



# MONTANA-DAKOTA

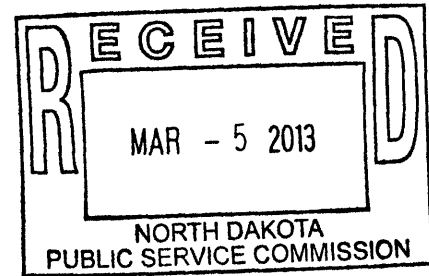
UTILITIES CO.

A Division of MDU Resources Group, Inc.

# ORIGINAL

400 North Fourth Street  
Bismarck, ND 58501  
(701) 222-7900

March 1, 2013



Executive Secretary  
North Dakota Public Service Commission  
State Capitol Building  
Bismarck, ND 58505-0480

Re: Case No. 11,006 (Therm Billing)  
Monthly Report – January 2013

Montana-Dakota Utilities Co., a Division of MDU Resources Group, Inc., herewith submits the following information, pursuant to the Ordering paragraphs one and two of the Order issued in the above-referenced docket, dated October 20, 1987:

1. Attachment A is a schedule showing the thermal billing factors by community that reflect the BTU values shown on Attachment B and were used for billing purposes in February 2013.
2. Attachment B consists of copies of the monthly Heating Value Test Reports received from our supplier for the month of January 2013. There is a report for each of the 17 thermal zones for the month.
3. Attachment C is a listing which states the type of measuring device in place at each zone.
4. Attachment D is a monthly list of the heating value data, by zone, for the most recent 12-month period and an average thereof. It is being provided pursuant to a Staff request.

There were no thermal variances for the month of January 2013.

Please acknowledge receipt by stamping or initialing the duplicate copy of this letter attached hereto and returning the same in the enclosed self-addressed, stamped envelope. Should the Commission or its Staff have any comments or questions with respect to these reports, please call me.

Sincerely,

Tamie Aberle  
Director of Regulatory Affairs

| TOWN                 | HEAT_ZONE | THERM_FACTOR |
|----------------------|-----------|--------------|
| MDU-314-APPLE VALLEY | 271       | 1.097055     |
| MDU-323-BERTHOLD     | 262       | 1.100344     |
| MDU-327-BISMARCK     | 28        | 1.069074     |
| MDU-337-BURLINGTON   | 262       | 1.124071     |
| MDU-343-CARRINGTON   | 273       | 1.09802      |
| MDU-364-CAVALIER     | 273       | 1.121196     |
| MDU-365-DAWSON       | 271       | 1.098917     |
| MDU-368-DES LACS     | 262       | 1.10635      |
| MDU-374-FT TOTTEN    | 273       | 1.116433     |
| MDU-375-DEVILS LAKE  | 273       | 1.105745     |
| MDU-379-BARLOW       | 273       | 1.09802      |
| MDU-411-GLEN ULLIN   | 28        | 1.052174     |
| MDU-416-GARRISON     | 262       | 1.108253     |
| MDU-417-GRAFTON      | 273       | 1.128922     |
| MDU-449-JAMESTOWN    | 272       | 1.105745     |
| MDU-463-LANGDON      | 273       | 1.09802      |
| MDU-475-LINTON       | 802       | 0.98899      |
| MDU-478-LINCOLN      | 28        | 1.069074     |
| MDU-494-MEDINA       | 271       | 1.089336     |
| MDU-498-MANDAN       | 28        | 1.069074     |
| MDU-505-MINOT        | 262       | 1.122141     |
| MDU-512-MAX          | 262       | 1.100344     |
| MDU-524-NEW SALEM    | 28        | 1.046507     |
| MDU-532-NEW ROCKFORD | 273       | 1.09802      |
| MDU-539-PARK RIVER   | 273       | 1.121196     |
| MDU-572-RUTHVILLE    | 262       | 1.124071     |
| MDU-574-SANBORN      | 272       | 1.105745     |
| MDU-593-STEELE       | 271       | 1.089336     |
| MDU-598-SHEYENNE     | 273       | 1.116433     |
| MDU-605-SURREY       | 262       | 1.122141     |
| MDU-610-TAPPEN       | 271       | 1.089336     |
| MDU-619-TURTLE LAKE  | 262       | 1.10635      |
| MDU-624-UNDERWOOD    | 262       | 1.10635      |
| MDU-625-VALLEY CITY  | 272       | 1.11347      |
| MDU-629-WALHALLA     | 273       | 1.121196     |
| MDU-646-WASHBURN     | 262       | 1.114246     |
| MDU-647-WILTON       | 262       | 1.100344     |
| MDU-664-RIVERDALE    | 262       | 1.10635      |
| MDU-712-MINOT AFB    | 262       | 1.124071     |
| MDU-717-SPIRITWOOD   | 272       | 1.115461     |
| MDU-732-MSR SITE     | 273       | 1.108633     |
| MDU-303-ALEXANDER    | 25        | 1.125845     |
| MDU-308-ARNEGARD     | 25        | 1.125845     |
| MDU-318-BEACH        | 32        | 1.015623     |
| MDU-319-BELFIELD     | 32        | 1.023084     |
| MDU-330-BOWMAN       | 34        | 1.048526     |

