

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

July 17, 2019

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

Re: Case No. PU-19-002 (Therm Billing)
Monthly Report – May 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 June 2019.
2. Attachment B consists of copies of the monthly Heating Value Test Reports received from our suppliers for the month of May 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 May 2019.

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

Sincerely,



Tamie Aberle
Director of Regulatory Affairs

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

Town	Heat Zone	Therm Factor
MDU-303-ALEXANDER	025	1.1353
MDU-308-ARNEGARD	025	1.1353
MDU-314-APPLE VALLEY	271	1.1414
MDU-318-BEACH	032	1.0452
MDU-319-BELFIELD	032	1.0529
MDU-323-BERTHOLD	262	1.1173
MDU-324-BEULAH	032	1.0529
MDU-327-BISMARCK	028	1.0989
MDU-330-BOWMAN	034	0.9180
MDU-337-BURLINGTON	262	1.1414
MDU-343-CARRINGTON	273	1.1385
MDU-344-CLEVELAND	272	1.1334
MDU-364-CAVALIER	273	1.1626
MDU-365-DAWSON	271	1.1334
MDU-368-DES LACS	262	1.1254
MDU-369-DICKINSON	031	1.0802
MDU-374-FT TOTTEN	273	1.1466
MDU-375-DEVILS LAKE	273	1.1466
MDU-379-BARLOW	273	1.1385
MDU-384-EPPING	264	1.0871
MDU-387-ELDRIDGE	272	1.1414
MDU-407-GLADSTONE	031	1.0802
MDU-411-GLEN ULLIN	031	1.0881
MDU-413-GOLVA	032	1.0298
MDU-416-GARRISON	262	1.1254
MDU-417-GRAFTON	273	1.1706
MDU-429-HEBRON	031	1.0881
MDU-432-HETTINGER	903	2.4049
MDU-449-JAMESTOWN	272	1.1495
MDU-459-KILLDEER	033	1.1079
MDU-463-LANGDON	273	1.1385
MDU-469-LEFOR	031	1.0802
MDU-474-LIGNITE	263	1.0921
MDU-475-LINTON	802	1.0623
MDU-478-LINCOLN	028	1.1067
MDU-488-MCKENZIE	271	1.1414
MDU-494-MEDINA	271	1.1334
MDU-498-MANDAN	028	1.1067
MDU-500-MARMARTH	034	0.9047
MDU-505-MINOT	262	1.1414
MDU-510-MOTT	031	1.0802
MDU-512-MAX	262	1.1414
MDU-522-NEW ENGLAND	031	1.0724
MDU-524-NEW SALEM	028	1.0833
MDU-532-NEW ROCKFORD	273	1.1385
MDU-539-PARK RIVER	273	1.1626
MDU-540-PALERMO	262	1.1173
MDU-558-RAY	264	1.0871
MDU-561-REGENT	031	1.0802

MDU-563-RHAME	034	0.8914
MDU-564-RICHARDTON	031	1.0724
MDU-568-ROSS	261	1.0971
MDU-572-RUTHVILLE	262	1.1414
MDU-574-SANBORN	272	1.1495
MDU-583-SENTINEL BUTTE	032	1.0452
MDU-588-SOUTH HEART	031	1.0724
MDU-717-SPIRITWOOD	272	1.1495
MDU-590-SPRINGBROOK	264	1.0871
MDU-591-STANLEY	261	1.1130
MDU-593-STEELE	271	1.1334
MDU-594-STERLING	028	1.1067
MDU-598-SHEYENNE	273	1.1466
MDU-605-SURREY	262	1.1414
MDU-610-TAPPEN	271	1.1334
MDU-611-TAYLOR	031	1.0724
MDU-616-TIOGA	260	1.0664
MDU-619-TURTLE LAKE	262	1.1254
MDU-620-TRENTON	024	1.1073
MDU-624-UNDERWOOD	262	1.1254
MDU-625-VALLEY CITY	272	1.1575
MDU-629-WALHALLA	273	1.1626
MDU-632-WATFORD CITY	610	1.1098
MDU-636-WHEELOCK	264	1.0793
MDU-637-WHITE EARTH	261	1.1051
MDU-642-WILLISTON	024	1.1073
MDU-646-WASHBURN	262	1.1324
MDU-647-WILTON	262	1.1173
MDU-664-RIVERDALE	262	1.1254
MDU-691-FAIRVIEW	241	1.1377
MDU-712-MINOT AFB	262	1.1414
MDU-718-FAIRMOUNT	600	1.1435
MDU-732-NEKOMA	273	1.1385
MDU-732-MSR SITE	273	1.1385

