



UTILITIES CO.

A Division of MDU Resources Group, Inc.

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

May 21, 2015

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

Re: Case No. 11,006 (Therm Billing)
Monthly Report – March 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 April 2015.
2. Attachment B consists of copies of the monthly Heating Value Test Reports received from our suppliers for the month of March 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 March 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 black ink that reads 'Jamie Aberle'.

Tamie Aberle
Director of Regulatory Affairs

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

Town	Heat Zone	Therm Factor
MDU-303-ALEXANDER	025	1.1400
MDU-308-ARNEGARD	025	1.1400
MDU-314-APPLE VALLEY	271	1.1299
MDU-318-BEACH	032	1.0258
MDU-319-BELFIELD	032	1.0333
MDU-323-BERTHOLD	262	1.1098
MDU-327-BISMARCK	028	1.0855
MDU-330-BOWMAN	034	1.0082
MDU-337-BURLINGTON	262	1.1337
MDU-343-CARRINGTON	273	1.1260
MDU-344-CLEVELAND	272	1.1200
MDU-364-CAVALIER	273	1.1498
MDU-365-DAWSON	271	1.1219
MDU-368-DES LACS	262	1.1178
MDU-369-DICKINSON	031	1.0681
MDU-374-FT TOTTEN	273	1.1339
MDU-375-DEVILS LAKE	273	1.1339
MDU-379-BARLOW	273	1.1260
MDU-384-EPPING	264	1.1060
MDU-387-ELDRIDGE	272	1.1279
MDU-407-GLADSTONE	031	1.0681
MDU-411-GLEN ULLIN	311	1.0531
MDU-413-GOLVA	032	1.0107
MDU-416-GARRISON	262	1.1178
MDU-417-GRAFTON	273	1.1577
MDU-421-HALLIDAY	031	1.0681
MDU-429-HEBRON	311	1.0531
MDU-432-HETTINGER	903	2.3875
MDU-449-JAMESTOWN	272	1.1359
MDU-459-KILLDEER	033	1.1136
MDU-463-LANGDON	273	1.1260
MDU-469-LEFOR	031	1.0681
MDU-474-LIGNITE	263	1.0312
MDU-475-LINTON	802	1.0170
MDU-478-LINCOLN	028	1.0932
MDU-488-MCKENZIE	271	1.1299
MDU-494-MEDINA	271	1.1219
MDU-498-MANDAN	028	1.0932
MDU-500-MARMARTH	034	1.0156
MDU-505-MINOT	262	1.1337
MDU-510-MOTT	031	1.0681
MDU-512-MAX	262	1.1098
MDU-522-NEW ENGLAND	031	1.0603
MDU-524-NEW SALEM	028	1.0701
MDU-532-NEW ROCKFORD	273	1.1260
MDU-539-PARK RIVER	273	1.1498
MDU-540-PALERMO	262	1.1098
MDU-558-RAY	264	1.1060
MDU-561-REGENT	031	1.0681

MDU-563-RHAME	034	1.0007
MDU-564-RICHARDTON	311	1.0147
MDU-568-ROSS	261	0.9302
MDU-572-RUTHVILLE	262	1.1337
MDU-574-SANBORN	272	1.1359
MDU-583-SENTINEL BUTTE	032	1.0258
MDU-588-SOUTH HEART	031	1.0603
MDU-717-SPIRITWOOD	272	1.1359
MDU-590-SPRINGBROOK	264	1.1060
MDU-591-STANLEY	261	0.9369
MDU-593-STEELE	271	1.1219
MDU-598-SHEYENNE	273	1.1339
MDU-605-SURREY	262	1.1337
MDU-610-TAPPEN	271	1.1219
MDU-611-TAYLOR	031	1.0603
MDU-616-TIOGA	261	0.9369
MDU-619-TURTLE LAKE	262	1.1178
MDU-620-TRENTON	024	1.1140
MDU-624-UNDERWOOD	262	1.1178
MDU-625-VALLEY CITY	272	1.1438
MDU-629-WALHALLA	273	1.1498
MDU-632-WATFORD CITY	610	1.1258
MDU-636-WHEELOCK	264	1.0981
MDU-637-WHITE EARTH	261	0.9369
MDU-642-WILLISTON	024	1.1140
MDU-646-WASHBURN	262	1.1257
MDU-647-WILTON	262	1.1098
MDU-664-RIVERDALE	262	1.1178
MDU-691-FAIRVIEW	241	1.1377
MDU-712-MINOT AFB	262	1.1337
MDU-718-FAIRMOUNT	600	1.1120
MDU-732-NEKOMA	273	1.1260
MDU-732-MSR SITE	273	1.0971

GQ Source Daily Summary

March 2015

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		CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
	Wet	Dry	Wet	Dry																
1	0.7339	1181.4	1202.3	1187	1.187	3.790	68.639	22.041	3.994	0.119	0.211	0.010	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1403.45
2	0.7362	1184.6	1205.6	1187	1.187	3.808	68.438	21.965	4.245	0.122	0.216	0.010	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1405.08
3	0.7350	1183.3	1204.2	1194	1.194	3.765	68.516	22.079	4.115	0.115	0.200	0.009	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1404.67
4	0.7348	1183.7	1204.7	1168	1.168	3.758	68.463	22.241	4.036	0.115	0.202	0.009	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1405.40
5	0.7338	1188.4	1209.5	0.975	0.975	3.671	68.457	22.535	4.048	0.108	0.189	0.009	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1412.02
6	0.7377	1187.5	1208.5	1.191	1.191	3.769	68.280	22.038	4.351	0.126	0.225	0.011	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1407.02
7	0.7383	1188.6	1209.7	1.187	1.187	3.758	68.251	22.004	4.413	0.132	0.236	0.011	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1407.85
8	0.7378	1187.4	1208.4	1.196	1.196	3.773	68.333	21.914	4.404	0.131	0.230	0.011	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1406.85
9	0.7364	1185.3	1206.3	1.194	1.194	3.780	68.454	21.938	4.258	0.128	0.227	0.011	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1405.61
10	0.7348	1182.1	1203.0	1.206	1.206	3.802	68.514	22.094	4.041	0.119	0.207	0.010	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1403.43
11	0.7362	1185.2	1206.2	1.202	1.202	3.751	68.285	22.341	4.065	0.122	0.216	0.010	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1405.78
12	0.7352	1183.8	1204.8	1.207	1.207	3.739	68.388	22.341	3.973	0.120	0.214	0.011	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1405.03
13	0.7355	1184.0	1205.0	1.207	1.207	3.746	68.295	22.479	3.915	0.122	0.218	0.011	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1405.11
14	0.7349	1183.1	1204.0	1.206	1.206	3.752	68.439	22.297	3.951	0.121	0.215	0.011	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1404.49
15	0.7336	1180.7	1201.6	1.205	1.205	3.773	68.701	22.017	3.947	0.121	0.216	0.011	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1402.97
16	0.7350	1183.0	1203.9	1.202	1.202	3.768	68.408	22.323	3.941	0.120	0.215	0.011	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1404.26
17	0.7343	1181.4	1202.3	1.202	1.202	3.805	68.537	22.173	3.924	0.122	0.218	0.011	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1403.07
18	0.7381	1187.6	1208.6	1.194	1.194	3.789	68.162	22.196	4.277	0.128	0.231	0.012	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1406.84
19	0.7235	1188.1	1209.1	0.419	0.419	3.580	69.136	23.293	3.342	0.081	0.138	0.005	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1421.54
20	0.7169	1190.1	1211.2	0.030	0.030	3.423	69.555	23.915	2.927	0.056	0.090	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1430.52
21	0.7150	1186.3	1207.3	0.028	0.028	3.487	69.602	24.072	2.710	0.042	0.059	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1427.77
22	0.7136	1184.9	1205.9	0.024	0.024	3.447	69.926	23.761	2.728	0.046	0.066	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1427.47
23	0.7102	1179.8	1200.7	0.028	0.028	3.436	70.364	23.567	2.517	0.037	0.051	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1424.71
24	0.7356	1186.9	1207.9	1.096	1.096	3.751	68.342	22.327	4.157	0.113	0.198	0.009	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1408.41
25	0.7351	1182.2	1203.2	1.213	1.213	3.813	68.445	22.177	3.995	0.121	0.217	0.011	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1403.31
26	0.7337	1180.0	1200.9	1.206	1.206	3.832	68.699	21.928	3.980	0.120	0.215	0.011	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1401.92
27	0.7335	1179.6	1200.5	1.208	1.208	3.824	68.727	21.926	3.967	0.118	0.211	0.010	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1401.79
28	0.7346	1181.6	1202.5	1.206	1.206	3.813	68.517	22.144	3.963	0.120	0.217	0.011	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1403.04
29	0.7343	1181.1	1202.1	1.203	1.203	3.817	68.494	22.244	3.888	0.119	0.215	0.011	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1402.80
30	0.7355	1183.0	1204.0	1.197	1.197	3.828	68.399	22.167	4.057	0.119	0.214	0.011	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1403.85
31	0.7335	1179.6	1200.5	1.203	1.203	3.840	68.650	22.065	3.879	0.122	0.220	0.011	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1401.69
Avg	0.7321	1184.0	1205.0	1.012	1.012	3.732	68.659	22.406	3.871	0.110	0.193	0.009	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1408.31

Zone 211

GQ Source Daily Summary

March 2015

Number: 372 **Pressure Base:** 14.730 **Contract Day:** 1

Name: NESSON PLANT-CHARBONNEAU STATION **Temperature Base:** **Contract Hour:** 9

