

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

October 17, 2019

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

Re: Case No. PU-19-002 (Therm Billing)
Monthly Report – August 2019

Montana-Dakota Utilities Co., a Subsidiary 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 2019.
2. Attachment B consists of copies of the monthly Heating Value Test Reports received from our suppliers for the month of August 2019.
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 2019.

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

Sincerely,



Tamie Aberle
Director of Regulatory Affairs

Montana-Dakota Utilities Co.
Therm Billing Factors - North Dakota
Sep-19

Town	Heat Zone	Therm Factor
MDU-303-ALEXANDER	025	1.1287
MDU-308-ARNEGARD	025	1.1287
MDU-314-APPLE VALLEY	271	1.1540
MDU-318-BEACH	032	1.0470
MDU-319-BELFIELD	032	1.0547
MDU-323-BERTHOLD	262	1.1315
MDU-324-BEULAH	032	1.0547
MDU-327-BISMARCK	028	1.1443
MDU-330-BOWMAN	034	0.9274
MDU-337-BURLINGTON	262	1.1559
MDU-343-CARRINGTON	273	1.1521
MDU-344-CLEVELAND	272	1.1449
MDU-364-CAVALIER	273	1.1764
MDU-365-DAWSON	271	1.1459
MDU-368-DES LACS	262	1.1396
MDU-369-DICKINSON	031	1.0577
MDU-374-FT TOTTEN	273	1.1602
MDU-375-DEVILS LAKE	273	1.1602
MDU-379-BARLOW	273	1.1521
MDU-384-EPPING	264	1.0900
MDU-387-ELDRIDGE	272	1.1530
MDU-407-GLADSTONE	031	1.0577
MDU-411-GLEN ULLIN	031	1.0654
MDU-413-GOLVA	032	1.0317
MDU-416-GARRISON	262	1.1396
MDU-417-GRAFTON	273	1.1845
MDU-429-HEBRON	031	1.0654
MDU-432-HETTINGER	903	2.3875
MDU-449-JAMESTOWN	272	1.1611
MDU-459-KILLDEER	033	1.1098
MDU-463-LANGDON	273	1.1521
MDU-469-LEFOR	031	1.0577
MDU-474-LIGNITE	263	1.1073
MDU-475-LINTON	802	1.0527
MDU-478-LINCOLN	028	1.1443
MDU-488-MCKENZIE	271	1.1540
MDU-494-MEDINA	271	1.1459
MDU-498-MANDAN	028	1.1443
MDU-500-MARMARTH	034	0.9140
MDU-505-MINOT	262	1.1559
MDU-510-MOTT	031	1.0577
MDU-512-MAX	262	1.1559
MDU-522-NEW ENGLAND	031	1.0501
MDU-524-NEW SALEM	028	1.1202
MDU-532-NEW ROCKFORD	273	1.1521
MDU-539-PARK RIVER	273	1.1764
MDU-540-PALERMO	262	1.1315
MDU-558-RAY	264	1.0900
MDU-561-REGENT	031	1.0577

MDU-563-RHAME	034	0.9005
MDU-564-RICHARDTON	031	1.0501
MDU-568-ROSS	261	1.1056
MDU-572-RUTHVILLE	262	1.1559
MDU-574-SANBORN	272	1.1611
MDU-583-SENTINEL BUTTE	032	1.0470
MDU-588-SOUTH HEART	031	1.0501
MDU-717-SPIRITWOOD	272	1.1611
MDU-590-SPRINGBROOK	264	1.0900
MDU-591-STANLEY	261	1.1216
MDU-593-STEELE	271	1.1459
MDU-594-STERLING	028	1.1443
MDU-598-SHEYENNE	273	1.1602
MDU-605-SURREY	262	1.1559
MDU-610-TAPPEN	271	1.1459
MDU-611-TAYLOR	031	1.0501
MDU-616-TIOGA	260	1.0769
MDU-619-TURTLE LAKE	262	1.1396
MDU-620-TRENTON	024	1.1083
MDU-624-UNDERWOOD	262	1.1396
MDU-625-VALLEY CITY	272	1.1692
MDU-629-WALHALLA	273	1.1764
MDU-632-WATFORD CITY	610	1.1145
MDU-636-WHEELOCK	264	1.0821
MDU-637-WHITE EARTH	261	1.1136
MDU-642-WILLISTON	024	1.1083
MDU-646-WASHBURN	262	1.1478
MDU-647-WILTON	262	1.1315
MDU-664-RIVERDALE	262	1.1396
MDU-691-FAIRVIEW	241	1.1330
MDU-712-MINOT AFB	262	1.1559
MDU-718-FAIRMOUNT	600	1.1415
MDU-732-NEKOMA	273	1.1521
MDU-732-MSR SITE	273	1.1521

Source Daily Summary

August 2019

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 Dry	Heating Value As Del	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.7356	1179.5	1200.4	1196.3	1.340	3.830	68.437	22.233	3.664	0.159	0.301	0.019	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1396.22
2	0.7350	1177.9	1198.8	1194.6	1.343	3.863	68.857	21.542	3.834	0.178	0.342	0.023	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1394.94
3	0.7392	1185.6	1206.6	1202.4	1.349	3.781	68.225	22.075	3.978	0.187	0.359	0.024	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1399.98
4	0.7370	1181.5	1202.5	1198.4	1.348	3.828	68.383	22.121	3.753	0.181	0.346	0.022	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1397.26
5	0.7302	1170.2	1191.0	1187.0	1.350	3.872	69.050	22.020	3.241	0.150	0.284	0.018	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1390.47
6	0.7314	1172.0	1192.8	1188.6	1.346	3.885	68.884	22.087	3.329	0.151	0.285	0.018	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1391.42
7	0.7403	1187.3	1208.3	1204.3	1.336	3.801	68.137	22.027	4.087	0.193	0.374	0.025	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1400.94
8	0.7324	1173.8	1194.6	1190.6	1.351	3.863	68.900	21.916	3.471	0.159	0.303	0.020	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1392.52
9	0.7321	1173.7	1194.5	1190.5	1.345	3.850	68.957	21.867	3.483	0.158	0.303	0.020	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1392.73
10	0.7313	1172.6	1193.4	1189.4	1.343	3.850	68.973	21.976	3.376	0.154	0.293	0.019	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1392.14
11	0.7309	1172.5	1193.3	1189.5	1.347	3.810	69.063	21.929	3.371	0.154	0.293	0.019	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1392.43
12	0.7307	1172.3	1193.0	1189.2	1.348	3.806	69.091	21.908	3.367	0.154	0.291	0.019	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1392.31
13	0.7304	1171.1	1191.9	1188.0	1.351	3.840	69.077	21.965	3.293	0.152	0.289	0.018	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1391.27
14	0.7339	1176.8	1197.6	1193.7	1.357	3.816	68.632	22.174	3.529	0.158	0.299	0.019	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1394.63
15	0.7370	1183.3	1204.2	1200.3	1.379	3.683	67.701	23.522	3.258	0.146	0.278	0.018	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1399.36
16	0.7359	1180.5	1201.4	1197.4	1.364	3.767	68.180	22.733	3.468	0.156	0.296	0.019	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1397.11
17	0.7300	1170.4	1191.1	1187.5	1.355	3.838	69.078	22.023	3.246	0.148	0.279	0.017	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1390.85
18	0.7334	1175.9	1196.7	1192.8	1.354	3.828	68.860	21.854	3.568	0.170	0.327	0.021	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1394.04
19	0.7328	1175.2	1196.1	1191.9	1.350	3.808	69.051	21.638	3.619	0.170	0.324	0.021	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1393.90
20	0.7329	1175.9	1196.7	1192.8	1.353	3.779	68.961	21.813	3.570	0.167	0.319	0.020	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1394.53
21	0.7324	1175.0	1195.8	1191.8	1.354	3.789	69.057	21.682	3.610	0.162	0.309	0.020	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1393.89
22	0.7399	1187.8	1208.8	1204.6	1.355	3.703	67.980	22.484	3.916	0.178	0.342	0.022	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1401.96
23	0.7335	1176.1	1196.9	1192.8	1.354	3.825	68.813	21.907	3.589	0.163	0.311	0.020	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1394.18
24	0.7327	1174.7	1195.6	1191.5	1.358	3.821	69.007	21.702	3.599	0.164	0.313	0.020	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1393.39
25	0.7332	1175.5	1196.3	1192.3	1.357	3.822	68.889	21.829	3.593	0.163	0.310	0.020	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1393.85
26	0.7389	1186.2	1207.2	1203.3	1.372	3.689	67.731	23.126	3.575	0.162	0.309	0.020	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1401.04
27	0.7412	1190.4	1211.5	1207.6	1.378	3.638	67.307	23.560	3.621	0.160	0.303	0.018	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1403.80
28	0.7408	1190.0	1211.1	1207.1	1.379	3.618	67.188	23.883	3.460	0.150	0.287	0.019	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1403.83
29	0.7408	1190.4	1211.4	1207.5	1.379	3.603	67.200	23.875	3.461	0.153	0.293	0.019	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1404.16
30	0.7440	1195.6	1216.7	1212.7	1.372	3.596	66.921	23.823	3.771	0.164	0.315	0.021	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1407.24
31	0.7439	1195.5	1216.6	1212.5	1.372	3.595	66.918	23.866	3.723	0.166	0.321	0.021	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1407.19
Avg	0.7353	1180.0	1200.4	1196.4	1.356	3.777	68.436	22.360	3.562	0.162	0.310	0.020	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1396.57

Zone all

Source Daily Summary

August 2019

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 Dry	Heating Value As Del	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.6962	1143.8	1164.1	1160.4	0.877	3.002	74.516	18.915	2.385	0.085	0.184	0.016	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1391.88
2	0.6967	1144.9	1165.2	1161.4	0.875	2.987	74.431	18.993	2.409	0.084	0.184	0.016	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1392.67
3	0.6974	1146.5	1166.8	1163.0	0.875	2.956	74.344	19.076	2.434	0.087	0.191	0.016	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1393.88
4	0.6962	1144.7	1165.0	1161.4	0.877	2.951	74.470	19.049	2.351	0.083	0.182	0.016	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1392.96
5	0.6964	1145.1	1165.4	1161.6	0.881	2.938	74.461	19.051	2.367	0.083	0.182	0.016	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1393.20
6	0.6966	1144.0	1164.2	1160.5	0.860	3.062	74.457	18.844	2.483	0.083	0.179	0.014	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1391.63
7	0.6962	1143.8	1164.0	1160.4	0.847	3.056	74.458	18.938	2.411	0.082	0.177	0.014	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1391.76
8	0.6965	1143.3	1163.6	1159.9	0.874	3.073	74.385	19.000	2.378	0.080	0.177	0.015	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1390.89
9	0.6976	1145.8	1166.1	1162.4	0.915	2.958	74.276	19.146	2.404	0.082	0.183	0.016	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1392.86
10	0.6962	1144.9	1165.2	1161.7	0.899	2.904	74.454	19.112	2.347	0.080	0.173	0.014	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1393.25
11	0.6970	1145.5	1165.8	1162.2	0.904	2.938	74.347	19.145	2.373	0.081	0.178	0.015	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1393.07
12	0.6976	1145.9	1166.1	1162.6	0.888	2.999	74.233	19.157	2.433	0.081	0.177	0.014	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1392.91
13	0.6940	1141.8	1162.0	1158.5	0.879	2.925	74.731	18.953	2.248	0.074	0.161	0.013	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1391.55
14	0.6965	1144.3	1164.5	1161.0	0.889	2.996	74.355	19.122	2.357	0.079	0.171	0.014	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1392.04
15	0.6973	1144.6	1164.9	1161.2	0.902	3.027	74.312	19.033	2.435	0.081	0.177	0.015	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1391.67
16	0.6956	1141.9	1162.2	1158.6	0.888	3.046	74.622	18.740	2.416	0.081	0.176	0.014	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1390.19
17	0.6960	1143.8	1164.1	1160.5	0.899	2.952	74.449	19.119	2.299	0.078	0.172	0.014	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1392.06
18	0.6973	1145.2	1165.5	1161.9	0.893	3.007	74.189	19.277	2.354	0.078	0.171	0.014	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1392.38
19	0.6980	1146.6	1166.9	1163.1	0.902	2.969	74.163	19.278	2.387	0.083	0.184	0.015	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1393.41
20	0.6970	1145.5	1165.7	1162.2	0.909	2.933	74.270	19.275	2.334	0.078	0.171	0.013	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1393.07
21	0.6967	1143.9	1164.2	1160.5	0.911	3.002	74.349	19.092	2.364	0.079	0.172	0.014	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1391.40
22	0.6969	1145.4	1165.6	1162.0	0.912	2.924	74.313	19.222	2.344	0.080	0.174	0.014	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1393.06
23	0.6983	1145.8	1166.1	1162.5	0.918	3.023	74.088	19.267	2.418	0.081	0.175	0.013	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1392.17
24	0.6985	1147.1	1167.4	1163.7	0.929	2.944	74.145	19.227	2.453	0.085	0.184	0.015	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1393.55
25	0.6973	1145.2	1165.5	1161.8	0.913	2.975	74.297	19.103	2.429	0.081	0.173	0.013	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1392.42
26	0.6969	1144.6	1164.9	1161.3	0.920	2.963	74.288	19.216	2.338	0.077	0.168	0.013	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1392.06
27	0.6975	1145.9	1166.2	1162.7	0.908	2.956	74.116	19.433	2.321	0.076	0.163	0.012	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1393.13
28	0.6982	1145.7	1166.0	1162.4	0.929	3.003	74.209	19.103	2.446	0.086	0.190	0.015	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1392.11
29	0.6962	1144.1	1164.4	1160.9	0.894	2.964	74.396	19.135	2.338	0.078	0.167	0.013	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1392.23
30	0.6975	1146.5	1166.8	1163.1	0.885	2.953	74.264	19.195	2.401	0.084	0.183	0.015	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1393.76
31	0.6991	1147.8	1168.1	1164.5	0.908	2.991	74.026	19.282	2.494	0.085	0.183	0.014	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1393.78
Avg	0.6969	1145.0	1165.2	1161.6	0.896	2.980	74.336	19.113	2.386	0.081	0.177	0.014	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1392.48

