

Exhibit No.:  
Witness: Maurice Brubaker  
Type of Exhibit: Surrebuttal Testimony  
Issue: Cost of Service and Rate  
Design, Fuel Costs  
Sponsoring Party: Federal Executive Agencies  
Sedalia Industrial Energy  
Users' Association  
St. Joe Industrial Group  
Case No.: ER-2005-0436

**Before the Public Service Commission  
of the State of Missouri**

In the Matter of the Tariff Filing of Aquila, Inc., )  
to Implement a General Rate Increase for )  
Retail Electric Service Provided to Customers ) Case No. ER-2005-0436  
in its MPS and L&P Missouri Service Areas. )

Surrebuttal Testimony of

**Maurice Brubaker**

On behalf of

**Federal Executive Agencies  
Sedalia Industrial Energy Users' Association  
St. Joe Industrial Group**

Project 8415  
December 13, 2005

**PUBLIC  
VERSION**

  
**BRUBAKER & ASSOCIATES, INC.**  
ST. LOUIS, MO 63141-2000

**Before the Public Service Commission  
of the State of Missouri**

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STATE OF MISSOURI	)	
	)	SS
COUNTY OF ST. LOUIS	)	

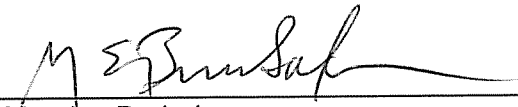
**Affidavit of Maurice Brubaker**

Maurice Brubaker, being first duly sworn, on his oath states:

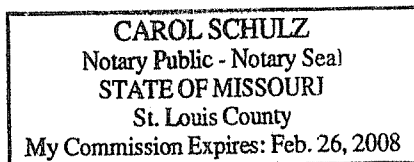
1. My name is Maurice Brubaker. I am a consultant with Brubaker & Associates, Inc., having its principal place of business at 1215 Fern Ridge Parkway, Suite 208, St. Louis, Missouri 63141-2000. We have been retained by the Federal Executive Agencies, the Sedalia Industrial Energy Users' Association and the St. Joe Industrial Group in this proceeding on their behalf.

2. Attached hereto and made a part hereof for all purposes is my surrebuttal testimony and schedules which were prepared in written form for introduction into evidence in Missouri Public Service Commission Case No. ER-2005-0436.

3. I hereby swear and affirm that the testimony and schedules are true and correct and that they show the matters and things they purport to show.

  
\_\_\_\_\_  
Maurice Brubaker

Subscribed and sworn to before this 12<sup>th</sup> day of December 2005.



  
\_\_\_\_\_  
Notary Public

My Commission Expires February 26, 2008.

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**Surrebuttal Testimony of Maurice Brubaker**

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

2    A     Maurice Brubaker. My business address is 1215 Fern Ridge Parkway, Suite 208,  
3           St. Louis, Missouri 63141-2000.

4    **Q     ARE YOU THE SAME MAURICE BRUBAKER THAT HAS PREVIOUSLY FILED**  
5           **TESTIMONY IN THIS PROCEEDING?**

6    A     Yes. I have previously filed direct testimony on revenue requirement issues, direct  
7           testimony on cost of service and rate design issues and rebuttal testimony on cost of  
8           service and rate design issues.

9    **Q     WHAT IS THE SUBJECT OF YOUR SURREBUTTAL TESTIMONY?**

10   A     This surrebuttal testimony provides an update to the class revenue allocation and rate  
11           design material included in my cost of service and rate design direct testimony,  
12           provides a response to the rebuttal testimony offered by Staff witness James Watkins  
13           and OPC witness Barbara Meisenheimer with respect to class revenue allocation,  
14           and provides an update of fuel prices as well as a response to the fuel cost recovery  
15           mechanism testimony of Staff witness Cary Featherstone and Aquila witness Dennis  
16           Williams.

**Maurice Brubaker  
Page 1**

1 **Summary**

2 **Q PLEASE SUMMARIZE YOUR SURREBUTTAL TESTIMONY AND**  
3 **RECOMMENDATIONS.**

4 **A** My testimony and recommendations may be summarized as follows:

5 1. The first section of my testimony provides an update of that portion of my direct  
6 testimony on cost of service and rate design that discussed how any increase  
7 granted in this case should be allocated among customer classes. The update is  
8 occasioned by the revisions and updates contained in Staff witness Jan Pyatte's  
9 rebuttal testimony. I have not changed any methodology, but simply have  
10 updated the numbers to conform to Staff's latest sales and revenues. To avoid  
11 having parties go back and read my direct testimony in connection with  
12 surrebuttal schedules, I have essentially repeated the essential features of that  
13 discussion in this surrebuttal testimony.

14 2. I provide a response to Staff witness James Watkins who addressed only a  
15 portion of the interclass revenue allocation recommendation contained in my  
16 direct testimony, and point out the incompleteness of his response.

17 3. I respond to OPC witness Barbara Meisenheimer with respect to revenue  
18 allocation. I note that she, like Mr. Watkins, talked only about a portion of my  
19 recommendation.

20 With respect to fuel cost recovery levels and recovery mechanisms, my testimony is  
21 the following:

22 a. I continue to support the development of an interim energy charge (IEC).

23 b. I provide an update of NYMEX gas futures' prices.

24 c. I provide an analysis of the "basis differential" between NYMEX prices and the  
25 market area prices where Aquila typically acquires physical quantities of gas.

26 d. I analyze Aquila's hedge program, reporting on the quantities and prices of its  
27 NYMEX fixed for floating swaps and also its call option contracts.

28 e. I provide a rebuttal to Mr. Williams' proposals for base and IEC levels for natural  
29 gas and purchased power, and recommend alternative levels for inclusion in an  
30 IEC.

31 f. I also refute Mr. Williams' proposal to defer all costs above the IEC level for future  
32 cost recovery.

1    **Update of Class Revenue Allocation**

2    **Q     IN YOUR DIRECT TESTIMONY, DID YOU PROVIDE RECOMMENDATIONS AND**  
3       **AN ILLUSTRATION OF THE ALLOCATION OF ANY REVENUE INCREASE**  
4       **AMONG CUSTOMER CLASSES?**

5    A     Yes. That was contained in my direct testimony on cost of service and rate design  
6       that was filed on October 28, 2005. As part of that testimony, I included Schedules 1,  
7       2 and 3 which were based upon class revenues and kilowatthour sales as presented  
8       by Staff witness Janice Pyatte in her direct testimony.

9    **Q     HAS MS. PYATTE UPDATED AND REVISED CLASS REVENUES AND**  
10       **KILOWATTHOUR SALES?**

11   A     Yes. In her rebuttal testimony, she presents certain revisions and updates to this  
12       information.

13   **Q     HAVE YOU PREPARED ADDITIONAL SCHEDULES BASED ON MS. PYATTE'S**  
14       **REVISED AND UPDATED CLASS REVENUES AND KILOWATTHOUR SALES**  
15       **INFORMATION?**

16   A     Yes. Schedules 1SR, 2SR and 3SR are attached to this surrebuttal testimony and  
17       provide an update of the illustration of my recommended interclass revenue allocation  
18       based on Ms. Pyatte's revised and updated class information.

19   **Q     ARE THERE ANY OTHER CHANGES TO THESE ILLUSTRATIONS AND**  
20       **RECOMMENDATIONS?**

21   A     No, there are not.

1    **Q     FOR THE CONVENIENCE OF THE PARTIES, WOULD YOU NOW EXPLAIN HOW**  
2           **ANY REVENUE INCREASE GRANTED IN THIS CASE SHOULD BE REFLECTED**  
3           **IN CLASS REVENUES, USING THIS UPDATED AND REVISED INFORMATION?**

4    A     The revenue increase granted should be applied as an equal percentage increase to  
5           the revenues of all customer classes, after the interclass revenue shifts from Case  
6           No. EO-2002-384 have been reflected.

7    **Q     WHY DO YOU RECOMMEND ALLOCATING THE INCREASE IN THIS FASHION?**

8    A     An across-the-board or equal percent increase preserves the rate relationships that  
9           exists after implementing the interclass revenue shifts that are derived from  
10          consideration of class cost of service studies in Case No. EO-2002-384. In the  
11          absence of new class cost of service studies, it is appropriate to preserve these  
12          relationships as there is no evidence that any other relationship would be more  
13          appropriate. Accordingly, allocation on an equal percentage basis of any increase  
14          that may be awarded in this case will preserve the results of the interclass revenue  
15          adjustments that are found appropriate in the cost of service case.

16   **Q     WOULD THE SAME APPROACH BE APPROPRIATE IF PART OF THE INCREASE**  
17          **IS IN THE FORM OF AN INTERIM ENERGY CHARGE (IEC)?**

18   A     Yes. Allocation on any other basis would alter the interclass revenue adjustments  
19          found appropriate in the cost of service case. Accordingly, only the equal percent  
20          across-the-board approach will preserve these relationships that have been found  
21          appropriate after reviewing the cost of service evidence.

1    **Q     HAVE YOU PREPARED AN EXAMPLE TO ILLUSTRATE THE APPLICATION OF**  
2    **AN EQUAL PERCENT INCREASE?**

3    A     Yes. Please see Schedule 1SR. Page 1 of Schedule 1SR is for L&P and page 2 of  
4     Schedule 1SR is for MPS. In the first column, I show base rate revenues at current  
5     rates. For purposes of illustration, I am going to use these revenues as a basis for  
6     the allocation of any revenue increase because I do not know what inter-class  
7     revenue shifts the Commission may order in Case No. EO-2002-384. After the  
8     Commission has decided on the revenue shifts from that case, they should be  
9     factored in before applying the revenue increase.

10   **Q     PLEASE CONTINUE WITH YOUR EXPLANATION.**

11   A     Let's assume that for L&P, base rates are increased by \$3 million and an amount  
12     equal to \$1 million is placed in an IEC. The schedule shows the allocation of the  
13     base revenue increase and the IEC amount. The IEC amount can be collected as an  
14     equal percentage for each customer group, or could be converted into a per kWh  
15     surcharge for each class by dividing the dollar amount allocated by class kWh sales.

