



Minnesota Energy Resources Corporation
Suite 200
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Eagan, MN 55122
www.minnesotaenergyresources.com

January 24, 2017

VIA ELECTRONIC FILING

Daniel P. Wolf
Executive Secretary
Minnesota Public Utilities Commission
121 Seventh Place East, Suite 350
St. Paul, MN 55101

**Re: In the Matter of the Petition of Minnesota Energy Resources Corporation
For Extension of Rule Variances to Recover the Costs of Financial
Instruments Through the Purchased Gas Adjustment
Docket No. G011/M-17-_____**

Dear Mr. Wolf:

Enclosed please find the petition of Minnesota Energy Resources Corporation (“MERC” or the “Company”) for approval of a four-year extension of variances allowing the recovery of costs of financial instruments through the purchased gas adjustment (“PGA”). MERC’s current variances to the PGA Rules expire on June 30, 2017. MERC requests the Commission to act to extend its variances before June 30, 2017, to allow the Company to continue to use the PGA to recover the incurred costs of financial instruments used for hedging purposes in procuring natural gas supplies for its Minnesota customers.

MERC has served a copy of this petition on the Department of Commerce, Division of Energy Resources and the Office of the Attorney General – Residential Utilities and Antitrust Division. A summary of the filing has been served on all parties on the Company’s attached service list.

Please contact me at (651) 322-8965 if you have any questions regarding the information in this petition. Thank you for your attention to this matter.

Sincerely yours,

/s/ Amber S. Lee

Amber S. Lee
Regulatory and Legislative Affairs Manager
Minnesota Energy Resources Corporation

Enclosure
cc: Service List

**STATE OF MINNESOTA
BEFORE THE
MINNESOTA PUBLIC UTILITIES COMMISSION**

Nancy Lange
Dan Lipschultz
Matthew Schuerger
Katie Sieben
John Tuma

Chair
Commissioner
Commissioner
Commissioner
Commissioner

In the Matter of the Petition of Minnesota
Energy Resources Corporation for
Extension of Rule Variances to Recover
Costs of Financial Instruments Through
the Purchased Gas Adjustment

Docket No. G011/M-17-_____

SUMMARY OF FILING

Pursuant to Minnesota Rule 7829.3200, Minnesota Energy Resources Corporation (“MERC” or the “Company”) hereby petitions the Minnesota Public Utilities Commission (“Commission”) for an order granting an extension of variances to Minnesota Rules 7825.2400, 7825.2500, and 7825.2700 (the “Purchased Gas Adjustment Rules” or “PGA Rules”) to use the purchased gas adjustment (“PGA”) to recover the incurred costs of financial instruments used for hedging purposes in procuring natural gas supplies for Minnesota customers. The Commission first granted the variances at issue to MERC by Order dated July 10, 2007, in Docket No. G007,011/M-06-1358. The Commission subsequently issued an Order extending those variances on June 30, 2009, in Docket No. G007,011/M-09-262; on August 17, 2011, in Docket No. G007,011/M-11-296; on June 21, 2013, in Docket No. G007,011/M-13-207; and on May 28, 2015, in Docket No. G011/M-15-231. The most recent Order extended the Company’s variances through the period ending June 30, 2017. With this Petition, MERC requests extensions of the variances to the PGA Rules for four years, through June 30, 2021.

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In the Matter of the Petition of Minnesota
Energy Resources Corporation for
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Docket No. G011/M-17-_____

PETITION

Pursuant to Minnesota Rule 7829.3200, Minnesota Energy Resources Corporation (“MERC” or the “Company”) hereby petitions the Minnesota Public Utilities Commission (“Commission”) for an order granting an extension of variances to Minnesota Rules 7825.2400, 7825.2500, and 7825.2700 (the “Purchased Gas Adjustment Rules” or “PGA Rules”) to use the purchased gas adjustment (“PGA”) to recover the incurred costs of financial instruments used for hedging purposes in procuring natural gas supplies for Minnesota customers. The Commission first granted the variances at issue to MERC by Order dated July 10, 2007, in Docket No. G007,011/M-06-1358. The Commission subsequently issued an Order extending those variances on June 30, 2009, in Docket No. G007,011/M-09-262; on August 17, 2011, in Docket No. G007,011/M-11-296; on June 21, 2013, in Docket No. G007,011/M-13-207; and on May 28, 2015, in Docket No. G011/M-15-231. The most recent Order extended the Company’s variances through the period ending June 30, 2017. With this Petition, MERC requests extensions of the variances to the PGA Rules for four years through June 30, 2021.

I. SUMMARY OF FILING

Pursuant to Minn. R. 7829.1300, subp. 1, a one-paragraph summary of the filing is attached.

II. SERVICE

Pursuant to Minn. R. 7829.1300, subp. 2, MERC has served a copy of this Petition on the Department of Commerce, Division of Energy Resources (“Department”) and the Office of the Attorney General – Antitrust and Utilities Division. A summary of the filing has been served on all parties on the attached service list.

III. GENERAL FILING INFORMATION

A. Name, Address, and Telephone Number of Filing Party

Minnesota Energy Resources Corporation
1995 Rahncliff Court, Suite 200
Eagan, MN 55122
(651) 322-8965

B. Name, Address, Electronic Address, and Telephone Number of Attorney for the Filing Party

Kristin M. Stastny
Briggs and Morgan, P.A.
80 South Eighth Street
Minneapolis, MN 55402
kstastny@briggs.com
(612) 977-8656

C. Date of Filing

The date of the filing is January 24, 2017. MERC respectfully requests that the Commission grant the requested PGA Rule variances by June 30, 2017.

D. Statute Controlling Schedule for Processing the Filing

No statute controls the schedule for processing this filing. Under Minn. R. 7829.0100, subp. 11, the requested variances fall within the definition of a "Miscellaneous Tariff Filing" because no determination of MERC's general revenue requirement is necessary. Under Minn. R. 7829.1400, initial comments on a miscellaneous filing are due within 30 days of filing, with reply comments due 10 days thereafter.

E. Signature, Electronic Address, and Title of Utility Employee Responsible for Filing



Amber S. Lee
Regulatory and Legislative Affairs Manager
Minnesota Energy Resources Corporation
1995 Rahncliff Court, Suite 200
Eagan, MN 55122
ASLee@integrysgroup.com
(651) 322-8965

IV. DESCRIPTION AND PURPOSE OF FILING

A. Background

On July 10, 2007, in Docket No. G007,011/M-06-1358, the Commission issued an Order granting MERC variances to the PGA Rules. The Commission extended these variances on June 30, 2009, in Docket No. G007,011/M-09-262; on August 17, 2011, in Docket No. G007,011/M-11-296; on June 21, 2013, in Docket No. G007,011/M-13-207; and most recently on May 28, 2015, in Docket No. G011/M-15-231. In that docket, the Commission extended the variances through the period ending June 30, 2017.

The Commission's May 28, 2015, Order in Docket No. G011/M-15-231 authorized MERC to continue to engage in certain limited financial transactions to minimize price volatility of natural gas purchased to serve Minnesota customers, subject to certain limitations and an annual hedging cost cap. In addition to granting this authorization, the Commission:

- Set the cap on the amount of financial hedging to 30 percent of total projected heating-season sales volumes for the combined MERC system.
- Required the cost recovery occur through the commodity portion of rates rather than the demand portion.
- Required the Company to continue to include information on the costs and benefits of financial instruments in its monthly PGA filings and annual Demand Entitlement and Annual Automatic Adjustment filings.
- Required the Company to provide, in its Annual Fuel Report filed yearly on or about September 1st, a full post-mortem analysis of its hedged volumes for the preceding heating season compared to other hedging strategies and the prevailing market prices strategy.
- Required the Company, in its next request for a PGA rule variance, to demonstrate that ratepayers benefit from hedging and that there is not an undue price penalty.

This Petition is consistent with prior approvals and includes continuation of all prior reporting requirements. Consistent with the Commission's recent Orders in Docket Nos. G008/M-15-912¹ and G002/M-16-88,² MERC is requesting a four-year variance extension.

¹ *In the Matter of the Petition of CenterPoint Energy for Approval of an Extension of Rule Variances to Minnesota Rules to Recover the Costs of Certain Natural Gas Financial Instruments through the Purchased Gas Adjustment (PGA) Clause*, Docket No. G008/M-15-912, ORDER (Feb. 5, 2016).

