

Before the

TENNESSEE REGULATORY AUTHORITY

IN RE:

PETITION OF PIEDMONT NATURAL
GAS, INC. FOR APPROVAL OF
SERVICE SCHEDULE NO. 317 AND
RELATED ENERGY EFFICIENCY
PROGRAMS

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DOCKET NO. 09-00104

DIRECT TESTIMONY
OF
TERRY BUCKNER

DECEMBER 4, 2009

Before the
TENNESSEE REGULATORY AUTHORITY

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GAS, INC. FOR APPROVAL OF
SERVICE SCHEDULE NO. 317 AND
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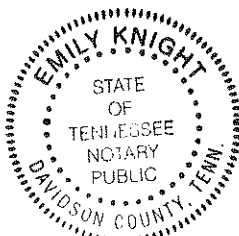
AFFIDAVIT

I, Terry Buckner, Regulatory Analyst, for the Consumer Advocate Division of the Attorney General's Office, hereby certify that the attached Direct Testimony represents my opinion in the above-referenced case and the opinion of the Consumer Advocate Division.


TERRY BUCKNER

Sworn to and subscribed before me
this 4th day of Dec., 2009.


NOTARY PUBLIC



My commission expires: Aug. 23, 2011

INTRODUCTION

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Q. Please state your name for the record.

A. My name is Terry Buckner.

Q. By whom are you employed and what is your position?

A. I am employed by the Consumer Advocate and Protection Division ("Consumer Advocate") in the Office of the Attorney General for the state of Tennessee ("Office") as a Regulatory Analyst.

Q. How long have you been employed in conjunction with the public utility industry?

A. Approximately thirty years. Before my current employment with the Office, I was employed by the Comptroller of the Treasury for the State of Tennessee for nearly two years as the Assistant Director responsible for public utility audits. Prior to that, I was employed for approximately eight years with the Office. Formerly, I was employed with the Tennessee Public Service Commission ("Commission") in the Utility Rates Division as a financial analyst for approximately six years. My responsibilities included testifying before the Commission as to the appropriate cost of service for public utilities operating in Tennessee. Prior to my employment with the Commission, I was employed by TDS Telecom for eight

1 years and the First Utility District of Knox County for three
2 years.

3
4 **Q. What is your educational background and what degrees do**
5 **you hold?**

6 A. I have a Bachelors degree in Business Administration
7 from the University of Tennessee, Knoxville with a major in
8 Accounting. I am also a Tennessee Certified Public Accountant
9 ("CPA") and a member of the American Institute of Certified
10 Public Accountants.

11
12 **Q. Would you briefly describe your responsibilities as a**
13 **Regulatory Analyst with the Consumer Advocate?**

14 A. I prepare testimony and financial exhibits in rate
15 proceedings as an employee with the Consumer Advocate.
16 Additionally, I review tariff filings by Tennessee public utilities,
17 which are subject to the jurisdiction of the Tennessee
18 Regulatory Authority ("TRA") and generally assist the
19 Consumer Advocate in representing the interest of ratepayers.

20
21 **Q. What is the purpose of your testimony?**

22 A. Although there are many underlying details supporting
23 the Consumer Advocate's position, all of which are discussed
24 below and/or shown in the testimony, work papers, and

1 exhibits of the Consumer Advocate's witnesses, the purpose of
2 my testimony is to address issues #2 and #3 from the issues list
3 as ordered by the Hearing Officer on October 13, 2009, and to
4 provide work papers of the Consumer Advocate ("Work
5 Papers of Consumer Advocate").
6

7 **SUMMARY**
8

9 **Q. Please summarize your conclusions on Issues #2 and #3.**

10 **A.** Regarding Issue #2, the Consumer Advocate believes
11 that a more recent test period should be used as a benchmark
12 for calculating the required components of Piedmont's Margin
13 Decoupling Tracker ("MDT"). Given Piedmont's desire for
14 their MDT to become effective September 2009, it would be
15 appropriate to align a more recent benchmark with the effective
16 date of their proposed tariff. In my opinion, any approval by
17 the TRA of Piedmont's MDT should use a benchmark which
18 coincides with its implementation date and fairly reflects the
19 most recent weather, usage, and customer data and economic
20 conditions. Therefore, a benchmark or test year ending
21 September 2009 would be more appropriate for implementation
22 of Piedmont's MDT. As a result of using a later benchmark,

1 Piedmont's MDT would generate \$1.8 million¹ less in rates
2 charged to customers.

3 Regarding Issue #3, the Consumer Advocate believes that
4 Piedmont's allowed earnings should be evaluated prior to the
5 implementation of decoupling mechanism. Moreover, this is a
6 paramount concern for setting just and reasonable rates in light
7 of reduced business risk and changes in Piedmont's capital
8 structure as proffered by Consumer Advocate witness, Dr.
9 Chris Klein.

11 RATEMAKING THEORY AND PRACTICE

13 **Q. What is a public utility?**

14 **A.** In the context of this case, a public utility is a business
15 formed as a shareholder-owned corporation. Even though the
16 public utility in this case is a for profit corporation, it is also
17 important to note that this public utility is:

18 an organization that has been designated by law as
19 a business affected with a significant public interest,
20 and that also possesses all of the following
21 characteristics: (1) The business is essentially free
22 from direct competition, i.e., it operates in a
23 monopolistic environment; (2) The business is
24 required by law to charge rates for its services that
25 are reasonable and not unjustly discriminatory; (3)
26 The business is allowed to earn (but not

¹ Consumer Advocate Work Paper CA-11, Index of Work Papers, P. 12.

1 guaranteed) a “reasonable” profit; and (4) The
2 business is obligated to provide adequate service to
3 its customers, on demand.²
4

5 **Q. Does Piedmont possess these public utility characteristics?**

6 A. Yes. Piedmont is a shareholder-owned public utility that
7 has been granted the advantage of operating in a monopolistic
8 environment in exchange for special obligations, namely, the
9 requirement to provide adequate service to all customers at
10 rates that are just, reasonable, and non-discriminatory.
11

12 **Q. From a regulated ratemaking perspective, what is the TRA**
13 **called upon to do in this proceeding?**

14 A. In this proceeding, the TRA is asked to establish the
15 amount of revenues that the utility should collect from
16 Piedmont’s MDT tariff filing. Therefore, it is not a traditional
17 rate case proceeding, which is ordinarily necessary to
18 determine how a public utility should recover its reasonable
19 and necessary expenses and how to reasonably compensate the
20 utility’s investors for their investment in the plant and
21 equipment necessary to provide utility service to the public. In
22 effect, this tariff filing is a single issue ratemaking mechanism,
23 which focuses on only one revenue determination. Piedmont’s
24 tariff ignores the other components for setting just and

²*Accounting for Public Utilities*, Hahne and Aliff §1.01.