| TOWN                   | HEAT_ZONE | THERM_FACTOR |
|------------------------|-----------|--------------|
| MDU-369-DICKINSON      | 31        | 1.036172     |
| MDU-384-EPPING         | 264       | 1.136235     |
| MDU-407-GLADSTONE      | 31        | 1.036172     |
| MDU-413-GOLVA          | 32        | 1.000702     |
| MDU-429-HEBRON         | 311       | 1.048396     |
| MDU-432-HETTINGER      | 903       | 2.387549     |
| MDU-459-KILLDEER       | 33        | 1.110733     |
| MDU-469-LEFOR          | 31        | 1.036172     |
| MDU-474-LIGNITE        | 263       | 1.016929     |
| MDU-500-MARMARTH       | 34        | 1.056285     |
| MDU-510-MOTT           | 31        | 1.04086      |
| MDU-522-NEW ENGLAND    | 31        | 1.02867      |
| MDU-540-PALERMO        | 262       | 1.098455     |
| MDU-558-RAY            | 264       | 1.137179     |
| MDU-561-REGENT         | 31        | 1.036172     |
| MDU-563-RHAME          | 34        | 1.040767     |
| MDU-564-RICHARDTON     | 311       | 1.02867      |
| MDU-568-ROSS           | 261       | 1.087746     |
| MDU-583-SENTINEL BUTTE | 32        | 1.015623     |
| MDU-588-SOUTH HEART    | 31        | 1.033325     |
| MDU-590-SPRINGBROOK    | 264       | 1.136235     |
| MDU-591-STANLEY        | 261       | 1.095621     |
| MDU-611-TAYLOR         | 31        | 1.033325     |
| MDU-616-TIOGA          | 261       | 1.087746     |
| MDU-620-TRENTON        | 24        | 1.145353     |
| MDU-632-WATFORD CITY   | 25        | 1.125845     |
| MDU-636-WHEELOCK       | 264       | 1.128068     |
| MDU-637-WHITE EARTH    | 261       | 1.09751      |
| MDU-642-WILLISTON      | 24        | 1.144402     |