² *In the Matter of a Petition by Northern States Power Company (Xcel) Requesting Approval of an Extension of Variances to Minnesota Rules to Allow Xcel to Recover the Costs of Financial Instruments Through the Purchased Gas Adjustment (PGA) Clause*, Docket No. G002/M-16-88, ORDER (Apr. 22, 2016).

B. Proposed Variances

MERC is requesting an extension of variances to Minn. R. 7825.2400, 7825.2500, and 7825.2700, to continue to recover the costs of financial instruments such as futures and options contracts through the PGA to mitigate the risks of price volatility for retail gas customers.

1. Extension of Variance

The existing variance expires June 30, 2017. MERC is proposing a four-year extension that would apply to financial positions entered into through June 30, 2021. A four-year extension of the variances would enable MERC to use financial instruments for the next four heating seasons (2017-2018; 2018-2019; 2019-2020; and 2020-2021) while also leaving ample opportunity for MERC to request, and the Commission and the Department to review, a subsequent extension petition before the variance ends.

MERC proposes that the extension be conditioned on MERC continuing to provide the reports required in Docket Nos. G007,011/M-03-821, G007,011/M-06-1358, G007,011/M-09-262, G007,011/M-13-207, and G011/M-15-231. These reports allow the Department and the Commission to regularly review MERC's financial instrument practices. If the Commission determines at some point during the extension period that the PGA Rule variance for financial instrument cost recovery is resulting in excessive costs to ratepayers, the Commission has the authority to disallow the costs or terminate the variance prior to June 30, 2021.

2. Accounting

MERC proposes to continue the accounting practices required by the existing variance, such that MERC would continue to record the cost associated with all financial instruments to FERC Account 804. MERC will continue to recover these costs through the commodity portion of rates.

3. Permitted Financial Instruments

MERC proposes to continue to use the mix of financial instruments permitted in the existing variances, including fixed-price, index-price, and swing contracts. As under the existing variances, MERC would be permitted to use put options in combination with call options to form a "collar," but would not be permitted to use put options for any other reason without Commission approval.

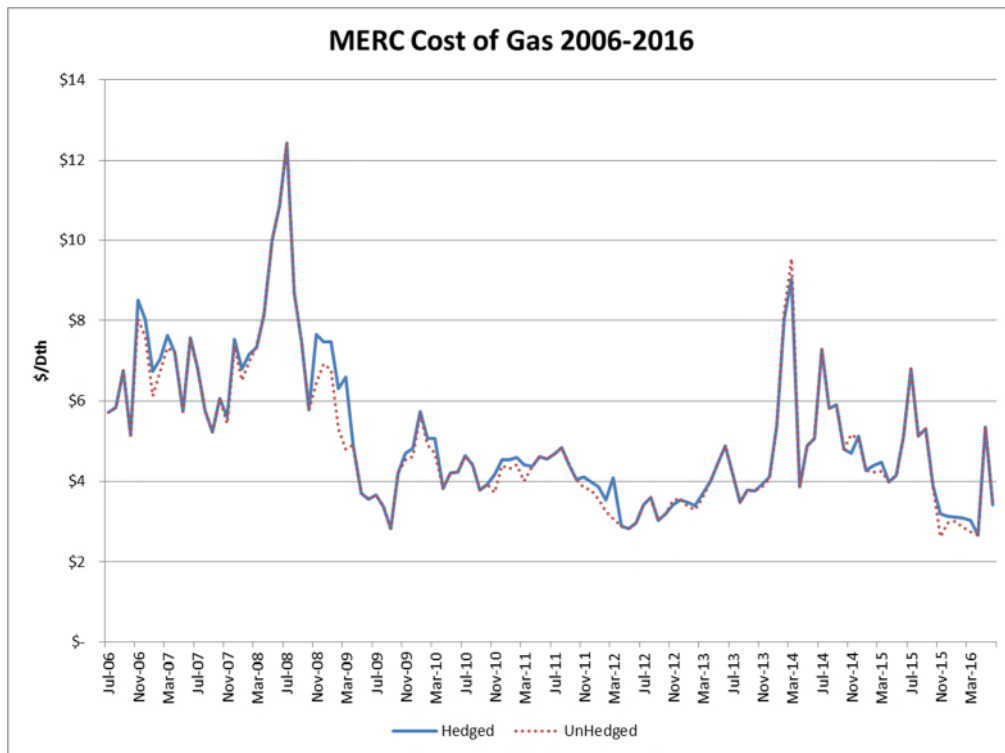
4. Cap on Amount of Financial Hedging

MERC proposes that the current cap of up to 30 percent of total projected heating season sales volumes remain in place. It is MERC's strategy to hedge 30 percent of total projected normal winter requirements with the use of financial instruments.

C. Ratepayer Benefit

In the May 28, 2015, Order issued in Docket No. G011/M-15-231, the Commission required that MERC demonstrate in its next request for PGA Rule variances that ratepayers benefit from hedging and that there is not an undue price penalty. MERC's use of financial instruments over the July 2006 through July 2016 time period has resulted in a 9.7 percent reduction in winter price volatility while accounting for 3.5 percent of the total cost of gas over the same period. Such reductions in price volatility benefit MERC's ratepayers by providing increased price certainty.

MERC purchases natural gas call option contracts representing up to 20 percent of each winter month's forecast gas requirement. Natural gas future contracts representing up to 10 percent of each winter month's price forecast are purchased as well. The impact of hedging (including gains and costs) on the price of purchased gas is shown in the following chart.



The information in the chart, and in the analysis in Attachment A filed contemporaneously with this Petition, demonstrates that the price increase due to hedging is relatively low when considering the benefit of reduced price volatility and protection from large winter price swings.

Over the period spanning July 2006 to June 2016, the summation of hedging costs represented 3.5 percent of the total cost of gas. Nearly half (41 percent) of hedging costs over the ten-year period result from the anomalous 2008 to 2009 period in which NYMEX natural gas prices soared to \$12.69/MMBtu in June 2008 and then plunged to

\$3.96/MMBtu by March 2009. This price event was caused by a massive run-up in commodity prices before the financial crash of late 2008 and ensuing recession.

MERC has continually refined its hedging strategy to reduce the premiums paid for call options, while still providing upside price protection. This strategy change has improved results dramatically. The most recent five-year period spanning July 2011 to June 2016 has hedging costs that represent only 1.5 percent of the total cost of gas. Volatility reduction has also improved over this period from 9.7 percent (2006-2016) to 17.6 percent (2011-2016).

Financial hedging is unlikely to provide lower costs than not utilizing financial hedging over time. However, the reduction in volatility and corresponding increase in bill certainty is a valuable benefit of hedging for MERC and its ratepayers that has come at a reasonable cost.

V. APPLICATION OF VARIANCE STANDARDS

MERC must obtain Commission approval of variances from three Commission rules in order to recover the costs of its hedging program through the PGA. These rules are:

- Minn. R. 7825.2400, subp. 12, which defines the cost of purchased gas as the cost of gas defined by the Minnesota uniform system of accounts, including specific accounts set forth by the Federal Energy Regulatory Commission (“FERC”), and defines “demand delivered gas cost” as the portion of the cost of purchased gas “other than the commodity-delivered gas costs,” including “associated costs incurred to deliver the gas to the utility’s distribution system.”
- Minn. R. 7825.2500(B), which permits an automatic adjustment of charges for “changes in the cost of commodity-delivered gas cost and demand-delivered gas cost for purchased gas.”
- Minn. R. 7825.2700, which permits natural gas utilities to file to adjust retail rates on a monthly basis to reflect changes in the delivered cost of the commodity natural gas, pipeline and contract storage capacity, and peak-shaving supplies purchased for resale.

Minn. R. 7829.3200 provides that the Commission may grant a variance to its rules if it finds that:

1. Enforcement of the rule would impose an excessive burden upon the applicant or others affected by the rule;
2. Granting the variance would not adversely affect the public interest; and
3. Granting the variance would not conflict with standards imposed by law.

A. Enforcement of the Rule Would Impose an Excessive Burden on MERC and Its Customers

The requested extension of variances will allow MERC to continue its current practice of financially hedging 30 percent of forecast winter sales. The cost of hedging, relative to

the total cost of gas, over the 2006 to 2016 period was approximately 3.5 percent. Hedging has reduced winter price volatility by approximately 9.7 percent over the same timeframe.