Day	Relative Density		Heating Value																CCT
	Wet	Dry	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobble		
1	0.7026	1158.1	1178.6	0.819	2.832	73.142	20.587	2.293	0.089	0.203	0.016	0.020	0.000	0.000	0.000	0.000	0.000	1406.08	
2	0.7036	1160.0	1180.6	0.831	2.790	73.048	20.641	2.339	0.092	0.215	0.019	0.023	0.000	0.000	0.000	0.000	0.000	1407.42	
3	0.7056	1162.6	1183.2	0.857	2.787	72.570	21.129	2.332	0.086	0.198	0.016	0.019	0.005	0.000	0.000	0.000	0.000	1408.49	
4	0.7034	1162.5	1183.1	0.873	2.562	72.625	21.681	1.966	0.075	0.174	0.016	0.019	0.009	0.000	0.000	0.000	0.000	1410.63	
5	0.7027	1158.1	1178.6	0.833	2.814	73.206	20.475	2.311	0.091	0.215	0.019	0.024	0.012	0.000	0.000	0.000	0.000	1406.06	
6	0.6986	1152.3	1172.7	0.804	2.835	73.895	19.866	2.264	0.085	0.199	0.018	0.022	0.012	0.000	0.000	0.000	0.000	1403.02	
7	0.6894	1137.3	1157.4	0.743	2.981	75.181	18.888	1.965	0.065	0.146	0.011	0.013	0.007	0.000	0.000	0.000	0.000	1393.92	
8	0.6907	1139.8	1160.0	0.740	2.949	75.250	18.613	2.130	0.080	0.190	0.017	0.021	0.010	0.000	0.000	0.000	0.000	1395.76	
9	0.6920	1140.7	1160.9	0.742	3.006	75.181	18.448	2.293	0.084	0.197	0.017	0.021	0.011	0.000	0.000	0.000	0.000	1395.60	
10	0.6899	1139.0	1159.2	0.713	2.965	75.403	18.427	2.190	0.079	0.181	0.015	0.018	0.009	0.000	0.000	0.000	0.000	1395.54	
11	0.6911	1141.8	1162.0	0.732	2.880	75.161	18.757	2.178	0.077	0.175	0.014	0.017	0.008	0.000	0.000	0.000	0.000	1397.74	
12	0.6909	1140.7	1160.9	0.747	2.900	74.945	19.170	1.984	0.068	0.153	0.012	0.015	0.007	0.000	0.000	0.000	0.000	1396.65	
13	0.6913	1141.0	1161.2	0.735	2.939	75.269	18.483	2.244	0.085	0.199	0.017	0.021	0.009	0.000	0.000	0.000	0.000	1396.56	
14	0.6918	1141.9	1162.2	0.726	2.943	75.205	18.441	2.399	0.077	0.171	0.013	0.016	0.008	0.000	0.000	0.000	0.000	1397.22	
15	0.6876	1134.6	1154.7	0.708	3.021	75.797	18.034	2.159	0.074	0.168	0.014	0.017	0.009	0.000	0.000	0.000	0.000	1392.52	
16	0.6967	1149.0	1169.4	0.767	2.907	74.104	19.659	2.300	0.073	0.160	0.011	0.013	0.005	0.000	0.000	0.000	0.000	1401.01	
17	0.6968	1149.2	1169.5	0.772	2.903	74.112	19.664	2.260	0.078	0.175	0.014	0.017	0.007	0.000	0.000	0.000	0.000	1401.04	
18	0.6999	1155.0	1175.4	0.788	2.820	73.706	19.959	2.414	0.083	0.188	0.015	0.019	0.009	0.000	0.000	0.000	0.000	1404.94	
19	0.7007	1156.2	1176.7	0.785	2.819	73.603	20.032	2.427	0.087	0.199	0.017	0.020	0.011	0.000	0.000	0.000	0.000	1405.73	
20	0.7003	1156.2	1176.7	0.795	2.767	73.394	20.538	2.221	0.077	0.173	0.013	0.015	0.006	0.000	0.000	0.000	0.000	1406.09	
21	0.7094	1169.7	1190.4	0.827	2.753	72.303	20.996	2.728	0.102	0.237	0.020	0.024	0.010	0.000	0.000	0.000	0.000	1413.29	
22	0.7024	1157.3	1177.8	0.829	2.851	73.022	20.762	2.246	0.076	0.173	0.014	0.018	0.009	0.000	0.000	0.000	0.000	1405.28	
23	0.7014	1156.1	1176.5	0.796	2.879	73.381	20.258	2.359	0.084	0.195	0.017	0.020	0.010	0.000	0.000	0.000	0.000	1404.80	
24	0.7023	1158.1	1178.6	0.805	2.820	73.076	20.741	2.250	0.081	0.184	0.015	0.019	0.009	0.000	0.000	0.000	0.000	1406.48	
25	0.7052	1162.9	1183.5	0.811	2.802	72.746	20.831	2.480	0.087	0.198	0.016	0.019	0.009	0.000	0.000	0.000	0.000	1409.23	
26	0.7021	1157.2	1177.7	0.802	2.870	73.067	20.730	2.225	0.078	0.182	0.016	0.019	0.011	0.000	0.000	0.000	0.000	1405.45	
27	0.7024	1157.8	1178.3	0.794	2.868	73.175	20.428	2.458	0.074	0.165	0.013	0.016	0.009	0.000	0.000	0.000	0.000	1405.94	
28	0.7005	1155.8	1176.2	0.778	2.840	73.407	20.302	2.448	0.066	0.136	0.009	0.010	0.004	0.000	0.000	0.000	0.000	1405.35	
29	0.6941	1145.0	1165.3	0.758	2.927	74.385	19.550	2.159	0.062	0.133	0.009	0.010	0.005	0.000	0.000	0.000	0.000	1398.67	
30	0.6940	1144.8	1165.1	0.739	2.956	74.361	19.596	2.134	0.060	0.128	0.009	0.011	0.006	0.000	0.000	0.000	0.000	1398.55	
31	0.6909	1140.4	1160.6	0.721	2.962	75.090	18.724	2.303	0.059	0.122	0.008	0.008	0.003	0.000	0.000	0.000	0.000	1396.28	
Avg	0.6978	1151.0	1171.4	0.780	2.869	73.962	19.820	2.273	0.079	0.178	0.015	0.018	0.008	0.000	0.000	0.000	0.000	1402.30	

Zone 24, 264

GQ Source Number:	0602160	Specific Gravity:	0.7307
GQ Source Name:	FAIRVIEW BORDER	Dry Heat Value:	1196.44
Effective Date:	3/1/2015 9:00:00 AM	Wet Heat Value:	1175.62
Effective End Date:	1/18/2038 9:14:07 PM	As Deliv. Heat Value:	1196.44
Pressure Base:	14.730	Sample Pressure:	1,004.00
Viscosity:		Sample Temperature:	

		<u>Mol %</u>	<u>Liquid Content</u>			<u>Mol %</u>
C1	Methane	68.784		CO2	Carbon Dioxide	1.214
C2	Ethane	22.075	0.0000	N2	Nitrogen	3.754
C3	Propane	3.807	1.0458	O2	Oxygen	0.012
IC4	Isobutane	0.123	0.0402	He	Helium	
NC4	n-Butane	0.211	0.0665	H2	Hydrogen	
IC5	Isopentane	0.011	0.0039	H2S	Hydrogen Sulfide	
NC5	n-Pentane	0.009	0.0032	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% 1.160 GPM

Sample Date: 4/1/2015 12:00:00 AM
Sample Type: Composite
Sample Tech: Rocky Robson
H2S: ppm

Sample Remarks:

Analysis Tech: MB

Analysis Remarks:

Zone 241

GQ Source Analysis

GQ Source Number:	0602230	Specific Gravity:	0.7234
GQ Source Name:	WATFORD CITY BORDER	Dry Heat Value:	1206.94
Effective Date:	3/1/2015 9:00:00 AM	Wet Heat Value:	1185.93
Effective End Date:	1/18/2038 9:14:07 PM	As Deliv. Heat Value:	1206.94
Pressure Base:	14.730	Sample Pressure:	313.00
Viscosity:		Sample Temperature:	

		<u>Mol %</u>	<u>Liquid Content</u>			<u>Mol %</u>
C1	Methane	69.990		CO2	Carbon Dioxide	0.994
C2	Ethane	22.543	6.0110	N2	Nitrogen	2.776
C3	Propane	3.131	0.8602	O2	Oxygen	0.006
IC4	Isobutane	0.165	0.0540	He	Helium	
NC4	n-Butane	0.334	0.1050	H2	Hydrogen	
IC5	Isopentane	0.028	0.0103	H2S	Hydrogen Sulfide	
NC5	n-Pentane	0.029	0.0105	Ar	Argon	
C6	Hexanes	0.002	0.0000	CO	Carbon Monoxide	
C7	Heptanes			H2	Water	
C8	Octanes			Neo-C5	Neopentane	
C9	Nonanes					
C10	Decanes					

Totals 100.000% 7.051 GPM

Sample Date: 4/1/2015 12:00:00 AM
Sample Type: Composite
Sample Tech: Eric S.
H2S: ppm

Sample Remarks:

Analysis Tech: MB

Analysis Remarks:

Zone 25

GQ Source Daily Summary

March 2015

Number: 163 **Pressure Base:** 14.730 **Contract Day:** 1
Name: NORTH TIOGA TRANSFER-PALERMO BORDER LI **Temperature Base:** **Contract Hour:** 9

Day	Heating Value		CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C5	C7	C8	C9	C10	Wobbe	CCT
	Relative Density	Dry																
1	0.6176	1031.4	0.020	3.785	86.776	9.218	0.181	0.005	0.011	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1335.59
2	0.5851	975.5	0.032	4.105	93.441	2.206	0.180	0.009	0.021	0.002	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1297.90
3	0.5973	993.7	0.116	4.019	91.393	3.948	0.444	0.020	0.048	0.005	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1308.52
4	0.6212	1029.0	0.263	3.889	87.381	7.338	0.960	0.043	0.103	0.010	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1328.53
5	0.5937	990.1	0.096	3.930	92.087	3.405	0.402	0.020	0.049	0.005	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1307.61
6	0.5791	967.9	0.007	4.040	94.565	1.258	0.102	0.007	0.017	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1294.51
7	0.5771	963.9	0.002	4.107	94.896	0.916	0.062	0.004	0.011	0.002	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1291.35
8	0.5774	966.1	0.002	4.001	94.843	1.076	0.060	0.004	0.010	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1293.96
9	0.5786	965.4	0.003	4.155	94.621	1.107	0.091	0.006	0.014	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1291.68
10	0.5777	965.9	0.002	4.045	94.763	1.116	0.058	0.004	0.009	0.002	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1293.30
11	0.5815	969.0	0.021	4.187	94.057	1.593	0.118	0.006	0.015	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1293.18
12	0.6189	1023.1	0.251	4.054	87.680	6.980	0.904	0.035	0.081	0.007	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1322.62
13	0.5791	964.3	0.005	4.268	94.464	1.176	0.069	0.004	0.011	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1289.63
14	0.5790	965.2	0.002	4.209	94.478	1.236	0.058	0.004	0.010	0.001	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1290.94
15	0.5789	963.6	0.002	4.299	94.484	1.139	0.058	0.004	0.011	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1288.89
16	0.5781	962.3	0.002	4.299	94.663	0.953	0.065	0.004	0.010	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1288.07
17	0.5789	964.5	0.006	4.234	94.519	1.152	0.069	0.005	0.011	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1290.12
18	0.5784	963.3	0.004	4.265	94.615	1.034	0.063	0.005	0.011	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1289.03
19	0.5799	967.1	0.013	4.161	94.371	1.330	0.101	0.006	0.014	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1292.45
20	0.5825	971.0	0.030	4.142	93.929	1.705	0.159	0.008	0.020	0.002	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1294.78
21	0.5872	978.4	0.059	4.090	93.174	2.343	0.278	0.014	0.033	0.004	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1299.35
22	0.5831	972.8	0.036	4.074	93.841	1.849	0.169	0.008	0.018	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1296.58
23	0.5790	967.0	0.013	4.078	94.567	1.220	0.098	0.006	0.014	0.001	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1293.41
24	0.5807	969.8	0.019	4.058	94.259	1.517	0.119	0.007	0.016	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1295.22
25	0.5848	973.6	0.043	4.176	93.548	1.986	0.205	0.010	0.025	0.003	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1295.68
26	0.5806	967.2	0.019	4.216	94.247	1.373	0.118	0.007	0.015	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1291.74
27	0.5802	966.8	0.018	4.200	94.320	1.329	0.109	0.006	0.015	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1291.72
28	0.5796	966.4	0.012	4.174	94.410	1.303	0.083	0.005	0.012	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1291.90
29	0.5783	963.5	0.002	4.245	94.620	1.060	0.056	0.004	0.010	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1289.43
30	0.5781	964.1	0.002	4.197	94.673	1.041	0.068	0.005	0.012	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1290.36
31	0.5785	964.7	0.002	4.192	94.632	1.059	0.091	0.006	0.014	0.001	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1290.80
Avg	0.5848	975.0	0.036	4.126	93.494	2.128	0.181	0.009	0.022	0.002	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1297.06