Source Daily Summary

May 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	0.7311	1189.4	1210.5	1207.0	0.929	3.433	68.556	23.252	3.443	0.131	0.234	0.012	0.009	0.000	0.000	0.000	0.000	0.000	1412.44	
2	0.7279	1186.2	1207.2	1203.7	0.894	3.383	69.018	23.015	3.323	0.125	0.220	0.011	0.009	0.000	0.000	0.000	0.000	0.000	1411.73	
3	0.7430	1194.4	1215.6	1211.9	1.343	3.618	67.009	23.851	3.653	0.174	0.320	0.018	0.014	0.000	0.000	0.000	0.000	0.000	1406.74	
4	0.7423	1193.0	1214.1	1210.6	1.344	3.631	67.114	23.764	3.633	0.171	0.312	0.017	0.013	0.000	0.000	0.000	0.000	0.000	1405.79	
5	0.7418	1191.9	1213.0	1209.5	1.347	3.648	67.196	23.679	3.623	0.170	0.309	0.016	0.013	0.000	0.000	0.000	0.000	0.000	1404.97	
6	0.7408	1190.5	1211.5	1207.9	1.347	3.644	67.431	23.415	3.649	0.171	0.312	0.017	0.013	0.000	0.000	0.000	0.000	0.000	1404.16	
7	0.7400	1189.4	1210.4	1206.8	1.346	3.634	67.582	23.292	3.639	0.169	0.308	0.017	0.013	0.000	0.000	0.000	0.000	0.000	1403.69	
8	0.7381	1186.6	1207.6	1204.0	1.351	3.621	67.742	23.317	3.502	0.157	0.284	0.015	0.012	0.000	0.000	0.000	0.000	0.000	1402.21	
9	0.7383	1186.5	1207.5	1203.9	1.350	3.648	67.532	23.630	3.407	0.145	0.262	0.014	0.011	0.000	0.000	0.000	0.000	0.000	1401.90	
10	0.7385	1186.2	1207.3	1203.6	1.356	3.669	67.518	23.603	3.415	0.146	0.265	0.014	0.011	0.000	0.000	0.000	0.000	0.000	1401.46	
11	0.7401	1188.8	1209.8	1206.2	1.353	3.673	67.361	23.580	3.596	0.146	0.264	0.014	0.011	0.000	0.000	0.000	0.000	0.000	1402.87	
12	0.7417	1190.9	1212.0	1208.2	1.361	3.675	67.360	23.357	3.729	0.170	0.315	0.018	0.014	0.000	0.000	0.000	0.000	0.000	1403.86	
13	0.7136	1172.2	1193.0	1189.3	0.707	3.177	71.329	21.473	3.027	0.094	0.173	0.010	0.009	0.000	0.000	0.000	0.000	0.000	1408.88	
14	0.7085	1183.0	1203.9	1200.4	0.067	3.013	71.105	22.943	2.778	0.041	0.053	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1427.02	
15	0.7070	1179.7	1200.6	1197.0	0.078	3.057	71.402	22.609	2.760	0.040	0.053	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1424.52	
16	0.7117	1186.4	1207.4	1203.9	0.073	3.095	70.755	22.906	3.063	0.045	0.061	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1427.92	
