreshments	
9210	\$8				\$17 Office Refreshments	
9210	\$714				\$1,428 Office Refreshments	OFFICE WHOLESALE WAREHOUSE
9210	\$14				\$27 Office Refreshments	
9210	\$58				\$116 Office Refreshments	
9210	\$41				\$82 Office Refreshments	
9210	\$16				\$32 Office Refreshments	
9210	\$481				\$963 Office Refreshments	US BANK - VISA PYMTS
9210	\$142				\$284 Office Refreshments	US BANK - VISA PYMTS
9210	\$68				\$136 Office Refreshments	
9210	\$30				\$61 Office Supplies	THE FLOWER SHOP
9210	\$23				\$47 Office Supplies	THE FLOWER SHOP
9210	\$21				\$42 Other	ATHLETIC AWARDS CO INC

FERC - SYSTEM	50%	100%	25%	Other	Amount of transaction	Cost Description	Supplier Name
9210	\$296				\$592	Purchased Services - general	HAGGEN MARKET STREET CATERING
Total - 921	\$53,919	\$5,385	\$0	\$45,231	\$104,535	\$23,980	\$13,604
9260	\$23	(\$136,948)			(\$136,948)	SERP - Defined Benefit Plan	
9260	\$99				\$46	Employee related expenses	ENCHANTED PARKS
9260	\$16				\$198	Employee related expenses	ENCHANTED PARKS
9260	\$53				\$32	Employee related expenses	HAGGEN INC
9260	\$878				\$106	Employee related expenses	INGALLINA'S BOX LUNCH INC
9260	\$115				\$1,755	Employee related expenses	JASPER'S BBQ
9260	\$9,380				\$231	Employee related expenses	MASTERCRAFT OF SEATTLE
9260	\$316				\$18,759	Employee related expenses	O C TANNER RECOGNITION COMPANY
9260	\$5,232				\$632	Employee related expenses	O C TANNER RECOGNITION COMPANY
9260	\$188				\$10,463	Employee related expenses	SCHWARTZ BROTHERS CATERING
9260	\$35				\$375	Employee related expenses	STARBUCKS COFFEE COMPANY
9260	\$475				\$70	Employee related expenses	THE FLOWER SHOP
9260	\$83				\$949	Employee related expenses	THE FLOWER SHOP
9260	\$39				\$165	Employee related expenses	THE FLOWER SHOP
9260	\$20				\$77	Employee related expenses	THE FLOWER SHOP
Total - 926	\$16,950	(\$136,948)			\$39	Employee related expenses	THE FLOWER SHOP
					(\$119,999)	(\$31,416)	
9302	\$309				\$618	Meals & Entertainment - 100% Deductible	INGALLINA'S BOX LUNCH INC
9302	\$246				\$492	Meals & Entertainment - 50% Deductible	
9302	\$93				\$185	Meals & Entertainment - 50% Deductible	
9302	\$30				\$60	Meals & Entertainment - 50% Deductible	
9302	\$446				\$893	Meals & Entertainment - 50% Deductible	
9302	\$167				\$333	Meals & Entertainment - 50% Deductible	
9302	\$27				\$55	Meals & Entertainment - 50% Deductible	
9302	\$617				\$1,233	Training - Seminars & Conferences	MCCORMICK & SCHMICK'S HARBORSIDE
Total - 9302	\$1,934		\$0		\$1,934	\$444	TOM DOUGLAS CATERING
Total	\$72,918	(\$131,563)	\$0	\$45,231	(\$13,414)		
Total - Oregon Allocation	\$16,727	(\$30,181)	\$0	\$10,376	(\$3,077)	\$12,522	

FERC - Oregon	50%	100%	25%	Other	Amount of transaction	Cost Description	Supplier Name
9030	17				33	Meals & Entertainment - 50% Deductible	ALTRUSA INTERNATIONAL
9030	81				162	Meals & Entertainment - 50% Deductible	AMERICAN EXPRESS
9030	45				89	Meals & Entertainment - 50% Deductible	
Total	142				284		
9050	153				306	Meals & Entertainment - 50% Deductible	
9050	15				30	Meals & Entertainment - 50% Deductible	
9050	255				510	Meals & Entertainment - 50% Deductible	
9050	239				479	Meals & Entertainment - 50% Deductible	
Total	663				1,325		
9210	15				30	Office Refreshments	
9210		139			139	Club MEMBERSHIP (Employee)	
9210	870				1,739	Meals & Entertainment - 50% Deductible	
9210	4				8	Office Refreshments	ALBERTSONS FOOD STORES
9210	28				55	Office Refreshments	ALBERTSONS FOOD STORES
9210	43				86	Office Refreshments	AMERICAN EXPRESS
9210	58				119	Office Refreshments	BOYD COFFEE CO
9210	18				37	Office Refreshments	CASH & CARRY
9210	76				152	Office Refreshments	CASH & CARRY
9210	124				248	Office Refreshments	DESERT SPRINGS BOTTLED WATER CO
9210	90				181	Office Refreshments	DESERT SPRINGS BOTTLED WATER CO
9210	21				42	Office Refreshments	
9210	1				2	Office Refreshments	
9210	2				4	Office Refreshments	
9210	83				167	Office Refreshments	
9210	2				4	Office Refreshments	
9210	26				53	Office Refreshments	
9210	15				29	Office Refreshments	
9210	13				25	Office Refreshments	
9210	17				34	Office Refreshments	
9210	52				103	Office Refreshments	
9210	6				13	Office Refreshments	
9210	72				145	Office Refreshments	
9210	30				61	Office Refreshments	
Total	1,668	139	0		1,806		
9260					20	Donations & Contributions	
9260	28				56	Employee related expenses	ALBERTSONS FOOD STORES
9260	162				324	Employee related expenses	AUTRY'S 4 SEASONS FLORIST
9260	18				35	Employee related expenses	BAKER CITY FLORAL
9260	230				459	Employee related expenses	BAKER ELKS LODGE #338
9260	19				39	Employee related expenses	CALICO COUNTRY DESIGNS
9260	58				117	Employee related expenses	CASH & CARRY
9260							WEST COAST PAPER COMPANY
9260							WEST COAST PAPER COMPANY

FERC - Oregon	50%	100%	25%	Other	Amount of transaction	Cost Description	Supplier Name
9260	235				469	Employee related expenses	MATSYS RESTAURANT & LOUNGE
9260	60				120	Employee related expenses	QUIZNOS SUB
9260	259				517	Employee related expenses	STETSON'S HOUSE OF PRIME
9260	18				35	Employee related expenses	THE LADY BUG FLOWERS & GIFTS
9260	3,143				6,285	Employee related expenses	THE RIVERHOUSE
Total	4,228	21			4,249		
Total Direct	6,700	160	0		6,860		

CASE: UG 173
WITNESS: Michael Dougherty

**PUBLIC UTILITY COMMISSION
OF
OREGON**

STAFF EXHIBIT 303

Exhibit in Support of Testimony

February 15, 2007



222 FAIRVIEW AVENUE NORTH, SEATTLE, WASHINGTON 98109-5312 (206) 624-3900
FACSIMILE (206) 624-7215

May 22, 2006

Oregon Public Utility Commission
Attn: Michael Dougherty
550 Capitol Street NE
Salem, OR 97310-1380

Re: OPUC Staff Audit 2006-001

Cascade Natural Gas Company ("Cascade" or "the Company") offers the following comments regarding the OPUC Staff Audit 2006-001, dated May 2, 2006 ("Audit Report").

Of primary concern is Staff's characterization of the audit results as showing the Company to be over-earning. As discussed below, the Company takes issue with this conclusion. More important, the undue attention focused on the particular earnings calculation advanced by Staff fails to properly acknowledge the significant cost savings the Company has been able to achieve for the benefit of its Oregon customers, while maintaining excellent service. Moreover, the Audit Report neglects to include several key developments that have transpired since the audit was initiated which directly bear on the weight to be accorded to the earnings calculations performed by Staff.

Two significant developments occurred since the audit was commenced that should be taken into account in evaluating Staff's analysis of the Company's earnings. First, effective with the Commission's approval of Cascade's Conservation Alliance Plan (UG 167), the Company has effectively lowered its earnings by a minimum of \$500,000 per year by contributing 0.75% of residential and commercial revenues for public purpose funding. Second, the Company committed to continuing the Earnings Sharing Agreement and accepted a lowering of the "no action" band from 300 basis points down to 175 basis points at which point the company shares 1/3 of the earnings above the threshold with customers. These two changes were agreed to by all parties in a comprehensive settlement and ultimately included in the final Commission order in Docket UG 167. In addition to this, several of the adjustments that Staff proposes are one-sided and the Company therefore disagrees with the Staff-adjusted earnings figures. The following discusses each of these concerns.

Staff indicates that this additional audit is the result of the Company's filing (*Audit Report at 4*)--presumably the Conservation Alliance Plan (UG 167)—and the focus seems to revolve around

the Company's earnings. Although the Audit Report expresses concern that Cascade's adjusted return on equity was 12.22%, 12.12%, and 11.88% over the most recent three years, the Audit Report fails to acknowledge that Cascade has been operating under an Earnings Sharing Mechanism that was designed to encourage the utilities to pursue operational efficiencies and new business opportunities in an effort to increase earnings and reduce the need for rate cases. Through 2005, Cascade has been operating under the Earnings Sharing Mechanism parameters set for Avista. The baseline ROE was set at 10.25% in 2003 and the Company has been allowed to increase earnings to a level 300 basis points above the baseline before any sharing of earnings with customers is required. The Company shares one third of the earnings above the 300 basis point "no action" band. The 300 basis point "no action" band for Avista and Cascade is identical to the "no action" band established for Northwest Natural in UM 903. The Commission stated in Order No 99-272 in Docket UM 903:

. . . An earnings threshold set at 300 basis points above the benchmark ROE will protect the interest of ratepayers and allow the company the opportunity to pursue increased earnings through cost management and operating efficiencies. (99-272 page 8 of 19.)

The Earnings Sharing Mechanisms established under UM 903 continues to remain in effect and, in fact, as part of the settlement in UG 167, the no-action band for Cascade was lowered to 175 basis points.

It is clear from other comments in the Audit Report that the Company has acted on the incentives provided by the Earnings Sharing Mechanism to aggressively pursue cost reductions. In this regard, the Audit Report states that:

- Cascade's rates are significantly lower than those for the other two natural gas companies operating in Oregon (15 percent lower than for NW Natural and 18 percent lower than Avista). *Audit Report at 34.*
- "For non-gas expenses, Cascade continues to throttle down on operating expenses, which are aligned to recent Cascade initiatives to reduce costs." *Audit Report at 18.*
- "Cascade's aggressive cost-cutting has benefited both the Company and customers." *Audit Report at 35.*
- "[A]lthough Cascade has used certain initiatives to reduce costs, these reductions have not affected customer service." *Audit Report at 48.* In fact, the Audit Report states that Cascade has *increased* labor for maintenance and pipeline safety management.

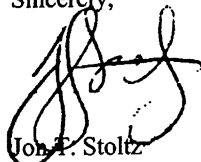
Given these acknowledged accomplishments, it should not appear that Cascade is being punished for achieving reasonable earnings results. Yet the tone of the Audit Report, which focuses on the Staff's earnings analysis, sets such a tone.

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Moreover, the Company does not agree with many of the ratemaking adjustments offered by Staff in reaching its "adjusted" calculations. The Company has been able to achieve its exemplary record of cost savings by pursuing initiatives such as the Call Center consolidation and the September 2005 reorganization. Yet Staff's proposed ratemaking adjustments would disallow the costs incurred by the Company to achieve the savings associated with these initiatives, which will continue well into the future. Similarly, Staff proposes to disallow certain Director stock awards (*Audit Report at 46*) without examining the reasonableness of the Company's overall Director compensation, which is low by industry standards. Moreover, Staff's ratemaking adjustments are one-sided, and do not include the other normalization/ pro forma adjustments that would be included in a ratemaking setting and that would more than offset the identified adjustments. For example, Staff's proposed adjustments to remove the Call Center Consolidation costs and September 2005 Reorganization expense are more than offset by the \$500,000 in public purpose funding. Additionally, while the Audit Reports states that the Company has been experiencing increases in both insurance and property taxes in the double digits over the past several years, this expense increase was not taken into account when discussing the Company's earnings situation even though both of these adjustments would be included with a general rate application along with several other known and measurable adjustments (*e.g.*, postage rate changes and pro forma wage adjustments). The earnings picture would look quite different if prepared on a basis that truly reflected likely rate case scenarios, and that took into account the impact of the public purpose funding to be provided by the Company. For the above reasons, the Audit Report's analyses of the Company's earnings performed by Staff should be accorded little, if any, weight. More attention should be focused on the Company's exemplary performance in cutting costs and the benefits provided to the Company's Oregon customers from those efforts.

The Company appreciates the opportunity to comment on the Audit Report. Please direct any questions regarding these comments to the undersigned.

Sincerely,



Jon F. Stoltz
Sr. Vice President
Regulatory & Gas Supply

CASE: UG 173
WITNESS: Thomas D. Morgan

**PUBLIC UTILITY COMMISSION
OF
OREGON**

STAFF EXHIBIT 400

Direct Testimony

February 15, 2007

Introduction

1
2 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

3 A. My name is Thomas D. Morgan and my business address is 550 Capitol Street
4 NE, Salem, Oregon 97301-2551.¹

5 **Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?**

6 A. I am employed as a Financial Economist by the Public Utility Commission of
7 Oregon ("Commission") in the Finance/Policy Analysis Division. I began
8 working at the Commission in 2001.

9 **Q. HAVE YOU PREPARED ANY EXHIBITS?**

10 A. Yes. My Witness Qualifications Statement is included as Staff/401. The
11 results of my analyses are included as Staff/402, which comprises 10 pages. I
12 have also prepared an Appendix marked as Staff/403, which includes 84 pages
13 of additional testimony and supporting exhibits.

14 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

15 A. The purpose of my testimony is to develop the cost of capital estimates for the
16 rate-regulated property operated by Cascade Natural Gas (Cascade or
17 Company.) In addition, I provide Staff's recommended capital structure for the
18 Company.

19 **Q. WHAT IS YOUR RECOMMENDED COST OF EMBEDDED DEBT?**

20 A. Staff accepts the embedded cost of debt provided by Cascade, which is 7.57
21 percent. (See Staff/402 Morgan/1-2; Staff Data Request 88.)

22 **Q. WHAT IS YOUR RECOMMENDED COST OF PREFERRED EQUITY?**

23 A. Cascade Natural Gas has no outstanding preferred stock.
24

¹ My telephone number is (503) 378-4629 and my e-mail address is thomas.d.morgan@state.or.us.

1 **Q. WHAT IS YOUR RECOMMENDED RETURN ON EQUITY?**

2 A. Staff recommends a cost of equity of 10.0 percent based on Cascade's actual
3 capital structure, which contains approximately 45 percent equity. Alternatively,
4 in order to match the capital structure of the cohort sample of companies I have
5 selected, the Commission could adopt a 9.00 percent return on equity along
6 with a capital structure that comprises 55 percent equity.

7 **Q. HOW DID YOU DEVELOP YOUR RECOMMENDED RETURN ON EQUITY?**

8 A. My recommendation is based upon review of single and multi-stage discounted
9 cash flow ("DCF") model results and sensitivity analyses. The use of DCF
10 models is consistent with Commission's most recent return on equity decisions
11 in Dockets UE 180², UE 115³ and UE 116.⁴ I detail the underlying theory of the
12 DCF model beginning at Staff/403, Morgan/40. I provide a check of
13 reasonableness that relies on the Capital Asset Pricing Model (CAPM).

14 **Q. WHAT IS THE BASIS FOR YOUR ASSERTION THAT CASCADE'S EQUITY
15 CAPITAL STRUCTURE IS 45 PERCENT?**

16 A. The following table is based on the most current, December 15, 2006, Value
17 Line report, which reflects an approximate 44% to 45% equity capitalization
18 rate for Cascade, as of the end of 2006 and the projection for the end of 2007.
19 The report is available at Staff/403 Morgan/55.

20 **Table 1: Cascade's Common Equity Structure:**

<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>'09-'10</u>
47.90%	40.60%	44.00%	45.00%	48.00%

21

22

² UE 180 Order 07-023 January 23, 2007. <http://apps.puc.state.or.us/orders/2007ords/07-023.pdf>

³ Order 01-777, August, 2001. <http://apps.puc.state.or.us/orders/2001ords/01-777.pdf>

⁴ Order 01-787, September, 2001. <http://apps.puc.state.or.us/orders/2001ords/01-787.pdf>

1 **Q. DOES YOUR DCF ANALYSIS PRODUCE A RANGE OF COST OF EQUITY**
2 **ESTIMATES?**

3 A. Yes. The following table illustrates the range of results produced by the DCF
4 models, using sample companies with an average equity ratio of 55 percent:

5 **Table 2 – Cost of Equity Summary Results**

	Range of Results
Single-stage DCF	8.5% to 9.5%
2-stage 150-year DCF	8.5% to 9.3%
3-Stage 40-year DCF	8.7% to 9.3%

6
7 Based on the recommended capital structure, I estimate a required
8 upward adjustment of 100 basis points (1.0%) above the figures cited above.
9 Support for a range of adjustment factors to apply to the ROE is discussed later
10 in my testimony. The adjusted recommendation ranges from 9.5% to 10.5
11 percent:

12 **Table 3 – Adjusted Cost of Equity Summary Results**

	Range of Results
Single-stage DCF	9.5% to 10.5%
2-stage 150-year DCF	9.5% to 10.3%
3-Stage 40-year DCF	9.7% to 10.3%

13
14 **Q. WOULD THE RESULTS OF YOUR COE ANALYSIS BE INAPPROPRIATE IF**
15 **THE ACTUAL CAPITAL STRUCTURE OF CASCADE WERE ADOPTED?**

16 A. Yes. The results would be inaccurate because the return on equity is based
17 upon the capital structure derived from the sample selection; and it does not
18 take into account that a less equity-rich capital structure, i.e., more leveraged,
19 would increase risk and, therefore, increase investors' required rate of return

1 for their equity investment. Similarly, a less debt-laden company would require
2 a lower cost of equity.

3 Assuming a capital structure that is different than the Company's
4 actual capital structure does not impact the ability of the Company to manage
5 its capital structure; rather, it simply recognizes that the DCF results related to
6 return on equity are a reflection of the capital structure of the sample selection
7 or comparable companies.

8 **Q. WHAT IS THE PERCENTAGE OF EQUITY YOU PROPOSE FOR THE**
9 **CAPITAL STRUCTURE?**

10 A. I propose a capital structure that includes 45 percent equity and 55 percent
11 debt. This is the actual capital structure of Cascade. As noted above, my 10.0
12 percent COE recommendation is coupled with a 45 percent equity capitalization
13 ratio.

14 However, an alternative recommendation is for the Commission to
15 assume an equity ratio for Cascade that mirrors that in my cohort company
16 selection. If the Commission were to do this, the capital structure would include
17 45 percent debt and 55 percent equity. If the Commission adopts this capital
18 structure, my recommended COE is 9.0 percent.

19 **Q. WHAT IS STAFF'S RECOMMENDED OVERALL ROR FOR THE**
20 **COMPANY?**

21 A. Relying on its actual capital structure, the recommended ROR is provided in
22 the following table.
23

1

Table 4: Recommended Cost of Capital Results

Capital Structure	Staff Recommended		
Capital Component	Cost	Ratio	Weighted Cost
Long-Term Debt	7.57%	55.00%	4.16%
Preferred Stock	0.00%	0.00%	0.00%
Common Equity	10.00%	45.00%	4.50%
TOTAL		100.00%	8.66%

2

3

Q. WHAT IS THE OVERALL ROR, BASED ON THE RESULT OF YOUR ANALYSIS OF SAMPLE COMPANIES?

4

5

A. The following table reflects the cost of capital, given the results derived from the sample of companies selected in my analysis.

6

7

Table 5: Cost of Capital Results Derived from Analysis

Capital Structure	Staff Sample		
Capital Component	Cost	Ratio	Weighted Cost
Long-Term Debt	7.57%	45.00%	3.41%
Preferred Stock	0.00%	0.00%	0.00%
Common Equity	9.00%	55.00%	4.95%
TOTAL		100.00%	8.36%

8

9

Q. IS THE APPROPRIATE COST OF EQUITY LINKED TO THE CAPITAL STRUCTURE?

10

11

A. Yes. The cost of equity is inextricably linked to the capital structure. For example, if Cascade employs more debt and less equity in its capital structure than the amount employed by the sample companies used in the DCF models, all else being equal, Cascade is a more risky investment than suggested by the analysis. Accordingly, Cascade would require a higher return on equity than

12

13

14

15

1 that indicated by the models, because the average figures that are derived from
2 the sample companies rely on less debt and more equity.

3 Estimating a cost of equity using a set of comparable companies
4 requires a matching of the capitalization of these same companies. To the
5 extent a company's capitalization is significantly different; an offsetting
6 adjustment to its cost of equity is indicated. Assuming a higher (or lower)
7 percentage of equity than provided by the cohort companies, requires a
8 corresponding downward (upward) adjustment to the cost of equity.

9 Cascade currently maintains healthy credit ratings while having a
10 capital structure with a significantly higher amount of debt. All else equal, this
11 would have the impact of increasing the riskiness for the firm's equity investors.
12 Therefore, my recommendation that rely on Cascade's more leveraged capital
13 structure requires an upward adjustment to the COE results in the sample
14 analysis.

15 **Q. HAS THE COMMISSION RECOGNIZED THIS COST OF EQUITY AND**
16 **CAPITAL STRUCTURE RELATIONSHIP IN THE PAST?**

17 A. Yes. The Commission, in Order 01-777, made an adjustment to the COE of
18 four basis points for each one point change in the equity capitalization
19 percentage. That is, for the 10 percentage points that are adjusted in the
20 capital structure, the cost of equity should be offset by a corresponding 40
21 basis points (10.0 x 4 basis points = 40 basis points.) The adjustment would
22 reflect the Commission's decision which included the following statement:
23 (Docket UE 115, Order No. 01-777 at 36)

24 It is well understood by finance practitioners and
25 theoreticians that the cost of equity drops as the percentage
26 of common equity in the capital structure increases. Because
27

1 the average amount of common equity in the capital
2 structure of the comparable group of electric companies was
3 45.14 percent compared to 52.16 percent for PGE, it
4 necessarily follows that PGE has a lower cost of equity.
5 PGE's capital structure is therefore less risky, and its cost of
6 common equity should be adjusted accordingly.

7 The question therefore becomes how much of an
8 adjustment should be made.

9
10 This record contains varying estimates that the cost of equity
11 for regulated electric utilities decrease anywhere from 4 to
12 13.8 basis points for each one percent increase in the level
13 of common equity in the capital structure. We find
14 Rothschild's proposed 25 basis point reduction to be a
15 reasonable adjustment to account for the above average
16 percentage of common equity in PGE's capital structure.
17 Contrary to PGE's arguments, this reduction does not
18 constitute a "penalty." Rather, it is simply an adjustment to
19 acknowledge PGE's reduced financial risk due to its
20 increased level of common equity in its capital structure.
21 Reliance on the stipulation in docket UM 814 is reasonable
22 for the purpose of establishing a capital structure for PGE.
23 The stipulation, however, cannot reasonably be used to
24 argue for an ROE that does not correspond to the adopted
25 capital structure.

26
27 Because the adjustment recommended in Docket UE 115 provided a
28 range up to 13.8 basis points per percentage change in capital structure, the

1 high-bound adjustment would reflect an ROE of 10.48 percent, assuming the
2 Company's actual capital structure.

3 **Q. WHY DO YOU RECOMMEND ADJUSTING YOUR RECOMMENDED COE,**
4 **RATHER THAN THE CAPITAL STRUCTURE?**

5 A. As noted above, Value Line projects that Cascade's capital structure will have
6 45 percent equity at the end of 2007. Staff's recommendation is therefore
7 based on information showing what Cascade's capital structure will be during
8 the period that rates will be in effect.

9 **Q. IS THERE ADDITIONAL THEORETICAL SUPPORT FOR AN ADJUSTMENT**
10 **IN COE THAT RELATES TO CHANGING LEVERAGE IN A COMPANY'S**
11 **CAPITAL STRUCTURE?**

12 A. Yes. It is possible to estimate the effect on the cost of equity using an
13 adjustment technique to the CAPM Beta. I describe Beta in detail at Staff/403
14 Morgan/31.

15 The following calculation "decomposes" the observed Beta and relates it to
16 the Beta that exists for a different level of debt financing.

$$17 \quad B_L = B_U * [1 + (1+T) \times D/E] \quad \text{Equation 1}$$

18 *Where,*

- 19 • B_L is the observed levered beta, B_U is the unlevered, i.e., debt-free, Beta for the
20 same sample, without debt in the capital structure.
- 21 • D/E is the debt-to-equity ratio
- 22 • T is the corporate tax rate

23 The following example and assumptions are used to calculate a two-step
24 process for estimating the impact of a change in leverage.

25 *** First, the "unleveraged" Beta is calculated.

1 *** Then, the "re-leveraged" capital structure is input into the model.

2 *** The initial, observed Beta is assumed to be 0.80, which approximates
3 the sample of companies' Beta, as reported by Value Line.

4 *** The initial debt-to-equity ratio is assumed to be 81.82% and taxes are
5 assumed to be 40%.

6 The average unleveraged Beta is therefore calculated by solving the
7 following equation, $0.80 = B_U * [1 + (1+.40) \times 81.82\%]$

8 **Solving the above equation for the Unlevered Beta, $B_U = .37$**

9 The second step is to estimate the leveraged Beta of a business, using the
10 same equation in reverse.

11 This calculation assumes that the debt-to-equity is 1.22 percent, indicating a
12 more leveraged structure.

13 The Leveraged Beta is, therefore solved by the following equation: B_L
14 $= 0.37 * [1 + (1+.40) \times 122\%]$. Solving the equation, $B_L = 1.01$ Therefore, the
15 example indicates that the amount of financial risk is about 26 percent greater
16 than the industry average. ($1.01/.80 = 126\%$).

17 In order to apply this adjustment, one would have to make judgments
18 of the appropriate market risk premium (M_{rp}). Assuming a risk-free Treasury
19 rate of 5.0 percent, and using my initial ROE recommendation of 9.1 percent,
20 an industry risk premium of 4.1 percent is calculated. Using the current
21 average Industry Beta of 0.8, then the implied Market Risk Premium is 5.13
22 percent (4.1 percent divided by 0.80.)

1 The following calculations indicate the proper adjustment to the ROE based
2 on this technique: $M_{rp} \times (B_1 - B_2)$, where B_1 is the initial observed Beta and B_2
3 is the "releveraged" Beta.

4 The calculation for this example is: 5.13% (1.01 - .80), which equals a 107
5 basis points upward adjustment to the COE, or an increase of about 11 basis
6 points for each percentage point increase change in the common equity portion
7 of the capital structure. The indicated COE would therefore be 10.07 percent
8 (9.0% + 1.07% = 10.07%)

10 Sample Selection

11 **Q. WHY DID YOU APPLY THE DCF MODELS TO A SAMPLE OF COMPANIES**
12 **RATHER THAN TO COMPANY ITSELF?**

13 A. I applied the DCF models to a representative sample of companies because
14 MDU Resources Group, Inc. is currently in purchase negotiations to acquire
15 Cascade (See Docket No. UM 1283). Because this acquisition has a potential
16 impact on Cascade's share prices, basing Cascade's COE on its own share
17 price is not recommended.

18 **Q. WHAT SAMPLE OF COMPANIES DID YOU ADOPT TO DETERMINE THE**
19 **COST OF EQUITY?**

20 A. My sample selection includes nine companies.⁵ I limited my selection to
21 companies covered by Value Line in the Natural Gas Distribution Industry,
22 which includes 16 companies. I filtered Value Line's universe of companies by

⁵ The company names and ticker symbols (in parenthesis) of my sample companies are: AGL Resources (ATG); Atmos Energy (ATO); Laclede Group (LG); New Jersey Resources (NJR); NICOR Inc. (GAS); Northwest Nat. Gas (NWN); Piedmont Natural Gas (PNY); South Jersey Industries (SJI); and WGL Holdings Inc. (WGL)

1 considering companies that maintain a predominantly rate-regulated focus on
2 domestic gas operations. I removed companies that had non-investment-grade
3 debt and also omitted companies that are under merger negotiations. The
4 remaining nine companies provide a representative sample.

6 DCF Analysis

7 **Q. WHAT INPUTS ARE REQUIRED FOR A SINGLE-STAGE DCF MODEL?**

8 A. The single-stage DCF model, which is also know as a perpetuity model,
9 requires a dividend growth estimate, current stock price, and an initial dividend.

10 **Q. HOW ARE YOUR MULTI-STAGE DCF MODELS DIFFERENT THAN THE**
11 **SINGLE-STAGE DCF MODEL?**

12 A. A multi-stage DCF model also requires a current stock price and initial dividend
13 but separates dividend growth into two or more stages. While a single-stage
14 model assumes that growth is steady and stable, the multi-stage models allow
15 the growth rate to change over a period of time before making the final (also
16 called “terminal” or “horizon”) constant growth rate assumption.

17 **Q. WHAT MULTI-STAGE DCF MODELS DID YOU EMPLOY?**

18 A. I used a two-stage DCF model that uses the current dividend yields and Value
19 Line’s Investment Survey (“Value Line”) estimates of growth for the next few
20 years and applied long-term growth forecasts for the remainder of 150 years.

21 I also utilized the three-stage DCF model that the Commission has
22 relied on in the last three contested cases in which parties litigated the return
23 on equity, UE 115 and UE 116 and UE 180. This model utilizes three-stages,
24 over a 40-year period. In the first stage, estimates from Value Line are used.
25 The second stage uses implicit growth rates from two primary input

1 assumptions. The third stage is the “reversionary” stage where an explicit
2 estimation of the stock price is produced at year 40.

3 **Q. WHAT DID YOU USE FOR THE CURRENT STOCK PRICE IN YOUR DCF**
4 **MODELS?**

5 A. I used the current stock price (P_0) from Microsoft Network Money as of
6 February 1, 2007.⁶ The most current spot prices are the correct prices to use
7 for P_0 because, based upon the efficient market hypothesis, current spot prices
8 include all current and past information.

9 **Q. WHAT DID YOU USE FOR THE INITIAL DIVIDEND, D_1 , IN YOUR DCF**
10 **MODELS?**

11 A. I used the estimates of D_1 (the expected dividend per share over the next year)
12 from the February, 2007, Value Line Summary and Index.

13
14 **Growth Rates**

15 **Q. WHAT IS THE APPROPRIATE PERPETUAL, LONG-TERM GROWTH RATE**
16 **TO BE USED IN THE DCF MODELS?**

17 A. I conclude that the appropriate growth rate ranges from 4.0 to no more than 5.5
18 percent. My perpetual growth rate analysis is supported by separate methods
19 and available market expectations.

20 **Q. IS THE APPROPRIATE LONG-TERM GROWTH RATE AN IMPORTANT**
21 **ISSUE?**

22 A. Yes. My long-term growth estimates are based upon the analysis and review
23 of the historic results regulated utility industry, financial analysts’ estimates of
24 future growth, and sustainable growth rates estimates.

⁶ <http://moneycentral.msn.com/investor/home.asp>: Supplied by Standard & Poor’s ComStock, Inc.

1 **Q. WHAT ARE THE METHODS YOU USED TO ESTIMATE LONG-TERM**
2 **GROWTH?**

3 A. My growth rate analysis is derived by using separate supporting methods and
4 available market expectations. Specifically, I considered the following:

- 5 1. Market Consensus Growth Rates (Financial Analysts' Forecasts);
- 6 2. Sustainable Growth; and,
- 7 3. Historical Utility Growth Rates.

8
9 **Market Consensus (Analyst) Growth Rates**

10 **Q. EXPLAIN HOW YOU USED THE MARKET CONCENSUS (ANALYST)**
11 **GROWTH RATE METHOD.**

12 A. I began by reviewing the actual growth rates achieved by the comparable
13 companies. Then, I considered current forecasts of growth, including changes
14 in dividend payout ratios. In order to estimate reasonable future growth rates, I
15 reviewed estimates from the following five major financial analysis services:
16 Kiplinger's; Firstcall; Zack's; Reuters; and Value Line. Using the analysts'
17 minimum and maximum estimates of 4.0 to 5.60 percent, I created a sensitivity
18 analysis in the single and two-stage DCF models. In the three-stage model, I
19 provide a sensitivity analysis with implicit growth rates that range up to about
20 5.6 percent.

21 **Q. HOW DID YOU ESTIMATE DIVIDEND GROWTH?**

22 A. Consistent with Staff's past approach to the DCF method, I viewed past
23 dividend growth as one potential indicator of the marginal investor's
24 expectations of future growth. I analyzed the historical dividend growth of the
25 comparable companies by looking at both the arithmetic and geometric
26 averages of dividends, book value and earnings.

1 I considered the historic growth rate in both earnings per share and
2 book value, because, over time, a convergence among these measures is
3 expected. For a more detailed explanation of the convergence issue, please
4 see Staff/403, Morgan/47.

5 **Q. IS IT APPROPRIATE TO CONSIDER ANALYSTS' FORECASTS OF**
6 **GROWTH WITHIN THE DCF MODEL?**

7 A. Yes. Analyst estimates are explicitly designed to cover a discrete period.
8 While I incorporate analysts' forecasts, the estimates must be considered in
9 light of estimates that are typically focused on the next five-year period. Also,
10 analysts may expect higher than "sustainable" growth rates at times, such as
11 during a recession or major industry restructuring. Thus, estimates should be
12 considered in the light of current performance and not necessarily be used for
13 the indefinite future. Nonetheless, in the broad prospective they provide
14 relevant information to consider in conducting a DCF analysis.

15 As such, the rates must be considered in light of other available
16 evidence in order to support being used for "perpetual growth". The
17 "sustainable growth" method, for example, is a useful tool to provide a cross-
18 check on analyst estimates. I explore this in the next section of my testimony.

19 **Q. WHAT DO YOU CONCLUDE THE MARKET EXPECTS FOR GROWTH**
20 **RATES?**

21 A. I conclude that all the actual growth rates and analysts' forecasts for the next
22 five years provide significant support for a growth rate of about five percent *or*
23 *less* for the average company in the industry.

24
25 **Sustainable Growth**

26 **Q. PLEASE DESCRIBE THE SUSTAINABLE GROWTH METHOD.**

1 A. The sustainable growth method is a minor variation of the “retention growth”
2 method. The retention growth is calculated by taking the product of the
3 percentage of retained earnings and the rate of return on book equity. The
4 percentage of earnings retained (b), multiplied by the rate of return on equity
5 (ROE), creates a long-horizon future growth estimate (g) [**g = b x ROE**].

6 The retention growth rate provides a useful check on the supportability
7 of growth rates because it requires an explicit expectation regarding the
8 sustainability of both ROEs and reinvestment rates (or, as the complementary
9 factor, dividend payouts). The combination of retention rates and ROEs
10 necessary to produce a particular growth rate can be easily estimated.

11 The sustainable growth rate can be estimated by the “b x ROE”
12 formula described above. A variation on the model, designed with the
13 assumption of on-going debt issuances to maintain a “balanced” capital
14 structure while reinvesting a portion of the earnings (“plowback) is described
15 below:

30

The Sustainable Growth Rate

- The sustainable growth rate tells us how much the firm can grow by using internally generated funds and issuing debt to maintain a constant debt ratio.

$$\begin{aligned} \text{Sustainable Growth Rate} &= \frac{\text{ROE} \times b}{1 - \text{ROE} \times b} \\ &= \frac{.2517 \times .6037}{1 - .2517 \times .6037} = .1792 \\ &= 17.92\% \end{aligned}$$

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1 Using this formula and assuming (1) the highest estimate that is
2 expected as a long-run ROE for natural gas utilities of 11.0 to 12.5 percent and
3 (2) a reasonable long-run expectation of dividend reinvestment of 30 to 40
4 percent, results in a growth estimate of 3.3 to 5.3 percent. The following table
5 presents a summary of the calculations from this technique:
6
7

SUSTAINABLE GROWTH RATE

ROE	Dividend Payout, "d"	Retention Rate "b" = (1-"d")	ROE x "b"	[1- ROE x "b"]	Expected Growth
10.50%	70%	30%	3.15%	96.85%	3.25%
11.00%	65%	40%	4.40%	95.60%	4.60%
12.00%	60%	40%	4.80%	95.20%	5.04%
12.50%	60%	40%	5.00%	95.00%	5.26%

8 Q. DO YOU HAVE ANYTHING ELSE TO ADD?

9 A. Yes. Using Value Line's estimate of future "earned" ROEs at about 12 percent,
10 along with a 40 percent retention rate, provides a growth rate estimate of 4.8
11 percent. This forecasted growth rate is based upon the future expectations for
12 the industry. It takes into account the expected level of earnings retention as
13 well as expected long-run returns on equity for the industry. It should be noted
14 that the ROE that is forecast by Value Line includes the contribution to earnings
15 from activities other than rate-regulated activities, and includes the accretive
16 effect of on-going share issuances at prices above book value.
17
18

19 Historic Utility Growth Rates

20 Q. IS THERE HISTORIC INFORMATION AVAILABLE REGARDING THE
21 ACTUAL GROWTH RATES OF THE COMPARABLE COMPANIES?

1 A. Yes. Over the past decade, the comparable companies have achieved a
2 median growth in book value, earnings per share, and dividends of less than
3 5.5 percent (average less than 5.0 percent.)

4 **Q. SHOULD THE COMMISSION GIVE ANY WEIGHT TO THE HISTORIC**
5 **GROWTH IN THIS CASE?**

6 A. Yes. Because there is no evidence that this historic period was the result of
7 unfair earnings performance, it could provide guidance judging future growth
8 expectations. The historic dividend growth reflects the comparable companies'
9 economic performance and dividend policies. If historic dividend growth is
10 relatively stable, one would assume that the historic dividend growth would
11 continue all else being equal.

12 The comparable companies' historic growth, coupled with Value Line's
13 average forecast of about five percent growth in earnings over the next five-
14 year period, supports an expected long-term growth rate near five percent. A
15 factor that would tend to place greater reliance on the higher-end of the range,
16 however, relates to changes in the dividend retentions. As more earnings are
17 withheld and reinvested in a company, the growth rate would increase, all else
18 equal.

19 **Q. IF THE DCF MODELS USE DIVIDEND GROWTH, WHY WOULD ONE**
20 **CONSIDER GROWTH IN BOOK VALUE OR GROWTH IN EARNINGS?**

21 A. Over the long run, there can be no growth in dividends per share without
22 growth in earnings per share unless companies have higher payout ratios.
23 Both earnings and dividend expectations have a significant influence on the
24 market prices. By considering earnings growth rates in the DCF analysis, a link
25 is provided between investors' market appreciation expectations and the

1 growth rate component of the DCF models. Over the long run, a convergence
2 among these measures of growth is a required assumption.

3 **Q. DO YOU HAVE ADDITIONAL INFORMATION ON THE HISTORIC GROWTH**
4 **RATES FROM THE COHORT SAMPLE YOU HAVE SELECTED?**

5 A. Yes, based upon Value Line's most current data, the following tables detail
6 historic growth in cash flow, earnings per share, dividends, and book value.
7 The last table provides Value Line's forecasts for these same financial metrics.

8 From this data, book value and earnings growth rates over the past
9 five and ten year periods have ranged from about 4.5 to 6.0 percent. Dividends
10 have grown more slowly, at about 2.5 percent.

