



UTILITIES CO.

A Division of MDU Resources Group, Inc.

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

April 15, 2015

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

Re: Case No. 11,006 (Therm Billing)
Monthly Report – February 2015

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 and pursuant to the North Dakota Administrative Code 69-09-01-02, part 2.

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 March 2015.
2. Attachment B consists of copies of the monthly Heating Value Test Reports received from our suppliers for the month of February 2015.
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.
5. Attachment E provides a brief explanation of the thermal variances, where applicable, for the month of February 2015.

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,

A handwritten signature in dark ink, appearing to read 'Tamie Aberle', is written over a light-colored background.

Tamie Aberle
Director of Regulatory Affairs

Montana-Dakota Utilities Co.
Therm Billing Factors - North Dakota
March 2015

Town	Heat Zone	Therm Factor
MDU-303-ALEXANDER	025	1.1296
MDU-308-ARNEGARD	025	1.1296
MDU-314-APPLE VALLEY	271	1.0990
MDU-318-BEACH	032	0.9971
MDU-319-BELFIELD	032	1.0045
MDU-323-BERTHOLD	262	1.1079
MDU-327-BISMARCK	028	1.0433
MDU-330-BOWMAN	034	0.9797
MDU-337-BURLINGTON	262	1.1318
MDU-343-CARRINGTON	273	1.0971
MDU-344-CLEVELAND	272	1.0893
MDU-364-CAVALIER	273	1.1202
MDU-365-DAWSON	271	1.0913
MDU-368-DES LACS	262	1.1159
MDU-369-DICKINSON	031	1.0230
MDU-374-FT TOTTEN	273	1.1048
MDU-375-DEVILS LAKE	273	1.1048
MDU-379-BARLOW	273	1.0971
MDU-384-EPPING	264	1.1145
MDU-387-ELDRIDGE	272	1.0971
MDU-407-GLADSTONE	031	1.0230
MDU-411-GLEN ULLIN	311	1.0295
MDU-413-GOLVA	032	0.9825
MDU-416-GARRISON	262	1.1159
MDU-417-GRAFTON	273	1.1279
MDU-421-HALLIDAY	031	1.0230
MDU-429-HEBRON	311	1.0295
MDU-432-HETTINGER	903	2.3875
MDU-449-JAMESTOWN	272	1.1048
MDU-459-KILLDEER	033	1.1117
MDU-463-LANGDON	273	1.0971
MDU-469-LEFOR	031	1.0230
MDU-474-LIGNITE	263	1.0664
MDU-475-LINTON	802	1.0170
MDU-478-LINCOLN	028	1.0507
MDU-488-MCKENZIE	271	1.0990
MDU-494-MEDINA	271	1.0913
MDU-498-MANDAN	028	1.0507
MDU-500-MARMARTH	034	0.9870
MDU-505-MINOT	262	1.1318
MDU-510-MOTT	031	1.0230
MDU-512-MAX	262	1.1079
MDU-522-NEW ENGLAND	031	1.0156
MDU-524-NEW SALEM	028	1.0286
MDU-532-NEW ROCKFORD	273	1.0971
MDU-539-PARK RIVER	273	1.1202
MDU-540-PALERMO	262	1.1079
MDU-558-RAY	264	1.1145
MDU-561-REGENT	031	1.0230

MDU-563-RHAME	034	0.9725
MDU-564-RICHARDTON	311	1.0147
MDU-568-ROSS	261	0.9415
MDU-572-RUTHVILLE	262	1.1318
MDU-574-SANBORN	272	1.1048
MDU-583-SENTINEL BUTTE	032	0.9971
MDU-588-SOUTH HEART	031	1.0156
MDU-717-SPIRITWOOD	272	1.1048
MDU-590-SPRINGBROOK	264	1.1145
MDU-591-STANLEY	261	0.9483
MDU-593-STEELE	271	1.0913
MDU-598-SHEYENNE	273	1.1048
MDU-605-SURREY	262	1.1318
MDU-610-TAPPEN	271	1.0913
MDU-611-TAYLOR	031	1.0277
MDU-616-TIOGA	261	0.9483
MDU-619-TURTLE LAKE	262	1.1159
MDU-620-TRENTON	024	1.1225
MDU-624-UNDERWOOD	262	1.1159
MDU-625-VALLEY CITY	272	1.1125
MDU-629-WALHALLA	273	1.1202
MDU-632-WATFORD CITY	610	1.1240
MDU-636-WHEELOCK	264	1.1065
MDU-637-WHITE EARTH	261	0.9483
MDU-642-WILLISTON	024	1.1225
MDU-646-WASHBURN	262	1.1238
MDU-647-WILTON	262	1.1079
MDU-664-RIVERDALE	262	1.1159
MDU-691-FAIRVIEW	241	1.1435
MDU-712-MINOT AFB	262	1.1318
MDU-718-FAIRMOUNT	600	1.1090
MDU-732-NEKOMA	273	1.0971
MDU-732-MSR SITE	273	1.1086

GQ Source Analysis

GQ Source Number:	0602160	Specific Gravity:	0.7300
GQ Source Name:	FAIRVIEW BORDER	Dry Heat Value:	1201.81
Effective Date:	2/1/2015 9:00:00 AM	Wet Heat Value:	1180.89
Effective End Date:	1/18/2038 9:14:07 PM	As Deliv. Heat Value:	1201.81
Pressure Base:	14.730	Sample Pressure:	316.00
Viscosity:		Sample Temperature:	

		<u>Mol %</u>	<u>Liquid Content</u>			<u>Mol %</u>
C1	Methane	68.961		CO2	Carbon Dioxide	1.063
C2	Ethane	22.006	5.8678	N2	Nitrogen	3.600
C3	Propane	4.034	1.1080	O2	Oxygen	0.010
IC4	Isobutane	0.113	0.0369	He	Helium	
NC4	n-Butane	0.195	0.0612	H2	Hydrogen	
IC5	Isopentane	0.010	0.0038	H2S	Hydrogen Sulfide	
NC5	n-Pentane	0.008	0.0030	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% 7.081 GPM