1 reasonable rates. As Consumer Advocate witness, Dr. David
2 Dismukes states in his pre-filed direct testimony, a traditional
3 rate case proceeding would be a better mechanism to weigh all
4 of the components necessary for setting just and reasonable
5 rates. The following ratemaking formula can be used to
6 express this concept:

$$\begin{aligned} &\text{Revenue Requirement} = (\text{Rate Base} \times \\ &\text{Rate of Return}) + \text{Operations and} \\ &\text{Maintenance Expense} + \text{Depreciation} \\ &\text{Expense} + \text{Taxes.} \end{aligned}$$

11 In this equation, "Rate Base" is essentially the plant and
12 equipment paid for by the investors in the utility. The "Rate of
13 Return" is comprised of two major components: (1) the "Cost of
14 Debt," which constitutes the interest rate on borrowed money
15 and (2) the "Return on Shareholders' Equity" ("ROE"), which is
16 the rate of compensation that flows to the owners of the utility
17 for their investment; "Operations and Maintenance Expense" is
18 the costs of operating the utility day-to-day, such as payroll,
19 employee benefits, fuel and power to pump the water,
20 chemicals to treat the water supply, rents, office supplies,
21 postage and billing costs, etc; "Depreciation Expense" is the
22 systematic recovery of the cost of the plant and equipment over
23 their useful lives; and "Taxes" are the business taxes owed by
24 the utility to federal, state, and municipal governments, such as

1 income taxes, payroll taxes, property taxes, and franchise taxes.

2 In order to arrive at the appropriate amounts for each
3 component of the ratemaking formula, the TRA should
4 consider the expert witness testimony of economists,
5 accountants, and other subject matter experts. These experts
6 usually calculate the amount of each component of the
7 ratemaking formula for the "Attrition Year." In making their
8 "Attrition Year" forecast, ratemaking experts often consider
9 "Test Year" data.

10
11 **Q. Please explain the difference between a "Test Year" and an**
12 **"Attrition Year."**

13 **A.** A "Test Year" is a measure of a utility's financial
14 operations and investment over a specific twelve month period.
15 It is the "raw material" for developing an attrition year
16 measure of the utility's financial operations and investment
17 (that is, the utility's Rate Base, Operations and Maintenance
18 Expense, Depreciation Expense, and Taxes). In this proceeding,
19 the terms "benchmark" or "baseline" are synonymous with test
20 year. Therefore, the selection of the test year is quite important:

21 The selection of the timing of the test year may be
22 the most significant single factor in the rate-making
23 process. The more outdated the test year levels of
24 operations, the more critical is the need for

1 significant restatement to produce representative
2 levels of future conditions.³
3

4 An "Attrition Year," also known as a forecast period, is
5 the "finished product" and is to be representative of the period
6 for any rate adjustment. The attrition year can also be viewed
7 as the first year during which the TRA's rate order will be
8 applied.

9 In this proceeding, Piedmont's tariff filing proposes using
10 the benchmark from the last "Relevant Rate Order", which is
11 the final order of the TRA in the most recent litigated rate case.⁴
12 The most recent litigated rate case of Piedmont before the TRA
13 was Docket No. 03-00313. As a consequence, many of the
14 components for Piedmont's MDT are derived from TRA Docket
15 No. 03-00313, which had an attrition year ended October 2004.
16 In an effort to eliminate outdated financial information, the
17 Consumer Advocate has adopted the test year ended
18 September 2009 as the benchmark for Piedmont's MDT.
19
20
21
22
23

³ *Accounting for Public Utilities*, Hahne and Aliff §7.03.

⁴ Piedmont Tariff Service Schedule No. 317, Page 1 of 3, Section 2, Definitions.

ISSUES

Q. If such mechanism or incentive is adopted, what is the appropriate customer usage level and/or margin to be used as the benchmark for Piedmont's proposed decoupling mechanism? (Issue #2)

A. As previously mentioned, the Consumer Advocate believes that a more recent test period should be used as a benchmark for calculating the required components of Piedmont's MDT. Given Piedmont's desire for their MDT to become effective September 2009, it would be appropriate to align a more recent benchmark, *i.e.*, a test period ending September 2009 with the effective date of their proposed tariff.

Q. What are the required components of Piedmont's MDT?

A. The required components of Piedmont's MDT are: (1) Monthly Normal Heating Degree Days ("HDD"); (2) a Base Load factor; (3) a Heat Sensitivity Factor; and (4) an R Factor, which is the applicable volumetric rate.

Q. How are the Monthly Normal HDD calculated?

A. It is customary to calculate the Monthly Normal HDD using a thirty year monthly average of actual heating degree days. The monthly average can be calculated from a 15th of the

1 month to the 15th of the next month or a 1st through the ending
2 day of the current month. However, there is no significant
3 difference in the cumulative monthly average using either
4 monthly time period. For regression analysis purposes, the
5 Consumer Advocate calculated the thirty year monthly average
6 of actual heating days from a 15th of the month to the 15th of the
7 next month. The actual degree days are derived from the
8 National Oceanic and Atmospheric Administration ("NOAA").

9 As a result, the Monthly Normal HDD for the test period
10 ending September 2009 are about 2.5%⁵ lower than the Monthly
11 Normal HDD used in TRA Docket No. 03-00313, *i.e.* the thirty
12 year cumulative monthly average of actual heating degree days
13 is about 2.5% warmer than Piedmont's HDD. The Monthly
14 Normal HDD is the same for Residential Rate Schedule No.
15 301, Value Service and Residential Rate Schedule No. 321,
16 Standard Service.

17
18 **Q. How is a Base Load Factor calculated?**

19 A. A Base Load Factor is "the use per customer that is not
20 impacted by changes in degree days."⁶ To develop a Base Load
21 Factor, a regression analysis must be performed to calculate a
22 comparison of "the actual usage per customer for each month
23 of the test year (dependent variable) with the actual degree

⁵Consumer Advocate Work Paper Comparison of 30 Year Actual Degree Days, Index of Work Papers, P.1.

⁶Piedmont Second Supplemental Response to CA Discovery Request #6.

1 days for each month of the test year (independent variable)."⁷
2 Consumer Advocate witness Dr. David Dismukes has
3 performed a regression analysis for the test year ending
4 September 2009 resulting in a Base Load Factor of
5 approximately 20.28⁸ for Residential Rate Schedule No. 301,
6 Value Service and a Base Load Factor of approximately 4.03⁹ for
7 Residential Rate Schedule No. 321, Standard Service.

8
9 **Q. How is a Heat Sensitivity Factor calculated?**

10 A. A Heat Sensitivity Factor is "the use per customer that is
11 impacted by changes in degree days."¹⁰ To develop a Heat
12 Sensitivity Factor, a regression analysis must be performed to
13 calculate a comparison of "the actual usage per customer for
14 each month of the test year (dependent variable) with the actual
15 degree days for each month of the test year (independent
16 variable)."¹¹ Again, Consumer Advocate witness Dr. David
17 Dismukes has performed a regression analysis for the test year
18 ending September 2009 resulting in a Heat Sensitivity Factor of
19 approximately 0.21¹² for Rate Schedule No. 301, Value Service

⁷ Ibid.

⁸ Consumer Advocate Work Paper Regression Analysis Summary, Index of Work Papers, P.2.

⁹ Ibid.

¹⁰ Piedmont Second Supplemental Response to CA Discovery Request #6.

¹¹ Ibid.

¹² Consumer Advocate Work Paper Regression Analysis Summary, Index of Work Papers, P.2.

1 and a Base Load Factor of approximately 0.16¹³ for Rate
2 Schedule No. 321, Standard Service.

