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April 2, 2010

Burl W. Haar  
Executive Secretary  
Minnesota Public Utilities Commission  
121 7th Place East, Suite 350  
St. Paul, Minnesota 55101-2147

**RE: Comments of the Minnesota Office of Energy Security**  
Docket No. G007/M-09-1282

Dear Dr. Haar:

Attached are the *Comments* of the Minnesota Office of Energy Security (OES) in the following matter:

A request (*Petition*) submitted by Minnesota Energy Resources Corporation-NMU (MERC-NMU or Company) for approval of changes in demand entitlements on its NMU Purchased Gas Adjustment (PGA) system.

The *Petition* was filed on November 2, 2009 by:

Greg Walters  
Regulatory and Legislative Affairs Manager  
Minnesota Energy Resources Corporation  
519 1<sup>st</sup> Avenue SW  
PO Box 6538  
Rochester, MN 55903-6538

Based on concerns associated with MERC-NMU's design-day calculations, the OES withholds recommendation in this proceeding until the Company provides additional information in its *Reply Comments*. Specifically, the OES recommends that MERC-NMU provide the following in its *Reply Comments*:

- a full discussion explaining why it uses a different wind chill calculation and what, if any, impact using the official wind chill calculation has on MERC-NMU's design-day forecast;
- a full justification of the peak day calculations the Company used to procure total entitlements for the Great Lakes and Centra pipelines;
- a full explanation of whether there are sufficient entitlements to serve MERC-NMU's Northern pipeline firm customers on a peak day;
- a full explanation of how firm entitlements shift between MERC-NMU and MERC-PNG on the Northern pipeline system; and

Burl W. Haar  
April 2, 2010  
Page Two

- a full discussion detailing how MERC-NMU intends to install telemetry equipment for transportation customers and an estimate of how long it will be before MERC-NMU has adequate daily data to more accurately estimate its firm design day.

The OES is available to answer any questions that the Commission may have.

Sincerely,

/s/ ADAM JOHN HEINEN  
Rates Analyst

AJH/sm  
Attachment



## BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

### COMMENTS OF THE MINNESOTA OFFICE OF ENERGY SECURITY

DOCKET NO. G007/M-09-1282

#### I. SUMMARY OF MERC-NMU'S PROPOSAL

Pursuant to Minnesota Rules 7825.2910, subpart 2 (Filing Upon Change in Demand), on November 2, 2009, Minnesota Energy Resources Corporation-NMU (MERC-NMU or Company), submitted a demand entitlement filing (*Petition*) for its NMU Purchased Gas Adjustment (PGA) system.<sup>1</sup> In its *Petition*, MERC-NMU requests the Minnesota Public Utilities Commission's (Commission) approval to "change demand levels by type" on the NMU PGA system for service to its Minnesota firm customers. Specifically, MERC-NMU requests to change its level of overall demand entitlement (capacity). In addition, MERC-NMU requests approval to recover the associated demand costs in the monthly PGA effective November 1, 2009. The OES provides comments regarding MERC-NMU's proposal below.

#### II. OES ANALYSIS OF MERC-NMU'S DEMAND PROPOSAL

The Minnesota Office of Energy Security (OES) reviewed MERC-NMU's proposed design-day requirement, proposed demand entitlement, and resulting reserve margins. Additionally, the OES compared this year's amounts with previous years' amounts. The OES's analysis of the Company's request includes three parts:

<sup>1</sup> MERC-NMU also serves Minnesota customers via its companion operating division MERC-PNG. The MERC-PNG operating system serves customers on three separate pipeline systems: the Viking Gas Transmission (Viking) pipeline system; the Great Lakes Transmission (Great Lakes) pipeline system; and the Northern Natural Gas (Northern) pipeline system. On November 2, 2009, MERC-PNG submitted the following requests with respect to these three systems:

- A request to change the Company's demand entitlements on the Viking system for the 2009-2010 heating season in Docket No. G011/M-09-1285;
- A request to change the Company's demand entitlements on the Northern system for the 2009-2010 heating season in Docket No. G011/M-09-1284 and
- A request to change the Company's demand entitlements on the Great Lakes system for the 2009-2010 heating season in Docket No. G011/M-09-1283.

- MERC-NMU's proposed Design-Day Requirement, Demand Entitlement Level, and Reserve Margin;
- MERC-NMU's proposed demand entitlement changes; and
- MERC-NMU's Cost Recovery Proposal.

A. *MERC-NMU'S PROPOSED DESIGN-DAY REQUIREMENT, PROPOSED DEMAND ENTITLEMENT LEVEL, AND RESULTING RESERVE MARGIN*

1. *Design-Day Requirement*

a. *Peak-Day Calculation*

In its *Petition* and in response to informal OES discovery, MERC-PNG explained the peak-day models it uses to determine its design-day requirement and provided the model results in its response (OES Attachment 1). Based on its review, the OES concludes that MERC-NMU conducted its design-day study using statistically valid models. However, the OES is still concerned that the Company's design-day analysis may not ensure sufficient volumes on a peak day under Commission practice.<sup>2</sup>

Before discussing its concerns with MERC-NMU's design-day calculations, the OES provides a brief description of the Company's design-day analysis.

MERC-NMU conducts its design-day and peak-day analyses using statistical techniques, specifically ordinary least squares (OLS) regressions. MERC-NMU's design-day analysis differs from the MERC-PNG pipeline design-day analyses in that MERC-NMU has a consolidated PGA that is comprised of four separate pipeline systems: Centra, Viking, Great Lakes, and Northern. Since these pipelines serve unique areas, it is necessary for the Company to estimate four separate design-day and peak-day calculations. MERC-NMU's regression analyses are based on daily system throughput, wind-adjusted heating degree days (AHDDs)<sup>3</sup> from four weather stations (International Falls, Fargo, Bemidji, and Cloquet),<sup>4</sup> and other significant independent variables (*e.g.*, month, day of the week)<sup>5</sup> for the months of December through February over the past three heating seasons (*i.e.*, 2006-2007, 2007-2008, 2008-2009). The OES notes that MERC-NMU's adjusted HDD calculation is different than the official calculation used by the National Weather Service (NWS). Given this difference, the OES recommends that MERC-NMU

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<sup>2</sup> Minnesota Rules 7825.2400, subp. 13d, defines a design-day as: "a 24-hour-day period of the greatest possible gas requirement to meet firm customer needs." The Commission later clarified this definition to mean a 24-hour period with an average temperature of -25°F (90 heating degree days (HDD)). The 90 HDD event corresponds to the coldest day in the last twenty years.

<sup>3</sup> Commission Staff has indicated concerns, in another utility's demand entitlement filing, about using AHDD when conducting a design-day analysis. The Company notes in its response to OES Information Request No. 3 (OES Attachment 2) in Docket No. G011/M-09-1284 that AHDDs produce more robust regression results than using non-wind-adjusted HDDs.

<sup>4</sup> MERC-NMU uses International Falls as its weather station for the Centra pipeline, Fargo as its weather station for the Viking pipeline, Bemidji and Cloquet as its weather stations for the Great Lakes pipeline, and Cloquet as the weather station for the Northern pipeline.

<sup>5</sup> MERC-NMU's Northern pipeline model only includes wind adjusted weather as a significant variable.

provide, in its *Reply Comments*, a full discussion explaining why it uses a different calculation and what, if any, impact using the official wind chill calculation has on MERC-NMU's design-day forecast.

These regression analyses allow MERC-NMU to estimate weather's (AHDDs) impact on pipeline system throughput and then compare this impact to the Company's all-time system peak day on each individual pipeline. This comparison then allows MERC-NMU to estimate pipeline system throughput, based on current customer counts and system characteristics, if a day similar to the specific pipeline system's all-time peak sendout were to occur during the heating season. Finally, the Company includes a volume risk adjustment, removes interruptible and transportation customer usage, and applies a customer growth figure to its estimate of total system throughput. MERC-NMU then aggregates these four separate analyses into a total PGA system peak-day entitlement projection.

As noted above, the OES concludes that MERC-NMU conducts its design-day analyses using a statistically valid technique. However, the OES is concerned that these analyses may not be able to fully ensure system reliability on an all-time peak day for certain pipeline systems. The OES's primary concern relates to estimating firm throughput on a peak day. To estimate daily use by firm customers, MERC-NMU must subtract estimated use by interruptible and transportation customers from total throughput. As mentioned in MERC-NMU's *Initial Petition*, pages 10 and 11, the Company states that it only has monthly billing cycle data, rather than daily data, for the majority of its interruptible and transportation customers. Thus, the Company must estimate daily use by interruptible and transportation customers before estimating firm sales. Since natural gas use by these non-firm customers are less sensitive to weather than firm customers, it is not unreasonable to assume, as MERC-NMU does, that these customers will consume roughly the same amount of gas each day. Based on conversations with the Company, the OES notes that the Company bases its interruptible and transportation calculation on 20 days in the month, which indicates that MERC-NMU believes that these customers operate approximately five days a week. The OES would prefer a more precise estimate, but notes that MERC-PNG is in the process of obtaining data for a more precise estimate of peak-day use, as discussed below.

The OES conducted further peak day analysis by comparing MERC-NMU's estimate of peak day use by interruptible and transportation customers to total peak day pipeline throughput estimates as referenced on pages 2 and 3 of the Company's *Initial Petition* (OES Attachment 3). Based on these comparisons, it appears that MERC-NMU's design-day calculations may not be sufficient to ensure peak day reliability on three of its pipeline systems: Great Lakes, Centra, and Northern. Specifically, the OES observed that there was one day on the Great Lakes system, two days on the Centra system, and six days on the Northern system where estimated firm peak day sendout was greater than total pipeline system entitlements. Although the numbers of deficient days on the Centra and Great Lakes systems are small, the OES notes that the estimated shortfalls on these days are quite large (some more than 1,000 Mcf/day) and indicate a possible issue in peak day calculations for these pipelines.<sup>6</sup> Given the differences between calculated peak day use and

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<sup>6</sup> The OES's firm peak day calculations are based on its interruptible usage estimates as provided by the Company in an informal information request (OES Attachment 4). While discussing the OES's calculation with the Company,

total entitlements procured for the Great Lakes and Centra pipelines, the OES recommends that MERC-NMU fully justify, in its *Reply Comments*, the peak day calculations it used to procure total entitlements for the Great Lakes and Centra pipelines.

In terms of the Northern pipeline, the OES is concerned by the number of deficient days; however, based on MERC-PNG's response to OES Information Request No. 4 in Docket No. G011/M-09-1284 (OES Attachment 5), overall firm service on a peak day may not be at risk. As presented in OES Attachment 5, and stated by MERC-PNG, natural gas procurement on the Northern pipeline system is made on a macro level and not by specific PGA system: MERC-NMU or MERC-PNG. While reviewing the estimated firm peak day volumes for MERC-PNG's Northern PGA system, the differences (surpluses) that the OES calculated between estimated firm usage on a peak day and total Northern system entitlements were quite large.<sup>7</sup> Since the Company purchases Northern system entitlements for both MERC-NMU and MERC-PNG, it is possible that these peak day surpluses calculated in the MERC-PNG Northern demand entitlement could be used to balance the six days of deficient volumes calculated in this docket. Given the six days of calculated deficiencies and the Company's Northern pipeline system planning process, the OES recommends that MERC-NMU provide the following in its *Reply Comments*:

- a full explanation of whether there are sufficient entitlements to serve MERC-NMU's Northern pipeline firm customers on a Commission-prescribed peak day; and
- a full explanation of how firm entitlements shift between MERC-NMU and MERC-PNG on the Northern pipeline system.

The OES notes the difficulty in estimating the daily amounts that interruptible and transportation customers use. The Company is further attempting to mitigate the design day risk associated with transportation customers by requiring gas meter telemetry. In its most recent general rate case, Docket No. G007,011/GR-08-835, MERC-PNG and MERC-NMU proposed a change in rate design requiring all transportation customers to install telemetry. In its June 29, 2009 *Order* in this rate case, the Commission agreed with the Administrative Law Judge's finding, and the Company's proposal, that MERC-NMU be allowed to require telemetry for transportation customers, without exception.<sup>8</sup> The OES agreed with this proposal.

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MERC-NMU stated that it was not clear if the OES's peak day calculations were entirely accurate. The OES has not received additional information and, as such, it will continue its analysis using the best available information provided in this proceeding.

<sup>7</sup> While reviewing the MERC-PNG Northern demand entitlement filing, the OES received a correspondence from the Company stating that it had observed an error in the weather data that it uses to calculate its Northern PGA system peak day. This error may impact the peak day estimates for the Northern pipeline system but, at this point, the OES has not received corrected data.

<sup>8</sup> Please note that the Commission included in its *Order* a requirement that MERC-NMU continue providing balancing service for its Small Volume Interruptible customers. As a result, it will still be necessary for MERC-NMU to estimate daily use by Small Volume Interruptible customers in its estimate of peak-day use by firm customers.

Based on the discussion above, the OES concludes that MERC-NMU made a reasonable attempt to estimate its design-day and peak-day sendout. However, given the lack of daily data associated with MERC-NMU's interruptible and transportation customers, the OES recommends that the Commission not endorse this technique until such time that MERC-NMU has adequate daily interruptible and transportation throughput data. Further, the OES recommends that MERC-NMU provide, in its *Reply Comments*, a full discussion detailing how it intends to install telemetry equipment for transportation customers and an estimate of how long it will be before MERC-NMU has adequate daily data to more accurately estimate its firm design day.

*b. Volume-Risk Adjustment*

In its *Initial Petition*, MERC-NMU states that it adds a volume risk adjustment to its design-day estimate. The purpose of the volume risk adjustment, as stated by the Company, is "to provide a confidence level that the daily metered load under design conditions would not exceed the daily metered regression estimate." In other words, MERC-PNG's adjustment is intended to address the concern discussed above regarding the estimate of energy used on a peak day. The confidence level MERC-NMU chose is 97.5 percent, which means that there is roughly a 2.5 percent chance that any given design day estimate will exceed the daily throughput estimate at a given point. In its response to OES Information Request No. 1 (OES Attachment 6), MERC-NMU states that a 99.9 percent confidence level could also have been chosen, which means that there would be a roughly 0.1 percent chance that a given design day estimate would exceed throughput estimates. Procuring demand contracts to meet a 99.9 percent confidence level would essentially assure full system integrity under any circumstance, but would also involve additional costs over MERC-NMU's current 97.5 percent confidence level. The OES concludes that MERC-PNG's proposed adjustment is reasonable at this time.

*2. Demand Entitlement Level*

In its *Petition*, MERC-NMU requests a decrease in total NMU PGA system entitlement levels between the 2008-2009 heating season and the 2009-2010 heating season of 1,052 Mcf/day. MERC-NMU's requested changes in entitlement contracts are as follows:

<b>Table 1: MERC-NMU's Proposed Changes to its System Demand Entitlements by Pipelines</b>	
<b>Contract Name</b>	<b>Level of Change (Mcf)</b>
<b>Northern</b>	
TF-12 (Base and Variable)	3,460
TF5	(3,460)
TFX5	0
SMS*	(40)
LS Power	(52)
Change in Northern Entitlements	(52)
<b>Viking</b>	
FT12	0
FT5	0
TF-12	1,397
TF-5	(1,526)
TFX12	(235)
TFX5	363
Change in Viking Entitlements	(1)
<b>Great Lakes</b>	
FT12	(1,000)
FT5	0
Change in Great Lakes Entitlements	(1,000)
<b>Centra</b>	
FT12	0
Change in Centra Entitlements	0
<b>Total Change</b>	<b>(1,053)^</b>

\* These volumes are not included in the total entitlement calculations.

^ The difference between MERC-NMU's proposed decrease of 1,052 Mcf/day and the 1,053 Mcf/day change calculated in the above table are *de minimus* and likely the result of rounding.

Given relatively mild temperatures during recent heating seasons, the OES investigated historical peak-day sendout per customer information. OES Attachment 7 shows that the all-time estimate design-day sendout was 1.5198 Mcf/customer during the 1996-1997 heating season.<sup>9</sup> As further indicated in OES Attachment 7, the firm peak-day sendout on MERC-PNG's Northern PGA system for the 2008-2009 heating season was 46,401 Mcf/day, a decrease of 7,714 Mcf/day (or approximately 14.25 percent) over the 2007-2008 heating season. The Company's proposed

<sup>9</sup> Prior to a heating seasons, utilities estimate the "design-day" needs of customers by estimating the sendout and the number of customers expected to be using service on a peak day. After the heating season, it is possible to look back and determine the actual use per customer on the peak day.



design-day requirement results in an anticipated design-day use per customer of 1.4809 Mcf/day. The total entitlement per customer of 1.5506 Mcf/day is less than the 15-year average peak-day sendout of 1.6332 Mcf/day, but greater than the all-time peak day sendout of 1.5198 Mcf/day. These figures would generally indicate that there is sufficient capacity to serve customers on a peak day; however, given the consolidated nature of MERC-NMU's PGA, and the issues discussed by the OES earlier in these *Comments*, these figures are not applicable to the overall reliability of MERC-NMU's total PGA system.

It is important to ensure that the Company does not over-estimate its need unreasonably and cause PGA rates to be too high. The OES intends to continue working with the Company in refining its peak-day use per customer estimates, and looks forward to the information MERC-PNG will provide in its *Reply Comments* related to its design-day calculations.

### *3. Reserve Margin*

As shown in OES Attachment 7, the Company's entitlement proposal results in a positive reserve margin for MERC-NMU's PGA system customers of 4.70 percent, which is an increase of 2.96 percent from the 2008-2009 reserve margin of 1.74 percent. This reserve margin is within the OES's five percent threshold and, as such, the OES concludes that MERC-NMU's total system reserve margin is adequate, based on the information available at this time. The OES will review MERC-NMU's reply comments and provide further analysis if needed.

### *C. MERC-PNG'S SPECIFIC PROPOSED DEMAND ENTITLEMENT CHANGES*

As MERC-NMU explains in its filing, there are two types of demand entitlement changes. The first type is design-day deliverability, which, in this filing, represents changes in various firm transportation capacity available to NMU's PGA customers during winter peak periods. The second type does not affect the level of design-day deliverability, but does affect the demand costs recovered from ratepayers through the PGA. Changes in the second type of demand entitlement changes are made to non-winter transportation and balancing contracts. In its filing, MERC-NMU proposes changes in its System Management Service (SMS) contract, which is used to balance firm volumes. The Company also proposes changes to its Firm Deferred Demand (FDD) storage contracts on the Northern pipeline system.

### *D. MERC-NMU'S COST RECOVERY PROPOSAL*

The demand entitlement changes discussed above represent the demand entitlements that firm customers on MERC-NMU's PGA system would pay under the Company's proposal. The Company's *Petition* uses MERC-NMU's October 2009 PGA as a means of comparison for its entitlement level cost changes since MERC-NMU proposes that the rate change take effect on November 1, 2009. MERC-NMU's proposed changes would result in the following bill impacts:

<b>Table 2: MERC-NMU's PGA System Cost Recovery Monthly Rate Impact as Calculated by MERC-NMU Compared to the October 2009 PGA</b>							
Customer Class	Commodity Change (\$/Mcf)	Commodity Change (Percent)	Demand Change (\$/Mcf)	Demand Change (Percent)	Total Change (\$/Mcf)	Total Change (Percent)	Effect on Annual Bill (\$)
General Service	\$0.8990	24.34%	\$(0.0169)	(1.55)%	\$0.8821	12.43%	\$123.28
Large General Service	\$0.8990	24.34%	\$(0.0169)	(1.55)%	\$0.8821	12.43%	\$6,101.33
Small Vol. Interruptible	\$0.8990	24.34%	\$0.0000	0.00%	\$0.8990	19.11%	\$5,963.44
Large Vol. Interruptible	\$0.8990	24.34%	\$0.0000	0.00%	\$0.8990	22.29%	\$33,365.86

As shown in Table 2 above, and in MERC-NMU Attachment 4 in its *Initial Petition*, the Company's proposed entitlement levels would result in the following estimated annual bill impacts:

- an increase of approximately \$123.28, or 12.43 percent, for an average General Service customer consuming 140 Mcf annually;
- an increase of approximately \$6,101.33, or 12.43 percent, for an average Large General Service customer consuming 6,917 Mcf annually;
- an increase of approximately \$5,963.44, or 19.11 percent, for an average Small Volume Interruptible customer consuming 6,333 Mcf annually; and
- an increase of approximately \$33,365.86, or 22.29 percent, for an average Large Volume Interruptible customer consuming 37,114 Mcf annually.

The OES's analysis is different from that shown in MERC-NMU's *Initial Petition* for two reasons. First, the OES holds the weighted average cost of gas constant, so as to isolate the increases in total gas costs associated solely with the demand cost of gas. Second, the OES does not include storage costs in its demand cost calculations, but rather in the commodity portion of the PGA. The OES notes that its decision to include FDD storage in the commodity portion of the PGA is the result of MERC-NMU's conclusions in its *Supplemental Comments* in Docket No. G011/M-07-1402. In that docket, the Company stated that it was appropriate to recover storage costs through the commodity portion of the PGA since all customers, not just firm customers, benefit from natural gas storage.<sup>10</sup> The OES's bill impacts are as follows:

<sup>10</sup> Purchased gas costs passed through the monthly PGAs to customers are classified as either demand-delivered gas costs (demand costs) or commodity-delivered gas costs (commodity costs). Generally, demand costs are recovered only from firm sales service customers and commodity costs are recovered from both firm and interruptible sales service customers. However, both firm and interruptible sales customers use storage gas and both classes receive the benefit of the possible hedge against winter price increases resulting from the use of storage gas. The Commission has not yet acted on this requested change in recovery of FDD Storage costs.

