MONTANA-DAKOTA
UTILITIES CO.
A Division of MDU Resources Group, Inc.

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

July 18, 2016

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

Re: Case No. PU-16-002 (Therm Billing)
Monthly Report – May 2016

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 Case No. 11,006, 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 June 2016.

2. Attachment B consists of copies of the monthly Heating Value Test Reports received from our suppliers for the month of May 2016.

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 May 2016.

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

Montana-Dakota Utilities Co.
Therm Billing Factors - North Dakota
May-16

Town	Heat Zone	Therm Factor
MDU-303-ALEXANDER	025	1.1438
MDU-308-ARNEGARD	025	1.1438
MDU-314-APPLE VALLEY	271	1.1636
MDU-318-BEACH	032	1.0433
MDU-319-BELFIELD	032	1.0510
MDU-323-BERTHOLD	262	1.1391
MDU-327-BISMARCK	028	1.1482
MDU-330-BOWMAN	034	0.9008
MDU-337-BURLINGTON	262	1.1636
MDU-343-CARRINGTON	273	1.1588
MDU-344-CLEVELAND	272	1.1535
MDU-364-CAVALIER	273	1.1833
MDU-365-DAWSON	271	1.1554
MDU-368-DES LACS	262	1.1473
MDU-369-DICKINSON	031	1.0446
MDU-374-FT TOTTEN	273	1.1718
MDU-375-DEVILS LAKE	273	1.1670
MDU-379-BARLOW	273	1.1588
MDU-384-EPPING	264	1.1240
MDU-387-ELDRIDGE	272	1.1617
MDU-407-GLADSTONE	031	1.0446
MDU-411-GLEN ULLIN	031	1.0522
MDU-413-GOLVA	032	1.0280
MDU-416-GARRISON	262	1.1473
MDU-417-GRAFTON	273	1.1914
MDU-429-HEBRON	031	1.0522
MDU-432-HETTINGER	903	2.4049
MDU-449-JAMESTOWN	272	1.1699
MDU-459-KILLDEER	033	1.1155
MDU-463-LANGDON	273	1.1588
MDU-469-LEFOR	031	1.0446
MDU-474-LIGNITE	263	1.0521
MDU-475-LINTON	802	1.0247
MDU-478-LINCOLN	028	1.1482
MDU-488-MCKENZIE	271	1.1636
MDU-494-MEDINA	271	1.1554
MDU-498-MANDAN	028	1.1482
MDU-500-MARMARTH	034	0.9075
MDU-505-MINOT	262	1.1636
MDU-510-MOTT	031	1.0446
MDU-512-MAX	262	1.1391
MDU-522-NEW ENGLAND	031	1.0370
MDU-524-NEW SALEM	028	1.1240
MDU-532-NEW ROCKFORD	273	1.1588
MDU-539-PARK RIVER	273	1.1833
MDU-540-PALERMO	262	1.1391
MDU-558-RAY	264	1.1240
MDU-561-REGENT	031	1.0446
MDU-563-RHAME	034	0.8942

MDU-564-RICHARDTON	031	1.0370
MDU-568-ROSS	261	1.1121
MDU-572-RUTHVILLE	262	1.1636
MDU-574-SANBORN	272	1.1699
MDU-583-SENTINEL BUTTE	032	1.0433
MDU-588-SOUTH HEART	031	1.0370
MDU-717-SPIRITWOOD	272	1.1699
MDU-590-SPRINGBROOK	264	1.1240
MDU-591-STANLEY	261	1.1202
MDU-593-STEELE	271	1.1554
MDU-598-SHEYENNE	273	1.1670
MDU-605-SURREY	262	1.1636
MDU-610-TAPPEN	271	1.1554
MDU-611-TAYLOR	031	1.0370
MDU-616-TIOGA	261	1.1282
MDU-619-TURTLE LAKE	262	1.1473
MDU-620-TRENTON	024	1.1377
MDU-624-UNDERWOOD	262	1.1473
MDU-625-VALLEY CITY	272	1.1780
MDU-629-WALHALLA	273	1.1833
MDU-632-WATFORD CITY	610	1.1088
MDU-636-WHEELOCK	264	1.1159
MDU-637-WHITE EARTH	261	1.1202
MDU-642-WILLISTON	024	1.1377
MDU-646-WASHBURN	262	1.1554
MDU-647-WILTON	262	1.1391
MDU-664-RIVERDALE	262	1.1473
MDU-691-FAIRVIEW	241	1.1482
MDU-712-MINOT AFB	262	1.1636
MDU-718-FAIRMOUNT	600	1.1199
MDU-732-NEKOMA	273	1.1588
MDU-732-MSR SITE	273	1.1434

GQ Source Daily Summary

May 2016

Number: 251 **Pressure Base:** 14.730 **Contract Day:** 1

Name: SIDNEY BORDER-MONDAK JNCTN-SIDNEY PLANT **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	0.7421	1192.5	1213.6	1.218	3.833	68.230	21.273	4.991	0.148	0.278	0.016	0.013	0.000	0.000	0.000	0.000	0.000	1408.74	
2	0.7395	1188.3	1209.4	1.224	3.826	68.539	21.213	4.738	0.150	0.280	0.016	0.013	0.000	0.000	0.000	0.000	0.000	1406.36	
3	0.7395	1188.3	1209.3	1.226	3.834	68.412	21.446	4.618	0.151	0.283	0.016	0.013	0.000	0.000	0.000	0.000	0.000	1406.25	
4	0.7370	1183.7	1204.7	1.230	3.873	68.787	21.152	4.499	0.150	0.279	0.017	0.014	0.000	0.000	0.000	0.000	0.000	1403.21	
5	0.7384	1185.6	1206.6	1.225	3.891	68.835	20.761	4.822	0.153	0.281	0.017	0.014	0.000	0.000	0.000	0.000	0.000	1404.15	
6	0.7341	1178.9	1199.8	1.232	3.881	69.118	21.023	4.340	0.136	0.245	0.013	0.010	0.000	0.000	0.000	0.000	0.000	1400.39	
7	0.7280	1175.9	1196.8	1.003	3.845	69.278	21.918	3.617	0.113	0.206	0.011	0.009	0.000	0.000	0.000	0.000	0.000	1402.71	
8	0.7355	1181.1	1202.0	1.232	3.884	68.801	21.404	4.245	0.142	0.264	0.015	0.013	0.000	0.000	0.000	0.000	0.000	1401.60	
9	0.7367	1183.3	1204.3	1.263	3.814	68.260	22.287	3.975	0.130	0.243	0.015	0.012	0.000	0.000	0.000	0.000	0.000	1403.14	
10	0.7401	1188.9	1210.0	1.217	3.862	68.257	21.576	4.647	0.144	0.269	0.016	0.013	0.000	0.000	0.000	0.000	0.000	1406.47	
11	0.7402	1189.1	1210.2	1.217	3.862	68.273	21.527	4.672	0.146	0.274	0.016	0.013	0.000	0.000	0.000	0.000	0.000	1406.58	
12	0.7428	1193.3	1214.4	1.209	3.858	68.149	21.240	5.119	0.138	0.258	0.015	0.012	0.000	0.000	0.000	0.000	0.000	1409.06	
13	0.7428	1193.3	1214.4	1.222	3.841	68.142	21.256	5.108	0.138	0.266	0.015	0.012	0.000	0.000	0.000	0.000	0.000	1409.03	
14	0.7361	1182.2	1203.2	1.227	3.882	68.788	21.270	4.407	0.136	0.263	0.015	0.012	0.000	0.000	0.000	0.000	0.000	1402.32	
15	0.7413	1191.1	1212.2	1.222	3.832	68.275	21.330	4.885	0.145	0.281	0.016	0.013	0.000	0.000	0.000	0.000	0.000	1407.93	
16	0.7375	1184.8	1205.7	1.226	3.858	68.662	21.304	4.511	0.141	0.268	0.016	0.014	0.000	0.000	0.000	0.000	0.000	1404.02	
17	0.7334	1178.0	1198.8	1.229	3.884	68.891	21.611	3.977	0.133	0.249	0.014	0.011	0.000	0.000	0.000	0.000	0.000	1399.89	
18	0.7352	1181.8	1202.7	1.224	3.884	68.714	21.548	4.195	0.142	0.265	0.015	0.013	0.000	0.000	0.000	0.000	0.000	1402.66	
19	0.7487	1203.0	1224.3	1.222	3.803	67.533	21.486	5.381	0.187	0.349	0.021	0.017	0.000	0.000	0.000	0.000	0.000	1414.83	
20	0.7381	1184.9	1205.9	1.238	3.894	68.418	21.636	4.357	0.149	0.279	0.016	0.013	0.000	0.000	0.000	0.000	0.000	1403.55	
21	0.7375	1183.7	1204.6	1.233	3.914	68.561	21.450	4.396	0.145	0.273	0.016	0.013	0.000	0.000	0.000	0.000	0.000	1402.75	
22	0.7368	1183.4	1204.4	1.214	3.891	68.604	21.529	4.319	0.144	0.270	0.016	0.013	0.000	0.000	0.000	0.000	0.000	1403.12	
23	0.7338	1178.7	1199.5	1.216	3.901	68.975	21.360	4.119	0.138	0.261	0.015	0.013	0.000	0.000	0.000	0.000	0.000	1400.30	
24	0.7332	1177.2	1198.0	1.220	3.930	69.117	21.165	4.139	0.139	0.261	0.015	0.013	0.000	0.000	0.000	0.000	0.000	1399.07	
25	0.7361	1182.2	1203.1	1.227	3.884	68.865	21.164	4.404	0.147	0.278	0.017	0.014	0.000	0.000	0.000	0.000	0.000	1402.27	
26	0.7336	1178.2	1199.1	1.230	3.883	69.068	21.242	4.157	0.135	0.255	0.016	0.013	0.000	0.000	0.000	0.000	0.000	1399.99	
27	0.7346	1179.9	1200.8	1.231	3.883	68.929	21.310	4.219	0.139	0.261	0.016	0.013	0.000	0.000	0.000	0.000	0.000	1400.93	
28	0.7328	1176.6	1197.4	1.228	3.917	69.160	21.168	4.106	0.136	0.256	0.015	0.013	0.000	0.000	0.000	0.000	0.000	1398.78	
29	0.7347	1179.5	1200.3	1.228	3.916	69.067	21.000	4.344	0.143	0.271	0.016	0.013	0.000	0.000	0.000	0.000	0.000	1400.38	
30	0.7316	1174.3	1195.1	1.227	3.943	69.428	20.848	4.134	0.135	0.255	0.016	0.013	0.000	0.000	0.000	0.000	0.000	1397.21	
31	0.7336	1177.3	1198.2	1.235	3.935	69.188	20.933	4.287	0.136	0.258	0.015	0.012	0.000	0.000	0.000	0.000	0.000	1398.87	
Avg	0.7369	1184.0	1204.8	1.219	3.875	68.688	21.337	4.443	0.142	0.267	0.016	0.013	0.000	0.000	0.000	0.000	0.000	1403.44	

Zone 11

GQ Source Analysis

GQ Source Number:	0602330	**Specific Gravity:**	0.7049
GQ Source Name:	WILLISTON BORDER	**Dry Heat Value:**	1181.85
Effective Date:	5/1/2016 9:00:00 AM	**Wet Heat Value:**	1161.29
Effective End Date	1/18/2038 9:14:07 PM	**As Deliv. Heat Value:**	1181.85
Pressure Base:	14.730	**Sample Pressure:**	316.00
Viscosity:		**Sample Temperature:**	

		Mol %	Liquid Content			Mol %
C1	Methane	72.576		CO2	Carbon Dioxide	0.860
C2	Ethane	20.915	0.0000	N2	Nitrogen	2.758
C3	Propane	2.605	0.7157	O2	Oxygen	0.000
IC4	Isobutane	0.087	0.0284	He	Helium	
NC4	n-Butane	0.175	0.0549	H2	Hydrogen	
IC5	Isopentane	0.012	0.0043	H2S	Hydrogen Sulfide	
NC5	n-Pentane	0.013	0.0048	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% 0.808 GPM

Sample Date: 6/1/2016 12:00:00 AM
Sample Type: Composite
Sample Tech: ES
H2S: ppm

Sample Remarks:

Analysis Tech: MB

Analysis Remarks:

Zone 24

GQ Source Analysis

GQ Source Number:	0602160	**Specific Gravity:**	0.7353
GQ Source Name:	FAIRVIEW BORDER	**Dry Heat Value:**	1201.69
Effective Date:	5/1/2016 9:00:00 AM	**Wet Heat Value:**	1180.78
Effective End Date	1/18/2038 9:14:07 PM	**As Deliv. Heat Value:**	1201.69
Pressure Base:	14.730	**Sample Pressure:**	338.00
Viscosity:		**Sample Temperature:**	

		Mol %	Liquid Content			Mol %
C1	Methane	68.833		CO2	Carbon Dioxide	1.227
C2	Ethane	21.010	5.6022	N2	Nitrogen	3.851
C3	Propane	4.612	1.2670	O2	Oxygen	0.011
IC4	Isobutane	0.153	0.0500	He	Helium	
NC4	n-Butane	0.272	0.0856	H2	Hydrogen	
IC5	Isopentane	0.016	0.0059	H2S	Hydrogen Sulfide	
NC5	n-Pentane	0.013	0.0048	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% 7.016 GPM

Sample Date: 6/1/2016 12:00:00 AM
Sample Type: Composite
Sample Tech: RR
H2S: ppm

Sample Remarks:

Analysis Tech: MB

Analysis Remarks:

Zone 241

GQ Source Analysis

GQ Source Number:	0602225	**Specific Gravity:**	0.7273
GQ Source Name:	WATFORD CITY WEST BORDER	**Dry Heat Value:**	1209.03
Effective Date:	5/1/2016 9:00:00 AM	**Wet Heat Value:**	1187.99
Effective End Date	1/18/2038 9:14:07 PM	**As Deliv. Heat Value:**	1209.03
Pressure Base:	14.730	**Sample Pressure:**	356.00
Viscosity:		**Sample Temperature:**	

		Mol %	Liquid Content			Mol %
C1	Methane	69.488		CO2	Carbon Dioxide	1.015
C2	Ethane	22.598	6.0257	N2	Nitrogen	2.984
C3	Propane	3.263	0.8963	O2	Oxygen	0.008
IC4	Isobutane	0.183	0.0598	He	Helium	
NC4	n-Butane	0.391	0.1230	H2	Hydrogen	
IC5	Isopentane	0.034	0.0123	H2S	Hydrogen Sulfide	
NC5	n-Pentane	0.034	0.0125	Ar	Argon	
C6	Hexanes	0.002	0.0011	CO	Carbon Monoxide	
C7	Heptanes			H2	Water	
C8	Octanes			Neo-C5	Neopentane	
C9	Nonanes					
C10	Decanes					

Totals 100.000% 7.131 GPM

Sample Date: 6/1/2016 12:00:00 AM
Sample Type: Composite
Sample Tech: ES
H2S: ppm

Sample Remarks:

Analysis Tech: MB

Analysis Remarks:

Zone 25

GQ Source Daily Summary

May 2016

Number: 163 **Pressure Base:** 14.730 **Contract Day:** 1

Name: NORTH TIOGA TRANSFER-PALERMO BORDER LI **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	0.7037	1151.2	1171.5	0.805	3.378	73.184	19.591	2.733	0.088	0.187	0.015	0.018	0.000	0.000	0.000	0.000	0.000	1396.56	
2	0.7012	1147.6	1168.0	0.779	3.393	73.513	19.414	2.610	0.084	0.176	0.014	0.017	0.000	0.000	0.000	0.000	0.000	1394.84	
3	0.7085	1158.2	1178.7	0.841	3.344	72.264	20.470	2.773	0.090	0.189	0.013	0.015	0.000	0.000	0.000	0.000	0.000	1400.36	
4	0.7111	1162.6	1183.1	0.837	3.330	71.984	20.598	2.900	0.100	0.213	0.018	0.022	0.000	0.000	0.000	0.000	0.000	1403.04	
5	0.7085	1159.4	1179.9	0.809	3.323	72.384	20.305	2.842	0.096	0.205	0.016	0.019	0.000	0.000	0.000	0.000	0.000	1401.77	
6	0.7214	1166.8	1187.4	0.825	4.053	70.481	20.751	3.454	0.120	0.270	0.021	0.025	0.000	0.000	0.000	0.000	0.000	1398.25	
7	0.7535	1186.3	1207.3	0.814	5.898	65.743	21.687	5.227	0.182	0.400	0.024	0.024	0.000	0.000	0.000	0.000	0.000	1390.78	
8	0.7543	1186.8	1207.8	0.825	5.918	65.677	21.651	5.290	0.189	0.403	0.023	0.024	0.000	0.000	0.000	0.000	0.000	1390.69	
9	0.7362	1174.3	1195.1	0.825	4.987	68.198	21.224	4.268	0.148	0.312	0.019	0.019	0.000	0.000	0.000	0.000	0.000	1393.08	
10	0.7162	1157.9	1178.4	0.788	4.169	71.396	19.840	3.372	0.122	0.267	0.021	0.025	0.000	0.000	0.000	0.000	0.000	1392.57	
11	0.7031	1150.8	1171.2	0.793	3.362	73.327	19.523	2.639	0.097	0.215	0.020	0.025	0.000	0.000	0.000	0.000	0.000	1396.74	
12	0.7076	1157.4	1177.9	0.834	3.319	72.644	20.095	2.705	0.103	0.240	0.026	0.033	0.000	0.000	0.000	0.000	0.000	1400.28	
13	0.7078	1157.2	1177.7	0.840	3.339	72.626	20.058	2.740	0.104	0.239	0.024	0.030	0.000	0.000	0.000	0.000	0.000	1399.86	
14	0.7050	1152.0	1172.4	0.846	3.386	73.008	19.818	2.558	0.096	0.232	0.024	0.031	0.000	0.000	0.000	0.000	0.000	1396.28	
15	0.7097	1159.7	1180.3	0.852	3.351	72.075	20.700	2.648	0.097	0.230	0.021	0.026	0.000	0.000	0.000	0.000	0.000	1401.01	
16	0.7346	1174.5	1195.3	0.823	4.824	68.626	20.981	4.192	0.156	0.349	0.023	0.026	0.000	0.000	0.000	0.000	0.000	1394.90	
17	0.7117	1158.7	1179.2	0.857	3.588	71.742	20.661	2.827	0.090	0.196	0.017	0.022	0.000	0.000	0.000	0.000	0.000	1397.90	
18	0.7505	1184.8	1205.8	0.818	5.695	66.341	21.390	5.082	0.193	0.431	0.024	0.024	0.000	0.000	0.000	0.000	0.000	1391.95	
19	0.7560	1186.8	1207.8	0.823	6.080	65.509	21.508	5.385	0.202	0.448	0.023	0.022	0.000	0.000	0.000	0.000	0.000	1389.13	
20	0.7442	1180.7	1201.6	0.822	5.349	67.280	21.185	4.725	0.181	0.405	0.025	0.027	0.000	0.000	0.000	0.000	0.000	1393.06	
21	0.7454	1179.7	1200.6	0.819	5.531	66.955	21.307	4.788	0.174	0.383	0.021	0.021	0.000	0.000	0.000	0.000	0.000	1390.64	
22	0.7521	1184.0	1205.0	0.818	5.890	66.034	21.439	5.163	0.191	0.421	0.023	0.023	0.000	0.000	0.000	0.000	0.000	1389.50	
23	0.7461	1180.0	1200.9	0.811	5.587	66.911	21.209	4.871	0.178	0.391	0.021	0.021	0.000	0.000	0.000	0.000	0.000	1390.39	
24	0.7173	1163.6	1184.2	0.798	3.903	71.203	20.284	3.399	0.118	0.255	0.019	0.022	0.000	0.000	0.000	0.000	0.000	1398.38	
25	0.7020	1143.3	1163.5	0.506	4.152	73.506	18.407	3.106	0.104	0.196	0.011	0.012	0.000	0.000	0.000	0.000	0.000	1389.00	
26	0.6725	1117.1	1136.9	0.221	3.409	78.237	15.720	2.225	0.071	0.102	0.007	0.008	0.000	0.000	0.000	0.000	0.000	1386.28	
27	0.6833	1124.9	1144.8	0.521	3.490	76.365	17.187	2.197	0.078	0.144	0.009	0.009	0.000	0.000	0.000	0.000	0.000	1384.97	
28	0.6833	1124.3	1144.2	0.556	3.483	76.062	17.684	2.071	0.058	0.079	0.003	0.004	0.000	0.000	0.000	0.000	0.000	1384.17	
29	0.6863	1129.3	1149.3	0.543	3.474	75.965	17.395	2.353	0.094	0.166	0.006	0.004	0.000	0.000	0.000	0.000	0.000	1387.29	
30	0.6823	1121.9	1141.8	0.550	3.532	76.527	17.047	2.129	0.074	0.123	0.007	0.009	0.000	0.000	0.000	0.000	0.000	1382.36	
31	0.6782	1116.3	1136.0	0.512	3.559	76.990	16.796	1.989	0.061	0.087	0.003	0.003	0.000	0.000	0.000	0.000	0.000	1379.44	
Avg	0.7159	1158.0	1178.5	0.745	4.197	71.379	19.869	3.396	0.121	0.257	0.017	0.020	0.000	0.000	0.000	0.000	0.000	1393.08	

Zone 261

GQ Source Daily Summary

May 2016

Number: 091 **Pressure Base:** 14.730 **Contract Day:** 1

Name: MINOT BRDR-PALERMO BRDR-BISMARCK STATI **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	0.7554	1187.2	1208.2	0.849	5.965	65.397	21.932	5.224	0.180	0.408	0.022	0.022	0.000	0.000	0.000	0.000	0.000	1390.11	
2	0.7556	1186.9	1207.9	0.848	6.003	65.356	21.926	5.233	0.181	0.409	0.022	0.022	0.000	0.000	0.000	0.000	0.000	1389.59	
3	0.7556	1187.3	1208.3	0.848	5.973	65.352	21.975	5.223	0.179	0.406	0.022	0.022	0.000	0.000	0.000	0.000	0.000	1390.12	
4	0.7547	1186.8	1207.8	0.844	5.932	65.460	21.972	5.166	0.179	0.405	0.021	0.022	0.000	0.000	0.000	0.000	0.000	1390.31	
5	0.7554	1187.6	1208.6	0.842	5.947	65.378	21.991	5.212	0.180	0.406	0.021	0.022	0.000	0.000	0.000	0.000	0.000	1390.62	
6	0.7558	1187.9	1208.9	0.845	5.966	65.322	21.993	5.239	0.182	0.409	0.022	0.022	0.000	0.000	0.000	0.000	0.000	1390.57	
7	0.7561	1187.5	1208.5	0.844	6.017	65.350	21.835	5.315	0.185	0.410	0.022	0.022	0.000	0.000	0.000	0.000	0.000	1389.82	
8	0.7565	1188.3	1209.3	0.837	6.013	65.343	21.785	5.374	0.193	0.412	0.021	0.022	0.000	0.000	0.000	0.000	0.000	1390.43	
9	0.7555	1187.7	1208.8	0.816	5.987	65.472	21.746	5.336	0.191	0.409	0.021	0.021	0.000	0.000	0.000	0.000	0.000	1390.68	
10	0.7549	1187.4	1208.5	0.816	5.952	65.570	21.704	5.320	0.190	0.406	0.021	0.021	0.000	0.000	0.000	0.000	0.000	1390.85	
11	0.7555	1188.4	1209.4	0.814	5.951	65.484	21.759	5.354	0.191	0.406	0.021	0.021	0.000	0.000	0.000	0.000	0.000	1391.45	
12	0.7554	1187.6	1208.6	0.836	5.955	65.527	21.687	5.358	0.191	0.403	0.021	0.021	0.000	0.000	0.000	0.000	0.000	1390.62	
13	0.7544	1185.5	1206.5	0.837	5.992	65.626	21.630	5.293	0.188	0.394	0.020	0.020	0.000	0.000	0.000	0.000	0.000	1389.06	
14	0.7539	1184.1	1205.1	0.835	6.031	65.678	21.576	5.270	0.185	0.386	0.019	0.020	0.000	0.000	0.000	0.000	0.000	1387.91	
15	0.7539	1183.6	1204.6	0.838	6.052	65.783	21.366	5.329	0.190	0.403	0.019	0.019	0.000	0.000	0.000	0.000	0.000	1387.34	
16	0.7550	1185.2	1206.2	0.835	6.066	65.689	21.327	5.427	0.198	0.421	0.018	0.018	0.000	0.000	0.000	0.000	0.000	1388.17	
17	0.7559	1186.8	1207.8	0.837	6.050	65.520	21.527	5.390	0.201	0.437	0.020	0.019	0.000	0.000	0.000	0.000	0.000	1389.22	
18	0.7570	1189.5	1210.6	0.834	5.992	65.253	21.934	5.286	0.201	0.453	0.023	0.023	0.000	0.000	0.000	0.000	0.000	1391.39	
19	0.7563	1185.8	1206.8	0.834	6.158	65.413	21.533	5.379	0.202	0.442	0.020	0.019	0.000	0.000	0.000	0.000	0.000	1387.62	
20	0.7566	1186.8	1207.8	0.834	6.123	65.411	21.532	5.409	0.203	0.448	0.020	0.020	0.000	0.000	0.000	0.000	0.000	1388.52	
21	0.7556	1185.8	1206.8	0.833	6.086	65.545	21.511	5.341	0.200	0.444	0.020	0.020	0.000	0.000	0.000	0.000	0.000	1388.36	
22	0.7547	1185.3	1206.3	0.831	6.043	65.663	21.477	5.314	0.197	0.436	0.019	0.019	0.000	0.000	0.000	0.000	0.000	1388.50	
23	0.7551	1185.9	1206.9	0.832	6.033	65.621	21.510	5.329	0.198	0.438	0.020	0.019	0.000	0.000	0.000	0.000	0.000	1388.96	
24	0.7539	1184.1	1205.1	0.834	6.028	65.774	21.444	5.255	0.195	0.430	0.020	0.020	0.000	0.000	0.000	0.000	0.000	1387.93	
25	0.7546	1185.8	1206.8	0.832	5.997	65.691	21.504	5.303	0.198	0.435	0.020	0.019	0.000	0.000	0.000	0.000	0.000	1389.23	
26	0.7555	1187.7	1208.7	0.830	5.971	65.607	21.519	5.395	0.200	0.439	0.020	0.020	0.000	0.000	0.000	0.000	0.000	1390.62	
27	0.7555	1187.3	1208.3	0.831	5.994	65.602	21.515	5.368	0.202	0.446	0.020	0.020	0.000	0.000	0.000	0.000	0.000	1390.13	
28	0.7555	1187.2	1208.3	0.832	5.992	65.619	21.500	5.363	0.203	0.450	0.021	0.020	0.000	0.000	0.000	0.000	0.000	1390.10	
29	0.7553	1186.4	1207.4	0.832	6.026	65.635	21.469	5.345	0.202	0.450	0.021	0.020	0.000	0.000	0.000	0.000	0.000	1389.28	
30	0.7548	1184.9	1205.9	0.834	6.071	65.678	21.413	5.322	0.199	0.442	0.021	0.020	0.000	0.000	0.000	0.000	0.000	1387.96	
31	0.7545	1185.1	1206.1	0.835	6.029	65.740	21.401	5.311	0.199	0.444	0.021	0.021	0.000	0.000	0.000	0.000	0.000	1388.47	
Avg	0.7553	1187.0	1207.6	0.835	6.013	65.534	21.645	5.316	0.193	0.423	0.021	0.021	0.000	0.000	0.000	0.000	0.000	1389.48	