Although natural gas prices have been fairly stable over the last several years, the market is susceptible to events beyond MERC's control. Shifts in energy policy, extreme weather, and physical infrastructure (e.g., pipeline) damage, while rare, have the potential to dramatically affect natural gas prices. The purpose of MERC's hedging strategy is to mitigate price volatility that could arise from events such as these and to do so at a cost that still allows the Company to provide reasonably-priced natural gas. Enforcement of the PGA Rules would prevent MERC from using a widely accepted industry approach to protecting utility customers from undue harm in a fluctuating market. Therefore, enforcement of the PGA Rules would impose an excessive burden on MERC and its ratepayers. The Company's hedging analysis spreadsheet, filed contemporaneously with this Petition as Attachment A, provides support for the conclusion that enforcement of the rules would impose an excessive burden on the Company.

B. The Public Interest is Not Adversely Affected By Varying the Rule

The public interest would not be adversely affected by granting the requested extension of variances. As the Commission and the Department determined in Docket Nos. G007,011/M-06-1358, G007,011/M-09-262, G007,011/M-11-296, G007,011/M-13-207, and G011/M-15-231, ratepayers benefit from the use of financial instruments to mitigate natural gas volatility, and the responsible use of such instruments will be ensured by regulatory oversight for the duration of the extension.

C. The Proposed Variances Would Not Conflict With Standards Imposed By Law

The proposed variances do not conflict with any standards imposed by law. The Commission has previously granted the rule variances to MERC in Docket Nos. G007,011/M-06-1358, G007,011/M-09-262, G007,011/M-11-296, G007,011/M-13-207, and G011/M-15-231, and has granted similar PGA Rule variances to other Minnesota gas utilities. The Commission has therefore previously determined a variance to the PGA Rules does not conflict with standards imposed by law.

VI. EFFECT ON MERC'S REVENUE

The extension would allow recovery of the costs of financial instruments from MERC's retail natural gas customers pursuant to the PGA and annual PGA true-up. The additional revenue would be offset by the costs of the financial instruments and have no net change on MERC's earnings.

VII. CONCLUSION

MERC believes it is in the best interest of its ratepayers to be allowed the flexibility to recover through the PGA the incurred costs of financial instruments used for hedging purposes in procuring natural gas supplies for Minnesota customers. MERC respectfully requests that the Commission grant extensions to PGA Rule variances subject to the reporting requirements and limitations described above. MERC requests Commission action no later than June 1, 2017, so MERC may continue to engage in limited hedging transactions and recover the costs through the PGA.

Dated: January 24, 2017

Respectfully submitted,

/s/ Amber S. Lee

Amber S. Lee
Regulatory and Legislative Affairs Manager
Minnesota Energy Resources Corporation

In the Matter of the Petition of Minnesota Energy
Resources Corporation For Extension of Rule
Variances to Recover the Costs of Financial
Instruments Through the Purchased Gas
Adjustment

Docket No. G011/M-17-____

CERTIFICATE OF SERVICE

I, Lauren E. Pockl, hereby certify that on the 24th of January, 2017, on behalf of Minnesota Energy Resources Corporation, I electronically filed a true and correct copy of the enclosed Letter on www.edockets.state.mn.us. Said documents were also served via U.S. mail and electronic service as designated on the attached service list.

Dated this 24th of January, 2017.

/s/ Lauren E. Pockl
Lauren E. Pockl

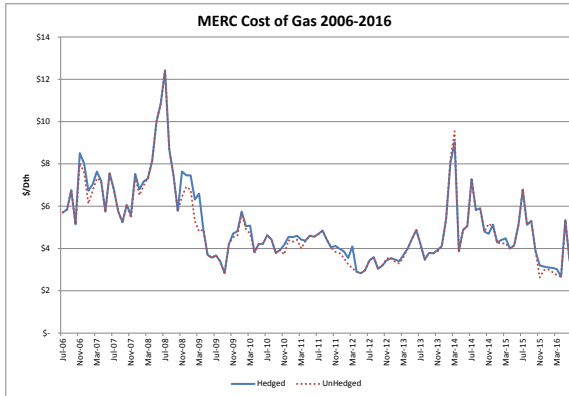
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Colleen	Sipiorski	ctsipiorski@integrysgroup.com	Minnesota Energy Resources Corporation	700 North Adams Street Green Bay, WI 54307	Electronic Service	No	GEN_SL_Minnesota Energy Resources Corporation_General Service List

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
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Daniel P	Wolf	dan.wolf@state.mn.us	Public Utilities Commission	121 7th Place East Suite 350 St. Paul, MN 551012147	Electronic Service	No	GEN_SL_Minnesota Energy Resources Corporation_General Service List