<b>Table 3: MERC-NMU's PGA System Cost Recovery Monthly Rate Impact as Calculated by the OES Compared to MERC-NMU's October 2009 PGA</b>							
Customer Class	Commodity Change (\$/Mcf)	Commodity Change (Percent)	Demand Change (\$/Mcf)	Demand Change (Percent)	Total Change (\$/Mcf)	Total Change (Percent)	Effect on Annual Bill (\$)
General Service	\$0.0694	1.88%	\$(0.0654)	(5.98)%	\$0.004	0.06%	\$0.56
Large General Service	\$0.0694	1.88%	\$(0.0654)	(5.98)%	\$0.004	0.06%	\$27.67
Small Vol. Interruptible	\$0.0694	1.88%	\$0.0000	0.00%	\$0.0694	1.47%	\$439.51
Large Vol. Interruptible	\$0.0694	1.88%	\$0.0000	0.00%	\$0.0694	1.72%	\$2,575.71

Note: The change in commodity cost relates to the implementation of Call Option costs for the 2009-2010 heating season and inclusion of FDD Storage in the commodity cost of gas.

As shown in Table 3 above, and in OES Attachments 8 and 9, the Company's proposed entitlement levels would result in the following estimated annual bill impacts:

- an increase of approximately \$0.56, or 0.06 percent, for an average General Service customer consuming 140 Mcf annually;
- an increase of approximately \$27.67, or 0.06 percent, for an average Large General Service customer consuming 6,917 Mcf annually;
- an increase of approximately \$439.51, or 1.47 percent, for an average Small Volume Interruptible customer consuming 6,333 Mcf annually; and
- an increase of approximately \$2,575.71, or 1.72 percent, for an average Large Volume Interruptible customer consuming 37,114 Mcf annually.

### III. THE OES'S RECOMMENDATIONS

Based on concerns associated with MERC-NMU's design-day calculations, the OES withholds recommendation in this proceeding until the Company provides additional information in its *Reply Comments*. Specifically, the OES recommends that MERC-NMU provide the following in its *Reply Comments*:

- a full discussion explaining why it uses a different wind chill calculation and what, if any, impact using the official wind chill calculation has on MERC-NMU's design-day forecast;
- a full justification of the peak day calculations the Company used to procure total entitlements for the Great Lakes and Centra pipelines;
- a full explanation of whether there are sufficient entitlements to serve MERC-NMU's Northern pipeline firm customers on a Commission-prescribed peak day;

- a full explanation of how firm entitlements shift between MERC-NMU and MERC-PNG on the Northern pipeline system; and
- a full discussion detailing how it intends to install telemetry equipment for transportation customers and an estimate of how long it will be before MERC-NMU has adequate daily data to more accurately estimate its firm design day.

/sm

NMU-Centra Peak Day Regression for Winter 2010 - Summary  
 Based on December through February Data for 3 years

110.5 Coldest International Falls WCHDD55 in 20 years (Feb 1 and 2, 1996)  
 107.0 Coldest International Falls AHDD65 in 20 years (Feb 1 and 2, 1996)  
 2.5% Risk Tolerance for Actual Load Exceeding Estimate

Regression	Baseload	Use/AHDD65	Use/HDDW65	Adj R Sq.	Sigma	Point Est	Daily Metered Risk Adjustment	Daily Metered Peak Day Estimate	Notes:
Last Yr 3yr-S	674.23	98.44		0.774	756.36	11,207	1,482	12,690	Dec 2005 to Feb 2008, only statistically significant independent variables
Last Yr 3yr-AHDD65	577.66	98.49		0.767	767.94	11,116	1,505	12,621	Dec 2005 to Feb 2008, only AHDD65
3yr-S	2,005.05		78.57	0.772	720.13	10,689	1,411	12,100	Dec 2006 to Feb 2009, SAS best statistically significant independent variables
<b>3yr-S+AHDD65</b>	<b>1,183.07</b>	<b>86.99</b>		<b>0.763</b>	<b>733.00</b>	<b>10,491</b>	<b>1,437</b>	<b>11,928</b>	Dec 2006 to Feb 2009, AHDD65 plus Significant non-weather variables
3yr-AHDD65	996.27	88.01		0.751	752.62	10,413	1,475	11,888	Dec 2006 to Feb 2009, only AHDD65
3yr-HDDW65	1,815.27		79.39	0.754	747.41	10,590	1,465	12,055	Dec 2006 to Feb 2009, only WCHDD55 (New Significant Weather Variable)
					Min	10,413		11,888	
					Max	10,689		12,100	
					Avg	10,546		11,993	

NMU-GLGT Peak Day Regression for Winter 2009/2010 - Summary - Paper Mills Removed  
Based on December through February Data for 3 years

107.0 Coldest Bemidji AHDD65 in 20 years (Feb 1, 1996)  
103.0 Coldest Cloquet AHDD65 in 20 years (Feb 2, 1996)  
105.3 Weighted Average AHDD65 based on 3 years of volumes

94.0 Coldest Bemidji HDDW60 in 20 years (Feb 1, 1996)  
90.4 Coldest Cloquet HDDW60 in 20 years (Feb 2, 1996)  
92.5 Weighted Average HDDW60 based on 3 years of volumes

77.0 HDDW55 on day Before Coldest Bemidji HDDW60 in 20 years (Jan 31, 1996)  
83.0 HDDW55 on day Before Coldest Cloquet HDDW60 in 20 years (Feb 1, 1996)  
79.6 Weighted Average HDDW55-1 based on 3 years of volumes

2.5% Risk Tolerance for Actual Load Exceeding Estimate

Regression	Baseload	Use Per AHDD65	Use Per HDDW60	Use Per HDDW55-1	Adj R Sq.	Sigma	Point Est	Daily Metered Risk Adjustment	Daily Metered Peak Day Estimate	Notes:
Last Yr 3yr-S	144.39				0.975	1,179.38	15,206	2,312	17,517	Dec 2005 to Feb 2008, only statistically significant independent variables
Last Yr 3yr-AHDD65	141.63				0.975	1,205.12	14,915	2,362	17,277	Dec 2005 to Feb 2008, only AHDD65
3yr-S	1,167.02		126.74	21.27	0.714	1,212.10	14,581	2,376	16,957	Dec 2006 to Feb 2009, SAS best statistically significant independent variables
3yr-S+AHDD65	633.77	133.05			0.707	1,226.82	14,644	2,405	17,049	Dec 2006 to Feb 2009, AHDD65 plus Significant non-weather variables
3yr-AHDD65		140.80			0.976	1,242.74	14,827	2,436	17,263	Dec 2006 to Feb 2009, only AHDD65
3yr-HDDW60	1,066.80		145.08		0.700	1,239.57	14,484	2,430	16,914	Dec 2006 to Feb 2009, only AHDD65
3yr-HDDW60,55-1	951.97		128.82	18.76	0.703	1,215.29	14,358	2,382	16,740	Dec 2006 to Feb 2009, only GasDay HDDW60 (New Significant Weather Variab
						Min	14,484		16,914	

NMU-NNG Peak Day Regression for Winter 2009/2010 - Summary  
Based on December through February Data for 3 years

- 103 Coldest Cloquet AHDD65 in 20 years (Feb 2, 1996)
- 102.1 Coldest Cloquet MGUAdj65 in 20 years (Feb 2, 1996)
- 7 Average Wind Speed on Coldest Cloquet MGUAdj65 day
- 2.5% Risk Tolerance for Actual Load Exceeding Estimate

Regression	Baseload	Use Per		Adj R Sq.	Sigma	Point Est	Daily Metered		Notes:
		AHDD65	MGUAdj65				Risk	Peak Day Estimate	
Last Year 3yr-S	2,847.21	241.13		0.893	1,113.46	27,684	2,182	29,866	Dec 2005 to Feb 2008, only statistically significant independent variables
Last Year 3yr-AHDD65	2,460.56	244.52		0.888	1,135.77	27,647	2,226	29,873	Dec 2005 to Feb 2008, only AHDD65
3yr-S	1,999.67		246.06	0.893	1,135.51	27,642	2,226	29,868	Dec 2006 to Feb 2009, SAS best statistically significant independent variables
3yr-S-AHDD65	2,230.39	234.93		0.892	1,143.44	26,992	2,241	29,234	Dec 2006 to Feb 2009, AHDD65 plus Significant non-weather variables
<b>3yr-AHDD65</b>	<b>2,461.97</b>	<b>237.87</b>	<b>0.00</b>	<b>0.884</b>	<b>1,185.24</b>	<b>26,962</b>	<b>2,323</b>	<b>29,285</b>	Dec 2006 to Feb 2009, only AHDD65
3yr-MGUAdj65	2,168.56		249.01	0.885	1,177.77	27,592	2,308	29,901	Dec 2006 to Feb 2009, only MGUAdj65
					Min	26,962		29,234	
					Max	27,642		29,901	
					Avg	27,297		29,572	





**State of Minnesota**  
**OFFICE OF ENERGY SECURITY**

**Utility Information Request**

Docket Number: G011/M-09-1284                      Date of Request: December 11, 2009  
Requested From: Minnesota Energy Resources Corporation                      Response Due: December 21, 2009  
Analyst Requesting Information: Adam Heinen

Type of Inquiry:    .....Financial                      .....Rate of Return                      .....Rate Design  
                         .....Engineering                      .....Forecasting                      .....Conservation  
                         .....Cost of Service                      .....CIP                      .....Other

*If you feel your responses are trade secret or privileged, please indicate this on your response.*

Request No.	
3	<p data-bbox="305 905 756 936">Subject: Design-Day Weather Data</p> <p data-bbox="305 972 1455 1178">MERC-PNG Northern uses adjusted heating degree days (AHDDs) as an input in its design-day study models. As discussed in the OES's June 17, 2009 <i>Response Comments</i> in Docket No. G011/M-08-1328, Commission Staff raised concerns about the appropriateness of using AHDDs in calculating the design-day. Given these concerns, please provide any, and all, evidence, including by not limited to statistical analysis, that fully supports MERC-PNG's use of AHDDs in its design-day calculations.</p> <p data-bbox="305 1213 1409 1314">If this information has already been provided in written testimony or in response to an earlier OES information request, please identify the specific testimony cite(s) or OES information request number(s).</p> <p data-bbox="305 1350 431 1381"><b><u>Response:</u></b></p> <p data-bbox="305 1417 1455 1661">The Excel file attachment in the response to question 2a above shows the details of the regressions run using MERC-PNG Northern adjusted heating degree days (AHDD) on the "3yr-AHDD65" tab. The "3yr-HDD65" tab contains the regression results using standard heating degree days (HDD). The standard error, or sigma, for the AHDD regression of 10,422.2 is 6% lower than the HDD regression sigma of 11,056.2, indicating that the AHDD variable provides a better fit than HDD. The AHDD regression also has a higher R-Squared value than the HDD regression (0.893 vs. 0.880).</p> <p data-bbox="305 1696 1435 1829">Note: The above analysis is focused on directly comparing AHDD verses HDD to determine which variable better matches MERC-PNG Northern customer demand. The final Design Day forecast "3yr-S+AHDD65" regression uses AHDD with additional significant indicator variables.</p>

OES's Analysis of the Centra Pipeline Peak Day Calculations											
SUMMARY OUTPUT											
Regression Statistics											
Multiple R	0.87528										
R Square	0.76911										
Adjusted R Square	0.76348										
Standard Error	732.999										
Observations	271										
ANOVA											
	df	SS	MS	F	Significance F						
Regression	3	463896018.5	154632006.3	291.52399	6.63152E-84						
Residual	267	143455685.9	537266.838								
Total	270	613351602.4									
	Coefficient	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%			
Intercept	1183.07	199.4781725	5.93081181	9.303E-09	790.3172092	1575.817794	790.3172092	1575.817794			
AHDD65	86.9896	3.019709917	28.807257	6.722E-84	81.04408737	92.93503202	81.04408737	92.93503202			
Sat	-394.812	122.3871208	-3.2259272	0.0014121	-635.778539	-153.845334	-635.778539	-153.845334			
Sun	-389.341	127.7895188	-3.0497355	0.0025451	-640.9446889	-137.7378514	-640.9446889	-137.7378514			
NMU-Centra Peak Day Regression for Winter 2009/2010 - VLOOKUP from Values page.											
		2	3	5	22	23	McF Usage per HDD		86.9895597		
		(Mon=1) International Falls					Peak Day Temperature		107		
							Days above Peak		2		
Date	Day	Daily Metered	AHDD65	Sat	Sun	Estimated Peak Day Use	Estimated Interruptible Use	Estimated Firm Use	Centra Total Entitlement Value	Difference Between Firm Use and Estimated Total Entitlement	% Sufficient Capacity = Estimated Firm Use Greater than Total Entitlement
12/1/2008	5	6,731	59.9	0.0	0.0	10,833	2,871	7,962	9,858	(1,896)	0
12/2/2008	6	6,892	59.4	1.0	0.0	10,638	2,871	7,767	9,858	(2,091)	0
12/3/2008	7	6,270	71.0	0.0	1.0	9,011	2,871	6,140	9,858	(3,718)	0
12/4/2008	1	7,175	68.9	0.0	0.0	10,489	2,871	7,618	9,858	(2,240)	0
12/5/2008	2	7,143	66.8	0.0	0.0	10,642	2,871	7,771	9,858	(2,087)	0
12/6/2008	3	8,857	88.9	0.0	0.0	11,969	2,871	9,098	9,858	(760)	0
12/7/2008	4	8,214	72.4	0.0	0.0	11,227	2,871	8,356	9,858	(1,502)	0
12/8/2008	5	5,596	47.7	0.0	0.0	10,754	2,871	7,883	9,858	(1,975)	0
12/9/2008	6	4,926	38.9	1.0	0.0	10,460	2,871	7,589	9,858	(2,269)	0
12/10/2008	7	5,306	49.7	0.0	1.0	9,903	2,871	7,032	9,858	(2,826)	0
12/11/2008	1	4,529	38.2	0.0	0.0	10,918	2,871	8,047	9,858	(1,811)	0
12/12/2008	2	5,000	33.3	0.0	0.0	11,413	2,871	8,542	9,858	(1,316)	0
12/13/2008	3	5,122	38.5	0.0	0.0	11,081	2,871	8,210	9,858	(1,648)	0
12/14/2008	4	5,433	38.5	0.0	0.0	11,390	2,871	8,519	9,858	(1,339)	0
12/15/2008	5	5,321	44.9	0.0	0.0	10,720	2,871	7,849	9,858	(2,009)	0
12/16/2008	6	4,922	38.5	1.0	0.0	10,486	2,871	7,615	9,858	(2,243)	0
12/17/2008	7	6,337	51.5	0.0	1.0	10,774	2,871	7,903	9,858	(1,955)	0
12/18/2008	1	6,889	56.2	0.0	0.0	11,312	2,871	8,441	9,858	(1,417)	0
12/19/2008	2	5,491	46.2	0.0	0.0	10,780	2,871	7,909	9,858	(1,949)	0
12/20/2008	3	5,546	42.5	0.0	0.0	11,156	2,871	8,285	9,858	(1,573)	0
12/21/2008	4	5,808	52.5	0.0	0.0	10,548	2,871	7,675	9,858	(2,183)	0
12/22/2008	5	4,944	42.6	0.0	0.0	10,543	2,871	7,672	9,858	(2,186)	0
12/23/2008	6	4,455	43.9	1.0	0.0	9,552	2,871	6,681	9,858	(3,177)	0
12/24/2008	7	4,186	44.3	1.0	0.0	9,247	2,871	6,376	9,858	(3,482)	0
12/25/2008	1	4,927	53.0	0.0	1.0	9,232	2,871	6,361	9,858	(3,497)	0
12/26/2008	2	4,682	52.4	0.0	0.0	9,428	2,871	6,558	9,858	(3,300)	0
12/27/2008	3	4,887	52.5	0.0	0.0	9,538	2,871	6,754	9,858	(3,104)	0
12/28/2008	4	4,560	51.9	0.0	0.0	9,350	2,871	6,479	9,858	(3,379)	0
12/29/2008	5	3,852	38.5	0.0	0.0	9,813	2,871	6,942	9,858	(2,916)	0
12/30/2008	6	3,680	37.8	1.0	0.0	9,305	2,871	6,434	9,858	(3,424)	0
12/31/2008	7	4,376	41.4	1.0	0.0	9,688	2,871	6,815	9,858	(3,043)	0
1/1/2007	1	4,752	48.2	0.0	1.0	9,492	2,871	6,611	9,858	(3,247)	0
1/2/2007	2	4,147	45.8	0.0	0.0	9,473	2,871	6,602	9,858	(3,256)	0
1/3/2007	3	3,401	34.9	0.0	0.0	9,675	2,871	6,804	9,858	(3,054)	0
1/4/2007	4	3,246	32.9	0.0	0.0	9,695	2,871	6,824	9,858	(3,034)	0
1/5/2007	5	3,790	37.8	0.0	0.0	9,810	2,871	6,939	9,858	(2,919)	0
1/6/2007	6	4,010	41.8	1.0	0.0	9,287	2,871	6,416	9,858	(3,442)	0
1/7/2007	7	4,856	48.2	0.0	1.0	9,585	2,871	6,714	9,858	(3,144)	0
1/8/2007	1	5,729	58.7	0.0	0.0	10,101	2,871	7,230	9,858	(2,628)	0
1/9/2007	2	6,435	69.8	0.0	0.0	9,674	2,871	6,803	9,858	(3,055)	0
1/10/2007	3	5,258	63.2	0.0	0.0	9,066	2,871	6,195	9,858	(3,663)	0
1/11/2007	4	6,979	57.8	0.0	0.0	11,261	2,871	8,390	9,858	(1,468)	0
1/12/2007	5	8,299	79.2	0.0	0.0	10,719	2,871	7,848	9,858	(2,010)	0
1/13/2007	6	7,150	74.9	1.0	0.0	9,548	2,871	6,677	9,858	(3,181)	0
1/14/2007	7	7,530	72.1	0.0	1.0	10,178	2,871	7,307	9,858	(2,551)	0
1/15/2007	1	8,023	73.8	0.0	0.0	10,922	2,871	8,051	9,858	(1,807)	0
1/16/2007	2	6,671	74.2	0.0	0.0	9,524	2,871	6,653	9,858	(3,205)	0
1/17/2007	3	5,331	52.2	0.0	0.0	10,101	2,871	7,230	9,858	(2,628)	0
1/18/2007	4	6,121	54.5	0.0	0.0	10,688	2,871	7,817	9,858	(2,041)	0
1/19/2007	5	6,604	70.6	0.0	0.0	9,769	2,871	6,898	9,858	(2,960)	0
1/20/2007	6	5,377	59.3	1.0	0.0	9,217	2,871	6,346	9,858	(3,512)	0
1/21/2007	7	5,303	51.0	0.0	1.0	9,789	2,871	6,919	9,858	(2,940)	0
1/22/2007	1	6,159	50.1	0.0	0.0	11,105	2,871	8,234	9,858	(1,624)	0
1/23/2007	2	6,681	61.6	0.0	0.0	10,634	2,871	7,763	9,858	(2,095)	0
1/24/2007	3	6,911	64.1	0.0	0.0	10,647	2,871	7,776	9,858	(2,082)	0
1/25/2007	4	6,421	67.2	0.0	0.0	9,883	2,871	7,012	9,858	(2,846)	0
1/26/2007	5	6,270	47.3	0.0	0.0	11,463	2,871	8,592	9,858	(1,266)	0
1/27/2007	6	6,281	68.3	1.0	0.0	11,251	2,871	8,380	9,858	(1,478)	0
1/28/2007	7	7,779	77.0	0.0	1.0	10,033	2,871	7,132	9,858	(2,726)	0
1/29/2007	1	8,551	64.8	0.0	0.0	12,222	2,871	9,351	9,858	(507)	0
1/30/2007	2	8,552	72.8	0.0	0.0	11,531	2,871	8,660	9,858	(1,198)	0
1/31/2007	3	7,716	64.5	0.0	0.0	11,415	2,871	8,544	9,858	(1,314)	0
2/1/2007	4	9,452	78.0	0.0	0.0	12,151	2,871	9,280	9,858	(578)	0
2/2/2007	5	9,990	80.3	0.0	0.0	12,257	2,871	9,386	9,858	(472)	0
2/3/2007	6	10,372	92.7	1.0	0.0	11,175	2,871	8,304	9,858	(1,554)	0
2/4/2007	7	9,674	92.9	0.0	1.0	10,513	2,871	7,642	9,858	(2,216)	0
2/5/2007	1	9,666	88.2	0.0	0.0	11,301	2,871	8,430	9,858	(1,428)	0
2/6/2007	2	9,020	83.0	0.0	0.0	11,112	2,871	8,241	9,858	(1,617)	0
2/7/2007	3	8,369	82.1	0.0	0.0	10,552	2,871	7,681	9,858	(2,177)	0
2/8/2007	4	8,518	76.6	0.0	0.0	11,163	2,871	8,292	9,858	(1,566)	0
2/9/2007	5	8,751	81.8	0.0	0.0	10,947	2,871	8,076	9,858	(1,782)	0
2/10/2007	6	7,416	75.6	1.0	0.0	9,753	2,871	6,882	9,858	(2,976)	0
2/11/2007	7	7,621	52.4	0.0	1.0	11,979	2,871	9,108	9,858	(750)	0
2/12/2007	1	8,598	58.7	0.9	0.0	12,976	2,871	10,105	9,858	247	1
2/13/2007	2	8,480	76.2	0.0	0.0	11,158	2,871	8,287	9,858	(1,571)	0
2/14/2007	3	8,275	74.6	0.0	0.0	11,098	2,871	8,227	9,858	(1,631)	0
2/15/2007	4	7,320	70.6	0.0	0.0	10,485	2,871	7,614	9,858	(2,244)	0
2/16/2007	5	6,139	56.2	0.0	0.0	10,562	2,871	7,691	9,858	(2,719)	0
2/17/2007	6	6,702	64.4	1.0	0.0	10,015	2,871	7,144	9,858	(2,714)	0
2/18/2007	7	6,291	72.8	0.0	1.0	8,880	2,871	6,009	9,858	(3,649)	0
2/19/2007	1	5,794	49.5	0.0	0.0	10,796	2,871	7,925	9,858	(1,933)	0
2/20/2007	2	4,904	42.6	0.0	0.0	10,603	2,871	7,732	9,858	(2,226)	0
2/21/2007	3	5,610	42.8	0.0	0.0	11,195	2,871	8,324	9,858	(1,534)	0
2/22/2007	4	6,831	55.1	0.0	0.0	10,344	2,871	7,473	9,858	(2,385)	0
2/23/2007	5	5,438	61.1	0.0	0.0	9,435	2,871	6,564	9,858	(3,294)	0
2/24/2007	6	4,902	49.9	1.0	0.0	9,478	2,871	6,605	9,858	(3,253)	0
2/25/2007	7	4,753	45.2	0.0	1.0	9,740	2,871	6,869	9,858	(2,989)	0
2/26/2007	1	4,976	48.6	0.0	0.0	10,056	2,871	7,185	9,858	(2,673)	0
2/27/2007	2	5,143	49.2	0.0	0.0	10,169	2,871	7,298	9,858	(2,560)	0
2/28/2007	3	4,550	47.3	0.0	0.0	9,843	2,871	6,972	9,858	(2,886)	0