Sample Date: 3/2/2015 12:00:00 AM
Sample Type: Composite
Sample Tech: sampler
H2S: ppm

Sample Remarks:

Analysis Tech: MB

Analysis Remarks:

Zone 241

GQ Source Analysis

GQ Source Number:	0602230	Specific Gravity:	0.7184
GQ Source Name:	WATFORD CITY BORDER	Dry Heat Value:	1196.11
Effective Date:	2/1/2015 9:00:00 AM	Wet Heat Value:	1175.30
Effective End Date:	1/18/2038 9:14:07 PM	As Deliv. Heat Value:	1196.11
Pressure Base:	14.730	Sample Pressure:	341.00
Viscosity:		Sample Temperature:	

	<u>Mol %</u>	<u>Liquid Content</u>		<u>Mol %</u>	
C1	Methane	69.888	CO2	Carbon Dioxide	0.980
C2	Ethane	23.370	N2	Nitrogen	2.996
C3	Propane	2.352	O2	Oxygen	0.000
IC4	Isobutane	0.123	He	Helium	
NC4	n-Butane	0.243	H2	Hydrogen	
IC5	Isopentane	0.022	H2S	Hydrogen Sulfide	
NC5	n-Pentane	0.023	Ar	Argon	
C6	Hexanes	0.002	CO	Carbon Monoxide	
C7	Heptanes		H2	Water	
C8	Octanes		Neo-C5	Neopentane	
C9	Nonanes				
C10	Decanes				
		Totals	100.000%	7.011 GPM	

Sample Date: 3/2/2015 12:00:00 AM
Sample Type: Composite
Sample Tech: sampler
H2S: ppm

Sample Remarks:

Analysis Tech: MB

Analysis Remarks:

Zone 25

GQ Source Analysis

GQ Source Number:	2501030	Specific Gravity:	0.6714
GQ Source Name:	LIGNITE PLANT	Dry Heat Value:	1121.44
Effective Date:	2/1/2015 9:00:00 AM	Wet Heat Value:	1101.93
Effective End Date:	1/18/2038 9:14:07 PM	As Deliv. Heat Value:	1121.44
Pressure Base:	14.730	Sample Pressure:	364.00
Viscosity:		Sample Temperature:	

	<u>Mol %</u>	<u>Liquid Content</u>			<u>Mol %</u>	
C1	Methane	77.170		CO2	Carbon Dioxide	0.339
C2	Ethane	16.956	0.0000	N2	Nitrogen	4.021
C3	Propane	1.442	0.3961	O2	Oxygen	0.008
IC4	Isobutane	0.022	0.0073	He	Helium	
NC4	n-Butane	0.037	0.0116	H2	Hydrogen	
IC5	Isopentane	0.002	0.0008	H2S	Hydrogen Sulfide	
NC5	n-Pentane	0.002	0.0006	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% 0.416 GPM

Sample Date: 3/2/2015 12:00:00 AM
Sample Type: Composite
Sample Tech: sampler
H2S: ppm

Sample Remarks:

Analysis Tech: MB

Analysis Remarks:

Zone 263

*** End of Report ***

GQ Source Daily Summary

February 2015

Number: 063	Pressure Base: 14.730	Contract Day: 1
Name: CLEVELAND STATION-MAPLETON	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	0.6901	1115.6	1135.3	0.470	4.776	75.506	16.149	2.773	0.101	0.201	0.013	0.011	0.000					1366.66	
2	0.6886	1112.8	1132.5	0.478	4.787	75.802	15.857	2.750	0.101	0.201	0.013	0.011	0.000					1364.84	
3	0.6939	1120.1	1140.0	0.492	4.818	74.837	16.672	2.848	0.103	0.204	0.013	0.011	0.000					1368.54	
4	0.6884	1112.3	1132.0	0.545	4.704	76.017	15.576	2.813	0.108	0.211	0.014	0.012	0.000					1364.30	
5	0.6935	1118.0	1137.8	0.506	4.896	75.010	16.321	2.921	0.107	0.213	0.014	0.012	0.000					1366.23	
6	0.7004	1126.1	1146.1	0.556	4.964	73.981	16.957	3.146	0.121	0.244	0.016	0.014	0.000					1369.47	
7	0.7080	1135.5	1155.6	0.577	5.078	72.590	18.049	3.311	0.121	0.245	0.015	0.014	0.000					1373.39	
8	0.7093	1137.2	1157.3	0.566	5.114	72.251	18.398	3.290	0.118	0.234	0.015	0.013	0.000					1374.20	
9	0.7039	1130.9	1151.0	0.528	5.044	73.119	17.820	3.137	0.109	0.216	0.014	0.012	0.000					1371.88	
10	0.7066	1132.4	1152.5	0.561	5.157	72.834	17.734	3.332	0.118	0.235	0.015	0.013	0.000					1371.06	
11	0.6976	1123.3	1143.2	0.516	4.944	74.190	17.048	2.974	0.102	0.200	0.014	0.012	0.000					1368.68	
12	0.6779	1098.4	1117.9	0.477	4.662	77.514	14.702	2.374	0.082	0.164	0.013	0.011	0.000					1357.75	
13	0.6845	1106.5	1126.1	0.519	4.725	76.440	15.468	2.549	0.090	0.183	0.014	0.012	0.000					1361.13	
14	0.6824	1106.7	1126.3	0.499	4.555	76.716	15.513	2.435	0.085	0.171	0.014	0.012	0.000					1363.36	
15	0.6821	1102.9	1122.4	0.525	4.719	76.921	14.987	2.548	0.090	0.184	0.014	0.012	0.000					1358.98	
16	0.6912	1113.1	1132.8	0.576	4.871	75.434	15.956	2.832	0.099	0.203	0.015	0.013	0.000					1362.53	
17	0.6833	1107.1	1126.7	0.496	4.617	76.661	15.372	2.566	0.090	0.174	0.013	0.011	0.000					1362.99	
18	0.6805	1102.6	1122.1	0.506	4.608	77.162	14.958	2.485	0.088	0.170	0.013	0.011	0.000					1360.30	
19	0.6877	1110.3	1129.9	0.550	4.754	75.990	15.687	2.700	0.095	0.196	0.014	0.013	0.000					1362.54	
20	0.6947	1117.0	1136.8	0.593	4.932	74.824	16.412	2.894	0.101	0.215	0.015	0.014	0.000					1363.90	
21	0.6980	1122.0	1141.8	0.592	4.946	74.239	16.889	2.985	0.103	0.217	0.015	0.014	0.000					1366.67	
22	0.6806	1102.3	1121.8	0.549	4.574	77.304	14.708	2.562	0.092	0.185	0.014	0.012	0.000					1359.77	
23	0.6866	1108.6	1128.2	0.593	4.688	76.367	15.241	2.780	0.101	0.202	0.015	0.013	0.000					1361.54	
24	0.7029	1126.3	1146.2	0.631	5.078	73.608	17.033	3.270	0.116	0.234	0.015	0.014	0.000					1367.17	
25	0.6992	1125.7	1145.7	0.591	4.828	74.128	17.015	3.080	0.111	0.219	0.015	0.014	0.000					1370.11	
26	0.6931	1120.2	1140.0	0.577	4.613	75.181	16.388	2.904	0.105	0.205	0.015	0.013	0.000					1369.35	
27	0.6920	1117.9	1137.7	0.555	4.677	75.223	16.448	2.774	0.100	0.197	0.014	0.013	0.000					1367.74	
28	0.7002	1125.3	1145.3	0.603	4.925	74.010	16.952	3.145	0.112	0.225	0.015	0.014	0.000					1368.68	
Avg	0.6928	1117.0	1136.8	0.544	4.823	75.138	16.297	2.864	0.102	0.205	0.014	0.013	0.000					1365.85	

