BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

Case No. GO-2000-705

MISSOURI GAS ENERGY

RELIABILITY REPORT

JULY 1, 2002 THROUGH JUNE 30, 2003

MGE

HIGHLY CONFIDENTIAL

This report contains material that has been classified HIGHLY CONFIDENTIAL under the terms of a Protective Order issued in Case No. GO-2000-705. Only authorized persons are entitled to view the HIGHLY CONFIDENTIAL portions.

July 1, 2002

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SCHEDULE DNK-10

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LIST OF TABLES AND FIGURES

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I. PROJECTIONS

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ANNUAL LOAD PROJECTIONS

A traditional forecast projects gas supply requirements based on past customer use and normal weather patterns. The annual load forecast is calculated based on an analysis of the relationship between monthly weather and related monthly sales. Annual load forecasts are maintained on a twelve–month rolling basis (short–term). Long-term (ten–year) forecasts are developed by calculating and applying an average annual escalation factor to the short-term totals. The Company develops three separate forecasts for planning purposes; a base case, high case, and low case forecast.

Annual Base Case

The annual base case forecast is the "most likely" scenario, which is based on a normal weather pattern. The National Oceanic and Atmospheric Administration's (NOAA) National Climatic Data Center (NCDC) has released the 1971–2000 Base Period Means replacing the 1961–1990 means The Base Period Means is also referred to as "normal weather" or "normal heating degree days" (HDD). Beginning with this forecast period, the Company is using the new normal HDD established for the Kansas City weather station. MCI. Below is a Table I–1 showing the new and old heating degree days for Kansas City.

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Table I-1

[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
	[redacted]	[redacted]

The "base load" component of the forecast is arrived at by averaging customer use per day for each year's summer months when there are no heating degree days. After calculating each year's average base load, the median of these is used as the base load factor for the next forecast period. Figure I–2 shows how the base load factor was calculated. As the graph shows, the inconsistency of the yearly base loads—up one year, down the next year—did not have any correlation to the annual weather patterns, i.e., a warmer than normal year did not produce a lower base load. The Company was also unable to find any other driving variables that would cause the up and down movement of the volumes. To moderate this phenomenon, the median or midpoint was calculated over a period of years and [redacted] Dth was arrived at as the base load factor for this forecast period. The base load is applied to each month of the annual forecast. Notwithstanding the addition of incremental load that would necessitate an immediate adjustment, this component remains constant and will be updated annually.

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Figure I-2

Weather is the key factor affecting natural gas consumption. Forecasts of heat sensitive loads are made on a use per customer basis, recognizing the effect of temperature (or weather conditions) on demand. The heat load component of the forecast is developed by analyzing several years of weather data and monthly heat load volumes. Once actual weather and delivery volumes are known for each month, the monthly base load (daily base load times the number of days in the month) is subtracted from the total volume to arrive at the monthly heat load. The monthly heat load is then divided by that month's actual heating degree days to arrive at its heat load factor (heat per heating degree day). A key finding in this analysis is that the heat load factor increases as the heating degree days increase. In other words, the value of a heating degree day in January will be higher than October's heat per heating degree day. Figure I–3 is a graphical representation of how heat loads increase with the rise in heating degree days. Exceptions to this occurred during May and June where extremes in the heat load factors were the result.

Figure I–3

The monthly heat load factors are analyzed to arrive at what would be a normal occurrence should normal weather prevail. A minimum of six years of data was used to ensure an adequate range of weather patterns and customer use is included. The larger sample size should ensure the distribution would approximate normal. A smaller sample size would have the risk of skewing the data to warmer than normal weather. In the analysis, the exceptions to the heat load-to-heating degree day correlation needed to be balanced. Utilizing the median of the heat load factors gives balance to the extreme factors by smoothing them out, thus producing a more likely forecast scenario. The median of a distribution is modified little, if at all, by any extreme values. The outliers in a group of values can skew the data when they are averaged, therefore the median is a more desirable measure of central tendency over the arithmetic average.

Using the former base load factor of [redacted] Dth, a retroactive look was taken at what the monthly heat load factors would have been. Neither the average nor the median made a good fit for the data, which also validates the appropriateness of the lower revised base load factor of [redacted] Dth. Figure I–4 shows the results of the heat load factor analysis. This analysis is a departure from previous forecasts, which normalized the heat load by normalizing only the previous year's heating degree days. Using a larger sample size to calculatemonthly heat load factors was not utilized in previous forecasts. This change should improve longer term forecast.

Table I-4

The base case totals are the sum of the heat load and the base load for each month, multiplied by an average annual escalation factor. For forecasting purposes, weather is presumed to follow normal patterns as established by NOAA. This normal weather pattern is used for the base case annual load forecast. The annual load forecast is based on heating degree days, base and heat load factors, and customer growth for each month. The load factors are integrated into the forecast using a computer based modeling tool, SENDOUT®, and applied to various weather patterns to determine the projected base case, high case, and low case customer demand scenarios.

Annual High Case

The high case scenario is developed using the coldest weather that has occurred, on a month-by-month basis, during the preceding 20 year period. The weather data is entered into the SENDOUT® forecasting model where it is applied to the heat load factors. The high case totals are the sum of the adjusted heat load and the base load for each month, multiplied by an average annual escalation factor. The probability that this type of weather would occur over several consecutive months is minimal, but gives a month–by–month maximum possible value.

Annual Low Case

The low case scenario is also developed using SENDOUT®, but uses the warmest weather that has occurred on a month–by–month basis during the preceding 20 year period. The weather data is entered into the SENDOUT® forecasting model where it is applied to the heat load factors. The low case totals are the sum of the adjusted heat load and the base load for each month multiplied by an average annual escalation factor. The probability that this type of weather would occur over several consecutive months is minimal, but gives a month–by–month minimum possible value.

Monthly Peak/Heating Degree Day Analysis

When all months are combined the high and low cases represent unlikely annual projections. The purpose of these scenarios is to identify a range of demand that could occur during any given month included in the study horizon. The "most likely" high and low annual forecasts are arrived at by adjusting the base case scenario by a percent of normal weather (e.g., 105 percent for higher than normal and 95 percent for lower than normal).

Using the SENDOUT® forecasting model, the new base and heat load factors were tested on prior years weather data and then compared to actual volumes. The annual difference between the SENDOUT® forecast and actual volumes was negligible, about one-half to two percent. The monthly difference ranged between one and six percent. The Company believes the improved factors, as well as the updated Base Period Means, are more reflective of current customer use and weather patterns and will project a well-defined normal forecast.