11 **HISTORIC 10-YEAR GROWTH RATES**

	<u>EPS</u>	<u>DIV</u>	<u>BV</u>
AGL Resources	6.50%	1.50%	5.50%
Atmos Energy	4.00%	3.00%	6.50%
Laclede Group	2.50%	1.00%	3.00%
New Jersey Resources	7.50%	3.00%	6.50%
Nicor Inc.	1.00%	4.00%	3.00%
Northwest Nat. Gas	1.50%	1.00%	4.00%
Piedmont Natural Gas	5.50%	5.50%	6.50%
South Jersey Inds.	8.00%	1.50%	5.50%
WGL Holdings Inc.	4.50%	1.50%	4.00%
Average	4.6%	2.4%	4.9%
Median	4.5%	1.5%	5.5%

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20 **HISTORIC 5-YEAR GROWTH RATES**

	<u>EPS</u>	<u>DIV</u>	<u>BV</u>
AGL Resources	13.50%	2.00%	8.50%
Atmos Energy	6.50%	2.00%	8.50%
Laclede Group	4.50%	0.50%	2.50%
New Jersey Resources	8.00%	3.50%	8.50%
Nicor Inc.	-3.50%	3.50%	1.50%
Northwest Nat. Gas	5.00%	1.00%	3.50%
Piedmont Natural Gas	5.00%	5.00%	6.50%
South Jersey Inds.	11.50%	2.50%	13.00%
WGL Holdings Inc.	6.00%	1.50%	3.00%
Average	6.3%	2.4%	6.2%
Median	6.0%	2.0%	6.5%

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FORECAST (EX-ANTE) 5-YEAR GROWTH RATES

The following table provides Value Line's current growth rate forecasts. A reasonable growth rate estimate for the group is about 4.0 to 5.0 percent.

	<u>EPS</u>	<u>DIV</u>	<u>BV</u>
AGL Resources	4.00%	6.50%	6.50%
Atmos Energy	6.50%	1.50%	4.00%
Laclede Group	5.00%	2.50%	7.50%
New Jersey Resources	4.50%	4.50%	8.50%
Nicor Inc.	4.00%	1.00%	4.50%
Northwest Nat. Gas	7.00%	4.50%	4.00%
Piedmont Natural Gas	6.00%	5.50%	4.50%
South Jersey Inds.	7.00%	6.00%	6.00%
WGL Holdings Inc.	1.50%	2.00%	3.50%
Average	5.1%	3.8%	5.4%
Median	5.0%	4.5%	4.5%

Q. ARE THERE MACROECONOMIC FACTORS, OTHER THAN CHANGES IN INTEREST RATES,⁷ THAT SHOULD BE CONSIDERED?

A. Yes. The implications of the tax cut program enacted in 2003 lowered dividend taxes, which is especially relevant for public utilities, which generally pay a large amount of dividends. With this reduction, the equity investor would be expected to bid up the price, all else being equal. This change would be expected to significantly contribute to the price of shares in high-dividend paying companies; thereby, reducing the required rate of return.

The 2005 Financial Review, "Annual Report of the U.S. Shareholder-owned Electric Utility Industry, Edison Electric Institute"⁸ supports the assertion that the dividend tax-reduction has the effect of increasing access to capital, as well as lowering the required returns:

The electric utility industry, known for its history of paying a strong dividend, continues to benefit from The Jobs and

⁷ Expected changes in interest rates are included in my analysis. For more information on interest rates, please refer to Staff/1003, Morgan/3.

⁸ http://www.eei.org/industry_issues/finance_and_accounting/finance/research_and_analysis/financial_review/FinancialReview.pdf, page 21

1 Growth Tax Relief Reconciliation Act of 2003. The Act reduced
2 individual tax rates on dividends to 15% for most tax brackets
3 and to 5% for the lowest two brackets. These tax rate
4 reductions provide an advantage for dividend paying stocks
5 over bonds, as bond interest is still taxed as ordinary income.
6 In May 2006, Congress extended the tax break an additional
7 two years, through the end of 2010. The reduction of individual
8 tax rates on dividends has clearly supported utility share
9 values by improving the net after-tax return to shareholders.

10 From the dividend paying company's perspective, a
11 higher stock price reduces the number of shares required to
12 raise a targeted amount of equity capital, therefore reducing
13 the aggregate dividend payment required to service the newly
14 issued shares—an especially attractive benefit for this capital-
15 intensive industry.

16 Sensitivity Analysis

17
18 **Q. WHAT IS THE RANGE OF COST OF EQUITY RESULTS INDICATED BY**
19 **THE 40-YEAR DCF MODEL?**

20 A. Based on the more equity-capitalized structure of the sample, the following
21 table provides a range of results, indicating the cost of equity that could be
22 generated in the 3-stage, 40-year DCF. This table reflects a range of retention
23 rates of 40 percent to 45 percent and ROEs as high as 13.0 percent. Value
24 Line estimated the industry average ROE and retention rates at 12.0 percent
25 and 60 percent, respectively. See Staff/403 Morgan/52. This compares to
26 Cascade actual forecasts of 11 percent and 61 percent. See Staff/403
27 Morgan/55. Therefore, Cascade could be expected to grow less than the

1 company sample, or 4.3 percent, compared to a five percent estimate for the
2 industry.

3 **SENSITIVITY ANALYSIS, EXPECTED COST OF EQUITY**

Growth Rate	5.18%	5.40%	5.63%	5.85%
Cost of Equity	8.62%	8.95%	9.27%	9.59%

4
5 **Check of Reasonableness**

6 **Q. DID YOU CONSIDER OTHER EXPECTATIONS FOR ROES?**

7 A. Yes. Expectations for ROE decisions are under 10.0 percent, and potentially as
8 low as 9.0 percent. See Staff/403 Morgan/61.

9 **Q. HOW DID YOU DETERMINE THE REASONABLENESS OF YOUR**
10 **CONCLUSION?**

11 A. I provided various reports indicating what overall market returns are expected
12 to be over the foreseeable future. These figures range as low as about eight
13 percent and as high as 11 percent. The highest overall market expectations
14 can be viewed as an absolute upper limit as compared to a reasonable,
15 required ROE for the public utility sector.

16 **Q. WHY DOES THE OVERALL MARKET RETURN SET THE CEILING FOR**
17 **THE INDUSTRY?**

18 A. Regulated public utilities have lower risk than the overall market and should
19 have returns lower than that required by the market in general. This notion is
20 well-founded. Because the average Beta⁹ is lower than 1.0, equity returns for
21 regulated public utilities would necessarily be lower than that of the market. The
22 CAPM framework requires a "risk-free rate", a market risk premium, and
23 estimates of Beta. This evidence is useful as a check of reasonableness.

⁹ See Staff/403 Morgan/29 for a discussion of Beta and the CAPM Model.

1 **Q. WHAT DOES THIS IMPLY ABOUT THE COST OF EQUITY FOR**
2 **REGULATED UTILITIES?**

3 A. Staff's historic CAPM practice employs some technical adjustments; I will
4 simplify the process for calculating the model.

5 The current 10-year Treasuries rate (typically regarded as the "risk-
6 free" rate) is about five percent. This figure suffices for the "risk-free" rate,
7 although it should be noted that actual 10-year Treasury rates are about 20
8 basis points lower as of the beginning of February.

9 As I mentioned earlier, the market return is expected to be no greater
10 than 11.0 percent and likely as low as 10 percent. Based on a return of 11
11 percent, the market risk premium would be six percent ($11.0\% - 5.0\% = 6.0\%$).

12 I will use a Beta of 0.80, which is the average of the sample group's
13 Betas, as published by Value Line.¹⁰ Therefore, the sample group's risk
14 premium is 4.8 percent ($6.0\% \times .80 = 4.80\%$). Adding this public utility risk
15 premium to the current 4.8 percent risk-rate indicates an COE of 9.6 percent
16 ($4.8\% + 4.8\% = 9.6\%$). Using the 10 percent market return to set a lower
17 bound, the results would be a 4.0 percent risk premium ($5.0\% \times .80$) and an
18 COE of 8.8 percent. These indications bracket a 9.00 percent cost of equity, for
19 a utility with the cohort sample's capital structure, and accordingly, a 10.0
20 percent cost of equity for a utility with Cascade's capital structure. This analysis
21 provides a useful check of reasonableness.

22 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

23 A. Yes.

¹⁰ Whether Value Line's Beta is the most reflective for use in the CAPM has been debated. It likely provides an upper bound of reasonable Betas, depending on the measurement process. Because Value Line's Beta calculations are independent and publicly available, they are reasonable for this discussion.

CASE: UG 173
WITNESS: Thomas D. Morgan

**PUBLIC UTILITY COMMISSION
OF
OREGON**

STAFF EXHIBIT 401

Witness Qualification Statement

February 15, 2007

WITNESS QUALIFICATIONS STATEMENT

NAME: Thomas D. Morgan

EMPLOYER: Public Utility Commission of Oregon

TITLE: Senior Financial Economist, Economic & Policy Analysis

ADDRESS: 550 Capitol St NE Suite 215, Salem, Oregon 97301-2551.

EDUCATION: Bachelor of Science in Business Administration, Finance; 1993, University of Oregon, Eugene, Oregon *summa cum laude*. I have also completed coursework in the Master of Science in Finance program through the University of Leicester (UK).

RELEVANT WORK EXPERIENCE:

Since August 2001, I have been employed by the Public Utility Commission of Oregon as a financial analyst in the Economic Research & Financial/Policy Analysis Division. Current responsibilities include conducting research and providing technical support for cost of equity issues for electric, telecommunications, and gas utilities.

From October 1997 to August 2001, I worked for the Oregon Department of Revenue as a Senior Appraiser Analyst in the Utility Program, Valuation Section of the Property Tax Division. Duties included appraising a variety of public utility and transportation properties. The valuation process included developing cost of capital studies for use in the discounting of cash flows in the Income Capitalization Approach to value. Duties included valuation of the property owned by gas, electric, telecommunication and airline companies.

I am a certified general property appraiser and have been involved in the valuation of commercial properties since 1993.

CASE: UG 173
WITNESS: Thomas D. Morgan

**PUBLIC UTILITY COMMISSION
OF
OREGON**

STAFF EXHIBIT 402

Exhibits in Support of Testimony

February 15, 2007

**CASCADE NATURAL GAS CORPORATION
Oregon Public Utility Commission
2006 Show Cause Data Request**

Staff/402
Morgan/1

Request No. 88

Date prepared: November 20, 2006

Preparer: Matt McArthur

Telephone: (206) 381-6777

Please provide an electronic listing of the Company's outstanding debt issuances, in the format that will be provided as an attachment to these requests.

Response:

See attached spreadsheet: DR 88 Cost of Debt Worksheet UG 173.xls

(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)	(O)	(P)	(Q)	(R)	(S)
	Ledger	Type	Description	Issue Date	Maturity Date	Term	Coupon	Gross Proceeds	DD&E Issue Costs	Call Premium & Unamort. DD&E of Refunded Issue	Net Proceeds	Embedded Cost	Net to Gross Rate	Face Amount Outstanding as of 11/1/06	Net Outstanding	Face Amount Weight	Weighted Rate	Embedded Cost
		(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)	(O)	(P)	(Q)	(R)	(S)
									(c)	(K)	(L)	(M)	(N)	(O)	(P)	(Q)	(R)	(S)
1	23707701	MTN	8.06% Due 9/04/2012	4-Sep-02	4-Sep-12	20	8.065%	\$14,000,000	\$140,846	\$1,214,817	\$12,644,337	9.122%	90.917%	\$14,000,000	\$12,644,337	8.479%	0.773%	8.121%
2	23707701	MTN	8.11% Due 10/8/2012	7-Oct-02	8-Oct-12	20	8.100%	\$5,000,000	\$50,302	\$0	\$4,949,698	8.203%	98.984%	\$5,000,000	\$4,949,698	3.028%	0.248%	8.203%
3	23707701	MTN	7.85% Due 10/8/2013	7-Oct-02	8-Oct-12	20	8.110%	\$3,000,000	\$30,181	\$0	\$2,969,819	8.213%	98.984%	\$3,000,000	\$2,969,819	1.817%	0.148%	8.213%
4	23707701	MTN	8.01% Due 2/13/2013	9-Feb-03	4-Feb-13	20	7.950%	\$4,000,000	\$40,242	\$556,184	\$3,403,564	9.648%	85.089%	\$4,000,000	\$3,403,564	2.422%	0.234%	9.648%
5	23707701	MTN	8.01% Due 2/13/2013	12-Feb-03	12-Feb-13	20	8.010%	\$10,000,000	\$100,604	\$1,390,484	\$8,508,912	9.714%	85.089%	\$10,000,000	\$8,508,912	6.056%	0.588%	9.714%
6	23707701	MTN	7.95% Due 2/25/2013	25-Feb-03	25-Feb-13	20	7.950%	\$10,000,000	\$100,604	\$1,390,484	\$8,508,912	9.648%	85.089%	\$10,000,000	\$8,508,912	6.056%	0.584%	9.648%
7	23707701	MTN	8.5% Due 10/2/2008	20-Oct-04	2-Oct-06	12	8.500%	\$8,000,000	\$70,570	\$0	\$7,929,430	0.000%	98.118%	\$0	\$0	0.000%	0	0.000%
8	23707701	MTN	7.48% Due 9/15/2007	15-Sep-07	15-Sep-27	30	7.480%	\$20,000,000	\$201,406	\$0	\$19,798,594	7.565%	98.983%	\$20,000,000	\$19,798,594	12.112%	0.916%	7.565%
9	23707701	MTN	7.098% Due 3/16/2009	16-Mar-09	16-Mar-29	30	7.098%	\$15,000,000	\$151,056	\$0	\$14,848,944	7.180%	98.983%	\$15,000,000	\$14,848,944	9.084%	0.652%	7.180%
10	23707701	Note	5.21% Due 9/1/2020	1-Sep-05	1-Sep-20	15	5.210%	\$15,000,000	\$282,524	\$0	\$14,717,476	5.395%	98.117%	\$15,000,000	\$14,717,476	9.084%	0.490%	5.394%
11	23707701	Note	7.5% LTN Due 11/15/2031	15-Nov-01	15-Nov-31	30	7.500%	\$40,000,000	\$1,490,735	\$0	\$38,509,265	7.861%	96.273%	\$39,831,000	\$38,509,265	24.122%	1.896%	7.860%
12	23707701	ICN	5.25% LTN Due 2/1/2035	1-Feb-05	1-Feb-35	30	5.250%	\$30,000,000	\$1,906,891	\$0	\$28,093,109	5.860%	93.644%	\$29,292,000	\$27,430,112	17.740%	1.039%	5.858%
			Total Debt					\$174,000,000	\$4,565,961	\$4,551,979	\$164,882,060			\$165,123,000	\$17,694,035	100.00%	7.5714%	

Single-Stage DCF Model Results

UG 173

COMPANY	TICKER	[A] Next 12-months Dividend	[B] Current Price	[C] Div Yield	[D] Ave. Analyst Growth	[E] ROE
AGL Resources	ATG	\$1.58	\$40.75	3.88%	4.51%	8.39%
Atmos Energy	ATO	\$1.28	\$31.55	4.06%	5.81%	9.87%
Laclede Group	LG	\$1.46	\$32.72	4.46%	4.13%	8.59%
New Jersey Resources	NJR	\$1.52	\$47.02	3.23%	5.34%	8.57%
NICOR Inc.	GAS	\$1.86	\$46.11	4.03%	3.25%	7.28%
Northwest Nat. Gas	NWN	\$1.43	\$41.30	3.46%	5.00%	8.46%
Piedmont Natural Gas	PNY	\$0.96	\$26.26	3.66%	5.00%	8.66%
South Jersey Inds.	SJI	\$0.98	\$33.51	2.92%	5.00%	7.92%
WGL Holdings Inc.	WGL	\$1.37	\$31.70	4.32%	5.00%	9.32%
		AVERAGE	3.78%	4.78%	8.56%	
		MEDIAN	3.88%	5.00%	8.57%	

Single-Stage DCF Model, Sensitivity Analysis

UG 173

COMPANY	TICKER	[A] Next 12-months Dividend	[B] Current Price	[C] Div Yield	[F] GROWTH Minimum Analyst Forecast	[G] ROE	[H] GROWTH Maximum Analyst Forecast	[I] ROE
AGL Resources	ATG	\$1.58	\$40.75	3.88%	4.00%	7.88%	5.00%	8.88%
Atmos Energy	ATO	\$1.28	\$31.55	4.06%	5.07%	9.13%	6.50%	10.56%
Laclede Group	LG	\$1.46	\$32.72	4.46%	3.00%	7.46%	5.00%	9.46%
New Jersey Resources	NJR	\$1.52	\$47.02	3.23%	4.50%	7.73%	6.00%	9.23%
NICOR Inc.	GAS	\$1.86	\$46.11	4.03%	2.50%	6.53%	4.00%	8.03%
Northwest Nat. Gas	NWN	\$1.43	\$41.30	3.46%	4.88%	8.34%	7.00%	10.46%
Piedmont Natural Gas	PNY	\$0.96	\$26.26	3.66%	4.00%	7.66%	6.00%	9.66%
South Jersey Inds.	SJI	\$0.98	\$33.51	2.92%	6.00%	8.92%	7.00%	9.92%
WGL Holdings Inc.	WGL	\$1.37	\$31.70	4.32%	1.50%	5.82%	4.00%	8.32%
		AVERAGE	3.78%	3.94%	7.72%	5.61%	9.39%	
		MEDIAN	3.88%	4.00%	7.73%	6.00%	9.46%	

[A] Value Line Summary and Index, February, 2007
 [B] Most current stock quotes provided by MSN Money, www.moneycentral.msn.com
 [C] Dividend rate divided by market price [C] / [B]
 [D] Growth Rates from Schedule 11 B
 [E] = [C] + [D]; Dividend Yield + Growth
 [F] From Long Term Growth worksheet, Minimum Column
 [G] = [C] + [F]; Dividend Yield + Growth
 [H] From Long Term Growth worksheet, Maximum Column
 [I] = [C] + [F]; Dividend Yield + Growth

LONG TERM GROWTH Maximum Analyst Estimate

====> to year 150

	[1] Most Current Price	[2] Dividend EOY 1	[3] Dividend EOY 2	[4] Dividend EOY 3	[5] Dividend EOY 4	Dividend EOY 5	Dividend EOY 6	Dividend EOY 7	Dividend EOY 8	Dividend EOY 9	Dividend EOY 10
GAS COMPANIES											
IRR											
ATG	8.70%	\$1.58	\$1.64	\$1.69	\$1.75	1.84	1.93	2.03	2.13	2.23	2.35
ATOs	10.05%	\$1.28	\$1.30	\$1.33	\$1.35	1.44	1.53	1.63	1.74	1.85	1.97
LG	9.10%	\$1.45	\$1.48	\$1.52	\$1.55	1.63	1.71	1.79	1.88	1.98	2.08
New Jersey Resources	9.00%	\$1.52	\$1.58	\$1.64	\$1.70	1.80	1.91	2.02	2.15	2.27	2.41
NICOR Inc.	7.86%	\$1.90	\$1.93	\$1.97	\$2.00	2.08	2.16	2.25	2.34	2.43	2.53
Northwest Nat. Gas	10.33%	\$1.43	\$1.52	\$1.61	\$1.70	1.82	1.95	2.08	2.23	2.38	2.55
Piedmont Natural Gas	9.72%	\$1.00	\$1.06	\$1.11	\$1.17	1.24	1.31	1.39	1.48	1.57	1.66
South Jersey Inds.	9.75%	\$0.98	\$1.04	\$1.09	\$1.15	1.23	1.32	1.41	1.51	1.61	1.73
WGL Holdings Inc.	8.15%	\$1.38	\$1.41	\$1.45	\$1.48	1.54	1.60	1.66	1.73	1.80	1.87
AGGREGATE	9.33%	12.52	12.96	13.41	13.85	14.61	15.42	16.28	17.18	18.13	19.14
Average	9.19%										
Stdev	0.80%										
Min	7.86%										
Max	10.33%										
Median	9.10%										
25 percentile	8.70%										

RESULTING IRR 9.01%

Year	[1] Year End Book	[2] Retention Rate	[3] Dividend	[4] Earnings Per Share	[5] Retained Earnings Per Share	[6] Total Increment to Book	[7] Market Price	[8] Mkt to Book	[9] Expect. Ret. on Equity	[10] Cash Fl. from Stock Trans.	[11] Cash Div.	[12] Total Cash Flow
	[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]	[I]	[J]	[K]	[L]
2006	\$18.63											
2007	\$19.49	37.62%	\$1.39	\$2.23	\$0.84	\$0.84	\$37.04	1.90	11.44%		\$1.39	(\$37.04)
2008	\$20.50	38.65%	\$1.44	\$2.35	\$0.91	\$0.91	\$38.96	1.90	11.45%		\$1.44	\$1.39
2009	\$21.51	39.58%	\$1.49	\$2.47	\$0.98	\$0.98	\$40.87	1.90	11.46%		\$1.49	\$1.44
2010	\$22.52	40.43%	\$1.54	\$2.58	\$1.04	\$1.04	\$42.79	1.90	11.47%		\$1.54	\$1.49
2011	\$23.84	45.00%	\$1.61	\$2.92	\$1.31	\$1.31	\$45.29	1.90	12.25%		\$1.54	\$1.54
2012	\$25.23	45.00%	\$1.70	\$3.09	\$1.39	\$1.39	\$47.93	1.90	12.25%		\$1.61	\$1.61
2013	\$26.66	45.00%	\$1.75	\$3.18	\$1.43	\$1.43	\$50.65	1.90	12.25%		\$1.70	\$1.70
2014	\$28.17	45.00%	\$1.85	\$3.36	\$1.51	\$1.51	\$53.52	1.90	12.25%		\$1.85	\$1.85
2015	\$29.76	45.00%	\$1.95	\$3.55	\$1.60	\$1.60	\$56.55	1.90	12.25%		\$1.95	\$1.95
2016	\$31.45	45.00%	\$2.06	\$3.75	\$1.69	\$1.69	\$59.76	1.90	12.25%		\$2.06	\$2.06
2017	\$33.23	45.00%	\$2.18	\$3.96	\$1.78	\$1.78	\$63.15	1.90	12.25%		\$2.18	\$2.18
2018	\$35.12	45.00%	\$2.30	\$4.19	\$1.88	\$1.88	\$66.73	1.90	12.25%		\$2.30	\$2.30
2019	\$37.11	45.00%	\$2.43	\$4.42	\$1.99	\$1.99	\$70.51	1.90	12.25%		\$2.43	\$2.43
2020	\$39.21	45.00%	\$2.57	\$4.67	\$2.10	\$2.10	\$74.51	1.90	12.25%		\$2.57	\$2.57
2021	\$41.44	45.00%	\$2.72	\$4.94	\$2.22	\$2.22	\$78.73	1.90	12.25%		\$2.72	\$2.72
2022	\$43.79	45.00%	\$2.87	\$5.22	\$2.35	\$2.35	\$83.19	1.90	12.25%		\$2.87	\$2.87
2023	\$46.27	45.00%	\$3.03	\$5.52	\$2.48	\$2.48	\$87.91	1.90	12.25%		\$3.03	\$3.03
2024	\$48.89	45.00%	\$3.21	\$5.83	\$2.62	\$2.62	\$92.89	1.90	12.25%		\$3.21	\$3.21
2025	\$51.66	45.00%	\$3.39	\$6.16	\$2.77	\$2.77	\$98.16	1.90	12.25%		\$3.39	\$3.39
2026	\$54.59	45.00%	\$3.58	\$6.51	\$2.93	\$2.93	\$103.72	1.90	12.25%		\$3.58	\$3.58
2027	\$57.68	45.00%	\$3.78	\$6.88	\$3.09	\$3.09	\$109.60	1.90	12.25%		\$3.78	\$3.78
2028	\$60.95	45.00%	\$4.00	\$7.27	\$3.27	\$3.27	\$115.81	1.90	12.25%		\$4.00	\$4.00
2029	\$64.41	45.00%	\$4.22	\$7.68	\$3.46	\$3.46	\$122.38	1.90	12.25%		\$4.22	\$4.22
2030	\$68.06	45.00%	\$4.46	\$8.11	\$3.65	\$3.65	\$129.32	1.90	12.25%		\$4.46	\$4.46
2031	\$71.92	45.00%	\$4.72	\$8.57	\$3.86	\$3.86	\$136.65	1.90	12.25%		\$4.72	\$4.72
2032	\$76.00	45.00%	\$4.98	\$9.06	\$4.08	\$4.08	\$144.39	1.90	12.25%		\$4.98	\$4.98
2033	\$80.30	45.00%	\$5.27	\$9.57	\$4.31	\$4.31	\$152.58	1.90	12.25%		\$5.27	\$5.27
2034	\$84.86	45.00%	\$5.56	\$10.12	\$4.55	\$4.55	\$161.23	1.90	12.25%		\$5.56	\$5.56
2035	\$89.67	45.00%	\$5.88	\$10.69	\$4.81	\$4.81	\$170.37	1.90	12.25%		\$5.88	\$5.88
2036	\$94.75	45.00%	\$6.21	\$11.30	\$5.08	\$5.08	\$180.03	1.90	12.25%		\$6.21	\$6.21
2037	\$100.12	45.00%	\$6.56	\$11.94	\$5.37	\$5.37	\$190.23	1.90	12.25%		\$6.56	\$6.56
2038	\$105.80	45.00%	\$6.94	\$12.61	\$5.68	\$5.68	\$201.01	1.90	12.25%		\$6.94	\$6.94
2039	\$111.79	45.00%	\$7.33	\$13.33	\$6.00	\$6.00	\$212.41	1.90	12.25%		\$7.33	\$7.33
2040	\$118.13	45.00%	\$7.75	\$14.08	\$6.34	\$6.34	\$224.45	1.90	12.25%		\$7.75	\$7.75
2041	\$124.83	45.00%	\$8.18	\$14.88	\$6.70	\$6.70	\$237.17	1.90	12.25%		\$8.18	\$8.18
2042	\$131.90	45.00%	\$8.65	\$15.72	\$7.08	\$7.08	\$250.62	1.90	12.25%		\$8.65	\$8.65
2043	\$139.38	45.00%	\$9.14	\$16.62	\$7.48	\$7.48	\$264.83	1.90	12.25%		\$9.14	\$9.14
2044	\$147.28	45.00%	\$9.66	\$17.56	\$7.90	\$7.90	\$279.84	1.90	12.25%		\$9.66	\$9.66
2045	\$155.63	45.00%	\$10.20	\$18.55	\$8.35	\$8.35	\$295.70	1.90	12.25%		\$10.20	\$10.20
2046	\$164.45	45.00%	\$10.78	\$19.61	\$8.82	\$8.82	\$312.46	1.90	12.25%	\$312.46	\$10.78	\$323.25

Indicated Marginal Cost of Equity 9.01%

Source:

- [A] First Stage is average from Value Line. Second stage is prior years' book value plus value from Col. [6]
- [B] First Stage is Col. [4]-Col.[3]/Col.[4]. First year of second stage computed by 1-dividends/earnings; subsequent years use the same retention rate.
- [C] First Stage is from Value Line. First year of second stage determined by Terminal Retention rate and ROE. Subsequent years of second stage is Col. [4] x (1-Col. [2])
- [D] First Stage is from Value line. Second stage is average of current and prior years' value from Col. [1] x Col. [9]
- [E] Col. [4] - Col. [3]
- [F] Col. [4] - Col. [3]
- [G] Col. [1] x Col. [10]
- [H] Staff/402 Schedule 7
- [I] First stage is Col. [4]/Ave. of Current and prior year's Col. [1]. Second stage is input.
- [J] Input is "negative" Col. [7] for year of purchase, "positive" Col. [7] for year of sale.
- [K] Col. [3]
- [L] Col. [10] + Col. [11]

SENSITIVITY ANALYSES, EXPECTED ORGANIC GROWTH RATE

Terminal Retention Rate	10.00%	10.50%	11.00%	11.50%	13.00%	13.50%	14.00%
30.00%	3.00%	3.15%	3.30%	3.45%	3.90%	4.05%	4.20%
35.00%	3.50%	3.68%	3.85%	4.03%	4.55%	4.73%	4.90%
40.00%	4.00%	4.20%	4.40%	4.60%	5.20%	5.40%	5.60%
45.00%	4.50%	4.73%	4.95%	5.18%	5.85%	6.08%	6.30%
50.00%	5.00%	5.25%	5.50%	5.75%	6.50%	6.75%	7.00%

SENSITIVITY ANALYSES, EXPECTED INTERNAL RATE OF RETURN

Terminal Retention Rate	9.0%	10.00%	10.50%	11.00%	11.50%	13.00%	13.50%	14.00%
30.00%	6.91%	7.19%	7.42%	7.71%	8.01%	8.60%	8.87%	9.15%
35.00%	7.12%	7.33%	7.65%	7.96%	8.27%	8.89%	9.18%	9.47%
40.00%	7.33%	7.55%	7.88%	8.20%	8.53%	9.19%	9.49%	9.80%
45.00%	7.55%	7.78%	8.12%	8.46%	8.79%	9.49%	9.81%	10.13%
50.00%	7.78%	8.02%	8.36%	8.70%	9.03%	9.80%	10.14%	10.47%

COHORT GAS COMPANIES
VALUE LINE'S EARNINGS PER SHARE PROJECTIONS

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COMPANY	Ticker	2005	2006	2007	2008	2009	2010	CAGR
AGL Resources	ATG	\$2.48	\$2.65	\$2.70	\$2.77	\$2.83	\$2.90	1.8%
Almos Energy	ATO	\$1.72	\$2.00	\$1.95	\$2.12	\$2.28	\$2.45	5.2%
Laclede Group	LG	\$1.90	\$2.37	\$2.15	\$2.27	\$2.38	\$2.50	1.3%
New Jersey Resources	NJR	\$2.85	\$2.80	\$2.90	\$3.05	\$3.20	\$3.35	4.6%
NICOR Inc.	GAS	\$2.27	\$2.70	\$2.72	\$2.75	\$2.77	\$2.80	0.9%
Northwest Nat. Gas	NWN	\$2.11	\$2.25	\$2.40	\$2.55	\$2.70	\$2.85	6.1%
Piedmont Natural Gas	PNY	\$1.32	\$1.30	\$1.40	\$1.52	\$1.63	\$1.75	7.7%
South Jersey Inds.	SJI	\$1.71	\$1.85	\$1.90	\$2.07	\$2.18	\$2.30	5.6%
WGL Holdings Inc.	WGL	\$2.11	\$1.80	\$1.95	\$2.05	\$2.20	\$2.35	5.3%
AVERAGE		\$2.03	\$2.20	\$2.23	\$2.35	\$2.47	\$2.58	4.30%

Note: Data are from the most current Value Line report.

VALUE LINE'S BOOK VALUE PER SHARE PROJECTIONS

COMPANY	2005	2006	2007	2008	2009	2010	CAGR
AGL Resources	\$19.29	\$20.40	\$21.50	\$22.70	\$23.90	\$25.10	3.9%
Almos Energy	\$19.90	\$20.10	\$20.20	\$21.12	\$22.03	\$22.95	3.4%
Laclede Group	\$17.31	\$18.85	\$20.65	\$22.43	\$24.22	\$26.00	8.4%
New Jersey Resources	\$15.90	\$22.50	\$23.60	\$25.02	\$26.43	\$27.85	5.5%
NICOR Inc.	\$18.36	\$19.35	\$20.20	\$21.07	\$21.93	\$22.80	4.2%
Northwest Nat. Gas	\$21.28	\$22.10	\$22.95	\$23.82	\$24.68	\$25.55	3.7%
Piedmont Natural Gas	\$11.53	\$11.90	\$12.40	\$12.88	\$13.37	\$13.85	3.9%
South Jersey Inds.	\$13.50	\$14.25	\$15.05	\$15.85	\$16.65	\$17.45	5.2%
WGL Holdings Inc.	\$17.80	\$18.25	\$18.90	\$19.65	\$20.40	\$21.15	3.8%
AVERAGE	\$17.21	\$18.63	\$19.49	\$20.50	\$21.51	\$22.52	4.65%

AVERAGE ROE

COMPANY	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010
AGL Resources	13.35%	12.89%	12.52%	12.16%	11.84%
Almos Energy	10.00%	9.68%	10.25%	10.58%	10.89%
Laclede Group	13.11%	10.89%	10.52%	10.22%	9.96%
New Jersey Resources	14.58%	12.58%	12.55%	12.44%	12.34%
NICOR Inc.	14.32%	13.75%	13.31%	12.90%	12.52%
Northwest Nat. Gas	10.37%	10.65%	10.91%	11.13%	11.35%
Piedmont Natural Gas	11.10%	11.52%	12.00%	12.44%	12.86%
South Jersey Inds.	13.33%	13.31%	13.38%	13.44%	13.49%
WGL Holdings Inc.	10.54%	10.23%	10.64%	10.99%	11.31%
Average	11.80%	12.29%	11.70%	11.74%	11.74%

EOY ROE

COMPANY	2006	2007	2008	2009	2010
AGL Resources	13.74%	13.24%	12.87%	12.48%	12.13%
Almos Energy	10.05%	9.70%	10.48%	10.81%	11.12%
Laclede Group	13.69%	11.41%	10.98%	10.62%	10.32%
New Jersey Resources	17.61%	12.89%	12.92%	12.79%	12.67%
NICOR Inc.	14.71%	14.06%	13.60%	13.16%	12.77%
Northwest Nat. Gas	10.57%	10.86%	11.11%	11.34%	11.55%
Piedmont Natural Gas	11.27%	11.76%	12.23%	12.68%	13.09%
South Jersey Inds.	13.70%	13.68%	13.73%	13.77%	13.81%
WGL Holdings Inc.	10.67%	10.41%	10.85%	11.20%	11.52%
AVERAGE	12.89%	12.00%	12.09%	12.10%	12.11%

Value Line's Dividends Per Share

COMPANY	2005	2006	2007	2008	2009	2010	CAGR
AGL Resources	\$1.30	\$1.50	\$1.58	\$1.64	\$1.69	\$1.75	2.6%
Almos Energy	\$1.24	\$1.20	\$1.28	\$1.30	\$1.33	\$1.35	1.7%
Laclede Group	\$1.37	\$1.40	\$1.45	\$1.48	\$1.52	\$1.55	2.6%
New Jersey Resources	\$1.36	\$1.44	\$1.52	\$1.58	\$1.64	\$1.70	4.2%
NICOR Inc.	\$1.86	\$1.88	\$1.90	\$1.93	\$1.97	\$2.00	1.8%
Northwest Nat. Gas	\$1.32	\$1.39	\$1.43	\$1.52	\$1.61	\$1.70	5.2%
Piedmont Natural Gas	\$0.91	\$0.96	\$1.00	\$1.06	\$1.11	\$1.17	5.1%
South Jersey Inds.	\$0.86	\$0.82	\$0.88	\$1.04	\$1.09	\$1.15	5.7%
WGL Holdings Inc.	\$1.32	\$1.35	\$1.38	\$1.41	\$1.45	\$1.48	2.3%
Average	\$1.28	\$1.34	\$1.39	\$1.44	\$1.49	\$1.54	3.47%

LONG-TERM GROWTH: Firstcall (MSN), Reuters', Zack's and Kiplinger's Long Term Earnings Growth Expectations

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UPDATED: 1/31/2007

	Ticker	Firstcall	MS Reuters	Zack's	Kiplingers	Value Line	Average	Median	Minimum	Maximum	EPS	DPS
AGL Resources	ATG	4.30%	4.66%	4.60%	5.00%	4.00%	4.51%	4.60%	4.00%	5.00%	4.00%	6.50%
Atmos Energy	ATO	6.00%	5.07%	5.50%	6.00%	6.50%	5.81%	6.00%	5.07%	6.50%	6.50%	1.50%
Laclede Group	LG	4.50%	3.00%	N/A	4.00%	5.00%	4.13%	4.25%	3.00%	5.00%	5.00%	2.50%
New Jersey Resources	NJR	6.00%	5.20%	6.00%	5.00%	4.50%	5.34%	5.20%	4.50%	6.00%	4.50%	4.50%
NICOR Inc.	GAS	3.00%	3.75%	2.50%	3.00%	4.00%	3.25%	3.00%	2.50%	4.00%	4.00%	1.00%
Northwest Nat. Gas	NWN	6.00%	4.88%	5.30%	5.00%	7.00%	5.00%	5.30%	4.88%	7.00%	7.00%	4.50%
Piedmont Natural Gas	PNY	4.10%	4.67%	5.60%	4.00%	6.00%	5.00%	4.67%	4.00%	6.00%	6.00%	5.50%
South Jersey Inds.	SJI	6.00%	6.33%	6.30%	6.00%	7.00%	5.00%	6.30%	6.00%	7.00%	7.00%	6.00%
WGL Holdings Inc.	WGL	3.50%	3.50%	3.30%	4.00%	1.50%	5.00%	3.50%	1.50%	4.00%	1.50%	2.00%
AVERAGE		4.82%	4.56%	4.89%	4.67%	5.06%	4.78%	4.76%	3.94%	5.61%	5.06%	3.78%
MEDIAN		4.50%	4.67%	5.40%	5.00%	5.00%	5.00%	4.67%	4.00%	6.00%	5.00%	4.50%

Value Line's Industry Forecast 1/31/2007 5.60%

DATA SOURCES:

- MSN Firstcall [http://money.cnn.com/data/earnings/profiles/\[TICK\].html](http://money.cnn.com/data/earnings/profiles/[TICK].html)
- Reuters [http://www.investor.reuters.com/CompanyEstimates.aspx?ticker=\[tick\]&target=%2fstocks%2fprofessionalanalysis%2fearningsestimates%2fseestimates](http://www.investor.reuters.com/CompanyEstimates.aspx?ticker=[tick]&target=%2fstocks%2fprofessionalanalysis%2fearningsestimates%2fseestimates)
- Zack's [http://www.zacks.com/research/report.php?type=report&t=\[TICK\]](http://www.zacks.com/research/report.php?type=report&t=[TICK])
- Kiplingers [http://www.kiplinger.com/personalfinance/tools/stockfinder/search.php?type=single&order1=COMPANY&order2=ASC&startNo=0&ticker=\[tick\]&company=&maxNo=10](http://www.kiplinger.com/personalfinance/tools/stockfinder/search.php?type=single&order1=COMPANY&order2=ASC&startNo=0&ticker=[tick]&company=&maxNo=10)
- Value Line See Value Line source documents located in Staff/403.

