



UTILITIES CO.

A Division of MDU Resources Group, Inc.

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

October 19, 2018

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

Re: Case No. PU-18-002 (Therm Billing)  
Monthly Report – August 2018

Montana-Dakota Utilities Co., a Division of MDU Resources Group, Inc., herewith submits the following information, pursuant to the Ordering paragraphs one and two of the Order issued in Case No. 11,006, dated October 20, 1987 and pursuant to the North Dakota Administrative Code 69-09-01-02, part 2.

1. Attachment A is a schedule showing the thermal billing factors by community that reflect the BTU values shown on Attachment B and were used for billing purposes in September 2018.
2. Attachment B consists of copies of the monthly Heating Value Test Reports received from our suppliers for the month of August 2018.
3. Attachment C is a listing which states the type of measuring device in place at each zone.
4. Attachment D is a monthly list of the heating value data, by zone, for the most recent 12-month period and an average thereof. It is being provided pursuant to a Staff request.
5. Attachment E provides a brief explanation of the thermal variances, where applicable, for the month of August 2018.

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 blue ink that reads 'Jamie Aberle'.

Tamie Aberle  
Director of Regulatory Affairs

**Montana-Dakota Utilities Co.**  
**Therm Billing Factors - North Dakota**  
**Sep-18**

Town	Heat Zone	Therm Factor
MDU-303-ALEXANDER	025	1.1372
MDU-308-ARNEGARD	025	1.1372
MDU-314-APPLE VALLEY	271	1.1125
MDU-318-BEACH	032	1.0498
MDU-319-BELFIELD	032	1.0575
MDU-323-BERTHOLD	262	1.0918
MDU-324-BEULAH	032	1.0575
MDU-327-BISMARCK	028	1.1125
MDU-330-BOWMAN	034	0.9218
MDU-337-BURLINGTON	262	1.1154
MDU-343-CARRINGTON	273	1.1125
MDU-344-CLEVELAND	272	1.1056
MDU-364-CAVALIER	273	1.1360
MDU-365-DAWSON	271	1.1047
MDU-368-DES LACS	262	1.0997
MDU-369-DICKINSON	031	1.0756
MDU-374-FT TOTTEN	273	1.1203
MDU-375-DEVILS LAKE	273	1.1203
MDU-379-BARLOW	273	1.1125
MDU-384-EPPING	264	1.0843
MDU-387-ELDRIDGE	272	1.1135
MDU-407-GLADSTONE	031	1.0756
MDU-411-GLEN ULLIN	031	1.0833
MDU-413-GOLVA	032	1.0344
MDU-416-GARRISON	262	1.0997
MDU-417-GRAFTON	273	1.1438
MDU-429-HEBRON	031	1.0833
MDU-432-HETTINGER	903	2.3875
MDU-449-JAMESTOWN	272	1.1213
MDU-459-KILLDEER	033	1.1098
MDU-463-LANGDON	273	1.1125
MDU-469-LEFOR	031	1.0756
MDU-474-LIGNITE	263	1.0797
MDU-475-LINTON	802	1.0623
MDU-478-LINCOLN	028	1.1125
MDU-488-MCKENZIE	271	1.1125
MDU-494-MEDINA	271	1.1047
MDU-498-MANDAN	028	1.1125
MDU-500-MARMARTH	034	0.9084
MDU-505-MINOT	262	1.1154
MDU-510-MOTT	031	1.0756
MDU-512-MAX	262	1.1154
MDU-522-NEW ENGLAND	031	1.0678
MDU-524-NEW SALEM	028	1.0890
MDU-532-NEW ROCKFORD	273	1.1125
MDU-539-PARK RIVER	273	1.1360
MDU-540-PALERMO	262	1.0918
MDU-558-RAY	264	1.0843
MDU-561-REGENT	031	1.0756

MDU-563-RHAME	034	0.8951	✓
MDU-564-RICHARDTON	031	1.0678	✓
MDU-568-ROSS	261	1.1037	✓
MDU-572-RUTHVILLE	262	1.1154	✓
MDU-574-SANBORN	272	1.1213	✓
MDU-583-SENTINEL BUTTE	032	1.0498	✓
MDU-588-SOUTH HEART	031	1.0678	✓
MDU-717-SPIRITWOOD	272	1.1213	✓
MDU-590-SPRINGBROOK	264	1.0843	✓
MDU-591-STANLEY	261	1.1197	✓
MDU-593-STEELE	271	1.1047	✓
MDU-594-STERLING	028	1.1125	✓
MDU-598-SHEYENNE	273	1.1203	✓
MDU-605-SURREY	262	1.1154	✓
MDU-610-TAPPEN	271	1.1047	✓
MDU-611-TAYLOR	031	1.0678	✓
MDU-616-TIOGA	260	1.0568	✓
MDU-619-TURTLE LAKE	262	1.0997	✓
MDU-620-TRENTON	024	1.1016	✓
MDU-624-UNDERWOOD	262	1.0997	✓
MDU-625-VALLEY CITY	272	1.1291	✓
MDU-629-WALHALLA	273	1.1360	✓
MDU-632-WATFORD CITY	610	1.0881	✓
MDU-636-WHEELOCK	264	1.0765	✓
MDU-637-WHITE EARTH	261	1.1117	✓
MDU-642-WILLISTON	024	1.1016	✓
MDU-646-WASHBURN	262	1.1075	✓
MDU-647-WILTON	262	1.0918	✓
MDU-664-RIVERDALE	262	1.0997	✓
MDU-691-FAIRVIEW	241	1.1377	✓
MDU-712-MINOT AFB	262	1.1154	✓
MDU-718-FAIRMOUNT	600	1.1395	✓
MDU-732-NEKOMA	273	1.1125	✓
MDU-732-MSR SITE	273	1.1125	✓

# Source Daily Summary

August 2018

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	0.7285	1168.3	1189.0	1184.9	1.291	3.926	69.680	21.067	3.534	0.162	0.304	0.019	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1389.65
2	0.7331	1174.8	1195.6	1191.1	1.301	3.938	69.193	21.222	3.758	0.186	0.358	0.024	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1392.90
3	0.7286	1166.8	1187.4	1183.0	1.293	4.024	69.608	21.076	3.515	0.157	0.293	0.018	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1387.69
4	0.7286	1167.3	1188.0	1183.8	1.289	3.999	69.467	21.367	3.408	0.152	0.285	0.018	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1388.38
5	0.7307	1170.9	1191.6	1187.4	1.287	3.977	69.222	21.530	3.475	0.159	0.309	0.022	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1390.59
6	0.7476	1199.2	1220.5	1215.5	1.261	3.861	67.726	21.700	4.593	0.236	0.521	0.048	0.052	0.000	0.000	0.000	0.000	0.000	0.000	1407.74
7	0.7484	1200.6	1221.9	1216.9	1.261	3.851	67.662	21.620	4.786	0.227	0.494	0.046	0.050	0.000	0.000	0.000	0.000	0.000	0.000	1408.67
8	0.7409	1188.4	1209.4	1204.8	1.269	3.887	68.306	21.520	4.414	0.180	0.364	0.030	0.030	0.000	0.000	0.000	0.000	0.000	0.000	1401.49
9	0.7346	1179.8	1200.7	1196.4	1.309	3.770	68.231	22.849	3.404	0.142	0.266	0.016	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1397.53
10	0.7317	1173.0	1193.7	1189.3	1.301	3.920	69.575	20.739	3.889	0.185	0.348	0.023	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1392.03
11	0.7424	1191.3	1212.3	1207.4	1.294	3.827	67.438	22.947	3.905	0.189	0.358	0.023	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1403.55
12	0.7390	1186.1	1207.1	1202.1	1.308	3.800	67.688	23.125	3.546	0.169	0.323	0.022	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1400.69
13	0.7344	1178.8	1199.7	1195.7	1.307	3.810	68.251	22.821	3.367	0.144	0.270	0.016	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1396.59
14	0.7357	1181.7	1202.7	1198.6	1.312	3.748	67.901	23.351	3.225	0.147	0.281	0.019	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1398.81
15	0.7369	1183.9	1204.9	1200.7	1.308	3.738	67.710	23.484	3.304	0.145	0.277	0.018	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1400.19
16	0.7370	1183.6	1204.6	1200.3	1.311	3.760	67.688	23.478	3.318	0.141	0.270	0.018	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1399.74
17	0.7341	1178.3	1199.2	1194.8	1.313	3.810	68.205	22.959	3.285	0.137	0.260	0.017	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1396.18
18	0.7326	1175.6	1196.4	1192.1	1.314	3.830	68.775	22.136	3.478	0.150	0.284	0.018	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1394.40
19	0.7352	1180.5	1201.4	1197.3	1.318	3.766	67.996	23.224	3.252	0.141	0.269	0.018	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1397.82
20	0.7212	1194.3	1215.5	1211.5	0.295	3.169	69.747	23.080	3.435	0.094	0.164	0.009	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1427.91
21	0.7222	1203.8	1225.1	1221.1	0.057	3.041	69.656	23.186	3.799	0.094	0.157	0.006	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1438.25
22	0.7310	1185.9	1206.9	1202.6	0.950	3.604	68.581	23.035	3.431	0.128	0.242	0.015	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1408.33
23	0.7352	1181.1	1202.0	1198.0	1.311	3.748	67.994	23.206	3.315	0.137	0.259	0.016	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1398.49
24	0.7357	1181.7	1202.6	1198.4	1.312	3.754	67.767	23.553	3.195	0.134	0.255	0.017	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1398.77
25	0.7368	1183.5	1204.4	1200.5	1.309	3.748	68.096	22.736	3.641	0.152	0.286	0.018	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1399.83
26	0.7353	1181.7	1202.6	1198.7	1.311	3.724	68.083	23.082	3.335	0.148	0.282	0.019	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1398.99
27	0.7338	1178.9	1199.8	1196.0	1.318	3.744	68.084	23.310	3.127	0.134	0.253	0.016	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1397.14
28	0.7351	1180.8	1201.7	1197.8	1.321	3.745	67.960	23.306	3.243	0.137	0.258	0.017	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1398.14
29	0.7343	1179.2	1200.1	1196.1	1.322	3.763	68.141	23.095	3.243	0.138	0.264	0.018	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1397.05
30	0.7368	1183.7	1204.6	1200.5	1.316	3.733	67.826	23.261	3.426	0.139	0.265	0.018	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1399.93
31	0.7367	1183.4	1204.4	1200.4	1.313	3.736	67.901	23.143	3.464	0.141	0.269	0.017	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1399.84
Avg	0.7346	1182.0	1203.1	1198.8	1.219	3.766	68.392	22.587	3.552	0.152	0.293	0.020	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1400.24

Zone 211

# Source Daily Summary

August 2018

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	0.6772	1118.1	1137.9	1134.5	0.727	3.017	77.409	16.850	1.798	0.058	0.121	0.009	0.011	0.000	0.000	0.000	0.000	0.000	1379.58	
2	0.6769	1117.4	1137.1	1133.6	0.724	3.036	77.463	16.782	1.794	0.058	0.122	0.009	0.011	0.000	0.000	0.000	0.000	0.000	1379.00	
3	0.6793	1121.7	1141.6	1137.9	0.736	2.985	77.148	17.003	1.902	0.065	0.138	0.011	0.013	0.000	0.000	0.000	0.000	0.000	1381.82	
4	0.6762	1116.4	1136.2	1132.6	0.730	3.019	77.633	16.617	1.797	0.059	0.125	0.010	0.012	0.000	0.000	0.000	0.000	0.000	1378.55	
5	0.6757	1115.4	1135.2	1131.6	0.718	3.059	77.835	16.295	1.856	0.065	0.144	0.012	0.015	0.000	0.000	0.000	0.000	0.000	1377.68	
6	0.6773	1117.9	1137.7	1134.1	0.737	3.023	77.521	16.630	1.866	0.063	0.135	0.011	0.013	0.000	0.000	0.000	0.000	0.000	1379.20	
7	0.6761	1116.2	1135.9	1132.3	0.724	3.042	77.659	16.546	1.818	0.061	0.128	0.010	0.012	0.000	0.000	0.000	0.000	0.000	1378.24	
8	0.6793	1120.7	1140.5	1136.8	0.742	3.037	77.156	16.938	1.899	0.064	0.138	0.011	0.014	0.000	0.000	0.000	0.000	0.000	1380.53	
9	0.6808	1122.8	1142.7	1139.0	0.755	3.032	76.842	17.235	1.922	0.062	0.130	0.009	0.012	0.000	0.000	0.000	0.000	0.000	1381.64	
10	0.6821	1125.4	1145.3	1141.5	0.746	3.010	76.758	17.194	2.053	0.069	0.145	0.011	0.014	0.000	0.000	0.000	0.000	0.000	1383.48	
11	0.6789	1120.6	1140.4	1136.8	0.714	3.042	77.402	16.536	2.060	0.071	0.150	0.011	0.014	0.000	0.000	0.000	0.000	0.000	1380.92	
12	0.6733	1110.3	1130.0	1126.0	0.612	3.302	78.146	15.892	1.806	0.068	0.147	0.012	0.015	0.000	0.000	0.000	0.000	0.000	1373.80	
13	0.6788	1120.6	1140.5	1136.9	0.744	2.988	77.182	17.032	1.836	0.063	0.132	0.010	0.013	0.000	0.000	0.000	0.000	0.000	1381.04	
14	0.6779	1118.9	1138.7	1135.1	0.733	3.030	77.426	16.696	1.879	0.066	0.143	0.012	0.015	0.000	0.000	0.000	0.000	0.000	1379.74	
15	0.6768	1116.5	1136.3	1132.7	0.724	3.083	77.547	16.588	1.848	0.061	0.127	0.009	0.012	0.000	0.000	0.000	0.000	0.000	1377.98	
16	0.6755	1114.4	1134.1	1130.5	0.723	3.095	77.777	16.369	1.828	0.060	0.127	0.010	0.012	0.000	0.000	0.000	0.000	0.000	1376.67	
17	0.6761	1115.1	1134.8	1131.2	0.724	3.100	77.686	16.443	1.834	0.061	0.130	0.010	0.012	0.000	0.000	0.000	0.000	0.000	1376.99	
18	0.6778	1117.9	1137.7	1134.0	0.729	3.083	77.611	16.325	1.985	0.073	0.162	0.014	0.018	0.000	0.000	0.000	0.000	0.000	1378.66	
19	0.6757	1114.8	1134.6	1131.0	0.732	3.070	77.740	16.446	1.803	0.059	0.126	0.010	0.012	0.000	0.000	0.000	0.000	0.000	1377.01	
20	0.6705	1103.0	1122.5	1118.8	0.640	3.440	78.724	15.170	1.779	0.069	0.149	0.012	0.016	0.000	0.000	0.000	0.000	0.000	1367.63	
21	0.6692	1100.4	1119.9	1116.1	0.622	3.507	78.990	14.840	1.789	0.069	0.152	0.013	0.017	0.000	0.000	0.000	0.000	0.000	1365.64	
22	0.6720	1106.7	1126.3	1122.7	0.672	3.302	78.430	15.577	1.800	0.063	0.132	0.010	0.013	0.000	0.000	0.000	0.000	0.000	1370.78	
23	0.6755	1112.5	1132.2	1128.7	0.709	3.227	77.850	16.097	1.902	0.061	0.130	0.010	0.013	0.000	0.000	0.000	0.000	0.000	1374.34	
24	0.6755	1114.5	1134.2	1130.6	0.696	3.123	77.795	16.321	1.854	0.061	0.128	0.010	0.012	0.000	0.000	0.000	0.000	0.000	1376.84	
25	0.6804	1123.1	1143.0	1139.4	0.725	3.021	76.988	17.091	1.930	0.068	0.148	0.012	0.016	0.000	0.000	0.000	0.000	0.000	1382.30	
26	0.6764	1117.7	1137.5	1134.1	0.712	2.994	77.485	16.879	1.737	0.057	0.118	0.009	0.011	0.000	0.000	0.000	0.000	0.000	1379.82	
27	0.6756	1115.2	1135.0	1131.6	0.723	3.051	77.720	16.514	1.792	0.058	0.121	0.009	0.011	0.000	0.000	0.000	0.000	0.000	1377.61	
28	0.6786	1120.2	1140.0	1136.4	0.715	3.045	77.516	16.431	2.008	0.076	0.172	0.016	0.021	0.000	0.000	0.000	0.000	0.000	1380.50	
29	0.6763	1116.9	1136.6	1133.1	0.698	3.056	77.822	16.221	1.957	0.070	0.149	0.012	0.016	0.000	0.000	0.000	0.000	0.000	1378.83	
30	0.6761	1116.5	1136.2	1132.7	0.709	3.040	77.745	16.404	1.884	0.063	0.131	0.010	0.012	0.000	0.000	0.000	0.000	0.000	1378.64	
31	0.6748	1114.2	1134.0	1130.5	0.701	3.067	77.928	16.263	1.828	0.061	0.128	0.010	0.012	0.000	0.000	0.000	0.000	0.000	1377.20	
Avg	0.6765	1116.0	1136.0	1132.4	0.713	3.094	77.643	16.459	1.866	0.064	0.136	0.011	0.014	0.000	0.000	0.000	0.000	0.000	1377.83	