3 .
4 **Q. How is an R Factor calculated?**

5 A. An R Factor is "the base rate....utilized by the Authority
6 in the Relevant Rate Order for the purpose of determining
7 normalized test year revenues."¹⁴ The base rate is the
8 volumetric rate or margin rate for Residential Service Rate
9 Schedules 301 and 321 currently in effect, which is \$.32 per
10 therm for the months of November through March and \$.27 per
11 therm for the months of April through October.

12
13 **Q. Using the components, how is the MDT calculated?**

14 A. The MDT is calculated by rate schedule, rate schedule 301
15 Residential Value Service and rate schedule 321 Residential
16 Standard Service, on a monthly basis. The monthly normal
17 HDD is multiplied by the Heat Sensitivity Factor and added to
18 the Base Load Factor, which is the usage per HDD per
19 customer. This usage per HDD per customer is multiplied by
20 the number of actual customers in a month, which is the total
21 normalized usage for the month. The total normalized usage is
22 multiplied by the R factor, which generates the normalized
23 margin for the month. The normalized monthly margin is

¹³ Ibid.

¹⁴ Piedmont proposed tariff dated July 16, 2009, Schedule No. 17 page 2 of 3.

1 compared to the actual margin, which is actual usage
2 multiplied by the R factor. The difference between the actual
3 margin and the normalized margin is the amount owed either
4 to the customer or Piedmont exclusive of the Weather
5 Normalization Adjustment ("WNA"). If the calculated
6 normalized monthly margin is greater than the actual monthly
7 margin, then an amount is due to Piedmont. If the calculated
8 normalized monthly margin is less than the actual monthly
9 margin, then an amount is due to the customers. Again, both
10 results are subject to the WNA amount for the month.
11

12 **Q. What is the revenue effect of Piedmont's MDT using a**
13 **benchmark of September 2009?**

14 A. Based on the calculation of new components with a
15 benchmark of September 2009 compared to actual usage and
16 customers for the test period ending September 2009, the
17 revenue effect of Piedmont's MDT is \$62,543.¹⁵ That is,
18 customers would pay \$62,543 more in rates under the proposed
19 MDT using the Consumer Advocate's benchmark.
20

21 **Q. What is the revenue effect of Piedmont's MDT using the**
22 **components from TRA Docket #03-00313?**

23 A. Using the benchmark from TRA Docket #03-00313
24 compared to an actual usage and customers for the test period

¹⁵ Consumer Advocate Work Paper CA-11, Index of Work Papers, P. 11.

1 ending September 2009, the revenue effect of Piedmont's MDT
2 is approximately \$1.9 million.¹⁶ That is, customers would pay
3 \$1.9 million more in rates under the proposed MDT using
4 Piedmont's benchmark.

5
6 **Q. What are the comparative results of Piedmont's MDT using a**
7 **later benchmark than TRA Docket No. 03-00313?**

8 A. As a result of using a later benchmark, ratepayers would
9 be charged approximately \$1.8 million¹⁷ less for the test year
10 ended September 2009 when compared to Piedmont's MDT
11 amount. For comparison purposes, both calculations used the
12 same WNA amounts reported by Piedmont for the test period.
13 Consequently, using a later benchmark is far more beneficial to
14 the ratepayers than Piedmont's proposed tariff.

15
16 **Q. How is the WNA calculated?**

17 A. The WNA amount for Piedmont is derived essentially by
18 comparing the actual heating degree days to the normal heating
19 degree days by month for the months of October through
20 March of each heating season. The intent of the WNA was "to
21 reduce the impact abnormal weather has on the customers' bills
22 and on the gas utilities' operations. In periods of weather
23 colder than normal, the customer receives a credit (refund) on

¹⁶ Ibid.

¹⁷ Consumer Advocate Work Paper CA-11, Index of Work Papers, P. 11.

1 his bill, while in periods of warmer than normal weather, the
2 customer is billed a surcharge. Thus, customers' monthly bills
3 should not fluctuate as dramatically and the gas company
4 should have a more stable rate of return."¹⁸

5
6 **Q. Should the components for the WNA be updated due to**
7 **Piedmont's MDT?**

8 A. Yes. As previously mentioned, the HDD has changed
9 since TRA Docket No. 03-00313. Therefore, any approval by the
10 TRA of Piedmont's MDT should use a WNA benchmark which
11 coincides with its implementation date and fairly reflects the
12 most recent weather, usage, customer data, and economic
13 conditions. Additionally, an updated weighted average base
14 rate should be calculated to reflect the reduced risk from the
15 MDT.

16
17 **Q. Prior to implementing a decoupling mechanism, should**
18 **Piedmont's earnings be evaluated? (Issue #3)**

19 A. Yes. In effect, Piedmont's MDT seeks to maintain or
20 guarantee a revenue stream based on weather normalized
21 usage per customer from their last rate filing in TRA Docket
22 #03-00313, *i.e.*, Piedmont's MDT will typically result in an
23 automatic semi-annual rate increase for every residential
24 customer regardless of their usage. Piedmont's MDT is,

¹⁸ TRA Docket No. 09-00111, Exhibit A, Page 3.

1 therefore, a significant change in the regulatory paradigm from
2 an earnings opportunity to a guarantee in earnings. Piedmont
3 has great discretion in determining their number of employees,
4 the amount of their plant investment, and their capital
5 structure. All of these items affect rates, but under Piedmont's
6 proposed MDT none of them are to be considered.
7 Furthermore, even though declining customer usage from
8 conservation and other determinants may have occurred since
9 Piedmont's last filing, Piedmont's proposed MDT would ignore
10 any recent decline in customer usage due to conservation,
11 changes in rate base, revenues from new customers, changes in
12 operating expenses, changes in capital structure, and the
13 reduced risk of earning a just and reasonable rate of return.
14 Therefore, an approval of Piedmont's MDT, the single issue
15 before the TRA, without consideration of the other ratemaking
16 components would be inconsistent with setting just and
17 reasonable rates.

18
19 **Q. What has Piedmont earned since TRA Docket No. 03-00313?**

20 **A.** An exhibit¹⁹ of Consumer Advocate witness Dr. David
21 Dismukes shows the annual reported earnings of Piedmont
22 exclusive of prior period adjustments from 2002 through 2008.
23 The most recent annual year from the exhibit shows an

¹⁹ Dismukes Exhibit DED-12, Page 2 of 2.

1 achieved rate of return of 9.86% compared to an authorized rate
2 of return of 8.42%. Moreover, Piedmont's reported twelve
3 months to date rate of return as of September 2009 is 7.47%.²⁰
4 However, when the prior period adjustment amount is
5 excluded from the reported rate of return, the resulting rate of
6 return is 8.54%. The magnitude of the prior period adjustment
7 underscores the need to convene a traditional rate case
8 proceeding before approving the MDT. The average rate of
9 return reported by Piedmont over the last five calendar years
10 (2004-2008) is 8.62%.²¹ Therefore, at existing rates as of
11 September 2009, Piedmont's current operations in Tennessee
12 earned more than the allowed rate of return from TRA Docket
13 No. 03-00313. If the effect of reduction in the allowed rate of
14 return is included as recommended by Consumer Advocate
15 witness Dr. Chris Klein, then Piedmont is currently over-
16 earning between \$.9 million to \$5.6 million.²² The difference in
17 the amounts is due to the treatment of the unknown prior
18 period adjustment amount, which has an NOI effect of
19 approximately \$2.9 million. The proposed reduction in the
20 allowed rate of return reflects the actual mid-year 2009 capital
21 structure, the lower cost of debt, and the reduced risk of the
22 MDT.