	Futures			NYMEX				Futures			Futures		
	Volumes	Futures	Market	Futures	Market	Futures		Volumes	Futures	Market	Futures	Market	
	Dth	Price	Price	Cost	Cost	Gain (Loss)		Dth	Price	Price	Cost	Cost	
Nov-06	730,000	\$ 8.0058	\$ 7.4100	\$ 5,844,227	\$ 5,409,300	\$ (434,927)	Nov 06-Mar07	2,890,000	\$ 8.3801	\$ 7.0467	\$ 24,218,599	\$ 20,365,000	
Dec-06	570,000	\$ 7.6372	\$ 6.7300	\$ 4,353,183	\$ 3,836,100	\$ (517,083)	Nov 07-Mar08	3,446,204	\$ 7.7706	\$ 8.1063	\$ 26,779,104	\$ 27,935,989	
Jan-07	760,000	\$ 8.7618	\$ 6.5500	\$ 6,658,945	\$ 4,978,000	\$ (1,680,945)	Nov 08-Mar09	3,530,651	\$ 9.2630	\$ 5.2348	\$ 32,704,324	\$ 18,482,170	
Feb-07	270,000	\$ 9.9999	\$ 8.0000	\$ 2,699,961	\$ 2,160,000	\$ (539,961)	Nov 09-Mar10	3,514,110	\$ 4.6913	\$ 4.7601	\$ 16,485,653	\$ 16,727,431	
Mar-07	560,000	\$ 8.3255	\$ 7.1100	\$ 4,662,283	\$ 3,981,600	\$ (680,683)	Nov 10-Mar11	3,130,000	\$ 5.1016	\$ 4.0679	\$ 15,967,950	\$ 12,732,500	
Nov-07	791,370	\$ 7.0534	\$ 7.1000	\$ 5,581,881	\$ 5,618,727	\$ 36,846	Nov 11-Mar12	3,200,000	\$ 4.1710	\$ 2.7208	\$ 13,347,110	\$ 8,706,700	
Dec-07	475,571	\$ 7.1030	\$ 7.1100	\$ 3,377,989	\$ 3,381,310	\$ 3,321	Nov 12-Mar13	4,020,000	\$ 3.4201	\$ 3.4897	\$ 13,748,980	\$ 14,028,500	
Jan-08	820,911	\$ 8.3825	\$ 7.9900	\$ 6,881,291	\$ 6,559,079	\$ (322,212)	Nov 13-Mar14	2,190,000	\$ 4.1054	\$ 4.6953	\$ 8,990,830	\$ 10,282,700	
Feb-08	465,769	\$ 8.1406	\$ 8.5400	\$ 3,791,650	\$ 3,977,667	\$ 186,017	Nov 14-Mar15	2,520,000	\$ 4.1422	\$ 3.2069	\$ 10,438,250	\$ 8,081,500	
Mar-08	892,583	\$ 8.0063	\$ 9.4100	\$ 7,146,293	\$ 8,399,206	\$ 1,252,913	Nov 15-Mar16	3,150,000	\$ 2.9853	\$ 1.9711	\$ 9,403,840	\$ 6,208,900	
Nov-08	830,100	\$ 10.4316	\$ 6.6800	\$ 8,659,244	\$ 5,545,068	\$ (3,114,176)	Total	31,590,965	\$ 5.4473	\$ 4.5441	\$ 172,084,640	\$ 143,551,390	
Dec-08	560,139	\$ 8.6958	\$ 5.8200	\$ 4,870,884	\$ 3,260,009	\$ (1,610,875)							
Jan-09	750,169	\$ 8.1810	\$ 5.2400	\$ 6,137,134	\$ 3,930,886	\$ (2,206,248)							
Feb-09	430,080	\$ 9.5095	\$ 4.5200	\$ 4,089,862	\$ 1,943,962	\$ (2,145,900)							
Mar-09	960,163	\$ 9.3184	\$ 3.9600	\$ 8,947,200	\$ 3,802,245	\$ (5,144,955)							
Nov-09	830,220	\$ 3.8317	\$ 3.6600	\$ 3,181,147	\$ 3,038,605	\$ (142,542)							
Dec-09	570,152	\$ 5.6093	\$ 5.3500	\$ 3,198,174	\$ 3,050,313	\$ (147,861)							
Jan-10	750,169	\$ 5.1188	\$ 5.8300	\$ 3,839,995	\$ 4,373,485	\$ 533,490							
Feb-10	403,220	\$ 4.8472	\$ 5.3200	\$ 1,954,484	\$ 2,145,130	\$ 190,646							
Mar-10	960,349	\$ 4.4899	\$ 4.2900	\$ 4,311,852	\$ 4,119,897	\$ (191,955)							
Nov-10	780,000	\$ 5.1053	\$ 3.7100	\$ 3,982,100	\$ 2,893,800	\$ (1,088,300)							
Dec-10	400,000	\$ 5.0141	\$ 4.2500	\$ 2,005,620	\$ 1,700,000	\$ (305,620)							
Jan-11	690,000	\$ 5.3842	\$ 4.4900	\$ 3,715,080	\$ 3,098,100	\$ (616,980)							
Feb-11	320,000	\$ 4.7736	\$ 4.0900	\$ 1,527,540	\$ 1,308,800	\$ (218,740)							
Mar-11	940,000	\$ 5.0400	\$ 3.9700	\$ 4,737,610	\$ 3,731,800	\$ (1,005,810)							
Nov-11	790,000	\$ 3.9665	\$ 3.2400	\$ 3,133,530	\$ 2,559,600	\$ (573,930)							
Dec-11	450,000	\$ 4.3375	\$ 3.1700	\$ 1,951,860	\$ 1,426,500	\$ (525,360)							
Jan-12	690,000	\$ 4.1833	\$ 2.6700	\$ 2,886,490	\$ 1,842,300	\$ (1,044,190)							
Feb-12	360,000	\$ 4.5582	\$ 2.5100	\$ 1,640,940	\$ 903,600	\$ (737,340)							
Mar-12	910,000	\$ 4.1036	\$ 2.1700	\$ 3,734,290	\$ 1,974,700	\$ (1,759,590)							
Nov-12	920,000	\$ 3.2616	\$ 3.5400	\$ 3,000,660	\$ 3,256,800	\$ 256,140							
Dec-12	710,000	\$ 2.9777	\$ 3.3400	\$ 2,114,180	\$ 2,371,400	\$ 257,220							
Jan-13	970,000	\$ 3.4091	\$ 3.3300	\$ 3,306,860	\$ 3,230,100	\$ (76,760)							
Feb-13	500,000	\$ 3.5076	\$ 3.3300	\$ 1,753,810	\$ 1,665,000	\$ (88,810)							
Mar-13	920,000	\$ 3.8842	\$ 3.8100	\$ 3,573,470	\$ 3,505,200	\$ (68,270)							
Nov-13	480,000	\$ 3.9226	\$ 3.6400	\$ 1,882,830	\$ 1,747,200	\$ (135,630)							
Dec-13	100,000	\$ 4.4558	\$ 4.2400	\$ 445,580	\$ 424,000	\$ (21,580)							
Jan-14	450,000	\$ 4.3580	\$ 4.7100	\$ 1,961,090	\$ 2,119,500	\$ 158,410							
Feb-14	280,000	\$ 4.9870	\$ 6.0000	\$ 1,396,360	\$ 1,680,000	\$ 283,640							
Mar-14	880,000	\$ 3.7556	\$ 4.9000	\$ 3,304,970	\$ 4,312,000	\$ 1,007,030							
Nov-14	580,000	\$ 4.5364	\$ 4.1200	\$ 2,631,120	\$ 2,389,600	\$ (241,520)							
Dec-14	170,000	\$ 3.5139	\$ 3.4800	\$ 597,360	\$ 591,600	\$ (5,760)							
Jan-15	490,000	\$ 4.1984	\$ 2.9900	\$ 2,057,200	\$ 1,465,100	\$ (592,100)							
Feb-15	320,000	\$ 4.0623	\$ 2.8700	\$ 1,299,950	\$ 918,400	\$ (381,550)							
Mar-15	960,000	\$ 4.0131	\$ 2.8300	\$ 3,852,620	\$ 2,716,800	\$ (1,135,820)							
Nov-15	630,000	\$ 2.8942	\$ 2.0900	\$ 1,823,360	\$ 1,316,700	\$ (506,660)							
Dec-15	360,000	\$ 2.7181	\$ 1.9300	\$ 978,530	\$ 694,800	\$ (283,730)							
Jan-16	620,000	\$ 3.1374	\$ 2.2800	\$ 1,945,160	\$ 1,413,600	\$ (531,560)							
Feb-16	460,000	\$ 3.0098	\$ 1.9900	\$ 1,384,490	\$ 915,400	\$ (469,090)							
Mar-16	1,080,000	\$ 3.0299	\$ 1.7300	\$ 3,272,300	\$ 1,868,400	\$ (1,403,900)							
Nov-16	320,000	\$ 2.6390	\$ 2.5500	\$ 844,490	\$ 816,000	\$ (28,490)							
Dec-16	460,000	\$ 3.3786	\$ 3.2320	\$ 1,554,160	\$ 1,486,720	\$ (67,440)							
Jan-17	560,000	\$ 3.9300	\$ 3.9300	\$ 2,200,800	\$ 2,200,800								