Zone 24

# Gas Composition and Properties

Effective August 1, 2018

Attachment B  
Page 3 of 23

Source #: 0602160  
Name: FAIRVIEW BORDER

Component	Mole %	Liquid Content	Mass %
Carbon Dioxide, CO2	1.4363		2.9773
Nitrogen, N2	3.7850		4.9942
Methane, C1	68.4632		51.7328
Ethane, C2	22.2703	0.0000	31.5413
Propane, C3	3.5300	0.9697	7.3317
iso-Butane, iC4	0.1612	0.0526	0.4413
n-Butane, nC4	0.3041	0.0956	0.8325
iso-Pentane, iC5	0.0206	0.0075	0.0700
n-Pentane, nC5	0.0184	0.0066	0.0625
Neo-Pentane, NeoC5			
Hexanes Plus, C6+	0.0000	0.0000	0.0000
Water, H2O			
Hydrogen Sulfide, H2S			
Oxygen, O2	0.0109		0.0164
Carbon Monoxide, CO			
Hydrogen, H2			
Helium, He			
Argon, Ar			
<b>Totals</b>	<b>100.0000</b>	<b>1.1340</b>	<b>100.0000</b>

Property	Total Sample	C6 Plus Fraction
Pressure Base	14.730	
Temperature Base	60.00	
HCDP @ Sample Pressure	-8.292	
Cricodentherm	5.953	
HV, Dry @ Base P, T	1194.70	
HV, Sat @ Base P, T	1173.91	
HV, Sat @ Sample P, T	1194.70	
Relative Density	0.7335	

C6+: 100

Sample		
Date: 09/04/2018	Pressure:	452.0
Type: Composite	Temperature:	0.0
Tech: RR	H2O:	lbs/mm
	H2S:	ppm
Remarks:		

Analysis		
Date: 09/05/2018	Instrument:	WBI- 205
	Cylinder:	404
Tech: MB		
Remarks:		

Zone 241

# Gas Composition and Properties

Effective August 1, 2018

Attachment B  
Page 4 of 23

Source #: 0602225  
Name: WATFORD CITY WEST BORDER

Component	Mole %	Liquid Content	Mass %
Carbon Dioxide, CO2	1.1090		2.3322
Nitrogen, N2	3.1540		4.2219
Methane, C1	71.0357		54.4536
Ethane, C2	20.2902	5.4307	29.1530
Propane, C3	3.6711	1.0085	7.7352
iso-Butane, iC4	0.2051	0.0669	0.5696
n-Butane, nC4	0.4414	0.1388	1.2259
iso-Pentane, iC5	0.0398	0.0145	0.1372
n-Pentane, nC5	0.0422	0.0152	0.1455
Neo-Pentane, NeoC5			
Hexanes Plus, C6+	0.0032	0.0015	0.0132
Water, H2O			
Hydrogen Sulfide, H2S			
Oxygen, O2	0.0083		0.0127
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		
Cricodentherm		
HV, Dry @ Base P, T	1197.02	
HV, Sat @ Base P, T	1176.19	
HV, Sat @ Sample P, T	1197.02	
Relative Density	0.7230	

C6+: 100

Totals	100.0000	6.6760	100.0000
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## Sample

Date: 09/04/2018      Pressure: 462.0  
 Type: Composite      Temperature: 0.0  
 Tech: ES      H2O: lbs/mm  
                                  H2S: ppm

Remarks:

## Analysis

Date: 09/05/2018      Instrument: WBI- 206  
                                  Cylinder: 338

Tech: MB

Remarks:

Zone 25

# Source Daily Summary

August 2018

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	0.6545	1078.5	1097.6		0.512	3.632	81.179	13.173	1.349	0.046	0.093	0.007	0.008	0.001					1353.53	
2	0.6562	1080.2	1099.3		0.530	3.655	80.951	13.281	1.415	0.050	0.103	0.007	0.008	0.000					1353.98	
3	0.6608	1088.0	1107.2		0.560	3.570	80.270	13.832	1.566	0.059	0.122	0.009	0.010	0.002					1358.94	
4	0.6533	1075.4	1094.4		0.511	3.706	81.478	12.768	1.365	0.050	0.104	0.008	0.010	0.001					1350.92	
5	0.6561	1079.2	1098.3		0.531	3.709	81.203	12.801	1.521	0.063	0.140	0.012	0.016	0.004					1352.78	
6	0.6571	1080.8	1099.9		0.542	3.689	80.915	13.152	1.506	0.057	0.120	0.009	0.010	0.000					1353.74	
7	0.6566	1080.6	1099.8		0.532	3.666	80.968	13.176	1.465	0.055	0.117	0.009	0.011	0.002					1354.08	
8	0.6629	1089.8	1109.1		0.581	3.623	79.891	14.113	1.584	0.059	0.125	0.010	0.012	0.002					1359.06	
9	0.6642	1091.4	1110.8		0.592	3.632	79.588	14.397	1.607	0.055	0.112	0.008	0.009	0.000					1359.77	
10	0.6632	1091.1	1110.5		0.553	3.616	79.868	14.086	1.668	0.061	0.125	0.009	0.011	0.002					1360.39	
11	0.6565	1081.3	1100.4		0.518	3.635	81.004	13.145	1.512	0.056	0.114	0.007	0.008	0.000					1355.02	
12	0.6616	1090.8	1110.2		0.483	3.586	79.991	14.190	1.567	0.054	0.110	0.008	0.009	0.001					1361.71	
13	0.6610	1087.2	1106.5		0.559	3.637	80.133	13.972	1.505	0.057	0.117	0.008	0.010	0.001					1357.79	
14	0.6599	1085.0	1104.2		0.552	3.679	80.462	13.541	1.543	0.062	0.135	0.011	0.014	0.004					1356.14	
15	0.6601	1084.8	1104.0		0.547	3.720	80.321	13.667	1.559	0.056	0.114	0.008	0.008	0.000					1355.70	
16	0.6561	1077.9	1097.0		0.530	3.784	81.021	13.026	1.454	0.054	0.112	0.008	0.010	0.001					1351.25	
17	0.6593	1083.3	1102.4		0.545	3.740	80.508	13.457	1.552	0.058	0.120	0.009	0.010	0.002					1354.58	
18	0.6615	1086.8	1106.0		0.557	3.714	80.439	13.267	1.749	0.074	0.165	0.014	0.017	0.004					1356.71	
19	0.6564	1079.2	1098.3		0.547	3.715	80.919	13.233	1.411	0.051	0.106	0.008	0.009	0.001					1352.46	
20	0.6584	1082.1	1101.2		0.547	3.726	80.742	13.212	1.554	0.061	0.133	0.011	0.013	0.002					1354.00	
21	0.6571	1080.0	1099.1		0.526	3.764	81.015	12.898	1.575	0.061	0.133	0.012	0.014	0.004					1352.72	
22	0.6559	1078.4	1097.5		0.522	3.750	81.109	12.923	1.517	0.053	0.109	0.007	0.008	0.000					1352.00	
23	0.6579	1080.7	1099.9		0.544	3.761	80.812	13.125	1.556	0.058	0.121	0.010	0.011	0.003					1352.90	
24	0.6517	1072.5	1091.5		0.459	3.815	81.779	12.353	1.422	0.052	0.105	0.007	0.008	0.001					1348.87	
25	0.6639	1092.2	1111.5		0.503	3.688	79.650	14.346	1.584	0.062	0.136	0.012	0.014	0.004					1361.05	
26	0.6529	1075.2	1094.2		0.497	3.699	81.439	12.897	1.326	0.043	0.086	0.006	0.006	0.000					1351.12	
27	0.6560	1078.9	1098.0		0.533	3.711	81.018	13.131	1.430	0.051	0.106	0.008	0.010	0.003					1352.60	
28	0.6605	1086.3	1105.6		0.507	3.716	80.623	13.142	1.721	0.075	0.173	0.017	0.021	0.006					1357.25	
29	0.6532	1075.6	1094.6		0.454	3.771	81.784	12.155	1.609	0.064	0.135	0.011	0.014	0.003					1351.23	
30	0.6558	1079.9	1099.0		0.495	3.689	81.110	13.020	1.506	0.055	0.109	0.007	0.008	0.001					1354.00	
31	0.6523	1074.2	1093.2		0.470	3.750	81.651	12.564	1.392	0.051	0.105	0.008	0.009	0.001					1350.42	
Avg	0.6578	1082.0	1101.3		0.527	3.695	80.769	13.292	1.519	0.057	0.120	0.009	0.011	0.002					1354.73	

Zone 260

# Source Daily Summary

August 2018

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	0.7083	1159.3	1179.8	1176.3	0.886	3.191	72.196	20.866	2.536	0.098	0.201	0.013	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1398.53
2	0.7040	1152.0	1172.4	1168.7	0.881	3.238	72.645	20.707	2.274	0.077	0.154	0.010	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1394.04
3	0.7064	1155.1	1175.6	1171.7	0.906	3.235	72.264	20.981	2.355	0.079	0.159	0.009	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1395.47
4	0.7089	1159.8	1180.4	1176.6	0.899	3.196	72.130	20.880	2.571	0.095	0.199	0.014	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1398.53
5	0.7064	1155.2	1175.7	1172.1	0.922	3.209	72.346	20.875	2.367	0.083	0.172	0.012	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1395.48
6	0.7067	1155.0	1175.5	1171.6	0.905	3.271	72.668	20.241	2.545	0.101	0.226	0.019	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1394.83
7	0.7077	1156.4	1176.9	1173.1	0.936	3.236	72.345	20.634	2.528	0.093	0.196	0.014	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1395.58
8	0.7066	1156.3	1176.8	1173.1	0.900	3.191	72.316	20.916	2.399	0.084	0.170	0.011	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1396.67
9	0.7089	1158.3	1178.8	1174.5	0.946	3.210	72.349	20.561	2.551	0.101	0.227	0.022	0.032	0.000	0.000	0.000	0.000	0.000	0.000	1396.53
10	0.7052	1153.2	1173.6	1169.6	0.919	3.222	72.748	20.354	2.436	0.092	0.195	0.014	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1394.18
11	0.7049	1152.6	1173.0	1168.9	0.920	3.223	72.800	20.318	2.424	0.091	0.192	0.014	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1393.83
12	0.7052	1153.2	1173.7	1169.5	0.919	3.219	72.748	20.359	2.438	0.091	0.194	0.014	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1394.26
13	0.7055	1153.7	1174.2	1170.7	0.920	3.217	72.694	20.403	2.447	0.092	0.195	0.014	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1394.53
14	0.7061	1155.4	1175.8	1172.2	0.915	3.175	72.550	20.619	2.431	0.091	0.189	0.013	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1396.00
15	0.7091	1159.7	1180.3	1176.5	0.922	3.187	72.132	20.860	2.548	0.099	0.214	0.016	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1398.21
16	0.7080	1157.7	1178.2	1174.6	0.912	3.223	72.155	20.930	2.491	0.087	0.177	0.011	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1396.86
17	0.7069	1155.8	1176.3	1172.6	0.910	3.236	72.381	20.682	2.496	0.089	0.181	0.011	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1395.74
18	0.7076	1156.8	1177.3	1173.5	0.912	3.235	72.166	20.973	2.432	0.085	0.172	0.011	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1396.25
19	0.7128	1164.8	1185.5	1181.7	0.929	3.207	71.968	20.550	2.904	0.121	0.270	0.022	0.029	0.000	0.000	0.000	0.000	0.000	0.000	1400.62
20	0.7056	1153.6	1174.0	1170.5	0.935	3.212	72.563	20.614	2.388	0.085	0.176	0.012	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1394.32
21	0.6957	1134.5	1154.6	1151.1	0.935	3.448	74.203	19.032	2.127	0.077	0.157	0.009	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1380.95
22	0.6949	1133.3	1153.4	1149.9	0.928	3.456	74.306	18.963	2.101	0.075	0.152	0.009	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1380.36
23	0.7003	1144.0	1164.3	1160.8	0.895	3.355	73.405	19.797	2.298	0.076	0.154	0.009	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1388.05
24	0.7051	1152.7	1173.1	1169.5	0.891	3.286	72.571	20.560	2.442	0.076	0.154	0.010	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1393.80
25	0.7069	1155.4	1175.9	1172.6	0.898	3.272	72.368	20.658	2.524	0.084	0.171	0.011	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1395.34
26	0.7100	1160.6	1181.1	1177.5	0.902	3.247	72.277	20.401	2.775	0.111	0.242	0.020	0.026	0.000	0.000	0.000	0.000	0.000	0.000	1398.25
27	0.7064	1155.9	1176.4	1173.0	0.888	3.219	72.448	20.686	2.459	0.091	0.184	0.012	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1396.30
28	0.7040	1152.0	1172.4	1169.1	0.881	3.238	72.645	20.707	2.274	0.077	0.154	0.010	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1394.02
29	0.7064	1155.1	1175.6	1172.2	0.906	3.235	72.264	20.981	2.355	0.079	0.159	0.009	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1395.45
30	0.7089	1159.9	1180.4	1176.8	0.899	3.196	72.130	20.880	2.571	0.095	0.199	0.014	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1398.52
31	0.7064	1155.2	1175.7	1172.3	0.922	3.209	72.346	20.875	2.367	0.083	0.172	0.012	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1395.49
Avg	0.7060	1154.0	1174.7	1171.1	0.911	3.242	72.553	20.544	2.447	0.089	0.186	0.013	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1394.74

