



UTILITIES CO.

A Subsidiary of MDU Resources Group, Inc.

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

March 21, 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 – January 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 February 2019.
2. Attachment B consists of copies of the monthly Heating Value Test Reports received from our suppliers for the month of January 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 January 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,

A handwritten signature in black ink that reads 'Tamie Aberle'.

Tamie Aberle  
Director of Regulatory Affairs

**Montana-Dakota Utilities Co.**  
**Therm Billing Factors - North Dakota**  
**Feb-19**

Town	Heat Zone	Therm Factor
MDU-303-ALEXANDER	025	1.1296
MDU-308-ARNEGARD	025	1.1296
MDU-314-APPLE VALLEY	271	1.1385
MDU-318-BEACH	032	1.0101
MDU-319-BELFIELD	032	1.0175
MDU-323-BERTHOLD	262	1.1164
MDU-324-BEULAH	032	1.0175
MDU-327-BISMARCK	028	1.0807
MDU-330-BOWMAN	034	0.9771
MDU-337-BURLINGTON	262	1.1405
MDU-343-CARRINGTON	273	1.1385
MDU-344-CLEVELAND	272	1.1305
MDU-364-CAVALIER	273	1.1626
MDU-365-DAWSON	271	1.1305
MDU-368-DES LACS	262	1.1244
MDU-369-DICKINSON	031	1.0615
MDU-374-FT TOTTEN	273	1.1466
MDU-375-DEVILS LAKE	273	1.1466
MDU-379-BARLOW	273	1.1385
MDU-384-EPPING	264	1.0833
MDU-387-ELDRIDGE	272	1.1385
MDU-407-GLADSTONE	031	1.0615
MDU-411-GLEN ULLIN	031	1.0692
MDU-413-GOLVA	032	0.9952
MDU-416-GARRISON	262	1.1244
MDU-417-GRAFTON	273	1.1706
MDU-429-HEBRON	031	1.0692
MDU-432-HETTINGER	903	2.4049
MDU-449-JAMESTOWN	272	1.1466
MDU-459-KILLDEER	033	1.1079
MDU-463-LANGDON	273	1.1385
MDU-469-LEFOR	031	1.0615
MDU-474-LIGNITE	263	1.0902
MDU-475-LINTON	802	1.0459
MDU-478-LINCOLN	028	1.0807
MDU-488-MCKENZIE	271	1.1385
MDU-494-MEDINA	271	1.1305
MDU-498-MANDAN	028	1.0807
MDU-500-MARMARTH	034	0.9629
MDU-505-MINOT	262	1.1405
MDU-510-MOTT	031	1.0615
MDU-512-MAX	262	1.1405
MDU-522-NEW ENGLAND	031	1.0538
MDU-524-NEW SALEM	028	1.0807
MDU-532-NEW ROCKFORD	273	1.1385
MDU-539-PARK RIVER	273	1.1626
MDU-540-PALERMO	262	1.1164
MDU-558-RAY	264	1.0833
MDU-561-REGENT	031	1.0615

MDU-563-RHAME	034	0.9488
MDU-564-RICHARDTON	031	1.0538
MDU-568-ROSS	261	1.0999
MDU-572-RUTHVILLE	262	1.1405
MDU-574-SANBORN	272	1.1466
MDU-583-SENTINEL BUTTE	032	1.0101
MDU-588-SOUTH HEART	031	1.0538
MDU-717-SPIRITWOOD	272	1.1466
MDU-590-SPRINGBROOK	264	1.0833
MDU-591-STANLEY	261	1.1159
MDU-593-STEELE	271	1.1305
MDU-594-STERLING	028	1.0807
MDU-598-SHEYENNE	273	1.1466
MDU-605-SURREY	262	1.1405
MDU-610-TAPPEN	271	1.1305
MDU-611-TAYLOR	031	1.0538
MDU-616-TIOGA	260	1.0502
MDU-619-TURTLE LAKE	262	1.1244
MDU-620-TRENTON	024	1.1073
MDU-624-UNDERWOOD	262	1.1244
MDU-625-VALLEY CITY	272	1.1546
MDU-629-WALHALLA	273	1.1626
MDU-632-WATFORD CITY	610	1.0475
MDU-636-WHEELOCK	264	1.0756
MDU-637-WHITE EARTH	261	1.1079
MDU-642-WILLISTON	024	1.1073
MDU-646-WASHBURN	262	1.1324
MDU-647-WILTON	262	1.1164
MDU-664-RIVERDALE	262	1.1244
MDU-691-FAIRVIEW	241	1.1235
MDU-712-MINOT AFB	262	1.1405
MDU-718-FAIRMOUNT	600	1.1336
MDU-732-NEKOMA	273	1.1385
MDU-732-MSR SITE	273	1.1385

# Source Daily Summary

January 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	0.7206	1170.7	1191.4	1188.1	1.123	3.296	70.618	21.390	3.224	0.112	0.213	0.013	0.012	0.000	0.000	0.000	0.000	0.000	1400.09	
2	0.7258	1176.3	1197.1	1193.7	1.165	3.374	69.946	21.617	3.529	0.119	0.224	0.014	0.012	0.000	0.000	0.000	0.000	0.000	1401.74	
3	0.7266	1174.4	1195.2	1191.8	1.175	3.550	70.073	21.024	3.775	0.131	0.245	0.014	0.012	0.000	0.000	0.000	0.000	0.000	1398.67	
4	0.7206	1165.6	1186.2	1182.8	1.147	3.561	70.922	20.522	3.468	0.122	0.230	0.014	0.012	0.000	0.000	0.000	0.000	0.000	1394.02	
5	0.7201	1164.1	1184.7	1181.3	1.154	3.602	71.023	20.363	3.475	0.125	0.232	0.013	0.012	0.000	0.000	0.000	0.000	0.000	1392.64	
6	0.7274	1175.7	1196.5	1192.9	1.157	3.572	70.268	20.605	3.870	0.161	0.322	0.023	0.022	0.000	0.000	0.000	0.000	0.000	1399.35	
7	0.7231	1171.2	1192.0	1188.4	1.133	3.473	70.796	20.505	3.606	0.148	0.296	0.021	0.021	0.000	0.000	0.000	0.000	0.000	1398.25	
8	0.7233	1174.1	1194.9	1191.5	1.095	3.376	70.552	20.906	3.704	0.119	0.223	0.013	0.012	0.000	0.000	0.000	0.000	0.000	1401.57	
9	0.7210	1170.8	1191.5	1188.2	1.114	3.341	70.527	21.441	3.230	0.112	0.212	0.012	0.011	0.000	0.000	0.000	0.000	0.000	1399.79	
10	0.7207	1167.2	1187.9	1184.5	1.177	3.436	70.650	21.197	3.147	0.125	0.239	0.015	0.014	0.000	0.000	0.000	0.000	0.000	1395.77	
11	0.7271	1178.5	1199.3	1195.8	1.167	3.362	69.854	21.696	3.432	0.148	0.297	0.022	0.022	0.000	0.000	0.000	0.000	0.000	1402.99	
12	0.7353	1188.1	1209.1	1205.5	1.223	3.457	68.561	22.529	3.721	0.156	0.312	0.020	0.020	0.000	0.000	0.000	0.000	0.000	1406.53	
13	0.7253	1175.2	1196.1	1192.6	1.175	3.380	69.688	22.254	3.110	0.124	0.239	0.015	0.014	0.000	0.000	0.000	0.000	0.000	1400.95	
14	0.7241	1174.4	1195.2	1191.7	1.159	3.338	69.869	22.183	3.071	0.120	0.231	0.014	0.014	0.000	0.000	0.000	0.000	0.000	1401.12	
15	0.7251	1173.4	1194.2	1190.8	1.202	3.432	69.697	22.184	3.108	0.123	0.229	0.013	0.012	0.000	0.000	0.000	0.000	0.000	1398.99	
16	0.7342	1185.5	1206.5	1203.1	1.178	3.584	68.046	23.436	3.398	0.123	0.217	0.010	0.008	0.000	0.000	0.000	0.000	0.000	1404.70	
17	0.7377	1185.3	1206.3	1203.0	1.342	3.671	67.652	23.432	3.524	0.131	0.229	0.010	0.008	0.000	0.000	0.000	0.000	0.000	1401.13	
18	0.7388	1189.1	1210.2	1206.8	1.307	3.600	67.514	23.564	3.638	0.130	0.228	0.011	0.008	0.000	0.000	0.000	0.000	0.000	1404.52	
19	0.7315	1181.3	1202.2	1198.8	1.226	3.515	68.713	22.748	3.426	0.125	0.225	0.011	0.009	0.000	0.000	0.000	0.000	0.000	1402.22	
20	0.7373	1186.2	1207.2	1203.7	1.292	3.657	68.196	22.489	3.944	0.143	0.255	0.012	0.010	0.000	0.000	0.000	0.000	0.000	1402.42	
21	0.7416	1192.3	1213.4	1210.0	1.331	3.634	67.213	23.595	3.806	0.145	0.255	0.012	0.009	0.000	0.000	0.000	0.000	0.000	1405.58	
22	0.7364	1185.4	1206.4	1203.1	1.298	3.613	67.744	23.607	3.333	0.137	0.246	0.012	0.010	0.000	0.000	0.000	0.000	0.000	1402.48	
23	0.7397	1189.3	1210.3	1206.9	1.324	3.653	67.595	23.192	3.810	0.146	0.258	0.013	0.010	0.000	0.000	0.000	0.000	0.000	1403.79	
24	0.7206	1183.0	1203.9	1200.7	0.549	3.425	69.449	23.412	2.962	0.072	0.121	0.005	0.004	0.000	0.000	0.000	0.000	0.000	1415.01	
25	0.7371	1183.8	1204.8	1201.4	1.326	3.732	67.870	23.073	3.600	0.136	0.242	0.012	0.009	0.000	0.000	0.000	0.000	0.000	1399.86	
26	0.7223	1165.7	1186.3	1183.0	1.204	3.635	70.397	21.144	3.225	0.130	0.238	0.013	0.012	0.000	0.000	0.000	0.000	0.000	1392.45	
27	0.7237	1170.8	1191.5	1188.1	1.174	3.498	70.405	21.071	3.412	0.138	0.267	0.018	0.017	0.000	0.000	0.000	0.000	0.000	1397.16	
28	0.7482	1206.4	1227.8	1224.0	1.252	3.500	67.229	22.716	4.626	0.203	0.414	0.030	0.030	0.000	0.000	0.000	0.000	0.000	1415.79	
29	0.7415	1208.3	1229.7	1226.0	0.856	3.361	67.693	23.214	4.288	0.180	0.360	0.025	0.024	0.000	0.000	0.000	0.000	0.000	1424.66	
30	0.7406	1200.2	1221.4	1217.7	1.052	3.474	67.763	23.104	4.035	0.177	0.349	0.023	0.022	0.000	0.000	0.000	0.000	0.000	1415.86	
31	0.7474	1201.5	1222.8	1219.0	1.328	3.612	67.020	23.172	4.186	0.205	0.418	0.030	0.029	0.000	0.000	0.000	0.000	0.000	1410.77	
Avg	0.7305	1181.0	1202.0	1198.5	1.174	3.507	69.147	22.174	3.570	0.138	0.260	0.016	0.014	0.000	0.000	0.000	0.000	0.000	1402.93	

Zone 211

# Source Daily Summary

January 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	0.6890	1139.9	1160.0	1156.9	0.819	2.667	75.601	18.530	2.125	0.072	0.157	0.013	0.016	0.000	0.000	0.000	0.000	0.000	1394.16	
2	0.6910	1140.6	1160.8	1157.6	0.818	2.803	75.181	18.821	2.126	0.070	0.152	0.013	0.016	0.000	0.000	0.000	0.000	0.000	1393.12	
3	0.6932	1143.4	1163.6	1160.4	0.825	2.833	74.795	19.097	2.194	0.072	0.155	0.013	0.016	0.000	0.000	0.000	0.000	0.000	1394.27	
4	0.6932	1143.0	1163.3	1160.1	0.830	2.842	74.856	18.993	2.211	0.075	0.163	0.014	0.017	0.000	0.000	0.000	0.000	0.000	1393.90	
5	0.6924	1142.1	1162.3	1159.2	0.823	2.838	74.992	18.877	2.203	0.075	0.162	0.013	0.016	0.000	0.000	0.000	0.000	0.000	1393.52	
6	0.6908	1140.7	1160.9	1157.8	0.824	2.772	75.355	18.568	2.197	0.080	0.172	0.015	0.018	0.000	0.000	0.000	0.000	0.000	1393.41	
7	0.6911	1142.2	1162.4	1159.3	0.831	2.705	75.227	18.805	2.169	0.074	0.159	0.013	0.016	0.000	0.000	0.000	0.000	0.000	1394.86	
8	0.6903	1142.0	1162.2	1159.1	0.823	2.653	75.376	18.732	2.154	0.073	0.159	0.013	0.016	0.000	0.000	0.000	0.000	0.000	1395.45	
9	0.6904	1142.0	1162.2	1159.0	0.820	2.658	75.473	18.556	2.213	0.077	0.170	0.014	0.018	0.000	0.000	0.000	0.000	0.000	1395.40	
10	0.6923	1143.1	1163.4	1160.2	0.824	2.765	75.098	18.789	2.238	0.080	0.174	0.014	0.017	0.000	0.000	0.000	0.000	0.000	1394.84	
11	0.6935	1144.9	1165.2	1162.1	0.844	2.735	74.951	18.892	2.279	0.083	0.182	0.015	0.019	0.000	0.000	0.000	0.000	0.000	1395.88	
12	0.6938	1145.4	1165.7	1162.5	0.837	2.746	74.776	19.137	2.232	0.077	0.165	0.014	0.017	0.000	0.000	0.000	0.000	0.000	1396.15	
13	0.6951	1146.8	1167.1	1163.8	0.846	2.770	74.620	19.190	2.282	0.081	0.177	0.015	0.019	0.000	0.000	0.000	0.000	0.000	1396.47	
14	0.6947	1146.8	1167.1	1163.8	0.833	2.750	74.845	18.883	2.364	0.089	0.197	0.017	0.022	0.000	0.000	0.000	0.000	0.000	1396.89	
15	0.6935	1145.1	1165.4	1162.2	0.840	2.734	74.886	19.002	2.250	0.080	0.175	0.014	0.018	0.000	0.000	0.000	0.000	0.000	1396.06	
16	0.6924	1143.5	1163.8	1160.6	0.834	2.733	75.038	18.904	2.220	0.076	0.164	0.013	0.016	0.000	0.000	0.000	0.000	0.000	1395.28	
17	0.6924	1144.1	1164.3	1161.2	0.832	2.706	75.088	18.861	2.224	0.080	0.176	0.015	0.018	0.000	0.000	0.000	0.000	0.000	1395.90	
18	0.6932	1145.2	1165.5	1162.3	0.834	2.712	74.983	18.921	2.244	0.083	0.187	0.016	0.020	0.000	0.000	0.000	0.000	0.000	1396.42	
19	0.6917	1142.3	1162.6	1159.4	0.828	2.751	75.193	18.741	2.204	0.077	0.172	0.015	0.019	0.000	0.000	0.000	0.000	0.000	1394.48	
20	0.6918	1143.4	1163.7	1160.5	0.832	2.692	75.180	18.816	2.186	0.080	0.179	0.016	0.019	0.000	0.000	0.000	0.000	0.000	1395.65	
21	0.6940	1144.9	1165.2	1161.9	0.836	2.801	74.788	19.039	2.235	0.081	0.182	0.016	0.021	0.000	0.000	0.000	0.000	0.000	1395.26	
22	0.6942	1144.7	1165.0	1161.7	0.835	2.827	74.905	18.784	2.326	0.086	0.194	0.018	0.023	0.000	0.000	0.000	0.000	0.000	1394.81	
23	0.6923	1142.8	1163.1	1159.9	0.827	2.781	75.182	18.632	2.266	0.085	0.189	0.017	0.021	0.000	0.000	0.000	0.000	0.000	1394.44	
24	0.6925	1142.7	1162.9	1159.6	0.822	2.811	75.186	18.590	2.262	0.086	0.200	0.019	0.024	0.000	0.000	0.000	0.000	0.000	1394.08	
25	0.6905	1140.7	1160.9	1157.7	0.821	2.747	75.470	18.468	2.190	0.082	0.184	0.017	0.021	0.000	0.000	0.000	0.000	0.000	1393.67	
26	0.6904	1139.9	1160.1	1157.0	0.822	2.781	75.421	18.517	2.180	0.077	0.169	0.014	0.018	0.000	0.000	0.000	0.000	0.000	1392.89	
27	0.6901	1139.6	1159.8	1156.7	0.826	2.772	75.419	18.567	2.146	0.076	0.165	0.014	0.016	0.000	0.000	0.000	0.000	0.000	1392.77	
28	0.6910	1141.3	1161.5	1158.3	0.824	2.752	75.347	18.584	2.206	0.079	0.175	0.015	0.018	0.000	0.000	0.000	0.000	0.000	1393.92	
29	0.6906	1141.6	1161.8	1158.5	0.818	2.701	75.731	18.071	2.306	0.097	0.227	0.021	0.026	0.000	0.000	0.000	0.000	0.000	1394.65	
30	0.6899	1141.3	1161.5	1158.3	0.821	2.655	75.645	18.334	2.249	0.080	0.180	0.016	0.020	0.000	0.000	0.000	0.000	0.000	1395.00	
31	0.6942	1146.1	1166.4	1163.1	0.837	2.734	75.057	18.647	2.360	0.094	0.221	0.021	0.027	0.000	0.000	0.000	0.000	0.000	1396.54	
Avg	0.6921	1143.0	1163.2	1160.0	0.829	2.749	75.150	18.753	2.227	0.080	0.177	0.015	0.019	0.000	0.000	0.000	0.000	0.000	1394.84	