	NYMEX													
	Volumes Dth	Option Price	Market Price	Option Cost	Market Cost	Option Premium	Option Market Gain	Volumes Dth	Option Price	Market Price	Option Cost	Market Cost	Premium Cost	
Nov-06	1,080,000	\$ 8.3434	\$ 7.4100	\$ 9,010,850	\$ 8,002,800	\$ 1,008,050	\$ -	Nov 06-Mar07	6,640,000	\$ 7.8963	\$ 7.1048	\$ 52,431,750	\$ 47,176,000	\$ 5,255,750
Dec-06	1,480,000	\$ 7.6219	\$ 6.7300	\$ 11,280,350	\$ 9,960,400	\$ 1,319,950	\$ -	Nov 07-Mar08	6,580,000	\$ 8.7944	\$ 8.0397	\$ 57,867,130	\$ 52,901,100	\$ 4,986,030
Jan-07	1,670,000	\$ 7.3749	\$ 6.5500	\$ 12,316,100	\$ 10,938,500	\$ 1,377,600	\$ -	Nov 08-Mar09	6,800,000	\$ 6.3772	\$ 5.2261	\$ 43,365,275	\$ 35,537,400	\$ 7,827,875
Feb-07	1,280,000	\$ 8.8727	\$ 8.0000	\$ 11,357,000	\$ 10,240,000	\$ 1,117,000	\$ -	Nov 09-Mar10	6,810,000	\$ 5.5576	\$ 5.0085	\$ 37,847,473	\$ 34,107,800	\$ 3,740,673
Mar-07	1,130,000	\$ 7.4933	\$ 7.1100	\$ 8,467,450	\$ 8,034,300	\$ 433,150	\$ -	Nov 10-Mar11	6,580,000	\$ 4.5302	\$ 4.1431	\$ 29,808,717	\$ 27,261,800	\$ 2,546,917
Nov-07	1,010,000	\$ 7.6617	\$ 7.1000	\$ 7,731,130	\$ 7,171,000	\$ 574,530	\$ 7,200	Nov 11-Mar12	6,600,000	\$ 3.0061	\$ 2.7496	\$ 19,840,170	\$ 18,147,400	\$ 1,692,770
Dec-07	1,370,000	\$ 7.6937	\$ 7.1100	\$ 10,540,350	\$ 9,740,700	\$ 799,650	\$ -	Nov 12-Mar13	7,550,000	\$ 3.5399	\$ 3.4381	\$ 26,726,340	\$ 25,957,500	\$ 778,840
Jan-08	1,630,000	\$ 8.8153	\$ 7.9900	\$ 14,368,900	\$ 13,023,700	\$ 1,345,200	\$ -	Nov 13-Mar14	6,140,000	\$ 4.0604	\$ 4.7995	\$ 24,931,130	\$ 29,469,200	\$ 4,538,070
Feb-08	1,400,000	\$ 9.4146	\$ 8.5400	\$ 13,180,500	\$ 11,956,000	\$ 1,224,500	\$ -	Nov 14-Mar15	6,350,000	\$ 3.3621	\$ 3.1918	\$ 21,349,430	\$ 20,268,000	\$ 1,081,430
Mar-08	1,170,000	\$ 10.2959	\$ 9.4100	\$ 12,046,250	\$ 11,009,700	\$ 1,036,550	\$ -	Nov 15-Mar16	7,070,000	\$ 2.2599	\$ 2.0120	\$ 15,977,400	\$ 14,224,800	\$ 1,752,600
Nov-08	1,070,000	\$ 7.6204	\$ 6.6800	\$ 8,153,859	\$ 7,147,600	\$ 1,006,259	\$ -							
Dec-08	1,510,000	\$ 6.7820	\$ 5.8200	\$ 10,240,800	\$ 8,788,200	\$ 1,452,600	\$ -	Total	67,120,000	\$ 4.9187	\$ 4.5449	\$ 330,144,815	\$ 305,051,000	\$ 33,054,725
Jan-09	1,650,000	\$ 6.3827	\$ 5.2400	\$ 10,531,500	\$ 8,646,000	\$ 1,885,500	\$ -							
Feb-09	1,390,000	\$ 5.8381	\$ 4.5200	\$ 8,114,966	\$ 6,282,800	\$ 1,832,166	\$ -							
Mar-09	1,180,000	\$ 5.3594	\$ 3.9600	\$ 6,324,150	\$ 4,672,800	\$ 1,651,350	\$ -							
Nov-09	1,080,000	\$ 4.0515	\$ 3.6600	\$ 4,362,276	\$ 3,952,800	\$ 436,264	\$ 13,394							
Dec-09	1,510,000	\$ 5.9339	\$ 5.3500	\$ 8,960,138	\$ 8,078,500	\$ 881,638	\$ -							
Jan-10	1,650,000	\$ 6.3632	\$ 5.8300	\$ 10,443,390	\$ 9,619,500	\$ 939,510	\$ 55,910							
Feb-10	1,390,000	\$ 5.9112	\$ 5.3200	\$ 8,183,159	\$ 7,394,800	\$ 855,121	\$ 33,381							
Mar-10	1,180,000	\$ 4.9993	\$ 4.2900	\$ 5,898,510	\$ 5,062,200	\$ 837,750	\$ 720							
Nov-10	1,020,000	\$ 4.0245	\$ 3.7100	\$ 4,105,028	\$ 3,784,200	\$ 320,828	\$ -							
Dec-10	1,420,000	\$ 4.5842	\$ 4.2500	\$ 6,509,527	\$ 6,035,000	\$ 474,527	\$ -							
Jan-11	1,620,000	\$ 4.8988	\$ 4.4900	\$ 7,934,460	\$ 7,273,800	\$ 663,760	\$ 1,550							
Feb-11	1,370,000	\$ 4.5275	\$ 4.0900	\$ 6,169,450	\$ 5,603,300	\$ 632,650	\$ 33,250							
Mar-11	1,150,000	\$ 4.4263	\$ 3.9700	\$ 5,090,252	\$ 4,565,500	\$ 524,752	\$ -							
Nov-11	1,040,000	\$ 3.4417	\$ 3.2400	\$ 3,579,320	\$ 3,369,600	\$ 209,720	\$ -							
Dec-11	1,430,000	\$ 3.3920	\$ 3.1700	\$ 4,850,590	\$ 4,533,100	\$ 317,490	\$ -							
Jan-12	1,620,000	\$ 2.9338	\$ 2.6700	\$ 4,752,700	\$ 4,325,400	\$ 427,300	\$ -							
Feb-12	1,390,000	\$ 2.7948	\$ 2.5100	\$ 3,884,770	\$ 3,488,900	\$ 395,870	\$ -							
Mar-12	1,120,000	\$ 2.4757	\$ 2.1700	\$ 2,772,790	\$ 2,430,400	\$ 342,390	\$ -							
Nov-12	1,150,000	\$ 3.5356	\$ 3.5400	\$ 3,870,080	\$ 4,071,000	\$ 190,740	\$ 195,830							
Dec-12	1,770,000	\$ 3.3696	\$ 3.3400	\$ 5,678,370	\$ 5,911,800	\$ 338,070	\$ 285,750							
Jan-13	1,920,000	\$ 3.5667	\$ 3.3300	\$ 6,846,720	\$ 6,393,600	\$ 455,680	\$ 1,280							
Feb-13	1,550,000	\$ 3.6065	\$ 3.3300	\$ 5,583,630	\$ 5,161,500	\$ 433,130	\$ 6,500							
Mar-13	1,160,000	\$ 4.0927	\$ 3.8100	\$ 4,747,540	\$ 4,419,600	\$ 327,940	\$ -							
Nov-13	830,000	\$ 3.7812	\$ 3.6400	\$ 3,104,760	\$ 3,021,200	\$ 150,760	\$ 33,600							
Dec-13	1,240,000	\$ 4.4172	\$ 4.2400	\$ 5,455,770	\$ 5,257,600	\$ 241,290	\$ 21,560							
Jan-14	1,540,000	\$ 4.7113	\$ 4.7100	\$ 6,853,610	\$ 7,253,400	\$ 403,910	\$ 401,850							
Feb-14	1,400,000	\$ 5.5267	\$ 6.0000	\$ 6,652,780	\$ 8,400,000	\$ 421,980	\$ 1,084,600							
Mar-14	1,130,000	\$ 3.8711	\$ 4.9000	\$ 2,864,210	\$ 5,537,000	\$ 347,450	\$ 1,510,120							
Nov-14	890,000	\$ 4.2691	\$ 4.1200	\$ 3,799,490	\$ 3,666,800	\$ 132,690	\$ -							
Dec-14	1,300,000	\$ 3.4656	\$ 3.4800	\$ 4,211,260	\$ 4,524,000	\$ 275,180	\$ 293,960							
Jan-15	1,550,000	\$ 3.2387	\$ 2.9900	\$ 5,020,010	\$ 4,634,500	\$ 385,510	\$ -							
Feb-15	1,410,000	\$ 3.1785	\$ 2.8700	\$ 4,481,670	\$ 4,046,700	\$ 434,970	\$ -							
Mar-15	1,200,000	\$ 3.1975	\$ 2.8300	\$ 3,837,000	\$ 3,396,000	\$ 441,000	\$ -							
Nov-15	960,000	\$ 2.2322	\$ 2.0900	\$ 2,142,880	\$ 2,006,400	\$ 136,480	\$ -							
Dec-15	1,510,000	\$ 2.1138	\$ 1.9300	\$ 3,191,890	\$ 2,914,300	\$ 277,590	\$ -							
Jan-16	1,710,000	\$ 2.5308	\$ 2.2800	\$ 4,327,710	\$ 3,898,800	\$ 428,910	\$ -							
Feb-16	1,560,000	\$ 2.2907	\$ 1.9900	\$ 3,573,480	\$ 3,104,400	\$ 469,080	\$ -							
Mar-16	1,330,000	\$ 2.0612	\$ 1.7300	\$ 2,741,440	\$ 2,300,900	\$ 440,540	\$ -							
Nov-16	650,000	\$ 2.7037	\$ 2.5500	\$ 1,751,780	\$ 1,657,500	\$ 105,560	\$ 5,640							
Dec-16	940,000	\$ 3.4439	\$ 3.2320	\$ 3,225,240	\$ 3,038,080	\$ 211,160	\$ 12,000							
Jan-17	1,130,000	\$ 4.2166	\$ 3.9300	\$ 4,764,710	\$ 4,440,900	\$ 323,810	\$ -							