17	0.7104	1185.1	1206.1	1202.8	0.079	3.050	70.994	22.732	3.038	0.047	0.060	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1427.59	
18	0.7156	1193.4	1214.5	1211.2	0.071	3.039	70.332	23.037	3.386	0.056	0.076	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1432.40	
19	0.7167	1194.1	1215.3	1211.9	0.095	3.067	70.144	23.161	3.389	0.058	0.081	0.002	0.002	0.000	0.000	0.000	0.000	0.000	1432.09	
20	0.7235	1185.8	1206.8	1203.3	0.735	3.238	69.532	22.950	3.263	0.098	0.170	0.008	0.006	0.000	0.000	0.000	0.000	0.000	1415.63	
21	0.7387	1186.6	1207.6	1204.0	1.361	3.664	67.460	23.671	3.417	0.142	0.259	0.014	0.011	0.000	0.000	0.000	0.000	0.000	1401.62	
22	0.7369	1183.9	1204.9	1201.2	1.367	3.648	67.871	23.253	3.426	0.145	0.264	0.015	0.011	0.000	0.000	0.000	0.000	0.000	1400.14	
23	0.7320	1174.9	1195.7	1192.1	1.339	3.774	68.942	21.984	3.498	0.153	0.280	0.016	0.012	0.000	0.000	0.000	0.000	0.000	1394.19	
24	0.7307	1172.9	1193.7	1190.2	1.323	3.798	69.189	21.725	3.506	0.153	0.279	0.015	0.012	0.000	0.000	0.000	0.000	0.000	1393.08	
25	0.7333	1176.7	1197.6	1193.8	1.323	3.805	68.941	21.741	3.685	0.167	0.307	0.017	0.014	0.000	0.000	0.000	0.000	0.000	1395.13	
26	0.7371	1182.7	1203.7	1199.9	1.317	3.810	68.601	21.698	4.011	0.184	0.342	0.020	0.016	0.000	0.000	0.000	0.000	0.000	1398.51	
27	0.7387	1185.3	1206.2	1202.5	1.317	3.803	68.172	22.243	3.901	0.185	0.343	0.019	0.015	0.000	0.000	0.000	0.000	0.000	1400.04	
28	0.7390	1186.1	1207.1	1203.2	1.323	3.777	68.279	22.023	4.007	0.192	0.360	0.021	0.017	0.000	0.000	0.000	0.000	0.000	1400.63	
29	0.7373	1183.7	1204.6	1200.7	1.349	3.724	68.631	21.724	3.984	0.192	0.357	0.022	0.017	0.000	0.000	0.000	0.000	0.000	1399.41	
30	0.7411	1191.0	1212.1	1208.2	1.359	3.616	67.472	23.305	3.746	0.164	0.305	0.018	0.015	0.000	0.000	0.000	0.000	0.000	1404.56	
31	0.7309	1184.4	1205.4	1201.7	1.093	3.476	68.409	23.502	3.162	0.120	0.217	0.012	0.010	0.000	0.000	0.000	0.000	0.000	1406.66	
Avg	0.7312	1186.0	1206.9	1203.2	1.022	3.513	68.677	22.917	3.473	0.134	0.240	0.013	0.010	0.000	0.000	0.000	0.000	0.000	1408.12	