# GQ Source Daily Summary

January 2013

**Number:** 372

**Pressure Base:** 14.730

**Contract Day:** 1

**Name:** NESSON PLANT-CHARBONNEAU STATION

**Temperature Base:**

**Contract Hour:** 9

| Day | Relative Density | Heating Value Wet | Heating Value Dry | CO2   | N2    | C1     | C2     | C3    | IC4   | NC4   | IC5   | NC5   | C6    | C7    | C8    | C9    | C10   | Wobbe   | CCT |
|-----|------------------|-------------------|-------------------|-------|-------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|-----|
| 1   | 0.7251           | 1181.9            | 1202.8            | 0.772 | 3.567 | 69.400 | 22.443 | 3.586 | 0.081 | 0.139 | 0.006 | 0.005 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 1412.56 |     |
| 2   | 0.7258           | 1181.6            | 1202.5            | 0.775 | 3.640 | 69.259 | 22.510 | 3.582 | 0.081 | 0.140 | 0.006 | 0.005 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 1411.58 |     |
| 3   | 0.7251           | 1181.7            | 1202.6            | 0.739 | 3.632 | 69.264 | 22.626 | 3.515 | 0.078 | 0.134 | 0.006 | 0.005 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 1412.29 |     |
| 4   | 0.7243           | 1182.3            | 1203.3            | 0.693 | 3.591 | 69.217 | 22.912 | 3.382 | 0.072 | 0.122 | 0.006 | 0.004 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 1413.80 |     |
| 5   | 0.7230           | 1179.6            | 1200.5            | 0.708 | 3.610 | 69.494 | 22.599 | 3.385 | 0.071 | 0.122 | 0.006 | 0.005 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 1411.85 |     |
| 6   | 0.7297           | 1182.2            | 1203.2            | 0.960 | 3.692 | 68.931 | 22.317 | 3.847 | 0.089 | 0.153 | 0.007 | 0.005 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 1408.50 |     |
| 7   | 0.7323           | 1182.4            | 1203.3            | 1.087 | 3.732 | 68.721 | 22.207 | 3.961 | 0.100 | 0.177 | 0.009 | 0.007 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 1406.16 |     |
| 8   | 0.7330           | 1182.8            | 1203.7            | 1.106 | 3.739 | 68.682 | 22.144 | 4.030 | 0.102 | 0.181 | 0.009 | 0.007 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 1406.03 |     |
| 9   | 0.7293           | 1182.8            | 1203.7            | 0.931 | 3.662 | 69.209 | 21.950 | 3.927 | 0.110 | 0.192 | 0.009 | 0.007 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 1409.58 |     |
| 10  | 0.7350           | 1185.4            | 1206.4            | 1.145 | 3.711 | 68.544 | 22.071 | 4.198 | 0.112 | 0.200 | 0.010 | 0.007 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 1407.17 |     |
| 11  | 0.7326           | 1181.9            | 1202.8            | 1.130 | 3.727 | 68.773 | 22.056 | 4.007 | 0.104 | 0.185 | 0.009 | 0.007 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 1405.25 |     |
| 12  | 0.7297           | 1184.6            | 1205.6            | 0.905 | 3.630 | 68.978 | 22.292 | 3.944 | 0.088 | 0.151 | 0.007 | 0.005 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 1411.31 |     |
| 13  | 0.7266           | 1181.5            | 1202.4            | 0.855 | 3.607 | 69.227 | 22.425 | 3.659 | 0.079 | 0.136 | 0.006 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1410.58 |     |
| 14  | 0.7287           | 1183.7            | 1204.6            | 0.888 | 3.619 | 69.061 | 22.329 | 3.865 | 0.084 | 0.143 | 0.006 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1411.17 |     |
| 15  | 0.7300           | 1183.8            | 1204.7            | 0.944 | 3.652 | 68.979 | 22.212 | 3.945 | 0.094 | 0.160 | 0.007 | 0.005 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 1410.00 |     |