²⁰ Piedmont's September 2009 TRA 3.03 Surveillance Report.

²¹ Dismukes Exhibit DED-12, Page 2 of 2.

²² Consumer Advocate Work Paper, CA-12, Index of Work Papers, P. 12.

1 Q. Can Piedmont's MDT still be employed by the TRA given the
2 current over-earnings?

3 A. Conceptually, yes. The TRA can elect to use a test year,
4 an attrition year or a mixture of historical and forecasted
5 amounts in setting rates. If the theoretical arguments for
6 Piedmont's MDT are proved valid in this non-traditional rate
7 case proceeding before the TRA, then the MDT can be
8 employed. However, a decrease to the R factor must be set to
9 correlate actual current earnings as of the twelve months ended
10 September 2009 with the recommendations by Consumer
11 Advocate witness Dr. Chris Klein. Also, the HDD, the Heat
12 Sensitivity Factor and the Base Load Factor as calculated by
13 Consumer Advocate witness Dr. David Dismukes must be
14 employed to correlate actual current earnings with known
15 usage, weather, and customer data. If an updated benchmark
16 with just and reasonable earnings, weather, usage, and
17 customers were used, then a more just and reasonable
18 application by the TRA of Piedmont's MDT could more fairly
19 accommodate the ratepayers and the shareholders.
20

21 Q. Does this conclude your testimony?

22 A. Yes, it does.

Before the

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DOCKET NO. 09-00104

WORK PAPERS

DECEMBER 4, 2009

OFFICE OF THE ATTORNEY GENERAL – STATE OF TENNESSEE
TRA DOCKET #09-00104
PIEDMONT NATURAL GAS
INDEX OF WORK PAPERS

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Office of the Attorney General - State of Tennessee
 TRA Docket #09-00104
 Piedmont Natural Gas
 Comparison of 30 Year Actual Degree Days

CA-1

	12 Months Ended Sept 2009	A/ TRA Docket #03-00313	
	Normal Heating	Normal Heating	Percent
	<u>Degree Days</u>	<u>Degree Days</u>	<u>Difference</u>
January	790	842.3	
February	807.8	807.9	
March	499.6	513.3	
April	327.7	331.6	
May	109.2	114.1	
June	15.2	13.7	
July	0.1	0.2	
August	0.1	0	
September	0.7	1.8	
October	79.4	89.6	
November	311.9	318.6	
December	573.6	570.6	
Total	3515.3	3603.7	2.51%

	12 Months Ended Sept 2008	TRA Docket #03-00313	
	Normal Heating	Normal Heating	Percent
	<u>Degree Days</u>	<u>Degree Days</u>	<u>Difference</u>
January	796.4	842.3	
February	816.7	807.9	
March	501.5	513.3	
April	326.7	331.6	
May	110.2	114.1	
June	15.3	13.7	
July	0.1	0.2	
August	0.1	0	
September	0.8	1.8	
October	82.2	89.6	
November	307.7	318.6	
December	567.1	570.6	
Total	3524.8	3603.7	2.24%

A/ Piedmont Response to CA Discovery Request #4.

TRA Docket #09-00104

Piedmont Natural Gas

Regression Analysis Summary

Base Load and Sensitivity Factor Parameters Based upon Sept 2008 and 2009

	Sep-08		Sep-09	
	Res Standard	Res Value	Res Standard	Res Value
Base load	3.88823	18.96851	4.02783	20.27586
Heat Sensitivity	0.15621	0.20586	0.15669	0.20785

	NDD	NDD
Oct-08	82.2	79.4
Nov-08	307.7	311.9
Dec-08	567.1	573.6
Jan-09	796.4	790
Feb-09	816.7	807.8
Mar-09	501.5	499.6
Apr-09	326.7	327.7
May-09	110.2	109.2
Jun-09	15.3	15.2
Jul-09	0.1	0.1
Aug-09	0.1	0.1
Sep-09	0.8	0.7
	3524.80	3515.30

Source: Dr. David Dismukes

Office of the Attorney General - State of Tennessee

TRA Docket #09-00104

CA - 3

Piedmont Natural Gas

MDT Calculation Model

Residential Rate Schedule 301 - Value Rate

Piedmont Gas Docket 09-00104 Test Period for the twelve months ended September 2008

Line #		Oct-07	Nov-07	Dec-07	Jan-08	Feb-08	Mar-08	Apr-08	May-08	Jun-08	Jul-08	Aug-08	Sep-08	TOTAL
1	NORMAL DEGREE DAYS A/	89.6	318.6	570.6	842.3	807.9	513.3	331.6	114.1	13.7	0.2	0	1.8	
2	BASE LOAD FACTOR B/	23.08653	23.08653	23.08653	23.08653	23.08653	23.08653	23.08653	23.08653	23.08653	23.08653	23.08653	23.08653	
3	HEAT SENSITIVITY FACTOR B/	0.21337	0.21337	0.21337	0.21337	0.21337	0.21337	0.21337	0.21337	0.21337	0.21337	0.21337	0.21337	
4	USAGE IN HEATING DEGREE DAYS PER CUSTOMER (Line 1 X Line 3)÷Line 2	42	91	145	203	195	133	94	47	26	23	23	23	
5	NUMBER OF CUSTOMERS C/	64,051	57,833	58,528	58,860	59,169	59,328	59,425	59,349	59,372	59,326	59,342	59,332	
6	TOTAL NORMALIZED USAGE Line 4 X Line 5	2,695,684	5,267,807	8,491,624	11,953,673	11,543,075	7,895,758	5,591,092	2,794,538	1,548,809	1,369,631	1,370,001	1,369,770	
7	R FACTOR VALUE D/	0.27	0.32	0.32	0.32	0.32	0.32	0.27	0.27	0.27	0.27	0.27	0.27	
8	NORMALIZED MARGIN Line 6 X Line 7	727,835	1,685,698	2,717,320	3,825,175	3,693,784	2,526,643	1,509,595	754,525	418,178	369,800	369,900	369,838	\$18,968,292
9	NUMBER OF CUSTOMERS	64,051	57,833	58,528	58,860	59,169	59,328	59,425	59,349	59,372	59,326	59,342	59,332	
10	ACTUAL USAGE IN THERMS	1,349,030	3,310,695	6,744,380	9,925,710	10,947,860	8,722,270	4,984,120	2,667,690	1,633,630	1,264,960	1,185,860	1,222,850	
11	R FACTOR VALUE	0.27	0.32	0.32	0.32	0.32	0.32	0.27	0.27	0.27	0.27	0.27	0.27	
12	ACTUAL MARGIN Line 10 X Line 11	\$364,238	\$1,059,422	\$2,158,202	\$3,176,227	\$3,503,315	\$2,791,126	\$1,345,712	\$720,276	\$440,810	\$341,539	\$320,182	\$330,170	\$16,551,221
13	MARGIN DECOUPLING DEFERRED Amount Due Company (Customer)	363,597	626,276	559,119	648,949	190,470	(264,485)	163,883	34,249	(22,631)	28,262	49,718	39,667	2,417,075
14	ACTUAL WNA Amount E/		(85,408)	(\$240,443)	(\$556,772)	(\$34,582)	\$153,823							(763,382)
15	NET ADJUSTMENT Line 13 + Line 14	\$363,597	\$540,868	\$318,676	\$92,177	\$155,888	(110,662)	\$163,883	\$34,249	(22,631)	\$28,262	\$49,718	\$39,667	1,653,693

A/ Piedmont Response to Consumer Advocate Request #4.