Zone 24

Gas Composition and Properties

Effective August 1, 2019

Attachment B
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Source #: 0602160
Name: FAIRVIEW BORDER

Component	Mole %	Liquid Content	Mass %
Carbon Dioxide, CO2	1.3269		2.7633
Nitrogen, N2	3.8893		5.1556
Methane, C1	69.2575		52.5757
Ethane, C2	21.3039	5.7021	30.3126
Propane, C3	3.6875	1.0167	7.6944
iso-Butane, iC4	0.1659	0.0543	0.4563
n-Butane, nC4	0.3295	0.1040	0.9062
iso-Pentane, iC5	0.0204	0.0075	0.0696
n-Pentane, nC5	0.0174	0.0063	0.0594
Neo-Pentane, NeoC5			
Hexanes Plus, C6+	0.0017	0.0007	0.0069
Water, H2O			
Hydrogen Sulfide, H2S			
Oxygen, O2			
Carbon Monoxide, CO			
Hydrogen, H2			
Helium, He			
Argon, Ar			
Totals	100.0000	6.8910	100.0000

Property	Total Sample	C6 Plus Fraction
Pressure Base	14.730	
Temperature Base	60.00	
HCDP @ Sample Pressure	-7.116	
Cricondentherm	5.877	
HV, Dry @ Base P, T	1193.82	
HV, Sat @ Base P, T	1173.04	
HV, Sat @ Sample P, T	1193.82	
Relative Density	0.7318	

C6+: 100

Sample

Date: 08/01/2019 Pressure: 460.0
 Type: Temperature:
 Tech: Kevin Moos H2O: lbs/mm
 H2S: ppm

Remarks:

Analysis

Date: 08/01/2019 Instrument:
 Cylinder: 25
 Tech: Kevin Moos

Remarks:

Zone 241

Gas Composition and Properties

Effective August 1, 2019

Attachment B
Page 4 of 23

Source #: 0602225
Name: WATFORD CITY WEST BORDER

Component	Mole %	Liquid Content	Mass %
Carbon Dioxide, CO2	1.2150		2.5312
Nitrogen, N2	3.8229		5.0694
Methane, C1	70.0011		53.1592
Ethane, C2	20.2699	5.4254	28.8517
Propane, C3	3.8982	1.0748	8.1369
iso-Butane, iC4	0.2143	0.0702	0.5896
n-Butane, nC4	0.4818	0.1520	1.3256
iso-Pentane, iC5	0.0431	0.0158	0.1472
n-Pentane, nC5	0.0450	0.0163	0.1537
Neo-Pentane, NeoC5			
Hexanes Plus, C6+	0.0087	0.0036	0.0355
Water, H2O			
Hydrogen Sulfide, H2S			
Oxygen, O2			
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	1.805	
Cricondentherm	11.713	
HV, Dry @ Base P, T	1197.24	
HV, Sat @ Base P, T	1176.40	
HV, Sat @ Sample P, T	1197.24	
Relative Density	0.7316	

C6+: 100

Totals	100.0000	6.7580	100.0000
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Sample

Date: 08/01/2019 Pressure: 472.0
 Type: Temperature:
 Tech: Kevin Moos H2O: lbs/mm
 H2S: ppm

Remarks:

Analysis

Date: 08/01/2019 Instrument:
 Cylinder: 321

Tech: Kevin Moos

Remarks:

Zone 25

Source Daily Summary

August 2019

Number: 164

Pressure Base: 14.730

Contract Day: 1

Name: N TIOGA TRANSFER-NESSON PLT

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	0.6810	1113.2	1132.9		0.675	3.759	76.824	16.404	2.106	0.068	0.140	0.010	0.012	0.002					1369.63	
2	0.6827	1115.2	1135.0		0.672	3.801	76.556	16.531	2.208	0.071	0.141	0.009	0.010	0.001					1370.42	
3	0.6831	1115.9	1135.7		0.683	3.782	76.465	16.668	2.156	0.072	0.147	0.011	0.013	0.003					1370.83	
4	0.6811	1113.2	1132.9		0.680	3.759	76.703	16.610	2.021	0.067	0.138	0.010	0.011	0.000					1369.59	
5	0.6819	1113.7	1133.4		0.691	3.793	76.624	16.572	2.087	0.068	0.139	0.011	0.012	0.003					1369.30	
6	0.6851	1116.0	1135.7		0.688	3.951	76.218	16.569	2.329	0.076	0.151	0.009	0.010	0.000					1368.99	
7	0.6844	1116.3	1136.0		0.680	3.886	76.237	16.727	2.236	0.069	0.143	0.010	0.012	0.001					1369.99	
8	0.6834	1115.4	1135.2		0.663	3.863	76.393	16.646	2.210	0.066	0.138	0.010	0.011	0.000					1370.01	
9	0.6837	1118.1	1137.9		0.675	3.712	76.328	16.895	2.158	0.067	0.139	0.011	0.013	0.003					1373.01	
10	0.6748	1106.0	1125.6		0.615	3.704	77.719	15.895	1.878	0.056	0.115	0.008	0.009	0.000					1367.09	
11	0.6806	1112.9	1132.6		0.656	3.761	76.866	16.409	2.078	0.065	0.138	0.011	0.014	0.002					1369.80	
12	0.6841	1117.5	1137.3		0.660	3.805	76.325	16.713	2.264	0.067	0.144	0.010	0.011	0.001					1371.92	
13	0.6815	1113.7	1133.5		0.696	3.734	76.666	16.653	2.020	0.065	0.140	0.011	0.013	0.002					1369.90	
14	0.6828	1115.4	1135.2		0.670	3.795	76.442	16.741	2.134	0.065	0.135	0.009	0.010	0.000					1370.66	
15	0.6847	1117.3	1137.1		0.684	3.843	76.277	16.653	2.294	0.072	0.151	0.011	0.013	0.002					1370.97	
16	0.6642	1088.9	1108.2		0.557	3.839	79.693	13.953	1.772	0.055	0.114	0.007	0.008	0.000					1356.56	
17	0.6816	1115.4	1135.2		0.680	3.665	76.589	16.851	1.996	0.063	0.133	0.009	0.011	0.002					1371.88	
18	0.6841	1117.5	1137.3		0.677	3.782	76.167	17.050	2.098	0.065	0.139	0.009	0.011	0.001					1371.85	
19	0.6817	1115.6	1135.3		0.671	3.682	76.565	16.846	2.022	0.063	0.131	0.009	0.010	0.001					1371.93	
20	0.6811	1114.5	1134.3		0.675	3.684	76.647	16.820	1.950	0.063	0.136	0.010	0.012	0.002					1371.24	
21	0.6827	1115.0	1134.7		0.663	3.826	76.494	16.629	2.157	0.068	0.142	0.009	0.010	0.000					1370.15	
22	0.6816	1115.4	1135.1		0.667	3.693	76.595	16.798	2.031	0.063	0.131	0.010	0.011	0.002					1371.78	
23	0.6852	1118.7	1138.5		0.674	3.815	75.997	17.117	2.175	0.065	0.137	0.009	0.010	0.000					1372.26	
24	0.6839	1118.4	1138.3		0.670	3.716	76.295	16.924	2.159	0.070	0.143	0.009	0.011	0.002					1373.23	
25	0.6837	1117.2	1137.0		0.670	3.770	76.317	16.848	2.170	0.068	0.138	0.008	0.010	0.002					1371.95	
26	0.6813	1113.3	1133.0		0.674	3.785	76.603	16.724	2.003	0.061	0.128	0.009	0.011	0.002					1369.46	
27	0.6842	1118.8	1138.6		0.668	3.727	76.002	17.384	2.020	0.061	0.121	0.008	0.009	0.000					1373.38	
28	0.6857	1118.7	1138.6		0.702	3.821	76.155	16.767	2.268	0.080	0.177	0.013	0.016	0.002					1371.75	
29	0.6835	1116.0	1135.7		0.682	3.815	76.301	16.853	2.127	0.066	0.138	0.008	0.009	0.000					1370.55	
30	0.6840	1117.1	1136.9		0.705	3.755	76.272	16.898	2.135	0.068	0.144	0.010	0.012	0.001					1371.48	
31	0.6881	1122.6	1142.4		0.699	3.820	75.695	17.142	2.390	0.077	0.157	0.009	0.010	0.000					1374.00	
Avg	0.6823	1115.0	1134.7		0.672	3.779	76.549	16.654	2.118	0.067	0.139	0.010	0.011	0.001					1370.50	

Zone 260

Source Daily Summary

August 2019

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 Dry	Heating Value As Del	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.7429	1170.9	1191.7	1188.1	0.914	5.679	67.539	20.420	4.919	0.165	0.328	0.017	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1379.37
2	0.7425	1171.5	1192.2	1188.6	0.917	5.600	67.557	20.549	4.859	0.162	0.320	0.017	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1380.45
3	0.7501	1178.3	1199.2	1195.5	0.917	5.890	66.693	20.477	5.437	0.182	0.364	0.019	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1381.42
4	0.7430	1176.3	1197.1	1193.4	0.912	5.363	67.604	20.639	4.960	0.162	0.324	0.017	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1385.65
5	0.7495	1177.5	1198.4	1194.8	0.917	5.892	66.816	20.305	5.510	0.174	0.348	0.019	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1380.96
6	0.7434	1178.5	1199.4	1195.8	0.911	5.269	67.428	21.023	4.835	0.165	0.331	0.018	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1387.81
7	0.7505	1179.3	1200.2	1196.7	0.916	5.878	66.633	20.525	5.448	0.187	0.372	0.020	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1382.15
8	0.7467	1172.4	1193.1	1189.6	0.911	5.947	67.121	20.187	5.293	0.170	0.335	0.017	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1377.55
9	0.7368	1165.3	1185.9	1182.4	0.910	5.457	68.228	20.448	4.516	0.138	0.273	0.014	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1378.48
10	0.7376	1167.9	1188.6	1185.1	0.923	5.353	68.187	20.508	4.588	0.136	0.273	0.015	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1380.77
11	0.7344	1166.2	1186.8	1183.4	0.925	5.156	68.595	20.571	4.298	0.142	0.282	0.015	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1381.85
12	0.7463	1171.9	1192.7	1189.3	0.922	5.923	67.152	20.225	5.242	0.170	0.333	0.016	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1377.38
13	0.7574	1190.5	1211.6	1208.1	0.905	5.855	65.842	20.791	5.970	0.185	0.401	0.025	0.027	0.000	0.000	0.000	0.000	0.000	0.000	1388.81
14	0.7319	1164.1	1184.7	1181.2	0.948	5.016	68.906	20.649	4.025	0.132	0.279	0.021	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1381.64
15	0.7416	1172.1	1192.8	1189.4	0.922	5.477	67.660	20.636	4.813	0.151	0.306	0.017	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1381.98
16	0.7488	1177.4	1198.3	1194.7	0.918	5.821	66.874	20.444	5.371	0.177	0.354	0.020	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1381.59
17	0.7135	1136.6	1156.7	1153.6	0.756	5.251	72.297	17.289	3.995	0.128	0.254	0.014	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1366.31
18	0.7021	1130.3	1150.4	1147.1	0.772	4.542	73.706	17.536	3.111	0.102	0.205	0.012	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1369.78
19	0.7479	1175.1	1195.9	1192.3	0.920	5.888	66.952	20.372	5.299	0.174	0.354	0.020	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1379.55
20	0.7436	1168.1	1188.8	1185.4	0.921	5.907	67.575	19.974	5.065	0.167	0.352	0.019	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1375.35
21	0.7317	1165.4	1186.0	1182.5	0.918	4.964	68.988	20.585	4.076	0.138	0.294	0.018	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1383.37
22	0.7461	1172.1	1192.9	1189.3	0.923	5.885	67.351	20.010	5.222	0.179	0.385	0.022	0.024	0.000	0.000	0.000	0.000	0.000	0.000	1377.83
23	0.7265	1161.7	1182.3	1178.8	0.923	4.697	69.455	20.908	3.645	0.113	0.232	0.013	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1383.97
24	0.7437	1167.5	1188.1	1184.6	0.923	5.950	67.433	20.126	5.066	0.151	0.315	0.017	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1374.54
25	0.7279	1158.2	1178.7	1175.3	0.919	5.039	69.360	20.440	3.852	0.119	0.243	0.013	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1378.54
26	0.7426	1169.5	1190.2	1186.9	0.927	5.708	67.603	20.323	4.926	0.155	0.323	0.017	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1378.08
27	0.7354	1165.8	1186.4	1183.2	0.937	5.259	68.298	20.814	4.262	0.129	0.268	0.016	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1380.33
28	0.7418	1164.1	1184.7	1181.3	0.924	5.976	67.594	20.128	4.913	0.144	0.291	0.015	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1372.36
29	0.7353	1166.1	1186.8	1183.5	0.913	5.266	68.411	20.614	4.353	0.136	0.276	0.015	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1380.88
30	0.7368	1169.0	1189.7	1186.4	0.910	5.227	68.219	20.766	4.421	0.139	0.285	0.016	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1382.94
31	0.7467	1172.1	1192.9	1189.5	0.916	5.952	67.075	20.294	5.219	0.163	0.343	0.019	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1377.30
Avg	0.7395	1168.0	1189.1	1185.7	0.909	5.519	68.037	20.277	4.758	0.153	0.311	0.017	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1379.64