12/1/2007	6	5,305	62.6	1.0	0.0	8,769	2,871	5,898	9,858	(3,960)	0
12/2/2007	7	5,817	55.6	0.0	1.0	9,900	2,871	7,029	9,858	(2,829)	0
12/3/2007	1	6,701	60.9	0.0	0.0	10,711	2,871	7,840	9,858	(2,018)	0
12/4/2007	2	7,665	63.7	0.0	0.0	11,430	2,871	8,559	9,858	(1,299)	0
12/5/2007	3	8,163	74.2	0.0	0.0	11,016	2,871	8,145	9,858	(1,713)	0
12/6/2007	4	7,677	67.4	0.0	0.0	11,121	2,871	8,250	9,858	(1,608)	0
12/7/2007	5	8,371	74.1	0.0	0.0	11,231	2,871	8,360	9,858	(1,488)	0
12/8/2007	6	8,179	78.8	1.0	0.0	10,242	2,871	7,371	9,858	(2,487)	0
12/9/2007	7	7,670	75.3	0.0	1.0	10,042	2,871	7,171	9,858	(2,687)	0
12/10/2007	1	7,247	61.0	0.0	0.0	11,249	2,871	8,378	9,858	(1,480)	0
12/11/2007	2	7,849	64.8	0.0	0.0	11,320	2,871	8,449	9,858	(1,409)	0
12/12/2007	3	6,586	57.8	0.0	0.0	10,868	2,871	7,997	9,858	(1,861)	0
12/13/2007	4	7,790	62.2	0.0	0.0	11,691	2,871	8,820	9,858	(1,038)	0
12/14/2007	5	8,154	79.0	0.0	0.0	10,886	2,871	7,715	9,858	(2,143)	0
12/15/2007	6	6,570	59.4	1.0	0.0	10,316	2,871	7,445	9,858	(2,413)	0
12/16/2007	7	6,494	68.0	0.0	1.0	9,499	2,871	6,628	9,858	(3,230)	0
12/17/2007	1	5,489	55.7	0.0	0.0	9,956	2,871	7,085	9,858	(2,773)	0
12/18/2007	2	5,111	51.0	0.0	0.0	9,896	2,871	7,115	9,858	(2,743)	0
12/19/2007	3	4,775	46.0	0.0	0.0	10,090	2,871	7,209	9,858	(2,849)	0
12/20/2007	4	4,345	43.6	0.0	0.0	9,860	2,871	6,989	9,858	(2,869)	0
12/21/2007	5	3,970	38.2	0.0	0.0	9,958	2,871	7,087	9,858	(2,771)	0
12/22/2007	6	5,248	50.8	1.0	0.0	9,745	2,871	6,874	9,858	(2,984)	0
12/23/2007	7	5,241	59.9	0.0	1.0	9,950	2,871	6,079	9,858	(3,779)	0
12/24/2007	1	4,693	49.8	0.0	1.0	9,278	2,871	6,407	9,858	(3,451)	0
12/25/2007	2	4,303	48.2	1.0	0.0	9,634	2,871	6,763	9,858	(3,095)	0
12/26/2007	3	5,435	51.5	0.0	0.0	10,287	2,871	7,396	9,858	(2,462)	0
12/27/2007	4	5,952	63.9	0.0	0.0	9,705	2,871	6,834	9,858	(3,024)	0
12/28/2007	5	5,912	66.3	0.0	0.0	9,452	2,871	6,581	9,858	(3,277)	0
12/29/2007	6	5,316	53.5	1.0	0.0	9,573	2,871	6,702	9,858	(3,156)	0
12/30/2007	7	5,205	55.7	0.0	1.0	9,283	2,871	6,412	9,858	(3,446)	0
12/31/2007	1	6,350	57.2	0.0	1.0	10,289	2,871	7,418	9,858	(2,440)	0
1/1/2008	2	7,039	70.9	0.0	0.0	9,789	2,871	6,918	9,858	(2,840)	0
1/2/2008	3	6,668	73.1	0.0	0.0	9,613	2,871	6,742	9,858	(3,116)	0
1/3/2008	4	5,628	52.6	0.0	0.0	10,355	2,871	7,484	9,858	(2,374)	0
1/4/2008	5	5,091	51.9	0.0	0.0	9,881	2,871	7,010	9,858	(2,848)	0
1/5/2008	6	4,333	41.4	1.0	0.0	9,643	2,871	6,772	9,858	(3,086)	0
1/6/2008	7	4,136	33.5	0.0	1.0	10,142	2,871	7,271	9,858	(2,587)	0
1/7/2008	1	4,463	43.3	0.0	0.0	10,008	2,871	7,137	9,858	(2,721)	0
1/8/2008	2	5,104	41.3	0.0	0.0	10,816	2,871	7,945	9,858	(1,913)	0
1/9/2008	3	5,483	49.4	0.0	0.0	10,498	2,871	7,627	9,858	(2,231)	0
1/10/2008	4	5,054	46.2	0.0	0.0	10,343	2,871	7,472	9,858	(2,386)	0
1/11/2008	5	5,146	45.6	0.0	0.0	10,489	2,871	7,618	9,858	(2,240)	0
1/12/2008	6	5,184	48.3	1.0	0.0	9,895	2,871	7,024	9,858	(2,834)	0
1/13/2008	7	6,571	53.6	0.0	1.0	10,636	2,871	7,765	9,858	(1,893)	0
1/14/2008	1	8,102	73.5	0.0	0.0	11,016	2,871	8,145	9,858	(1,713)	0
1/15/2008	2	6,310	70.2	0.0	0.0	9,511	2,871	6,640	9,858	(3,218)	0
1/16/2008	3	7,601	63.8	0.0	0.0	11,359	2,871	8,488	9,858	(1,370)	0
1/17/2008	4	7,792	78.8	0.0	0.0	10,249	2,871	7,378	9,858	(2,480)	0
1/18/2008	5	9,180	80.6	0.0	0.0	11,473	2,871	8,602	9,858	(1,256)	0
1/19/2008	6	8,782	90.5	1.0	0.0	9,825	2,871	6,954	9,858	(2,904)	0
1/20/2008	7	8,588	87.7	0.0	1.0	9,874	2,871	7,003	9,858	(2,855)	0
1/21/2008	1	8,398	81.6	0.0	0.0	10,606	2,871	7,735	9,858	(2,123)	0
1/22/2008	2	9,156	79.2	0.0	0.0	11,574	2,871	8,703	9,858	(1,155)	0
1/23/2008	3	10,103	88.9	0.0	0.0	11,850	2,871	8,979	9,858	(879)	0
1/24/2008	4	8,577	77.4	0.0	0.0	11,154	2,871	8,283	9,858	(1,575)	0
1/25/2008	5	7,043	68.0	0.0	0.0	10,437	2,871	7,566	9,858	(2,292)	0
1/26/2008	6	8,273	56.2	1.0	0.0	10,299	2,871	7,429	9,858	(2,430)	0
1/27/2008	7	5,431	52.0	0.0	1.0	9,826	2,871	6,955	9,858	(2,903)	0
1/28/2008	1	6,464	39.2	0.0	0.0	12,360	2,871	9,489	9,858	(369)	0
1/29/2008	2	10,481	72.0	0.0	0.0	13,527	2,871	10,656	9,858	798	1
1/30/2008	3	10,656	93.8	0.0	0.0	11,805	2,871	8,934	9,858	(924)	0
1/31/2008	4	7,121	81.6	0.0	0.0	9,329	2,871	6,458	9,858	(3,400)	0
2/1/2008	5	6,199	36.6	0.0	0.0	10,582	2,871	7,711	9,858	(2,147)	0
2/2/2008	6	6,619	52.0	1.0	0.0	11,008	2,871	8,136	9,858	(1,728)	0
2/3/2008	7	5,597	52.5	0.0	1.0	9,949	2,871	7,078	9,858	(2,780)	0
2/4/2008	1	5,428	46.2	0.0	0.0	10,717	2,871	7,846	9,858	(2,012)	0
2/5/2008	2	6,928	59.4	0.0	0.0	11,089	2,871	8,198	9,858	(1,660)	0
2/6/2008	3	6,397	65.5	0.0	0.0	10,005	2,871	7,134	9,858	(2,724)	0
2/7/2008	4	5,445	50.9	0.0	0.0	10,327	2,871	7,456	9,858	(2,402)	0
2/8/2008	5	5,340	53.6	0.0	0.0	9,989	2,871	7,118	9,858	(2,740)	0
2/9/2008	6	8,410	73.0	1.0	0.0	10,976	2,871	8,105	9,858	(1,753)	0
2/10/2008	7	8,879	93.5	0.0	1.0	9,666	2,871	6,795	9,858	(3,063)	0
2/11/2008	1	7,694	88.6	0.0	0.0	9,296	2,871	6,425	9,858	(3,433)	0
2/12/2008	2	7,276	64.3	0.0	0.0	10,990	2,871	8,119	9,858	(1,739)	0
2/13/2008	3	8,098	74.6	0.0	0.0	10,821	2,871	8,050	9,858	(1,808)	0
2/14/2008	4	8,813	81.0	0.0	0.0	11,075	2,871	8,204	9,858	(1,654)	0
2/15/2008	5	7,781	80.6	0.0	0.0	10,658	2,871	7,189	9,858	(2,670)	0
2/16/2008	6	4,855	55.6	1.0	0.0	8,932	2,871	6,061	9,858	(3,797)	0
2/17/2008	7	6,172	51.2	0.0	1.0	10,634	2,871	7,763	9,858	(2,095)	0
2/18/2008	1	7,943	74.6	0.0	0.0	10,763	2,871	7,892	9,858	(1,966)	0
2/19/2008	2	8,992	83.7	0.0	0.0	11,015	2,871	8,144	9,858	(1,714)	0
2/20/2008	3	8,654	83.0	0.0	0.0	10,748	2,871	7,875	9,858	(1,983)	0
2/21/2008	4	7,694	75.6	0.0	0.0	10,425	2,871	7,554	9,858	(2,304)	0
2/22/2008	5	6,207	65.0	0.0	0.0	9,774	2,871	6,903	9,858	(2,955)	0
2/23/2008	6	4,730	56.1	1.0	0.0	8,763	2,871	5,892	9,858	(3,966)	0
2/24/2008	7	4,241	42.4	0.0	1.0	9,471	2,871	6,600	9,858	(3,258)	0
2/25/2008	1	5,349	49.5	0.0	0.0	10,351	2,871	7,480	9,858	(2,378)	0
2/26/2008	2	5,966	61.8	0.0	0.0	9,915	2,871	7,044	9,858	(2,814)	0
2/27/2008	3	5,362	59.7	0.0	0.0	10,103	2,871	7,232	9,858	(2,626)	0
2/28/2008	4	5,129	62.1	0.0	0.0	9,038	2,871	6,167	9,858	(3,691)	0
2/29/2008	5	6,242	59.4	0.0	0.0	10,386	2,871	7,515	9,858	(2,343)	0

12/1/2008	1	6,414	55.6	0.0	0.0	10,882	2,871	8,011	9,858	(1,847)	0
12/2/2008	2	6,282	49.7	0.0	0.0	11,295	2,871	8,364	9,858	(1,464)	0
12/3/2008	3	7,276	81.0	0.0	0.0	11,278	2,871	8,407	9,858	(1,451)	0
12/4/2008	4	7,471	64.8	0.0	0.0	11,142	2,871	8,271	9,858	(1,587)	0
12/5/2008	5	6,804	61.0	0.0	0.0	10,802	2,871	7,931	9,858	(1,927)	0
12/6/2008	6	6,808	76.3	1.0	0.0	9,062	2,871	6,211	9,858	(3,647)	0
12/7/2008	7	6,347	68.6	0.0	1.0	9,295	2,871	6,424	9,858	(3,434)	0
12/8/2008	1	6,680	63.0	0.0	0.0	10,508	2,871	7,637	9,858	(2,221)	0
12/9/2008	2	7,122	70.0	0.0	0.0	10,337	2,871	7,466	9,858	(2,392)	0
12/10/2008	3	7,087	64.4	0.0	0.0	10,894	2,871	7,933	9,858	(1,925)	0
12/11/2008	4	7,946	81.1	0.0	0.0	10,197	2,871	7,326	9,858	(2,532)	0
12/12/2008	5	6,247	65.5	0.0	0.0	9,855	2,871	6,984	9,858	(2,874)	0
12/13/2008	6	6,254	63.8	1.0	0.0	9,617	2,871	6,746	9,858	(3,112)	0
12/14/2008	7	8,119	83.5	0.0	1.0	9,772	2,871	6,901	9,858	(2,957)	0
12/15/2008	1	9,914	90.5	0.0	0.0	11,352	2,871	8,481	9,858	(1,377)	0
12/16/2008	2	8,819	84.8	0.0	0.0	10,750	2,871	7,879	9,858	(1,979)	0
12/17/2008	3	8,177	78.5	0.0	0.0	10,653	2,871	7,782	9,858	(2,076)	0
12/18/2008	4	8,630	74.2	0.0	0.0	11,483	2,871	8,612	9,858	(1,246)	0
12/19/2008	5	8,032	68.8	0.0	0.0	11,531	2,871	8,660	9,858	(1,198)	0
12/20/2008	6	6,287	65.9	1.0	0.0	9,499	2,871	6,598	9,858	(3,260)	0
12/21/2008	7	7,398	82.5	0.0	1.0	9,140	2,871	6,269	9,858	(3,589)	0
12/22/2008	1	6,973	75.9	0.0	0.0	9,677	2,871	6,806	9,858	(3,052)	0
12/23/2008	2	6,170	70.0	0.0	0.0	9,985	2,871	6,514	9,858	(3,344)	0
12/24/2008	3	6,779	78.0	0.0	0.0	9,302	2,871	6,431	9,858	(3,427)	0
12/25/2008	4	5,385	62.6	0.0	0.0	9,244	2,871	6,373	9,858	(3,485)	0
12/26/2008	5	4,295	40.3	1.0	0.0	9,704	2,871	6,833	9,858	(3,025)	0
12/27/2008	6	5,458	55.8	1.0	0.0	9,529	2,871	6,658	9,858	(3,200)	0
12/28/2008	7	5,513	61.4	0.0	1.0	9,094	2,871	6,223	9,858	(3,635)	0
12/29/2008	1	6,384	70.2	0.0	0.0	9,585	2,871	6,714	9,858	(3,144)	0
12/30/2008	2	7,502	83.5	0.0	0.0	9,550	2,871	6,679	9,858	(3,179)	0
12/31/2008	3	6,632	77.4	0.0	0.0	9,209	2,871	6,338	9,858	(3,520)	0
1/1/2009	4	6,135	69.1	1.0	0.0	9,035	2,871	6,164	9,858	(3,694)	0
1/2/2009	5	6,792	77.4	0.0	0.0	9,369	2,871	6,498	9,858	(3,360)	0
1/3/2009	6	6,021	61.8	0.0	0.0	9,576	2,871	6,705	9,858	(3,153)	0
1/4/2009	7	7,704	89.9	0.0	1.0	9,804	2,871	6,933	9,858	(3,925)	0
1/5/2009	1	7,608	84.5	0.0	0.0	9,569	2,871	6,698	9,858	(3,160)	0
1/6/2009	2	6,103	60.4	0.0	0.0	10,155	2,871	7,284	9,858	(2,574)	0
1/7/2009	3	6,436	70.0	0.0	0.0	9,658	2,871	6,787	9,858	(3,071)	0
1/8/2009	4	7,168	79.6	0.0	0.0	9,555	2,871	6,684	9,858	(3,174)	0
1/9/2009	5	6,844	74.5	0.0	0.0	9,675	2,871	6,804	9,858	(3,054)	0
1/10/2009	6	6,896	63.4	1.0	0.0	9,290	2,871	6,419	9,858	(3,439)	0
1/11/2009	7	5,935	59.9	0.0	1.0	9,647	2,871	6,776	9,858	(3,082)	0
1/12/2009	1	7,892	89.6	0.0	0.0	9,402	2,871	6,531	9,858	(3,327)	0
1/13/2009	2	8,684	92.8	0.0	0.0	9,818	2,871	7,047	9,858	(2,811)	0
1/14/2009	3	9,028	94.0	0.0	0.0	10,162	2,871	7,291	9,858	(2,567)	0
1/15/2009	4	9,196	93.3	0.0	0.0	10,399	2,871	7,518	9,858	(2,340)	0
1/16/2009	5	7,278	79.5	0.0	0.0	9,670	2,871	6,799	9,858	(3,059)	0
1/17/2009	6	6,010	65.1	1.0	0.0	9,260	2,871	6,389	9,858	(3,469)	0
1/18/2009	7	5,704	63.9	0.0	1.0	9,067	2,871	6,196	9,858	(3,662)	0
1/19/2009	1	7,237	66.2	0.0	0.0	10,791	2,871	7,920	9,858	(1,838)	0
1/20/2009	2	6,495	54.1	0.0	0.0	11,100	2,871	8,229	9,858	(1,629)	0
1/21/2009	3	6,357	48.2	0.0	0.0	11,646	2,871	8,775	9,858	(1,083)	0
1/22/2009	4	6,471	59.3	0.0	0.0	10,656	2,871	7,785	9,858	(2,073)	0
1/23/2009	5	8,709	84.0	0.0	0.0	10,710	2,871	7,839	9,858	(2,019)	0
1/24/2009	6	7,940	83.9	1.0	0.0	9,552	2,871	6,681	9,858	(3,177)	0
1/25/2009	7	8,310	83.5	0.0	1.0	9,968	2,871	7,097	9,858	(2,761)	0
1/26/2009	1	8,617	79.5	0.0	0.0	11,009	2,871	8,138	9,858	(1,720)	0
1/27/2009	2	7,566	73.1	0.0	0.0	10,511	2,871	7,640	9,858	(2,218)	0
1/28/2009	3	6,761	61.5	0.0	0.0	10,721	2,871	7,850	9,858	(2,035)	0
1/29/2009	4	7,667	83.7	0.0	0.0	9,690	2,871	7,019	9,858	(2,839)	0
1/30/2009	5	6,231	67.4	0.0	0.0	9,675	2,871	6,804	9,858	(3,054)	0
1/31/2009	6	4,660	43.6	1.0	0.0	9,784	2,871	6,913	9,858	(2,945)	0
2/1/2009	7	5,981	63.8	0.0	1.0	9,350	2,871	6,479	9,858	(3,379)	0
2/2/2009	1	7,466	74.9	0.0	0.0	10,258	2,871	7,387	9,858	(2,471)	0
2/3/2009	2	7,756	78.5	0.0	0.0	10,232	2,871	7,361	9,858	(2,497)	0
2/4/2009	3	6,770	72.1	0.0	0.0	9,808	2,871	6,937	9,858	(2,921)	0
2/5/2009	4	5,489	53.0	0.0	0.0	10,183	2,871	7,312	9,858	(2,546)	0
2/6/2009	5	4,167	38.2	0.0	0.0	10,155	2,871	7,284	9,858	(2,574)	0
2/7/2009	6	4,822	53.4	1.0	0.0	9,089	2,871	6,218	9,858	(3,640)	0
2/8/2009	7	4,232	42.4	0.0	1.0	9,462	2,871	6,591	9,858	(3,267)	0
2/9/2009	1	3,766	34.7	0.0	0.0	10,054	2,871	7,183	9,858	(2,675)	0
2/10/2009	2	3,677	30.5	0.0	0.0	10,336	2,871	7,465	9,858	(2,393)	0
2/11/2009	3	4,046	37.5	0.0	0.0	10,069	2,871	7,228	9,858	(2,630)	0
2/12/2009	4	5,081	49.6	0.0	0.0	10,161	2,871	7,290	9,858	(2,568)	0
2/13/2009	5	5,557	56.7	0.0	0.0	9,932	2,871	7,061	9,858	(2,797)	0
2/14/2009	6	6,098	67.6	1.0	0.0	9,131	2,871	6,260	9,858	(3,598)	0
2/15/2009	7	5,690	61.8	0.0	1.0	9,233	2,871	6,362	9,858	(3,496)	0
2/16/2009	1	5,822	57.2	0.0	0.0	10,154	2,871	7,283	9,858	(2,575)	0
2/17/2009	2	6,347	63.2	0.0	0.0	10,155	2,871	7,284	9,858	(2,574)	0
2/18/2009	3	7,147	80.3	0.0	0.0	9,474	2,871	6,603	9,858	(3,255)	0
2/19/2009	4	6,872	73.1	0.0	0.0	9,818	2,871	6,947	9,858	(2,911)	0
2/20/2009	5	6,042	64.5	0.0	0.0	9,741	2,871	6,870	9,858	(2,988)	0
2/21/2009	6	5,840	63.7	1.0	0.0	9,210	2,871	6,339	9,858	(3,519)	0
2/22/2009	7	5,155	70.4	0.0	1.0	8,654	2,871	5,783	9,858	(3,775)	0
2/23/2009	1	5,715	61.6	0.0	0.0	9,668	2,871	6,797	9,858	(3,061)	0
2/24/2009	2	4,607	41.3	0.0	0.0	10,319	2,871	7,446	9,858	(2,410)	0
2/25/2009	3	6,087	58.3	0.0	0.0	10,323	2,871	7,452	9,858	(2,408)	0
2/26/2009	4	7,389	74.5	0.0	0.0	10,214	2,871	7,343	9,858	(2,515)	0
2/27/2009	5	7,190	81.1	0.0	0.0	9,441	2,871	6,570	9,858	(3,288)	0
2/28/2009	6	6,756	79.6	1.0	0.0	8,727	2,871	5,856	9,858	(4,002)	0