Zone 272

GQ Source Daily Summary

February 2015

Number: 061

Pressure Base: 14.730

Contract Day: 1

Name: CLEVELAND STATION-GRAFTON BORDER

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	0.6904	1116.2	1135.9	0.471	4.766	75.466	16.183	2.786	0.102	0.203	0.013	0.011	0.000	0.000	0.000	0.000	0.000	1367.10	
2	0.6889	1113.5	1133.2	0.477	4.776	75.762	15.893	2.762	0.102	0.203	0.013	0.011	0.000	0.000	0.000	0.000	0.000	1365.32	
3	0.6943	1120.9	1140.8	0.494	4.806	74.779	16.724	2.863	0.104	0.205	0.014	0.012	0.000	0.000	0.000	0.000	0.000	1369.08	
4	0.6888	1113.0	1132.7	0.546	4.690	75.968	15.626	2.823	0.109	0.212	0.014	0.012	0.000	0.000	0.000	0.000	0.000	1364.84	
5	0.6938	1118.5	1138.3	0.507	4.883	74.976	16.356	2.930	0.108	0.214	0.014	0.012	0.000	0.000	0.000	0.000	0.000	1366.68	
6	0.7006	1126.7	1146.7	0.556	4.950	73.951	16.987	3.157	0.122	0.246	0.016	0.015	0.000	0.000	0.000	0.000	0.000	1369.94	
7	0.7083	1136.2	1156.3	0.577	5.065	72.543	18.092	3.326	0.121	0.246	0.015	0.014	0.000	0.000	0.000	0.000	0.000	1373.94	
8	0.7097	1138.0	1158.2	0.567	5.100	72.192	18.454	3.305	0.119	0.235	0.015	0.013	0.000	0.000	0.000	0.000	0.000	1374.81	
9	0.7042	1131.7	1151.7	0.529	5.030	73.068	17.871	3.149	0.110	0.217	0.014	0.012	0.000	0.000	0.000	0.000	0.000	1372.45	
10	0.7069	1132.9	1153.0	0.563	5.150	72.801	17.757	3.346	0.119	0.237	0.015	0.013	0.000	0.000	0.000	0.000	0.000	1371.39	
11	0.6980	1124.1	1144.0	0.516	4.928	74.138	17.097	2.989	0.103	0.202	0.014	0.012	0.000	0.000	0.000	0.000	0.000	1369.30	
12	0.6781	1098.9	1118.4	0.478	4.654	77.484	14.729	2.383	0.083	0.166	0.013	0.011	0.000	0.000	0.000	0.000	0.000	1358.11	
13	0.6847	1107.1	1126.7	0.519	4.713	76.404	15.504	2.559	0.090	0.184	0.014	0.012	0.000	0.000	0.000	0.000	0.000	1361.57	
14	0.6828	1107.3	1126.9	0.501	4.548	76.659	15.558	2.450	0.086	0.172	0.014	0.012	0.000	0.000	0.000	0.000	0.000	1363.79	
15	0.6825	1103.4	1123.0	0.526	4.712	76.873	15.029	2.558	0.091	0.185	0.014	0.012	0.000	0.000	0.000	0.000	0.000	1359.37	
16	0.6915	1113.6	1133.3	0.578	4.860	75.405	15.983	2.842	0.100	0.204	0.015	0.013	0.000	0.000	0.000	0.000	0.000	1362.90	
17	0.6836	1107.6	1127.3	0.497	4.608	76.620	15.408	2.576	0.090	0.175	0.013	0.011	0.000	0.000	0.000	0.000	0.000	1363.39	
18	0.6808	1103.2	1122.7	0.507	4.597	77.118	14.999	2.496	0.088	0.171	0.013	0.011	0.000	0.000	0.000	0.000	0.000	1360.76	
19	0.6880	1110.8	1130.5	0.550	4.745	75.950	15.725	2.709	0.096	0.197	0.014	0.013	0.000	0.000	0.000	0.000	0.000	1362.94	
20	0.6949	1117.5	1137.2	0.594	4.921	74.799	16.437	2.902	0.102	0.216	0.015	0.014	0.000	0.000	0.000	0.000	0.000	1364.26	
21	0.6958	1118.1	1137.9	0.592	4.972	74.502	16.743	2.876	0.095	0.196	0.013	0.011	0.000	0.000	0.000	0.000	0.000	1364.14	
22	0.6807	1102.5	1122.0	0.550	4.566	77.286	14.731	2.564	0.092	0.184	0.014	0.012	0.000	0.000	0.000	0.000	0.000	1359.97	
23	0.6869	1109.1	1128.8	0.595	4.678	76.331	15.273	2.790	0.101	0.203	0.015	0.014	0.000	0.000	0.000	0.000	0.000	1361.94	
24	0.7032	1126.9	1146.9	0.632	5.066	73.562	17.076	3.283	0.116	0.235	0.016	0.014	0.000	0.000	0.000	0.000	0.000	1367.70	
25	0.6985	1124.7	1144.6	0.592	4.827	74.196	16.996	3.045	0.107	0.211	0.014	0.012	0.000	0.000	0.000	0.000	0.000	1369.50	
26	0.6933	1120.6	1140.5	0.577	4.606	75.146	16.419	2.914	0.105	0.205	0.015	0.013	0.000	0.000	0.000	0.000	0.000	1369.69	
27	0.6924	1118.8	1138.6	0.556	4.664	75.165	16.501	2.787	0.101	0.199	0.014	0.013	0.000	0.000	0.000	0.000	0.000	1368.34	
28	0.7006	1126.2	1146.1	0.603	4.910	73.952	17.007	3.159	0.112	0.226	0.015	0.014	0.000	0.000	0.000	0.000	0.000	1369.30	
Avg	0.6929	1117.0	1137.2	0.545	4.814	75.111	16.327	2.869	0.103	0.205	0.014	0.013	0.000	0.000	0.000	0.000	0.000	1366.16	