Included are two annual load forecasts for fiscal year 2003. The first study, shown in Table I–5, utilizes 30–year weather data and is the basis for the Company's current normal weather projections. The second study, Table I–6, utilizes 10–year weather data. Since projections based on 30 years result in a more conservative forecast, for reliability purposes, the actual results and may base future plans wholly on 10–year weather data. In any event, the differences appear slight. Monthly weather-induced variations in demand can be viewed as the difference.

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HISTORIC AND DESIGN PEAK DAY PROJECTIONS

A key consideration in the forecasting process is the firm demand during extreme weather conditions. This information is necessary to allow the Company to ensure adequate supplies and pipeline capacity to meet all of its firm sales obligations under such conditions.

Because they account for a small portion of total sales, historic and design peak day loads have a modest revenue impact. Nevertheless, they are important because of the operating and fixed costs that are incurred in providing a system to meet peak loads. Such costs include activating peaking supply contracts and purchasing additional volumes on the open market, as well as those associated with providing adequate transmission and distribution capacity to meet peak demand.

Historic Peak Day

The historic peak day is based on the lowest temperatures that might be expected in a service area. The Company's actual historic peak was 85 HDD and it occurred in the Kansas City market area on December 21, 1989. This represents an average daily temperature of –20 degrees Fahrenheit. Because it is weather that was actually experienced, the Company believes that 85 HDD is the extreme that should be used for planning purposes. The Company does not believe this weather is likely to occur regularly. Conversely, it may not be the coldest weather the region will ever experience. The Company believes that failure to plan for actually experienced extreme cold weather may limit its ability to meeting its firm service obligations.

Design Peak Day

The design day is the heating degree day average of four recent cold winter day experienced in the Company's service areas. These occurred on January 10, 1982 with 76 HDD, December 24, 1983 with 77 HDD, December 21, 1989 with 85 HDD, and February 2, 1996 with 73 HDD. The average of these winter peak days is 77 HDD. The Company uses 77 HDD for its design peak day and has determined that at this point 99 percent of Missouri's peak demand will be met. This is one of the Company's key points for supply and capacity planning purposes.

Historic and Design Peak Day Projections

For purposes of projecting the historic and design peak day for a heating season, a peak day heat load factor must be used in order to find the most likely historic and design peak day demand. The peak day load is calculated based on an analysis of the relationship between actual peak day weather and resultant sales requirements. The data are developed from firm sales and historic weather information. The design peak day forecast is based on a heating degree day factor calculated by averaging the heating degree days of the four most recent coldest winter days, and multiplied this by the peak day heat load factor. The historic peak day forecast is based on the single, coldest 24-hour period for which there are verifiable records. The base load (constant) factor is developed by an analysis of average day summer volumes as discussed in detail under "Annual Load Projections." An analysis is performed on the historic data described above to determine the weather sensitive or heat load (variable) factor.

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The peak day heat load factor was arrived at after completing several studies on heating degree days relationships. The first study was the result of recognizing the relationship of heat load value to heating degree day. The finding, which was discussed in "Annual Load Projections," was that as the number of heating degrees days in a month increased, the value of each heating degree day increased. That is, the HDD value in March is generally lower than a HDD value in January, see Figure I–3. The first study analyzed how this phenomenon affects the selection of an actual peak day for forecasting the historical and design peak day. After analyzing daily degree days during the core winter months, it was found that the colder-than-normal daily heating degree days were clustered over the period between December 15 through February 17. The study showed that just as there are core heat load months (November-March), there are core peak load days within those months. Table I–7, on the following pages, shows how the average HDD escalates on December 15 and remains consistently higher than in November to December 14 and declines around February 11 to 17 and remains consistently lower for the remainder of the winter period. When this is applied to the monthly heat load value findings, the correlation is made that it is more likely that a peak day's heat per HDD in January would generally have a higher heat per HDD value than the same peak day in March. The Company found this to be especially true for the actual peak day in fiscal year 2002, see Table I–8 below.

Table I-8

[redacted]		
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]

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Table I-7

Core Months HDD Study (MCI)

NOV	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1980	13	11	7	13	13	4	4	1	5	16	13	7	15	29	32	33	30	33	28	26	25	20	26	33	36	39	32	31	21	13
1981	6	11	12	13	14	18	16	16	27	23	17	15	14	11	12	14	12	10	27	40	34	25	16	26	14	21	32	29	27	21
1982	5	14	32	40	36	18	6	6	1	7	6	31	38	37	36	26	24	17	6	10	18	24	38	42	34	33	35	29	22	17
1983	4	0	8	22	19	11	8	14	20	32	30	29	19	16	30	29	18	13	12	17	15	11	33	33	22	15	24	36	36	41
1984	20	30	14	11	19	18	4	7	8	27	29	24	13	6	20	29	28	30	30	33	29	22	22	15	14	12	28	29	22	31
1985	14	22	16	19	13	19	22	13	16	30	27	17	22	28	27	24	16	11	36	42	39	34	39	44	35	35	44	43	47	47
1986	17	23	20	23	19	19	10	20	27	32	45	46	51	38	26	25	22	30	30	31	21	15	29	33	30	30	29	22	18	24
1987	0	0	0	4	17	12	7	13	26	29	26	16	14	11	8	13	27	27	24	28	21	15	18	24	25	27	27	30	30	33
1988	10	9	8	9	19	22	16	17	15	20	22	21	15	11	10	32	23	14	25	31	30	24	17	10	21	23	35	35	26	29
1989	24	31	22	14	14	20	18	21	14	15	4	9	3	13	29	44	29	35	14	11	26	37	37	20	18	22	27	44	36	24
1990	0	0	10	29	27	19	30	28	21	15	12	15	9	4	1	15	22	16	14	5	8	17	15	8	11	0	26	30	28	17
1991	36	48	49	43	27	39	50	49	28	30	32	21	11	8	14	21	11	10	18	19	17	29	37	41	41	27	25	12	14	34
1992	13	26	27	32	33	33	33	18	10	15	24	23	30	27	20	11	20	24	16	17	27	32	31	27	31	37	35	35	33	33
1993	24	20	15	14	35	37	25	22	21	18	14	8	15	25	30	27	20	24	27	25	18	17	17	38	47	45	41	33	31	26
1994	17	7	7	19	22	16	7	4	19	22	20	13	7	16	20	24	14	21	24	21	21	29	26	20	18	18	21	25	32	26
1995	16	35	36	36	21	21	28	32	16	28	44	30	31	26	27	19	29	24	13	21	26	22	36	4	0	0	0	15	12	3
1996	27	29	13	19	16	13	19	26	31	36	36	34	36	31	16	22	35	28	23	25	29	24	28	44	42	44	37	30	27	36
1997	12	23	32	24	25	24	25	18	28	37	32	29	32	34	42	37	28	23	18	21	25	30	23	13	13	17	8	5	13	21
1998	14	18	25	26	30	24	24	20	15	28	19	19	14	18	18	16	8	14	29	24	14	10	16	10	15	10	5	0	3	18
1999	14	23	15	4	2	4	1	0	1	8	10	6	2	13	12	10	2	7	28	19	16	15	28	27	24	16	18	24	22	19
2000	7	12	18	12	8	19	31	36	39	36	30	36	36	31	24	41	38	31	31	43	31	31	24	24	29	30	26	19	31	29
MIN	0	0	0	4	2	4	1	0	1	7	4	6	2	4	1	10	2	7	6	5	8	10	15	4	0	0	0	0	3	3
MAX	36	48	49	43	36	39	50	49	39	37	45	46	51	38	42	44	38	35	36	43	39	37	39	44	47	45	44	44	47	47
AVG	14	19	18	20	20	20	18	18	18	24	23	21	20	21	22	24	22	21	23	24	23	23	26	26	25	24	26	26	25	26