16           Page 2 of Schedule 1SR presents an example for MPS assuming a base  
17     revenue increase of \$10 million and an IEC amount of \$5 million.

18   **Q     WOULD IT BE POSSIBLE TO SEPARATELY TRACK AND REFLECT INCREASES**  
19   **IN FUEL AND VARIABLE PURCHASE POWER COSTS?**

20   A     Yes. When the current IEC was developed, the amount of fuel and variable  
21     purchased power costs (hereafter referred to as fuel-related) in base rates was  
22     specifically identified and stipulated. Accordingly, we know how much fuel-related  
23     cost recovery is built into the current tariffs. It would therefore be possible to adjust

1 this fuel-related cost recovery, by rate schedule, to reflect any changes in the amount  
2 of fuel-related costs to be included in base rates, as well as any amount that might be  
3 associated with a new IEC.

4 **Q IF CHANGES IN THE FUEL-RELATED COMPONENT ARE SEPARATELY**  
5 **IDENTIFIED AND REFLECTED IN RATE CHANGES, HOW SHOULD CHANGES IN**  
6 **THE NON-FUEL COMPONENT BE REFLECTED IN RATES?**

7 A The appropriate way to reflect in rates these changes in non-fuel costs would be to  
8 apportion them as an equal percentage of the non-fuel portion of base revenues after  
9 first adjusting for any interclass revenue shifts from Case No. EO-2002-384.

10 **Q HAVE YOU PREPARED A SCHEDULE TO SHOW THE DERIVATION OF THE**  
11 **FUEL AND THE NON-FUEL REVENUES BY RATE GROUP?**

12 A Yes. This is shown on Schedule 2SR.

13 **Q WHAT IS THE SOURCE OF THE FUEL-RELATED COSTS INCLUDED IN BASE**  
14 **RATES?**

15 A The source of the fuel-related costs per kWh included in base rates is Appendix A to  
16 the Stipulation and Agreement in Case No. ER-2004-0034, the previous rate case for  
17 Aquila, Inc. in which the current IEC was established. (This is provided in Schedule 2  
18 of Mr. Featherstone's direct testimony on revenue requirements in this case.)



1    **Q     PLEASE EXPLAIN HOW THE FUEL-RELATED AND NON-FUEL REVENUES ARE**  
2    **DEVELOPED.**

3    A     The fuel revenues are developed by multiplying the class energy sales in column 2 of  
4     Schedule 2SR times the amount per kWh included in permanent rates. The non-fuel  
5     revenue, shown in column 4, is derived by subtracting the fuel-related revenue from  
6     the total permanent base rate revenue shown in column 1.

7    **Q     IS THIS DISTINCTION BETWEEN FUEL-RELATED AND NON-FUEL REVENUES**  
8    **IMPORTANT?**

9    A     Yes, it is important if there is a desire to reflect the impact of change in fuel-related  
10    cost recovery on a per kWh basis.

11   **Q     PLEASE EXPLAIN.**

12   A     If fuel-related costs are to be passed through on a kWh basis, then the tracking of  
13    changes in non-fuel costs should be related to the level of non-fuel revenue in each  
14    class. In other words, if increases in fuel cost are to be reflected in customer rates by  
15    increasing the amount per kWh, then any increases in the level of non-fuel costs  
16    should be allocated as a uniform percentage applied to the non-fuel revenues in each  
17    customer class. Since total revenues include both fuel-related and non-fuel  
18    revenues, allocating increases in non-fuel costs on total revenues would distort rate  
19    relationships.

20   **Q     CAN YOU ILLUSTRATE?**

21   A     Please refer to columns 5 through 7 on Schedule 2SR. Focusing first on page 1,  
22    which pertains to L&P Electric, note that the residential class accounts for 45% of the

1 non-fuel revenues, but only 37% of the fuel-related revenues. In contrast, the large  
2 power class accounts for 24% of non-fuel revenues but 37% of the fuel-related.

3 The differences are even larger in the case of MPS as shown on page 2 of  
4 Schedule 2SR. The MPS residential class constitutes 56% of non-fuel revenues but  
5 only 46% of the fuel-related revenues. The large power class represents 13% of non-  
6 fuel revenues but 23% of the fuel-related revenues.

7 The difference in impact between allocating increases in non-fuel costs on  
8 current non-fuel revenues as compared to total permanent revenues is appreciated  
9 by comparing columns 5 and 7. For the MPS large power class, allocation of  
10 increases in non-fuel costs on total revenues would assign to them 16% of the total,  
11 whereas they are responsible only for 13% of the non-fuel revenues. Therefore, if the  
12 above average proportion of fuel-related cost recovery associated with the large  
13 power class is to be recognized by assigning increases in fuel cost on a per kWh  
14 basis, it is imperative that the approach be applied consistently and changes in  
15 non-fuel costs be applied on the basis of existing non-fuel revenues and not on the  
16 total revenues which include both fuel and non-fuel revenues.

17 **Q HAVE YOU PREPARED AN ILLUSTRATION OF THIS APPROACH?**

18 **A** Yes. This is shown on Schedule 3SR. Column 1 shows the allocation of additional  
19 fuel-related costs that are to be included in base rates. The allocation is on the basis  
20 of current responsibility for fuel-related costs, which is equivalent to a per kWh  
21 allocation. Column 2 shows the allocation of additional non-fuel costs in base rates  
22 and is accomplished by increasing the existing non-fuel revenues of each class by an  
23 equal percent. Column 3 shows new base rates, which are equal to current base  
24 rates plus the two components of the increase shown in columns 1 and 2. Column 4

1 shows the allocation of an amount of fuel in an IEC allocated based on kWh sales.

2 Finally, column 5 shows the sum of the new base rates and the IEC.

3 **Response to Staff Witness James Watkins**

4 **Q DID MR. WATKINS RESPOND TO YOUR INTERCLASS REVENUE ALLOCATION**  
5 **RECOMMENDATIONS?**

6 A Yes, but only in part. I should also note that my clients have pending a motion to  
7 strike portions of Mr. Watkins' testimony on this issue, as we believe this issue was  
8 determined by the Commission to be litigated, briefed and decided in the EO-2002-  
9 0384 Class Cost of Service case. Any response that I make here is without prejudice  
10 to that motion. Further, should that motion be denied, we expect to request additional  
11 time from the Commission to make a more detailed response to Mr. Watkins'  
12 testimony on these issues.

13 **Q PLEASE EXPLAIN THE INITIAL PART OF YOUR RESPONSE.**

14 A As noted above, I offered two alternatives for interclass revenue allocation. The first  
15 was an equal percentage approach, implemented by applying an equal percent to  
16 existing rates in order to recover any increases in base revenues, and also allocating  
17 any IEC amount as an equal percentage. This was designed to maintain the rate  
18 relationships found appropriate at this point in time in the class cost of service case.

19 The alternative recommendation was to allocate any increases in non-fuel  
20 revenues as an equal percentage of non-fuel revenues in the event that it was  
21 decided to allocate any increase in fuel cost revenues on a per kWh basis.

1           Mr. Watkins only addressed the portion of my testimony with respect to the  
2           equal percentage allocation of the fuel cost component of an IEC under the first  
3           alternative.

4   **Q     DOES MR. WATKINS ADDRESS HOW TO ALLOCATE ANY INCREASES IN NON-**  
5   **FUEL REVENUE?**

6   A     No, he does not.

7   **Q     DO YOU HAVE ANY OTHER COMMENTS CONCERNING MR. WATKINS'**  
8   **TESTIMONY?**

9   A     Yes. Mr. Watkins' direct testimony is the subject of a pending motion to strike, so an  
10         additional response may be required if the motion is not granted.

11   **Response to OPC Witness Barbara Meisenheimer**

12   **Q     HAVE YOU REVIEWED THE REBUTTAL TESTIMONY OF OPC WITNESS**  
13   **BARBARA MEISENHEIMER?**

14   A     Yes, I have. She provides what she calls a "updated" class cost of service study and  
15         also responds to some of my revenue allocation recommendations.

16   **Q     PLEASE ADDRESS MS. MEISENHEIMER'S "UPDATED" COST OF SERVICE**  
17   **STUDY.**

18   A     As I discussed in connection with Mr. Watkins' testimony, this testimony of Ms.  
19         Meisenheimer is subject to a motion to strike, so I will only briefly address it here.  
20         However, in the event that the motion to strike is not granted, I reserve the right to file  
21         a more detailed response.

1   **Q     IN THAT CONTEXT, PLEASE ADDRESS MS. MEISENHEIMER’S “UPDATED”**  
2   **COST OF SERVICE STUDY.**

3   A     It is difficult to characterize her study as a “updated” cost of service study since it is  
4         actually a revised and corrected version of the study which she filed in the cost of  
5         service case, EO-2002-384. Thus, I find that it is of no value in this proceeding.

6   **Q     DOES MS. MEISENHEIMER ADDRESS YOUR ALLOCATION OF ANY REVENUE**  
7   **INCREASE?**

8   A     Only very partially. She, like Mr. Watkins, just talks about the allocation of fuel cost.  
9         She does not address my recommendation with respect to the two alternatives, nor  
10        does she address how to allocate any increase in non-fuel revenues if fuel-related  
11        costs are allocated on a per kWh basis.

12                 Finally, on page 8 of her rebuttal testimony, she refers to page 3 of her  
13         schedules and states:

14                         “It appears that allocating the IEC related costs on class cost of service  
15                         creates an allocation of these costs that is approximately six percent  
16                         higher than if the incremental costs were based on energy. “

17         There are two problems with this. First, the overall increase will not be different  
18         irrespective of how it is spread, and she does not state to what class or group of  
19         customers the 6% applies. . .thus, her statement has no meaning. Second, page 3 of  
20         her schedules illustrates only one set of allocations, not two, so the comparison that  
21         she claims exists on Schedule 3 is simply not there. Nothing meaningful can be  
22         concluded from this portion of her testimony or the schedules.