Zone 213

GQ Source Daily Summary

February 2015

Number: 041

Pressure Base: 14.730

Contract Day: 1

Name: BISMARCK STATION-GLEN ULLIN STATION

Temperature Base:

Contract Hour: 9

Day	Relative Density	Heating Value Wet	Heating Value Dry	CO2	N2	C1	C2	C3	IC4	NC4	ICS	NCS	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.6482	1075.6	1094.7	0.279	3.569	82.053	12.806	1.183	0.042	0.051	0.010	0.006	0.000	0.000	0.000	0.000	0.000	1359.62	
2	0.6489	1076.5	1095.6	0.281	3.572	81.900	12.979	1.162	0.040	0.049	0.010	0.006	0.000	0.000	0.000	0.000	0.000	1360.08	
3	0.6498	1076.3	1095.4	0.321	3.610	81.783	12.985	1.190	0.042	0.052	0.010	0.006	0.000	0.000	0.000	0.000	0.000	1358.88	
4	0.6534	1080.7	1099.8	0.404	3.557	81.550	12.838	1.481	0.060	0.089	0.012	0.008	0.000	0.000	0.000	0.000	0.000	1360.58	
5	0.6456	1071.1	1090.1	0.295	3.574	82.621	12.230	1.153	0.046	0.062	0.012	0.007	0.000	0.000	0.000	0.000	0.000	1356.66	
6	0.6590	1090.5	1109.8	0.405	3.481	80.459	13.994	1.481	0.063	0.094	0.014	0.009	0.000	0.000	0.000	0.000	0.000	1367.13	
7	0.6587	1095.5	1114.9	0.299	3.311	79.880	15.313	1.105	0.036	0.039	0.010	0.006	0.000	0.000	0.000	0.000	0.000	1373.75	
8	0.6619	1099.4	1118.8	0.295	3.386	79.432	15.467	1.317	0.045	0.042	0.010	0.005	0.000	0.000	0.000	0.000	0.000	1375.19	
9	0.6546	1088.1	1107.4	0.242	3.470	80.562	14.563	1.091	0.031	0.027	0.009	0.005	0.000	0.000	0.000	0.000	0.000	1368.65	
10	0.6441	1071.2	1090.2	0.256	3.488	82.592	12.629	0.965	0.030	0.025	0.009	0.004	0.000	0.000	0.000	0.000	0.000	1358.33	
11	0.6438	1068.3	1087.2	0.278	3.601	82.698	12.360	0.983	0.032	0.034	0.009	0.005	0.000	0.000	0.000	0.000	0.000	1355.01	
12	0.6345	1053.2	1071.8	0.299	3.621	84.510	10.609	0.878	0.033	0.036	0.009	0.005	0.000	0.000	0.000	0.000	0.000	1345.52	
13	0.6378	1058.6	1077.4	0.328	3.554	83.966	11.109	0.951	0.036	0.040	0.010	0.005	0.000	0.000	0.000	0.000	0.000	1348.98	
14	0.6375	1057.2	1076.0	0.336	3.591	84.041	10.980	0.966	0.034	0.038	0.009	0.004	0.000	0.000	0.000	0.000	0.000	1347.62	
15	0.6341	1050.1	1068.7	0.417	3.581	84.815	10.159	0.928	0.039	0.045	0.010	0.005	0.000	0.000	0.000	0.000	0.000	1342.15	
16	0.6376	1057.4	1076.1	0.358	3.560	84.034	11.020	0.941	0.035	0.038	0.009	0.005	0.000	0.000	0.000	0.000	0.000	1347.66	
17	0.6406	1063.3	1082.2	0.334	3.516	83.402	11.707	0.956	0.034	0.037	0.009	0.005	0.000	0.000	0.000	0.000	0.000	1352.10	
18	0.6370	1057.2	1075.9	0.361	3.516	84.109	11.029	0.893	0.036	0.040	0.010	0.006	0.000	0.000	0.000	0.000	0.000	1348.01	
19	0.6363	1056.9	1075.6	0.407	3.392	84.362	10.833	0.911	0.037	0.041	0.010	0.006	0.000	0.000	0.000	0.000	0.000	1348.42	
20	0.6383	1061.3	1080.1	0.445	3.263	83.988	11.301	0.915	0.035	0.037	0.010	0.006	0.000	0.000	0.000	0.000	0.000	1351.81	
21	0.6427	1067.4	1086.3	0.403	3.360	83.197	11.901	1.038	0.040	0.045	0.011	0.006	0.000	0.000	0.000	0.000	0.000	1355.04	
22	0.6340	1052.2	1070.8	0.475	3.357	85.001	10.084	0.966	0.045	0.054	0.011	0.007	0.000	0.000	0.000	0.000	0.000	1344.90	
23	0.6324	1051.1	1069.7	0.480	3.266	85.274	9.974	0.893	0.044	0.050	0.012	0.007	0.000	0.000	0.000	0.000	0.000	1345.15	
24	0.6390	1062.3	1081.1	0.474	3.217	84.025	11.178	0.991	0.045	0.050	0.012	0.007	0.000	0.000	0.000	0.000	0.000	1352.43	
25	0.6521	1084.4	1103.6	0.441	3.156	81.505	13.589	1.203	0.042	0.047	0.011	0.006	0.000	0.000	0.000	0.000	0.000	1366.58	
26	0.6487	1077.6	1096.7	0.454	3.230	82.221	12.765	1.216	0.044	0.053	0.010	0.006	0.000	0.000	0.000	0.000	0.000	1361.58	
27	0.6443	1069.5	1088.5	0.438	3.326	82.991	12.038	1.091	0.045	0.053	0.011	0.007	0.000	0.000	0.000	0.000	0.000	1356.08	
28	0.6491	1079.0	1098.1	0.443	3.194	82.149	12.885	1.213	0.045	0.053	0.011	0.007	0.000	0.000	0.000	0.000	0.000	1363.00	
Avg	0.6444	1070.0	1088.7	0.366	3.440	82.826	12.190	1.074	0.041	0.047	0.010	0.006	0.000	0.000	0.000	0.000	0.000	1356.10	