Zone 24

# Gas Composition and Properties

Effective January 1, 2019

Source #: 0602160  
Name: FAIRVIEW BORDER

Component	Mole %	Liquid Content	Mass %
Carbon Dioxide, CO2	0.8846		1.9226
Nitrogen, N2	2.9500		4.0812
Methane, C1	73.7479		58.4282
Ethane, C2	19.4788	5.2124	28.9255
Propane, C3	2.6276	0.7243	5.7221
iso-Butane, iC4	0.0878	0.0287	0.2520
n-Butane, nC4	0.1891	0.0597	0.5428
iso-Pentane, iC5	0.0128	0.0047	0.0456
n-Pentane, nC5	0.0160	0.0058	0.0570
Neo-Pentane, NeoC5			
Hexanes Plus, C6+	0.0054	0.0022	0.0230
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	-27.316	
Cricodentherm	-9.016	
HV, Dry @ Base P, T	1172.51	
HV, Sat @ Base P, T	1152.10	
HV, Sat @ Sample P, T	1172.51	
Relative Density	0.7011	

C6+: 100

Totals 100.0000 6.0380 100.0000

**Sample**  
Date: 02/04/2019 Pressure: 347.0  
Type: Temperature:  
Tech: Kevin Moos H2O: lbs/mm  
H2S: ppm  
Remarks:

**Analysis**  
Date: 02/04/2019 Instrument:  
Cylinder: 347  
Tech: Kevin Moos  
Remarks:

Zone 241

# Gas Composition and Properties

Effective January 1, 2019

Attachment B  
Page 4 of 23

Source #: 0602225  
Name: WATFORD CITY WEST BORDER

Component	Mole %	Liquid Content	Mass %
Carbon Dioxide, CO2	1.1232		2.3708
Nitrogen, N2	3.4264		4.6037
Methane, C1	71.6854		55.1574
Ethane, C2	19.2788	5.1597	27.8035
Propane, C3	3.7321	1.0290	7.8931
iso-Butane, iC4	0.2065	0.0676	0.5757
n-Butane, nC4	0.4585	0.1447	1.2781
iso-Pentane, iC5	0.0368	0.0135	0.1273
n-Pentane, nC5	0.0383	0.0139	0.1325
Neo-Pentane, NeoC5			
Hexanes Plus, C6+	0.0140	0.0058	0.0579
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	2.459	
Cricodentherm	8.806	
HV, Dry @ Base P, T	1191.14	
HV, Sat @ Base P, T	1170.41	
HV, Sat @ Sample P, T	1191.14	
Relative Density	0.7220	

C6+: 100

Totals	100.0000	6.4350	100.0000
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**Sample**  
Date: 02/04/2019      Pressure: 525.0  
Type:                      Temperature:  
Tech: Kevin Moos      H2O: lbs/mm  
                                 H2S: ppm  
Remarks:

**Analysis**  
Date: 02/04/2019      Instrument:  
                                 Cylinder: 452  
Tech: Kevin Moos  
Remarks:

Zone 25

# Source Daily Summary

January 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	0.6478	1068.1	1087.0		0.469	3.698	82.233	12.321	1.162	0.036	0.072	0.005	0.005	0.000						1347.48
2	0.6586	1084.2	1103.4		0.544	3.621	80.408	13.881	1.396	0.045	0.089	0.007	0.008	0.002						1356.51
3	0.6655	1094.3	1113.7		0.602	3.565	79.177	14.998	1.508	0.047	0.091	0.006	0.006	0.000						1362.01
4	0.6660	1094.8	1114.2		0.613	3.570	79.097	15.059	1.498	0.048	0.097	0.007	0.009	0.001						1362.04
5	0.6649	1093.5	1112.8		0.606	3.551	79.257	14.977	1.462	0.046	0.090	0.006	0.006	0.000						1361.62
6	0.6611	1087.5	1106.8		0.591	3.583	79.973	14.285	1.415	0.044	0.092	0.007	0.008	0.001						1358.05
7	0.6573	1082.8	1102.0		0.537	3.594	80.559	13.858	1.321	0.041	0.080	0.005	0.005	0.000						1356.08
8	0.6478	1067.9	1086.9		0.466	3.710	82.213	12.349	1.148	0.035	0.069	0.005	0.005	0.000						1347.28
9	0.6525	1075.8	1094.9		0.486	3.639	81.558	12.842	1.312	0.046	0.098	0.008	0.010	0.001						1352.34
10	0.6668	1096.1	1115.6		0.609	3.564	79.032	15.036	1.591	0.051	0.101	0.007	0.008	0.000						1362.96
11	0.6726	1104.4	1124.0		0.639	3.553	78.212	15.608	1.748	0.065	0.144	0.013	0.016	0.003						1367.41
12	0.6748	1108.1	1127.7		0.660	3.509	77.706	16.164	1.761	0.058	0.121	0.009	0.011	0.001						1369.63
13	0.6778	1112.8	1132.5		0.663	3.496	77.434	16.196	1.945	0.072	0.156	0.014	0.018	0.006						1372.42
14	0.6762	1111.0	1130.7		0.639	3.496	77.887	15.649	2.025	0.081	0.179	0.016	0.021	0.006						1371.77
15	0.6721	1104.6	1124.2		0.643	3.491	78.281	15.629	1.729	0.063	0.136	0.012	0.014	0.003						1368.10
16	0.6672	1097.3	1116.7		0.611	3.530	79.053	14.974	1.646	0.055	0.112	0.008	0.010	0.002						1363.98
17	0.6639	1092.8	1112.2		0.547	3.583	79.987	13.870	1.723	0.074	0.172	0.017	0.022	0.006						1361.81
18	0.6676	1098.3	1117.8		0.578	3.552	79.190	14.692	1.725	0.068	0.156	0.015	0.018	0.005						1364.85
19	0.6694	1100.9	1120.4		0.584	3.552	78.900	14.923	1.763	0.072	0.166	0.016	0.020	0.004						1366.26
20	0.6624	1090.3	1109.6		0.549	3.598	79.976	14.089	1.563	0.060	0.134	0.013	0.015	0.004						1360.20
21	0.6738	1106.6	1126.2		0.635	3.537	78.286	15.341	1.880	0.079	0.187	0.020	0.025	0.009						1368.84
22	0.6739	1106.4	1126.0		0.615	3.592	78.406	15.041	2.000	0.086	0.200	0.021	0.028	0.012						1368.47
23	0.6756	1109.3	1129.0		0.629	3.553	78.019	15.492	1.969	0.085	0.200	0.020	0.024	0.008						1370.35
24	0.6678	1097.4	1116.8		0.571	3.630	79.440	14.190	1.824	0.082	0.200	0.023	0.029	0.011						1363.55
25	0.6605	1087.1	1106.4		0.529	3.636	80.415	13.583	1.600	0.061	0.139	0.014	0.017	0.005						1358.24
26	0.6633	1090.5	1109.8		0.567	3.636	79.839	14.140	1.605	0.057	0.125	0.012	0.015	0.006						1359.59
27	0.6640	1091.8	1111.1		0.581	3.610	79.633	14.388	1.597	0.055	0.115	0.009	0.011	0.001						1360.37
28	0.6616	1088.4	1107.6		0.547	3.638	80.338	13.555	1.647	0.069	0.162	0.017	0.021	0.007						1358.63
29	0.6589	1085.5	1104.8		0.492	3.636	81.275	12.390	1.804	0.093	0.238	0.027	0.033	0.010						1357.86
30	0.6355	1050.0	1068.6		0.355	3.816	84.764	9.762	1.105	0.047	0.116	0.012	0.016	0.006						1337.34
31	0.6764	1111.1	1130.7		0.611	3.544	78.298	14.934	2.163	0.105	0.263	0.031	0.037	0.014						1371.70
Avg	0.6646	1093.0	1112.6		0.573	3.590	79.640	14.329	1.633	0.062	0.139	0.013	0.016	0.004						1361.54

Zone 260

# Source Daily Summary

January 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	0.7044	1153.3	1173.7	1170.6	0.897	3.177	72.422	21.097	2.190	0.068	0.131	0.008	0.009	0.000	0.000	0.000	0.000	0.000	1395.16	
2	0.7059	1155.5	1176.0	1172.9	0.909	3.163	72.124	21.404	2.189	0.067	0.128	0.008	0.009	0.000	0.000	0.000	0.000	0.000	1396.40	
3	0.7051	1154.2	1174.7	1171.5	0.901	3.178	72.347	21.132	2.216	0.069	0.134	0.010	0.012	0.000	0.000	0.000	0.000	0.000	1395.56	
4	0.7055	1155.0	1175.5	1172.4	0.903	3.167	72.275	21.178	2.258	0.070	0.132	0.008	0.009	0.000	0.000	0.000	0.000	0.000	1396.14	
5	0.7063	1155.4	1175.8	1172.7	0.928	3.178	72.149	21.288	2.230	0.070	0.137	0.009	0.012	0.000	0.000	0.000	0.000	0.000	1395.80	
6	0.7065	1156.0	1176.4	1173.4	0.937	3.154	72.054	21.424	2.214	0.068	0.132	0.008	0.009	0.000	0.000	0.000	0.000	0.000	1396.30	
7	0.7072	1156.2	1176.6	1173.6	0.961	3.171	71.934	21.497	2.218	0.068	0.133	0.009	0.010	0.000	0.000	0.000	0.000	0.000	1395.87	
8	0.7050	1153.6	1174.1	1170.9	0.915	3.188	72.344	21.128	2.205	0.068	0.133	0.009	0.011	0.000	0.000	0.000	0.000	0.000	1394.91	
9	0.7055	1154.4	1174.8	1171.8	0.921	3.181	72.172	21.347	2.175	0.065	0.124	0.007	0.008	0.000	0.000	0.000	0.000	0.000	1395.35	
10	0.7051	1154.0	1174.5	1171.3	0.899	3.194	72.460	20.917	2.275	0.076	0.155	0.011	0.014	0.000	0.000	0.000	0.000	0.000	1395.31	
11	0.7065	1155.9	1176.4	1173.3	0.919	3.180	72.242	21.063	2.352	0.075	0.148	0.010	0.012	0.000	0.000	0.000	0.000	0.000	1396.23	
12	0.7092	1159.6	1180.2	1176.9	0.929	3.193	71.990	21.112	2.450	0.089	0.197	0.017	0.022	0.000	0.000	0.000	0.000	0.000	1397.92	
13	0.7055	1154.0	1174.4	1171.3	0.897	3.232	72.460	20.799	2.356	0.076	0.156	0.011	0.013	0.000	0.000	0.000	0.000	0.000	1394.92	
14	0.7080	1157.9	1178.4	1175.1	0.910	3.204	72.260	20.814	2.502	0.087	0.186	0.016	0.021	0.000	0.000	0.000	0.000	0.000	1397.10	
15	0.7116	1163.9	1184.5	1181.0	0.896	3.200	72.082	20.581	2.822	0.113	0.251	0.023	0.031	0.000	0.000	0.000	0.000	0.000	1400.62	
16	0.7082	1158.1	1178.6	1175.3	0.920	3.200	72.172	20.936	2.465	0.087	0.185	0.015	0.019	0.000	0.000	0.000	0.000	0.000	1397.12	
17	0.7063	1155.5	1176.0	1172.9	0.909	3.201	72.354	20.876	2.395	0.079	0.161	0.011	0.014	0.000	0.000	0.000	0.000	0.000	1395.93	
18	0.7071	1156.9	1177.4	1174.1	0.866	3.250	72.482	20.537	2.517	0.095	0.210	0.018	0.024	0.000	0.000	0.000	0.000	0.000	1396.76	
19	0.7128	1165.2	1185.9	1182.4	0.900	3.230	71.767	20.933	2.736	0.113	0.263	0.025	0.033	0.000	0.000	0.000	0.000	0.000	1401.03	
20	0.7100	1161.5	1182.0	1178.7	0.888	3.214	72.033	20.915	2.573	0.101	0.228	0.021	0.027	0.000	0.000	0.000	0.000	0.000	1399.35	
21	0.7092	1160.2	1180.7	1177.3	0.889	3.220	72.197	20.762	2.544	0.102	0.234	0.022	0.029	0.000	0.000	0.000	0.000	0.000	1398.48	
22	0.7103	1161.2	1181.8	1178.3	0.919	3.207	72.018	20.922	2.553	0.100	0.229	0.022	0.029	0.000	0.000	0.000	0.000	0.000	1398.71	
23	0.7236	1180.6	1201.5	1196.9	0.930	3.250	70.804	21.066	3.285	0.157	0.396	0.045	0.067	0.000	0.000	0.000	0.000	0.000	1408.31	
24	0.7122	1164.4	1185.0	1181.5	0.899	3.220	71.964	20.698	2.776	0.116	0.269	0.025	0.034	0.000	0.000	0.000	0.000	0.000	1400.67	
25	0.7141	1167.6	1188.3	1184.5	0.889	3.217	71.814	20.743	2.817	0.127	0.312	0.034	0.046	0.000	0.000	0.000	0.000	0.000	1402.52	
26	0.7122	1164.6	1185.3	1181.7	0.892	3.217	71.905	20.825	2.726	0.111	0.261	0.026	0.035	0.000	0.000	0.000	0.000	0.000	1400.88	
27	0.7071	1156.3	1176.8	1173.3	0.905	3.235	72.444	20.598	2.497	0.088	0.190	0.018	0.024	0.000	0.000	0.000	0.000	0.000	1395.89	
28	0.7050	1153.3	1173.8	1170.6	0.891	3.237	72.651	20.535	2.406	0.081	0.168	0.013	0.016	0.000	0.000	0.000	0.000	0.000	1394.55	
29	0.7035	1150.3	1170.6	1167.4	0.878	3.301	73.062	20.020	2.415	0.088	0.197	0.018	0.022	0.000	0.000	0.000	0.000	0.000	1392.28	
30	0.7215	1178.8	1199.7	1195.7	0.917	3.186	71.168	20.793	3.230	0.165	0.429	0.047	0.064	0.000	0.000	0.000	0.000	0.000	1408.54	
31	0.7152	1169.4	1190.1	1186.4	0.921	3.165	71.486	21.176	2.764	0.120	0.297	0.030	0.040	0.000	0.000	0.000	0.000	0.000	1403.64	
Avg	0.7089	1159.0	1180.0	1176.6	0.907	3.204	72.117	20.939	2.495	0.092	0.203	0.018	0.023	0.000	0.000	0.000	0.000	0.000	1398.01	