	Hedged Price	Ln(Price Change)	Unhedged Price	Ln(Price Change)
Jul-06	\$ 5.7084		\$ 5.7084	
Aug-06	\$ 5.8386		\$ 5.8386	
Sep-06	\$ 6.7629		\$ 6.7629	
Oct-06	\$ 5.1477		\$ 5.1477	
Nov-06	\$ 8.5039	0.5020	\$ 8.0293	0.4446
Dec-06	\$ 8.0160	-0.0591	\$ 7.5883	-0.0565
Jan-07	\$ 6.7318	-0.1746	\$ 6.1168	-0.2156
Feb-07	\$ 7.0285	0.0431	\$ 6.7243	0.0947
Mar-07	\$ 7.5369	0.0830	\$ 7.3233	0.0853
Apr-07	\$ 7.2019		\$ 7.2019	
May-07	\$ 5.7461		\$ 5.7461	
Jun-07	\$ 7.5616		\$ 7.5616	
Jul-07	\$ 6.7903		\$ 6.7903	
Aug-07	\$ 5.7906		\$ 5.7906	
Sep-07	\$ 5.2389		\$ 5.2389	
Oct-07	\$ 6.0632		\$ 6.0632	
Nov-07	\$ 5.5876	-0.0817	\$ 5.4402	-0.1084
Dec-07	\$ 7.5278	0.2981	\$ 7.3737	0.3041
Jan-08	\$ 6.7993	-0.1018	\$ 6.5197	-0.1231
Feb-08	\$ 7.1653	0.0536	\$ 6.9753	0.0676
Mar-08	\$ 7.3137	0.0204	\$ 7.3581	0.0534
Apr-08	\$ 8.1440		\$ 8.1440	
May-08	\$ 10.0090		\$ 10.0090	
Jun-08	\$ 10.8578		\$ 10.8578	
Jul-08	\$ 12.4254		\$ 12.4254	
Aug-08	\$ 8.6916		\$ 8.6916	
Sep-08	\$ 7.4569		\$ 7.4569	
Oct-08	\$ 5.7782		\$ 5.7782	
Nov-08	\$ 7.6434	0.2798	\$ 6.4544	0.1107
Dec-08	\$ 7.4618	-0.0240	\$ 6.9201	0.0697
Jan-09	\$ 6.5557	-0.0008	\$ 6.7785	-0.0207
Feb-09	\$ 6.3119	-0.1666	\$ 5.3097	-0.2442
Mar-09	\$ 6.5910	0.0433	\$ 4.7986	-0.1012
Apr-09	\$ 4.9035		\$ 4.9035	
May-09	\$ 3.6965		\$ 3.6965	
Jun-09	\$ 3.5651		\$ 3.5651	
Jul-09	\$ 3.6718		\$ 3.6718	
Aug-09	\$ 3.3798		\$ 3.3798	
Sep-09	\$ 2.8307		\$ 2.8307	
Oct-09	\$ 4.2100		\$ 4.2100	
Nov-09	\$ 4.7096	0.1121	\$ 4.5311	0.0735
Dec-09	\$ 4.8123	0.0248	\$ 4.6145	0.0183
Jan-10	\$ 5.7401	0.1763	\$ 5.6786	0.2075
Feb-10	\$ 5.0597	-0.1262	\$ 4.9116	-0.1451
Mar-10	\$ 5.0763	0.0033	\$ 4.7043	-0.0431
Apr-10	\$ 3.8185		\$ 3.8185	
May-10	\$ 4.2040		\$ 4.2040	
Jun-10	\$ 4.2300		\$ 4.2300	
Jul-10	\$ 4.6296		\$ 4.6296	
Aug-10	\$ 4.4253		\$ 4.4253	
Sep-10	\$ 3.7882		\$ 3.7882	
Oct-10	\$ 3.9271		\$ 3.9271	
Nov-10	\$ 4.1723	0.0696	\$ 3.7210	-0.0539
Dec-10	\$ 4.5471	0.0860	\$ 4.3941	0.1663
Jan-11	\$ 4.5405	-0.0015	\$ 4.3146	-0.182
Feb-11	\$ 4.5983	0.0127	\$ 4.4165	0.0233
Mar-11	\$ 4.4194	-0.0397	\$ 4.0016	-0.0987
Apr-11	\$ 4.3667		\$ 4.3667	
May-11	\$ 4.6106		\$ 4.6106	
Jun-11	\$ 4.5551		\$ 4.5551	
Jul-11	\$ 4.6827		\$ 4.6827	
Aug-11	\$ 4.8483		\$ 4.8483	
Sep-11	\$ 4.4209		\$ 4.4209	
Oct-11	\$ 4.0525		\$ 4.0525	
Nov-11	\$ 4.1205	0.0167	\$ 3.8421	-0.0533
Dec-11	\$ 3.9881	-0.0327	\$ 3.7790	-0.0165
Jan-12	\$ 3.8655	-0.0312	\$ 3.5553	-0.0610
Feb-12	\$ 3.5479	-0.0857	\$ 3.2516	-0.0893
Mar-12	\$ 4.0966	0.1438	\$ 3.0672	-0.0584
Apr-12	\$ 2.8970		\$ 2.8970	
May-12	\$ 2.8296		\$ 2.8296	
Jun-12	\$ 2.9734		\$ 2.9734	
Jul-12	\$ 3.4264		\$ 3.4264	
Aug-12	\$ 3.5931		\$ 3.5931	
Sep-12	\$ 3.0425		\$ 3.0425	
Oct-12	\$ 3.1892		\$ 3.1892	
Nov-12	\$ 3.4271	0.0719	\$ 3.5130	0.0967
Dec-12	\$ 3.5355	0.0312	\$ 3.5798	0.0188
Jan-13	\$ 3.4787	-0.0162	\$ 3.3802	-0.0574
Feb-13	\$ 3.4027	-0.0221	\$ 3.2874	-0.0278
Mar-13	\$ 3.6866	0.0801	\$ 3.5911	0.0884
Apr-13	\$ 4.0078		\$ 4.0078	
May-13	\$ 4.4629		\$ 4.4629	
Jun-13	\$ 4.8792		\$ 4.8792	
Jul-13	\$ 4.1942		\$ 4.1942	
Aug-13	\$ 3.4716		\$ 3.4716	
Sep-13	\$ 3.7940		\$ 3.7940	
Oct-13	\$ 3.7718		\$ 3.7718	
Nov-13	\$ 3.9270	0.0403	\$ 3.8606	0.0233
Dec-13	\$ 4.1153	0.0468	\$ 4.0750	0.0541
Jan-14	\$ 5.3868	0.2692	\$ 5.4107	0.2835
Feb-14	\$ 8.0292	0.3991	\$ 8.1974	0.4154
Mar-14	\$ 9.0247	0.1169	\$ 9.5399	0.1517
Apr-14	\$ 3.8583		\$ 3.8583	
May-14	\$ 4.8772		\$ 4.8772	
Jun-14	\$ 5.0656		\$ 5.0656	
Jul-14	\$ 7.2739		\$ 7.2739	
Aug-14	\$ 5.8226		\$ 5.8226	
Sep-14	\$ 5.8907		\$ 5.8907	
Oct-14	\$ 4.7964		\$ 4.7964	
Nov-14	\$ 4.6974	-0.0209	\$ 5.1692	0.0748
Dec-14	\$ 5.1297	0.0880	\$ 5.0474	-0.0238
Jan-15	\$ 4.2784	-0.1815	\$ 4.2808	-0.1647
Feb-15	\$ 4.4048	0.0291	\$ 4.2328	-0.0113
Mar-15	\$ 4.4838	0.0178	\$ 4.2469	0.0033
Apr-15	\$ 3.9963		\$ 3.9963	
May-15	\$ 4.1418		\$ 4.1418	
Jun-15	\$ 5.1228		\$ 5.1228	
Jul-15	\$ 6.7851		\$ 6.7851	
Aug-15	\$ 5.1215		\$ 5.1215	
Sep-15	\$ 5.3033		\$ 5.3033	
Oct-15	\$ 3.8822		\$ 3.8822	
Nov-15	\$ 3.1961	-0.1945	\$ 2.6302	-0.3893
Dec-15	\$ 3.1425	-0.0199	\$ 2.9782	0.1243
Jan-16	\$ 3.1041	-0.0123	\$ 3.0055	0.0091
Feb-16	\$ 3.0843	-0.0064	\$ 2.8792	-0.0429
Mar-16	\$ 3.0265	-0.0189	\$ 2.7416	-0.0490
Apr-16	\$ 2.6633		\$ 2.6633	
May-16	\$ 5.3437		\$ 5.3437	
Jun-16	\$ 3.4188		\$ 3.4188	



Winter Price Volatility	13.41%	14.85%
Volatility Reduction Due to Hedging	0.69%	
2011-2016 Winter Price Volatility	11.89%	14.43%
Volatility Reduction Due to Hedging	17.57%	

Definition:
The relative rate at which the price of a security moves up and down.