| 16  | 0.7305           | 1182.0            | 1202.9            | 1.022 | 3.683 | 68.888 | 22.287 | 3.843 | 0.096 | 0.167 | 0.008 | 0.006 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 1407.47 |     |
| 17  | 0.7323           | 1180.6            | 1201.5            | 1.152 | 3.745 | 68.809 | 22.029 | 3.948 | 0.108 | 0.192 | 0.009 | 0.007 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 1404.02 |     |
| 18  | 0.7275           | 1175.2            | 1196.0            | 1.087 | 3.725 | 69.228 | 22.173 | 3.486 | 0.102 | 0.181 | 0.009 | 0.007 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 1402.19 |     |
| 19  | 0.7314           | 1179.0            | 1199.9            | 1.159 | 3.749 | 68.887 | 22.053 | 3.832 | 0.108 | 0.193 | 0.010 | 0.008 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 1402.95 |     |
| 20  | 0.7274           | 1184.0            | 1205.0            | 0.813 | 3.586 | 69.210 | 22.347 | 3.806 | 0.083 | 0.142 | 0.006 | 0.005 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 1412.87 |     |
| 21  | 0.7263           | 1184.7            | 1205.7            | 0.734 | 3.566 | 69.210 | 22.561 | 3.715 | 0.077 | 0.128 | 0.005 | 0.004 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1414.71 |     |
| 22  | 0.7229           | 1179.6            | 1200.5            | 0.691 | 3.615 | 69.684 | 22.266 | 3.526 | 0.078 | 0.130 | 0.006 | 0.004 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 1412.03 |     |
| 23  | 0.7235           | 1178.2            | 1199.1            | 0.773 | 3.639 | 69.608 | 22.261 | 3.501 | 0.077 | 0.130 | 0.006 | 0.005 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 1409.69 |     |
| 24  | 0.7261           | 1183.9            | 1204.9            | 0.750 | 3.570 | 69.237 | 22.541 | 3.692 | 0.075 | 0.125 | 0.005 | 0.004 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 1414.00 |     |
| 25  | 0.7286           | 1185.0            | 1206.0            | 0.847 | 3.589 | 69.069 | 22.382 | 3.864 | 0.087 | 0.149 | 0.007 | 0.005 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 1412.86 |     |
| 26  | 0.7305           | 1187.0            | 1208.1            | 0.877 | 3.600 | 68.884 | 22.382 | 3.976 | 0.098 | 0.169 | 0.008 | 0.006 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 1413.44 |     |
| 27  | 0.7309           | 1182.4            | 1203.3            | 1.045 | 3.661 | 68.973 | 22.072 | 3.956 | 0.101 | 0.177 | 0.009 | 0.007 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 1407.57 |     |
| 28  | 0.7314           | 1182.6            | 1203.6            | 1.060 | 3.671 | 68.899 | 22.111 | 3.959 | 0.102 | 0.181 | 0.009 | 0.007 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 1407.34 |     |
| 29  | 0.7301           | 1182.6            | 1203.5            | 1.008 | 3.637 | 68.993 | 22.208 | 3.861 | 0.100 | 0.177 | 0.009 | 0.007 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 1408.51 |     |
| 30  | 0.7310           | 1189.6            | 1210.7            | 0.835 | 3.546 | 68.908 | 22.298 | 4.141 | 0.096 | 0.163 | 0.007 | 0.005 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 1416.07 |     |
| 31  | 0.7287           | 1187.2            | 1208.3            | 0.771 | 3.580 | 69.021 | 22.454 | 3.935 | 0.085 | 0.142 | 0.006 | 0.005 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 1415.41 |     |
| Avg | 0.7287           | 1183.0            | 1203.6            | 0.912 | 3.644 | 69.072 | 22.307 | 3.802 | 0.091 | 0.157 | 0.007 | 0.006 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 1409.97 |     |