Zone 28

GQ Source Analysis

GQ Source Number:	0202080	Specific Gravity:	0.6459
GQ Source Name:	RICHARDTON-GLEN ULLIN COMPRE	Dry Heat Value:	1090.32
Effective Date:	2/1/2015 9:00:00 AM	Wet Heat Value:	1071.34
Effective End Date:	1/18/2038 9:14:00 PM	As Deliv. Heat Value:	
Pressure Base:	14.730	Sample Pressure:	336.00
Viscosity:		Sample Temperature:	0.00

	<u>Mol %</u>	<u>Liquid Content</u>		<u>Mol %</u>	
C1	Methane	82.486	CO2	Carbon Dioxide	0.344
C2	Ethane	12.456	N2	Nitrogen	3.508
C3	Propane	1.092	O2	Oxygen	
IC4	Isobutane	0.040	He	Helium	
NC4	n-Butane	0.048	H2	Hydrogen	
IC5	Isopentane	0.010	H2S	Hydrogen Sulfide	
NC5	n-Pentane	0.006	Ar	Argon	
C6	Hexanes	0.010	CO	Carbon Monoxide	
C7	Heptanes		H2	Water	
C8	Octanes		Neo-C5	Neopentane	
C9	Nonanes				
C10	Decanes				

Totals 100.000% 3.659 GPM

Sample Date: 5/1/2014 10:29:00 AM
Sample Type: Composite
Sample Tech: RR
H2S: ppm

Sample Remarks:

Analysis Tech: MB

Analysis Remarks:

Zone 311

GQ Source Daily Summary

February 2015

Number: 111

Pressure Base: 14.730

Contract Day: 1

Name: LITTLE KNIFE-BELFIELD TRANSFER

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	0.6840	1156.7	1177.1	0.002	2.434	73.674	23.380	0.498	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1423.28	
2	0.6841	1156.3	1176.8	0.002	2.462	73.676	23.331	0.517	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1422.76	
3	0.6841	1156.2	1176.6	0.001	2.467	73.673	23.344	0.502	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1422.64	
4	0.6851	1157.4	1177.9	0.000	2.489	73.503	23.461	0.529	0.006	0.010	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1423.07	
5	0.6843	1156.2	1176.7	0.000	2.490	73.632	23.339	0.526	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1422.44	
6	0.6850	1157.4	1177.9	0.001	2.484	73.505	23.457	0.541	0.006	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1423.16	
7	0.6842	1156.1	1176.6	0.001	2.482	73.719	23.207	0.577	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1422.42	
8	0.6844	1156.8	1177.3	0.000	2.465	73.653	23.305	0.563	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1423.03	
9	0.6842	1156.5	1177.0	0.000	2.464	73.655	23.342	0.526	0.006	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1422.87	
10	0.6844	1156.8	1177.2	0.000	2.464	73.609	23.402	0.512	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1423.01	
11	0.6840	1155.9	1176.3	0.000	2.482	73.665	23.350	0.491	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1422.33	
12	0.6845	1156.3	1176.8	0.000	2.501	73.574	23.416	0.495	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1422.35	
13	0.6844	1156.3	1176.8	0.000	2.494	73.605	23.367	0.521	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1422.46	
14	0.6841	1156.2	1176.6	0.000	2.476	73.618	23.423	0.470	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1422.57	
15	0.6846	1156.8	1177.3	0.000	2.477	73.575	23.419	0.516	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1422.90	
16	0.6843	1156.6	1177.1	0.000	2.468	73.606	23.419	0.494	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1422.88	
17	0.6838	1155.8	1176.3	0.000	2.472	73.665	23.396	0.455	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1422.40	
18	0.6846	1156.7	1177.2	0.000	2.488	73.548	23.446	0.504	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1422.75	
19	0.6838	1155.2	1175.7	0.000	2.498	73.726	23.262	0.502	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1421.78	
20	0.6847	1157.0	1177.5	0.000	2.479	73.543	23.453	0.512	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1423.00	
21	0.6838	1155.4	1175.9	0.000	2.490	73.674	23.371	0.454	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1421.98	
22	0.6836	1155.1	1175.6	0.000	2.486	73.705	23.356	0.440	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1421.88	
23	0.6845	1156.7	1177.2	0.000	2.475	73.567	23.460	0.485	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1422.86	
24	0.6838	1155.8	1176.3	0.000	2.467	73.685	23.365	0.471	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1422.48	
25	0.6848	1156.5	1177.0	0.000	2.512	73.504	23.482	0.489	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1422.37	
26	0.6846	1156.0	1176.5	0.000	2.533	73.539	23.418	0.499	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1421.84	
27	0.6854	1157.1	1177.6	0.000	2.536	73.406	23.526	0.519	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1422.41	
28	0.6847	1155.8	1176.3	0.000	2.552	73.520	23.415	0.500	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1421.50	
Avg	0.6844	1156.0	1176.8	0.000	2.485	73.608	23.390	0.504	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1422.55	