Zone 261

GQ Source Daily Summary

March 2015

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	0.7327	1161.0	1181.6	0.685	5.680	68.488	20.563	4.099	0.141	0.314	0.015	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1380.37	
2	0.7301	1157.6	1178.1	0.670	5.669	68.876	20.296	4.019	0.137	0.303	0.015	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1378.76	
3	0.7234	1147.2	1167.5	0.658	5.690	70.320	18.773	4.078	0.140	0.310	0.015	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1372.65	
4	0.7168	1140.5	1160.7	0.640	5.503	71.313	18.330	3.754	0.132	0.297	0.015	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1370.97	
5	0.7244	1151.9	1172.3	0.695	5.438	70.020	19.497	3.850	0.141	0.322	0.018	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1377.36	
6	0.7295	1154.8	1175.2	0.699	5.742	69.129	19.863	4.071	0.142	0.321	0.016	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1375.91	
7	0.7307	1156.0	1176.5	0.700	5.778	68.948	19.923	4.170	0.141	0.311	0.015	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1376.26	
8	0.7333	1159.3	1179.8	0.709	5.809	68.587	20.080	4.327	0.146	0.312	0.015	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1377.70	
9	0.7308	1155.9	1176.4	0.695	5.798	69.048	19.695	4.259	0.154	0.322	0.014	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1376.07	
10	0.7348	1160.7	1181.2	0.714	5.850	68.406	20.125	4.391	0.158	0.327	0.014	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1378.01	
11	0.7340	1160.7	1181.3	0.704	5.791	68.564	20.029	4.400	0.156	0.326	0.015	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1378.80	
12	0.7309	1155.8	1176.3	0.699	5.805	68.973	19.810	4.224	0.149	0.312	0.014	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1375.90	
13	0.7424	1169.8	1190.5	0.748	5.957	67.118	21.032	4.620	0.161	0.334	0.015	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1381.75	
14	0.7362	1163.6	1184.2	0.717	5.799	68.063	20.567	4.353	0.153	0.319	0.014	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1380.20	
15	0.7349	1160.5	1181.0	0.698	5.902	68.288	20.247	4.371	0.150	0.314	0.014	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1377.63	
16	0.7349	1160.5	1181.1	0.699	5.892	68.330	20.190	4.394	0.150	0.316	0.015	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1377.75	
17	0.7267	1149.4	1169.8	0.672	5.838	69.712	19.141	4.161	0.145	0.303	0.014	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1372.26	
18	0.7297	1153.7	1174.2	0.691	5.831	69.177	19.604	4.220	0.143	0.306	0.014	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1374.06	
19	0.7268	1151.0	1171.4	0.673	5.750	69.668	19.310	4.126	0.139	0.306	0.015	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1373.36	
20	0.7250	1149.0	1169.4	0.667	5.715	69.940	19.152	4.065	0.136	0.298	0.014	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1372.77	
21	0.7221	1146.2	1166.5	0.653	5.633	70.487	18.751	4.013	0.140	0.296	0.013	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1375.22	
22	0.7236	1148.0	1168.3	0.664	5.651	70.259	18.893	4.060	0.144	0.302	0.014	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1373.42	
23	0.7264	1151.6	1172.0	0.673	5.678	69.824	19.178	4.158	0.149	0.311	0.015	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1375.09	
24	0.7272	1152.3	1172.7	0.673	5.709	69.716	19.198	4.211	0.151	0.313	0.015	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1375.22	
25	0.7221	1145.7	1166.0	0.646	5.678	70.555	18.569	4.076	0.145	0.303	0.014	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1372.11	
26	0.7242	1148.4	1168.7	0.665	5.684	70.123	18.976	4.088	0.142	0.296	0.013	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1373.30	
27	0.7264	1151.0	1171.4	0.669	5.724	69.809	19.127	4.192	0.147	0.305	0.014	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1373.30	
28	0.7268	1152.5	1172.9	0.665	5.677	69.782	19.171	4.219	0.149	0.311	0.014	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1375.75	
29	0.7307	1156.9	1177.4	0.682	5.744	69.086	19.698	4.294	0.153	0.316	0.014	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1377.40	
30	0.7310	1156.9	1177.4	0.687	5.762	69.015	19.763	4.277	0.152	0.318	0.013	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1377.15	
31	0.7313	1157.0	1177.5	0.691	5.776	68.945	19.844	4.230	0.155	0.332	0.013	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1377.02	
Avg	0.7290	1154.0	1174.8	0.684	5.740	69.309	19.593	4.186	0.147	0.312	0.014	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1375.93	

Zone 2b2

GQ Source Analysis

GQ Source Number:	2501030	Specific Gravity:	0.6448
GQ Source Name:	LIGNITE PLANT	Dry Heat Value:	1083.92
Effective Date:	3/1/2015 9:00:00 AM	Wet Heat Value:	1065.05
Effective End Date:	1/18/2038 9:14:07 PM	As Deliv. Heat Value:	1083.92
Pressure Base:	14.730	Sample Pressure:	500.00
Viscosity:		Sample Temperature:	

		<u>Mol %</u>	<u>Liquid Content</u>			<u>Mol %</u>
C1	Methane	81.677		CO2	Carbon Dioxide	0.150
C2	Ethane	13.365	3.5637	N2	Nitrogen	4.057
C3	Propane	0.739	0.2030	O2	Oxygen	0.009
IC4	Isobutane	0.000	0.0000	He	Helium	
NC4	n-Butane	0.000	0.0000	H2	Hydrogen	
IC5	Isopentane	0.000	0.0000	H2S	Hydrogen Sulfide	
NC5	n-Pentane	0.000	0.0000	Ar	Argon	
C6	Hexanes	0.000	0.0000	CO	Carbon Monoxide	
C7	Heptanes			H2	Water	
C8	Octanes			Neo-C5	Neopentane	
C9	Nonanes					
C10	Decanes					

Totals 99.996% 3.767 GPM

Sample Date: 4/1/2015 12:00:00 AM
Sample Type: Composite
Sample Tech: Eric S.
H2S: ppm

Sample Remarks:

Analysis Tech: MB

Analysis Remarks:

Zone 263

*** End of Report ***

GQ Source Daily Summary

March 2015

Number: 043 Pressure Base: 14.730 Contract Day: 1
 Name: BISMARCK STATION-CLEVELAND STATION Temperature Base: 9

Day	Heating Value		CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
	Relative Density	Wet																
1	0.7062	1135.0	1155.0	0.614	4.890	72.963	17.862	3.284	0.113	0.242	0.016	0.015	0.000	0.000	0.000	0.000	0.000	1374.44
2	0.7106	1141.8	1162.0	0.606	4.896	72.043	18.799	3.277	0.111	0.238	0.015	0.014	0.000	0.000	0.000	0.000	0.000	1378.48
3	0.7005	1130.6	1150.6	0.576	4.671	73.780	17.618	3.017	0.101	0.209	0.015	0.014	0.000	0.000	0.000	0.000	0.000	1374.83
4	0.6917	1119.3	1139.1	0.557	4.565	75.358	16.360	2.837	0.097	0.199	0.014	0.013	0.000	0.000	0.000	0.000	0.000	1369.68
5	0.6992	1125.5	1145.5	0.588	4.844	74.151	16.985	3.045	0.111	0.243	0.017	0.017	0.000	0.000	0.000	0.000	0.000	1369.88
6	0.7218	1151.3	1171.7	0.685	5.252	70.468	19.348	3.774	0.134	0.301	0.019	0.019	0.000	0.000	0.000	0.000	0.000	1379.06
7	0.7232	1149.4	1169.8	0.674	5.514	70.184	19.309	3.853	0.132	0.299	0.018	0.018	0.000	0.000	0.000	0.000	0.000	1375.51
8	0.7303	1156.7	1177.2	0.691	5.704	69.128	19.769	4.221	0.142	0.309	0.017	0.018	0.000	0.000	0.000	0.000	0.000	1377.55
9	0.7326	1159.2	1179.8	0.696	5.756	68.848	19.831	4.351	0.153	0.329	0.017	0.018	0.000	0.000	0.000	0.000	0.000	1378.40
10	0.7319	1158.2	1178.7	0.698	5.756	68.916	19.830	4.282	0.155	0.328	0.017	0.017	0.000	0.000	0.000	0.000	0.000	1377.79
11	0.7287	1154.7	1175.2	0.676	5.694	69.486	19.417	4.218	0.152	0.322	0.017	0.017	0.000	0.000	0.000	0.000	0.000	1376.71
12	0.7349	1161.5	1182.1	0.710	5.815	68.399	20.184	4.380	0.154	0.323	0.017	0.017	0.000	0.000	0.000	0.000	0.000	1378.90
13	0.7422	1170.9	1191.6	0.737	5.894	67.206	21.005	4.620	0.162	0.339	0.018	0.018	0.000	0.000	0.000	0.000	0.000	1383.13
14	0.7329	1159.7	1180.2	0.708	5.741	68.695	20.078	4.276	0.149	0.317	0.017	0.018	0.000	0.000	0.000	0.000	0.000	1378.61
15	0.7378	1164.7	1185.3	0.719	5.880	67.906	20.507	4.470	0.153	0.328	0.018	0.018	0.000	0.000	0.000	0.000	0.000	1379.98
16	0.7336	1159.7	1180.3	0.700	5.823	68.609	20.006	4.357	0.149	0.320	0.018	0.018	0.000	0.000	0.000	0.000	0.000	1377.95
17	0.7258	1149.0	1169.3	0.664	5.794	69.947	18.962	4.150	0.145	0.305	0.016	0.017	0.000	0.000	0.000	0.000	0.000	1372.55
18	0.7294	1154.2	1174.7	0.683	5.788	69.301	19.516	4.223	0.143	0.312	0.017	0.017	0.000	0.000	0.000	0.000	0.000	1375.40
19	0.7259	1150.4	1170.8	0.664	5.715	69.905	19.116	4.116	0.139	0.310	0.017	0.018	0.000	0.000	0.000	0.000	0.000	1374.18
20	0.7238	1148.4	1168.7	0.660	5.653	70.203	18.994	4.021	0.136	0.299	0.017	0.017	0.000	0.000	0.000	0.000	0.000	1373.69
21	0.7191	1144.9	1165.2	0.639	5.452	70.996	18.594	3.860	0.137	0.289	0.017	0.017	0.000	0.000	0.000	0.000	0.000	1374.08
22	0.7213	1147.2	1167.5	0.648	5.503	70.686	18.729	3.959	0.141	0.298	0.017	0.017	0.000	0.000	0.000	0.000	0.000	1374.69
23	0.7251	1150.7	1171.0	0.664	5.626	70.118	18.961	4.133	0.148	0.315	0.017	0.018	0.000	0.000	0.000	0.000	0.000	1375.23
24	0.7263	1152.3	1172.7	0.663	5.641	69.924	19.086	4.183	0.150	0.317	0.017	0.018	0.000	0.000	0.000	0.000	0.000	1376.06
25	0.7207	1145.4	1165.7	0.634	5.577	70.838	18.460	4.012	0.144	0.302	0.017	0.017	0.000	0.000	0.000	0.000	0.000	1373.15
26	0.7235	1148.4	1168.7	0.654	5.632	70.326	18.838	4.076	0.142	0.299	0.016	0.017	0.000	0.000	0.000	0.000	0.000	1374.00
27	0.7253	1150.3	1170.6	0.660	5.679	70.072	18.937	4.167	0.146	0.307	0.016	0.017	0.000	0.000	0.000	0.000	0.000	1374.53
28	0.7241	1149.3	1169.7	0.650	5.639	70.285	18.800	4.137	0.147	0.308	0.016	0.017	0.000	0.000	0.000	0.000	0.000	1374.52
29	0.7306	1157.7	1178.2	0.679	5.692	69.171	19.665	4.286	0.152	0.320	0.017	0.017	0.000	0.000	0.000	0.000	0.000	1378.43
30	0.7285	1154.8	1175.2	0.672	5.686	69.493	19.458	4.182	0.151	0.326	0.016	0.016	0.000	0.000	0.000	0.000	0.000	1376.90
31	0.7328	1159.7	1180.2	0.693	5.760	68.779	19.942	4.291	0.158	0.344	0.016	0.017	0.000	0.000	0.000	0.000	0.000	1378.69
Avg	0.7239	1150.0	1170.7	0.663	5.533	70.200	19.128	4.002	0.140	0.300	0.017	0.017	0.000	0.000	0.000	0.000	0.000	1376.03