OES's Analysis of the Great Lakes Pipeline Peak Day Calculations												
SUMMARY OUTPUT												
Regression Statistics												
Multiple R	0.84186											
R Square	0.708728											
Adjusted R Sq	0.705521											
Standard Error	1226.824											
Observations	267											
ANOVA												
	df	SS	MS	F	Significance F							
Regression	2	966826903.5	483413451.7	321.1843656	1.939E-71							
Residual	264	397345465.5	1505096.46									
Total	266	1364172369										
	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%				
Intercept	633.7687	347.1263	1.8258	0.0690	-49.719648	1317.26	-49.71964765	1317.257015				
AHDD65	133.0491	5.4404	24.4557	0.0000	122.33698	143.761	122.3369823	143.7612814				
Dec	161.1940	12.9079	12.5079	0.0054	-770.00558	-135.228	-770.0055824	-135.2277961				
NMU-GLGT Peak Day Regression for Winter 2009/2010												
	2	3	4	5	7	26			133.0491			
	(Mon=1)	Cloquet	Bemidji	Total				Peak Day Temperature	105.3011773			
								Days above Peak	1			
Date	Day	DailyMetered	DailyMetered	DailyMetered	AHDD65	Dec	Estimated Peak Day Use	Estimated Interruptible Use	Estimated Firm Use	GLGT Total Entitlement Value	Difference Between Firm Use and Estimated Total Entitlement	0= Sufficient Capacity 1=Estimated Firm Use Greater than Total Entitlement
12/1/2006	5	3,356	3,996	7,352	57.6	1	13,242	4,551	8,691	16,446	(7,755)	0
12/2/2006	5	3,743	4,382	8,125	60	1	13,693	4,551	9,142	16,446	(7,304)	0
12/3/2006	6	3,734	4,448	8,182	65	1	13,140	4,551	8,589	16,446	(7,857)	0
12/4/2006	7	4,294	4,943	9,237	68	1	13,735	4,551	9,184	16,446	(7,262)	0
12/5/2006	1	3,670	4,165	7,836	59	1	13,561	4,551	9,010	16,446	(7,436)	0
12/6/2006	2	4,335	5,085	9,420	67	1	14,070	4,551	9,569	16,446	(6,877)	0
12/7/2006	3	4,302	4,833	9,135	68	1	13,628	4,551	9,077	16,446	(7,369)	0
12/8/2006	4	3,070	3,281	6,350	46	1	13,583	4,551	9,032	16,446	(7,414)	0
12/9/2006	5	2,606	2,706	5,312	33	1	14,464	4,551	9,913	16,446	(6,533)	0
12/10/2006	6	2,173	2,619	4,792	39	1	13,213	4,551	8,662	16,446	(7,784)	0
12/15/2006	7	2,627	3,080	5,707	41	1	13,768	4,551	9,217	16,446	(7,229)	0
12/16/2006	1	2,367	2,835	5,202	36	1	13,954	4,551	9,403	16,446	(7,043)	0
12/17/2006	2	2,814	3,553	6,367	45	1	13,932	4,551	9,381	16,446	(7,065)	0
12/18/2006	3	3,067	3,477	6,544	47	1	13,864	4,551	9,313	16,446	(7,133)	0
12/19/2006	4	2,692	2,836	5,528	39	1	13,908	4,551	9,357	16,446	(7,089)	0
12/20/2006	5	2,762	3,261	6,023	38	1	14,514	4,551	9,963	16,446	(6,483)	0
12/21/2006	6	2,693	3,056	5,749	47	1	13,129	4,551	8,678	16,446	(7,768)	0
12/22/2006	7	2,498	2,858	5,356	37	1	13,945	4,551	9,394	16,446	(7,052)	0
12/23/2006	1	2,892	3,081	5,973	39	1	14,077	4,551	9,526	16,446	(6,920)	0
12/24/2006	2	2,677	2,984	5,641	42	1	13,637	4,551	9,086	16,446	(7,360)	0
12/25/2006	3	3,113	3,490	6,603	49	1	13,607	4,551	9,056	16,446	(7,390)	0
12/26/2006	4	2,793	3,188	5,961	45	1	13,481	4,551	8,930	16,446	(7,516)	0
12/27/2006	5	2,547	3,074	5,621	39	1	14,038	4,551	9,487	16,446	(6,959)	0
12/28/2006	6	2,708	3,023	5,731	41	1	13,898	4,551	9,347	16,446	(7,099)	0
12/29/2006	7	2,485	2,822	5,307	38	1	13,856	4,551	9,305	16,446	(7,141)	0
12/30/2006	1	2,441	2,718	5,159	37	1	13,744	4,551	9,193	16,446	(7,253)	0
12/31/2006	2	2,677	3,186	5,873	41	1	14,011	4,551	9,460	16,446	(6,986)	0
1/1/2007	3	3,016	3,512	6,528	47	0	14,277	4,551	9,726	16,446	(6,720)	0
1/2/2007	4	2,858	3,149	6,005	45	0	14,026	4,551	9,475	16,446	(6,971)	0
1/3/2007	5	2,608	3,123	5,731	35	0	14,966	4,551	10,415	16,446	(6,031)	0
1/4/2007	6	2,236	2,498	4,735	30	0	14,777	4,551	10,226	16,446	(6,220)	0
1/5/2007	7	2,390	2,825	5,215	37	0	14,342	4,551	9,791	16,446	(6,655)	0
1/6/2007	1	2,599	3,159	5,758	41	0	14,317	4,551	9,766	16,446	(6,680)	0
1/7/2007	2	3,175	4,109	7,284	46	0	15,237	4,551	10,686	16,446	(5,760)	0
1/8/2007	3	3,476	5,780	9,256	52	0	16,348	4,551	11,797	16,446	(4,649)	0
1/9/2007	4	3,906	6,164	10,070	60	0	16,087	4,551	11,536	16,446	(4,910)	0
1/10/2007	5	3,346	5,117	8,463	54	0	15,243	4,551	10,692	16,446	(5,754)	0
1/11/2007	6	3,565	6,966	10,530	57	0	16,978	4,551	12,425	16,446	(4,021)	0
1/12/2007	7	4,814	8,732	13,546	75	0	17,580	4,551	13,027	16,446	(3,419)	0
1/13/2007	1	4,370	5,770	10,140	70	0	14,890	4,551	10,249	16,446	(6,197)	0
1/14/2007	2	4,223	6,103	10,326	68	0	15,303	4,551	10,752	16,446	(5,694)	0
1/15/2007	3	4,677	6,061	10,738	70	0	15,384	4,551	10,833	16,446	(5,613)	0
1/16/2007	4	4,319	4,970	9,289	69	0	14,055	4,551	9,504	16,446	(6,942)	0
1/17/2007	5	3,587	4,182	7,769	55	0	14,472	4,551	9,921	16,446	(6,525)	0
1/18/2007	6	3,557	4,205	7,761	52	0	14,809	4,551	10,258	16,446	(6,188)	0
1/19/2007	7	4,205	4,601	8,806	56	0	14,037	4,551	9,486	16,446	(6,960)	0
1/20/2007	1	3,498	3,171	6,669	59	0	12,872	4,551	8,321	16,446	(8,125)	0
1/21/2007	2	3,147	3,221	6,368	49	0	13,821	4,551	9,270	16,446	(7,176)	0
1/22/2007	3	3,988	3,621	7,609	49	0	14,268	4,551	9,717	16,446	(6,729)	0
1/23/2007	4	3,333	4,076	7,409	56	0	13,939	4,551	9,398	16,446	(7,058)	0
1/24/2007	5	3,855	4,493	8,348	57	0	14,751	4,551	10,200	16,446	(6,246)	0
1/25/2007	6	3,614	4,116	7,730	60	0	13,752	4,551	9,201	16,446	(7,245)	0
1/26/2007	7	2,950	3,462	6,412	43	0	14,733	4,551	10,182	16,446	(6,264)	0
1/27/2007	1	4,389	5,347	9,736	64	0	15,239	4,551	10,688	16,446	(5,758)	0
1/28/2007	2	4,224	5,014	9,238	73	0	13,561	4,551	9,010	16,446	(7,436)	0
1/29/2007	3	4,255	5,106	9,360	67	0	14,461	4,551	9,910	16,446	(6,536)	0
1/30/2007	4	4,238	4,988	9,226	71	0	13,824	4,551	9,273	16,446	(7,173)	0
1/31/2007	5	3,985	4,845	8,830	64	0	14,321	4,551	9,770	16,446	(6,676)	0
2/1/2007	6	4,699	5,319	10,018	74	0	14,244	4,551	9,693	16,446	(6,753)	0
2/2/2007	7	4,764	5,277	10,041	78	0	14,191	4,551	9,640	16,446	(6,806)	0
2/3/2007	1	5,676	7,277	12,953	90	0	14,961	4,551	10,410	16,446	(6,036)	0
2/4/2007	2	5,889	8,353	14,242	90	0	16,244	4,551	11,693	16,446	(4,753)	0
2/5/2007	3	5,308	9,536	14,844	84	0	17,648	4,551	13,095	16,446	(3,351)	0
2/6/2007	4	4,938	7,819	12,758	75	0	16,772	4,551	12,221	16,446	(4,225)	0
2/7/2007	5	4,705	7,945	12,650	80	0	15,967	4,551	11,416	16,446	(5,030)	0
2/8/2007	6	5,147	7,784	12,930	74	0	17,081	4,551	12,530	16,446	(3,916)	0
2/9/2007	7	4,880	6,593	11,473	79	0	14,994	4,551	10,443	16,446	(6,003)	0
2/10/2007	1	4,341	5,105	9,445	74	0	13,602	4,551	9,051	16,446	(7,395)	0
2/11/2007	2	3,935	4,888	8,823	61	0	14,781	4,551	10,230	16,446	(6,216)	0
2/12/2007	3	3,895	5,211	9,107	69	0	13,987	4,551	9,438	16,446	(7,010)	0
2/13/2007	4	4,393	6,430	10,793	72	0	15,263	4,551	10,712	16,446	(5,734)	0
2/14/2007	5	4,524	6,909	11,433	74	0	15,594	4,551	11,043	16,446	(5,403)	0
2/15/2007	6	4,316	5,726	10,042	64	0	15,518	4,551	10,967	16,446	(5,479)	0
2/16/2007	7	3,815	4,315	8,130	59	0	14,301	4,551	9,750	16,446	(6,696)	0
2/17/2007	1	4,039	4,570	8,609	60	0	14,621	4,551	10,070	16,446	(6,376)	0
2/18/2007	2	3,628	4,330	7,958	65	0	13,347	4,551	8,796	16,446	(7,650)	0
2/19/2007	3	3,076	3,600	6,676	45	0	14,659	4,551	10,118	16,446	(6,328)	0
2/20/2007	4	2,490	3,031	5,521	42	0	13,888	4,551	9,337	16,446	(7,109)	0
2/21/2007	5	2,726	3,539	6,265	41	0	14,847	4,551	10,299	16,446	(6,150)	0
2/22/2007	6	3,104	3,715	6,819	52	0	13,956	4,551	9,405	16,446	(7,041)	0
2/23/2007	7	3,514	3,950	7,464	61	0	14,662	4,551	10,111	16,446	(6,335)	0
2/24/2007	1	3,531	3,756	7,287	49	0	14,822	4,551	10,271	16,446	(6,175)	0
2/25/2007	2	2,941	3,416	6,357	46	0	14,291	4,551	9,740	16,446	(6,706)	0
2/26/2007												

12/1/2007	6	3,143	3,839	6,982	56	1	13,119	4,551	8,568	16,446	(7,878)	0
12/2/2007	7	3,386	4,216	7,602	58	1	13,466	4,551	8,915	16,446	(7,531)	0
12/3/2007	1	3,420	4,878	8,299	63	1	13,440	4,551	8,489	16,446	(7,957)	0
12/4/2007	2	3,371	4,688	8,059	56	1	14,224	4,551	9,673	16,446	(6,773)	0
12/5/2007	5	3,733	5,807	9,539	69	1	13,964	4,551	9,413	16,446	(7,033)	0
12/6/2007	6	3,698	6,321	10,019	62	1	15,305	4,551	10,754	16,446	(5,692)	0
12/7/2007	7	4,301	5,170	9,470	71	1	13,693	4,551	9,042	16,446	(7,404)	0
12/8/2007	1	4,237	5,457	9,694	74	1	13,426	4,551	8,875	16,446	(7,571)	0
12/9/2007	2	4,300	6,280	10,580	73	1	14,451	4,551	9,900	16,446	(6,546)	0
12/10/2007	3	3,239	4,344	7,583	60	1	13,096	4,551	8,545	16,446	(7,901)	0
12/11/2007	4	3,737	4,486	8,223	61	1	13,639	4,551	9,088	16,446	(7,358)	0
12/12/2007	5	3,413	3,976	7,390	57	1	13,363	4,551	8,812	16,446	(7,634)	0
12/13/2007	6	3,985	5,033	9,019	61	1	14,521	4,551	9,970	16,446	(6,476)	0
12/14/2007	7	4,088	6,150	10,238	72	1	14,267	4,551	9,708	16,446	(6,740)	0
12/15/2007	1	3,290	5,274	8,564	60	1	14,119	4,551	9,568	16,446	(6,878)	0
12/16/2007	2	2,986	5,506	8,492	54	1	14,847	4,551	10,296	16,446	(6,150)	0
12/17/2007	3	2,873	3,789	6,641	49	1	13,637	4,551	9,086	16,446	(7,360)	0
12/18/2007	4	2,719	3,541	6,260	48	1	13,426	4,551	8,875	16,446	(7,571)	0
12/19/2007	5	2,645	3,601	6,246	49	1	13,266	4,551	8,705	16,446	(7,741)	0
12/20/2007	6	2,282	3,385	5,666	41	1	13,754	4,551	9,203	16,446	(7,243)	0
12/21/2007	7	2,166	2,978	5,144	37	1	13,742	4,551	9,191	16,446	(7,255)	0
12/22/2007	1	3,125	4,255	7,380	52	1	13,982	4,551	9,431	16,446	(7,015)	0
12/23/2007	2	3,264	4,216	7,480	65	1	12,371	4,551	7,820	16,446	(8,626)	0
12/24/2007	3	3,114	3,744	6,858	59	1	12,901	4,551	8,350	16,446	(8,096)	0
12/25/2007	4	2,749	3,568	6,315	47	1	13,558	4,551	9,007	16,446	(7,439)	0
12/26/2007	5	2,829	3,732	6,561	45	1	14,177	4,551	9,626	16,446	(6,820)	0
12/27/2007	6	3,367	4,217	7,584	51	1	14,316	4,551	9,765	16,446	(6,681)	0
12/28/2007	7	3,829	4,095	7,924	55	1	14,229	4,551	9,678	16,446	(6,768)	0
12/29/2007	1	2,914	3,894	6,808	49	1	13,844	4,551	9,293	16,446	(7,153)	0
12/30/2007	2	2,941	3,872	6,813	48	1	13,935	4,551	9,384	16,446	(7,062)	0
12/31/2007	3	3,643	4,525	8,168	59	1	13,903	4,551	9,352	16,446	(7,094)	0
1/1/2008	4	4,115	5,393	9,508	73	0	13,762	4,551	9,201	16,446	(7,245)	0
1/2/2008	5	3,949	5,630	9,579	70	0	14,299	4,551	9,748	16,446	(6,698)	0
1/3/2008	6	3,679	6,527	10,196	54	0	16,927	4,551	12,446	16,446	(4,000)	0
1/4/2008	7	2,733	6,962	12,695	60	0	20,039	4,551	15,488	16,446	(958)	0
1/5/2008	1	2,360	3,738	6,098	43	0	14,383	4,551	9,832	16,446	(6,614)	0
1/6/2008	2	2,098	3,165	5,263	35	0	14,638	4,551	10,085	16,446	(6,361)	0
1/7/2008	3	2,010	2,953	4,963	36	0	14,235	4,551	9,684	16,446	(6,762)	0
1/8/2008	4	2,533	3,375	5,908	43	0	14,253	4,551	9,702	16,446	(6,744)	0
1/9/2008	5	2,766	3,606	6,372	48	0	13,933	4,551	9,382	16,446	(7,064)	0
1/10/2008	6	2,595	3,327	5,922	43	0	14,160	4,551	9,609	16,446	(6,837)	0
1/11/2008	7	2,715	3,627	6,341	47	0	14,042	4,551	9,491	16,446	(6,955)	0
1/12/2008	1	2,713	3,737	6,450	53	0	13,379	4,551	8,828	16,446	(7,618)	0
1/13/2008	2	3,246	4,347	7,597	56	0	14,095	4,551	9,644	16,446	(6,802)	0
1/14/2008	3	3,395	5,009	8,405	70	0	13,509	4,551	8,958	16,446	(7,488)	0
1/15/2008	4	2,586	4,679	7,265	65	0	12,673	4,551	8,122	16,446	(8,324)	0
1/16/2008	5	3,507	5,518	9,025	60	0	14,988	4,551	10,437	16,446	(6,009)	0
1/17/2008	6	4,106	6,779	10,885	69	0	15,721	4,551	11,170	16,446	(5,276)	0
1/18/2008	7	5,366	8,026	13,392	81	0	16,659	4,551	12,108	16,446	(4,338)	0
1/19/2008	1	5,135	8,140	13,275	84	0	16,098	4,551	11,545	16,446	(4,901)	0
1/20/2008	2	4,825	7,803	12,727	81	0	15,935	4,551	11,384	16,446	(5,062)	0
1/21/2008	3	4,655	6,937	11,593	73	0	15,911	4,551	11,360	16,446	(5,086)	0
1/22/2008	4	4,508	6,591	11,100	74	0	15,269	4,551	10,738	16,446	(5,708)	0
1/23/2008	5	4,949	7,995	12,854	82	0	15,990	4,551	11,409	16,446	(5,037)	0
1/24/2008	6	4,480	6,661	11,141	73	0	14,715	4,551	10,263	16,446	(6,183)	0
1/25/2008	7	3,449	6,282	9,711	62	0	15,490	4,551	10,939	16,446	(5,507)	0
1/26/2008	1	3,438	4,486	7,924	50	0	15,327	4,551	10,776	16,446	(5,670)	0
1/27/2008	2	2,727	3,675	6,402	49	0	13,850	4,551	9,299	16,446	(7,147)	0
1/28/2008	3	2,253	3,554	5,807	37	0	14,892	4,551	10,341	16,446	(6,105)	0
1/29/2008	4	5,063	7,858	12,921	76	0	16,885	4,551	12,334	16,446	(4,112)	0
1/30/2008	5	5,154	8,542	13,696	90	0	15,696	4,551	11,145	16,446	(5,301)	0
1/31/2008	6	4,519	7,171	11,690	72	0	16,121	4,551	11,570	16,446	(4,876)	0
2/1/2008	7	3,227	4,223	7,450	56	0	14,018	4,551	9,467	16,446	(6,979)	0
2/2/2008	1	2,892	3,887	6,779	46	0	14,615	4,551	10,084	16,446	(6,362)	0
2/3/2008	2	2,623	3,621	6,244	45	0	14,218	4,551	9,687	16,446	(6,759)	0
2/4/2008	3	2,706	3,497	6,202	43	0	14,475	4,551	9,924	16,446	(6,522)	0
2/5/2008	4	2,911	4,160	7,070	53	0	13,974	4,551	9,423	16,446	(7,023)	0
2/6/2008	5	3,424	4,285	7,710	59	0	13,906	4,551	9,355	16,446	(7,091)	0
2/7/2008	6	3,260	4,168	7,447	51	0	14,681	4,551	10,130	16,446	(6,316)	0
2/8/2008	7	3,004	4,359	7,363	48	0	14,950	4,551	10,399	16,446	(6,047)	0
2/9/2008	1	4,555	6,931	11,486	73	0	15,771	4,551	11,220	16,446	(5,226)	0
2/10/2008	2	5,253	9,372	14,624	94	0	16,193	4,551	11,642	16,446	(4,804)	0
2/11/2008	3	4,300	10,719	15,019	80	0	18,417	4,551	13,866	16,446	(2,580)	0
2/12/2008	4	4,497	11,568	16,065	80	0	22,097	4,551	17,548	16,446	(1,100)	1
2/13/2008	5	3,991	10,585	14,576	64	0	20,023	4,551	15,472	16,446	(974)	0
2/14/2008	6	4,379	6,262	10,640	76	0	14,596	4,551	10,045	16,446	(6,401)	0
2/15/2008	7	4,428	6,687	10,113	80	0	13,446	4,551	8,895	16,446	(7,551)	0
2/16/2008	1	2,689	3,644	6,333	54	0	13,195	4,551	8,644	16,446	(7,802)	0
2/17/2008	2	2,993	4,338	7,331	53	0	14,257	4,551	9,706	16,446	(6,740)	0
2/18/2008	3	4,202	5,535	9,737	74	0	13,880	4,551	9,329	16,446	(7,117)	0
2/19/2008	4	4,556	5,933	10,489	81	0	13,657	4,551	9,106	16,446	(7,340)	0
2/20/2008	5	4,581	5,931	10,513	80	0	13,901	4,551	9,350	16,446	(7,096)	0
2/21/2008	6	3,761	4,948	8,709	73	0	12,992	4,551	8,441	16,446	(8,005)	0
2/22/2008	7	3,322	4,309	7,630	57	0	14,026	4,551	9,475	16,446	(6,971)	0
2/23/2008	1	2,616	6,761	9,377	52	0	16,467	4,551	11,916	16,446	(4,530)	0
2/24/2008	2	2,744	6,941	9,685	45	0	17,662	4,551	13,101	16,446	(3,345)	0
2/25/2008	3	2,931	8,077	10,908	49	0	18,453	4,551	13,902	16,446	(2,544)	0
2/26/2008	4	3,271	6,542	9,813	54	0	16,575	4,551	12,024	16,446	(4,422)	0
2/27/2008	5	3,214	4,278	7,492	56	0	13,987	4,551	9,436	16,446	(7,010)	0
2/28/2008	6	2,979	3,649	6,627	56	0	13,240	4,551	8,689	16,446	(7,757)	0
2/29/2008	7	3,292	4,343	7,634	54	0	14,399	4,551	9,848	16,446	(6,598)	0