Zone 261

# Source Daily Summary

August 2018

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	0.7199	1128.3	1148.3	1144.7	0.860	6.214	70.388	18.502	3.752	0.098	0.181	0.003	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1350.16
2	0.7217	1133.3	1153.3	1149.6	0.864	6.067	70.176	18.764	3.826	0.104	0.192	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1354.48
3	0.7252	1137.7	1157.8	1153.7	0.870	6.118	69.740	18.887	4.054	0.112	0.209	0.005	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1356.46
4	0.7240	1135.7	1155.8	1151.9	0.873	6.123	69.942	18.729	4.003	0.111	0.209	0.006	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1355.19
5	0.7247	1137.4	1157.5	1153.8	0.878	6.081	69.924	18.694	4.068	0.115	0.224	0.008	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1356.47
6	0.7246	1138.8	1158.9	1155.2	0.878	5.982	69.893	18.871	4.049	0.106	0.208	0.006	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1358.30
7	0.7249	1135.1	1155.2	1151.3	0.891	6.221	69.775	18.728	4.076	0.103	0.197	0.005	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1353.59
8	0.7283	1141.7	1161.9	1158.0	0.890	6.130	69.353	19.041	4.244	0.115	0.218	0.006	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1358.38
9	0.7268	1140.6	1160.8	1156.8	0.888	6.066	69.560	19.001	4.134	0.117	0.221	0.006	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1358.37
10	0.7264	1139.1	1159.2	1155.1	0.886	6.124	69.634	18.876	4.122	0.120	0.225	0.006	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1356.95
11	0.7256	1140.9	1161.1	1156.9	0.884	5.941	69.770	18.977	4.072	0.118	0.225	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1359.88
12	0.7279	1143.7	1163.9	1159.5	0.877	5.997	69.517	18.959	4.282	0.120	0.235	0.007	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1361.05
13	0.7320	1147.6	1167.9	1164.2	0.872	6.144	69.035	18.953	4.602	0.126	0.252	0.008	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1361.92
14	0.7360	1152.3	1172.7	1168.9	0.871	6.241	68.508	19.129	4.801	0.143	0.287	0.010	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1363.66
15	0.7392	1155.7	1176.1	1172.2	0.867	6.335	68.168	19.084	5.071	0.151	0.304	0.011	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1364.77
16	0.7320	1145.3	1165.6	1162.6	0.872	6.270	68.909	19.012	4.530	0.129	0.256	0.011	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1359.77
17	0.7292	1142.4	1162.6	1158.8	0.879	6.189	69.234	19.017	4.347	0.109	0.213	0.007	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1358.36
18	0.7300	1142.7	1163.0	1159.0	0.883	6.243	69.090	19.088	4.344	0.115	0.222	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1357.94
19	0.7284	1140.5	1160.7	1157.1	0.878	6.228	69.318	18.991	4.230	0.119	0.224	0.006	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1356.88
20	0.7268	1138.0	1158.2	1154.6	0.875	6.240	69.517	18.875	4.162	0.111	0.210	0.006	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1355.35
21	0.7278	1138.8	1159.0	1155.3	0.873	6.288	69.406	18.856	4.227	0.116	0.222	0.006	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1355.35
22	0.7256	1136.8	1156.9	1153.1	0.877	6.197	69.731	18.754	4.099	0.112	0.217	0.006	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1355.01
23	0.7248	1134.2	1154.2	1150.5	0.878	6.287	69.760	18.716	4.042	0.106	0.202	0.005	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1352.59
24	0.7280	1139.0	1159.1	1155.3	0.882	6.283	69.362	18.883	4.260	0.110	0.211	0.005	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1355.38
25	0.7277	1138.8	1158.9	1155.5	0.882	6.270	69.448	18.794	4.262	0.113	0.220	0.006	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1355.39
26	0.7281	1138.7	1158.8	1155.5	0.881	6.318	69.397	18.772	4.273	0.118	0.229	0.006	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1354.87
27	0.7280	1140.8	1161.0	1157.7	0.881	6.174	69.450	18.875	4.255	0.118	0.233	0.007	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1357.52
28	0.7266	1138.7	1158.9	1155.6	0.876	6.179	69.659	18.701	4.245	0.110	0.218	0.006	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1356.36
29	0.7226	1130.7	1150.7	1147.3	0.874	6.293	70.126	18.418	3.984	0.104	0.194	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1350.58
30	0.7232	1132.8	1152.8	1149.2	0.880	6.212	70.023	18.599	3.979	0.104	0.194	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1352.48
31	0.7232	1131.9	1151.9	1148.4	0.880	6.272	70.016	18.528	4.006	0.103	0.188	0.003	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1351.36
Avg	0.7271	1139.0	1159.5	1155.7	0.877	6.185	69.543	18.841	4.206	0.115	0.221	0.006	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1356.61

Zone 262

# Gas Composition and Properties

Effective August 1, 2018

Source #: 2501030  
Name: LIGNITE PLANT

Component	Mole %	Liquid Content	Mass %
Carbon Dioxide, CO2	0.0821		0.1814
Nitrogen, N2	3.3943		4.7740
Methane, C1	75.3949		60.7271
Ethane, C2	17.7959	4.7616	26.8662
Propane, C3	2.9807	0.8188	6.5990
iso-Butane, iC4	0.0961	0.0314	0.2804
n-Butane, nC4	0.1156	0.0364	0.3373
iso-Pentane, iC5	0.0000	0.0000	0.0000
n-Pentane, nC5	0.0000	0.0000	0.0000
Neo-Pentane, NeoC5			
Hexanes Plus, C6+	0.0034	0.0016	0.0147
Water, H2O			
Hydrogen Sulfide, H2S			
Oxygen, O2	0.1369		0.2199
Carbon Monoxide, CO			
Hydrogen, H2			
Helium, He			
Argon, Ar			
<b>Totals</b>	<b>99.9999</b>	<b>5.6500</b>	<b>100.0000</b>

Property	Total Sample	C6 Plus Fraction
Pressure Base	14.730	
Temperature Base	60.00	
HCDP @ Sample Pressure	-19.625	
Cricodentherm	-14.281	
HV, Dry @ Base P, T	1162.11	
HV, Sat @ Base P, T	1141.88	
HV, Sat @ Sample P, T	1162.11	
Relative Density	0.6882	

C6+: 100

Sample		
Date: 09/04/2018	Pressure:	580.0
Type: Composite	Temperature:	0.0
Tech: ES	H2O:	lbs/mm
	H2S:	ppm
Remarks:		

Analysis		
Date: 09/05/2018	Instrument:	WBI- 207
	Cylinder:	1004
Tech: MB		
Remarks:		

Zone 263

# Gas Composition and Properties

Effective August 1, 2018

Attachment B  
Page 9 of 23

Source #: 3002013  
Name: EPPING BORDER

Component	Mole %	Liquid Content	Mass %
Carbon Dioxide, CO2	0.7402		1.6639
Nitrogen, N2	3.0511		4.3656
Methane, C1	77.5004		63.5032
Ethane, C2	16.5217	4.4200	25.3742
Propane, C3	1.9450	0.5343	4.3806
iso-Butane, iC4	0.0671	0.0219	0.1992
n-Butane, nC4	0.1389	0.0437	0.4123
iso-Pentane, iC5	0.0097	0.0035	0.0357
n-Pentane, nC5	0.0112	0.0040	0.0413
Neo-Pentane, NeoC5			
Hexanes Plus, C6+	0.0000	0.0000	0.0000
Water, H2O			
Hydrogen Sulfide, H2S			
Oxygen, O2	0.0147		0.0240
Carbon Monoxide, CO			
Hydrogen, H2			
Helium, He			
Argon, Ar			
<b>Totals</b>	<b>100.0000</b>	<b>5.0280</b>	<b>100.0000</b>

Property	Total Sample	C6 Plus Fraction
Pressure Base	14.730	
Temperature Base	60.00	
HCDP @ Sample Pressure		
Cricodentherm		
HV, Dry @ Base P, T	1135.25	
HV, Sat @ Base P, T	1115.49	
HV, Sat @ Sample P, T	1135.25	
Relative Density	0.6765	

C6+: 100

**Sample**

Date: 09/04/2018      Pressure: 460.0  
 Type: Composite      Temperature: 0.0  
 Tech: ES      H2O: lbs/mm  
                                  H2S: ppm

Remarks:

**Analysis**

Date: 09/05/2018      Instrument: WBI- 208  
                                  Cylinder: 316

Tech: MB

Remarks:

Zone 264

# Source Daily Summary

August 2018

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	0.7084	1160.9	1181.5	1177.8	0.829	3.183	72.330	20.647	2.655	0.106	0.217	0.014	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1400.34
2	0.7048	1153.1	1173.5	1170.1	0.888	3.237	72.538	20.765	2.310	0.080	0.161	0.010	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1394.57
3	0.7050	1153.5	1173.9	1170.4	0.887	3.239	72.496	20.797	2.326	0.078	0.156	0.010	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1394.75
4	0.7080	1158.7	1179.3	1175.7	0.884	3.199	72.116	21.039	2.468	0.088	0.180	0.012	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1398.19
5	0.7078	1157.2	1177.7	1174.1	0.939	3.190	72.150	21.022	2.412	0.085	0.175	0.012	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1396.51
6	0.7056	1153.6	1174.0	1170.4	0.895	3.271	72.760	20.236	2.493	0.096	0.210	0.017	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1394.23
7	0.7084	1157.5	1178.0	1174.3	0.939	3.232	72.289	20.655	2.536	0.098	0.213	0.017	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1396.16
8	0.7067	1156.0	1176.4	1172.9	0.902	3.216	72.407	20.704	2.477	0.088	0.180	0.012	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1396.15
9	0.7080	1157.8	1178.3	1174.6	0.916	3.203	72.273	20.790	2.490	0.093	0.199	0.016	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1397.01
10	0.7063	1155.5	1176.0	1172.4	0.906	3.200	72.441	20.725	2.444	0.085	0.173	0.011	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1396.00
11	0.7065	1155.7	1176.1	1172.5	0.903	3.214	72.490	20.594	2.509	0.087	0.175	0.012	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1395.94
12	0.7094	1161.5	1182.0	1178.4	0.871	3.179	72.057	20.914	2.672	0.096	0.189	0.011	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1400.12
13	0.7121	1164.0	1184.6	1181.0	0.922	3.205	71.588	21.283	2.677	0.098	0.201	0.012	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1400.46
14	0.7065	1155.5	1176.0	1172.4	0.918	3.209	72.348	20.855	2.392	0.084	0.170	0.011	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1395.68
15	0.7092	1160.0	1180.6	1177.0	0.920	3.173	72.118	20.896	2.544	0.099	0.213	0.016	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1398.58
16	0.7087	1158.8	1179.3	1175.7	0.914	3.217	72.140	20.877	2.528	0.093	0.198	0.015	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1397.47
17	0.7084	1158.0	1178.5	1175.0	0.914	3.231	72.152	20.861	2.542	0.091	0.185	0.012	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1396.97
18	0.7082	1157.8	1178.3	1174.8	0.916	3.227	72.170	20.880	2.497	0.091	0.189	0.013	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1396.81
19	0.7129	1165.1	1185.7	1182.0	0.922	3.213	71.840	20.743	2.858	0.118	0.259	0.020	0.026	0.000	0.000	0.000	0.000	0.000	0.000	1400.87
20	0.7082	1157.7	1178.2	1174.5	0.935	3.204	72.374	20.562	2.575	0.099	0.213	0.016	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1396.61
21	0.7050	1152.8	1173.2	1169.6	0.905	3.248	72.773	20.313	2.445	0.091	0.193	0.014	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1393.92
22	0.7026	1148.3	1168.6	1164.9	0.888	3.325	73.221	19.826	2.427	0.089	0.189	0.015	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1390.76
23	0.7074	1156.1	1176.5	1172.8	0.898	3.280	72.605	20.181	2.687	0.100	0.213	0.016	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1395.48
24	0.7057	1153.5	1173.9	1170.3	0.904	3.273	72.741	20.201	2.565	0.093	0.192	0.013	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1394.06
25	0.7049	1154.1	1174.6	1171.0	0.850	3.239	72.775	20.322	2.520	0.090	0.179	0.011	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1395.64
26	0.7084	1158.7	1179.2	1175.6	0.883	3.242	72.369	20.469	2.691	0.102	0.213	0.014	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1397.66
27	0.7091	1159.8	1180.4	1176.6	0.890	3.222	72.192	20.740	2.608	0.098	0.211	0.016	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1398.31
28	0.7080	1158.7	1179.3	1175.7	0.884	3.200	72.116	21.039	2.468	0.088	0.180	0.012	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1398.18
29	0.7078	1157.2	1177.7	1174.1	0.939	3.200	72.150	21.022	2.412	0.085	0.175	0.012	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1396.42
30	0.7056	1153.6	1174.0	1170.3	0.895	3.300	72.760	20.236	2.493	0.096	0.209	0.017	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1393.95
31	0.7084	1157.5	1178.0	1174.3	0.939	3.200	72.289	20.655	2.536	0.098	0.213	0.017	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1396.46
Avg	0.7075	1157.0	1177.5	1173.9	0.903	3.225	72.357	20.673	2.524	0.093	0.194	0.014	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1396.59

