



UTILITIES CO.

A Division of MDU Resources Group, Inc.

400 North Fourth Street

Bismarck, ND 58501

(701) 222-7900

October 18, 2017

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

Re: Case No. PU-17-002 (Therm Billing)
Monthly Report – August 2017

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 September 2017.
2. Attachment B consists of copies of the monthly Heating Value Test Reports received from our suppliers for the month of August 2017.
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 August 2017.

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 cursive script that reads 'Tamie Aberle'.

Tamie Aberle
Director of Regulatory Affairs

Montana-Dakota Utilities Co.
Therm Billing Factors - North Dakota
Sep-17

Town	Heat Zone	Therm Factor
MDU-303-ALEXANDER	025	1.1391
MDU-308-ARNEGARD	025	1.1391
MDU-314-APPLE VALLEY	271	1.1521
MDU-318-BEACH	032	1.0692
MDU-319-BELFIELD	032	1.0771
MDU-323-BERTHOLD	262	1.1268
MDU-327-BISMARCK	028	1.1439
MDU-330-BOWMAN	034	0.9137
MDU-337-BURLINGTON	262	1.1511
MDU-343-CARRINGTON	273	1.1521
MDU-344-CLEVELAND	272	1.1430
MDU-364-CAVALIER	273	1.1764
MDU-365-DAWSON	271	1.1439
MDU-368-DES LACS	262	1.1349
MDU-369-DICKINSON	031	1.1056
MDU-374-FT TOTTEN	273	1.1602
MDU-375-DEVILS LAKE	273	1.1602
MDU-379-BARLOW	273	1.1521
MDU-384-EPPING	264	1.0748
MDU-387-ELDRIDGE	272	1.1511
MDU-407-GLADSTONE	031	1.1056
MDU-411-GLEN ULLIN	031	1.1136
MDU-413-GOLVA	032	1.0535
MDU-416-GARRISON	262	1.1349
MDU-417-GRAFTON	273	1.1845
MDU-429-HEBRON	031	1.1136
MDU-432-HETTINGER	903	2.4049
MDU-449-JAMESTOWN	272	1.1592
MDU-459-KILLDEER	033	1.1145
MDU-463-LANGDON	273	1.1521
MDU-469-LEFOR	031	1.1056
MDU-474-LIGNITE	263	1.0902
MDU-475-LINTON	802	1.0199
MDU-478-LINCOLN	028	1.1521
MDU-488-MCKENZIE	271	1.1521
MDU-494-MEDINA	271	1.1439
MDU-498-MANDAN	028	1.1521
MDU-500-MARMARTH	034	0.9204
MDU-505-MINOT	262	1.1511
MDU-510-MOTT	031	1.1056
MDU-512-MAX	262	1.1511
MDU-522-NEW ENGLAND	031	1.0976
MDU-524-NEW SALEM	028	1.1277
MDU-532-NEW ROCKFORD	273	1.1521
MDU-539-PARK RIVER	273	1.1764
MDU-540-PALERMO	262	1.1268
MDU-558-RAY	264	1.0748
MDU-561-REGENT	031	1.1056
MDU-563-RHAME	034	0.9069

MDU-564-RICHARDTON	031	1.0976
MDU-568-ROSS	261	1.1093
MDU-572-RUTHVILLE	262	1.1511
MDU-574-SANBORN	272	1.1592
MDU-583-SENTINEL BUTTE	032	1.0692
MDU-588-SOUTH HEART	031	1.0976
MDU-717-SPIRITWOOD	272	1.1592
MDU-590-SPRINGBROOK	264	1.0748
MDU-591-STANLEY	261	1.1254
MDU-593-STEELE	271	1.1439
MDU-598-SHEYENNE	273	1.1602
MDU-605-SURREY	262	1.1511
MDU-610-TAPPEN	271	1.1439
MDU-611-TAYLOR	031	1.0976
MDU-616-TIOGA	261	1.1093
MDU-619-TURTLE LAKE	262	1.1349
MDU-620-TRENTON	024	1.0854
MDU-624-UNDERWOOD	262	1.1349
MDU-625-VALLEY CITY	272	1.1673
MDU-629-WALHALLA	273	1.1764
MDU-632-WATFORD CITY	610	1.1192
MDU-636-WHEELOCK	264	1.0671
MDU-637-WHITE EARTH	261	1.1173
MDU-642-WILLISTON	024	1.0854
MDU-646-WASHBURN	262	1.1430
MDU-647-WILTON	262	1.1268
MDU-664-RIVERDALE	262	1.1349
MDU-691-FAIRVIEW	241	1.1083
MDU-712-MINOT AFB	262	1.1511
MDU-718-FAIRMOUNT	600	1.1287
MDU-732-NEKOMA	273	1.1521
MDU-732-MSR SITE	273	1.1521

Source Daily Summary

August 2017

Number: 251

Pressure Base: 14.730

Contract Day: 1

Name: SDNY BDR-MNDK JNCTN-SDNY PLT

Temperature Base:

Contract Hour: 9

Day	Relative Density	Heating Value Wet	Heating Value Drv	Heating Value As Del	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.7329	1184.9	1205.9	1201.1	1.084	3.636	68.635	22.597	3.585	0.143	0.282	0.019	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1405.18
2	0.7374	1190.5	1211.5	1206.9	1.117	3.670	68.093	22.699	3.976	0.139	0.272	0.018	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1407.42
3	0.7361	1186.3	1207.3	1202.6	1.183	3.702	68.292	22.536	3.829	0.144	0.279	0.018	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1403.75
4	0.7320	1181.6	1202.5	1197.9	1.139	3.675	68.696	22.547	3.526	0.130	0.254	0.017	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1402.09
5	0.7294	1184.2	1200.6	1200.6	0.995	3.495	69.184	22.230	3.751	0.107	0.210	0.014	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1407.61
6	0.7218	1176.0	1196.8	1192.3	0.907	3.407	70.200	21.846	3.310	0.102	0.202	0.013	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1405.33
7	0.7216	1173.6	1194.4	1189.6	0.954	3.467	70.137	21.981	3.094	0.113	0.224	0.015	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1402.63
8	0.7375	1186.0	1207.0	1202.2	1.236	3.776	67.901	22.976	3.624	0.153	0.297	0.020	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1402.05
9	0.7382	1188.6	1209.6	1205.0	1.202	3.730	67.898	22.885	3.817	0.147	0.286	0.019	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1404.47
10	0.7336	1184.3	1205.2	1200.7	1.134	3.670	68.430	22.783	3.547	0.136	0.266	0.018	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1403.73
11	0.7272	1173.6	1194.4	1189.9	1.168	3.663	69.474	22.004	3.264	0.133	0.261	0.017	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1397.26
12	0.7302	1177.3	1198.1	1193.5	1.190	3.695	68.927	22.435	3.321	0.135	0.263	0.017	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1398.66
13	0.7286	1175.6	1196.4	1191.8	1.175	3.668	69.198	22.251	3.283	0.133	0.259	0.017	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1398.21
14	0.7276	1174.4	1195.2	1190.6	1.167	3.657	69.308	22.239	3.218	0.128	0.251	0.017	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1397.79
15	0.7272	1173.9	1194.7	1190.1	1.163	3.653	69.581	21.798	3.367	0.137	0.268	0.017	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1397.61
16	0.7320	1181.1	1202.0	1197.4	1.138	3.700	68.893	22.210	3.566	0.154	0.302	0.020	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1401.57
17	0.7328	1181.5	1202.4	1197.7	1.161	3.720	68.702	22.387	3.551	0.150	0.293	0.019	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1401.25
18	0.7345	1181.2	1202.1	1197.3	1.236	3.790	68.447	22.464	3.578	0.152	0.297	0.019	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1399.18
19	0.7359	1183.2	1204.2	1199.4	1.238	3.785	68.234	22.633	3.623	0.153	0.298	0.019	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1400.36
20	0.7343	1181.0	1202.0	1197.3	1.232	3.779	68.493	22.435	3.582	0.151	0.294	0.019	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1399.29
21	0.7371	1184.8	1205.8	1201.1	1.251	3.791	68.030	22.778	3.655	0.156	0.301	0.020	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1400.99
22	0.7375	1184.3	1205.2	1200.5	1.274	3.823	68.019	22.690	3.692	0.158	0.307	0.020	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1400.01
23	0.7423	1192.6	1213.7	1208.8	1.261	3.779	67.456	22.967	3.976	0.176	0.343	0.023	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1405.35
24	0.7490	1203.7	1225.0	1219.8	1.255	3.735	66.990	22.731	4.597	0.215	0.421	0.029	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1411.99
25	0.7421	1192.6	1213.7	1208.8	1.267	3.755	67.373	23.191	3.862	0.175	0.335	0.022	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1405.46
26	0.7512	1208.1	1229.4	1224.0	1.247	3.694	66.350	23.596	4.423	0.217	0.422	0.027	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1415.01
27	0.7515	1208.1	1229.5	1224.4	1.248	3.718	66.672	22.923	4.691	0.234	0.459	0.030	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1414.76
28	0.7325	1185.6	1206.6	1201.7	1.088	3.555	68.844	22.379	3.635	0.156	0.304	0.021	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1406.35
29	0.7231	1177.2	1198.0	1193.2	0.936	3.409	70.166	21.734	3.346	0.129	0.248	0.016	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1405.51
30	0.7145	1164.3	1184.9	1180.1	0.961	3.324	71.629	20.651	3.016	0.123	0.243	0.017	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1398.39
31	0.7155	1164.0	1184.6	1179.9	0.997	3.410	71.451	20.687	3.065	0.120	0.236	0.017	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1397.10
Avg	0.7331	1183.0	1204.3	1199.6	1.149	3.656	68.700	22.386	3.825	0.148	0.290	0.019	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1403.11

Zone 211

Source Daily Summary

August 2017

Number: 571

Pressure Base: 14.730

Contract Day: 1

Name: WILLISTON BDR-CHARBN STN

Temperature Base:

Contract Hour: 9

Day	Relative Density	Heating Value Wet	Heating Value Drv	Heating Value As Del	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.6780	1121.0	1140.8	1137.5	0.751	2.881	77.396	16.857	1.917	0.059	0.120	0.008	0.010	0.000	0.000	0.000	0.000	0.000	1382.30	
2	0.6796	1124.3	1144.2	1140.9	0.771	2.797	77.180	17.061	1.997	0.058	0.117	0.008	0.010	0.000	0.000	0.000	0.000	0.000	1384.77	
3	0.6802	1124.9	1144.9	1141.6	0.766	2.823	76.970	17.312	1.944	0.055	0.113	0.008	0.009	0.000	0.000	0.000	0.000	0.000	1384.97	
4	0.6809	1126.3	1146.2	1142.9	0.769	2.810	76.810	17.507	1.909	0.057	0.119	0.009	0.010	0.000	0.000	0.000	0.000	0.000	1385.80	
5	0.6796	1124.1	1144.0	1140.7	0.769	2.817	77.019	17.347	1.858	0.056	0.116	0.008	0.010	0.000	0.000	0.000	0.000	0.000	1384.51	
6	0.6791	1123.0	1142.9	1139.6	0.767	2.841	77.096	17.260	1.848	0.054	0.115	0.009	0.010	0.000	0.000	0.000	0.000	0.000	1383.67	
7	0.6796	1124.4	1144.3	1141.0	0.766	2.806	76.998	17.398	1.841	0.055	0.117	0.009	0.010	0.000	0.000	0.000	0.000	0.000	1384.84	
8	0.6802	1125.6	1145.5	1142.2	0.769	2.786	76.892	17.510	1.853	0.055	0.116	0.009	0.011	0.000	0.000	0.000	0.000	0.000	1385.69	
9	0.6768	1120.2	1140.0	1136.7	0.757	2.811	77.543	16.872	1.832	0.054	0.113	0.008	0.009	0.000	0.000	0.000	0.000	0.000	1382.51	
10	0.6767	1120.3	1140.1	1136.8	0.761	2.787	77.675	16.665	1.921	0.056	0.116	0.009	0.010	0.000	0.000	0.000	0.000	0.000	1382.77	
11	0.6756	1118.4	1138.2	1134.9	0.748	2.823	77.747	16.694	1.802	0.054	0.113	0.008	0.010	0.000	0.000	0.000	0.000	0.000	1381.49	
12	0.6759	1119.0	1138.8	1135.5	0.750	2.814	77.749	16.636	1.864	0.055	0.114	0.008	0.010	0.000	0.000	0.000	0.000	0.000	1381.92	
13	0.6763	1119.8	1139.6	1136.3	0.742	2.815	77.552	16.947	1.759	0.054	0.113	0.009	0.010	0.000	0.000	0.000	0.000	0.000	1382.51	
14	0.6761	1119.4	1139.3	1136.0	0.736	2.822	77.569	16.940	1.753	0.052	0.109	0.008	0.009	0.000	0.000	0.000	0.000	0.000	1382.34	
15	0.6761	1119.1	1138.9	1135.7	0.739	2.837	77.552	16.959	1.733	0.052	0.109	0.008	0.010	0.000	0.000	0.000	0.000	0.000	1381.95	
16	0.6755	1118.0	1137.8	1134.5	0.737	2.849	77.674	16.825	1.736	0.051	0.109	0.008	0.009	0.000	0.000	0.000	0.000	0.000	1381.22	
17	0.6764	1119.9	1139.7	1136.4	0.741	2.816	77.530	16.973	1.758	0.053	0.111	0.008	0.010	0.000	0.000	0.000	0.000	0.000	1382.58	
18	0.6771	1120.8	1140.7	1137.3	0.743	2.817	77.428	17.041	1.782	0.055	0.115	0.008	0.010	0.000	0.000	0.000	0.000	0.000	1383.07	
19	0.6776	1121.2	1141.0	1137.7	0.747	2.843	77.404	16.958	1.855	0.056	0.118	0.009	0.010	0.000	0.000	0.000	0.000	0.000	1382.89	
20	0.6783	1121.9	1141.8	1138.5	0.752	2.855	77.271	17.059	1.872	0.056	0.117	0.008	0.010	0.000	0.000	0.000	0.000	0.000	1383.13	
21	0.6789	1123.5	1143.4	1140.2	0.756	2.800	77.342	16.885	2.015	0.059	0.122	0.009	0.011	0.000	0.000	0.000	0.000	0.000	1384.55	
22	0.6772	1121.2	1141.0	1137.7	0.751	2.798	77.541	16.823	1.888	0.059	0.122	0.009	0.010	0.000	0.000	0.000	0.000	0.000	1383.33	
23	0.6791	1122.2	1142.1	1138.8	0.764	2.889	77.266	16.913	1.949	0.064	0.133	0.010	0.012	0.000	0.000	0.000	0.000	0.000	1382.71	
24	0.6795	1123.7	1143.6	1140.2	0.761	2.846	77.197	17.003	1.979	0.062	0.130	0.010	0.012	0.000	0.000	0.000	0.000	0.000	1384.05	
25	0.6798	1123.9	1143.8	1140.6	0.772	2.843	77.078	17.179	1.915	0.062	0.130	0.009	0.011	0.000	0.000	0.000	0.000	0.000	1384.08	
26	0.6790	1122.9	1142.8	1139.4	0.773	2.831	77.280	16.954	1.949	0.062	0.130	0.010	0.012	0.000	0.000	0.000	0.000	0.000	1383.57	
27	0.6776	1120.8	1140.7	1137.4	0.768	2.830	77.508	16.778	1.908	0.061	0.127	0.009	0.011	0.000	0.000	0.000	0.000	0.000	1382.51	
28	0.6790	1123.1	1143.0	1139.7	0.765	2.823	77.282	16.982	1.925	0.064	0.136	0.010	0.012	0.000	0.000	0.000	0.000	0.000	1383.92	
29	0.6793	1124.1	1144.0	1140.6	0.766	2.789	77.245	17.034	1.947	0.063	0.134	0.010	0.012	0.000	0.000	0.000	0.000	0.000	1384.82	
30	0.6746	1116.6	1136.4	1133.2	0.711	2.891	77.892	16.530	1.787	0.055	0.116	0.008	0.010	0.000	0.000	0.000	0.000	0.000	1380.38	
31	0.6777	1121.5	1141.4	1138.1	0.753	2.822	77.403	16.958	1.868	0.056	0.119	0.009	0.010	0.000	0.000	0.000	0.000	0.000	1383.23	
Avg	0.6780	1122.0	1141.6	1138.3	0.756	2.826	77.358	16.995	1.870	0.057	0.119	0.009	0.010	0.000	0.000	0.000	0.000	0.000	1383.29	