Zone 33

GQ Source Analysis

GQ Source Number:	1202160	Specific Gravity:	0.6969
GQ Source Name:	BOWMAN BORDER	Dry Heat Value:	1068.09
Effective Date:	2/1/2015 9:00:00 AM	Wet Heat Value:	1049.50
Effective End Date:	1/18/2038 9:14:07 PM	As Deliv. Heat Value:	1068.09
Pressure Base:	14.730	Sample Pressure:	
Viscosity:		Sample Temperature:	

	<u>Mol %</u>	<u>Liquid Content</u>		<u>Mol %</u>	
C1	Methane	73.543	CO2	Carbon Dioxide	1.259
C2	Ethane	14.642	N2	Nitrogen	8.254
C3	Propane	1.968	O2	Oxygen	
IC4	Isobutane	0.077	He	Helium	
NC4	n-Butane	0.209	H2	Hydrogen	
IC5	Isopentane	0.014	H2S	Hydrogen Sulfide	
NC5	n-Pentane	0.027	Ar	Argon	
C6	Hexanes	0.007	CO	Carbon Monoxide	
C7	Heptanes		H2	Water	
C8	Octanes		Neo-C5	Neopentane	
C9	Nonanes				
C10	Decanes				

Totals 100.000% 4.554 GPM

Sample Date: 4/1/2014 1:01:00 PM
Sample Type: Composite
Sample Tech: MIKE GENTILINI
H2S: ppm

Sample Remarks:

Analysis Tech: MIKE GENTILINI

Analysis Remarks:

Zone 34

Feb-15

ZONE 610

Watford City

01320

Watford City Border

01312

Watford City East Border

Weighted

Begin Date	End Date	BTU			BTU			AVG BTU	
		MCF	DK	Zone 25	MCF	DK	Zone 43		
2/1/2015	2/2/2015	571	683	1.196	1061	1266	1.194	1.195	2/1/2015
2/2/2015	2/3/2015	542	649	1.196	1070	1263	1.181	1.186	2/2/2015
2/3/2015	2/4/2015	602	720	1.196	1146	1358	1.185	1.189	2/3/2015
2/4/2015	2/5/2015	598	715	1.196	1000	1191	1.189	1.192	2/4/2015
2/5/2015	2/6/2015	453	541	1.196	755	899	1.192	1.194	2/5/2015
2/6/2015	2/7/2015	439	525	1.196	898	1077	1.200	1.199	2/6/2015
2/7/2015	2/8/2015	321	384	1.196	838	1013	1.208	1.205	2/7/2015
2/8/2015	2/9/2015	412	493	1.196	561	668	1.190	1.193	2/8/2015
2/9/2015	2/10/2015	431	516	1.196	525	625	1.193	1.194	2/9/2015
2/10/2015	2/11/2015	565	676	1.196	890	1057	1.187	1.190	2/10/2015
2/11/2015	2/12/2015	613	733	1.196	833	992	1.192	1.194	2/11/2015
2/12/2015	2/13/2015	440	526	1.196	656	776	1.184	1.189	2/12/2015
2/13/2015	2/14/2015	423	506	1.196	688	818	1.189	1.192	2/13/2015
2/14/2015	2/15/2015	620	742	1.196	752	898	1.194	1.195	2/14/2015
2/15/2015	2/16/2015	456	545	1.196	613	727	1.189	1.192	2/15/2015
2/16/2015	2/17/2015	569	681	1.196	926	1105	1.194	1.195	2/16/2015
2/17/2015	2/18/2015	659	789	1.196	870	1034	1.192	1.194	2/17/2015
2/18/2015	2/19/2015	552	660	1.196	1028	1222	1.188	1.191	2/18/2015
2/19/2015	2/20/2015	404	483	1.196	909	1072	1.179	1.184	2/19/2015
2/20/2015	2/21/2015	467	559	1.196	741	874	1.180	1.186	2/20/2015
2/21/2015	2/22/2015	640	766	1.196	964	1144	1.186	1.190	2/21/2015
2/22/2015	2/23/2015	665	795	1.196	1047	1232	1.177	1.184	2/22/2015
2/23/2015	2/24/2015	497	595	1.196	808	956	1.185	1.189	2/23/2015
2/24/2015	2/25/2015	486	581	1.196	947	1113	1.175	1.182	2/24/2015
2/25/2015	2/26/2015	651	779	1.196	1171	1388	1.185	1.189	2/25/2015
2/26/2015	2/27/2015	666	797	1.196	1432	1680	1.173	1.180	2/26/2015
2/27/2015	2/28/2015	553	661	1.196	1289	1514	1.175	1.181	2/27/2015
2/28/2015	3/1/2015	577	690	1.196	1130	1329	1.175	1.182	2/28/2015
		14,872	17,790		25,548	30,291	1.1868	1.1902	