Zone 262

GQ Source Analysis

GQ Source Number:	2501030	**Specific Gravity:**	0.7144
GQ Source Name:	LIGNITE PLANT	**Dry Heat Value:**	946.99
Effective Date:	5/1/2016 9:00:00 AM	**Wet Heat Value:**	930.51
Effective End Date	1/18/2038 9:14:07 PM	**As Deliv. Heat Value:**	946.99
Pressure Base:	14.730	**Sample Pressure:**	384.00
Viscosity:		**Sample Temperature:**	

		Mol %	Liquid Content			Mol %
C1	Methane	66.950		CO2	Carbon Dioxide	0.105
C2	Ethane	12.666	0.0000	N2	Nitrogen	15.645
C3	Propane	1.641	0.4509	O2	Oxygen	2.915
IC4	Isobutane	0.043	0.0139	He	Helium	
NC4	n-Butane	0.035	0.0111	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					

Totals 100.000% 0.476 GPM

Sample Date: 6/1/2016 12:00:00 AM
Sample Type: Composite
Sample Tech: ES
H2S: ppm

Sample Remarks:

Analysis Tech: MB

Analysis Remarks:

Zone 263

*** End of Report ***

GQ Source Analysis

GQ Source Number:	0702010	**Specific Gravity:**	0.7090
GQ Source Name:	EPPING BORDER	**Dry Heat Value:**	1183.60
Effective Date:	5/1/2016 9:00:00 AM	**Wet Heat Value:**	1163.00
Effective End Date	1/18/2038 9:14:07 PM	**As Deliv. Heat Value:**	1183.60
Pressure Base:	14.730	**Sample Pressure:**	383.00
Viscosity:		**Sample Temperature:**	

		Mol %	Liquid Content			Mol %
C1	Methane	72.267		CO2	Carbon Dioxide	0.971
C2	Ethane	20.603	0.0000	N2	Nitrogen	2.869
C3	Propane	2.962	0.8137	O2	Oxygen	0.000
IC4	Isobutane	0.099	0.0323	He	Helium	
NC4	n-Butane	0.198	0.0622	H2	Hydrogen	
IC5	Isopentane	0.015	0.0053	H2S	Hydrogen Sulfide	
NC5	n-Pentane	0.017	0.0062	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% 0.920 GPM

Sample Date: 5/20/2016 12:00:00 AM
Sample Type: Composite
Sample Tech: 0
H2S: ppm

Sample Remarks:

Analysis Tech: MB

Analysis Remarks:

Zone 264

GQ Source Daily Summary

May 2016

Number: 161 **Pressure Base:** 14.730 **Contract Day:** 1

Name: NORTH TIOGA TRANSFER-PORTAL **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	0.7110	1162.1	1182.7	0.850	3.329	71.901	20.727	2.874	0.091	0.193	0.016	0.018	0.000	0.000	0.000	0.000	0.000	1402.60	
2	0.7101	1160.9	1181.5	0.838	3.337	72.017	20.694	2.785	0.092	0.198	0.017	0.021	0.000	0.000	0.000	0.000	0.000	1402.02	
3	0.7101	1160.9	1181.4	0.846	3.329	71.988	20.701	2.833	0.090	0.186	0.013	0.015	0.000	0.000	0.000	0.000	0.000	1401.97	
4	0.7126	1165.1	1185.7	0.837	3.320	71.859	20.547	3.077	0.103	0.218	0.017	0.021	0.000	0.000	0.000	0.000	0.000	1404.55	
5	0.7138	1167.6	1188.3	0.817	3.301	71.757	20.533	3.227	0.110	0.224	0.015	0.017	0.000	0.000	0.000	0.000	0.000	1406.49	
6	0.7084	1158.1	1178.6	0.833	3.354	72.350	20.287	2.881	0.091	0.180	0.011	0.013	0.000	0.000	0.000	0.000	0.000	1400.33	
7	0.7071	1155.7	1176.1	0.809	3.412	72.538	20.161	2.782	0.087	0.178	0.014	0.018	0.000	0.000	0.000	0.000	0.000	1398.72	
8	0.7043	1151.7	1172.1	0.792	3.424	72.618	20.447	2.484	0.073	0.141	0.009	0.011	0.000	0.000	0.000	0.000	0.000	1396.63	
9	0.7069	1155.2	1175.6	0.847	3.364	72.681	20.025	2.745	0.095	0.203	0.018	0.022	0.000	0.000	0.000	0.000	0.000	1398.33	
10	0.7089	1159.4	1179.9	0.824	3.338	72.349	20.347	2.765	0.102	0.227	0.021	0.026	0.000	0.000	0.000	0.000	0.000	1401.35	
11	0.7092	1159.9	1180.4	0.832	3.318	72.295	20.417	2.763	0.102	0.227	0.021	0.025	0.000	0.000	0.000	0.000	0.000	1401.72	
12	0.7090	1159.7	1180.2	0.841	3.300	72.397	20.312	2.754	0.103	0.237	0.024	0.030	0.000	0.000	0.000	0.000	0.000	1401.66	
13	0.7113	1162.4	1182.9	0.867	3.316	72.067	20.514	2.820	0.107	0.250	0.026	0.032	0.000	0.000	0.000	0.000	0.000	1402.60	
14	0.7122	1162.7	1183.3	0.887	3.354	71.744	20.869	2.761	0.099	0.236	0.023	0.028	0.000	0.000	0.000	0.000	0.000	1402.08	
15	0.7093	1159.3	1179.8	0.829	3.371	72.313	20.349	2.749	0.098	0.235	0.024	0.031	0.000	0.000	0.000	0.000	0.000	1400.86	
16	0.7103	1162.7	1183.3	0.764	3.354	72.583	19.788	2.998	0.127	0.310	0.033	0.043	0.000	0.000	0.000	0.000	0.000	1403.94	
17	0.7088	1157.7	1178.2	0.843	3.406	72.160	20.568	2.724	0.085	0.179	0.015	0.019	0.000	0.000	0.000	0.000	0.000	1399.37	
18	0.7066	1154.3	1174.7	0.819	3.438	72.511	20.264	2.692	0.081	0.164	0.014	0.017	0.000	0.000	0.000	0.000	0.000	1397.51	
19	0.7082	1157.7	1178.2	0.815	3.390	72.316	20.336	2.868	0.085	0.165	0.011	0.013	0.000	0.000	0.000	0.000	0.000	1400.03	
20	0.7086	1158.7	1179.2	0.814	3.369	72.304	20.389	2.806	0.091	0.190	0.016	0.020	0.000	0.000	0.000	0.000	0.000	1400.78	
21	0.7109	1161.9	1182.5	0.822	3.371	71.994	20.585	2.883	0.096	0.206	0.019	0.023	0.000	0.000	0.000	0.000	0.000	1402.48	
22	0.7103	1161.3	1181.8	0.821	3.360	72.106	20.464	2.901	0.098	0.210	0.018	0.021	0.000	0.000	0.000	0.000	0.000	1402.24	
23	0.7083	1159.0	1179.5	0.810	3.327	72.404	20.317	2.810	0.093	0.198	0.018	0.022	0.000	0.000	0.000	0.000	0.000	1401.46	
24	0.7103	1162.2	1182.8	0.817	3.307	72.160	20.445	2.909	0.100	0.218	0.020	0.024	0.000	0.000	0.000	0.000	0.000	1403.37	
25	0.6890	1137.1	1157.2	0.490	3.335	75.376	18.195	2.378	0.075	0.128	0.010	0.013	0.000	0.000	0.000	0.000	0.000	1394.17	
26	0.6751	1120.8	1140.7	0.246	3.385	77.782	16.135	2.258	0.072	0.107	0.007	0.008	0.000	0.000	0.000	0.000	0.000	1388.29	
27	0.6849	1127.4	1147.4	0.531	3.474	75.939	17.696	2.148	0.073	0.126	0.007	0.006	0.000	0.000	0.000	0.000	0.000	1386.45	
28	0.6849	1126.7	1146.7	0.564	3.470	75.790	17.927	2.101	0.059	0.081	0.003	0.004	0.000	0.000	0.000	0.000	0.000	1385.57	
29	0.6871	1130.3	1150.3	0.556	3.464	75.670	17.806	2.275	0.082	0.138	0.005	0.004	0.000	0.000	0.000	0.000	0.000	1387.79	
30	0.6870	1129.2	1149.2	0.574	3.495	75.701	17.792	2.215	0.077	0.127	0.007	0.010	0.000	0.000	0.000	0.000	0.000	1386.54	
31	0.6820	1122.1	1142.0	0.530	3.533	76.373	17.320	2.062	0.066	0.103	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1382.78	
Avg	0.7038	1153.0	1173.0	0.754	3.376	73.098	19.773	2.688	0.090	0.187	0.015	0.019	0.000	0.000	0.000	0.000	0.000	1398.22	