Zone 265

# Source Daily Summary

August 2018

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	0.7222	1134.0	1154.1	1150.2	0.857	6.082	70.279	18.481	3.971	0.107	0.204	0.009	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1354.77
2	0.7216	1135.2	1155.3	1151.2	0.862	5.947	70.395	18.580	3.853	0.117	0.224	0.011	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1356.72
3	0.7268	1142.7	1162.9	1158.8	0.858	5.974	69.703	18.846	4.272	0.113	0.216	0.009	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1360.93
4	0.7251	1136.2	1156.3	1152.4	0.869	6.200	69.899	18.502	4.207	0.104	0.202	0.009	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1354.74
5	0.7254	1139.3	1159.5	1155.5	0.871	6.037	69.829	18.814	4.086	0.119	0.225	0.010	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1358.16
6	0.7244	1140.3	1160.5	1156.5	0.864	5.891	70.026	18.799	4.056	0.119	0.225	0.010	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1360.28
7	0.7292	1148.6	1168.9	1164.8	0.861	5.844	69.446	19.074	4.371	0.129	0.251	0.012	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1365.55
8	0.7310	1148.2	1168.5	1164.4	0.857	6.045	69.268	18.820	4.608	0.125	0.254	0.012	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1363.38
9	0.7344	1152.8	1173.2	1169.0	0.856	6.081	68.761	19.158	4.690	0.139	0.287	0.014	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1365.67
10	0.7317	1147.1	1167.4	1163.2	0.855	6.175	69.064	18.970	4.515	0.133	0.265	0.012	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1361.48
11	0.7352	1151.4	1171.8	1167.6	0.856	6.233	68.723	18.913	4.813	0.145	0.291	0.013	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1363.40
12	0.7382	1156.2	1176.7	1172.4	0.851	6.233	68.441	18.876	5.114	0.150	0.307	0.014	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1366.27
13	0.7287	1138.0	1158.1	1154.2	0.857	6.446	69.420	18.501	4.397	0.123	0.235	0.010	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1353.47
14	0.7282	1144.1	1164.3	1160.3	0.868	6.010	69.438	19.036	4.313	0.108	0.207	0.010	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1361.17
15	0.7263	1138.3	1158.5	1154.6	0.864	6.190	69.638	18.829	4.128	0.117	0.218	0.009	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1356.16
16	0.7262	1138.6	1158.7	1154.8	0.861	6.173	69.697	18.735	4.191	0.113	0.213	0.009	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1356.50
17	0.7256	1135.9	1156.0	1152.1	0.856	6.287	69.710	18.684	4.133	0.109	0.204	0.009	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1353.91
18	0.7272	1140.4	1160.6	1156.7	0.859	6.157	69.619	18.732	4.257	0.121	0.234	0.010	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1357.77
19	0.7227	1132.8	1152.8	1149.0	0.861	6.194	70.219	18.382	4.007	0.109	0.211	0.009	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1352.92
20	0.7227	1132.5	1152.6	1148.7	0.861	6.213	70.108	18.548	3.959	0.103	0.192	0.008	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1352.58
21	0.7263	1137.9	1158.1	1154.2	0.864	6.213	69.680	18.692	4.219	0.109	0.207	0.008	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1355.72
22	0.7267	1138.2	1158.3	1154.4	0.866	6.230	69.658	18.655	4.246	0.112	0.216	0.009	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1355.66
23	0.7263	1137.9	1158.1	1154.2	0.865	6.219	69.732	18.606	4.213	0.118	0.229	0.010	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1355.59
24	0.7264	1137.0	1157.2	1153.3	0.863	6.280	69.710	18.564	4.222	0.117	0.226	0.010	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1354.53
25	0.7263	1140.3	1160.5	1156.5	0.866	6.067	69.747	18.770	4.182	0.117	0.231	0.011	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1358.50
26	0.7261	1140.1	1160.3	1156.3	0.861	6.069	69.795	18.675	4.263	0.106	0.212	0.009	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1358.43
27	0.7227	1133.1	1153.1	1149.2	0.856	6.183	70.214	18.399	4.013	0.110	0.207	0.008	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1353.26
28	0.7217	1131.4	1151.4	1147.5	0.862	6.187	70.269	18.449	3.927	0.103	0.188	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1352.17
29	0.7284	1144.4	1164.6	1160.7	0.863	6.025	69.461	18.939	4.350	0.122	0.222	0.009	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1361.30
30	0.7377	1159.1	1179.6	1175.7	0.859	5.997	68.320	19.474	4.889	0.153	0.285	0.012	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1370.20
31	0.7345	1158.1	1178.6	1174.6	0.856	5.767	68.805	19.406	4.716	0.147	0.279	0.012	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1371.93
Avg	0.7276	1142.0	1161.8	1157.8	0.861	6.118	69.583	18.771	4.296	0.120	0.231	0.010	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1358.81

Zone 271

# Source Daily Summary

August 2018

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	0.7202	1125.7	1145.7	1138.5	0.863	6.387	70.396	18.311	3.738	0.102	0.187	0.008	0.008	0.000	0.000	0.000	0.000	0.000	1346.75	
2	0.7232	1135.3	1155.4	1152.0	0.871	6.072	70.161	18.594	3.954	0.109	0.213	0.012	0.013	0.000	0.000	0.000	0.000	0.000	1355.27	
3	0.7243	1138.5	1158.7	1155.7	0.879	5.971	69.968	18.794	4.056	0.110	0.205	0.009	0.009	0.000	0.000	0.000	0.000	0.000	1358.26	
4	0.7258	1139.4	1159.6	1156.6	0.871	6.066	69.734	18.851	4.146	0.108	0.206	0.009	0.009	0.000	0.000	0.000	0.000	0.000	1357.95	
5	0.7248	1137.5	1157.6	1154.6	0.882	6.073	69.857	18.799	4.057	0.109	0.205	0.009	0.009	0.000	0.000	0.000	0.000	0.000	1356.64	
6	0.7255	1138.3	1158.4	1155.4	0.880	6.099	69.811	18.742	4.100	0.121	0.225	0.010	0.010	0.000	0.000	0.000	0.000	0.000	1356.83	
7	0.7257	1142.9	1163.2	1160.2	0.865	5.857	69.841	18.934	4.125	0.123	0.233	0.011	0.011	0.000	0.000	0.000	0.000	0.000	1362.20	
8	0.7289	1145.6	1165.9	1162.9	0.870	5.982	69.482	18.851	4.443	0.117	0.231	0.012	0.012	0.000	0.000	0.000	0.000	0.000	1362.43	
9	0.7327	1149.6	1169.9	1166.9	0.867	6.097	69.037	18.900	4.672	0.132	0.268	0.013	0.013	0.000	0.000	0.000	0.000	0.000	1363.60	
10	0.7327	1150.5	1170.8	1167.8	0.867	6.045	68.886	19.271	4.495	0.136	0.273	0.013	0.013	0.000	0.000	0.000	0.000	0.000	1364.61	
11	0.7324	1146.5	1166.8	1163.7	0.870	6.258	68.939	18.946	4.574	0.132	0.258	0.012	0.011	0.000	0.000	0.000	0.000	0.000	1360.17	
12	0.7357	1151.4	1171.8	1168.7	0.867	6.265	68.656	18.904	4.838	0.148	0.293	0.014	0.014	0.000	0.000	0.000	0.000	0.000	1362.99	
13	0.7387	1155.3	1175.7	1172.7	0.856	6.333	68.263	18.984	5.097	0.145	0.294	0.014	0.014	0.000	0.000	0.000	0.000	0.000	1364.71	
14	0.7218	1129.8	1149.8	1146.8	0.876	6.265	70.183	18.519	3.850	0.103	0.187	0.008	0.008	0.000	0.000	0.000	0.000	0.000	1350.30	
15	0.7243	1135.2	1155.3	1152.0	0.871	6.072	70.161	18.594	3.954	0.109	0.213	0.012	0.013	0.000	0.000	0.000	0.000	0.000	1355.29	
16	0.7270	1139.7	1159.9	1156.9	0.871	6.160	69.532	18.928	4.149	0.119	0.221	0.010	0.010	0.000	0.000	0.000	0.000	0.000	1357.22	
17	0.7255	1136.6	1156.7	1153.7	0.869	6.211	69.725	18.754	4.113	0.109	0.201	0.009	0.009	0.000	0.000	0.000	0.000	0.000	1354.92	
18	0.7261	1135.5	1155.6	1152.6	0.866	6.347	69.641	18.637	4.177	0.110	0.205	0.009	0.009	0.000	0.000	0.000	0.000	0.000	1352.98	
19	0.7270	1140.0	1160.2	1157.1	0.864	6.153	69.683	18.663	4.254	0.122	0.238	0.011	0.011	0.000	0.000	0.000	0.000	0.000	1357.52	
20	0.7213	1130.1	1150.1	1147.0	0.871	6.216	70.308	18.418	3.881	0.101	0.188	0.008	0.007	0.000	0.000	0.000	0.000	0.000	1350.99	
21	0.7239	1133.2	1153.3	1150.2	0.872	6.265	69.937	18.589	4.021	0.105	0.195	0.008	0.008	0.000	0.000	0.000	0.000	0.000	1352.33	
22	0.7275	1139.1	1159.2	1156.2	0.874	6.241	69.492	18.792	4.262	0.111	0.210	0.009	0.008	0.000	0.000	0.000	0.000	0.000	1355.96	
23	0.7269	1138.2	1158.4	1155.4	0.884	6.226	69.614	18.684	4.245	0.112	0.217	0.010	0.009	0.000	0.000	0.000	0.000	0.000	1355.51	
24	0.7262	1136.3	1156.5	1153.5	0.876	6.287	69.736	18.524	4.218	0.117	0.223	0.010	0.009	0.000	0.000	0.000	0.000	0.000	1353.90	
25	0.7273	1138.0	1158.1	1155.1	0.869	6.297	69.609	18.565	4.291	0.119	0.230	0.010	0.009	0.000	0.000	0.000	0.000	0.000	1354.85	
26	0.7247	1137.9	1158.0	1155.0	0.872	6.057	69.958	18.656	4.102	0.113	0.221	0.010	0.010	0.000	0.000	0.000	0.000	0.000	1357.12	
27	0.7258	1138.6	1158.7	1155.7	0.867	6.128	69.822	18.598	4.248	0.107	0.211	0.009	0.009	0.000	0.000	0.000	0.000	0.000	1356.90	
28	0.7222	1131.2	1151.2	1148.2	0.863	6.249	70.232	18.353	3.982	0.108	0.196	0.008	0.008	0.000	0.000	0.000	0.000	0.000	1351.41	
29	0.7222	1131.9	1151.9	1148.9	0.875	6.182	70.195	18.505	3.935	0.104	0.188	0.008	0.007	0.000	0.000	0.000	0.000	0.000	1352.32	
30	0.7343	1152.6	1173.0	1170.0	0.875	6.050	68.683	19.313	4.671	0.137	0.250	0.011	0.011	0.000	0.000	0.000	0.000	0.000	1365.72	
31	0.7391	1162.2	1182.7	1179.7	0.865	5.932	68.140	19.622	4.969	0.154	0.292	0.013	0.013	0.000	0.000	0.000	0.000	0.000	1372.55	
Avg	0.7272	1140.0	1160.3	1157.1	0.871	6.156	69.603	18.761	4.246	0.118	0.225	0.010	0.010	0.000	0.000	0.000	0.000	0.000	1357.43	

Zone 272

# Source Daily Summary

August 2018

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	0.7198	1127.2	1147.2	1140.0	0.867	6.259	70.495	18.337	3.737	0.100	0.187	0.009	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1348.77
2	0.7253	1138.6	1158.8	1155.2	0.876	6.062	69.926	18.688	4.066	0.115	0.236	0.015	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1357.17
3	0.7259	1141.5	1161.7	1158.7	0.872	5.950	69.843	18.817	4.127	0.119	0.245	0.014	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1360.29
4	0.7268	1139.8	1160.0	1157.2	0.877	6.129	69.608	18.820	4.227	0.110	0.210	0.009	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1357.48
5	0.7258	1138.6	1158.8	1155.9	0.885	6.099	69.723	18.831	4.123	0.111	0.210	0.009	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1356.96
6	0.7266	1139.0	1159.2	1155.9	0.875	6.162	69.657	18.765	4.166	0.123	0.230	0.010	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1356.72
7	0.7273	1143.9	1164.1	1161.2	0.867	5.939	69.643	18.935	4.229	0.126	0.239	0.011	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1361.90
8	0.7293	1146.3	1166.6	1163.7	0.870	5.975	69.440	18.873	4.468	0.118	0.233	0.011	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1362.86
9	0.7330	1150.0	1170.4	1167.5	0.866	6.104	68.994	18.908	4.699	0.133	0.270	0.013	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1363.79
10	0.7357	1155.2	1175.6	1172.7	0.868	6.039	68.525	19.421	4.682	0.145	0.291	0.015	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1367.36
11	0.7331	1147.6	1167.9	1165.1	0.870	6.248	68.865	18.980	4.616	0.134	0.262	0.012	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1360.92
12	0.7353	1150.4	1170.8	1167.6	0.867	6.285	68.694	18.885	4.803	0.147	0.291	0.014	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1362.22
13	0.7386	1154.9	1175.4	1172.2	0.858	6.334	68.235	19.066	5.045	0.145	0.289	0.014	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1364.48
14	0.7234	1133.5	1153.6	1150.8	0.876	6.193	69.964	18.716	3.932	0.107	0.195	0.009	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1353.18
15	0.7256	1137.4	1157.5	1154.4	0.873	6.052	70.015	18.659	4.043	0.116	0.223	0.010	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1356.75
16	0.7278	1141.1	1161.4	1158.4	0.875	6.145	69.436	18.975	4.200	0.122	0.226	0.011	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1358.12
17	0.7256	1136.9	1157.0	1154.2	0.869	6.204	69.717	18.759	4.122	0.109	0.202	0.009	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1355.18
18	0.7261	1135.4	1155.5	1152.5	0.862	6.355	69.649	18.618	4.182	0.110	0.206	0.009	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1352.91
19	0.7279	1140.5	1160.7	1157.7	0.863	6.206	69.588	18.620	4.333	0.124	0.243	0.012	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1357.29
20	0.7213	1130.0	1150.0	1147.1	0.872	6.217	70.314	18.411	3.881	0.101	0.189	0.008	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1350.93
21	0.7239	1133.2	1153.3	1150.4	0.874	6.265	69.936	18.583	4.026	0.105	0.195	0.008	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1352.31
22	0.7278	1139.3	1159.5	1156.6	0.880	6.247	69.448	18.812	4.273	0.111	0.211	0.009	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1355.95
23	0.7270	1138.3	1158.5	1155.6	0.883	6.227	69.613	18.674	4.252	0.113	0.219	0.010	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1355.55
24	0.7265	1136.9	1157.0	1154.2	0.870	6.284	69.710	18.534	4.238	0.118	0.226	0.010	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1354.33
25	0.7272	1137.9	1158.0	1155.1	0.863	6.301	69.631	18.541	4.294	0.120	0.231	0.010	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1354.83
26	0.7246	1137.7	1157.8	1154.9	0.870	6.064	69.970	18.639	4.103	0.113	0.221	0.010	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1356.99
27	0.7257	1138.3	1158.5	1155.6	0.867	6.131	69.839	18.582	4.243	0.107	0.211	0.009	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1356.73
28	0.7221	1130.6	1150.7	1147.8	0.866	6.260	70.260	18.322	3.973	0.107	0.196	0.008	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1350.97
29	0.7219	1131.4	1151.4	1148.5	0.875	6.190	70.230	18.473	3.926	0.104	0.187	0.008	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1351.95
30	0.7346	1153.0	1173.4	1170.5	0.879	6.050	68.649	19.328	4.684	0.138	0.251	0.011	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1365.86
31	0.7388	1161.6	1182.1	1179.2	0.864	5.943	68.180	19.588	4.956	0.153	0.290	0.013	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1372.11
Avg	0.7277	1141.0	1161.0	1158.0	0.871	6.159	69.542	18.779	4.279	0.119	0.230	0.011	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1357.83