Zone 261

Source Daily Summary

August 2019

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	0.7542	1182.5	1203.5	1199.5	0.923	6.014	66.258	20.444	5.683	0.209	0.425	0.021	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1382.53	
2	0.7501	1175.0	1195.9	1191.8	0.924	6.085	66.705	20.229	5.451	0.188	0.380	0.018	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1377.54	
3	0.7484	1172.3	1193.1	1189.1	0.926	6.094	66.898	20.135	5.377	0.180	0.358	0.016	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1375.88	
4	0.7513	1176.9	1197.7	1193.7	0.926	6.082	66.531	20.322	5.542	0.189	0.373	0.017	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1378.61	
5	0.7496	1175.8	1196.6	1193.3	0.910	6.020	66.735	20.303	5.459	0.182	0.356	0.018	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1378.79	14.66
6	0.7484	1173.4	1194.2	1190.9	0.907	6.056	66.862	20.218	5.411	0.173	0.339	0.017	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1377.14	13.87
7	0.7462	1170.0	1190.7	1187.5	0.907	6.061	67.117	20.106	5.303	0.160	0.314	0.015	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1375.14	12.47
8	0.7489	1174.7	1195.5	1192.2	0.911	6.017	66.847	20.234	5.422	0.179	0.354	0.018	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1378.18	14.48
9	0.7483	1173.4	1194.2	1191.0	0.911	6.038	66.861	20.284	5.345	0.178	0.347	0.017	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1377.27	13.94
10	0.7730	1215.6	1237.1	1233.5	0.895	5.810	64.063	21.450	6.947	0.235	0.526	0.036	0.039	0.000	0.000	0.000	0.000	0.000	0.000	1403.49	28.66
11	0.7536	1180.8	1201.7	1198.4	0.904	6.095	66.267	20.367	5.786	0.171	0.368	0.020	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1380.92	16.68
12	0.7510	1178.2	1199.1	1195.9	0.914	5.991	66.546	20.453	5.515	0.181	0.361	0.019	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1380.44	15.55
13	0.7523	1181.4	1202.3	1199.1	0.913	5.918	66.425	20.547	5.592	0.188	0.375	0.021	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1382.96	16.51
14	0.7523	1181.0	1201.9	1198.7	0.915	5.947	66.427	20.512	5.582	0.193	0.382	0.021	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1382.39	16.61
15	0.7516	1179.2	1200.1	1196.9	0.916	5.988	66.493	20.464	5.528	0.192	0.377	0.021	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1380.98	16.11
16	0.7491	1175.0	1195.8	1192.6	0.916	6.012	66.904	20.129	5.421	0.185	0.390	0.021	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1378.32	15.22
17	0.7467	1170.7	1191.4	1188.2	0.918	6.044	67.180	20.012	5.253	0.179	0.374	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1375.50	13.67
18	0.7470	1171.3	1192.0	1188.8	0.919	6.032	67.239	19.884	5.299	0.186	0.396	0.021	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1375.93	14.33
19	0.7502	1176.8	1197.7	1194.4	0.918	5.998	66.761	20.236	5.451	0.189	0.401	0.022	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1379.46	15.84
20	0.7486	1173.5	1194.3	1191.1	0.922	6.045	66.808	20.335	5.321	0.173	0.357	0.019	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1377.09	14.13
21	0.7466	1169.6	1190.3	1187.1	0.921	6.102	67.050	20.143	5.260	0.158	0.332	0.017	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1374.26	12.67
22	0.7491	1174.8	1195.6	1192.3	0.921	6.021	66.820	20.260	5.387	0.177	0.372	0.021	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1377.99	14.63
23	0.7489	1175.1	1195.9	1192.7	0.922	5.974	66.828	20.326	5.372	0.175	0.363	0.019	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1378.69	14.53
24	0.7489	1173.5	1194.3	1191.0	0.918	6.085	66.723	20.362	5.368	0.165	0.341	0.018	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1376.72	13.92
25	0.7442	1165.6	1186.2	1183.0	0.919	6.123	67.255	20.145	5.083	0.148	0.297	0.015	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1371.81	10.74
26	0.7487	1174.8	1195.6	1192.4	0.917	5.987	66.783	20.420	5.332	0.172	0.351	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1378.47	14.17
27	0.7486	1175.0	1195.8	1192.6	0.916	5.968	66.819	20.402	5.323	0.175	0.358	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1378.76	14.26
28	0.7511	1178.4	1199.2	1196.0	0.913	5.993	66.521	20.500	5.479	0.179	0.374	0.020	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1380.49	15.68
29	0.7503	1177.0	1197.8	1194.6	0.909	6.015	66.649	20.383	5.437	0.183	0.382	0.021	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1379.52	15.46
30	0.7463	1169.1	1189.8	1186.7	0.910	6.116	67.357	19.706	5.267	0.192	0.407	0.022	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1374.00	14.18
31	0.7509	1177.9	1198.7	1195.5	0.907	6.011	66.769	20.107	5.538	0.196	0.422	0.024	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1380.07	16.70
Avg	0.7501	1176.0	1197.2	1193.9	0.915	6.024	66.693	20.304	5.469	0.182	0.373	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1379.01	15.17

Zone 262

Gas Composition and Properties

Effective August 1, 2019

Source #: 2501030
Name: LIGNITE PLANT

Component	Mole %	Liquid Content	Mass %
Carbon Dioxide, CO2	0.1075		0.2405
Nitrogen, N2	2.8227		4.0201
Methane, C1	76.3018		62.2314
Ethane, C2	18.3635	4.9132	28.0723
Propane, C3	2.3411	0.6453	5.2483
iso-Butane, iC4	0.0380	0.0124	0.1123
n-Butane, nC4	0.0254	0.0080	0.0751
iso-Pentane, iC5			
n-Pentane, nC5			
Neo-Pentane, NeoC5			
Hexanes Plus, C6+			
Water, H2O			
Hydrogen Sulfide, H2S			
Oxygen, O2			
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	-27.646	
Cricodentherm	-22.034	
HV, Dry @ Base P, T	1162.77	
HV, Sat @ Base P, T	1142.53	
HV, Sat @ Sample P, T	1162.77	
Relative Density	0.6809	

C6+: 100

Totals 100.0000 5.5780 100.0000

Sample

Date: 08/01/2019 Pressure: 600.0
 Type: Temperature:
 Tech: Kevin Moos H2O: lbs/mm
 H2S: ppm

Remarks:

Analysis

Date: 08/01/2019 Instrument:
 Cylinder: 900

Tech: Kevin Moos

Remarks:

Zone 263

Gas Composition and Properties

Effective August 1, 2019

Attachment B
Page 9 of 23

Source #: 3002013
Name: EPPING BORDER

Component	Mole %	Liquid Content	Mass %
Carbon Dioxide, CO2	0.8160		1.8005
Nitrogen, N2	3.1359		4.4044
Methane, C1	75.2897		60.5569
Ethane, C2	18.2402	4.8804	27.4982
Propane, C3	2.2928	0.6320	5.0689
iso-Butane, iC4	0.0656	0.0215	0.1912
n-Butane, nC4	0.1410	0.0445	0.4109
iso-Pentane, iC5	0.0084	0.0031	0.0304
n-Pentane, nC5	0.0090	0.0033	0.0326
Neo-Pentane, NeoC5			
Hexanes Plus, C6+	0.0014	0.0006	0.0060
Water, H2O			
Hydrogen Sulfide, H2S			
Oxygen, O2			
Carbon Monoxide, CO			
Hydrogen, H2			
Helium, He			
Argon, Ar			
Totals	100.0000	5.5840	100.0000

Property	Total Sample	C6 Plus Fraction
Pressure Base	14.730	
Temperature Base	60.00	
HCDP @ Sample Pressure	-23.325	
Cricondentherm	-16.880	
HV, Dry @ Base P, T	1154.57	
HV, Sat @ Base P, T	1134.48	
HV, Sat @ Sample P, T	1154.57	
Relative Density	0.6905	

C6+: 100

Sample

Date: 08/01/2019 Pressure: 550.0
 Type: Temperature:
 Tech: Kevin Moos H2O: lbs/mm
 H2S: ppm

Remarks:

Analysis

Date: 08/01/2019 Instrument:
 Cylinder: 385

Tech: Kevin Moos

Remarks:

*** End of Report ***

Zone 264

Source Daily Summary

August 2019

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 Dry	Heating Value As Del	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.7099	1159.4	1179.9	1176.4	0.906	3.302	71.749	21.248	2.534	0.078	0.157	0.011	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1397.09
2	0.7102	1161.1	1181.7	1178.3	0.883	3.267	71.677	21.325	2.589	0.081	0.158	0.009	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1398.91
3	0.7088	1156.8	1177.3	1173.7	0.920	3.336	71.836	21.253	2.401	0.074	0.152	0.012	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1395.04
4	0.7114	1161.1	1181.7	1178.2	0.907	3.346	71.451	21.457	2.572	0.081	0.162	0.011	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1397.66
5	0.7103	1158.3	1178.8	1175.3	0.918	3.387	71.532	21.494	2.407	0.077	0.159	0.011	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1395.44
6	0.7090	1156.4	1176.9	1173.3	0.922	3.386	71.745	21.314	2.377	0.074	0.153	0.012	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1394.28
7	0.7076	1153.8	1174.2	1170.9	0.913	3.419	71.972	21.085	2.374	0.072	0.145	0.009	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1392.70
8	0.7075	1154.1	1174.6	1171.1	0.917	3.384	72.064	20.982	2.401	0.075	0.151	0.011	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1393.13
9	0.7102	1158.6	1179.2	1175.8	0.921	3.360	71.465	21.643	2.361	0.072	0.152	0.011	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1395.92
10	0.7101	1158.5	1179.0	1175.5	0.927	3.344	71.626	21.404	2.439	0.075	0.156	0.013	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1395.83
11	0.7104	1159.3	1179.8	1176.4	0.907	3.362	71.538	21.455	2.488	0.076	0.152	0.010	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1396.47
12	0.7074	1154.6	1175.0	1171.5	0.924	3.335	72.000	21.198	2.303	0.070	0.145	0.011	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1393.74
13	0.7093	1157.8	1178.3	1174.9	0.904	3.350	71.702	21.378	2.417	0.073	0.152	0.011	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1395.78
14	0.7101	1157.3	1177.8	1174.4	0.971	3.352	71.535	21.547	2.343	0.073	0.152	0.011	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1394.43
15	0.7107	1158.6	1179.1	1175.8	0.952	3.365	71.373	21.700	2.365	0.072	0.150	0.010	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1395.38
16	0.7082	1155.4	1175.8	1172.4	0.932	3.356	71.882	21.226	2.358	0.071	0.149	0.012	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1393.89
17	0.7070	1153.8	1174.2	1170.9	0.916	3.358	72.159	20.911	2.413	0.072	0.148	0.010	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1393.25
18	0.6925	1131.9	1151.9	1148.6	0.825	3.466	74.665	18.738	2.079	0.066	0.138	0.010	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1380.85
19	0.7090	1156.9	1177.4	1174.1	0.916	3.356	71.569	21.666	2.262	0.068	0.142	0.010	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1395.11
20	0.7100	1158.4	1178.9	1175.5	0.933	3.337	71.473	21.702	2.310	0.072	0.150	0.011	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1395.83
21	0.7101	1159.2	1179.8	1176.4	0.909	3.329	71.528	21.580	2.402	0.076	0.154	0.010	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1396.77
22	0.7069	1153.5	1173.9	1170.5	0.911	3.377	72.045	21.154	2.266	0.072	0.149	0.011	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1392.93
23	0.7086	1156.9	1177.4	1174.1	0.910	3.335	71.706	21.487	2.332	0.070	0.141	0.009	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1395.40
24	0.7107	1159.9	1180.4	1177.0	0.930	3.315	71.474	21.597	2.426	0.076	0.156	0.011	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1396.92
25	0.7106	1160.2	1180.8	1177.4	0.897	3.338	71.453	21.595	2.471	0.076	0.150	0.009	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1397.46
26	0.7110	1160.0	1180.5	1177.0	0.918	3.353	71.546	21.380	2.526	0.083	0.167	0.011	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1396.70
27	0.7101	1158.1	1178.6	1175.0	0.914	3.392	71.531	21.537	2.372	0.075	0.152	0.012	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1395.27
28	0.7087	1156.7	1177.2	1173.8	0.898	3.373	71.643	21.553	2.307	0.069	0.138	0.009	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1395.07
29	0.7132	1161.1	1181.6	1178.1	0.968	3.414	71.279	21.470	2.535	0.092	0.203	0.017	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1395.90
30	0.7102	1158.2	1178.8	1175.4	0.926	3.371	71.504	21.558	2.392	0.075	0.153	0.010	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1395.52
31	0.7121	1159.7	1180.2	1176.9	0.978	3.386	71.296	21.590	2.474	0.082	0.168	0.012	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1395.33
Avg	0.7091	1157.0	1177.4	1174.0	0.919	3.360	71.743	21.330	2.397	0.075	0.153	0.011	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1394.97