DEC	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1980	31	49	34	19	6	22	26	33	37	32	27	18	29	23	29	30	23	31	47	53	46	38	33	54	59	40	37	27	28	26	24
1981	30	31	25	29	28	18	15	28	35	35	29	28	26	32	36	45	62	67	63	44	31	34	38	36	33	35	41	47	44	29	38
1982	4	11	23	26	28	28	28	39	40	31	43	45	30	31	36	42	25	19	24	27	24	19	15	12	27	38	27	42	49	43	35
1983	40	33	37	35	37	41	35	38	36	37	35	40	41	49	49	56	56	72	77	69	66	78	72	77	71	59	46	55	64	59	42
1984	26	31	41	35	42	52	30	22	18	22	14	24	33	30	16	16	36	43	37	36	24	34	24	44	44	25	11	0	19	37	41
1985	56	57	48	35	40	43	28	30	39	39	50	49	59	50	36	34	39	61	49	56	47	27	26	45	55	33	35	35	37	28	31
1986	28	30	31	35	34	18	20	26	37	48	35	31	36	23	26	20	24	32	27	26	29	28	36	35	27	37	36	32	29	32	30
1987	38	26	23	29	23	19	22	16	20	23	18	28	33	37	41	45	45	30	28	32	30	24	21	23	38	36	32	36	34	33	39
1988	30	18	19	31	20	17	28	37	34	39	49	35	21	25	47	39	36	25	14	24	31	16	24	30	34	18	37	40	35	29	33
1989	20	35	43	17	12	27	42	41	30	36	56	54	49	60	74	66	52	54	57	52	74	85	72	43	30	39	27	22	25	35	35
1990	22	30	34	36	20	32	28	22	17	18	12	21	30	26	29	31	28	35	24	40	63	67	60	48	45	50	44	29	44	66	53
1991	41	40	44	46	26	21	8	14	23	19	23	19	24	32	33	25	31	39	37	29	30	26	30	30	29	26	30	29	30	30	24
1992	31	28	26	37	43	37	35	30	27	26	27	21	23	22	26	34	35	27	35	37	27	27	38	43	39	35	24	27	23	42	55
1993	21	22	25	31	22	29	24	24	13	26	33	18	26	32	27	26	26	32	28	34	32	43	41	40	37	29	45	46	44	40	25
1994	15	13	11	12	19	34	37	33	37	40	46	33	31	33	25	29	24	31	20	25	27	30	31	33	36	25	20	24	27	30	39
1995	13	13	18	23	30	34	37	49	59	50	43	46	31	25	25	28	28	31	36	36	37	41	42	38	38	32	36	40	35	33	30
1996	37	27	33	29	31	25	24	28	24	14	26	27	23	25	40	37	51	58	57	45	27	32	50	55	50	47	29	38	41	27	26
1997	26	25	35	37	41	36	37	30	33	34	36	42	36	31	22	29	23	18	21	32	32	29	29	31	37	38	36	34	31	29	28
1998	8	6	3	7	12	31	34	29	26	29	28	25	23	22	19	26	25	26	37	48	58	55	50	44	49	31	30	32	45	52	54
1999	10	8	15	28	38	35	20	18	32	28	24	28	25	31	33	34	36	36	36	50	45	46	33	38	24	30	37	22	13	22	20
2000	33	39	33	31	41	34	20	31	26	46	61	58	50	47	36	54	54	55	54	51	64	56	49	58	52	52	51	44	53	53	59
MIN	4	6	3	7	6	17	8	14	13	14	12	18	21	22	16	16	23	18	14	24	24	16	15	12	24	18	11	0	13	22	20
MAX	56	57	48	46	43	52	42	49	59	50	61	58	59	60	74	66	62	72	77	69	74	85	72	77	71	59	51	55	64	66	59
AVG	27	27	29	29	28	30	28	29	31	32	34	33	32	33	34	36	36	39	38	40	40	40	39	41	41	36	34	33	36	37	36

JAN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1980	36	38	37	35	36	39	49	46	48	28	28	37	23	28	10	20	31	28	29	34	30	35	35	20	29	44	51	50	52	55	62
1981	32	32	40	46	39	30	36	39	41	48	47	40	34	37	39	49	43	31	24	27	31	25	21	17	15	26	30	32	39	41	38
1982	47	34	46	48	34	53	58	43	57	76	61	53	64	51	45	88	55	38	37	36	38	34	54	47	45	40	22	32	29	38	49
1983	34	39	41	37	33	23	30	27	27	33	37	37	23	34	40	37	41	44	41	36	36	34	34	36	36	41	39	26	30	33	35
1984	38	42	35	28	26	27	28	32	37	49	43	42	52	54	47	53	56	61	58	66	55	39	35	34	28	24	32	23	24	37	29
1985	56	57	54	45	41	29	32	38	40	41	58	63	43	43	51	39	37	35	56	69	52	44	40	36	44	49	36	45	40	50	68
1986	26	24	32	38	35	43	53	45	30	29	19	25	35	30	26	16	19	21	29	19	23	35	30	23	27	45	54	31	32	29	17
1987	35	35	30	28	25	23	35	37	34	39	40	25	19	25	35	45	44	46	42	44	38	43	51	52	51	42	31	30	18	24	22
1988	47	40	38	54	55	57	52	52	54	51	34	39	46	35	26	17	26	28	26	40	50	41	31	37	53	51	32	23	14	8	23
1989	32	39	27	24	21	26	36	44	38	29	22	35	33	34	32	28	22	19	18	34	26	18	14	22	28	30	24	26	27	21	7
1990	40	24	18	33	32	32	28	24	23	19	23	39	37	22	17	6	22	32	35	32	31	21	18	23	36	24	30	32	30	31	22
1991	40	50	53	46	39	49	51	39	43	41	41	45	34	29	32	38	34	31	27	42	52	37	34	39	53	55	43	35	53	53	38
1992	28	26	25	31	27	25	19	24	38	34	23	26	34	36	46	35	35	36	28	24	22	23	32	35	33	31	25	33	22	20	22