ROW ID	LOCATION DESCRIPTION	CROSS HEATING VALUE (BTU/SCF)	SPECIFIC GRAVITY	WOBBE (BTU)	WILCOXENTHERM (deg F)	NITROGEN (mole percent)	CARBON DIOXIDE (mole percent)	METHANE (mole percent)	ETHANE (mole percent)	PROPANE (mole percent)	NORMAL BUTANE (mole percent)	ISO BUTANE (mole percent)	PENTANE (mole percent)	ISO PENTANE (mole percent)	NEO PENTANE (mole percent)	HEXANES PLUS (mole percent)	HYDROGEN (mole percent)	HELIUM (mole percent)	PRODUCTION DATE	POSTING DATE	Changefirststamp	NOTES
11587	GLEN ULLIN	1059.9	0.6052	1350.9	-72.5	1.3383	0.8067	90.4426	6.7565	0.4212	0.0273	0.0209	0.0027	0.0041	0	0.0016	0.1613	0.0162	1/31/2015	2/1/2015	2/1/2015 2:21:14 PM	
11587	GLEN ULLIN	1051.4	0.6039	1340.7	-71.7	1.3941	0.7936	90.3064	6.8231	0.4458	0.0281	0.0216	0.003	0.0044	0	0.0015	0.1647	0.0162	2/1/2015	2/2/2015	2/2/2015 2:21:34 PM	
11587	GLEN ULLIN	1049.8	0.6024	1349.2	-68	1.3121	0.881	90.4939	6.657	0.4131	0.0312	0.0242	0.0036	0.0053	0	0.0024	0.1607	0.0162	2/2/2015	2/3/2015	2/3/2015 2:24:37 PM	
11587	GLEN ULLIN	1047.3	0.6027	1349.1	-68.8	1.2564	0.8447	91.0042	6.2564	0.3928	0.03	0.0242	0.0037	0.0054	0	0.0024	0.1636	0.0162	2/3/2015	2/4/2015	2/4/2015 2:23:51 PM	
11587	GLEN ULLIN	1046.7	0.6026	1348.2	-72.7	1.3371	0.8119	90.9891	6.2659	0.3796	0.0277	0.0215	0.003	0.0045	0	0.0018	0.1404	0.0183	2/4/2015	2/5/2015	2/5/2015 2:24:58 PM	
11587	GLEN ULLIN	1049.3	0.6035	1350.7	-66.1	1.2824	0.8017	90.7815	6.4431	0.4164	0.0333	0.0262	0.0043	0.0061	0	0.0029	0.1818	0.0188	2/5/2015	2/6/2015	2/6/2015 2:25:23 PM	
11587	GLEN ULLIN	1053.3	0.6064	1352.6	-60.9	1.2474	0.8489	90.4044	6.7451	0.4938	0.04	0.0319	0.0053	0.0076	0	0.0036	0.1625	0.0188	2/6/2015	2/7/2015	2/7/2015 2:25:07 PM	
11587	GLEN ULLIN	1068.1	0.61	1356.3	-59.3	1.2588	0.8528	89.6921	7.4457	0.5621	0.0418	0.0329	0.0056	0.0076	0	0.0036	0.0798	0.0188	2/7/2015	2/8/2015	2/8/2015 2:24:05 PM	
11587	GLEN ULLIN	1058.3	0.6095	1355.6	-61.6	1.2668	0.8324	89.7313	7.3788	0.5196	0.0389	0.0301	0.0049	0.0067	0	0.0032	0.172	0.0188	2/8/2015	2/9/2015	2/9/2015 2:25:18 PM	
11587	GLEN ULLIN	1058.8	0.6082	1353.8	-62.4	1.2495	0.8599	89.952	7.1581	0.49	0.0364	0.0287	0.0046	0.0065	0	0.0031	0.1963	0.0188	2/9/2015	2/10/2015	2/10/2015 2:23:58 PM	
11587	GLEN ULLIN	1055.6	0.6074	1354.7	-62.5	1.1955	0.8461	90.1715	7.0377	0.4873	0.0372	0.0298	0.0048	0.0068	0	0.0031	0.1633	0.0188	2/10/2015	2/11/2015	2/11/2015 2:24:04 PM	
11587	GLEN ULLIN	1053.7	0.6061	1353.4	-64.9	1.1966	0.8506	90.4106	6.8184	0.472	0.0352	0.0279	0.0041	0.0061	0	0.0028	0.161	0.0188	2/11/2015	2/12/2015	2/12/2015 2:24:04 PM	
11587	GLEN ULLIN	1051.7	0.6049	1352.2	-64.3	1.2246	0.8296	90.6479	6.5613	0.4772	0.0356	0.0279	0.0044	0.0063	0	0.003	0.1557	0.0188	2/12/2015	2/13/2015	2/13/2015 2:26:37 PM	
11587	GLEN ULLIN	1056.6	0.6075	1355.6	-59.1	1.2192	0.8033	90.1829	6.9723	0.3771	0.0438	0.0344	0.0061	0.0082	0	0.0038	0.1679	0.0188	2/13/2015	2/14/2015	2/14/2015 2:24:14 PM	
11587	GLEN ULLIN	1058.9	0.6088	1356.1	-57.2	1.2687	0.8263	89.7397	7.3729	0.5544	0.0444	0.0335	0.0064	0.0085	0	0.004	0.1668	0.0188	2/14/2015	2/15/2015	2/15/2015 2:25:17 PM	
11587	GLEN ULLIN	1057.3	0.6088	1355.1	-59	1.2382	0.8436	89.9371	7.1654	0.5358	0.0425	0.0338	0.0061	0.0081	0	0.0038	0.1704	0.0188	2/15/2015	2/16/2015	2/16/2015 2:25:15 PM	
11587	GLEN ULLIN	1056.6	0.6084	1354.8	-59.1	1.2287	0.8492	90.0189	7.0885	0.5338	0.0425	0.0335	0.0061	0.008	0	0.0037	0.1707	0.0188	2/16/2015	2/17/2015	2/17/2015 2:24:56 PM	
11587	GLEN ULLIN	1056.8	0.6084	1354.8	-59.1	1.2287	0.8492	90.0189	7.0885	0.5338	0.0425	0.0335	0.0061	0.008	0	0.0037	0.1707	0.0188	2/16/2015	2/18/2015	2/18/2015 2:24:27 PM	
11587	GLEN ULLIN	1053.5	0.6077	1354	-61	1.2071	0.8656	90.1874	6.9569	0.5192	0.041	0.0322	0.0054	0.0074	0	0.0034	0.1602	0.0188	2/18/2015	2/19/2015	2/19/2015 2:25:52 PM	
11587	GLEN ULLIN	1052.1	0.6039	1351.6	-62.7	1.2561	0.8599	90.4961	6.6599	0.4871	0.0394	0.0305	0.0052	0.0071	0	0.0033	0.1598	0.0188	2/19/2015	2/20/2015	2/20/2015 2:25:11 PM	
11587	GLEN ULLIN	1057.5	0.6098	1354.3	-54.8	1.2246	0.8412	89.8085	7.184	0.5561	0.0518	0.0401	0.0076	0.0099	0	0.0048	0.1546	0.0188	2/20/2015	2/21/2015	2/21/2015 2:25:17 PM	
11587	GLEN ULLIN	1056	0.6088	1353.4	-60.2	1.2385	0.8388	89.9027	7.1512	0.5337	0.0409	0.0321	0.0053	0.0074	0	0.0036	0.1592	0.0188	2/21/2015	2/22/2015	2/22/2015 2:24:01 PM	
11587	GLEN ULLIN	1052.3	0.6029	1351.9	-64.9	1.2603	0.8436	90.4115	6.7629	0.453	0.036	0.0286	0.0044	0.0064	0	0.0029	0.1703	0.0188	2/22/2015	2/23/2015	2/23/2015 2:24:34 PM	
11587	GLEN ULLIN	1054	0.6071	1352.7	-66.5	1.2591	0.8445	90.23	6.9574	0.4626	0.0342	0.027	0.0039	0.0058	0	0.0025	0.1472	0.0188	2/23/2015	2/24/2015	2/24/2015 2:25:16 PM	
11587	GLEN ULLIN	1056.1	0.6071	1355.4	-64.3	1.2246	0.7993	90.2095	7.0624	0.4738	0.0371	0.0286	0.0045	0.0064	0	0.0028	0.1351	0.0188	2/24/2015	2/25/2015	2/25/2015 2:24:26 PM	
11587	GLEN ULLIN	1052.6	0.6053	1353	-65	1.2706	0.791	90.329	6.6875	0.4763	0.0356	0.0278	0.0043	0.0062	0	0.0028	0.1531	0.0188	2/25/2015	2/26/2015	2/26/2015 2:25:39 PM	
11587	GLEN ULLIN	1053.3	0.6053	1353.6	-61.4	1.2418	0.798	90.4893	6.7403	0.467	0.0391	0.031	0.0052	0.0072	0	0.0035	0.1624	0.0188	2/26/2015	2/27/2015	2/27/2015 2:25:54 PM	
11587	GLEN ULLIN	1052.2	0.6052	1352.6	-61.4	1.2411	0.8224	90.6229	6.6082	0.4644	0.0386	0.0313	0.0052	0.0073	0	0.0035	0.1378	0.0188	2/27/2015	2/28/2015	2/28/2015 2:24:44 PM	