Zone 271

GQ Source Daily Summary

March 2015

Number: 063 **Pressure Base:** 14.730 **Contract Day:** 1

Name: CLEVELAND STATION-MAPLETON **Temperature Base:** **Contract Hour:** 9

Day	Relative Density		Heating Value		CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
	Wet	Dry	Wet	Dry																
1	0.7045	1131.7	1151.8	0.610	4.934	73.260	17.563	3.255	0.112	0.236	0.016	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1372.19	1377.11
2	0.7101	1140.2	1160.4	0.613	4.931	72.136	18.681	3.260	0.111	0.237	0.016	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1374.17	1366.77
3	0.7025	1131.7	1151.8	0.583	4.786	73.351	17.918	3.022	0.101	0.210	0.015	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1366.77	1378.10
4	0.6930	1119.6	1139.4	0.560	4.663	75.124	16.450	2.880	0.097	0.199	0.014	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1373.70	1375.49
5	0.6922	1117.4	1137.1	0.556	4.735	75.252	16.284	2.831	0.100	0.212	0.015	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1376.80	1373.05
6	0.7181	1147.5	1167.8	0.679	5.143	71.026	19.097	3.598	0.130	0.288	0.019	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1378.75	1374.02
7	0.7204	1145.7	1165.9	0.662	5.496	70.606	19.046	3.737	0.129	0.288	0.018	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1378.75	1373.05
8	0.7276	1152.9	1173.3	0.687	5.694	69.486	19.596	4.062	0.137	0.300	0.018	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1378.75	1373.05
9	0.7319	1157.4	1177.9	0.697	5.808	68.869	19.839	4.291	0.146	0.314	0.017	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1378.75	1373.05
10	0.7294	1154.4	1174.8	0.689	5.771	69.297	19.540	4.195	0.152	0.321	0.017	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1378.75	1373.05
11	0.7343	1160.9	1181.5	0.701	5.807	68.560	20.000	4.408	0.158	0.331	0.017	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1378.75	1373.05
12	0.7255	1149.1	1169.5	0.671	5.745	69.896	19.155	4.053	0.144	0.303	0.017	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1378.75	1373.05
13	0.7414	1169.2	1189.9	0.735	5.919	67.303	20.942	4.574	0.159	0.331	0.018	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1378.75	1373.05
14	0.7377	1165.1	1185.7	0.730	5.829	67.899	20.603	4.422	0.156	0.325	0.018	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1378.75	1373.05
15	0.7342	1159.4	1180.0	0.705	5.883	68.461	20.107	4.345	0.149	0.314	0.017	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1378.75	1373.05
16	0.7376	1163.5	1184.1	0.720	5.934	67.887	20.507	4.441	0.151	0.322	0.018	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1378.75	1373.05
17	0.7284	1152.1	1172.5	0.677	5.829	69.476	19.306	4.226	0.146	0.307	0.017	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1378.75	1373.05
18	0.7260	1148.8	1169.2	0.669	5.820	69.820	19.077	4.139	0.141	0.300	0.016	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1378.75	1373.05
19	0.7270	1151.2	1171.5	0.672	5.764	69.664	19.275	4.141	0.140	0.309	0.017	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1378.75	1373.05
20	0.7247	1148.2	1168.5	0.662	5.743	70.012	19.063	4.050	0.136	0.300	0.017	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1378.75	1373.05
21	0.7216	1146.1	1166.4	0.655	5.586	70.576	18.766	3.954	0.137	0.293	0.017	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1378.75	1373.05
22	0.7188	1144.5	1164.8	0.637	5.446	71.020	18.611	3.831	0.136	0.284	0.017	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1378.75	1373.05
23	0.7228	1147.0	1167.3	0.655	5.649	70.437	18.735	4.044	0.144	0.303	0.017	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1378.75	1373.05
24	0.7261	1151.2	1171.6	0.668	5.680	69.945	19.033	4.172	0.150	0.316	0.018	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1378.75	1373.05
25	0.7226	1147.1	1167.4	0.647	5.637	70.500	18.664	4.070	0.145	0.303	0.017	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1378.75	1373.05
26	0.7215	1145.0	1165.2	0.648	5.666	70.629	18.558	4.028	0.141	0.297	0.016	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1378.75	1373.05
27	0.7243	1148.2	1168.5	0.658	5.710	70.186	18.839	4.130	0.144	0.301	0.016	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1378.75	1373.05
28	0.7239	1147.9	1168.3	0.653	5.695	70.254	18.794	4.124	0.144	0.302	0.016	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1378.75	1373.05
29	0.7264	1151.5	1171.9	0.659	5.704	69.822	19.149	4.176	0.148	0.308	0.016	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1378.75	1373.05
30	0.7300	1155.6	1176.1	0.678	5.762	69.189	19.619	4.252	0.150	0.316	0.016	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1378.75	1373.05
31	0.7287	1153.7	1174.1	0.675	5.761	69.390	19.501	4.161	0.152	0.327	0.016	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1378.75	1373.05
Avg	0.7230	1149.0	1168.8	0.662	5.565	70.301	19.043	3.964	0.138	0.293	0.017	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1378.75	1373.05

Zone 272

GQ Source Daily Summary

March 2015

Number: 061 Pressure Base: 14.730 Contract Day: 1

Name: CLEVELAND STATION-GRAFTON BORDER Temperature Base: 9

Day	Heating Value		CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
	Relative Density	Dry																
1	0.7049	1132.5	1152.5	0.610	4.918	73.212	17.610	3.269	0.113	0.238	0.016	0.015	0.000	0.000	0.000	0.000	0.000	1372.79
2	0.7103	1140.8	1161.0	0.614	4.918	72.108	18.704	3.274	0.112	0.239	0.016	0.015	0.000	0.000	0.000	0.000	0.000	1377.56
3	0.7029	1132.5	1152.5	0.584	4.774	73.294	17.971	3.036	0.101	0.212	0.015	0.013	0.000	0.000	0.000	0.000	0.000	1374.71
4	0.6934	1120.5	1140.3	0.561	4.647	75.067	16.505	2.894	0.098	0.201	0.014	0.013	0.000	0.000	0.000	0.000	0.000	1369.43
5	0.6925	1117.9	1137.7	0.557	4.721	75.219	16.320	2.840	0.100	0.213	0.015	0.014	0.000	0.000	0.000	0.000	0.000	1367.25
6	0.7183	1148.1	1168.4	0.679	5.128	70.997	19.128	3.610	0.130	0.289	0.019	0.020	0.000	0.000	0.000	0.000	0.000	1378.60
7	0.7208	1146.4	1166.7	0.663	5.481	70.559	19.089	3.752	0.130	0.290	0.018	0.018	0.000	0.000	0.000	0.000	0.000	1374.28
8	0.7280	1153.8	1174.2	0.688	5.678	69.429	19.646	4.083	0.138	0.302	0.018	0.018	0.000	0.000	0.000	0.000	0.000	1376.17
9	0.7322	1158.1	1178.6	0.697	5.793	68.832	19.872	4.308	0.147	0.316	0.018	0.018	0.000	0.000	0.000	0.000	0.000	1377.35
10	0.7299	1155.1	1175.5	0.692	5.772	69.216	19.600	4.213	0.152	0.321	0.017	0.017	0.000	0.000	0.000	0.000	0.000	1375.91
11	0.7344	1161.1	1181.6	0.701	5.807	68.546	20.011	4.410	0.158	0.331	0.017	0.017	0.000	0.000	0.000	0.000	0.000	1378.88
12	0.7255	1149.3	1169.6	0.671	5.739	69.902	19.149	4.057	0.144	0.304	0.017	0.017	0.000	0.000	0.000	0.000	0.000	1373.19
13	0.7414	1169.2	1189.9	0.736	5.914	67.307	20.942	4.575	0.159	0.331	0.018	0.018	0.000	0.000	0.000	0.000	0.000	1382.01
14	0.7378	1165.3	1185.9	0.732	5.831	67.868	20.625	4.427	0.156	0.325	0.018	0.018	0.000	0.000	0.000	0.000	0.000	1380.60
15	0.7342	1159.4	1179.9	0.705	5.887	68.463	20.101	4.345	0.149	0.314	0.018	0.018	0.000	0.000	0.000	0.000	0.000	1377.04
16	0.7376	1163.6	1184.2	0.721	5.932	67.886	20.510	4.440	0.151	0.323	0.018	0.019	0.000	0.000	0.000	0.000	0.000	1378.79
17	0.7284	1152.3	1172.7	0.676	5.822	69.470	19.316	4.228	0.146	0.307	0.017	0.017	0.000	0.000	0.000	0.000	0.000	1374.02
18	0.7257	1148.3	1168.6	0.669	5.825	69.859	19.053	4.124	0.140	0.297	0.016	0.016	0.000	0.000	0.000	0.000	0.000	1371.76
19	0.7258	1149.0	1169.4	0.673	5.784	69.781	19.223	4.080	0.135	0.293	0.015	0.015	0.000	0.000	0.000	0.000	0.000	1372.56
20	0.7235	1146.1	1166.4	0.664	5.757	70.127	19.026	3.987	0.129	0.281	0.014	0.014	0.000	0.000	0.000	0.000	0.000	1371.27
21	0.7201	1143.8	1164.1	0.656	5.589	70.722	18.716	3.885	0.131	0.274	0.014	0.013	0.000	0.000	0.000	0.000	0.000	1371.78
22	0.7175	1142.4	1162.6	0.638	5.458	71.139	18.572	3.768	0.130	0.267	0.015	0.014	0.000	0.000	0.000	0.000	0.000	1372.55
23	0.7203	1142.6	1162.8	0.657	5.676	70.681	18.649	3.914	0.131	0.267	0.013	0.012	0.000	0.000	0.000	0.000	0.000	1370.16
24	0.7210	1142.5	1162.7	0.671	5.735	70.456	18.841	3.905	0.126	0.247	0.010	0.009	0.000	0.000	0.000	0.000	0.000	1369.37
25	0.7189	1140.9	1161.1	0.647	5.670	70.878	18.521	3.882	0.128	0.253	0.011	0.010	0.000	0.000	0.000	0.000	0.000	1371.95
26	0.7216	1145.2	1165.4	0.649	5.658	70.610	18.587	4.029	0.141	0.295	0.016	0.016	0.000	0.000	0.000	0.000	0.000	1371.82
27	0.7231	1146.3	1166.6	0.659	5.720	70.302	18.799	4.070	0.138	0.284	0.014	0.014	0.000	0.000	0.000	0.000	0.000	1369.81
28	0.7209	1142.8	1163.0	0.656	5.724	70.563	18.692	3.958	0.129	0.257	0.011	0.010	0.000	0.000	0.000	0.000	0.000	1370.61
29	0.7226	1144.8	1165.1	0.661	5.753	70.217	19.000	3.964	0.128	0.255	0.011	0.010	0.000	0.000	0.000	0.000	0.000	1372.22
30	0.7262	1149.0	1169.4	0.681	5.809	69.584	19.466	4.043	0.132	0.264	0.011	0.010	0.000	0.000	0.000	0.000	0.000	1372.22
31	0.7263	1149.5	1169.9	0.677	5.791	69.644	19.407	4.029	0.140	0.292	0.012	0.012	0.000	0.000	0.000	0.000	0.000	1372.71
AVG	0.7221	1147.0	1167.4	0.663	5.571	70.385	19.021	3.916	0.134	0.280	0.015	0.015	0.000	0.000	0.000	0.000	0.000	1373.76