Zone 211

Source Daily Summary

May 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	0.6872	1134.4	1154.5	1151.3	0.800	2.851	75.983	17.949	2.143	0.076	0.166	0.014	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1389.37
2	0.6854	1131.0	1151.0	1147.8	0.795	2.904	76.208	17.774	2.063	0.072	0.156	0.013	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1386.97
3	0.6864	1132.7	1152.8	1149.6	0.794	2.893	76.126	17.759	2.155	0.077	0.166	0.013	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1388.09
4	0.6862	1132.2	1152.2	1149.1	0.797	2.899	76.051	17.925	2.077	0.072	0.153	0.012	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1387.71
5	0.6864	1133.0	1153.1	1150.0	0.791	2.877	76.019	17.965	2.096	0.072	0.153	0.012	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1388.52
6	0.6876	1133.5	1153.6	1150.4	0.787	2.959	75.866	17.967	2.159	0.075	0.160	0.013	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1387.97
7	0.6880	1134.6	1154.7	1151.6	0.786	2.933	75.749	18.125	2.154	0.073	0.154	0.012	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1388.91
8	0.6902	1138.2	1158.3	1155.1	0.788	2.924	75.411	18.383	2.224	0.077	0.164	0.013	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1390.96
9	0.6903	1136.9	1157.1	1153.9	0.789	3.008	75.481	18.125	2.319	0.080	0.171	0.013	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1389.37
10	0.6903	1136.6	1156.7	1153.5	0.789	3.026	75.549	17.991	2.353	0.083	0.178	0.014	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1388.95
11	0.6879	1134.9	1155.0	1151.8	0.794	2.895	75.981	17.767	2.272	0.083	0.178	0.014	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1389.32
12	0.6876	1135.0	1155.1	1151.9	0.800	2.853	76.025	17.775	2.261	0.081	0.174	0.013	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1389.74
13	0.6888	1135.0	1155.1	1152.0	0.782	2.990	75.790	17.850	2.298	0.083	0.177	0.013	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1388.58
14	0.6896	1131.7	1151.7	1148.4	0.767	3.291	75.718	17.513	2.402	0.090	0.190	0.014	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1383.66
15	0.7203	1166.9	1187.6	1183.9	1.053	3.585	71.280	20.109	3.368	0.174	0.368	0.031	0.032	0.000	0.000	0.000	0.000	0.000	0.000	1396.06
16	0.7194	1174.5	1195.3	1191.8	0.735	3.530	70.728	21.306	3.231	0.138	0.279	0.026	0.028	0.000	0.000	0.000	0.000	0.000	0.000	1406.06
17	0.7008	1147.5	1167.8	1164.5	0.789	3.346	74.182	18.366	2.886	0.121	0.263	0.022	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1391.71
18	0.6875	1136.1	1156.2	1152.9	0.749	2.856	76.111	17.665	2.311	0.084	0.190	0.015	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1391.05
19	0.6889	1138.6	1158.8	1155.5	0.759	2.823	75.713	18.154	2.279	0.077	0.170	0.012	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1392.76
20	0.6888	1137.2	1157.4	1154.1	0.789	2.843	75.707	18.176	2.219	0.077	0.161	0.012	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1391.29
21	0.6875	1135.7	1155.8	1152.5	0.786	2.827	75.948	17.963	2.209	0.076	0.161	0.013	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1390.61
22	0.6872	1135.1	1155.2	1151.9	0.775	2.856	75.952	17.974	2.179	0.075	0.160	0.013	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1390.14
23	0.6868	1134.0	1154.1	1150.8	0.757	2.900	76.081	17.778	2.213	0.077	0.165	0.013	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1389.36
24	0.6863	1132.4	1152.4	1149.2	0.760	2.956	76.101	17.745	2.177	0.076	0.158	0.012	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1387.78
25	0.6882	1134.3	1154.3	1151.0	0.759	3.018	75.881	17.755	2.311	0.079	0.168	0.013	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1388.15
26	0.6911	1137.6	1157.8	1154.5	0.772	3.066	75.376	18.111	2.394	0.081	0.172	0.013	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1389.37
27	0.6924	1141.6	1161.8	1158.5	0.796	2.908	75.162	18.484	2.357	0.083	0.178	0.014	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1392.89
28	0.6906	1138.5	1158.6	1155.3	0.779	2.959	75.420	18.243	2.327	0.079	0.166	0.012	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1390.88
29	0.6892	1135.6	1155.7	1152.3	0.763	3.024	75.690	17.919	2.333	0.078	0.164	0.013	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1388.80
30	0.6926	1137.9	1158.1	1154.7	0.754	3.212	75.205	18.007	2.525	0.086	0.183	0.013	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1388.28
31	0.6889	1134.5	1154.6	1151.3	0.766	3.054	75.678	17.972	2.258	0.078	0.166	0.013	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1387.86
Avg	0.6909	1138.0	1158.1	1154.9	0.787	3.002	75.425	18.148	2.340	0.085	0.181	0.014	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1390.04