Table I-7

JAN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1993	49	33	26	41	43	41	37	40	41	42	40	39	52	51	41	38	45	46	47	35	33	29	28	41	37	29	29	36	49	41	24
1994	33	36	40	38	32	49	52	41	30	30	38	33	40	55	53	52	59	56	42	46	28	17	21	16	25	29	38	37	44	53	46
1995	52	49	55	59	49	41	55	41	41	31	26	23	28	31	29	22	28	36	29	37	41	40	37	34	35	31	27	32	36	38	22
1996	32	39	45	42	54	65	66	50	31	31	32	19	16	23	38	27	29	65	57	51	37	37	50	49	34	52	49	40	55	61	61
1997	10	14	9	29	42	43	40	35	50	67	64	63	57	46	49	57	54	46	23	15	16	36	39	48	56	52	63	62	45	37	19
1998	16	6	20	33	30	30	32	31	44	43	38	47	48	38	37	36	28	42	39	28	36	38	35	36	24	23	17	18	26	19	12
1999	51	56	62	57	39	40	56	52	53	41	24	31	48	35	22	24	28	26	28	27	27	32	33	28	36	19	25	32	32	31	30
2000	15	28	42	45	35	32	24	20	27	25	29	30	36	26	22	33	30	25	29	44	28	27	47	39	44	48	42	43	44	46	43
MIN	10	6	9	24	21	23	19	20	23	19	19	19	16	22	10	6	19	19	18	15	16	17	14	16	15	19	17	18	14	8	7
MAX	56	57	62	59	55	65	66	52	67	76	64	63	64	55	53	68	69	65	58	69	55	44	54	52	56	55	63	62	55	61	68
AVG	36	35	37	40	37	38	41	38	39	39	37	38	38	36	35	35	36	38	35	37	35	33	34	34	37	37	35	34	35	36	33

FEB	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
1980	58	41	40	41	37	47	50	42	54	53	53	56	36	30	41	54	52	37	27	27	23	25	30	26	36	37	22	26	47
1981	44	58	53	56	45	41	38	53	47	57	67	46	38	27	20	16	13	12	15	14	13	22	20	18	3	14	7	23	
1982	40	41	55	62	69	66	46	51	62	57	51	39	40	29	21	26	29	27	18	16	14	9	19	28	35	35	31	21	
1983	38	41	53	53	38	48	50	35	35	29	30	29	24	18	23	19	25	19	10	13	20	19	22	25	30	24	21	19	
1984	19	24	27	33	45	44	31	22	25	22	13	23	22	18	13	21	26	22	33	29	23	16	21	26	23	28	32	35	34
1985	62	58	52	48	59	59	60	51	34	38	51	50	41	45	47	31	35	30	29	25	11	20	25	32	25	31	31	22	
1986	23	18	22	27	29	33	37	44	47	49	54	56	48	49	43	32	21	21	29	40	44	35	28	30	20	14	31	36	
1987	16	16	25	27	29	27	19	27	32	22	16	18	20	20	33	39	37	38	30	26	26	31	28	23	18	19	24	26	
1988	45	47	45	53	62	57	41	37	38	51	68	56	35	30	42	22	28	33	26	32	21	21	35	37	32	13	20	17	25
1989	30	54	67	66	63	55	48	54	51	37	34	33	31	35	38	40	38	36	35	35	38	51	50	31	18	33	38	37	
1990	25	39	39	33	20	25	19	15	24	22	17	7	22	41	37	44	41	27	33	32	23	26	25	33	42	28	27	34	
1991	24	20	15	17	21	30	27	25	23	25	21	22	19	37	48	31	23	24	29	18	10	25	20	35	38	36	26	20	
1992	18	10	14	28	34	30	33	42	32	26	32	35	31	28	27	21	20	24	31	17	22	16	17	29	33	27	17	12	18
1993	26	26	23	24	27	23	21	34	20	12	26	35	37	39	44	53	62	55	40	33	39	45	49	48	46	47	45	36	
1994	39	40	37	35	32	28	48	55	57	46	36	35	32	17	25	18	13	7	13	29	34	36	46	47	48	50	39	32	
1995	19	23	28	36	40	33	43	42	28	34	48	48	43	35	38	36	26	15	19	14	23	7	19	28	4	12	27	39	
1996	60	73	68	57	40	33	20	21	9	23	32	33	21	21	39	36	31	32	18	11	18	21	22	16	7	30	45	49	47
1997	24	26	31	34	37	37	39	39	39	40	40	42	39	29	32	31	13	14	21	20	38	34	35	34	29	32	35	22	
1998	30	31	35	36	32	28	25	22	17	24	32	28	22	21	16	24	26	25	24	23	17	14	15	7	10	22	24	32	
1999	29	24	21	23	17	20	23	17	14	10	34	34	30	12	17	31	32	25	30	34	34	34	36	26	18	11	19	19	
2000	42	33	25	40	31	24	27	22	15	27	39	34	37	32	23	30	30	35	31	19	7	5	7	2	10	22	16	4	15
MIN	16	10	14	17	17	20	19	15	9	10	13	7	19	12	13	16	13	7	10	11	7	5	7	2	3	11	7	4	15
MAX	62	73	68	66	69	66	60	55	62	57	68	56	48	49	48	54	62	55	40	40	44	51	50	48	48	50	45	49	47
AVG	34	35	37	39	38	38	35	36	33	34	38	36	32	29	32	31	30	27	26	24	24	24	27	28	25	27	27	27	31