Zone 265

Source Daily Summary

August 2019

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 Dry	Heating Value As Del	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.7523	1180.4	1201.3	1197.3	0.911	5.983	66.513	20.315	5.654	0.195	0.388	0.020	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1381.72
2	0.7532	1182.1	1203.0	1199.0	0.912	5.967	66.401	20.395	5.674	0.204	0.404	0.021	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1382.84
3	0.7523	1180.5	1201.4	1197.3	0.908	5.991	66.495	20.354	5.601	0.203	0.404	0.021	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1381.74
4	0.7515	1180.0	1200.9	1196.8	0.908	5.944	66.613	20.335	5.551	0.204	0.404	0.021	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1381.94
5	0.7498	1177.3	1198.2	1194.0	0.904	5.956	66.792	20.252	5.502	0.187	0.369	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1380.34
6	0.7486	1175.1	1195.9	1191.8	0.907	5.973	66.941	20.153	5.463	0.178	0.351	0.017	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1378.86
7	0.7440	1167.5	1188.1	1184.1	0.904	6.006	67.486	19.905	5.194	0.161	0.315	0.015	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1374.23
8	0.7455	1169.9	1190.6	1186.5	0.907	5.996	67.322	19.947	5.313	0.163	0.320	0.015	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1375.66
9	0.7470	1172.3	1193.1	1189.0	0.909	5.991	67.126	20.075	5.337	0.178	0.349	0.017	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1377.08
10	0.7526	1182.8	1203.8	1199.6	0.909	5.872	66.483	20.462	5.634	0.197	0.397	0.022	0.024	0.000	0.000	0.000	0.000	0.000	0.000	1384.17
11	0.7712	1211.7	1233.2	1228.7	0.885	5.888	64.343	21.123	6.968	0.218	0.504	0.034	0.037	0.000	0.000	0.000	0.000	0.000	0.000	1400.68
12	0.7475	1172.8	1193.6	1189.6	0.911	6.003	67.030	20.135	5.379	0.168	0.339	0.017	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1377.22
13	0.7502	1178.7	1199.5	1195.5	0.910	5.903	66.711	20.384	5.506	0.182	0.365	0.019	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1381.58
14	0.7512	1181.1	1202.0	1198.0	0.912	5.845	66.654	20.401	5.566	0.192	0.387	0.021	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1383.47
15	0.7495	1177.1	1198.0	1194.0	0.911	5.930	66.820	20.283	5.465	0.185	0.366	0.019	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1380.40
16	0.7498	1177.2	1198.1	1194.1	0.915	5.947	66.797	20.268	5.468	0.187	0.378	0.020	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1380.22
17	0.7445	1168.1	1188.8	1184.9	0.913	6.003	67.591	19.694	5.202	0.178	0.378	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1374.46
18	0.7458	1170.5	1191.2	1187.3	0.916	5.978	67.409	19.830	5.261	0.181	0.384	0.021	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1376.03
19	0.7469	1172.6	1193.3	1189.3	0.919	5.950	67.318	19.845	5.337	0.187	0.401	0.022	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1377.45
20	0.7474	1172.7	1193.5	1189.5	0.916	5.987	67.117	20.077	5.309	0.179	0.374	0.020	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1377.22
21	0.7477	1173.1	1193.9	1189.8	0.918	5.990	66.981	20.218	5.352	0.163	0.342	0.018	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1377.44
22	0.7474	1172.8	1193.5	1189.5	0.918	5.983	67.089	20.101	5.339	0.171	0.359	0.019	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1377.23
23	0.7445	1167.8	1188.5	1184.4	0.921	6.009	67.465	19.891	5.166	0.166	0.346	0.018	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1374.10
24	0.7483	1175.7	1196.5	1192.5	0.921	5.888	67.004	20.209	5.393	0.177	0.369	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1379.85
25	0.7443	1165.6	1186.2	1182.3	0.913	6.140	67.287	20.046	5.138	0.147	0.299	0.015	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1371.71
26	0.7459	1170.5	1191.3	1187.4	0.918	5.976	67.180	20.192	5.207	0.163	0.330	0.017	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1376.09
27	0.7468	1172.9	1193.7	1189.8	0.913	5.931	67.067	20.296	5.243	0.169	0.345	0.018	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1377.97
28	0.7485	1176.0	1196.8	1192.7	0.916	5.892	66.953	20.280	5.368	0.180	0.370	0.020	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1380.04
29	0.7500	1177.5	1198.4	1194.4	0.908	5.956	66.738	20.334	5.458	0.182	0.380	0.021	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1380.41
30	0.7466	1171.3	1192.1	1188.1	0.906	6.017	67.295	19.858	5.310	0.183	0.388	0.021	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1376.28
31	0.7469	1172.0	1192.7	1188.8	0.906	6.000	67.297	19.835	5.338	0.185	0.395	0.022	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1376.77
Avg	0.7490	1176.0	1196.5	1192.5	0.911	5.964	66.913	20.177	5.442	0.181	0.371	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1379.20

Zone 271

Source Daily Summary

August 2019

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 Dry	Heating Value As Del	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.7552	1185.1	1206.1	1202.2	0.919	5.961	66.132	20.551	5.760	0.210	0.418	0.023	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1384.55
2	0.7503	1176.1	1197.0	1193.1	0.921	6.050	66.666	20.268	5.511	0.184	0.361	0.019	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1378.55
3	0.7547	1183.9	1204.9	1201.3	0.921	5.977	66.191	20.512	5.736	0.208	0.409	0.022	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1383.73
4	0.7514	1177.9	1198.8	1195.6	0.915	6.044	66.553	20.335	5.531	0.196	0.385	0.021	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1379.74
5	0.7511	1178.5	1199.4	1196.2	0.916	5.980	66.622	20.345	5.505	0.199	0.390	0.021	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1380.65
6	0.7500	1176.9	1197.8	1194.6	0.912	5.984	66.735	20.283	5.498	0.185	0.364	0.019	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1379.78
7	0.7481	1173.6	1194.4	1191.2	0.916	6.003	66.956	20.164	5.413	0.174	0.339	0.018	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1377.62
8	0.7441	1166.9	1187.6	1184.4	0.913	6.041	67.442	19.906	5.196	0.160	0.310	0.015	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1373.48
9	0.7451	1168.4	1189.1	1186.0	0.916	6.043	67.323	19.931	5.284	0.159	0.311	0.016	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1374.27
10	0.7469	1171.4	1192.1	1189.0	0.918	6.024	67.104	20.084	5.318	0.176	0.341	0.018	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1376.17
11	0.7515	1180.1	1201.0	1197.8	0.918	5.923	66.556	20.435	5.553	0.192	0.380	0.022	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1382.09
12	0.7697	1208.5	1229.9	1226.3	0.897	5.923	64.478	21.089	6.846	0.213	0.485	0.033	0.036	0.000	0.000	0.000	0.000	0.000	0.000	1398.41
13	0.7470	1171.1	1191.8	1188.7	0.919	6.044	67.053	20.127	5.330	0.164	0.327	0.018	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1375.77
14	0.7489	1175.5	1196.3	1192.5	0.920	5.957	66.852	20.286	5.418	0.177	0.350	0.019	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1379.09
15	0.7517	1181.0	1202.0	1198.1	0.921	5.874	66.565	20.445	5.577	0.192	0.381	0.022	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1383.07
16	0.7502	1177.5	1198.3	1194.4	0.921	5.954	66.711	20.332	5.489	0.186	0.365	0.021	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1380.25
17	0.7498	1176.5	1197.3	1193.5	0.924	5.971	66.766	20.291	5.450	0.184	0.370	0.021	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1379.48
18	0.7446	1167.4	1188.1	1184.3	0.923	6.039	67.549	19.705	5.194	0.177	0.372	0.020	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1373.59
19	0.7464	1171.0	1191.8	1188.6	0.924	5.991	67.304	19.882	5.293	0.182	0.381	0.021	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1376.15
20	0.7455	1169.3	1190.0	1186.9	0.927	6.002	67.434	19.803	5.233	0.181	0.378	0.021	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1374.99
21	0.7483	1173.7	1194.4	1191.2	0.924	6.002	67.017	20.086	5.362	0.183	0.381	0.022	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1377.50
22	0.7480	1173.0	1193.8	1190.6	0.927	6.014	66.927	20.234	5.354	0.165	0.341	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1377.00
23	0.7457	1168.9	1189.6	1186.5	0.927	6.046	67.263	19.991	5.230	0.164	0.341	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1374.32
24	0.7445	1167.1	1187.7	1184.6	0.930	6.045	67.421	19.911	5.148	0.166	0.341	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1373.26
25	0.7483	1174.8	1195.6	1192.4	0.928	5.929	66.970	20.220	5.376	0.175	0.361	0.020	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1378.86
26	0.7445	1165.2	1185.9	1182.1	0.922	6.164	67.257	20.044	5.134	0.148	0.299	0.016	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1371.17
27	0.7462	1170.4	1191.1	1187.7	0.926	6.006	67.118	20.203	5.222	0.163	0.327	0.018	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1375.60
28	0.7466	1171.7	1192.4	1189.2	0.920	5.971	67.101	20.223	5.241	0.167	0.338	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1376.76
29	0.7476	1173.8	1194.5	1190.8	0.924	5.938	67.007	20.269	5.291	0.175	0.356	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1378.21
30	0.7507	1178.0	1198.8	1194.9	0.916	5.979	66.623	20.401	5.478	0.182	0.377	0.022	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1380.34
31	0.7461	1169.6	1190.3	1186.4	0.915	6.060	67.338	19.815	5.269	0.181	0.380	0.021	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1374.76
Avg	0.7490	1175.0	1195.7	1192.3	0.920	5.998	66.872	20.199	5.427	0.180	0.363	0.020	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1378.36

Zone 272

Source Daily Summary

August 2019

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 Dry	Heating Value As Del	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.7544	1183.5	1204.5	1201.0	0.920	5.978	66.220	20.510	5.711	0.206	0.409	0.022	0.023	0.000	0.000	0.000	0.000	0.000	1383.48	
2	0.7486	1173.0	1193.7	1190.3	0.921	6.079	66.872	20.155	5.412	0.178	0.346	0.018	0.019	0.000	0.000	0.000	0.000	0.000	1376.45	
3	0.7535	1181.8	1202.8	1199.4	0.921	5.996	66.322	20.443	5.677	0.202	0.397	0.021	0.022	0.000	0.000	0.000	0.000	0.000	1382.34	
4	0.7517	1178.4	1199.2	1196.1	0.916	6.049	66.520	20.337	5.549	0.198	0.389	0.021	0.022	0.000	0.000	0.000	0.000	0.000	1379.91	
5	0.7514	1178.9	1199.8	1196.6	0.917	5.987	66.591	20.331	5.538	0.200	0.393	0.021	0.022	0.000	0.000	0.000	0.000	0.000	1380.81	
6	0.7500	1176.7	1197.6	1194.5	0.913	5.994	66.736	20.273	5.493	0.186	0.365	0.020	0.020	0.000	0.000	0.000	0.000	0.000	1379.55	
7	0.7487	1174.5	1195.3	1192.2	0.916	6.006	66.888	20.186	5.445	0.177	0.345	0.018	0.018	0.000	0.000	0.000	0.000	0.000	1378.08	
8	0.7435	1165.4	1186.0	1182.8	0.914	6.072	67.517	19.846	5.152	0.159	0.308	0.015	0.015	0.000	0.000	0.000	0.000	0.000	1372.30	
9	0.7449	1167.6	1188.3	1185.2	0.916	6.064	67.347	19.909	5.265	0.159	0.309	0.016	0.016	0.000	0.000	0.000	0.000	0.000	1373.64	
10	0.7472	1171.9	1192.6	1189.6	0.918	6.022	67.074	20.089	5.339	0.177	0.344	0.018	0.018	0.000	0.000	0.000	0.000	0.000	1376.45	
11	0.7472	1171.9	1192.6	1189.4	0.919	6.016	67.051	20.169	5.277	0.180	0.350	0.019	0.019	0.000	0.000	0.000	0.000	0.000	1376.50	
12	0.7707	1210.2	1231.6	1228.0	0.898	5.913	64.355	21.155	6.897	0.219	0.495	0.033	0.035	0.000	0.000	0.000	0.000	0.000	1399.45	
13	0.7471	1171.3	1192.0	1189.0	0.919	6.049	67.039	20.115	5.350	0.163	0.328	0.018	0.018	0.000	0.000	0.000	0.000	0.000	1375.83	
14	0.7485	1174.5	1195.3	1191.8	0.920	5.976	66.909	20.234	5.397	0.177	0.349	0.019	0.020	0.000	0.000	0.000	0.000	0.000	1378.36	
15	0.7512	1180.0	1200.9	1197.6	0.921	5.892	66.617	20.406	5.557	0.189	0.375	0.021	0.022	0.000	0.000	0.000	0.000	0.000	1382.32	
16	0.7493	1175.7	1196.6	1193.3	0.921	5.972	66.822	20.269	5.436	0.182	0.358	0.020	0.020	0.000	0.000	0.000	0.000	0.000	1379.08	
17	0.7489	1174.8	1195.6	1192.3	0.925	5.992	66.869	20.229	5.399	0.182	0.363	0.020	0.021	0.000	0.000	0.000	0.000	0.000	1378.30	
18	0.7440	1166.2	1186.9	1183.6	0.923	6.056	67.629	19.645	5.162	0.175	0.369	0.020	0.021	0.000	0.000	0.000	0.000	0.000	1372.73	
19	0.7457	1169.6	1190.3	1186.8	0.927	6.005	67.348	19.901	5.233	0.177	0.367	0.020	0.021	0.000	0.000	0.000	0.000	0.000	1375.17	
20	0.7461	1170.3	1191.0	1187.5	0.926	6.002	67.385	19.789	5.281	0.184	0.388	0.022	0.022	0.000	0.000	0.000	0.000	0.000	1375.56	
21	0.7486	1174.5	1195.3	1191.8	0.926	5.979	67.024	20.056	5.392	0.187	0.392	0.022	0.023	0.000	0.000	0.000	0.000	0.000	1378.17	
22	0.7491	1175.0	1195.8	1192.6	0.927	5.995	66.816	20.280	5.411	0.172	0.358	0.020	0.021	0.000	0.000	0.000	0.000	0.000	1378.35	
23	0.7462	1169.8	1190.5	1187.5	0.927	6.038	67.198	20.033	5.257	0.165	0.343	0.019	0.019	0.000	0.000	0.000	0.000	0.000	1374.90	
24	0.7440	1165.7	1186.3	1182.9	0.932	6.073	67.513	19.816	5.114	0.167	0.345	0.019	0.020	0.000	0.000	0.000	0.000	0.000	1372.14	
25	0.7479	1173.7	1194.5	1191.4	0.930	5.951	67.015	20.193	5.329	0.177	0.363	0.021	0.021	0.000	0.000	0.000	0.000	0.000	1377.99	
26	0.7451	1166.4	1187.0	1183.7	0.923	6.153	67.183	20.082	5.173	0.150	0.303	0.016	0.016	0.000	0.000	0.000	0.000	0.000	1371.92	
27	0.7453	1168.7	1189.4	1186.1	0.927	6.025	67.228	20.136	5.167	0.160	0.321	0.017	0.017	0.000	0.000	0.000	0.000	0.000	1374.39	
28	0.7475	1173.3	1194.1	1190.8	0.922	5.961	66.988	20.282	5.288	0.171	0.348	0.020	0.020	0.000	0.000	0.000	0.000	0.000	1377.76	
29	0.7467	1172.0	1192.8	1189.3	0.924	5.957	67.128	20.189	5.239	0.173	0.351	0.019	0.020	0.000	0.000	0.000	0.000	0.000	1377.01	
30	0.7496	1176.0	1196.8	1193.4	0.917	6.002	66.753	20.320	5.418	0.178	0.370	0.021	0.022	0.000	0.000	0.000	0.000	0.000	1378.93	
31	0.7455	1168.4	1189.1	1185.7	0.915	6.072	67.403	19.785	5.232	0.178	0.372	0.021	0.021	0.000	0.000	0.000	0.000	0.000	1373.94	
Avg	0.7486	1174.0	1195.0	1191.7	0.921	6.011	66.915	20.167	5.406	0.179	0.362	0.020	0.020	0.000	0.000	0.000	0.000	0.000	1377.80	