Zone 2b1

# Source Daily Summary

January 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	0.7324	1164.6	1185.2	1182.1	0.925	5.074	68.787	20.660	4.110	0.135	0.286	0.012	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1381.61
2	0.7368	1169.1	1189.8	1186.6	0.926	5.210	68.252	20.739	4.377	0.148	0.318	0.015	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1382.75
3	0.7360	1166.7	1187.4	1184.2	0.922	5.280	68.359	20.612	4.344	0.143	0.312	0.015	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1380.76
4	0.7344	1163.4	1184.0	1180.8	0.924	5.330	68.536	20.493	4.257	0.138	0.297	0.013	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1378.32
5	0.7307	1157.1	1177.6	1174.5	0.928	5.359	69.020	20.212	4.053	0.130	0.276	0.011	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1374.39
6	0.7315	1160.1	1180.6	1177.5	0.927	5.261	68.860	20.461	4.069	0.128	0.272	0.011	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1377.11
7	0.7321	1159.5	1180.0	1176.9	0.930	5.343	68.817	20.362	4.112	0.131	0.282	0.012	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1375.89
8	0.7291	1155.4	1175.9	1172.8	0.920	5.324	69.167	20.257	3.929	0.122	0.261	0.010	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1373.88
9	0.7296	1156.6	1177.1	1174.1	0.922	5.295	69.118	20.291	3.962	0.126	0.265	0.011	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1374.87
10	0.7358	1165.1	1185.8	1182.6	0.922	5.357	68.406	20.477	4.341	0.147	0.319	0.015	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1379.07
11	0.7322	1157.6	1178.1	1175.0	0.926	5.472	68.891	20.066	4.189	0.138	0.294	0.013	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1373.58
12	0.7360	1161.9	1182.5	1179.3	0.928	5.567	68.441	20.129	4.429	0.148	0.327	0.016	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1375.03
13	0.7389	1167.1	1187.8	1184.6	0.923	5.522	68.101	20.315	4.602	0.156	0.348	0.017	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1378.55
14	0.7364	1164.1	1184.8	1181.6	0.922	5.471	68.397	20.260	4.440	0.149	0.328	0.016	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1377.36
15	0.7360	1163.5	1184.1	1181.0	0.921	5.480	68.459	20.203	4.424	0.149	0.329	0.016	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1376.91
16	0.7337	1160.4	1181.0	1177.8	0.923	5.452	68.694	20.190	4.263	0.142	0.308	0.014	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1375.40
17	0.7345	1161.8	1182.3	1179.2	0.920	5.446	68.596	20.237	4.318	0.142	0.310	0.014	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1376.28
18	0.7340	1159.9	1180.5	1177.3	0.913	5.524	68.692	20.075	4.304	0.143	0.317	0.016	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1374.53
19	0.7350	1161.5	1182.1	1179.0	0.917	5.508	68.547	20.188	4.348	0.144	0.317	0.015	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1375.56
20	0.7350	1162.4	1182.9	1179.8	0.913	5.467	68.583	20.172	4.361	0.146	0.324	0.017	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1376.49
21	0.7364	1164.3	1184.9	1181.7	0.918	5.475	68.365	20.308	4.430	0.146	0.324	0.016	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1377.44
22	0.7409	1171.1	1191.8	1188.7	0.922	5.469	67.862	20.481	4.700	0.161	0.365	0.019	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1381.35
23	0.7380	1164.6	1185.2	1182.1	0.918	5.597	68.178	20.229	4.567	0.149	0.330	0.015	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1376.42
24	0.7367	1163.1	1183.7	1180.5	0.916	5.583	68.317	20.192	4.499	0.147	0.317	0.014	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1375.73
25	0.7379	1166.6	1187.2	1184.0	0.919	5.473	68.250	20.298	4.508	0.157	0.352	0.020	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1378.73
26	0.7351	1161.3	1181.8	1178.7	0.916	5.540	68.541	20.133	4.379	0.145	0.315	0.015	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1375.09
27	0.7377	1165.2	1185.9	1182.7	0.919	5.540	68.228	20.256	4.535	0.152	0.336	0.017	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1377.31
28	0.7306	1153.6	1174.1	1171.1	0.921	5.579	69.011	19.939	4.152	0.124	0.256	0.009	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1370.30
29	0.7245	1145.8	1166.1	1163.2	0.925	5.480	69.538	20.028	3.827	0.079	0.123	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1366.78
30	0.7327	1163.6	1184.2	1181.2	0.924	5.157	68.833	20.424	4.208	0.141	0.294	0.010	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1380.22
31	0.7390	1169.0	1189.7	1186.5	0.922	5.424	68.061	20.501	4.545	0.157	0.349	0.019	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1380.55
Avg	0.7345	1162.0	1182.7	1179.6	0.922	5.421	68.578	20.296	4.309	0.141	0.305	0.014	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1376.72

Zone 2b2

# Gas Composition and Properties

Effective January 1, 2019

Source #: 2501030  
Name: LIGNITE PLANT

Component	Mole %	Liquid Content	Mass %
Carbon Dioxide, CO2	0.1618		0.3660
Nitrogen, N2	2.8641		4.1235
Methane, C1	77.6797		64.0460
Ethane, C2	17.1008	4.5750	26.4270
Propane, C3	2.1165	0.5833	4.7965
iso-Butane, iC4	0.0443	0.0145	0.1323
n-Butane, nC4	0.0254	0.0080	0.0759
iso-Pentane, iC5			
n-Pentane, nC5			
Neo-Pentane, NeoC5			
Hexanes Plus, C6+	0.0074	0.0030	0.0328
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	-33.064	
Cricodentherm	-25.416	
HV, Dry @ Base P, T	1149.08	
HV, Sat @ Base P, T	1129.08	
HV, Sat @ Sample P, T	1149.08	
Relative Density	0.6735	

C6+: 100

Totals	100.0000	5.1840	100.0000
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### Sample

Date: 02/04/2019      Pressure: 500.0  
 Type:                      Temperature:  
 Tech: Kevin Moos      H2O: lbs/mm  
                                  H2S: ppm

Remarks:

### Analysis

Date: 02/04/2019      Instrument:  
                                  Cylinder:  
 Tech: Kevin Moos

Remarks:

Zone 263

# Gas Composition and Properties

Effective January 1, 2019

Source #: 3002013  
Name: EPPING BORDER

Component	Mole %	Liquid Content	Mass %
Carbon Dioxide, CO2	0.7979		1.7816
Nitrogen, N2	2.7188		3.8642
Methane, C1	76.6961		62.4262
Ethane, C2	17.5868	4.7053	26.8304
Propane, C3	1.9853	0.5472	4.4416
iso-Butane, iC4	0.0579	0.0190	0.1707
n-Butane, nC4	0.1310	0.0413	0.3863
iso-Pentane, iC5	0.0098	0.0036	0.0359
n-Pentane, nC5	0.0121	0.0044	0.0443
Neo-Pentane, NeoC5			
Hexanes Plus, C6+	0.0043	0.0018	0.0188
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	-24.744	
Cricondentherm	-20.397	
HV, Dry @ Base P, T	1149.12	
HV, Sat @ Base P, T	1129.12	
HV, Sat @ Sample P, T	1149.12	
Relative Density	0.6823	

C6+: 100

Totals	100.0000	5.3220	100.0000
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## Sample

Date: 02/04/2019      Pressure: 575.0  
 Type:                      Temperature:  
 Tech: Kevin Moos      H2O: lbs/mm  
                                  H2S: ppm

Remarks:

## Analysis

Date: 02/04/2019      Instrument:  
                                  Cylinder: 399  
 Tech: Kevin Moos

Remarks:

\*\*\* End of Report \*\*\*

Zone 264

# Source Daily Summary

January 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	0.7045	1152.6	1173.1	1169.9	0.916	3.197	72.404	21.084	2.184	0.068	0.130	0.008	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1394.30
2	0.7059	1155.5	1176.0	1172.8	0.908	3.168	72.130	21.379	2.200	0.068	0.130	0.008	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1396.34
3	0.7054	1154.8	1175.2	1172.1	0.909	3.163	72.210	21.326	2.180	0.067	0.129	0.008	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1396.00
4	0.7055	1155.1	1175.5	1172.3	0.900	3.170	72.327	21.097	2.274	0.072	0.138	0.010	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1396.11
5	0.7059	1155.2	1175.6	1172.5	0.916	3.176	72.156	21.316	2.220	0.068	0.131	0.008	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1395.94
6	0.7066	1155.8	1176.2	1173.0	0.933	3.175	72.103	21.324	2.233	0.070	0.139	0.010	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1395.97
7	0.7073	1157.0	1177.5	1174.4	0.952	3.141	71.914	21.561	2.213	0.068	0.133	0.008	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1396.78
8	0.7059	1154.2	1174.7	1171.5	0.935	3.203	72.225	21.176	2.236	0.068	0.137	0.009	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1394.78
9	0.7049	1153.7	1174.1	1171.0	0.909	3.181	72.260	21.301	2.147	0.064	0.123	0.007	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1395.17
10	0.7043	1152.6	1173.0	1169.9	0.910	3.190	72.435	21.068	2.185	0.067	0.128	0.008	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1394.43
11	0.7073	1157.1	1177.6	1174.3	0.916	3.187	72.187	21.050	2.383	0.081	0.167	0.013	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1396.82
12	0.7090	1159.5	1180.0	1176.7	0.928	3.184	72.027	21.077	2.464	0.089	0.193	0.016	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1397.97
13	0.7054	1153.8	1174.3	1171.1	0.903	3.226	72.413	20.900	2.313	0.074	0.149	0.010	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1394.81
14	0.7064	1155.5	1175.9	1172.7	0.907	3.216	72.372	20.831	2.397	0.080	0.168	0.013	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1395.74
15	0.7117	1164.0	1184.6	1180.9	0.904	3.192	72.014	20.704	2.779	0.109	0.243	0.023	0.031	0.000	0.000	0.000	0.000	0.000	0.000	1400.61
16	0.7088	1159.3	1179.8	1176.4	0.910	3.204	72.178	20.805	2.575	0.093	0.198	0.016	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1397.89
17	0.7083	1158.4	1178.9	1175.6	0.919	3.192	72.122	21.023	2.437	0.086	0.186	0.015	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1397.43
18	0.7060	1155.4	1175.8	1172.5	0.875	3.230	72.539	20.595	2.466	0.085	0.178	0.014	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1396.00
19	0.7118	1163.4	1184.0	1180.4	0.897	3.250	71.955	20.749	2.716	0.112	0.262	0.025	0.033	0.000	0.000	0.000	0.000	0.000	0.000	1399.80
20	0.7104	1162.0	1182.6	1179.2	0.888	3.219	71.998	20.907	2.598	0.103	0.235	0.022	0.028	0.000	0.000	0.000	0.000	0.000	0.000	1399.59
21	0.7107	1162.6	1183.2	1179.7	0.886	3.209	72.038	20.832	2.620	0.108	0.250	0.024	0.032	0.000	0.000	0.000	0.000	0.000	0.000	1400.02
22	0.7076	1157.3	1177.8	1174.5	0.903	3.218	72.250	20.890	2.424	0.087	0.190	0.016	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1396.78
23	0.7176	1169.3	1190.0	1186.0	0.929	3.379	71.340	20.835	2.978	0.134	0.323	0.034	0.047	0.000	0.000	0.000	0.000	0.000	0.000	1401.05
24	0.7144	1167.3	1188.0	1184.4	0.920	3.218	71.712	20.773	2.911	0.123	0.283	0.026	0.034	0.000	0.000	0.000	0.000	0.000	0.000	1402.01
25	0.7131	1166.0	1186.6	1182.9	0.880	3.235	71.975	20.586	2.806	0.128	0.313	0.033	0.044	0.000	0.000	0.000	0.000	0.000	0.000	1401.63
26	0.7132	1166.3	1187.0	1183.2	0.894	3.200	71.811	20.888	2.746	0.115	0.275	0.029	0.040	0.000	0.000	0.000	0.000	0.000	0.000	1401.91
27	0.7083	1158.0	1178.5	1175.1	0.901	3.242	72.299	20.668	2.548	0.094	0.204	0.019	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1396.87
28	0.7055	1154.0	1174.4	1171.0	0.898	3.233	72.598	20.571	2.418	0.081	0.167	0.014	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1394.76
29	0.7044	1151.4	1171.8	1168.5	0.892	3.290	72.849	20.244	2.421	0.085	0.184	0.015	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1392.87
30	0.7122	1164.2	1184.8	1181.1	0.891	3.244	72.135	20.442	2.774	0.125	0.311	0.034	0.044	0.000	0.000	0.000	0.000	0.000	0.000	1400.31
31	0.7188	1175.0	1195.8	1191.9	0.917	3.171	71.294	20.963	3.048	0.146	0.368	0.040	0.052	0.000	0.000	0.000	0.000	0.000	0.000	1406.65
Avg	0.7086	1159.0	1179.4	1176.0	0.908	3.210	72.138	20.934	2.481	0.091	0.199	0.017	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1397.66