MAR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1980	54	55	31	31	49	31	31	30	24	27	35	32	35	21	12	11	24	18	8	19	24	16	17	28	29	24	17	16	19	23	18
1981	25	28	28	26	28	29	33	32	23	24	24	15	19	23	12	22	13	29	26	30	19	19	21	13	10	12	2	1	10	6	5
1982	18	19	34	39	45	42	43	33	36	15	18	10	20	20	11	9	8	17	3	17	30	25	18	21	27	30	25	23	14	7	13
1983	12	7	0	3	6	8	22	35	32	35	34	25	9	18	4	16	24	26	30	37	38	36	29	27	28	24	27	27	27	19	10
1984	27	29	24	28	33	35	30	44	40	35	38	38	33	18	14	31	28	33	35	35	27	26	25	23	18	22	19	22	24	30	27
1985	15	21	12	22	34	26	10	15	17	14	16	27	23	22	20	18	20	12	10	12	14	14	16	21	21	4	2	4	19	26	31
1986	26	18	29	23	27	23	40	24	0	12	18	20	26	23	23	21	12	12	29	37	29	13	15	5	0	11	12	0	0	0	0
1987	28	19	19	11	7	6	7	9	29	34	29	20	11	7	16	22	17	17	14	5	12	8	2	19	21	24	18	18	33	37	30
1988	16	21	32	35	33	26	14	22	24	19	11	34	40	41	39	35	33	31	20	10	12	0	10	5	12	15	8	7	23	20	20
1989	39	26	22	44	43	38	34	26	19	5	5	16	22	17	31	12	28	36	25	30	35	26	15	7	12	0	0	1	5	17	22
1990	31	24	28	18	8	20	20	18	9	0	3	0	0	12	23	21	18	25	33	22	8	17	37	38	39	26	22	21	22	22	16
1991	19	35	36	24	9	27	30	22	25	16	6	12	31	29	30	22	16	17	15	4	0	4	12	10	0	0	14	19	29	29	11
1992	2	0	1	6	7	7	9	1	19	39	34	34	18	21	27	13	13	25	27	22	23	28	22	19	16	21	25	18	19	18	20
1993	24	26	29	27	27	23	18	20	21	30	38	38	46	36	21	25	41	38	30	24	23	23	27	26	22	18	15	7	2	9	23
1994	34	31	16	15	11	13	22	31	29	26	19	11	18	7	20	23	6	12	3	7	16	3	1	25	28	22	25	29	30	31	17
1995	45	43	37	31	31	31	48	52	34	15	8	4	2	0	3	5	4	6	4	14	7	5	15	15	10	7	22	24	26	31	26
1996	33	41	40	22	29	51	56	46	40	29	17	11	7	18	12	16	18	23	34	32	29	18	10	25	45	40	30	23	14	27	26
1997	29	28	23	33	32	26	19	15	21	12	15	8	28	40	38	25	15	26	22	10	9	19	17	10	21	11	4	22	16	16	8
1998	34	31	28	28	34	25	27	40	52	49	61	44	26	33	32	29	27	27	29	27	19	22	26	14	19	0	8	0	0	6	21
1999	8	30	29	15	28	11	32	32	33	35	28	29	31	28	15	2	18	20	22	17	18	28	22	23	26	20	10	14	9	2	6
2000	18	24	28	15	6	0	0	17	30	31	28	24	21	16	22	27	24	26	30	25	12	9	4	7	9	7	18	21	15	13	10
MIN	2	0	0	3	6	0	0	1	0	0	3	0	0	0	3	2	4	6	3	4	0	0	1	5	0	0	0	0	0	0	0
MAX	54	55	40	44	49	51	56	52	52	49	61	44	46	41	39	35	41	38	35	37	38	36	37	38	45	40	30	29	33	37	31
AVG	26	26	25	24	25	24	26	27	27	24	23	22	22	21	20	19	19	23	21	21	19	17	17	18	20	16	15	15	17	19	17

Reliab03 / Study.xls / Winter Months

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As Table I–8 shows, all of the actual peak days in January and December had HDD values greater than those in March, which had higher heating degree days. Additionally, although the heat loads in January through December were lower compared to prior years, they are still consistent with each other.

The next study looked at past actual peak day heat load factors. As in the analysis of the base load factor, the actual peak day heat load factors also did not have a compelling correlation to the number of the peak days' HDD, see Figure I–9 graph.

Figure I–9

To mitigate the effect of the inconsistency in year–to–year values of actual peak day heat load factors—since the coldest day may not be close to a historic or design peak day value—the factor must be reviewed to determine if the calculation would result in a factor that would be one produced on a historical peak day. The median of past actual peak day factors will be utilize in the same way the monthly load factors were utilize to approximate demand during a period of normal weather. Table I–10 shows how the peak day heat load factor was calculated.

These factors can then be applied to degree day figures and projected customer growth patterns to approximate load requirements for a historic and design peak day. Load requirements or volumes of gas are expressed in Dekatherms (Dth) and daily volumes are expressed as Dekatherms per day or Dth/day. Table I–10 also shows what the historical and design peak day would be had a historical or design day occurred using the median heat load factor.

To further refine this forecast, an assumption was made that a historical or design peak day heat load factor would be higher than the calculated median. Five recent winters were analyzed and the greatest of the actually experienced cold day's heat load factor was used to establish a plausible range for historical and design peak day loads. The following table shows what the historical and design peak day would be had a historical and design day occurred under this scenario.

Peak Day/Heating Degree Day Analysis

Notwithstanding the unusually warm weather in 2000–2001, the slight difference of [redacted] percent in historic peak day projections between the 2000–2001 winter and 2001–2002 winter forecasts—[redacted] Dth for 2000-2001 compared to **[redacted]** Dth and **[redacted]**for 2001-2002—provides added confidence in the Company's forecasting methodologies. This is reflective of the decrease in the base load factor and balancing the heat load factors. The difference between the 2001–2002 and 2002–2003 forecasts is much the same as the difference in historic peak day projections. This further validates the updated lower base load factor and new heat load factors and also indicates that the Company's average annual escalator continues to be substantially accurate. The results of the revised projected peak day range are shown in Figure I–12 and Figure I–13. This newest study covers a time horizon of 2002 through 2013. Based on historical weather, the Company's transportation capacity currently under contract would not serve the forecasted peak day beyond the 2009–2010 winter or the 2006–2007 winter, if the higher heat load factor was used. Additionally, if any type of "reserve margin" were considered, additional capacity would be needed soon. The Company is now reviewing capacity alternatives that may be available. This is discussed further in Section III, "Additional Actions Taken To Ensure Reliability."

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PROJECTED SUPPLY/TRANSPORTATION REQUIREMENTS

Introduction

Accurate forecasting of demand over short (one year) and long (five to ten year) time horizons provides the Company with the planning tool it needs to contract for additional gas supplies and transportation capacity in a timely and cost effective manner. The following are the Company's projections of supply and transportation requirements for the forecast period.