12/1/2008	1	3,174	3,968	7,142	55	1	13,446	4,551	8,895	16,446	(7,551)	0
12/2/2008	2	3,099	3,673	6,772	50	1	13,696	4,551	9,145	16,446	(7,301)	0
12/3/2008	3	3,432	4,401	7,833	59	1	13,556	4,551	9,005	16,446	(7,441)	0
12/4/2008	6	3,890	4,737	8,626	62	1	13,939	4,551	9,388	16,446	(7,058)	0
12/5/2008	7	3,524	4,322	7,846	59	1	13,566	4,551	9,015	16,446	(7,431)	0
12/6/2008	1	3,978	5,042	9,020	72	1	12,964	4,551	8,413	16,446	(8,033)	0
12/7/2008	2	3,737	4,814	8,551	62	1	13,805	4,551	9,257	16,446	(7,189)	0
12/8/2008	3	3,331	4,493	7,824	61	1	13,219	4,551	8,668	16,446	(7,778)	0
12/9/2008	4	3,530	4,701	8,231	63	1	13,385	4,551	8,834	16,446	(7,612)	0
12/10/2008	5	3,637	4,712	8,349	60	1	13,870	4,551	9,319	16,446	(7,127)	0
12/11/2008	6	4,363	5,540	9,902	75	1	13,452	4,551	8,901	16,446	(7,545)	0
12/12/2008	7	3,879	4,743	8,621	62	1	13,984	4,551	9,433	16,446	(7,013)	0
12/13/2008	1	2,707	3,991	6,689	55	1	12,951	4,551	8,400	16,446	(8,046)	0
12/14/2008	2	3,927	5,425	9,351	79	1	12,404	4,551	7,853	16,446	(8,593)	0
12/15/2008	3	5,321	6,533	11,854	88	1	13,643	4,551	9,092	16,446	(7,354)	0
12/16/2008	4	4,741	7,051	11,792	79	1	14,796	4,551	10,245	16,446	(6,201)	0
12/17/2008	5	4,408	6,682	11,090	74	1	14,858	4,551	10,307	16,446	(6,139)	0
12/18/2008	6	3,949	5,197	9,146	71	1	13,250	4,551	8,699	16,446	(7,747)	0
12/19/2008	7	3,457	4,541	7,998	59	1	13,729	4,551	9,178	16,446	(7,268)	0
12/20/2008	1	3,614	4,892	8,505	70	1	12,722	4,551	8,171	16,446	(8,275)	0
12/21/2008	2	4,405	5,626	10,031	81	1	12,871	4,551	8,320	16,446	(8,126)	0
12/22/2008	3	4,224	5,362	9,586	77	1	12,960	4,551	8,409	16,446	(8,037)	0
12/23/2008	4	3,708	4,950	8,658	66	1	13,489	4,551	9,938	16,446	(7,508)	0
12/24/2008	5	4,012	5,233	9,245	72	1	13,215	4,551	8,664	16,446	(7,782)	0
12/25/2008	6	3,220	4,148	7,368	62	1	12,672	4,551	8,121	16,446	(8,325)	0
12/26/2008	7	2,413	3,213	5,626	39	1	13,944	4,551	9,393	16,446	(7,053)	0
12/27/2008	1	4,652	4,080	8,731	59	1	14,392	4,551	9,841	16,446	(6,605)	0
12/28/2008	2	5,289	4,197	9,487	59	1	15,195	4,551	10,644	16,446	(6,802)	0
12/29/2008	3	6,653	4,663	11,416	61	1	16,832	4,551	12,281	16,446	(4,185)	0
12/30/2008	4	4,692	5,690	10,382	79	1	13,334	4,551	8,783	16,446	(7,663)	0
12/31/2008	5	4,202	5,233	9,436	74	1	13,103	4,551	8,552	16,446	(7,894)	0
1/1/2009	6	3,695	4,737	8,431	66	0	13,621	4,551	9,070	16,446	(7,376)	0
1/2/2009	7	3,608	4,843	8,451	68	0	13,352	4,551	8,801	16,446	(7,645)	0
1/3/2009	1	3,094	4,294	7,388	65	0	12,769	4,551	8,218	16,446	(8,228)	0
1/4/2009	2	4,282	5,665	9,947	84	0	12,725	4,551	8,174	16,446	(8,272)	0
1/5/2009	3	4,104	5,119	9,223	75	0	13,309	4,551	8,758	16,446	(7,688)	0
1/6/2009	4	3,266	4,315	7,580	58	0	13,829	4,551	9,278	16,446	(7,168)	0
1/7/2009	5	3,490	4,791	8,281	69	0	13,108	4,551	8,555	16,446	(7,891)	0
1/8/2009	6	3,921	5,170	9,090	69	0	13,854	4,551	9,303	16,446	(7,143)	0
1/9/2009	7	3,818	5,141	8,959	67	0	14,055	4,551	9,504	16,446	(6,942)	0
1/10/2009	1	3,494	4,478	7,972	62	0	13,726	4,551	9,175	16,446	(7,271)	0
1/11/2009	2	3,582	4,668	8,250	63	0	13,840	4,551	9,289	16,446	(7,157)	0
1/12/2009	3	4,401	5,697	10,097	84	0	12,876	4,551	8,325	16,446	(8,121)	0
1/13/2009	4	4,571	6,128	10,699	86	0	13,242	4,551	8,891	16,446	(7,555)	0
1/14/2009	5	5,238	6,634	11,872	91	0	13,729	4,551	9,178	16,446	(7,268)	0
1/15/2009	6	5,060	6,423	11,483	86	0	14,002	4,551	9,451	16,446	(6,995)	0
1/16/2009	7	4,211	5,443	9,654	80	0	12,983	4,551	8,432	16,446	(8,014)	0
1/17/2009	1	3,748	4,690	8,437	60	0	14,480	4,551	9,929	16,446	(6,517)	0
1/18/2009	2	3,475	4,398	7,873	57	0	14,246	4,551	9,695	16,446	(6,751)	0
1/19/2009	3	3,423	4,427	7,850	60	0	13,816	4,551	9,361	16,446	(7,085)	0
1/20/2009	4	3,260	4,008	7,269	53	0	14,195	4,551	9,644	16,446	(6,802)	0
1/21/2009	5	2,463	3,861	6,325	49	0	13,790	4,551	9,239	16,446	(7,207)	0
1/22/2009	6	2,777	3,900	6,677	57	0	13,044	4,551	8,493	16,446	(7,953)	0
1/23/2009	7	4,142	5,514	9,656	83	0	12,681	4,551	8,130	16,446	(8,316)	0
1/24/2009	1	4,632	5,705	10,338	83	0	13,354	4,551	8,803	16,446	(7,643)	0
1/25/2009	2	4,577	5,804	10,381	82	0	13,510	4,551	8,959	16,446	(7,487)	0
1/26/2009	3	4,803	5,744	10,547	79	0	14,097	4,551	9,546	16,446	(6,900)	0
1/27/2009	4	4,022	5,118	9,141	71	0	13,718	4,551	9,167	16,446	(7,279)	0
1/28/2009	5	3,798	4,596	8,394	66	0	13,650	4,551	9,099	16,446	(7,347)	0
1/29/2009	6	3,814	5,275	9,089	78	0	12,868	4,551	8,317	16,446	(8,129)	0
1/30/2009	7	3,607	4,312	7,918	63	0	13,548	4,551	8,997	16,446	(7,449)	0
1/31/2009	1	2,604	3,170	5,775	39	0	14,566	4,551	10,015	16,446	(6,431)	0
2/1/2009	2	2,894	4,069	6,963	63	0	12,528	4,551	7,977	16,446	(8,469)	0
2/2/2009	3	3,977	5,386	9,363	79	0	12,830	4,551	8,279	16,446	(8,167)	0
2/3/2009	4	4,327	5,600	9,927	76	0	13,769	4,551	9,218	16,446	(7,228)	0
2/4/2009	5	3,813	4,951	8,764	71	0	13,386	4,551	8,835	16,446	(7,611)	0
2/5/2009	6	3,046	3,881	6,928	48	0	14,502	4,551	9,951	16,446	(6,495)	0
2/6/2009	7	2,490	3,067	5,557	39	0	14,424	4,551	9,873	16,446	(6,573)	0
2/7/2009	1	2,544	3,631	6,175	48	0	13,817	4,551	9,266	16,446	(7,180)	0
2/8/2009	2	2,269	3,079	5,347	39	0	14,105	4,551	9,554	16,446	(6,892)	0
2/9/2009	3	2,342	2,840	5,182	34	0	14,836	4,551	10,086	16,446	(6,360)	0
2/10/2009	4	2,068	2,717	4,785	35	0	14,178	4,551	9,627	16,446	(6,819)	0
2/11/2009	5	2,226	2,953	5,179	40	0	13,923	4,551	9,372	16,446	(7,074)	0
2/12/2009	6	2,429	3,601	6,031	51	0	13,230	4,551	8,679	16,446	(7,767)	0
2/13/2009	7	2,871	3,919	6,790	57	0	13,253	4,551	8,702	16,446	(7,744)	0
2/14/2009	1	3,526	4,626	8,151	65	0	13,448	4,551	8,897	16,446	(7,549)	0
2/15/2009	2	3,308	4,076	7,384	59	0	13,501	4,551	8,950	16,446	(7,496)	0
2/16/2009	3	2,602	3,524	6,125	46	0	14,003	4,551	9,452	16,446	(6,994)	0
2/17/2009	4	2,806	3,439	6,046	55	0	12,732	4,551	8,181	16,446	(8,265)	0
2/18/2009	5	3,745	4,944	8,689	72	0	13,074	4,551	8,523	16,446	(7,923)	0
2/19/2009	6	3,713	4,844	8,558	65	0	13,905	4,551	9,354	16,446	(7,092)	0
2/20/2009	7	3,067	4,137	7,204	58	0	13,551	4,551	9,000	16,446	(7,446)	0
2/21/2009	1	3,480	4,457	7,937	63	0	13,561	4,551	9,010	16,446	(7,436)	0
2/22/2009	2	3,816	4,676	8,492	65	0	13,853	4,551	9,302	16,446	(7,144)	0
2/23/2009	3	3,159	4,109	7,267	59	0	13,443	4,551	8,892	16,446	(7,554)	0
2/24/2009	4	2,109	2,980	5,089	43	0	13,368	4,551	8,817	16,446	(7,629)	0
2/25/2009	5	2,713	3,948	6,660	58	0	12,915	4,551	8,364	16,446	(8,082)	0
2/26/2009	6	3,787	5,004	8,791	72	0	13,187	4,551	8,636	16,446	(7,810)	0
2/27/2009	7	4,039	5,233	9,272	74	0	13,412	4,551	8,861	16,446	(7,585)	0
2/28/2009	1	3,904	5,062	8,966	72	0	13,353	4,551	8,602	16,446	(7,844)	0





12/1/2007	6	14,758	56.7	25,769	4.964	20,805	24,680	(3,875)	0
12/2/2007	7	15,312	51.2	27,626	4.964	22,662	24,680	(2,018)	0
12/3/2007	1	16,106	60.8	26,151	4.964	21,187	24,680	(3,493)	0
12/4/2007	2	16,880	54.1	28,521	4.964	23,557	24,680	(1,123)	0
12/5/2007	3	18,257	69.6	26,214	4.964	21,250	24,680	(3,430)	0
12/6/2007	4	17,267	63.0	26,742	4.964	21,616	24,680	(2,864)	0
12/7/2007	5	19,101	68.0	27,417	4.964	22,453	24,680	(2,227)	0
12/8/2007	6	19,324	72.5	26,591	4.964	21,627	24,680	(3,053)	0
12/9/2007	7	19,659	72.8	26,843	4.964	21,879	24,680	(2,801)	0
12/10/2007	1	18,057	62.0	25,921	4.964	20,857	24,680	(3,823)	0
12/11/2007	2	18,561	57.8	27,320	4.964	22,356	24,680	(2,324)	0
12/12/2007	3	15,320	58.9	25,822	4.964	20,858	24,680	(3,822)	0
12/13/2007	4	18,003	59.3	28,403	4.964	23,439	24,680	(1,241)	0
12/14/2007	5	18,922	68.3	27,167	4.964	22,203	24,680	(2,477)	0
12/15/2007	6	15,919	65.5	24,834	4.964	19,870	24,680	(4,810)	0
12/16/2007	7	15,190	53.5	26,964	4.964	22,000	24,680	(2,690)	0
12/17/2007	1	14,185	51.9	26,331	4.964	21,387	24,680	(3,313)	0
12/18/2007	2	12,958	46.8	26,328	4.964	21,362	24,680	(3,318)	0
12/19/2007	3	13,147	42.6	27,505	4.964	22,541	24,680	(2,139)	0
12/20/2007	4	11,641	39.2	26,812	4.964	21,648	24,680	(2,832)	0
12/21/2007	5	10,566	34.7	26,824	4.964	21,860	24,680	(2,820)	0
12/22/2007	6	14,924	48.8	27,826	4.964	22,852	24,680	(1,818)	0
12/23/2007	7	15,849	63.8	26,173	4.964	20,209	24,680	(4,471)	0
12/24/2007	1	14,026	54.6	25,546	4.964	20,582	24,680	(4,098)	0
12/25/2007	2	12,991	51.5	25,253	4.964	20,289	24,680	(4,391)	0
12/26/2007	3	13,543	41.6	28,148	4.964	23,184	24,680	(1,496)	0
12/27/2007	4	15,410	57.2	26,295	4.964	21,331	24,680	(3,349)	0
12/28/2007	5	14,756	57.2	25,850	4.964	20,886	24,680	(3,904)	0
12/29/2007	6	14,290	50.5	26,785	4.964	21,821	24,680	(2,859)	0
12/30/2007	7	14,008	47.8	27,129	4.964	22,165	24,680	(2,515)	0
12/31/2007	1	15,989	53.5	27,763	4.964	22,799	24,680	(1,881)	0
1/1/2008	2	19,573	71.2	27,140	4.964	22,176	24,680	(2,504)	0
1/2/2008	3	18,240	69.1	26,399	4.964	21,355	24,680	(3,345)	0
1/3/2008	4	15,936	57.8	26,307	4.964	21,743	24,680	(2,837)	0
1/4/2008	5	13,796	46.4	26,781	4.964	21,817	24,680	(2,863)	0
1/5/2008	6	11,734	41.3	26,401	4.964	21,437	24,680	(3,243)	0
1/6/2008	7	10,770	34.2	27,126	4.964	22,162	24,680	(2,518)	0
1/7/2008	1	10,827	35.0	26,997	4.964	22,033	24,680	(2,647)	0
1/8/2008	2	12,153	40.3	27,072	4.964	22,108	24,680	(2,572)	0
1/9/2008	3	13,186	46.6	26,592	4.964	21,628	24,680	(3,052)	0
1/10/2008	4	12,259	42.4	26,674	4.964	21,710	24,680	(2,970)	0
1/11/2008	5	13,001	46.4	26,455	4.964	21,491	24,680	(3,189)	0
1/12/2008	6	13,296	47.1	26,598	4.964	21,634	24,680	(3,048)	0
1/13/2008	7	15,412	51.7	27,815	4.964	22,651	24,680	(2,029)	0
1/14/2008	1	18,323	63.3	27,174	4.964	22,810	24,680	(1,870)	0
1/15/2008	2	15,727	59.9	25,991	4.964	21,027	24,680	(3,653)	0
1/16/2008	3	17,370	56.7	28,391	4.964	23,417	24,680	(1,263)	0
1/17/2008	4	18,660	68.5	26,871	4.964	21,907	24,680	(2,773)	0
1/18/2008	5	22,671	78.0	28,825	4.964	23,661	24,680	(1,019)	0
1/19/2008	6	23,091	82.5	27,898	4.964	22,922	24,680	(1,758)	0
1/20/2008	7	22,166	79.2	27,832	4.964	22,898	24,680	(1,812)	0
1/21/2008	1	20,878	72.5	28,145	4.964	23,181	24,680	(1,499)	0
1/22/2008	2	20,950	69.1	29,009	4.964	24,045	24,680	(635)	0
1/23/2008	3	22,572	79.9	28,052	4.964	23,098	24,680	(1,582)	0
1/24/2008	4	20,447	76.0	26,877	4.964	21,913	24,680	(2,767)	0
1/25/2008	5	16,434	60.3	26,396	4.964	21,622	24,680	(3,058)	0
1/26/2008	6	15,818	49.4	26,658	4.964	23,694	24,680	(896)	0
1/27/2008	7	13,264	49.9	25,890	4.964	20,926	24,680	(3,754)	0
1/28/2008	1	12,292	35.0	28,479	4.964	23,515	24,680	(1,165)	0
1/29/2008	2	23,987	67.8	32,353	4.964	27,389	24,680	2,709	1
1/30/2008	3	23,804	68.1	27,399	4.964	22,375	24,680	(2,305)	0
1/31/2008	4	20,577	70.9	28,417	4.964	23,453	24,680	(1,227)	0
2/1/2008	5	15,455	57.2	26,329	4.964	21,385	24,680	(3,315)	0
2/2/2008	6	13,477	42.4	27,887	4.964	22,923	24,680	(1,757)	0
2/3/2008	7	13,373	41.6	27,978	4.964	23,014	24,680	(1,666)	0
2/4/2008	1	12,993	44.1	27,003	4.964	22,039	24,680	(2,641)	0
2/5/2008	2	14,756	45.4	28,487	4.964	23,503	24,680	(1,177)	0
2/6/2008	3	18,340	64.0	26,396	4.964	22,032	24,680	(2,648)	0
2/7/2008	4	15,046	55.1	26,435	4.964	21,471	24,680	(3,209)	0
2/8/2008	5	14,149	49.5	26,877	4.964	21,913	24,680	(2,767)	0
2/9/2008	6	21,950	70.6	29,666	4.964	24,702	24,680	22	1
2/10/2008	7	24,367	89.3	27,621	4.964	22,697	24,680	(2,023)	0
2/11/2008	1	19,637	76.3	25,917	4.964	20,553	24,680	(4,127)	0
2/12/2008	2	17,668	59.3	27,958	4.964	23,004	24,680	(1,676)	0
2/13/2008	3	18,474	62.0	28,238	4.964	23,274	24,680	(1,406)	0
2/14/2008	4	20,817	72.6	28,046	4.964	23,084	24,680	(1,596)	0
2/15/2008	5	20,378	80.9	25,647	4.964	20,693	24,680	(3,997)	0
2/16/2008	6	13,454	55.6	24,719	4.964	19,755	24,680	(4,925)	0
2/17/2008	7	14,718	48.8	27,601	4.964	21,637	24,680	(3,043)	0
2/18/2008	1	19,503	69.0	27,991	4.964	23,027	24,680	(1,653)	0
2/19/2008	2	21,138	77.8	27,142	4.964	22,178	24,680	(2,502)	0
2/20/2008	3	20,833	77.8	26,837	4.964	21,873	24,680	(2,807)	0
2/21/2008	4	18,332	74.5	25,106	4.964	20,142	24,680	(4,538)	0
2/22/2008	5	15,521	58.1	26,192	4.964	21,228	24,680	(3,452)	0
2/23/2008	6	13,186	52.0	25,919	4.964	20,355	24,680	(4,325)	0
2/24/2008	7	12,602	47.3	25,863	4.964	20,899	24,680	(3,781)	0
2/25/2008	1	14,332	48.0	27,424	4.964	22,460	24,680	(2,220)	0
2/26/2008	2	15,887	56.1	27,043	4.964	22,079	24,680	(2,601)	0
2/27/2008	3	15,822	56.2	26,959	4.964	21,995	24,680	(2,685)	0
2/28/2008	4	13,871	57.7	24,451	4.964	19,497	24,680	(6,183)	0
2/29/2008	5	15,708	52.8	27,447	4.964	22,683	24,680	(1,997)	0