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Morgan/8

COMPARATIVE NATURAL GAS COMPANIES
 Percentage of Common Equity in the Capital Structure
 Excluding Short-term Debt

GAS COMPANIES	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	'09-'11	Ave. '96-'07	Ave. '96-'10	2007
AGL Resources	48.90%	45.90%	47.10%	49.20%	48.30%	38.70%	41.70%	49.70%	46.00%	48.10%	49.00%	50.00%	51.50%	46.88%	47.24%	50.0%
Atmos Energy	58.50%	51.90%	48.20%	50.00%	51.90%	45.70%	46.10%	49.80%	56.80%	42.30%	43.00%	43.00%	45.00%	48.93%	48.63%	43.0%
Laclede Group	57.10%	61.60%	58.60%	57.80%	54.50%	50.20%	52.30%	49.40%	48.30%	51.80%	50.50%	51.00%	52.00%	53.59%	53.47%	51.0%
New Jersey Resources	45.80%	47.10%	45.60%	51.20%	52.80%	49.90%	49.40%	61.90%	59.70%	58.00%	65.20%	66.00%	67.50%	54.39%	55.40%	66.0%
NICOR Inc.	58.10%	57.20%	57.40%	64.00%	66.70%	61.70%	64.50%	60.30%	60.10%	62.50%	66.00%	67.00%	69.00%	62.13%	62.65%	67.0%
Northwest Nat. Gas	52.80%	49.00%	50.60%	49.90%	50.90%	53.20%	51.50%	50.30%	54.00%	53.00%	53.00%	53.00%	53.00%	51.77%	51.86%	53.0%
Piedmont Natural Gas	49.70%	52.40%	55.30%	53.80%	53.90%	52.40%	56.10%	57.80%	56.40%	58.60%	52.00%	53.00%	55.00%	54.28%	54.34%	53.0%
South Jersey Inds.	53.20%	35.80%	33.50%	37.00%	37.60%	35.90%	46.10%	49.00%	51.00%	55.10%	54.00%	54.50%	58.00%	45.23%	46.21%	54.5%
WGL Holdings Inc.	59.40%	56.20%	57.10%	56.10%	54.80%	56.30%	52.40%	54.30%	57.20%	58.60%	60.00%	60.50%	61.00%	56.91%	57.22%	60.5%
Average	53.72%	50.79%	50.38%	52.11%	52.39%	49.33%	51.12%	53.61%	54.39%	54.22%	54.74%	55.33%	56.89%	52.68%	53.00%	55.33%
Median	53.20%	51.90%	50.60%	51.20%	52.90%	50.20%	51.50%	50.30%	56.40%	55.10%	53.00%	53.00%	55.00%	53.59%	53.47%	53.00%
Minimum	45.80%	35.80%	33.50%	37.00%	37.60%	35.90%	41.70%	49.00%	46.00%	42.30%	43.00%	43.00%	45.00%	45.23%	46.21%	43.00%
Maximum	59.40%	61.60%	58.60%	64.00%	66.70%	61.70%	64.50%	61.90%	60.10%	62.50%	66.00%	67.00%	69.00%	62.13%	62.65%	67.00%

Source: Value Line
 Most current through:
 December-06

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2/1/2007

Ticker Share Price

ATG 40.75
ATO 31.55
LG 32.72
NJR 47.02
GAS 46.11
NWN 41.3
PNY 26.26
SJI 33.51
WGL 31.7

2/1/2007

MV/Share BV per Share M/B Ratio

AGL Resources 40.75 21.50 1.90
Atmos Energy 31.55 20.20 1.56
Laclede Group 32.72 20.65 1.58
New Jersey Resources 47.02 23.60 1.99
NICOR Inc. 46.11 20.20 2.28
Northwest Nat. Gas 41.30 22.95 1.80
Piedmont Natural Gas 26.26 12.40 2.12
South Jersey Inds. 33.51 15.05 2.23
WGL Holdings Inc. 31.70 18.90 1.68

AVERAGE 36.77 19.49 1.90
MEDIAN 33.51 20.20 1.90

CASE: UG 173
WITNESS: Thomas D. Morgan

**PUBLIC UTILITY COMMISSION
OF
OREGON**

STAFF EXHIBIT 403

Exhibits in Support of Testimony

February 15, 2007

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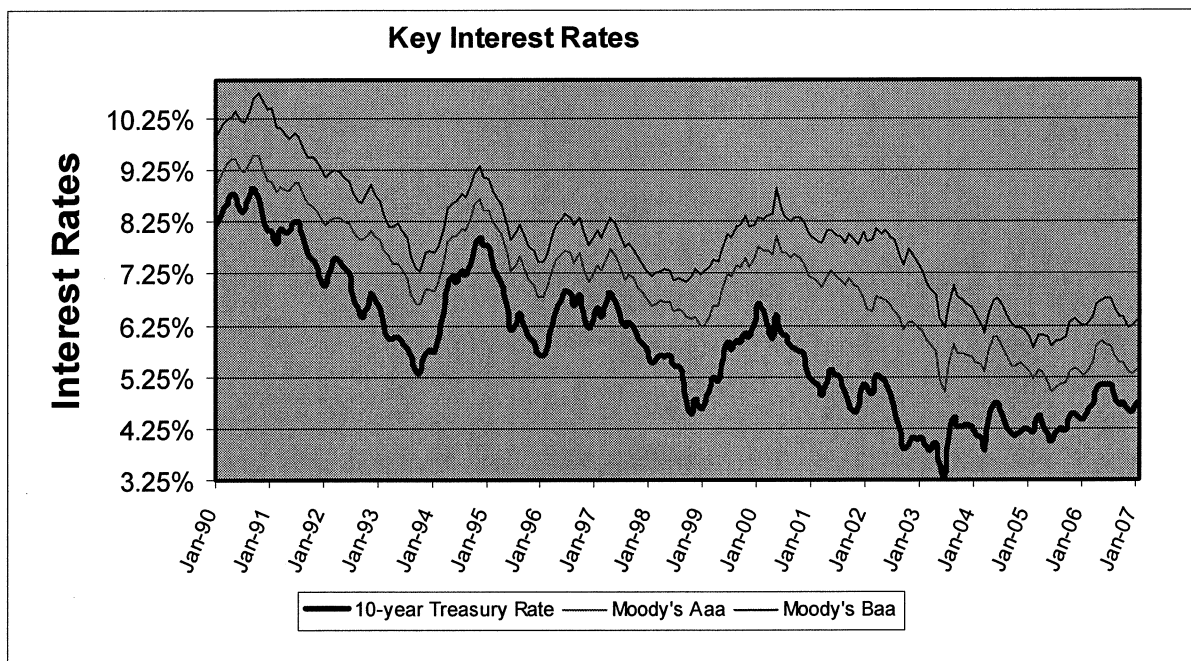
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Historical Perspective of Interest Rates

Interest rates have declined significantly in the past ten years, and have recently reached record lows. Below is a chart that graphs corporate bond rates along with U.S. Treasury rates from January 1990 through January 2007.

Specifically, the following table shows the cost of "Moody's Aaa" corporate debt, the best rates available to the corporate environment; "Baa" debt, which is the lowest rung of the "investment-grade" ladder, and 10-year Treasuries. The cost of 10-year Treasuries is shown to demonstrate the typical spread between the 10-year Treasury and both Moody's Aaa and Baa-rated corporate debt.



This table shows the spread between Treasury rates and the cost of debt capital for companies. There has been an average spread of about 110 to 120 basis points between long-term AAA-rated bonds and 10-year Treasuries and a spread of about 200 basis points between long-term Baa bonds and the 10-year

Treasuries. Current spreads are roughly 50-60 basis points lower than the long-term averages.

Summary statistics from the same series of risk-free government interest rates from the beginning of 1970 to the present put recent rates in a longer-term perspective.

US Treasury Rates from 1970 to 2006

	<u>10-Year Average</u>
Minimum	3.33%
Maximum	15.32%
Average	7.58%
Median	7.29%
Current (Feb 2007)	4.76%

Current rates are among the lowest levels that have existed since at least 1970. For the foreseeable future, most analysts do not expect significant upward pressure. These "risk-free" interest rates contain a component for the risk of inflation, so the outlook for inflation, or other upward expectations, is already reflected in these rates.

The following table represents Value Line's projections for several key measures, including overall economic growth and interest rates. Through 2007, interest rates are not expected to be significantly different than they are today. Over the next three-to-five year period, they are expected to increase very marginally.

Value Line National Income and Interest Rate Projections

THESE ARE THE NATIONAL INCOME SERIES TO WHICH VALUE LINE SALES, EARNINGS, AND DIVIDEND ESTIMATES ARE CORRELATED														
ANNUAL STATISTICS	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006*	2007*	2008-11*
Gross Domestic Product (\$BIL.)	7396	7817	8304	8747	9258	9817	10128	10470	10971	11734	12487	13296	13935	16194
Real GDP (2000 Chained \$BIL.)	8032	8329	8704	9067	9470	9817	9891	10049	10321	10758	11135	11520	11865	13079
Total Consumption (\$BIL.)	5434	5619	5882	6126	6439	6739	6910	7089	7306	7589	7857	8121	8360	9171
Nonresidential Fixed Investment (\$BIL.)	762	834	934	1038	1133	1232	1180	1072	1085	1187	1289	1413	1507	1778
Industrial Prod. (% Change, Annualized)	4.8	4.9	7.4	5.9	4.4	4.4	-3.4	-0.3	0.0	4.1	3.2	4.4	2.7	3.0
Housing Starts (Mill. Units)	1.36	1.47	1.47	1.62	1.65	1.57	1.60	1.71	1.85	1.95	2.07	1.92	1.79	1.80
Total Light Vehicle Sales (Mill. Units)	14.8	15.1	15.1	15.5	16.9	17.4	17.1	16.8	16.6	16.9	16.9	16.5	16.4	17.5
Personal Savings Rate (%)	4.6	4.0	3.6	4.3	2.4	2.4	1.8	2.4	2.1	1.7	-0.4	-0.5	0.3	1.2
National Unemployment Rate (%)	5.6	5.4	4.9	4.5	4.2	4.0	4.8	5.8	6.0	5.5	5.1	4.7	4.8	4.8
AAA Corp Bond Rate (%)	7.6	7.4	7.3	6.5	7.0	7.6	7.1	6.5	5.7	5.6	5.2	6.0	6.1	6.6
10-Year Treasury Note Rate (%)	6.6	6.4	6.4	5.3	5.6	6.0	5.0	4.6	4.0	4.3	4.3	5.0	5.1	5.5
3-Month Treasury Bill Rate (%)	5.5	5.0	5.1	4.8	4.6	5.8	3.4	1.6	1.0	1.4	3.1	4.8	4.9	4.8
ANNUAL RATES OF CHANGE														
Real GDP	2.5	3.7	4.5	4.2	4.4	3.7	0.8	1.6	2.7	4.2	3.5	3.5	3.0	3.5
GDP Deflator	2.0	1.9	1.7	1.1	1.4	2.2	2.4	1.7	2.0	2.6	2.8	2.8	2.2	2.2
Consumer Price Index	2.8	2.9	2.3	1.5	2.2	3.4	2.8	1.6	2.3	2.7	3.4	2.7	2.4	2.5
QUARTERLY ANNUALIZED RATES		2005				2006				2007				
	1st	2nd	3rd	4th	1st*	2nd*	3rd*	4th*	1st*	2nd*	3rd*	4th*		
Gross Domestic Product (\$BIL.)	12199	12378	12606	12766	13021	13236	13392	13535	13699	13853	14011	14178		
Real GDP (2000 Chained \$BIL.)	10999	11099	11202	11248	11381	11477	11568	11653	11731	11818	11909	12003		
Total Consumption (\$BIL.)	7765	7830	7908	7925	8032	8092	8152	8210	8267	8328	8390	8456		
Nonresidential Fixed Investment (\$BIL.)	1252	1279	1305	1320	1365	1398	1432	1459	1477	1495	1517	1540		
Industrial Production (% Change, Annualized)	3.6	1.4	1.4	5.3	4.5	6.0	4.0	3.0	2.5	2.5	2.7	3.0		
Housing Starts (Mill. Units)	2.08	2.04	2.10	2.06	2.13	1.88	1.85	1.83	1.80	1.78	1.78	1.80		
Total Light Vehicle Sales (Mill. Units)	16.5	17.2	17.9	15.8	16.9	16.5	16.4	16.2	16.0	16.3	16.6	16.6		

*Estimated

A Historical Perspective of Stock Returns

The geometric mean return for the overall market, since 1929, has been about 10.5 percent, a measure that is representative of an *average-risk* portfolio. It is commonly accepted that public utilities are, by their regulated nature, less risky than the overall market. One should keep in mind that these series measure *actual* returns, not *expected* returns.

The Dow Jones Industrial Average (commonly referred to as "The Dow") has tended to return about nine percent to ten percent (nominal) per year over the past one hundred years.

An analysis of the historic market returns (ex post) and a consideration of the market's outlook should be informative when considering the required returns for investors of public utilities. From this perspective, the market's overall

return outlook should set the "ceiling" for the required return for a company's rate-regulated assets.

The geometric average nominal¹ return for stocks from 1926 through 2004 was 0.80 percent per month, or 10.10 percent per year, based on the NYSE/AMEX/NASDAQ stock return series from The Center for Research in Securities Prices (CRSP). Excluding the effect of inflation, the monthly returns were 0.56 percent, and the annual returns were 6.87%.

The CRSP is a more comprehensive database that includes all the stocks in the NYSE and ASE from the early 1960's S&P 500² accounts for 80-90% of the value of the stocks in the CRSP index. Due to the S&P 500 being better known outside of academic circles, it is more often used. Either database should provide consistent results. Returns are measured by a "holding-period" measurement unit:

$$HPR = \frac{(P_1 - P_0) + D_1}{P_0}$$

Where:

HPR = Holding Period Return
P = Price
D = Dividend

(Note: subscripts refer to period of return, e.g., 0 is present; 1 is at the end of the first year, etc.)

¹ Nominal returns include the impact of inflation, over time. Real returns are net of inflation and are provided to illustrate the sensitivity of inflation.

² The Standard & Poor's 500 Index, or S&P 500, is an index of 500 stocks chosen for their market size, liquidity and industry group representation. Experts use the S&P 500 as a benchmark for the overall market performance. It is a broader, more comprehensive index than the Dow Jones Industrial Average, representing the largest U.S. companies in 11 diversified sectors of the market. It is also a capitalization weighted benchmark, with each stock's weight in the index proportionate to its market value. So price fluctuations in big companies in the index count proportionately more than little ones. In contrast, the Dow is a price-weighted index, which weights price movements for all of its stocks equally, regardless of their size.

The following table represents the returns that have been generated on all stocks in the CRSP database over the period 1926 through 2004.

EX-POST STOCK MARKET RETURNS		
CRSP DATA	<i>Compounded Average Return</i>	
	<u>Nominal Annual Return</u>	<u>Real Annual Return</u>
1926-2004	10.10%	6.85%

The following table represents the returns that have been generated on all stocks in the S&P 500 over the period 1970 through 2004. Though the nominal returns were higher than over the longer period displayed above, a larger portion of the returns were to offset inflation. The real annual returns are almost 65 basis points lower:

EX-POST STOCK MARKET RETURNS – S&P 500		
S&P 500 DATA	<i>Compounded Average Return</i>	
	<u>Nominal Annual Return</u>	<u>Real Annual Return</u>
1926-2004	11.56%	6.47%

Additionally, Wharton School finance professor Jeremy J. Siegel published his finding that the average real return on U.S. equities has been 7.0 percent using 195 years of data from 1802 through 2001.³ He indicates that the 7.0 percent real return on stocks has been remarkably stable over time.

Dr. Siegel writes,

³Stocks for the Long Run, 3rd Edition, Page 12, Jeremy Siegel, Russell E. Palmer Prof. of Finance, The Wharton School, Univ. of Pennsylvania, McGraw-Hill, © 2002. The analysis omits the poor returns achieved in 2002 and 2003, which would have reduced the calculations to be more in line with the figures provided above.

"The real return on equities has averaged 7.0 percent per year over the past 195 years. Note the extraordinary stability of the real return on stocks over all major subperiods: 7.0 percent per year from 1802-1870, 6.6 percent from 1871 through 1925, and 7.2 percent per year since 1926. Even since World War II, during which all the inflation that the U.S. has experienced over the past two hundred years occurred, the average real rate of return on stocks has been 7.5 percent per year. This is virtually identical to the previous 125 years, which saw no overall inflation."

The following two pages reflect tables that provide the return data from Stocks for the Long Run.⁴ The tables' data extends back to 1801, providing over 200 years of returns from the market.

⁴ Ibid, Table 1.1, P. 13.

Annual Stock Market Returns, 1802-2001

Periods	Total Nominal Returns			Nominal Capital Apprec.			Div. Yield	Total Real Return			Real Capital Apprec.			Real Gold Return	CPI
	Comp	Arith	Risk	Comp	Arith	Risk		Comp	Arith	Risk	Comp	Arith	Risk		
1802-2001	8.30%	9.70%	17.50%	3.00%	4.40%	17.50%	5.20%	6.90%	8.40%	18.10%	1.60%	3.20%	17.90%	0.00%	1.40%
1871-2001	9.00%	10.60%	18.50%	4.20%	5.80%	18.30%	4.60%	6.80%	8.50%	18.80%	2.10%	3.80%	18.60%	-0.10%	2.00%
Major Subperiods															
1802-1870	7.10%	8.10%	15.50%	0.70%	1.80%	15.50%	6.40%	7.00%	8.30%	16.90%	0.60%	1.90%	16.60%	20.00%	0.10%
1871-1925	7.20%	8.40%	15.70%	1.90%	3.10%	16.10%	5.20%	6.60%	7.90%	16.80%	1.30%	2.70%	17.10%	-0.80%	0.60%
1926-2001	10.20%	12.20%	20.30%	5.80%	7.80%	19.60%	4.10%	6.90%	8.90%	20.30%	2.70%	4.60%	19.60%	0.40%	3.10%
Post-war Periods															
1946-2001	11.60%	12.80%	16.80%	7.50%	8.70%	16.20%	3.80%	7.10%	8.60%	17.40%	3.20%	4.60%	16.80%	-0.30%	4.10%
1946-1965	13.10%	14.30%	19.50%	8.20%	9.20%	18.70%	4.60%	10.00%	11.40%	18.40%	5.20%	6.50%	18.10%	-2.70%	2.80%
1966-1981	6.60%	8.30%	17.20%	2.60%	4.30%	16.60%	3.90%	-0.40%	1.40%	17.10%	-4.10%	-2.40%	16.70%	8.80%	7.00%
1982-1999	17.30%	18.00%	12.50%	13.80%	14.50%	12.40%	3.10%	13.60%	14.30%	12.60%	10.20%	10.90%	12.60%	-4.90%	3.30%
1982-2001	14.10%	15.00%	14.90%	10.90%	11.80%	14.40%	2.90%	10.50%	11.50%	14.70%	7.40%	8.30%	14.30%	-4.80%	3.20%

Comp = Compounded Arith = Arithmetic Div. = Dividend Apprec. = Appreciation CPI = Consumer Price Inflation

Stocks for the Long Run, 3rd Edition Table 1.1, P. 13

Jeremy Siegel, Russell E. Palmer Prof. of Finance, The Wharton School, Univ. of Pennsylvania

McGraw-Hill, © 2002, 1998, 1994

Fixed Income Returns, 1802-2001

Periods	Long-Term Governments						Short-Term Governments					
	Coupon Rate		Nominal Returns		Real Returns		Nominal Rate		Real Returns		CPI	
	Comp	Arith	Arith	Risk	Comp	Arith	Risk	Rate	Comp	Arith	Risk	CPI
1802-2001	4.80%	4.90%	5.10%	6.30%	3.50%	3.90%	8.90%	4.30%	2.90%	3.10%	6.10%	1.40%
1871-2001	4.70%	4.90%	5.10%	7.50%	2.80%	3.20%	9.10%	3.80%	1.70%	1.90%	4.60%	2.00%
Major Subperiods												
1802-1870	4.90%	4.90%	4.90%	2.80%	4.80%	5.10%	8.30%	5.20%	5.10%	5.40%	7.70%	0.10%
1871-1925	4.00%	4.30%	4.40%	3.00%	3.70%	3.90%	6.40%	3.80%	3.20%	3.30%	4.80%	0.60%
1926-2001	5.20%	5.30%	5.70%	9.50%	2.20%	2.70%	10.70%	3.90%	0.70%	0.80%	4.10%	3.10%
Post-war Periods												
1946-2001	6.00%	5.50%	6.00%	10.70%	1.30%	1.90%	11.50%	4.90%	0.60%	0.70%	3.30%	4.10%
1946-1965	3.10%	1.60%	1.70%	7.10%	-1.20%	-1.00%	8.10%	2.00%	-0.80%	-0.70%	2.10%	2.80%
1966-1981	7.20%	2.50%	2.80%	12.30%	-4.20%	-3.90%	13.20%	6.90%	-0.20%	-0.10%	2.40%	7.00%
1982-1999	8.40%	12.00%	12.80%	14.40%	8.40%	9.30%	14.20%	6.30%	2.90%	2.90%	1.80%	3.30%
1982-2001	8.10%	12.00%	12.80%	13.80%	8.50%	9.30%	13.60%	6.10%	2.80%	2.80%	1.70%	3.20%

Comp = Compounded

Arith = Arithmetic

Div. = Dividend

Apprec. = Appreciation

CPI = Consumer Price Inflation

Stocks for the Long Run, 3rd Edition

Table 1.2, P. 15

Jeremy Siegel, Russell E. Palmer Prof. of Finance, The Wharton School, Univ. of Pennsylvania

McGraw-Hill, © 2002

Annual Stock Market Returns, 1802-2001

Based on the information from those tables, historic real returns ranged from 6.9% to 7.0% for the major sub-periods. The current rate of expected inflation over the next ten years is approximately 2.58 percent,⁵ leading one to conclude, based on the above information, that an average-risk security is expected to yield a rate of return of about 9.6 percent over a long investment horizon.

For comparison purposes, the tables also provide investment return data for risk-free fixed-income returns, i.e., U.S. government bonds.⁶

Fixed Income Returns, 1802-2001

This data reflect that long-run inflation has ranged from roughly 2.0% to 3.0%, which is only slightly higher than the current estimates based on information contained in contemporaneous trades of Treasury debt.

Other major international markets have not generally had real returns greater than the historical returns in the U.S. equities markets. A recent study collated data on a consistent basis for the 101-year period from 1900 to the end of 2000 for sixteen countries, the most comprehensive international database available. The following table provides the results of that period:

⁵ Estimated as the arithmetic difference between the U.S. Treasury security rate (5.21 percent for February 2016 maturity) and an inflation-indexed Treasury security of similar maturity (2.63 percent for January 2016 maturity) quoted in the *Wall Street Journal* (June 28, 2006.) The inflation calculation is 2.58 percent (5.21% - 2.63%).

⁶ Siegel, Table 1.2, P. 15.

Sixteen-Country Returns
Dimson/Marsh/Staunton Database⁷

Country	Real Equity Return	Real Equity Risk Premium
Australia	7.50%	6.30%
Belgium	2.50%	2.90%
Canada	6.40%	4.50%
Denmark	4.60%	2.00%
France	3.80%	4.90%
Germany	3.60%	6.70%
Ireland	4.80%	3.20%
Italy	2.70%	5.00%
Japan	4.50%	6.20%
Netherlands	5.80%	4.70%
South Africa	6.80%	5.40%
Spain	3.60%	2.30%
Sweden	7.60%	5.20%
Switzerland	5.00%	2.70%
United Kingdom	5.80%	4.40%
United States	6.70%	4.60%

Of the 16 countries, only three (Australia, Sweden and South Africa) international equities' real returns exceeded the real U.S. equities' returns over the period from 1900 to 2000. "The average real equity return for the 'world' (the sixteen countries weighted by Gross Domestic Product⁸) was **5.1%**, and the average equity risk premium was **4.6%**."⁹

⁷ Data from Dimson, E., Marsh, P., and Staunton, M.: The Triumph of the Optimists, Princeton University Press, 2002. The Equity Risk Premium is measured against the real Government Bond Yield.

⁸ Gross Domestic Product (GDP) is the broadest measure of aggregate economic activity and encompasses every sector of the economy. It is a measure of output from domestic factories and related consumption in the a country. It excludes products made by a country's companies in foreign markets.

⁹ Compensation Awards and Real Returns, Society of Actuaries, Remarks of Colm McCarthy, <http://www.actuaries-soc.ie/>

An additional source of information regarding inflation-adjusted international returns is provided by Siegel¹⁰ and covers the period from 1926-2001. This period showed that the US outperformed Germany, Japan and the U.K. over that period. The following table details his return estimates:

Compound Annual Real Equity Returns			
USA	Germany	UK	Japan
7.00%	6.44%	6.01%	2.93%

As measured by the S&P 500 index, the stock market had declined by almost half from its all-time high in early 2000 through the beginning of 2003. Since 2003, the market has regained all but about 15 percent of its historic peak. The current level of the S&P 500 (May, 2006) is similar to where the market was seven years ago, in 1999. Many analysts had begun revising their predictions of the market's long-run expected performance prior to the market adjustment.

Several sources forecast returns for the overall market, on average:

- 1) Dr. Siegel indicates that, "looking forward, returns on diversified portfolios of common stocks... should only average 5 to 7 percent after inflation, at or slightly below their long-term historical average... With inflation likely to be in the 2 to 3 percent range, stock returns before inflation are expected to be between 7 and 10 percent per year, just one-half of what they averaged during the last bull market."¹¹
- 2) In Dr. Bradford Cornell's book, The Equity Risk Premium, Dr. Cornell details the results of his own analysis and synthesizes the results of several published reports. He indicates that the competing approaches are

¹⁰ Siegel Page 19.

¹¹ Ibid, page 361

separated into two "camps": those that focus on historical data and those that focus on the application of the DCF model or projection of earnings yield and the work on survival bias.¹²

- a. The historical "camp" is predominantly composed of Ibbotson Associates (1998); Kaplan and Ruback (1995); and, Fama and French (1998). "All of these studies produced estimates of the risk premium of about 7.0% to 7.5% over treasury bonds." Assuming a 3.5% rate of Treasury bonds, this would represent an expectation of about 10% to 10.5% as a long-run expectation for future results.
- b. The forward-looking "camp" comprises the results of his own work (Cornell, 1999); Blanchard (1993); Siegel (1998); Brown et. al (1995) and Goetzmann and Jorion (1997). "Each of these approaches produce estimates that are approximately 300 basis points lower than the historical data, or about 4% over treasury bonds."

Dr. Cornell also discusses the Welch (1998) survey of leading professors and financial economists. The results of Dr. Welch's survey indicate that the expectation of the long-run real return in the stock market is 9.5 percent (3.5% Treasury and 6.0% risk premium.) Dr. Cornell's own conclusion is that, "Investors cannot reasonably expect equities to produce such large premiums (as occurred in the 1926-1997 period) going forward. Instead, premiums are much more likely to be on the order of 300 to 400 basis points lower. Reasonable forward-looking ranges for the future equity risk premium in the long run are 3.5% to 5.5% over

¹² The Equity Risk Premium, Pages 123-125, Dr. Bradford Cornell, Professor of Finance at the Anderson Graduate School of Management, UCLA. © 1999.

treasury bonds and 5.0% to 7.0% over treasury bills."¹³ These results would reflect total returns in the market to hover in the **6.5% to 9.5%** range.

3) Dr. William Reichenstein, CFA wrote an article titled, "What Do Past Stock Market Returns Tell Us About the Future?"¹⁴ This article was published in the Journal of Financial Planning (July, 2002). In it, Dr. Reichenstein states:

"Fama and French (2001) is indicative of the recent studies. They analyze historical real returns on the S&P 500 index (and its predecessors) from 1950 to 1999. Actual real returns were 10.33 percent, which can be separated into three components as shown in the following table.

Components of Real Return		Real Dividend Yield	+	% Growth Real EPS	+	% Growth P/E Ratio
Actual Real Return	10.33% =	3.84%	+	3.04%	+	3.41%
Expected Real Return	6.92% =	3.84%	+	3.04%		

For the 50 years, the actual real return was 10.33 percent. The average real dividend yield was 3.84 percent and the growth in real earnings was 3.04 percent. The additional return—more than three percent a year—was due to the increase in the market's price-earnings ratio.¹ If we assume that the increase in market multiple was unanticipated, the expected real stock return was 6.92 percent, which essentially matches the 7 percent real return Siegel (1998) says U.S. stocks have consistently provided for long horizons since 1802. Also, this indicates that the models' forecasts have not been precise.

Fama, French and most other scholars agree with the following points: (1) market returns in the last half of the 20th century, especially returns in the 1980s and 1990s, were better than expected because market multiples rose unexpectedly; (2) a substantial decrease in the equity risk premium is largely

¹³ Cornell, page 201.

¹⁴ A full copy is included in Staff/501 and is found at:

http://www.fpanet.org/journal/articles/2002_Issues/jfp0702-art8.cfm?renderforprint=1

responsible for the sharp rise in market multiples. As we shall see, a decrease in the equity risk premium has implications for future stock returns."

Dr. Reichenstein's article also summarizes the real stock returns anticipated by other industry experts, which range from 3.2 percent to 4.8 percent.¹⁵

Based on the historic CRSP¹⁶ data, and assuming a range of 3.0 percent to 3.5 percent inflation in the foreseeable future, the following table projects a reasonable range of average ex-ante returns that can be expected for the stock market, roughly 8.5% to 9.5%:

EX-POST AND EX-ANTE MARKET RETURNS

CRSP DATA

Compounded Average Return

	Nominal Annual Return	Real Annual Return
1926-2004	10.10%	6.85%
Real Annual return	6.85%	6.85%
Expected inflation	2.50%	3.50%
Expected Market Return	9.35%	10.35%

Overall returns on well-diversified portfolios of common equity are expected to be **no more** than 10 to 11 percent into the foreseeable future.

The following is an excerpt¹⁷ that discusses market risk premiums and studies by American economists. The data iterate what is reported above.

¹⁵ Ibid, page 7.

¹⁶ The Center for Research in Security Prices (CRSP®) provides historical US databases of stock, indices, bond, and mutual fund securities.

¹⁷ <http://www.treasury.govt.nz/merp/06.asp>

Welch (2000, 2001) surveyed financial economist professors on their views about the short-term and long-term equity risk premium in 1998 and again in 2001. The results are summarized in Table 3. The period intervening the two surveys saw equity prices climb rapidly, and then decline to about their original level. In addition, several of the influential articles reviewed in this paper were published over the period. The results show that respondents have become more pessimistic, both about short-term prospects and about the long-term. The focus of this paper is on the long-term, so the 30-year forecasts are most relevant. The mean long-term expected risk premium of respondents in the 2001 survey was 5.5% and the median was 5%, down from 7.1% and 7%.

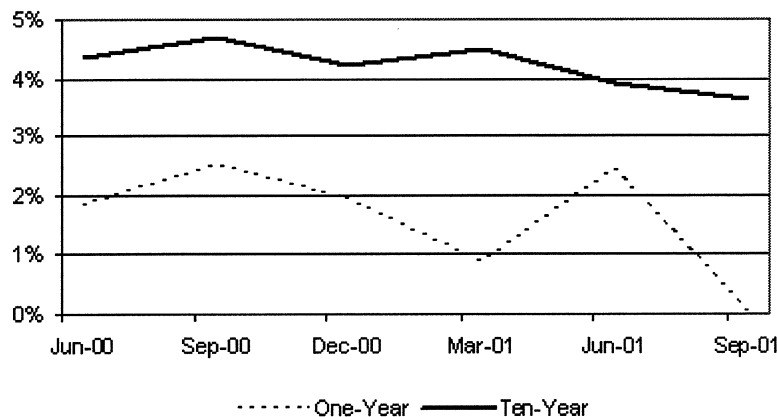
Table 3 – Forecasts of Arithmetic Equity Risk Premia (Welch 2000, 2001)

Time Horizon	1-Year		30-Year	
Year	1998	2001	1998	2001
Mean	5.8%	3.4%	7.1%	5.5%
Median	6%	3%	7%	5%
Interquartile Range	4%-8.5%	2%-5%	6%-8.4%	4%-7%

Graham and Harvey (2001) report on a rolling quarterly survey of chief financial officers from June 2000 to September 2001. Their forecasts of the equity risk premium for one-year and ten-year horizons are illustrated in Figure 3. The ten-year forecasts are most relevant for this analysis. They are generally lower than the thirty-year forecasts from Welch (2001). Graham and Harvey speculate that this is because chief financial officers have a better understanding than financial economists. However, there are two reasons to believe that Graham and Harvey's results might be biased downward. First, the time horizon is only ten years. The immediate prospects for the short term would be expected to have a greater impact on a ten-year time horizon than they would on a thirty-year time horizon.

As Figure 3 shows, their short-term forecasts were low, suggesting that the ten-year forecast could be biased downwards as a long-term estimate. Second, the survey question was not specific about whether an arithmetic or a geometric return was sought. It is reasonable to assume that some proportion of the respondents gave their estimate in geometric terms. This implies that the reported result would be biased downwards as an estimate of expected arithmetic annual premium.

Figure 3 – CFO Quarterly Forecasts of Equity Risk Premium



Source: (Graham and Harvey 2001)

A survey of global bond investors by Schroder Salomon Smith Barney (Ilmanen, Byrne, Gunasekera and Minikin 2002) elicited an average equity risk premium in the range of 2% to 2.5%. They note that the results vary across countries according to recent experience in those countries, and they suggest that the cautious response may be specific to bond investors. A survey of Goldman Sachs' global clients in July 2002 elicited an average response on the long-run equity risk premium of 3.9%, with most responses clustered in the 3.5% to 4.5% range (O'Neill et al 2002).

Gross Domestic Product (GDP) Growth

The historic relationship for growth rates achieved in the overall stock market is shown in the following table and excerpt from Stocks for the Long Run:

Long-Term Growth of GDP, Earnings, and Dividends, 1871-2001

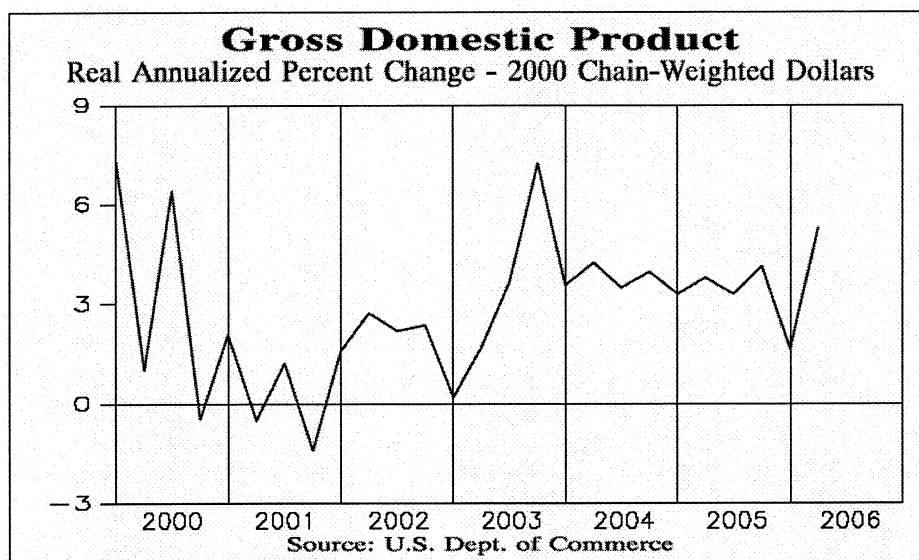
	Real GDP Growth	Real Per-Share Earnings Growth	Real Per-Share Dividend Growth	Dividend Yield	Payout Ratio
1871-2001	3.91%	1.25%	1.09%	4.54%	58.75%
1871-1945	4.51%	0.66%	0.74%	5.07%	66.78%
1946-2001	3.11%	2.05%	1.56%	3.53%	51.91%

“The data show that real per-share earnings growth over the entire 130 years has been a paltry 1.25%, considerably below the nearly 4 percent growth rate of real gross domestic product (GDP). Because of the funding requirement, EPS growth does not match aggregate economic growth over the long run.”

Over the entire period shown in the table, the payout ratio was just under 70% and the dividend yield was just over 4.5%. The data clearly show that it is inappropriate to assume that the earnings growth of the overall market will mirror the GDP and that the earnings growth in the stock market lags overall growth in GDP.

Historic GDP Growth

The following chart reflects real growth in GDP since 2000. A recessionary period in 2001 followed a peak period in late 1999. Since 2004, the economy has been relatively stable, with real growth in the three percent range.

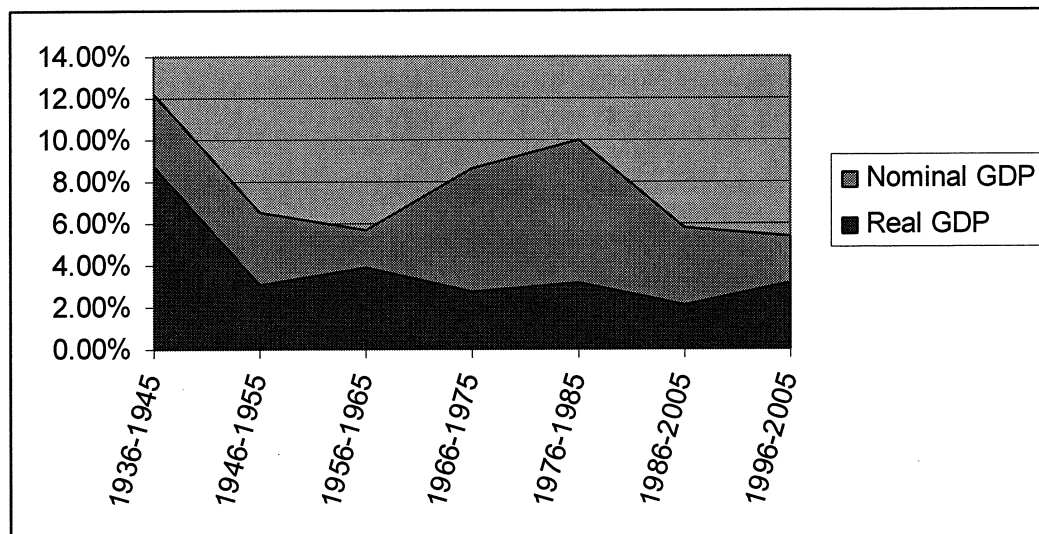


The following table and chart provide a summary of Gross Domestic Product results for the period 1936 through 2005. This table includes data from a dozen additional years and includes each decade in non-overlapping series. The data indicate that, other than the 1936-1945 time period, real GDP growth has been fairly stable, averaging 3.02%.