Zone 265

# Source Daily Summary

January 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	0.7156	1150.7	1171.0	1167.5	0.760	4.598	71.158	19.795	3.356	0.102	0.211	0.010	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1381.00
2	0.7316	1165.6	1186.3	1182.5	0.874	5.004	69.090	20.368	4.188	0.139	0.304	0.016	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1383.63
3	0.7356	1167.7	1188.4	1184.5	0.906	5.206	68.534	20.461	4.387	0.147	0.324	0.018	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1382.29
4	0.7331	1163.0	1183.6	1179.7	0.903	5.264	68.761	20.396	4.214	0.136	0.295	0.015	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1379.07
5	0.7311	1159.6	1180.1	1176.2	0.909	5.281	69.003	20.273	4.088	0.131	0.285	0.015	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1376.84
6	0.7299	1157.6	1178.1	1174.3	0.907	5.286	69.137	20.231	4.016	0.126	0.270	0.013	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1375.67
7	0.7316	1162.1	1182.6	1178.8	0.912	5.170	68.921	20.459	4.095	0.131	0.283	0.014	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1379.35
8	0.7257	1154.6	1175.0	1171.3	0.853	5.162	69.692	20.094	3.799	0.119	0.254	0.013	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1376.03
9	0.7244	1155.4	1175.8	1172.2	0.866	4.974	69.859	20.221	3.695	0.116	0.244	0.012	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1378.22
10	0.7276	1160.1	1180.6	1176.9	0.851	5.004	69.569	20.192	3.945	0.130	0.279	0.015	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1380.78
11	0.7243	1155.2	1175.7	1172.0	0.815	5.047	70.027	19.861	3.832	0.124	0.266	0.014	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1378.14
12	0.7291	1157.1	1177.6	1173.9	0.861	5.310	69.420	19.850	4.092	0.136	0.298	0.017	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1375.85
13	0.7374	1166.4	1187.0	1183.2	0.902	5.463	68.341	20.204	4.551	0.156	0.345	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1379.02
14	0.7354	1163.5	1184.1	1180.3	0.904	5.446	68.578	20.139	4.417	0.149	0.329	0.018	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1377.49
15	0.7330	1165.2	1185.8	1182.0	0.858	5.185	68.966	20.177	4.299	0.147	0.328	0.019	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1381.74
16	0.7238	1153.1	1173.5	1169.8	0.826	5.118	70.090	19.751	3.798	0.123	0.265	0.014	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1376.02
17	0.7233	1154.7	1175.1	1171.5	0.802	5.006	70.266	19.649	3.846	0.126	0.274	0.015	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1378.44
18	0.7191	1147.5	1167.8	1164.2	0.790	5.066	70.903	19.145	3.690	0.119	0.257	0.014	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1373.88
19	0.7247	1155.5	1175.9	1172.2	0.835	5.041	70.183	19.526	3.955	0.133	0.292	0.017	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1377.99
20	0.7221	1152.4	1172.8	1169.1	0.840	4.974	70.524	19.425	3.806	0.126	0.274	0.016	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1376.85
21	0.7255	1156.6	1177.1	1173.4	0.843	5.035	70.067	19.604	3.988	0.134	0.294	0.017	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1378.59
22	0.7309	1162.8	1183.4	1179.6	0.855	5.141	69.259	20.032	4.221	0.142	0.314	0.018	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1380.88
23	0.7314	1163.5	1184.1	1180.3	0.818	5.200	69.217	19.983	4.269	0.146	0.326	0.020	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1381.24
24	0.7213	1152.6	1173.0	1169.3	0.758	5.011	70.553	19.476	3.784	0.122	0.265	0.015	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1377.83
25	0.7230	1153.8	1174.2	1170.5	0.818	5.007	70.445	19.400	3.870	0.133	0.291	0.018	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1377.63
26	0.7228	1153.9	1174.4	1170.6	0.783	5.032	70.451	19.390	3.897	0.129	0.283	0.017	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1377.97
27	0.7231	1153.4	1173.8	1170.1	0.792	5.076	70.416	19.341	3.930	0.130	0.282	0.016	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1377.10
28	0.7157	1145.9	1166.2	1162.6	0.753	4.901	71.425	18.963	3.573	0.115	0.244	0.013	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1375.24
29	0.7031	1134.5	1154.6	1151.1	0.680	4.527	73.404	17.949	3.114	0.099	0.204	0.012	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1373.64
30	0.7034	1135.4	1155.5	1151.9	0.685	4.491	73.612	17.619	3.190	0.114	0.252	0.018	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1374.36
31	0.7122	1143.2	1163.4	1159.7	0.748	4.743	72.153	18.455	3.490	0.119	0.258	0.016	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1375.28
Avg	0.7249	1156.0	1176.0	1172.3	0.829	5.057	70.065	19.691	3.916	0.129	0.280	0.016	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1378.00

Zone 271

# Source Daily Summary

January 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	0.7148	1148.6	1168.9	1165.6	0.755	4.655	71.257	19.705	3.304	0.100	0.204	0.010	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1379.24
2	0.7211	1156.3	1176.8	1173.0	0.797	4.711	70.428	20.071	3.618	0.113	0.236	0.013	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1382.39
3	0.7349	1167.9	1188.6	1185.3	0.903	5.132	68.578	20.605	4.294	0.143	0.311	0.017	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1383.10
4	0.7356	1167.0	1187.6	1184.3	0.911	5.247	68.470	20.543	4.337	0.143	0.312	0.018	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1381.26
5	0.7334	1162.5	1183.1	1179.9	0.913	5.309	68.716	20.385	4.219	0.135	0.292	0.015	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1378.10
6	0.7304	1157.4	1177.9	1174.7	0.917	5.336	69.110	20.148	4.056	0.129	0.276	0.015	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1374.83
7	0.7307	1159.0	1179.6	1176.3	0.915	5.263	69.042	20.309	4.048	0.127	0.269	0.014	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1376.51
8	0.7315	1159.8	1180.4	1177.3	0.918	5.286	68.944	20.318	4.094	0.130	0.280	0.015	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1376.76
9	0.7236	1152.3	1172.7	1169.6	0.847	5.118	70.006	19.933	3.715	0.116	0.242	0.012	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1375.19
10	0.7246	1155.2	1175.6	1172.5	0.873	4.992	69.902	20.098	3.744	0.118	0.247	0.013	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1377.71
11	0.7288	1160.9	1181.5	1178.3	0.850	5.066	69.436	20.171	4.026	0.133	0.286	0.016	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1380.60
12	0.7243	1153.3	1173.8	1170.6	0.829	5.144	70.011	19.782	3.825	0.122	0.259	0.014	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1375.80
13	0.7315	1158.4	1178.9	1175.7	0.883	5.423	69.111	19.887	4.216	0.140	0.305	0.017	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1375.04
14	0.7386	1167.4	1188.1	1184.9	0.913	5.497	68.189	20.254	4.604	0.157	0.348	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1379.03
15	0.7341	1162.5	1183.1	1179.9	0.896	5.401	68.733	20.141	4.330	0.145	0.317	0.018	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1377.44
16	0.7315	1162.3	1182.8	1179.3	0.860	5.220	69.136	20.086	4.208	0.142	0.311	0.018	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1379.64
17	0.7243	1153.9	1174.4	1170.8	0.825	5.108	70.050	19.774	3.822	0.124	0.266	0.015	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1376.55
18	0.7223	1152.6	1173.0	1169.5	0.801	5.043	70.429	19.490	3.816	0.124	0.267	0.015	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1376.79
19	0.7203	1148.7	1169.1	1165.6	0.806	5.087	70.777	19.150	3.760	0.123	0.265	0.016	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1374.04
20	0.7246	1154.6	1175.0	1171.5	0.851	5.060	70.171	19.547	3.925	0.131	0.283	0.016	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1377.00
21	0.7229	1153.4	1173.8	1170.3	0.845	4.983	70.419	19.479	3.839	0.127	0.274	0.016	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1377.17
22	0.7266	1157.0	1177.5	1174.0	0.851	5.101	69.857	19.727	4.010	0.133	0.288	0.017	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1377.98
23	0.7336	1165.5	1186.1	1182.6	0.863	5.219	68.913	20.131	4.355	0.149	0.330	0.020	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1381.45
24	0.7279	1159.3	1179.8	1176.3	0.793	5.171	69.660	19.802	4.101	0.137	0.299	0.018	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1379.44
25	0.7218	1152.7	1173.1	1169.6	0.786	5.011	70.526	19.443	3.809	0.125	0.268	0.016	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1377.43
26	0.7232	1154.1	1174.5	1171.0	0.806	5.027	70.429	19.383	3.893	0.132	0.290	0.019	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1377.70
27	0.7225	1152.2	1172.6	1169.0	0.792	5.095	70.470	19.342	3.870	0.126	0.272	0.016	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1376.13
28	0.7227	1153.3	1173.7	1170.2	0.795	5.048	70.468	19.346	3.901	0.130	0.279	0.017	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1377.23
29	0.7078	1139.2	1159.3	1156.0	0.708	4.642	72.641	18.407	3.262	0.103	0.213	0.012	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1374.64
30	0.7012	1130.9	1150.9	1147.5	0.683	4.561	73.879	17.415	3.108	0.105	0.221	0.015	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1371.03
31	0.7082	1139.9	1160.0	1156.5	0.730	4.601	72.819	18.115	3.324	0.117	0.255	0.018	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1375.01
Avg	0.7251	1155.0	1175.9	1172.5	0.836	5.082	70.019	19.709	3.917	0.128	0.276	0.016	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1377.49

Zone 272

# Source Daily Summary

January 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	0.7150	1148.6	1169.0	1165.8	0.758	4.663	71.235	19.708	3.309	0.100	0.205	0.010	0.010	0.000	0.000	0.000	0.000	0.000	1379.12	
2	0.7206	1155.8	1176.2	1172.7	0.794	4.699	70.500	20.050	3.587	0.112	0.233	0.012	0.012	0.000	0.000	0.000	0.000	0.000	1382.23	
3	0.7346	1167.7	1188.4	1185.2	0.901	5.121	68.611	20.602	4.280	0.142	0.309	0.017	0.017	0.000	0.000	0.000	0.000	0.000	1383.13	
4	0.7360	1167.5	1188.1	1184.9	0.913	5.247	68.422	20.570	4.352	0.144	0.315	0.018	0.018	0.000	0.000	0.000	0.000	0.000	1381.52	
5	0.7333	1162.3	1182.9	1179.7	0.913	5.312	68.733	20.372	4.212	0.135	0.291	0.016	0.016	0.000	0.000	0.000	0.000	0.000	1377.93	
6	0.7305	1157.4	1177.9	1174.7	0.917	5.338	69.112	20.141	4.057	0.129	0.277	0.015	0.015	0.000	0.000	0.000	0.000	0.000	1374.80	
7	0.7307	1158.9	1179.4	1176.2	0.916	5.270	69.044	20.298	4.048	0.127	0.270	0.014	0.014	0.000	0.000	0.000	0.000	0.000	1376.34	
8	0.7317	1160.0	1180.6	1177.5	0.920	5.287	68.917	20.334	4.099	0.131	0.281	0.015	0.015	0.000	0.000	0.000	0.000	0.000	1376.82	
9	0.7239	1152.4	1172.8	1169.8	0.850	5.127	69.976	19.939	3.725	0.116	0.243	0.013	0.012	0.000	0.000	0.000	0.000	0.000	1375.14	
10	0.7249	1155.6	1176.1	1173.0	0.875	4.991	69.861	20.126	3.755	0.119	0.248	0.013	0.013	0.000	0.000	0.000	0.000	0.000	1377.95	
11	0.7290	1161.3	1181.9	1178.7	0.852	5.059	69.408	20.195	4.033	0.133	0.288	0.016	0.017	0.000	0.000	0.000	0.000	0.000	1380.85	
12	0.7245	1153.9	1174.3	1171.2	0.828	5.128	69.987	19.813	3.833	0.122	0.261	0.014	0.014	0.000	0.000	0.000	0.000	0.000	1376.28	
13	0.7312	1158.2	1178.7	1175.6	0.881	5.408	69.151	19.884	4.197	0.139	0.304	0.017	0.018	0.000	0.000	0.000	0.000	0.000	1375.10	
14	0.7388	1167.6	1188.2	1185.1	0.914	5.499	68.169	20.263	4.610	0.158	0.348	0.020	0.020	0.000	0.000	0.000	0.000	0.000	1379.08	
15	0.7346	1162.7	1183.3	1180.2	0.902	5.423	68.670	20.147	4.356	0.146	0.319	0.018	0.019	0.000	0.000	0.000	0.000	0.000	1377.25	
16	0.7316	1162.5	1183.0	1179.7	0.861	5.223	69.113	20.093	4.218	0.143	0.312	0.018	0.019	0.000	0.000	0.000	0.000	0.000	1379.70	
17	0.7245	1154.0	1174.5	1171.1	0.829	5.118	70.016	19.783	3.831	0.125	0.267	0.015	0.015	0.000	0.000	0.000	0.000	0.000	1376.45	
18	0.7229	1153.4	1173.8	1170.5	0.803	5.041	70.350	19.541	3.840	0.126	0.269	0.015	0.015	0.000	0.000	0.000	0.000	0.000	1377.26	
19	0.7203	1148.6	1168.9	1165.6	0.806	5.091	70.772	19.157	3.755	0.123	0.264	0.015	0.016	0.000	0.000	0.000	0.000	0.000	1373.93	
20	0.7250	1155.0	1175.5	1172.1	0.851	5.066	70.126	19.567	3.940	0.131	0.285	0.017	0.018	0.000	0.000	0.000	0.000	0.000	1377.18	
21	0.7230	1153.4	1173.8	1170.4	0.846	4.987	70.409	19.483	3.840	0.127	0.275	0.016	0.017	0.000	0.000	0.000	0.000	0.000	1377.11	
22	0.7267	1157.2	1177.7	1174.3	0.851	5.097	69.855	19.721	4.018	0.134	0.290	0.017	0.018	0.000	0.000	0.000	0.000	0.000	1378.14	
23	0.7335	1165.3	1186.0	1182.5	0.865	5.215	68.926	20.131	4.345	0.149	0.328	0.020	0.020	0.000	0.000	0.000	0.000	0.000	1381.35	
24	0.7288	1160.3	1180.8	1177.5	0.800	5.183	69.546	19.847	4.143	0.139	0.304	0.018	0.020	0.000	0.000	0.000	0.000	0.000	1379.79	
25	0.7218	1152.6	1173.0	1169.7	0.783	5.016	70.527	19.450	3.801	0.124	0.267	0.016	0.016	0.000	0.000	0.000	0.000	0.000	1377.33	
26	0.7240	1154.7	1175.1	1171.8	0.814	5.050	70.319	19.426	3.926	0.133	0.293	0.019	0.020	0.000	0.000	0.000	0.000	0.000	1377.68	
27	0.7223	1151.9	1172.3	1169.0	0.795	5.091	70.488	19.337	3.858	0.126	0.272	0.016	0.017	0.000	0.000	0.000	0.000	0.000	1376.01	
28	0.7239	1154.1	1174.5	1171.2	0.805	5.093	70.300	19.406	3.950	0.131	0.282	0.017	0.017	0.000	0.000	0.000	0.000	0.000	1377.07	
29	0.7079	1139.3	1159.4	1156.3	0.702	4.648	72.637	18.403	3.269	0.103	0.213	0.012	0.012	0.000	0.000	0.000	0.000	0.000	1374.72	
30	0.7010	1130.5	1150.6	1147.3	0.683	4.565	73.902	17.393	3.100	0.105	0.221	0.015	0.015	0.000	0.000	0.000	0.000	0.000	1370.78	
31	0.7084	1140.1	1160.2	1156.9	0.729	4.605	72.793	18.132	3.331	0.117	0.255	0.018	0.020	0.000	0.000	0.000	0.000	0.000	1375.12	
Avg	0.7253	1156.0	1176.0	1172.8	0.837	5.086	69.996	19.720	3.923	0.129	0.277	0.016	0.016	0.000	0.000	0.000	0.000	0.000	1377.52	