Zone 273

# Source Daily Summary

August 2018

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	0.7215	1132.8	1152.9	1149.3	0.857	6.092	70.360	18.443	3.923	0.106	0.201	0.009	0.009	0.000	0.000	0.000	0.000	0.000	1353.99	
2	0.7210	1133.6	1153.7	1149.9	0.862	5.985	70.479	18.485	3.832	0.114	0.219	0.011	0.012	0.000	0.000	0.000	0.000	0.000	1355.42	
3	0.7259	1141.1	1161.3	1157.5	0.859	5.993	69.813	18.776	4.214	0.112	0.215	0.009	0.009	0.000	0.000	0.000	0.000	0.000	1359.81	
4	0.7252	1137.5	1157.6	1153.9	0.867	6.137	69.878	18.588	4.206	0.104	0.202	0.009	0.008	0.000	0.000	0.000	0.000	0.000	1356.13	
5	0.7255	1139.6	1159.7	1156.1	0.871	6.026	69.826	18.824	4.089	0.119	0.225	0.010	0.010	0.000	0.000	0.000	0.000	0.000	1358.39	
6	0.7241	1139.6	1159.8	1156.1	0.865	5.910	70.056	18.764	4.045	0.117	0.223	0.010	0.010	0.000	0.000	0.000	0.000	0.000	1359.65	
7	0.7287	1147.3	1167.7	1163.9	0.860	5.876	69.501	19.025	4.335	0.129	0.250	0.012	0.012	0.000	0.000	0.000	0.000	0.000	1364.55	
8	0.7302	1147.4	1167.7	1163.9	0.860	6.004	69.365	18.848	4.527	0.124	0.249	0.012	0.011	0.000	0.000	0.000	0.000	0.000	1363.29	
9	0.7335	1151.0	1171.4	1167.6	0.856	6.105	68.880	19.058	4.666	0.135	0.276	0.013	0.013	0.000	0.000	0.000	0.000	0.000	1364.46	
10	0.7318	1147.7	1168.0	1164.2	0.855	6.145	69.054	19.014	4.506	0.134	0.267	0.012	0.012	0.000	0.000	0.000	0.000	0.000	1362.11	
11	0.7349	1151.3	1171.7	1167.8	0.856	6.212	68.743	18.950	4.783	0.144	0.286	0.013	0.013	0.000	0.000	0.000	0.000	0.000	1363.58	
12	0.7387	1157.5	1178.0	1174.0	0.854	6.194	68.390	18.944	5.121	0.154	0.315	0.015	0.014	0.000	0.000	0.000	0.000	0.000	1367.39	
13	0.7307	1141.2	1161.4	1157.8	0.855	6.445	69.196	18.558	4.544	0.129	0.250	0.011	0.010	0.000	0.000	0.000	0.000	0.000	1355.35	
14	0.7270	1141.3	1161.5	1157.9	0.866	6.073	69.584	18.900	4.248	0.107	0.204	0.009	0.009	0.000	0.000	0.000	0.000	0.000	1359.01	
15	0.7260	1137.8	1157.9	1154.2	0.864	6.200	69.665	18.807	4.119	0.114	0.213	0.009	0.009	0.000	0.000	0.000	0.000	0.000	1355.72	
16	0.7270	1140.1	1160.3	1156.5	0.861	6.152	69.605	18.795	4.233	0.116	0.219	0.009	0.009	0.000	0.000	0.000	0.000	0.000	1357.59	
17	0.7254	1135.9	1156.0	1152.4	0.857	6.262	69.751	18.678	4.122	0.109	0.204	0.009	0.008	0.000	0.000	0.000	0.000	0.000	1354.15	
18	0.7265	1138.6	1158.8	1155.0	0.858	6.198	69.688	18.690	4.206	0.117	0.224	0.010	0.009	0.000	0.000	0.000	0.000	0.000	1356.31	
19	0.7237	1134.6	1154.7	1151.2	0.861	6.183	70.103	18.428	4.074	0.112	0.220	0.010	0.010	0.000	0.000	0.000	0.000	0.000	1354.08	
20	0.7226	1132.6	1152.6	1149.1	0.862	6.203	70.115	18.558	3.951	0.103	0.192	0.008	0.008	0.000	0.000	0.000	0.000	0.000	1352.70	
21	0.7256	1136.7	1156.8	1153.3	0.863	6.228	69.765	18.641	4.174	0.108	0.205	0.008	0.008	0.000	0.000	0.000	0.000	0.000	1354.83	
22	0.7264	1137.6	1157.8	1154.2	0.866	6.238	69.687	18.643	4.221	0.112	0.215	0.009	0.009	0.000	0.000	0.000	0.000	0.000	1355.24	
23	0.7261	1137.5	1157.7	1154.1	0.865	6.214	69.770	18.594	4.194	0.117	0.227	0.010	0.009	0.000	0.000	0.000	0.000	0.000	1355.44	
24	0.7263	1136.8	1157.0	1153.3	0.864	6.280	69.725	18.559	4.212	0.117	0.225	0.010	0.009	0.000	0.000	0.000	0.000	0.000	1354.39	
25	0.7267	1140.7	1160.9	1157.3	0.865	6.086	69.695	18.770	4.210	0.118	0.233	0.011	0.011	0.000	0.000	0.000	0.000	0.000	1358.51	
26	0.7260	1139.9	1160.1	1156.5	0.862	6.069	69.804	18.688	4.234	0.108	0.215	0.010	0.009	0.000	0.000	0.000	0.000	0.000	1358.29	
27	0.7229	1133.4	1153.5	1150.1	0.857	6.183	70.194	18.392	4.040	0.110	0.208	0.009	0.008	0.000	0.000	0.000	0.000	0.000	1353.48	
28	0.7216	1131.1	1151.1	1147.6	0.861	6.194	70.297	18.416	3.927	0.103	0.187	0.007	0.007	0.000	0.000	0.000	0.000	0.000	1351.92	
29	0.7267	1141.2	1161.4	1157.9	0.863	6.056	69.674	18.811	4.248	0.117	0.213	0.009	0.009	0.000	0.000	0.000	0.000	0.000	1359.18	
30	0.7365	1157.1	1177.5	1173.8	0.859	6.008	68.464	19.405	4.820	0.149	0.274	0.012	0.011	0.000	0.000	0.000	0.000	0.000	1368.91	
31	0.7352	1158.6	1179.1	1175.4	0.857	5.803	68.709	19.418	4.758	0.148	0.283	0.013	0.012	0.000	0.000	0.000	0.000	0.000	1371.85	
Avg	0.7274	1141.0	1161.5	1157.8	0.861	6.121	69.608	18.757	4.283	0.120	0.230	0.010	0.010	0.000	0.000	0.000	0.000	0.000	1358.57	

Zone 28

# Source Daily Summary

August 2018

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	0.7222	1127.3	1147.3	1143.6	0.827	6.539	70.206	18.047	4.075	0.104	0.188	0.007	0.006	0.000	0.000	0.000	0.000	0.000	1346.83	
2	0.7223	1126.6	1146.5	1142.3	0.828	6.592	70.191	18.004	4.078	0.105	0.190	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1345.84	
3	0.7233	1128.6	1148.6	1144.2	0.828	6.559	70.073	18.081	4.146	0.106	0.193	0.007	0.006	0.000	0.000	0.000	0.000	0.000	1347.36	
4	0.7177	1123.7	1143.6	1139.6	0.829	6.335	70.790	18.013	3.751	0.096	0.174	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1346.72	
5	0.7176	1123.6	1143.5	1139.8	0.826	6.332	70.844	17.943	3.775	0.095	0.175	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1346.74	
6	0.7211	1132.6	1152.6	1148.8	0.812	6.128	70.465	18.267	4.009	0.103	0.199	0.008	0.008	0.000	0.000	0.000	0.000	0.000	1354.26	
7	0.7219	1135.0	1155.1	1151.0	0.822	6.048	70.418	18.287	4.095	0.105	0.208	0.008	0.009	0.000	0.000	0.000	0.000	0.000	1356.29	
8	0.7229	1135.3	1155.4	1151.3	0.870	6.047	70.297	18.359	4.071	0.115	0.223	0.009	0.009	0.000	0.000	0.000	0.000	0.000	1355.77	
9	0.7207	1132.4	1152.5	1148.2	0.867	6.018	70.612	18.209	3.948	0.113	0.217	0.009	0.009	0.000	0.000	0.000	0.000	0.000	1354.43	
10	0.7243	1139.7	1159.8	1155.4	0.858	5.929	70.232	18.357	4.251	0.117	0.235	0.010	0.010	0.000	0.000	0.000	0.000	0.000	1359.65	
11	0.6733	1105.4	1125.0	1120.5	0.854	3.237	79.037	14.126	2.513	0.069	0.147	0.008	0.008	0.000	0.000	0.000	0.000	0.000	1367.77	
12	0.6740	1108.6	1128.3	1124.4	0.743	3.266	78.579	14.840	2.386	0.056	0.120	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1371.09	
13	0.6827	1107.3	1127.0	1123.5	0.859	3.993	77.229	14.960	2.721	0.074	0.152	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1361.02	
14	0.6671	1101.7	1121.2	1117.9	0.846	3.485	78.771	14.314	2.366	0.072	0.133	0.007	0.006	0.000	0.000	0.000	0.000	0.000	1363.36	
15	0.6752	1114.5	1134.2	1131.0	0.869	4.633	75.112	16.072	3.004	0.108	0.180	0.013	0.010	0.000	0.000	0.000	0.000	0.000	1358.39	
16	0.6781	1115.0	1134.7	1130.7	0.853	4.760	74.861	16.161	3.114	0.080	0.159	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1357.23	
17	0.6810	1115.3	1135.1	1131.4	0.758	4.229	75.919	16.084	2.725	0.098	0.167	0.010	0.009	0.000	0.000	0.000	0.000	0.000	1364.67	
18	0.6838	1115.8	1135.6	1131.7	0.898	2.701	79.316	14.006	2.669	0.135	0.232	0.023	0.019	0.000	0.000	0.000	0.000	0.000	1378.83	
19	0.6867	1116.2	1136.0	1132.5	0.891	2.686	79.335	14.018	2.659	0.135	0.232	0.023	0.020	0.000	0.000	0.000	0.000	0.000	1379.21	
20	0.6896	1116.7	1136.5	1132.9	0.903	2.717	79.205	14.080	2.680	0.138	0.237	0.023	0.019	0.000	0.000	0.000	0.000	0.000	1378.96	
21	0.6918	1112.9	1132.6	1129.2	0.832	4.386	75.953	15.581	2.986	0.085	0.163	0.008	0.007	0.000	0.000	0.000	0.000	0.000	1360.89	
22	0.6616	1094.1	1113.5	1109.9	0.825	2.867	80.687	13.587	1.867	0.053	0.104	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1365.80	
23	0.6673	1093.8	1113.2	1109.7	0.842	3.394	79.636	13.896	2.081	0.050	0.095	0.003	0.003	0.000	0.000	0.000	0.000	0.000	1359.60	
24	0.6639	1094.4	1113.8	1109.9	0.844	3.036	80.297	13.671	2.014	0.046	0.087	0.002	0.003	0.000	0.000	0.000	0.000	0.000	1363.79	
25	0.6675	1096.5	1115.9	1112.2	0.841	3.648	78.871	14.237	2.244	0.052	0.100	0.003	0.003	0.000	0.000	0.000	0.000	0.000	1358.40	
26	0.6647	1095.1	1114.5	1111.3	0.843	3.677	78.943	14.174	2.218	0.048	0.092	0.002	0.003	0.000	0.000	0.000	0.000	0.000	1357.21	
27	0.6650	1095.4	1114.8	1111.8	0.857	3.082	80.067	13.792	2.063	0.046	0.089	0.002	0.003	0.000	0.000	0.000	0.000	0.000	1363.68	
28	0.6780	1105.2	1124.7	1121.5	0.833	3.665	78.027	14.797	2.468	0.066	0.132	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1363.57	
29	0.6658	1096.0	1115.5	1112.0	0.794	3.193	79.868	13.978	2.007	0.052	0.100	0.004	0.004	0.000	0.000	0.000	0.000	0.000	1363.86	
30	0.6565	1086.7	1105.9	1102.1	0.770	2.920	81.468	12.973	1.739	0.042	0.083	0.002	0.003	0.000	0.000	0.000	0.000	0.000	1361.82	
31	0.6651	1094.0	1113.4	1109.9	0.772	3.281	80.023	13.728	2.027	0.054	0.106	0.004	0.004	0.000	0.000	0.000	0.000	0.000	1362.08	
Avg	0.6888	1112.0	1132.1	1128.4	0.835	4.367	75.978	15.634	2.927	0.084	0.158	0.008	0.007	0.000	0.000	0.000	0.000	0.000	1360.49	