Zone 273

Source Daily Summary

August 2019

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 Dry	Heating Value As Del	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.7527	1181.3	1202.2	1198.3	0.911	5.971	66.464	20.346	5.675	0.197	0.393	0.021	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1382.35
2	0.7528	1181.3	1202.2	1198.2	0.912	5.978	66.451	20.365	5.651	0.202	0.399	0.021	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1382.27
3	0.7519	1179.7	1200.6	1196.7	0.908	5.999	66.549	20.323	5.576	0.202	0.400	0.021	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1381.20
4	0.7514	1179.8	1200.7	1196.8	0.908	5.951	66.625	20.323	5.544	0.203	0.402	0.021	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1381.73
5	0.7496	1176.9	1197.7	1193.9	0.904	5.963	66.816	20.237	5.487	0.187	0.368	0.019	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1380.03
6	0.7485	1174.8	1195.6	1191.8	0.907	5.976	66.959	20.141	5.451	0.179	0.351	0.018	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1378.68
7	0.7441	1167.6	1188.3	1184.6	0.904	6.010	67.470	19.906	5.202	0.161	0.316	0.015	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1374.27
8	0.7455	1169.9	1190.6	1186.9	0.907	5.999	67.310	19.952	5.316	0.162	0.320	0.016	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1375.66
9	0.7468	1171.9	1192.7	1189.0	0.909	5.993	67.159	20.054	5.324	0.178	0.348	0.017	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1376.85
10	0.7511	1180.1	1201.0	1197.2	0.910	5.898	66.648	20.377	5.544	0.193	0.386	0.021	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1382.39
11	0.7724	1213.8	1235.3	1231.2	0.885	5.867	64.208	21.205	7.025	0.222	0.515	0.035	0.038	0.000	0.000	0.000	0.000	0.000	0.000	1402.08
12	0.7472	1172.4	1193.2	1189.5	0.911	6.001	67.066	20.118	5.368	0.166	0.336	0.018	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1377.03
13	0.7497	1177.7	1198.5	1194.9	0.911	5.914	66.776	20.341	5.477	0.181	0.361	0.019	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1380.88
14	0.7507	1180.1	1201.0	1197.2	0.912	5.856	66.714	20.367	5.539	0.190	0.380	0.021	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1382.81
15	0.7494	1176.9	1197.7	1194.0	0.911	5.932	66.840	20.271	5.456	0.185	0.365	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1380.22
16	0.7498	1177.0	1197.8	1194.0	0.915	5.952	66.810	20.252	5.463	0.188	0.378	0.021	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1380.03
17	0.7447	1168.6	1189.3	1185.7	0.913	5.997	67.560	19.716	5.216	0.178	0.379	0.020	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1374.79
18	0.7456	1170.0	1190.7	1187.0	0.916	5.985	67.427	19.822	5.247	0.180	0.381	0.021	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1375.69
19	0.7461	1171.0	1191.8	1187.9	0.919	5.966	67.420	19.779	5.292	0.185	0.395	0.022	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1376.42
20	0.7476	1173.1	1193.8	1190.1	0.916	5.983	67.105	20.072	5.323	0.180	0.378	0.021	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1377.47
21	0.7476	1173.0	1193.7	1190.0	0.918	5.990	66.994	20.212	5.343	0.163	0.342	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1377.34
22	0.7464	1170.9	1191.7	1187.9	0.919	6.002	67.205	20.032	5.285	0.168	0.351	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1376.01
23	0.7449	1168.6	1189.3	1185.5	0.921	6.005	67.412	19.914	5.191	0.168	0.351	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1374.59
24	0.7478	1174.8	1195.6	1191.8	0.921	5.900	67.061	20.173	5.365	0.175	0.365	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1379.19
25	0.7441	1165.2	1185.8	1182.1	0.913	6.143	67.330	20.009	5.125	0.147	0.301	0.016	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1371.44
26	0.7455	1169.8	1190.5	1186.8	0.918	5.989	67.216	20.168	5.187	0.161	0.327	0.017	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1375.54
27	0.7464	1172.1	1192.9	1189.2	0.913	5.940	67.120	20.259	5.222	0.167	0.342	0.018	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1377.42
28	0.7484	1175.8	1196.7	1192.9	0.916	5.893	66.965	20.271	5.362	0.180	0.370	0.020	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1379.95
29	0.7489	1175.3	1196.1	1192.4	0.908	5.980	66.881	20.243	5.397	0.178	0.371	0.020	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1378.90
30	0.7468	1171.6	1192.4	1188.7	0.906	6.011	67.269	19.883	5.321	0.182	0.386	0.021	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1376.52
31	0.7459	1170.2	1190.9	1187.2	0.907	6.021	67.415	19.756	5.284	0.183	0.390	0.021	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1375.54
Avg	0.7487	1175.0	1196.0	1192.2	0.911	5.970	66.943	20.158	5.428	0.180	0.369	0.020	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1378.88

Zone 28

Source Daily Summary

August 2019

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 Dry	Heating Value As Del	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.6549	1090.9	1110.2	1106.4	0.841	2.407	81.742	13.350	1.528	0.044	0.081	0.003	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1368.73
2	0.6493	1085.8	1105.1	1101.1	0.827	2.210	82.719	12.767	1.349	0.040	0.080	0.004	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1368.28
3	0.6574	1091.6	1110.9	1107.0	0.839	2.603	81.346	13.418	1.647	0.048	0.092	0.004	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1367.01
4	0.6740	1108.8	1128.4	1124.4	0.853	3.093	78.797	14.652	2.364	0.076	0.150	0.008	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1371.31
5	0.6740	1108.2	1127.8	1124.0	0.860	3.121	78.780	14.660	2.336	0.076	0.151	0.008	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1370.54
6	0.6658	1100.9	1120.4	1116.7	0.861	2.793	80.067	14.092	1.988	0.063	0.124	0.006	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1369.90
7	0.6482	1084.9	1104.1	1100.8	0.836	2.153	82.924	12.633	1.331	0.039	0.078	0.003	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1368.23
8	0.6570	1091.8	1111.1	1107.7	0.842	2.555	81.439	13.353	1.667	0.046	0.090	0.004	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1367.62
9	0.6635	1098.2	1117.7	1114.2	0.842	2.766	80.432	13.846	1.939	0.056	0.110	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1369.00
10	0.6590	1094.1	1113.5	1110.0	0.865	2.564	81.043	13.717	1.674	0.045	0.084	0.003	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1368.46
11	0.6519	1088.0	1107.2	1103.9	0.848	2.291	82.229	13.104	1.416	0.037	0.070	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1368.23
12	0.6474	1084.2	1103.4	1100.0	0.862	2.085	82.889	12.905	1.170	0.031	0.055	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1368.13
13	0.6541	1089.8	1109.1	1105.9	0.862	2.368	81.919	13.194	1.530	0.041	0.080	0.003	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1368.20
14	0.6631	1098.0	1117.4	1113.8	0.865	2.711	80.447	13.937	1.879	0.052	0.100	0.004	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1369.05
15	0.6700	1104.2	1123.8	1120.5	0.862	2.982	79.305	14.519	2.146	0.059	0.116	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1369.76
16	0.6451	1081.8	1101.0	1097.6	0.851	2.023	83.309	12.624	1.104	0.031	0.056	0.002	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1367.66
17	0.6414	1078.5	1097.6	1094.5	0.847	1.893	83.877	12.355	0.961	0.024	0.042	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1367.27
18	0.6379	1074.4	1093.4	1090.1	0.844	1.815	84.416	12.077	0.794	0.019	0.034	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1365.84
19	0.6395	1075.9	1094.9	1091.5	0.821	1.907	84.138	12.207	0.871	0.021	0.036	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1366.05
20	0.6399	1076.6	1095.7	1092.4	0.826	1.890	84.189	12.063	0.956	0.027	0.048	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1366.59
21	0.6816	1116.3	1136.1	1132.6	0.839	3.370	77.622	15.155	2.747	0.082	0.167	0.009	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1372.98
22	0.6935	1125.7	1145.6	1141.9	0.832	3.923	75.707	16.000	3.199	0.103	0.213	0.011	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1372.49
23	0.6812	1113.5	1133.2	1129.7	0.830	3.513	77.624	15.087	2.673	0.083	0.171	0.009	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1369.93
24	0.6757	1108.5	1128.1	1124.6	0.832	3.303	78.409	14.818	2.414	0.069	0.141	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1369.37
25	0.6767	1109.1	1128.8	1125.1	0.872	3.293	78.256	14.956	2.385	0.073	0.150	0.008	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1369.09
26	0.6573	1090.9	1110.3	1107.0	0.876	2.581	81.320	13.508	1.569	0.046	0.092	0.004	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1366.27
27	0.6591	1093.9	1113.3	1110.0	0.884	2.560	81.047	13.709	1.652	0.047	0.092	0.004	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1368.06
28	0.6650	1100.1	1119.6	1115.9	0.870	2.754	80.101	14.196	1.907	0.054	0.107	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1369.72
29	0.6635	1098.4	1117.9	1114.5	0.866	2.722	80.385	13.975	1.880	0.055	0.108	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1369.22
30	0.6443	1080.4	1099.5	1096.2	0.872	2.010	83.282	12.813	0.966	0.021	0.036	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1366.63
31	0.6556	1091.1	1110.4	1107.0	0.874	2.418	81.476	13.691	1.429	0.038	0.068	0.003	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1368.17
Avg	0.6596	1095.0	1114.0	1110.5	0.852	2.602	81.008	13.658	1.725	0.050	0.097	0.004	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1368.64

Zone 31

Source Daily Summary

August 2019

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 Dry	Heating Value As Del	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.6756	1116.8	1136.6	1133.0	0.703	2.986	77.795	16.406	1.922	0.062	0.111	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1379.58
2	0.6796	1122.4	1142.3	1138.7	0.720	2.995	77.226	16.737	2.111	0.070	0.124	0.008	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1382.39
3	0.6784	1120.4	1140.2	1136.5	0.721	3.001	77.489	16.470	2.102	0.073	0.128	0.009	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1381.15
4	0.6722	1112.3	1132.0	1128.3	0.682	2.972	78.377	15.947	1.844	0.059	0.105	0.007	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1377.50
5	0.6738	1113.3	1133.0	1129.2	0.658	3.104	78.020	16.170	1.871	0.059	0.104	0.007	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1377.02
6	0.6706	1112.8	1132.5	1128.8	0.738	2.706	78.720	15.895	1.763	0.058	0.104	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1379.74
7	0.6741	1114.6	1134.3	1130.7	0.627	3.099	77.946	16.273	1.873	0.060	0.109	0.007	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1378.33
8	0.6759	1117.1	1136.9	1133.2	0.717	2.981	77.832	16.280	1.993	0.065	0.116	0.008	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1379.53
9	0.6727	1111.2	1130.9	1127.1	0.715	3.035	78.368	15.805	1.887	0.062	0.112	0.008	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1375.62
10	0.6747	1114.7	1134.4	1130.6	0.719	3.003	78.029	16.115	1.942	0.064	0.113	0.008	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1377.90
11	0.6779	1118.9	1138.7	1134.9	0.705	3.073	77.396	16.653	1.971	0.067	0.120	0.008	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1379.78
12	0.6795	1121.3	1141.1	1137.4	0.686	3.107	77.077	16.927	2.002	0.067	0.118	0.008	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1381.09
13	0.6763	1121.7	1141.5	1137.9	0.570	2.962	77.231	17.374	1.714	0.050	0.087	0.006	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1384.86
14	0.6757	1119.0	1138.9	1135.2	0.635	2.962	77.555	16.885	1.796	0.056	0.099	0.007	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1382.25
15	0.6783	1125.3	1145.2	1141.6	0.548	2.966	76.775	17.877	1.681	0.051	0.090	0.006	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1387.23
16	0.6789	1125.5	1145.4	1141.8	0.586	2.949	76.776	17.789	1.740	0.054	0.094	0.006	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1386.88
17	0.6709	1119.3	1139.2	1135.6	0.463	2.764	77.722	17.668	1.284	0.033	0.058	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1387.51
18	0.6742	1118.4	1138.2	1134.6	0.570	2.962	77.651	16.974	1.694	0.050	0.088	0.006	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1382.95
19	0.6734	1118.1	1137.9	1134.3	0.631	2.809	77.864	16.899	1.640	0.052	0.092	0.006	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1383.45
20	0.6739	1118.8	1138.6	1135.0	0.623	2.829	77.782	16.926	1.684	0.052	0.092	0.006	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1383.79
21	0.6754	1118.4	1138.2	1134.6	0.652	2.948	77.647	16.781	1.799	0.058	0.102	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1381.75
22	0.6781	1122.5	1142.4	1138.8	0.653	2.950	77.268	16.995	1.949	0.062	0.109	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1384.06
23	0.6762	1119.2	1139.0	1135.4	0.635	3.002	77.589	16.670	1.925	0.059	0.106	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1381.89
24	0.6699	1109.6	1129.2	1125.6	0.618	3.025	78.600	15.867	1.741	0.050	0.088	0.006	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1376.42
25	0.6732	1114.1	1133.9	1130.2	0.608	3.070	78.046	16.268	1.848	0.053	0.095	0.006	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1378.70
26	0.6743	1118.0	1137.7	1134.1	0.497	3.108	77.445	17.183	1.631	0.045	0.081	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1382.34
27	0.6723	1118.7	1138.5	1134.9	0.512	2.858	77.716	17.306	1.488	0.040	0.071	0.004	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1385.27
28	0.6769	1122.0	1141.9	1138.1	0.761	2.704	77.537	16.992	1.816	0.062	0.112	0.008	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1384.63
29	0.6714	1111.8	1131.5	1127.9	0.629	3.007	78.303	16.184	1.728	0.049	0.088	0.006	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1377.74
30	0.6737	1115.3	1135.1	1131.4	0.668	2.953	77.978	16.450	1.780	0.056	0.102	0.007	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1379.68
31	0.6672	1110.7	1130.3	1126.7	1.035	2.061	79.686	15.421	1.610	0.061	0.109	0.008	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1380.61
Avg	0.6747	1117.0	1137.3	1133.6	0.654	2.934	77.789	16.651	1.801	0.057	0.101	0.007	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1381.34