Zone 24, 264

**GQ Source Analysis**

WBI Energy Transmission, Inc.

|                            |                      |                              |         |
|----------------------------|----------------------|------------------------------|---------|
| <b>GQ Source Number:</b>   | 0602160              | <b>Specific Gravity:</b>     | 0.7211  |
| <b>GQ Source Name:</b>     | FAIRVIEW BORDER      | <b>Dry Heat Value:</b>       | 1191.30 |
| <b>Effective Date:</b>     | 12/1/2012 9:00:00 AM | <b>Wet Heat Value:</b>       | 1170.57 |
| <b>Effective End Date:</b> | 2/1/2013 9:00:00 AM  | <b>As Deliv. Heat Value:</b> | 1191.30 |
| <b>Pressure Base:</b>      | 14.730               | <b>Sample Pressure:</b>      | 450.00  |
| <b>Viscosity:</b>          |                      | <b>Sample Temperature:</b>   |         |

|               | <u>Mol %</u> | <u>Liquid Content</u> |           |        | <u>Mol %</u>     |       |
|---------------|--------------|-----------------------|-----------|--------|------------------|-------|
| C1            | Methane      | 70.025                |           | CO2    | Carbon Dioxide   | 0.871 |
| C2            | Ethane       | 21.551                | 5.7463    | N2     | Nitrogen         | 3.695 |
| C3            | Propane      | 3.603                 | 0.9898    | O2     | Oxygen           | 0.000 |
| IC4           | Isobutane    | 0.088                 | 0.0286    | He     | Helium           |       |
| NC4           | n-Butane     | 0.155                 | 0.0488    | H2     | Hydrogen         |       |
| IC5           | Isopentane   | 0.007                 | 0.0027    | H2S    | Hydrogen Sulfide |       |
| NC5           | n-Pentane    | 0.006                 | 0.0020    | Ar     | Argon            |       |
| C6            | Hexanes      | 0.000                 | 0.0000    | CO     | Carbon Monoxide  |       |
| C7            | Heptanes     |                       |           | H2     | Water            |       |
| C8            | Octanes      |                       |           | Neo-C5 | Neopentane       |       |
| C9            | Nonanes      |                       |           |        |                  |       |
| C10           | Decanes      |                       |           |        |                  |       |
| <b>Totals</b> |              | 100.000%              | 6.818 GPM |        |                  |       |

**Sample Date:** 12/31/2012 12:00:00 AM  
**Sample Type:** Composite  
**Sample Tech:** sampler  
**H2S:** ppm

**Sample Remarks:**

**Analysis Tech:** Lab

**Analysis Remarks:**

Zone 241

# GQ Source Analysis

WBI Energy Transmission, Inc.

|                            |                      |                              |         |
|----------------------------|----------------------|------------------------------|---------|
| <b>GQ Source Number:</b>   | 0602230              | <b>Specific Gravity:</b>     | 0.7221  |
| <b>GQ Source Name:</b>     | WATFORD CITY BORDER  | <b>Dry Heat Value:</b>       | 1192.41 |
| <b>Effective Date:</b>     | 12/1/2012 9:00:00 AM | <b>Wet Heat Value:</b>       | 1171.65 |
| <b>Effective End Date:</b> | 2/1/2013 9:00:00 AM  | <b>As Deliv. Heat Value:</b> | 1192.41 |
| <b>Pressure Base:</b>      | 14.730               | <b>Sample Pressure:</b>      | 390.00  |
| <b>Viscosity:</b>          |                      | <b>Sample Temperature:</b>   |         |

|     | <u>Mol %</u> | <u>Liquid Content</u> |        |        | <u>Mol %</u>     |       |
|-----|--------------|-----------------------|--------|--------|------------------|-------|
| C1  | Methane      | 69.904                |        | CO2    | Carbon Dioxide   | 0.890 |
| C2  | Ethane       | 21.606                | 5.7611 | N2     | Nitrogen         | 3.690 |
| C3  | Propane      | 3.646                 | 1.0016 | O2     | Oxygen           | 0.000 |
| IC4 | Isobutane    | 0.090                 | 0.0294 | He     | Helium           |       |
| NC4 | n-Butane     | 0.160                 | 0.0503 | H2     | Hydrogen         |       |
| IC5 | Isopentane   | 0.008                 | 0.0027 | H2S    | Hydrogen Sulfide |       |
| NC5 | n-Pentane    | 0.006                 | 0.0021 | Ar     | Argon            |       |
| C6  | Hexanes      | 0.000                 | 0.0000 | CO     | Carbon Monoxide  |       |
| C7  | Heptanes     |                       |        | H2     | Water            |       |
| C8  | Octanes      |                       |        | Neo-C5 | Neopentane       |       |
| C9  | Nonanes      |                       |        |        |                  |       |
| C10 | Decanes      |                       |        |        |                  |       |