PERIOD	AVERAGE		MEDIAN		STANDARD DEV.	
	Nominal GDP	Real GDP	Nominal GDP	Real GDP	Nominal GDP	Real GDP
1936-1945	12.23%	8.71%	10.33%	9.56%	10.63%	9.46%
1946-1955	6.52%	3.03%	7.47%	3.44%	5.41%	7.88%
1956-1965	5.68%	3.91%	5.48%	3.53%	2.32%	2.06%
1966-1975	8.60%	2.78%	8.88%	2.97%	1.86%	2.19%
1976-1985	9.96%	3.12%	11.24%	4.01%	2.74%	3.20%
1986-2005	5.78%	2.12%	5.78%	2.08%	1.28%	0.85%
1996-2005	5.38%	3.16%	5.79%	3.10%	1.26%	1.53%
Average	7.74%	3.83%	7.47%	3.44%	3.39%	3.38%
Median	6.52%	3.12%	7.47%	3.44%	2.32%	2.19%

<u>1936-2005 CAGR*</u>	6.81%	3.56%
<u>1976-2005 CAGR</u>	6.86%	3.14%
<u>1990-2005 CAGR</u>	5.24%	3.03%

*CAGR = Compounded Average Growth Rate

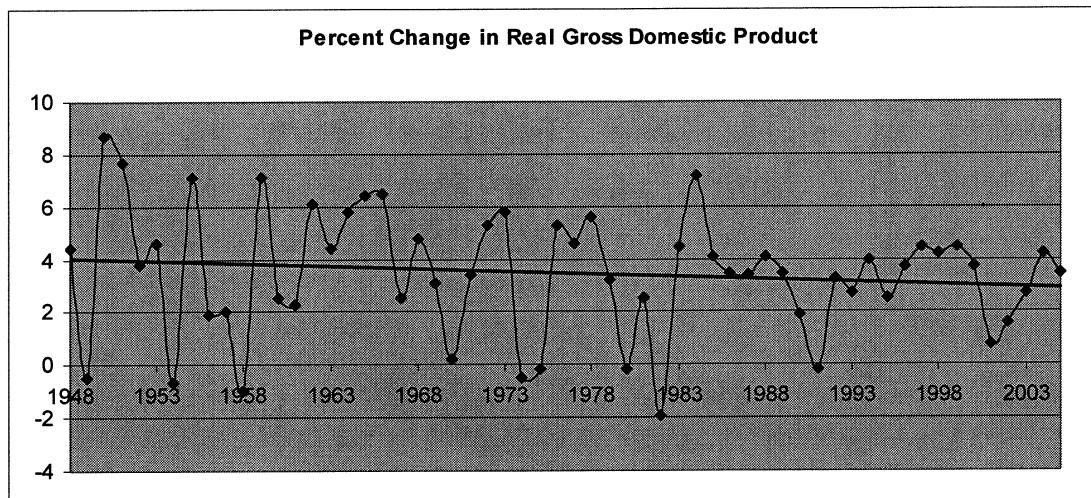


Inflation rates over the same periods can be visualized as the area above the real growth rate figures in the chart and are summarized in the following table:

<u>Period</u>	<u>Inflation</u>
1936-1945	3.52%
1946-1955	3.49%
1956-1965	1.77%
1966-1975	5.82%
1976-1985	6.84%
1986-2005	3.66%
1996-2005	2.22%

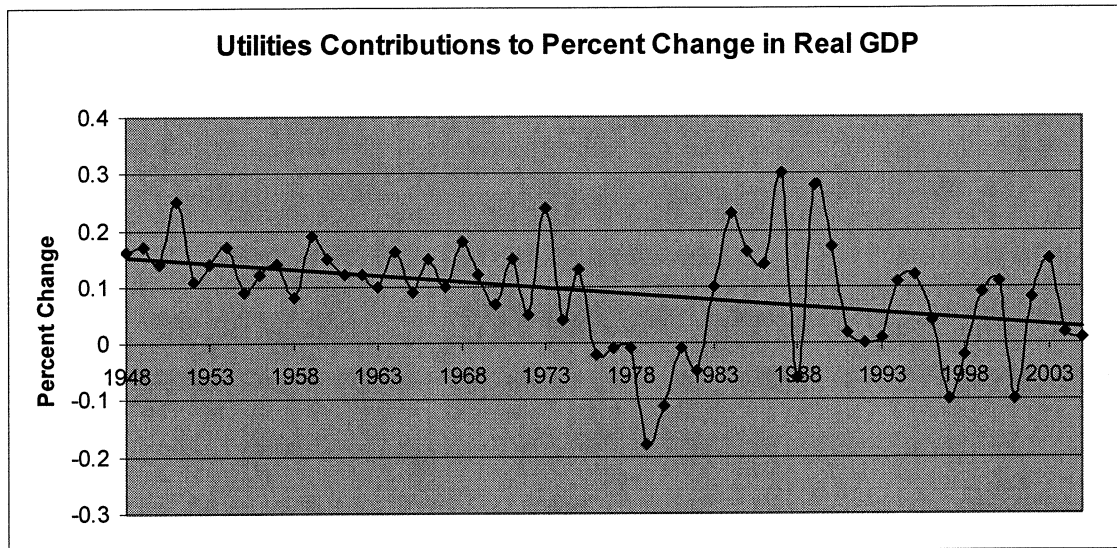
The table and corresponding charts clearly show a decreasing rate of growth in real GDP over the past seven decades. Further, focusing on the inflation component indicates that the period from 1976-1985 was affected by a high *6.84 percent* average inflation rate. Adjusting for inflation, that period has a real growth rate (3.12%) below the overall 70-year period (3.83%).

The following chart¹⁸ provides year-over-year changes in the growth rate of real GDP. Over the past five-year and ten-year periods, the rate of change has been around three percent. The chart reflects a gradual decline over time.



¹⁸ Data are from the "Contributions to Percent Change in Real Gross Domestic Product by Industry Group" from the Bureau of Economic Analysis, an agency of the U.S. Department of Commerce, http://www.bea.gov/bea/industry/gpotables/gpo_list.cfm?anon=274®istered=0

The following chart puts into perspective the overall contribution of utilities to the percent change in real GDP. The chart indicates that utilities are contributing a lower proportion of GDP, over time. Over the decade from 1996 to 2005, utilities contributed only about three percent to overall GDP growth.



Additional support for overall GDP growth is available from a UBS Global Asset Management report from September 2002 in which real earnings per share of the S&P 500 over the 1960-2001 period declined from about 3.0 percent to about 2.0 percent and that, looking forward over approximately the next decade, real earnings growth for the S&P 500 is expected to be only 2.0 to 3.3 percent.

Even without considering the impact of leakage, using real historic GDP growth rate assumptions and projecting them forward based on current expectations of inflation would not support the Company's conclusion of nominal growth rates near seven percent. Because growth is a function of investment and earnings, companies that pay out a large portion of their earnings in dividends will not grow as fast as companies that retain all of their dividends, all other things equal. Over the past 70+ years, real economic growth was no more

than 3.66 percent, on average, and excluding the period from the mid 1930s through the end of WWII, it averaged about three percent.

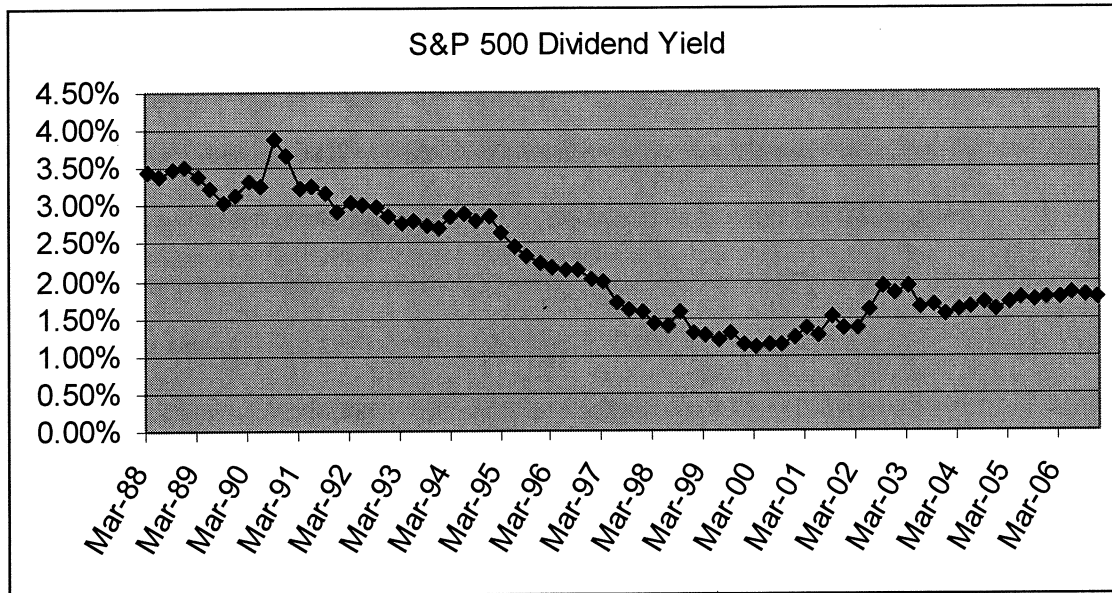
Based on a table included later in this report, ex-ante, or forward-looking real growth is also anticipated at about three percent. If we assume a two and one-half percent inflation rate over the foreseeable future,¹⁹ total *nominal* GDP growth would equal five and one-half percent. Second, the average dividend from the S&P 500 is currently 1.91%.²⁰ *Companies that pay out higher proportions of their earnings as dividends have less available cash from which to "intrinsically" grow. Therefore, on a per share basis, high dividend companies can be expected to grow slower than low- or no-dividend companies, all else equal.*

Low dividend payments may actually increase the risk for investors because lower dividends provide less of a cushion during bear markets when a company may be able to reduce dividend payouts to absorb the impact of decreased earnings.

Although the dividend yields have recovered from the trough in 2000, they are still roughly half of where they stood 20 years ago. The following table reflects the declining dividend yield on the S&P 500 from 1988 through December 2006:

¹⁹ Estimated as the arithmetic difference between the U.S. Treasury security rate (4.78 percent for February 2017 maturity) and an inflation-indexed Treasury security of similar maturity (2.42 percent for January 2017 maturity) quoted in the *Wall Street Journal* (February 12, 2007.) The inflation calculation is 2.36 percent (4.78% - 2.42%). <http://online.wsj.com/public/resources/documents/tsyquotefree.htm>

²⁰ 2/07/2007 data from Standard & Poor's, www2.standardandpoors.com/spf/xls/index/SP500EPSEST.XLS

1988-2006 S&P 500 Dividend Yield Trend**Forecast GDP Growth**

Looking forward, for the period from now through 2030, the expected annual growth rate in real GDP is expected to be about 2.5 to 3.0 percent.²¹ If we assume a 2.0 to 2.5 percent inflation rate over that period²² total GDP growth would be above 4.5 percent and no greater than 5.5 percent.

Capital Structure

The capital structure refers to the relationship among the component sources of debt and equity financing used by a company. On a book value basis, it is typical for utilities to be leveraged, or financed with debt, at roughly 45 to 55 percent, making the equity portion also 45 to 55 percent. The capital

²¹ See the Annual Energy Outlook with Projections to 2025 from the USA Dept. of Energy, on Page 2, "Economic Growth" at <http://www.eia.doe.gov/oiaf/aeo/index.html>. Also see Welch's (1998) survey of leading professors and financial economists. The results of Dr. Welch's survey indicate that the highest long-run growth forecasts for real gross domestic product are on the order of 2.5% per year.

²² Support for which is included in my discussion of growth.

structure may also include preferred stock, which is a type of equity that enjoys some of the features of debt.

Arithmetic vs. Geometric Averages

The difference between the arithmetic average and the geometric average is reasonably intuitive. I will provide a simplistic example that has been used in past testimony before the Commission. As a starting point, the arithmetic average refers to the “typical” average that most people understand from basic statistics. The geometric average refers to the compounding process that is common among financial economists.

Let us say that an investor purchased a non-dividend paying stock for \$100 and made a return of 100 percent in the first year, i.e., the stock value has risen to \$200. In the second year, the investment lost 50 percent of its value, i.e., the stock’s value has fallen back to its initial price of \$100. The arithmetic average is the simple average of 100 percent and -50 percent, or 25 percent $[(100\% + (-50\%) / 2]$. The geometric average is a bit more complicated to calculate. In this example, you add the number one to each of the annual returns to form two “value relatives”, multiply the value relatives together, take the square root, and then subtract the number one.

	<u>1st Period</u>	<u>2nd Period</u>
	<u>Return</u>	<u>Return</u>
Return	100%	-50%
Value Relative (1+ Return)	200%	50%
Product	= 200% x 50%	100.00%
	= [square root (100%)]	100.00%
Geometric Return	= [square root (100%)] -1	0.00%

In this example, the arithmetic average rate of return would lead one to make a false conclusion about their actual, compounded/geometric return. The compounded average return correctly indicates that your average rate of return over two years is zero percent. The arithmetic average rate of return would lead to the conclusion that, on average, a 25 percent return was made per year. *The geometric average rate of return is properly used to express average rates of return over time.*

Although some published literature provides the arithmetic average, for rate-making purposes, the compounded, or geometric average, return is the proper metric upon which to focus for cost of capital determinations. It has historically been the analytical approach used by the Oregon Public Utility Commission. It is important to note that the arithmetic average is always equal to or larger than the geometric average.

Arithmetic averages of historic nominal growth rates are inappropriate and should be rejected in favor of compounded rates in conjunction with cost of equity analysis. A DCF is based on a geometric progression and, as such, requires a compounded growth rate. As indicated previously, arithmetic averaging is skewed upward, when compared to geometric rates.

Additionally, historic nominal rates would simply assume the same rate of inflation going forward as was present in the period from which the data were derived. Using historic nominal rates would not properly take into account lower expectations of real growth going forward.

Using nominal historic growth rates represents an average of growth rates over a wide range of inflation, interest rates and general economic conditions. Because inflation is expected to remain well below previous long-term levels, historic growth rates are biased upwards.

Stock Market Benchmarks

An example of a stock market benchmark is an index that represents a broad range of companies, such as the S&P 500. The S&P 500 is designed to represent the "leading companies in leading U.S. Industries."²³ However, the S&P 500 is composed of 500 traded companies and accounts for less than 80 percent of the total value of the US stock market. The Dow Jones Industrial Average ("the Dow") is another index comprised of 30 large "blue-chip" stocks selected by the editors of the *Wall Street Journal*. An investor may use an index as a benchmark to help determine how well his or her investment position compares "with the market".

The benchmark may be designed to represent the asset class. The Standard & Poor's "Utilities" Index is similar to the groupings created by other market analysts. Such groupings of similar companies may be designed to be representative of individual market sectors rather than designed to represent the market overall. It is important that the basket of assets placed into the cohort, or comparison, group mirrors the risk profile of the subject company being modeled.

²³ Roger J. Bos and Michele Ruotolo, "General Criteria for S&P U.S. Index Membership," Standard & Poor's, New York, NY, September 2000.

From the benchmark, relative performance can be measured. One factor that can influence the ultimate results of an analysis relates to the relative influence or weighting each security contributed to the benchmark. Returns and other metrics for the "portfolio" must be average in some way. There are several methods for doing so, and each will produce different results.

Most commonly, analysts use a market capitalization-weighting (cap-weighted) approach. To be clear, this refers to the total market value of the equity and the influence of each security in the index is directly proportional to its market value. A variation of the cap-weighted approach is one that weights only those shares available for purchase by the public. Such an approach is called "float-weighting".²⁴

Over time, the composition of a cap-weighted "portfolio" may be skewed towards individual companies that may have grown significantly when compared to the others in the group. It is also difficult to develop a cross-sectional weighting over time, based on readily available market information. Further, rapidly changing equity prices makes it particularly difficult to determine the proper timing for the share price to be used in any calculation. For example, the S&P has "investment style benchmarks"²⁵ that are rebalanced twice a year to maintain roughly the same total market capitalization.

Another approach is to use an equal share weighting ("equal-weighted") approach in which a single share of a particulate stock is representative of the company and a simple average of each cohort security is computed to represent the return, regardless of the market value. Price movements to the share as well as other metrics tied to the share (e.g. dividends and earnings) are used for comparison purposes. Such an approach is used by Value Line in its Composite Index and the VL Arithmetic Index.

²⁴ The "Float" refers to those shares outstanding and available to the public, as opposed to those held by the government or corporate insiders.

²⁵ The style benchmarks correspond to a "Value" and a "Growth" division based on market valuations. Lower valuation companies are put into the "value" index while larger valuations go into the "growth" index. Each stock is used only once, i.e., there is no overlapping.

An equal-weighted version of the S&P 500 Index is also calculated. This is an approach commonly used by the Oregon Public Utility Commission and is used in staff's Discounted Cash Flow (DCF) analysis. It is also the basis upon which both the CRSP and S&P portfolios are analyzed.

A final, though rarely applied approach, is price weighting in which the price per share of an individual share of stock is used to weight the benchmark, giving greater influence to higher priced securities. This method would tend to over-emphasize those companies that had fewer shares outstanding but with shares that are individually priced higher relative to other securities. The Dow Jones Industrial Average is price weighted as are the Dow Transportation and Dow Utility averages.

Equal-weighted indexes are generally less susceptible to large swings in prices for individual components. For instance, when the *Internet bubble* burst, the value of the S&P 500 cap-weighted index fell significantly while the equal-weighted index remained much less volatile, reflective of its diversification-like quality.

The returns generated from companies whose stocks are included in a well-followed index may be distorted from their inclusion within the index. This factor is due to indexing by mutual funds and other investment techniques that use an individual index as a proxy with which to mirror results.

Modern Portfolio Theory

Modern Portfolio Theory relates to an investment approach whereby investors construct a grouping of investments. The proper portfolio would offer maximum expected returns for a given level of risk tolerance. The theory assumes that investors like investment returns, but dislike the risk, or volatility, associated with those returns. The result is that investors require a greater return for bearing greater risk. Underlying the theory is the assumption that

investors purchase assets in portfolios, and in doing so reduce the total variation of their returns. Therefore, they can reduce their overall exposure to each investment or "business-specific" risk that would affect them if they were not well diversified.

The total variation of a portfolio is less than the sum of its individual parts, i.e., variation of the return on the underlying, individual investments. In a diversified portfolio of risky assets, some returns are high while others are low, offsetting each other.

Combining multiple stocks into a portfolio allows all business-specific risk to be diversified²⁶ away, even though each of the companies' individual returns is still quite risky.²⁷ The risk that can be diversified away becomes irrelevant and investors do not require a return on this *diversifiable risk*.

Modern finance theory indicates that most well-diversified investors are concerned with the risk related to their exposure to the market as they consider their required return, i.e., the marginal cost of equity. These market-oriented risks include such things as interest rate changes, threat of war, and recession. They differ from diversifiable risks in that the diversifiable risks are company-

²⁶ In other words, when one speaks of diversification, it refers to owning a complement of investments. Dividing investment funds among a variety of securities with different risk and reward relationships is presumed to be the major concern of any sophisticated investor. The primary reason is that the investor can reduce or completely "diversify away" unsystematic, or "company-specific" risk and only have exposure to systematic, or "market" risk.

²⁷ An example of these dynamics follows: Two Oregon Companies, Stock A (a suntan lotion company,) and Stock B (an umbrella company) are both expected to earn 10 percent and have equivalent risk. However, it seems that returns on the two stocks move in exactly opposite directions. When it is sunny, stock A makes unusually good returns but stock B makes unusually poor returns. When it is rainy, stock B makes unusually good returns and stock A makes unusually poor returns.

More precisely, assuming that the variance of returns of companies A and B are the same, the portfolio of them together has the variance: $\sigma^2(A) + \sigma^2(B) + 2\rho(A,B)\sigma(A)\sigma(B)$. If $\rho(A,B) = -1$ (the securities' returns are perfectly negatively correlated), and $\sigma(A) = \sigma(B)$, then the portfolio variance equals 0.

specific. These relate, for instance, to the factors that impact only a company or perhaps its market segment.

In other words, when we speak of diversification, we are talking about owning a complement of investments. Dividing Investment funds among a variety of securities with different risk and reward relationships is presumed to be the major concern of any sophisticated investor. The primary reason is that the investor can reduce or completely "diversify away" unsystematic, or "company-specific" risk and only have exposure to systematic, or "market" risk.

Since diversification allows investors to reduce their level of risk exposure for any given level of expected return, the remaining risk that requires compensation, is called the *systematic or market risk*. Systematic risk measures the extent to which a security's returns are correlated with returns in the general market of risky assets.

Risk

Market risk is generally measured by Beta²⁸, which reflects the percentage of volatility that a specific company's equity contributes to the overall market return. Stated in other words, Beta is a measure of an investment's volatility, relative to an appropriate asset class. Investors are compensated for their exposure to market-risks, but not business-specific risk, since they are "diversified away". For the stock market, as an overall asset class, many analysts use the S&P 500 index as a proxy.

²⁸ Beta is used within the framework of the Capital Asset Pricing Model (CAPM).

Mathematically, Beta is calculated covariance of the stock, with the overall market, divided by the variance of the market as a whole. The following formula²⁹ represents the calculation:

$$\beta_i = \frac{Cov(R_i, R_M)}{\sigma^2(R_M)}$$

Beta is used in modern portfolio theory as a measure of risk; it's specifically used in the Capital Asset Pricing Model. The Beta of the market, by definition, equals 1.0. Therefore, if a company has a beta greater than one, it is thought to be greater risk, and conversely, a Beta less than one generally belongs to companies that contribute less risk to a portfolio. Beta is a correlation statistic that is calculated over a historic period of time and therefore assumes that the period analyzed will be representative of the future forecast.

Beta is not the only meaningful measure of risk, however. The staff analysis relies upon the standard deviation as an appropriate, quantifiable measure of risk. The standard deviation over a single period is also referred to as "volatility". Other, qualitative factors may include the amount of non-regulated activities, the historic regulator-company relationship and bond ratings.

The following excerpt is from the State of Oregon's Savings Growth Plan and provides insight into investor risk:

"Investor's typically associate the term "risk" with market risk, meaning the possibility that a particular investment may fluctuate in value... It seems much easier to assume market risk in investing when the market is performing well,

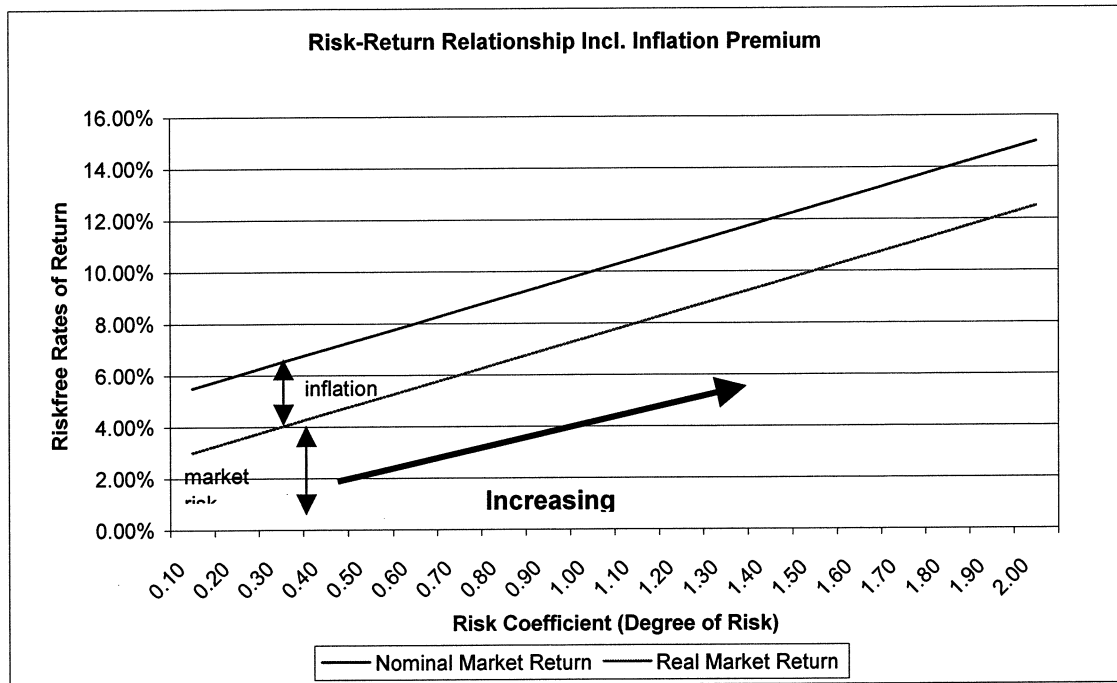
²⁹ Written other way, the formula is: $\text{Beta} = [Cov(r, K_m)] / [StdDev(K_m)]^2$
Where, r is the return rate of the investment; K_m is the return rate of the asset class.

because the reality of the market risk we are assuming may not be apparent. Today's market shows the true meaning of market risk in investing."³⁰

Further, the Bluefield Waterworks decision provided insight into the volatility of earnings and the impact on the perception of risk:

"Investors take into account the result of past operations, especially in recent years, when determining the terms upon which they will invest in such an undertaking. Low, uncertain, or irregular income makes for low prices for the securities of the utility and higher rates of interest to be demanded by investors."³¹

The following table provides a graphic representation of the dynamics of the risk-return tradeoff that underlies financial analysis:



³⁰ Plan Update, Oregon Savings Growth Plan, Winter 2003

³¹ Bluefield Water Works Co. V. Public Service Commission, 262 U.S. 679 (1923)

Bond ratings measure the potential of default on the underlying debt held by a company. Most pure play public utilities, for instance, have been able to maintain strong investment-grade ratings, which helps the Company attract borrowed capital on reasonable terms. As a measure of risk, bond ratings can be considered to capture the inherent impact of both systematic and unsystematic risk. The A rating will last as long as rating agencies have confidence in the regulatory climate in which the Company operates.

An additional component that can be considered is the level of Regulatory Risk. Oregon has provided a favorable regulatory environment that has responded quickly to changing market conditions that affect its regulated enterprises. Strong regulatory support is considered very favorable in the market:

"Other states' regulatory bodies may also be very adept at providing quick and fair revenue relief in changing times. Research has examined the impact of the regulatory environment on the firm and has found that firms operating within an environment of greater regulatory intensity face more stringent regulation (Reger et al., 1992) and thus are more constrained financially (Reger et al., 1992; Russo, 1992b).

Research has also found that in stable environments the volatility of earnings for firms should be low and in unstable environments the volatility of earnings should be greater (Amit and Wernerfelt, 1990). In general, regulatory environments that preclude firms from receiving timely or appropriate rate relief should be more financially constrained and less favorable than those that do provide stable rate relief (Rajagopalan, 1997)."

Thus, it is expected that firms which operate in more favorable regulatory environments should be less subject to risk than firms that operate in less stable regulatory environments.³²

Finally, an important quantitative analysis can consider the prices at which the company's stock is selling at, in comparison to the book value, must be considered. The greater the relationship, the greater support that either low earnings or future expectations thereof are not harming the company.

While the risk-return tradeoff works well at the market and portfolio level, the volatility of individual stocks provide poor measures of the returns to be expected. The relative volatility among stocks may be considered, perhaps as a measure to anticipate forward-looking volatility, though the exact contribution to company-specific returns cannot be considered.

Evidence indicates that the current expected market return is probably lower than the historical market return, in both real and nominal terms.

Portfolio Diversification

The term "diversified portfolio" is based on the underlying and ubiquitous financial tenet that rational investors who are risk averse will be better off if they invest in a large sampling of stocks with differing effects from market forces. This diversification allows the investor the ability to reduce overall risks in their portfolio by spreading their investments over a series of financial assets. Portfolio design, or asset allocation, in practice, provides for a lower underlying volatility of investment returns than an investor would experience by holding only one stock or several stocks that are highly correlated.

³² "The Effect of Corporate Strategy and Regulation on the Risk of Electric Utilities", Gieger and Rasheed, University of South Florida; Hoffman, Texas Tech University; Williams, University of North Alabama

For rate-making purposes, we are considering the return that rational investors may require to properly compensate them for the purchase of a particular stock. In this regard, the market can be expected to do a fairly efficient job of incorporating new information into stock prices.

Risk Versus Return

As a general matter, *investors are properly compensated by their investment for perceived levels of risk*. An appropriate financial return is predicated on the perceived risk of the investment. This concept applies to all classes of investors, including common shareholders and debt holders. The precept of financial theory is that investors expect a higher return as compensation for taking on higher non-diversifiable risk from financial assets. Conversely, the lower the risk, the lower the return that would be expected. This guiding principle for determining the appropriate cost of equity for a regulated firm should also be placed in the context of broader cost of capital concepts. Two such concepts are (1) the relationship between operating position, capital structure and bond ratings; and, (2) the relationship between capital structure and the cost of equity itself.

It is generally understood that rate-regulated public utility companies are among the least risky investments. Their debt-service payments and common equity dividends are more secure, since they enjoy a territorial monopoly and provide a basic and required service, their revenue and earnings streams are more assured. They are more stable than many companies both in good times and in bad times.

Utility Risk and Its Relationship to an Average-Risk Security

Utilities are significantly less risky than the "average-risk" security. A fundamental tenet of modern financial theory is the presumption that investors that take on additional risk will be rewarded with additional returns. The type of risk that is rewarded is "systematic" risk. Quantitative evidence to support this assertion is based on Beta calculations. As indicated previously, Beta is the result of a regression analysis of an individual company's returns compared to the market's returns, overall. The market, by definition, has a Beta risk of 1.0, and the average rate-regulated utility, in general, has consistently had Betas significantly less than 1.0.

Public utilities are expected to contribute a lower risk component to a portfolio. This contribution can be considered on a stand-alone basis. The average Beta for public utilities has typically been estimated at .30 to .80 depending on the timeframe, method, and frequency of the time-series data employed. Regardless of the technique employed, the relative contribution, of both risk and return, to a diversified portfolio by regulated utility property is expected to be something less than the overall portfolio return.

Betas across the comparable sample of companies selected for staff's analysis, as reported by Value Line, are provided in the following table. They range from .70 to 1.30; averaging 0.87 with a median of 0.80.

Value Line's Reported Beta

	<u>Beta</u>
AGL Resources	0.95
Atmos Energy	0.80
Laclede Group	0.90
New Jersey Resources	0.80
Nicor Inc.	1.30
Northwest Nat. Gas	0.75
Piedmont Natural Gas	0.80
South Jersey Inds.	0.70
WGL Holdings Inc.	0.85
<hr/>	
Average	0.87
Median	0.80

This measure indicates that these companies are affected by about 15 to 20 percent less systematic risk than an average-risk security. However, Value Line's calculation of Beta may be inflated somewhat. The Value Line betas "are adjusted for their long-term tendency to converge toward 1.00."³³ Still, for comparative purposes, Value Line's Beta provides a reasonable market risk metric and provides support that the equity investments in an average, regulated electric utility are less risky than the market as a whole.

The fact that public utilities are less risky than the average-risk security implies that their cost of equity, and expected returns, are expected to be somewhat lower than the average-risk security.

The most current Value Line Gas Distribution Sheet provides "Investment Advice" with a similar conclusion:³⁴

"This industry caters to risk-averse investors, who look for an above-average dividend yield when choosing a stock. It should be noted that as the percentage of earnings derived from nonregulated operations grows,

³³ Arnold Bernhard, How to Use the Value Line Investment Survey, page 61.

³⁴ See Staff/403 Morgan/52.

risk increases. Therefore, it is worthwhile for investors to decide whether or not they are willing to take on the additional risk. Note, however, that especially high dividend yields for stocks in this sector can mean that growth opportunities are constrained.”

Institutional Ownership

Conventional wisdom holds that the market is more efficient when considering the value of well-established companies in stable industries. Publicly regulated utilities have a history of stability and are favored by many investors.

Institutional investors typically make up the lion's share of ownership in public utilities. This creates less uncertainty and may reduce downward pricing pressures for the underlying shares. Assuming that the underlying property is functioning well and maintains long term value, the share prices may not be expected to be priced below net book value, e.g., the rate base for which the return is being set.

Some price greater than net book value may be correctly assumed due to the historic premiums gained from past investments. Most institutional investors have large teams of equity analysts and formulate "buy and sell" decisions based on their internal analysis.

The outstanding float³⁵ of stable operating utilities comprise large portions of the portfolios of investment banks and funds, i.e. institutional ownership.

Most rate-regulated companies are owned by large institutional investors. Most of the companies used in staff analysis have institutional ownership from around 40 to 60%. The following table indicates the relative

³⁵ Shares outstanding, less shares controlled by insiders, restricted stock and stock held by 5% owners

ownership interest of institutional investors for the electric companies that are followed in Value Line and that are used in the staff analysis.

Percentage of Electric Companies' Shares

Held by Institutional Investors³⁶

	<u>% owned</u>
AGL Resources	64.74%
Atmos Energy	55.67%
Laclede Group	46.68%
New Jersey Resources	60.03%
Nicor Inc.	72.76%
Northwest Nat. Gas	52.10%
Piedmont Natural Gas	44.56%
South Jersey Inds.	53.66%
WGL Holdings Inc.	61.59%
Average	56.9%
Median	55.7%

A large majority of the public float, that is the shares available for purchase by the public, is held by large institutional investors. Institutional investors own about 55 percent of the outstanding shares.

The effect of institutional ownership on companies depends on the type of institution that owns the company. Large pension and mutual fund companies can create stability in share pricing by holding a large block of shares. Overall, the investment community looks favorably on companies that have gained the attention of large institutional investors.

Discounted Cash Flow Model Theory

The Discounted Cash Flow (DCF) model³⁷ is based upon the premise that a company's stock price is equal to the present value of all future dividends

³⁶ Based on Value Line Data as of February 2007.

³⁷ The DCF model was first formalized in John Burr William's book *The Theory of Investment Value* (Cambridge: Harvard University Press, 1938). The concept of discounting dividends to value a stock dates back to at least 1930 and Robert F. Wiese's article "Investment for True Values." *Barrons*,

expected to be received by a share of stock. The expected dividends are discounted by the company's cost of common equity.

Equity returns are comprised of two components, dividend income and capital gains. Capital gains are derived from the ability of a company to increase its value, or to grow, over time, through reinvestment. This value increase is directly tied to earnings growth. Relating to the DCF Model, when one reflects on "growth," it is an allusion to both earnings growth and to on-going value growth.

When a company generates earnings, it chooses to either reinvest ("plow-back") those funds, or it chooses to pay those funds out as current income to its investors, via dividends. A company works to earn a reasonable return on any funds reinvested to *grow* the asset base of the company. Any amount not reinvested in the company, i.e., is paid out in dividends, reduces the amount available for long-term growth.

The growth rate can be the most speculative of all components that underlie the DCF for any company. From a valuation perspective, as greater income is derived from continuous dividend payouts, the more robust the analysis. Fortunately, public utilities commonly pay a significant portion of their earnings in dividends, making the DCF a reliable tool.

If we assume that *all* of the earnings are *paid out as dividends*, then the company, over the long run, will not grow, since it will have had no internally generated funds from which to grow.

September 8, 1930 p. 5. The DCF model was resurrected by Myron Gordon and E. Shapiro who used it to solve for the cost of equity in their article, "Capital Equipment Analysis: Required Rate of Profit," *Management Science* 102 (October 1956). Myron Gordon expanded the DCF model in the early 1960's, employing the model mainly as a method for estimating the cost of capital. He later published his work in *The Cost of Capital to a Public Utility* (Michigan: MSU Public Utilities Studies, 1974). Myron Gordon is considered the father of modern DCF analysis.

Conversely, if we assume that no dividends are paid and *all* funds are used for *growth* purposes, then the primary driver of value will be the company's ability to put the reinvested funds to economically advantageous uses. The shareholder then will benefit from either the expectation of future dividends or from price appreciation as the expectations of long-run earnings growth are reflected in share prices.

To summarize the discussion above, the two components of the DCF model relate to the actual dividends being projected for distribution to the shareholders and the long-run growth that will be generated from the reinvestments. Based on the above example, it is obvious that the larger the dividend component, the better the DCF model works to mirror investor sentiment.

For instance, if a company has \$1.00 of earnings and pays it out as \$1.00 of dividends, and if investors require a five percent return, the share price can be expected to be exactly \$20.00³⁸ and the entire valuation will be based on the current dividend, which in turn will be equal to all future dividends since this simplification assumes there will be no growth in the asset base that could generate greater earnings.

Conversely, the larger the growth component in the DCF, the more difficult it is to place great reliance on the technique. If a company pays no dividends, then the entire value of the company is dependent on the expectations of future earnings, which increases estimation uncertainty.

Many publicly regulated utilities have dividend streams that can be relatively well projected. Fortunately, the comparable companies used in my

³⁸ The perpetuity formula can be summarized as "Cash Flow divided by Capital Cost = Value", therefore: \$1.00 divided 5.0% = \$20.00. The Rate can also be converted into a Multiplier by taking the inverse of the Rate, i.e., $1 / 5.0\% = 20$; $20 \times \$1.00 = \20 .

analysis all pay a significant portion of their earnings in dividends, making the DCF a reliable tool.

Current Dividend Yields³⁹ are simple to estimate. The most difficult aspect of implementing the DCF method is estimating the future growth rate. If a company's past trend in earnings or dividend growth has been erratic, it is difficult to project future growth on the basis of past trends. Because the DCF method requires a constant or sustainable growth rate, growth rates based upon recent realized rates of earnings or dividend may be too volatile to provide a basis for future projections for some companies. Likewise, analyst estimates for long-term growth may be influenced by immediate market forces and may have to be tempered when applying the rates to a DCF analysis.

Mathematically, the DCF model for the cost of equity is represented by the following Fundamental Equation (Equation 1):

$$P_0 = \frac{Div_1}{(1+k)} + \frac{Div_2}{(1+k)^2} + \dots + \frac{Div_n}{(1+k)^n}$$

Where,

P = Price
D = Dividend
k = Discount rate

And,

$$P_t = \frac{Div_t(1+g)}{(k-g)}$$

Here, t represents a finite time period, or horizon, upon which the share will be sold for a Price, P_t.

³⁹ Dividend Yield is calculated as the Annual Dividends anticipated over the next year, divided by the Current Price per Share. This equation reflects a portion of the investor's "interest" income achieved by purchasing a share today and holding it for income over the ensuing year. It does not include share appreciation growth, which is related to overall earnings growth, and is considered by the expected Market Value of the share when the investor exits his investment position in a company.

This DCF model is a particular form called the Dividend Discount Model (DDM). Equation (1) says that the current price of a stock (P_0) is equal to the sum of expected future dividends discounted to the present value at the company's cost of equity (k). D_1 is the dividend expected one year hence, D_2 is the dividend expected two years hence, etc. Dividends can be related to each other by growth rates. For example, D_2 is equal to D_1 times a growth factor, D_3 is equal to D_2 times a growth factor, etc.

In this way, each dividend can be related to the dividend before it via a growth factor. The growth factor is equal to the number 1.0 plus a growth rate. If we know a stock price and can estimate dividends (or dividend growth rates) then we can use Equation 1 to calculate the cost of equity, k through a calculation called an "internal rate of return" calculation. That calculation essentially finds the cost of equity that equates the present value of dividends to the current stock price.

The model can be simplified to a "perpetuity" or "constant growth" case of the DCF as follows:

$$P_0 = \frac{Div_1}{k - g}$$

where g = growth

If the earnings and dividends of a company are "normalized" to reflect a "steady-state" process, the constant growth version of the DDM may be appropriate.

Alternatively, the following DCF model is a Holding Period model, similar to that describe previously in this testimony. This model allows an explicit share price forecast to be used to determine the internal rate of return for the holding period.

$$k = \frac{(P_1 - P_0) + D_1}{P_0}$$

This equation is appropriate for ex-ante, or forward-looking expectations, whereas the Holding period Return Model (HPR) is generally used to reflect ex-post, or historic results.

The DCF model is used by the utility industry. Many investment analysts, such as AG Edwards, provided a single-stage DCF analysis of the electric companies they follow. Other companies that use the model of which I am aware are Prudential-Bache and Merrill Lynch. Major investment funds also rely on the model. Warren Buffett's *Berkshire Hathaway* uses a DCF model that is similar to one of those proposed by staff. The models are used to make "fair price" estimates and to make "buy/hold/sale" investment advice decisions. Any corporate finance textbook will include a description of the DCF Model. Variations are used in the valuation arena for instance, for commercial and industrial real estate.

The Multi-Stage DCF

A multi-stage DCF model is one in which dividend growth is separated into two or more stages. Dividend growth can be separated into the following three stages: (1) short to near term; (2) near to long term; and, (3) long term, i.e., by using a reversionary price that implicitly contains the impact of on-going growth. Like the single-stage model, the multi-stage model requires a current stock price and an initial dividend.

The primary difference between a single-stage and multi-stage DCF model relates to the underlying changes in growth rates. A single-stage model assumes that the growth is steady and stable at the outset while a multi-stage

model allows the growth to change explicitly over a period of time before making the assumption of a final, "terminal" or "horizon", constant growth forecast.

The growth rate that is adopted as an input for any DCF model is paramount to the outcome. *It is a highly controversial issue and immense consideration should be given to this issue since the outcome is highly sensitive to the growth rate used.*

Some witnesses will estimate both short-term and long-term growth rates and assume a convergence over a transition period. The convergence may occur in one year or over several years via arithmetic smoothing, or in a "shifting" stage, where perpetual growth is adjusted. Any transition period is subjective.

Staff's 3-stage model has three stages over 40 years. This model uses implicit forecasts of book value, earnings and dividends. The first stage uses the estimates from Value Line. The second stage uses implicit growth rates from two primary input assumptions, and the third stage, at year 40, is the "reversionary" stage, where an explicit estimation of the stock price is produced.