Equation:
Annual price volatility ($\sigma_{p,t}$) is calculated as the standard deviation of monthly price changes

Where:
 $\sigma_{p,t}$ = Standard Deviation ($C_{t+1,t}$)
 $C_t = \ln(p_t/p_{t-1})$ Ln = Natural Logarithm

From AAA Input File

Month	Volume	with Hedging		without Hedging		
		Cost	Hedging Cost/unit	Hedging Loss (Gain)	Cost	Hedging Cost/unit
Jul-06	535,243	\$3,055,387	\$5.71	\$0	\$3,055,387	\$5.71
Aug-06	804,987	\$4,699,986	\$5.84	\$0	\$4,699,986	\$5.84
Sep-06	816,482	\$5,521,820	\$6.76	\$0	\$5,521,820	\$6.76
Oct-06	2,199,627	\$11,322,991	\$5.15	\$0	\$11,322,991	\$5.15
Nov-06	3,040,534	\$25,856,365	\$8.50	\$1,442,977	\$24,413,388	\$8.03
Dec-06	4,295,567	\$34,433,241	\$8.02	\$1,837,033	\$32,596,208	\$7.59
Jan-07	6,973,386	\$33,479,681	\$6.73	\$3,058,545	\$30,421,136	\$6.12
Feb-07	5,445,495	\$38,280,629	\$7.03	\$1,656,961	\$36,623,668	\$6.72
Mar-07	3,561,975	\$27,126,021	\$7.64	\$1,113,883	\$26,012,138	\$7.32
Apr-07	2,174,912	\$15,663,580	\$7.20	\$0	\$15,663,580	\$7.20
May-07	1,117,339	\$6,420,365	\$5.75	\$0	\$6,420,365	\$5.75
Jun-07	440,960	\$3,334,362	\$7.56	\$0	\$3,334,362	\$7.56
Jul-07	687,683	\$4,669,559	\$6.79	\$0	\$4,669,559	\$6.79
Aug-07	656,746	\$3,783,260	\$5.76	\$0	\$3,783,260	\$5.76
Sep-07	878,464	\$4,602,172	\$5.24	\$0	\$4,602,172	\$5.24
Oct-07	1,737,296	\$10,533,553	\$6.06	\$0	\$10,533,553	\$6.06
Nov-07	3,590,414	\$20,106,426	\$5.59	\$530,484	\$19,575,942	\$5.44
Dec-07	5,168,722	\$38,909,079	\$7.53	\$796,329	\$38,112,750	\$7.37
Jan-08	5,962,078	\$40,538,152	\$6.80	\$1,667,412	\$38,870,740	\$6.52
Feb-08	4,538,275	\$38,972,130	\$7.17	\$1,038,483	\$37,933,647	\$6.98
Mar-08	4,873,548	\$35,643,759	\$7.31	(\$216,363)	\$35,860,122	\$7.36
Apr-08	2,103,698	\$17,132,479	\$8.14	\$0	\$17,132,479	\$8.14
May-08	1,262,118	\$12,632,498	\$10.01	\$0	\$12,632,498	\$10.01
Jun-08	547,520	\$5,944,852	\$10.86	\$0	\$5,944,852	\$10.86
Jul-08	664,382	\$8,255,188	\$12.43	\$0	\$8,255,188	\$12.43
Aug-08	651,933	\$5,666,365	\$8.69	\$0	\$5,666,365	\$8.69
Sep-08	785,846	\$5,860,007	\$7.46	\$0	\$5,860,007	\$7.46
Oct-08	1,606,198	\$9,280,883	\$5.78	\$0	\$9,280,883	\$5.78
Nov-08	3,465,575	\$26,488,737	\$7.64	\$4,120,435	\$22,368,302	\$6.45
Dec-08	5,655,147	\$42,197,536	\$7.46	\$3,863,475	\$38,334,061	\$6.92
Jan-09	6,042,287	\$45,049,638	\$7.46	\$4,091,748	\$40,957,890	\$6.78
Feb-09	3,969,513	\$25,055,038	\$6.31	\$3,978,066	\$21,076,972	\$5.31
Mar-09	3,791,682	\$24,990,955	\$6.59	\$6,796,305	\$18,194,650	\$4.80
Apr-09	1,957,447	\$9,598,418	\$4.90	\$0	\$9,598,418	\$4.90
May-09	979,150	\$3,619,426	\$3.70	\$0	\$3,619,426	\$3.70
Jun-09	801,231	\$2,856,461	\$3.57	\$0	\$2,856,461	\$3.57
Jul-09	663,333	\$2,435,652	\$3.67	\$0	\$2,435,652	\$3.67
Aug-09	614,231	\$2,075,982	\$3.38	\$0	\$2,075,982	\$3.38
Sep-09	691,140	\$1,956,434	\$2.83	\$0	\$1,956,434	\$2.83
Oct-09	2,080,690	\$8,797,552	\$4.21	\$0	\$8,797,552	\$4.21
Nov-09	3,167,083	\$14,915,661	\$4.71	\$565,412	\$14,350,249	\$4.53
Dec-09	5,205,508	\$25,050,453	\$4.81	\$1,029,499	\$24,020,954	\$4.61
Jan-10	5,625,981	\$32,293,941	\$5.74	\$346,310	\$31,947,631	\$5.68
Feb-10	4,262,378	\$21,566,194	\$5.06	\$631,094	\$20,935,100	\$4.91
Mar-10	2,766,113	\$14,041,597	\$5.08	\$1,028,985	\$13,012,612	\$4.70
Apr-10	1,173,367	\$4,480,491	\$3.82	\$0	\$4,480,491	\$3.82
May-10	1,046,932	\$4,401,270	\$4.20	\$0	\$4,401,270	\$4.20
Jun-10	721,132	\$3,050,386	\$4.23	\$0	\$3,050,386	\$4.23
Jul-10	565,488	\$2,515,008	\$4.63	\$0	\$2,515,008	\$4.63
Aug-10	637,185	\$2,819,751	\$4.43	\$0	\$2,819,751	\$4.43
Sep-10	749,639	\$2,839,811	\$3.79	\$0	\$2,839,811	\$3.79
Oct-10	1,373,739	\$5,394,846	\$3.93	\$0	\$5,394,846	\$3.93
Nov-10	3,122,447	\$13,027,903	\$4.17	\$1,409,128	\$11,618,775	\$3.72
Dec-10	5,099,206	\$23,186,523	\$4.55	\$780,147	\$22,406,376	\$4.39
Jan-11	5,664,615	\$25,720,009	\$4.54	\$1,279,190	\$24,440,819	\$4.31
Feb-11	4,500,300	\$20,693,847	\$4.60	\$818,140	\$19,875,707	\$4.42
Mar-11	3,663,287	\$16,188,519	\$4.42	\$1,530,562	\$14,657,957	\$4.00
Apr-11	2,133,988	\$9,314,189	\$4.37	\$0	\$9,314,189	\$4.37
May-11	1,185,542	\$5,466,027	\$4.61	\$0	\$5,466,027	\$4.61
Jun-11	662,190	\$3,016,340	\$4.56	\$0	\$3,016,340	\$4.56
Jul-11	486,172	\$2,276,621	\$4.68	\$0	\$2,276,621	\$4.68
Aug-11	556,358	\$2,697,381	\$4.85	\$0	\$2,697,381	\$4.85
Sep-11	776,554	\$3,433,106	\$4.42	\$0	\$3,433,106	\$4.42
Oct-11	1,397,489	\$5,663,280	\$4.05	\$0	\$5,663,280	\$4.05
Nov-11	2,814,146	\$11,595,816	\$4.12	\$783,650	\$10,812,166	\$3.84
Dec-11	4,030,859	\$16,075,593	\$3.99	\$842,850	\$15,232,743	\$3.78
Jan-12	4,744,223	\$18,338,658	\$3.87	\$1,471,490	\$16,867,168	\$3.56
Feb-12	3,823,825	\$13,566,648	\$3.55	\$1,133,210	\$12,433,438	\$3.25
Mar-12	2,041,908	\$8,364,856	\$4.10	\$2,101,980	\$6,262,876	\$3.07
Apr-12	1,707,291	\$4,945,998	\$2.90	\$0	\$4,945,998	\$2.90
May-12	866,736	\$2,452,543	\$2.83	\$0	\$2,452,543	\$2.83
Jun-12	605,674	\$1,800,893	\$2.97	\$0	\$1,800,893	\$2.97
Jul-12	476,612	\$1,633,063	\$3.43	\$0	\$1,633,063	\$3.43
Aug-12	556,192	\$1,998,462	\$3.59	\$0	\$1,998,462	\$3.59
Sep-12	776,641	\$2,362,917	\$3.04	\$0	\$2,362,917	\$3.04
Oct-12	1,839,063	\$5,865,189	\$3.19	\$0	\$5,865,189	\$3.19
Nov-12	3,042,329	\$10,426,357	\$3.43	(\$261,230)	\$10,687,587	\$3.51
Dec-12	4,631,499	\$16,374,868	\$3.54	(\$204,900)	\$16,579,768	\$3.58
Jan-13	5,396,498	\$18,772,574	\$3.48	\$531,160	\$18,241,414	\$3.38
Feb-13	4,486,623	\$15,266,766	\$3.40	\$517,440	\$14,749,326	\$3.29
Mar-13	4,151,502	\$15,304,812	\$3.69	\$396,210	\$14,908,602	\$3.59
Apr-13	2,860,175	\$11,463,000	\$4.01	\$0	\$11,463,000	\$4.01
May-13	1,339,955	\$5,980,030	\$4.46	\$0	\$5,980,030	\$4.46
Jun-13	500,321	\$2,441,163	\$4.88	\$0	\$2,441,163	\$4.88
Jul-13	689,368	\$2,891,353	\$4.19	\$0	\$2,891,353	\$4.19
Aug-13	322,658	\$1,120,124	\$3.47	\$0	\$1,120,124	\$3.47
Sep-13	872,025	\$3,308,485	\$3.79	\$0	\$3,308,485	\$3.79
Oct-13	1,955,048	\$7,373,987	\$3.77	\$0	\$7,373,987	\$3.77
Nov-13	3,804,843	\$14,941,586	\$3.93	\$252,790	\$14,688,796	\$3.86
Dec-13	5,994,262	\$24,668,087	\$4.12	\$241,310	\$24,426,777	\$4.08
Jan-14	6,537,646	\$35,217,172	\$5.39	(\$156,350)	\$35,373,522	\$5.41
Feb-14	5,623,686	\$45,153,552	\$8.03	(\$946,260)	\$46,099,812	\$8.20
Mar-14	4,210,895	\$38,001,961	\$9.02	(\$2,169,700)	\$40,171,661	\$9.54
Apr-14	2,334,006	\$9,005,370	\$3.86	\$0	\$9,005,370	\$3.86
May-14	1,549,815	\$7,558,779	\$4.88	\$0	\$7,558,779	\$4.88
Jun-14	426,835	\$2,162,173	\$5.07	\$0	\$2,162,173	\$5.07
Jul-14	491,190	\$3,572,862	\$7.27	\$0	\$3,572,862	\$7.27
Aug-14	801,514	\$4,666,892	\$5.82	\$0	\$4,666,892	\$5.82
Sep-14	744,426	\$4,385,163	\$5.89	\$0	\$4,385,163	\$5.89
Oct-14	1,911,559	\$9,168,650	\$4.80	\$0	\$9,168,650	\$4.80
Nov-14	4,598,779	\$21,602,189	\$4.70	(\$2,169,700)	\$23,771,889	\$5.17
Dec-14	4,548,071	\$23,330,014	\$5.13	\$374,210	\$22,955,804	\$5.05
Jan-15	5,457,309	\$23,348,653	\$4.28	(\$13,020)	\$23,361,673	\$4.28
Feb-15	5,685,434	\$25,042,979	\$4.40	\$977,610	\$24,065,369	\$4.23
Mar-15	3,446,128	\$15,451,787	\$4.48	\$816,520	\$14,635,267	\$4.25
Apr-15	1,740,048	\$6,953,776	\$4.00	\$0	\$6,953,776	\$4.00
May-15	1,382,227	\$5,724,908	\$4.14	\$0	\$5,724,908	\$4.14
Jun-15	1,187,263	\$6,082,115	\$5.12	\$0	\$6,082,115	\$5.12
Jul-15	523,292	\$3,550,597	\$6.79	\$0	\$3,550,597	\$6.79
Aug-15	938,340	\$4,805,742	\$5.12	\$0	\$4,805,742	\$5.12
Sep-15	794,813	\$4,215,109	\$5.30	\$0	\$4,215,109	\$5.30
Oct-15	1,781,753	\$6,917,128	\$3.88	\$0	\$6,917,128	\$3.88
Nov-15	2,786,293	\$8,905,368	\$3.20	\$1,576,820	\$7,328,548	\$2.63
Dec-15	3,915,286	\$12,303,605	\$3.14	\$643,140	\$11,660,465	\$2.98
Jan-16	5,694,811	\$17,677,258	\$3.10	\$561,320	\$17,115,938	\$2.71
Feb-16	4,683,351	\$14,444,805	\$3.08	\$960,470	\$13,484,335	\$2.88
Mar-16	3,292,655	\$9,965,361	\$3.03	\$938,170	\$9,027,191	\$2.74
Apr-16	2,167,895	\$5,773,826	\$2.66	\$0	\$5,773,826	\$2.66
May-16	659,650	\$3,524,963	\$5.34	\$0	\$3,524,963	\$5.34
Jun-16	1,220,547	\$4,172,837	\$3.42	\$0	\$4,172,837	\$3.42