Zone 273

GQ Source Daily Summary

March 2015

Number: 041 **Pressure Base:** 14.730 **Contract Day:** 1

Name: BISMARCK STATION-GLEN ULLIN STATION **Temperature Base:** **Contract Hour:** 9

Day	Heating Value		CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	C11	CCT
	Relative Density	Wet																
1	0.6553	1088.8	1108.0	0.452	3.173	81.011	13.913	1.329	0.046	0.058	0.011	0.006	0.000	0.000	0.000	0.000	0.000	1368.75
2	0.6574	1091.7	1111.0	0.463	3.174	80.643	14.217	1.389	0.044	0.053	0.010	0.006	0.000	0.000	0.000	0.000	0.000	1370.25
3	0.6578	1092.4	1111.7	0.448	3.191	80.498	14.404	1.348	0.043	0.053	0.010	0.006	0.000	0.000	0.000	0.000	0.000	1370.73
4	0.6532	1084.4	1103.6	0.445	3.248	81.398	13.476	1.316	0.044	0.056	0.010	0.006	0.000	0.000	0.000	0.000	0.000	1365.52
5	0.6535	1085.1	1104.3	0.429	3.261	81.333	13.528	1.332	0.044	0.056	0.010	0.006	0.000	0.000	0.000	0.000	0.000	1366.05
6	0.6520	1084.3	1103.5	0.511	3.048	81.627	13.500	1.195	0.045	0.054	0.012	0.007	0.000	0.000	0.000	0.000	0.000	1366.54
7	0.6575	1093.6	1113.0	0.512	2.989	80.579	14.568	1.232	0.046	0.053	0.013	0.007	0.000	0.000	0.000	0.000	0.000	1372.58
8	0.6630	1098.7	1118.1	0.524	3.184	79.592	15.223	1.334	0.053	0.068	0.014	0.008	0.000	0.000	0.000	0.000	0.000	1373.20
9	0.7152	1144.8	1165.1	0.635	5.105	71.493	18.763	3.584	0.128	0.261	0.016	0.015	0.000	0.000	0.000	0.000	0.000	1377.86
10	0.6646	1105.8	1125.4	0.478	2.971	79.187	15.964	1.260	0.055	0.061	0.016	0.009	0.000	0.000	0.000	0.000	0.000	1380.43
11	0.6655	1106.9	1126.5	0.452	3.028	78.992	16.106	1.288	0.052	0.059	0.015	0.008	0.000	0.000	0.000	0.000	0.000	1380.84
12	0.7119	1144.1	1164.3	0.596	4.891	71.807	19.043	3.286	0.117	0.230	0.016	0.014	0.000	0.000	0.000	0.000	0.000	1380.32
13	0.7173	1149.4	1169.7	0.635	5.016	71.009	19.414	3.518	0.126	0.248	0.017	0.015	0.000	0.000	0.000	0.000	0.000	1381.45
14	0.7264	1154.6	1175.0	0.679	5.490	69.659	19.739	3.970	0.139	0.291	0.017	0.017	0.000	0.000	0.000	0.000	0.000	1378.75
15	0.7376	1164.1	1184.8	0.719	5.893	67.944	20.466	4.462	0.153	0.328	0.018	0.018	0.000	0.000	0.000	0.000	0.000	1379.54
16	0.6852	1125.3	1145.2	0.543	3.616	75.811	17.845	1.955	0.078	0.123	0.018	0.012	0.000	0.000	0.000	0.000	0.000	1383.77
17	0.6732	1114.3	1134.1	0.452	3.293	77.556	17.122	1.425	0.056	0.072	0.015	0.009	0.000	0.000	0.000	0.000	0.000	1382.25
18	0.6684	1110.1	1129.8	0.380	3.213	78.558	16.188	1.491	0.062	0.083	0.015	0.009	0.000	0.000	0.000	0.000	0.000	1381.87
19	0.6708	1112.2	1131.9	0.368	3.330	78.022	16.600	1.536	0.054	0.069	0.013	0.007	0.000	0.000	0.000	0.000	0.000	1382.00
20	0.6674	1107.0	1126.6	0.464	3.181	78.770	16.002	1.428	0.060	0.069	0.017	0.009	0.000	0.000	0.000	0.000	0.000	1379.03
21	0.6637	1113.9	1133.6	0.542	2.300	79.098	17.198	0.719	0.058	0.047	0.025	0.012	0.000	0.000	0.000	0.000	0.000	1391.40
22	0.6664	1112.6	1132.3	0.436	2.792	78.583	17.035	1.027	0.052	0.050	0.017	0.009	0.000	0.000	0.000	0.000	0.000	1387.03
23	0.6610	1103.1	1122.6	0.418	2.889	79.671	15.845	1.046	0.052	0.052	0.017	0.009	0.000	0.000	0.000	0.000	0.000	1380.76
24	0.6531	1088.8	1108.1	0.322	3.158	80.953	14.532	0.937	0.041	0.038	0.013	0.006	0.000	0.000	0.000	0.000	0.000	1371.19
25	0.6499	1083.6	1102.8	0.288	3.230	81.556	13.863	0.970	0.039	0.038	0.011	0.006	0.000	0.000	0.000	0.000	0.000	1367.95
26	0.6583	1093.8	1113.2	0.368	3.273	80.386	14.482	1.349	0.053	0.068	0.013	0.007	0.000	0.000	0.000	0.000	0.000	1371.99
27	0.6701	1105.3	1124.9	0.533	3.428	78.383	15.973	1.507	0.064	0.084	0.016	0.010	0.000	0.000	0.000	0.000	0.000	1374.20
28	0.6877	1128.3	1148.3	0.494	3.743	75.400	18.022	2.093	0.082	0.138	0.016	0.011	0.000	0.000	0.000	0.000	0.000	1384.84
29	0.6779	1113.1	1132.8	0.704	3.422	77.593	16.095	1.916	0.095	0.135	0.025	0.015	0.000	0.000	0.000	0.000	0.000	1375.97
30	0.7153	1146.3	1166.6	0.638	5.010	71.484	18.931	3.504	0.132	0.269	0.017	0.015	0.000	0.000	0.000	0.000	0.000	1379.64
31	0.7232	1151.1	1171.5	0.758	5.275	70.412	19.217	3.843	0.149	0.309	0.020	0.017	0.000	0.000	0.000	0.000	0.000	1377.71
Avg	0.6768	1113.0	1132.5	0.506	3.639	77.387	16.364	1.890	0.073	0.115	0.015	0.010	0.000	0.000	0.000	0.000	0.000	1376.92

Zone 28

GQ Source Daily Summary

March 2015

Number: 271 Pressure Base: 14.730 Contract Day: 1

Name: DICKINSON STN-BELFIELD TSF-GLENNULLIN STN Temperature Base: Contract Hour: 9

Day	Relative Density		Heating Value		C02	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	C11	Wobbe	CCT
	Wet	Dry	Wet	Dry																	
1	0.6574	1093.4	1112.8	0.300	3.316	80.303	14.615	1.389	0.031	0.043	0.003	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1372.46	
2	0.6582	1094.3	1113.7	0.297	3.338	80.144	14.751	1.388	0.032	0.045	0.003	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1372.79	
3	0.6564	1091.0	1110.3	0.304	3.369	80.511	14.343	1.389	0.032	0.047	0.004	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1370.36	
4	0.6533	1085.7	1104.9	0.294	3.411	81.114	13.738	1.354	0.034	0.049	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1367.01	
5	0.6531	1087.3	1106.6	0.304	3.279	81.086	13.975	1.270	0.032	0.047	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1369.27	
6	0.6605	1101.5	1121.0	0.230	3.220	79.524	15.643	1.307	0.029	0.043	0.002	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1379.39	
7	0.6628	1105.4	1125.0	0.218	3.221	78.882	16.439	1.182	0.024	0.034	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1381.83	
8	0.6695	1116.0	1135.7	0.152	3.309	77.613	17.513	1.346	0.026	0.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1388.02	
9	0.6727	1124.8	1144.7	0.104	3.145	76.750	18.772	1.173	0.022	0.034	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1395.67	
10	0.6712	1117.9	1137.7	0.123	3.395	77.190	17.908	1.324	0.024	0.036	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1388.68	
11	0.6718	1119.4	1139.2	0.075	3.440	76.866	18.359	1.215	0.019	0.027	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1389.83	
12	0.6733	1123.9	1143.8	0.067	3.314	76.567	18.803	1.203	0.019	0.027	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1393.95	
13	0.6743	1127.3	1147.2	0.065	3.208	76.293	19.262	1.129	0.018	0.026	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1397.07	
14	0.6764	1134.1	1154.2	0.045	3.020	75.665	20.287	0.954	0.012	0.016	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1403.38	
15	0.6778	1137.2	1157.3	0.033	2.984	75.448	20.488	1.012	0.015	0.021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1405.72	
16	0.6732	1121.1	1140.9	0.079	3.461	76.759	18.287	1.346	0.026	0.041	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1390.48	
17	0.6730	1119.9	1139.7	0.083	3.497	77.105	17.652	1.554	0.039	0.066	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1389.33	
18	0.6728	1119.5	1139.3	0.095	3.494	76.981	17.889	1.472	0.028	0.041	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1388.93	
19	0.6775	1136.8	1157.0	0.044	2.957	75.413	20.659	0.893	0.014	0.019	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1405.58	
20	0.6801	1145.1	1165.4	0.019	2.738	74.731	21.733	0.757	0.010	0.013	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.12	
21	0.6751	1127.5	1147.5	0.076	3.253	76.211	19.218	1.190	0.022	0.032	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1396.54	
22	0.6645	1111.1	1130.7	0.046	3.304	78.182	17.384	1.034	0.020	0.030	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1387.07	
23	0.6567	1095.3	1114.7	0.044	3.531	79.693	15.688	1.006	0.017	0.021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1375.51	
24	0.6529	1089.6	1108.9	0.046	3.512	80.473	14.937	0.992	0.018	0.022	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1372.40	
25	0.6575	1094.5	1113.9	0.122	3.527	80.020	14.933	1.315	0.032	0.050	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1373.73	
26	0.6749	1124.0	1143.9	0.134	3.356	76.322	18.933	1.201	0.022	0.033	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1392.38	
27	0.6803	1143.3	1163.6	0.052	2.815	74.939	21.189	0.973	0.013	0.019	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1410.69	
28	0.6819	1151.4	1171.8	0.006	2.541	74.347	22.358	0.729	0.008	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1419.10	
29	0.6834	1153.5	1173.9	0.000	2.570	73.945	22.810	0.658	0.007	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1420.02	
30	0.6835	1153.8	1174.2	0.000	2.558	73.990	22.723	0.712	0.007	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1420.31	
31	0.6824	1153.2	1173.6	0.000	2.498	74.200	22.586	0.699	0.007	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1420.62	
Avg	0.6696	1119.0	1139.1	0.112	3.180	77.331	18.189	1.134	0.021	0.031	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1391.98	