Zone 223

# Source Daily Summary

January 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	0.6828	1128.6	1148.6	1145.6	0.357	3.469	75.832	18.257	1.954	0.047	0.076	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1386.79
2	0.6797	1123.4	1143.3	1140.2	0.390	3.446	76.480	17.631	1.915	0.049	0.081	0.004	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1383.52
3	0.6836	1130.0	1150.0	1146.9	0.387	3.420	75.757	18.304	1.988	0.050	0.085	0.005	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1387.62
4	0.6961	1137.5	1157.6	1154.5	0.517	3.940	73.962	18.827	2.531	0.071	0.138	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1384.20
5	0.6861	1128.7	1148.7	1145.6	0.414	3.690	75.477	18.077	2.168	0.059	0.104	0.006	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1383.51
6	0.6762	1117.7	1137.4	1134.4	0.372	3.495	77.161	16.932	1.899	0.050	0.083	0.005	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1379.96
7	0.6864	1133.4	1153.5	1150.3	0.455	3.366	75.588	18.192	2.216	0.064	0.107	0.007	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1389.00
8	0.6847	1131.8	1151.9	1148.8	0.376	3.429	75.620	18.382	2.020	0.059	0.102	0.006	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1388.71
9	0.6936	1145.8	1166.0	1162.8	0.552	3.147	74.430	19.346	2.292	0.077	0.137	0.010	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1396.72
10	0.6956	1148.6	1168.9	1165.7	0.533	3.189	74.133	19.463	2.465	0.075	0.127	0.008	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1398.19
11	0.6823	1128.6	1148.6	1145.5	0.339	3.457	75.867	18.306	1.889	0.050	0.083	0.005	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1387.21
12	0.6808	1126.0	1146.0	1142.9	0.339	3.467	76.087	18.172	1.797	0.048	0.081	0.005	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1385.65
13	0.6848	1133.3	1153.4	1150.3	0.422	3.279	75.531	18.702	1.903	0.055	0.096	0.006	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1390.44
14	0.6844	1134.7	1154.8	1151.6	0.426	3.151	75.645	18.723	1.879	0.058	0.105	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1392.51
15	0.6835	1134.2	1154.3	1151.2	0.356	3.202	75.497	19.090	1.722	0.046	0.078	0.005	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1392.90
16	0.6820	1129.9	1149.9	1146.8	0.391	3.271	75.817	18.682	1.707	0.046	0.077	0.004	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1389.07
17	0.6743	1115.8	1135.6	1132.6	0.346	3.467	77.314	17.036	1.708	0.045	0.075	0.004	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1379.66
18	0.6632	1101.9	1121.4	1118.4	0.334	3.292	79.261	15.575	1.440	0.036	0.056	0.003	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1373.80
19	0.6687	1110.7	1130.4	1127.4	0.486	3.044	78.603	16.085	1.648	0.048	0.078	0.005	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1379.03
20	0.6704	1115.1	1134.9	1131.9	0.575	2.797	78.341	16.565	1.577	0.050	0.085	0.006	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1382.79
21	0.6688	1113.2	1132.9	1129.9	0.525	2.839	78.500	16.509	1.498	0.045	0.075	0.005	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1382.07
22	0.6738	1119.8	1139.6	1136.6	0.455	3.019	77.471	17.334	1.589	0.046	0.077	0.005	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1385.03
23	0.6760	1120.0	1139.9	1136.8	0.287	3.460	76.859	17.592	1.688	0.041	0.065	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1383.14
24	0.6764	1120.1	1139.9	1136.9	0.306	3.471	76.771	17.667	1.665	0.043	0.070	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1382.74
25	0.6699	1112.2	1131.9	1128.8	0.509	3.036	78.284	16.523	1.487	0.054	0.093	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1379.54
26	0.6710	1110.6	1130.3	1127.3	0.312	3.532	78.013	16.220	1.798	0.045	0.071	0.004	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1376.52
27	0.6723	1110.8	1130.4	1127.4	0.367	3.561	77.794	16.375	1.764	0.049	0.081	0.005	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1375.38
28	0.6741	1113.8	1133.5	1130.4	0.425	3.455	77.619	16.513	1.827	0.055	0.094	0.006	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1377.28
29	0.6689	1106.8	1126.5	1123.4	0.404	3.417	78.651	15.566	1.803	0.054	0.092	0.007	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1374.03
30	0.6556	1085.0	1104.2	1101.2	0.373	3.545	80.893	13.627	1.432	0.045	0.074	0.006	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1360.50
31	0.6569	1087.6	1106.9	1103.9	0.362	3.524	80.653	13.862	1.470	0.045	0.073	0.006	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1362.47
Avg	0.6775	1121.0	1141.0	1137.9	0.409	3.351	76.900	17.359	1.830	0.052	0.088	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1382.90

Zone 28

# Source Daily Summary

January 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	0.6804	1125.6	1145.5	1142.7	0.364	3.419	76.298	17.864	1.921	0.049	0.080	0.003	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1385.55
2	0.6820	1128.7	1148.7	1145.9	0.352	3.392	75.972	18.221	1.929	0.048	0.079	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1387.83
3	0.6780	1122.4	1142.3	1139.4	0.334	3.439	76.667	17.579	1.852	0.047	0.076	0.003	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1384.00
4	0.6791	1123.3	1143.2	1140.4	0.321	3.499	76.572	17.489	1.988	0.048	0.078	0.003	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1384.06
5	0.6758	1118.0	1137.8	1135.0	0.362	3.448	77.220	16.932	1.900	0.050	0.082	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1380.94
6	0.6854	1132.7	1152.7	1149.9	0.446	3.331	75.746	18.097	2.200	0.063	0.106	0.006	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1389.16
7	0.6823	1129.1	1149.0	1146.2	0.334	3.434	75.942	18.192	1.941	0.054	0.094	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1387.85
8	0.6893	1139.2	1159.4	1156.5	0.483	3.245	75.068	18.787	2.207	0.070	0.124	0.008	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1393.18
9	0.6939	1146.5	1166.8	1163.9	0.519	3.172	74.414	19.244	2.443	0.072	0.122	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1397.53
10	0.6814	1128.1	1148.0	1145.2	0.326	3.421	76.009	18.237	1.875	0.048	0.079	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1387.58
11	0.6796	1125.0	1144.9	1142.0	0.329	3.440	76.282	18.026	1.791	0.047	0.079	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1385.54
12	0.6845	1134.3	1154.4	1151.6	0.405	3.212	75.609	18.671	1.937	0.056	0.099	0.006	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1392.10
13	0.6813	1131.8	1151.8	1149.0	0.354	3.142	75.962	18.683	1.715	0.047	0.086	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1392.25
14	0.6823	1133.3	1153.3	1150.5	0.357	3.147	75.725	18.915	1.730	0.044	0.075	0.003	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1393.00
15	0.6817	1130.7	1150.8	1147.9	0.381	3.206	75.859	18.708	1.720	0.045	0.075	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1390.54
16	0.6741	1115.6	1135.4	1132.6	0.325	3.495	77.351	16.939	1.764	0.046	0.075	0.003	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1379.67
17	0.6636	1102.2	1121.7	1118.3	0.305	3.301	79.294	15.598	1.412	0.035	0.053	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1374.05
18	0.6646	1105.4	1125.0	1122.2	0.397	3.118	79.177	15.644	1.555	0.040	0.065	0.003	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1376.73
19	0.6697	1114.6	1134.3	1131.5	0.563	2.786	78.468	16.442	1.598	0.049	0.084	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1382.83
20	0.6686	1113.6	1133.4	1130.6	0.518	2.801	78.548	16.486	1.522	0.043	0.073	0.004	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1382.91
21	0.6728	1118.2	1138.0	1135.2	0.440	3.039	77.642	17.156	1.596	0.047	0.074	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1384.25
22	0.6754	1120.2	1140.0	1137.2	0.267	3.431	76.937	17.559	1.698	0.042	0.064	0.002	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1383.94
23	0.6769	1121.7	1141.6	1138.7	0.274	3.464	76.654	17.797	1.698	0.044	0.067	0.002	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1384.34
24	0.6732	1116.0	1135.8	1133.0	0.467	3.166	77.689	16.879	1.638	0.055	0.093	0.006	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1381.11
25	0.6675	1108.6	1128.2	1125.4	0.335	3.287	78.549	16.133	1.582	0.041	0.066	0.003	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1377.74
26	0.6709	1109.5	1129.1	1126.3	0.333	3.557	77.979	16.269	1.737	0.045	0.073	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1375.32
27	0.6730	1112.0	1131.7	1128.9	0.427	3.459	77.804	16.333	1.822	0.054	0.091	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1376.26
28	0.6734	1114.2	1133.9	1131.1	0.399	3.400	77.783	16.376	1.888	0.053	0.090	0.006	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1378.62
29	0.6606	1093.7	1113.1	1110.3	0.391	3.459	80.075	14.318	1.616	0.048	0.082	0.006	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1366.30
30	0.6555	1086.3	1105.6	1102.8	0.349	3.498	80.852	13.733	1.447	0.042	0.069	0.005	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1362.30
31	0.6608	1096.4	1115.8	1113.0	0.275	3.493	79.733	14.882	1.509	0.039	0.061	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1369.42
Avg	0.6754	1119.0	1139.1	1136.2	0.378	3.313	77.222	17.167	1.782	0.049	0.081	0.004	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1382.80

Zone 31

# Source Daily Summary

January 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	0.6746	1112.4	1132.1	1128.6	0.461	3.528	77.815	15.929	2.103	0.057	0.097	0.006	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1375.10
2	0.6758	1113.7	1133.4	1129.9	0.456	3.572	77.602	16.056	2.148	0.058	0.098	0.006	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1375.48
3	0.6788	1117.4	1137.2	1133.7	0.437	3.657	77.196	16.158	2.380	0.061	0.102	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1377.01
4	0.6536	1079.1	1098.2	1094.8	0.381	3.702	81.609	12.409	1.761	0.049	0.080	0.004	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1355.20
5	0.6881	1133.1	1153.2	1149.6	0.705	3.163	76.082	17.167	2.610	0.090	0.160	0.011	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1386.86
6	0.6860	1129.3	1149.3	1145.7	0.624	3.321	76.335	16.903	2.553	0.087	0.156	0.011	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1384.32
7	0.6909	1136.3	1156.4	1152.9	0.650	3.312	75.499	17.607	2.651	0.090	0.166	0.012	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1387.98
8	0.7001	1152.1	1172.5	1169.1	0.817	2.965	74.230	18.705	2.959	0.106	0.192	0.014	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1397.94
9	0.6853	1128.0	1148.0	1144.5	0.555	3.434	76.282	16.977	2.530	0.075	0.131	0.008	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1383.54
10	0.6785	1117.1	1136.8	1133.3	0.467	3.598	77.188	16.333	2.227	0.064	0.111	0.006	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1376.97
11	0.6791	1123.4	1143.3	1139.7	0.723	2.878	77.460	16.546	2.166	0.074	0.135	0.009	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1384.13
12	0.6689	1112.5	1132.2	1128.6	0.767	2.523	79.263	15.390	1.859	0.063	0.117	0.008	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1381.04
13	0.6746	1118.1	1137.9	1134.6	0.652	2.892	78.040	16.220	2.014	0.061	0.108	0.007	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1382.18
14	0.6762	1119.9	1139.8	1136.3	0.675	2.889	77.752	16.490	2.009	0.061	0.109	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1382.86
15	0.6729	1111.4	1131.1	1127.7	0.535	3.312	78.205	15.749	2.027	0.058	0.101	0.006	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1375.71
16	0.6566	1086.8	1106.1	1102.9	0.436	3.433	80.896	13.501	1.613	0.042	0.070	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1361.84
17	0.6578	1090.9	1110.2	1107.1	0.447	3.283	80.710	13.800	1.640	0.043	0.070	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1365.66
18	0.6705	1106.5	1126.1	1123.1	0.407	3.587	78.468	15.363	2.023	0.054	0.088	0.005	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1372.00
19	0.6710	1108.0	1127.6	1129.3	0.474	3.487	77.779	16.064	2.035	0.056	0.095	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1375.49
20	0.6710	1108.8	1128.4	1129.3	0.474	3.487	77.777	16.066	2.035	0.056	0.095	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1375.50
21	0.6710	1109.6	1129.2	1126.1	0.476	3.348	78.384	15.672	1.964	0.055	0.092	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1375.39
22	0.6730	1110.7	1130.3	1126.9	0.422	3.544	78.025	15.798	2.053	0.056	0.092	0.005	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1374.63
23	0.6731	1111.6	1131.3	1128.0	0.466	3.433	77.973	16.021	1.937	0.058	0.100	0.006	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1375.64
24	0.6688	1107.8	1127.4	1124.2	0.648	2.982	78.998	15.431	1.732	0.069	0.121	0.009	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1375.26
25	0.6683	1106.8	1126.4	1122.8	0.336	3.464	78.861	15.169	2.035	0.048	0.078	0.005	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1374.66
26	0.6613	1094.8	1114.2	1110.5	0.429	3.397	79.929	14.550	1.559	0.046	0.079	0.006	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1366.98
27	0.6759	1119.5	1139.4	1135.9	0.788	2.721	78.014	16.299	1.921	0.084	0.151	0.012	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1382.54
28	0.6478	1076.8	1095.9	1092.6	0.827	2.614	83.266	11.609	1.499	0.063	0.103	0.011	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1358.33
29	0.6331	1055.4	1074.1	1070.5	0.999	2.280	86.247	9.077	1.210	0.064	0.100	0.013	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1346.50
30	0.6317	1053.4	1072.0	1068.3	1.000	2.270	86.513	8.854	1.177	0.064	0.099	0.013	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1345.37
31	0.6601	1091.7	1111.1	1107.7	0.389	3.532	80.360	13.800	1.764	0.053	0.089	0.007	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1364.29
Avg	0.6701	1108.0	1127.5	1124.3	0.578	3.213	78.799	15.217	2.006	0.063	0.109	0.008	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1374.08