1    **Fuel Cost Levels and Recovery Mechanisms**

2    **Q     HAVE YOU REVIEWED THE TESTIMONY OF STAFF WITNESS CARY**  
3       **FEATHERSTONE AND AQUILA WITNESS DENNIS WILLIAMS WITH RESPECT**  
4       **TO FUEL AND PURCHASED POWER COST RECOVERY?**

5    A     Yes, I have. Both witnesses are supportive of an Interim Energy Charge (IEC) which  
6       would, similar to IECs that have been operative in the past, include a specified  
7       amount of fuel and variable purchased power cost in Aquila's base rates, and an  
8       additional amount in the form of a refundable surcharge.

9    **Q     IN YOUR EARLIER TESTIMONY, YOU SUPPORTED AN IEC MECHANISM AS**  
10       **WELL. DO YOU CONTINUE TO SUPPORT THAT APPROACH?**

11   A     Yes, I do. The natural gas market continues to be characterized by volatility and an  
12       elevated (at least by historic standards) price level. Attempting to lock into the rates  
13       an accurate level for fuel and variable purchased power cost recovery is challenging,  
14       and under present circumstances an IEC cost recovery mechanism is a useful  
15       approach. While I will discuss this concept, I understand that there is a question  
16       about the legality of an IEC mechanism.

17   **Q     HAVE YOU UPDATED THE NYMEX GAS FUTURES PRICES THAT YOU**  
18       **INCLUDED WITH YOUR DIRECT TESTIMONY?**

19   A     Yes. Schedule 4SR provides an update of the NYMEX futures prices through  
20       November 30, 2005. While it continues to show high price levels throughout the  
21       period reported, note that the trend is for declining prices, indicating that the market  
22       participants view current prices to be abnormally high.

1    **Q     WOULD AQUILA TYPICALLY ACQUIRE PHYSICAL GAS AT THE NYMEX PRICE**  
2    **LEVEL, OR AT A LOWER PRICE?**

3    A     Aquila typically would be able to purchase natural gas at a price less than the  
4           NYMEX price. Aquila transports its gas on Southern Star Central Gas Pipeline  
5           (Southern Star) and on Panhandle Eastern Pipeline Company (Panhandle). The  
6           typical pricing point for gas that Aquila purchases for transport on these pipelines  
7           runs at a discount to the Henry Hub/NYMEX prices. The magnitude of the negative  
8           basis depends upon the overall level of gas prices and conditions in the market.

9           Schedule 5SR is a graphical presentation of this basis differential over the  
10          period January 2004 through November 2005. Page 1 shows the gas price data, by  
11          month, at each of the three pricing points. Page 2 of this Schedule shows the  
12          differential over the same period of time. Note that during the early portion of this  
13          time period, the basis was in the range of -\$0.50 per MMBtu to Henry Hub. More  
14          recently, with the substantially elevated market gas prices, the basis has been  
15          significantly more negative, ranging to over \$4.00 per MMBtu, below the Henry Hub  
16          price.

17   **Q     HAS AQUILA ALSO ENTERED INTO FINANCIAL TRANSACTIONS TO HEDGE**  
18   **THE PRICE OF ITS NATURAL GAS AND PURCHASED POWER?**

19   A     Yes. According to Aquila's response to SIEUA 234 (Revised), Aquila has entered  
20          into NYMEX swaps (fixed for floating price transactions) for \*\*\*CONFIDENTIAL\*\*\* of  
21          gas for the 12-month period ending March 2007 at an average price of  
22          \*\*\*CONFIDENTIAL\*\*\*, and for the 12-month period ending March 2008, a total  
23          volume of \*\*\*CONFIDENTIAL\*\*\* at an average price of \*\*\*CONFIDENTIAL\*\*\*. In

1           these transactions, Aquila is paid the actual NYMEX price by the financial counter-  
2           party, and pays to the counter-party a fixed price per MMBtu.

3   **Q       DO THESE FINANCIAL TRANSACTIONS PROVIDE AQUILA WITH PHYSICAL**  
4   **GAS?**

5   A       They alter the net cost of gas to Aquila, but Aquila still must acquire the gas.

6   **Q       PLEASE EXPLAIN THESE ARRANGEMENTS AND RELATIONSHIPS.**

7   A       For example, suppose that Aquila had entered into physical transactions to acquire  
8           gas from a producer or marketer of natural gas at a price equal to the NYMEX price  
9           minus a basis adjustment. Aquila would pay the fixed price to the financial counter-  
10          party, receive the NYMEX index from the financial counter-party, and pay to the  
11          producer or marketer the NYMEX price minus the basis differential. On net, Aquila's  
12          cost of gas would be equal to the fixed price minus the basis differential. Thus, if  
13          Aquila were counter-party to a swap transaction that provided it with a fixed gas price  
14          of \$9.00 per MMBtu, but was purchasing gas from a marketer at NYMEX minus \$2.00  
15          per MMBtu, its net cost would be \$7.00 per MMBtu. Thus, both physical and financial  
16          transactions must be taken into account in estimating what Aquila's cost of acquired  
17          natural gas will be.

18   **Q       IF AQUILA WERE ACQUIRING ITS PHYSICAL GAS IN THE MARKET AREA AT A**  
19   **PRICE THAT WAS NOT EXPLICITLY TIED TO THE NYMEX PRICE, WOULD THE**  
20   **RELATIONSHIPS AND ARRANGEMENTS BE SIMILAR?**

21   A       Yes. If Aquila were buying gas in a market area at a price that was below the Henry  
22          Hub price, then that would naturally be reflected in the price that it paid to the



1 producer or marketer, and the net result of the transactions would be exactly the  
2 same.

3 **Q HAS AQUILA PROVIDED ITS ESTIMATED PHYSICAL NATURAL GAS**  
4 **REQUIREMENTS FOR ELECTRIC GENERATION, DISCLOSED TRANSACTIONS**  
5 **INTO WHICH IT MAY ALREADY HAVE ENTERED WITH RESPECT TO SUCH**  
6 **VOLUMES, OR THE ANTICIPATED BASIS FOR SUCH PHYSICAL CONTRACTS?**

7 A No. This has been requested of Aquila, but it has not provided any information with  
8 regard to the specific physical transactions (quantity, delivery point, price) into which it  
9 has already entered, or into which it anticipates entering.

10 **Q HAS AQUILA ALSO ENTERED INTO CALL OPTION CONTRACTS?**

11 A Yes. For the 12-month period ending March 2007, Aquila reports having entered into  
12 call option contracts for \*\*\*CONFIDENTIAL\*\*\* of natural gas at a weighted average  
13 cost of \*\*\*CONFIDENTIAL\*\*\* (of which \*\*\*CONFIDENTIAL\*\*\* at an average price of  
14 \*\*\*CONFIDENTIAL\*\*\* are currently profitable); and for the 12-month period ending  
15 March 2008, a quantity equal to \*\*\*CONFIDENTIAL\*\*\* at an average cost of  
16 \*\*\*CONFIDENTIAL\*\*\* (all of which currently are profitable). These call options  
17 provide Aquila with the opportunity to secure gas at the specified strike price, at  
18 Aquila's option. Thus, the call option contracts provide a protection from upside  
19 movements in natural gas prices by allowing Aquila to exercise the option if prices  
20 move above the strike price, while giving it the flexibility not to exercise the option and  
21 instead buy in the market, if actual prices are below the strike price.

1    **Q     WHAT PERCENTAGE OF THE HEDGE VOLUMES ARE ASSIGNED TO GAS**  
2           **GENERATION AND WHAT PERCENT ARE ASSIGNED TO PURCHASED POWER**  
3           **EQUIVALENCE?**

4    A     According to information provided by Aquila, approximately 34% of both the swaps  
5           and the call options are related to gas to be acquired for electric generation, and the  
6           balance is related to purchase power.

7    **Q     WHAT AMOUNTS DOES MR. WILLIAMS RECOMMEND FOR BASE RATE AND**  
8           **IEC COST RECOVERIES?**

9    A     Mr. Williams recommends, for the base, a natural gas price of \$7.00 per MMBtu and  
10          for purchased power, a price of \$50 per MWh.

11                For the IEC, he recommends a total natural gas cost of \$10.00 per MMBtu,  
12          and a purchased power price of \$80 per MWh.

13   **Q     DO YOU AGREE WITH THESE PRICE LEVELS?**

14   A     No, I do not.

15   **Q     PLEASE EXPLAIN WHY NOT.**

16   A     Mr. Williams has not said what these prices represent or explained how he derived  
17          them. There is no evidentiary basis to accept them.

18   **Q     WHAT DO YOU RECOMMEND BE USED FOR NATURAL GAS PRICES?**

19   A     For the base, I believe it would be appropriate to use natural gas prices equal to the  
20          swap prices under Aquila's hedges, which is about \*\*\*CONFIDENTIAL\*\*\* for the  
21          period April 2006 through March 2008, minus the basis differential to the market area

1 where natural gas is purchased. In the absence of explicit information from Aquila, I  
2 would recommend using a subtraction of \$3 per MMBtu, consistent with the  
3 information shown on Schedule 5SR. The resulting price would then be  
4 \*\*\*CONFIDENTIAL\*\*\*.

5 Based on Staff's dispatch, the volume of gas that Aquila has under fixed for  
6 floating price arrangements is more than adequate for Aquila's generation  
7 requirements. However, to recognize imprecision in forecasting, I would recommend  
8 making the amount in the IEC \$1 per MMBtu greater than the amount in the base.