Zone 31

GQ Source Analysis

GQ Source Number:	0202080	Specific Gravity:	0.6592
GQ Source Name:	RICHARDTON-GLEN ULLIN COMPRE	Dry Heat Value:	1115.08
Effective Date:	3/1/2015 9:00:00 AM	Wet Heat Value:	1095.67
Effective End Date:	1/18/2038 9:14:00 PM	As Deliv. Heat Value:	1115.08
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	80.178		CO2	Carbon Dioxide	0.457
C2	Ethane	14.853	3.9600	N2	Nitrogen	3.110
C3	Propane	1.263	0.3470	O2	Oxygen	
IC4	Isobutane	0.045	0.0150	He	Helium	
NC4	n-Butane	0.052	0.0160	H2	Hydrogen	
IC5	Isopentane	0.012	0.0040	H2S	Hydrogen Sulfide	
NC5	n-Pentane	0.006	0.0020	Ar	Argon	
C6	Hexanes	0.024	0.0100	CO	Carbon Monoxide	
C7	Heptanes			H2	Water	
C8	Octanes			Neo-C5	Neopentane	
C9	Nonanes					
C10	Decanes					

Totals 100.000% 4.354 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

March 2015

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

Name: CABIN CREEK STATION-BELFIELD TRANSFER **Temperature Base:** **Contract Hour:** 9

Day	Heating Value		CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
	Relative Density	Wet																
1	0.6558	1085.1	1104.3	0.392	3.527	81.017	13.318	1.643	0.038	0.056	0.005	0.004	0.000	0.000	0.000	0.000	0.000	1363.71
2	0.6563	1086.3	1105.6	0.374	3.533	80.831	13.565	1.598	0.037	0.054	0.005	0.003	0.000	0.000	0.000	0.000	0.000	1364.67
3	0.6510	1077.9	1097.0	0.384	3.528	81.870	12.597	1.517	0.038	0.056	0.005	0.004	0.000	0.000	0.000	0.000	0.000	1359.62
4	0.6514	1078.6	1097.7	0.372	3.543	81.831	12.579	1.562	0.041	0.061	0.006	0.005	0.000	0.000	0.000	0.000	0.000	1360.09
5	0.6507	1079.3	1098.4	0.351	3.471	81.909	12.628	1.540	0.037	0.055	0.005	0.004	0.000	0.000	0.000	0.000	0.000	1361.63
6	0.6562	1086.7	1105.9	0.338	3.556	80.767	13.680	1.566	0.035	0.051	0.004	0.003	0.000	0.000	0.000	0.000	0.000	1365.23
7	0.6652	1098.5	1117.9	0.265	3.789	79.151	14.822	1.864	0.040	0.062	0.004	0.003	0.000	0.000	0.000	0.000	0.000	1370.70
8	0.6660	1099.6	1119.0	0.263	3.803	79.028	14.888	1.906	0.041	0.064	0.004	0.003	0.000	0.000	0.000	0.000	0.000	1371.22
9	0.6701	1104.3	1123.9	0.177	4.034	77.987	15.835	1.873	0.035	0.054	0.002	0.002	0.000	0.000	0.000	0.000	0.000	1372.90
10	0.6678	1100.8	1120.3	0.147	4.077	78.233	15.752	1.715	0.029	0.044	0.002	0.001	0.000	0.000	0.000	0.000	0.000	1370.89
11	0.6692	1103.3	1122.9	0.150	4.050	78.076	15.810	1.831	0.032	0.048	0.002	0.001	0.000	0.000	0.000	0.000	0.000	1372.61
12	0.6672	1100.0	1119.4	0.157	4.056	78.345	15.659	1.715	0.027	0.038	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1370.49
13	0.6673	1100.5	1120.0	0.133	4.067	78.391	15.555	1.773	0.032	0.047	0.002	0.001	0.000	0.000	0.000	0.000	0.000	1371.07
14	0.6679	1101.6	1121.1	0.158	4.018	78.359	15.577	1.790	0.037	0.058	0.002	0.002	0.000	0.000	0.000	0.000	0.000	1371.81
15	0.6726	1107.2	1126.8	0.146	4.132	77.914	15.446	2.195	0.058	0.101	0.005	0.004	0.000	0.000	0.000	0.000	0.000	1374.00
16	0.6714	1107.3	1126.9	0.135	4.035	78.084	15.459	2.120	0.057	0.100	0.005	0.004	0.000	0.000	0.000	0.000	0.000	1375.26
17	0.6700	1104.7	1124.3	0.156	4.027	78.170	15.513	2.026	0.041	0.062	0.002	0.001	0.000	0.000	0.000	0.000	0.000	1373.56
18	0.6688	1100.8	1120.3	0.190	4.112	78.252	15.481	1.863	0.040	0.059	0.002	0.001	0.000	0.000	0.000	0.000	0.000	1369.79
19	0.6619	1090.9	1110.2	0.143	4.134	79.574	14.222	1.833	0.037	0.054	0.002	0.001	0.000	0.000	0.000	0.000	0.000	1364.55
20	0.6546	1080.1	1099.2	0.080	4.200	80.878	13.039	1.699	0.039	0.061	0.002	0.001	0.000	0.000	0.000	0.000	0.000	1358.57
21	0.6461	1066.0	1084.9	0.082	4.254	82.259	11.926	1.407	0.028	0.041	0.002	0.001	0.000	0.000	0.000	0.000	0.000	1349.69
22	0.6430	1062.4	1081.2	0.081	4.190	82.750	11.629	1.293	0.024	0.032	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1348.28
23	0.6350	1050.8	1069.5	0.085	4.132	84.280	10.274	1.177	0.023	0.029	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1342.05
24	0.6386	1056.9	1075.6	0.085	4.098	83.799	10.562	1.389	0.027	0.038	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1345.98
25	0.6658	1095.0	1114.4	0.263	4.064	78.928	14.837	1.785	0.043	0.072	0.004	0.003	0.000	0.000	0.000	0.000	0.000	1365.69
26	0.6496	1072.5	1091.5	0.226	3.970	81.633	12.789	1.308	0.028	0.041	0.002	0.001	0.000	0.000	0.000	0.000	0.000	1354.21
27	0.6694	1102.1	1121.7	0.244	3.997	78.137	15.735	1.783	0.038	0.061	0.003	0.002	0.000	0.000	0.000	0.000	0.000	1370.94
28	0.6527	1076.8	1095.8	0.231	3.996	81.168	13.062	1.456	0.033	0.050	0.002	0.002	0.000	0.000	0.000	0.000	0.000	1356.34
29	0.6513	1074.4	1093.4	0.231	4.009	81.241	13.173	1.273	0.028	0.041	0.002	0.001	0.000	0.000	0.000	0.000	0.000	1354.83
30	0.6641	1104.1	1123.7	0.160	3.514	78.628	16.361	1.262	0.028	0.044	0.002	0.001	0.000	0.000	0.000	0.000	0.000	1378.49
31	0.6874	1160.2	1180.7	0.004	2.531	73.259	23.419	0.767	0.008	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1424.10
Avg	0.6601	1091.0	1110.1	0.200	3.885	79.831	14.361	1.630	0.035	0.053	0.003	0.002	0.000	0.000	0.000	0.000	0.000	1366.22