Zone 24

Gas Composition and Properties

Effective August 1, 2017 09:00 - January 18, 2038 21:14

Attachment B
Page 3 of 21

Source #: 0602160
Name: FAIRVIEW BORDER

Component	Mole %	Liquid Content	Mass %
Carbon Dioxide, CO2	0.7081		1.5414
Nitrogen, N2	3.1217		4.3256
Methane, C1	73.4573		58.2901
Ethane, C2	20.0192	5.3569	29.7751
Propane, C3	2.4224	0.6654	5.2836
iso-Butane, iC4	0.0818	0.0267	0.2352
n-Butane, nC4	0.1584	0.0498	0.4554
iso-Pentane, iC5	0.0112	0.0041	0.0400
n-Pentane, nC5	0.0112	0.0040	0.0400
Neo-Pentane, NeoC5			
Hexanes Plus, C6+	0.0000	0.0000	0.0000
Water, H2O			
Hydrogen Sulfide, H2S			
Oxygen, O2	0.0086		0.0136
Carbon Monoxide, CO			
Hydrogen, H2			
Helium, He			
Argon, Ar			
Totals	99.9999	6.1070	100.0000

Property	Total Sample	C6 Plus Fraction
Pressure Base	14.730	
Temperature Base	60.00	
HCDP @ Sample Pressure	-24.512	
Cricodentherm	-11.692	
HV, Dry @ Base P, T	1169.49	
HV, Sat @ Base P, T	1149.14	
HV, Sat @ Sample P, T	1169.49	
Relative Density	0.6985	

C6+: 100

Sample

Date: 09/01/2017 Pressure: 452.0
 Type: Composite Temperature: 0.0
 Tech: RR H2O: lbs/mm
 H2S: ppm

Remarks:

Analysis

Date: 09/02/2017 Instrument: WBI-207
 Cylinder: 383

Tech: MB

Remarks:

Zone 241

Gas Composition and Properties

Effective August 1, 2017 09:00 - January 18, 2038 21:14

Source #: 0602225
Name: WATFORD CITY WEST BORDER

Component	Mole %	Liquid Content	Mass %
Carbon Dioxide, CO2	1.0587		2.2139
Nitrogen, N2	3.2886		4.3774
Methane, C1	69.7040		53.1342
Ethane, C2	21.8829	5.8572	31.2657
Propane, C3	3.3475	0.9196	7.0139
iso-Butane, iC4	0.1941	0.0633	0.5361
n-Butane, nC4	0.4134	0.1300	1.1417
iso-Pentane, iC5	0.0365	0.0133	0.1251
n-Pentane, nC5	0.0377	0.0136	0.1292
Neo-Pentane, NeoC5			
Hexanes Plus, C6+	0.0027	0.0012	0.0111
Water, H2O			
Hydrogen Sulfide, H2S			
Oxygen, O2	0.0340		0.0517
Carbon Monoxide, CO			
Hydrogen, H2			
Helium, He			
Argon, Ar			
Totals	100.0001	6.9980	100.0000

Property	Total Sample	C6 Plus Fraction
Pressure Base	14.730	
Temperature Base	60.00	
HCDP @ Sample Pressure		
Cricondentherm		
HV, Dry @ Base P, T	1202.00	
HV, Sat @ Base P, T	1181.08	
HV, Sat @ Sample P, T	1202.00	
Relative Density	0.7271	

C6+: 100

Sample			
Date:	09/01/2017	Pressure:	488.0
Type:	Composite	Temperature:	0.0
Tech:	ES	H2O:	lbs/mm
		H2S:	ppm
Remarks:			

Analysis			
Date:	09/02/2017	Instrument:	WBI- 210
		Cylinder:	396
Tech:	MB		
Remarks:			

Zone 25

Source Daily Summary

August 2017

Number: 601

Pressure Base: 14.730

Contract Day: 1

Name: TIOGA STN-ROBINSON LAKE PLNT

Temperature Base:

Contract Hour: 9

Day	Relative Density	Heating Value Wet	Heating Value Drv	Heating Value As Del	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.7069	1158.4	1178.9	1174.4	0.848	3.170	72.320	20.888	2.488	0.086	0.175	0.011	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1398.85
2	0.7064	1158.2	1178.7	1174.4	0.851	3.138	72.277	21.093	2.367	0.083	0.167	0.011	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1399.04
3	0.7062	1158.1	1178.6	1174.3	0.847	3.129	72.185	21.296	2.292	0.077	0.154	0.010	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1399.21
4	0.7060	1157.5	1178.0	1173.6	0.854	3.130	72.415	20.902	2.426	0.082	0.167	0.011	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1398.74
5	0.7068	1158.8	1179.3	1174.9	0.856	3.128	72.220	21.153	2.374	0.080	0.163	0.012	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1399.34
6	0.7046	1155.1	1175.5	1171.2	0.861	3.138	72.571	20.851	2.320	0.078	0.158	0.010	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1397.14
7	0.7066	1158.6	1179.1	1174.5	0.862	3.116	72.305	21.044	2.393	0.082	0.170	0.013	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1399.26
8	0.7064	1158.6	1179.1	1174.6	0.846	3.116	72.345	20.973	2.446	0.082	0.167	0.011	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1399.61
9	0.7061	1157.3	1177.8	1173.4	0.872	3.126	72.381	20.985	2.362	0.080	0.167	0.012	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1398.27
10	0.7049	1155.8	1176.3	1171.9	0.859	3.126	72.456	21.021	2.292	0.075	0.152	0.010	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1397.73
11	0.7061	1157.3	1177.8	1173.2	0.869	3.134	72.367	20.982	2.386	0.076	0.160	0.012	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1398.25
12	0.7049	1155.5	1176.0	1171.6	0.857	3.144	72.524	20.873	2.347	0.078	0.155	0.010	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1397.41
13	0.7050	1155.6	1176.1	1171.6	0.864	3.136	72.539	20.856	2.341	0.079	0.161	0.011	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1397.40
14	0.7045	1155.3	1175.7	1171.2	0.854	3.125	72.646	20.743	2.371	0.079	0.159	0.010	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1397.49
15	0.7052	1156.1	1176.6	1172.1	0.864	3.133	72.583	20.733	2.414	0.082	0.166	0.012	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1397.69
16	0.7048	1155.6	1176.0	1171.5	0.858	3.132	72.640	20.691	2.412	0.082	0.164	0.010	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1397.53
17	0.7058	1156.8	1177.3	1172.7	0.869	3.135	72.542	20.711	2.457	0.085	0.174	0.012	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1397.96
18	0.7056	1156.9	1177.4	1172.9	0.858	3.128	72.541	20.735	2.460	0.084	0.170	0.011	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1398.30
19	0.7048	1155.7	1176.2	1171.6	0.862	3.121	72.705	20.596	2.429	0.084	0.173	0.012	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1397.59
20	0.7036	1154.0	1174.4	1170.1	0.843	3.139	72.866	20.475	2.407	0.083	0.164	0.010	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1396.78
21	0.7037	1153.9	1174.3	1169.9	0.856	3.135	72.894	20.434	2.400	0.084	0.171	0.012	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1396.52
22	0.7026	1152.1	1172.5	1168.1	0.853	3.139	73.009	20.395	2.342	0.079	0.160	0.010	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1395.56
23	0.7046	1155.1	1175.5	1171.4	0.866	3.130	72.712	20.600	2.418	0.083	0.168	0.011	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1397.11
24	0.7040	1154.1	1174.5	1170.1	0.863	3.145	72.693	20.720	2.318	0.080	0.160	0.010	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1396.46
25	0.7075	1158.8	1179.3	1174.8	0.882	3.152	72.261	20.952	2.445	0.089	0.188	0.014	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1398.64
26	0.7057	1156.0	1176.5	1172.1	0.873	3.164	72.523	20.744	2.404	0.086	0.179	0.013	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1397.19
27	0.7057	1156.4	1176.9	1172.2	0.863	3.161	72.535	20.726	2.425	0.085	0.175	0.013	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1397.50
28	0.7060	1156.8	1177.3	1172.1	0.857	3.173	72.501	20.720	2.452	0.087	0.180	0.013	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1397.73
29	0.7071	1159.4	1180.0	1175.1	0.834	3.152	72.389	20.760	2.549	0.093	0.192	0.014	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1399.83
30	0.7077	1161.0	1181.5	1176.7	0.815	3.143	72.375	20.711	2.613	0.099	0.208	0.017	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1401.09
31	0.7034	1153.9	1174.3	1169.6	0.838	3.138	72.727	20.803	2.234	0.078	0.156	0.011	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1396.75
Avg	0.7055	1157.0	1177.0	1172.5	0.857	3.138	72.518	20.812	2.400	0.083	0.168	0.012	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1398.00

Zone 261

Source Daily Summary

August 2017

Number: 091

Pressure Base: 14.730

Contract Day: 1

Name: MNT BRD-PLRMO BRD-BIS STN

Temperature Base:

Contract Hour: 9

Day	Relative Density	Heating Value Wet	Heating Value Dry	Heating Value As Del	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.7366	1171.1	1191.9	1187.8	0.868	5.158	67.915	21.623	3.866	0.159	0.365	0.022	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1385.30
2	0.7360	1171.1	1191.9	1188.2	0.866	5.099	67.999	21.621	3.867	0.154	0.351	0.020	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1385.95
3	0.7376	1174.7	1195.5	1191.8	0.861	5.035	67.842	21.710	3.981	0.159	0.367	0.021	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1388.71
4	0.7395	1176.9	1197.8	1194.0	0.860	5.078	67.677	21.648	4.130	0.169	0.391	0.023	0.024	0.000	0.000	0.000	0.000	0.000	0.000	1389.55
5	0.7390	1175.2	1196.0	1192.3	0.865	5.135	67.698	21.616	4.089	0.166	0.384	0.023	0.024	0.000	0.000	0.000	0.000	0.000	0.000	1387.92
6	0.7373	1173.6	1194.4	1190.6	0.870	5.064	67.855	21.709	3.928	0.159	0.370	0.022	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1387.66
7	0.7362	1172.8	1193.6	1189.8	0.868	5.016	67.973	21.726	3.860	0.156	0.359	0.021	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1387.75
8	0.7359	1172.5	1193.3	1189.4	0.870	4.999	68.083	21.592	3.895	0.156	0.361	0.021	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1387.70
9	0.7350	1172.1	1192.9	1189.1	0.872	4.934	68.185	21.645	3.821	0.151	0.349	0.021	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1388.07
10	0.7341	1171.2	1191.9	1188.1	0.872	4.906	68.295	21.626	3.770	0.149	0.341	0.020	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1387.84
11	0.7338	1171.5	1192.3	1188.4	0.875	4.859	68.358	21.611	3.761	0.149	0.342	0.020	0.024	0.000	0.000	0.000	0.000	0.000	0.000	1388.44
12	0.7346	1172.2	1193.0	1189.3	0.870	4.896	68.247	21.638	3.812	0.150	0.345	0.020	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1388.55
13	0.7343	1171.1	1191.9	1188.1	0.881	4.915	68.268	21.633	3.770	0.148	0.342	0.020	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1387.58
14	0.7329	1170.2	1190.9	1187.1	0.878	4.847	68.448	21.609	3.699	0.144	0.332	0.019	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1387.80
15	0.7344	1170.9	1191.7	1188.0	0.877	4.946	68.262	21.579	3.801	0.148	0.343	0.020	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1387.22
16	0.7346	1170.5	1191.2	1187.4	0.873	4.997	68.230	21.550	3.813	0.150	0.345	0.020	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1386.51
17	0.7348	1170.8	1191.6	1187.7	0.875	4.995	68.219	21.534	3.830	0.152	0.350	0.020	0.024	0.000	0.000	0.000	0.000	0.000	0.000	1386.70
18	0.7332	1170.0	1190.7	1186.8	0.870	4.903	68.475	21.446	3.771	0.149	0.343	0.020	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1387.21
19	0.7332	1169.6	1190.3	1186.4	0.874	4.922	68.476	21.420	3.775	0.149	0.342	0.020	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1386.73
20	0.7343	1170.2	1191.0	1187.1	0.876	4.981	68.332	21.435	3.831	0.152	0.349	0.021	0.024	0.000	0.000	0.000	0.000	0.000	0.000	1386.49
21	0.7340	1169.3	1190.0	1186.3	0.876	5.004	68.366	21.399	3.812	0.151	0.347	0.020	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1385.73
22	0.7355	1171.2	1192.0	1188.2	0.880	5.027	68.202	21.416	3.907	0.158	0.364	0.021	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1386.51
23	0.7370	1174.1	1194.9	1190.9	0.875	5.001	68.098	21.387	4.033	0.167	0.388	0.023	0.027	0.000	0.000	0.000	0.000	0.000	0.000	1388.47
24	0.7384	1176.0	1196.8	1192.9	0.871	5.017	68.012	21.288	4.186	0.173	0.401	0.024	0.028	0.000	0.000	0.000	0.000	0.000	0.000	1389.43
25	0.7379	1174.5	1195.3	1191.5	0.872	5.057	68.058	21.247	4.150	0.171	0.395	0.024	0.027	0.000	0.000	0.000	0.000	0.000	0.000	1388.18
26	0.7514	1186.0	1207.0	1203.0	0.878	5.617	66.216	21.683	4.850	0.206	0.486	0.030	0.034	0.000	0.000	0.000	0.000	0.000	0.000	1389.00
27	0.7495	1184.4	1205.4	1201.3	0.876	5.542	66.440	21.682	4.728	0.199	0.471	0.029	0.033	0.000	0.000	0.000	0.000	0.000	0.000	1388.86
28	0.7398	1177.8	1198.6	1194.5	0.875	5.034	67.776	21.473	4.207	0.174	0.408	0.024	0.029	0.000	0.000	0.000	0.000	0.000	0.000	1390.20
29	0.7399	1177.9	1198.7	1194.5	0.881	5.032	67.741	21.523	4.189	0.174	0.407	0.022	0.032	0.000	0.000	0.000	0.000	0.000	0.000	1390.17
30	0.7402	1178.2	1199.0	1195.0	0.883	5.035	67.713	21.521	4.211	0.175	0.408	0.025	0.029	0.000	0.000	0.000	0.000	0.000	0.000	1390.27
31	0.7406	1178.2	1199.1	1195.0	0.881	5.071	67.660	21.512	4.236	0.175	0.409	0.026	0.030	0.000	0.000	0.000	0.000	0.000	0.000	1389.98
Avg	0.7371	1174.0	1194.5	1190.7	0.873	5.036	67.972	21.552	3.986	0.161	0.373	0.022	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1387.95

Zone 2b2

Gas Composition and Properties

Effective August 1, 2017 09:00 - January 18, 2038 21:14

Source #: 2501030
Name: LIGNITE PLANT

Component	Mole %	Liquid Content	Mass %
Carbon Dioxide, CO2	0.1317		0.2974
Nitrogen, N2	3.1854		4.5784
Methane, C1	77.4455		63.7454
Ethane, C2	16.9190	4.5263	26.1020
Propane, C3	2.1649	0.5947	4.8979
iso-Butane, iC4	0.0560	0.0183	0.1670
n-Butane, nC4	0.0387	0.0122	0.1154
iso-Pentane, iC5	0.0000	0.0000	0.0000
n-Pentane, nC5	0.0000	0.0000	0.0000
Neo-Pentane, NeoC5			
Hexanes Plus, C6+	0.0000	0.0000	0.0000
Water, H2O			
Hydrogen Sulfide, H2S			
Oxygen, O2	0.0588		0.0965
Carbon Monoxide, CO			
Hydrogen, H2			
Helium, He			
Argon, Ar			

Property	Total Sample	C6 Plus Fraction
Pressure Base	14.730	
Temperature Base	60.00	
HCDP @ Sample Pressure	-31.101	
Cricondentherm	-26.199	
HV, Dry @ Base P, T	1142.81	
HV, Sat @ Base P, T	1122.92	
HV, Sat @ Sample P, T	1142.81	
Relative Density	0.6735	

C6+: 100

Totals 100.0000 5.1510 100.0000

Sample
Date: 09/01/2017 Pressure: 600.0
Type: Composite Temperature: 0.0
Tech: ES H2O: lbs/mm
H2S: ppm
Remarks:

Analysis
Date: 09/02/2017 Instrument: WBI- 208
Cylinder: 318
Tech: MB
Remarks:

Zone 263

Gas Composition and Properties

Effective August 1, 2017 09:00 - January 18, 2038 21:14

Source #: 3002013
Name: EPPING BORDER

Component	Mole %	Liquid Content	Mass %
Carbon Dioxide, CO2	0.6937		1.5687
Nitrogen, N2	2.8789		4.1441
Methane, C1	77.8862		64.2049
Ethane, C2	16.7395	4.4782	25.8640
Propane, C3	1.6289	0.4475	3.6908
iso-Butane, iC4	0.0517	0.0169	0.1544
n-Butane, nC4	0.1052	0.0331	0.3142
iso-Pentane, iC5	0.0075	0.0027	0.0278
n-Pentane, nC5	0.0084	0.0030	0.0311
Neo-Pentane, NeoC5			
Hexanes Plus, C6+	0.0000	0.0000	0.0000
Water, H2O			
Hydrogen Sulfide, H2S			
Oxygen, O2	0.0000		0.0000
Carbon Monoxide, CO			
Hydrogen, H2			
Helium, He			
Argon, Ar			

Property	Total Sample	C6 Plus Fraction
Pressure Base	14.730	
Temperature Base	60.00	
HCDP @ Sample Pressure		
Cricondentherm		
HV, Dry @ Base P, T	1133.26	
HV, Sat @ Base P, T	1113.53	
HV, Sat @ Sample P, T	1133.26	
Relative Density	0.6725	

C6+: 100

Totals 100.0000 4.9810 100.0000

Sample
Date: 09/01/2017 Pressure: 610.0
Type: Composite Temperature: 0.0
Tech: ES H2O: lbs/mm
H2S: ppm
Remarks:

Analysis
Date: 09/02/2017 Instrument: WBI-209
Cylinder: 387
Tech: MB
Remarks:

Zone 264

Source Daily Summary

August 2017

Number: 603

Pressure Base: 14.730

Contract Day: 1

Name: TIOGA STN-COUNTY LINE PLANT

Temperature Base:

Contract Hour: 9

Day	Relative Density	Heating Value Wet	Heating Value Drv	Heating Value As Def	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.7070	1158.5	1179.0	1175.5	0.852	3.172	72.287	20.922	2.483	0.086	0.175	0.011	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1398.83
2	0.7066	1158.5	1179.0	1175.4	0.851	3.135	72.244	21.132	2.362	0.083	0.168	0.012	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1399.22
3	0.7063	1158.3	1178.8	1175.3	0.846	3.128	72.164	21.315	2.295	0.077	0.154	0.010	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1399.33
4	0.7062	1157.8	1178.3	1174.8	0.854	3.127	72.385	20.936	2.425	0.082	0.167	0.011	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1398.92
5	0.7069	1159.0	1179.5	1175.9	0.857	3.125	72.191	21.185	2.372	0.080	0.164	0.012	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1399.50
6	0.7047	1155.3	1175.7	1172.3	0.862	3.138	72.542	20.879	2.321	0.078	0.158	0.010	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1397.26
7	0.7068	1158.8	1179.4	1175.7	0.862	3.114	72.282	21.062	2.397	0.082	0.172	0.013	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1399.43
8	0.7065	1158.7	1179.2	1175.7	0.846	3.116	72.337	20.983	2.446	0.082	0.167	0.011	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1399.64
9	0.7064	1157.7	1178.2	1174.6	0.875	3.128	72.351	20.986	2.375	0.082	0.172	0.013	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1398.43
10	0.7049	1155.9	1176.3	1172.9	0.860	3.126	72.447	21.028	2.293	0.075	0.151	0.010	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1397.76
11	0.7062	1157.4	1177.9	1174.3	0.870	3.132	72.352	20.994	2.387	0.077	0.162	0.012	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1398.34
12	0.7049	1155.5	1176.0	1172.5	0.857	3.144	72.522	20.877	2.346	0.078	0.155	0.010	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1397.42
13	0.7051	1155.8	1176.2	1172.7	0.864	3.137	72.527	20.862	2.343	0.080	0.162	0.011	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1397.47
14	0.7045	1155.3	1175.7	1172.3	0.854	3.124	72.647	20.744	2.370	0.079	0.159	0.010	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1397.50
15	0.7053	1156.3	1176.7	1173.2	0.863	3.131	72.573	20.740	2.416	0.082	0.167	0.012	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1397.80
16	0.7048	1155.6	1176.1	1172.6	0.858	3.131	72.628	20.705	2.410	0.082	0.164	0.010	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1397.59
17	0.7058	1156.8	1177.3	1173.8	0.868	3.135	72.539	20.713	2.457	0.085	0.174	0.013	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1398.00
18	0.7056	1156.8	1177.3	1173.8	0.858	3.129	72.546	20.736	2.454	0.084	0.170	0.011	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1398.24
19	0.7049	1155.8	1176.3	1172.7	0.862	3.121	72.693	20.611	2.428	0.084	0.174	0.012	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1397.67
20	0.7037	1154.1	1174.5	1171.0	0.844	3.139	72.850	20.494	2.403	0.083	0.164	0.010	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1396.80
21	0.7038	1154.0	1174.5	1170.9	0.856	3.132	72.884	20.443	2.402	0.084	0.172	0.012	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1396.64
22	0.7026	1152.2	1172.6	1169.1	0.854	3.139	72.998	20.408	2.340	0.079	0.160	0.010	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1395.59
23	0.7050	1155.7	1176.2	1172.6	0.863	3.136	72.683	20.586	2.447	0.085	0.173	0.012	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1397.43
24	0.7041	1154.3	1174.8	1171.3	0.855	3.147	72.674	20.737	2.324	0.080	0.161	0.010	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1396.72
25	0.7077	1159.1	1179.7	1176.0	0.883	3.149	72.229	20.975	2.451	0.090	0.190	0.014	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1398.84
26	0.7057	1156.1	1176.6	1173.1	0.873	3.163	72.507	20.760	2.404	0.086	0.179	0.013	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1397.27
27	0.7059	1156.6	1177.1	1173.4	0.865	3.158	72.514	20.749	2.424	0.085	0.176	0.013	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1397.63
28	0.7062	1157.1	1177.6	1174.0	0.858	3.171	72.477	20.738	2.458	0.087	0.181	0.013	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1397.89
29	0.7071	1159.4	1179.9	1176.3	0.834	3.152	72.390	20.767	2.543	0.093	0.192	0.014	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1399.79
30	0.7083	1161.6	1182.2	1178.5	0.823	3.144	72.293	20.759	2.635	0.100	0.211	0.016	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1401.28
31	0.7038	1154.3	1174.7	1171.1	0.842	3.141	72.680	20.826	2.248	0.077	0.158	0.012	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1396.89
Avg	0.7056	1157.0	1177.2	1173.7	0.857	3.138	72.498	20.827	2.402	0.083	0.169	0.012	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1398.10

Zone 265

Source Daily Summary

August 2017

Number: 043

Pressure Base: 14.730

Contract Day: 1

Name: BISMARCK STN-CLEVELAND STN

Temperature Base:

Contract Hour: 9

Day	Relative Density	Heating Value Wet	Heating Value Drv	Heating Value As Del	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.7396	1177.7	1198.5	1194.1	0.847	5.065	67.748	21.555	4.154	0.171	0.404	0.027	0.029	0.000	0.000	0.000	0.000	0.000	0.000	1390.17
2	0.7383	1175.5	1196.3	1191.8	0.853	5.070	67.826	21.614	4.037	0.164	0.385	0.025	0.027	0.000	0.000	0.000	0.000	0.000	0.000	1388.82
3	0.7365	1173.6	1194.4	1189.9	0.855	5.013	68.002	21.667	3.884	0.158	0.370	0.024	0.026	0.000	0.000	0.000	0.000	0.000	0.000	1388.30
4	0.7355	1172.6	1193.3	1188.9	0.854	4.984	68.231	21.442	3.911	0.158	0.370	0.024	0.026	0.000	0.000	0.000	0.000	0.000	0.000	1388.02
5	0.7343	1172.0	1192.8	1188.3	0.857	4.900	68.360	21.517	3.813	0.151	0.354	0.023	0.026	0.000	0.000	0.000	0.000	0.000	0.000	1388.47
6	0.7339	1171.7	1192.5	1188.0	0.857	4.884	68.360	21.587	3.769	0.149	0.348	0.022	0.024	0.000	0.000	0.000	0.000	0.000	0.000	1388.49
7	0.7334	1171.8	1192.6	1188.1	0.861	4.825	68.479	21.531	3.756	0.149	0.349	0.023	0.026	0.000	0.000	0.000	0.000	0.000	0.000	1389.08
8	0.7333	1172.3	1193.0	1188.8	0.853	4.794	68.511	21.523	3.775	0.149	0.347	0.022	0.024	0.000	0.000	0.000	0.000	0.000	0.000	1389.77
9	0.7333	1171.8	1192.5	1188.0	0.859	4.820	68.499	21.524	3.753	0.148	0.348	0.023	0.026	0.000	0.000	0.000	0.000	0.000	0.000	1389.11
10	0.7327	1170.8	1191.6	1187.1	0.867	4.802	68.532	21.583	3.687	0.145	0.338	0.022	0.024	0.000	0.000	0.000	0.000	0.000	0.000	1388.69
11	0.7341	1171.5	1192.2	1187.8	0.864	4.903	68.375	21.512	3.799	0.148	0.349	0.023	0.026	0.000	0.000	0.000	0.000	0.000	0.000	1388.03
12	0.7345	1171.1	1191.9	1187.5	0.859	4.968	68.304	21.501	3.816	0.151	0.353	0.023	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1387.28
13	0.7346	1171.1	1191.9	1187.4	0.861	4.978	68.313	21.452	3.835	0.153	0.358	0.023	0.026	0.000	0.000	0.000	0.000	0.000	0.000	1387.15
14	0.7321	1169.8	1190.5	1186.1	0.855	4.830	68.707	21.327	3.741	0.148	0.345	0.022	0.024	0.000	0.000	0.000	0.000	0.000	0.000	1387.98
15	0.7332	1170.0	1190.7	1186.3	0.859	4.919	68.538	21.344	3.793	0.151	0.351	0.022	0.024	0.000	0.000	0.000	0.000	0.000	0.000	1387.12
16	0.7339	1170.3	1191.0	1186.6	0.861	4.960	68.463	21.329	3.827	0.153	0.358	0.024	0.026	0.000	0.000	0.000	0.000	0.000	0.000	1386.84
17	0.7335	1169.4	1190.1	1185.8	0.861	4.978	68.500	21.296	3.810	0.152	0.354	0.023	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1386.16
18	0.7347	1170.7	1191.4	1186.9	0.865	5.003	68.372	21.316	3.871	0.157	0.367	0.024	0.026	0.000	0.000	0.000	0.000	0.000	0.000	1386.57
19	0.7382	1176.7	1197.5	1193.0	0.859	4.974	68.135	21.202	4.170	0.179	0.423	0.028	0.031	0.000	0.000	0.000	0.000	0.000	0.000	1390.35
20	0.7391	1177.4	1198.2	1193.7	0.856	5.020	67.998	21.241	4.229	0.177	0.419	0.028	0.031	0.000	0.000	0.000	0.000	0.000	0.000	1390.28
21	0.7369	1175.0	1195.8	1191.3	0.856	4.959	68.282	21.147	4.131	0.170	0.400	0.026	0.028	0.000	0.000	0.000	0.000	0.000	0.000	1389.59
22	0.7376	1175.7	1196.5	1192.0	0.860	4.979	68.162	21.228	4.136	0.172	0.406	0.027	0.030	0.000	0.000	0.000	0.000	0.000	0.000	1389.70
23	0.7393	1177.1	1197.9	1193.5	0.856	5.058	67.932	21.271	4.233	0.176	0.416	0.027	0.030	0.000	0.000	0.000	0.000	0.000	0.000	1389.77
24	0.7432	1180.8	1201.7	1197.2	0.862	5.187	67.394	21.451	4.416	0.187	0.443	0.029	0.032	0.000	0.000	0.000	0.000	0.000	0.000	1390.53
25	0.7395	1178.3	1199.2	1194.5	0.865	4.993	67.862	21.443	4.187	0.175	0.415	0.028	0.031	0.000	0.000	0.000	0.000	0.000	0.000	1390.94
26	0.7396	1178.4	1199.3	1194.8	0.865	4.993	67.856	21.432	4.203	0.176	0.417	0.028	0.030	0.000	0.000	0.000	0.000	0.000	0.000	1391.06
27	0.7401	1178.7	1199.6	1195.1	0.864	5.018	67.832	21.378	4.246	0.178	0.423	0.028	0.031	0.000	0.000	0.000	0.000	0.000	0.000	1390.96
28	0.7389	1177.5	1198.4	1193.8	0.858	4.993	67.994	21.298	4.211	0.175	0.414	0.027	0.030	0.000	0.000	0.000	0.000	0.000	0.000	1390.64
29	0.7395	1179.8	1200.7	1196.2	0.857	4.907	67.999	21.308	4.255	0.181	0.431	0.029	0.033	0.000	0.000	0.000	0.000	0.000	0.000	1392.79
30	0.7383	1181.6	1202.5	1198.0	0.837	4.722	68.130	21.470	4.185	0.179	0.419	0.028	0.031	0.000	0.000	0.000	0.000	0.000	0.000	1395.99
31	0.7353	1176.1	1197.0	1192.4	0.846	4.757	68.434	21.396	3.956	0.165	0.390	0.026	0.029	0.000	0.000	0.000	0.000	0.000	0.000	1392.38
Avg	0.7364	1174.0	1195.2	1190.7	0.858	4.944	68.198	21.416	3.987	0.163	0.383	0.025	0.028	0.000	0.000	0.000	0.000	0.000	0.000	1389.39

Zone 271

Source Daily Summary

August 2017

Number: 063

Pressure Base: 14.730

Contract Day: 1

Name: CLEVELAND STN-MAPLETON

Temperature Base:

Contract Hour: 9

Day	Relative Density	Heating Value Wet	Heating Value Drv	Heating Value As Del	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT	
1	0.7383	1174.9	1195.7	1192.2	0.850	5.109	67.768	21.668	4.019	0.162	0.371	0.025	0.027	0.000						1388.14	
2	0.7401	1177.1	1197.9	1194.4	0.850	5.141	67.642	21.571	4.171	0.172	0.396	0.027	0.030	0.000						1389.04	
3	0.7398	1175.3	1196.1	1192.6	0.863	5.209	67.581	21.642	4.101	0.166	0.384	0.026	0.028	0.000						1387.15	
4	0.7376	1173.4	1194.1	1190.7	0.864	5.119	67.815	21.689	3.937	0.160	0.366	0.025	0.027	0.000						1386.97	
5	0.7363	1172.3	1193.0	1189.6	0.864	5.064	68.002	21.626	3.882	0.156	0.357	0.024	0.026	0.000						1386.93	
6	0.7359	1171.8	1192.6	1189.1	0.868	5.044	68.097	21.550	3.882	0.155	0.354	0.024	0.026	0.000						1386.79	
7	0.7347	1171.2	1191.9	1188.5	0.867	4.970	68.199	21.646	3.783	0.148	0.339	0.023	0.025	0.000						1387.20	
8	0.7344	1171.8	1192.6	1189.0	0.870	4.900	68.289	21.622	3.780	0.149	0.340	0.023	0.026	0.000						1388.17	
9	0.7344	1171.9	1192.6	1189.2	0.863	4.910	68.280	21.614	3.795	0.149	0.341	0.023	0.025	0.000						1388.26	
10	0.7335	1170.8	1191.5	1188.1	0.868	4.885	68.419	21.538	3.756	0.148	0.338	0.023	0.025	0.000						1387.81	
11	0.7327	1169.6	1190.3	1186.9	0.873	4.872	68.496	21.557	3.683	0.144	0.328	0.022	0.024	0.000						1387.19	
12	0.7343	1170.4	1191.1	1187.7	0.871	4.974	68.283	21.562	3.776	0.147	0.338	0.023	0.025	0.000						1386.64	
13	0.7352	1170.6	1191.4	1187.9	0.871	5.049	68.155	21.547	3.831	0.151	0.346	0.024	0.026	0.000						1386.01	
14	0.7352	1170.3	1191.0	1187.6	0.869	5.069	68.163	21.509	3.842	0.152	0.347	0.023	0.025	0.000						1385.68	
15	0.7326	1169.0	1189.7	1186.3	0.867	4.906	68.581	21.382	3.731	0.147	0.336	0.023	0.026	0.000						1386.61	
16	0.7335	1169.2	1189.9	1186.5	0.867	4.981	68.450	21.374	3.789	0.150	0.341	0.023	0.025	0.000						1385.96	
17	0.7345	1169.7	1190.4	1187.0	0.869	5.038	68.324	21.374	3.845	0.153	0.347	0.024	0.026	0.000						1385.64	
18	0.7344	1169.1	1189.8	1186.4	0.870	5.063	68.320	21.371	3.828	0.152	0.347	0.023	0.025	0.000						1385.04	
19	0.7354	1170.5	1191.3	1187.8	0.873	5.073	68.216	21.376	3.892	0.157	0.361	0.025	0.027	0.000						1385.68	
20	0.7387	1176.2	1197.0	1193.5	0.868	5.041	67.993	21.289	4.162	0.177	0.411	0.028	0.031	0.000						1389.25	
21	0.7396	1176.6	1197.4	1193.9	0.865	5.099	67.881	21.270	4.240	0.177	0.408	0.028	0.031	0.000						1388.93	
22	0.7370	1173.9	1194.7	1191.2	0.865	5.026	68.210	21.174	4.114	0.168	0.387	0.027	0.029	0.000						1388.15	
23	0.7383	1175.1	1195.9	1192.4	0.869	5.065	68.025	21.261	4.154	0.171	0.397	0.028	0.030	0.000						1388.37	
24	0.7388	1175.8	1196.6	1193.1	0.864	5.081	67.921	21.330	4.179	0.172	0.397	0.027	0.030	0.000						1388.74	
25	0.7436	1179.7	1200.6	1197.1	0.870	5.282	67.264	21.488	4.419	0.185	0.430	0.029	0.032	0.000						1388.87	
26	0.7400	1177.4	1198.2	1194.7	0.873	5.081	67.739	21.471	4.197	0.174	0.405	0.028	0.031	0.000						1389.47	
27	0.7405	1178.0	1198.9	1195.4	0.874	5.082	67.685	21.488	4.226	0.176	0.409	0.028	0.031	0.000						1389.83	
28	0.7406	1178.0	1198.9	1195.3	0.872	5.098	67.697	21.429	4.254	0.177	0.412	0.029	0.031	0.000						1389.66	
29	0.7396	1177.3	1198.1	1194.6	0.866	5.059	67.832	21.390	4.214	0.175	0.405	0.028	0.030	0.000						1389.74	
30	0.7398	1179.6	1200.5	1196.9	0.863	4.938	67.884	21.422	4.236	0.180	0.416	0.029	0.032	0.000						1392.28	
31	0.7393	1181.2	1202.1	1198.6	0.841	4.833	67.909	21.567	4.202	0.178	0.410	0.029	0.031	0.000						1394.61	
Avg	0.7371	1174.0	1194.6	1191.1	0.866	5.034	68.036	21.477	3.998	0.162	0.373	0.026	0.028	0.000						1388.03	

Zone 272

Source Daily Summary

August 2017

Number: 061

Pressure Base: 14.730

Contract Day: 1

Name: CLEVELAND STN-GRAFTON BDR

Temperature Base:

Contract Hour: 9

Day	Relative Density	Heating Value Wet	Heating Value Drv	Heating Value As Del	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.7398	1178.0	1198.8	1195.5	0.846	5.064	67.695	21.608	4.163	0.172	0.395	0.027	0.030	0.000	0.000	0.000	0.000	0.000	0.000	1390.43
2	0.7403	1176.6	1197.4	1194.0	0.864	5.172	67.544	21.668	4.143	0.168	0.387	0.026	0.028	0.000	0.000	0.000	0.000	0.000	0.000	1388.26
3	0.7378	1174.5	1195.3	1191.9	0.862	5.073	67.822	21.693	3.967	0.161	0.370	0.025	0.027	0.000	0.000	0.000	0.000	0.000	0.000	1388.09
4	0.7362	1172.9	1193.7	1190.4	0.862	5.016	68.013	21.682	3.868	0.156	0.355	0.024	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1387.78
5	0.7361	1172.8	1193.6	1190.3	0.866	5.006	68.096	21.552	3.913	0.157	0.359	0.024	0.026	0.000	0.000	0.000	0.000	0.000	0.000	1387.79
6	0.7346	1172.0	1192.7	1189.4	0.865	4.923	68.225	21.662	3.790	0.149	0.339	0.023	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1388.16
7	0.7339	1171.1	1191.8	1188.6	0.867	4.900	68.362	21.562	3.772	0.149	0.340	0.023	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1387.86
8	0.7345	1172.7	1193.5	1190.0	0.866	4.862	68.292	21.641	3.796	0.150	0.343	0.024	0.027	0.000	0.000	0.000	0.000	0.000	0.000	1389.13
9	0.7336	1172.1	1192.8	1189.4	0.863	4.821	68.427	21.581	3.774	0.148	0.338	0.023	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1389.28
10	0.7335	1171.1	1191.8	1188.4	0.876	4.857	68.409	21.594	3.732	0.146	0.336	0.023	0.026	0.000	0.000	0.000	0.000	0.000	0.000	1388.11
11	0.7329	1170.3	1191.0	1187.7	0.867	4.862	68.460	21.585	3.707	0.144	0.329	0.022	0.024	0.000	0.000	0.000	0.000	0.000	0.000	1387.79
12	0.7360	1172.3	1193.0	1189.7	0.873	5.021	68.072	21.601	3.879	0.152	0.351	0.024	0.027	0.000	0.000	0.000	0.000	0.000	0.000	1387.17
13	0.7346	1170.6	1191.3	1188.1	0.867	5.004	68.250	21.518	3.821	0.150	0.342	0.023	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1386.52
14	0.7351	1171.3	1192.0	1188.8	0.870	5.000	68.221	21.504	3.850	0.154	0.352	0.024	0.026	0.000	0.000	0.000	0.000	0.000	0.000	1386.92
15	0.7326	1169.5	1190.2	1186.9	0.865	4.880	68.601	21.372	3.751	0.148	0.336	0.023	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1387.17
16	0.7347	1170.8	1191.6	1188.3	0.869	4.986	68.303	21.443	3.846	0.153	0.349	0.024	0.026	0.000	0.000	0.000	0.000	0.000	0.000	1386.80
17	0.7340	1169.5	1190.3	1187.0	0.868	5.003	68.389	21.380	3.817	0.152	0.345	0.023	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1385.93
18	0.7351	1170.5	1191.2	1187.9	0.873	5.046	68.249	21.396	3.873	0.155	0.356	0.024	0.026	0.000	0.000	0.000	0.000	0.000	0.000	1385.92
19	0.7375	1174.4	1195.2	1191.9	0.867	5.033	68.039	21.403	4.049	0.168	0.386	0.026	0.028	0.000	0.000	0.000	0.000	0.000	0.000	1388.38
20	0.7392	1176.9	1197.7	1194.4	0.868	5.044	67.953	21.272	4.211	0.178	0.414	0.029	0.032	0.000	0.000	0.000	0.000	0.000	0.000	1389.62
21	0.7386	1176.6	1197.4	1194.1	0.865	5.012	68.006	21.283	4.208	0.173	0.397	0.027	0.029	0.000	0.000	0.000	0.000	0.000	0.000	1389.83
22	0.7377	1174.7	1195.5	1192.1	0.866	5.041	68.120	21.205	4.146	0.171	0.394	0.027	0.030	0.000	0.000	0.000	0.000	0.000	0.000	1388.42
23	0.7370	1174.8	1195.6	1192.3	0.864	4.971	68.192	21.268	4.094	0.168	0.388	0.027	0.029	0.000	0.000	0.000	0.000	0.000	0.000	1389.27
24	0.7468	1183.2	1204.1	1200.8	0.870	5.366	66.851	21.616	4.588	0.193	0.452	0.031	0.033	0.000	0.000	0.000	0.000	0.000	0.000	1390.00
25	0.7386	1176.8	1197.6	1194.3	0.869	4.996	67.933	21.439	4.139	0.171	0.396	0.027	0.029	0.000	0.000	0.000	0.000	0.000	0.000	1390.05
26	0.7410	1179.3	1200.2	1196.8	0.877	5.048	67.628	21.549	4.247	0.177	0.413	0.029	0.032	0.000	0.000	0.000	0.000	0.000	0.000	1390.82
27	0.7401	1178.2	1199.0	1195.7	0.872	5.044	67.751	21.471	4.220	0.176	0.407	0.028	0.031	0.000	0.000	0.000	0.000	0.000	0.000	1390.31
28	0.7405	1178.8	1199.7	1196.3	0.869	5.049	67.717	21.462	4.255	0.177	0.411	0.029	0.031	0.000	0.000	0.000	0.000	0.000	0.000	1390.63
29	0.7404	1179.1	1200.0	1196.5	0.868	5.023	67.762	21.431	4.260	0.179	0.416	0.029	0.032	0.000	0.000	0.000	0.000	0.000	0.000	1391.10
30	0.7406	1181.8	1202.7	1199.2	0.849	4.902	67.761	21.551	4.275	0.182	0.420	0.029	0.032	0.000	0.000	0.000	0.000	0.000	0.000	1394.11
31	0.7351	1177.6	1198.4	1195.0	0.859	4.627	68.504	21.443	3.961	0.165	0.382	0.027	0.031	0.000	0.000	0.000	0.000	0.000	0.000	1394.36
Avg	0.7370	1175.0	1195.3	1192.0	0.866	4.989	68.053	21.498	4.004	0.163	0.374	0.026	0.028	0.000	0.000	0.000	0.000	0.000	0.000	1388.90

Zone 273

Source Daily Summary

August 2017

Number: 041

Pressure Base: 14.730

Contract Day: 1

Name: BISMARCK STN-GLEN ULLIN STN

Temperature Base:

Contract Hour: 9

Day	Relative Density	Heating Value Wet	Heating Value Drv	Heating Value As Del	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.7392	1176.6	1197.5	1193.2	0.846	5.094	67.746	21.587	4.107	0.168	0.397	0.026	0.028	0.000	0.000	0.000	0.000	0.000	1389.29	
2	0.7384	1175.6	1196.4	1192.6	0.853	5.074	67.814	21.609	4.048	0.165	0.386	0.025	0.027	0.000	0.000	0.000	0.000	0.000	1388.85	
3	0.7364	1173.4	1194.2	1190.3	0.855	5.013	68.029	21.642	3.883	0.158	0.370	0.024	0.026	0.000	0.000	0.000	0.000	0.000	1388.18	
4	0.7356	1172.6	1193.4	1189.4	0.854	4.985	68.222	21.452	3.910	0.158	0.370	0.024	0.026	0.000	0.000	0.000	0.000	0.000	1388.03	
5	0.7344	1172.1	1192.8	1188.9	0.857	4.904	68.351	21.513	3.819	0.151	0.354	0.023	0.026	0.000	0.000	0.000	0.000	0.000	1388.45	
6	0.7340	1171.8	1192.5	1188.7	0.857	4.884	68.353	21.591	3.771	0.149	0.348	0.022	0.024	0.000	0.000	0.000	0.000	0.000	1388.53	
7	0.7333	1171.6	1192.4	1188.4	0.861	4.824	68.507	21.507	3.755	0.149	0.349	0.023	0.026	0.000	0.000	0.000	0.000	0.000	1388.97	
8	0.7333	1172.2	1192.9	1188.9	0.854	4.804	68.506	21.514	3.777	0.149	0.348	0.023	0.025	0.000	0.000	0.000	0.000	0.000	1389.60	
9	0.7333	1171.8	1192.5	1188.5	0.859	4.819	68.506	21.513	3.756	0.149	0.349	0.023	0.026	0.000	0.000	0.000	0.000	0.000	1389.11	
10	0.7324	1170.7	1191.4	1187.4	0.866	4.791	68.572	21.566	3.679	0.145	0.337	0.022	0.024	0.000	0.000	0.000	0.000	0.000	1388.71	
11	0.7340	1171.4	1192.1	1188.0	0.863	4.902	68.384	21.511	3.794	0.148	0.349	0.023	0.026	0.000	0.000	0.000	0.000	0.000	1388.01	
12	0.7344	1171.1	1191.9	1187.9	0.860	4.961	68.315	21.499	3.814	0.151	0.353	0.023	0.025	0.000	0.000	0.000	0.000	0.000	1387.35	
13	0.7346	1171.0	1191.7	1187.8	0.860	4.980	68.319	21.450	3.832	0.153	0.357	0.023	0.025	0.000	0.000	0.000	0.000	0.000	1387.07	
14	0.7321	1169.8	1190.5	1186.5	0.856	4.827	68.718	21.321	3.738	0.148	0.345	0.022	0.025	0.000	0.000	0.000	0.000	0.000	1387.98	
15	0.7331	1170.0	1190.7	1186.7	0.859	4.912	68.550	21.344	3.787	0.150	0.350	0.023	0.025	0.000	0.000	0.000	0.000	0.000	1387.17	
16	0.7339	1170.4	1191.1	1187.1	0.861	4.956	68.462	21.333	3.827	0.153	0.358	0.024	0.026	0.000	0.000	0.000	0.000	0.000	1386.93	
17	0.7335	1169.3	1190.0	1186.0	0.861	4.979	68.505	21.296	3.805	0.152	0.354	0.023	0.025	0.000	0.000	0.000	0.000	0.000	1386.11	
18	0.7345	1170.5	1191.2	1187.1	0.865	5.001	68.389	21.312	3.862	0.156	0.365	0.024	0.026	0.000	0.000	0.000	0.000	0.000	1386.46	
19	0.7379	1176.5	1197.3	1193.1	0.859	4.956	68.169	21.215	4.146	0.177	0.420	0.028	0.030	0.000	0.000	0.000	0.000	0.000	1390.40	
20	0.7390	1177.3	1198.1	1194.1	0.856	5.020	68.007	21.233	4.227	0.178	0.420	0.028	0.031	0.000	0.000	0.000	0.000	0.000	1390.22	
21	0.7367	1174.9	1195.7	1191.7	0.856	4.948	68.304	21.149	4.122	0.169	0.397	0.026	0.028	0.000	0.000	0.000	0.000	0.000	1389.65	
22	0.7377	1175.6	1196.4	1192.4	0.861	4.986	68.165	21.213	4.141	0.172	0.406	0.027	0.030	0.000	0.000	0.000	0.000	0.000	1389.57	
23	0.7377	1175.6	1196.4	1192.2	0.853	4.998	68.157	21.207	4.152	0.172	0.405	0.027	0.029	0.000	0.000	0.000	0.000	0.000	1389.58	
24	0.7434	1181.0	1201.9	1197.7	0.861	5.198	67.370	21.443	4.434	0.187	0.445	0.029	0.032	0.000	0.000	0.000	0.000	0.000	1390.51	
25	0.7394	1178.1	1199.0	1194.9	0.866	4.996	67.876	21.431	4.183	0.175	0.415	0.028	0.031	0.000	0.000	0.000	0.000	0.000	1390.79	
26	0.7397	1178.5	1199.4	1195.4	0.865	4.993	67.847	21.439	4.205	0.176	0.417	0.028	0.030	0.000	0.000	0.000	0.000	0.000	1391.11	
27	0.7400	1178.6	1199.4	1195.3	0.864	5.019	67.845	21.370	4.242	0.178	0.422	0.028	0.031	0.000	0.000	0.000	0.000	0.000	1390.86	
28	0.7389	1177.5	1198.4	1194.1	0.858	4.995	67.994	21.294	4.212	0.175	0.415	0.027	0.030	0.000	0.000	0.000	0.000	0.000	1390.59	
29	0.7395	1179.7	1200.6	1196.3	0.857	4.917	68.001	21.291	4.259	0.181	0.431	0.029	0.033	0.000	0.000	0.000	0.000	0.000	1392.59	
30	0.7382	1181.4	1202.3	1198.1	0.837	4.723	68.142	21.472	4.170	0.178	0.419	0.028	0.031	0.000	0.000	0.000	0.000	0.000	1395.84	
31	0.7350	1175.9	1196.7	1192.5	0.846	4.739	68.496	21.362	3.949	0.164	0.388	0.026	0.030	0.000	0.000	0.000	0.000	0.000	1392.44	
Avg	0.7382	1174.0	1195.1	1191.0	0.858	4.942	68.213	21.409	3.981	0.162	0.382	0.025	0.028	0.000	0.000	0.000	0.000	0.000	1389.32	

Zone 28

Source Daily Summary

August 2017

Number: 271

Pressure Base: 14.730

Contract Day: 1

Name: DCKSN BRD-BLFD TSF-G.U. STN

Temperature Base:

Contract Hour: 9

Day	Relative Density	Heating Value Wet	Heating Value Drv	Heating Value As Del	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.6851	1150.9	1171.3	1167.6	0.000	2.881	73.745	22.511	0.847	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.87
2	0.6852	1151.2	1171.6	1168.1	0.000	2.875	73.716	22.558	0.836	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.08
3	0.6870	1154.0	1174.4	1170.9	0.001	2.870	73.458	22.716	0.937	0.007	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.67
4	0.7319	1169.2	1189.9	1186.2	0.773	4.969	68.730	21.141	3.841	0.148	0.351	0.023	0.024	0.000	0.000	0.000	0.000	0.000	0.000	1387.67
5	0.6794	1113.9	1133.6	1130.2	0.806	3.364	77.674	15.571	2.274	0.085	0.199	0.013	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1372.09
6	0.6609	1094.0	1113.4	1110.1	0.828	2.802	80.878	13.504	1.757	0.063	0.147	0.010	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1366.36
7	0.6540	1087.0	1106.3	1102.9	0.826	2.584	81.995	12.880	1.525	0.052	0.121	0.008	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1364.77
8	0.6578	1090.9	1110.2	1106.8	0.827	2.700	81.373	13.243	1.646	0.058	0.134	0.008	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1365.68
9	0.6989	1133.9	1154.0	1150.4	0.824	3.947	74.338	17.676	2.822	0.106	0.251	0.017	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1377.31
10	0.7304	1167.3	1188.0	1184.3	0.826	4.869	68.982	21.034	3.760	0.143	0.339	0.022	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1386.72
11	0.7070	1161.2	1181.8	1178.1	0.368	3.747	71.358	22.056	2.222	0.068	0.158	0.010	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1402.55
12	0.6867	1153.7	1174.1	1170.6	0.000	2.867	73.409	22.872	0.837	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.56
13	0.6863	1152.7	1173.1	1169.6	0.000	2.890	73.503	22.733	0.858	0.007	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.77
14	0.6868	1153.8	1174.3	1170.7	0.000	2.865	73.512	22.653	0.948	0.009	0.013	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.67
15	0.6880	1156.1	1176.6	1173.0	0.000	2.844	73.289	22.870	0.976	0.008	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1415.15
16	0.6891	1158.0	1178.5	1174.9	0.000	2.834	73.148	22.935	1.064	0.008	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1416.31
17	0.6898	1159.5	1180.1	1176.5	0.000	2.804	73.069	22.986	1.120	0.008	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1417.49
18	0.6907	1159.2	1179.8	1176.1	0.000	2.908	72.754	23.308	1.011	0.007	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1416.21
19	0.6919	1159.1	1179.7	1176.0	0.000	3.023	72.483	23.483	0.994	0.008	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.91
20	0.6908	1157.3	1177.8	1174.2	0.000	3.031	72.650	23.365	0.935	0.007	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.79
21	0.6917	1158.3	1178.8	1175.2	0.000	3.062	72.485	23.463	0.972	0.008	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.00
22	0.6916	1158.0	1178.5	1174.9	0.000	3.066	72.515	23.429	0.971	0.008	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.79
23	0.6908	1158.4	1178.9	1175.3	0.000	2.967	72.728	23.272	1.014	0.008	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1415.11
24	0.6919	1159.0	1179.5	1175.8	0.000	3.030	72.499	23.441	1.011	0.008	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.76
25	0.6909	1156.6	1177.1	1173.6	0.000	3.089	72.634	23.298	0.960	0.008	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.77
26	0.6906	1156.1	1176.6	1173.0	0.000	3.090	72.700	23.229	0.962	0.008	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.49
27	0.6916	1157.5	1178.0	1174.3	0.000	3.099	72.536	23.345	1.002	0.008	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.16
28	0.6882	1149.6	1170.0	1166.3	0.065	3.152	73.429	22.220	1.093	0.015	0.024	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1407.06
29	0.6878	1147.9	1168.3	1164.6	0.091	3.174	73.623	21.904	1.157	0.019	0.031	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1405.44
30	0.7299	1170.5	1191.2	1187.4	0.740	4.756	69.028	21.199	3.739	0.145	0.346	0.023	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1391.18
31	0.7106	1147.6	1168.0	1164.2	0.830	4.193	72.736	18.341	3.395	0.135	0.324	0.022	0.024	0.000	0.000	0.000	0.000	0.000	0.000	1382.53
Avg	0.6914	1148.0	1168.8	1165.2	0.252	3.237	73.580	21.266	1.532	0.038	0.085	0.005	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1402.48