Zone 32

# Source Daily Summary

January 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	0.6853	1151.3	1171.7	1166.3	0.000	2.881	73.479	23.002	0.625	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.09	-26.90
2	0.6854	1151.7	1172.1	1167.0	0.000	2.871	73.480	22.982	0.652	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.40	-26.70
3	0.6863	1152.9	1173.3	1168.7	0.000	2.876	73.305	23.155	0.649	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.03	-26.28
4	0.6844	1151.2	1171.6	1166.5	0.000	2.806	73.686	22.848	0.647	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.87	-27.08
5	0.6846	1150.6	1170.9	1166.2	0.000	2.859	73.631	22.867	0.629	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.93	-27.19
6	0.6847	1150.2	1170.6	1165.8	0.000	2.889	73.587	22.898	0.613	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.42	-27.27
7	0.6860	1150.9	1171.3	1166.7	0.000	2.971	73.327	23.054	0.634	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1410.90	-26.70
8	0.6855	1151.4	1171.8	1167.1	0.000	2.893	73.427	23.053	0.613	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.02	-26.87
9	0.6865	1152.2	1172.6	1167.8	0.000	2.936	73.238	23.177	0.635	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.01	-26.37
10	0.6863	1152.0	1172.4	1167.7	0.000	2.936	73.295	23.089	0.666	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.90	-26.32
11	0.6851	1149.8	1170.2	1165.2	0.000	2.955	73.502	22.904	0.624	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1410.46	-27.15
12	0.6863	1151.5	1171.9	1166.7	0.000	2.966	73.268	23.117	0.636	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.27	-26.53
13	0.6870	1152.6	1173.0	1167.9	0.000	2.958	73.156	23.212	0.659	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.00	-26.07
14	0.6873	1152.4	1172.8	1168.1	0.000	3.005	73.059	23.283	0.639	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.37	-26.07
15	0.6851	1150.5	1170.8	1166.2	0.000	2.917	73.493	22.964	0.613	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.24	-27.10
16	0.6847	1149.7	1170.0	1164.5	0.000	2.922	73.597	22.842	0.625	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1410.72	-27.32
17	0.6849	1150.5	1170.9	1166.0	0.000	2.894	73.537	22.947	0.609	0.005	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.51	-27.18
18	0.6851	1150.3	1170.6	1165.2	0.000	2.926	73.502	22.939	0.620	0.005	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.03	-27.12
19	0.6857	1150.8	1171.2	1166.2	0.000	2.949	73.361	23.074	0.603	0.005	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.09	-26.93
20	0.6856	1150.3	1170.6	1165.2	0.000	2.970	73.383	23.029	0.605	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1410.56	-27.03
21	0.6858	1151.3	1171.7	1166.5	0.000	2.934	73.345	23.094	0.615	0.005	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.52	-26.77
22	0.6856	1150.5	1170.9	1166.2	0.000	2.958	73.397	23.014	0.618	0.005	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1410.81	-26.95
23	0.6861	1151.1	1171.5	1166.8	0.000	2.968	73.275	23.149	0.596	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.03	-26.80
24	0.6856	1151.4	1171.8	1166.4	0.000	2.902	73.411	23.052	0.622	0.005	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.92	-26.82
25	0.6858	1151.5	1171.8	1166.6	0.000	2.915	73.420	22.982	0.670	0.005	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.81	-26.57
26	0.6863	1152.4	1172.8	1167.6	0.000	2.911	73.296	23.124	0.656	0.005	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.36	-26.33
27	0.6863	1151.6	1172.0	1167.3	0.000	2.956	73.251	23.163	0.616	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.45	-26.58
28	0.6855	1150.7	1171.1	1166.5	0.000	2.935	73.378	23.102	0.572	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.17	-27.13
29	0.6852	1150.2	1170.6	1165.4	0.000	2.935	73.450	23.020	0.583	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1410.91	-27.24
30	0.6862	1151.6	1172.0	1166.7	0.000	2.948	73.267	23.165	0.608	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.52	-26.66
31	0.6867	1152.7	1173.1	1167.8	0.000	2.927	73.222	23.169	0.669	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.40	-26.11
Avg	0.6857	1151.0	1171.6	1166.6	0.000	2.925	73.388	23.047	0.626	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.57	-26.78

Zone 33

# Source Daily Summary

January 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	0.6570	1077.6	1096.7	1093.8	0.418	4.059	80.871	12.810	1.678	0.056	0.095	0.007	0.006	0.000	0.000	0.000	0.000	0.000	1349.84	
2	0.6545	1073.5	1092.5	1089.5	0.414	4.080	81.343	12.360	1.638	0.056	0.095	0.007	0.007	0.000	0.000	0.000	0.000	0.000	1347.22	
3	0.6595	1081.8	1100.9	1097.9	0.429	4.028	80.417	13.230	1.733	0.056	0.094	0.007	0.006	0.000	0.000	0.000	0.000	0.000	1352.42	
4	0.6587	1078.6	1097.7	1094.7	0.399	4.191	80.575	12.905	1.756	0.058	0.104	0.007	0.007	0.000	0.000	0.000	0.000	0.000	1349.30	
5	0.6558	1075.6	1094.6	1091.6	0.386	4.116	81.165	12.455	1.677	0.060	0.122	0.008	0.010	0.000	0.000	0.000	0.000	0.000	1348.52	
6	0.6544	1075.3	1094.3	1091.3	0.402	3.981	81.312	12.543	1.607	0.053	0.088	0.007	0.007	0.000	0.000	0.000	0.000	0.000	1349.57	
7	0.6595	1082.0	1101.2	1098.2	0.416	4.024	80.492	13.125	1.761	0.059	0.107	0.007	0.008	0.000	0.000	0.000	0.000	0.000	1352.83	
8	0.6162	1023.0	1041.1	1038.4	0.274	3.767	88.220	6.727	0.918	0.035	0.052	0.004	0.003	0.000	0.000	0.000	0.000	0.000	1322.94	
9	0.5726	962.2	979.2	976.7	0.108	3.631	95.923	0.312	0.017	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1291.01	
10	0.5726	962.1	979.2	976.6	0.109	3.629	95.928	0.309	0.017	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1291.02	
11	0.5726	962.2	979.2	976.7	0.109	3.626	95.930	0.309	0.017	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1291.06	
12	0.5758	966.4	983.5	980.9	0.120	3.660	95.344	0.780	0.082	0.010	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1293.04	
13	0.5731	962.5	979.6	977.0	0.109	3.650	95.837	0.369	0.025	0.009	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1290.98	
14	0.5728	961.9	979.0	976.4	0.108	3.658	95.891	0.317	0.018	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1290.57	
15	0.5727	961.9	978.9	976.4	0.108	3.657	95.901	0.310	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1290.53	
16	0.5729	961.3	978.4	975.8	0.106	3.707	95.855	0.307	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1289.64	
17	0.5728	961.6	978.7	976.2	0.108	3.677	95.883	0.307	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1290.16	
18	0.6098	993.1	1010.6	1008.1	0.173	5.146	89.180	4.549	0.836	0.036	0.071	0.004	0.005	0.000	0.000	0.000	0.000	0.000	1292.10	
19	0.6425	1050.2	1068.8	1065.9	0.352	4.470	83.394	10.243	1.391	0.051	0.085	0.007	0.007	0.000	0.000	0.000	0.000	0.000	1330.20	
20	0.6531	1070.2	1089.2	1086.3	0.391	4.182	81.570	12.069	1.628	0.055	0.092	0.007	0.006	0.000	0.000	0.000	0.000	0.000	1344.57	
21	0.6481	1062.4	1081.2	1078.3	0.382	4.205	82.410	11.376	1.477	0.052	0.086	0.007	0.006	0.000	0.000	0.000	0.000	0.000	1339.84	
22	0.6479	1061.2	1080.0	1077.1	0.376	4.269	82.425	11.307	1.471	0.052	0.086	0.007	0.006	0.000	0.000	0.000	0.000	0.000	1338.54	
23	0.6480	1061.8	1080.6	1077.8	0.369	4.249	82.394	11.374	1.467	0.051	0.084	0.007	0.006	0.000	0.000	0.000	0.000	0.000	1339.26	
24	0.6445	1057.1	1075.8	1072.9	0.367	4.212	83.010	10.898	1.372	0.049	0.079	0.007	0.006	0.000	0.000	0.000	0.000	0.000	1336.89	
25	0.6495	1064.2	1083.1	1080.2	0.384	4.221	82.115	11.659	1.471	0.051	0.085	0.007	0.006	0.000	0.000	0.000	0.000	0.000	1340.75	
26	0.6396	1045.8	1064.3	1061.4	0.333	4.489	83.833	9.936	1.270	0.047	0.078	0.007	0.007	0.000	0.000	0.000	0.000	0.000	1327.65	
27	0.6359	1040.4	1058.8	1056.0	0.316	4.499	84.468	9.400	1.187	0.045	0.072	0.007	0.006	0.000	0.000	0.000	0.000	0.000	1324.65	
28	0.6370	1043.5	1062.0	1059.2	0.324	4.403	84.276	9.668	1.199	0.045	0.072	0.007	0.006	0.000	0.000	0.000	0.000	0.000	1327.43	
29	0.6394	1049.0	1067.6	1064.8	0.339	4.268	83.870	10.151	1.240	0.046	0.073	0.007	0.006	0.000	0.000	0.000	0.000	0.000	1331.94	
30	0.6389	1048.4	1066.9	1064.1	0.336	4.263	83.956	10.086	1.228	0.045	0.072	0.007	0.006	0.000	0.000	0.000	0.000	0.000	1331.67	
31	0.6382	1046.9	1065.4	1062.5	0.332	4.295	84.087	9.937	1.218	0.046	0.072	0.007	0.006	0.000	0.000	0.000	0.000	0.000	1330.48	
Avg	0.6240	1030.0	1048.0	1045.2	0.287	4.075	86.706	7.811	1.014	0.038	0.060	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1323.44	

Zone 34

# Source Daily Summary

January 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	0.6302	1030.3	1048.6	1045.9	1.165	3.290	85.728	9.305	0.483	0.011	0.019	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1317.82	-66.73
2	0.6209	1018.3	1036.4	1033.8	1.078	3.277	87.476	7.722	0.419	0.010	0.017	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1312.20	-74.05
3	0.6166	1011.1	1029.0	1026.4	1.052	3.357	88.265	6.921	0.381	0.009	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1307.40	-77.98
4	0.6187	1014.4	1032.4	1029.8	1.088	3.297	87.911	7.273	0.406	0.009	0.016	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1309.46	-75.95
5	0.6214	1018.4	1036.4	1033.8	1.105	3.285	87.399	7.754	0.430	0.010	0.017	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1311.70	-73.54
6	0.6264	1025.6	1043.8	1041.1	1.125	3.278	86.451	8.652	0.466	0.011	0.018	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1315.80	-69.52
7	0.6182	1012.9	1030.8	1028.2	1.067	3.381	87.943	7.206	0.382	0.008	0.014	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1307.94	-76.84
8	0.6218	1016.2	1034.2	1031.6	1.113	3.444	87.302	7.680	0.434	0.010	0.016	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1308.48	-73.83
9	0.6201	1013.3	1031.3	1028.7	1.118	3.448	87.610	7.413	0.388	0.009	0.014	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1306.59	-75.77
10	0.6215	1018.6	1036.7	1034.1	1.075	3.323	87.354	7.784	0.436	0.010	0.017	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1311.94	-73.45
11	0.6234	1020.8	1038.9	1036.3	1.113	3.307	87.029	8.070	0.453	0.010	0.017	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1312.80	-71.89
12	0.6315	1033.9	1052.3	1049.6	1.165	3.191	85.527	9.557	0.527	0.012	0.021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1321.11	-64.87
13	0.6340	1037.8	1056.2	1053.6	1.159	3.201	85.051	9.984	0.568	0.014	0.024	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1323.44	-62.65
14	0.6187	1015.0	1032.9	1030.3	1.053	3.319	87.863	7.339	0.401	0.009	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1310.12	-76.19
15	0.6242	1022.4	1040.5	1037.9	1.169	3.198	86.957	8.184	0.463	0.011	0.018	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1314.02	-71.12
16	0.6266	1026.2	1044.4	1041.7	1.145	3.235	86.469	8.620	0.500	0.012	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1316.27	-69.01
17	0.6175	1011.4	1029.4	1026.8	1.148	3.271	88.194	6.985	0.379	0.008	0.014	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1306.92	-77.50
18	0.6239	1023.3	1041.4	1038.8	1.124	3.191	86.965	8.227	0.463	0.011	0.019	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1315.39	-71.03
19	0.6206	1017.3	1035.3	1032.7	1.161	3.192	87.584	7.649	0.391	0.009	0.014	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1311.13	-74.55
20	0.6176	1012.4	1030.3	1027.7	1.107	3.285	88.131	7.078	0.377	0.008	0.014	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1308.03	-77.28
21	0.6257	1032.1	1050.4	1047.8	1.078	2.890	86.640	8.858	0.502	0.012	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1324.83	-68.26
22	0.6238	1027.0	1045.2	1042.5	1.124	2.956	87.008	8.434	0.451	0.011	0.018	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1320.25	-70.42
23	0.6211	1021.2	1039.2	1036.6	1.102	3.087	87.499	7.855	0.430	0.010	0.017	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1315.62	-73.18
24	0.6231	1022.1	1040.2	1037.6	1.120	3.191	87.106	8.110	0.445	0.010	0.017	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1314.73	-71.89
25	0.6211	1018.3	1036.3	1033.7	1.138	3.211	87.521	7.664	0.438	0.010	0.017	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1311.90	-73.58
26	0.6298	1031.9	1050.1	1047.5	1.178	3.136	85.888	9.251	0.514	0.012	0.021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1320.22	-66.21
27	0.6308	1035.3	1053.7	1051.0	1.111	3.126	85.633	9.556	0.540	0.013	0.022	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1323.56	-64.99
28	0.6219	1020.0	1038.0	1035.4	1.133	3.188	87.380	7.819	0.452	0.011	0.018	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1313.27	-72.72
29	0.6253	1026.5	1044.6	1042.0	1.101	3.159	86.703	8.512	0.494	0.011	0.019	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1318.04	-69.48
30	0.6734	1108.0	1127.6	1124.8	0.996	2.877	78.092	16.341	1.536	0.052	0.099	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1370.69	-31.50
31	0.6409	1053.3	1071.9	1069.2	1.086	3.019	83.754	11.389	0.704	0.017	0.030	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1335.82	-56.10
Avg	0.6255	1026.0	1043.8	1041.2	1.113	3.213	86.659	8.490	0.492	0.012	0.021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1316.69	-70.07