**Totals**      100.000%      6.847 GPM

**Sample Date:** 12/31/2012 12:00:00 AM  
**Sample Type:** Composite  
**Sample Tech:** sampler  
**H2S:** ppm

**Sample Remarks:**

**Analysis Tech:** Lab

**Analysis Remarks:**

Zone 25





**GQ Source Analysis**

WBI Energy Transmission, Inc.

|                            |                      |                              |         |
|----------------------------|----------------------|------------------------------|---------|
| <b>GQ Source Number:</b>   | 2501030              | <b>Specific Gravity:</b>     | 0.6401  |
| <b>GQ Source Name:</b>     | LIGNITE PLANT        | <b>Dry Heat Value:</b>       | 1068.72 |
| <b>Effective Date:</b>     | 12/1/2012 9:00:00 AM | <b>Wet Heat Value:</b>       | 1050.12 |
| <b>Effective End Date:</b> | 2/1/2013 9:00:00 AM  | <b>As Deliv. Heat Value:</b> | 1068.72 |
| <b>Pressure Base:</b>      | 14.730               | <b>Sample Pressure:</b>      | 316.00  |
| <b>Viscosity:</b>          |                      | <b>Sample Temperature:</b>   |         |

|               | <u>Mol %</u> | <u>Liquid Content</u> |           |        | <u>Mol %</u>     |       |
|---------------|--------------|-----------------------|-----------|--------|------------------|-------|
| C1            | Methane      | 82.407                |           | CO2    | Carbon Dioxide   | 0.064 |
| C2            | Ethane       | 12.231                | 3.2614    | N2     | Nitrogen         | 4.665 |
| C3            | Propane      | 0.614                 | 0.1686    | O2     | Oxygen           | 0.000 |
| IC4           | Isobutane    | 0.000                 | 0.0000    | He     | Helium           |       |
| NC4           | n-Butane     | 0.000                 | 0.0000    | H2     | Hydrogen         |       |
| IC5           | Isopentane   | 0.000                 | 0.0000    | H2S    | Hydrogen Sulfide |       |
| NC5           | n-Pentane    | 0.000                 | 0.0000    | Ar     | Argon            |       |
| C6            | Hexanes      | 0.019                 | 0.0087    | CO     | Carbon Monoxide  |       |
| C7            | Heptanes     |                       |           | H2     | Water            |       |
| C8            | Octanes      |                       |           | Neo-C5 | Neopentane       |       |
| C9            | Nonanes      |                       |           |        |                  |       |
| C10           | Decanes      |                       |           |        |                  |       |
| <b>Totals</b> |              | 100.000%              | 3.439 GPM |        |                  |       |

**Sample Date:** 12/31/2012 12:00:00 AM  
**Sample Type:** Composite  
**Sample Tech:** sampler  
**H2S:** ppm

**Sample Remarks:**

**Analysis Tech:** Lab

**Analysis Remarks:**

Zone 263

\*\*\* End of Report \*\*\*

















**GQ Source Analysis**

WBI Energy Transmission, Inc.

|                            |                      |                              |        |
|----------------------------|----------------------|------------------------------|--------|
| <b>GQ Source Number:</b>   | 1201140              | <b>Specific Gravity:</b>     | 0.5728 |
| <b>GQ Source Name:</b>     | ZEAGLE 8B ND LMD     | <b>Dry Heat Value:</b>       | 979.13 |
| <b>Effective Date:</b>     | 6/8/2012 9:00:00 AM  | <b>Wet Heat Value:</b>       | 962.09 |
| <b>Effective End Date:</b> | 1/18/2038 9:14:07 PM | <b>As Deliv. Heat Value:</b> | 979.13 |
| <b>Pressure Base:</b>      | 14.730               | <b>Sample Pressure:</b>      | 28.00  |
| <b>Viscosity:</b>          |                      | <b>Sample Temperature:</b>   |        |