9 **Q WHAT AMOUNTS DO YOU RECOMMEND FOR THE SPOT PURCHASE POWER**  
10 **COMPONENT?**

11 A Both Staff and Aquila have modeled the system dispatch, but there is a large  
12 difference between them with respect to the purchased power issue. In light of this  
13 large difference, I recommend including in the base Staff's spot power average price  
14 of \*\*\*CONFIDENTIAL\*\*\*. The amount in the IEC should be set equal to the average  
15 cost of spot purchase power for the period January through October of 2005 in the  
16 amount of \*\*\*CONFIDENTIAL\*\*\*, minus the net value of the natural gas hedges not  
17 required for physical gas. Based on Staff's dispatch, and current NYMEX prices, the  
18 net value of the hedges is approximately \*\*\*CONFIDENTIAL\*\*\*, making an offset of  
19 \*\*\*CONFIDENTIAL\*\*\*, which yields a net price for the IEC of \*\*\*CONFIDENTIAL\*\*\*.

20 **Q DOES MR. WILLIAMS ALSO PROPOSE TO INCLUDE SO<sub>2</sub> ALLOWANCES IN THE**  
21 **IEC?**

22 A Yes, he does.

1    **Q        SHOULD SO<sub>2</sub> ALLOWANCES BE INCLUDED IN AN IEC?**

2    A        No. SO<sub>2</sub> allowances are not fuel, they are permissions to emit SO<sub>2</sub>. SO<sub>2</sub> allowances  
3        have never been included in IEC mechanisms, and should not be included now.

4    **Q        DOES MR. WILLIAMS PROPOSE ANY OTHER CHANGES TO THE IEC**  
5        **MECHANISM THAT IS CURRENTLY IN PLACE?**

6    A        Yes. He now proposes that Aquila be allowed to record in a deferred regulatory asset  
7        account any amount which Aquila expends above the ceiling price in the IEC, for  
8        recovery in the next general rate case with a two-year forward amortization.

9    **Q        DO YOU AGREE WITH THIS MODIFICATION TO THE CURRENT IEC**  
10       **MECHANISM?**

11   A        No, I do not. One of the most important features of the IEC mechanism is that while it  
12       allows the utility some upside room if higher fuel costs are experienced, it also  
13       provides the utility with an incentive to efficiently manage its fuel and purchase power  
14       costs. At the upper end, this is accomplished by requiring by the utility to absorb any  
15       costs incurred in excess of the ceiling price in the IEC. This feature in the IEC is very  
16       important as it aligns the interests of the utility with those of the consumers, in a  
17       fashion similar to the alignment of incentives when all costs are recovered through  
18       base rates and there are no adjustment clauses. The prospect of adverse earnings  
19       consequences for incurring high fuel costs is a very important incentive that I believe  
20       should be retained if an IEC is put in place at the end of this case.

1    **Q     WITHIN THE BAND BETWEEN THE BASE RATES AND THE IEC, IS THERE AN**  
2    **INCENTIVE FOR AQUILA TO REDUCE ITS COST?**

3    A     If Aquila is within the band, the structure of the IEC that has previously been utilized  
4         would provide for 100% recovery of costs deemed to have been prudently incurred.  
5         In order to better align the interests of the consumer and the utility, it would be  
6         appropriate to build into the mechanism an incentive in the form of less than complete  
7         recovery of costs incurred within this region. The knowledge that some portion of the  
8         incurred costs will not be subject to recovery from consumers would provide a  
9         continuous incentive to improve performance at all levels.

10   **Q     ARE THERE ANY OTHER ISSUES THAT ARISE IN CONNECTION WITH**  
11   **AQUILA'S PLANNING AND FUEL PROCUREMENT PROCESSES?**

12   A     Yes. As Ms. Hennings' testimony points out, there is a considerable question  
13         concerning the adequacy of Aquila's analysis and planning with respect to the use of  
14         solid fuels, as well as consideration of the most appropriate method to deal with  
15         regulated emissions. Particular issues include the specific emissions to be controlled,  
16         the choices among fuel sources, technology to reduce emissions, the cost of  
17         acquiring emission allowances, reliability of fuel suppliers, and the impact of different  
18         strategies on generating unit operations and maintenance requirements.

19             The issues in this case concerning coal for Sibley and Lake Road bring all of  
20         these issues to the forefront. Aquila should be put on notice that an effective  
21         planning process not only is expected, but required. While always important, it must  
22         be in place before any fuel adjustment rate form that would comprehend periodic rate  
23         adjustments to pass through prudently incurred fuel and purchased power cost is  
24         considered.

1    **Q       DOES THIS CONCLUDE YOUR SURREBUTTAL TESTIMONY?**

2    **A       Yes, it does.**

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## AQUILA NETWORKS - L&P

### Illustration of an Across-the-Board Allocation of a Revenue Increase

Line	Rate Group	Rate Revenue from Base Rates* (\$000) (1)	Increase in Base Rates (\$000) (2)	New Base Rates (\$000) (3)	Percent Increase in Base Rates (4)	Allocation of New IEC (\$000) (5)	IEC as a Percent of New Base Rates (6)	New Base Rates Plus IEC (\$000) (7)
1	Residential	\$42,607.0	\$1,287.5	\$43,894.4	3.022%	\$429.2	0.978%	\$44,323.6
2	Small General Service	\$7,794.7	\$235.5	\$8,030.3	3.022%	\$78.5	0.978%	\$8,108.8
3	Large General Service	\$19,216.3	\$580.7	\$19,797.0	3.022%	\$193.6	0.978%	\$19,990.5
4	Large Power	\$27,374.3	\$827.2	\$28,201.5	3.022%	\$275.7	0.978%	\$28,477.2
5	Lighting	\$2,288.6	\$69.2	\$2,357.8	3.022%	\$23.1	0.978%	\$2,380.8
6	Total	\$99,280.9	\$3,000.0	\$102,280.9	3.022%	\$1,000.0	0.978%	\$103,280.9

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\*Before allocating any increase, there should first be an adjustment for inter-class revenue shifts from Case No. EO-2002-384

## AQUILA NETWORKS - MPS

### Illustration of an Across-the-Board Allocation of a Revenue Increase

<u>Line</u>	<u>Rate Group</u>	Rate Revenue from Base Rates* (\$000) (1)	Increase in Base Rates (\$000) (2)	New Base Rates (\$000) (3)	Percent Increase in Base Rates (4)	Allocation of New IEC (\$000) (5)	IEC as a Percent of New Base Rates (6)	New Base Rates Plus IEC (\$000) (7)
1	Residential	\$183,279.5	\$5,352.9	\$188,632.3	2.921%	\$2,676.4	1.419%	\$191,308.8
2	Small General Service	\$53,740.9	\$1,569.6	\$55,310.5	2.921%	\$784.8	1.419%	\$56,095.3
3	Large General Service	\$44,645.0	\$1,303.9	\$45,948.9	2.921%	\$652.0	1.419%	\$46,600.9
4	Large Power	\$54,683.2	\$1,597.1	\$56,280.2	2.921%	\$798.5	1.419%	\$57,078.8
5	Special	\$519.8	\$15.2	\$535.0	2.921%	\$7.6	1.419%	\$542.6
6	Lighting	\$5,526.9	\$161.4	\$5,688.3	2.921%	\$80.7	1.419%	\$5,769.0
7	Total	\$342,395.3	\$10,000.0	\$352,395.3	2.921%	\$5,000.0	1.419%	\$357,395.3

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\*Before allocating any increase, there should first be an adjustment for inter-class revenue shifts from Case No. EO-2002-384



## AQUILA NETWORKS - L&P

### Determination of Fuel-Related and Non-Fuel Revenue by Rate Group at Current Base Rates

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Line	Rate Group	Total Rate Revenue from Base Rates (\$000)	MWh Sales (2)	Fuel-Related Revenue Included in Base Rates* (\$000)	Non-Fuel Revenue (\$000)	Percent of Revenue by Rate Group		
		(1)		(3)		Total Base (5)	Fuel- Related (6)	Non-Fuel (7)
1	Residential	\$42,607.0	738,834	\$9,339.6	\$33,267.4	43%	37%	45%
2	Small General Service	\$7,794.7	105,133	\$1,329.0	\$6,465.7	8%	5%	9%
3	Large General Service	\$19,216.3	397,817	\$5,028.8	\$14,187.5	19%	20%	19%
4	Large Power	\$27,374.3	733,882	\$9,277.0	\$18,097.3	28%	37%	24%
6	Lighting	\$2,288.6	21,348	\$269.9	\$2,018.8	2%	1%	3%
7	Total Sales	\$99,280.9	1,997,012	\$25,244.2	\$74,036.7	100%	100%	100%

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\* MWh Sales multiplied by \$12.641/MWh; Aquila Networks, Case No. ER-2004-0034, "Stipulation and Agreement", Appendix A

## AQUILA NETWORKS - MPS

### Determination of Fuel-Related and Non-Fuel Revenue by Rate Group at Current Base Rates

---

<u>Line</u>	<u>Rate Group</u>	Total Rate Revenue from Base Rates (\$000)	MWh Sales	Fuel-Related Revenue Included in Base Rates* (\$000)	Non-Fuel Revenue (\$000)	<u>Percent of Revenue by Rate Group</u>		
		(1)	(2)	(3)	(4)	<u>Total Base</u> (5)	<u>Fuel- Related</u> (6)	<u>Non-Fuel</u> (7)
1	Residential	\$183,279.5	2,572,791	\$42,847.3	\$140,432.2	54%	46%	56%
2	Small General Service	\$53,740.9	812,395	\$13,529.6	\$40,211.3	16%	15%	16%
3	Large General Service	\$44,645.0	849,676	\$14,150.5	\$30,494.5	13%	15%	12%
4	Large Power	\$54,683.2	1,285,996	\$21,417.0	\$33,266.2	16%	23%	13%
5	Special	\$519.8	11,777	\$196.1	\$323.7	0%	0%	0%
6	Lighting	\$5,526.9	43,914	\$731.4	\$4,795.5	2%	1%	2%
7	Total Sales	\$342,395.3	5,576,549	\$92,871.8	\$249,523.5	100%	100%	100%