B/TRA Docket #03-00313, Schedule III.

C/ Piedmont Response to Consumer Advocate Request #41.

D/ Piedmont tariffs rate schedule 301, effective 11/1/03.

E/ Piedmont Response to Consumer Advocate Request #9.

Office of the Attorney General - State of Tennessee

TRA Docket #09-00104

Piedmont Natural Gas

MDT Calculation Model

Residential Rate Schedule 321 - Standard Rate

Piedmont Gas Docket 09-00104 Test Period for the twelve months ended September 2008

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Line #		Oct-07	Nov-07	Dec-07	Jan-08	Feb-08	Mar-08	Apr-08	May-08	Jun-08	Jul-08	Aug-08	Sep-08	TOTAL
1	NORMAL DEGREE DAYS A/	89.6	318.6	570.6	842.3	807.9	513.3	331.6	114.1	13.7	0.2	0	1.8	
2	BASE LOAD FACTOR B/	3.91564	3.91564	3.91564	3.91564	3.91564	3.91564	3.91564	3.91564	3.91564	3.91564	3.91564	3.91564	
3	HEAT SENSITIVITY FACTOR B/	0.15957	0.15957	0.15957	0.15957	0.15957	0.15957	0.15957	0.15957	0.15957	0.15957	0.15957	0.15957	
4	USAGE IN HEATING DEGREE DAYS PER CUSTOMER	18	55	95	138	133	86	57	22	6	4	4	4	
5	NUMBER OF CUSTOMERS C/	78,854	86,432	87,972	88,556	88,823	88,843	88,523	87,876	87,240	86,474	85,755	85,254	
6	TOTAL NORMALIZED USAGE	1,412,720	4,746,469	8,349,919	12,213,257	11,805,966	7,633,003	5,038,343	1,925,859	516,080	338,601	335,786	333,824	
7	R FACTOR VALUE D/	0.27	0.32	0.32	0.32	0.32	0.32	0.27	0.27	0.27	0.27	0.27	0.27	
8	NORMALIZED MARGIN	\$381,434	\$1,518,870	\$2,671,974	\$3,908,242	\$3,777,909	\$2,442,561	\$1,360,353	\$519,982	\$139,342	\$91,422	\$90,662	\$90,132	\$16,992,883
9	NUMBER OF CUSTOMERS	78,854	86,432	87,972	88,556	88,823	88,843	88,523	87,876	87,240	86,474	85,755	85,254	
10	ACTUAL USAGE IN THERMS	464,962	2,847,539	6,879,738	10,453,824	11,356,050	8,982,618	4,903,576	1,952,709	732,757	477,331	456,749	462,702	
11	R FACTOR VALUE	0.27	0.32	0.32	0.32	0.32	0.32	0.27	0.27	0.27	0.27	0.27	0.27	
12	ACTUAL MARGIN	\$125,540	\$911,212	\$2,201,516	\$3,345,224	\$3,633,936	\$2,874,438	\$1,323,966	\$527,231	\$197,844	\$128,879	\$123,322	\$124,930	\$15,518,038
13	MARGIN DECOUPLING DEFERRED Amount Due Company (Customer)	\$255,894	\$607,658	\$470,459	\$563,018	\$143,973	(\$431,877)	\$36,387	(\$7,249)	(\$58,502)	(\$37,457)	(\$32,660)	(\$34,798)	\$1,474,845
14	ACTUAL WNA Amount E/		(\$95,427)	(\$257,949)	(\$611,082)	(\$79,666)	\$144,050							(900,074)
15	NET ADJUSTMENT		\$512,231	\$212,510	(\$48,064)	\$64,307	(\$287,827)	\$36,387	(\$7,249)	(\$58,502)	(\$37,457)	(\$32,660)	(\$34,798)	\$574,771

A/ Piedmont Response to Consumer Advocate Request #4.

B/ TRA Docket #03-00313, Schedule III.

C/ Piedmont Response to Consumer Advocate Request #41.

D/ Piedmont tariffs rate schedule 321, effective 11/1/03.

E/ Piedmont Response to Consumer Advocate Request #9.

Office of the Attorney General - State of Tennessee
TRA Docket #09-00104
Piedmont Natural Gas
MDT Calculation Model

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Residential Rate Schedule 301 - Value Rate
Piedmont Gas Docket 09-00104 Test Period for the twelve months ended September 2009

Line #		Oct-08	Nov-08	Dec-08	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	TOTAL
1	NORMAL DEGREE DAYS A/ (Line 1 X Line 3) = Line 2	89.6	318.6	570.6	842.3	807.9	513.3	331.6	114.1	13.7	0.2	0	1.8	
2	BASE LOAD FACTOR B/	23.08653	23.08653	23.08653	23.08653	23.08653	23.08653	23.08653	23.08653	23.08653	23.08653	23.08653	23.08653	
3	HEAT SENSITIVITY FACTOR B/	0.21337	0.21337	0.21337	0.21337	0.21337	0.21337	0.21337	0.21337	0.21337	0.21337	0.21337	0.21337	
4	USAGE IN HEATING DEGREE DAYS PER CUSTOMER	42	91	145	203	195	133	94	47	26	23	23	23	
5	NUMBER OF CUSTOMERS C/	59,472	53,447	53,929	54,107	54,248	54,242	54,160	54,025	53,908	53,888	53,896	53,948	
6	TOTAL NORMALIZED USAGE Line 4 X Line 5	2,502,970	4,868,302	7,824,371	10,988,403	10,583,054	7,218,880	5,095,726	2,543,850	1,406,273	1,244,087	1,244,272	1,245,472	
7	R FACTOR VALUE D/	0.27	0.32	0.32	0.32	0.32	0.32	0.27	0.27	0.27	0.27	0.27	0.27	
8	NORMALIZED MARGIN Line 6 X Line 7	\$675,802	\$1,557,857	\$2,503,799	\$3,516,289	\$3,386,577	\$2,310,042	\$1,375,846	\$686,840	\$379,694	\$335,903	\$335,953	\$336,277	\$17,400,879
9	NUMBER OF CUSTOMERS	59,472	53,447	53,929	54,107	54,248	54,242	54,160	54,025	53,908	53,888	53,896	53,948	
10	ACTUAL USAGE IN THERMS	1,418,937	3,600,435	8,669,648	10,197,009	10,850,577	7,698,184	4,250,914	2,406,380	1,480,625	1,244,556	1,202,605	1,181,708	
11	R FACTOR VALUE	0.27	0.32	0.32	0.32	0.32	0.32	0.27	0.27	0.27	0.27	0.27	0.27	
12	ACTUAL MARGIN Line 10 X Line 11	\$383,113	\$1,152,139	\$2,774,287	\$3,263,043	\$3,472,185	\$2,463,419	\$1,147,747	\$649,723	\$399,769	\$336,030	\$324,703	\$319,061	\$16,685,219
13	MARGIN DECOUPLING DEFERRED Amount Due Company (Customer)	\$297,689	\$405,718	-\$270,488	\$253,246	-\$85,608	-\$153,377	\$228,099	\$37,117	-\$20,075	-\$127	\$11,250	\$17,216	715,660
14	ACTUAL WNA Amount E/		\$141,023	\$492,837	(\$215,932)	\$143,592	(\$43,921)							517,599
15	NET ADJUSTMENT Line 13 + Line 14	292,689	546,741	222,349	37,314	57,984	(197,298)	228,099	37,117	(20,075)	(127)	11,250	17,216	1,233,259

A/ Piedmont Response to Consumer Advocate Request #4.