|               | <u>Mol %</u> | <u>Liquid Content</u> |          |           | <u>Mol %</u>     |       |
|---------------|--------------|-----------------------|----------|-----------|------------------|-------|
| C1            | Methane      | 95.902                |          | CO2       | Carbon Dioxide   | 0.106 |
| C2            | Ethane       | 0.323                 | 0.0860   | N2        | Nitrogen         | 3.640 |
| C3            | Propane      | 0.020                 | 0.0054   | O2        | Oxygen           | 0.000 |
| IC4           | Isobutane    | 0.008                 | 0.0026   | He        | Helium           |       |
| NC4           | n-Butane     | 0.001                 | 0.0002   | H2        | Hydrogen         |       |
| IC5           | Isopentane   | 0.000                 | 0.0000   | H2S       | Hydrogen Sulfide |       |
| NC5           | n-Pentane    | 0.000                 | 0.0000   | Ar        | Argon            |       |
| C6            | Hexanes      | 0.000                 | 0.0000   | CO        | Carbon Monoxide  |       |
| C7            | Heptanes     |                       |          | H2        | Water            |       |
| C8            | Octanes      |                       |          | Neo-C5    | Neopentane       |       |
| C9            | Nonanes      |                       |          |           |                  |       |
| C10           | Decanes      |                       |          |           |                  |       |
| <b>Totals</b> |              |                       | 100.000% | 0.094 GPM |                  |       |

**Sample Date:** 6/8/2012 12:00:00 AM  
**Sample Type:** Spot  
**Sample Tech:** MG  
**H2S:** ppm

**Sample Remarks:**

**Analysis Tech:** M. Barney

**Analysis Remarks:**

Zone 35

| <b>NORTH DAKOTA HEATING VALUE ZONES</b> |                         |                                   |
|---|-------------------------|-----------------------------------|
| <b>ZONES</b>                            | <b>MEASURING DEVICE</b> | <b>LOCATION</b>                   |
| 211                                     | Chromatograph           | Sidney Area                       |
| 24                                      | Chromatograph           | Williston Area                    |
| 241                                     | Monthly Sampler         | Fairview Area                     |
| 25                                      | Monthly Sampler         | Watford City Area                 |
| 261                                     | Chromatograph           | Williston – Tioga – Minot Line    |
| 262                                     | Chromatograph           | Minot Area                        |
| 263                                     | Monthly Sampler         | Tioga – Portal                    |
| 264                                     | Chromatograph           | Williston – Ray                   |
| 271                                     | Chromatograph           | Bismarck – Cleveland              |
| 272                                     | Chromatograph           | Cleveland – Mapleton              |
| 273                                     | Chromatograph           | Cleveland – Grafton               |
| 28                                      | Chromatograph           | Bismarck                          |
| 31                                      | Chromatograph           | Dickinson                         |
| 311                                     | Chromatograph           | Taylor Take-Off – Glen Ullin Comp |
| 32                                      | Chromatograph           | Cabin Creek – Dickinson           |
| 33                                      | Chromatograph           | Killdeer                          |
| 34                                      | Chromatograph           | Bowman Area                       |
| 35                                      | Yearly Sampler          | Baker Field – North Dakota        |