Zone 43

January-19

ZONE 550

MANDAN BORDER

NBPL - St Anthony

Weighted

Start Date	End Date	MCF	DK	BTU	MCF	DK	BTU Zone 28	AVG BTU	
1/1/2019	1/2/2019	1892	2044	1.0805	4950	5686	1.1486	1.130	1/1/2019
1/2/2019	1/3/2019	1898	2051	1.0804	2708	3096	1.1433	1.117	1/2/2019
1/3/2019	1/4/2019	1806	1955	1.0822	2031	2336	1.1500	1.118	1/3/2019
1/4/2019	1/5/2019	1986	2156	1.0855	1660	1922	1.1576	1.118	1/4/2019
1/5/2019	1/6/2019	1818	1965	1.0808	2737	3143	1.1487	1.122	1/5/2019
1/6/2019	1/7/2019	1930	2091	1.0833	2893	3292	1.1374	1.116	1/6/2019
1/7/2019	1/8/2019	1890	2047	1.0832	2571	2969	1.1535	1.124	1/7/2019
1/8/2019	1/9/2019	1873	2028	1.0827	4670	5379	1.1519	1.132	1/8/2019
1/9/2019	1/10/2019	1843	1987	1.0785	4856	5663	1.1660	1.142	1/9/2019
1/10/2019	1/11/2019	1868	2010	1.0757	3942	4607	1.1689	1.139	1/10/2019
1/11/2019	1/12/2019	1816	1957	1.0774	4199	4823	1.1486	1.127	1/11/2019
1/12/2019	1/13/2019	1958	2119	1.0822	4112	4712	1.1460	1.125	1/12/2019
1/13/2019	1/14/2019	1841	1999	1.0855	3193	3685	1.1534	1.129	1/13/2019
1/14/2019	1/15/2019	1894	2052	1.0830	3510	4051	1.1548	1.130	1/14/2019
1/15/2019	1/16/2019	1957	2112	1.0795	4588	5296	1.1543	1.132	1/15/2019
1/16/2019	1/17/2019	3460	3780	1.0899	4876	5607	1.1499	1.125	1/16/2019
1/17/2019	1/18/2019	6650	7176	1.0783	4920	5581	1.1356	1.103	1/17/2019
1/18/2019	1/19/2019	7097	7688	1.0834	5889	6604	1.1214	1.101	1/18/2019
1/19/2019	1/20/2019	1801	1966	1.0912	5515	6234	1.1304	1.121	1/19/2019
1/20/2019	1/21/2019	1839	1996	1.0852	5878	6671	1.1349	1.123	1/20/2019
1/21/2019	1/22/2019	1935	2098	1.0844	5100	5778	1.1329	1.120	1/21/2019
1/22/2019	1/23/2019	1736	1880	1.0830	3920	4467	1.1396	1.122	1/22/2019
1/23/2019	1/24/2019	1994	2160	1.0831	4808	5485	1.1399	1.123	1/23/2019
1/24/2019	1/25/2019	2888	3133	1.0843	6434	7335	1.1399	1.123	1/24/2019
1/25/2019	1/26/2019	3298	3576	1.0837	5444	6164	1.1319	1.114	1/25/2019
1/26/2019	1/27/2019	1806	1962	1.0862	4765	5386	1.1303	1.118	1/26/2019
1/27/2019	1/28/2019	1955	2133	1.0909	4802	5430	1.1304	1.119	1/27/2019
1/28/2019	1/29/2019	1949	2118	1.0870	6663	7555	1.1335	1.123	1/28/2019
1/29/2019	1/30/2019	4091	4436	1.0854	8963	10091	1.1265	1.114	1/29/2019
1/30/2019	1/31/2019	10305	11144	1.0813	7836	8653	1.1042	1.091	1/30/2019
1/31/2019	2/1/2019	4756	5145	1.0812	5769	6386	1.1069	1.095	1/31/2019
		85,830	92,964	1.0832	144,202	164,087	1.1410	1.1205	



# Alliance Pipeline

DAILY ANALYSIS — USA  
 ND07MD1 — Hankinson Sales  
 January 2019

DAY	Heating Value (BTU/ft <sup>3</sup> )	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	1,155.047	0.6618	84.3185	9.5292	3.5798	0.3666	0.6385	0.0656	0.0509	0.0260	1.0101	0.4030	0.0119
2	1,154.701	0.6619	84.3008	9.4940	3.6304	0.3629	0.6253	0.0625	0.0485	0.0251	1.0325	0.4063	0.0116
3	1,153.525	0.6612	84.3846	9.4613	3.5906	0.3615	0.6161	0.0597	0.0483	0.0258	1.0327	0.4076	0.0118
4	1,153.997	0.6612	84.3839	9.4843	3.5508	0.3755	0.6384	0.0584	0.0474	0.0254	1.0277	0.3963	0.0119
5	1,156.817	0.6629	84.2086	9.5662	3.5889	0.3988	0.6806	0.0602	0.0469	0.0245	1.0178	0.3954	0.0121
6	1,160.010	0.6664	83.9259	9.5404	3.6717	0.4340	0.7565	0.0692	0.0527	0.0279	1.0426	0.4667	0.0124
7	1,157.501	0.6653	84.0081	9.4767	3.6875	0.4111	0.7125	0.0661	0.0488	0.0253	1.0669	0.4841	0.0127
8	1,157.393	0.6644	84.2088	9.3780	3.5934	0.4510	0.7513	0.0600	0.0437	0.0226	1.0050	0.4736	0.0126
9	1,155.992	0.6633	84.2418	9.5327	3.4730	0.4329	0.7313	0.0586	0.0419	0.0215	0.9819	0.4720	0.0125
10	1,158.291	0.6647	84.0921	9.6026	3.5026	0.4463	0.7583	0.0623	0.0468	0.0244	0.9824	0.4697	0.0125
11	1,157.438	0.6645	84.2587	9.3356	3.5501	0.4553	0.7623	0.0689	0.0526	0.0262	0.9919	0.4858	0.0126
12	1,157.931	0.6647	84.1963	9.3524	3.6716	0.4287	0.7141	0.0710	0.0545	0.0270	0.9989	0.4729	0.0126
13	1,156.106	0.6629	84.3286	9.3706	3.6542	0.3833	0.6579	0.0737	0.0569	0.0289	0.9926	0.4409	0.0125
14	1,157.812	0.6640	84.2764	9.3336	3.6928	0.3943	0.6806	0.0796	0.0640	0.0346	0.9865	0.4447	0.0129
15	1,157.368	0.6642	84.3673	9.2045	3.6158	0.4369	0.7352	0.0769	0.0613	0.0328	0.9893	0.4679	0.0121
16	1,159.905	0.6653	84.2744	9.2510	3.6407	0.4637	0.7623	0.0790	0.0633	0.0343	0.9683	0.4505	0.0123
17	1,161.070	0.6663	84.2590	9.2246	3.5457	0.5034	0.8469	0.0804	0.0641	0.0348	0.9571	0.4715	0.0124
18	1,158.740	0.6647	84.2520	9.3387	3.6323	0.4489	0.7479	0.0686	0.0509	0.0259	0.9581	0.4643	0.0123
19	1,155.759	0.6629	84.2960	9.4076	3.6774	0.3910	0.6479	0.0635	0.0456	0.0222	0.9738	0.4622	0.0129
20	1,155.881	0.6629	84.2939	9.4103	3.6608	0.3947	0.6548	0.0646	0.0473	0.0233	0.9832	0.4540	0.0130
21	1,154.507	0.6619	84.3413	9.4771	3.5932	0.3787	0.6330	0.0647	0.0461	0.0225	0.9846	0.4455	0.0133
22	1,151.407	0.6599	84.5628	9.3958	3.5340	0.3528	0.5911	0.0621	0.0446	0.0225	0.9641	0.4572	0.0130
23	1,152.298	0.6605	84.5119	9.4033	3.5390	0.3590	0.6087	0.0652	0.0483	0.0243	0.9717	0.4560	0.0126
24	1,153.542	0.6613	84.5024	9.3518	3.5178	0.4025	0.6624	0.0605	0.0444	0.0234	0.9688	0.4536	0.0126
25	1,153.774	0.6612	84.5451	9.3197	3.5184	0.4044	0.6642	0.0629	0.0468	0.0240	0.9498	0.4520	0.0126
26	1,150.060	0.6585	84.8781	9.1370	3.4238	0.3925	0.6424	0.0601	0.0440	0.0222	0.9582	0.4303	0.0115
27	1,152.505	0.6598	84.7142	9.2160	3.4913	0.4006	0.6619	0.0599	0.0450	0.0231	0.9772	0.3995	0.0114
28	1,153.374	0.6600	84.5089	9.5318	3.4723	0.3734	0.6255	0.0595	0.0435	0.0225	0.9616	0.3891	0.0121
29	1,152.536	0.6596	84.5729	9.5040	3.4244	0.3767	0.6330	0.0583	0.0423	0.0218	0.9565	0.3982	0.0120
30	1,153.194	0.6600	84.5006	9.5530	3.4418	0.3763	0.6356	0.0594	0.0417	0.0214	0.9579	0.4001	0.0122
31	1,151.914	0.6590	84.6377	9.5025	3.4009	0.3728	0.6147	0.0582	0.0425	0.0232	0.9401	0.3957	0.0118
Volume	1,155.492	0.6625	84.3603	9.4096	3.5663	0.4042	0.6803	0.0651	0.0492	0.0255	0.9868	0.4405	0.0123
Weight Avg Energy	1,155.498	0.6625	84.3600	9.4095	3.5664	0.4042	0.6804	0.0651	0.0492	0.0255	0.9868	0.4405	0.0123

*Done 1/30*

January-19

ZONE 610

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		
1/1/2019	1/2/2019	516	615	1.1911	856	898	1.0486	1.102	1/1/2019
1/2/2019	1/3/2019	399	475	1.1911	567	588	1.0364	1.100	1/2/2019
1/3/2019	1/4/2019	369	440	1.1911	475	489	1.0290	1.100	1/3/2019
1/4/2019	1/5/2019	354	421	1.1911	457	471	1.0324	1.102	1/4/2019
1/5/2019	1/6/2019	410	488	1.1911	630	652	1.0364	1.097	1/5/2019
1/6/2019	1/7/2019	408	486	1.1911	536	559	1.0438	1.107	1/6/2019
1/7/2019	1/8/2019	461	550	1.1911	684	705	1.0308	1.095	1/7/2019
1/8/2019	1/9/2019	568	677	1.1911	972	1005	1.0342	1.092	1/8/2019
1/9/2019	1/10/2019	548	652	1.1911	915	944	1.0313	1.091	1/9/2019
1/10/2019	1/11/2019	443	528	1.1911	626	648	1.0367	1.101	1/10/2019
1/11/2019	1/12/2019	541	645	1.1911	905	941	1.0389	1.096	1/11/2019
1/12/2019	1/13/2019	499	595	1.1911	818	860	1.0523	1.105	1/12/2019
1/13/2019	1/14/2019	447	533	1.1911	730	771	1.0562	1.107	1/13/2019
1/14/2019	1/15/2019	447	532	1.1911	669	691	1.0329	1.096	1/14/2019
1/15/2019	1/16/2019	511	609	1.1911	852	887	1.0405	1.097	1/15/2019
1/16/2019	1/17/2019	506	603	1.1911	779	814	1.0444	1.102	1/16/2019
1/17/2019	1/18/2019	577	687	1.1911	939	967	1.0294	1.091	1/17/2019
1/18/2019	1/19/2019	611	727	1.1911	1016	1058	1.0414	1.098	1/18/2019
1/19/2019	1/20/2019	593	706	1.1911	973	1008	1.0353	1.094	1/19/2019
1/20/2019	1/21/2019	576	686	1.1911	982	1012	1.0303	1.090	1/20/2019
1/21/2019	1/22/2019	530	631	1.1911	879	923	1.0504	1.103	1/21/2019
1/22/2019	1/23/2019	485	578	1.1911	725	758	1.0452	1.104	1/22/2019
1/23/2019	1/24/2019	610	726	1.1911	1033	1073	1.0392	1.096	1/23/2019
1/24/2019	1/25/2019	613	731	1.1911	975	1014	1.0402	1.098	1/24/2019
1/25/2019	1/26/2019	517	616	1.1911	837	867	1.0363	1.095	1/25/2019
1/26/2019	1/27/2019	471	561	1.1911	749	785	1.0501	1.105	1/26/2019
1/27/2019	1/28/2019	496	591	1.1911	732	770	1.0537	1.109	1/27/2019
1/28/2019	1/29/2019	662	789	1.1911	1130	1173	1.0380	1.095	1/28/2019
1/29/2019	1/30/2019	727	866	1.1911	1189	1242	1.0446	1.100	1/29/2019
1/30/2019	1/31/2019	613	730	1.1911	1015	1143	1.1276	1.152	1/30/2019
1/31/2019	2/1/2019	466	555	1.1911	770	826	1.0719	1.117	1/31/2019
		15,974	19,029		25,415	26,542	1.0438	1.1012	