Zone 31

Source Daily Summary

August 2017

Number: 051

Pressure Base: 14.730

Contract Day: 1

Name: CABIN CRK STN-BELFIELD TRSFR

Temperature Base:

Contract Hour: 9

Day	Relative Density	Heating Value Wet	Heating Value Drv	Heating Value As Del	CO2	N2	C1	C2	C3	IC4	NC4	IC6	NC6	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.7009	1161.1	1181.7	1178.0	0.196	3.442	71.649	22.988	1.575	0.042	0.095	0.006	0.007	0.000	0.000	0.000	0.000	0.000	1408.20	
2	0.7001	1160.8	1181.3	1177.5	0.184	3.409	71.738	22.994	1.532	0.040	0.090	0.006	0.007	0.000	0.000	0.000	0.000	0.000	1408.55	
3	0.7020	1161.8	1182.3	1178.5	0.208	3.489	71.507	22.999	1.635	0.045	0.102	0.007	0.008	0.000	0.000	0.000	0.000	0.000	1407.85	
4	0.6944	1158.4	1178.9	1175.0	0.110	3.133	72.505	22.882	1.280	0.026	0.057	0.003	0.004	0.000	0.000	0.000	0.000	0.000	1411.48	
5	0.6974	1147.8	1166.1	1164.1	0.421	3.581	73.172	20.559	2.039	0.064	0.145	0.009	0.010	0.000	0.000	0.000	0.000	0.000	1395.47	
6	0.6758	1124.3	1144.2	1140.3	0.471	2.908	76.978	18.049	1.444	0.042	0.095	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1388.61	
7	0.6698	1117.7	1137.5	1133.4	0.502	2.693	78.073	17.327	1.278	0.036	0.079	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1386.65	
8	0.6654	1110.5	1130.2	1126.3	0.476	2.762	78.825	16.619	1.204	0.033	0.071	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1382.23	
9	0.6796	1133.8	1153.9	1150.2	0.221	3.071	75.464	20.039	1.130	0.024	0.046	0.003	0.002	0.000	0.000	0.000	0.000	0.000	1396.41	
10	0.6841	1143.0	1163.3	1159.6	0.172	3.011	74.449	21.208	1.089	0.022	0.045	0.003	0.003	0.000	0.000	0.000	0.000	0.000	1403.12	
11	0.6852	1134.4	1154.5	1150.8	0.270	3.487	74.718	19.958	1.436	0.039	0.080	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1391.27	
12	0.6661	1101.7	1121.2	1118.0	0.288	3.649	78.457	16.197	1.285	0.039	0.075	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1370.59	
13	0.6664	1102.7	1122.3	1119.0	0.286	3.620	78.399	16.282	1.288	0.039	0.076	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1371.51	
14	0.6892	1150.6	1171.0	1167.3	0.110	3.113	73.406	22.155	1.143	0.022	0.046	0.002	0.003	0.000	0.000	0.000	0.000	0.000	1407.31	
15	0.6876	1151.6	1172.0	1168.3	0.065	2.982	73.565	22.256	1.093	0.014	0.023	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1410.02	
16	0.6833	1138.1	1158.3	1154.7	0.167	3.234	74.802	20.425	1.291	0.028	0.049	0.003	0.002	0.000	0.000	0.000	0.000	0.000	1397.97	
17	0.6758	1115.4	1135.1	1131.5	0.325	3.674	76.827	17.464	1.565	0.047	0.087	0.006	0.005	0.000	0.000	0.000	0.000	0.000	1377.48	
18	0.6717	1104.7	1124.2	1121.0	0.382	3.848	77.797	16.187	1.623	0.052	0.098	0.007	0.006	0.000	0.000	0.000	0.000	0.000	1368.53	
19	0.6642	1086.0	1105.2	1101.5	0.466	4.149	79.609	13.790	1.788	0.064	0.120	0.008	0.007	0.000	0.000	0.000	0.000	0.000	1353.00	
20	0.6627	1084.0	1103.2	1099.4	0.452	4.156	79.846	13.593	1.758	0.063	0.118	0.008	0.006	0.000	0.000	0.000	0.000	0.000	1352.00	
21	0.6597	1078.9	1098.0	1094.4	0.418	4.232	80.237	13.323	1.620	0.056	0.102	0.006	0.005	0.000	0.000	0.000	0.000	0.000	1348.68	
22	0.6606	1077.0	1096.1	1092.4	0.528	4.272	80.349	12.878	1.781	0.062	0.115	0.007	0.006	0.000	0.000	0.000	0.000	0.000	1345.36	
23	0.6570	1074.5	1093.6	1090.7	0.464	4.181	81.005	12.396	1.774	0.060	0.108	0.007	0.005	0.000	0.000	0.000	0.000	0.000	1345.95	
24	0.6562	1073.9	1092.9	1089.5	0.412	4.219	81.078	12.379	1.734	0.059	0.106	0.007	0.006	0.000	0.000	0.000	0.000	0.000	1346.01	
25	0.6546	1071.2	1090.1	1086.6	0.406	4.246	81.388	12.064	1.709	0.061	0.111	0.008	0.006	0.000	0.000	0.000	0.000	0.000	1344.20	
26	0.6635	1086.0	1105.2	1101.5	0.572	3.931	80.032	13.351	1.887	0.075	0.126	0.009	0.007	0.000	0.000	0.000	0.000	0.000	1353.56	
27	0.6678	1090.3	1109.6	1105.8	0.523	4.139	79.345	13.645	2.098	0.081	0.151	0.010	0.008	0.000	0.000	0.000	0.000	0.000	1354.66	
28	0.6797	1110.7	1130.4	1127.4	0.674	3.781	77.473	15.431	2.339	0.098	0.182	0.012	0.010	0.000	0.000	0.000	0.000	0.000	1367.79	
29	0.6777	1113.1	1132.9	1129.3	0.554	3.630	77.344	16.188	2.056	0.075	0.136	0.009	0.008	0.000	0.000	0.000	0.000	0.000	1372.91	
30	0.6734	1125.0	1144.9	1141.2	0.461	2.658	77.368	18.013	1.380	0.041	0.071	0.004	0.004	0.000	0.000	0.000	0.000	0.000	1391.88	
31	0.6543	1098.7	1118.2	1114.6	0.732	2.046	81.560	14.253	1.278	0.043	0.078	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1379.08	
Avg	0.6750	1116.0	1135.5	1131.9	0.372	3.508	77.063	17.351	1.553	0.048	0.093	0.006	0.005	0.000	0.000	0.000	0.000	0.000	1378.66	

Zone 32

Source Daily Summary

August 2017

Number: 111

Pressure Base: 14.730

Contract Day: 1

Name: LITTLE KNIFE PLANT

Temperature Base:

Contract Hour: 9

Day	Relative Density	Heating Value Wet	Heating Value Drv	Heating Value As Del	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.6877	1156.4	1176.9	1172.3	0.001	2.797	73.212	23.132	0.841	0.007	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1415.84
2	0.6870	1155.7	1176.2	1171.7	0.001	2.773	73.331	23.068	0.810	0.007	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1415.70
3	0.6887	1157.4	1177.9	1173.4	0.001	2.823	73.058	23.232	0.867	0.007	0.011	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1416.08
4	0.6896	1159.0	1179.6	1175.1	0.002	2.806	72.948	23.287	0.939	0.007	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1417.15
5	0.6890	1158.1	1178.6	1174.0	0.002	2.815	73.016	23.243	0.905	0.007	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1416.53
6	0.6884	1157.1	1177.6	1173.2	0.002	2.812	73.078	23.253	0.838	0.007	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1416.06
7	0.6894	1159.0	1179.5	1175.1	0.002	2.795	72.940	23.341	0.905	0.007	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1417.27
8	0.6890	1158.0	1178.5	1174.2	0.001	2.817	72.971	23.334	0.861	0.007	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1416.52
9	0.6883	1157.4	1177.9	1173.5	0.002	2.785	73.065	23.330	0.803	0.007	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1416.54
10	0.6885	1156.8	1177.3	1172.6	0.001	2.843	73.032	23.284	0.825	0.007	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1415.57
11	0.6893	1158.4	1178.9	1174.6	0.002	2.818	72.916	23.388	0.861	0.007	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1416.71
12	0.6891	1157.9	1178.5	1173.7	0.001	2.831	72.914	23.413	0.825	0.007	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1416.33
13	0.6890	1157.7	1178.2	1173.5	0.002	2.832	73.011	23.246	0.889	0.008	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1416.16
14	0.6909	1161.1	1181.7	1177.3	0.002	2.800	72.744	23.432	1.003	0.008	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1418.40
15	0.6903	1160.4	1180.9	1176.2	0.001	2.791	72.815	23.423	0.951	0.007	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1418.10
16	0.6919	1163.1	1183.7	1179.2	0.001	2.783	72.610	23.498	1.086	0.008	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1419.70
17	0.6917	1163.4	1184.0	1179.5	0.002	2.745	72.652	23.504	1.076	0.008	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1420.25
18	0.6948	1164.9	1185.5	1181.0	0.000	2.949	71.910	24.115	1.006	0.008	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1418.92
19	0.6937	1162.7	1183.2	1179.1	0.000	2.978	72.093	23.950	0.960	0.008	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1417.35
20	0.6932	1161.6	1182.2	1177.9	0.000	2.992	72.161	23.900	0.928	0.008	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1416.64
21	0.6941	1162.8	1183.4	1179.2	0.000	3.013	71.994	24.014	0.958	0.008	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1417.05
22	0.6941	1162.8	1183.4	1179.0	0.000	3.008	72.009	23.992	0.972	0.008	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1417.14
23	0.6936	1162.7	1183.2	1178.7	0.000	2.970	72.111	23.940	0.960	0.008	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1417.44
24	0.6939	1161.8	1182.3	1177.9	0.000	3.048	72.067	23.890	0.977	0.008	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1416.09
25	0.6931	1160.8	1181.3	1176.8	0.000	3.035	72.181	23.829	0.935	0.008	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1415.69
26	0.6934	1161.2	1181.7	1177.4	0.000	3.041	72.147	23.825	0.967	0.008	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1415.86
27	0.6941	1162.0	1182.6	1178.2	0.000	3.052	72.039	23.898	0.990	0.009	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1416.18
28	0.6938	1161.8	1182.4	1177.9	0.000	3.040	72.080	23.877	0.983	0.008	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1416.23
29	0.6931	1161.3	1181.9	1177.4	0.000	3.004	72.212	23.809	0.954	0.009	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1416.30
30	0.6925	1161.1	1181.6	1177.2	0.000	2.961	72.303	23.797	0.918	0.009	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1416.66
31	0.6924	1160.0	1180.5	1176.1	0.000	3.023	72.298	23.739	0.920	0.008	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1415.39
Avg	0.6912	1160.0	1180.7	1176.2	0.001	2.896	72.578	23.580	0.926	0.008	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1416.83

Zone 33

Gas Composition and Properties

Effective June 1, 2016 09:00 - January 18, 2038 21:14

Attachment B
Page 17 of 21

Source #: 1202160
Name: BOWMAN BORDER

Component	Mole %	Liquid Content	Mass %	Property	Total Sample	C6 Plus Fraction
Carbon Dioxide, CO2	0.2321		0.6048	Pressure Base	14.730	
Nitrogen, N2	3.4604		5.7399	Temperature Base	60.00	
Methane, C1	94.0188		89.3085	HCDP @ Sample Pressure		
Ethane, C2	1.9955	0.5321	3.5530	Cricondentherm		
Propane, C3	0.2261	0.0621	0.5904	HV, Dry @ Base P, T	996.12	
iso-Butane, iC4	0.0203	0.0066	0.5904	HV, Sat @ Base P, T	978.78	
n-Butane, nC4	0.0216	0.0068	0.0743	HV, Sat @ Sample P, T	996.12	
iso-Pentane, iC5	0.0028	0.0010	0.0120	Relative Density	0.5840	
n-Pentane, nC5	0.0020	0.0007	0.0085			
Neo-Pentane, NeoC5						
Hexanes Plus, C6+	0.0000	0.0000	0.0000			
Water, H2O						
Hydrogen Sulfide, H2S						
Oxygen, O2	0.0204					
Carbon Monoxide, CO						
Hydrogen, H2						
Helium, He						
Argon, Ar						
				C6+: 100		
Totals	100.0000	0.6100	100.4818			

Sample

Date: 07/01/2016 Pressure: 380.0
 Type: Spot Temperature:
 Tech: MG H2O: lbs/mm
 H2S: ppm
 Remarks:

Analysis

Date: 07/05/2016 Instrument: WBI- 447
 Cylinder: 100
 Tech: MB
 Remarks: Inactive

Zone 34

Source Daily Summary

August 2017

Number: 471

Pressure Base: 14.730

Contract Day:

Name: SPRING CREEK I - SAX VALVE I

Temperature Base:

Contract Hour: 9

Day	Relative Density	Heating Value Wet	Heating Value Drv	Heating Value As Del	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.6808	1116.5	1136.3	1133.3	1.009	3.046	75.419	19.823	0.692	0.004	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1373.89
2	0.6796	1112.3	1132.0	1129.1	1.017	3.173	75.542	19.672	0.593	0.002	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1370.00
3	0.6775	1109.3	1128.9	1126.0	1.017	3.162	75.914	19.371	0.534	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1368.38
4	0.6806	1114.2	1134.0	1131.0	1.007	3.168	75.249	20.057	0.517	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1371.36
5	0.6775	1110.4	1130.1	1127.2	1.005	3.111	75.751	19.753	0.379	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1369.79
6	0.6780	1114.1	1133.8	1130.9	1.007	2.933	75.857	19.640	0.561	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1373.77
7	0.6792	1111.6	1131.3	1128.4	1.029	3.161	75.662	19.541	0.593	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1369.49
8	0.7052	1154.9	1175.4	1172.4	0.967	3.040	72.883	20.054	2.919	0.057	0.078	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1396.47
9	0.7027	1152.8	1173.2	1170.2	0.961	2.946	73.077	20.222	2.717	0.035	0.041	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1396.37
10	0.6953	1141.0	1161.2	1158.2	0.975	2.953	73.729	20.370	1.949	0.011	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1389.42
11	0.6921	1135.2	1155.3	1152.3	0.985	3.000	74.005	20.398	1.599	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1385.47
12	0.7002	1148.1	1168.4	1165.4	0.965	2.995	73.273	20.241	2.493	0.016	0.016	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1393.12
13	0.6918	1133.7	1153.7	1150.8	0.992	3.053	74.178	20.053	1.708	0.008	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1383.90
14	0.6899	1131.1	1151.1	1148.2	0.976	3.051	74.446	19.915	1.598	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1382.73
15	0.6875	1127.3	1147.3	1144.3	0.983	3.050	74.681	19.922	1.353	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1380.48
16	0.6879	1128.4	1148.4	1145.4	0.971	3.042	74.683	19.843	1.450	0.006	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1381.38
17	0.6861	1125.6	1145.5	1142.6	0.971	3.041	74.853	19.876	1.249	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1379.78
18	0.6871	1126.3	1146.2	1143.2	0.999	3.051	74.545	20.285	1.112	0.004	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1379.61
19	0.6876	1127.0	1146.9	1143.9	1.005	3.054	74.277	20.700	0.959	0.003	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1379.91
20	0.6894	1132.0	1152.0	1149.0	1.000	2.923	74.079	20.886	1.105	0.004	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1384.23
21	0.6872	1126.5	1146.4	1143.5	1.008	3.037	74.335	20.696	0.919	0.003	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1379.75
22	0.6836	1120.3	1140.1	1137.2	1.006	3.084	75.112	19.812	0.980	0.003	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1375.70
23	0.6843	1123.4	1143.3	1140.3	1.000	2.969	74.817	20.391	0.819	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1378.84
24	0.6999	1148.2	1168.5	1165.5	0.983	2.946	72.740	21.397	1.914	0.010	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1393.43
25	0.7022	1153.7	1174.1	1171.1	0.971	2.841	72.454	21.626	2.090	0.009	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1397.90
26	0.6891	1130.3	1150.3	1147.4	1.002	2.990	74.038	20.956	1.007	0.004	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1382.55
27	0.6818	1117.5	1137.3	1134.4	1.005	3.082	75.214	19.980	0.715	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1374.20
28	0.6857	1125.3	1145.2	1142.2	0.987	3.004	74.928	19.846	1.227	0.005	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1379.73
29	0.7149	1173.4	1194.2	1191.1	0.962	2.837	71.553	20.966	3.526	0.066	0.088	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1408.99
30	0.7032	1156.9	1177.4	1174.3	0.968	2.738	72.150	22.160	1.965	0.009	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1400.83
31	0.6925	1129.7	1149.7	1146.6	0.998	3.361	73.321	21.268	1.043	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1378.81
Avg	0.6897	1131.0	1150.9	1147.9	0.991	3.027	74.283	20.314	1.364	0.010	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1382.59

Zone 43



Alliance Pipeline

DAILY ANALYSIS — USA
 ND07MD1 — Hankinson Sales
 August 2017

DAY	Heating Value (BTU/M3)	Relative Density	C1 Mol%	C2 Mol%	C3 Mol%	IC4 Mol%	NC4 Mol%	IC5 Mol%	NC5 Mol%	C6+ Mol%	N2 Mol%	CO2 Mol%	Hel Mol%
1	1,154.152	0.6652	84.0710	9.1006	3.8555	0.3851	0.6659	0.0693	0.0587	0.0322	1.2850	0.4646	0.0121
2	1,152.344	0.6643	84.1673	9.0415	3.8295	0.3764	0.6476	0.0674	0.0568	0.0315	1.3006	0.4691	0.0123
3	1,151.296	0.6629	84.3411	9.0197	3.7558	0.3700	0.6410	0.0656	0.0558	0.0313	1.2416	0.4654	0.0127
4	1,153.747	0.6647	84.0294	9.2313	3.8394	0.3716	0.6418	0.0625	0.0524	0.0293	1.2640	0.4659	0.0125
5	1,151.048	0.6630	84.2013	9.1780	3.7377	0.3638	0.6284	0.0600	0.0510	0.0282	1.2870	0.4521	0.0125
6	1,152.817	0.6635	84.1830	9.2301	3.7425	0.3673	0.6375	0.0649	0.0554	0.0305	1.2255	0.4509	0.0125
7	1,154.151	0.6643	84.0830	9.2717	3.7811	0.3743	0.6490	0.0658	0.0557	0.0298	1.2274	0.4497	0.0125
8	1,152.988	0.6641	84.1226	9.2402	3.7385	0.3722	0.6419	0.0702	0.0599	0.0305	1.2466	0.4654	0.0121
9	1,155.081	0.6653	83.9500	9.3533	3.7870	0.3773	0.6534	0.0688	0.0590	0.0333	1.2449	0.4609	0.0119
10	1,153.959	0.6646	84.0760	9.2546	3.7660	0.3762	0.6513	0.0689	0.0591	0.0332	1.2411	0.4613	0.0122
11	1,153.414	0.6655	83.9879	9.1683	3.8280	0.3777	0.6571	0.0694	0.0592	0.0343	1.3188	0.4880	0.0114
12	1,153.571	0.6665	83.8799	9.0749	3.9490	0.3704	0.6634	0.0683	0.0585	0.0333	1.3968	0.4946	0.0109
13	1,149.747	0.6619	84.4922	8.9588	3.6671	0.3676	0.6370	0.0686	0.0592	0.0356	1.2275	0.4751	0.0113
14	1,151.900	0.6634	84.2780	9.0879	3.7414	0.3703	0.6459	0.0664	0.0571	0.0341	1.2313	0.4762	0.0113
15	1,148.574	0.6606	84.6391	8.9112	3.6482	0.3594	0.6185	0.0640	0.0553	0.0333	1.2034	0.4554	0.0122
16	1,148.631	0.6603	84.6769	8.9163	3.6385	0.3574	0.6188	0.0629	0.0542	0.0327	1.1741	0.4557	0.0125
17	1,147.439	0.6595	84.7614	8.9008	3.6032	0.3508	0.5961	0.0633	0.0546	0.0339	1.1691	0.4547	0.0121
18	1,147.394	0.6595	84.7815	8.8804	3.5957	0.3530	0.6044	0.0624	0.0546	0.0338	1.1605	0.4615	0.0122
19	1,149.410	0.6609	84.6382	8.9118	3.6532	0.3646	0.6283	0.0659	0.0576	0.0343	1.1780	0.4566	0.0117
20	1,148.238	0.6602	84.6574	8.9653	3.6131	0.3550	0.6077	0.0634	0.0543	0.0326	1.1858	0.4532	0.0122
21	1,147.607	0.6592	84.7875	8.9001	3.6018	0.3518	0.6049	0.0611	0.0518	0.0304	1.1678	0.4308	0.0119
22	1,147.399	0.6593	84.8052	8.8613	3.6037	0.3543	0.6078	0.0619	0.0524	0.0308	1.1713	0.4394	0.0119
23	1,148.412	0.6601	84.6822	8.9351	3.6333	0.3556	0.6115	0.0620	0.0524	0.0314	1.1806	0.4439	0.0121
24	1,149.211	0.6614	84.5724	8.9057	3.6859	0.3655	0.6308	0.0646	0.0553	0.0296	1.1983	0.4806	0.0114
25	1,148.896	0.6614	84.5228	8.9604	3.6503	0.3625	0.6287	0.0670	0.0576	0.0317	1.2443	0.4626	0.0122
26	1,153.022	0.6640	84.3114	8.9679	3.7444	0.3907	0.6846	0.0771	0.0670	0.0356	1.2531	0.4567	0.0115
27	1,163.960	0.6715	83.5949	9.1404	4.0283	0.4493	0.8010	0.0994	0.0881	0.0439	1.2602	0.4824	0.0121
28	1,165.164	0.6719	83.5813	9.1586	4.0229	0.4594	0.8156	0.1015	0.0908	0.0469	1.2479	0.4631	0.0120
29	1,162.862	0.6703	83.7168	9.1644	3.9699	0.4368	0.7819	0.0968	0.0861	0.0428	1.2138	0.4785	0.0122
30	1,156.556	0.6661	84.1234	9.0469	3.8230	0.4026	0.7186	0.0824	0.0722	0.0376	1.2076	0.4733	0.0123
31	1,148.928	0.6615	84.5257	8.9522	3.6519	0.3645	0.6361	0.0648	0.0556	0.0310	1.2301	0.4756	0.0125
Volume	1,152.305	0.6634	84.2996	9.0537	3.7475	0.3759	0.6533	0.0696	0.0599	0.0335	1.2316	0.4633	0.0120
Weight Avg Energy	1,152.322	0.6634	84.2984	9.0541	3.7479	0.3760	0.6535	0.0696	0.0600	0.0335	1.2317	0.4633	0.0120

2007
 Zone

Aug-17

ZONE 610

Watford City

01325

Watford City West Border

01312

Watford City East Border

Weighted

Begin Date	End Date	01325 Watford City West Border			01312 Watford City East Border			AVG BTU	
		MCF	DK	BTU Zone 25	MCF	DK	BTU Zone 43		
8/1/2017	8/2/2017	63	75	1.202	30	34	1.136	1.181	8/1/2017
8/2/2017	8/3/2017	83	100	1.202	37	42	1.132	1.180	8/2/2017
8/3/2017	8/4/2017	73	88	1.202	32	36	1.129	1.180	8/3/2017
8/4/2017	8/5/2017	59	71	1.202	30	34	1.134	1.179	8/4/2017
8/5/2017	8/6/2017	55	66	1.202	48	54	1.130	1.168	8/5/2017
8/6/2017	8/7/2017	58	70	1.202	31	36	1.134	1.178	8/6/2017
8/7/2017	8/8/2017	86	103	1.202	30	34	1.131	1.184	8/7/2017
8/8/2017	8/9/2017	82	99	1.202	52	61	1.175	1.192	8/8/2017
8/9/2017	8/10/2017	88	106	1.202	42	49	1.173	1.193	8/9/2017
8/10/2017	8/11/2017	72	86	1.202	35	40	1.161	1.189	8/10/2017
8/11/2017	8/12/2017	54	65	1.202	38	44	1.155	1.183	8/11/2017
8/12/2017	8/13/2017	55	66	1.202	58	68	1.168	1.185	8/12/2017
8/13/2017	8/14/2017	70	84	1.202	80	92	1.154	1.176	8/13/2017
8/14/2017	8/15/2017	64	77	1.202	51	58	1.151	1.179	8/14/2017
8/15/2017	8/16/2017	52	62	1.202	51	59	1.147	1.175	8/15/2017
8/16/2017	8/17/2017	58	70	1.202	65	74	1.148	1.173	8/16/2017
8/17/2017	8/18/2017	69	83	1.202	40	46	1.146	1.181	8/17/2017
8/18/2017	8/19/2017	60	72	1.202	47	53	1.146	1.177	8/18/2017
8/19/2017	8/20/2017	51	61	1.202	29	33	1.147	1.182	8/19/2017
8/20/2017	8/21/2017	52	62	1.202	29	33	1.152	1.184	8/20/2017
8/21/2017	8/22/2017	80	96	1.202	39	44	1.146	1.184	8/21/2017
8/22/2017	8/23/2017	75	90	1.202	58	67	1.140	1.175	8/22/2017
8/23/2017	8/24/2017	81	97	1.202	41	47	1.143	1.182	8/23/2017
8/24/2017	8/25/2017	68	82	1.202	35	41	1.169	1.191	8/24/2017
8/25/2017	8/26/2017	75	90	1.202	43	51	1.174	1.192	8/25/2017
8/26/2017	8/27/2017	58	70	1.202	30	35	1.150	1.184	8/26/2017
8/27/2017	8/28/2017	73	87	1.202	40	46	1.137	1.179	8/27/2017
8/28/2017	8/29/2017	80	96	1.202	42	48	1.145	1.182	8/28/2017
8/29/2017	8/30/2017	61	74	1.202	29	35	1.194	1.199	8/29/2017
8/30/2017	8/31/2017	55	66	1.202	28	33	1.177	1.194	8/30/2017
8/31/2017	9/1/2017	74	89	1.202	35	40	1.150	1.185	8/31/2017
		2,084	2,503		1,275	1,467	1.1508	1.1828	