12/1/2008	1	15,427	56.7	26,445	4,964	21,481	24,680	(3,199)	0
12/2/2008	2	12,895	50.4	25,407	4,964	20,443	24,680	(4,237)	0
12/3/2008	3	15,739	56.7	26,757	4,964	21,793	24,680	(2,887)	0
12/4/2008	4	17,371	63.2	28,833	4,964	23,869	24,680	(2,811)	0
12/5/2008	5	15,170	58.3	25,803	4,964	20,839	24,680	(3,841)	0
12/6/2008	6	17,066	73.0	24,195	4,964	19,231	24,680	(5,449)	0
12/7/2008	7	16,708	62.8	26,263	4,964	21,299	24,680	(3,381)	0
12/8/2008	1	15,723	59.3	26,356	4,964	21,392	24,680	(3,288)	0
12/9/2008	2	17,450	62.0	27,184	4,964	22,200	24,680	(2,480)	0
12/10/2008	3	16,188	58.8	26,695	4,964	21,731	24,680	(2,949)	0
12/11/2008	4	17,534	74.2	24,385	4,964	19,421	24,680	(5,259)	0
12/12/2008	5	15,988	62.4	25,643	4,964	20,679	24,680	(4,001)	0
12/13/2008	6	10,996	45.1	24,759	4,964	19,805	24,680	(4,875)	0
12/14/2008	7	19,207	70.2	27,097	4,964	22,043	24,680	(2,637)	0
12/15/2008	1	22,965	87.2	26,723	4,964	21,759	24,680	(2,921)	0
12/16/2008	2	21,162	77.3	27,287	4,964	22,323	24,680	(2,357)	0
12/17/2008	3	19,711	72.8	26,895	4,964	21,931	24,680	(2,749)	0
12/18/2008	4	17,237	64.9	26,302	4,964	21,338	24,680	(3,342)	0
12/19/2008	5	15,136	55.1	26,325	4,964	21,361	24,680	(3,314)	0
12/20/2008	6	18,452	68.2	26,730	4,964	21,766	24,680	(2,914)	0
12/21/2008	7	21,246	78.4	27,098	4,964	22,134	24,680	(2,546)	0
12/22/2008	1	19,978	74.9	26,667	4,964	21,703	24,680	(2,977)	0
12/23/2008	2	16,484	63.2	25,942	4,964	20,978	24,680	(3,702)	0
12/24/2008	3	18,191	68.3	26,457	4,964	21,493	24,680	(3,187)	0
12/25/2008	4	14,946	53.4	24,723	4,964	19,759	24,680	(4,921)	0
12/26/2008	5	10,977	38.2	26,400	4,964	21,436	24,680	(3,244)	0
12/27/2008	6	14,389	52.2	26,490	4,964	21,516	24,680	(3,164)	0
12/28/2008	7	13,188	54.1	24,829	4,964	19,865	24,680	(4,815)	0
12/29/2008	1	14,921	57.8	25,680	4,964	20,716	24,680	(3,964)	0
12/30/2008	2	19,083	77.0	25,248	4,964	20,284	24,680	(4,396)	0
1/1/2009	3	17,856	73.1	24,971	4,964	20,007	24,680	(4,673)	0
1/1/2009	4	17,223	62.7	26,804	4,964	21,840	24,680	(2,840)	0
1/2/2009	5	17,556	64.7	26,676	4,964	21,712	24,680	(2,968)	0
1/3/2009	6	15,351	58.8	25,858	4,964	20,894	24,680	(3,786)	0
1/4/2009	7	20,258	79.9	25,748	4,964	20,784	24,680	(3,896)	0
1/5/2009	1	18,635	70.4	26,394	4,964	21,430	24,680	(3,250)	0
1/6/2009	2	15,636	54.1	27,273	4,964	22,309	24,680	(2,371)	0
1/7/2009	3	17,460	68.9	25,564	4,964	20,600	24,680	(4,080)	0
1/8/2009	4	18,886	71.1	26,481	4,964	21,517	24,680	(3,163)	0
1/9/2009	5	18,319	65.6	26,987	4,964	22,023	24,680	(2,657)	0
1/10/2009	6	16,612	60.8	26,657	4,964	21,693	24,680	(2,987)	0
1/11/2009	7	16,646	64.5	25,929	4,964	20,845	24,680	(3,835)	0
1/12/2009	1	20,922	80.6	26,241	4,964	21,277	24,680	(3,403)	0
1/13/2009	2	22,761	83.2	27,491	4,964	22,527	24,680	(2,153)	0
1/14/2009	3	23,922	89.9	27,036	4,964	22,072	24,680	(2,608)	0
1/15/2009	4	23,187	85.3	27,393	4,964	22,429	24,680	(2,251)	0
1/16/2009	5	19,871	80.3	25,282	4,964	20,318	24,680	(4,362)	0
1/17/2009	6	17,946	69.5	26,614	4,964	21,657	24,680	(3,023)	0
1/18/2009	7	16,736	56.2	27,873	4,964	22,909	24,680	(1,771)	0
1/19/2009	1	16,452	58.3	27,085	4,964	22,121	24,680	(2,559)	0
1/20/2009	2	15,297	57.2	26,182	4,964	21,218	24,680	(3,462)	0
1/21/2009	3	14,058	53.0	25,942	4,964	20,978	24,680	(3,702)	0
1/22/2009	4	14,264	54.1	25,905	4,964	20,941	24,680	(3,739)	0
1/23/2009	5	20,230	79.1	25,915	4,964	20,951	24,680	(3,729)	0
1/24/2009	6	21,037	80.3	26,437	4,964	21,473	24,680	(3,207)	0
1/25/2009	7	21,576	79.9	27,086	4,964	22,102	24,680	(2,578)	0
1/26/2009	1	21,550	78.4	27,392	4,964	22,428	24,680	(2,252)	0
1/27/2009	2	19,984	69.3	28,000	4,964	23,036	24,680	(1,644)	0
1/28/2009	3	17,442	63.3	28,192	4,964	21,198	24,680	(3,482)	0
1/29/2009	4	19,205	74.1	26,075	4,964	21,111	24,680	(3,569)	0
1/30/2009	5	16,940	63.6	26,312	4,964	21,348	24,680	(3,332)	0
1/31/2009	6	12,428	38.3	27,823	4,964	22,859	24,680	(1,821)	0
2/1/2009	7	14,571	59.9	24,825	4,964	19,861	24,680	(4,819)	0
2/2/2009	1	19,432	73.8	26,349	4,964	21,385	24,680	(3,295)	0
2/3/2009	2	19,832	75.3	26,278	4,964	21,314	24,680	(3,366)	0
2/4/2009	3	19,130	69.3	26,146	4,964	21,182	24,680	(3,498)	0
2/5/2009	4	14,520	46.9	27,860	4,964	22,896	24,680	(1,784)	0
2/6/2009	5	11,575	40.3	26,494	4,964	21,530	24,680	(3,150)	0
2/7/2009	6	13,114	46.9	26,466	4,964	21,502	24,680	(3,178)	0
2/8/2009	7	11,451	41.7	26,026	4,964	21,061	24,680	(3,619)	0
2/9/2009	1	10,873	34.7	27,115	4,964	22,151	24,680	(2,529)	0
2/10/2009	2	10,303	35.5	26,354	4,964	21,390	24,680	(3,290)	0
2/11/2009	3	10,851	37.1	26,536	4,964	21,572	24,680	(3,108)	0
2/12/2009	4	13,016	47.5	26,213	4,964	21,249	24,680	(3,431)	0
2/13/2009	5	14,117	54.6	25,637	4,964	20,673	24,680	(4,007)	0
2/14/2009	6	16,726	64.1	25,990	4,964	21,026	24,680	(3,654)	0
2/15/2009	7	15,181	57.2	26,075	4,964	21,111	24,680	(3,569)	0
2/16/2009	1	13,057	44.5	26,968	4,964	22,004	24,680	(2,676)	0
2/17/2009	2	13,014	52.8	24,955	4,964	19,991	24,680	(4,689)	0
2/18/2009	3	18,278	72.3	25,576	4,964	20,612	24,680	(4,068)	0
2/19/2009	4	17,767	68.8	26,303	4,964	21,419	24,680	(3,261)	0
2/20/2009	5	15,072	58.7	26,097	4,964	21,133	24,680	(3,547)	0
2/21/2009	6	16,099	60.5	26,208	4,964	21,244	24,680	(3,436)	0
2/22/2009	7	16,989	65.7	25,857	4,964	20,893	24,680	(3,787)	0
2/23/2009	1	15,409	56.7	25,422	4,964	21,458	24,680	(3,222)	0
2/24/2009	2	11,430	42.0	25,940	4,964	20,976	24,680	(3,704)	0
2/25/2009	3	13,946	59.1	26,519	4,964	21,555	24,680	(3,125)	0
2/26/2009	4	18,233	68.8	26,363	4,964	21,399	24,680	(3,281)	0
2/27/2009	5	19,198	75.2	25,813	4,964	20,849	24,680	(3,831)	0
2/28/2009	6	18,007	66.0	26,808	4,964	21,844	24,680	(2,836)	0



12/1/2007	6	7,758	53	1	1	11,207	6,478	4,729	13,868	(9,139)	0
12/2/2007	7	8,683	71	0	1	11,246	6,478	4,768	13,868	(9,100)	0
12/3/2007	1	8,633	64	0	1	11,726	6,478	5,248	13,868	(8,620)	0
12/4/2007	2	8,503	53	0	1	12,512	6,478	6,034	13,868	(7,334)	0
12/5/2007	3	9,032	73	0	1	11,416	6,478	4,938	13,868	(8,930)	0
12/6/2007	4	8,692	63	0	1	11,895	6,478	5,417	13,868	(8,451)	0
12/7/2007	5	9,200	77	0	1	11,207	6,478	4,729	13,868	(9,139)	0
12/8/2007	6	8,076	79	1	1	9,438	6,478	2,960	13,868	(10,908)	0
12/9/2007	7	7,325	78	0	1	9,223	6,478	2,745	13,868	(11,123)	0
12/10/2007	1	6,855	63	0	1	10,011	6,478	3,533	13,868	(10,335)	0
12/11/2007	2	8,692	63	0	1	11,908	6,478	5,430	13,868	(8,438)	0
12/12/2007	3	8,579	58	0	1	12,153	6,478	5,675	13,868	(8,193)	0
12/13/2007	4	8,634	60	0	1	13,042	6,478	6,564	13,868	(7,304)	0
12/14/2007	5	8,338	72	0	1	11,810	6,478	5,332	13,868	(8,538)	0
12/15/2007	6	8,195	56	1	1	11,474	6,478	4,996	13,868	(8,672)	0
12/16/2007	7	8,191	57	0	1	11,838	6,478	5,360	13,868	(8,508)	0
12/17/2007	1	7,727	55	0	1	11,592	6,478	5,114	13,868	(8,754)	0
12/18/2007	2	8,119	53	0	1	12,152	6,478	5,674	13,868	(8,154)	0
12/19/2007	3	7,813	52	0	1	11,661	6,478	5,383	13,868	(8,485)	0
12/20/2007	4	6,710	48	0	1	11,132	6,478	4,654	13,868	(9,214)	0
12/21/2007	5	6,250	47	0	1	10,762	6,478	4,284	13,868	(9,584)	0
12/22/2007	6	6,816	60	1	1	9,594	6,478	3,216	13,868	(10,652)	0
12/23/2007	7	6,724	68	0	1	9,463	6,478	2,995	13,868	(10,863)	0
12/24/2007	1	5,566	57	0	1	9,255	6,478	2,787	13,868	(11,081)	0
12/25/2007	2	4,853	43	1	1	9,133	6,478	2,655	13,868	(11,213)	0
12/26/2007	3	5,522	54	0	1	9,428	6,478	2,950	13,868	(10,918)	0
12/27/2007	4	5,558	52	0	1	9,632	6,478	3,154	13,868	(10,714)	0
12/28/2007	5	5,432	49	0	1	9,760	6,478	3,282	13,868	(10,586)	0
12/29/2007	6	5,109	51	1	1	8,725	6,478	2,247	13,868	(11,621)	0
12/30/2007	7	5,159	54	0	1	9,078	6,478	2,600	13,868	(11,268)	0
12/31/2007	1	6,340	62	0	1	9,632	6,478	3,154	13,868	(10,714)	0
1/1/2008	2	7,525	77	1	0	9,633	6,478	3,155	13,868	(10,713)	0
1/2/2008	3	7,374	68	0	0	10,696	6,478	4,218	13,868	(9,650)	0
1/3/2008	4	8,312	52	0	0	12,917	6,478	6,439	13,868	(7,429)	0
1/4/2008	5	8,037	51	0	0	12,792	6,478	6,314	13,868	(7,554)	0
1/5/2008	6	7,147	46	1	0	11,799	6,478	5,321	13,868	(8,547)	0
1/6/2008	7	6,420	35	0	0	12,455	6,478	5,877	13,868	(7,891)	0
1/7/2008	1	6,700	36	0	0	12,613	6,478	6,135	13,868	(7,733)	0
1/8/2008	2	7,047	49	0	0	11,952	6,478	5,474	13,868	(8,394)	0
1/9/2008	3	7,347	48	0	0	12,289	6,478	5,811	13,868	(8,057)	0
1/10/2008	4	7,301	48	0	0	12,271	6,478	5,793	13,868	(8,075)	0
1/11/2008	5	7,430	50	0	0	12,201	6,478	5,723	13,868	(8,145)	0
1/12/2008	6	7,741	57	1	0	11,445	6,478	4,967	13,868	(8,901)	0
1/13/2008	7	8,730	67	0	0	12,133	6,478	5,655	13,868	(8,213)	0
1/14/2008	1	9,736	80	0	0	12,138	6,478	5,660	13,868	(8,208)	0
1/15/2008	2	8,262	68	0	0	11,564	6,478	5,086	13,868	(8,782)	0
1/16/2008	3	8,173	64	0	0	11,650	6,478	5,372	13,868	(8,498)	0
1/17/2008	4	6,692	72	0	0	12,675	6,478	6,197	13,868	(7,671)	0
1/18/2008	5	10,724	81	0	0	12,974	6,478	6,496	13,868	(7,372)	0
1/19/2008	6	10,713	85	1	0	12,173	6,478	5,695	13,868	(8,173)	0
1/20/2008	7	10,413	82	0	0	12,576	6,478	6,101	13,868	(7,767)	0
1/21/2008	1	9,809	71	0	0	13,001	6,478	6,523	13,868	(7,345)	0
1/22/2008	2	10,212	71	0	0	13,303	6,478	6,825	13,868	(7,043)	0
1/23/2008	3	11,103	81	0	0	13,383	6,478	6,905	13,868	(6,963)	0
1/24/2008	4	9,416	75	0	0	12,181	6,478	5,703	13,868	(8,165)	0
1/25/2008	5	8,353	62	0	0	12,184	6,478	5,706	13,868	(8,162)	0
1/26/2008	6	7,743	60	1	0	11,188	6,478	4,710	13,868	(9,158)	0
1/27/2008	7	6,938	48	0	0	11,872	6,478	5,394	13,868	(8,474)	0
1/28/2008	1	7,069	48	0	0	12,011	6,478	5,533	13,868	(8,335)	0
1/29/2008	2	10,014	85	0	0	11,993	6,478	5,515	13,868	(8,353)	0
1/30/2008	3	9,012	87	0	0	10,810	6,478	4,332	13,868	(9,536)	0
1/31/2008	4	7,944	74	0	0	10,826	6,478	4,348	13,868	(9,520)	0
2/1/2008	5	7,980	55	0	0	12,426	6,478	5,948	13,868	(7,920)	0
2/2/2008	6	7,991	56	1	0	11,798	6,478	5,310	13,868	(8,558)	0
2/3/2008	7	7,780	47	0	0	12,639	6,478	6,361	13,868	(7,507)	0
2/4/2008	1	7,324	51	0	0	12,059	6,478	5,581	13,868	(8,287)	0
2/5/2008	2	8,386	72	0	0	11,372	6,478	4,894	13,868	(8,974)	0
2/6/2008	3	8,375	69	0	0	11,540	6,478	5,162	13,868	(8,706)	0
2/7/2008	4	7,863	56	0	0	12,155	6,478	5,687	13,868	(8,181)	0
2/8/2008	5	7,263	47	0	0	12,291	6,478	5,813	13,868	(8,055)	0
2/9/2008	6	9,696	71	1	0	12,248	6,478	5,770	13,868	(8,098)	0
2/10/2008	7	11,134	91	0	0	12,598	6,478	6,120	13,868	(7,748)	0
2/11/2008	1	10,336	77	0	0	13,075	6,478	6,497	13,868	(7,371)	0
2/12/2008	2	9,168	61	0	0	13,075	6,478	6,497	13,868	(7,371)	0
2/13/2008	3	7,847	65	0	0	11,433	6,478	4,955	13,868	(8,913)	0
2/14/2008	4	8,500	79	0	0	10,934	6,478	4,456	13,868	(9,412)	0
2/15/2008	5	9,712	69	0	0	12,944	6,478	6,466	13,868	(7,402)	0
2/16/2008	6	8,907	46	1	0	11,589	6,478	5,111	13,868	(8,757)	0
2/17/2008	7	8,877	57	0	0	13,140	6,478	6,662	13,868	(7,206)	0
2/18/2008	1	10,802	83	0	0	12,951	6,478	6,473	13,868	(7,395)	0
2/19/2008	2	11,074	90	0	0	12,645	6,478	6,167	13,868	(7,701)	0
2/20/2008	3	10,917	89	0	0	12,525	6,478	6,047	13,868	(7,821)	0
2/21/2008	4	9,107	71	0	0	12,198	6,478	5,720	13,868	(8,148)	0
2/22/2008	5	7,755	56	0	0	12,101	6,478	5,623	13,868	(8,245)	0
2/23/2008	6	6,776	56	1	0	10,810	6,478	4,132	13,868	(9,738)	0
2/24/2008	7	6,780	47	0	0	11,908	6,478	5,330	13,868	(8,538)	0
2/25/2008	1	8,044	59	0	0	12,102	6,478	5,624	13,868	(8,244)	0
2/26/2008	2	8,517	51	0	0	13,259	6,478	6,781	13,868	(7,087)	0
2/27/2008	3	7,635	54	0	0	12,149	6,478	5,671	13,868	(8,197)	0
2/28/2008	4	8,030	46	0	0	11,133	6,478	4,655	13,868	(9,213)	0
2/29/2008	5	5,940	53	0	0	10,477	6,478	3,999	13,868	(9,869)	0