ROW ID	LOCATION DESCRIPTION	GROSS HEATING VALUE (BTU/CF)	SPECIFIC GRAVITY	WOBBE (cal)	CRICONDENTHERM (deg F)	NITROGEN (mole percent)	CARBON DIOXIDE (mole percent)	METHANE (mole percent)	ETHANE (mole percent)	PROPANE (mole percent)	NORMAL BUTANE (mole percent)	ISO BUTANE (mole percent)	PENTANE (mole percent)	ISO PENTANE (mole percent)	NEO PENTANE (mole percent)	HEXANES PLUS (mole percent)	HYDROGEN (mole percent)	HELIUM (mole percent)	PRODUCTION DATE	POSTING DATE	ChangeTimestamp	NOTES
11587	GLEN ULLIN	1081.5	0.6278	1365	-60	1.554	0.8579	85.9932	10.8265	0.5832	0.0211	0.0129	0.001	0.0006	0	0	0.133	0.0179	12/31/2018	1/1/2019	1/1/2019 3:54:17 PM	
11587	GLEN ULLIN	1079.1	0.626	1363.9	-60.9	1.5343	0.8526	86.4035	10.4245	0.6017	0.0241	0.0143	0.0009	0.0009	0	0	0.1268	0.0179	1/1/2019	1/2/2019	1/2/2019 3:49:17 PM	
11587	GLEN ULLIN	1081.4	0.6282	1364.4	-59.2	1.6242	0.8433	85.8959	10.7814	0.633	0.0261	0.0151	0.0011	0.0012	0	0	0.161	0.0184	1/2/2019	1/3/2019	1/3/2019 3:51:49 PM	
11587	GLEN ULLIN	1083.5	0.6297	1365.4	-58.7	1.6268	0.8481	85.8589	10.9623	0.6207	0.0264	0.0149	0.0012	0.0013	0	0	0.0212	0.0188	1/3/2019	1/4/2019	1/4/2019 3:51:12 PM	
11587	GLEN ULLIN	1083.9	0.6294	1366.3	-58.6	1.5888	0.8387	85.9301	10.9071	0.6475	0.0264	0.015	0.0013	0.0012	0	0	0.0262	0.0186	1/4/2019	1/5/2019	1/5/2019 3:58:21 PM	
11587	GLEN ULLIN	1081.8	0.6284	1364.7	-59.5	1.6203	0.8393	85.931	10.8306	0.6163	0.0223	0.0132	0.0011	0.0008	0	0	0.108	0.0186	1/5/2019	1/6/2019	1/6/2019 3:48:19 PM	
11587	GLEN ULLIN	1082.2	0.6287	1364.9	-59.5	1.6125	0.8492	85.8733	10.9263	0.5915	0.0215	0.0125	0.0012	0.0011	0	0	0.0939	0.0186	1/6/2019	1/7/2019	1/7/2019 3:51:57 PM	
11587	GLEN ULLIN	1080.8	0.6279	1364	-59.8	1.6093	0.8587	85.9024	10.8056	0.6011	0.0216	0.0124	0.001	0.0009	0	0	0.1702	0.0181	1/7/2019	1/8/2019	1/8/2019 3:55:19 PM	
11587	GLEN ULLIN	1082.6	0.6297	1364.3	-58.6	1.6517	0.8677	85.5984	11.0412	0.6334	0.0197	0.0117	0.0013	0.0009	0	0	0.1578	0.0181	1/8/2019	1/9/2019	1/9/2019 3:54:04 PM	
11587	GLEN ULLIN	1077.9	0.6258	1362.5	-61.9	1.6024	0.8499	86.2457	10.5641	0.5275	0.0171	0.0102	0.0012	0.0006	0	0	0.1651	0.0181	1/9/2019	1/10/2019	1/10/2019 3:57:39 PM	
11587	GLEN ULLIN	1076.5	0.625	1361.7	-62	1.6218	0.8398	86.4326	10.3159	0.5691	0.019	0.0109	0.0013	0.0013	0	0	0.1729	0.018	1/10/2019	1/11/2019	1/11/2019 3:59:24 PM	
11587	GLEN ULLIN	1078.6	0.6263	1362.9	-60.7	1.6174	0.8391	86.2238	10.475	0.6155	0.0224	0.0129	0.0011	0.0011	0	0	0.1751	0.018	1/11/2019	1/12/2019	1/12/2019 3:50:20 PM	
11587	GLEN ULLIN	1082.4	0.6291	1364.7	-59.1	1.6574	0.837	85.6543	11.0208	0.6179	0.0192	0.0112	0.0009	0.0007	0	0	0.1635	0.0185	1/12/2019	1/13/2019	1/13/2019 3:50:25 PM	
11587	GLEN ULLIN	1084.3	0.6301	1365.9	-57.7	1.6307	0.8477	85.485	11.1841	0.6358	0.0226	0.0127	0.0016	0.0013	0	0.0006	0.162	0.0182	1/13/2019	1/14/2019	1/14/2019 4:02:42 PM	
11587	GLEN ULLIN	1080.5	0.6275	1364.1	-59.8	1.6189	0.8378	85.9847	10.7242	0.6059	0.025	0.0136	0.0013	0.0012	0	0	0.17	0.0182	1/14/2019	1/15/2019	1/15/2019 3:50:25 PM	
11587	GLEN ULLIN	1080.6	0.6274	1364.2	-59	1.5963	0.8457	86.0862	10.5956	0.6479	0.0295	0.0163	0.0016	0.0016	0	0.0006	0.1616	0.0182	1/15/2019	1/16/2019	1/16/2019 4:13:15 PM	
11587	GLEN ULLIN	1081.2	0.6271	1365.4	-47.5	1.5312	0.8416	86.2767	10.4079	0.7161	0.0329	0.0212	0.0032	0.0035	0	0.0072	0.1495	0.0177	1/16/2019	1/17/2019	1/17/2019 3:52:46 PM	
11587	GLEN ULLIN	1078.7	0.626	1363.3	-60.4	1.5915	0.8387	86.3679	10.3024	0.6826	0.0221	0.0128	0.0013	0.0011	0	0	0.1634	0.0178	1/17/2019	1/18/2019	1/18/2019 3:54:35 PM	
11587	GLEN ULLIN	1086.5	0.6324	1366.2	-55.7	1.6951	0.8593	85.1005	11.4005	0.7033	0.0318	0.0177	0.0017	0.0017	0	0.0002	0.1713	0.0181	1/18/2019	1/19/2019	1/19/2019 3:53:22 PM	
11587	GLEN ULLIN	1090.6	0.6347	1369	-55.1	1.6516	0.8685	84.579	12.0308	0.658	0.021	0.0124	0.0008	0.0006	0	0	0.161	0.0177	1/19/2019	1/20/2019	1/20/2019 4:04:45 PM	
11587	GLEN ULLIN	1084.1	0.6303	1365.5	-58.1	1.6314	0.8624	85.4725	11.1824	0.6385	0.021	0.0121	0.001	0.0009	0	0	0.1618	0.0176	1/20/2019	1/21/2019	1/21/2019 3:55:56 PM	
11587	GLEN ULLIN	1082.7	0.6292	1365	-58.8	1.6072	0.8625	85.7078	10.9908	0.6272	0.0214	0.012	0.0012	0.001	0	0	0.1531	0.0175	1/21/2019	1/22/2019	1/22/2019 3:58:20 PM	
11587	GLEN ULLIN	1082.8	0.6296	1364.7	-58.7	1.6309	0.8676	85.5838	11.1461	0.5695	0.0223	0.0122	0.0014	0.0011	0	0.0006	0.1485	0.0179	1/22/2019	1/23/2019	1/23/2019 4:02:13 PM	
11587	GLEN ULLIN	1081.2	0.6282	1364.1	-59.5	1.6136	0.8623	85.8507	10.8917	0.5731	0.0235	0.0127	0.0014	0.0013	0	0.0003	0.153	0.0179	1/23/2019	1/24/2019	1/24/2019 4:02:24 PM	
11587	GLEN ULLIN	1085.2	0.6308	1366.4	-57.3	1.6137	0.8612	85.592	11.151	0.6676	0.0222	0.0127	0.0012	0.001	0	0.0008	0.0608	0.0181	1/24/2019	1/25/2019	1/25/2019 4:03:14 PM	
11587	GLEN ULLIN	1082	0.6287	1364.6	-59.1	1.6418	0.8358	86.0096	10.8011	0.6212	0.0238	0.0133	0.0013	0.0013	0	0.0005	0.0338	0.0187	1/25/2019	1/26/2019	1/26/2019 3:53:30 PM	
11587	GLEN ULLIN	1087.2	0.6327	1366.9	-55.8	1.6897	0.8439	85.2997	11.3459	0.7134	0.0291	0.0163	0.0014	0.0014	0	0.0006	0.0406	0.019	1/26/2019	1/27/2019	1/27/2019 4:06:34 PM	
11587	GLEN ULLIN	1089.5	0.6343	1367.9	-55.2	1.7113	0.8454	84.8293	11.763	0.6992	0.0249	0.0144	0.0012	0.0011	0	0	0.0919	0.0191	1/27/2019	1/28/2019	1/28/2019 4:02:39 PM	
11587	GLEN ULLIN	1085.4	0.6316	1365.7	-57.4	1.7001	0.846	85.35	11.3235	0.6468	0.0224	0.0129	0.0012	0.0014	0	0	0.0789	0.0191	1/28/2019	1/29/2019	1/29/2019 4:09:54 PM	
11587	GLEN ULLIN	1083.3	0.6294	1365.4	-58.9	1.6221	0.8453	85.8006	10.9647	0.6446	0.0187	0.0111	0.0007	0.0006	0	0	0.0742	0.0185	1/29/2019	1/30/2019	1/30/2019 4:04:01 PM	
11587	GLEN ULLIN	1083.3	0.6287	1366.3	-58.7	1.5723	0.8324	85.9463	10.856	0.655	0.0229	0.0134	0.0012	0.0012	0	0.0003	0.083	0.0181	1/30/2019	1/31/2019	1/31/2019 4:05:00 PM	
11587	GLEN ULLIN	1081.6	0.6281	1364.7	-60	1.612	0.8354	85.9841	10.837	0.5872	0.0206	0.0121	0.001	0.0008	0	0	0.0931	0.0182	1/31/2019	2/1/2019	2/1/2019 3:57:17 PM	

32 record(s) retrieved

*2020*

<b>NORTH DAKOTA HEATING VALUE ZONES</b>		
<b>ZONES</b>	<b>MEASURING DEVICE</b>	<b>LOCATION</b>
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	JAN 19	DEC 18	NOV 18	OCT 18	SEPT 18	AUG 18	JULY 18	JUNE 18	MAY 18	APRIL 18	MARCH 18	FEB 18	ZONE
MT/ND	211	Sidney Border - MonDak Tfr - Sidney Plt	1197	1202	1200	1207	1202	1191	1203	1202	1171	1193	1191	1211	1195	211
ND	24	Williston Border - Charbonneau Station	1147	1163	1164	1163	1140	1152	1136	1158	1141	1135	1136	1140	1140	24
ND	25	Waford City West Border	1194	1191	1196	1199	1199	1200	1197	1204	1202	1192	1185	1179	1184	25
ND	28	Bismarck Station - Glen Ullin Station	1145	1141	1120	1112	1153	1173	1162	1153	1173	1172	1163	1121	1098	28
ND	31	Dickinson Brd - Belfield Trf - G Ullin Str	1133	1139	1132	1110	1134	1144	1132	1147	1139	1158	1134	1122	1102	31
ND/MT	32	Cabin Creek Station - Belfied Transfer	1110	1128	1093	1068	1110	1106	1133	1136	1127	1113	1116	1104	1080	32
ND	33	Little Knife Plant	1174	1172	1173	1174	1172	1172	1176	1175	1174	1176	1175	1175	1176	33
ND	34	Badlands Plant/Bowman Border	1015	1048	1042	1073	1063	1018	979	983	984	996	996	996	996	34
ND	43	Spring Creek I - Sax Valve I	1131	1044	1051	1062	1144	1158	1172	1152	1155	1160	1164	1158	1148	43
ND/MT	241	Fairview Border	1184	1173	1181	1193	1175	1186	1195	1196	1180	1168	1151	1205	1206	241
ND	260	North Tioga Transfer - Nesson Plant	1067	1113	1104	1095	1102	1120	1101	1127	1089	989	989	987	986	260
ND	261	Tioga Comp Station - Robinson Lake Plant	1176	1180	1173	1177	1183	1181	1175	1177	1178	1169	1176	1173	1171	261
ND	262	Minot Bdr - Palermo Bdr - Bismarck Stn	1180	1183	1182	1182	1179	1175	1160	1156	1175	1180	1198	1199	1191	262
ND	263	Lignite Plant	1136	1149	1146	1127	1140	1146	1162	1135	1115	1128	1135	1115	1135	263
ND	264	Epping Border	1139	1149	1147	1153	1139	1135	1135	1148	1148	1129	1128	1118	1144	264
ND	265	Tioga Comp Station - County Line Plant	1177	1179	1173	1177	1183	1182	1178	1176	1178	1175	1176	1173	1171	265
ND	266	County Line Plant	1180	1177	1179	1180	1181	1180	1178	1181	1181	1180	1181	1182	1185	266
ND	271	Bismarck Station - Cleveland Station	1174	1176	1180	1180	1178	1173	1162	1153	1173	1173	1194	1187	1159	271
ND	272	Cleveland Station - Mapleton	1174	1176	1180	1179	1177	1173	1160	1154	1173	1172	1194	1187	1158	272
ND	273	Cleveland Station - Grafton Border	1173	1176	1180	1179	1177	1173	1161	1153	1173	1171	1192	1187	1158	273
ND	550	Mandan Border / NBPL-St Anthony	1138	1121	1106	1102	1145	1173	1162	1150	1173	1172	1163	1100	1090	550
ND	610	MDU-Waford City BTU	1155	1101	1109	1131	1180	1181	1175	1152	1156	1164	1174	1170	1168	610
ND	802	NBPL - Linton	1086	1083	1084	1086	1092	1097	1092	1101	1097	1083	1074	1069	1068	802
ND	903	Hettinger Propane	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	903
ND	600	Alliance Pipeline - Hankinson	1155	1155	1153	1155	1155	1160	1159	1159	1153	1148	1152	1153	1152	600

<b>THERMAL ZONE VARIANCE DOCUMENTATION</b>		
<b>January 2019</b>		
<b><i>ZONE</i></b>	<b><i>BTU VARIANCE</i></b>	<b><i>REASON</i></b>
28	21	Source of Blend of Gas
32	25	Source of Blend of Gas