Zone 265

GQ Source Daily Summary

May 2016

Number: 043 **Pressure Base:** 14.730 **Contract Day:** 1

Name: BISMARCK STATION-CLEVELAND 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	0.7543	1187.0	1208.0	0.835	5.894	65.637	21.809	5.183	0.179	0.413	0.024	0.025	0.000	0.000	0.000	0.000	0.000	1390.88	
2	0.7552	1187.1	1208.1	0.834	5.968	65.501	21.822	5.229	0.181	0.417	0.024	0.025	0.000	0.000	0.000	0.000	0.000	1390.25	
3	0.7545	1186.6	1207.7	0.833	5.936	65.573	21.840	5.183	0.178	0.410	0.023	0.024	0.000	0.000	0.000	0.000	0.000	1390.33	
4	0.7545	1187.4	1208.4	0.828	5.902	65.564	21.886	5.183	0.179	0.410	0.023	0.024	0.000	0.000	0.000	0.000	0.000	1391.13	
5	0.7552	1187.6	1208.6	0.830	5.953	65.540	21.749	5.276	0.184	0.420	0.024	0.025	0.000	0.000	0.000	0.000	0.000	1390.72	
6	0.7565	1189.2	1210.2	0.825	5.980	65.397	21.759	5.377	0.193	0.421	0.024	0.024	0.000	0.000	0.000	0.000	0.000	1391.44	
7	0.7560	1188.9	1210.0	0.823	5.957	65.462	21.741	5.361	0.193	0.417	0.023	0.024	0.000	0.000	0.000	0.000	0.000	1391.55	
8	0.7545	1187.2	1208.3	0.821	5.920	65.688	21.625	5.296	0.190	0.412	0.023	0.024	0.000	0.000	0.000	0.000	0.000	1390.98	
9	0.7549	1187.9	1208.9	0.822	5.913	65.641	21.660	5.315	0.191	0.412	0.023	0.023	0.000	0.000	0.000	0.000	0.000	1391.40	
10	0.7551	1187.9	1209.0	0.820	5.934	65.576	21.716	5.308	0.190	0.410	0.022	0.023	0.000	0.000	0.000	0.000	0.000	1391.26	
11	0.7559	1189.9	1211.0	0.818	5.892	65.485	21.787	5.364	0.192	0.415	0.023	0.024	0.000	0.000	0.000	0.000	0.000	1392.86	
12	0.7554	1188.6	1209.6	0.821	5.919	65.544	21.742	5.330	0.190	0.409	0.023	0.023	0.000	0.000	0.000	0.000	0.000	1391.78	
13	0.7365	1168.3	1189.0	0.821	5.384	68.652	19.901	4.685	0.166	0.352	0.020	0.020	0.000	0.000	0.000	0.000	0.000	1385.43	
14	0.7505	1181.4	1202.3	0.822	5.897	66.377	21.071	5.208	0.186	0.397	0.021	0.021	0.000	0.000	0.000	0.000	0.000	1387.85	
15	0.7542	1184.9	1205.8	0.820	6.037	65.867	21.208	5.401	0.197	0.429	0.020	0.021	0.000	0.000	0.000	0.000	0.000	1388.47	
16	0.7554	1187.2	1208.3	0.820	6.006	65.655	21.449	5.379	0.201	0.446	0.021	0.022	0.000	0.000	0.000	0.000	0.000	1390.14	
17	0.7561	1187.6	1208.6	0.820	6.048	65.512	21.568	5.347	0.203	0.456	0.023	0.023	0.000	0.000	0.000	0.000	0.000	1389.94	
18	0.7561	1187.1	1208.1	0.819	6.077	65.583	21.400	5.413	0.205	0.458	0.023	0.023	0.000	0.000	0.000	0.000	0.000	1389.39	
19	0.7558	1186.9	1207.9	0.819	6.067	65.596	21.434	5.379	0.203	0.457	0.023	0.023	0.000	0.000	0.000	0.000	0.000	1389.35	
20	0.7545	1185.9	1206.9	0.818	6.003	65.775	21.405	5.312	0.199	0.444	0.022	0.022	0.000	0.000	0.000	0.000	0.000	1389.41	
21	0.7546	1186.2	1207.2	0.818	5.993	65.760	21.421	5.319	0.199	0.446	0.022	0.022	0.000	0.000	0.000	0.000	0.000	1389.73	
22	0.7535	1184.5	1205.5	0.820	5.983	65.911	21.360	5.247	0.195	0.440	0.022	0.022	0.000	0.000	0.000	0.000	0.000	1388.82	
23	0.7539	1185.5	1206.5	0.818	5.966	65.872	21.372	5.286	0.197	0.444	0.022	0.022	0.000	0.000	0.000	0.000	0.000	1389.60	
24	0.7554	1188.4	1209.5	0.819	5.931	65.701	21.469	5.379	0.202	0.454	0.022	0.023	0.000	0.000	0.000	0.000	0.000	1391.57	
25	0.7554	1188.3	1209.4	0.818	5.940	65.684	21.486	5.371	0.202	0.454	0.022	0.023	0.000	0.000	0.000	0.000	0.000	1391.44	
26	0.7553	1188.0	1209.1	0.818	5.949	65.705	21.456	5.361	0.204	0.461	0.023	0.023	0.000	0.000	0.000	0.000	0.000	1391.19	
27	0.7550	1187.1	1208.1	0.819	5.978	65.735	21.420	5.338	0.203	0.461	0.023	0.023	0.000	0.000	0.000	0.000	0.000	1390.35	
28	0.7545	1185.5	1206.5	0.821	6.027	65.788	21.345	5.320	0.200	0.453	0.023	0.023	0.000	0.000	0.000	0.000	0.000	1388.91	
29	0.7541	1185.7	1206.7	0.822	5.977	65.864	21.335	5.302	0.200	0.454	0.023	0.023	0.000	0.000	0.000	0.000	0.000	1389.50	
30	0.7554	1187.9	1208.9	0.822	5.959	65.731	21.390	5.377	0.205	0.468	0.024	0.024	0.000	0.000	0.000	0.000	0.000	1390.93	
31	0.7564	1189.1	1210.2	0.822	5.979	65.561	21.497	5.439	0.198	0.459	0.023	0.022	0.000	0.000	0.000	0.000	0.000	1391.46	
Avg	0.7544	1186.0	1207.5	0.822	5.947	65.772	21.488	5.299	0.194	0.432	0.023	0.023	0.000	0.000	0.000	0.000	0.000	1390.26	

Zone 271

GQ Source Daily Summary

May 2016

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	0.7533	1186.1	1207.1	0.838	5.850	65.748	21.819	5.116	0.177	0.402	0.024	0.025	0.000					1390.78	
2	0.7548	1186.6	1207.6	0.835	5.966	65.514	21.850	5.198	0.180	0.408	0.024	0.024	0.000					1389.95	
3	0.7550	1186.7	1207.7	0.833	5.976	65.480	21.875	5.202	0.179	0.407	0.024	0.024	0.000					1389.96	
4	0.7538	1185.6	1206.6	0.831	5.934	65.618	21.871	5.122	0.177	0.400	0.023	0.024	0.000					1389.81	
5	0.7550	1187.5	1208.5	0.834	5.924	65.459	21.968	5.183	0.179	0.405	0.024	0.024	0.000					1390.92	
6	0.7558	1187.9	1208.9	0.832	5.982	65.436	21.802	5.300	0.186	0.413	0.024	0.025	0.000	0.000	0.000	0.000	0.000	1390.57	
7	0.7553	1187.2	1208.2	0.821	6.000	65.544	21.652	5.334	0.192	0.409	0.023	0.024	0.000	0.000	0.000	0.000	0.000	1390.16	
8	0.7550	1187.0	1208.0	0.819	5.986	65.583	21.645	5.323	0.191	0.407	0.023	0.023	0.000	0.000	0.000	0.000	0.000	1390.23	
9	0.7540	1186.4	1207.4	0.817	5.930	65.752	21.575	5.287	0.190	0.403	0.023	0.023	0.000	0.000	0.000	0.000	0.000	1390.44	
10	0.7543	1186.4	1207.4	0.818	5.954	65.700	21.591	5.298	0.190	0.403	0.023	0.023	0.000					1390.22	
11	0.7549	1187.7	1208.7	0.817	5.936	65.612	21.667	5.330	0.190	0.403	0.023	0.023	0.000					1391.13	
12	0.7549	1187.8	1208.8	0.818	5.925	65.655	21.609	5.349	0.191	0.407	0.023	0.023	0.000	0.000	0.000	0.000	0.000	1391.28	
13	0.7440	1175.5	1196.3	0.824	5.644	67.408	20.590	4.945	0.176	0.372	0.021	0.021	0.000					1386.93	
14	0.7428	1173.5	1194.2	0.823	5.652	67.588	20.454	4.905	0.174	0.364	0.020	0.020	0.000					1385.72	
15	0.7535	1183.3	1204.3	0.824	6.054	65.881	21.282	5.318	0.191	0.409	0.021	0.021	0.000					1387.38	
16	0.7549	1186.0	1207.0	0.824	6.029	65.723	21.360	5.389	0.200	0.433	0.021	0.021	0.000					1389.15	
17	0.7554	1186.4	1207.4	0.824	6.049	65.578	21.555	5.307	0.199	0.443	0.023	0.023	0.000	0.000	0.000	0.000	0.000	1389.18	
18	0.7559	1186.6	1207.6	0.823	6.088	65.534	21.492	5.368	0.203	0.449	0.022	0.022	0.000					1388.93	
19	0.7560	1186.6	1207.6	0.821	6.098	65.548	21.434	5.400	0.204	0.450	0.023	0.023	0.000					1388.88	
20	0.7542	1184.8	1205.7	0.821	6.041	65.780	21.391	5.286	0.198	0.438	0.022	0.022	0.000					1388.37	
21	0.7543	1185.2	1206.2	0.820	6.022	65.787	21.379	5.315	0.198	0.436	0.022	0.021	0.000					1388.81	
22	0.7534	1183.9	1204.9	0.816	6.018	65.882	21.362	5.249	0.196	0.433	0.022	0.022	0.000					1388.21	
23	0.7531	1183.7	1204.7	0.818	6.000	65.941	21.335	5.234	0.195	0.433	0.022	0.022	0.000					1388.24	
24	0.7543	1186.0	1207.0	0.816	5.976	65.793	21.425	5.304	0.199	0.442	0.022	0.022	0.000					1389.80	
25	0.7547	1186.9	1207.9	0.814	5.965	65.775	21.386	5.375	0.200	0.440	0.022	0.022	0.000					1390.43	
26	0.7549	1187.1	1208.1	0.814	5.973	65.738	21.424	5.353	0.203	0.449	0.023	0.023	0.000					1390.46	
27	0.7544	1186.1	1207.1	0.816	5.984	65.810	21.368	5.326	0.202	0.448	0.023	0.023	0.000					1389.78	
28	0.7544	1185.1	1206.1	0.820	6.044	65.779	21.351	5.313	0.201	0.446	0.023	0.023	0.000					1388.54	
29	0.7536	1183.9	1204.8	0.824	6.035	65.895	21.288	5.275	0.198	0.440	0.023	0.022	0.000					1387.87	
30	0.7546	1186.0	1207.0	0.823	5.996	65.790	21.359	5.332	0.202	0.451	0.024	0.023	0.000					1389.51	
31	0.7554	1187.7	1208.7	0.823	5.972	65.703	21.406	5.386	0.204	0.457	0.024	0.024	0.000					1390.70	
Avg	0.7539	1185.0	1206.4	0.823	5.968	65.808	21.470	5.272	0.192	0.423	0.023	0.023	0.000	0.000	0.000	0.000	0.000	1389.43	