Supply Requirements

The system supply requirements include the forecasted customer demand, including fuel, plus the storage injection. Forecasted customer demand is discussed in Section I., "Annual Load Projections." The Company's supply needs are also discussed in Section II., "Additional Supplies To Be Contracted For."

Transportation Requirements

As previously described, forecasts are developed for both annual and peak day requirements. However, it is the historic peak day forecast that drives the level of firm transportation service that will be necessary in a given year. The planning process must result in a transportation portfolio that meets firm customers' peak day requirements during the period of the study.

The planning cycle of a pipeline company is substantially longer than for a local distribution company (LDC). This is due to the longer lead times and economics associated with pipeline construction and capacity expansion projects. For this reason, the LDC must contract capacity in longer blocks of time, usually five to ten years. The timing of pipeline expansion projects does not necessarily match the needs of the LDC and may result in a temporary surplus or temporary deficiency of firm capacity. Because The Company's capacity is contracted for in longer blocks and added periodically over a five to ten year time horizon, capacity may be lower or higher than the historic peak day at any given point in time. There is, however, sufficient capacity to meet the design peak day over the 10–year forecast horizon, which ensures 99 percent of the Company's peak demand will be met. The Company endeavors to maintain a reasonable reserve margin above the design day minimum to meet the historic peak.

A comparison of projected historic peak day demand to transportation capacity is shown in Figure I–12 and transportation capacity compared to projected design day demand is shown in Figure I–13. Table I–5 and Table I–6 show the annual demand for the forecast period. A detailed discussion of transportation requirements can be found in Section III., "Additional Actions Taken To Ensure Reliability."

II. SUPPLY/DELIVERY RESOURCES

II. SUPPLY/DELIVERY RESOURCES

PIPELINE TRANSPORTATION/STORAGE CAPACITY

Pipeline Capacity

The Company currently holds firm transportation contracts on four interstate pipelines; Williams Gas Pipelines–Central (Williams), Panhandle Eastern Pipe Line (PEPL), Kansas Pipeline Company (KPC), and Pony Express Pipeline (PXP), which is owned and operated by Kinder Morgan Interstate Gas Transmission LLC (KMIGT). The combined firm deliverability on the four pipelines is **[redacted]** Dekatherms per day (Dth/day). This level of service is adequate to cover the projected design peak day of **[redacted]**, and is **[redacted]** Dth above the projected historic peak day of **[redacted]** Dth for the 2002-2003 heating season. This should ensure reliable delivery of gas in the coming heating season for the Company's high priority customers. As discussed previously in Section I, "Transportation Requirements," capacity is typically contracted for in five to ten year blocks and added periodically over a five to ten year time horizon. Because of this phenomenon, the contracted capacity in any given year may be lower or higher than the projected historical peak day demand.

In addition to the firm capacity described above, the Company holds interruptible contracts on two of the four pipelines with a total deliverability of *[redacted]** Dth/day. Historically, some level of interruptible transportation has been available on a peak day. Maintaining these interruptible contracts for service has provided an additional alternative to meet peak demand although they could not be relied upon. However, given the high demand for gas-fired electric generation, interruptible transportation may not, in any event, be available in the future.

Storage Deliverability

The Company currently owns storage capacity rights totaling **[redacted]** Dth on two interstate pipelines, Williams Gas Pipelines–Central and Panhandle Eastern Pipe Line. The combined deliverability of **[redacted]** Dth/day is utilized to augment flowing gas during the withdrawal months of November through March and represents approximately [redacted] of the total supply used to meet the peak day demand.

Identified Needs for Transportation or Storage Capacity

There is an identified need to add capacity prior to the 2006–2007 heating season to cover the projected historic peak day. The peak day forecasts and transportation capacity are shown in Figure I–12 and Figure I–13. A detailed discussion of transportation capacity is in Section III, "Additional Actions Taken To Ensure Reliability." Large daily swings on the Company's system have confirmed the need for alternative storage capacity arrangements. The Company is seeking to maintain cost savings while researching alternative storage arrangements with KMIGT.

Williams Balancing

Williams Gas Pipeline–Central, has filed tariffs to convert from a monthly balanced pipeline system to a daily balanced system. In this regard, Williams held meetings in Kansas City on December 6, 2001, to discuss their preliminary proposal. At the meeting in December, customers raised a number of issues that Williams sought to address. As a general rule, Williams is dismissing the majority of these concerns by indicating that they feel that they have addressed-it within their daily balancing proposal.

This proposal raises several concerns for service to the Company. At present, the Company balances its deliveries through storage services available under Williams TSS rate schedule. As such, any differences between flowing purchase supplies and end use demand is reconciled by an adjustment to the ending storage balance at the end of the month. However, once Williams moves to a daily balance system, then the current storage injection and withdrawal limitations that exist within their tariffs will serve to limit the overall daily flexibility that has previously been enjoyed by the Company and other customers on the Williams system. In this regard, the Company looked primarily at the shoulder months of April and October to review how many days the Company exceeded its allowable injection ratchets during the beginning of the injection season when the injection ratchets are highest, as well as at the end of the season when the injection ratchets-are at their lowest. In addition, similar concerns exist during the November through March winter period, when Williams' tariffs allow only for storage withdrawal when in reality there would be many days in which gas will, on a net basis, be injected. Therefore, concerns are that the flexibility that currently exists within the system under monthly balancing will not being afforded to the customers by this change to daily balancing.

The Company continues to participate in these FERC proceedings. It is possible the FERC would allow Williams to implement daily balancing prior to the 2002–2003 winter.

GAS SUPPLY RESOURCES

Supplies Under Contract

The Company has three long-term firm purchase contracts with Amoco, OXY, and KN Marketing. Additionally, the Company entered into a three-year agreement with Duke Energy Trading and Marketing (DETM) to provide additional gas supplies needed by the Company. DETM is given the Company's annual, monthly, and daily demand forecasts and DETM will provide all incremental supply required to meet 100 percent of the Company's needs. A tentative agreement was reached with DETM on April 1, 2000 and the formal agreement became effective September 1, 2000. Table II–14 shows the Company's firm supplies currently under contract.

Table II–14

Additional Supplies To Be Contracted For

Demand

To determine new supply requirements, the Company reviewed customer demand and developed a Base Case, High Case, and Low Case scenario as described in Section I, "Annual Load Projections." Projected monthly demand was calculated as the Base Case scenario because it is the "most likely" to occur.

Supply

Due to the commitment with DETM, the Company does not anticipate needing to acquire incremental supply until the summer of 2003. However, considering the current peak day capacity requirements, the Company may review forward contracts for supply and capacity to become effective upon termination of the contract with DETM.