28 record(s) retrieved

Zone 802

NORTH DAKOTA HEATING VALUE ZONES		
ZONES	MEASURING DEVICE	LOCATION
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	Monthly Sampler	Taylor Take-Off – Glen Ullin Comp
32	Chromatograph	Cabin Creek – Dickinson
33	Chromatograph	Killdeer
34	Monthly Sampler	Bowman Area
600	Chromatograph	Hankinson Area
610	Monthly Sampler & Chromatograph	Watford City
802	Chromatograph	Linton

MONTANA DAKOTA UTILITIES CO
 NORTH DAKOTA
 HEATING VALUE DATA

STATE	ZONE	ZONE BOUNDARY	12 MONTH AVERAGE	FEB 15	JAN 15	DEC 14	NOV 14	OCT 14	SEPT 14	AUG 14	JULY 14	JUNE 14	MAY 14	APR 14	MAR 14	ZONE
MT/ND	211	Sidney Area	1209	1209	1215	1214	1215	1211	1204	1209	1212	1207	1212	1198	1204	211
ND	24	Williston Area	1182	1180	1173	1180	1182	1190	1189	1186	1184	1183	1180	1177	1181	24
ND	25	Watford City Border	1213	1196	1203	1201	1199	1207	1217	1205	1219	1226	1241	1221	1220	25
ND/MT	241	Fairview Area	1202	1202	1203	1203	1203	1197	1205	1201	1208	1202	1204	1194	1197	241
ND	261	Williston - Tioga - Minot Line	1072	1004	1015	1035	1058	1021	1027	1013	1094	1115	1118	1181	1187	261
ND	262	Minot Area	1168	1173	1173	1169	1171	1155	1150	1149	1154	1166	1161	1196	1201	262
ND	263	Tioga - Portal	1090	1121	1097	1094	1097	1103	1103	1089	1098	1078	1062	1074	1058	263
ND	264	Williston - Ray	1182	1180	1173	1180	1182	1190	1189	1186	1184	1183	1180	1177	1181	264
ND	271	Bismarck - Cleveland	1157	1139	1151	1160	1159	1155	1147	1148	1152	1164	1162	1192	1159	271
ND	272	Cleveland - Mapleton	1156	1137	1149	1157	1157	1154	1146	1148	1151	1163	1162	1192	1158	272
ND	273	Cleveland - Grafton	1156	1137	1149	1158	1158	1154	1146	1148	1151	1163	1162	1190	1158	273
ND	28	Bismarck - Cabin Creek	1128	1089	1101	1116	1118	1140	1147	1148	1151	1163	1155	1135	1077	28
ND	31	Dickinson Area	1134	1091	1104	1122	1125	1154	1170	1174	1176	1171	1140	1102	1079	31
ND	311	Taylor Take-Off - Glen Ullin Comp	1110	1090	1094	1114	1121	1116	1130	1114	1131	1138	1105	1091	1072	311
ND/MT	32	Cabin Creek - Dickinson	1112	1079	1091	1103	1110	1144	1164	1134	1147	1134	1100	1077	1061	32
ND	33	Killdeer	1180	1177	1177	1178	1176	1180	1162	1182	1183	1183	1183	1183	1180	33
ND	34	Bowman Area	1098	1068	1049	1089	1116	1136	1128	1127	1130	1119	1123	1030	1059	34
ND	610	MDU-Watford City BTU	1198	1190	1189	1195	1193	1205	1210	1204	1204	1195				
ND	802	Linton	1051	1054	1056	1055	1054	1051	1054	1060	1050	1047	1047	1044	1045	802

**THERMAL ZONE VARIANCE
DOCUMENTATION**

February 2015

ZONE	<i>BTU VARIANCE</i>	<i>REASON</i>
263	24	Interrupted Supply