Zone 32

GQ Source Daily Summary

March 2015

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

Name: LITTLE KNIFE-BELFIELD TRANSFER **Temperature Base:** **Contract Hour:** 9

Day	Heating Value		CO2	N2	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	Wobbe	CCT
	Relative Density	Dry														
1	0.6852	1156.5	1177.0	0.000	2.552	73.454	23.455	0.527	0.005	0.007	0.000	0.000	0.000	0.000	0.000	1421.91
2	0.6853	1156.4	1176.9	0.000	2.573	73.412	23.482	0.519	0.005	0.007	0.000	0.000	0.000	0.000	0.000	1421.60
3	0.6849	1155.7	1176.1	0.000	2.577	73.446	23.497	0.469	0.005	0.007	0.000	0.000	0.000	0.000	0.000	1421.17
4	0.6853	1156.3	1176.8	0.000	2.579	73.399	23.503	0.506	0.005	0.007	0.000	0.000	0.000	0.000	0.000	1421.50
5	0.6849	1155.7	1176.2	0.001	2.575	73.503	23.378	0.531	0.005	0.007	0.000	0.000	0.000	0.000	0.000	1421.22
6	0.6851	1156.2	1176.7	0.001	2.564	73.503	23.352	0.567	0.006	0.007	0.000	0.000	0.000	0.000	0.000	1421.58
7	0.6863	1158.4	1178.9	0.001	2.543	73.274	23.596	0.573	0.005	0.007	0.000	0.000	0.000	0.000	0.000	1423.02
8	0.6853	1156.5	1177.0	0.002	2.560	73.473	23.385	0.566	0.005	0.007	0.000	0.000	0.000	0.000	0.000	1423.02
9	0.6856	1156.9	1177.4	0.001	2.562	73.421	23.429	0.575	0.006	0.008	0.000	0.000	0.000	0.000	0.000	1422.02
10	0.6855	1156.7	1177.2	0.002	2.572	73.417	23.433	0.563	0.006	0.007	0.000	0.000	0.000	0.000	0.000	1421.77
11	0.6858	1157.4	1177.9	0.002	2.552	73.420	23.397	0.616	0.006	0.008	0.000	0.000	0.000	0.000	0.000	1422.39
12	0.6856	1157.4	1177.9	0.002	2.532	73.421	23.457	0.575	0.006	0.008	0.000	0.000	0.000	0.000	0.000	1422.62
13	0.6862	1158.8	1179.4	0.002	2.506	73.355	23.489	0.634	0.006	0.008	0.000	0.000	0.000	0.000	0.000	1423.66
14	0.6872	1159.6	1180.2	0.004	2.549	73.169	23.607	0.657	0.006	0.008	0.000	0.000	0.000	0.000	0.000	1423.61
15	0.6879	1160.5	1181.0	0.002	2.569	73.026	23.728	0.661	0.006	0.009	0.000	0.000	0.000	0.000	0.000	1423.89
16	0.6872	1159.3	1179.8	0.002	2.571	73.115	23.689	0.608	0.006	0.008	0.000	0.000	0.000	0.000	0.000	1423.23
17	0.6859	1157.2	1177.7	0.002	2.578	73.366	23.448	0.592	0.006	0.008	0.000	0.000	0.000	0.000	0.000	1421.95
18	0.6860	1157.6	1178.1	0.004	2.553	73.378	23.439	0.613	0.006	0.008	0.000	0.000	0.000	0.000	0.000	1422.46
19	0.6862	1158.0	1178.5	0.003	2.551	73.365	23.432	0.634	0.006	0.008	0.000	0.000	0.000	0.000	0.000	1422.67
20	0.6872	1159.7	1180.2	0.003	2.542	73.172	23.618	0.651	0.006	0.008	0.000	0.000	0.000	0.000	0.000	1423.74
21	0.6865	1158.9	1179.4	0.003	2.530	73.284	23.542	0.625	0.006	0.008	0.000	0.000	0.000	0.000	0.000	1423.41
22	0.6866	1158.9	1179.5	0.003	2.530	73.270	23.561	0.623	0.006	0.008	0.000	0.000	0.000	0.000	0.000	1423.41
23	0.6869	1159.6	1180.2	0.002	2.519	73.238	23.574	0.651	0.007	0.009	0.000	0.000	0.000	0.000	0.000	1423.46
24	0.6865	1159.0	1179.5	0.003	2.524	73.308	23.507	0.644	0.006	0.009	0.000	0.000	0.000	0.000	0.000	1423.97
25	0.6872	1160.0	1180.5	0.003	2.524	73.213	23.562	0.683	0.007	0.009	0.000	0.000	0.000	0.000	0.000	1423.54
26	0.6876	1160.9	1181.4	0.004	2.512	73.193	23.523	0.752	0.007	0.010	0.000	0.000	0.000	0.000	0.000	1424.09
27	0.6875	1161.0	1181.6	0.004	2.487	73.229	23.512	0.751	0.007	0.010	0.000	0.000	0.000	0.000	0.000	1424.70
28	0.6881	1161.4	1182.0	0.002	2.528	73.055	23.681	0.717	0.007	0.010	0.000	0.000	0.000	0.000	0.000	1425.04
29	0.6879	1160.7	1181.2	0.002	2.549	73.080	23.652	0.701	0.007	0.009	0.000	0.000	0.000	0.000	0.000	1424.86
30	0.6881	1161.7	1182.2	0.003	2.512	73.098	23.611	0.760	0.007	0.010	0.000	0.000	0.000	0.000	0.000	1424.23
31	0.6876	1160.6	1181.1	0.002	2.525	73.173	23.561	0.723	0.007	0.009	0.000	0.000	0.000	0.000	0.000	1425.15
Avg	0.6864	1158.0	1179.0	0.002	2.545	73.298	23.519	0.622	0.006	0.008	0.000	0.000	0.000	0.000	0.000	1423.05

Zone 33

GQ Source Analysis

GQ Source Number:	1202160	Specific Gravity:	0.7224
GQ Source Name:	BOWMAN BORDER	Dry Heat Value:	1098.69
Effective Date:	3/1/2015 9:00:00 AM	Wet Heat Value:	1079.57
Effective End Date:	1/18/2038 9:14:07 PM	As Deliv. Heat Value:	1098.69
Pressure Base:	14.730	Sample Pressure:	
Viscosity:		Sample Temperature:	

		<u>Mol %</u>	<u>Liquid Content</u>			<u>Mol %</u>
C1	Methane	68.900		CO2	Carbon Dioxide	1.233
C2	Ethane	18.056	4.8150	N2	Nitrogen	8.864
C3	Propane	2.545	0.6990	O2	Oxygen	
IC4	Isobutane	0.090	0.0290	He	Helium	
NC4	n-Butane	0.266	0.0840	H2	Hydrogen	
IC5	Isopentane	0.012	0.0040	H2S	Hydrogen Sulfide	
NC5	n-Pentane	0.029	0.0100	Ar	Argon	
C6	Hexanes	0.005	0.0020	CO	Carbon Monoxide	
C7	Heptanes			H2	Water	
C8	Octanes			Neo-C5	Neopentane	
C9	Nonanes					
C10	Decanes					

Totals 100.000% 5.643 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

Mar-15

ZONE 610

Watford City

01320

Watford City Border

Begin Date	End Date	MCF	DK	BTU Zone 25
3/1/2025	3/2/2015	531	640	1,207
3/2/2025	3/3/2015	515	622	1,207
3/3/2025	3/4/2015	678	818	1,207
3/4/2025	3/5/2015	662	799	1,207
3/5/2025	3/6/2015	451	545	1,207
3/6/2025	3/7/2015	361	436	1,207
3/7/2025	3/8/2015	327	394	1,207
3/8/2025	3/9/2015	307	371	1,207
3/9/2025	3/10/2015	228	275	1,207
3/10/2025	3/11/2015	237	286	1,207
3/11/2025	3/12/2015	205	248	1,207
3/12/2025	3/13/2015	181	218	1,207
3/13/2025	3/14/2015	161	195	1,207
3/14/2025	3/15/2015	101	122	1,207
3/15/2025	3/16/2015	128	154	1,207
3/16/2025	3/17/2015	350	422	1,207
3/17/2025	3/18/2015	292	352	1,207
3/18/2025	3/19/2015	354	427	1,207
3/19/2025	3/20/2015	312	377	1,207
3/20/2025	3/21/2015	275	332	1,207
3/21/2025	3/22/2015	351	424	1,207
3/22/2025	3/23/2015	250	301	1,207
3/23/2025	3/24/2015	299	361	1,207
3/24/2025	3/25/2015	411	496	1,207
3/25/2025	3/26/2015	365	428	1,207
3/26/2025	3/27/2015	276	333	1,207
3/27/2025	3/28/2015	184	222	1,207
3/28/2025	3/29/2015	52	62	1,207
3/29/2025	3/30/2015	65	79	1,207
3/30/2025	3/31/2015	60	72	1,207
3/31/2025	4/1/2015	26	32	1,207

8,985 10,843

01312

Watford City East Border

Begin Date	End Date	MCF	DK	BTU Zone 43
3/1/2025	3/2/2015	1130	1328	1,174
3/2/2025	3/3/2015	942	1108	1,177
3/3/2025	3/4/2015	833	974	1,170
3/4/2025	3/5/2015	1199	1407	1,173
3/5/2025	3/6/2015	1051	1233	1,173
3/6/2025	3/7/2015	1008	1184	1,175
3/7/2025	3/8/2015	1061	1245	1,174
3/8/2025	3/9/2015	1042	1225	1,176
3/9/2025	3/10/2015	795	935	1,176
3/10/2025	3/11/2015	829	978	1,180
3/11/2025	3/12/2015	803	950	1,185
3/12/2025	3/13/2015	1039	1225	1,179
3/13/2025	3/14/2015	774	912	1,178
3/14/2025	3/15/2015	378	447	1,188
3/15/2025	3/16/2015	332	397	1,194
3/16/2025	3/17/2015	448	537	1,199
3/17/2025	3/18/2015	259	311	1,202
3/18/2025	3/19/2015	287	346	1,208
3/19/2025	3/20/2015	223	267	1,198
3/20/2025	3/21/2015	272	324	1,192
3/21/2025	3/22/2015	379	450	1,185
3/22/2025	3/23/2015	294	350	1,188
3/23/2025	3/24/2015	362	436	1,205
3/24/2025	3/25/2015	358	428	1,194
3/25/2025	3/26/2015	279	333	1,193
3/26/2025	3/27/2015	219	266	1,214
3/27/2025	3/28/2015	243	289	1,195
3/28/2025	3/29/2015	318	372	1,172
3/29/2025	3/30/2015	372	435	1,169
3/30/2025	3/31/2015	315	375	1,191
3/31/2025	4/1/2015	236	280	1,186

18,080 21,347 1,1859

Weighted

AVG BTU
1,185
1,188
1,187
1,185
1,183
1,183
1,182
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1,186
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1,206
1,201
1,201
1,201
1,210
1,200
1,177
1,175
1,194
1,188