Zone 32

Source Daily Summary

August 2019

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 Dry	Heating Value As Del	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.6862	1153.3	1173.8	1169.3	0.000	2.843	73.380	23.049	0.713	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.65	-26.00
2	0.6874	1155.2	1175.7	1171.2	0.000	2.836	73.220	23.142	0.787	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.78	-25.13
3	0.6877	1155.9	1176.3	1171.7	0.000	2.829	73.183	23.160	0.814	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1415.21	-24.85
4	0.6870	1155.0	1175.4	1171.0	0.000	2.819	73.251	23.174	0.741	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.81	-25.45
5	0.6862	1153.7	1174.2	1169.8	0.000	2.818	73.389	23.064	0.715	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.14	-25.95
6	0.6875	1155.0	1175.5	1170.9	0.000	2.865	73.175	23.168	0.777	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.33	-25.16
7	0.6861	1153.8	1174.3	1169.8	0.000	2.801	73.365	23.154	0.667	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.41	-26.15
8	0.6863	1154.2	1174.7	1170.2	0.000	2.800	73.346	23.144	0.696	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.62	-25.91
9	0.6871	1154.8	1175.3	1170.8	0.000	2.837	73.205	23.232	0.713	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.53	-25.55
10	0.6867	1154.6	1175.1	1170.5	0.000	2.808	73.269	23.218	0.691	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.76	-25.77
11	0.6860	1154.4	1174.9	1170.2	0.000	2.760	73.376	23.190	0.660	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1415.18	-26.10
12	0.6866	1155.5	1175.9	1171.3	0.000	2.754	73.277	23.271	0.684	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1415.82	-25.69
13	0.6860	1154.5	1175.0	1170.1	0.000	2.752	73.384	23.192	0.658	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1415.30	-26.11
14	0.6864	1154.8	1175.3	1170.7	0.000	2.769	73.327	23.205	0.685	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1415.30	-25.85
15	0.6863	1154.7	1175.2	1170.8	0.000	2.767	73.334	23.214	0.672	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1415.27	-25.94
16	0.6859	1153.7	1174.1	1169.8	0.000	2.791	73.437	23.070	0.689	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.41	-26.16
17	0.6857	1153.6	1174.0	1169.7	0.000	2.782	73.414	23.153	0.637	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.48	-26.38
18	0.6861	1153.8	1174.3	1170.0	0.000	2.801	73.372	23.144	0.669	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.39	-26.14
19	0.6867	1155.8	1176.2	1171.7	0.000	2.745	73.295	23.228	0.718	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1416.08	-25.50
20	0.6861	1153.9	1174.3	1169.9	0.000	2.799	73.370	23.150	0.667	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.43	-26.15
21	0.6862	1153.8	1174.2	1169.8	0.000	2.815	73.339	23.166	0.666	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.22	-26.11
22	0.6878	1156.0	1176.5	1172.2	0.000	2.827	73.082	23.348	0.729	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1415.33	-25.12
23	0.6859	1153.3	1173.8	1169.6	0.000	2.811	73.442	23.034	0.699	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.00	-26.16
24	0.6869	1155.2	1175.7	1171.4	0.000	2.789	73.273	23.200	0.725	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1415.29	-25.51
25	0.6863	1154.7	1175.1	1170.9	0.000	2.770	73.351	23.173	0.692	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1415.21	-25.87
26	0.6853	1153.4	1173.8	1169.2	0.000	2.755	73.513	23.075	0.644	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.65	-26.52
27	0.6856	1154.0	1174.4	1169.6	0.000	2.750	73.453	23.130	0.653	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1415.03	-26.31
28	0.6861	1154.7	1175.2	1171.0	0.000	2.748	73.407	23.127	0.704	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1415.48	-25.88
29	0.6856	1153.5	1173.9	1169.5	0.000	2.772	73.477	23.074	0.663	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.51	-26.37
30	0.6859	1153.7	1174.1	1169.6	0.000	2.787	73.425	23.099	0.674	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.46	-26.21
31	0.6858	1153.4	1173.8	1169.1	0.000	2.803	73.442	23.058	0.683	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.10	-26.24
Avg	0.6864	1154.0	1174.8	1170.4	0.000	2.794	73.341	23.155	0.696	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.78	-25.88

Zone 33

Source Daily Summary

August 2019

Number: 351

Pressure Base: 14.730

Contract Day: 1

Name: BADLANDS PLANT

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	0.5727	964.5	981.6	978.3	0.115	3.480	95.953	0.415	0.027	0.009	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1294.15	
2	0.5755	968.2	985.4	981.8	0.141	3.484	95.444	0.847	0.069	0.010	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1295.86	
3	0.5795	972.4	989.6	986.0	0.173	3.551	94.727	1.405	0.122	0.012	0.008	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1296.97	
4	0.6089	1016.2	1034.2	1030.5	0.460	3.214	89.609	6.058	0.583	0.028	0.041	0.004	0.003	0.000	0.000	0.000	0.000	0.000	1322.19	
5	0.6087	1017.9	1035.9	1032.2	0.464	3.084	89.683	6.107	0.586	0.028	0.041	0.004	0.003	0.000	0.000	0.000	0.000	0.000	1324.68	
6	0.6032	1008.7	1026.6	1022.8	0.405	3.223	90.651	5.120	0.529	0.027	0.038	0.004	0.003	0.000	0.000	0.000	0.000	0.000	1318.62	
7	0.6160	1029.2	1047.4	1043.9	0.509	3.015	88.530	7.025	0.813	0.039	0.060	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1331.38	
8	0.6173	1031.0	1049.2	1045.6	0.523	3.013	88.326	7.174	0.847	0.041	0.065	0.006	0.005	0.000	0.000	0.000	0.000	0.000	1332.22	
9	0.6033	1010.6	1028.5	1025.0	0.405	3.118	90.637	5.246	0.527	0.025	0.036	0.003	0.003	0.000	0.000	0.000	0.000	0.000	1320.90	
10	0.5748	967.8	985.0	981.7	0.137	3.452	95.575	0.762	0.061	0.010	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1296.08	
11	0.5755	968.9	986.0	982.9	0.143	3.444	95.453	0.873	0.071	0.010	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1296.68	
12	0.5734	963.3	980.4	977.2	0.113	3.626	95.783	0.439	0.028	0.009	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1291.68	
13	0.6071	1016.1	1034.0	1030.7	0.441	3.085	89.962	5.862	0.576	0.027	0.039	0.003	0.003	0.000	0.000	0.000	0.000	0.000	1323.96	
14	0.5976	997.7	1015.4	1012.0	0.346	3.451	91.558	4.187	0.402	0.022	0.029	0.003	0.002	0.000	0.000	0.000	0.000	0.000	1310.34	
15	0.6058	1013.7	1031.7	1028.3	0.432	3.115	90.209	5.609	0.562	0.028	0.040	0.003	0.003	0.000	0.000	0.000	0.000	0.000	1322.40	
16	0.6040	1009.6	1027.5	1024.1	0.405	3.236	90.569	5.127	0.582	0.030	0.044	0.004	0.003	0.000	0.000	0.000	0.000	0.000	1319.01	
17	0.5899	987.1	1004.6	1001.5	0.274	3.486	92.951	2.919	0.322	0.020	0.024	0.002	0.002	0.000	0.000	0.000	0.000	0.000	1304.84	
18	0.5950	995.3	1012.9	1009.6	0.323	3.393	92.080	3.730	0.416	0.023	0.029	0.003	0.002	0.000	0.000	0.000	0.000	0.000	1309.96	
19	0.6122	1020.8	1038.9	1035.4	0.460	3.245	89.231	6.139	0.808	0.042	0.064	0.006	0.005	0.000	0.000	0.000	0.000	0.000	1324.63	
20	0.5955	996.3	1013.9	1010.6	0.317	3.381	92.030	3.766	0.443	0.025	0.033	0.003	0.003	0.000	0.000	0.000	0.000	0.000	1310.88	
21	0.5721	963.5	980.6	977.4	0.109	3.496	96.055	0.314	0.018	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1293.44	
22	0.5731	965.0	982.1	978.8	0.118	3.491	95.875	0.468	0.037	0.009	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1294.21	
23	0.5749	967.3	984.4	981.2	0.133	3.491	95.573	0.720	0.068	0.010	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1295.35	
24	0.5942	992.4	1010.0	1006.6	0.300	3.524	92.208	3.503	0.407	0.023	0.030	0.003	0.002	0.000	0.000	0.000	0.000	0.000	1307.04	
25	0.6108	1017.3	1035.4	1031.9	0.463	3.322	89.368	6.044	0.708	0.034	0.053	0.005	0.004	0.000	0.000	0.000	0.000	0.000	1321.53	
26	0.6141	1024.7	1042.9	1039.5	0.493	3.131	88.870	6.607	0.789	0.039	0.061	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1327.66	
27	0.5978	1001.7	1019.4	1016.3	0.346	3.230	91.654	4.209	0.492	0.027	0.036	0.003	0.003	0.000	0.000	0.000	0.000	0.000	1315.27	
28	0.5770	970.8	988.0	984.8	0.154	3.441	95.220	1.057	0.107	0.012	0.007	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1297.73	
29	0.5750	967.7	984.8	981.7	0.135	3.479	95.546	0.754	0.071	0.011	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1295.72	
30	0.5942	994.9	1012.5	1009.3	0.304	3.364	92.253	3.600	0.417	0.024	0.032	0.003	0.002	0.000	0.000	0.000	0.000	0.000	1310.27	
31	0.6120	1020.2	1038.2	1034.8	0.478	3.238	89.173	6.295	0.716	0.035	0.056	0.005	0.004	0.000	0.000	0.000	0.000	0.000	1323.89	
Avg	0.5939	995.0	1012.5	1009.1	0.310	3.332	92.283	3.625	0.394	0.022	0.029	0.003	0.002	0.000	0.000	0.000	0.000	0.000	1310.63	

Zone 34

Source Daily Summary

August 2019

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 Dry	Heating Value As Del	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.6859	1128.0	1148.0	1106.6	0.998	2.831	74.978	19.947	1.209	0.013	0.022	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1382.95	-26.87
2	0.6859	1127.9	1147.9	1102.2	1.001	2.836	74.935	20.029	1.163	0.013	0.022	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1382.79	-27.03
3	0.6857	1127.7	1147.7	1099.6	1.001	2.826	74.956	20.034	1.154	0.011	0.018	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1382.83	-27.30
4	0.6846	1126.0	1146.0	1101.4	1.009	2.819	75.038	20.088	1.019	0.009	0.016	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1381.79	-28.41
5	0.6857	1128.2	1148.1	1104.5	1.008	2.789	74.935	20.110	1.138	0.008	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1383.34	-27.46
6	0.6869	1129.9	1149.9	1104.2	1.006	2.807	74.840	20.041	1.269	0.013	0.023	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1384.13	-26.05
7	0.6896	1133.9	1154.0	1116.3	1.005	2.808	74.548	20.088	1.503	0.016	0.028	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1386.43	-23.70
8	0.6878	1130.7	1150.7	1108.4	1.007	2.834	74.752	20.003	1.367	0.013	0.022	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1384.30	-25.33
9	0.6881	1131.9	1151.9	1108.0	1.007	2.790	74.700	20.092	1.383	0.011	0.016	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1385.46	-25.16
10	0.6913	1133.6	1153.7	1113.5	1.019	2.842	74.173	20.415	1.526	0.011	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1386.94	-23.30
11	0.6899	1134.1	1154.2	1115.6	1.007	2.822	74.493	20.088	1.568	0.010	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1386.38	-23.73
12	0.6880	1131.7	1151.7	1113.9	1.010	2.794	74.748	20.005	1.411	0.012	0.019	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1385.23	-25.07
13	0.6896	1134.8	1154.9	1118.9	1.005	2.756	74.586	20.051	1.569	0.013	0.020	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1387.51	-23.54
14	0.6877	1131.3	1151.3	1110.2	1.012	2.782	74.757	20.063	1.359	0.011	0.016	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1385.13	-24.62
15	0.6876	1131.3	1151.3	1109.7	1.013	2.775	74.755	20.089	1.345	0.009	0.014	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1385.18	-25.73
16	0.6868	1130.6	1150.6	1107.3	1.005	2.751	74.968	19.863	1.378	0.012	0.020	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1385.17	-26.07
17	0.6845	1126.0	1146.0	1113.2	1.015	2.802	75.111	19.961	1.097	0.005	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1381.87	-28.35
18	0.6887	1126.9	1146.9	1127.2	1.159	2.738	72.651	22.183	1.258	0.005	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1390.17	-23.52
19	0.6832	1132.8	1152.9	1109.7	1.019	2.842	74.173	20.415	1.526	0.011	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1386.92	-23.21
20	0.6832	1129.1	1149.1	1113.0	1.019	2.842	74.173	20.415	1.526	0.011	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1386.92	-23.21
21	0.6832	1128.9	1148.9	1113.8	1.019	2.842	74.173	20.415	1.526	0.011	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1386.92	-23.21
22	0.6832	1129.0	1149.0	1112.1	1.019	2.842	74.173	20.415	1.526	0.011	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1386.92	-23.21
23	0.6832	1128.9	1148.9	1110.1	1.019	2.842	74.173	20.415	1.526	0.011	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1386.92	-23.21
24	0.6832	1129.1	1149.1	1108.0	1.019	2.842	74.173	20.415	1.526	0.011	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1386.92	-23.21
25	0.6832	1129.1	1149.0	1111.8	1.019	2.842	74.173	20.415	1.526	0.011	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1386.92	-23.21
26	0.6832	1128.7	1148.7	1121.2	1.019	2.842	74.173	20.415	1.526	0.011	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1386.92	-23.21
27	0.6832	1129.2	1149.2	1127.0	1.019	2.842	74.173	20.415	1.526	0.011	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1386.92	-23.21
28	0.6912	1138.7	1158.9	1168.9	1.127	2.700	71.991	22.220	1.900	0.022	0.036	0.002	0.002	0.000	0.000	0.000	0.000	0.000	1397.98	-15.24
29	0.6815	1120.5	1140.3	1137.4	1.050	2.799	75.595	19.626	0.913	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1378.15	-30.76
30	0.6809	1121.1	1141.0	1138.0	1.060	2.690	75.566	19.934	0.737	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1379.53	-31.65
31	0.6908	1137.0	1157.1	1154.1	1.042	2.682	73.840	21.382	1.023	0.012	0.019	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1389.01	-25.00
Avg	0.6861	1130.0	1149.9	1116.3	1.024	2.802	74.467	20.324	1.355	0.011	0.017	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1385.63	-25.05