The Commission relied on the 3-Stage model in the last three contested rate cases, UE 115, UE 116 and UE 181. In those dockets, the Commission adopted a 40-year DCF. The Commission indicated a preference for multi-stage models in Docket No. UE 116:

We have previously favored use of the multi-stage DCF analysis over the single-stage DCF formula. In docket UG 132, In re Northwest Natural Gas Company, we noted that the multi-stage DCF improves on the implicit assumption in the single-stage version that dividends grow indefinitely at the same rate. This limitation of the single-stage DCF model is even more significant given the ongoing restructuring of the

electric industry. For this reason, and in light of the parties' significant disagreements over the proper application of the single-stage DCF model, we adopt Staff's recommendation to reject the single-stage DCF analysis in favor of PGE's and Staff's multi-stage DCF results. We conclude that the parties' single-stage DCF analyses provide no information not already contained in their complex DCF analyses. Parties are free to use the single-stage version of the DCF method in future dockets, but they will be expected to show that the required industry stability is present.⁴⁰

Dividend Growth

The estimate of growth in the derivation of the cost of equity is a very important estimate. Because the dividend yield can be readily and relatively accurately estimated from market data, the long-run change to dividends or the underlying drivers of dividends such as book value and earnings becomes the only major component that cannot be directly observed and quantified.

Historic dividend growth reflects the company's economic performance and dividend policies. If historic dividend growth is reasonably stable, then, all else being equal, one would presume the historic dividend growth would continue unless there are substantive changes in general economic conditions, business operations or practices. There is no support for presuming that, all else being equal, future dividend growth will increase significantly from past results.

Convergence in Growth Rates

Convergence relates to the tendency for the growth in book value, dividends, and earnings to move toward the same level, to a "steady-state". The

⁴⁰ Order No. 01-777 at 27.

underlying notion is that the "asset base" of a company, reflected by book value, is the ultimate driver for earnings.

This is true because book value represents the equity earnings base from which earnings are derived. In the short run, growth rates in the two may diverge due to fluctuations in earned rates of return and dividend payout percentages. Book value growth allows for growth in earnings, which is the ultimate source from which dividends are paid. Over the long-run, earnings are the only base from which to provide a reinvestment in the company, or a payout to investors. The reinvestment creates growth in book value and any changes in the payout from the achieved earnings, drives the growth in dividends, which is the ultimate focus of the DCF models that were employed.

It is the interplay between the earnings and the residual amount, after paying dividends, which allows for continued reinvestment, i.e., an increase in the book value. This "re-investment" or "plowback" provides the impetus, or value driver, that supports any sustained growth in earnings.

Many companies may withhold dividend increases in order to provide funds for fast-growing operations. In such a case, the eventual impact is for earnings growth that would be manifested in share appreciation. The DCF model can either implicitly or explicitly consider the increase in share price, i.e., price appreciation, as a "dividend" payment or as a reversionary benefit. Either market mechanism would arrive at the same conclusion.

In the DCF model, there is assumed to be a long-run convergence in growth rates of book value and earnings. The DCF model assumes that this convergence accrues to the equity-holder through dividends. The alternative market mechanism, assuming dividends are withheld or not grown over time, is an increase in share prices, i.e., capital appreciation. Multi-stage reversionary

DCF models attempt to capture the share price appreciation, although models that explicitly forecast future share sale prices can be fraught with estimation error. The 40-year and 150-year models reduce the impact of this error.

If convergence only occurs over a future period specified in the model, there is a clear disconnect between the results of the model and the underlying market forces and drivers of value.

We could always assume higher growth rates into the future and assume that such a convergence *may* occur. However, such an argument is circular. This implies that offering a higher cost of equity based on higher growth rate assumptions would then allow higher growth rates to be used in the model. Therefore, convergence must have a basis in past results.

All else equal, over time, earnings growth rates (per share) cannot exceed the growth rate in book value (per share), which will drive the available resources to provide the dividend growth (per share). This relationship holds more closely for rate-regulated property.

Value Line

Whether Value Line estimates are efficient and accurate has been debated for some time. Staff believes that the company provides fair data. Value Line's projections diverged, over the short-term, but eventually converge. The following excerpt is provided by Value Line:⁴¹

⁴¹ Updated January 27, 2006, http://www.valueline.com/why_use_potential.html

Value Line's 3- to 5-Year Appreciation Potential—An Update

The following is an update to the evaluation of our 3- to 5-year price appreciation potential. The results of this study were first published on November 8, 2002, with a subsequent update published on February 11, 2005. The original article and accompanying chart detailed the methodology behind our evaluation and discussed some of the more interesting results. For the benefit of our subscribers, we briefly review the methodology used for this analysis.

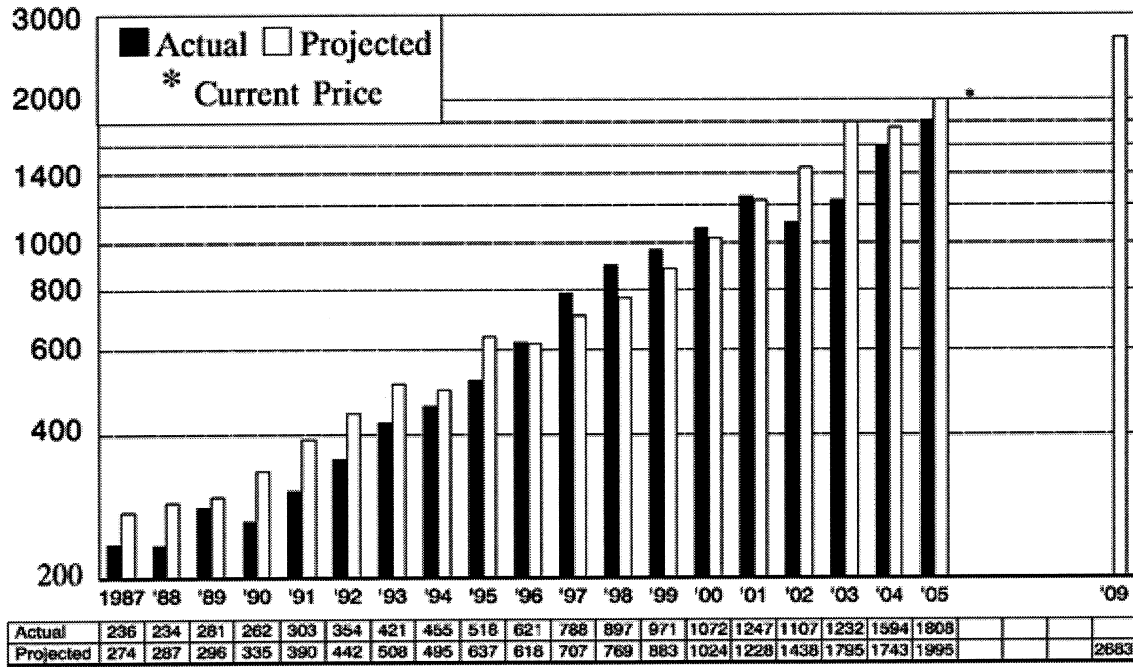
Price Appreciation Potential - The estimate of the median price appreciation potential is found by first calculating the percentage change between the current price of each stock in our universe and the middle of its 3- to 5- year Target Price Range. These figures are then arrayed, and the median price appreciation potential is determined. We select the median of the array (the middle) as the most likely price, in order to play down the effect of outliers, that is, excessively large or small percentage price changes.

The chart included below depicts the results of those projections from 1983 to 2005, using the Value Line Arithmetic Index as our measure of the market. For simplicity sake, we take the actual price as the average of the middle year of the 3- to 5-year forecast, so that a projection made at the end of 1983 would be compared to the average price of the index in 1987. Strictly speaking this would be a 3 1/2 year forecast, from the end of 1983 to midyear 1987.

Update for 2005 - Our estimate for the year 2005 (made at the end of 2001) was 1995. The average price of the Value Line Arithmetic Index in 2005 was 1808. Interestingly, the year ended with the Index at 1917, almost exactly in line with the 4-year projection made in 2001. The average deviation between the

projected and actual average prices is 17% (ignoring signs). The median deviation during this period is 16%. Our projection for 2009 now stands at 2683, 34% above the current level.

Four-Year Projections of the Value Line Arithmetic Index



Natural Gas (Distribution) companies have entered their most profitable time of the year as the winter heating season is upon us. Utilities earn most of their profits during the December and March quarters. To reduce the volatility of earnings that may arise due to warmer-than-normal temperatures, many companies have applied for, and been granted, regulatory programs that not only protect against warmer weather, but also reduced gas consumption (discussed below). Some key features of owning gas utilities include their Safety ranks and better-than-average dividend yields, rather than price performance or appreciation potential.

Natural Gas Distribution

The distribution operations of gas utilities are regulated by state agencies, which set the allowed rates of return these companies are permitted to earn. They are considered natural monopolies since it is more cost-effective to build one pipeline system to serve a region, versus multiple distributors competing over the same location. As a result, utilities typically generate steady earnings that rise with population growth over time. In the event that profits fall below their allowed return-on-equity utilities can petition their state regulatory authority for rate relief, although there is a time lag before new rates are put in place, if approved.

New Rate Plans

Over the past year, there have been numerous gas distributors that have received decoupling mechanisms in various forms that protect against both warmer-than-normal temperatures and reduced consumption by customers due to conservation. This enables utilities to promote conservation and efficiency, while also protecting financial performance. The New Jersey Board of Public Utilities recently approved conservation incentive plans for both *New Jersey Resources* and *South Jersey Industries*. *WGL Holdings* has a revenue normalization clause in place to protect against these issues in its Maryland service territory. The company is seeking to implement a similar plan in its Virginia service territory and plans to file a rate case this upcoming spring to recover costs associated with the Prince George's County rehabilitation project. At *SEMCO Energy*, the company

INDUSTRY TIMELINESS: 88 (of 97)

received a rate increase of \$8.5 million based on a return on equity of 10.15%-11.15%. However this is below the \$18.1 million increase on a return on common equity of 11.9% that had been requested. Management plans to file a rebuttal shortly. Lastly, *Southern Union* has filed for a \$41.7 million rate increase in its Missouri service territory, and is seeking additional relief in its Massachusetts service area.

Nonutility Operations

Industry deregulation has allowed gas utilities to expand their businesses beyond their normal distribution operations. This includes retail energy marketing, energy trading, and oil and gas exploration and production. In fact, most companies in this industry have at least a small percentage of their profits derived from these activities, with many looking to expand their presence further. One benefit is that there is no cap on the allowed return on equity as compared to the regulated operations. However, some drawbacks include regulatory agencies being less inclined to approve rate increases, along with corporate boards possibly reducing the rate of dividend increases to use the funds for other growth investments.

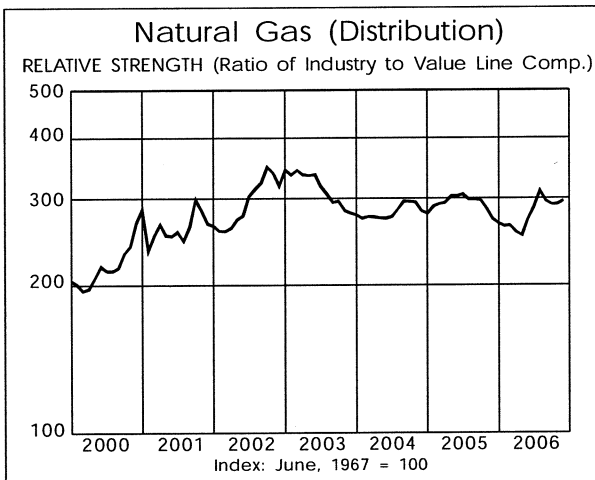
South Jersey Industries, through its Marina Energy subsidiary, is poised for growth out to late decade. The company is in the second phase of its expansion at the Borgata Hotel Casino & Spa, which is scheduled to be completed next year. In addition, Marina remains one of the finalists to co-own and operate a thermal facility to provide all the energy needs for a Las Vegas casino project.

Investment Advice

This industry caters to risk-averse investors, who look for an above-average dividend yield when choosing a stock. It should be noted that as the percentage of earnings derived from nonregulated operations grows, risk increases. Therefore, it is worthwhile for investors to decide whether or not they are willing to take on the additional risk. Note, however, that especially high dividend yields for stocks in this sector can mean that growth opportunities are constrained.

Evan I. Blatter

Composite Statistics: Natural Gas (Distribution)							
2002	2003	2004	2005	2006	2007		09-11
22947	29981	33220	41399	44500	49000	Revenues (\$mill)	58000
1231.5	1395.3	1517.2	1788.8	2000	2200	Net Profit (\$mill)	2800
35.3%	37.4%	35.7%	35.8%	36.0%	36.0%	Income Tax Rate	36.0%
5.4%	4.7%	4.6%	4.3%	4.5%	4.5%	Net Profit Margin	4.8%
57.8%	55.9%	53.2%	50.7%	52.0%	52.0%	Long-Term Debt Ratio	52.0%
41.4%	43.7%	45.7%	48.3%	46.0%	46.0%	Common Equity Ratio	46.0%
24907	28436	31268	33911	35400	36750	Total Capital (\$mill)	42000
25590	31732	32053	35030	37000	39000	Net Plant (\$mill)	45000
6.6%	6.4%	6.4%	6.9%	7.0%	7.0%	Return on Total Cap'l	7.5%
11.7%	11.1%	10.4%	10.7%	11.0%	11.5%	Return on Shr. Equity	12.0%
11.8%	11.2%	10.5%	10.8%	11.0%	11.5%	Return on Com Equity	12.0%
3.9%	4.1%	4.0%	4.4%	5.0%	5.2%	Retained to Com Eq	5.5%
68%	64%	63%	59%	61%	60%	All Div'ds to Net Prof	60%
14.8	14.1	15.6	16.2	Bold figures are Value Line estimates		Avg Ann'l P/E Ratio	13.0
.81	.80	.82	.87			Relative P/E Ratio	.85
4.5%	4.5%	4.0%	3.6%			Avg Ann'l Div'd Yield	4.6%
281%	314%	308%	331%	315%	330%	Fixed Charge Coverage	355%



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AGL RESOURCES NYSE-ATG

RECENT PRICE **39.50** P/E RATIO **14.8** (Trailing: 13.3 Median: 14.0) RELATIVE P/E RATIO **0.80** DIV'D YLD **4.0%** VALUE LINE

TIMELINESS 4 Lowered 8/11/06
SAFETY 2 New 7/27/06
TECHNICAL 2 Raised 12/1/06
BETA .95 (1.00 = Market)

High: 20.0 22.0 21.6 23.4 23.4 23.2 24.5 25.0 29.3 33.7 39.3 40.0
 Low: 14.9 17.1 17.8 17.7 15.6 15.5 19.0 17.3 21.9 26.5 32.0 34.4

LEGENDS
 — 1.15 x Dividends p sh divided by Interest Rate
 Relative Price Strength
 2-for-1 split 12/95
 Options: Yes
 Shaded area indicates recession

2009-11 PROJECTIONS

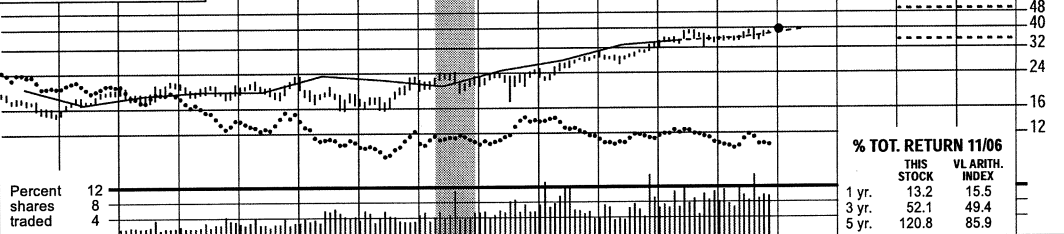
	Price	Gain	Return
High	50	(+25%)	9%
Low	35	(-10%)	1%

Insider Decisions

	J	F	M	A	M	J	J	A	S
to Buy	0	0	0	0	0	0	0	0	0
Options	0	1	1	0	0	0	0	1	0
to Sell	0	0	1	0	0	0	2	0	0

Institutional Decisions

	4Q2005	1Q2006	2Q2006
to Buy	109	110	95
to Sell	88	83	102
Hld's(000)	49186	45106	49525



1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	© VALUE LINE PUB., INC. 09-11
22.58	20.26	20.43	22.73	23.59	19.32	21.91	22.75	23.36	18.71	11.25	19.04	15.32	15.25	23.89	34.98	35.55	36.10	Revenues per sh ^A
2.04	2.07	2.31	2.25	2.24	2.33	2.49	2.42	2.65	2.29	2.86	3.31	3.39	3.47	3.29	4.20	4.40	4.50	"Cash Flow" per sh
1.01	1.04	1.13	1.08	1.17	1.33	1.37	1.37	1.41	.91	1.29	1.50	1.82	2.08	2.28	2.48	2.65	2.70	Earnings per sh ^{A,B}
.98	1.02	1.03	1.04	1.04	1.04	1.06	1.08	1.08	1.08	1.08	1.08	1.08	1.11	1.15	1.30	1.50	1.58	Div'ds Decl'd per sh ^C
2.73	2.95	2.74	2.49	2.37	2.17	2.37	2.59	2.05	2.51	2.92	2.83	3.30	2.46	3.44	3.44	3.20	3.10	Cap'l Spending per sh
8.97	9.42	9.70	9.90	10.19	10.12	10.56	10.99	11.42	11.59	11.50	12.19	12.52	14.66	18.06	19.29	20.40	21.50	Book Value per sh ^D
44.32	47.57	48.69	49.72	50.86	55.02	55.70	56.60	57.30	57.10	54.00	55.10	56.70	64.50	76.70	77.70	77.90	78.00	Common Shs Outst'g ^E
14.2	15.3	15.5	17.9	15.1	12.6	13.8	14.7	13.9	21.4	13.6	14.6	12.5	12.5	13.1	14.3	14.3	14.3	Avg Ann'l P/E Ratio
1.05	.98	.94	1.06	.99	.84	.86	.85	.72	1.22	.88	.75	.68	.71	.69	.76	.76	.76	Relative P/E Ratio
6.8%	6.4%	5.9%	5.4%	5.9%	6.2%	5.6%	5.4%	5.5%	5.5%	6.2%	4.9%	4.7%	4.3%	3.9%	3.7%	3.7%	3.7%	Avg Ann'l Div'd Yield

CAPITAL STRUCTURE as of 9/30/06
 Total Debt 2075.0 mill. Due in 5 Yrs \$530.0 mill.
 LT Debt \$1634.0 mill. LT Interest \$100.0 mill.

(Total interest coverage: 4.4x)
 Leases, Uncapitalized Annual rentals \$27.0 mill.

Pension Assets-12/05 \$371.0 mill. Oblig. \$464.0 mill.

Pfd Stock None
 Common Stock 77,696,090 shs. as of 10/20/06

MARKET CAP: \$3.1 billion (Mid Cap)

1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Revenues (\$mill) ^A
1220.2	1287.6	1338.6	1068.6	607.4	1049.3	868.9	983.7	1832.0	2718.0	2770	2815	Revenues (\$mill) ^A	3000					
75.6	76.6	80.6	52.1	71.1	82.3	103.0	132.4	153.0	193.0	205	210	Net Profit (\$mill)	230					
38.6%	37.9%	32.5%	33.1%	34.3%	40.7%	36.0%	35.9%	37.0%	37.7%	38.0%	38.0%	Income Tax Rate	38.0%					
6.2%	5.9%	6.0%	4.9%	11.7%	7.8%	11.9%	13.5%	8.4%	7.1%	7.5%	7.5%	Net Profit Margin	7.7%					
46.2%	48.7%	47.5%	45.3%	45.9%	61.3%	58.3%	50.3%	54.0%	51.9%	51.0%	50.0%	Long-Term Debt Ratio	48.5%					
48.9%	45.9%	47.1%	49.2%	48.3%	38.7%	41.7%	49.7%	46.0%	48.1%	49.0%	50.0%	Common Equity Ratio	51.5%					
1201.3	1356.4	1388.4	1345.8	1286.2	1736.3	1704.3	1901.4	3008.0	3114.0	3225	3310	Total Capital (\$mill)	3775					
1415.4	1496.6	1534.0	1598.9	1637.5	2058.9	2194.2	2352.4	3178.0	3271.0	3350	3450	Net Plant (\$mill)	3750					
8.0%	7.3%	7.6%	5.7%	7.4%	6.5%	8.1%	8.9%	6.3%	7.9%	8.0%	8.0%	Return on Total Cap'l	7.5%					
11.7%	11.0%	11.1%	7.1%	10.2%	12.3%	14.5%	14.0%	11.0%	12.9%	13.0%	12.5%	Return on Shr. Equity	12.0%					
12.1%	11.3%	12.3%	7.9%	11.5%	12.3%	14.5%	14.0%	11.0%	12.9%	13.0%	12.5%	Return on Com Equity	12.0%					
3.8%	3.2%	4.4%	NMF	3.2%	4.2%	7.0%	6.6%	5.6%	6.2%	5.5%	5.5%	Retained to Com Eq	5.0%					
71%	74%	64%	101%	72%	65%	52%	53%	49%	52%	57%	58%	All Div'ds to Net Prof	59%					

ANNUAL RATES Past 10 Yrs. Past 5 Yrs. Est'd '03-'05 to '09-'11

Revenues	1.0%	7.0%	7.5%
"Cash Flow"	5.0%	7.0%	5.0%
Earnings	6.5%	13.5%	4.0%
Dividends	1.5%	2.0%	6.5%
Book Value	5.5%	8.5%	6.5%

BUSINESS: AGL Resources, Inc. is a public utility holding company. Its distribution subsidiaries are Atlanta Gas Light, Chattanooga Gas, and Virginia Natural Gas. The utilities have more than 2.2 million customers in Georgia (primarily Atlanta), Virginia, and in southern Tennessee. Also engaged in nonregulated natural gas marketing and other, allied services. Also wholesales and retails propane. Nonregulated subsidiaries: Georgia Natural Gas Services markets natural gas at retail. Acq. Virginia Natural Gas, 10/00. Sold Utilipro, 3/01. Off./dir. own less than 1.0% of common; Goldman Sachs, 5.5%; JPMorgan, 5.9% (3/06 Proxy). Pres. & CEO: John W. Somerhalder II. Inc.: GA. Addr.: 10 Peachtree Place N.E., Atlanta, GA 30309. Tel.: 404-584-4000. Internet: www.aglresources.com.

AGL Resources is on track to register solid earnings gains in 2006. The company reported earnings of \$0.46 a share in the third quarter, significantly ahead of the prior year. Most of the gains can be attributed to a strong performance at the company's Wholesale Services segment. The unit benefited from mark-to-market gains following the decline in NYMEX gas prices. This resulted in the recognition of \$38 million in gains compared to the loss of \$46 million last year when gas prices increased significantly. Since gas prices typically fluctuate over time, quarterly earnings should remain volatile at this unit.

put since our last report. In August, the Louisiana Department of Natural Resources terminated the company's mineral lease. AGL Resources responded by filing suit in September against the state of Louisiana to maintain its lease and complete the project. Management is optimistic that a resolution can be reached, though the third cavern will likely not become operational until 2009 as a result of delays. In addition, **The company has signed an option to develop a salt dome in east Texas near the Gulf Coast.** It has an estimated 12 billion cubic feet of working capacity. The location also provides the ability to connect to other pipelines in the area, along with potential LNG facilities that may come into the region. The first cavern, which would be about six bcf and similar in size to the Jefferson Island cavern, has the potential to be in operation by 2010. **Though untimely, this stock offers a good dividend yield.** ATG shares offer only limited appreciation potential, but further expansion in nonregulated activities may well improve these prospects.

Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2003	352.5	186.6	166.3	278.3	983.7
2004	651.0	294.0	262.0	625.0	1832.0
2005	908.0	430.0	387.0	993.0	2718.0
2006	1047.0	436.0	434.0	853	2770
2007	970	480	465	900	2815

The company is looking to reduce costs about 2%-3% at its distribution segment. Over the past few years, operating and maintenance costs per customer have decreased significantly thanks to numerous efficiency programs put in place. As another way to improve results, the company is looking to reduce customer attrition. Management believes it can achieve 0.8% growth this year and push the rate higher in the coming years. **No progress has been made on the Jefferson Island storage facility dis-**

Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2003	.98	.29	.27	.54	2.08
2004	1.00	.33	.31	.64	2.28
2005	1.14	.30	.19	.85	2.48
2006	1.41	.25	.46	.53	2.65
2007	1.30	.37	.29	.74	2.70

Evans I. Blatter December 15, 2006

Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2002	.27	.27	.27	.27	1.08
2003	.27	.28	.28	.28	1.11
2004	.28	.29	.29	.29	1.15
2005	.31	.31	.31	.37	1.30
2006	.37	.37	.37	.37	

Company's Financial Strength B++
Stock's Price Stability 95
Price Growth Persistence 70
Earnings Predictability 75

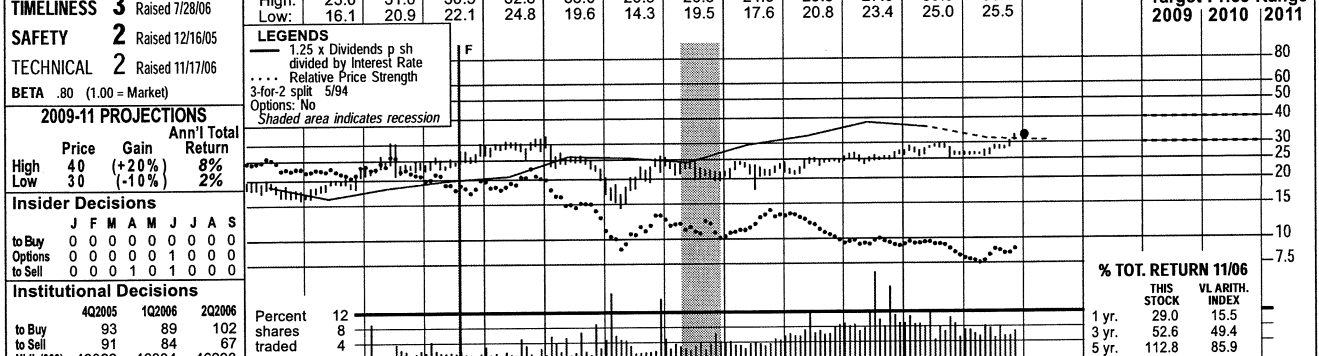
(A) Fiscal year ends December 31st. Ended September 30th prior to 2002.
 (B) Diluted earnings per share. Excl. nonrecurring gains (losses): '95, (\$0.83); '99, \$0.39; '00, \$0.13; '01, \$0.13; '03, (\$0.07). Next earnings report due late Jan.
 (C) Dividends historically paid early March, June, Sept, and Dec. = Div'd reinvest. plan available.
 (D) Includes intangibles. In 2005: \$422 million, \$5.43/share.
 (E) In millions, adjusted for stock split.

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ATMOS ENERGY CORP. NYSE-ATO

RECENT PRICE **32.82** P/E RATIO **14.1** (Trailing: 17.9; Median: 16.0) RELATIVE P/E RATIO **0.77** DIV'D YLD **3.9%** VALUE LINE



	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	© VALUE LINE PUB., INC. 09-11
Revenues per sh ^A	30.19	30.59	27.90	22.09	26.61	35.36	22.82	54.39	46.50	61.75	75.05	73.80	100.00
"Cash Flow" per sh	2.80	2.85	3.38	2.62	3.01	3.03	3.39	3.23	2.91	3.90	4.25	4.30	4.85
Earnings per sh ^{A,B}	1.51	1.34	1.84	.81	1.03	1.47	1.45	1.71	1.58	1.72	2.00	1.95	2.45
Div'ds Decl'd per sh ^C	.96	1.01	1.06	1.10	1.14	1.16	1.18	1.20	1.22	1.24	1.26	1.28	1.35
Cap'l Spending per sh	4.84	4.13	4.44	3.53	2.36	2.77	3.17	3.10	3.03	4.14	5.20	5.15	7.10
Book Value per sh	10.75	11.04	12.21	12.09	12.28	14.31	13.75	16.66	18.05	19.90	20.10	20.20	22.95
Common Shs Outst'g ^D	16.02	29.64	30.40	31.25	31.95	40.79	41.68	51.48	62.80	80.54	82.00	84.00	100.00
Avg Ann'l P/E Ratio	15.1	17.9	15.4	33.0	18.9	15.6	15.2	13.4	15.9	16.1	13.5		14.0
Relative P/E Ratio	.95	1.03	.80	1.88	1.23	.80	83	.76	.84	.84	.72		.95
Avg Ann'l Div'd Yield	4.2%	4.2%	3.7%	4.1%	5.9%	5.1%	5.4%	5.2%	4.9%	4.5%	4.7%		3.9%
Revenues (\$mill) ^A	483.7	906.8	848.2	690.2	850.2	1442.3	950.8	2799.9	2920.0	4973.3	6152.4	6200	10000
Net Profit (\$mill)	23.9	39.2	55.3	25.0	32.2	56.1	59.7	79.5	86.2	135.8	162.3	165	250
Income Tax Rate	35.7%	37.5%	36.5%	35.0%	36.1%	37.3%	37.1%	37.1%	37.4%	37.7%	37.6%	37.5%	38.0%
Net Profit Margin	5.0%	4.3%	6.5%	3.6%	3.8%	3.9%	6.3%	2.8%	3.0%	2.7%	2.6%	2.7%	2.5%
Long-Term Debt Ratio	41.5%	48.1%	51.8%	50.0%	48.1%	54.3%	53.9%	50.2%	43.2%	57.7%	57.0%	57.0%	55.0%
Common Equity Ratio	58.5%	51.9%	48.2%	50.0%	51.9%	45.7%	46.1%	49.8%	56.8%	42.3%	43.0%	43.0%	45.0%
Total Capital (\$mill)	294.6	630.2	769.7	755.1	755.7	1276.3	1243.7	1721.4	1994.8	3785.5	4300	3950	5100
Net Plant (\$mill)	413.6	849.1	917.9	965.8	982.3	1335.4	1300.3	1516.0	1722.5	3374.4	3630	3900	5000
Return on Total Cap'l	10.6%	8.3%	9.0%	5.1%	6.5%	5.9%	6.8%	6.2%	5.8%	5.3%	6.0%	6.0%	6.5%
Return on Shr. Equity	13.9%	12.0%	14.9%	6.6%	8.2%	9.6%	10.4%	9.3%	7.6%	8.5%	10.0%	9.5%	11.0%
Return on Com Equity	13.9%	12.0%	14.9%	6.6%	8.2%	9.6%	10.4%	9.3%	7.6%	8.5%	10.0%	9.5%	11.0%
Retained to Com Eq	5.1%	3.9%	6.3%	NMF	NMF	2.1%	1.9%	2.8%	1.7%	2.3%	3.5%	3.5%	5.0%
All Div'ds to Net Prof	64%	67%	58%	NMF	112%	79%	82%	70%	77%	73%	64%	65%	54%

CAPITAL STRUCTURE as of 6/30/06
Total Debt \$2481.2 mill. Due in 5 Yrs \$860.0 mill.
LT Debt \$2180.8 mill. LT Interest \$135.0 mill.
(LT interest earned: 2.7%; total interest coverage: 2.6x)
Leases, Uncapitalized Annual rentals \$15.3 mill.
Pfd Stock None
Pension Assets-9/05 \$355.9 mill. Oblig. \$359.9 mill.
Common Stock 81,595,723 shs. as of 7/31/06
MARKET CAP: \$2.7 billion (Mid Cap)

CURRENT POSITION	2004	2005	6/30/06
Cash Assets	201.9	40.1	26.8
Other	475.2	1224.3	1023.4
Current Assets	677.1	1264.4	1050.2
Accts Payable	185.3	461.3	306.8
Debt Due	5.9	148.1	300.4
Other	223.3	503.4	407.6
Current Liab.	414.5	1112.8	1014.8
Fix. Chg. Cov.	384%	395%	400%

ANNUAL RATES	Past 10 Yrs.	Past 5 Yrs.	Est'd '03-'05 of change (per sh)	'09-'11
Revenues	6.0%	16.5%	10.5%	
"Cash Flow"	3.5%	2.0%	6.5%	
Earnings	4.0%	6.5%	6.5%	
Dividends	3.0%	2.0%	2.0%	
Book Value	6.5%	8.5%	4.0%	

Fiscal Year Ends	QUARTERLY REVENUES (\$ mill) ^A	Full Fiscal Year			
	Dec.31	Mar.31	Jun.30	Sep.30	
2003	680.4	1194.1	488.5	436.9	2799.9
2004	763.6	1117.5	546.1	492.8	2920.0
2005	1371.0	1687.8	909.9	1004.6	4973.3
2006	2283.8	2033.8	863.2	971.6	6152.4
2007	1550	1550	1550	1550	6200

Fiscal Year Ends	EARNINGS PER SHARE ^{A,B,E}	Full Fiscal Year			
	Dec.31	Mar.31	Jun.30	Sep.30	
2003	.60	1.24	--	d.05	1.71
2004	.57	1.12	.09	d.11	1.58
2005	.79	1.11	.06	d.21	1.72
2006	.88	1.10	d.22	.25	2.00
2007	.85	1.15	.08	d.13	1.95

Calendar	QUARTERLY DIVIDENDS PAID ^C	Full Year			
	Mar.31	Jun.30	Sep.30	Dec.31	
2002	.295	.295	.295	.30	1.19
2003	.30	.30	.30	.305	1.21
2004	.305	.305	.305	.31	1.23
2005	.31	.31	.31	.315	1.25
2006	.315	.315	.315	.32	

BUSINESS: Atmos Energy Corporation is engaged primarily in the distribution and sale of natural gas to 3.2 million customers via seven regulated natural gas utility operations: Louisiana Division, Mid-States Division, West Texas Division, Mid-Tex Division, Mississippi Division, Colorado-Kansas Division, and Kentucky Division. Combined 2005 gas volumes: 296 MMcf. Breakdown: 55%, resi-

We believe that Atmos Energy's bottom line will be flat in fiscal 2007, which began on October 1st. This is attributable largely to the difficult comparison, reflecting a record performance from the non-utility marketing segment, which was able to capture highly favorable arbitrage spreads created by natural gas volatility. Note, too, that our figure for the fourth quarter of fiscal 2006 does not include an \$0.18-a-share charge for the impairment of irrigation properties in the West Texas Division.

But the company ought to be aided by certain factors. Weather-normalized rates are now in effect for the Mid-Tex operation and Louisiana unit, presently accounting for almost 60% of the customer base, combined. Consequently, around 90% of the utility's margins are protected by these mechanisms, compared to about 33% previously. Also, this fiscal year's results should be absent the \$0.10-a-share reduction from the impact of Hurricane Katrina.

Atmos is one of the more aggressively managed natural gas utilities in the Value Line universe, as it has completed

a string of major acquisitions over the past 20 years (the last one being TXU Gas Company in 2004). The TXU purchase brought a substantial pipeline business into the fold. The company is now one of the largest operators in Texas, with room for expansion. Management will undoubtedly continue to implement its strategy of purchasing less-efficient utilities and shoring up their profitability through expense-reduction initiatives, rate relief, and aggressive marketing efforts.

These good-quality shares have exhibited strength since our last report in September, arising partly, we think, from the possibility that natural gas costs will decline this winter, in view of weather forecasts and supply levels. **Income-oriented accounts may be drawn to the dividend yield.** And it seems that more increases in the payout are plausible. Earnings coverage should remain adequate.

But long-term total-return possibilities are limited, given the stock's price move. Also, the Timeliness rank is just 3 (Average). *Frederick L. Harris, III December 15, 2006*

(A) Fiscal year ends Sept. 30th. (B) Diluted shrs. Excl. nonrec. items: '97, d53¢; '99, d23¢; '00, 12¢; '03, d17¢; Q4 '06, d18¢. Next egs. rpt. due early Feb. (C) Dividends historically paid in early March, June, Sept., and Dec. (D) In millions, adjusted for stock splits. (E) Qtrs may not add due to change in shrs outstanding. (F) ATO completed United Cities merger 7/97.