Zone 31

# Source Daily Summary

August 2018

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	0.6734	1110.0	1129.6	1126.0	0.506	3.495	78.410	15.117	2.211	0.086	0.157	0.009	0.009	0.000	0.000	0.000	0.000	0.000	1373.33	
2	0.6888	1134.7	1154.8	1151.1	0.778	3.017	76.069	17.279	2.522	0.109	0.200	0.013	0.012	0.000	0.000	0.000	0.000	0.000	1388.19	
3	0.6758	1117.1	1136.9	1133.3	0.682	3.009	78.212	15.617	2.199	0.091	0.169	0.011	0.010	0.000	0.000	0.000	0.000	0.000	1379.82	
4	0.6660	1104.6	1124.2	1120.6	0.583	3.004	79.543	14.883	1.783	0.067	0.122	0.008	0.008	0.000	0.000	0.000	0.000	0.000	1374.34	
5	0.6637	1099.8	1119.3	1115.7	0.471	3.260	79.716	14.678	1.687	0.061	0.113	0.007	0.007	0.000	0.000	0.000	0.000	0.000	1370.64	
6	0.6643	1100.6	1120.1	1116.5	0.463	3.279	79.698	14.603	1.745	0.066	0.129	0.008	0.009	0.000	0.000	0.000	0.000	0.000	1371.01	
7	0.6756	1116.1	1135.9	1132.2	0.635	3.130	78.123	15.691	2.139	0.089	0.169	0.012	0.012	0.000	0.000	0.000	0.000	0.000	1378.66	
8	0.6761	1118.1	1137.9	1134.2	0.686	2.983	78.028	15.929	2.108	0.085	0.160	0.011	0.011	0.000	0.000	0.000	0.000	0.000	1380.58	
9	0.6691	1109.9	1129.5	1125.9	0.643	2.892	79.022	15.416	1.815	0.069	0.128	0.008	0.008	0.000	0.000	0.000	0.000	0.000	1377.57	
10	0.6672	1101.6	1121.1	1117.4	0.548	3.354	79.650	14.128	2.025	0.087	0.180	0.014	0.015	0.000	0.000	0.000	0.000	0.000	1369.31	
11	0.6656	1096.0	1115.4	1111.8	0.564	3.524	79.996	13.511	2.143	0.083	0.159	0.010	0.010	0.000	0.000	0.000	0.000	0.000	1363.94	
12	0.6723	1104.8	1124.4	1120.8	0.617	3.534	78.841	14.451	2.281	0.089	0.166	0.010	0.011	0.000	0.000	0.000	0.000	0.000	1368.08	
13	0.6786	1119.9	1139.8	1136.0	0.473	3.423	77.256	16.454	2.144	0.080	0.150	0.010	0.010	0.000	0.000	0.000	0.000	0.000	1380.35	
14	0.6771	1114.9	1134.6	1130.9	0.486	3.577	77.528	16.001	2.174	0.076	0.142	0.008	0.008	0.000	0.000	0.000	0.000	0.000	1375.61	
15	0.6746	1113.4	1133.1	1129.4	0.412	3.547	77.803	15.998	2.005	0.075	0.143	0.009	0.009	0.000	0.000	0.000	0.000	0.000	1376.26	
16	0.6794	1120.5	1140.3	1136.6	0.634	3.225	77.293	16.432	2.157	0.085	0.155	0.010	0.009	0.000	0.000	0.000	0.000	0.000	1380.15	
17	0.6724	1107.6	1127.2	1123.5	0.539	3.499	78.544	15.032	2.136	0.081	0.150	0.009	0.009	0.000	0.000	0.000	0.000	0.000	1371.36	
18	0.6729	1111.2	1130.9	1127.3	0.420	3.505	77.861	16.230	1.793	0.062	0.114	0.007	0.007	0.000	0.000	0.000	0.000	0.000	1375.41	
19	0.6799	1128.2	1148.1	1144.5	0.258	3.380	75.823	18.961	1.449	0.043	0.076	0.004	0.004	0.000	0.000	0.000	0.000	0.000	1389.14	
20	0.6779	1124.0	1143.9	1140.2	0.274	3.424	76.224	18.515	1.432	0.044	0.078	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1386.06	
21	0.6744	1120.8	1140.7	1137.1	0.258	3.306	76.892	18.037	1.381	0.042	0.075	0.004	0.005	0.000	0.000	0.000	0.000	0.000	1385.78	
22	0.6684	1105.0	1124.6	1121.0	0.424	3.450	78.952	15.056	1.915	0.067	0.122	0.007	0.007	0.000	0.000	0.000	0.000	0.000	1372.34	
23	0.6707	1109.3	1129.0	1125.3	0.421	3.413	78.373	15.761	1.843	0.062	0.114	0.007	0.007	0.000	0.000	0.000	0.000	0.000	1375.28	
24	0.6710	1107.0	1126.6	1122.9	0.499	3.465	78.706	15.014	2.085	0.075	0.138	0.008	0.009	0.000	0.000	0.000	0.000	0.000	1372.03	
25	0.6707	1106.6	1126.2	1122.6	0.464	3.510	78.485	15.445	1.897	0.064	0.120	0.007	0.008	0.000	0.000	0.000	0.000	0.000	1371.93	
26	0.6765	1115.7	1135.4	1131.8	0.478	3.488	77.274	16.684	1.885	0.061	0.116	0.007	0.007	0.000	0.000	0.000	0.000	0.000	1377.19	
27	0.6786	1124.5	1144.4	1140.8	0.348	3.348	76.322	18.280	1.548	0.050	0.092	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1385.96	
28	0.6805	1130.8	1150.8	1147.2	0.275	3.249	75.572	19.474	1.321	0.037	0.065	0.003	0.003	0.000	0.000	0.000	0.000	0.000	1391.84	
29	0.6761	1115.3	1135.0	1131.4	0.443	3.519	77.303	16.691	1.852	0.063	0.116	0.007	0.007	0.000	0.000	0.000	0.000	0.000	1377.22	
30	0.6746	1114.9	1134.6	1131.0	0.406	3.467	77.409	16.809	1.735	0.057	0.104	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1378.16	
31	0.6752	1118.2	1138.0	1134.4	0.333	3.431	77.137	17.262	1.672	0.054	0.099	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1381.65	
Avg	0.6738	1114.0	1133.3	1129.7	0.485	3.345	77.938	16.111	1.906	0.070	0.130	0.008	0.008	0.000	0.000	0.000	0.000	0.000	1377.39	

Zone 32

# Source Daily Summary

August 2018

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	0.6897	1154.6	1175.0	1170.5	0.000	3.099	72.613	23.578	0.695	0.007	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.54	-24.85
2	0.6885	1155.4	1175.9	1171.1	0.000	2.933	73.072	23.096	0.883	0.007	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.81	-24.41
3	0.6880	1155.8	1176.2	1171.5	0.000	2.858	73.174	23.094	0.858	0.007	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.82	-24.62
4	0.6868	1153.7	1174.2	1169.7	0.000	2.875	73.274	23.105	0.731	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.52	-25.70
5	0.6863	1153.0	1173.5	1169.1	0.000	2.874	73.323	23.107	0.682	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.14	-26.12
6	0.6888	1156.4	1176.9	1172.4	0.000	2.899	72.925	23.370	0.791	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.75	-24.55
7	0.6886	1155.7	1176.1	1171.5	0.000	2.929	72.973	23.277	0.806	0.007	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.00	-24.63
8	0.6884	1155.9	1176.4	1171.5	0.000	2.889	73.066	23.193	0.836	0.007	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.54	-24.57
9	0.6911	1160.9	1181.5	1176.7	0.000	2.839	72.832	23.164	1.139	0.011	0.016	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1417.90	-21.95
10	0.6924	1161.9	1182.5	1177.5	0.000	2.901	72.611	23.271	1.194	0.010	0.013	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1417.74	-21.31
11	0.6939	1164.0	1184.6	1179.4	0.000	2.909	72.513	23.164	1.385	0.012	0.017	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1418.80	-19.91
12	0.6997	1173.0	1193.8	1188.4	0.000	2.899	72.028	23.058	1.899	0.035	0.070	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1423.81	-14.89
13	0.6881	1155.2	1175.7	1171.1	0.000	2.903	73.037	23.290	0.756	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.05	-25.05
14	0.6873	1154.9	1175.4	1170.8	0.000	2.850	73.173	23.233	0.730	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.46	-25.40
15	0.6886	1155.8	1176.3	1171.8	0.000	2.915	72.978	23.292	0.800	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.23	-24.65
16	0.6901	1155.4	1175.8	1171.5	0.000	3.081	72.607	23.543	0.754	0.007	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.19	-24.44
17	0.6902	1154.4	1174.8	1170.4	0.000	3.150	72.546	23.562	0.727	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1410.90	-24.64
18	0.6908	1155.0	1175.5	1171.1	0.000	3.171	72.425	23.653	0.735	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.01	-24.34
19	0.6899	1154.0	1174.4	1170.0	0.000	3.153	72.549	23.603	0.680	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1410.63	-24.93
20	0.6877	1153.2	1173.6	1169.2	0.000	2.994	73.030	23.276	0.686	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.91	-25.69
21	0.6865	1153.2	1173.6	1169.1	0.000	2.875	73.315	23.091	0.705	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.24	-25.97
22	0.6870	1154.2	1174.6	1170.2	0.000	2.867	73.243	23.136	0.739	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.85	-25.56
23	0.6872	1153.9	1174.3	1169.8	0.000	2.899	73.142	23.272	0.674	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.35	-25.80
24	0.6875	1154.6	1175.0	1170.7	0.000	2.883	73.135	23.244	0.723	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.91	-25.43
25	0.6865	1152.3	1172.7	1168.2	0.000	2.928	73.257	23.150	0.652	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.16	-26.30
26	0.6859	1151.6	1171.9	1167.1	0.000	2.926	73.355	23.063	0.643	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.76	-26.60
27	0.6856	1150.8	1171.2	1166.5	0.000	2.944	73.394	23.027	0.622	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.13	-26.87
28	0.6854	1151.2	1171.6	1167.1	0.000	2.900	73.452	23.000	0.633	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.83	-26.83
29	0.6860	1151.6	1172.0	1167.4	0.000	2.928	73.385	22.983	0.690	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.77	-26.39
30	0.6869	1152.8	1173.2	1168.8	0.000	2.941	73.281	22.999	0.764	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.26	-25.70
31	0.6862	1152.1	1172.5	1167.9	0.000	2.916	73.411	22.918	0.741	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.12	-26.10
Avg	0.6886	1155.0	1175.8	1171.2	0.000	2.940	73.004	23.220	0.818	0.008	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.71	-24.65

Zone 33

# Source Daily Summary

August 2018

<b>Number:</b>	351	<b>Pressure Base:</b>	14.730	<b>Contract Day:</b>	1
<b>Name:</b>	BADLANDS PLANT	<b>Temperature Base:</b>		<b>Contract Hour:</b>	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	0.5726	962.0	979.0	975.8	0.107	3.643	95.914	0.311	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1290.79	
2	0.5726	962.1	979.1	975.8	0.108	3.637	95.920	0.311	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1290.90	
3	0.5726	962.1	979.2	975.9	0.107	3.631	95.925	0.312	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1291.02	
4	0.5726	962.2	979.3	976.0	0.107	3.624	95.932	0.312	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1291.16	
5	0.5726	962.0	979.0	975.8	0.107	3.645	95.912	0.311	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1290.77	
6	0.5728	961.6	978.6	975.5	0.107	3.682	95.877	0.310	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1290.10	
7	0.5729	961.3	978.3	975.0	0.106	3.711	95.852	0.308	0.015	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1289.59	
8	0.5729	961.4	978.4	975.0	0.106	3.707	95.854	0.309	0.015	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1289.65	
9	0.5729	961.2	978.3	974.9	0.105	3.720	95.843	0.308	0.015	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1289.44	
10	0.5732	960.3	977.3	973.9	0.102	3.815	95.755	0.305	0.015	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1287.77	
11	0.5733	960.1	977.1	973.6	0.102	3.830	95.742	0.303	0.014	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1287.51	
12	0.5729	961.3	978.3	974.8	0.105	3.714	95.849	0.308	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1289.56	
13	0.5728	961.6	978.6	975.3	0.107	3.686	95.873	0.310	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1290.02	
14	0.5730	961.0	978.1	974.8	0.105	3.739	95.824	0.308	0.015	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1289.09	
15	0.5731	960.8	977.8	974.5	0.104	3.761	95.806	0.306	0.015	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1288.71	
16	0.5732	960.5	977.5	974.2	0.103	3.791	95.779	0.305	0.015	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1288.20	
17	0.5727	961.7	978.8	975.4	0.107	3.670	95.888	0.311	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1290.32	
18	0.5726	962.1	979.2	975.9	0.108	3.632	95.924	0.312	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1290.98	
19	0.5728	961.7	978.7	975.5	0.106	3.678	95.882	0.310	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1290.18	
20	0.5729	961.2	978.3	975.1	0.105	3.719	95.843	0.309	0.015	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1289.45	
21	0.5729	961.2	978.2	975.0	0.105	3.721	95.843	0.307	0.015	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1289.41	
22	0.5728	961.6	978.6	975.3	0.106	3.686	95.875	0.309	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1290.03	
23	0.5728	961.6	978.6	975.4	0.106	3.687	95.875	0.309	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1290.02	
24	0.5726	962.0	979.1	975.8	0.107	3.642	95.915	0.311	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1290.81	
25	0.5726	962.2	979.2	976.1	0.108	3.628	95.927	0.312	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1291.06	
26	0.5731	960.9	977.9	974.8	0.107	3.759	95.796	0.312	0.017	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1288.74	
27	0.5728	961.7	978.7	975.7	0.107	3.678	95.881	0.310	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1290.17	
28	0.5729	961.1	978.2	975.1	0.105	3.728	95.835	0.308	0.015	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1289.30	
29	0.5730	961.1	978.1	974.9	0.105	3.735	95.829	0.307	0.015	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1289.16	
30	0.5728	961.6	978.7	975.4	0.106	3.679	95.882	0.309	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1290.16	
31	0.5728	961.5	978.5	975.3	0.107	3.697	95.862	0.309	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1289.81	
Avg	0.5728	961.0	978.5	975.2	0.106	3.699	95.862	0.309	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1289.80	