Zone 43

MANDAN BORDER

NBPL - St Anthony

Weighted

Start Date	End Date	MCF	DK	BTU	MCF	DK	BTU Zone 28	AVG BTU	
8/1/2019	8/2/2019				736	885	1.2022	1.202	8/1/2019
8/2/2019	8/3/2019				713	858	1.2022	1.202	8/2/2019
8/3/2019	8/4/2019				644	773	1.2006	1.201	8/3/2019
8/4/2019	8/5/2019				682	819	1.2007	1.201	8/4/2019
8/5/2019	8/6/2019				759	910	1.1977	1.198	8/5/2019
8/6/2019	8/7/2019				845	1011	1.1956	1.196	8/6/2019
8/7/2019	8/8/2019				837	995	1.1883	1.188	8/7/2019
8/8/2019	8/9/2019				761	906	1.1906	1.191	8/8/2019
8/9/2019	8/10/2019				749	894	1.1927	1.193	8/9/2019
8/10/2019	8/11/2019				672	806	1.2010	1.201	8/10/2019
8/11/2019	8/12/2019				715	882	1.2353	1.235	8/11/2019
8/12/2019	8/13/2019				811	967	1.1932	1.193	8/12/2019
8/13/2019	8/14/2019				880	1055	1.1985	1.199	8/13/2019
8/14/2019	8/15/2019				910	1093	1.2010	1.201	8/14/2019
8/15/2019	8/16/2019				861	1031	1.1977	1.198	8/15/2019
8/16/2019	8/17/2019				748	896	1.1978	1.198	8/16/2019
8/17/2019	8/18/2019				771	917	1.1893	1.189	8/17/2019
8/18/2019	8/19/2019				731	870	1.1907	1.191	8/18/2019
8/19/2019	8/20/2019				757	903	1.1918	1.192	8/19/2019
8/20/2019	8/21/2019				802	958	1.1938	1.194	8/20/2019
8/21/2019	8/22/2019				802	958	1.1937	1.194	8/21/2019
8/22/2019	8/23/2019				786	936	1.1917	1.192	8/22/2019
8/23/2019	8/24/2019				756	899	1.1893	1.189	8/23/2019
8/24/2019	8/25/2019				801	957	1.1956	1.196	8/24/2019
8/25/2019	8/26/2019				811	963	1.1858	1.186	8/25/2019
8/26/2019	8/27/2019				834	993	1.1905	1.191	8/26/2019
8/27/2019	8/28/2019				999	1192	1.1929	1.193	8/27/2019
8/28/2019	8/29/2019				812	971	1.1967	1.197	8/28/2019
8/29/2019	8/30/2019				1016	1215	1.1961	1.196	8/29/2019
8/30/2019	8/31/2019				779	929	1.1924	1.192	8/30/2019
8/31/2019	9/1/2019				729	867	1.1909	1.191	8/31/2019
		0	0	#DIV/0!	24,509	29,309	1.1960	1.1960	



Alliance Pipeline

DAILY ANALYSIS — USA
 ND07MD1 — Hankinson Sales
 August 2019

DAY	Heating Value (BTU/#3)	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	1,158.634	0.6639	83.9905	9.8297	3.5923	0.3801	0.6815	0.0589	0.0458	0.0230	0.9800	0.4065	0.0119
2	1,160.560	0.6657	83.8296	9.8114	3.6889	0.3927	0.7084	0.0607	0.0475	0.0226	0.9927	0.4338	0.0116
3	1,160.881	0.6663	83.7636	9.7944	3.7014	0.4002	0.7291	0.0624	0.0481	0.0217	1.0258	0.4407	0.0125
4	1,157.326	0.6639	84.0858	9.6135	3.6316	0.3858	0.6930	0.0599	0.0471	0.0214	0.9974	0.4518	0.0127
5	1,161.690	0.6662	83.8032	9.7691	3.7604	0.3983	0.7138	0.0614	0.0476	0.0215	0.9787	0.4341	0.0119
6	1,158.800	0.6641	84.0710	9.6478	3.6779	0.3868	0.6840	0.0615	0.0481	0.0211	0.9614	0.4278	0.0125
7	1,161.946	0.6658	83.8575	9.7893	3.7595	0.3939	0.6939	0.0626	0.0498	0.0220	0.9246	0.4339	0.0129
8	1,163.053	0.6672	83.6757	9.8356	3.8093	0.3997	0.7085	0.0659	0.0508	0.0224	0.9779	0.4413	0.0128
9	1,162.225	0.6669	83.6737	9.8568	3.7885	0.3958	0.7024	0.0624	0.0485	0.0205	1.0043	0.4342	0.0129
10	1,159.964	0.6656	83.8959	9.6701	3.7471	0.3942	0.7003	0.0620	0.0485	0.0205	1.0082	0.4404	0.0127
11	1,157.571	0.6618	84.4852	9.4671	3.5926	0.3924	0.6740	0.0637	0.0492	0.0206	0.8137	0.4290	0.0126
12	1,161.914	0.6675	83.6913	9.6349	3.8522	0.4088	0.7490	0.0633	0.0471	0.0187	1.0951	0.4270	0.0127
13	1,162.139	0.6669	83.7260	9.7725	3.7881	0.4021	0.7218	0.0638	0.0488	0.0201	1.0118	0.4321	0.0129
14	1,161.584	0.6668	83.7794	9.6695	3.8131	0.4017	0.7229	0.0654	0.0491	0.0203	1.0269	0.4393	0.0125
15	1,161.691	0.6668	83.7867	9.6732	3.7937	0.4064	0.7317	0.0653	0.0495	0.0204	1.0226	0.4382	0.0124
16	1,163.405	0.6675	83.6483	9.8273	3.8278	0.4047	0.7164	0.0652	0.0505	0.0209	0.9999	0.4271	0.0120
17	1,160.918	0.6653	83.9301	9.7178	3.7145	0.3940	0.7071	0.0635	0.0508	0.0250	0.9881	0.3974	0.0117
18	1,159.674	0.6649	84.0367	9.5776	3.6996	0.3972	0.7211	0.0639	0.0487	0.0262	1.0111	0.4066	0.0113
19	1,159.641	0.6646	84.0297	9.6305	3.6960	0.3921	0.7033	0.0629	0.0473	0.0269	1.0008	0.3994	0.0110
20	1,159.627	0.6645	84.0035	9.7011	3.6757	0.3904	0.6974	0.0618	0.0468	0.0233	0.9843	0.4044	0.0113
21	1,162.026	0.6660	83.8378	9.7720	3.7442	0.3995	0.7170	0.0628	0.0480	0.0241	0.9721	0.4111	0.0114
22	1,164.062	0.6675	83.6639	9.8618	3.7679	0.4095	0.7551	0.0639	0.0486	0.0230	0.9787	0.4162	0.0115
23	1,164.987	0.6682	83.5697	9.9116	3.7928	0.4136	0.7627	0.0633	0.0492	0.0225	0.9888	0.4146	0.0113
24	1,163.610	0.6674	83.6742	9.8558	3.7411	0.4068	0.7581	0.0657	0.0519	0.0232	0.9905	0.4202	0.0124
25	1,164.362	0.6679	83.6034	9.8887	3.7554	0.4090	0.7654	0.0674	0.0519	0.0263	1.0209	0.4001	0.0117
26	1,167.873	0.6703	83.3891	9.8964	3.8900	0.4250	0.7964	0.0709	0.0573	0.0307	1.0173	0.4156	0.0113
27	1,164.134	0.6681	83.5865	9.8354	3.8094	0.4088	0.7572	0.0638	0.0512	0.0256	1.0340	0.4162	0.0119
28	1,163.716	0.6674	83.6449	9.9008	3.7473	0.4029	0.7411	0.0673	0.0513	0.0253	0.9945	0.4131	0.0118
29	1,164.828	0.6681	83.4965	10.0138	3.7909	0.4014	0.7370	0.0639	0.0494	0.0229	1.0007	0.4110	0.0125
30	1,164.819	0.6684	83.5417	9.9002	3.8153	0.4087	0.7559	0.0644	0.0497	0.0238	1.0022	0.4258	0.0122
31	1,163.667	0.6683	83.5595	9.8383	3.8122	0.4037	0.7553	0.0656	0.0497	0.0236	1.0355	0.4446	0.0121
Volume Weight Avg Energy	1,161.987	0.6664	83.7843	9.7744	3.7501	0.4002	0.7247	0.0637	0.0493	0.0230	0.9948	0.4234	0.0121
Energy	1,161.992	0.6664	83.7838	9.7747	3.7502	0.4002	0.7248	0.0637	0.0493	0.0230	0.9948	0.4234	0.0121

Watford City

Watford City West Border

Watford City East Border

Weighted

Start Date	End Date	BTU			BTU			AVG BTU	
		MCF	DK	Zone 25	MCF	DK	Zone 43		
8/1/2019	8/2/2019	116	138	1.1972	66	76	1.1480	1.179	8/1/2019
8/2/2019	8/3/2019	93	112	1.1972	37	43	1.1479	1.183	8/2/2019
8/3/2019	8/4/2019	97	116	1.1972	35	40	1.1477	1.184	8/3/2019
8/4/2019	8/5/2019	110	132	1.1972	45	51	1.1460	1.182	8/4/2019
8/5/2019	8/6/2019	122	146	1.1972	61	70	1.1481	1.181	8/5/2019
8/6/2019	8/7/2019	111	133	1.1972	43	49	1.1499	1.184	8/6/2019
8/7/2019	8/8/2019	130	156	1.1972	59	69	1.1540	1.184	8/7/2019
8/8/2019	8/9/2019	125	150	1.1972	80	92	1.1507	1.179	8/8/2019
8/9/2019	8/10/2019	89	107	1.1972	59	68	1.1519	1.179	8/9/2019
8/10/2019	8/11/2019	101	120	1.1972	54	62	1.1537	1.182	8/10/2019
8/11/2019	8/12/2019	126	151	1.1972	46	53	1.1542	1.186	8/11/2019
8/12/2019	8/13/2019	142	170	1.1972	77	89	1.1517	1.181	8/12/2019
8/13/2019	8/14/2019	149	179	1.1972	65	76	1.1549	1.184	8/13/2019
8/14/2019	8/15/2019	131	157	1.1972	92	106	1.1513	1.178	8/14/2019
8/15/2019	8/16/2019	134	161	1.1972	90	104	1.1513	1.179	8/15/2019
8/16/2019	8/17/2019	114	137	1.1972	54	62	1.1506	1.182	8/16/2019
8/17/2019	8/18/2019	149	179	1.1972	70	80	1.1460	1.181	8/17/2019
8/18/2019	8/19/2019	126	151	1.1972	65	75	1.1469	1.180	8/18/2019
8/19/2019	8/20/2019	115	138	1.1972	92	107	1.1529	1.178	8/19/2019
8/20/2019	8/21/2019	126	151	1.1972	88	102	1.1491	1.177	8/20/2019
8/21/2019	8/22/2019	124	149	1.1972	63	73	1.1489	1.181	8/21/2019
8/22/2019	8/23/2019	117	140	1.1972	54	63	1.1490	1.182	8/22/2019
8/23/2019	8/24/2019	94	113	1.1972	57	66	1.1489	1.179	8/23/2019
8/24/2019	8/25/2019	84	101	1.1972	61	71	1.1491	1.177	8/24/2019
8/25/2019	8/26/2019	105	126	1.1972	47	54	1.1490	1.182	8/25/2019
8/26/2019	8/27/2019	133	159	1.1972	84	96	1.1487	1.178	8/26/2019
8/27/2019	8/28/2019	147	176	1.1972	70	80	1.1492	1.182	8/27/2019
8/28/2019	8/29/2019	129	155	1.1972	50	58	1.1589	1.187	8/28/2019
8/29/2019	8/30/2019	135	161	1.1972	74	85	1.1403	1.177	8/29/2019
8/30/2019	8/31/2019	116	139	1.1972	52	59	1.1410	1.180	8/30/2019
8/31/2019	9/1/2019	90	108	1.1972	50	58	1.1571	1.183	8/31/2019
		3,680	4,411		1,940	2,237	1.1499	1.1810	