In addition, as a result of the general tightness of supply experienced during the 2001–2002 winter, it is apparent that growth in natural gas reserves and increased deliverability will come primarily from the Rocky Mountain area to serve the Western Missouri markets. The older Mid–Continent basins, including the Hugoton fields, are forecasted to have declining production. It is the Company's position that continued efforts to increase access to growing Rocky Mountain supplies will be in the best long term interest for Western Missouri customers

III. SUMMARY AND CONCLUSIONS

III. SUMMARY AND CONCLUSIONS

ADDITIONAL ACTIONS TAKEN TO ENSURE RELIABILITY

Supply

The supply options of the Company's portfolio consist of various components. These include firm supplies contracted for on a long-term basis, firm or interruptible transportation on four interstate pipelines, and two storage services. The utilization of these components varies depending on demand and operating conditions.

The Company does not anticipate needing to acquire incremental supply until the summer of 2003 when its commitment with DETM will expire. However, considering the current peak day capacity requirements, the Company may review forward contracts for supply and capacity to become effective upon termination of the contract with DETM.

The Company is actively reviewing alternatives to increase capacity access to Rocky Mountain supplies.

Transportation

As indicated earlier in this report, the Company has identified a need for additional transportation capacity prior to the winter of 2006–2007 to meet the projected historic peak day. The Company is proactively analyzing available alternatives to meet this additional transportation capacity as well as other issues that are relative to expansion of future deliverability and reliability needs.

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Williams Gas Pipelines–Central has pursued the development and construction of the Western Frontier System; a pipeline that would move gas from the Cheyenne Hub area to the Hugoton Field area and interconnect with existing Williams–Central System. This system was designed to bring 540,000 MMBtu per day of gas from the Rocky Mountain supply area into the Mid–Continent area. Information provided by Williams showed that from a reserve and deliverability stand point, the Mid–Continent production area has generally been declining over many years while the productive capability in the Rocky Mountains has been increasing substantially. Over the long term, increased access to Rocky Mountain supplies for the Company in the Western Missouri service area will be important from the standpoint of long–term supply reliability.

Attached, as Appendix B to this report, are copies of reports and analyses that have been done regarding the Company's review of pipeline alternatives that have been proposed to move Rocky Mountain supplies into the Mid-Continent area.

At this time, it does not appear that any of these systems will be constructed as a result of the current limitations within the industry to obtain financing and the on-going industry credit concerns following the trading scandals at Enron, Dynegy, and others. It is anticipated that additional capacity will be constructed from the Rocky Mountain area into the Mid–Continent over the next several years. At such time, the Company will continue to review potential participation in those activities.

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With regard to Williams Gas Pipeline–Central, the Company has [redacted] capacity of **[redacted]** MMBtu expiring [redacted] During the [redacted] the Company will be actively reviewing renewal of this capacity, or its ability to obtain capacity on other systems that could be utilized in the same manner to provide the necessary [redacted] deliverability necessary under Williams' TSS rate structure schedules.

The following table further illustrates the Company's pipeline capacity and storage deliverability. Table III–15 shows pipeline capacity and storage deliverability effective July 1, 2001. These volumes remain subject to change based on ongoing negotiations with the respective pipelines.

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EMERGENCY CURTAILMENT PLAN

The following is Section 13 of the Company's General Terms and Conditions as approved in Case No. GR-96-285. This section addresses the Priorities of Service under which the Company will curtail service during periods of supply deficiencies or limitation of pipeline capacity. The Company stands ready to execute this plan as conditions warrant.

The Company believes this report verifies that adequate steps have been taken to ensure the reliability of supply for its resale customers. The inability to control volumes delivered for end use by the Company's transport customers may lead to the implementation of this plan in the event there are major failures in third party supplies.

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13. PRIORITY OF SERVICE

13.01 PURPOSE: The purpose of this rule is to establish the priority of service required to be provided by Company during periods of natural gas supply deficiencies and/or capacity constraints on the Company's distribution system.

13.02 CURTAILMENT: During periods of natural gas supply deficiencies and/or capacity constraints on the Company's distribution system, the Company will curtail or limit gas service to its customers (or conversely, allocate its available supply of gas) as provided in this Rule 13. Curtailment may be initiated due to a supply deficiency or limitation of pipeline capacity or a combination of both. For purposes of this Rule, interruption of service to a particular customer due to the failure of the customer's transportation volumes to be delivered to Company does not constitute curtailment under this rule.

13.03 PRIORITY CATEGORIES: Each customer's requirements shall be classified into priority categories. The priority categories, to be utilized by the Company for allocating available gas service, listed in descending order of priority, with Category 3 being the lowest priority and Category 1 being the highest priority of service to be retained are listed below:

For an MGE Sales Service Supply Deficiency

Category 1.

Sales service to residential customers, public housing authorities, public schools, hospitals, and other human needs customers receiving firm sales service from the Company

Category 2.

Commercial sales service

Category 3.

Industrial sales service

For an MGE Distribution System Capacity Deficiency

Category 1.

Sales or transportation service to residential customers, public housing authorities, public schools, hospitals, and other human needs customers receiving firm sales service from the Company

Category 2.

Commercial sales service and commercial transportation service

Category 3.

Industrial sales service and industrial transportation service

13.04 CURTAILMENT PROCEDURES: Notice shall be given to all affected LVS customers by telephone or in writing. Notice shall be given to all other affected customers via mass media (radio and television). Notice shall be given as far in advance as possible and may be changed by the company as conditions warrant.

Curtailment shall be assigned initially to the lowest priority category (Category 3) and successively to each higher priority category as required. Should partial service only be available to an affected category, deliveries to individual customers shall be limited to the customer's pro rata share of available supply, such allocation to be based on the ratio of the customer's requirements in the category for which partial service is available to the aggregate requirements of all the Company's customers in the same category.

13.05 UNAUTHORIZED OVERRUN DELIVERIES: If during any period of curtailment, any customer takes, without the Company's advance approval, a volume of gas in excess of the volumes authorized to be used by such customer, said excess volumes shall be considered "unauthorized use" and will be billed pursuant to the Unauthorized Use Charges as set forth in the Company's approved tariff.