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

Zone 34

# Source Daily Summary

August 2018

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	0.6929	1140.6	1160.8	1157.7	0.980	2.757	72.868	22.801	0.582	0.005	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1391.31	-25.74
2	0.6950	1144.4	1164.7	1161.6	0.976	2.729	72.488	23.158	0.634	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1393.85	-24.39
3	0.6973	1147.8	1168.2	1165.0	0.977	2.738	72.187	23.276	0.808	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1395.67	-22.65
4	0.6976	1148.3	1168.7	1165.6	0.973	2.738	72.085	23.423	0.767	0.005	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1396.00	-22.66
5	0.7003	1152.8	1173.2	1170.1	0.970	2.725	71.891	23.275	1.123	0.007	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1398.71	-20.03
6	0.7041	1158.9	1179.4	1176.3	0.965	2.716	71.617	23.059	1.619	0.011	0.013	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1402.29	-16.55
7	0.6999	1152.2	1172.6	1169.5	0.970	2.726	71.942	23.245	1.101	0.007	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1398.38	-20.28
8	0.7053	1161.0	1181.6	1178.4	0.966	2.695	71.565	22.947	1.799	0.012	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1403.68	-15.27
9	0.6974	1148.0	1168.4	1165.2	0.979	2.725	72.364	22.925	0.994	0.006	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1395.87	-22.00
10	0.6887	1133.2	1153.3	1150.2	1.000	2.788	74.002	21.332	0.869	0.004	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1386.39	-27.10
11	0.6939	1142.2	1162.4	1159.2	0.988	2.741	73.177	21.988	1.095	0.005	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1392.20	-23.47
12	0.6933	1141.2	1161.4	1158.2	0.989	2.743	73.937	20.590	1.717	0.012	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1391.46	-21.91
13	0.6877	1131.6	1151.6	1148.6	1.001	2.784	73.971	21.617	0.616	0.004	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1385.51	-28.53
14	0.6979	1150.4	1170.8	1167.7	0.970	2.646	72.285	23.064	1.012	0.009	0.013	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1398.20	-21.32
15	0.6949	1144.3	1164.6	1161.5	0.979	2.728	72.570	23.009	0.695	0.007	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1393.73	-24.14
16	0.6953	1144.8	1165.1	1162.0	0.979	2.728	72.416	23.253	0.607	0.007	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1394.03	-24.30
17	0.6944	1143.7	1163.9	1160.8	0.979	2.718	72.601	23.056	0.631	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1393.50	-24.66
18	0.7076	1165.2	1185.8	1182.7	0.964	2.659	71.497	22.658	2.185	0.017	0.019	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1406.37	-13.22
19	0.6966	1147.5	1167.8	1164.7	0.979	2.693	72.367	23.113	0.829	0.008	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1395.90	-22.77
20	0.7006	1153.6	1174.0	1170.9	0.977	2.696	72.033	22.964	1.308	0.010	0.014	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1399.33	-19.15
21	0.7031	1157.6	1178.1	1175.0	0.971	2.688	71.619	23.312	1.379	0.012	0.018	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1401.76	-17.65
22	0.7147	1176.2	1197.1	1193.9	0.959	2.655	70.605	23.012	2.730	0.018	0.022	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.72	-7.90
23	0.7080	1165.6	1186.2	1183.1	0.965	2.673	71.149	23.263	1.913	0.016	0.022	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1406.50	-13.54
24	0.7057	1162.1	1182.7	1179.5	0.966	2.667	71.377	23.287	1.666	0.015	0.022	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1404.59	-15.32
25	0.7097	1168.5	1189.2	1186.1	0.963	2.653	71.098	23.059	2.178	0.021	0.029	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1408.37	-11.76
26	0.7069	1163.9	1184.5	1181.4	0.961	2.682	71.209	23.352	1.760	0.015	0.021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1405.50	-14.48
27	0.6967	1149.3	1169.7	1166.6	0.973	2.601	72.107	23.710	0.597	0.005	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1398.04	-23.38
28	0.6959	1146.2	1166.5	1163.5	0.985	2.695	72.196	23.593	0.521	0.004	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1395.09	-24.30
29	0.6939	1142.1	1162.3	1159.3	0.993	2.739	72.592	23.169	0.492	0.005	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1392.15	-25.54
30	0.6964	1146.9	1167.3	1164.2	0.981	2.703	72.299	23.279	0.717	0.008	0.013	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1395.46	-23.25
31	0.7006	1153.8	1174.2	1171.1	0.975	2.683	71.803	23.453	1.061	0.010	0.016	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1399.64	-19.94
Avg	0.6991	1151.0	1171.5	1168.4	0.976	2.707	72.191	22.943	1.161	0.009	0.013	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1397.81	-20.55

Zone 43

August-18

ZONE 550

MANDAN BORDER

NBPL - St Anthony

Weighted

Begin Date	End Date	MCF	DK	BTU	MCF	DK	BTU Zone 28	AVG BTU	
8/1/2018	8/2/2018				943	1087	1.1529	1.153	8/1/2018
8/2/2018	8/3/2018				827	954	1.1537	1.154	8/2/2018
8/3/2018	8/4/2018				736	855	1.1613	1.161	8/3/2018
8/4/2018	8/5/2018				676	783	1.1576	1.158	8/4/2018
8/5/2018	8/6/2018				751	871	1.1597	1.160	8/5/2018
8/6/2018	8/7/2018				792	918	1.1598	1.160	8/6/2018
8/7/2018	8/8/2018				768	896	1.1677	1.168	8/7/2018
8/8/2018	8/9/2018				768	897	1.1677	1.168	8/8/2018
8/9/2018	8/10/2018				748	877	1.1714	1.171	8/9/2018
8/10/2018	8/11/2018				802	936	1.1680	1.168	8/10/2018
8/11/2018	8/12/2018				706	828	1.1717	1.172	8/11/2018
8/12/2018	8/13/2018				706	832	1.1780	1.178	8/12/2018
8/13/2018	8/14/2018				845	981	1.1614	1.161	8/13/2018
8/14/2018	8/15/2018				888	1031	1.1615	1.162	8/14/2018
8/15/2018	8/16/2018				800	926	1.1579	1.158	8/15/2018
8/16/2018	8/17/2018				868	1007	1.1603	1.160	8/16/2018
8/17/2018	8/18/2018				767	886	1.1560	1.156	8/17/2018
8/18/2018	8/19/2018				683	791	1.1588	1.159	8/18/2018
8/19/2018	8/20/2018				773	894	1.1548	1.155	8/19/2018
8/20/2018	8/21/2018				809	933	1.1526	1.153	8/20/2018
8/21/2018	8/22/2018				837	968	1.1568	1.157	8/21/2018
8/22/2018	8/23/2018				804	931	1.1578	1.158	8/22/2018
8/23/2018	8/24/2018				988	1144	1.1577	1.158	8/23/2018
8/24/2018	8/25/2018				772	893	1.1570	1.157	8/24/2018
8/25/2018	8/26/2018				716	831	1.1609	1.161	8/25/2018
8/26/2018	8/27/2018				870	1009	1.1601	1.160	8/26/2018
8/27/2018	8/28/2018				1010	1165	1.1535	1.154	8/27/2018
8/28/2018	8/29/2018				1039	1196	1.1511	1.151	8/28/2018
8/29/2018	8/30/2018				902	1048	1.1614	1.161	8/29/2018
8/30/2018	8/31/2018				822	968	1.1775	1.178	8/30/2018
8/31/2018	9/1/2018				743	877	1.1791	1.179	8/31/2018
		0	0	#DIV/0!	25,159	29,213	1.1615	1.1615	



# Alliance Pipeline

DAILY ANALYSIS — USA  
 ND07MD1 — Hankinson Sales  
 August 2018

DAY	Heating Value (BTU/ft3)	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	1,160.089	0.6660	83.8193	9.6741	3.8403	0.3755	0.6493	0.0639	0.0534	0.0307	1.0426	0.4413	0.0096
2	1,159.217	0.6655	83.8458	9.6929	3.8242	0.3674	0.6333	0.0614	0.0516	0.0286	1.0404	0.4443	0.0101
3	1,160.996	0.6669	83.7084	9.7242	3.8506	0.3789	0.6692	0.0633	0.0523	0.0343	1.0555	0.4537	0.0095
4	1,158.610	0.6652	83.9306	9.6031	3.8085	0.3695	0.6411	0.0626	0.0516	0.0318	1.0354	0.4559	0.0097
5	1,158.120	0.6652	83.9259	9.5981	3.8106	0.3650	0.6340	0.0625	0.0518	0.0314	1.0430	0.4677	0.0101
6	1,157.462	0.6647	83.9300	9.6530	3.7730	0.3591	0.6238	0.0595	0.0496	0.0317	1.0501	0.4603	0.0100
7	1,158.244	0.6652	83.8594	9.6808	3.7962	0.3614	0.6398	0.0578	0.0486	0.0299	1.0656	0.4503	0.0102
8	1,157.918	0.6650	83.8554	9.7218	3.7775	0.3570	0.6264	0.0584	0.0489	0.0301	1.0684	0.4458	0.0102
9	1,160.805	0.6669	83.6105	9.8532	3.8627	0.3627	0.6389	0.0607	0.0515	0.0315	1.0647	0.4534	0.0102
10	1,160.862	0.6669	83.6476	9.7848	3.8685	0.3684	0.6608	0.0595	0.0501	0.0305	1.0784	0.4412	0.0101
11	1,160.856	0.6668	83.6773	9.7469	3.8769	0.3706	0.6610	0.0607	0.0507	0.0305	1.0796	0.4357	0.0100
12	1,159.617	0.6659	83.7909	9.7256	3.8152	0.3681	0.6461	0.0620	0.0521	0.0310	1.0557	0.4432	0.0101
13	1,156.801	0.6639	84.1034	9.5333	3.7269	0.3625	0.6435	0.0609	0.0512	0.0317	1.0241	0.4524	0.0102
14	1,161.288	0.6670	83.5871	9.8682	3.8639	0.3710	0.6509	0.0586	0.0493	0.0299	1.0714	0.4392	0.0104
15	1,160.444	0.6669	83.6741	9.7137	3.8867	0.3726	0.6667	0.0573	0.0481	0.0296	1.0978	0.4429	0.0105
16	1,158.514	0.6654	83.8227	9.6970	3.8089	0.3630	0.6383	0.0577	0.0484	0.0308	1.0925	0.4302	0.0104
17	1,159.264	0.6659	83.7532	9.7592	3.8114	0.3650	0.6407	0.0590	0.0494	0.0318	1.0789	0.4411	0.0105
18	1,160.531	0.6670	83.6367	9.7512	3.8800	0.3718	0.6647	0.0585	0.0491	0.0290	1.0974	0.4512	0.0104
19	1,159.703	0.6663	83.7138	9.7657	3.8335	0.3683	0.6422	0.0588	0.0490	0.0323	1.0777	0.4487	0.0100
20	1,161.119	0.6672	83.5928	9.8238	3.8883	0.3714	0.6452	0.0595	0.0500	0.0313	1.0820	0.4458	0.0101
21	1,158.306	0.6652	83.8619	9.6796	3.8022	0.3628	0.6354	0.0573	0.0484	0.0306	1.0681	0.4434	0.0102
22	1,158.386	0.6654	83.8315	9.6973	3.8065	0.3624	0.6352	0.0572	0.0483	0.0305	1.0700	0.4507	0.0103
23	1,158.903	0.6659	83.7752	9.6978	3.8288	0.3663	0.6450	0.0580	0.0488	0.0308	1.0882	0.4511	0.0102
24	1,158.216	0.6655	83.8022	9.7252	3.7919	0.3597	0.6314	0.0594	0.0506	0.0312	1.0855	0.4527	0.0102
25	1,159.395	0.6662	83.6972	9.7758	3.8366	0.3641	0.6361	0.0596	0.0502	0.0294	1.0855	0.4550	0.0104
26	1,157.187	0.6647	83.8806	9.7384	3.7362	0.3598	0.6244	0.0564	0.0464	0.0285	1.0539	0.4653	0.0101
27	1,155.154	0.6631	83.9715	9.7969	3.6780	0.3404	0.5795	0.0520	0.0430	0.0266	1.0532	0.4485	0.0102
28	1,157.988	0.6646	83.8513	9.7854	3.7738	0.3542	0.6164	0.0535	0.0446	0.0273	1.0428	0.4404	0.0103
29	1,156.103	0.6635	83.9960	9.7275	3.6945	0.3511	0.6070	0.0545	0.0454	0.0280	1.0493	0.4368	0.0099
30	1,158.357	0.6653	83.8410	9.6991	3.7985	0.3627	0.6406	0.0564	0.0471	0.0293	1.0680	0.4474	0.0101
31	1,157.631	0.6649	83.8965	9.6644	3.7737	0.3615	0.6388	0.0570	0.0478	0.0293	1.0655	0.4551	0.0103
<b>Volume</b>	<b>1,158.894</b>	<b>0.6656</b>	<b>83.8038</b>	<b>9.7210</b>	<b>3.8101</b>	<b>0.3643</b>	<b>0.6387</b>	<b>0.0588</b>	<b>0.0492</b>	<b>0.0303</b>	<b>1.0654</b>	<b>0.4481</b>	<b>0.0101</b>
<b>Weight Avg Energy</b>	<b>1,158.896</b>	<b>0.6656</b>	<b>83.8037</b>	<b>9.7210</b>	<b>3.8101</b>	<b>0.3643</b>	<b>0.6388</b>	<b>0.0588</b>	<b>0.0492</b>	<b>0.0303</b>	<b>1.0654</b>	<b>0.4481</b>	<b>0.0101</b>

100% OK

August-18

ZONE 610

Watford City

Watford City West Border

Weighted

Begin Date	End Date	MCF	DK	BTU Zone 25	MCF	DK	BTU Zone 43	AVG BTU	
8/1/2018	8/2/2018	0	0	1.197	144	167	1.161	1.161	8/1/2018
8/2/2018	8/3/2018	0	0	1.197	123	144	1.165	1.165	8/2/2018
8/3/2018	8/4/2018	0	0	1.197	98	115	1.168	1.168	8/3/2018
8/4/2018	8/5/2018	0	0	1.197	107	125	1.169	1.169	8/4/2018
8/5/2018	8/6/2018	0	0	1.197	113	133	1.173	1.173	8/5/2018
8/6/2018	8/7/2018	0	0	1.197	118	139	1.179	1.179	8/6/2018
8/7/2018	8/8/2018	2	2	1.197	120	140	1.173	1.173	8/7/2018
8/8/2018	8/9/2018	0	0	1.197	115	136	1.182	1.182	8/8/2018
8/9/2018	8/10/2018	45	54	1.197	98	115	1.168	1.177	8/9/2018
8/10/2018	8/11/2018	71	85	1.197	38	44	1.153	1.182	8/10/2018
8/11/2018	8/12/2018	68	82	1.197	30	35	1.162	1.186	8/11/2018
8/12/2018	8/13/2018	80	95	1.197	24	28	1.161	1.189	8/12/2018
8/13/2018	8/14/2018	5	6	1.197	112	129	1.152	1.154	8/13/2018
8/14/2018	8/15/2018	0	0	1.197	117	138	1.171	1.171	8/14/2018
8/15/2018	8/16/2018	0	0	1.197	120	139	1.165	1.165	8/15/2018
8/16/2018	8/17/2018	0	0	1.197	106	124	1.165	1.165	8/16/2018
8/17/2018	8/18/2018	0	0	1.197	98	114	1.164	1.164	8/17/2018
8/18/2018	8/19/2018	0	0	1.197	103	122	1.186	1.186	8/18/2018
8/19/2018	8/20/2018	1	1	1.197	113	132	1.168	1.168	8/19/2018
8/20/2018	8/21/2018	3	3	1.197	117	137	1.174	1.175	8/20/2018
8/21/2018	8/22/2018	1	1	1.197	113	133	1.178	1.178	8/21/2018
8/22/2018	8/23/2018	1	1	1.197	119	142	1.197	1.197	8/22/2018
8/23/2018	8/24/2018	0	0	1.197	132	157	1.186	1.186	8/23/2018
8/24/2018	8/25/2018	0	0	1.197	116	137	1.183	1.183	8/24/2018
8/25/2018	8/26/2018	0	0	1.197	116	138	1.189	1.189	8/25/2018
8/26/2018	8/27/2018	6	7	1.197	125	148	1.185	1.186	8/26/2018
8/27/2018	8/28/2018	58	70	1.197	153	179	1.170	1.177	8/27/2018
8/28/2018	8/29/2018	37	44	1.197	156	182	1.167	1.173	8/28/2018
8/29/2018	8/30/2018	12	14	1.197	133	155	1.162	1.165	8/29/2018
8/30/2018	8/31/2018	1	1	1.197	112	131	1.167	1.167	8/30/2018
8/31/2018	9/1/2018	2	2	1.197	131	154	1.174	1.174	8/31/2018
		393	468		3,420	4,012	1.1715	1.1751	