Zone 272

GQ Source Daily Summary

May 2016

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	0.7515	1182.8	1203.7	0.840	5.880	65.943	21.723	5.012	0.171	0.385	0.022	0.023	0.000	0.000	0.000	0.000	0.000	1388.55	
2	0.7543	1185.5	1206.5	0.838	5.980	65.567	21.825	5.162	0.178	0.403	0.024	0.025	0.000	0.000	0.000	0.000	0.000	1389.14	
3	0.7536	1184.2	1205.2	0.835	5.995	65.612	21.830	5.120	0.173	0.391	0.022	0.022	0.000	0.000	0.000	0.000	0.000	1388.33	
4	0.7529	1183.9	1204.9	0.834	5.947	65.709	21.837	5.069	0.172	0.388	0.022	0.022	0.000	0.000	0.000	0.000	0.000	1388.66	
5	0.7550	1187.4	1208.5	0.837	5.926	65.446	21.979	5.187	0.178	0.400	0.023	0.023	0.000	0.000	0.000	0.000	0.000	1390.81	
6	0.7553	1187.0	1208.1	0.834	5.990	65.469	21.792	5.285	0.183	0.402	0.023	0.023	0.000	0.000	0.000	0.000	0.000	1390.00	
7	0.7551	1186.7	1207.7	0.824	6.007	65.565	21.638	5.323	0.191	0.406	0.023	0.023	0.000	0.000	0.000	0.000	0.000	1389.77	
8	0.7551	1186.9	1207.9	0.822	5.990	65.578	21.647	5.321	0.191	0.405	0.023	0.023	0.000	0.000	0.000	0.000	0.000	1390.07	
9	0.7537	1185.6	1206.6	0.820	5.938	65.789	21.553	5.266	0.189	0.400	0.022	0.023	0.000	0.000	0.000	0.000	0.000	1389.90	
10	0.7538	1185.5	1206.5	0.819	5.960	65.747	21.575	5.272	0.187	0.395	0.022	0.022	0.000	0.000	0.000	0.000	0.000	1389.62	
11	0.7542	1186.4	1207.4	0.820	5.948	65.666	21.652	5.295	0.186	0.391	0.021	0.021	0.000	0.000	0.000	0.000	0.000	1390.24	
12	0.7539	1186.1	1207.1	0.818	5.938	65.749	21.572	5.301	0.187	0.393	0.021	0.021	0.000	0.000	0.000	0.000	0.000	1390.19	
13	0.7434	1174.2	1195.0	0.823	5.660	67.460	20.575	4.906	0.172	0.362	0.020	0.020	0.000	0.000	0.000	0.000	0.000	1386.08	
14	0.7419	1172.1	1192.8	0.822	5.659	67.680	20.414	4.862	0.170	0.354	0.019	0.019	0.000	0.000	0.000	0.000	0.000	1384.87	
15	0.7529	1182.2	1203.1	0.826	6.064	65.937	21.262	5.286	0.188	0.399	0.020	0.019	0.000	0.000	0.000	0.000	0.000	1386.59	
16	0.7540	1184.3	1205.3	0.825	6.041	65.816	21.325	5.339	0.195	0.420	0.019	0.019	0.000	0.000	0.000	0.000	0.000	1388.06	
17	0.7547	1185.0	1205.9	0.826	6.069	65.641	21.521	5.272	0.196	0.432	0.022	0.021	0.000	0.000	0.000	0.000	0.000	1388.14	
18	0.7558	1186.1	1207.1	0.825	6.096	65.553	21.477	5.356	0.202	0.447	0.022	0.022	0.000	0.000	0.000	0.000	0.000	1388.55	
19	0.7559	1186.3	1207.3	0.824	6.101	65.566	21.421	5.388	0.203	0.449	0.023	0.023	0.000	0.000	0.000	0.000	0.000	1388.59	
20	0.7539	1184.1	1205.0	0.822	6.056	65.813	21.360	5.273	0.197	0.435	0.022	0.022	0.000	0.000	0.000	0.000	0.000	1387.81	
21	0.7543	1184.9	1205.9	0.824	6.034	65.780	21.377	5.310	0.198	0.434	0.021	0.021	0.000	0.000	0.000	0.000	0.000	1388.46	
22	0.7533	1183.7	1204.6	0.820	6.024	65.888	21.354	5.241	0.195	0.434	0.022	0.022	0.000	0.000	0.000	0.000	0.000	1387.92	
23	0.7529	1183.3	1204.3	0.819	6.009	65.955	21.322	5.224	0.195	0.432	0.022	0.022	0.000	0.000	0.000	0.000	0.000	1387.91	
24	0.7542	1185.8	1206.8	0.817	5.986	65.795	21.416	5.302	0.199	0.441	0.022	0.022	0.000	0.000	0.000	0.000	0.000	1389.55	
25	0.7545	1186.5	1207.5	0.816	5.966	65.795	21.380	5.362	0.200	0.438	0.022	0.022	0.000	0.000	0.000	0.000	0.000	1390.19	
26	0.7548	1186.8	1207.8	0.814	5.978	65.754	21.408	5.347	0.203	0.450	0.023	0.023	0.000	0.000	0.000	0.000	0.000	1390.27	
27	0.7543	1185.8	1206.8	0.817	5.993	65.825	21.349	5.320	0.202	0.449	0.023	0.023	0.000	0.000	0.000	0.000	0.000	1389.49	
28	0.7542	1184.6	1205.6	0.823	6.048	65.802	21.339	5.299	0.200	0.444	0.023	0.022	0.000	0.000	0.000	0.000	0.000	1388.20	
29	0.7536	1183.7	1204.7	0.825	6.039	65.900	21.280	5.273	0.198	0.440	0.023	0.022	0.000	0.000	0.000	0.000	0.000	1387.74	
30	0.7544	1185.7	1206.7	0.825	6.002	65.816	21.334	5.324	0.202	0.451	0.024	0.023	0.000	0.000	0.000	0.000	0.000	1389.21	
31	0.7553	1187.3	1208.3	0.825	5.981	65.709	21.401	5.379	0.204	0.454	0.024	0.024	0.000	0.000	0.000	0.000	0.000	1390.36	
Avg	0.7534	1185.0	1205.5	0.824	5.978	65.849	21.450	5.248	0.191	0.417	0.022	0.022	0.000	0.000	0.000	0.000	0.000	1388.82	

Zone 273

GQ Source Daily Summary

May 2016

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	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.7542	1186.8	1207.8	0.835	5.896	65.650	21.799	5.179	0.179	0.413	0.024	0.025	0.000	0.000	0.000	0.000	0.000	1390.78	
2	0.7549	1186.7	1207.7	0.834	5.974	65.529	21.800	5.219	0.180	0.415	0.024	0.025	0.000	0.000	0.000	0.000	0.000	1389.94	
3	0.7545	1186.5	1207.5	0.833	5.943	65.576	21.833	5.179	0.178	0.410	0.024	0.024	0.000	0.000	0.000	0.000	0.000	1390.17	
4	0.7543	1186.9	1207.9	0.829	5.908	65.596	21.865	5.166	0.178	0.410	0.024	0.024	0.000	0.000	0.000	0.000	0.000	1390.80	
5	0.7549	1187.0	1208.0	0.830	5.951	65.587	21.736	5.247	0.182	0.418	0.024	0.025	0.000	0.000	0.000	0.000	0.000	1390.41	
6	0.7564	1188.9	1210.0	0.825	5.983	65.412	21.749	5.369	0.192	0.421	0.024	0.024	0.000	0.000	0.000	0.000	0.000	1391.27	
7	0.7559	1188.6	1209.7	0.823	5.964	65.475	21.728	5.354	0.193	0.417	0.023	0.024	0.000	0.000	0.000	0.000	0.000	1391.32	
8	0.7546	1187.2	1208.3	0.821	5.925	65.681	21.629	5.295	0.190	0.412	0.023	0.024	0.000	0.000	0.000	0.000	0.000	1390.93	
9	0.7549	1187.9	1209.0	0.822	5.910	65.642	21.660	5.317	0.191	0.412	0.023	0.023	0.000	0.000	0.000	0.000	0.000	1391.46	
10	0.7550	1187.7	1208.8	0.820	5.936	65.592	21.706	5.302	0.190	0.409	0.022	0.023	0.000	0.000	0.000	0.000	0.000	1391.12	
11	0.7559	1189.8	1210.9	0.818	5.892	65.490	21.788	5.359	0.192	0.414	0.023	0.024	0.000	0.000	0.000	0.000	0.000	1392.79	
12	0.7553	1188.9	1210.0	0.820	5.894	65.556	21.756	5.330	0.189	0.408	0.023	0.023	0.000	0.000	0.000	0.000	0.000	1392.21	
13	0.6178	1049.4	1067.9	0.835	1.454	88.557	8.410	0.651	0.033	0.048	0.006	0.005	0.000	0.000	0.000	0.000	0.000	1358.84	
14	0.7156	1146.5	1166.8	0.821	4.747	72.213	17.707	4.025	0.147	0.306	0.017	0.017	0.000	0.000	0.000	0.000	0.000	1379.95	
15	0.7537	1184.2	1205.2	0.821	6.025	65.952	21.160	5.379	0.196	0.425	0.021	0.021	0.000	0.000	0.000	0.000	0.000	1388.20	
16	0.7551	1186.7	1207.7	0.820	6.009	65.702	21.411	5.368	0.201	0.445	0.021	0.022	0.000	0.000	0.000	0.000	0.000	1389.79	
17	0.7558	1187.1	1208.2	0.820	6.049	65.563	21.522	5.344	0.202	0.454	0.023	0.023	0.000	0.000	0.000	0.000	0.000	1389.67	
18	0.7561	1187.2	1208.2	0.819	6.071	65.581	21.406	5.414	0.205	0.458	0.023	0.023	0.000	0.000	0.000	0.000	0.000	1389.50	
19	0.7559	1187.0	1208.0	0.819	6.061	65.597	21.434	5.384	0.203	0.456	0.023	0.023	0.000	0.000	0.000	0.000	0.000	1389.48	
20	0.7544	1185.7	1206.7	0.818	6.008	65.784	21.391	5.313	0.199	0.445	0.022	0.022	0.000	0.000	0.000	0.000	0.000	1389.29	
21	0.7545	1186.1	1207.1	0.819	5.993	65.772	21.413	5.315	0.199	0.446	0.022	0.022	0.000	0.000	0.000	0.000	0.000	1389.65	
22	0.7535	1184.6	1205.6	0.820	5.984	65.906	21.360	5.249	0.196	0.440	0.022	0.022	0.000	0.000	0.000	0.000	0.000	1388.84	
23	0.7536	1185.0	1206.0	0.818	5.971	65.909	21.350	5.270	0.196	0.441	0.022	0.022	0.000	0.000	0.000	0.000	0.000	1389.24	
24	0.7552	1187.8	1208.8	0.819	5.948	65.728	21.441	5.363	0.201	0.454	0.023	0.023	0.000	0.000	0.000	0.000	0.000	1391.06	
25	0.7552	1188.0	1209.0	0.818	5.941	65.715	21.469	5.359	0.201	0.453	0.022	0.023	0.000	0.000	0.000	0.000	0.000	1391.23	
26	0.7553	1188.0	1209.0	0.818	5.949	65.711	21.450	5.360	0.204	0.462	0.023	0.023	0.000	0.000	0.000	0.000	0.000	1391.17	
27	0.7550	1187.1	1208.1	0.819	5.973	65.747	21.416	5.336	0.202	0.460	0.023	0.024	0.000	0.000	0.000	0.000	0.000	1390.39	
28	0.7545	1185.5	1206.5	0.821	6.022	65.790	21.355	5.314	0.200	0.452	0.023	0.023	0.000	0.000	0.000	0.000	0.000	1388.98	
29	0.7541	1185.5	1206.5	0.822	5.981	65.877	21.322	5.298	0.200	0.454	0.023	0.023	0.000	0.000	0.000	0.000	0.000	1389.34	
30	0.7553	1187.6	1208.7	0.822	5.961	65.744	21.385	5.370	0.204	0.466	0.024	0.024	0.000	0.000	0.000	0.000	0.000	1390.79	
31	0.7563	1188.6	1209.6	0.821	6.007	65.545	21.498	5.419	0.202	0.461	0.023	0.023	0.000	0.000	0.000	0.000	0.000	1390.87	
Avg	0.7493	1181.0	1202.2	0.823	5.785	66.619	20.998	5.124	0.188	0.419	0.022	0.022	0.000	0.000	0.000	0.000	0.000	1389.02	