1,1919

Gas Quality Download - Chromatograph |

ROW ID	LOCATION DESCRIPTION	GROSS HEATING VALUE (BTU/CF)	SPECIFIC GRAVITY	WOBBE (Btu)	CM(CONDENTHERM (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	Chromatostamp	NOTES
11587	GLEN ULLIN	1052.5	0.6057	1352.4	-63.2	1.2741	0.8145	90.5061	6.7246	0.4505	0.0377	0.0291	0.005	0.0068	0	0.0032	0.1326	0.0188	2/28/2015	3/1/2015	3/1/2015 2:25:52 PM	
11587	GLEN ULLIN	1055.8	0.6077	1354.4	-62.4	1.2528	0.8269	90.1273	7.0781	0.4818	0.038	0.0295	0.0049	0.0068	0	0.0032	0.1349	0.0188	3/1/2015	3/2/2015	3/2/2015 2:25:49 PM	
11587	GLEN ULLIN	1052.3	0.6049	1353	-69.8	1.2156	0.813	90.5951	6.7515	0.4084	0.0309	0.0236	0.0037	0.0052	0	0.0021	0.136	0.0188	3/1/2015	3/3/2015	3/3/2015 2:25:31 PM	
11587	GLEN ULLIN	1050.3	0.6037	1351.8	-70.9	1.221	0.8153	90.8134	6.5605	0.3861	0.0283	0.0219	0.0032	0.0048	0	0.002	0.1288	0.0188	3/3/2015	3/4/2015	3/4/2015 2:26:05 PM	
11587	GLEN ULLIN	1047.9	0.6025	1350	-73.2	1.2305	0.8311	91.0315	6.3562	0.355	0.0253	0.0194	0.0028	0.0042	0	0.0017	0.1252	0.0188	3/4/2015	3/5/2015	3/5/2015 2:25:02 PM	
11587	GLEN ULLIN	1053.2	0.604	1351.5	-71.9	1.2378	0.8241	90.7232	6.6033	0.3943	0.028	0.0205	0.003	0.0043	0	0.0017	0.1434	0.0188	3/5/2015	3/6/2015	3/6/2015 2:27:04 PM	
11587	GLEN ULLIN	1052	0.6048	1352.7	-71	1.2056	0.8309	90.5679	6.7377	0.4195	0.0296	0.0223	0.0032	0.0046	0	0.0017	0.1624	0.0188	3/6/2015	3/7/2015	3/7/2015 2:25:03 PM	
11587	GLEN ULLIN	1053.4	0.6061	1353.1	-68.3	1.234	0.833	90.3305	6.9197	0.4351	0.0309	0.0242	0.0035	0.0052	0	0.0022	0.1662	0.0188	3/7/2015	3/8/2015	3/8/2015 2:25:03 PM	
11587	GLEN ULLIN	1054.9	0.607	1354	-67.1	1.2329	0.8301	90.1457	7.1097	0.4333	0.0314	0.0245	0.0036	0.0053	0	0.0024	0.1657	0.0188	3/8/2015	3/9/2015	3/9/2015 2:26:26 PM	
11587	GLEN ULLIN	1055	0.6069	1354.2	-64.7	1.2408	0.8174	90.1945	7.0368	0.4548	0.0357	0.0278	0.0043	0.0062	0	0.0029	0.1616	0.0188	3/9/2015	3/10/2015	3/10/2015 2:28:40 PM	
11587	GLEN ULLIN	1053.7	0.6063	1353.3	-63.6	1.2478	0.8248	90.368	6.8228	0.4816	0.0378	0.0293	0.0046	0.0065	0	0.003	0.1577	0.0188	3/10/2015	3/11/2015	3/11/2015 2:24:18 PM	
11587	GLEN ULLIN	1053.4	0.606	1353.2	-65.7	1.2509	0.8163	90.3788	6.842	0.4582	0.0362	0.0283	0.0043	0.0062	0	0.0026	0.1608	0.0188	3/10/2015	3/12/2015	3/12/2015 2:25:27 PM	
11587	GLEN ULLIN	1054.7	0.6072	1353.5	-68.4	1.2783	0.8204	90.1454	7.0612	0.4581	0.0335	0.0254	0.0036	0.0052	0	0.0021	0.1494	0.0188	3/11/2015	3/12/2015	3/12/2015 2:25:32 PM	
11587	GLEN ULLIN	1052.2	0.6058	1351.8	-68.3	1.2911	0.8294	90.3302	6.8664	0.4187	0.0337	0.0253	0.0036	0.0053	0	0.0022	0.1792	0.0188	3/12/2015	3/13/2015	3/13/2015 2:24:53 PM	
11587	GLEN ULLIN	1056.7	0.6087	1354.4	-63.4	1.2726	0.841	89.8834	7.2174	0.5092	0.0398	0.0302	0.0046	0.0065	0	0.0027	0.1776	0.0188	3/13/2015	3/14/2015	3/14/2015 2:24:56 PM	
11587	GLEN ULLIN	1056.7	0.6087	1354.4	-63.4	1.2726	0.841	89.8834	7.2174	0.5092	0.0398	0.0302	0.0046	0.0065	0	0.0027	0.1776	0.0188	3/14/2015	3/15/2015	3/15/2015 2:23:48 PM	
11587	GLEN ULLIN	1057.5	0.6091	1355	-68.3	1.2509	0.851	89.7434	7.3852	0.5056	0.0308	0.0241	0.0033	0.0049	0	0.0018	0.186	0.0188	3/15/2015	3/16/2015	3/16/2015 2:25:43 PM	
11587	GLEN ULLIN	1059	0.6098	1356.2	-69.4	1.2568	0.8292	89.5708	7.5687	0.5115	0.0292	0.0226	0.0029	0.0043	0	0.0014	0.1875	0.0188	3/16/2015	3/17/2015	3/17/2015 2:23:36 PM	
11587	GLEN ULLIN	1057.7	0.6089	1355.4	-68.4	1.2324	0.8391	89.8283	7.3216	0.5251	0.0293	0.0232	0.0031	0.0045	0	0.0017	0.175	0.0188	3/17/2015	3/18/2015	3/18/2015 2:25:32 PM	
11587	GLEN ULLIN	1055.7	0.6079	1354.1	-68.1	1.2522	0.8416	89.9903	7.1605	0.4943	0.0306	0.024	0.0035	0.005	0	0.0021	0.1811	0.0188	3/18/2015	3/19/2015	3/19/2015 2:23:32 PM	
11587	GLEN ULLIN	1053.8	0.6069	1352.7	-71.1	1.2751	0.8412	90.1523	7.0459	0.4425	0.0283	0.0219	0.0031	0.0044	0	0.0015	0.1683	0.0188	3/19/2015	3/20/2015	3/20/2015 2:25:00 PM	
11587	GLEN ULLIN	1054.6	0.6072	1353.4	-68.5	1.2732	0.8327	90.1173	7.0492	0.4761	0.0316	0.0241	0.0035	0.005	0	0.0019	0.1701	0.0188	3/20/2015	3/21/2015	3/21/2015 2:24:29 PM	
11587	GLEN ULLIN	1055	0.6079	1353.1	-68.3	1.2518	0.8685	90.0224	7.1575	0.4533	0.0322	0.0246	0.0036	0.0052	0	0.0021	0.165	0.0188	3/21/2015	3/22/2015	3/22/2015 2:26:43 PM	
11587	GLEN ULLIN	1056.6	0.6084	1354.6	-65.6	1.262	0.8343	89.9462	7.1774	0.5247	0.0338	0.0264	0.0038	0.0056	0	0.0024	0.1671	0.0188	3/22/2015	3/23/2015	3/23/2015 2:23:39 PM	
11587	GLEN ULLIN	1054.7	0.6071	1353.6	-66.5	1.2654	0.8262	90.1793	6.9892	0.4927	0.0328	0.0255	0.0038	0.0054	0	0.0023	0.1622	0.0188	3/23/2015	3/24/2015	3/24/2015 2:23:47 PM	
11587	GLEN ULLIN	1051.8	0.6052	1352	-71.3	1.2769	0.8128	90.4529	6.8005	0.4198	0.027	0.0212	0.003	0.0044	0	0.0018	0.1639	0.0188	3/24/2015	3/25/2015	3/25/2015 2:23:40 PM	
11587	GLEN ULLIN	1053.2	0.6055	1353.5	-70.2	1.2304	0.8075	90.4738	6.7372	0.5085	0.0275	0.0217	0.003	0.0044	0	0.0018	0.1667	0.0188	3/25/2015	3/26/2015	3/26/2015 2:24:03 PM	
11587	GLEN ULLIN	1051.7	0.605	1352.1	-69.8	1.2716	0.8184	90.5459	6.6725	0.463	0.0283	0.0221	0.0033	0.0047	0	0.0019	0.166	0.0188	3/27/2015	3/28/2015	3/27/2015 2:24:27 PM	
11587	GLEN ULLIN	1051.7	0.605	1352.1	-68.6	1.2563	0.8216	90.4988	6.735	0.4269	0.0321	0.0247	0.0037	0.0053	0	0.0022	0.1769	0.0188	3/28/2015	3/29/2015	3/28/2015 2:24:07 PM	
11587	GLEN ULLIN	1051.1	0.6044	1352	-70.4	1.2429	0.8134	90.5682	6.7429	0.3752	0.0307	0.0237	0.0034	0.005	0	0.0019	0.1759	0.0188	3/29/2015	3/30/2015	3/30/2015 2:24:43 PM	
11587	GLEN ULLIN	1050.7	0.6043	1351.6	-72.7	1.2407	0.8228	90.5723	6.7239	0.3773	0.0284	0.0215	0.0032	0.0045	0	0.0016	0.1871	0.0188	3/31/2015	3/31/2015	3/31/2015 2:23:56 PM	

31 records 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	MAR 15	FEB 15	JAN 15	DEC 14	NOV 14	OCT 14	SEPT 14	AUG 14	JULY 14	JUNE 14	MAY 14	APR 14	ZONE
MT/ND	211	Sidney Area	1209	1205	1209	1215	1214	1215	1211	1204	1209	1212	1207	1212	1198	211
ND	24	Williston Area	1181	1171	1180	1173	1180	1182	1190	1189	1186	1184	1183	1180	1177	24
ND	25	Watford City Border	1212	1207	1196	1203	1201	1199	1207	1217	1205	1219	1226	1241	1221	25
ND/MT	241	Fairview Area	1202	1196	1202	1203	1203	1203	1197	1205	1201	1208	1202	1204	1194	241
ND	261	Williston - Toga - Minot Line	1056	992	1004	1015	1035	1058	1021	1027	1013	1094	1115	1118	1181	261
ND	262	Minot Area	1175	1173	1173	1169	1169	1171	1155	1150	1149	1154	1166	1161	1196	262
ND	263	Toga - Portal	1092	1084	1121	1097	1094	1097	1103	1103	1089	1098	1078	1062	1074	263
ND	264	Williston - Ray	1181	1171	1180	1173	1180	1182	1190	1189	1186	1184	1183	1180	1177	264
ND	271	Bismarck - Cleveland	1158	1171	1139	1151	1160	1159	1155	1147	1148	1152	1164	1162	1192	271
ND	272	Cleveland - Mapleton	1157	1169	1137	1149	1157	1157	1146	1146	1148	1151	1163	1162	1192	272
ND	273	Cleveland - Craifton	1157	1167	1137	1149	1158	1158	1154	1146	1148	1151	1163	1162	1190	273
ND	28	Bismarck - Cabin Creek	1133	1133	1089	1101	1116	1118	1140	1147	1148	1151	1163	1155	1135	28
ND	31	Dickinson Area	1139	1139	1091	1104	1122	1125	1154	1170	1174	1176	1171	1140	1102	31
ND	32	Taylor Take-Off - Glen Ullin Comp	1113	1115	1090	1094	1114	1121	1116	1130	1114	1131	1138	1105	1091	32
ND/MT	33	Cabin Creek - Dickinson	1116	1110	1079	1091	1103	1110	1144	1164	1134	1147	1134	1100	1077	33
ND	34	Killdeer	1180	1179	1177	1177	1178	1176	1180	1182	1182	1183	1183	1183	1183	34
ND	610	Bowman Area	1101	1099	1068	1049	1089	1116	1136	1128	1127	1130	1119	1123	1030	610
ND	802	MDU-Watford City BTU	1198	1192	1190	1189	1195	1193	1205	1210	1204	1204	1195	1047	1044	802
ND		Linton	1052	1054	1054	1056	1055	1054	1051	1054	1060	1050	1047	1047	1044	

**THERMAL ZONE VARIANCE
DOCUMENTATION**

March 2015

ZONE	BTU VARIANCE	REASON
263	-37	Process Plant Issue Corrected
271	32	Change in Supply Receipt
272	32	Change in Supply Receipt
273	30	Change in Supply Receipt
311	25	Change in Supply Receipt
28	44	Change in Supply Receipt
31	48	Change in Supply Receipt
32	31	Change in Supply Receipt
34	31	Change in Supply Receipt