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	1088.7	0.6333	1368	-55.3	1.6662	0.8405	85.2789	11.4558	0.6914	0.035	0.0189	0.0023	0.0023	0	0.0007	0.0087	0	7/31/2018	8/1/2018	8/1/2018 3:35:54 PM	
11587	GLEN ULLIN	1087.3	0.6323	1367.4	-55.8	1.6631	0.8402	85.4697	11.2677	0.6894	0.0371	0.0192	0.0024	0.0023	0	0.0005	0.0087	0	8/1/2018	8/2/2018	8/2/2018 3:39:53 PM	
11587	GLEN ULLIN	1087.5	0.6323	1367.6	-56	1.6444	0.8444	85.4687	11.2926	0.6875	0.0331	0.0179	0.002	0.0019	0	0.0006	0.0088	0.0052	8/2/2018	8/3/2018	8/3/2018 3:35:51 PM	
11587	GLEN ULLIN	1092.6	0.6359	1370.1	-53.6	1.6345	0.8731	84.7922	11.9135	0.7284	0.0307	0.0172	0.0019	0.0017	0	0.0005	0.0084	0.0069	8/3/2018	8/4/2018	8/4/2018 3:35:58 PM	
11587	GLEN ULLIN	1092.4	0.636	1369.8	-53.8	1.6381	0.8817	84.7667	11.9422	0.7135	0.0305	0.0167	0.0018	0.0017	0	0.0003	0.0089	0.0089	8/4/2018	8/5/2018	8/5/2018 3:34:53 PM	
11587	GLEN ULLIN	1093.2	0.6363	1370.5	-53.1	1.6224	0.8767	84.8266	11.8038	0.8156	0.0312	0.0174	0.0019	0.0019	0	0	0.0061	0	8/5/2018	8/6/2018	8/6/2018 3:37:26 PM	
11587	GLEN ULLIN	1094.2	0.6368	1371.1	-52.7	1.6089	0.8788	84.7539	11.8714	0.8325	0.0314	0.0181	0.0018	0.0019	0	0	0.0062	0	8/6/2018	8/7/2018	8/7/2018 3:37:41 PM	
11587	GLEN ULLIN	1092.9	0.6358	1370.6	-53.4	1.6035	0.8719	84.8995	11.7944	0.776	0.0327	0.0186	0.0018	0.002	0	0.0004	0.0052	0	8/7/2018	8/8/2018	8/8/2018 3:38:53 PM	
11587	GLEN ULLIN	1094.5	0.637	1371.4	-51.8	1.6192	0.8754	84.7388	11.8414	0.8643	0.0353	0.0203	0.0023	0.0024	0	0.0006	0.0047	0.0128	8/8/2018	8/9/2018	8/9/2018 3:37:32 PM	
11587	GLEN ULLIN	1088.9	0.6333	1368.4	-55.2	1.6197	0.8599	85.3659	11.3485	0.7542	0.0309	0.0171	0.0016	0.0017	0	0.0004	0.0031	0.021	8/9/2018	8/10/2018	8/10/2018 3:41:23 PM	
11587	GLEN ULLIN	1086.7	0.6318	1367.1	-55.6	1.6046	0.8715	85.6789	11.0372	0.751	0.0337	0.0183	0.0022	0.0023	0	0.0011	0	0.0174	8/10/2018	8/11/2018	8/11/2018 3:38:14 PM	
11587	GLEN ULLIN	1088.6	0.6333	1367.9	-55.5	1.6449	0.8637	85.2926	11.4376	0.7166	0.0263	0.0152	0.0013	0.0011	0	0.0009	0.0044	0.0217	8/11/2018	8/12/2018	8/12/2018 3:36:47 PM	
11587	GLEN ULLIN	1086.8	0.6311	1368	-56	1.5696	0.8489	85.8622	10.8462	0.8238	0.0284	0.0183	0.0014	0.0018	0	0.0004	0	0.0171	8/12/2018	8/13/2018	8/13/2018 3:37:33 PM	
11587	GLEN ULLIN	1086.9	0.6318	1367.5	-56	1.6013	0.8629	85.6444	11.1048	0.7316	0.0305	0.0179	0.0023	0.0025	0	0.0006	0.0101	0.0179	8/13/2018	8/14/2018	8/14/2018 3:47:21 PM	
11587	GLEN ULLIN	1087.7	0.632	1368.2	-55.6	1.604	0.8417	85.6652	11.0322	0.8046	0.0315	0.0172	0.0018	0.0017	0	0.0004	0.0049	0.019	8/14/2018	8/15/2018	8/15/2018 3:40:03 PM	
11587	GLEN ULLIN	1088.9	0.633	1368.7	-54.7	1.6078	0.8515	85.4023	11.2453	0.7988	0.0334	0.0186	0.002	0.0021	0	0.0007	0.0535	0.0133	8/15/2018	8/16/2018	8/16/2018 3:39:04 PM	
11587	GLEN ULLIN	1088.7	0.6331	1368.2	-55.2	1.6323	0.8515	85.3509	11.3654	0.7301	0.0324	0.0184	0.002	0.0021	0	0.0005	0.0256	0.0125	8/16/2018	8/17/2018	8/17/2018 3:45:48 PM	
11587	GLEN ULLIN	1095.7	0.6379	1371.9	-50.1	1.6444	0.866	84.5658	12.0058	0.8288	0.047	0.0302	0.0036	0.0046	0	0.0015	0.0064	0.0119	8/17/2018	8/18/2018	8/18/2018 3:36:30 PM	
11587	GLEN ULLIN	1096.1	0.638	1372.2	-50.5	1.6559	0.8484	84.6355	11.7999	0.9963	0.0355	0.0205	0.0022	0.0022	0	0.0004	0.0143	0.0078	8/18/2018	8/19/2018	8/19/2018 3:36:52 PM	
11587	GLEN ULLIN	1091.3	0.6348	1369.7	-53.8	1.6546	0.8417	84.9154	11.7021	0.7655	0.0318	0.0186	0.0019	0.002	0	0.0007	0.0636	0.0144	8/19/2018	8/20/2018	8/20/2018 3:40:37 PM	
11587	GLEN ULLIN	1092.6	0.6356	1370.5	-52.6	1.6575	0.8325	84.9529	11.6666	0.8319	0.0337	0.0193	0.0021	0.0021	0	0.0012	0.0051	0.0125	8/20/2018	8/21/2018	8/21/2018 3:39:10 PM	
11587	GLEN ULLIN	1093.9	0.6364	1371.2	-51.5	1.6275	0.8549	84.8651	11.7165	0.8613	0.04	0.0237	0.003	0.0033	0	0.0012	0.0092	0.0065	8/21/2018	8/22/2018	8/22/2018 3:39:55 PM	
11587	GLEN ULLIN	1094.3	0.6365	1371.7	-51.1	1.6201	0.8452	84.989	11.4538	1.0313	0.0346	0.02	0.0021	0.0021	0	0.0006	0.0062	0.0172	8/22/2018	8/23/2018	8/23/2018 3:38:49 PM	
11587	GLEN ULLIN	1098	0.6389	1373.7	-48.9	1.6243	0.8497	84.5477	11.7994	1.1034	0.0376	0.0213	0.0021	0.002	0	0.0009	0.0167	0.0132	8/23/2018	8/24/2018	8/24/2018 3:34:41 PM	
11587	GLEN ULLIN	1097.4	0.6385	1373.4	-49.4	1.627	0.845	84.5793	11.8142	1.0474	0.0421	0.0238	0.0021	0.0022	0	0.0007	0.0158	0.0098	8/24/2018	8/25/2018	8/25/2018 3:36:18 PM	
11587	GLEN ULLIN	1100.1	0.6407	1374.4	-47.7	1.6748	0.8427	84.2142	12.0876	1.1059	0.0438	0.0245	0.0024	0.0022	0	0.0009	0.0078	0	8/25/2018	8/26/2018	8/26/2018 3:33:10 PM	
11587	GLEN ULLIN	1102.8	0.6421	1376.2	-46.1	1.6662	0.8285	84.0098	12.2377	1.1736	0.0498	0.027	0.0031	0.003	0	0.0008	0.0045	0.0175	8/26/2018	8/27/2018	8/27/2018 3:36:49 PM	
11587	GLEN ULLIN	1095.4	0.6367	1372.8	-50.4	1.61	0.8258	84.8627	11.6903	0.9355	0.0439	0.0241	0.0032	0.0031	0	0.0013	0.0033	0.0151	8/27/2018	8/28/2018	8/28/2018 3:35:02 PM	
11587	GLEN ULLIN	1088.7	0.6322	1369.2	-55.2	1.5966	0.8205	85.5682	11.1981	0.7536	0.0366	0.0207	0.0024	0.0025	0	0.0007	0.0044	0.0196	8/28/2018	8/29/2018	8/29/2018 3:35:37 PM	
11587	GLEN ULLIN	1086.6	0.631	1367.9	-56.1	1.611	0.8218	85.7751	11.0117	0.7172	0.0374	0.0198	0.0026	0.0024	0	0.0009	0.0069	0.0127	8/29/2018	8/30/2018	8/30/2018 3:34:49 PM	
11587	GLEN ULLIN	1089.8	0.6337	1369	-54	1.6434	0.8348	85.3516	11.2873	0.8161	0.0386	0.0207	0.0029	0.0026	0	0.0007	0.0065	0.013	8/30/2018	8/31/2018	8/31/2018 3:35:09 PM	
11587	GLEN ULLIN	1094.9	0.6372	1371.6	-49.8	1.6672	0.8397	84.8184	11.616	0.9791	0.0464	0.0244	0.0037	0.0034	0	0.0015	0	0.0133	8/31/2018	9/1/2018	9/1/2018 3:38:46 PM	

Zone 802

<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	AUG 18	JULY 18	JUNE 18	MAY 18	APRIL 18	MARCH 18	FEB 18	JAN 18	DEC 17	NOV 17	OCT 17	SEPT 17	ZONE
MT/ND	211	Sidney Border - MonDak Tfr - Sidney Plt	1196	1203	1202	1171	1193	1191	1211	1195	1185	1193	1210	1201	1200	211
ND	24	Williston Border - Charbonneau Station	1141	1136	1158	1141	1135	1136	1140	1140	1138	1143	1144	1144	1142	24
ND	25	Watford City West Border	1188	1197	1204	1202	1192	1185	1179	1184	1174	1165	1169	1204	1205	25
ND	28	Bismarck Station - Glen Ullin Station	1144	1162	1153	1173	1172	1163	1121	1098	1096	1114	1111	1173	1196	28
ND	31	Dickinson Brd - Belfield Trf - G Ullin Stn	1124	1132	1147	1139	1158	1134	1122	1102	1095	1111	1110	1132	1100	31
ND/MT	32	Cabin Creek Station - Belfied Transfer	1107	1133	1136	1127	1113	1116	1104	1080	1072	1096	1090	1113	1103	32
ND	33	Little Knife Plant	1175	1176	1175	1174	1176	1175	1175	1176	1175	1174	1174	1174	1177	33
ND	34	Badlands Plant/Bowman Border	993	979	983	984	996	996	996	996	996	996	996	996	996	34
ND	43	Spring Creek I - Sax Valve I	1156	1172	1152	1155	1160	1164	1158	1148	1153	1165	1158	1143	1147	43
ND/MT	241	Fairview Border	1189	1195	1196	1180	1168	1151	1205	1206	1203	1190	1204	1196	1175	241
ND	260	North Tioga Transfer - Nesson Plant	1022	1101	1127	1089	989	989	987	986	1021	998	992	996	987	260
ND	261	Tioga Comp Station - Robinson Lake Plan	1173	1175	1177	1178	1169	1176	1173	1171	1173	1167	1170	1176	1175	261
ND	262	Minot Bdr - Palermo Bdr - Bismarck Sin	1186	1160	1156	1175	1180	1198	1199	1191	1193	1196	1190	1194	1196	262
ND	263	Lignite Plant	1131	1162	1135	1115	1128	1135	1115	1135	1114	1120	1143	1141	1123	263
ND	264	Epping Border	1138	1135	1148	1148	1129	1128	1118	1144	1161	1142	1133	1134	1136	264
ND	265	Tioga Comp Station - County Line Plant	1174	1178	1176	1178	1175	1176	1173	1171	1174	1167	1170	1176	1176	265
ND	266	County Line Plant	1183	1178	1181	1181	1180	1181	1182	1185	1183	1181	1184	1185	1189	266
ND	271	Bismarck Station - Cleveland Station	1175	1162	1153	1173	1173	1194	1187	1159	1161	1176	1179	1192	1196	271
ND	272	Cleveland Station - Mapleton	1175	1160	1154	1173	1172	1194	1187	1158	1160	1177	1179	1192	1196	272
ND	273	Cleveland Station - Grafton Border	1175	1161	1153	1173	1171	1192	1187	1158	1160	1177	1179	1192	1196	273
ND	550	Mandan Border / NBPL-St Anthony		1162	1150	1173	1172	1163	1100	1090	1088	1099	1093			550
ND	610	MDU-Watford City BTU	1169	1175	1152	1156	1164	1174	1170	1168	1164	1165	1165	1189	1190	610
ND	802	Linton	1078	1092	1101	1097	1083	1074	1069	1068	1069	1073	1075	1064	1065	802
ND	903	Hettinger Propane	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	903

**THERMAL ZONE VARIANCE  
DOCUMENTATION**

**August 2018**

<b><i>ZONE</i></b>	<b><i>BTU VARIANCE</i></b>	<b><i>REASON</i></b>
24	-22	Operational Maintenance
260	-26	Operational Maintenance
263	27	Operational Change
43	20	Operational, pipe upgrades & additions