Company's Financial Strength	B+
Stock's Price Stability	100
Price Growth Persistence	30
Earnings Predictability	70

CASCAD NAT'L GAS NYSE-CGC		RECENT PRICE	25.90	P/E RATIO	24.7	(Trailing: 24.9 Median: 18.0)	RELATIVE P/E RATIO	1.34	DIV'D YLD	3.7%	VALUE LINE								
TIMELINESS — Suspended 7/21/06	High: 17.5	17.5	19.0	18.7	19.8	20.9	22.8	24.2	22.0	23.0	22.8	26.3	Target Price	Range					
SAFETY 3 New 7/27/90	Low: 13.0	13.4	15.3	14.6	14.4	13.4	17.4	15.5	18.0	19.1	18.0	19.0	2009	2010					
TECHNICAL — Suspended 7/21/06	LEGENDS 1.13 x Dividends p sh divided by Interest Rate Relative Price Strength 3-for-2 split 12/93 Options: No Shaded area indicates recession												2011						
BETA .80 (1.00 = Market)	2009-11 PROJECTIONS Ann'l Total Price Gain Return High 30 (+15%) 7% Low 20 (-25%) -2%																		
Insider Decisions J F M A M J J A S to Buy 0 0 0 0 0 0 0 0 0 Options 0 1 0 0 0 0 0 0 0 to Sell 0 0 0 0 0 0 0 0 0																			
Institutional Decisions 4Q2005 1Q2006 2Q2006 to Buy 38 47 53 to Sell 34 31 28 Hd's(000) 4695 4911 5297 Percent shares traded 9 6 3																			
© VALUE LINE PUB., INC. 09-11 % TOT. RETURN 11/06 THIS STOCK INDEX 15.5 1 yr. 32.8 3 yr. 47.8 5 yr. 61.4 85.9																			
1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Revenues per sh^A	60.00
24.45	23.27	20.03	21.88	21.59	19.98	11.84	17.85	17.17	18.89	21.90	30.40	29.06	27.20	28.23	28.61	39.51	41.75	"Cash Flow" per sh	4.00
2.36	2.29	1.66	2.04	1.71	2.07	1.22	1.92	2.06	2.40	2.60	2.72	2.48	2.25	2.63	2.32	2.65	2.90	Earnings per sh ^{AB}	1.45
1.26	1.14	.63	1.05	.60	.80	.39	.93	.84	1.24	1.39	1.47	1.13	.87	1.19	.82	1.09	1.15	Div'ds Decl'd per sh ^C	.98
.87	.90	.93	.94	.96	.96	.72	.96	.96	.96	.96	.96	.96	.96	.96	.96	.96	.96	Cap'l Spending per sh	3.80
2.50	2.97	4.64	3.85	3.06	4.12	2.42	2.66	2.32	1.81	1.65	2.16	1.91	2.56	3.50	2.53	1.50	1.80	Book Value per sh ^D	14.50
8.33	8.63	9.09	9.96	9.81	9.76	10.09	10.16	10.07	10.36	10.79	11.01	10.34	10.11	10.52	10.39	10.60	11.15	Common Shs Outst'g ^E	12.50
6.56	6.63	7.61	8.57	8.91	9.14	10.79	10.97	11.05	11.05	11.05	11.05	11.05	11.13	11.27	11.41	11.51	11.50	Avg Ann'l P/E Ratio	17.5
8.9	12.2	23.7	16.6	25.7	18.2	40.0	17.6	19.4	13.7	11.7	13.4	18.2	22.0	17.5	25.1	19.7	19.7	Relative P/E Ratio	1.15
.66	.78	1.44	.98	1.69	1.22	2.51	1.01	1.01	.78	.76	.69	.99	1.25	.92	1.34	1.05	1.05	Avg Ann'l Div'd Yield	3.9%
7.8%	6.4%	6.2%	5.4%	6.2%	6.6%	4.6%	5.9%	5.9%	5.7%	5.9%	4.9%	4.7%	5.0%	4.6%	4.7%	4.5%	4.5%		
CAPITAL STRUCTURE as of 6/30/06															Revenues (\$mill)^A	750			
Total Debt \$173.3 mill. Due in 5 Yrs \$20.5 mill.															Net Profit (\$mill)	20.0			
LT Debt \$165.3 mill. LT Interest \$10.0 mill.															Income Tax Rate	41.0%			
(LT interest earned: 2.3x; total interest coverage: 2.3x)															Net Profit Margin	2.7%			
Pension Assets-9/05 \$58.5 mill. Oblig. \$71.7 mill.															Long-Term Debt Ratio	52.0%			
Pfd Stock None															Common Equity Ratio	48.0%			
Common Stock 11,505,996 shs. as of 7/31/06															Total Capital (\$mill)	470			
MARKET CAP: \$300 million (Small Cap)															Net Plant (\$mill)	465			
CURRENT POSITION^A 2004 2005 6/30/06															Return on Total Cap'l	6.0%			
Cash Assets 5 1.1 22.4															Return on Shr. Equity	11.0%			
Other 65.9 141.0 57.9															Return on Com Equity	11.0%			
Current Assets 66.4 142.1 80.3															Retained to Com Eq	4.5%			
Accts Payable 12.9 17.8 15.2															All Div's to Net Prof	61%			
Debt Due 47.5 12.5 8.0																			
Other 38.6 111.9 43.8																			
Current Liab. 99.0 142.2 67.0																			
Fix. Chg. Cov. 269% 225% 235%																			
ANNUAL RATES Past Past Est'd '03-'05																			
of change (per sh) 10 Yrs. 5 Yrs. to '09-'11																			
Revenues 3.0% 7.5% 13.5%																			
"Cash Flow" 2.0% .5% 9.0%																			
Earnings 1.5% -3.5% 7.0%																			
Dividends - .5%																			
Book Value .5% - 6.0%																			
Fiscal Year Ends QUARTERLY REVENUES (\$mill.)^A Full Fiscal Year																			
2003 100.5 109.3 53.8 39.2 302.8																			
2004 104.9 119.4 52.1 41.7 318.1																			
2005 104.6 117.7 56.3 47.9 326.5																			
2006 158.6 162.8 76.4 57.0 454.8																			
2007 163 166 85.0 66.0 480																			
Fiscal Year Ends EARNINGS PER SHARE^{AB} Full Fiscal Year																			
2003 .60 .67 d.18 d.22 .87																			
2004 .72 .79 d.05 d.26 1.19																			
2005 .59 .65 d.10 d.32 .82																			
2006 .70 .78 d.05 d.35 1.09																			
2007 .73 .75 d.08 d.25 1.15																			
Cal-endar QUARTERLY DIVIDENDS PAID^C Full Year																			
2002 .24 .24 .24 .24 .96																			
2003 .24 .24 .24 .24 .96																			
2004 .24 .24 .24 .24 .96																			
2005 .24 .24 .24 .24 .96																			
2006 .24 .24 .24 .24 .96																			

Cascade Natural Gas intends to be taken over by MDU Resources Group. Under the terms of the transaction, valued at \$475 million, Cascade stockholders would receive \$26.50 in cash for each CGC share. The deal, which was approved by Cascade shareholders, is awaiting clearance from regulatory entities and the satisfaction of other closing conditions.

The company would make a fine addition to MDU's regulated operations, Great Plains Natural Gas and Montana-Dakota Utilities, serving roughly 250,000 customers in five upper midwest states, combined. And MDU appears to possess adequate resources to enable Cascade to reach even greater heights. We estimate that the transaction would be neutral to MDU's earnings in 2007 and 2008 because of integration costs. But accretion to the bottom line is possible in 2009 and thereafter, partly assuming that cost savings come to the fore. Our presentation for Cascade will be on a stand-alone basis until the closing date, slated for mid-2007.

The company's share earnings stand to advance at a steady, albeit

measured, clip for fiscal 2007 (began October 1st). The residential and commercial segment, roughly 70% of the operating margin, ought to benefit from an expanding customer base, plus increased consumption (assuming that the weather cooperates). Cost-containment measures should also help. That said, the bottom line may increase about 5%, to \$1.15 a share, in fiscal 2007. More expansion in operating margins should enable share net to advance another 9%, to \$1.25, next year. Note that Cascade is still awaiting the outcome of a rate-hike request, intended to generate additional annual revenues of \$11.7 million, from the Washington Utilities and Transportation Commission. Our figures will account for that amount if it is approved.

The Timeliness rank is suspended because developments pertaining to the consolidation, rather than earnings, are governing the stock price. We think Cascade stockholders are getting a good deal, but it would have been even better if the terms included an option to purchase MDU shares.

Frederick L. Harris, III December 15, 2006

(A) Cal. yr. thru. 12/95. Changed to 9/30 fiscal yr. in '96. (B) Primary eggs. thru. '97, then diluted. Excl. nonrec. gains (losses): '91, 19¢; '93, 9¢; '96, (11¢); '98, (2¢); '99, (1¢); '01, 9¢; '02, (16¢); '03, (5¢). '04 and '06 eggs. don't add to total due to rounding. Next eggs. rpt. due late Jan. (C) Dividends historically paid in the middle of Feb., May, Aug., Nov. *Div'd reinvest. plan avail. (D) Incl. deferred charges. In '05: \$68.0 mill., \$5.96/sh. (E) In mill., adj. for stk. split.

Company's Financial Strength B+
Stock's Price Stability 80
Price Growth Persistence 55
Earnings Predictability 70

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LACLEDE GROUP NYSE-LG				RECENT PRICE	36.70	P/E RATIO	15.2 (Trailing: 15.5 Median: 15.0)	RELATIVE P/E RATIO	0.83	DIV'D YLD	4.0%	VALUE LINE																																																																																																																																																																																																																																	
TIMELINESS 4	Raised 9/8/06	High: 23.1	24.9	28.6	27.9	27.0	24.8	25.5	25.0	30.0	32.5	34.3	37.5	Target Price Range	2009	2010	2011																																																																																																																																																																																																																												
SAFETY 2	Raised 6/20/03	Low: 18.4	20.0	20.3	22.4	20.0	17.5	21.3	19.0	21.8	26.0	26.9	29.1																																																																																																																																																																																																																																
TECHNICAL 3	Lowered 9/15/06	LEGENDS 1.00 x Dividends p sh divided by Interest Rate Relative Price Strength 2-for-1 split 3/94 Options: No Shaded area indicates recession																																																																																																																																																																																																																																											
BETA .90	(1.00 = Market)	2009-11 PROJECTIONS Price Gain Ann'l Total High 45 (+25%) 9% Low 30 (-20%) Nil																																																																																																																																																																																																																																											
Insider Decisions				J F M A M J J A S to Buy 0 0 0 0 0 0 0 0 0 Options 0 1 0 0 1 0 0 0 1 to Sell 0 1 0 0 1 0 0 0 1																																																																																																																																																																																																																																									
Institutional Decisions				4Q2005 1Q2006 2Q2006 to Buy 50 67 60 to Sell 37 30 47 Hlds(000) 8521 9470 10115 Percent shares traded 7.5 2.5																																																																																																																																																																																																																																									
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CAPITAL STRUCTURE as of 6/30/06				Total Debt \$518.8 mill. Due in 5 Yrs \$175.0 mill. LT Debt \$395.4 mill. LT Interest \$25.0 mill. (Total interest coverage: 3.0x)																																																																																																																																																																																																																																									
Leases, Uncapitalized Annual rentals \$1.7 mill.				Pension Assets-9/05 \$272.8 mill. Oblig. \$327.2 mill. Pfd Stock \$.8 mill. Pfd Div'd \$.05 mill. Common Stock 21,357,009 shs. as of 7/28/06																																																																																																																																																																																																																																									
MARKET CAP: \$775 million (Small Cap)				<table border="1"> <thead> <tr> <th>2004</th><th>2005</th><th>6/30/06</th></tr> </thead> <tbody> <tr> <td>35.9%</td><td>36.1%</td><td>35.6%</td></tr> <tr> <td>6.0%</td><td>5.4%</td><td>5.1%</td></tr> <tr> <td>42.5%</td><td>38.0%</td><td>40.9%</td></tr> <tr> <td>57.1%</td><td>61.6%</td><td>58.6%</td></tr> <tr> <td>422.2</td><td>406.8</td><td>438.0</td></tr> <tr> <td>452.2</td><td>467.6</td><td>490.6</td></tr> <tr> <td>9.4%</td><td>9.7%</td><td>8.1%</td></tr> <tr> <td>13.5%</td><td>12.9%</td><td>10.8%</td></tr> <tr> <td>13.6%</td><td>12.9%</td><td>10.8%</td></tr> <tr> <td>4.5%</td><td>3.9%</td><td>1.8%</td></tr> <tr> <td>67%</td><td>70%</td><td>83%</td></tr> </tbody> </table>														2004	2005	6/30/06	35.9%	36.1%	35.6%	6.0%	5.4%	5.1%	42.5%	38.0%	40.9%	57.1%	61.6%	58.6%	422.2	406.8	438.0	452.2	467.6	490.6	9.4%	9.7%	8.1%	13.5%	12.9%	10.8%	13.6%	12.9%	10.8%	4.5%	3.9%	1.8%	67%	70%	83%																																																																																																																																																																																								
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2006	689.2	708.8	330.5	269.0	1997.5																																																																																																																																																																																																																																								
2007	475	475	475	475	1900																																																																																																																																																																																																																																								
EARNINGS PER SHARE^{A B F}				<table border="1"> <thead> <tr> <th>Fiscal Year Ends</th><th>Dec.31</th><th>Mar.31</th><th>Jun.30</th><th>Sep.30</th><th>Full Fiscal Year</th></tr> </thead> <tbody> <tr> <td>2003</td><td>.80</td><td>1.14</td><td>.11</td><td>d.21</td><td>1.82</td></tr> <tr> <td>2004</td><td>.87</td><td>1.12</td><td>.19</td><td>d.28</td><td>1.82</td></tr> <tr> <td>2005</td><td>.79</td><td>1.06</td><td>.29</td><td>d.24</td><td>1.90</td></tr> <tr> <td>2006</td><td>1.23</td><td>1.05</td><td>.13</td><td>d.04</td><td>2.37</td></tr> <tr> <td>2007</td><td>1.15</td><td>1.05</td><td>.25</td><td>d.30</td><td>2.15</td></tr> </tbody> </table>														Fiscal Year Ends	Dec.31	Mar.31	Jun.30	Sep.30	Full Fiscal Year	2003	.80	1.14	.11	d.21	1.82	2004	.87	1.12	.19	d.28	1.82	2005	.79	1.06	.29	d.24	1.90	2006	1.23	1.05	.13	d.04	2.37	2007	1.15	1.05	.25	d.30	2.15																																																																																																																																																																																								
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BUSINESS: Laclede Group, Inc., is a holding company for Laclede Gas, which distributes natural gas in eastern Missouri, including the city of St. Louis, St. Louis County, and parts of 8 other counties. Has roughly 631,000 customers. Purchased SM&P for \$43 million (1/02). Therms sold and transported in fiscal 2005: 1.12 mill. Revenue mix for regulated operations: residential, 60%; commercial and industrial, 23%; transportation, 2%; other, 15%. Has around 3,815 employees. Officers and directors own approximately 6.0% of common shares (1/06 Proxy). Chairman, Chief Executive Officer, and President: Douglas H. Yaeger. Incorporated: Missouri. Address: 720 Olive Street, St. Louis, Missouri 63101. Telephone: 314-342-0500. Internet: www.lacledegas.com.				<p>We don't expect Laclede Group's bottom line in fiscal 2007 (began October 1st) to reach last year's level. This can be attributed primarily to the tough comparison, reflecting an exceptional showing from Laclede Energy Resources (LER). Indeed, that division was aided by supply/demand imbalances resulting from the 2005 Gulf Coast hurricanes (one of the busiest storm seasons on record), plus a surge in volumes (due to higher interstate pipeline wholesale transactions). A repeat of that scenario seems unlikely anytime soon, though. Also, results for Laclede Gas Company, the core subsidiary, may continue to be dampened by rising operating costs and lackluster volumes within the service area (stemming from conservation efforts). But SM&P Utility Resources could begin to experience the benefits of initiatives directed toward the startup of new business in existing markets. The recent purchase of Reliant Services, which provides services that are similar to SM&P, ought to help performance here, too. Nonetheless, consolidated share net could decrease about 9%, to \$2.15, in fiscal 2007. We think a bottom line rebound is plausible in fiscal 2008, partly assuming an easier comparison.</p> <p>The company stands to post unspectacular earnings over the 3- to 5-year period. Customer increases for the natural gas unit have been sluggish because the service territory is mature. As such, internal growth here should remain moderate, at best. The non-regulated units hold promising prospects, although they have contributed a small portion to profits historically (with the exception of LER's performance in fiscal 2006). Major acquisitions could offset this, but it appears that management has no such plans in the works at this juncture. That said, annual share-net gains may only be in the mid-single-digit range out to 2009-2011.</p> <p>These shares are trading at relatively high levels, coming off Laclede's excellent results in fiscal 2006. A record-breaking equity market has also helped matters. But total-return possibilities are limited, given the stock's price movement and assuming continued modest hikes in the payout. Moreover, the Timeliness rank is 4 (Below Average).</p> <p><i>Frederick L. Harris, III December 15, 2006</i></p>																																																																																																																																																																																																																																									
(A) Fiscal year ends Sept. 30th.				(C) Dividends historically paid in early January, April, July, and October. ■ Dividend reinvestment plan available.																																																																																																																																																																																																																																									
(B) Based on average shares outstanding thru '97, then diluted. Excludes nonrecurring loss: Q2 '06, 7%. Next earnings report due late Jan.				(D) Incl. deferred charges. In '05: \$203.8 mill., \$9.63/sh.																																																																																																																																																																																																																																									
(E) In millions. Adjusted for stock split.				(F) Qly. egs. may not sum due to change in shares outstanding.																																																																																																																																																																																																																																									
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NICOR, INC. NYSE-GAS				RECENT PRICE	49.59	P/E RATIO	18.1	(Trailing: 18.0 Median: 14.0)	RELATIVE P/E RATIO	0.98	DIV'D YLD	3.8%	VALUE LINE								
TIMELINESS	2	Raised 11/10/06	High: 28.5	37.1	42.9	44.4	42.9	43.9	42.4	49.0	39.3	39.7	43.0	49.9	Target Price	Range					
SAFETY	3	Lowered 6/17/05	Low: 21.8	25.4	30.0	37.1	31.2	29.4	34.0	17.3	23.7	32.0	35.5	38.7	2009	2010	2011				
TECHNICAL	2	Raised 11/3/06	LEGENDS 1.30 x Dividends p sh divided by Interest Rate --- Relative Price Strength 2-for-1 split 4/93 Options: Yes Shaded area indicates recession																		
BETA	1.30	(1.00 = Market)	2009-11 PROJECTIONS Ann'l Total High 55 (+10%) Low 35 (-30%) Gain 6% Return -4%																		
Insider Decisions			Institutional Decisions 4Q2005 102006 2Q2006 to Buy 117 112 98 to Sell 97 94 110 Hld's(000) 30966 32581 32450 Percent shares traded 18 12 6																		
			% TOT. RETURN 11/06 THIS STOCK VL ARITH. INDEX 1 yr. 29.3 15.5 3 yr. 75.0 49.4 5 yr. 63.0 85.9																		
1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 © VALUE LINE PUB., INC. 09-11																					
26.52	26.46	28.90	31.02	31.23	29.42	37.39	41.33	30.84	34.45	50.52	57.30	43.11	60.46	62.12	76.00	71.90	72.30	Revenues per sh	71.25		
3.86	3.92	4.14	3.80	4.11	4.19	4.97	5.29	5.21	5.59	6.16	6.41	6.03	5.37	6.00	6.19	5.95	6.10	"Cash Flow" per sh	6.15		
1.93	1.86	1.92	1.97	2.07	1.96	2.42	2.55	2.31	2.57	2.94	3.01	2.88	2.11	2.22	2.27	2.70	2.72	Earnings per sh ^A	2.80		
1.06	1.12	1.18	1.22	1.25	1.28	1.32	1.40	1.48	1.54	1.66	1.76	1.84	1.86	1.86	1.86	1.86	1.90	Div'ds Decl'd per sh ^B	2.00		
3.00	3.65	3.12	2.62	3.34	3.12	2.42	2.34	2.87	3.28	3.48	4.18	4.37	4.12	4.32	4.57	4.50	4.50	Cap'l Spending per sh	4.45		
11.67	12.28	12.76	13.05	13.26	13.67	14.74	15.43	15.97	16.80	15.56	16.39	16.55	17.13	16.99	18.36	19.35	20.20	Book Value per sh	22.80		
57.93	57.30	55.77	53.96	51.54	50.30	49.49	48.22	47.51	46.89	45.49	44.40	44.01	44.04	44.10	44.18	44.50	44.60	Common Shs Outst'g ^C	44.90		
10.7	11.5	11.6	14.1	12.5	13.1	12.5	14.2	17.6	14.6	11.9	12.8	13.1	15.8	15.9	17.3	17.3	17.3	Avg Ann'l P/E Ratio	16.0		
.79	.73	.70	.83	.82	.88	.78	.82	.92	.83	.77	.66	.72	.90	.84	.91	.84	.84	Relative P/E Ratio	1.05		
5.1%	5.2%	5.3%	4.4%	4.8%	5.0%	4.4%	3.9%	3.6%	4.1%	4.7%	4.6%	4.9%	5.6%	5.3%	4.7%	4.7%	4.7%	Avg Ann'l Div'd Yield	4.5%		
CAPITAL STRUCTURE as of 9/30/06			1850.7 1992.6 1465.1 1615.2 2298.1 2544.1 1897.4 2662.7 2739.7 3357.8 3200 3225 Total Debt \$660.4 mill. Due in 5 Yrs \$215.0 mill. LT Debt \$459.4 mill. LT Interest \$20.0 mill. (Total interest coverage: 4.0x)														3200	3225	Revenues (\$mill)	3200	
Pension Assets-12/05 \$424.0 mill. Oblig. \$284.4 mill.			121.2 124.3 111.1 121.9 136.4 136.3 128.0 93.1 98.1 101.1 120 120 35.8% 35.0% 34.4% 34.7% 34.8% 33.5% 31.0% 35.2% 31.8% 28.3% 27.0% 30.0% 6.5% 6.2% 7.6% 7.5% 5.9% 5.4% 6.7% 3.5% 3.6% 3.0% 3.8% 3.8% 41.3% 42.3% 42.1% 35.5% 32.7% 37.8% 35.1% 39.6% 39.8% 37.4% 34.0% 33.0% 58.1% 57.2% 57.4% 64.0% 66.7% 61.7% 64.5% 60.3% 60.1% 62.5% 66.0% 67.0% 1255.1 1300.6 1322.6 1230.1 1061.2 1180.1 1128.9 1251.5 1246.0 1297.7 1310 1350 1771.9 1735.8 1731.8 1735.2 1729.6 1768.6 1796.8 2484.2 2549.8 2659.1 2760 2860 11.1% 11.1% 9.9% 10.9% 13.7% 12.3% 12.2% 8.3% 8.8% 9.4% 10.9% 10.6% 16.4% 16.6% 14.5% 15.4% 19.1% 18.6% 17.5% 12.3% 13.1% 12.5% 14.0% 13.5% 16.6% 16.7% 14.6% 15.4% 19.2% 18.7% 17.5% 12.3% 13.1% 12.5% 14.0% 13.0% 7.6% 7.6% 5.4% 6.2% 8.5% 7.9% 6.5% 1.5% 2.1% 2.3% 4.5% 4.0% 54% 55% 63% 60% 56% 58% 63% 88% 84% 81% 68% 70%														120	120	Net Profit (\$mill)	125	
Pfd Stock \$6 mill. Pfd Div'd \$2.2 mill. (11,681 shares of 4.48% mandatorily redeemable preferred stock)			7.6% 7.6% 5.4% 6.2% 8.5% 7.9% 6.5% 1.5% 2.1% 2.3% 4.5% 4.0% 54% 55% 63% 60% 56% 58% 63% 88%														31.0%	31.0%	Long-Term Debt Ratio	31.0%	
Common Stock 44,709,976 shares as of 10/27/06			11.1% 11.1% 9.9% 10.9% 13.7% 12.3% 12.2% 8.3% 8.8% 9.4% 10.9% 10.6% 16.4% 16.6% 14.5% 15.4% 19.1% 18.6% 17.5% 12.3% 13.1% 12.5% 14.0% 13.5% 16.6% 16.7% 14.6% 15.4% 19.2% 18.7% 17.5% 12.3% 13.1% 12.5% 14.0% 13.0% 7.6% 7.6% 5.4% 6.2% 8.5% 7.9% 6.5% 1.5% 2.1% 2.3% 4.5% 4.0% 54% 55% 63% 60% 56% 58% 63% 88%														62.5%	67.0%	Common Equity Ratio	69.0%	
MARKET CAP: \$2.2 billion (Mid Cap)			11.1% 11.1% 9.9% 10.9% 13.7% 12.3% 12.2% 8.3% 8.8% 9.4% 10.9% 10.6% 16.4% 16.6% 14.5% 15.4% 19.1% 18.6% 17.5% 12.3% 13.1% 12.5% 14.0% 13.5% 16.6% 16.7% 14.6% 15.4% 19.2% 18.7% 17.5% 12.3% 13.1% 12.5% 14.0% 13.0% 7.6% 7.6% 5.4% 6.2% 8.5% 7.9% 6.5% 1.5% 2.1% 2.3% 4.5% 4.0% 54% 55% 63% 60% 56% 58% 63% 88%														62.5%	67.0%	Total Capital (\$mill)	1475	
CURRENT POSITION			1771.9 1735.8 1731.8 1735.2 1729.6 1768.6 1796.8 2484.2 2549.8 2659.1 2760 2860 11.1% 11.1% 9.9% 10.9% 13.7% 12.3% 12.2% 8.3% 8.8% 9.4% 10.9% 10.6% 16.4% 16.6% 14.5% 15.4% 19.1% 18.6% 17.5% 12.3% 13.1% 12.5% 14.0% 13.5% 16.6% 16.7% 14.6% 15.4% 19.2% 18.7% 17.5% 12.3% 13.1% 12.5% 14.0% 13.0% 7.6% 7.6% 5.4% 6.2% 8.5% 7.9% 6.5% 1.5% 2.1% 2.3% 4.5% 4.0% 54% 55% 63% 60% 56% 58% 63% 88%														2760	2860	Net Plant (\$mill)	3160	
CASH ASSETS			83.2 126.9 54.4 937.7 1218.8 628.2 1020.9 1345.7 682.6 502.9 658.2 519.4 490.2 636.0 201.0 178.3 328.7 263.0 1171.4 1622.9 983.4 428% 367% NMF														54.4	628.2	Other	628.2	
ANNUAL RATES			Past 10 Yrs. Past 5 Yrs. Est'd '03-'05 to '09-'11 Revenues 8.0% 11.5% 1.0% "Cash Flow" 4.0% 0.5% 1.0% Earnings 1.0% -3.5% 4.0% Dividends 4.0% 3.5% 1.0% Book Value 3.0% 1.5% 4.5%														1.0%	4.0%	Return on Total Cap'l	10.0%	
QUARTERLY REVENUES (\$mill)			Full Year 2003 1171.3 452.8 294.8 743.8 2662.7 2004 1115.7 429.5 299.9 894.6 2739.7 2005 1179.9 484.4 336.0 1357.5 3357.8 2006 1319.4 451.3 351.1 1078.2 3200 2007 1250 500 350 1125 3225														2662.7	2739.7	3357.8	3200	3225
EARNINGS PER SHARE^A			Full Year 2003 1.11 .21 .01 .78 2.11 2004 .96 .44 d.26 1.08 2.22 2005 .98 .35 d.06 1.02 2.27 2006 .94 .41 .39 .96 2.70 2007 1.02 .37 .28 1.05 2.72														2.11	2.22	2.27	2.70	2.72
QUARTERLY DIVIDENDS PAID^B			Full Year 2002 .46 .46 .46 .46 1.84 2003 .46 .465 .465 .465 1.86 2004 .465 .465 .465 .465 1.86 2005 .465 .465 .465 .465 1.86 2006 .465 .465 .465 .465 1.86														1.84	1.86	1.86	1.86	1.86

BUSINESS: Nicor Inc. is a holding company with gas distribution as its primary business. Serves over 2.1 million customers in northern and western Illinois. 2005 gas delivered: 470.6 Bcf, incl. 219.4 Bcf from transportation. 2005 gas sales (251.2 bcf): residential, 80%; commercial, 18%; industrial, 2%. Principal supplying pipelines: Natural Gas Pipeline, Horizon Pipeline, and TGPC. Current operations include Tropical Shipping subsidiary and several energy related ventures. Divested inland barging, 7/86; contract drilling, 9/86; oil and gas E&P, 6/93. Has about 3,700 employees Off./dir. own about 2.8% of common stock. (3/06 proxy). Chairman and CEO: Russ Strobel, Inc. Illinois Address: 1844 Ferry Road, Naperville, Illinois 60563. Telephone: 630-305-9500. Internet: www.nicor.com.

Nicor reported strong results for its September period. Indeed, the company registered a share-net gain of \$0.39, which exceeded the popular consensus and topped last year's number at a loss of \$0.06 a share. All operating segments produced solid results. However, volumes were particularly strong in the gas distribution segment.

As the unseasonably warm weather passes, the company will likely benefit from an increase in the usage of natural gas over the balance of the year. The industry suffered through a tough first half due to warm conditions, but now as we near 2007, gas deliveries are increasing. As gas consumption returns to normal levels, Nicor's bottom line should push forward, beginning in 2007.

Base rates will likely remain unchanged. Late in 2005, the Illinois Commerce Commission approved an increase in rates, which will likely continue to help the company's top and bottom lines in 2007. For the near term, Nicor seems to be content to move forward operating in the current conditions. Still, it has not fully utilized strategies that would protect its

business through various mechanisms, which would help limit the variability of earnings. Thus, we anticipate similar volatility for these shares in the future. **Nicor's other business segments should continue to be solid.** Particularly, the Tropical Shipping division has continued to generate high revenues, which ought to continue going into 2007, as demand for the service remains robust. The company's energy ventures ought to also add some consistent volume to Nicor's top line over the next year.

This issue is ranked to outperform the market in the year ahead. All told, the company has taken steps to improve its business across all of its segments and has benefited from the latest rate increase. However, much of this issue's long-term appreciation potential has been realized, as this stock is already trading within its Target Price Range.

These shares may be of interest to income-oriented investors. Although Nicor offers a yield that is slightly below the industry mean at 3.8%, it's still is above the Value Line average.

Richard Gallagher December 15, 2006

(A) Based on primary earnings thru '96, then diluted. Excl. nonrecurring gains/(loss): '89, 7¢; '97, 6¢; '98, 11¢; '99, 5¢; '00, (\$1.96); '01, 16¢; '03, (27¢); '04, (52¢); '05, 80¢; '06, (17¢). Excl. items from discontinued ops.: '93, 4¢; '96, 30¢.

Quarterly earnings may not sum to total due to rounding. Next egs. report due early March. (B) Dividends historically paid early February, May, August, November. (C) Dividend reinvestment plan available.

(C) In millions, adjusted for stock split.

Company's Financial Strength	A
Stock's Price Stability	55
Price Growth Persistence	35
Earnings Predictability	80

N.W. NAT'L GAS NYSE:NMN				RECENT PRICE	PIE RATIO 17.9 (Trailing: 19.5 Median: 15.0)					RELATIVE P/E RATIO	DIV'D YLD 3.4%		VALUE LINE						
TIMELINESS 4 Lowered 12/8/06	High: 22.8	25.9	31.4	30.8	27.9	27.5	26.8	30.7	31.3	34.1	39.6	41.9	Target Price Range						
SAFETY 1 Raised 3/18/05	Low: 18.3	20.8	23.0	24.3	19.5	17.8	21.7	23.5	24.0	27.5	32.4	32.8	2009 2010 2011						
TECHNICAL 2 Raised 12/8/06	LEGENDS 1.10 x Dividends p sh divided by Interest Rate Relative Price Strength 3-for-2 split 9/96 Options: Yes Shaded area indicates recession																		
BETA .75 (1.00 = Market)	2009-11 PROJECTIONS Ann'l Total Price Gain Return High 45 (+10%) 5% Low 40 (-5%) 3%																		
Insider Decisions	J F M A M J J A S to Buy 0 1 1 0 0 0 0 0 0 to Sell 0 0 0 0 0 0 0 0 1 Options 0 0 0 0 0 0 0 0 1																		
Institutional Decisions	4Q2005 1Q2006 2Q2006 to Buy 59 62 77 to Sell 54 59 59 Net's(000) 12922 13095 14328 Percent shares traded 9 6 3																		
% TOT. RETURN 11/06	THIS STOCK VL ARITH. INDEX 1 yr. 24.6 15.5 3 yr. 52.1 49.4 5 yr. 105.7 85.9																		
1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	© VALUE LINE PUB., INC. 09-11	
17.02	16.74	14.10	18.15	18.30	16.02	16.86	15.82	16.77	18.17	21.09	25.78	25.07	23.57	25.69	33.01	36.35	36.85	Revenues per sh	51.80
3.22	2.57	3.25	3.74	3.50	3.41	3.86	3.72	3.24	3.72	3.68	3.86	3.65	3.85	3.92	4.34	4.65	4.75	"Cash Flow" per sh	5.10
1.62	.67	.74	1.74	1.63	1.61	1.97	1.76	1.02	1.70	1.79	1.88	1.62	1.76	1.86	2.11	2.25	2.40	Earnings per sh ^A	2.85
1.10	1.13	1.15	1.17	1.17	1.18	1.20	1.21	1.22	1.23	1.24	1.25	1.26	1.27	1.30	1.32	1.39	1.43	Div'ds Decl'd per sh ^B	1.70
3.85	3.58	3.73	3.61	4.23	3.02	3.70	5.07	4.02	4.78	3.46	3.23	3.11	4.90	5.52	3.48	3.65	3.30	Cap'l Spending per sh	3.35
12.61	12.23	12.41	13.08	13.63	14.55	15.37	16.02	16.59	17.12	17.93	18.56	18.88	19.52	20.64	21.28	22.10	22.95	Book Value per sh	25.55
17.41	17.68	19.46	19.77	20.13	22.24	22.56	22.86	24.85	25.09	25.23	25.23	25.59	25.94	27.55	27.58	27.50	27.80	Common Shs Outst'g ^C	28.00
10.2	28.1	27.0	12.9	13.0	12.9	11.7	14.4	26.7	14.5	12.4	12.9	17.2	15.8	16.7	17.0	<i>Bold figures are Value Line estimates</i>		Avg Ann'l P/E Ratio	15.0
.76	1.79	1.64	.76	.85	.86	.73	.83	1.39	.83	.81	.66	.94	.90	.88	.91			Relative P/E Ratio	1.00
6.7%	5.9%	5.2%	5.2%	5.5%	5.7%	5.2%	4.8%	4.5%	5.0%	5.6%	5.1%	4.5%	4.6%	4.2%	3.7%			Avg Ann'l Div'd Yield	4.0%
CAPITAL STRUCTURE as of 9/30/06				380.3 361.8 416.7 455.8 532.1 650.3 641.4 611.3 707.6 910.5 1000 1025 1025 Revenues (\$mill)															1350
Total Debt \$624.8 mill. Due in 5 Yrs \$251.7 mill.				46.8 43.1 27.3 44.9 47.8 50.2 43.8 46.0 50.6 58.1 62.0 66.5 66.5 Net Profit (\$mill)															80.0
LT Debt \$492.0 mill. LT Interest \$31.0 mill.				36.9% 32.9% 31.0% 35.4% 35.9% 35.4% 34.9% 33.7% 34.4% 36.0% 36.0% 36.0% 36.0% 34.4% 36.0% 36.0% 36.0% 36.0% Income Tax Rate															36.0%
(Total interest coverage: 3.4x)				12.3% 11.9% 6.6% 9.9% 9.0% 7.7% 6.8% 7.5% 7.1% 6.4% 6.2% 6.5% 6.5% 7.1% 6.4% 6.2% 6.5% 6.5% Net Profit Margin															5.9%
Pension Assets-12/05 \$218.6 mill.				41.4% 46.0% 45.0% 46.0% 45.1% 43.0% 47.6% 49.7% 46.0% 47.0% 47.0% 47.0% 47.0% 46.0% 47.0% 47.0% 47.0% 47.0% Long-Term Debt Ratio															47%
Oblig. \$267.9 mill.				52.8% 49.0% 50.6% 49.9% 50.9% 53.2% 51.5% 50.3% 54.0% 53.0% 53.0% 53.0% 53.0% 54.0% 53.0% 53.0% 53.0% 53.0% Common Equity Ratio															53%
Pfd Stock None				657.4 748.0 815.6 861.5 887.8 880.5 937.3 1006.6 1052.5 1108.4 1125 1175 1175 Total Capital (\$mill)															1350
Common Stock 27,504,896 shs.				745.3 827.5 894.7 895.9 934.0 965.0 995.6 1205.9 1318.4 1373.4 1425 1475 1475 Net Plant (\$mill)															1700
as of 10/31/06				8.9% 7.4% 5.0% 6.8% 6.7% 6.9% 5.9% 5.7% 5.9% 6.5% 7.0% 7.0% 7.0% 5.9% 6.5% 7.0% 7.0% 7.0% Return on Total Cap'l															7.0%
MARKET CAP \$1.1 billion (Mid Cap)				12.1% 10.7% 6.1% 9.7% 9.8% 10.0% 8.9% 9.1% 8.9% 9.9% 10.0% 10.5% 10.5% 8.9% 9.9% 10.0% 10.5% 10.5% Return on Shr. Equity															10.5%
				12.7% 11.0% 6.0% 9.9% 10.0% 10.2% 8.5% 9.0% 8.9% 9.9% 10.0% 10.5% 10.5% 8.9% 9.9% 10.0% 10.5% 10.5% Return on Com Equity															10.5%
				5.0% 3.6% NMF 2.8% 3.1% 3.5% 1.9% 2.6% 2.7% 3.7% 3.7% 3.7% 3.7% 2.7% 3.7% 3.7% 3.7% 3.7% Retained to Com Eq															3.8%
				63% 70% 118% 74% 70% 67% 79% 72% 69% 63% 62% 59% 59% 69% 63% 62% 62% 62% All Div'ds to Net Prof															60%
CURRENT POSITION (\$MILL)				BUSINESS: Northwest Natural Gas Co. distributes natural gas at retail to 90 communities, 624,000 customers, in Oregon (90% of custs.) and in southwest Washington state. Principal cities served: Portland and Eugene, OR; Vancouver, WA. Service area population: 2.4 mill. (77% in OR). Company buys gas supply from Canadian and U.S. producers; has transportation rights on Northwest Pipeline system to bring gas to market. Owns local underground storage. Rev. breakdown: residential, 53%; commercial, 27%; industrial, gas transportation, and other, 20%. Employs 1,305. Barclays owns 6.2% of shares; insiders, 1% (4/06 proxy). CEO: Mark S. Dodson, Inc.: OR. Address: 220 NW 2nd Ave., Portland, OR 97209. Tel.: 503-226-4211. Internet: www.nwnatural.com.															
Cash Assets 5.2				7.1 5.7															
Other 231.9				316.6 209.7															
Current Assets 237.1				323.7 215.4															
Accts Payable 102.5				135.3 64.5															
Debt Due 117.5				134.7 132.8															
Other 47.3				56.6 58.6															
Current Liab. 267.3				326.6 255.9															
Fx. Chg. Cov. 316%				340% NMF															
ANNUAL RATES				Northwest reported a seasonal loss in the third quarter. The increased loss was due largely to the effects of the company's weather adjustment clause, which cost about \$0.02 in the September period, and to the fact that some industrial customers switched to lower rate schedules. Meanwhile, customer growth for the last 12 months was strong, at 3.4%.															
of change (per sh)				We look for a solid earnings gain in the fourth quarter due in part to the absence of an unusual expense. In the final period of 2005, unusual litigation costs reduced earnings by \$0.05 a share, which Northwest will not incur this year. Customer growth should add a few cents a share. Moreover, changes in the company's weather adjustment clause have moved the effective date back to October 1st, which give Northwest protection against warm weather in October and November for the first time. The first severance costs of the company's new operations streamlining plan will occur in the December period, but they should be offset by gains coming from sales of some non-core assets. Continued customer growth and cost cutting will likely produce decent earnings growth in 2007. The pace of new single-home construction is likely to slow, but growth from new apartment houses in Portland will offset much of that. And conversions from oil will probably grow, if, as we believe likely, OPEC keeps the price of oil over \$55 a barrel. Too, Northwest's program to pare costs to equal the top quartile of all gas utilities should begin to pay off next year. Earnings growth at an above-industry pace looks likely out to 2009-2011. A zoning change east of Portland should lead to substantial growth in residential customers by the end of our time horizon. It is likely that the growing demand for natural gas will bring at least one new liquefied natural gas plant to Northwest's territory. Moreover, a new pipeline connection could boost gas supplies. Still, These untimely, but top-quality, shares, have below-average total return potential. Earnings and dividends will probably grow faster than the industry averages, but the likelihood of higher interest rates limits capital appreciation potential.															
Past 10 Yrs. 4.5%				8.0% 11.0%															
Past 5 Yrs. 8.0%				11.0%															
"Cash Flow" 1.5%				2.5% 4.5%															
Earnings 1.5%				5.0% 7.0%															
Dividends 1.0%				1.0% 4.0%															
Book Value 4.0%				3.5% 3.5%															
QUARTERLY REVENUES (\$mill.)				Sigourney B. Romaine December 15, 2006															
Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year														
2003	206.5	117.5	69.5	217.8	611.3														
2004	254.5	109.7	81.4	262.0	707.6														
2005	308.7	153.7	106.7	341.4	910.5														
2006	390.4	171.0	114.9	323.7	1000														
2007	370	180	135	340	1025														
EARNINGS PER SHARE ^A																			
Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year														
2003	1.01	.17	d.25	.83	1.76														
2004	1.24	d.03	d.30	.95	1.86														
2005	1.44	.04	d.31	.94	2.11														
2006	1.48	.07	d.35	1.05	2.25														
2007	1.56	.06	d.33	1.11	2.40														
QUARTERLY DIVIDENDS PAID ^B																			
Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year														
2002	.315	.315	.315	.315	1.26														
2003	.315	.315	.315	.325	1.27														
2004	.325	.325	.325	.325	1.30														
2005	.325	.325	.325	.345	1.32														
2006	.345	.345	.345	.355															

(A) Diluted earnings per share. Excludes non-recurring gain: '98, \$0.15; '00, \$0.11. Next earnings report due early February.
(B) Dividends historically paid in mid-February.

mid-May, mid-August, and mid-November.
Div'd reinvestment plan available.
(C) In millions, adjusted for stock split.