Zone 28

GQ Source Daily Summary

May 2016

Number: 271 **Pressure Base:** 14.730 **Contract Day:** 1

Name: DICKINSON STN-BELFIELD TSF-GLENULLIN STN **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	0.6161	1049.5	1068.0	0.894	1.199	89.002	8.179	0.610	0.043	0.055	0.010	0.007	0.000	0.000	0.000	0.000	0.000	1360.74	
2	0.6684	1130.9	1150.9	0.237	2.170	77.641	18.989	0.916	0.018	0.024	0.003	0.002	0.000	0.000	0.000	0.000	0.000	1407.46	
3	0.6862	1158.6	1179.1	0.001	2.524	73.677	22.832	0.947	0.008	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1423.32	
4	0.6864	1159.0	1179.5	0.000	2.514	73.634	22.888	0.944	0.008	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1423.68	
5	0.6863	1158.2	1178.7	0.000	2.549	73.667	22.814	0.949	0.008	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1422.85	
6	0.6854	1156.9	1177.4	0.000	2.552	73.729	22.854	0.848	0.007	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1422.09	
7	0.6864	1158.3	1178.8	0.000	2.560	73.628	22.842	0.951	0.008	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1422.78	
8	0.6857	1157.2	1177.7	0.000	2.557	73.719	22.813	0.893	0.008	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1422.22	
9	0.6857	1157.3	1177.8	0.000	2.546	73.700	22.878	0.856	0.008	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1422.39	
10	0.6831	1120.2	1140.1	0.709	3.463	77.335	15.434	2.719	0.103	0.208	0.015	0.014	0.000	0.000	0.000	0.000	0.000	1380.34	
11	0.6115	1042.7	1061.1	0.840	1.264	89.728	7.550	0.533	0.032	0.043	0.006	0.005	0.000	0.000	0.000	0.000	0.000	1357.01	
12	0.6726	1137.3	1157.4	0.133	2.333	76.450	20.300	0.763	0.008	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.07	
13	0.6854	1157.2	1177.7	0.000	2.536	73.726	22.876	0.846	0.007	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1422.43	
14	0.6854	1157.0	1177.5	0.003	2.535	73.775	22.805	0.855	0.009	0.015	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1422.27	
15	0.6803	1149.1	1169.4	0.058	2.451	74.867	21.764	0.836	0.010	0.014	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1417.79	
16	0.6151	1048.1	1066.7	0.840	1.272	89.084	8.104	0.601	0.037	0.048	0.008	0.006	0.000	0.000	0.000	0.000	0.000	1360.05	
17	0.6151	1048.3	1066.8	0.847	1.251	89.050	8.188	0.571	0.035	0.045	0.008	0.005	0.000	0.000	0.000	0.000	0.000	1360.28	
18	0.6151	1048.8	1067.4	0.844	1.224	89.054	8.208	0.579	0.035	0.044	0.007	0.005	0.000	0.000	0.000	0.000	0.000	1360.98	
19	0.6405	1073.2	1092.3	0.828	2.145	84.797	10.571	1.458	0.064	0.118	0.010	0.008	0.000	0.000	0.000	0.000	0.000	1364.84	
20	0.6286	1060.7	1079.5	0.823	1.803	86.835	9.252	1.144	0.047	0.084	0.007	0.005	0.000	0.000	0.000	0.000	0.000	1361.54	
21	0.6317	1065.0	1083.9	0.847	1.786	86.503	9.392	1.273	0.069	0.108	0.012	0.010	0.000	0.000	0.000	0.000	0.000	1363.76	
22	0.6470	1079.2	1098.3	0.836	2.386	83.832	10.924	1.788	0.074	0.140	0.011	0.009	0.000	0.000	0.000	0.000	0.000	1365.37	
23	0.6296	1060.0	1078.7	0.859	1.929	86.504	9.360	1.203	0.044	0.086	0.007	0.007	0.000	0.000	0.000	0.000	0.000	1359.47	
24	0.6303	1058.1	1076.8	0.803	2.150	86.463	9.239	1.215	0.039	0.084	0.004	0.004	0.000	0.000	0.000	0.000	0.000	1356.36	
25	0.6318	1059.8	1078.5	0.819	2.159	86.241	9.381	1.260	0.042	0.089	0.004	0.004	0.000	0.000	0.000	0.000	0.000	1356.95	
26	0.6343	1063.3	1082.1	0.809	2.201	85.801	9.702	1.339	0.045	0.096	0.004	0.004	0.000	0.000	0.000	0.000	0.000	1358.70	
27	0.6366	1065.8	1084.6	0.810	2.266	85.432	9.904	1.425	0.049	0.105	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1359.37	
28	0.6277	1057.5	1076.2	0.823	1.907	86.907	9.162	1.079	0.038	0.077	0.004	0.004	0.000	0.000	0.000	0.000	0.000	1358.46	
29	0.6286	1058.8	1077.5	0.819	1.922	86.799	9.193	1.128	0.044	0.084	0.006	0.005	0.000	0.000	0.000	0.000	0.000	1359.07	
30	0.6302	1059.9	1078.7	0.850	1.960	86.527	9.363	1.158	0.045	0.086	0.006	0.005	0.000	0.000	0.000	0.000	0.000	1358.75	
31	0.6302	1063.6	1082.4	0.862	1.709	86.795	9.218	1.207	0.073	0.111	0.014	0.011	0.000	0.000	0.000	0.000	0.000	1363.55	
Avg	0.6509	1097.0	1116.8	0.522	2.123	81.771	14.419	1.061	0.034	0.060	0.005	0.004	0.000	0.000	0.000	0.000	0.000	1384.06	

Zone 31

GQ Source Daily Summary

May 2016

Number: 051 **Pressure Base:** 14.730 **Contract Day:** 1

Name: CABIN CREEK STATION-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	0.6775	1145.3	1165.6	0.130	2.312	75.603	21.023	0.897	0.013	0.019	0.002	0.002	0.000	0.000	0.000	0.000	0.000	1416.08	
2	0.6773	1144.5	1164.7	0.180	2.268	75.779	20.775	0.950	0.017	0.026	0.002	0.002	0.000	0.000	0.000	0.000	0.000	1415.22	
3	0.6846	1156.1	1176.6	0.050	2.449	74.043	22.519	0.912	0.010	0.015	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1421.94	
4	0.6673	1125.8	1145.7	0.449	2.051	78.459	17.797	1.131	0.038	0.064	0.007	0.006	0.000	0.000	0.000	0.000	0.000	1402.37	
5	0.6448	1088.3	1107.6	0.825	1.636	83.892	12.134	1.305	0.073	0.112	0.013	0.010	0.000	0.000	0.000	0.000	0.000	1379.32	
6	0.6696	1130.4	1150.4	0.353	2.136	77.749	18.629	1.036	0.035	0.052	0.006	0.004	0.000	0.000	0.000	0.000	0.000	1405.64	
7	0.6868	1159.0	1179.5	0.015	2.527	73.521	23.038	0.876	0.009	0.014	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1423.28	
8	0.6872	1159.8	1180.4	0.003	2.531	73.390	23.202	0.853	0.008	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1423.91	
9	0.6868	1159.2	1179.7	0.010	2.526	73.503	23.062	0.875	0.009	0.014	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1423.48	
10	0.6997	1164.8	1185.4	0.158	3.165	71.922	22.973	1.649	0.040	0.085	0.004	0.004	0.000	0.000	0.000	0.000	0.000	1417.39	
11	0.6440	1092.3	1111.7	0.502	1.813	82.909	13.919	0.765	0.033	0.046	0.007	0.005	0.000	0.000	0.000	0.000	0.000	1385.31	
12	0.6419	1088.1	1107.4	0.541	1.811	83.332	13.497	0.739	0.030	0.041	0.006	0.004	0.000	0.000	0.000	0.000	0.000	1382.25	
13	0.6404	1087.2	1106.5	0.532	1.744	83.538	13.445	0.669	0.027	0.036	0.005	0.004	0.000	0.000	0.000	0.000	0.000	1382.66	
14	0.6669	1128.6	1148.6	0.222	2.189	77.720	19.108	0.728	0.012	0.018	0.002	0.001	0.000	0.000	0.000	0.000	0.000	1406.34	
15	0.6878	1161.1	1181.7	0.004	2.507	73.295	23.302	0.872	0.008	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1424.88	
16	0.6881	1161.5	1182.1	0.006	2.509	73.276	23.270	0.915	0.008	0.014	0.000	0.001	0.000	0.000	0.000	0.000	0.000	1425.05	
17	0.6632	1122.1	1142.0	0.333	2.061	78.960	17.600	0.955	0.030	0.051	0.005	0.004	0.000	0.000	0.000	0.000	0.000	1402.29	
18	0.6504	1103.1	1122.7	0.444	1.850	81.444	15.457	0.744	0.023	0.030	0.005	0.004	0.000	0.000	0.000	0.000	0.000	1392.07	
19	0.6525	1102.3	1121.8	0.491	2.025	81.330	15.086	0.974	0.032	0.052	0.006	0.004	0.000	0.000	0.000	0.000	0.000	1388.81	
20	0.6615	1111.7	1131.4	0.463	2.337	79.704	16.158	1.222	0.037	0.070	0.005	0.004	0.000	0.000	0.000	0.000	0.000	1391.11	
21	0.6505	1099.9	1119.4	0.493	1.974	81.770	14.700	0.958	0.037	0.056	0.007	0.005	0.000	0.000	0.000	0.000	0.000	1387.93	
22	0.6621	1110.6	1130.2	0.513	2.389	79.894	15.642	1.406	0.051	0.091	0.008	0.006	0.000	0.000	0.000	0.000	0.000	1388.99	
23	0.6559	1103.3	1122.8	0.544	2.202	80.972	14.934	1.222	0.041	0.074	0.006	0.005	0.000	0.000	0.000	0.000	0.000	1386.39	
24	0.6504	1095.1	1114.5	0.535	2.194	81.891	14.181	1.108	0.028	0.057	0.003	0.003	0.000	0.000	0.000	0.000	0.000	1382.00	
25	0.6536	1097.7	1117.1	0.532	2.346	81.275	14.602	1.142	0.031	0.065	0.003	0.003	0.000	0.000	0.000	0.000	0.000	1381.79	
26	0.6510	1094.0	1113.3	0.571	2.271	81.924	13.920	1.198	0.035	0.073	0.004	0.004	0.000	0.000	0.000	0.000	0.000	1379.83	
27	0.6508	1091.8	1111.1	0.616	2.316	82.085	13.597	1.259	0.038	0.080	0.004	0.004	0.000	0.000	0.000	0.000	0.000	1377.31	
28	0.6488	1091.0	1110.3	0.618	2.165	82.364	13.625	1.118	0.034	0.068	0.004	0.004	0.000	0.000	0.000	0.000	0.000	1378.53	
29	0.6455	1088.1	1107.3	0.620	2.036	82.949	13.264	1.030	0.033	0.061	0.004	0.004	0.000	0.000	0.000	0.000	0.000	1378.26	
30	0.6484	1091.0	1110.3	0.602	2.153	82.422	13.609	1.102	0.036	0.068	0.005	0.004	0.000	0.000	0.000	0.000	0.000	1378.93	
31	0.6482	1092.7	1112.1	0.603	2.031	82.532	13.606	1.089	0.048	0.077	0.008	0.006	0.000	0.000	0.000	0.000	0.000	1381.27	
Avg	0.6627	1118.0	1137.4	0.386	2.210	79.144	17.151	1.023	0.029	0.050	0.004	0.004	0.000	0.000	0.000	0.000	0.000	1397.12	