12/1/2008	1	5,769	53	0	1	9,791	6,478	3,313	13,868	(10,555)	0
12/2/2008	2	5,589	48	0	1	9,774	6,478	3,296	13,868	(10,572)	0
12/3/2008	3	6,391	56	0	1	10,180	6,478	3,702	13,868	(10,166)	0
12/4/2008	4	7,289	62	0	1	10,581	6,478	4,103	13,868	(9,765)	0
12/5/2008	5	8,423	60	0	1	11,886	6,478	5,408	13,868	(8,460)	0
12/6/2008	6	9,169	66	1	1	11,553	6,478	5,075	13,868	(8,793)	0
12/7/2008	7	8,839	56	0	1	12,579	6,478	6,101	13,868	(7,767)	0
12/8/2008	1	8,543	63	0	1	11,746	6,478	5,268	13,868	(8,600)	0
12/9/2008	2	8,815	62	0	1	12,111	6,478	5,633	13,868	(8,235)	0
12/10/2008	3	8,679	50	0	1	12,920	6,478	6,442	13,868	(7,426)	0
12/11/2008	4	9,457	70	0	1	12,102	6,478	5,624	13,868	(8,244)	0
12/12/2008	5	8,095	55	0	1	11,925	6,478	5,447	13,868	(8,421)	0
12/13/2008	6	6,450	70	1	1	8,539	6,478	2,061	13,868	(11,807)	0
12/14/2008	7	7,844	97	0	1	8,293	6,478	1,815	13,868	(12,053)	0
12/15/2008	1	10,669	89	0	1	11,547	6,478	5,069	13,868	(8,798)	0
12/16/2008	2	10,483	77	0	1	12,522	6,478	6,044	13,868	(7,824)	0
12/17/2008	3	10,120	77	0	1	12,185	6,478	5,707	13,868	(8,161)	0
12/18/2008	4	9,607	75	0	1	11,769	6,478	5,291	13,868	(8,577)	0
12/19/2008	5	8,564	60	0	1	11,952	6,478	5,475	13,868	(8,393)	0
12/20/2008	6	9,206	63	1	1	10,221	6,478	3,743	13,868	(10,125)	0
12/21/2008	7	9,347	84	0	1	10,847	6,478	4,369	13,868	(9,499)	0
12/22/2008	1	9,142	75	0	1	11,378	6,478	4,900	13,868	(8,968)	0
12/23/2008	2	7,168	64	0	1	10,249	6,478	3,771	13,868	(10,097)	0
12/24/2008	3	7,291	76	0	1	9,419	6,478	2,941	13,868	(10,927)	0
12/25/2008	4	5,811	58	0	1	9,387	6,478	2,910	13,868	(10,949)	0
12/26/2008	5	4,444	46	1	1	8,469	6,478	1,991	13,868	(11,877)	0
12/27/2008	6	5,871	64	1	1	8,432	6,478	1,954	13,868	(11,914)	0
12/28/2008	7	5,650	56	0	1	9,399	6,478	2,920	13,868	(10,948)	0
12/29/2008	1	6,322	60	0	1	9,706	6,478	3,228	13,868	(10,500)	0
12/30/2008	2	7,605	82	0	1	9,256	6,478	2,778	13,868	(11,090)	0
12/31/2008	3	7,132	75	0	1	9,301	6,478	2,823	13,868	(11,045)	0
1/1/2009	4	6,395	67	1	0	9,331	6,478	2,853	13,868	(11,015)	0
1/2/2009	5	6,600	66	0	0	10,073	6,478	3,595	13,868	(10,273)	0
1/3/2009	6	6,090	72	1	0	8,618	6,478	2,140	13,868	(11,728)	0
1/4/2009	7	8,416	83	0	0	10,497	6,478	4,019	13,868	(9,849)	0
1/5/2009	1	9,686	73	0	0	12,633	6,478	6,155	13,868	(7,713)	0
1/6/2009	2	9,248	70	0	0	12,429	6,478	5,951	13,868	(7,917)	0
1/7/2009	3	9,719	72	0	0	12,702	6,478	6,224	13,868	(7,644)	0
1/8/2009	4	9,605	67	0	0	12,908	6,478	6,430	13,868	(7,438)	0
1/9/2009	5	9,148	69	0	0	12,432	6,478	5,954	13,868	(7,914)	0
1/10/2009	6	8,649	67	1	0	11,542	6,478	5,064	13,868	(8,804)	0
1/11/2009	7	8,814	60	0	0	12,608	6,478	6,130	13,868	(7,538)	0
1/12/2009	1	10,480	84	0	0	12,702	6,478	6,224	13,868	(7,644)	0
1/13/2009	2	10,973	90	0	0	12,553	6,478	6,075	13,868	(7,793)	0
1/14/2009	3	11,651	92	0	0	13,034	6,478	6,556	13,868	(7,312)	0
1/15/2009	4	11,770	94	0	0	13,012	6,478	6,534	13,868	(7,334)	0
1/16/2009	5	10,054	70	0	0	13,213	6,478	6,735	13,868	(7,133)	0
1/17/2009	6	8,007	60	0	0	12,277	6,478	5,799	13,868	(8,068)	0
1/18/2009	7	7,721	51	0	0	12,476	6,478	5,998	13,868	(7,870)	0
1/19/2009	1	8,276	50	0	0	13,103	6,478	6,625	13,868	(7,243)	0
1/20/2009	2	8,347	54	0	0	10,633	6,478	4,355	13,868	(8,513)	0
1/21/2009	3	5,923	54	0	0	10,438	6,478	3,960	13,868	(9,908)	0
1/22/2009	4	8,551	64	0	0	12,182	6,478	5,704	13,868	(8,164)	0
1/23/2009	5	10,195	84	0	0	12,230	6,478	5,752	13,868	(8,116)	0
1/24/2009	6	10,497	84	1	0	11,993	6,478	5,515	13,868	(8,353)	0
1/25/2009	7	10,756	83	0	0	12,886	6,478	6,408	13,868	(7,460)	0
1/26/2009	1	11,070	83	0	0	13,174	6,478	6,696	13,868	(7,172)	0
1/27/2009	2	10,223	77	0	0	12,606	6,478	6,328	13,868	(7,540)	0
1/28/2009	3	8,938	63	0	0	12,708	6,478	6,230	13,868	(7,638)	0
1/29/2009	4	9,592	71	0	0	12,653	6,478	6,175	13,868	(7,693)	0
1/30/2009	5	8,295	51	0	0	13,150	6,478	6,672	13,868	(7,196)	0
1/31/2009	6	6,581	40	1	0	11,715	6,478	5,237	13,868	(8,631)	0
2/1/2009	7	7,834	65	0	0	11,420	6,478	4,942	13,868	(8,926)	0
2/2/2009	1	10,440	82	0	0	12,659	6,478	6,181	13,868	(7,687)	0
2/3/2009	2	10,088	77	0	0	12,677	6,478	6,199	13,868	(7,669)	0
2/4/2009	3	7,551	69	0	0	10,805	6,478	4,327	13,868	(9,541)	0
2/5/2009	4	5,292	50	0	0	10,122	6,478	3,644	13,868	(10,224)	0
2/6/2009	5	4,381	43	0	0	9,781	6,478	3,313	13,868	(10,555)	0
2/7/2009	6	5,057	54	1	0	9,044	6,478	2,566	13,868	(11,302)	0
2/8/2009	7	4,539	44	0	0	9,794	6,478	3,316	13,868	(10,552)	0
2/9/2009	1	4,528	32	0	0	10,781	6,478	4,303	13,868	(9,565)	0
2/10/2009	2	6,215	35	0	0	12,212	6,478	5,734	13,868	(8,134)	0
2/11/2009	3	7,239	45	0	0	12,430	6,478	5,952	13,868	(7,916)	0
2/12/2009	4	7,814	57	0	0	12,039	6,478	5,560	13,868	(8,308)	0
2/13/2009	5	8,031	60	0	0	11,881	6,478	5,393	13,868	(8,365)	0
2/14/2009	6	8,326	62	1	0	11,610	6,478	5,132	13,868	(8,738)	0
2/15/2009	7	7,774	56	0	0	12,123	6,478	5,645	13,868	(8,223)	0
2/16/2009	1	8,966	54	0	0	11,485	6,478	5,007	13,868	(8,881)	0
2/17/2009	2	8,939	59	0	0	11,038	6,478	4,560	13,868	(9,308)	0
2/18/2009	3	9,012	71	0	0	12,103	6,478	5,625	13,868	(8,243)	0
2/19/2009	4	8,966	64	0	0	12,662	6,478	6,184	13,868	(7,684)	0
2/20/2009	5	8,177	64	0	0	11,854	6,478	5,376	13,868	(8,492)	0
2/21/2009	6	8,082	66	1	0	11,082	6,478	4,604	13,868	(9,264)	0
2/22/2009	7	8,581	63	0	0	12,326	6,478	5,848	13,868	(8,020)	0
2/23/2009	1	8,273	61	0	0	12,152	6,478	5,674	13,868	(8,194)	0
2/24/2009	2	8,785	49	0	0	11,666	6,478	5,188	13,868	(8,680)	0
2/25/2009	3	6,418	69	0	0	9,675	6,478	3,197	13,868	(10,671)	0
2/26/2009	4	7,177	96	0	0	9,076	6,478	2,598	13,868	(11,270)	0
2/27/2009	5	7,065	78	1	0	9,541	6,478	3,063	13,868	(10,805)	0
2/28/2009	6	6,671	73	1	0	9,056	6,478	2,578	13,868	(11,290)	0

2010

**MERC Throughput Data by Demand Area by Month for Interruptible, Transportation and Joint  
Interruptible Customers (Excludes RES, LCI and SCI)**

The purpose of this analysis is to remove non-firm volumes from a database that contains all volumes billed by MERC.  
When developed, an "MDQ Report" would replace this analysis.

	2008 Dec	2009 Jan	2009 Feb
<b>Gross Volumes Billed (in therms)</b>			
<b>INTER</b>			
1 NMU-Centra	545,786	534,441	422,863
2 NMU-GLGT	267,929	282,788	244,069
3 NMU-NNG	715,154	731,500	597,143
4 NMU-VGT	140,086	153,219	121,392
5 NMU-GLGT&VGT	-	-	-
<b>NMU Sub-Total</b>	<b>1,668,955</b>	<b>1,701,948</b>	<b>1,385,467</b>
6 PNG-GLGT	-	-	-
7 PNG-NNG	-	-	-
8 PNG-VGT	-	-	-
9 Missing	-	-	-
<b>PNG Sub-Total</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Total</b>	<b>1,668,955</b>	<b>1,701,948</b>	<b>1,385,467</b>
<b>JINTER</b>			
1 NMU-Centra	28,451	32,837	25,745
2 NMU-GLGT	15,816	11,333	9,510
3 NMU-NNG	32,621	34,535	31,381
4 NMU-VGT	12,737	13,197	10,068
5 NMU-GLGT&VGT	-	-	-
<b>NMU Sub-Total</b>	<b>89,625</b>	<b>91,902</b>	<b>76,704</b>
6 PNG-GLGT	-	-	-
7 PNG-NNG	-	-	-
8 PNG-VGT	-	-	-
9 Missing	-	-	-
<b>PNG Sub-Total</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Total</b>	<b>89,625</b>	<b>91,902</b>	<b>76,704</b>
<b>TRANS</b>			
1 NMU-Centra	-	-	-
2 NMU-GLGT	3,445,680	4,916,443	3,752,456
3 NMU-NNG	218,055	226,846	160,648
4 NMU-VGT	841,753	1,129,176	781,431
5 NMU-GLGT&VGT	-	-	-
<b>NMU Sub-Total</b>	<b>4,505,488</b>	<b>6,272,465</b>	<b>4,694,535</b>
6 PNG-GLGT	-	-	-
7 PNG-NNG	-	-	-
8 PNG-VGT	-	-	-
9 Missing	-	-	-
<b>PNG Sub-Total</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Total</b>	<b>4,505,488</b>	<b>6,272,465</b>	<b>4,694,535</b>
<b>Total Gross Volumes Billed for INTER, JINTER &amp; TRANS (in therms)</b>			
1 NMU-Centra	574,237	567,278	448,608
2 NMU-GLGT	3,729,425	5,210,564	4,006,035
3 NMU-NNG	965,830	992,881	789,172
4 NMU-VGT	994,576	1,295,592	912,891
5 NMU-GLGT&VGT	-	-	-
<b>NMU Sub-Total</b>	<b>6,264,068</b>	<b>8,066,315</b>	<b>6,156,706</b>
6 PNG-GLGT	-	-	-
7 PNG-NNG	-	-	-
8 PNG-VGT	-	-	-
9 Missing	-	-	-
<b>PNG Sub-Total</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Total</b>	<b>6,264,068</b>	<b>8,066,315</b>	<b>6,156,706</b>

2010

**MERC Throughput Data by Demand Area by Month for Interruptible, Transportation and Joint Interruptible Customers (Excludes RES, LCI and SCI)**

Account Metered Volumes to be Removed from Billing Data (in therms)

(A)	1 NMU-Centra				
(B)	2 NMU-GLGT	Paper Mills	3,000,653	4,300,352	3,398,173
(B)	3 NMU-NNG	Direct Connects	-	-	-
	4 NMU-VGT		-	-	-
	5 NMU-GLGT&VGT		-	-	-
	NMU Sub-Total		3,000,653	4,300,352	3,398,173
	6 PNG-GLGT		-	-	-
(D)	7 PNG-NNG	Taconites / Direct Connects,	-	-	-
(E)	7 PNG-NNG	OSEU (EndUsers)	-	-	-
	8 PNG-VGT		-	-	-
	9 Missing		-	-	-
	PNG Sub-Total		-	-	-
	Total		3,000,653	4,300,352	3,398,173

Total Net Volumes Billed for INTER, JINTER & TRANS to be removed from Throughput Volumes Regressed

Demand Area	2008	2009	2009	Maximum Value	Maximum Value / 20 days / 10
	Dec	Jan	Feb		
	(in therms)				
1 NMU-Centra	574,237	567,278	448,608	574,237	2,871
2 NMU-GLGT	728,772	910,212	607,862	910,212	4,551
3 NMU-NNG	965,830	992,881	789,172	992,881	4,964
4 NMU-VGT	994,576	1,295,592	912,891	1,295,592	6,478
5 NMU-GLGT&VGT	-	-	-	-	-
NMU Sub-Total		3,263,415	3,765,963	2,758,533	3,772,922
6 PNG-GLGT	-	-	-	-	18,865
7 PNG-NNG	-	-	-	-	-
8 PNG-VGT	-	-	-	-	-
9 Missing	-	-	-	-	-
PNG Sub-Total		-	-	-	-
Total		3,263,415	3,765,963	2,758,533	3,772,922

Results copied to Summary Report column E = (Remove) Interruptible, Transportation & Joint Interruptible

Account Metered Volumes to be Removed from Billing Data (in therms)

(A)	2 NMU-GLGT	Paper Mills	<table border="1"> <tr> <td>NMU-Paper Bemidji</td> <td>NMU-Paper Bemidji</td> <td>NMU-Paper Bemidji</td> <td>NMU-Paper Cloquet</td> <td>NMU-Paper Cloquet</td> </tr> <tr> <td>Ainsworth TWA#</td> <td>Blañdon TWA#</td> <td>Ainsworth TWA#</td> <td>Sappi TWA#</td> <td>USG TWA#</td> </tr> <tr> <td>4193436</td> <td>4269599-9</td> <td>4080224-1</td> <td>4095836-5</td> <td>4281266-9</td> </tr> </table>	NMU-Paper Bemidji	NMU-Paper Bemidji	NMU-Paper Bemidji	NMU-Paper Cloquet	NMU-Paper Cloquet	Ainsworth TWA#	Blañdon TWA#	Ainsworth TWA#	Sappi TWA#	USG TWA#	4193436	4269599-9	4080224-1	4095836-5	4281266-9
NMU-Paper Bemidji	NMU-Paper Bemidji	NMU-Paper Bemidji	NMU-Paper Cloquet	NMU-Paper Cloquet														
Ainsworth TWA#	Blañdon TWA#	Ainsworth TWA#	Sappi TWA#	USG TWA#														
4193436	4269599-9	4080224-1	4095836-5	4281266-9														

(B) 3 NMU-NNG Taconites / Direct Connects None

**State of Minnesota**  
**OFFICE OF ENERGY SECURITY**

Docket No. G007/M-09-1282  
Attachment 5  
Page 1 of 2

Utility Information Request

Docket Number: G011/M-09-1284                      Date of Request: December 11, 2009  
Requested From: Minnesota Energy Resources Corporation                      Response Due: December 21, 2009  
Analyst Requesting Information: Adam Heinen

Type of Inquiry:    .....Financial                      .....Rate of Return                      .....Rate Design  
                          .....Engineering                      .....Forecasting                      .....Conservation  
                          .....Cost of Service                      .....CIP                      .....Other

*If you feel your responses are trade secret or privileged, please indicate this on your response.*

Request No.	
4	<p>Subject:    MERC-PNG/MERC-NMU Capacity Release Analysis</p> <p>Reference:    Initial Filing, Attachment 7</p> <p>A.    Please provide a full discussion explaining the negative reserve margin shown for NNG-NMU in the above reference.</p> <p>B.    If MERC's NMU customers use more than capacity (<i>i.e.</i>, near design-day), how does MERC intend to serve these customers and maintain system reliability.</p> <p>If this information has already been provided in written testimony or in response to an earlier OES information request, please identify the specific testimony cite(s) or OES information request number(s).</p> <p><b><u>Response:</u></b></p> <p>a)    MERC allocated the NNG firm capacity between PNG and NMU based on the contractual capacity at each delivery point that MERC has with NNG. NNG did not have any additional capacity that could be purchased or realigned at the NMU-NNG delivery point. However, due to operational differences on NNG, this last summer, MERC realigned some capacity from PNG-NNG customers to NMU-NNG, where NNG had the ability to realign, to address the negative reserve margin.</p> <p>b)    MERC does not distinguish between forecasted gas supply requirements or purchases between PNG or NMU but rather forecasts all MERC requirements on NNG pipeline. NNG allows MERC to nominate to a zone instead of nominating to individual delivery points. MERC's nomination zone includes all delivery points in Zone EF, which is all of Minnesota and part of South Dakota. Since MERC has a positive reserve margin on NNG, the excess PNG-NNG capacity can be used to serve NMU-NNG as necessary. As indicated in Attachment 7, PNG-NNG has a positive reserve margin of 13.62% and the NNG pipeline as a whole has an</p>



11.68% positive reserve margin. MERC will continue to work with NNG to realign capacity from PNG-NNG to NMU-NNG as capacity becomes available.

Docket No. G007/M-09-1282

Attachment 5

Page 2 of 2

**State of Minnesota**  
**OFFICE OF ENERGY SECURITY**

Docket No. G007/M-09-1282  
Attachment 6  
Page 1 of 2

Utility Information Request

Docket Number: G007/M-09-1282

Date of Request: December 8, 2009

Requested From: Minnesota Energy Resources Corporation

Response Due: December 18, 2009

Analyst Requesting Information: Adam Heinen

Type of Inquiry:    .....Financial                    .....Rate of Return            .....Rate Design  
                          .....Engineering                .....Forecasting                .....Conservation  
                          .....Cost of Service               .....CIP                            .....Other

*If you feel your responses are trade secret or privileged, please indicate this on your response.*

Request No.	
1	<p>Subject: Volume Risk Adjustments Reference: MERC-NMU Initial Filing, Page 10</p> <p>A. Please provide a full explanation of how MERC-NMU arrived at its desired confidence level of 97.5 percent, which is mentioned in the above reference.</p> <p>B. Please provide a full explanation, including calculations where applicable, of how MERC-NMU's volume risk adjustment influences load under design-day conditions.</p> <p>If this information has already been provided in written testimony or in response to an earlier OES information request, please identify the specific testimony cite(s) or OES information request number(s).</p> <p><b><u>Response:</u></b></p> <p>A. MERC used management judgment and traditional statistical techniques to select the 97.5% confidence level that actual firm customer demand under design peak day conditions would not exceed the estimate. MERC selected 97.5% because the resulting confidence level covers actual observations up to 1.96 standard deviations (sigmas) above the regression line and represents a reasonable balance between the volume risk inherent in covering only 1 sigma and the incremental supply required to cover 3 sigmas.</p>

Response by: Greg Walters

List sources of information: \_\_\_\_\_

Title: Manager

Department: Regulatory and Legislative Affairs

Telephone: 507-529-5100

Covering only 1 sigma leaves about a 16% chance that actual firm customer demand under design-day conditions would exceed the forecast, which seemed too risky. Covering 3 sigmas reduces the risk that actual firm customer demand under design-day conditions would exceed the forecast to about 0.1%. It takes the same incremental peak day volumes to move from covering 1 sigma to covering 2 sigmas as it does to move from covering 2 sigmas to covering 3 sigmas. Covering 2 sigmas instead of 1 reduces the volume risk from 16% to about 2.5%. Covering 3 sigmas instead of 2 reduces the volume risk from about 2.5% to about 0.1%. MERC management did not feel that the incremental risk reduction associated with moving from 2 to 3 sigmas justified the incremental peak day volumes required and increasing their associated costs to ratepayers. MERC management decided that 2.5% was a reasonable volume risk and fine tuned the number of sigmas to 1.96 based on the traditional statistical one-tailed test.

There is no single correct answer as to the proper method for selecting the peak day design volume risk conditions. Any method will result in different risks and costs for MERC's customers, as MERC needs to balance 1) the probability that firm customer requirements under design-day weather conditions could exceed the peak day requirements forecast and 2) the costs associated with actual firm supply exceeding firm requirements.

- B. MERC's volume risk adjustment does not influence the actual load under design-day conditions. The volume risk adjustment quantifies the risk that actual load under design-day conditions could exceed the peak day forecast.

Relying on the regression line forecast alone provides an average "point estimate" of load under design-day conditions with a 50% chance that actual load under those design-day conditions would be higher than the forecast. MERC management interprets this as a 50% chance of facing more demand than the regression line shows on the day that our customers need service most.

Statistical confidence levels based on the 1-tail test are employed to convert the management risk preference of a 2.5% chance that actual load under design-day conditions could exceed the forecast to a volume risk adjustment required to provide that level of statistical confidence. Traditional statistical practice indicates that adding 1.96 sigmas to the regression line value provides an estimate that covers all but the highest 2.5% of expected occurrences. This approach does nothing to change the actual load under design-day conditions, it just recognizes that the actual load under design-day conditions is unknown and quantifies the chance that the peak day forecast could be exceeded when design-day conditions occur.