ROW ID	LOCATION DESCRIPTION	GROSS HEATING VALUE (BTU/GAL)	SPECIFIC GRAVITY	WOBBE (cal)	CRI/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	Changestamp	NOTES
11587	GLEN ULLIN	1060.7	0.6134	1354.1	-71.5	1.4941	0.8263	88.7446	8.2873	0.4585	0.0145	0.0089	0.0002	0.0005	0	0	0.1466	0.0173	7/31/2017	8/1/2017	8/1/2017 3:08:15 PM	
11587	GLEN ULLIN	1057.7	0.6104	1353.8	-74.1	1.399	0.8248	89.3089	7.887	0.4033	0.0113	0.0069	0.0001	0.0002	0	0	0.1402	0.0173	8/1/2017	8/2/2017	8/2/2017 3:10:17 PM	
11587	GLEN ULLIN	1057.4	0.6101	1353.8	-74.4	1.3706	0.8339	89.3083	7.9092	0.3732	0.0111	0.0069	0	0.0002	0	0	0.171	0.0173	8/2/2017	8/3/2017	8/3/2017 3:08:02 PM	
11587	GLEN ULLIN	1060.6	0.6128	1354.9	-72.2	1.4043	0.8564	88.7125	8.4157	0.375	0.0126	0.008	0.0001	0.0004	0	0	0.1973	0.0173	8/3/2017	8/4/2017	8/4/2017 3:13:19 PM	
11587	GLEN ULLIN	1064.3	0.6151	1357.1	-70.2	1.4134	0.8447	88.2651	8.8224	0.4172	0.0113	0.0073	0	0.0002	0	0	0.2005	0.0173	8/4/2017	8/5/2017	8/5/2017 3:13:36 PM	
11587	GLEN ULLIN	1063.4	0.6141	1357	-71	1.3758	0.8429	88.4579	8.6894	0.3942	0.0115	0.0074	0	0.0003	0	0	0.2026	0.0173	8/5/2017	8/6/2017	8/6/2017 3:07:12 PM	
11587	GLEN ULLIN	1063.8	0.6149	1356.6	-70.7	1.4328	0.8408	88.2746	8.8299	0.3917	0.0094	0.0063	0	0.0001	0	0	0.1982	0.0173	8/6/2017	8/7/2017	8/7/2017 3:12:07 PM	
11587	GLEN ULLIN	1062.1	0.6133	1356.3	-72.3	1.3674	0.8483	88.8026	8.4916	0.366	0.0095	0.0062	0	0	0	0	0.0948	0.0173	8/7/2017	8/8/2017	8/8/2017 3:07:44 PM	
11587	GLEN ULLIN	1061.3	0.6126	1355.9	-71.8	1.3995	0.8164	88.8559	8.2497	0.4663	0.0106	0.0073	0	0	0	0	0.1755	0.0173	8/8/2017	8/9/2017	8/9/2017 3:07:54 PM	
11587	GLEN ULLIN	1066.2	0.6165	1357.9	-68.7	1.4525	0.8316	88.1734	8.8292	0.5279	0.0099	0.0076	0.0001	0.0002	0	0	0.1491	0.0173	8/9/2017	8/10/2017	8/10/2017 3:08:31 PM	
11587	GLEN ULLIN	1066	0.6166	1357.6	-68.4	1.4675	0.8371	88.1841	8.793	0.5389	0.0137	0.0082	0.0002	0.0003	0	0.0001	0.1391	0.0173	8/10/2017	8/11/2017	8/11/2017 3:08:09 PM	
11587	GLEN ULLIN	1059.6	0.6126	1353.8	-71.7	1.4964	0.8202	88.9166	8.0664	0.4976	0.0154	0.0083	0.0005	0.0004	0	0	0.1608	0.0173	8/11/2017	8/12/2017	8/12/2017 3:07:08 PM	
11587	GLEN ULLIN	1058.6	0.6119	1353.3	-71.8	1.4852	0.8209	89.1192	7.8301	0.5427	0.0167	0.009	0.0007	0.0007	0	0.0001	0.1572	0.0173	8/12/2017	8/13/2017	8/13/2017 3:05:25 PM	
11587	GLEN ULLIN	1056.3	0.6103	1352.1	-73.8	1.4866	0.8175	89.3456	7.668	0.4782	0.0137	0.0077	0.0001	0.0002	0	0	0.165	0.0173	8/13/2017	8/14/2017	8/14/2017 3:08:05 PM	
11587	GLEN ULLIN	1055.9	0.6107	1351.2	-73.8	1.5047	0.8404	89.2621	7.7315	0.4521	0.0138	0.0076	0.0001	0.0002	0	0	0.1684	0.0173	8/14/2017	8/15/2017	8/15/2017 3:05:55 PM	
11587	GLEN ULLIN	1057.8	0.6128	1351.3	-71.9	1.5622	0.8573	88.8876	7.9968	0.4843	0.0171	0.0091	0.0005	0.0006	0	0.0002	0.1648	0.0173	8/15/2017	8/16/2017	8/16/2017 3:06:24 PM	
11587	GLEN ULLIN	1059.3	0.614	1351.9	-71	1.5777	0.8664	88.625	8.2229	0.4909	0.0161	0.0091	0.0006	0.0005	0	0	0.1731	0.0173	8/16/2017	8/17/2017	8/17/2017 3:11:52 PM	
11587	GLEN ULLIN	1059.1	0.6138	1351.8	-71.6	1.5453	0.8831	88.6567	8.2601	0.445	0.0159	0.0085	0.0005	0.0003	0	0	0.1663	0.0173	8/17/2017	8/18/2017	8/18/2017 3:17:24 PM	
11587	GLEN ULLIN	1059.9	0.6144	1352.2	-70.6	1.579	0.8638	88.5555	8.2851	0.4944	0.0175	0.0095	0.0009	0.0008	0	0	0.1752	0.0173	8/18/2017	8/19/2017	8/19/2017 3:23:31 PM	
11587	GLEN ULLIN	1063.2	0.6173	1353.2	-68.2	1.6435	0.875	87.9863	8.7347	0.5312	0.0191	0.0099	0.0011	0.001	0	0	0.1793	0.0173	8/19/2017	8/20/2017	8/20/2017 3:13:07 PM	
11587	GLEN ULLIN	1065	0.6181	1354.6	-67.3	1.6012	0.8828	87.8812	8.8488	0.5658	0.0185	0.0094	0.0012	0.001	0	0	0.1712	0.0173	8/20/2017	8/21/2017	8/21/2017 3:08:25 PM	
11587	GLEN ULLIN	1059.2	0.6133	1352.5	-70.9	1.5259	0.8575	88.8301	8.0376	0.5289	0.0183	0.0094	0.0012	0.0011	0	0	0.1728	0.0173	8/21/2017	8/22/2017	8/22/2017 3:03:47 PM	
11587	GLEN ULLIN	1058	0.6129	1351.4	-71.8	1.5542	0.8614	88.8832	7.9639	0.5213	0.014	0.0079	0.0003	0.0003	0	0	0.1732	0.0173	8/22/2017	8/23/2017	8/23/2017 3:04:09 PM	
11587	GLEN ULLIN	1061.8	0.6154	1353.5	-70	1.5655	0.8643	88.3328	8.5251	0.5018	0.012	0.0079	0.0002	0.0004	0	0	0.1715	0.0173	8/23/2017	8/24/2017	8/24/2017 3:07:16 PM	
11587	GLEN ULLIN	1064.9	0.6169	1355.8	-68.3	1.5195	0.8629	88.141	8.697	0.5783	0.0122	0.0077	0	0.0002	0	0	0.1629	0.0173	8/24/2017	8/25/2017	8/25/2017 3:03:28 PM	
11587	GLEN ULLIN	1066.9	0.6175	1357.7	-66.9	1.5042	0.8318	88.0483	8.7365	0.6597	0.014	0.009	0.0001	0.0003	0	0	0.1769	0.0173	8/25/2017	8/26/2017	8/26/2017 3:08:02 PM	
11587	GLEN ULLIN	1068.7	0.6186	1358.8	-66.3	1.5054	0.8263	87.5946	9.1947	0.5806	0.0154	0.0097	0.0001	0.0004	0	0	0.2538	0.0173	8/26/2017	8/27/2017	8/27/2017 3:03:27 PM	
11587	GLEN ULLIN	1068.7	0.6187	1358.7	-66.1	1.4932	0.8449	87.6646	9.1486	0.5812	0.0184	0.0116	0.0004	0.0008	0	0	0.2186	0.0173	8/27/2017	8/28/2017	8/28/2017 3:05:21 PM	
11587	GLEN ULLIN	1069.9	0.6189	1359.9	-65.7	1.4775	0.8202	87.6025	9.2361	0.5861	0.0197	0.0123	0.0003	0.0009	0	0	0.2257	0.0179	8/28/2017	8/29/2017	8/29/2017 3:02:40 PM	
11587	GLEN ULLIN	1070.7	0.6182	1361.8	-64.5	1.3919	0.8007	87.9114	8.8328	0.7714	0.023	0.0143	0.0001	0.0003	0	0	0.2378	0.0184	8/29/2017	8/30/2017	8/30/2017 3:08:53 PM	
11587	GLEN ULLIN	1063.9	0.6131	1358.8	-69.4	1.3158	0.8036	88.7676	8.1822	0.6379	0.012	0.0092	0.0003	0.0005	0	0.0001	0.2537	0.0171	8/30/2017	8/31/2017	8/31/2017 3:08:02 PM	
11587	GLEN ULLIN	1063.9	0.6142	1357.5	-70.1	1.4213	0.8045	88.4319	8.5763	0.5023	0.0098	0.0072	0.0001	0.0003	0	0	0.2286	0.0167	8/31/2017	9/1/2017	9/1/2017 3:05:59 PM	

32 record(s) retrieved

FORM 802

NORTH DAKOTA HEATING VALUE ZONES		
ZONES	MEASURING DEVICE	LOCATION
211	Chromatograph	Sidney Border
24	Monthly Sampler	Williston Border
241	Monthly Sampler	Fairview Border
25	Monthly Sampler	Watford City West Border
260	Chromatograph	North Tioga Transfer
261	Chromatograph	Tioga Comp Station – Robinson Lake Plant
262	Chromatograph	Minot Border
263	Monthly Sampler	Lignite Plant
264	Monthly Sampler	Epping Border
265	Chromatograph	Tioga Comp Station – County Line Plant
266	Chromatograph	County Line Plant
271	Chromatograph	Bismarck – Cleveland
272	Chromatograph	Cleveland – Mapleton
273	Chromatograph	Cleveland – Grafton
28	Chromatograph	Bismarck Station
31	Chromatograph	Dickinson Border
32	Chromatograph	Cabin Creek Station
33	Chromatograph	Little Knife Plant
34	Monthly Sampler	Bowman Border
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	AUG 17	JULY 17	JUNE 17	MAY 17	APRIL 17	MAR 17	FEB 17	JAN 17	DEC 16	NOV 16	OCT 16	SEPT 16	ZONE
MT/ND	211	Sidney Border - MonDak Tfr - Sidney Pit	1199	1204	1201	1191	1206	1191	1194	1195	1199	1199	1200	1193	1209	211
ND	24	Williston Border - Charbonneau Station	1167	1142	1141	1141	1148	1158	1171	1173	1189	1190	1187	1169	1195	24
ND	25	Watford City West Border	1202	1202	1206	1204	1204	1200	1199	1202	1198	1193	1200	1206	1211	25
ND	28	Bismarck Station - Glen Ullin Station	1153	1195	1194	1188	1191	1161	1118	1121	1115	1112	1122	1152	1172	28
ND	31	Dickinson Brd - Belfield Tfr - G Ullin Stn	1142	1169	1179	1171	1137	1147	1118	1119	1113	1110	1120	1153	1171	31
ND/MT	32	Cabin Creek Station - Belfield Transfer	1122	1136	1157	1122	1097	1104	1112	1114	1118	1118	1099	1137	1153	32
ND	33	Little Knife Plant	1181	1181	1180	1177	1177	1178	1176	1177	1181	1200	1179	1182	1184	33
ND	34	Bowman Border	996	996	996	996	996	996	996	996	996	996	996	996	996	34
ND	43	Spring Creek I - Sax Valve I	1122	1151	1141	1125	1136	1141	1102	1075	1121	1122	1114	1109	1128	43
ND/MT	241	Fairview Border	1180	1169	1165	1161	1168	1167	1179	1181	1196	1200	1193	1170	1210	241
ND	260	North Tioga Transfer - Nesson Plant		993	1002	1087	1090	1082	0							260
ND	261	Tioga Comp Station - Robinson Lake Plant	1119	1177	1183	1181	1176	1170	1065	1089	1105	1096	1034	981	1174	261
ND	262	Minot Bdr - Palermo Bdr - Bismarck Str	1173	1195	1193	1189	1192	1189	1181	1178	1152	1144	1147	1141	1172	262
ND	263	Lignite Plant	1122	1143	1146	1135	1115	1103	1115	1112	1103	1110	1138	1120	1129	263
ND	264	Epping Border	1160	1133	1138	1133	1145	1154	1158	1172	1186	1186	1158	1157	1194	264
ND	265	Tioga Comp Station - County Line Plant	1178	1177	1184	1181	1176	1170	1174	1175	1184	1170	1182	1180	1186	265
ND	266	County Line Plant		1184	1191	1183	1185	1185	1173	1182	0					266
ND	271	Bismarck Station - Cleveland Station	1166	1195	1194	1188	1192	1189	1163	1155	1129	1127	1140	1142	1173	271
ND	272	Cleveland Station - Mapleton	1165	1195	1193	1188	1191	1187	1161	1153	1128	1126	1139	1142	1172	272
ND	273	Cleveland Station - Grafton Border	1165	1195	1194	1189	1192	1187	1162	1154	1128	1127	1139	1142	1172	273
ND	610	MDU-Watford City BTU	1178	1183	1185	1176	1183	1188	1171	1163	1170	1162	1176	1179	1197	610
ND	802	Linton	1056	1062	1057	1054	1063	1059	1054	1052	1049	1051	1058	1053	1058	802
ND	903	Hettinger Propane	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	903

**THERMAL ZONE VARIANCE
DOCUMENTATION**

August 2017

<i>ZONE</i>	<i>BTU VARIANCE</i>	<i>REASON</i>
32	-21	Blend of Gas