ROW ID	LOCATION DESCRIPTION	GROSS HEATING VALUE (BTU/CF)	SPECIFIC GRAVITY	WOBBE (calc)	CRICONDENTHERM (deg F)	NITROGEN (mole percent)	CARBON DIOXIDE (mole percent)	METHANE (mole percent)	ETHANE (mole percent)	PROPANE (mole percent)	NORMAL BUTANE (mole percent)	ISO BUTANE (mole percent)	PENTANE (mole percent)	ISO PENTANE (mole percent)	NEO PENTANE (mole percent)	HEXANES PLUS (mole percent)	HYDROGEN (mole percent)	HELIUM (mole percent)	PRODUCTION DATE	POSTING DATE	Changestimestamp	NOTES
11587	GLEN ULLIN	1096	0.6403	1369.7	-49.3	1.8675	0.8533	83.8274	12.2656	0.9538	0.0441	0.0241	0.0027	0.0029	0	0.0001	0.1394	0.0194	7/31/2019	8/1/2019	8/1/2019 3:48:20 PM	
11587	GLEN ULLIN	1090.7	0.636	1367.6	-52.3	1.8263	0.8304	84.5181	11.7234	0.86	0.0379	0.0203	0.0024	0.0024	0	0.0003	0.1595	0.0192	8/1/2019	8/2/2019	8/2/2019 3:41:45 PM	
11587	GLEN ULLIN	1090.6	0.636	1367.6	-53	1.7992	0.845	84.4984	11.7812	0.8378	0.032	0.0184	0.0018	0.0018	0	0	0.1653	0.019	8/2/2019	8/3/2019	8/3/2019 3:42:07 PM	
11587	GLEN ULLIN	1089.6	0.6348	1367.5	-54	1.7481	0.8475	84.6688	11.7253	0.7736	0.0291	0.0169	0.0013	0.0015	0	0.0002	0.1691	0.0188	8/3/2019	8/4/2019	8/4/2019 3:46:04 PM	
11587	GLEN ULLIN	1095	0.6387	1370.1	-49.9	1.7689	0.8639	84.0767	12.1477	0.8844	0.0466	0.0276	0.0032	0.0038	0	0.0004	0.158	0.0189	8/4/2019	8/5/2019	8/5/2019 3:47:32 PM	
11587	GLEN ULLIN	1091.7	0.6365	1368.3	-52.6	1.7468	0.8714	84.407	11.9425	0.7942	0.0354	0.02	0.0023	0.0025	0	0	0.1594	0.0188	8/5/2019	8/6/2019	8/6/2019 3:48:01 PM	
11587	GLEN ULLIN	1090.9	0.636	1367.9	-52.8	1.7453	0.8732	84.575	11.7555	0.8313	0.0348	0.0195	0.0022	0.0022	0	0	0.1422	0.0189	8/6/2019	8/7/2019	8/7/2019 3:49:04 PM	
11587	GLEN ULLIN	1092.8	0.6375	1368.7	-50.9	1.7675	0.8746	84.3535	11.8135	0.9366	0.0434	0.0236	0.0025	0.0027	0	0	0.1631	0.0191	8/7/2019	8/8/2019	8/8/2019 3:43:32 PM	
11587	GLEN ULLIN	1092.9	0.6379	1368.3	-50.9	1.7958	0.8763	84.2633	11.8928	0.9205	0.0411	0.0236	0.0025	0.0029	0	0	0.1622	0.019	8/8/2019	8/9/2019	8/9/2019 3:43:24 PM	
11587	GLEN ULLIN	1094.7	0.6397	1368.8	-49.9	1.8427	0.8823	83.9583	12.1324	0.9579	0.0387	0.0218	0.0021	0.0023	0	0	0.1421	0.0195	8/9/2019	8/10/2019	8/10/2019 3:47:08 PM	
11587	GLEN ULLIN	1099.6	0.6434	1370.9	-47.2	1.9121	0.8725	83.4964	12.5094	1.065	0.0464	0.0257	0.0025	0.0027	0	0	0.0472	0.0204	8/10/2019	8/11/2019	8/11/2019 3:39:58 PM	
11587	GLEN ULLIN	1097.8	0.642	1370.1	-48.9	1.8963	0.8716	83.735	12.4123	0.9867	0.0376	0.0217	0.0021	0.0025	0	0	0.0137	0.0207	8/11/2019	8/12/2019	8/12/2019 3:40:56 PM	
11587	GLEN ULLIN	1098	0.6421	1370.2	-48.2	1.8697	0.8817	83.7456	12.3338	1.0319	0.0432	0.0237	0.0023	0.0025	0	0	0.0454	0.0202	8/12/2019	8/13/2019	8/13/2019 3:49:29 PM	
11587	GLEN ULLIN	1097.2	0.6411	1370.3	-49.2	1.8425	0.8748	83.8823	12.2938	0.9849	0.0377	0.0221	0.0019	0.0021	0	0	0.0381	0.0199	8/13/2019	8/14/2019	8/14/2019 3:50:38 PM	
11587	GLEN ULLIN	1096.8	0.6412	1369.7	-49.1	1.8693	0.8723	83.8873	12.2625	0.9833	0.0417	0.0238	0.0021	0.0024	0	0.0001	0.0348	0.0206	8/14/2019	8/15/2019	8/15/2019 3:40:40 PM	
11587	GLEN ULLIN	1096.2	0.6405	1369.7	-49.5	1.8499	0.8702	84.011	12.1959	0.9513	0.0441	0.0241	0.0026	0.0028	0	0	0.0281	0.0202	8/15/2019	8/16/2019	8/16/2019 3:39:09 PM	
11587	GLEN ULLIN	1097	0.6416	1369.6	-48.5	1.9048	0.8692	83.6775	12.334	1.0138	0.0429	0.0238	0.0023	0.0025	0	0	0.1092	0.0203	8/16/2019	8/17/2019	8/17/2019 3:39:57 PM	
11587	GLEN ULLIN	1091.8	0.6372	1367.8	-52.5	1.8099	0.8653	84.3723	11.9424	0.8279	0.0337	0.0184	0.0016	0.0018	0	0	0.1071	0.0197	8/17/2019	8/18/2019	8/18/2019 3:38:39 PM	
11587	GLEN ULLIN	1093.6	0.6392	1367.8	-51	1.9062	0.8577	83.9796	12.1571	0.8987	0.0348	0.0194	0.0012	0.0015	0	0	0.1233	0.0206	8/18/2019	8/19/2019	8/19/2019 3:43:20 PM	
11587	GLEN ULLIN	1093.3	0.639	1367.6	-50.1	1.8901	0.8651	84.1777	11.8843	0.9739	0.0472	0.0251	0.0024	0.0025	0	0	0.1115	0.0203	8/19/2019	8/20/2019	8/20/2019 3:23:34 PM	
11587	GLEN ULLIN	1095.3	0.64	1369.1	-49.4	1.8683	0.8603	83.9705	12.1116	0.9795	0.0451	0.0248	0.0024	0.0027	0	0	0.1146	0.0204	8/20/2019	8/21/2019	8/21/2019 3:23:48 PM	
11587	GLEN ULLIN	1092.7	0.638	1368	-50.6	1.8422	0.8566	84.2936	11.8452	0.9271	0.0482	0.0253	0.003	0.0032	0	0.0001	0.1354	0.0203	8/21/2019	8/22/2019	8/22/2019 3:26:01 PM	
11587	GLEN ULLIN	1091.7	0.6374	1367.4	-50.6	1.8434	0.8603	84.4741	11.6141	0.9687	0.0515	0.028	0.0031	0.0034	0	0	0.1335	0.0201	8/22/2019	8/23/2019	8/23/2019 3:24:56 PM	
11587	GLEN ULLIN	1093.6	0.6389	1368.2	-50.4	1.8572	0.8736	84.1157	12.0083	0.9308	0.0429	0.0233	0.0024	0.0026	0	0	0.123	0.0203	8/23/2019	8/24/2019	8/24/2019 3:24:58 PM	
11587	GLEN ULLIN	1095.3	0.6405	1368.7	-49.5	1.8949	0.8748	83.8491	12.2389	0.9429	0.0448	0.024	0.0026	0.0028	0	0	0.1045	0.0208	8/24/2019	8/25/2019	8/25/2019 3:22:24 PM	
11587	GLEN ULLIN	1094	0.6396	1368	-50.4	1.8778	0.8832	83.9841	12.1835	0.8782	0.0443	0.0231	0.0025	0.0026	0	0	0.1005	0.0203	8/25/2019	8/26/2019	8/26/2019 3:26:59 PM	
11587	GLEN ULLIN	1093.5	0.6394	1367.6	-50.9	1.8743	0.8953	83.9554	12.1996	0.872	0.0366	0.0198	0.0021	0.0022	0	0	0.1224	0.0205	8/26/2019	8/27/2019	8/27/2019 3:28:23 PM	
11587	GLEN ULLIN	1098.3	0.6428	1369.8	-48.1	1.9097	0.8963	83.3906	12.6674	0.9832	0.0376	0.0212	0.0021	0.0022	0	0	0.1599	0.02	8/27/2019	8/28/2019	8/28/2019 3:25:32 PM	
11587	GLEN ULLIN	1097	0.6411	1370.1	-47.9	1.8591	0.8728	83.7298	12.2106	1.0561	0.0505	0.0272	0.0026	0.0029	0	0.0001	0.1691	0.0194	8/28/2019	8/29/2019	8/29/2019 3:26:16 PM	
11587	GLEN ULLIN	1094.8	0.64	1368.5	-50.6	1.869	0.885	83.7758	12.3709	0.8808	0.033	0.0182	0.0012	0.0013	0	0	0.1455	0.0195	8/29/2019	8/30/2019	8/30/2019 3:26:44 PM	
11587	GLEN ULLIN	1096.5	0.6419	1368.6	-49.7	1.9247	0.8955	83.3992	12.6682	0.8939	0.0287	0.0181	0.0012	0.0017	0	0.0001	0.1485	0.0203	8/30/2019	8/31/2019	8/31/2019 3:29:39 PM	
11587	GLEN ULLIN	1098.3	0.643	1369.7	-48.6	1.9223	0.8934	83.205	12.8052	0.9466	0.0287	0.0176	0.0013	0.0016	0	0	0.158	0.0205	8/31/2019	9/1/2019	9/1/2019 3:25:29 PM	

32 record(s) retrieved

NORTH DAKOTA HEATING VALUE ZONES		
ZONES	MEASURING DEVICE	LOCATION
211	Chromatograph	Sidney Border
24	Chromatograph	Williston Border
241	Accumulated Sample	Fairview Border
25	Accumulated Sample	Watford City West Border
260	Chromatograph	North Tioga Transfer
261	Chromatograph	Tioga Comp Station – Robinson Lake Plant
262	Chromatograph	Minot Border
263	Accumulated Sample	Lignite Plant
264	Accumulated Sample	Epping Border
265	Chromatograph	Tioga Comp Station – 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	Chromatograph	Bowman Border
43	Chromatograph	Spring Creek
550	Accumulated Sample & Chromatograph	Mandan Border
600	Chromatograph	Hankinson Area
610	Accumulated Sample & Chromatograph	Watford City
802	Chromatograph	Linton

MONTANA DAKOTA UTILITIES CO
 NORTH DAKOTA
 HEATING VALUE DATA

STATE	ZONE	ZONE BOUNDARY	12 MONTH AVERAGE	AUG 19	JULY 19	JUNE 19	MAY 19	APR 19	MAR 19	FEB 19	JAN 19	DEC 18	NOV 18	OCT 18	SEPT 18	ZONE
MT/ND	211	Sidney Border - MonDak Trf - Sidney Plt	1203	1200	1199	1208	1207	1202	1205	1207	1202	1200	1207	1202	1191	211
ND	24	Williston Border - Charbonneau Station	1160	1165	1165	1152	1158	1164	1166	1162	1163	1164	1163	1140	1152	24
ND	25	Watford City West Border	1197	1197	1195	1199	1188	1202	1198	1204	1191	1196	1199	1199	1200	25
ND	28	Bismarck Station - Glen Ullin Station	1156	1196	1186	1205	1178	1147	1144	1115	1141	1120	1112	1153	1173	28
ND	31	Dickinson Brd - Belfield Trf - G Ullin Stn	1137	1114	1128	1168	1165	1152	1143	1116	1139	1132	1110	1134	1144	31
ND/MT	32	Cabin Creek Station - Belfied Transfer	1120	1137	1133	1147	1138	1131	1139	1104	1128	1093	1068	1110	1106	32
ND	33	Little Knife Plant	1173	1175	1175	1174	1173	1173	1173	1173	1172	1173	1174	1172	1172	33
ND	34	Badlands Plant/Bowman Border	1021	1013	989	978	979	979	1013	1062	1048	1042	1073	1063	1018	34
ND	43	Spring Creek I - Sax Valve I	1114	1150	1140	1149	1148	1136	1127	1061	1044	1051	1062	1144	1158	43
ND/MT	241	Fairview Border	1190	1194	1191	1200	1202	1196	1188	1204	1173	1181	1193	1175	1186	241
ND	260	North Tioga Transfer - Nesson Plant	1116	1135	1132	1115	1118	1121	1127	1109	1113	1104	1095	1102	1120	260
ND	261	Tioga Comp Station - Robinson Lake Plan	1178	1189	1179	1175	1164	1170	1179	1184	1180	1173	1177	1183	1181	261
ND	262	Minot Bdr - Palermo Bdr - Bismarck Stn	1186	1197	1198	1205	1185	1183	1182	1182	1183	1182	1182	1179	1175	262
ND	263	Lignite Plant	1149	1163	1164	1160	1152	1148	1149	1146	1149	1146	1127	1140	1146	263
ND	264	Epping Border	1148	1155	1154	1150	1143	1151	1153	1148	1149	1147	1153	1139	1135	264
ND	265	Tioga Comp Station - County Line Plant	1178	1177	1175	1175	1177	1171	1181	1184	1179	1173	1177	1183	1182	265
ND	266	County Line Plant	1175	1170	1166	1170	1171	1174	1176	1170	1177	1179	1180	1181	1180	266
ND	271	Bismarck Station - Cleveland Station	1184	1197	1196	1206	1186	1183	1181	1168	1176	1180	1180	1178	1173	271
ND	272	Cleveland Station - Mapleton	1183	1196	1195	1206	1185	1183	1180	1167	1176	1180	1179	1177	1173	272
ND	273	Cleveland Station - Grafton Border	1183	1195	1194	1204	1185	1180	1181	1167	1176	1180	1179	1177	1173	273
ND	550	Mandan Border / NBPL-St Anthony	1148	1196	1186	1202	1176	1147	1119	1107	1121	1106	1102	1145	1173	550
ND	610	MDU-Watford City BTU	1156	1181	1180	1187	1176	1175	1158	1113	1101	1109	1131	1180	1181	610
ND	802	NBPL - Linton	1091	1094	1091	1098	1101	1101	1083	1083	1083	1084	1086	1092	1097	802
ND	903	Hettinger Propane	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	903
ND	600	Alliance Pipeline - Hankinson	1158	1162	1161	1158	1169	1163	1157	1151	1155	1153	1155	1155	1160	600

THERMAL ZONE VARIANCE DOCUMENTATION		
August 2019		
<i>ZONE</i>	<i>BTU VARIANCE</i>	<i>REASON</i>
34	24	Source of Gas