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Response by: Greg Walters

List sources of information:

Title: Manager

Department: Regulatory and Legislative Affairs

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OES Attachment 7  
Demand Entitlement Analysis  
NMU's Customers  
As Proposed by MERC-NMU  
Docket No. G007/M-09-1282

MERC-NMU

Heating Season	Number of Firm Customers			Design Day Requirement				Total Entitlement + Peak Shaving			Reserve Margin
	(1) DD No. of Customers	(2) Change from Previous Year	(3) % Change From Previous Year	(4) Design Day (Mcf)	(5) Change from Previous Year	(6) % Change From Previous Year	(7) Total Entitlement (Mcf)*	(8) Change From Previous Year	(9) % Change From Previous Year	(10) Margin [(7)-(4)]/(4)	
2009-2010	41,135	2,023	5.17%	60,918	(2,808)	-4.41%	63,783	(1,052)	-1.62%	4.70%	
2008-2009	39,112	854	2.23%	63,726	2,718	4.46%	64,835	415	0.64%	1.74%	
2007-2008	38,258	(225)	-0.58%	61,008	(52)	-0.09%	64,420	1,639	2.61%	5.59%	
2006-2007	38,483	275	0.72%	61,060	(1,047)	-1.69%	62,781	(1,553)	-2.41%	2.82%	
2005-2006	38,208	(1,608)	-4.04%	62,107	1,404	2.31%	64,334	2,668	4.33%	3.59%	
2004-2005	39,816	2,740	7.39%	60,703	(1,491)	-2.40%	61,666	(2,672)	-4.15%	1.59%	
2003-2004	37,076	612	1.68%	62,194	7,968	14.69%	64,338	7,945	14.09%	3.45%	
2002-2003	36,464	362	1.00%	54,226	(344)	-0.63%	56,393	260	0.46%	4.00%	
2001-2002	36,102	415	1.16%	54,570	(1,099)	-1.97%	56,133	0	0.00%	2.86%	
2000-2001	35,687	717	2.05%	55,669	1,118	2.05%	56,133	1,210	2.20%	0.83%	
1999-2000	34,970	1,097	3.24%	54,551	119	0.22%	54,923	151	0.28%	0.68%	
1998-1999	33,873	968	2.94%	54,432	1,551	2.93%	54,772	3,918	7.70%	0.62%	
1997-1998	32,905	1,362	4.32%	52,881	2,176	4.29%	50,854	0	0.00%	-3.83%	
1996-1997	31,543	790	2.57%	50,705	1,342	2.72%	50,854	(10,270)	-16.80%	0.29%	
1995-1996	30,753			49,363			61,124			23.83%	
Average:			2.13%			1.61%			0.52%	3.52%	
Average (Ex. 2003-2004):			2.17%			0.60%			-0.52%		

Firm Peak Day Sendout

Heating Season	(11) Number of Peak Day Customers	(12) Firm Peak Day Sendout (Mcf)	(13) Change from Previous Year	(14) % Change From Previous Year	(15) Excess/Def. per Cust. [(7)-(4)]/(1)	(16) Design Day per Customer* (4)/(1)	(17) Entitlement per Customer (7)/(1)	(19) Peak Day Sendout per DD Customer (12)/(1)
2009-2010	unknown	unknown			0.0696	1.4809	1.5506	unknown
2008-2009**	40,694	46,401	(7,714)	-14.25%	0.0284	1.6293	1.6577	1.1864
2007-2008	38,258	54,115	24,019	79.81%	0.0892	1.5946	1.6838	1.4145
2006-2007	38,483	30,096	(16,324)	-35.17%	0.0447	1.5867	1.6314	0.7821
2005-2006	38,208	46,420	5,014	12.11%	0.0583	1.6255	1.6838	1.2149
2004-2005	38,394	41,406	2,123	5.40%	0.0242	1.5246	1.5488	1.0399
2003-2004	37,632	39,283	(5,858)	-12.98%	0.0578	1.6775	1.7353	1.0595
2002-2003	37,076	45,141	10,769	31.33%	0.0594	1.4871	1.5465	1.2380
2001-2002	36,500	34,372	(9,950)	-22.45%	0.0433	1.5116	1.5548	0.9521
2000-2001	35,956	44,322	3,967	9.83%	0.0130	1.5599	1.5729	1.2420
1999-2000	35,822	40,355	(8,001)	-16.55%	0.0106	1.5599	1.5706	1.1540
1998-1999	34,970	48,356	8,320	20.78%	0.0100	1.6069	1.6170	1.4276
1997-1998	33,873	40,036	(7,904)	-16.49%	-0.0616	1.6071	1.5455	1.2167
1996-1997	33,064	47,940	16,790	53.90%	0.0047	1.6075	1.6122	1.5198
1995-1996	32,112	31,150			0.3824	1.6051	1.9876	1.0129
Average:				7.33%	0.0556	1.5776	1.6332	1.1757
Average (Ex. 2003-2004):				9.02%	0.0555	1.5705	1.6259	1.1847

\* The total entitlement includes the 864 Mcf/day of entitlement permanently released to Cornerstone in 2002-2003.

\*\* The number of peak day customers is calculated using firm customer count numbers provided in MERC-NMU's Initial Filing, Attachment 12.

MERC-NMU October 2009 PGA Costs							
	Monthly Entitlement (Dkt)	Months	Rate	Contract Costs	Rate Case Volumes (therms)	Rate (\$/therm)	
<b>Northern Natural Gas (NNG)</b>							
TF12-B (Max Rate)	2,653	12	\$7.57760	\$241,240.47	54,645,910	0.00441	
TF12-V (Max Rate)	6,643	12	\$9.09260	\$724,825.70	54,645,910	0.01326	
TF5 (Max Rate)	5,451	5	\$15.15300	\$412,995.02	54,645,910	0.00756	
TFX5 (Max Rate)	6,139	5	\$15.15300	\$465,121.34	54,645,910	0.00851	
SMS	2,143	12	\$2.18000	\$56,060.88	54,645,910	0.00103	
FDD-Reservation	7,128	12	\$1.71400	\$146,608.70	54,645,910	0.00268	
FDD-Storage Cycle	82,188	5	\$0.35670	\$146,582.30	54,645,910	0.00268	
FDD-Reservation	524	12	\$3.31570	\$20,849.12	54,645,910	0.00038	
FDD-Storage Cycle	6,047	5	\$0.69010	\$20,865.17	54,645,910	0.00038	
FDD-Reservation	328	12	\$1.71400	\$6,746.30	54,645,910	0.00012	
FDD-Storage Cycle	3,779	5	\$0.35670	\$6,739.85	54,645,910	0.00012	
LS Power	2,777	3	\$4.34625	\$36,208.61	54,645,910	0.00066	
Exchange	0	1	\$2.00350	\$0.00	54,645,910	0.00000	
	<b>NNG Demand</b>			<b>\$2,284,843.46</b>			<b>\$0.04181</b>
<b>Viking (VGT)</b>							
FT	7,966	12	\$3.46710	\$331,427.02	54,645,910	0.00606	
FT	5,902	5	\$3.76710	\$111,167.12	54,645,910	0.00203	
TF-12	926	12	\$7.57760	\$84,202.29	54,645,910	0.00154	
TF-5	2,089	5	\$15.15300	\$158,273.09	54,645,910	0.00290	
TFX-12	2,324	12	\$9.62880	\$268,527.97	54,645,910	0.00491	
TFX-5	563	5	\$15.15300	\$42,655.70	54,645,910	0.00078	
	<b>VGT Demand</b>			<b>\$996,253.19</b>			<b>\$0.01823</b>
<b>Great Lakes (GLGT)</b>							
FT	10,130	12	\$3.45800	\$420,354.48	54,645,910	0.00769	
FT	1,178	12	\$3.45800	\$48,882.29	54,645,910	0.00089	
FT	2,138	5	\$3.45800	\$36,966.02	54,645,910	0.00068	
T	0	7	\$10.27800	\$0.00	54,645,910	0.00000	
FT	4,000	12	\$3.45800	\$165,984.00	54,645,910	0.00304	
	<b>GLGT Demand</b>			<b>\$672,186.79</b>			<b>\$0.01230</b>
<b>Centra</b>							
FT	9,858	12	\$1.23110	\$145,634.21	54,645,910	0.00267	
FT	9,858	12	\$5.14284	\$608,377.40	54,645,910	0.01113	
Balancing	9,858	12	\$4,500	\$54,000.00	54,645,910	0.00099	
	<b>Centra Demand</b>			<b>\$808,011.61</b>			<b>\$0.01479</b>
<b>Nexen</b>							
Nexen	684,604	1	\$1.77000	\$1,211,749.08	54,645,910	0.02217	
	<b>Nexen Demand</b>			<b>\$1,211,749.08</b>			<b>\$0.02217</b>
<b>Total NMU Demand</b>				<b>\$5,973,044.13</b>			<b>\$0.10930</b>

Commodity Cost Calculation						
	Rate	Annual Vol.	Call Option Premium	Total Cost	Cost/therm	
<b>Joint Rate Demand</b>						
<b>NNG</b>						
TF12-B (Max Rate)	2,653	12				
TF12-V (Max Rate)	6,643	12				
TF5 (Max Rate)	5,451	5				
TFX5 (Max Rate)	6,139	5				
				169,502		
<b>VGT</b>						
FT	7,966	12				
TF12	926	12				
TF5	2,089	5				
TFX12	2,324	12				
TFX5	563	5				
				147,852		
<b>GLGT</b>						
FT	10,130	12				
FT	1,178	12				
FT	2,138	5				
				146,386		
<b>Centra</b>						
FT	9,858	12				
				118,296		
Total Demand Cost				\$5,973,044.13		
Total Demand Weighted Vol.				5,820,360		
Total Joint Demand Rate (\$/therm)				\$1.02623		
<b>NNG</b>						
Gas Cost	\$3.60720					
Fuel 2.56%	\$0.09477					
Transportation	\$0.03620					
ACA	\$0.00170					
GRI Fee	\$0.00000					
<b>NNG Commodity</b>	<b>\$3.73987</b>	<b>2,503,071</b>	<b>\$0</b>	<b>\$9,361,160.14</b>	<b>\$0.14019</b>	
<b>VGT</b>						
Gas Cost	\$3.63030					
Fuel 0.64%	\$0.02338					
Transportation	\$0.01300					
GRI	\$0.00000					
ACA	\$0.00170					
<b>VGT Commodity</b>	<b>\$3.66838</b>	<b>1,820,220</b>	<b>\$0</b>	<b>\$6,677,258.64</b>	<b>\$0.10000</b>	
<b>GLGT</b>						
Gas Cost	\$3.63030					
Fuel 0.860%	\$0.03149					
Transportation	\$0.00326					
GRI	\$0.00000					
ACA	\$0.00170					
<b>GLGT Commodity</b>	<b>\$3.66675</b>	<b>962,512</b>	<b>\$0</b>	<b>\$3,529,290.88</b>	<b>\$0.05286</b>	
<b>Centra</b>						
Transmission	1.06200					
Conversion*0.9306	\$0.02759					
Gas Cost	\$3.63030					
Customs Fee	\$0.00029					
<b>Centra Commodity</b>	<b>\$3.65818</b>	<b>1,391,502</b>	<b>\$0</b>	<b>\$5,090,364.79</b>	<b>\$0.07623</b>	
<b>NMU Weighted Average Cost of Gas</b>		<b>6,677,305</b>	<b>\$0</b>	<b>\$24,658,074.45</b>	<b>\$0.36928</b>	
Total Annual Sales (therms)	66,773,050					

MERC-NMU October 2009 PGA Costs with New Entitlements as Modified by the OES							
	Monthly Entitlement (Dkt)	Months	Rate	Contract Costs	Rate Case Volumes # (therms)	Rate (\$/therm)	
<b>Northern Natural Gas (NNG)</b>							
TF12-B (Max Rate)	7,513	12	\$7.57760	\$683,166.11	54,645,910	0.01250	
TF12-V (Max Rate)	5,243	12	\$9.09260	\$572,070.02	54,645,910	0.01047	
TF5 (Max Rate)	1,991	5	\$15.15300	\$150,848.12	54,645,910	0.00276	
TFX5 (Max Rate)	6,139	5	\$15.15300	\$465,121.34	54,645,910	0.00851	
SMS	2,103	12	\$2.18000	\$55,014.48	54,645,910	0.00101	
LS Power	2,725	3	\$4.34625	\$35,530.59	54,645,910	0.00065	
Exchange	0	1	\$2.00350	\$0.00	54,645,910	0.00000	
<b>NNG Demand</b>				<b>\$1,961,750.65</b>		<b>\$0.03590</b>	
FDD-Reservation	6,833	12	\$1.71400	\$140,541.14	2,503,071	0.05615	
FDD-Storage Cycle	78,790	5	\$0.35670	\$140,521.97	2,503,071	0.05614	
FDD-Reservation	515	12	\$3.31570	\$20,491.03	2,503,071	0.00819	
FDD-Storage Cycle	5,933	5	\$0.69010	\$20,471.82	2,503,071	0.00818	
FDD-Reservation	482	12	\$1.71400	\$9,913.78	2,503,071	0.00396	
FDD-Storage Cycle	5,563	5	\$0.35670	\$9,921.61	2,503,071	0.00396	
<b>NNG Commodity</b>				<b>\$341,861.34</b>		<b>\$0.13658</b>	
<b>Viking (VGT)</b>							
FT	7,966	12	\$3.46710	\$331,427.02	54,645,910	0.00606	
FT	5,902	4	\$3.76710	\$88,933.70	54,645,910	0.00163	
TF-12B	1,368	12	\$7.57760	\$124,393.88	54,645,910	0.00228	
TF-12V	955	12	\$9.09258	\$104,200.97	54,645,910	0.00191	
TF-5	563	5	\$15.15300	\$42,655.70	54,645,910	0.00078	
TFX-12	2,089	12	\$9.62883	\$241,375.51	54,645,910	0.00442	
TFX-5	926	5	\$15.15300	\$70,158.39	54,645,910	0.00128	
<b>VGT Demand</b>				<b>\$1,003,145.16</b>		<b>\$0.01836</b>	
<b>Great Lakes (GLGT)</b>							
FT	10,130	12	\$3.45800	\$420,354.48	54,645,910	0.00769	
FT	1,178	12	\$3.45800	\$48,882.29	54,645,910	0.00089	
FT	2,138	5	\$3.45800	\$36,966.02	54,645,910	0.00068	
T	0	7	\$10.27800	\$0.00	54,645,910	0.00000	
FT	3,000	12	\$3.45800	\$124,488.00	54,645,910	0.00228	
<b>GLGT Demand</b>				<b>\$630,690.79</b>		<b>\$0.01154</b>	
<b>Centra</b>							
FT	9,858	12	\$1.23110	\$145,634.21	54,645,910	0.00267	
FT	9,858	12	\$5.14284	\$608,377.40	54,645,910	0.01113	
Balancing	9,858	12	\$4,500	\$54,000.00	54,645,910	0.00099	
<b>Centra Demand</b>				<b>\$808,011.61</b>		<b>\$0.01479</b>	
<b>Nexen</b>							
Nexen	684,604	1	\$1.77000	\$1,211,749.08	54,645,910	0.02217	
<b>Nexen Demand</b>				<b>\$1,211,749.08</b>		<b>\$0.02217</b>	
<b>Total NMU Demand</b>				<b>\$5,615,347.29</b>		<b>\$0.10276</b>	

Joint Rate Demand		
<b>NNG</b>		
TF12-B (Max Rate)	7,513	12
TF12-V (Max Rate)	5,243	12
TF5 (Max Rate)	1,991	5
TFX5 (Max Rate)	6,139	5
		<u>193,722</u>
<b>VGT</b>		
FT	7,966	12
TF-12B	1,368	12
TF-12V	955	12
TF5	563	5
TFX12	2,089	12
TFX5	926	5
		<u>155,981</u>
<b>GLGT</b>		
FT	10,130	12
FT	1,178	12
FT	2,138	5
		<u>146,386</u>
<b>Centra</b>		
FT	9,858	12
		<u>118,296</u>
Total Demand Cost		\$5,615,347.29
Total Demand Weighted Vol.		6,143,850
<b>Total Joint Demand Rate (\$/therm)</b>		<b>\$0.91398</b>

Commodity Cost Calculation						
	Rate	Annual Vol.	Call Option Premium	Total Cost	Cost/therm	
<b>NNG</b>						
Gas Cost	\$3.60720					
Fuel 2.56%	\$0.09477					
Storage Costs	\$0.13658					
Transportation	\$0.03620					
ACA	\$0.00170					
GRI Fee	\$0.00000					
<b>NNG Commodity</b>	<u>\$3.87645</u>	2,503,071	\$60,591	\$9,763,612.48	\$0.14622	
<b>VGT</b>						
Gas Cost	\$3.63030					
Fuel 0.64%	\$0.02338					
Transportation	\$0.01300					
GRI	\$0.00000					
ACA	\$0.00170					
<b>VGT Commodity</b>	<u>\$3.66838</u>	1,820,220	\$20,197	\$6,697,455.64	\$0.10030	
<b>GLGT</b>						
Gas Cost	\$3.63030					
Fuel 0.860%	\$0.03149					
Transportation	\$0.00326					
GRI	\$0.00000					
ACA	\$0.00170					
<b>GLGT Commodity</b>	<u>\$3.66675</u>	962,512	\$20,197	\$3,549,487.88	\$0.05316	
<b>Centra</b>						
Transmission	1.06200					
Conversion*0.9306	\$0.02759					
Gas Cost	\$3.63030					
Customs Fee	\$0.00029					
<b>Centra Commodity</b>	<u>\$3.65818</u>	1,391,502	\$20,197	\$5,110,561.79	\$0.07654	
<b>NMU Weighted Average Cost of Gas</b>		<u>6,677,305</u>	<u>\$121,182</u>	<u>\$25,121,117.78</u>	<u>\$0.37622</u>	
Total Annual Sales (therms)	66,773,050					



## OES Attachment 9

## Effect of MERC-NMU's Proposed Demand Entitlement Changes as Modified by the OES

	Last Rate Case	Last Demand Filing	October PGA 2009	October PGA with Proposed Demand Changes	% Change from Last Rate Case	% Change from Last Demand Filing	% Change from Oct. PGA	\$ Change from Oct. PGA
<b>General Service</b>	GR-08-835	M-08-1329						
Commodity Cost	\$8.5288	\$6.5778	\$3.6928	\$3.7622	-55.89%	-42.80%	1.88%	\$0.0694
Demand Cost	\$1.1420	\$1.1201	\$1.0930	\$1.0276	-10.02%	-8.26%	-5.98%	(\$0.0654)
Margin	\$2.3126	\$2.3126	\$2.3126	\$2.3126	0.00%	0.00%	0.00%	\$0.0000
Total Cost of Gas	\$11.9834	\$10.0105	\$7.0984	\$7.1024	-40.73%	-29.05%	0.06%	\$0.0040
<b>Average Annual Use</b>	<b>140</b>	<b>140</b>	<b>140</b>	<b>140</b>				
Average Annual Cost of Gas	\$1,677.68	\$1,401.47	\$993.78	\$994.34	-40.73%	-29.05%	0.06%	\$0.56
	Last Rate Case	Last Demand Filing	October PGA 2009	October PGA with Proposed Demand Changes	% Change from Last Rate Case	% Change from Last Demand Filing	% Change from Oct. PGA	\$ Change from Oct. PGA
<b>Large General Service</b>	GR-08-835	M-08-1329						
Commodity Cost	\$8.5288	\$6.5778	\$3.6928	\$3.7622	-55.89%	-42.80%	1.88%	\$0.0694
Demand Cost	\$1.1420	\$1.1201	\$1.0930	\$1.0276	-10.02%	-8.26%	-5.98%	(\$0.0654)
Margin	\$2.3126	\$2.3126	\$2.3126	\$2.3126	0.00%	0.00%	0.00%	\$0.0000
Total Cost of Gas	\$11.9834	\$10.0105	\$7.0984	\$7.1024	-40.73%	-29.05%	0.06%	\$0.0040
<b>Average Annual Use</b>	<b>6,917</b>	<b>6,917</b>	<b>6,917</b>	<b>6,917</b>				
Average Annual Cost of Gas	\$82,889.18	\$69,242.63	\$49,099.63	\$49,127.30	-40.73%	-29.05%	0.06%	\$27.67
	Last Rate Case	Last Demand Filing	October PGA 2009	October PGA with Proposed Demand Changes	% Change from Last Rate Case	% Change from Last Demand Filing	% Change from Oct. PGA	\$ Change from Oct. PGA
<b>SV Interruptible Service</b>	GR-08-835	M-08-1329						
Commodity Cost	\$8.5288	\$6.5778	\$3.6928	\$3.7622	-55.89%	-42.80%	1.88%	\$0.0694
Commodity Margin	\$1.0127	\$0.8500	\$1.0127	\$1.0127	0.00%	19.14%	0.00%	\$0.0000
Total Cost of Gas	\$9.5415	\$7.4278	\$4.7055	\$4.7749	-49.96%	-35.72%	1.47%	\$0.0694
<b>Average Annual Use</b>	<b>6,333</b>	<b>6,333</b>	<b>6,333</b>	<b>6,333</b>				
Average Annual Cost of Gas	\$60,426.32	\$47,040.26	\$29,799.93	\$30,239.44	-49.96%	-35.72%	1.47%	\$439.51
	Last Rate Case	Last Demand Filing	October PGA 2009	October PGA with Proposed Demand Changes	% Change from Last Rate Case	% Change from Last Demand Filing	% Change from Oct. PGA	\$ Change from Oct. PGA
<b>LV Interruptible Service</b>	GR-08-835	M-08-1329						
Commodity Cost	\$8.5288	\$6.5778	\$3.6928	\$3.7622	-55.89%	-42.80%	1.88%	\$0.0694
Commodity Margin	\$0.3395	\$0.2850	\$0.3395	\$0.3395	0.00%	19.12%	0.00%	\$0.0000
Total Cost of Gas	\$8.8683	\$6.8628	\$4.0323	\$4.1017	-53.75%	-40.23%	1.72%	\$0.0694
<b>Average Annual Use</b>	<b>37,114</b>	<b>37,114</b>	<b>37,114</b>	<b>37,114</b>				
Average Annual Cost of Gas	\$329,138.09	\$254,705.96	\$149,654.78	\$152,230.49	-53.75%	-40.23%	1.72%	\$2,575.71
October Change Summary	Commodity Change \$/Mcf	Commodity Change %	Demand Change \$/Mcf	Demand Change %	Total Change \$/Mcf	Total Change %	Average Annual Change	
General Service	\$0.0694	1.88%	(\$0.0654)	-5.98%	\$0.0040	0.06%	\$0.56	
Large General Service	\$0.0694	1.88%	(\$0.0654)	-5.98%	\$0.0040	0.06%	\$27.67	
SV Interruptible Service	\$0.0694	1.88%	\$0.0000	0.00%	\$0.0694	1.47%	\$439.51	
LV Interruptible Service	\$0.0694	1.88%	\$0.0000	0.00%	\$0.0694	1.72%	\$2,575.71	

Note: The November commodity cost figure of \$3.7622 includes \$0.0694 in costs related to storage contracts and call option premiums.

## **CERTIFICATE OF SERVICE**

I, Jan Mottaz, hereby certify that I have this day, served copies of the following document on the attached list of persons by electronic filing, e-mail, or by depositing a true and correct copy thereof properly enveloped with postage paid in the United States Mail at St. Paul, Minnesota.

**Minnesota Office of Energy Security Comments**

**Docket No. G007/M-09-1282**

Dated this **2nd** day of **April 2010**

**/s/Jan Mottaz**

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