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\* MWh Sales multiplied by \$16.654/MWh; Aquila Networks, Case No. ER-2004-0034, "Stipulation and Agreement", Appendix A

## AQUILA NETWORKS - L&P

### Illustration of Fuel / Non-Fuel Allocation of Changes in Revenue Requirement

Line	Rate Group	Base Revenues from Current Base Rates (\$000) (1)	Allocation of Additional Fuel-Related Costs in Base Rates (\$000) <sup>1</sup> (2)	Allocation of Additional Non-Fuel Costs in Base Rates (\$000) <sup>2</sup> (3)	New Base Rates (\$000) (4)	Allocation of IEC Amount (\$000) <sup>1</sup> (5)	New Base Rates plus IEC (\$000) (6)
1	Residential	\$42,607.0	\$555.0	\$674.0	\$43,835.9	\$370.0	\$44,205.9
2	Small General Service	\$7,794.7	\$79.0	\$131.0	\$8,004.7	\$52.6	\$8,057.3
3	Large General Service	\$19,216.3	\$298.8	\$287.4	\$19,802.6	\$199.2	\$20,001.8
4	Large Power	\$27,374.3	\$551.2	\$366.7	\$28,292.2	\$367.5	\$28,659.7
5	Lighting	\$2,288.6	\$16.0	\$40.9	\$2,345.6	\$10.7	\$2,356.3
7	Total	\$99,280.9	\$1,500.0	\$1,500.0	\$102,280.9	\$1,000.0	\$103,280.9

<sup>1</sup> Allocated on Column (6) from Schedule 2, Page 1

<sup>2</sup> Allocated on Column (7) from Schedule 2, Page 1

## AQUILA NETWORKS - MPS

### Illustration of Fuel / Non-Fuel Allocation of Changes in Revenue Requirement

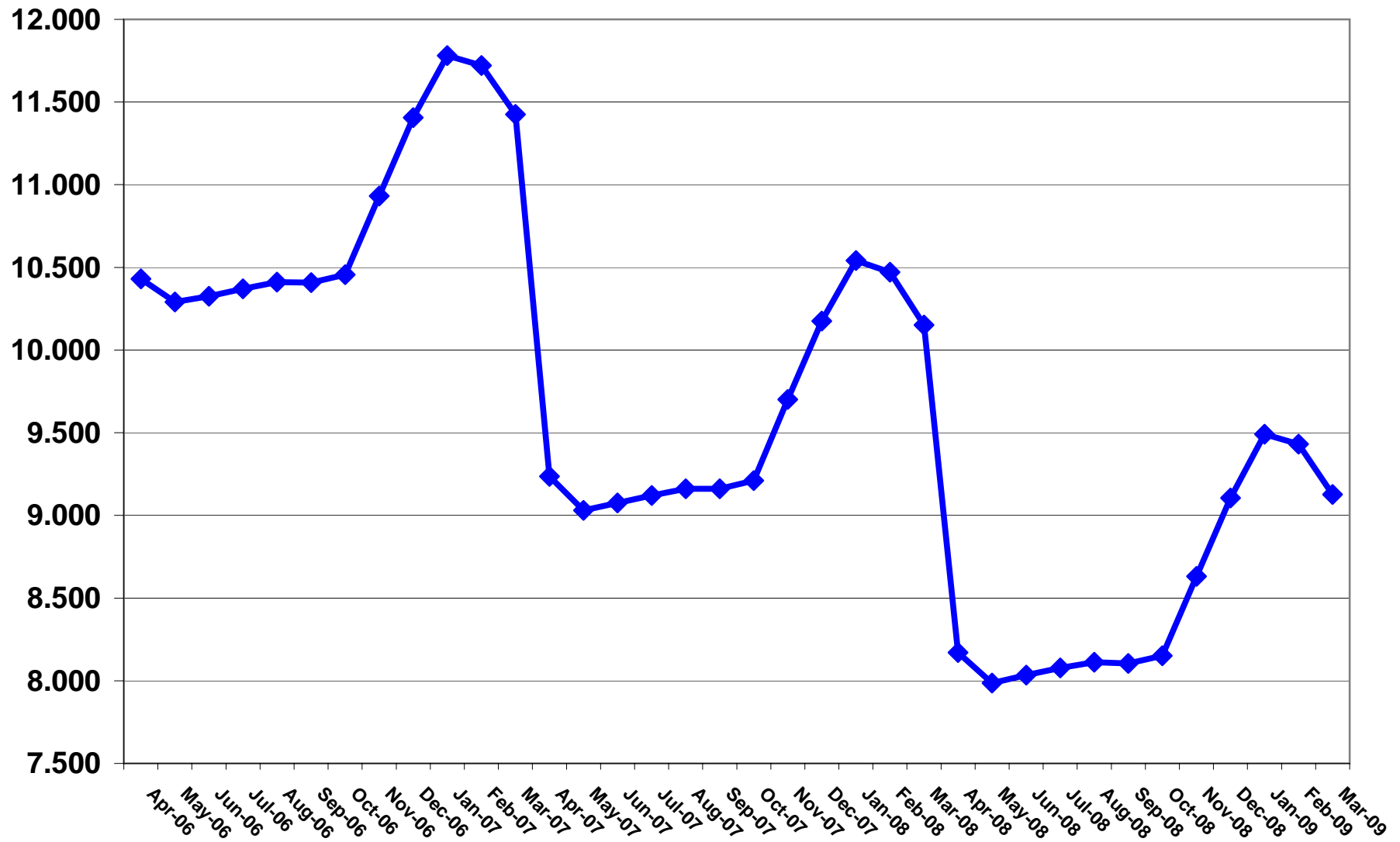
<u>Line</u>	<u>Rate Group</u>	Base Revenues from Current Base Rates <u>(\$000)</u> (1)	Allocation of Additional Fuel-Related Costs in Base Rates <u>(\$000)</u> <sup>1</sup> (2)	Allocation of Additional Non-Fuel Costs in Base Rates <u>(\$000)</u> <sup>2</sup> (3)	New Base Rates <u>(\$000)</u> (4)	Allocation of IEC Amount <u>(\$000)</u> <sup>1</sup> (5)	New Base Rates plus IEC <u>(\$000)</u> (6)
1	Residential	\$183,279.5	\$2,768.2	\$2,251.2	\$188,298.8	\$2,306.8	\$190,605.6
2	Small General Service	\$53,740.9	\$874.1	\$644.6	\$55,259.6	\$728.4	\$55,988.0
3	Large General Service	\$44,645.0	\$914.2	\$488.8	\$46,048.1	\$761.8	\$46,809.9
4	Large Power	\$54,683.2	\$1,383.6	\$533.3	\$56,600.1	\$1,153.0	\$57,753.1
5	Special	\$519.8	\$12.7	\$5.2	\$537.7	\$10.6	\$548.3
6	Lighting	\$5,526.9	\$47.2	\$76.9	\$5,651.0	\$39.4	\$5,690.4
7	Total	\$342,395.3	\$6,000.0	\$4,000.0	\$352,395.3	\$5,000.0	\$357,395.3

<sup>1</sup> Allocated on Column (6) from Schedule 2, Page 2

<sup>2</sup> Allocated on Column (7) from Schedule 2, Page 2

**NYMEX NATURAL GAS FUTURES SETTLEMENT PRICES ON 11-30-2005**  
**APRIL 2006 - MARCH 2009 (\$/MMBtu)**

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**NYMEX NATURAL GAS FUTURES PRICES (\$/MMBTU)**  
**(APRIL 2006 - MARCH 2009)**