APPENDICES

APPENDIX A

MPSC RESPONSE TO 5-14-02 LETTER FOR RELIABILITY INFORMATION

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APPENDIX B

REPORTS AND ANALYSES OF PIPELINE ALTERNATIVES

Highly Confidential

Update on the Assessment Of Various Pipeline Expansion Alternatives To Bring Additional Wyoming Natural Gas Supplies to MGE's Missouri Markets

May 21, 2002

Kinder Morgan

Cheyenne Market Center

Storage Proposal

KINDER MORGAN
KM INTERSTATE GAS TRANSMISSION LLC

April 29, 2002

Dear Prospective Shipper:

Re: Cheyenne Market Center Open Season – (Storage Service)

Thank you for your interest in Kinder Morgan Interstate Gas Transmission LLC's ("KMIGT") recently announced open season for the Cheyenne Market Center service ("CMC"). Please find enclosed with this letter the following information:

1. Power Point Slides depicting service attributes
2. Open Season Procedures
3. Master Point List (i.e., proposed available point list under Rate Schedule CMC)
4. Pro Forma Rate Schedule CMC
5. Precedent Agreement with Appendix A (i.e., Bid Form)

As described in the enclosed material, the CMC service is a firm storage service, which will allow for the receipt, storage, and subsequent re-delivery of natural gas supplies at the applicable Cheyenne Market Center Points, which are located in the vicinity of the Cheyenne Hub in Weld County, Colorado and the Huntsman Storage Facility in Cheyenne County, Nebraska. To provide the CMC Service, KMIGT proposes to construct and operate new pipeline, compression, and storage facilities. These new facilities will create incremental storage capacity for up to 6,000,000 Dth, which has an associated injection capability of approximately 38,400 Dth per day and an associated withdrawal deliverability of approximately 62,400 Dth per day. Construction of the necessary facilities and the availability of CMC service are subject to Federal Energy Regulatory Commission ("FERC") approval.

During the Open Season, any shipper interested in contracting for CMC service must execute and return a Precedent Agreement. The binding Open Season for CMC Service began at 8:00 a.m. Mountain Daylight Time ("MDT") on April 29, 2002 and will close at 5:00 p.m. MDT on May 13, 2002. If you have any questions or require other information regarding CMC Service, please contact: Randy Holstlaw, Marketing Manager (303) 914-4517; Max Lawton, Account Manager (303) 914-4622; or Joe Sterrett, Account Manager (303) 763-3246.

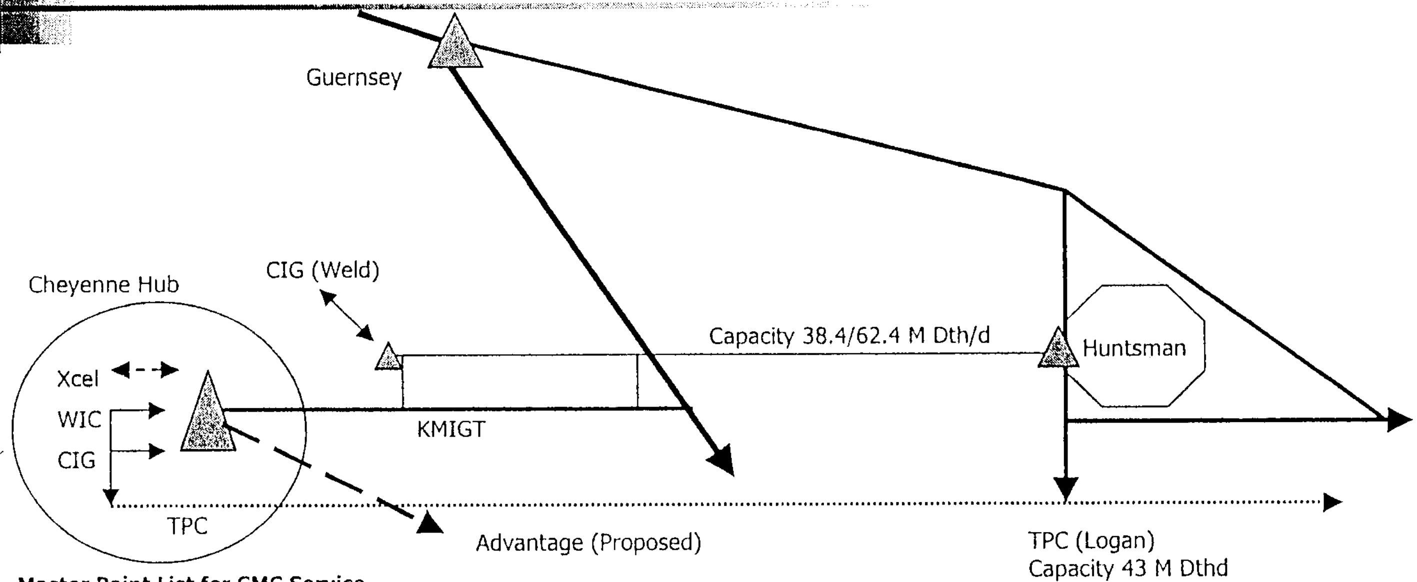
Thank you for your interest.

Sincerely,

Michael P Crisman
Vice President, Business Management and Development
Kinder Morgan Interstate Gas Transmission LLC

KINDER MORGAN
ENERGY PARTNERS, L.P.

CMC Service - Gas Flow & Map



Master Point List for CMC Service

Available Primary Receipt Points

Wyoming Interstate Company – Rockport in Weld County, CO
Xcel (PSCO) – Chalk Bluffs in Weld County, CO
Trailblazer Pipeline Company – Logan in Logan County, CO*
Colorado Interstate Gas Company – Weld in Weld County, CO

Anticipated Available Secondary Receipt Points

Colorado Interstate Gas Company – Arrowhead in Weld County, CO
Huntsman Storage (Huntsman) in Cheyenne County, NE

Available Primary Delivery Points

Wyoming Interstate Company – Rockport in Weld County, CO*
Colorado Interstate Gas Company – Arrowhead in Weld County, CO*
Xcel (PSCO) – Chalk Bluffs in Weld County, CO
Trailblazer Pipeline Company – Logan in Logan County, CO
Colorado Interstate Gas Company – Weld in Weld County, CO

Anticipated Available Secondary Delivery Points

Huntsman Storage (Huntsman) in Cheyenne County, NE

* Via displacement and subject to applicable flowing receipt or delivery volume at the point(s).

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KINDER MORGAN

Storage Components

- Capacity Available – "Open Season"
  - Initial 6 MMDth

	1 MMDth	6 MMDth	Days
■ Injection (Dth/d)			
■ Inventory=<100% of MSV:	6,400	38,400	156
■ Withdraw (Dth/d)			
■ Inventory >15% of MSV:	10,400	62,400	82
■ Inventory =<15% of MSV:	5,200	31,200	19
■ Inventory =<5% of MSV:	2,600	15,600	19
■ Wtd. Avg.:	8,320	49,920	120