Company's Financial Strength	A
Stock's Price Stability	100
Price Growth Persistence	55
Earnings Predictability	75

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SOUTH JERSEY INDS. NYSE-SJ										RECENT PRICE	P/E RATIO		Trailing: 20.3 Median: 14.0		RELATIVE P/E RATIO	DIV'D YLD		VALUE LINE				
TIMELINESS 4 Raised 10/6/06 SAFETY 2 Lowered 1/4/91 TECHNICAL 2 Raised 11/10/06 BETA .70 (1.00 = Market) 2009-11 PROJECTIONS Ann'l Total Price Gain Return High 35 (+5%) 4% Low 25 (-25%) -3% Insider Decisions J F M A M J J A S to Buy 0 0 0 0 0 0 0 0 0 Options 0 0 0 0 0 0 0 0 0 to Sell 0 0 3 0 0 0 0 0 0 Institutional Decisions 4Q2005 1Q2006 2Q2006 to Buy 63 59 64 to Sell 49 52 46 Hld's(000) 14085 14260 15700 Percent shares traded: 6, 4, 2 LEGENDS 1.03 x Dividends p sh divided by Interest Rate Relative Price Strength 2-for-1 split, 7/05 Options: No Shaded area indicates recession										33.89	17.7	20.3	14.0	0.96	2.9%	Target Price Range 2009 2010 2011						
1990-2007 14.40 15.10 16.67 17.03 17.45 16.50 16.52 16.18 20.89 17.60 22.43 35.30 20.69 26.34 29.51 31.78 32.25 33.80 1.34 1.37 1.56 1.54 1.35 1.65 1.54 1.60 1.44 1.84 1.95 1.90 2.12 2.24 2.44 2.51 2.80 2.95 .67 .64 .81 .78 .61 .83 .85 .86 .64 1.01 1.08 1.15 1.22 1.37 1.58 1.71 1.85 1.95 .70 .71 .71 .72 .72 .72 .72 .72 .72 .72 .73 .74 .75 .78 .82 .86 .92 .98 2.11 2.17 1.69 1.87 1.93 2.08 2.01 2.30 3.06 2.19 2.21 2.82 3.47 2.36 2.67 3.21 3.60 3.70 6.79 6.77 6.95 7.17 7.23 7.34 8.03 6.43 6.23 6.74 7.25 7.81 9.67 11.26 12.41 13.50 14.25 15.05 18.06 18.48 19.00 19.61 21.43 21.44 21.51 21.54 21.56 22.30 23.00 23.72 24.41 26.46 27.76 28.98 29.30 29.60 13.6 14.5 13.2 15.8 16.1 12.2 13.3 13.8 21.2 13.3 13.0 13.6 13.5 13.3 14.1 16.6 1.01 .93 .80 .93 1.06 .82 .83 .80 1.10 .76 .85 .70 .74 .76 .74 .88 7.7% 7.6% 6.6% 5.9% 7.4% 7.2% 6.4% 6.1% 5.3% 5.4% 5.2% 4.7% 4.6% 4.3% 3.7% 3.0%										% TOT. RETURN 11/06 THIS STOCK VL ARITH. INDEX 1 yr. 19.8 15.5 3 yr. 87.3 49.4 5 yr. 139.6 85.9												
CAPITAL STRUCTURE as of 9/30/06 Total Debt \$505.1 mill. Due in 5 Yrs \$175.0 mill. LT Debt \$358.1 mill. LT Interest \$20.0 mill. (Total interest coverage: 4.8x) Pension Assets-12/05 \$108.5 mill. Oblig. \$126.7 mill. Pfd Stock none Common Stock 29,279,288 common shs. as of 11/1/06 MARKET CAP: \$1.0 billion (Mid Cap)										355.5 348.6 450.2 392.5 515.9 837.3 505.1 696.8 819.1 921.0 945 1000 18.5 18.4 13.8 22.0 24.7 26.8 29.4 34.6 43.0 48.6 55.0 60.0 35.5% 36.8% 46.2% 42.8% 43.1% 42.2% 41.4% 40.6% 40.9% 41.5% 40.5% 40.5% 5.2% 5.3% 3.1% 5.6% 4.8% 3.2% 5.8% 5.0% 5.2% 5.3% 5.7% 5.6% 46.1% 54.6% 57.3% 53.8% 54.1% 57.0% 53.6% 50.8% 48.7% 44.9% 46.0% 45.5% 53.2% 35.8% 33.5% 37.0% 37.6% 35.9% 46.1% 49.0% 51.0% 55.1% 54.0% 54.5% 324.8 387.1 401.1 405.9 443.5 516.2 512.5 608.4 675.0 710.3 780 820 423.9 456.5 504.3 533.3 562.2 607.0 666.6 748.3 799.9 877.3 940 1010 7.9% 6.7% 5.3% 7.4% 7.4% 6.9% 7.6% 7.3% 7.9% 8.3% 8.5% 8.0% 10.5% 10.5% 8.1% 11.7% 12.1% 12.1% 12.4% 11.5% 12.4% 12.4% 13.0% 12.5% 10.6% 13.3% 10.3% 14.6% 14.8% 12.8% 12.5% 11.6% 12.5% 12.4% 13.0% 12.5% 1.6% 2.1% NMF 4.2% 4.8% 3.5% 4.7% 5.0% 5.9% 6.2% 6.5% 6.5% 85% 84% 112% 72% 67% 76% 62% 57% 52% 50%										Revenues per sh 37.75 "Cash Flow" per sh 3.45 Earnings per sh A 2.30 Div'ds Decl'd per sh B 1.15 Cap'l Spending per sh 4.05 Book Value per sh C 17.45 Common Shs Outst'g D 31.00 Avg Ann'l P/E Ratio 14.0 Relative P/E Ratio .95 Avg Ann'l Div'd Yield 3.5% Revenues (\$mill) 1170 Net Profit (\$mill) 70.0 Income Tax Rate 40.5% Net Profit Margin 6.0% Long-Term Debt Ratio 42.0% Common Equity Ratio 58.0% Total Capital (\$mill) 935 Net Plant (\$mill) 1200 Return on Total Cap'l 8.5% Return on Shr. Equity 13.0% Return on Com Equity 13.0% Retained to Com Eq 6.0% All Div'ds to Net Prof 53%		
CURRENT POSITION (\$MILL) Cash Assets 10.6 4.9 5.0 Other 273.3 352.6 310.7 Current Assets 283.9 357.5 315.7 Accts Payable 118.8 179.0 52.3 Debt Due 97.6 149.7 177.9 Other 68.9 74.4 140.5 Current Liab. 285.3 403.1 370.7 Fix. Chg. Cov. 426% 486% 445%										BUSINESS: South Jersey Industries, Inc. is a holding company. Its subsidiary, South Jersey Gas Co., distributes natural gas to 322,424 customers in New Jersey's southern counties, which covers 2,500 square miles and includes Atlantic City. Gas revenue mix '05: residential, 45%; commercial, 23%; cogeneration and electric generation 4%; Industrial, 23%. Non-utility operations include: South Jersey Energy, South Jersey Resource Group, Marina Energy, and South Jersey Energy Services Plus. Has 636 employees. Off./dir. cntrl. 1.5% of com. shares; Dimensional Fund Advisors, 7.9%; Barclays, 5.3% (3/06 proxy). Chrmn. & CEO: Edward Graham, Incorp.: NJ. Address: 1 South Jersey Plaza, Rte. 54, Folsom, NJ 08037. Tel.: 609-561-9000. Internet: www.sjindustries.com.												
ANNUAL RATES Past Past Est'd '03-'05 of change (per sh) 10 Yrs. 5 Yrs. to '09-'11 Revenues 5.5% 7.5% 4.5% "Cash Flow" 4.5% 6.5% 6.5% Earnings 8.0% 11.5% 7.0% Dividends 1.5% 2.5% 6.0% Book Value 5.5% 13.0% 6.0%										South Jersey Industries is on pace to close out 2006 on a strong note. We look for the company to report earnings of \$0.58 a share in the fourth quarter, almost 50% above last year's figure. This can be attributed to a new Conservation Incentive Program (CIP) at South Jersey Gas, along with better performance from its non-utility operations (discussed below). The company continues to add customers at a nice rate, a trend that should continue in the coming years, driven by the strength of the local economy and steady demand for new housing in south New Jersey. Earnings at South Jersey Gas, the company's main subsidiary, should become less volatile in the coming years. This is due to the approval in October of the CIP by the New Jersey Board of Public Utilities. It is a three-year pilot program that will allow the company to promote energy conservation, without earnings being impacted. The primary benefit of the program is that it protects SJG from margin variations related to both changes in weather and customer usage, versus just weather under the prior plan. Nonutility business is positioned to												
QUARTERLY REVENUES (\$mill) Cal-endar Mar.31 Jun.30 Sep.30 Dec.31 Full Year 2003 279.9 106.2 90.1 220.6 696.8 2004 307.6 136.5 129.5 245.5 819.1 2005 328.6 154.0 157.0 281.4 921.0 2006 365.0 155.5 133.1 291.4 945 2007 375 175 160 290 1000										good over the 2009-2011 period. The company's Marina Energy subsidiary is in the second phase of its expansion of the Borgata Hotel Casino & Spa, which includes a 40-story hotel tower that is scheduled to be completed late next year. Marina is also pursuing a similar project with the Borgata in Las Vegas, and remains one of the finalists to co-own and operate a thermal facility to provide all the energy needs for this Las Vegas casino project. The winning bid is expected to be announced shortly, and if South Jersey gets the nod, the deal would be a meaningful contributor to earnings toward the latter part of the decade. Good-quality South Jersey Industries shares have benefited from good news. Due to an improved outlook, the board now intends to raise the dividend payout about 6%-7% annually, up from 3%-6%. Even so, this untimely equity has risen about 15% since our last report, and is now trading at a lofty P/E ratio compared to historical levels. Looking ahead, total return potential is limited, despite the likelihood of dividend increases.												
EARNINGS PER SHAREA Cal-endar Mar.31 Jun.30 Sep.30 Dec.31 Full Year 2003 .92 .08 d.07 .44 1.37 2004 .91 .15 .02 .50 1.58 2005 .96 .27 .09 .39 1.71 2006 .93 .25 .09 .58 1.85 2007 .97 .28 .10 .60 1.95										Good-quality South Jersey Industries shares have benefited from good news. Due to an improved outlook, the board now intends to raise the dividend payout about 6%-7% annually, up from 3%-6%. Even so, this untimely equity has risen about 15% since our last report, and is now trading at a lofty P/E ratio compared to historical levels. Looking ahead, total return potential is limited, despite the likelihood of dividend increases.												
QUARTERLY DIVIDENDS PAID P Cal-endar Mar.31 Jun.30 Sep.30 Dec.31 Full Year 2002 .185 .188 .188 .38 .94 2003 .193 .193 .395 .78 2004 .202 .202 .415 .82 2005 .213 .213 .438 .86 2006 .225 .225										Good-quality South Jersey Industries shares have benefited from good news. Due to an improved outlook, the board now intends to raise the dividend payout about 6%-7% annually, up from 3%-6%. Even so, this untimely equity has risen about 15% since our last report, and is now trading at a lofty P/E ratio compared to historical levels. Looking ahead, total return potential is limited, despite the likelihood of dividend increases.												

(A) Based on avg. shs. Excl. nonrecr. gain: '01, \$0.13. Excl gain (losses) from discount. ops.: '96, \$1.14; '97, (\$0.24); '98, (\$0.26); '99, (\$0.02); '00, (\$0.04); '01, (\$0.02); '02, (\$0.04); '03, (\$0.09); '05, (\$0.02). Excl. gains due to acct'g change: '93, \$0.04; '01, \$0.14. Next eqs. report due late January. (B) Dividends paid early Apr., Jul., Oct, and late Dec. ■ Div. reinvest. plan avail. (2% disc.). (C) Incl. regulatory assets (\$121.5 mill.): at 12/31/05, \$4.19 per shr. (D) In millions, adjusted for split.

Company's Financial Strength B++
 Stock's Price Stability 100
 Price Growth Persistence 95
 Earnings Predictability 90

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Evan I. Blatter December 15, 2006

WGL HOLDINGS NYSE-WGL

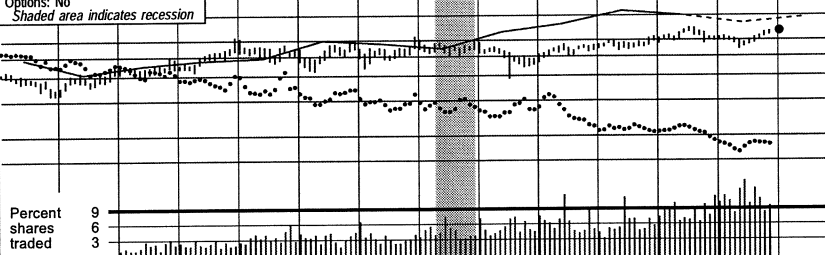
RECENT PRICE **33.41** P/E RATIO **17.4** (Trailing: 19.0 Median: 15.0) RELATIVE P/E RATIO **0.95** DIV'D YLD **4.1%** VALUE LINE

TIMELINESS 4 Raised 8/4/06
SAFETY 1 Raised 4/2/93
TECHNICAL 2 Raised 11/17/06
BETA .85 (1.00 = Market)

High: 22.4 25.0 31.4 30.8 29.4 31.5 30.5 29.5 28.8 31.4 34.8 33.4
 Low: 16.1 19.1 20.9 23.1 21.0 21.8 25.3 19.3 23.2 26.7 28.8 27.0

Target Price Range
 2009 2010 2011

2009-11 PROJECTIONS
 Ann'l Total
 Price Gain Return
 High 35 (+5%) 6%
 Low 30 (-10%) 2%



Insider Decisions
 J F M A M J J A S
 to Buy 0 0 0 0 0 0 0 0 0
 Options 0 0 0 0 0 0 1 6 0
 to Sell 0 0 0 0 0 0 1 7 0

Institutional Decisions
 4Q2005 1Q2006 2Q2006
 to Buy 88 70 73
 to Sell 67 77 78
 Hid's(000) 27959 27311 29760

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Revenues per sh ^A	18.75	17.50	18.37	21.55	21.69	19.30	22.19	24.16	23.74	20.92	22.19	29.80	32.63	42.45	42.93	44.94	53.94	55.10
"Cash Flow" per sh	2.17	2.04	2.17	2.25	2.43	2.51	2.93	3.02	2.79	2.74	3.20	3.24	2.63	4.00	3.87	3.97	3.68	3.85
Earnings per sh ^B	1.26	1.14	1.27	1.31	1.42	1.45	1.85	1.85	1.54	1.47	1.79	1.88	1.14	2.30	1.98	2.11	1.90	1.90
Div'ds Decl'd per sh ^C	1.01	1.05	1.07	1.09	1.11	1.12	1.14	1.17	1.20	1.22	1.24	1.26	1.27	1.28	1.30	1.32	1.35	1.38
Cap'l Spending per sh	2.38	2.05	2.17	2.43	2.84	2.63	2.85	3.20	3.62	3.42	2.67	2.68	3.34	2.65	2.33	2.32	3.40	3.30
Book Value per sh ^D	10.17	9.63	10.66	11.04	11.51	11.95	12.79	13.48	13.86	14.72	15.31	16.24	15.78	16.25	16.95	17.80	18.25	18.90
Common Shs Outst'g ^E	39.23	39.89	40.62	41.50	42.19	42.93	43.70	43.70	43.84	46.47	46.47	48.54	48.56	48.63	48.67	48.65	48.88	49.00
Avg Ann'l P/E Ratio	11.7	12.8	13.6	15.6	14.0	12.7	11.5	12.7	17.2	17.3	14.6	14.7	23.1	11.1	14.2	14.7	15.8	14.0
Relative P/E Ratio	.87	.82	.82	.92	.92	.85	.72	.73	.89	.99	.95	.75	1.26	.63	.75	.78	.85	.90
Avg Ann'l Div'd Yield	6.9%	7.2%	6.2%	5.3%	5.6%	6.1%	5.4%	5.0%	4.5%	4.8%	4.8%	4.6%	4.8%	5.0%	4.6%	4.2%	4.5%	4.3%

% TOT. RETURN 11/06
 THIS STOCK VS. ARITH. INDEX
 1 yr. 13.6% 15.5%
 3 yr. 41.1% 49.4%
 5 yr. 50.0% 85.9%

CAPITAL STRUCTURE as of 9/30/06
 Total Debt \$814.5 mill. Due in 5 Yrs \$520.0 mill.
 LT Debt \$576.1 mill. LT Interest \$40.0 mill.
 (LT interest earned: 4.6x; total interest coverage: 4.2x)
 Pension Assets-9/05 \$691.7 mill. Oblig. \$691.2 mill.
 Preferred Stock \$28.2 mill. Pfd Div'd \$1.3 mill.
 Common Stock 48,878,000 shs.

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Revenues (\$mill) ^A	969.8	1055.8	1040.6	972.1	1031.1	1446.5	1584.8	2064.2	2089.6	2186.3	2636.7	2750.0	3000					
Net Profit (\$mill)	81.6	82.0	68.6	68.8	84.6	89.9	55.7	112.3	98.0	104.8	87.3	95.0	110					
Income Tax Rate	37.7%	36.9%	35.6%	36.0%	36.1%	39.6%	34.0%	38.2%	37.4%	38.2%	37.4%	38.0%	38.0%					
Net Profit Margin	8.4%	7.8%	6.6%	7.1%	8.2%	6.2%	3.5%	5.4%	4.7%	4.8%	3.3%	3.4%	3.8%					
Long-Term Debt Ratio	37.6%	41.1%	40.3%	41.5%	43.1%	41.7%	45.7%	43.8%	40.9%	39.5%	38.0%	37.5%	37.0%					
Common Equity Ratio	59.4%	56.2%	57.1%	56.1%	54.8%	56.3%	52.4%	54.3%	57.2%	58.6%	60.0%	60.5%	60.0%					
Total Capital (\$mill)	941.1	1049.0	1064.8	1218.5	1299.2	1400.8	1462.5	1454.9	1443.6	1478.1	1496.4	1570	1760					
Net Plant (\$mill)	1130.6	1217.1	1319.5	1402.7	1460.3	1519.7	1606.8	1874.9	1915.6	1969.7	2067.9	2270	2550					
Return on Total Cap'l	10.1%	9.3%	8.0%	7.1%	7.9%	7.9%	5.3%	9.1%	8.2%	8.5%	6.0%	6.0%	6.5%					
Return on Shr. Equity	13.9%	13.3%	10.8%	9.7%	11.4%	11.0%	7.0%	13.7%	11.5%	11.7%	9.0%	9.5%	10.5%					
Return on Com Equity	14.4%	13.7%	11.1%	9.9%	11.7%	11.2%	7.2%	14.0%	11.7%	12.0%	9.5%	10.0%	11.0%					
Retained to Com Eq	5.6%	5.1%	2.5%	1.8%	3.7%	3.8%	NMF	6.2%	4.1%	4.6%	2.5%	2.5%	4.0%					
All Div'ds to Net Prof	62%	63%	78%	82%	69%	67%	112%	56%	65%	62%	74%	74%	65%					

MARKET CAP: \$1.6 billion (Mid Cap)
CURRENT POSITION
 2004 2005 9/30/06
 (\$MILL)
 Cash Assets 6.6 4.8 4.4
 Other 426.3 476.2 556.9
 Current Assets 432.9 481.0 561.3
 Accts Payable 179.0 204.9 208.5
 Debt Due 156.3 91.0 238.4
 Other 77.6 115.5 113.9
 Current Liab. 412.9 411.4 560.8
 Fix. Chg. Cov. 449% 460% 450%

ANNUAL RATES
 Past 10 Yrs. Past 5 Yrs. to '03-'05 of change (per sh) 10 Yrs. 5 Yrs. to '09-'11
 Revenues 7.5% 14.5% 5.5%
 "Cash Flow" 5.0% 6.5% 2.0%
 Earnings 4.5% 6.0% 1.5%
 Dividends 1.5% 1.5% 2.0%
 Book Value 4.0% 3.0% 3.5%

© VALUE LINE PUB. INC. 09-11
 Revenues per sh^A 60.60
 "Cash Flow" per sh 4.45
 Earnings per sh^B 2.35
 Div'ds Decl'd per sh^C 1.48
 Cap'l Spending per sh 3.95
 Book Value per sh^D 21.15
 Common Shs Outst'g^E 49.50
 Avg Ann'l P/E Ratio 14.0
 Relative P/E Ratio .90
 Avg Ann'l Div'd Yield 4.3%

QUARTERLY REVENUES (\$ mill.)^A
 Fiscal Year Ends
 2003 560.0 851.1 373.2 279.9 2064.2
 2004 585.3 862.2 356.9 285.2 2089.6
 2005 623.4 929.8 349.0 284.1 2186.3
 2006 N/A N/A N/A 322.5 2636.7
 2007 960 1010 380 350 2700

WASHINGTON GAS LIGHT
 provides energy related products in the D.C. metro area; Wash. Gas Energy Sys. designs/installs comm'l heating, ventilating, and air cond. systems. American Comm'l Inv. own 9.3% of common stock; Off./dir. less than 1% (1/06 proxy). Chrmn. & CEO: J.H. DeGraffenreid, Inc.; D.C. and VA. Addr.: 1100 H St., N.W., Washington, D.C. 20080. Tel.: 202-624-6410. Internet: www.wgholdings.com.

Business: WGL Holdings, Inc. is the parent of Washington Gas Light, a natural gas distributor in Washington, D.C. and adjacent areas of VA. and MD. to resident'l and comm'l users (1,032,198 meters). Hampshire Gas, a federally regulated sub., operates an underground gas-storage facility in WV. Non-regulated subs.: Wash. Gas Energy Svcs. sells and delivers natural gas and pro-

EARNINGS PER SHARE^{A,B}
 Fiscal Year Ends
 2003 1.10 1.61 d.05 d.36 2.30
 2004 .81 1.62 d.08 d.37 1.98
 2005 .88 1.63 d.17 d.23 2.11
 2006 .93 1.16 d.01 d.18 1.90
 2007 .91 1.29 d.10 d.20 1.90

Fiscal 2006 (ended September 30th) was not the best of years for WGL Holdings. Results were impacted by a decline in natural gas deliveries due to customer conservation, along with higher operation and maintenance expenses, and results that were below last year's level at the company's nonutility segment. For 2007, we look for earnings to remain flat. This includes about \$1.60 from the main utility segment, and \$0.30 from nonutility operations. The company expects to add 20,000 new customers this year, slightly below previous years' additions. However, indicators point to a rebound in home construction in 2008.

rate case in Virginia, which also includes a performance-based rate plan that would put new rates in place by February if approved. The company also intends to file a rate case in the spring of 2007 to recover the costs associated with the Prince George's county rehabilitation program. We think the company is likely to receive most, if not all, of these costs.

QUARTERLY DIVIDENDS PAID^C
 Calendar
 2002 .315 .318 .318 .318 1.27
 2003 .318 .32 .32 .32 1.28
 2004 .32 .325 .325 .325 1.30
 2005 .325 .333 .333 .333 1.32
 2006 .333 .338 .338 .338

Washington Gas Light aims to improve the consistency of its earnings through new rate designs. In 2006, the company was able to fully neutralize the effect of warmer-than-normal temperatures in the District of Columbia and Virginia. However, in Maryland the company is able to protect against both warmer weather and customer conservation through its revenue normalization adjustment plan. Due to the success of this plan, the company filed in September a similar

The company is looking to improve its nonregulated operations. In September, WGL sold its interest in American Combustion Industries, which had been underperforming. This should permit management to focus on growth businesses. The company initiated a partnership with select heating, ventilating, and air conditioning contractors to increase market penetration through residential conversions. WGL expects the conversion rate, which is currently 7%, to increase to 14% for new residential businesses in 2007. **These shares are best suited for conservative investors.** The dividend is well covered, and the yield is above its distribution counterparts. But investors should note the limited capital gains prospects. *Evan I. Blatter December 15, 2006*

(A) Fiscal years end Sept. 30th. (B) Based on diluted shares. Excludes non-recurring losses: '01, (13¢); '02, (34¢); discontinued operations: '06, (14¢). Next earnings report due early Feb. (C) Dividends historically paid early February, May, August, and November. ■ Dividend reinvestment plan available. (D) Includes deferred charges and intangibles. '05: \$150.0 million, \$3.08/sh. (E) In millions, adjusted for stock split. (F) Quarterly revenues will be adjusted following 10k release.

Company's Financial Strength A
 Stock's Price Stability 100
 Price Growth Persistence 70
 Earnings Predictability 60

To subscribe call 1-800-833-0046.

**2003 NASUCA Annual Meeting
Atlanta, Georgia
November 19, 2003**

Why Are Allowed Rates of Returns Too High?

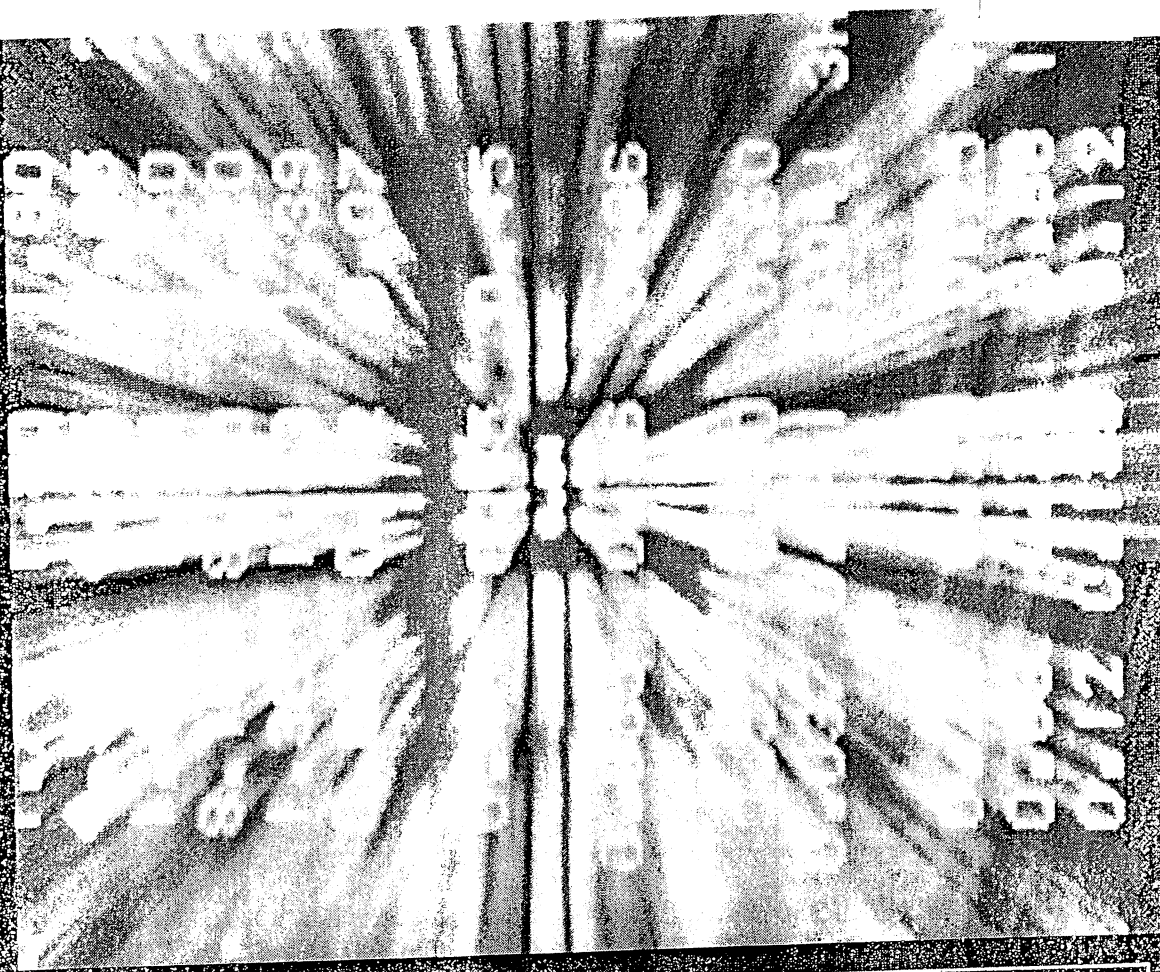
J. Randall Woolridge
Vice President, the Columbia Group

&

**The Goldman, Sachs and Frank P. Smeal Professor of Finance
The Pennsylvania State University
University Park, PA 16802
814-865-1160
jrw@psu.edu**

Rate of Return Topics

- Allowed Returns on Equity
- Long-Term Interest Rates
- Utility Risk
- DCF Equity Cost Rates
- Risk Premiums
- Equity Cost Rate Test
- The Impact of the New Tax Law



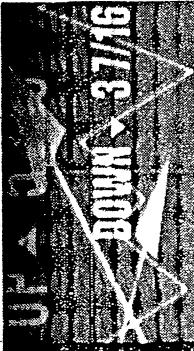
DOWN 37/16

Allowed Returns on Equity

Allowed Returns

Below 10%

Despite some resistance,
Some Public Utility
Commissions are setting
Allowed Returns Below
10%!



State	Date of Decision	Utility	Type	Docket, Case #	ROE Allowed
NY	8/4/2003	St. Lawrence Gas Co. Inc.	Gas	CASE 02-G-1275; CASE 02-G-1011	9.8
NJ	8/1/2003	Jersey Central Power & Light Co.	Electric	DOCKET NO. ER02080506; DOCKET NO. ER02080507; DOCKET NO. E002070417; DOCKET NO. ER02030173; DOCKET NO. ER95120633	9.5
NJ	8/1/2003	Public Service Electric & Gas Co.	Electric	DOCKET NO. ER02050303; DOCKET NO. ER02080604; DOCKET NO. E000040253; DOCKET NO. E001120830; DOCKET NO. E002080610; DOCKET NO. E001120832; DOCKET NO. E002110854; DOCKET NO. GR01040280	9.75
NJ	7/31/2003	Rockland Electric Co.	Electric	DOCKET NO. ER02080614; DOCKET NO. ER02100724	9.75
AR	7/17/2003	Arkansas Western Gas Co.	Gas	DOCKET NO. 02-227-U	9.9
TN	6/27/2003	Tennessee-American Water Co.	Water	DOCKET NO. 03-00118	9.9
WY	4/30/2003	Lower Valley Energy, Inc.	Gas	DOCKET NO. 30018-GR-0215	9.21
NY	3/7/2003	Rochester Gas & Electric Corp.	Gas, Electric	CASE 02-E-0198; CASE 02-G-0199	9.96
FL	2/10/2003	Cypress Lakes Utilities	Water	DOCKET NO. 020407-WS	9.93
AZ	4/17/2002	Xcel Energy-Black Mountain Gas Co.	Gas	Docket No. G-03703A-01-0263	9.85

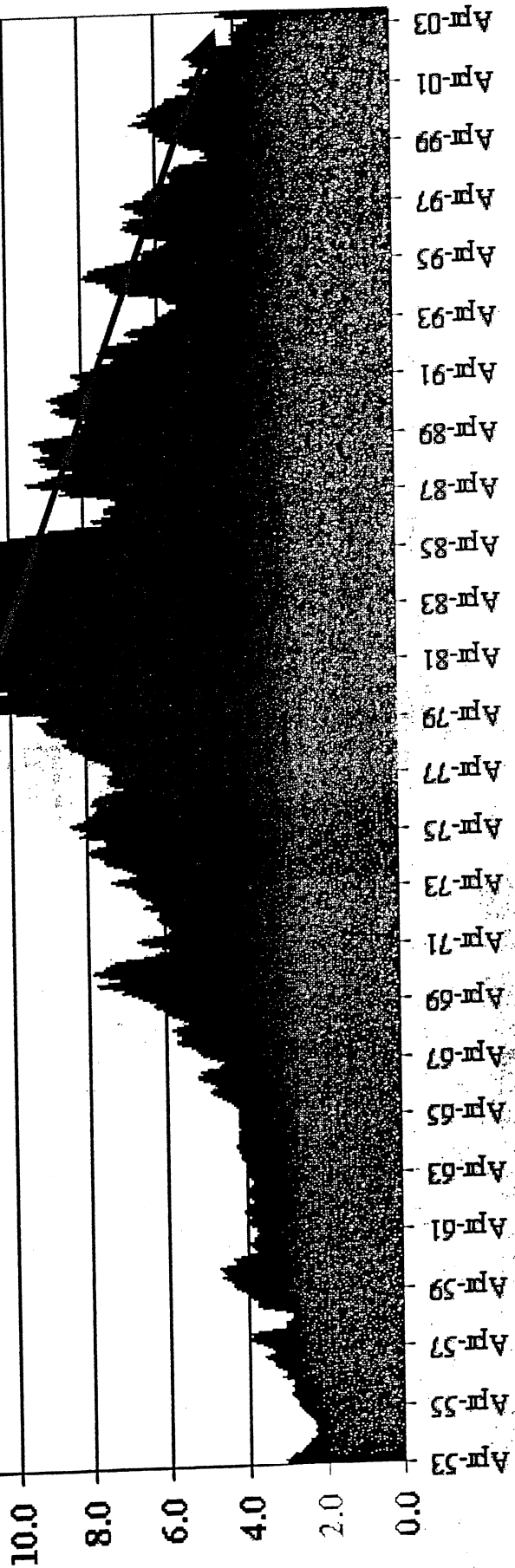
Interest Rates

Ten-Year Treasury Rate

And Why Not!

Interest Rates are at Historic Lows

The 10-Year Treasury Rate has been in the 4.2% range. This is the lowest since 1965!



Utility Risk



And Despite Deregulation, Utilities are not Riskier on a Relative Basis! Electric, Gas, and Water Utilities are Among the Lowest Risk Businesses As Measured by Beta of the 100 Industries Covered by Value Line

Industry Name	# of Firms	Beta
E-Commerce	170	0.78
Internet	30	0.78
Semiconductor Cap Equip	29	0.78
Wireless Networking	48	0.78
Semiconductor	124	0.78
Telecom. Services	122	0.78
Telecom. Equipment	15	0.77
Utility (Foreign)	78	0.77
Computer Software & Svcs	16	0.77
Computer & Peripherals	13	0.76
Advertising	42	0.75
Cable TV	90	0.75
Foreign Telecom.	13	0.75
Bank (Foreign)	92	0.71
Securities Brokerage	35	0.70
Retail (Special Lines)	23	0.70
Investment Co. (Foreign)	26	0.70
Oilfield Services/Equip.	50	0.69
Bank (Canadian)	143	0.69
Electronics	86	0.68
Toiletries/Cosmetics	26	0.67
Steel (Integrated)	36	0.62
Air Transport	20	0.61
Retail Store	30	0.60
Foreign Electron/Entertn	11	0.59
Chemical (Basic)	25	0.58
Financial Svcs. (Div.)	34	0.58
Electrical Equipment	13	0.55
Entertainment	19	0.54
Industrial Services	32	0.53
Auto Parts (OEM)	56	0.79
Metals & Mining (Div.)	25	0.79
Home Appliance	12	0.91
Recreation	81	0.86
Trucking/Transp. Leasing	45	0.85
Medical Services	156	0.85
Building Materials	37	0.85
Bank (Midwest)	32	0.85
Furn./Home Furnishings	33	0.84
Hotel/Gaming	52	0.84
Educational Services	27	0.84
Medical Supplies	182	0.83
Homebuilding	54	0.82
Aerospace/Defense	39	0.82
Maritime	14	0.82
Apparel	41	0.82
Newspaper	18	0.82
Packaging & Container	36	0.82
Diversified Co.	92	0.82
Metal Fabricating	38	0.82
Manuf. Housing/Rec/Veh	20	0.81
Chemical (Diversified)	32	0.80
Insurance (Prop/Casualty)	56	0.79
Textile	25	0.79
Publishing	43	0.79
Food Processing	86	0.68
Auto Parts (Replacement)	26	0.67
Natural Gas (Distrib.)	36	0.62
Electric Utility (West)	20	0.61
Gold/Silver Mining	30	0.60
Tobacco	11	0.59
Investment Co.	25	0.58
Electric Utility (East)	34	0.58
Water Utility	13	0.55
Beverage (Alcoholic)	19	0.54
Electric Util. (Central)	32	0.53

Data Source: Value Line

The Required Return on Equity

DOWN 37/16

The Traditional Methods to Compute the Cost Required Return on Equity are the Discounted Cash Flow (DCF) and Risk Premium (RP) Approaches. The RP Approach Takes Various Forms, Including the Capital Asset Pricing Model (CAPM)

- Discounted Cash Flow Method
- Dividend Yield Plus Growth
- Risk Premium Approaches
 - Risk Premium
 - CAPM
 - APT



DCF Equity Cost Rates

DCF Estimates are Clearly Below 10%!

	Electric	Gas	Water
Dividend Yield*	4.6%	3.7%	3.1%
Expected Growth**	<u>5.0%</u>	<u>6.0%</u>	<u>5.5%</u>
DCF Cost Rate	9.6%	9.7%	8.6%

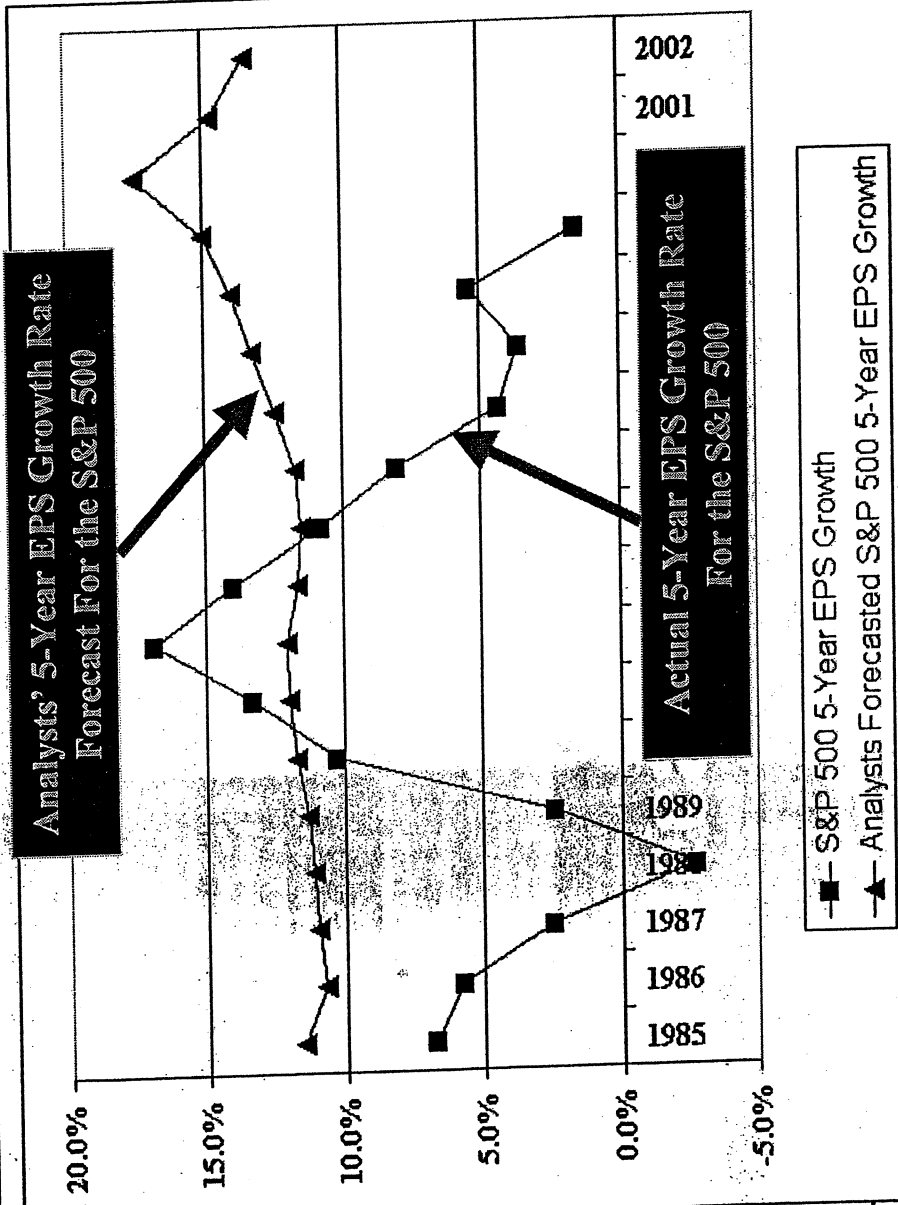
* CA Turner Utility Reports

** Analysis' Average 5-Year Projected EPS Growth Rate, www.yahoo.com

Analysts' EPS Forecasts

And That's Even Using Analysts' 5-Year EPS Forecasts for DCF Growth Which, as Shown Below, are Upwardly Biased Measures of Actual Growth!