Zone 32

GQ Source Daily Summary

May 2016

Number: 111 **Pressure Base:** 14.730 **Contract Day:** 1

Name: LITTLE KNIFE PLANT-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	0.6896	1164.4	1185.0	0.003	2.486	72.977	23.579	0.936	0.008	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1426.93	
2	0.6892	1163.6	1184.2	0.003	2.494	73.094	23.419	0.969	0.008	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1426.41	
3	0.6889	1163.0	1183.6	0.002	2.501	73.106	23.463	0.906	0.008	0.012	0.000	0.001	0.000	0.000	0.000	0.000	0.000	1425.99	
4	0.6894	1160.3	1180.8	0.002	2.703	72.996	23.366	0.914	0.008	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1422.17	
5	0.6890	1162.9	1183.5	0.002	2.522	73.102	23.409	0.946	0.008	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1425.73	
6	0.6888	1162.5	1183.0	0.002	2.522	73.106	23.458	0.892	0.008	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1425.49	
7	0.6884	1162.0	1182.6	0.002	2.515	73.148	23.458	0.859	0.007	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1425.33	
8	0.6885	1162.2	1182.8	0.003	2.513	73.152	23.432	0.881	0.008	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1425.43	
9	0.6883	1161.8	1182.4	0.002	2.514	73.137	23.504	0.827	0.007	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1425.23	
10	0.6883	1162.0	1182.5	0.001	2.514	73.103	23.558	0.806	0.007	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1425.33	
11	0.6880	1161.6	1182.2	0.001	2.505	73.177	23.491	0.808	0.007	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1425.23	
12	0.6885	1162.2	1182.8	0.001	2.512	73.110	23.519	0.841	0.007	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1425.49	
13	0.6887	1162.6	1183.2	0.002	2.509	73.081	23.532	0.857	0.007	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1425.69	
14	0.6887	1162.9	1183.4	0.002	2.494	73.111	23.485	0.888	0.007	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1426.01	
15	0.6891	1163.5	1184.1	0.002	2.493	73.063	23.504	0.917	0.008	0.012	0.000	0.001	0.000	0.000	0.000	0.000	0.000	1426.40	
16	0.6908	1165.5	1186.2	0.001	2.525	72.792	23.679	0.979	0.009	0.014	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1427.17	
17	0.6899	1163.8	1184.4	0.002	2.544	73.027	23.390	1.006	0.011	0.017	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1425.99	
18	0.6890	1163.3	1183.9	0.001	2.499	73.154	23.335	0.991	0.008	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1426.21	
19	0.6886	1162.4	1183.0	0.000	2.511	73.135	23.445	0.891	0.007	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1425.64	
20	0.6886	1162.3	1182.9	0.003	2.521	73.134	23.428	0.896	0.007	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1425.40	
21	0.6883	1161.7	1182.3	0.001	2.524	73.192	23.375	0.890	0.007	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1425.10	
22	0.6882	1161.6	1182.1	0.002	2.526	73.212	23.343	0.900	0.007	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1424.96	
23	0.6882	1162.0	1182.6	0.001	2.504	73.181	23.433	0.865	0.007	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1425.45	
24	0.6909	1165.9	1186.6	0.000	2.515	72.784	23.669	1.009	0.009	0.013	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1427.52	
25	0.6891	1163.1	1183.7	0.000	2.519	73.000	23.603	0.853	0.008	0.014	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1425.91	
26	0.6905	1165.0	1185.6	0.001	2.532	72.832	23.647	0.965	0.009	0.013	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1426.78	
27	0.6900	1164.0	1184.6	0.001	2.544	72.850	23.694	0.893	0.007	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1426.13	
28	0.6901	1164.5	1185.1	0.001	2.521	72.846	23.710	0.903	0.007	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1426.65	
29	0.6904	1164.9	1185.6	0.001	2.525	72.846	23.638	0.971	0.007	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1426.85	
30	0.6893	1163.2	1183.8	0.002	2.528	72.943	23.660	0.849	0.007	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1425.87	
31	0.6881	1161.9	1182.5	0.000	2.496	73.146	23.546	0.795	0.007	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1425.49	
Avg	0.6891	1163.0	1183.6	0.002	2.520	73.050	23.509	0.900	0.008	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1425.80	

Zone 33

GQ Source Analysis

GQ Source Number:	1202160	**Specific Gravity:**	0.5727
GQ Source Name:	BOWMAN BORDER	**Dry Heat Value:**	980.34
Effective Date:	5/1/2016 9:00:00 AM	**Wet Heat Value:**	963.28
Effective End Date	1/18/2038 9:14:07 PM	**As Deliv. Heat Value:**	980.34
Pressure Base:	14.730	**Sample Pressure:**	375.00
Viscosity:		**Sample Temperature:**	

		Mol %	Liquid Content			Mol %
C1	Methane	95.928		CO2	Carbon Dioxide	0.110
C2	Ethane	0.401	0.1070	N2	Nitrogen	3.529
C3	Propane	0.000	0.0000	O2	Oxygen	0.021
IC4	Isobutane	0.009	0.0028	He	Helium	
NC4	n-Butane	0.002	0.0006	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					

Totals 100.000% 0.110 GPM

Sample Date: 6/1/2016 12:00:00 AM
Sample Type: Composite
Sample Tech: MG
H2S: ppm

Sample Remarks:

Analysis Tech: MB

Analysis Remarks:

Zone 34

GQ Source Daily Summary

May 2016

Number: 471 **Pressure Base:** 14.730 **Contract Day:**

Name: SPRING CREEK I INTERCONNECT **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	0.6894	1132.9	1153.0	0.961	2.927	73.791	21.456	0.856	0.004	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1388.58	
2	0.6865	1128.3	1148.3	0.952	2.951	73.942	21.719	0.434	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1385.89	
3	0.6895	1132.4	1152.4	0.964	2.965	73.430	22.116	0.521	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1387.86	
4	0.6863	1127.5	1147.5	0.965	2.954	74.138	21.372	0.567	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1385.19	
5	0.6824	1125.1	1145.1	0.973	2.721	75.158	20.397	0.745	0.003	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1386.17	
6	0.6758	1116.6	1136.4	0.985	2.602	76.250	19.693	0.463	0.003	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1382.34	
7	0.6777	1118.3	1138.1	0.982	2.682	76.076	19.570	0.679	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1382.55	
8	0.6805	1122.6	1142.5	0.979	2.687	75.670	19.803	0.849	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1384.96	
9	0.6811	1123.9	1143.8	0.983	2.655	75.582	19.896	0.872	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1386.01	
10	0.6572	1078.0	1097.1	1.046	3.106	80.739	14.000	1.042	0.025	0.041	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1353.12	
11	0.6431	1053.9	1072.6	1.067	3.220	83.241	11.718	0.710	0.016	0.027	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1337.46	
12	0.6435	1054.7	1073.4	1.076	3.192	83.137	11.878	0.677	0.015	0.025	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1338.10	
13	0.6402	1052.4	1071.0	1.092	2.994	83.954	11.160	0.759	0.015	0.025	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1338.62	
14	0.6409	1054.4	1073.0	1.079	2.966	83.749	11.442	0.726	0.014	0.024	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1340.32	
15	0.6460	1061.9	1080.7	1.077	2.986	82.714	12.456	0.730	0.014	0.023	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1344.60	
16	0.6453	1061.4	1080.2	1.075	2.957	82.807	12.434	0.697	0.012	0.019	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1344.66	
17	0.6455	1061.2	1080.0	1.079	2.981	82.798	12.385	0.719	0.014	0.024	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1344.24	
18	0.6452	1060.5	1079.3	1.075	3.005	82.823	12.368	0.693	0.014	0.023	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1343.60	
19	0.6483	1065.9	1084.8	1.071	2.965	82.336	12.768	0.821	0.014	0.023	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1347.28	
20	0.6456	1062.6	1081.5	1.075	2.907	82.779	12.493	0.711	0.013	0.022	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1345.95	
21	0.6468	1065.5	1084.4	1.074	2.847	82.613	12.640	0.794	0.012	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1348.35	
22	0.6623	1088.0	1107.2	1.043	2.979	79.752	15.076	1.088	0.022	0.038	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1360.56	
23	0.6418	1056.5	1075.2	1.068	2.936	83.517	11.763	0.676	0.015	0.025	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1342.08	
24	0.6488	1062.7	1081.5	1.081	3.201	82.206	12.655	0.804	0.020	0.034	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1342.63	
25	0.6580	1077.8	1096.9	1.053	3.185	80.403	14.404	0.895	0.021	0.038	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1352.17	
26	0.6476	1062.1	1080.9	1.050	3.163	82.436	12.495	0.804	0.019	0.033	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1343.21	
27	0.6545	1072.0	1091.0	1.064	3.192	81.070	13.776	0.843	0.020	0.035	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1348.51	
28	0.6469	1066.8	1085.7	1.006	2.877	82.587	12.668	0.810	0.019	0.033	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1349.92	
29	0.6462	1067.5	1086.4	0.990	2.799	82.720	12.629	0.811	0.019	0.032	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1351.42	
30	0.6515	1068.3	1087.2	1.074	3.122	81.787	13.046	0.902	0.024	0.044	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1346.93	
31	0.6538	1070.0	1088.9	1.065	3.253	81.171	13.638	0.821	0.019	0.033	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1346.67	
Avg	0.6583	1082.0	1101.5	1.036	2.967	80.174	15.030	0.759	0.013	0.022	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1357.42	

Zone 43

ZONE 610

Watford City Effective 2-3-16

		01325 Watford City West Border			01312 Watford City East Border			**Weighted**	
Begin Date	End Date	MCF	DK	BTU Zone 25	MCF	DK	BTU Zone 43	**AVG BTU**	
5/1/2016	5/2/2016	68	82	1.209	173	200	1.153	1.169	5/1/2016
5/2/2016	5/3/2016	58	70	1.209	134	154	1.148	1.166	5/2/2016
5/3/2016	5/4/2016	58	70	1.209	65	75	1.152	1.179	5/3/2016
5/4/2016	5/5/2016	69	83	1.209	20	23	1.148	1.195	5/4/2016
5/5/2016	5/6/2016	65	78	1.209	23	27	1.145	1.192	5/5/2016
5/6/2016	5/7/2016	56	67	1.209	28	32	1.136	1.185	5/6/2016
5/7/2016	5/8/2016	64	77	1.209	17	20	1.138	1.194	5/7/2016
5/8/2016	5/9/2016	51	62	1.209	19	21	1.143	1.191	5/8/2016
5/9/2016	5/10/2016	74	89	1.209	24	28	1.144	1.193	5/9/2016
5/10/2016	5/11/2016	214	258	1.209	56	62	1.097	1.186	5/10/2016
5/11/2016	5/12/2016	315	380	1.209	84	90	1.073	1.180	5/11/2016
5/12/2016	5/13/2016	295	356	1.209	91	98	1.073	1.177	5/12/2016
5/13/2016	5/14/2016	320	387	1.209	104	111	1.071	1.175	5/13/2016
5/14/2016	5/15/2016	228	276	1.209	50	54	1.073	1.185	5/14/2016
5/15/2016	5/16/2016	150	181	1.209	39	42	1.081	1.183	5/15/2016
5/16/2016	5/17/2016	123	149	1.209	48	52	1.080	1.173	5/16/2016
5/17/2016	5/18/2016	102	123	1.209	20	21	1.080	1.188	5/17/2016
5/18/2016	5/19/2016	98	118	1.209	29	31	1.079	1.179	5/18/2016
5/19/2016	5/20/2016	73	88	1.209	19	21	1.085	1.183	5/19/2016
5/20/2016	5/21/2016	51	62	1.209	22	24	1.082	1.171	5/20/2016
5/21/2016	5/22/2016	50	61	1.209	4	4	1.084	1.200	5/21/2016
5/22/2016	5/23/2016	65	78	1.209	10	11	1.107	1.195	5/22/2016
5/23/2016	5/24/2016	79	96	1.209	22	24	1.075	1.180	5/23/2016
5/24/2016	5/25/2016	121	147	1.209	24	26	1.082	1.188	5/24/2016
5/25/2016	5/26/2016	183	222	1.209	58	64	1.097	1.182	5/25/2016
5/26/2016	5/27/2016	142	172	1.209	36	39	1.081	1.183	5/26/2016
5/27/2016	5/28/2016	87	106	1.209	19	21	1.091	1.188	5/27/2016
5/28/2016	5/29/2016	67	81	1.209	9	10	1.086	1.194	5/28/2016
5/29/2016	5/30/2016	48	58	1.209	16	17	1.086	1.178	5/29/2016
5/30/2016	5/31/2016	169	205	1.209	28	30	1.087	1.192	5/30/2016
5/31/2016	6/1/2016	253	306	1.209	55	60	1.089	1.188	5/31/2016
		3,796	4,588		1,346	1,492	1.1015	1.1843	