B/ TRA Docket #03-00313, Schedule III.

C/ Piedmont Response to Consumer Advocate Request #41.

D/ Piedmont tariffs rate schedule 301, effective 11/1/03.

E/ Piedmont Response to Consumer Advocate Request #9.

Office of the Attorney General - State of Tennessee

TRA Docket #09-00104

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Piedmont Natural Gas

MDT Calculation Model

Residential Rate Schedule 321 - Standard Rate

Piedmont Gas Docket 09-00104 Test Period for the twelve months ended September 2009

Line #		Oct-08	Nov-08	Dec-08	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	TOTAL
1	NORMAL DEGREE DAYS A/	89.6	318.6	570.6	842.3	807.9	513.3	331.6	114.1	13.7	0.2	0	1.8	
2	BASE LOAD FACTOR B/	3.91564	3.91564	3.91564	3.91564	3.91564	3.91564	3.91564	3.91564	3.91564	3.91564	3.91564	3.91564	
3	HEAT SENSITIVITY FACTOR B/	0.15957	0.15957	0.15957	0.15957	0.15957	0.15957	0.15957	0.15957	0.15957	0.15957	0.15957	0.15957	
4	USAGE IN HEATING DEGREE DAYS PER CUSTOMER	18	55	95	138	133	86	57	22	6	4	4	4	
5	NUMBER OF CUSTOMERS C/	85,206	92,263	93,643	94,229	94,391	94,200	93,611	92,678	91,819	91,283	90,943	90,783	
6	TOTAL NORMALIZED USAGE	1,526,520	5,066,682	8,888,185	12,995,653	12,546,040	8,093,253	5,327,930	2,031,098	543,168	357,431	356,100	355,474	
7	R FACTOR VALUE D/	0.27	0.32	0.32	0.32	0.32	0.32	0.27	0.27	0.27	0.27	0.27	0.27	
8	NORMALIZED MARGIN	\$412,160	\$1,621,338	\$2,844,219	\$4,158,609	\$4,014,733	\$2,589,841	\$1,438,541	\$548,396	\$146,655	\$96,506	\$96,147	\$95,978	\$18,063,123
9	NUMBER OF CUSTOMERS	85,206	92,263	93,643	94,229	94,391	94,200	93,611	92,678	91,819	91,283	90,943	90,783	
10	ACTUAL USAGE IN THERMS	621,319	3,752,660	10,213,859	12,488,477	13,005,059	9,051,156	4,558,239	2,003,590	709,885	556,407	528,925	510,829	
11	R FACTOR VALUE	0.27	0.32	0.32	0.32	0.32	0.32	0.27	0.27	0.27	0.27	0.27	0.27	
12	ACTUAL MARGIN	\$167,756	\$1,200,851	\$3,268,435	\$3,996,313	\$4,161,619	\$2,896,370	\$1,230,725	\$540,969	\$191,669	\$150,230	\$142,810	\$137,924	\$18,085,671
13	MARGIN DECOUPLING DEFERRED Amount Due Company (Customer)	244,404	420,487	(424,216)	162,296	(146,886)	(306,529)	207,816	7,427	(45,014)	(53,724)	(46,663)	(41,946)	(22,547)
14	ACTUAL WNA Amount E/	-	189,366	625,704	(243,403)	191,451	(86,871)							676,247
15	NET ADJUSTMENT	244,404	609,853	201,488	(81,107)	44,565	(393,400)	207,816	7,427	(45,014)	(53,724)	(46,663)	(41,946)	653,700

A/ Piedmont Response to Consumer Advocate Request #4.

B/ TRA Docket #03-00313, Schedule III.

C/ Piedmont Response to Consumer Advocate Request #41.

D/ Piedmont tariffs rate schedule 321, effective 11/1/03.

E/ Piedmont Response to Consumer Advocate Request #9.

Office of the Attorney General - State of Tennessee

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TRA Docket #09-00104

Piedmont Natural Gas

MDT Calculation Model - CA Components

Residential Rate Schedule 301 - Value Rate

Piedmont Gas Docket 09-00104 Test Period for the twelve months ended September 2008

Line #		Oct-07	Nov-07	Dec-07	Jan-08	Feb-08	Mar-08	Apr-08	May-08	Jun-08	Jul-08	Aug-08	Sep-08	TOTAL
1	NORMAL DEGREE DAYS A/	82.2	307.7	567.1	796.4	816.7	501.5	326.7	110.2	15.3	0.1	0.1	0.8	
2	BASE LOAD FACTOR A/	18.96851	18.96851	18.96851	18.96851	18.96851	18.96851	18.96851	18.96851	18.96851	18.96851	18.96851	18.96851	
3	HEAT SENSITIVITY FACTOR A/	0.20586	0.20586	0.20586	0.20586	0.20586	0.20586	0.20586	0.20586	0.20586	0.20586	0.20586	0.20586	
4	USAGE IN HEATING DEGREE DAYS PER CUSTOMER	36	82	136	183	187	122	86	42	22	19	19	19	
5	NUMBER OF CUSTOMERS B/	64,051	57,833	58,528	58,860	59,169	59,328	59,425	59,349	59,372	59,326	59,342	59,332	
6	TOTAL NORMALIZED USAGE	2,298,803	4,760,329	7,942,935	10,766,401	11,070,187	7,250,315	5,123,800	2,472,140	1,313,200	1,126,547	1,126,851	1,135,211	
7	R FACTOR VALUE C/	0.27	0.32	0.32	0.32	0.32	0.32	0.27	0.27	0.27	0.27	0.27	0.27	
8	NORMALIZED MARGIN	\$620,677	\$1,523,305	\$2,541,739	\$3,445,248	\$3,542,460	\$2,320,101	\$1,383,426	\$667,478	\$354,564	\$304,168	\$304,250	\$306,507	\$17,313,922
9	NUMBER OF CUSTOMERS	64,051	57,833	58,528	58,860	59,169	59,328	59,425	59,349	59,372	59,326	59,342	59,332	
10	ACTUAL USAGE IN THERMS B/	1,349,030	3,310,695	6,744,380	9,925,710	10,947,860	8,722,270	4,984,120	2,667,690	1,632,630	1,264,960	1,185,860	1,222,850	
11	R FACTOR VALUE	0.27	0.32	0.32	0.32	0.32	0.32	0.27	0.27	0.27	0.27	0.27	0.27	
12	ACTUAL MARGIN	\$364,238	\$1,059,422	\$2,158,202	\$3,176,227	\$3,503,315	\$2,791,126	\$1,345,712	\$720,276	\$440,810	\$341,539	\$320,182	\$330,170	\$16,551,221
13	MARGIN DECOUPLING DEFERRED Amount Due Company (Customer)	\$256,439	\$463,883	\$383,538	\$269,021	\$39,145	(\$471,026)	\$37,714	(\$52,799)	(\$86,246)	(\$37,371)	(\$15,932)	(\$23,663)	\$762,702
14	ACTUAL WNA Amount D/		(85,408)	(\$240,443)	(\$556,772)	(\$34,582)	\$153,823							(\$763,382)
15	NET ADJUSTMENT	\$256,439	\$378,475	\$143,095	(\$287,751)	\$4,563	(\$317,203)	\$37,714	(\$52,799)	(\$86,246)	(\$37,371)	(\$15,932)	(\$23,663)	(\$680)

A/ Consumer Advocate Regression Analysis

B/ Piedmont Response to Consumer Advocate Request #41.