MONTANA DAKOTA UTILITIES CO  
NORTH DAKOTA  
HEATING VALUE DATA  
12 MONTH ACCUMULATIVE AT 14.73 psia, 60 f. DRY

| STATE | ZONE | ZONE BOUNDARY                     | 12 MONTH AVERAGE | JAN 13 | DEC 12 | NOV 12 | OCT 12 | SEPT 12 | AUG 12 | JULY 12 | JUNE 12 | MAY 12 | APR 12 | MAR 12 | FEB 12 | ZONE |
|-------|------|-----------------------------------|------------------|--------|--------|--------|--------|---------|--------|---------|---------|--------|--------|--------|--------|------|
| MT/ND | 211  | Sidney Area                       | 1200             | 1203   | 1200   | 1201   | 1200   | 1202    | 1197   | 1197    | 1200    | 1194   | 1196   | 1199   | 1206   | 211  |
| ND    | 24   | Williston Area                    | 1198             | 1204   | 1203   | 1199   | 1195   | 1197    | 1198   | 1203    | 1197    | 1196   | 1194   | 1199   | 1195   | 24   |
| ND    | 25   | Watford City Area                 | 1168             | 1192   | 1192   | 1188   | 1176   | 1183    | 1184   | 1176    | 1151    | 1159   | 1139   | 1138   | 1132   | 25   |
| ND/MT | 241  | Fairview Area                     | 1189             | 1191   | 1191   | 1192   | 1189   | 1191    | 1187   | 1185    | 1191    | 1184   | 1185   | 1189   | 1193   | 241  |
| ND    | 261  | Williston - Tioga - Minot Line    | 1160             | 1160   | 1162   | 1162   | 1164   | 1170    | 1151   | 1161    | 1157    | 1157   | 1155   | 1162   | 1156   | 261  |
| ND    | 262  | Minot Area                        | 1165             | 1163   | 1165   | 1165   | 1171   | 1175    | 1179   | 1163    | 1160    | 1159   | 1157   | 1162   | 1158   | 262  |
| ND    | 263  | Tioga - Portal                    | 1117             | 1069   | 1069   | 1135   | 1140   | 1142    | 1143   | 1132    | 1136    | 1126   | 1099   | 1135   | 1081   | 263  |
| ND    | 264  | Williston - Ray                   | 1198             | 1204   | 1203   | 1199   | 1195   | 1197    | 1198   | 1203    | 1197    | 1196   | 1194   | 1199   | 1195   | 264  |
| ND    | 271  | Bismarck - Cleveland              | 1156             | 1137   | 1147   | 1154   | 1170   | 1173    | 1178   | 1161    | 1157    | 1157   | 1157   | 1154   | 1123   | 271  |
| ND    | 272  | Cleveland - Mapleton              | 1156             | 1138   | 1148   | 1155   | 1171   | 1175    | 1180   | 1162    | 1159    | 1158   | 1156   | 1153   | 1121   | 272  |
| ND    | 273  | Cleveland - Grafton               | 1157             | 1138   | 1149   | 1155   | 1171   | 1175    | 1180   | 1162    | 1159    | 1158   | 1157   | 1153   | 1121   | 273  |
| ND    | 28   | Bismarck - Cabin Creek            | 1135             | 1108   | 1114   | 1104   | 1149   | 1173    | 1178   | 1160    | 1157    | 1157   | 1143   | 1117   | 1065   | 28   |
| ND    | 31   | Dickinson Area                    | 1105             | 1105   | 1110   | 1111   | 1152   | 1074    | 1102   | 1150    | 1092    | 1070   | 1111   | 1114   | 1064   | 31   |
| ND    | 311  | Taylor Take-Off - Glen Ullin Comp |                  | 1105   | 1110   |        |        |         |        |         |         |        |        |        |        |      |
| ND/MT | 32   | Cabin Creek - Dickinson           | 1106             | 1094   | 1099   | 1056   | 1121   | 1131    | 1135   | 1164    | 1152    | 1142   | 1092   | 1047   | 1044   | 32   |
| ND    | 33   | Killdeer                          | 1180             | 1177   | 1176   | 1177   | 1177   | 1180    | 1179   | 1181    | 1184    | 1181   | 1181   | 1183   | 1182   | 33   |
| ND    | 34   | Bowman Area                       | 1131             | 1143   | 1142   | 1142   | 1140   | 1136    | 1130   | 1126    | 1098    | 1134   | 1130   | 1126   | 1126   | 34   |
| ND    | 35   | Baker Field - North Dakota        | 979              | 979    | 979    | 979    | 979    | 979     | 979    | 979     | 979     | 979    | 979    | 979    | 979    | 35   |