ROW ID	LOCATION DESCRIPTION	GROSS HEATING VALUE (BTU/CF)	SPECIFIC GRAVITY	WOBBE (calc)	CRICONDENTHERM (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	Changetimestamp	NOTES
11587	GLEN ULLIN	1066	0.6142	1360.2	-57	1.1761	0.8777	89.0087	8.1177	0.5745	0.0465	0.0374	0.0062	0.0085	0	0.0037	0.1277	0.016	4/30/2016	5/1/2016	5/1/2016 2:45:11 PM	
11587	GLEN ULLIN	1069.3	0.6165	1361.9	-61.2	1.2029	0.8735	88.4415	8.7144	0.5399	0.0382	0.0302	0.0044	0.0064	0	0.0026	0.1307	0.016	5/1/2016	5/2/2016	5/2/2016 2:44:06 PM	
11587	GLEN ULLIN	1073.9	0.6191	1364.9	-60.6	1.1766	0.8653	87.9149	9.2805	0.5376	0.0369	0.0298	0.0045	0.0064	0	0.0025	0.1295	0.016	5/2/2016	5/3/2016	5/3/2016 2:44:02 PM	
11587	GLEN ULLIN	1070.8	0.6172	1363	-58.1	1.1934	0.8584	88.362	8.7715	0.5725	0.043	0.035	0.0058	0.0079	0	0.0033	0.1294	0.016	5/3/2016	5/4/2016	5/4/2016 2:45:00 PM	
11587	GLEN ULLIN	1068.3	0.6154	1361.8	-49.1	1.2074	0.8366	88.9954	7.8999	0.7628	0.0659	0.0517	0.0093	0.0121	0	0.0056	0.1369	0.016	5/4/2016	5/5/2016	5/5/2016 2:44:21 PM	
11587	GLEN ULLIN	1069.7	0.6168	1362	-50.2	1.246	0.8454	88.6923	8.1848	0.7562	0.0595	0.0475	0.0087	0.0114	0	0.0053	0.1263	0.016	5/5/2016	5/6/2016	5/6/2016 2:45:04 PM	
11587	GLEN ULLIN	1069.7	0.6169	1362	-41.3	1.2191	0.8652	88.8754	7.896	0.8106	0.0827	0.0674	0.0128	0.0171	0	0.0086	0.1301	0.016	5/6/2016	5/7/2016	5/7/2016 2:44:25 PM	
11587	GLEN ULLIN	1069.3	0.6166	1361.8	-42.2	1.1969	0.8803	88.9569	7.8101	0.8313	0.0794	0.0656	0.0119	0.0163	0	0.0081	0.1267	0.016	5/7/2016	5/8/2016	5/8/2016 2:44:53 PM	
11587	GLEN ULLIN	1068	0.6157	1361	-45.1	1.215	0.8633	89.075	7.7372	0.8017	0.0744	0.0612	0.0109	0.0146	0	0.0071	0.1243	0.016	5/8/2016	5/9/2016	5/9/2016 2:44:44 PM	
11587	GLEN ULLIN	1064.8	0.6132	1359.8	-47.2	1.214	0.8353	89.4201	7.5172	0.7086	0.0694	0.0572	0.0104	0.0138	0	0.0066	0.1318	0.016	5/9/2016	5/10/2016	5/10/2016 2:45:24 PM	
11587	GLEN ULLIN	1061	0.6104	1358	-52.2	1.1994	0.8202	89.8712	7.1868	0.641	0.0597	0.0485	0.0087	0.0113	0	0.0053	0.1324	0.016	5/10/2016	5/11/2016	5/11/2016 2:44:58 PM	
11587	GLEN ULLIN	1060.1	0.6106	1356.7	-66.4	1.2618	0.8281	89.5336	7.6568	0.4948	0.0351	0.0272	0.004	0.0055	0	0.0021	0.1358	0.016	5/11/2016	5/12/2016	5/12/2016 2:45:30 PM	
11587	GLEN ULLIN	1060.8	0.6108	1357.3	-62	1.2604	0.8195	89.5767	7.5604	0.5503	0.0416	0.0327	0.0053	0.0071	0	0.0029	0.1274	0.016	5/12/2016	5/13/2016	5/13/2016 2:48:24 PM	
11587	GLEN ULLIN	1062.4	0.6115	1358.5	-53.1	1.2408	0.8087	89.6178	7.4074	0.6486	0.0587	0.0465	0.0085	0.0108	0	0.0048	0.1305	0.0162	5/13/2016	5/14/2016	5/14/2016 2:45:37 PM	
11587	GLEN ULLIN	1065.3	0.6139	1359.6	-56.7	1.2668	0.8261	89.0978	7.9054	0.6504	0.0508	0.0402	0.0068	0.0088	0	0.0036	0.1258	0.0173	5/14/2016	5/15/2016	5/15/2016 2:45:04 PM	
11587	GLEN ULLIN	1065.3	0.6141	1359.5	-59.2	1.2533	0.8459	88.9564	8.1336	0.5687	0.0426	0.0347	0.0059	0.0078	0	0.0032	0.1322	0.0175	5/15/2016	5/16/2016	5/16/2016 2:48:56 PM	
11587	GLEN ULLIN	1064.9	0.6134	1359.7	-59.7	1.2322	0.8336	89.0777	8.0634	0.5562	0.0408	0.0333	0.0056	0.0075	0	0.0031	0.1312	0.0175	5/16/2016	5/17/2016	5/17/2016 2:46:17 PM	
11587	GLEN ULLIN	1066.8	0.6144	1361	-57.3	1.2001	0.8443	88.9538	8.1548	0.6009	0.0455	0.0374	0.0064	0.0084	0	0.0036	0.1303	0.0175	5/17/2016	5/18/2016	5/18/2016 2:46:07 PM	
11587	GLEN ULLIN	1064.5	0.6129	1359.7	-61.5	1.2041	0.8385	89.152	8.0279	0.5385	0.0395	0.0325	0.0052	0.0071	0	0.0029	0.1352	0.0175	5/18/2016	5/19/2016	5/19/2016 2:46:47 PM	
11587	GLEN ULLIN	1062	0.6112	1358.4	-65.9	1.2054	0.8283	89.4511	7.7766	0.5222	0.0327	0.0267	0.0041	0.0056	0	0.0019	0.1305	0.0175	5/19/2016	5/20/2016	5/20/2016 2:51:49 PM	
11587	GLEN ULLIN	1062.1	0.611	1358.7	-58.2	1.1817	0.8267	89.6627	7.4763	0.6076	0.0463	0.0381	0.0061	0.0083	0	0.0036	0.1263	0.0175	5/20/2016	5/21/2016	5/21/2016 2:55:43 PM	
11587	GLEN ULLIN	1065.2	0.6132	1360.3	-54.5	1.1984	0.8325	89.3086	7.6953	0.6939	0.054	0.0449	0.0071	0.0097	0	0.0042	0.1373	0.0175	5/21/2016	5/22/2016	5/22/2016 2:50:02 PM	
11587	GLEN ULLIN	1064	0.6129	1359.1	-60.5	1.2155	0.8458	89.3388	7.6812	0.6788	0.0464	0.0365	0.0053	0.0073	0	0.0026	0.1267	0.0175	5/22/2016	5/23/2016	5/23/2016 2:51:58 PM	
11587	GLEN ULLIN	1051.5	0.6051	1351.8	-78.1	1.2437	0.8366	90.4529	6.9152	0.3816	0.0133	0.009	0.0002	0.0004	0	0	0.1313	0.0175	5/23/2016	5/24/2016	5/24/2016 2:56:20 PM	
11587	GLEN ULLIN	1049.4	0.6046	1349.7	-78.6	1.3608	0.8122	90.5058	6.7355	0.3991	0.0149	0.0098	0.0003	0.0005	0	0	0.1425	0.0175	5/24/2016	5/25/2016	5/25/2016 2:46:51 PM	
11587	GLEN ULLIN	1049.5	0.6039	1350.5	-79.4	1.2833	0.8216	90.6152	6.7523	0.3566	0.0113	0.0074	0	0.0001	0	0	0.1369	0.0175	5/25/2016	5/26/2016	5/26/2016 2:47:28 PM	
11587	GLEN ULLIN	1050.6	0.6048	1350.9	-78.5	1.297	0.8239	90.4637	6.8691	0.3715	0.0124	0.0088	0.0004	0.0006	0	0	0.1364	0.0175	5/26/2016	5/27/2016	5/27/2016 2:50:14 PM	
11587	GLEN ULLIN	1052.2	0.606	1351.7	-77.3	1.2671	0.8509	90.2857	7.0348	0.3836	0.0151	0.0105	0.0004	0.0009	0	0.0001	0.1345	0.0175	5/27/2016	5/28/2016	5/28/2016 2:47:36 PM	
11587	GLEN ULLIN	1054.6	0.6073	1353.3	-75.1	1.2421	0.8558	90.0847	7.2094	0.4216	0.0202	0.0153	0.0015	0.0024	0	0.0002	0.132	0.0175	5/28/2016	5/29/2016	5/29/2016 2:47:59 PM	
11587	GLEN ULLIN	1055.1	0.6077	1353.5	-74.4	1.2492	0.8556	90.0432	7.2184	0.438	0.0243	0.0188	0.0023	0.0033	0	0	0.1321	0.0175	5/29/2016	5/30/2016	5/30/2016 2:47:28 PM	
11587	GLEN ULLIN	1057.8	0.6093	1355.2	-69.3	1.2383	0.8537	89.8228	7.3702	0.4963	0.0331	0.0263	0.0036	0.0051	0	0.0013	0.135	0.0175	5/30/2016	5/31/2016	5/31/2016 2:49:14 PM	
11587	GLEN ULLIN	1067.8	0.6152	1361.4	-45	1.1905	0.8533	89.1373	7.7234	0.7643	0.0785	0.066	0.0115	0.0153	0	0.0071	0.1378	0.0175	5/31/2016	6/1/2016	6/1/2016 2:48:23 PM	

Zone 802

NORTH DAKOTA HEATING VALUE ZONES		
ZONES	***MEASURING DEVICE***	***LOCATION***
211	Chromatograph	Sidney Area
24	Monthly Sampler	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	Monthly Sampler	Williston – Ray
265	Chromatograph	North Tioga
271	Chromatograph	Bismarck – Cleveland
272	Chromatograph	Cleveland – Mapleton
273	Chromatograph	Cleveland – Grafton
28	Chromatograph	Bismarck
31	Chromatograph	Dickinson
32	Chromatograph	Cabin Creek – Dickinson
33	Chromatograph	Killdeer
34	Monthly Sampler	Bowman Area
43	Chromatograph	Spring Creek
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	MAY 16	APR 16	MAR 16	FEB 16	JAN 16	DEC 15	NOV 15	OCT 15	SEPT 15	AUG 15	JULY 15	JUNE 15	ZONE
MT/ND	211	Sidney Area	1202	1205	1207	1213	1209	1207	1204	1195	1188	1193	1196	1199	1205	211
ND	24	Williston Area	1187	1182	1196	1194	1195	1195	1199	1183	1177	1166	1179	1185	1187	24
ND	25	Watford City Border	1209	1209	1211	1211	1213	1216	1216	1223	1216	1198	1198	1188	1207	25
ND/MT	241	Fairview Area	1194	1202	1207	1201	1201	1199	1199	1184	1182	1177	1188	1195	1195	241
ND	261	Williston - Tioga - Minot Line	1060	1179	1186	1048	1035	1052	1066	1047	1000	1042	1015	1028	1026	261
ND	262	Minot Area	1196	1208	1206	1189	1190	1189	1188	1192	1198	1201	1201	1201	1185	262
ND	263	Tioga - Portal	1091	947	1105	1082	1107	1092	1082	1112	1112	1104	1117	1121	1107	263
ND	264	Williston - Ray	1175	1184	1190	1189	1181	1183	1180	1178	1162	1154	1146	1170	1187	264
ND	265	North Tioga Transfer - Portal	1186	1173	1190	1186	1187	1190	1188	1189	1180	1188	1188	1191	1187	265
ND	271	Bismarck - Cleveland	1193	1208	1206	1186	1181	1172	1181	1192	1199	1203	1199	1201	1186	271
ND	272	Cleveland - Mapleton	1192	1206	1204	1185	1180	1171	1180	1191	1197	1202	1199	1200	1186	272
ND	273	Cleveland - Grafton	1191	1206	1201	1185	1179	1171	1180	1190	1197	1203	1199	1200	1185	273
ND	28	Bismarck - Cabin Creek	1174	1202	1190	1154	1142	1131	1137	1148	1196	1203	1200	1201	1186	28
ND	31	Dickinson Area	1141	1117	1114	1144	1139	1130	1136	1135	1161	1161	1145	1181	1127	31
ND	311	Taylor Take-Off - Glen Ullin Comp	1170	0	0	0	0	0	0	1147	1179	1168	1158	1200	1168	311
ND/MT	32	Cabin Creek - Dickinson	1140	1137	1129	1121	1125	1117	1117	1111	1120	1176	1173	1181	1169	32
ND	33	Killdeer	1184	1184	1181	1181	1183	1182	1186	1185	1186	1186	1191	1185	1183	33
ND	34	Bowman Area	1074	980	982	979	1082	1103	1121	1102	1084	1025	1133	1176	1121	34
ND	43	Spring Creek - Garden Crk Plant	1107	1102	1143	1112	1091	1087	1092	1088	1083	1100	1162	1129	1099	43
ND	610	MDU-Watford City BTU	1175	1184	1174	1153	1140	1155	1174	1197	1211	1197	1197	1145	1175	610
ND	802	Linton	1061	1062	1062	1057	1056	1060	1066	1073	1064	1055	1055	1057	1068	802
ND	903	Hettinger Propane	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	903

THERMAL ZONE VARIANCE DOCUMENTATION May 2016		
ZONE	***BTU VARIANCE***	***REASON***
43	-41	Operational Changes
263	-158	Supply low due to Lignite shut down