C/ Piedmont tariffs rate schedule 301, effective 11/1/03.

D/ Piedmont Response to Consumer Advocate Request #9.

Office of the Attorney General - State of Tennessee

TRA Docket #09-00104

Piedmont Natural Gas

MDT Calculation Model - CA Components

Residential Rate Schedule 321 - Standard Rate

Piedmont Gas Docket 09-00104 Test Period for the twelve months ended September 2008

Line #		Oct-07	Nov-07	Dec-07	Jan-08	Feb-08	Mar-08	Apr-08	May-08	Jun-08	Jul-08	Aug-08	Sep-08	TOTAL
1	NORMAL DEGREE DAYS A/ (Line 1 X Line 3)+Line 2	82.2	307.7	567.1	796.4	816.7	501.5	326.7	110.2	15.3	0.1	0.1	0.8	
2	BASE LOAD FACTOR A/	3.88823	3.88823	3.88823	3.88823	3.88823	3.88823	3.88823	3.88823	3.88823	3.88823	3.88823	3.88823	
3	HEAT SENSITIVITY FACTOR A/	0.15621	0.15621	0.15621	0.15621	0.15621	0.15621	0.15621	0.15621	0.15621	0.15621	0.15621	0.15621	
4	USAGE IN HEATING DEGREE DAYS PER CUSTOMER	17	52	92	128	131	82	55	21	6	4	4	4	
5	NUMBER OF CUSTOMERS B/	78,854	86,432	87,972	88,556	88,823	88,843	88,523	87,876	87,240	86,474	85,755	85,254	
6	TOTAL NORMALIZED USAGE	1,319,124	4,490,492	8,135,204	11,361,192	11,677,110	7,305,342	4,861,863	1,854,410	547,714	337,582	334,775	342,141	
7	R FACTOR VALUE C/	0.27	0.32	0.32	0.32	0.32	0.32	0.27	0.27	0.27	0.27	0.27	0.27	
8	NORMALIZED MARGIN	\$356,164	\$1,436,958	\$2,603,265	\$3,635,582	\$3,736,675	\$2,337,709	\$1,312,703	\$500,691	\$147,883	\$91,147	\$90,389	\$91,378	\$16,341,543
9	NUMBER OF CUSTOMERS	78,854	86,432	87,972	88,556	88,823	88,843	88,523	87,876	87,240	86,474	85,755	85,254	
10	ACTUAL USAGE IN THERMS B/	464,962	2,847,539	6,879,738	10,453,824	11,356,050	8,982,618	4,903,576	1,952,709	732,757	477,331	456,749	462,702	
11	R FACTOR VALUE	0.27	0.32	0.32	0.32	0.32	0.32	0.27	0.27	0.27	0.27	0.27	0.27	
12	ACTUAL MARGIN	\$125,540	\$911,212	\$2,201,516	\$3,345,224	\$3,633,936	\$2,874,438	\$1,323,966	\$527,231	\$197,844	\$128,879	\$123,322	\$124,930	\$15,518,038
13	MARGIN DECOUPLING DEFERRED Amount Due Company (Customer)	\$230,624	\$525,745	\$401,749	\$290,358	\$102,739	-\$536,728	-\$11,262	-\$26,541	-\$49,962	-\$37,732	-\$32,933	-\$32,551	\$823,505
14	ACTUAL WNA Amount D/		(\$95,427)	(\$257,949)	(\$611,082)	(\$79,666)	\$144,050							(900,074)
15	NET ADJUSTMENT	\$230,624	\$430,318	\$143,800	(320,724)	\$23,073	(392,678)	(11,262)	(26,541)	(49,962)	(37,732)	(32,933)	(32,551)	(76,569)

A/ Consumer Advocate Regression Analysis

B/ Piedmont Response to Consumer Advocate Request #41.

C/ Piedmont tariffs rate schedule 321, effective 11/1/03.

D/ Piedmont Response to Consumer Advocate Request #9.

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Piedmont Natural Gas

MDT Calculation Model - CA Components

Residential Rate Schedule 301 - Value Rate

Piedmont Gas Docket 09-00104 Test Period for the twelve months ended September 2009

Line #		Oct-08	Nov-08	Dec-08	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	TOTAL
1	NORMAL DEGREE DAYS A/	79.4	311.9	573.6	790	807.8	499.6	327.7	109.2	15.2	0.1	0.1	0.7	
2	BASE LOAD FACTOR A/	20.27586	20.27586	20.27586	20.27586	20.27586	20.27586	20.27586	20.27586	20.27586	20.27586	20.27586	20.27586	
3	HEAT SENSITIVITY FACTOR A/	0.20785	0.20785	0.20785	0.20785	0.20785	0.20785	0.20785	0.20785	0.20785	0.20785	0.20785	0.20785	
4	USAGE IN HEATING DEGREE DAYS PER CUSTOMER (Line 1 X Line 3) ÷ Line 2	37	85	139	184	188	124	88	43	23	20	20	20	
5	NUMBER OF CUSTOMERS B/	59,472	53,447	53,929	54,107	54,248	54,242	54,160	54,025	53,908	53,888	53,896	53,948	
6	TOTAL NORMALIZED USAGE Line 4 X Line 5	2,187,330	4,548,568	7,523,021	9,981,517	10,208,231	6,732,393	4,787,111	2,321,621	1,263,344	1,093,746	1,093,908	1,101,691	
7	R FACTOR VALUE C/	0.27	0.32	0.32	0.32	0.32	0.32	0.27	0.27	0.27	0.27	0.27	0.27	
8	NORMALIZED MARGIN Line 6 X Line 7	\$590,579	\$1,455,542	\$2,407,367	\$3,194,085	\$3,266,634	\$2,154,366	\$1,292,520	\$626,838	\$341,103	\$295,311	\$295,355	\$297,457	\$16,217,156
9	NUMBER OF CUSTOMERS	59,472	53,447	53,929	54,107	54,248	54,242	54,160	54,025	53,908	53,888	53,896	53,948	
10	ACTUAL USAGE IN THERMS B/	1,418,937	3,600,435	8,669,648	10,197,009	10,850,577	7,698,184	4,250,914	2,406,380	1,480,625	1,244,556	1,202,605	1,181,708	
11	R FACTOR VALUE	0.27	0.32	0.32	0.32	0.32	0.32	0.27	0.27	0.27	0.27	0.27	0.27	
12	ACTUAL MARGIN Line 10 X Line 11	\$383,113	\$1,152,139	\$2,774,287	\$3,263,043	\$3,472,185	\$2,463,419	\$1,147,747	\$649,723	\$399,769	\$336,030	\$324,703	\$319,061	\$16,685,219
13	MARGIN DECOUPLING DEFERRED Amount Due Company (Customer)	\$207,466	\$303,403	(\$366,921)	(\$68,958)	(\$205,551)	(\$309,053)	\$144,773	(\$22,885)	(\$58,666)	(\$40,719)	(\$29,348)	(\$21,605)	(468,063)
14	ACTUAL WNA Amount D/		\$141,023	\$492,837	(\$215,932)	\$143,592	(\$43,921)							\$517,599
15	NET ADJUSTMENT Line 13 + Line 14	\$207,466	\$444,426	\$125,916	(\$284,890)	(\$61,959)	(\$352,974)	\$144,773	(\$22,885)	(\$58,666)	(\$40,719)	(\$29,348)	(\$21,605)	\$49,536