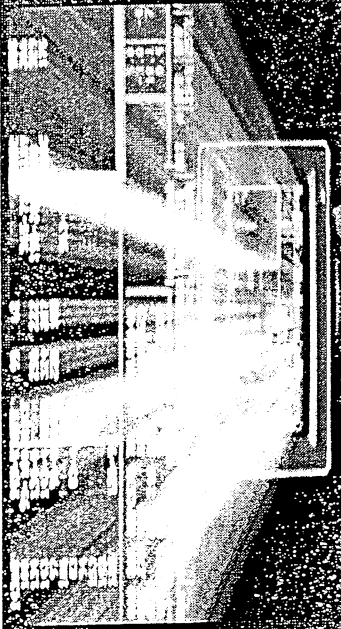
	Actual 5-Year S&P 500 EPS Growth	Analysts Projected 5-Year S&P 500 EPS Growth
1985	6.75%	11.50%
1986	5.77%	10.75%
1987	2.48%	11.00%
1988	-2.74%	11.15%
1989	2.40%	11.35%
1990	10.23%	11.75%
1991	13.37%	12.00%
1992	16.89%	12.10%
1993	14.04%	11.65%
1994	10.80%	11.50%
1995	8.02%	11.75%
1996	4.33%	12.50%
1997	3.61%	13.25%
1998	5.43%	14.00%
1999	1.51%	15.00%
2000		17.50%
2001		14.75%
2002		13.50%
Mean		11.71%



Source: J. Randall Woolridge, "Forecasting Through Rose-Colored Glasses: Projected Versus Actual EPS Growth Rates for the S&P 500."

The Market or Equity Risk Premium

Whereas DCF Equity Cost Estimates are Low, the Big Debate in Many Cases Is the Size of the Risk Premium. The Magnitude of The Risk Premium has been Debated in Academic Circles Since Mehra and Prescott's "The Equity Risk Premium Puzzle." The Primary Issue is That Historic Risk Premiums Cannot be Justified Based on Economic Fundamentals



➤ The Market or Equity Risk Premium is the Difference between the Market Return and the Risk-Free Interest Rate

➤ Mehra and Prescott (1985)
The Equity Risk Premium Puzzle

Historic Risk Premiums are Too High Based on Economic Fundamentals

Risk Premium Approaches

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There are Three Ways to Measuring the Risk Premium, and There are Problems and Issues with Each. Most Consultants Employ Historical Returns. A Number of Recent Studies are Critical of the Use of Historic Returns to Estimate the Expected Risk Premium.

	Historical Ex Post Excess Returns	Surveys	Ex Ante Models and Market Data
Means of Assessing the Equity-Bond Risk Premium	Historical average is a popular proxy for the ex ante premium — but likely to be misleading	Investor and expert surveys can provide direct estimates of prevailing expected returns/premiums	Current financial market prices (simple valuation ratios or DDM-based measures) can give most objective estimates of feasible ex ante equity-bond risk premium
Problems/Debated Issues	Time variation in required returns and systematic selection and other biases have boosted valuations over time, and have exaggerated realized excess equity returns compared with ex ante expected premiums	Limited survey histories and questions of survey representativeness. Surveys may tell more about hoped-for expected returns than about objective required premiums due to irrational biases such as extrapolation.	Assumptions needed for DDM inputs, notably the trend earnings growth rate, make even these models' outputs subjective Range of views on this growth rate (plus debates on relevant stock and bond yields) => range of premium estimates.

The Risk Premium

➤ Among the Issues in Measuring the Risk Premium are:

Geometric vs. Arithmetic Means

Short vs. Long Horizon Models

Real vs. Nominal Rates

Short vs. Long Risk Premium Expectation

➤ The Following Table Shows the Estimated Risk Premiums Classified into Four Different Types of Studies:

Historic – A Straight Historical Comparison of Stock and Bond Returns
Social Security (SS) – A Series of Studies Commissioned by SS Involving a

Breakdown of Fundamental Factors Driving Risk Premiums

Puzzle Research – Studies by Academics and Professionals that Try to

Estimate the Risk Premium from Fundamental Data (like SS)

Surveys – Surveys of Academics and CFOs

Miscellaneous – Other Studies

Straight Historical Return Comparison
Risk Premiums
 SS Estimates Based on
 Fundamentals are Lower
 Puzzle Researchers also find
 Lower Risk Premiums
 BURN 3/16

Source	Risk-free Rate	ERP Estimate	Data Period	Methodology
Historical				
Ibbotson Associates	3.8% ⁷	8.4%	1926-2002	Historical
Social Security				
Office of the Chief Actuary ¹	2.9%, 3.0% ⁸	4.7%, 4.0% ³²	1900-1995. Proj out 75 years	Historical & Ratios (Div/Price & Earn Gr)
John Campbell ²	3% to 3.5% ⁹	1.5-2.5%, 3.4% ²⁵	Projecting out 75 years	Fundamentals: Div Yld, GDP Gr
Peter Diamond	2.2% ¹⁰	<4.8% ²⁴	Last 200 years for eq, 75 for bonds, Proj 75 yrs	Fundamentals: Div/Price
Peter Diamond ³	3.0% ¹¹	3.0% to 3.5% ²⁵	Projecting out 75 years	Fundamentals: P/E, GDP Gr
John Shoven ⁴	3.0%, 3.5% ¹²	3.0% to 3.5% ²⁶	Projecting out 75 years	
Puzzle Research				
Robert Arnott and Peter Bernstein	3.7% ¹³	2.4% ³⁷	1802 to 2001, normal	Fundamentals: Div Yld & Gr
Robert Arnott and Ronald Ryan	4.1% ¹⁴	-0.9% ³⁸	Past 74 years, 74 year projection ³⁸	Fundamentals: Div Yld & Gr
John Campbell and Robert Shiller	N/A	Negative ³⁹	1871 to 2000, ten-year projection	Ratios: P/E and Div/Price
James Claus and Jacob Thomas	7.64% ¹⁵	3.39% or less ⁴⁰	1985-1998, long-term	Abnormal Earnings model
George Constantinides	2.0% ¹⁶	6.9% ⁴¹	1872 to 2000, long-term	Hist. and Fund.: Price/Div & P/E
Bradford Cornell	5.6%, 3.6% ¹⁷	3.5-5.5%, 5-7% ⁴²	1925-1997, long run forward-looking	Weighting theoretical and empirical evid
Dimson, Marsh, & Staunton	1.0% ¹⁸	5.4% ⁴³	1900-2000, prospective	Adj hist ret, Var of Gordon gr model
Eugene Fama and Kenneth French	3.24% ¹⁹	3.83% & 4.78% ⁴⁴	Estimate for 1951-2000, long-term	Fundamentals: Dividends and Earnings
Robert Harris and Felicia Marston	8.53% ²⁰	7.14% ⁴⁵	1982-1998, expectational	Fin analysts' est, div gr model
Roger Ibbotson and Peng Chen	2.05% ²¹	4% and 6% ⁴⁶	1926-2000, long-term	Historical and supply side approaches
Jeremy Siegel	4.0% ²²	-0.9% to -0.3% ⁴⁷	1971 to 1998, forward-looking	Fundamentals: Div, Div Yld, Div Gr
Jeremy Siegel	3.5% ²³	2-3% ⁴⁸	1902-2001, forward-looking	
Surveys				
John Graham and Campbell Harvey	? by survey ²⁴	3-4.7% ⁴⁹	2002, 3Q 2002, 1 & 10 year period	
Ivo Welch	N/A ²⁵	7% ⁵⁰	30-year forecast, surveys in 97/98 & 99	Survey of financial economists
Ivo Welch ⁵	5% ²⁶	5.0% to 5.5% ⁵¹	30-year forecast, survey around August 2001	Survey of financial economists
Misc.				
Barclays Global Investors	5% ²⁷	2.5%, 3.25% ⁵²	Long-run (10-year) expected return	Fundamentals: Inc, Earn Gr, & Repricing
Richard Brealey and Stewart Myers	N/A ²⁸	6 to 8.5% ⁵³	1926-1997	Predominantly Historical
Burton Malkiel	5.25% ²⁹	2.75% ⁵⁴	1926 to 1997, estimate millennium ⁵⁴	Fundamentals: Div Yld, Earn Gr
Richard Wendt ⁶	5.5% ³⁰	3.3% ⁵⁵	1960-2000, estimate 2001-2015 period	Linear regression model

Current Survey of CFOs
 Indicates a 3.8% Risk Premium

Source: Richard Derrig and Elisha Dorr, "Equity Risk Premium: Expectations Great and Small"
 Non-Historic Risk Premium
 Measures are Lower

The Risk Premium

- Straight Historical Risk Premium Estimates are in the 6-8 Percent Range
- Virtually all SS and Puzzle Research Studies Indicate that the Risk Premium is Much Lower
- The Updated CFO Survey by Graham and Harvey Indicates a Risk Premium of 3.8%.



DOWN 37/16

Risk Premiums

A Number of Explanations have been Offered To Explain Why Historic Risk Premiums are Excessive

The Problems w

Change in the Relative Risk of Stocks and Bonds

Survivorship Bias

Easy Data Bias

Peso Problem

Stock returns used to be much more volatile than bonds. Today, stock and bond returns are nearly equally volatile.

The only companies that are still in stock market indexes are those that have been successful and are still around. Merged and bankrupt companies did not survive.

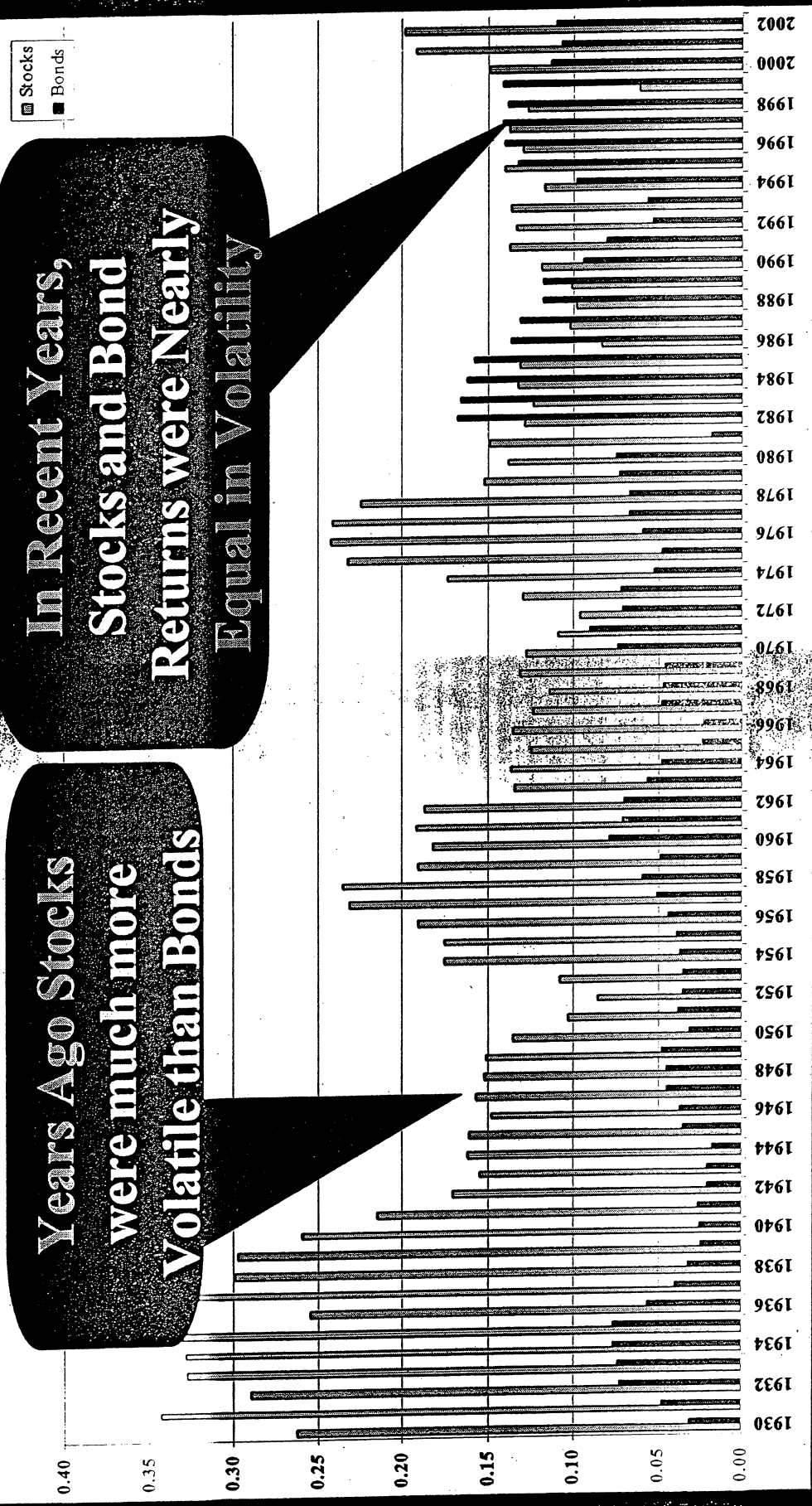
Return series tend to start after unusual events (war, market closure, etc.) when assets are cheap.

The pricing in US markets is based on what could have happened but did not. The US survived two world wars, and a depression, but did not suffer from hyperinflation, invasion, or other calamities of other countries. Since these did not occur, equity returns have been helped.

Risk Premiums

The Problem with Historic Risk Premiums: The Change in Risk and Return

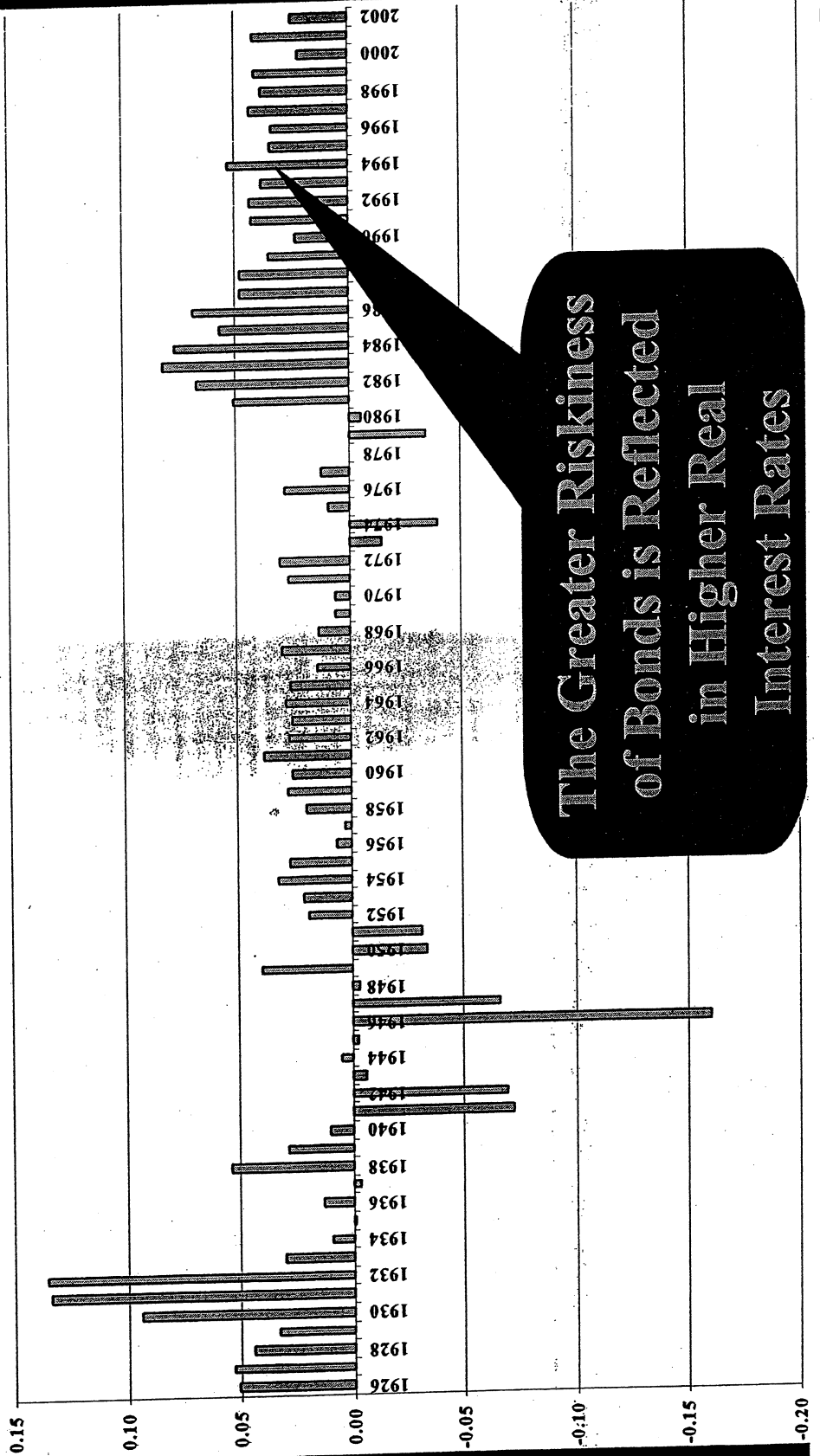
Stocks and Bonds Annual Standard Deviation (1930 - 2002)



Risk Premiums

The Problem: with Historic Risk Premiums: Real Interest Rates

Real Interest Rates (1926 - 2002)



Risk Premiums

Risk Premiums from
Value Line Investment Survey

Some Analysts Employ *Value Line's* Projected Four-Year Stock Market Return to Compute an Ex-Ante Risk Premium. However, this Study Shows that *Value Line's* Methodology has Produced Expected Market Returns Well Above Actual Market Returns.

Value Line Forecasted Versus Actual Four-Year Returns
1984-2002

	Projected Four-Year Return	Actual S&P 500		Actual S&P 500		Projected - Actual	
		One-Year Return	Four-Year Return	One-Year Return	Four-Year Return	Four-Year Return	Four-Year Return
1984	23.30%	6.27%	14.99%	14.99%	8.31%		
1985	20.03%	31.73%	17.69%	17.69%	2.34%		
1986	14.38%	18.67%	17.68%	17.68%	-3.30%		
1987	14.68%	5.25%	11.87%	11.87%	2.82%		
1988	18.67%	16.61%	18.04%	18.04%	0.63%		
1989	16.80%	31.69%	15.69%	15.69%	1.11%		
1990	20.88%	-3.11%	10.62%	10.62%	10.26%		
1991	19.00%	30.47%	11.87%	11.87%	7.13%		
1992	17.70%	7.62%	13.36%	13.36%	4.34%		
1993	14.96%	10.08%	17.20%	17.20%	-2.24%		
1994	15.61%	1.32%	22.96%	22.96%	-7.35%		
1995	15.14%	37.58%	30.51%	30.51%	-15.37%		
1996	13.40%	22.96%	26.39%	26.39%	-13.20%		
1997	13.20%	33.36%	17.20%	17.20%	-4.00%		
1998	9.91%	28.58%	5.66%	5.66%	4.24%		
1999	14.23%	21.04%	-6.78%	-6.78%	21.01%		
2000	18.57%	-9.11%	14.55%*	14.55%*	33.12%		
2001	17.20%	-11.88%	-17.5%**	-17.5%**	34.35%		
2002		-22.10%	-22.10%	-22.10%	4.68%		

* Three-Year Return

** Two-Year Return

Data Sources: Value Line Investment Survey, Various Issues.

www.barra.com

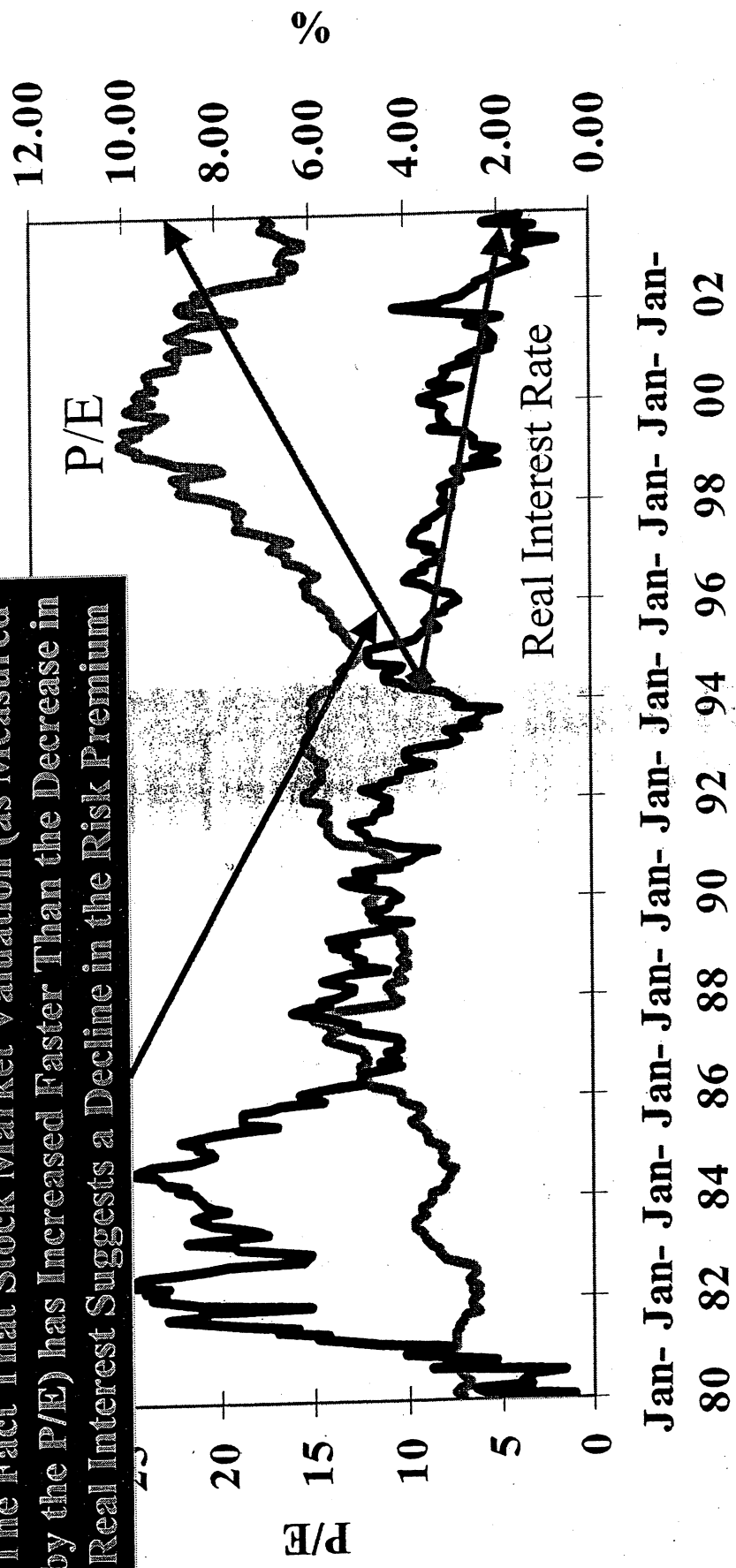
Source: J. Randall Woolridge, "Pitfalls in Using Value Line's Expected Stock Market Returns in Estimating an Equity Risk Premium."

Risk Premiums



Risk Premium Equity Cost Rate

The Fact That Stock Market Valuation (as Measured by the P/E) has Increased Faster Than the Decrease in Real Interest Suggests a Decline in the Risk Premium



Source: J. Randall Woolridge, "The Equity Risk Premium: Evidence from Market Valuation and Real Interest Rates."

Risk Premiums

Risk Premium Equity Cost Rate

Using a 5.0% Long-Term Risk-Free Interest Rate, a Risk-Adjustment Factor (or Beta of 0.70), and a Risk Premium of 3.45% (from the Updated Fama French Study), A Risk-Premium Equity Cost Rate of 7.40% is Indicated.

Risk-Free Interest Rate*	5.0%
+	
Risk-Adjustment Factor	.70
*	
Risk Premium**	3.45%
=	
Risk Premium Equity Cost Rate	7.40%

* 30-Year Treasury Rate

** Average Beta for Electric, Gas Distribution, and Water-Utilities, Value Line Investment Survey

*** Risk Premium from Updated Fama French Study (2002).

Equity Cost Rate Test

And So How Can One Test Whether an Allowed Return on Equity Meets Investors' Return Requirement?

One Rather Simple Test, Described Below, Involves the Relationship Between Return on Equity and the Market-to-Book Ratio

For a given industry, more profitable firms – those able to generate higher returns per dollar of equity – should have higher market-to-book ratios. Conversely, firms which are unable to generate returns in excess of their cost of equity should sell for less than book value.

Profitability Value

If $ROE > K$

then $Market/Book > 1$

If $ROE = K$

then $Market/Book = 1$

If $ROE < K$

then $Market/Book < 1$

“A Note on Value Drivers,” Harvard Business School case study.

Equity Cost Rate Test

DOWN 3/7/16

Returns on Equity and Market-to-Book Ratios for Electric, Gas, and Water Utilities are Provided Below. The Average Return on Equity and Market-to-Book Ratios are 10.6% and 1.87, Respectively. These Results Clearly Show That the Required Return on Common Equity is Well Below the Current Range.

	Electric	Gas	Water	Average
Return on Equity*	10.7%	11.1%	10.0%	10.6%
Market-to-Book Ratio*	1.58	1.71	2.31	1.87

* CA Turner Utility Reports

The New Tax Law has Further Reduced the Cost of Equity Capital

2. The 10% Pre-Tax Return Produces an After-Tax Return of 8.5% Under The New Tax Law

Panel A

Old Tax Law

10% Pre-Tax Return - 5% Dividend Yield & 5% Capital Gain
Tax Rates - Dividends 30% & Capital Gains 20%

	Pre-Tax Return	Tax Rate	After-Tax Return
Dividends	5.00%	30.00%	3.50%
Capital Gain	5.00%	20.00%	4.00%
Total	10.00%		7.50%

1.

Under the Old Tax Law, A 10% Pre-Tax Return Produced an After-Tax Return of 7.5%

Panel C

The Effect of the New Tax Law on Pre-Tax Returns
After-Tax Return - 3.25% Dividend Yield & 4.25% Capital Gain
Tax Rates - Dividends 15% & Capital Gains 15%

	Pre-Tax Return	Tax Rate	After-Tax Return
Dividends	3.82%	15.00%	3.25%
Capital Gain	5.00%	15.00%	4.25%
Total	8.82%		7.50%

3.

Under the New Tax Law, An After-Tax Return of 7.5% is Produced with a Pre-Tax Return of 8.82%. Hence, The New Tax Law Reduces the Pre-Tax Required Return by 1.18%

Panel B

New Tax Law

10% Pre-Tax Return - 5% Dividend Yield & 5% Capital Gain
Tax Rates - Dividends 15% & Capital Gains 15%

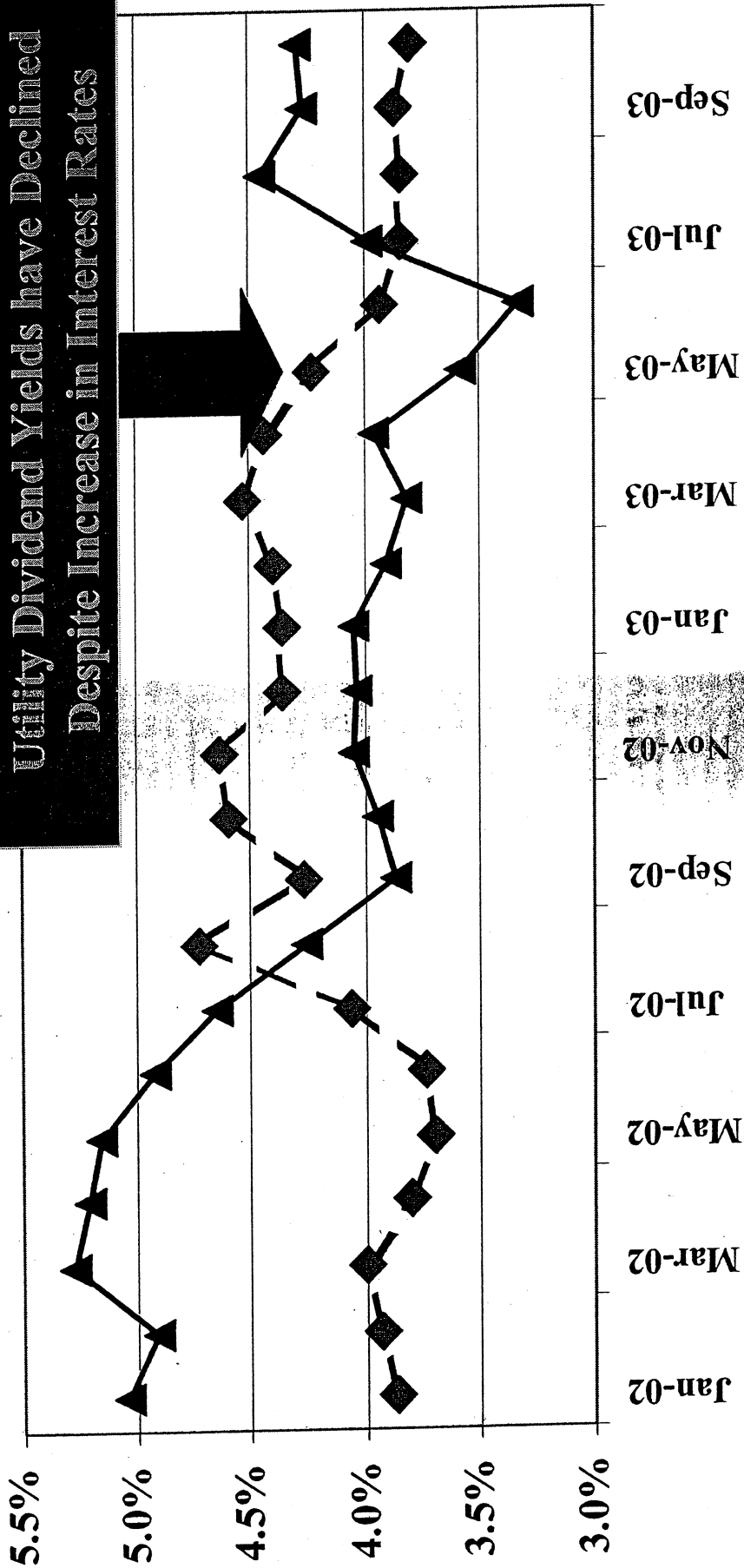
	Pre-Tax Return	Tax Rate	After-Tax Return
Dividends	5.00%	15.00%	4.25%
Capital Gain	5.00%	15.00%	4.25%
Total	10.00%		8.50%

Assume that a utility has a 10% expected return - 5.0% in dividends and 5.0% in capital gains. The new tax law reduces the corporate-taxation of dividends by cutting the tax rate on dividends from 30 percent (the marginal tax bracket for the average individual taxpayer) to 15 percent. Panel A shows that under the old tax law a 10.0% pre-tax return provided for a 7.5% after-tax return. Panel B shows that under the new tax law, with tax rates of 15% on both dividends and capital gains, the 10% pre-tax return is worth 8.5% on an after-tax basis. In Panel C, I have held the after-tax return constant (at 7.5%) to illustrate the effect of the new tax law on required pre-tax returns. Assuming that the entire after-tax 1% return difference (7.5% to 8.5%) is attributed to the lower taxation of dividends, the 10.0% pre-tax return under the new law is now only 8.82%. In other words, to generate an after-tax return of 7.5%, the new tax law reduced the required pre-tax return from 10.0% to 8.82%.

The Impact of the New Tax Law

New Tax Law Signed May, 2003

**Utility Dividend Yields have Declined
 Despite Increase in Interest Rates**



▲ 10-Year Treasury Yield —◆ Average Utility Dividend Yield

Rate of Return Summary

- **Allowed Returns on Equity Above 10% are Clearly Excessive**
- **Interest Rates are at Historic Lows, and Utility Risk is Still Much Lower than Most Industries**
- **DCF Equity Cost Rates are in the 8-9 Percent Range**
- **The Big Issue is the Size of the Risk Premium. Most Recent Studies Indicate that Historic Risk Premiums are Excessive. These Studies Suggest a Risk Premium of 3-4 Percent above Long-Term Treasuries.**
- **Returns on Equity and Market-to-Book Ratios also Support Utility Equity Cost Rates Below 10%**
- **The New Tax Law has Lowered Equity Cost Rates for Utilities -- by up to 100 Basis Points**



DOWN - 3/7/16

J. Randall Woolridge, Ph.D.

Professor of Finance

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J. Randall Woolridge is a Professor of Finance and the Goldman Sachs & Co. and Frank P. Smeal Endowed University Fellow in the Smeal College of Business at the Pennsylvania State University. He is also the Director of the Smeal College Trading Room. Professor Woolridge's teaching and research interests are in corporate finance and investments, with an emphasis on the valuation consequences of corporate strategic investment and financial decisions. He has published over 35 articles in leading academic and professional journals, including the *Journal of Finance*, *Journal of Financial Economics*, *Strategic Management Journal*, and the *Harvard Business Review*. Dr. Woolridge's research has been highlighted extensively in the financial press. He has been quoted in the *Wall Street Journal*, *Barron's*, *Financial Times*, *New York Times*, *Washington Post*, *Fortune*, *Forbes*, *Business Week*, *The Economist*, *Financial World*, *CFO Magazine*, *Investors' Business Daily*, *Worth Magazine*, *USA Today*, and other publications. In addition, Dr. Woolridge has appeared as a guest on CNN's *Money Line* and CNBC's *Morning Call* and *Business Today*.

Professor Woolridge has consulted on financial issues with businesses, investment banks, and government agencies. He has testified on financial issues in over 50 public utility rate cases in seven states and the District of Columbia. In addition, Dr. Woolridge has participated in executive development programs and seminars for major corporations, financial institutions, and universities in 25 countries in North and South America, Europe, Asia and Africa.

The second edition of Professor Woolridge's popular stock valuation book, *The StreetSmart Guide to Valuing a Stock* (McGraw-Hill, 2003), was recently released. He has also co-authored *Spinoffs and Equity Carve-Outs: Achieving Faster Growth and Better Performance* (Financial Executives Research Foundation, 1999) as well as a new textbook entitled *Modern Corporate Finance, Capital Markets, and Valuation* (Kendall Hunt, 2003). Dr. Woolridge is a founder and a managing director of www.valuepro.net - a stock valuation website.

CASE: UG 173
WITNESS: Steve W. Chriss

**PUBLIC UTILITY COMMISSION
OF
OREGON**

STAFF EXHIBIT 500

Direct Testimony

February 15, 2007

1 **Q. PLEASE STATE YOUR NAME, OCCUPATION, AND BUSINESS**
2 **ADDRESS.**

3 A. My name is Steve W. Chriss. My business address is 550 Capitol Street NE
4 Suite 215, Salem, Oregon 97301-2551. I am employed by the Public Utility
5 Commission of Oregon (OPUC or the Commission) as a Senior Utility Analyst
6 in the Electric and Natural Gas Division.

7 **Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND WORK**
8 **EXPERIENCE.**

9 A. My Witness Qualification Statement is found in Exhibit Staff/501. I have
10 previously testified in UX 29, all three phases of UM 1129, UE 179, and UE
11 180/UE 181/UE 184.

12 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

13 A. I discuss rate spread and rate design issues.

14 **Q. HAVE YOU PERFORMED AN INCREMENTAL OR MARGINAL COST**
15 **STUDY FOR THIS DOCKET?**

16 A. No.

17 **Q. STAFF IS PROPOSING A REVENUE REQUIREMENT DECREASE IN THIS**
18 **PROCEEDING. WHAT IS YOUR RECOMMENDATION FOR HOW THIS**
19 **DECREASE SHOULD BE SPREAD AMONG CUSTOMER CLASSES?**

20 A. Optimally, the decrease should be spread in a way that brings each customer
21 class towards paying its cost of service and that minimizes cross-subsidization
22 between customer classes. However, due to the size of staff's proposed

1 decrease, the potential for the minimization of cross-subsidization may in itself
2 be minimal.

3 **Q. GIVEN THE ABSENCE OF A COST STUDY AND THE SIZE OF STAFF'S**
4 **PROPOSED DECREASE, DOES STAFF HAVE A SPECIFIC PROPOSAL**
5 **FOR RATE SPREAD?**

6 A. Yes. The reduction in revenue requirement should be spread among all
7 customer classes as an equal percent of margin. This will result in a rate
8 reduction for all customer classes.

9 This is a simple solution that is not unprecedented; the stipulated rate
10 spread in UG 152 was an equal percent of margin increase. See Order 03-507
11 at 9.

12 **Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

13 A. Yes.

CASE: UG 173
WITNESS: Steve W. Chriss

**PUBLIC UTILITY COMMISSION
OF
OREGON**

STAFF EXHIBIT 501

Witness Qualification Statement

February 15, 2007

WITNESS QUALIFICATIONS STATEMENT

NAME: STEVE W. CHRISS

EMPLOYER: PUBLIC UTILITY COMMISSION OF OREGON

TITLE: SENIOR UTILITY ANALYST

ADDRESS: 550 CAPITOL ST. NE, SUITE 215, SALEM, OR 97310-1380

EDUCATION: Masters of Science degree, Agricultural Economics, from Louisiana State University (2001).

Bachelor of Science degree, Agricultural Development, from Texas A&M University (1997).

Bachelor of Science degree, Horticulture, from Texas A&M University (1997).

EXPERIENCE: Employed with the Public Utility Commission of Oregon (OPUC) as a Senior Utility Analyst in the Electric and Natural Gas Division. Previously employed with the OPUC as an Economist in the Economic Research and Financial Analysis Division from June, 2003 through February, 2006. Previously submitted testimony as the lead witness in Oregon docket UX 29 and as a supporting witness in Oregon dockets UE 179, UE 180/UE 181/UE 184, and UM 1129.

Employed as an Analyst and Senior Analyst at the Houston office of Econ One Research, Inc., a Los Angeles-based economic and regulatory consulting firm, between 2001 and 2003. Worked on regulatory and market issues in electricity, natural gas, and oil in both domestic and international markets.

Employed by North Harris College in Houston as an adjunct microeconomics instructor from January through May 2003.

CERTIFICATE OF SERVICE

UG 173

I certify that I have this day served the foregoing document upon all parties of record in this proceeding by delivering a copy in person or by mailing a copy properly addressed with first class postage prepaid, or by electronic mail pursuant to OAR 860-13-0070, to the following parties or attorneys of parties.

Dated at Salem, Oregon, this 15th day of February, 2007.



Stephanie S. Andrus
Assistant Attorney General
Of Attorneys for Public Utility Commission's Staff
1162 Court Street NE
Salem, Oregon 97301-4096
Telephone: (503) 378-6322

UG 173
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