Month	Volume	Cost	Hedging Cost/unit	Hedging Loss (Gain)	Cost	Hedging Cost/unit
Jul-15	523,292	\$3,055,387	\$5.84	\$0	\$3,055,387	\$5.84
Aug-15	804,987	\$4,699,986	\$5.84	\$0	\$4,699,986	\$5.84
Sep-15	816,482	\$5,521,820	\$6.76	\$0	\$5,521,820	\$6.76
Oct-15	2,199,627	\$11,322,991	\$5.15	\$0	\$11,322,991	\$5.15
Nov-15	3,040,534	\$25,856,365	\$8.50	\$1,442,977	\$24,413,388	\$8.03
Dec-15	4,295,567	\$34,433,241	\$8.02	\$1,837,033	\$32,596,208	\$7.59
Jan-16	6,973,386	\$33,479,681	\$6.73	\$3,058,545	\$30,421,136	\$6.12
Feb-16	5,445,495	\$38,280,629	\$7.03	\$1,656,961	\$36,623,668	\$6.72
Mar-16	3,561,975	\$27,126,021	\$7.64	\$1,113,883	\$26,012,138	\$7.32
Apr-16	2,174,912	\$15,663,580	\$7.20	\$0	\$15,663,580	\$7.20
May-16	1,117,339	\$6,420,365	\$5.75	\$0	\$6,420,365	\$5.75
Jun-16	440,960	\$3,334,362	\$7.56	\$0	\$3,334,362	\$7.56
Jul-16	687,683	\$4,669,559	\$6.79	\$0	\$4,669,559	\$6.79
Aug-16	656,746	\$3,783,260	\$5.76	\$0	\$3,783,260	\$5.76
Sep-16	878,464	\$4,602,172	\$5.24	\$0	\$4,602,172	\$5.24
Oct-16	1,737,296	\$10,533,553	\$6.06	\$0	\$10,533,553	\$6.06
Nov-16	3,590,414	\$20,106,426	\$5.59	\$530,484	\$19,575,942	\$5.44
Dec-16	5,168,722	\$38,909,079	\$7.53	\$796,329	\$38,112,750	\$7.37
Jan-17	5,962,078	\$40,538,152	\$6.80	\$1,667,412	\$38,870,740	\$6.52
Feb-17	4,538,275	\$38,972,130	\$7.17	\$1,038,483	\$37,933,647	\$6.98
Mar-17	4,873,548	\$35,643,759	\$7.31	(\$216,363)	\$35,860,122	\$7.36
Apr-17	2,103,698	\$17,132,479	\$8.14	\$0	\$17,132,479	\$8.14
May-17	1,262,118	\$12,632,498	\$10.01	\$0	\$12,632,498	\$10.01
Jun-17	547,520	\$5,944,852	\$10.86	\$0	\$5,944,852	\$10.86
Jul-17	664,382					

1.45%	Hedge cost relative to total cost of gas
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