A/ Consumer Advocate Regression Analysis

B/ Piedmont Response to Consumer Advocate Request #41.

C/ Piedmont tariffs rate schedule 301, effective 11/1/03.

D/ Piedmont Response to Consumer Advocate Request #9.

Office of the Attorney General - State of Tennessee

TRA Docket #09-00104

CA - 10

Piedmont Natural Gas

MDT Calculation Model - CA Components

Residential Rate Schedule 321 - Standard Rate

Piedmont Gas Docket 09-00104 Test Period for the twelve months ended September 2009

Line #		Oct-08	Nov-08	Dec-08	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	TOTAL
1	NORMAL DEGREE DAYS A/	794	311.9	573.6	790	807.8	499.6	327.7	109.2	15.2	0.1	0.1	0.7	
2	BASE LOAD FACTOR A/	4.02783	4.02783	4.02783	4.02783	4.02783	4.02783	4.02783	4.02783	4.02783	4.02783	4.02783	4.02783	
3	HEAT SENSITIVITY FACTOR A/	0.15669	0.15669	0.15669	0.15669	0.15669	0.15669	0.15669	0.15669	0.15669	0.15669	0.15669	0.15669	
4	USAGE IN HEATING DEGREE DAYS PER CUSTOMER	16	53	94	128	131	82	55	21	6	4	4	4	
5	NUMBER OF CUSTOMERS B/	85,206	92,263	93,643	94,229	94,391	94,200	93,611	92,678	91,819	91,283	90,943	90,783	
6	TOTAL NORMALIZED USAGE	1,403,259	4,880,661	8,793,566	12,043,685	12,327,655	7,753,617	5,183,723	1,959,063	588,516	369,103	367,728	375,616	
7	R FACTOR VALUE C/	0.27	0.32	0.32	0.32	0.32	0.32	0.27	0.27	0.27	0.27	0.27	0.27	
8	NORMALIZED MARGIN	\$378,380	\$1,561,812	\$2,813,941	\$3,853,979	\$3,944,849	\$2,481,157	\$1,399,605	\$528,947	\$158,899	\$99,658	\$99,287	\$101,416	\$17,422,430
9	NUMBER OF CUSTOMERS	85,206	92,263	93,643	94,229	94,391	94,200	93,611	92,678	91,819	91,283	90,943	90,783	
10	ACTUAL USAGE IN THERMS B/	621,319	3,752,660	10,213,859	12,488,477	13,005,059	9,051,156	4,558,239	2,003,590	709,885	556,407	528,925	510,829	
11	R FACTOR VALUE	0.27	0.32	0.32	0.32	0.32	0.32	0.27	0.27	0.27	0.27	0.27	0.27	
12	ACTUAL MARGIN	\$167,756	\$1,200,851	\$3,268,435	\$3,996,313	\$4,161,619	\$2,896,370	\$1,230,725	\$540,969	\$191,669	\$150,230	\$142,810	\$137,924	\$18,085,670
13	MARGIN DECOUPLING DEFERRED Amount Due Company (Customer)	\$211,124	\$360,960	(\$454,494)	(\$142,334)	(\$216,769)	(\$415,213)	\$168,881	(\$12,022)	(\$32,770)	(\$50,572)	(\$43,523)	(\$36,508)	(663,240)
14	ACTUAL WNA Amount D/		189,366	625,704	(243,403)	191,451	(86,871)							676,247
15	NET ADJUSTMENT	\$211,124	\$550,326	\$171,210	(\$385,737)	(\$25,318)	(\$502,084)	\$168,881	(\$12,022)	(\$32,770)	(\$50,572)	(\$43,523)	(\$36,508)	13,007

A/ Consumer Advocate Regression Analysis

B/ Piedmont Response to Consumer Advocate Request #41.

C/ Piedmont tariffs rate schedule 321, effective 11/1/03.

D/ Piedmont Response to Consumer Advocate Request #9.

Office of the Attorney General - State of Tennessee
 TRA Docket #09-00104
 Piedmont Natural Gas
 MDT Calculation Model
 Summary

CA-11

	<u>Consumer Advocate</u>	<u>Piedmont</u>	<u>Difference</u>
<u>Sep-08</u>			
Rate Schedule 301	\$ (680) A/	\$ 1,653,693 E/	\$(1,654,373)
Rate Schedule 321	(76,569) B/	574,771 F/	(651,340)
Total	\$ (77,249)	\$ 2,228,464	\$(2,305,713)

<u>Sep-09</u>			
Rate Schedule 301	\$ 49,536 C/	\$ 1,233,259 G/	\$(1,183,723)
Rate Schedule 321	13,007 D/	653,700 H/	(640,693)
Total	\$ 62,543	\$ 1,886,959	\$(1,824,416)

A/ Consumer Advocate Work Paper CA-7
 B/ Consumer Advocate Work Paper CA-8
 C/ Consumer Advocate Work Paper CA-9
 D/ Consumer Advocate Work Paper CA-10

E/ Consumer Advocate Work Paper CA-3
 F/ Consumer Advocate Work Paper CA-4
 G/ Consumer Advocate Work Paper CA-5
 H/ Consumer Advocate Work Paper CA-6

**Office of the Attorney General - State of Tennessee
TRA Docket #09-00104
Piedmont Natural Gas
Revenue Requirement Reduction**

CA-12

Reported Rate of Return	8.54% A/	7.47% D/
Recommended Rate of Return	7.27% B/	7.27% B/
Excess Return	1.27%	0.20%
September 2009 12 MTD Rate Base	\$ 268,398,127	\$268,398,127
Excess NOI	\$ 3,408,656	\$ 536,796
Gross Revenue Conversion Factor	1.640709 C/	1.640709 C/
Revenue Requirement Reduction	\$ 5,592,613	\$ 880,726

A/ Piedmont September 2009 3.03 Surveillance Report, Excluding Prior Period Adjustments.

B/ Mid-year 2009 Capital Structure and Cost Rates with 50 basis point risk reduction.

C/ TRA Docket #03-00313, Settlement Agreement page 3, 8(e).

D/ Piedmont September 2009 3.03 Surveillance Report, Including Prior Period Adjustments.