		1/14/2005	2/15/2005	3/15/2005	4/15/2005	5/16/2005	6/15/2005	7/15/2005	8/15/2005	9/15/2005
<u>Line</u>	<u>Contract Month</u>	<u>Futures Prices</u>	<u>Futures Prices</u>	<u>Futures Prices</u>	<u>Futures Prices</u>	<u>Futures Prices</u>	<u>Futures Prices</u>	<u>Futures Prices</u>	<u>Futures Prices</u>	<u>Futures Prices</u>
1	Apr-06	6.049	6.264	6.878	7.063	6.829	7.559	7.870	8.772	10.007
2	May-06	5.914	6.129	6.733	6.913	6.714	7.411	7.710	8.547	9.627
3	Jun-06	5.924	6.154	6.758	6.950	6.758	7.451	7.752	8.578	9.652
4	Jul-06	5.944	6.184	6.783	6.985	6.804	7.498	7.802	8.623	9.693
5	Aug-06	5.964	6.209	6.808	7.005	6.840	7.533	7.847	8.662	9.736
6	Sep-06	5.959	6.194	6.787	6.985	6.837	7.522	7.835	8.640	9.712
7	Oct-06	5.989	6.219	6.812	7.018	6.877	7.554	7.870	8.667	9.741
8	Nov-06	6.299	6.514	7.107	7.338	7.202	7.909	8.215	9.027	10.131
9	Dec-06	6.574	6.794	7.392	7.648	7.502	8.224	8.545	9.362	10.511
10	Jan-07	6.779	7.019	7.603	7.858	7.712	8.451	8.780	9.607	10.796
11	Feb-07	6.759	6.984	7.568	7.838	7.697	8.441	8.770	9.592	10.771
12	Mar-07	6.564	6.784	7.387	7.693	7.552	8.281	8.620	9.407	10.536
13	Apr-07	5.674	5.899	6.357	6.573	6.512	7.116	7.465	8.082	8.826
14	May-07	5.534	5.759	6.222	6.418	6.389	6.986	7.300	7.912	8.551
15	Jun-07	5.556	5.789	6.232	6.438	6.427	7.026	7.348	7.947	8.586
16	Jul-07	5.579	5.809	6.242	6.463	6.464	7.058	7.389	7.982	8.616
17	Aug-07	5.594	5.829	6.257	6.498	6.494	7.830	7.426	8.022	8.649
18	Sep-07	5.569	5.814	6.237	6.473	6.480	7.068	7.420	8.012	8.634
19	Oct-07	5.579	5.827	6.257	6.508	6.500	7.101	7.455	8.047	8.666
20	Nov-07	5.869	6.112	6.544	6.823	6.830	7.421	7.795	8.407	9.051
21	Dec-07	6.159	6.377	6.832	7.118	7.150	7.731	8.115	8.742	9.436
22	Jan-08	6.394	6.612	7.062	7.343	7.370	7.946	8.320	8.972	9.726
23	Feb-08	6.374	6.592	7.032	7.323	7.355	7.931	8.310	8.957	9.701
24	Mar-08	6.167	6.392	6.832	7.153	7.205	7.779	8.165	8.777	9.466
25	Apr-08	5.337	5.552	5.912	6.143	6.185	6.679	7.065	7.557	8.031
26	May-08	5.217	5.432	5.792	5.998	6.050	6.564	6.920	7.387	7.811
27	Jun-08	5.242	5.457	5.812	6.028	6.080	6.594	6.955	7.422	7.856
28	Jul-08	5.272	5.482	5.832	6.058	6.110	6.624	6.990	7.462	7.896
29	Aug-08	5.297	5.507	5.852	6.093	6.145	6.659	7.020	7.502	7.941
30	Sep-08	5.277	5.487	5.837	6.073	6.130	6.639	7.010	7.497	7.931
31	Oct-08	5.292	5.497	5.852	6.093	6.150	6.669	7.045	7.537	7.961
32	Nov-08	5.567	5.772	6.127	6.378	6.465	6.999	7.395	7.892	8.356
33	Dec-08	5.842	6.047	6.387	6.653	6.760	7.304	7.715	8.227	8.741
34	Jan-09	6.067	6.287	6.622	6.893	6.980	7.524	7.940	8.447	9.031
35	Feb-09	6.067	6.272	6.592	6.873	6.965	7.512	7.935	8.432	9.006
36	Mar-09	5.897	6.077	6.387	6.683	6.815	7.372	7.795	8.258	8.776
37	1st Year Avg <sup>1</sup>	6.227	6.454	7.051	7.275	7.110	7.820	8.135	8.957	10.076
38	2nd Year Avg <sup>2</sup>	5.837	6.068	6.509	6.761	6.765	7.416	7.709	8.322	8.992
39	3rd Year Avg <sup>3</sup>	5.531	5.739	6.084	6.331	6.403	6.928	7.315	7.802	8.278
40	Total 3-Year Avg	5.865	6.087	6.548	6.789	6.759	7.388	7.720	8.360	9.116

Notes:

<sup>1</sup> 1st year time frame is from April 2006 through March 2007

<sup>2</sup> 2nd year time frame is from April 2007 through March 2008

<sup>3</sup> 3rd year time frame is from April 2008 through March 2009

**NYMEX NATURAL GAS FUTURES PRICES (\$/MMBTU)**  
**(APRIL 2006 - MARCH 2009)**

		10/5/2005	10/6/2005	10/7/2005	10/10/2005	10/11/2005	10/12/2005	10/13/2005	10/14/2005	10/17/2005	10/18/2005
<u>Line</u>	<u>Contract Month</u>	<u>Futures Prices</u>	<u>Futures Prices</u>	<u>Futures Prices</u>	<u>Futures Prices</u>	<u>Futures Prices</u>	<u>Futures Prices</u>	<u>Futures Prices</u>	<u>Futures Prices</u>	<u>Futures Prices</u>	<u>Futures Prices</u>
1	Apr-06	10.981	10.695	10.671	10.517	10.719	10.800	10.704	10.839	11.005	10.885
2	May-06	10.441	10.205	10.216	10.097	10.274	10.350	10.299	10.434	10.575	10.485
3	Jun-06	10.436	10.200	10.216	10.102	10.269	10.345	10.306	10.439	10.580	10.490
4	Jul-06	10.461	10.225	10.246	10.132	10.299	10.375	10.336	10.469	10.610	10.522
5	Aug-06	10.486	10.255	10.276	10.167	10.334	10.410	10.371	10.504	10.640	10.554
6	Sep-06	10.456	10.230	10.251	10.142	10.309	10.385	10.346	10.479	10.610	10.527
7	Oct-06	10.481	10.260	10.281	10.177	10.339	10.415	10.376	10.509	10.640	10.557
8	Nov-06	10.906	10.695	10.706	10.602	10.754	10.830	10.791	10.924	11.055	10.977
9	Dec-06	11.306	11.100	11.111	11.012	11.164	11.240	11.206	11.339	11.470	11.392
10	Jan-07	11.616	11.420	11.431	11.332	11.474	11.550	11.516	11.649	11.780	11.702
11	Feb-07	11.511	11.325	11.331	11.242	11.379	11.455	11.426	11.559	11.685	11.612
12	Mar-07	11.211	11.025	11.031	10.942	11.074	11.145	11.116	11.249	11.370	11.297
13	Apr-07	9.051	8.885	8.891	8.832	8.894	8.965	8.956	9.059	9.140	9.067
14	May-07	8.661	8.495	8.491	8.447	8.494	8.565	8.561	8.659	8.740	8.687
15	Jun-07	8.697	8.531	8.527	8.483	8.530	8.601	8.594	8.689	8.770	8.717
16	Jul-07	8.732	8.566	8.562	8.518	8.565	8.636	8.627	8.722	8.796	8.743
17	Aug-07	8.767	8.601	8.597	8.553	8.600	8.671	8.660	8.755	8.826	8.773
18	Sep-07	8.747	8.581	8.577	8.533	8.580	8.651	8.640	8.735	8.806	8.753
19	Oct-07	8.781	8.615	8.611	8.567	8.614	8.685	8.674	8.769	8.840	8.787
20	Nov-07	9.241	9.075	9.071	9.027	9.074	9.150	9.139	9.234	9.305	9.252
21	Dec-07	9.691	9.525	9.521	9.477	9.524	9.605	9.594	9.679	9.750	9.697
22	Jan-08	10.036	9.865	9.861	9.817	9.864	9.950	9.939	10.019	10.090	10.037
23	Feb-08	9.966	9.795	9.791	9.747	9.784	9.870	9.859	9.934	10.000	9.947
24	Mar-08	9.706	9.545	9.541	9.497	9.524	9.610	9.599	9.669	9.720	9.667
25	Apr-08	7.981	7.825	7.821	7.807	7.814	7.900	7.889	7.949	7.980	7.927
26	May-08	7.671	7.515	7.511	7.497	7.494	7.580	7.569	7.619	7.630	7.577
27	Jun-08	7.716	7.560	7.556	7.542	7.534	7.620	7.609	7.654	7.665	7.612
28	Jul-08	7.756	7.600	7.596	7.582	7.574	7.660	7.649	7.689	7.700	7.647
29	Aug-08	7.801	7.645	7.641	7.627	7.614	7.700	7.689	7.724	7.735	7.682
30	Sep-08	7.791	7.635	7.631	7.617	7.604	7.690	7.679	7.709	7.720	7.667
31	Oct-08	7.821	7.665	7.666	7.652	7.639	7.725	7.714	7.744	7.755	7.702
32	Nov-08	8.271	8.125	8.126	8.112	8.099	8.139	8.179	8.209	8.220	8.167
33	Dec-08	8.721	8.575	8.576	8.562	8.549	8.592	8.634	8.664	8.675	8.622
34	Jan-09	9.051	8.915	8.916	8.902	8.884	8.934	8.984	9.014	9.025	8.982
35	Feb-09	8.996	8.860	8.861	8.847	8.824	8.874	8.924	8.954	8.965	8.922
36	Mar-09	8.731	8.595	8.596	8.582	8.554	8.604	8.654	8.684	8.695	8.652
37	1st Year Avg <sup>1</sup>	10.858	10.636	10.647	10.539	10.699	10.775	10.733	10.866	11.002	10.917
38	2nd Year Avg <sup>2</sup>	9.173	9.007	9.003	8.958	9.004	9.080	9.070	9.160	9.232	9.177
39	3rd Year Avg <sup>3</sup>	8.192	8.043	8.041	8.027	8.015	8.085	8.098	8.134	8.147	8.097
40	Total 3-Year Avg	9.408	9.229	9.231	9.175	9.239	9.313	9.300	9.387	9.460	9.397

Notes:

<sup>1</sup> 1st year time frame is from April 2006 through March 2007

<sup>2</sup> 2nd year time frame is from April 2007 through March 2008

<sup>3</sup> 3rd year time frame is from April 2008 through March 2009

**NYMEX NATURAL GAS FUTURES PRICES (\$/MMBTU)**  
**(APRIL 2006 - MARCH 2009)**

		10/19/2005	10/20/2005	10/21/2005	10/24/2005	10/25/2005	10/26/2005	10/27/2005	10/28/2005	10/31/2005	11/1/2005
<u>Line</u>	<u>Contract Month</u>	<u>Futures Prices</u>	<u>Futures Prices</u>	<u>Futures Prices</u>	<u>Futures Prices</u>	<u>Futures Prices</u>	<u>Futures Prices</u>	<u>Futures Prices</u>	<u>Futures Prices</u>	<u>Futures Prices</u>	<u>Futures Prices</u>
1	Apr-06	10.893	10.584	10.619	10.620	11.159	10.890	10.854	10.737	10.466	10.302
2	May-06	10.503	10.234	10.304	10.320	10.829	10.580	10.559	10.465	10.226	10.059
3	Jun-06	10.510	10.249	10.319	10.337	10.839	10.590	10.577	10.487	10.256	10.089
4	Jul-06	10.544	10.286	10.359	10.377	10.879	10.630	10.619	10.532	10.304	10.137
5	Aug-06	10.578	10.323	10.399	10.417	10.919	10.670	10.664	10.577	10.349	10.182
6	Sep-06	10.553	10.299	10.375	10.395	10.892	10.645	10.639	10.557	10.331	10.167
7	Oct-06	10.583	10.329	10.405	10.427	10.924	10.680	10.674	10.597	10.376	10.212
8	Nov-06	11.003	10.764	10.845	10.872	11.364	11.125	11.124	11.052	10.836	10.672
9	Dec-06	11.423	11.189	11.280	11.307	11.794	11.560	11.559	11.487	11.276	11.112
10	Jan-07	11.733	11.504	11.600	11.627	12.114	11.880	11.884	11.817	11.616	11.457
11	Feb-07	11.643	11.424	11.520	11.547	12.024	11.790	11.794	11.727	11.531	11.372
12	Mar-07	11.328	11.119	11.220	11.247	11.704	11.470	11.484	11.417	11.221	11.062
13	Apr-07	9.078	8.899	9.000	9.027	9.404	9.190	9.204	9.177	9.051	8.902
14	May-07	8.698	8.529	8.660	8.692	9.059	8.865	8.894	8.902	8.796	8.652
15	Jun-07	8.723	8.554	8.690	8.722	9.089	8.895	8.924	8.932	8.831	8.687
16	Jul-07	8.749	8.580	8.716	8.752	9.119	8.930	8.959	8.967	8.871	8.727
17	Aug-07	8.779	8.610	8.746	8.782	9.149	8.960	8.989	8.997	8.906	8.762
18	Sep-07	8.759	8.590	8.726	8.762	9.129	8.940	8.969	8.977	8.889	8.745
19	Oct-07	8.793	8.624	8.760	8.796	9.163	8.974	9.003	9.011	8.926	8.782
20	Nov-07	9.253	9.084	9.220	9.254	9.621	9.432	9.461	9.469	9.386	9.242
21	Dec-07	9.693	9.524	9.660	9.687	10.054	9.867	9.896	9.904	9.821	9.677
22	Jan-08	10.033	9.864	10.000	10.025	10.392	10.205	10.234	10.249	10.166	10.022
23	Feb-08	9.943	9.774	9.900	9.935	10.292	10.105	10.134	10.149	10.071	9.927
24	Mar-08	9.653	9.484	9.600	9.627	9.972	9.785	9.814	9.829	9.766	9.622
25	Apr-08	7.903	7.764	7.875	7.897	8.162	7.985	8.014	8.039	8.016	7.872
26	May-08	7.553	7.414	7.535	7.557	7.822	7.645	7.674	7.729	7.726	7.582
27	Jun-08	7.588	7.454	7.575	7.597	7.862	7.685	7.714	7.769	7.766	7.623
28	Jul-08	7.623	7.491	7.612	7.634	7.899	7.722	7.751	7.806	7.803	7.661
29	Aug-08	7.658	7.529	7.650	7.672	7.937	7.760	7.789	7.844	7.841	7.699
30	Sep-08	7.643	7.514	7.630	7.652	7.917	7.740	7.769	7.824	7.821	7.679
31	Oct-08	7.678	7.549	7.665	7.687	7.952	7.775	7.804	7.859	7.856	7.714
32	Nov-08	8.143	8.014	8.125	8.147	8.412	8.235	8.259	8.324	8.316	8.184
33	Dec-08	8.598	8.469	8.580	8.602	8.867	8.690	8.709	8.784	8.768	8.649
34	Jan-09	8.963	8.839	8.950	8.972	9.237	9.050	9.069	9.157	9.136	9.024
35	Feb-09	8.903	8.779	8.890	8.912	9.157	8.970	8.989	9.077	9.056	8.944
36	Mar-09	8.633	8.509	8.620	8.642	8.857	8.670	8.689	8.777	8.756	8.644
37	1st Year Avg <sup>1</sup>	10.941	10.692	10.770	10.791	11.287	11.043	11.036	10.954	10.732	10.569
38	2nd Year Avg <sup>2</sup>	9.180	9.010	9.140	9.172	9.537	9.346	9.373	9.380	9.290	9.146
39	3rd Year Avg <sup>3</sup>	8.074	7.944	8.059	8.081	8.340	8.161	8.186	8.249	8.238	8.106
40	Total 3-Year Avg	9.398	9.215	9.323	9.348	9.721	9.516	9.532	9.528	9.420	9.273

Notes:

<sup>1</sup> 1st year time frame is from April 2006 through March 2007

<sup>2</sup> 2nd year time frame is from April 2007 through March 2008

<sup>3</sup> 3rd year time frame is from April 2008 through March 2009



**NYMEX NATURAL GAS FUTURES PRICES (\$/MMBTU)**  
**(APRIL 2006 - MARCH 2009)**

		11/2/2005	11/3/2005	11/4/2005	11/7/2005	11/8/2005	11/9/2005	11/10/2005	11/11/2005	11/14/2005	11/15/2005
<u>Line</u>	<u>Contract Month</u>	<u>Futures Prices</u>	<u>Futures Prices</u>	<u>Futures Prices</u>	<u>Futures Prices</u>	<u>Futures Prices</u>	<u>Futures Prices</u>	<u>Futures Prices</u>	<u>Futures Prices</u>	<u>Futures Prices</u>	<u>Futures Prices</u>
1	Apr-06	10.116	10.079	9.859	10.118	10.041	9.915	9.819	9.991	10.187	10.279
2	May-06	9.881	9.839	9.639	9.888	9.821	9.710	9.639	9.831	10.027	10.119
3	Jun-06	9.911	9.869	9.669	9.918	9.854	9.740	9.672	9.861	10.057	10.149
4	Jul-06	9.961	9.919	9.719	9.968	9.901	9.790	9.722	9.908	10.104	10.194
5	Aug-06	10.006	9.964	9.764	10.013	9.946	9.835	9.762	9.948	10.144	10.232
6	Sep-06	9.991	9.947	9.747	9.996	9.931	9.823	9.752	9.938	10.139	10.232
7	Oct-06	10.041	9.994	9.794	10.041	9.976	9.870	9.802	9.986	10.187	10.279
8	Nov-06	10.506	10.459	10.264	10.511	10.446	10.335	10.267	10.451	10.652	10.744
9	Dec-06	10.956	10.909	10.719	10.966	10.906	10.800	10.732	10.916	11.117	11.209
10	Jan-07	11.311	11.264	11.079	11.326	11.271	11.170	11.112	11.296	11.497	11.579
11	Feb-07	11.231	11.184	11.004	11.251	11.196	11.110	11.052	11.231	11.432	11.519
12	Mar-07	10.926	10.874	10.699	10.946	10.886	10.815	10.757	10.926	11.127	11.209
13	Apr-07	8.776	8.719	8.599	8.776	8.656	8.595	8.567	8.701	8.887	8.954
14	May-07	8.536	8.464	8.379	8.546	8.426	8.365	8.352	8.488	8.677	8.749
15	Jun-07	8.571	8.494	8.409	8.576	8.456	8.400	8.387	8.523	8.712	8.784
16	Jul-07	8.611	8.524	8.439	8.606	8.496	8.440	8.427	8.558	8.747	8.824
17	Aug-07	8.651	8.564	8.479	8.646	8.536	8.475	8.467	8.598	8.787	8.864
18	Sep-07	8.636	8.549	8.464	8.631	8.521	8.455	8.447	8.578	8.772	8.849
19	Oct-07	8.676	8.589	8.504	8.671	8.563	8.495	8.487	8.618	8.812	8.889
20	Nov-07	9.136	9.049	8.984	9.146	9.038	8.970	8.962	9.093	9.282	9.364
21	Dec-07	9.571	9.489	9.439	9.611	9.508	9.440	9.432	9.563	9.752	9.834
22	Jan-08	9.916	9.833	9.783	9.986	9.878	9.810	9.802	9.933	10.122	10.209
23	Feb-08	9.826	9.717	9.678	9.886	9.803	9.735	9.737	9.863	10.057	10.144
24	Mar-08	9.526	9.401	9.373	9.586	9.503	9.435	9.427	9.548	9.742	9.839
25	Apr-08	7.786	7.651	7.603	7.796	7.683	7.615	7.607	7.708	7.892	7.959
26	May-08	7.526	7.381	7.323	7.531	7.448	7.390	7.392	7.503	7.682	7.739
27	Jun-08	7.571	7.431	7.373	7.581	7.498	7.440	7.442	7.553	7.732	7.789
28	Jul-08	7.611	7.476	7.418	7.626	7.543	7.485	7.487	7.598	7.777	7.834
29	Aug-08	7.651	7.521	7.463	7.671	7.583	7.525	7.527	7.638	7.817	7.874
30	Sep-08	7.636	7.506	7.448	7.656	7.563	7.505	7.507	7.618	7.797	7.854
31	Oct-08	7.676	7.546	7.488	7.696	7.603	7.545	7.547	7.658	7.837	7.894
32	Nov-08	8.156	8.036	7.988	8.196	8.093	8.035	8.037	8.148	8.327	8.384
33	Dec-08	8.631	8.521	8.483	8.691	8.578	8.520	8.522	8.633	8.812	8.869
34	Jan-09	9.016	8.921	8.888	9.096	8.983	8.925	8.927	9.038	9.202	9.259
35	Feb-09	8.936	8.841	8.808	9.016	8.903	8.845	8.847	8.958	9.122	9.179
36	Mar-09	8.636	8.541	8.508	8.716	8.603	8.545	8.547	8.658	8.822	8.879
37	1st Year Avg <sup>1</sup>	10.403	10.358	10.163	10.412	10.348	10.243	10.174	10.357	10.556	10.645
38	2nd Year Avg <sup>2</sup>	9.036	8.949	8.878	9.056	8.949	8.885	8.875	9.005	9.196	9.275
39	3rd Year Avg <sup>3</sup>	8.069	7.948	7.899	8.106	8.007	7.948	7.949	8.059	8.235	8.293
40	Total 3-Year Avg	9.169	9.085	8.980	9.191	9.101	9.025	8.999	9.141	9.329	9.404

Notes:

<sup>1</sup> 1st year time frame is from April 2006 through March 2007

<sup>2</sup> 2nd year time frame is from April 2007 through March 2008

<sup>3</sup> 3rd year time frame is from April 2008 through March 2009

**NYMEX NATURAL GAS FUTURES PRICES (\$/MMBTU)**  
**(APRIL 2006 - MARCH 2009)**

		11/16/2005	11/17/2005	11/18/2005	11/21/2005	11/22/2005	11/23/2005	11/28/2005	11/29/2005	11/30/2005
<u>Line</u>	<u>Contract Month</u>	<u>Futures Prices</u>	<u>Futures Prices</u>	<u>Futures Prices</u>	<u>Futures Prices</u>	<u>Futures Prices</u>	<u>Futures Prices</u>	<u>Futures Prices</u>	<u>Futures Prices</u>	<u>Futures Prices</u>
1	Apr-06	10.653	10.440	10.161	10.100	10.249	10.220	10.004	10.017	10.431
2	May-06	10.473	10.260	10.001	9.960	10.109	10.080	9.889	9.902	10.291
3	Jun-06	10.500	10.287	10.031	9.993	10.144	10.115	9.924	9.937	10.326
4	Jul-06	10.543	10.332	10.076	10.038	10.189	10.160	9.969	9.984	10.371
5	Aug-06	10.580	10.372	10.119	10.081	10.229	10.200	10.009	10.025	10.411
6	Sep-06	10.573	10.365	10.119	10.081	10.229	10.197	10.009	10.027	10.408
7	Oct-06	10.618	10.410	10.167	10.129	10.277	10.245	10.057	10.075	10.456
8	Nov-06	11.083	10.885	10.642	10.604	10.752	10.720	10.537	10.555	10.931
9	Dec-06	11.548	11.360	11.117	11.079	11.227	11.195	11.017	11.035	11.406
10	Jan-07	11.918	11.740	11.497	11.459	11.607	11.575	11.402	11.420	11.781
11	Feb-07	11.853	11.680	11.437	11.404	11.547	11.515	11.352	11.368	11.721
12	Mar-07	11.538	11.370	11.132	11.099	11.242	11.210	11.052	11.068	11.426
13	Apr-07	9.218	9.050	8.872	8.869	9.012	9.000	8.942	8.938	9.236
14	May-07	9.008	8.840	8.672	8.674	8.812	8.800	8.762	8.758	9.031
15	Jun-07	9.043	8.885	8.717	8.719	8.854	8.842	8.807	8.803	9.076
16	Jul-07	9.083	8.925	8.757	8.759	8.896	8.884	8.852	8.848	9.121
17	Aug-07	9.123	8.965	8.797	8.799	8.936	8.924	8.892	8.888	9.161
18	Sep-07	9.108	8.955	8.792	8.794	8.931	8.919	8.892	8.888	9.161
19	Oct-07	9.148	9.000	8.837	8.839	8.976	8.964	8.942	8.938	9.211
20	Nov-07	9.633	9.490	9.332	9.334	9.466	9.454	9.437	9.433	9.701
21	Dec-07	10.103	9.965	9.817	9.819	9.946	9.929	9.917	9.913	10.176
22	Jan-08	10.479	10.341	10.197	10.199	10.321	10.304	10.292	10.288	10.541
23	Feb-08	10.409	10.271	10.127	10.139	10.256	10.239	10.237	10.228	10.471
24	Mar-08	10.099	9.961	9.822	9.834	9.946	9.929	9.942	9.923	10.151
25	Apr-08	8.179	8.041	7.922	7.954	8.036	8.019	8.052	8.013	8.171
26	May-08	7.959	7.821	7.702	7.754	7.831	7.814	7.877	7.838	7.986
27	Jun-08	8.009	7.871	7.752	7.804	7.881	7.864	7.927	7.886	8.034
28	Jul-08	8.054	7.916	7.797	7.849	7.926	7.909	7.972	7.929	8.077
29	Aug-08	8.094	7.956	7.837	7.889	7.966	7.949	8.012	7.964	8.112
30	Sep-08	8.074	7.936	7.817	7.874	7.951	7.934	8.007	7.956	8.104
31	Oct-08	8.114	7.976	7.857	7.924	8.001	7.984	8.057	8.003	8.151
32	Nov-08	8.599	8.466	8.344	8.411	8.488	8.467	8.542	8.488	8.631
33	Dec-08	9.079	8.955	8.830	8.897	8.974	8.949	9.027	8.973	9.106
34	Jan-09	9.469	9.343	9.217	9.284	9.361	9.334	9.417	9.363	9.491
35	Feb-09	9.389	9.268	9.147	9.224	9.301	9.269	9.362	9.303	9.431
36	Mar-09	9.089	8.968	8.847	8.924	9.001	8.959	9.067	8.998	9.126
37	1st Year Avg <sup>1</sup>	10.990	10.792	10.542	10.502	10.650	10.619	10.435	10.451	10.830
38	2nd Year Avg <sup>2</sup>	9.538	9.387	9.228	9.232	9.363	9.349	9.326	9.321	9.586
39	3rd Year Avg <sup>3</sup>	8.509	8.376	8.256	8.316	8.393	8.371	8.443	8.393	8.535
40	Total 3-Year Avg	9.679	9.518	9.342	9.350	9.469	9.446	9.402	9.388	9.650

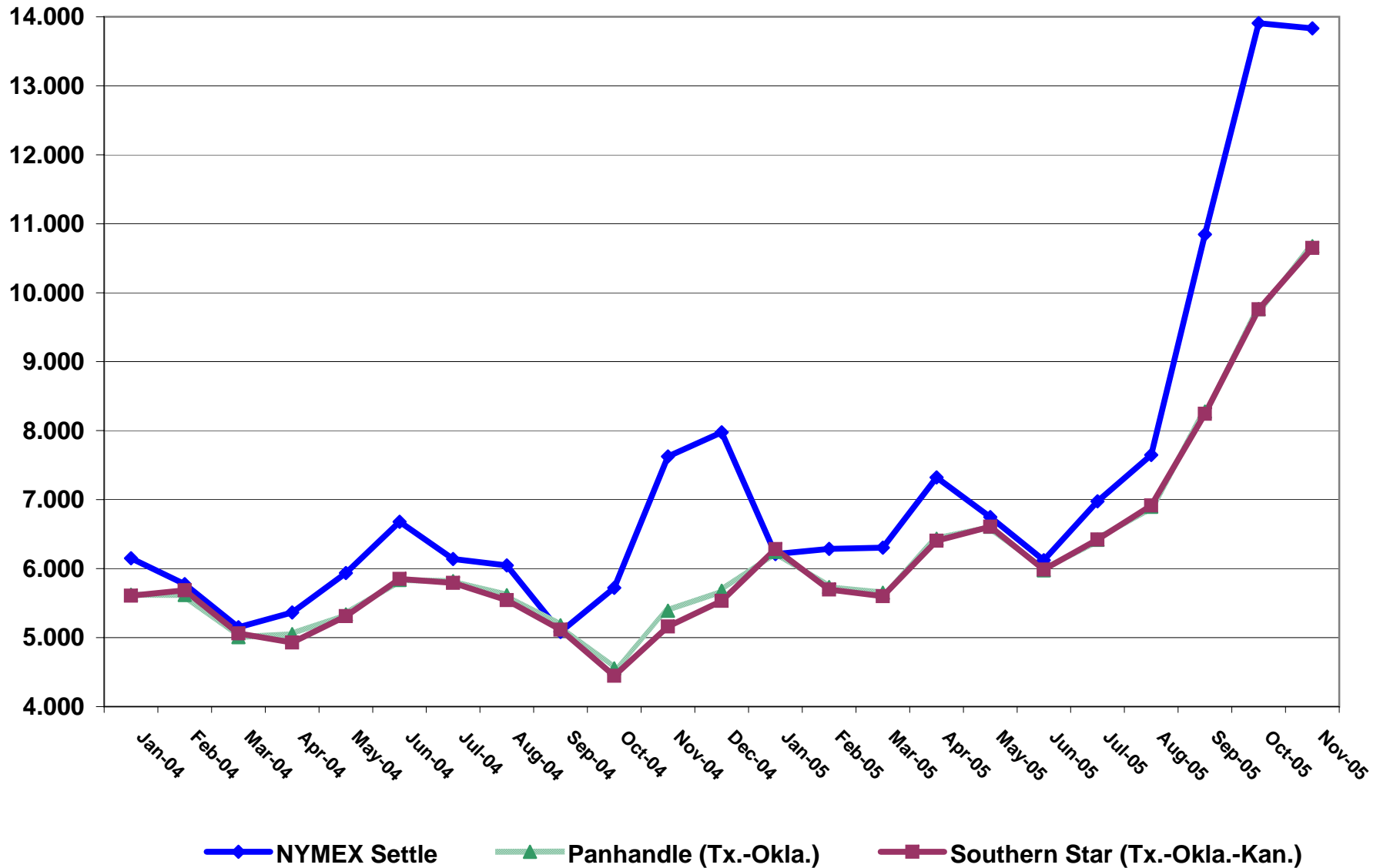
**Notes:**

<sup>1</sup> 1st year time frame is from April 2006 through March 2007

<sup>2</sup> 2nd year time frame is from April 2007 through March 2008

<sup>3</sup> 3rd year time frame is from April 2008 through March 2009

**NYMEX SETTLEMENT, PANHANDLE (TX.-OKLA.) & SOUTHERN STAR (TX.-OKLA.-KAN.)  
MONTHLY INDEX & SETTLEMENT PRICES - JANUARY 2004 - NOVEMBER 2005 - (\$/MMBtu)**



**NYMEX SETTLEMENT, PANHANDLE (TX.-OKLA.) & SOUTHERN STAR (TX.-OKLA.-KAN.)  
MONTHLY BASIS DIFFERENTIAL JANUARY 2004 - NOVEMBER 2005 - (\$/MMBtu)**