Zone 24

Gas Composition and Properties

Effective May 1, 2019

Source #: 0602160
Name: FAIRVIEW BORDER

Component	Mole %	Liquid Content	Mass %
Carbon Dioxide, CO2	1.1416		2.3836
Nitrogen, N2	3.4874		4.6350
Methane, C1	69.0961		52.5902
Ethane, C2	22.3599	5.9849	31.8983
Propane, C3	3.4884	0.9619	7.2979
iso-Butane, iC4	0.1393	0.0456	0.3841
n-Butane, nC4	0.2622	0.0827	0.7230
iso-Pentane, iC5	0.0126	0.0046	0.0431
n-Pentane, nC5	0.0095	0.0034	0.0325
Neo-Pentane, NeoC5			
Hexanes Plus, C6+	0.0030	0.0012	0.0123
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	-7.187	
Cricondentherm	3.980	
HV, Dry @ Base P, T	1202.32	
HV, Sat @ Base P, T	1181.39	
HV, Sat @ Sample P, T	1202.32	
Relative Density	0.7299	

C6+: 100

Totals	100.0000	7.0850	100.0000
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Sample		
Date: 05/01/2019	Pressure:	500.0
Type:	Temperature:	
Tech: Kevin Moos	H2O:	lbs/mm
	H2S:	ppm
Remarks:		

Analysis	
Date: 05/01/2019	Instrument:
	Cylinder: 25
Tech: Kevin Moos	
Remarks:	

Zone 241

Gas Composition and Properties

Effective May 1, 2019

Source #: 0602225
Name: WATFORD CITY WEST BORDER

Component	Mole %	Liquid Content	Mass %
Carbon Dioxide, CO2	1.2016		2.5143
Nitrogen, N2	4.0853		5.4413
Methane, C1	70.3608		53.6678
Ethane, C2	19.8470	5.3119	28.3742
Propane, C3	3.7610	1.0369	7.8851
iso-Butane, iC4	0.2059	0.0674	0.5690
n-Butane, nC4	0.4551	0.1436	1.2576
iso-Pentane, iC5	0.0384	0.0141	0.1317
n-Pentane, nC5	0.0374	0.0136	0.1283
Neo-Pentane, NeoC5			
Hexanes Plus, C6+	0.0075	0.0031	0.0307
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	-3.281	
Cricondentherm	9.062	
HV, Dry @ Base P, T	1188.13	
HV, Sat @ Base P, T	1167.45	
HV, Sat @ Sample P, T	1188.13	
Relative Density	0.7283	

C6+: 100

Totals	100.0000	6.5910	100.0000
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Sample

Date: 05/01/2019 Pressure: 430.0
 Type: Temperature:
 Tech: Kevin Moos H2O: lbs/mm
 H2S: ppm

Remarks:

Analysis

Date: 05/01/2019 Instrument:
 Cylinder: 400
 Tech: Kevin Moos

Remarks:

Zone 25

Source Daily Summary

May 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	0.6580	1082.7	1101.8		0.525	3.683	80.650	13.491	1.469	0.051	0.109	0.009	0.011	0.002					1355.20	
2	0.6594	1083.3	1102.5		0.567	3.711	80.357	13.753	1.436	0.049	0.104	0.009	0.011	0.003					1354.59	
3	0.6620	1087.1	1106.3		0.568	3.723	79.878	14.156	1.511	0.048	0.100	0.007	0.008	0.001					1356.64	
4	0.6617	1086.6	1105.9		0.579	3.709	79.895	14.189	1.471	0.047	0.095	0.007	0.008	0.001					1356.35	
5	0.6600	1084.7	1103.9		0.555	3.705	80.123	14.056	1.420	0.043	0.086	0.006	0.006	0.000					1355.68	
6	0.6635	1089.8	1109.1		0.591	3.674	79.602	14.441	1.526	0.048	0.100	0.008	0.009	0.001					1361.55	
7	0.6649	1092.6	1112.0		0.583	3.645	79.276	14.823	1.520	0.047	0.093	0.006	0.007	0.000					1360.47	
8	0.6662	1094.1	1113.5		0.582	3.670	79.204	14.710	1.657	0.052	0.106	0.008	0.009	0.001					1361.09	
9	0.6680	1094.9	1114.3		0.592	3.780	78.953	14.701	1.799	0.054	0.107	0.007	0.007	0.000					1360.18	
10	0.6677	1094.3	1113.7		0.593	3.786	79.050	14.579	1.804	0.056	0.113	0.008	0.009	0.001					1359.74	
11	0.6624	1088.5	1107.8		0.574	3.666	79.836	14.208	1.558	0.047	0.096	0.007	0.008	0.000					1357.99	
12	0.6640	1091.3	1110.6		0.584	3.633	79.559	14.468	1.601	0.048	0.093	0.006	0.007	0.001					1359.83	
13	0.6684	1097.4	1116.8		0.587	3.674	78.804	15.044	1.716	0.054	0.107	0.007	0.008	0.000					1362.87	
14	0.6803	1123.8	1143.7		0.737	2.944	77.231	16.716	2.102	0.080	0.164	0.012	0.012	0.001					1383.49	
15	0.6998	1152.8	1173.2		0.908	2.751	74.909	17.878	3.028	0.145	0.324	0.026	0.028	0.004					1399.16	
16	0.6985	1152.8	1173.3		0.912	2.621	74.990	18.081	2.907	0.137	0.300	0.023	0.025	0.004					1400.53	
17	0.6603	1091.9	1111.2		0.567	3.274	80.460	13.891	1.611	0.058	0.118	0.009	0.010	0.001					1364.30	
18	0.6554	1079.9	1099.0		0.487	3.669	80.921	13.431	1.364	0.040	0.077	0.005	0.005	0.000					1354.38	
19	0.6659	1095.8	1115.3		0.553	3.584	79.207	14.848	1.646	0.049	0.096	0.007	0.009	0.002					1363.50	
20	0.6678	1098.4	1117.9		0.578	3.561	78.856	15.181	1.668	0.049	0.093	0.006	0.006	0.000					1364.84	
21	0.6620	1089.7	1109.0		0.559	3.581	79.937	14.195	1.563	0.049	0.097	0.008	0.009	0.002					1359.85	
22	0.6606	1087.0	1106.3		0.540	3.640	80.103	14.057	1.513	0.046	0.088	0.006	0.006	0.000					1357.97	
23	0.6658	1095.3	1114.7		0.573	3.574	79.256	14.791	1.638	0.051	0.099	0.008	0.009	0.002					1362.98	
24	0.6680	1097.9	1117.4		0.604	3.577	78.813	15.202	1.649	0.049	0.094	0.006	0.006	0.000					1363.94	
25	0.6709	1098.8	1118.3		0.601	3.798	78.562	14.909	1.930	0.060	0.120	0.008	0.010	0.002					1362.09	
26	0.6749	1104.0	1123.5		0.625	3.822	77.883	15.421	2.043	0.064	0.127	0.008	0.008	0.000					1364.45	
27	0.6750	1106.7	1126.3		0.639	3.643	77.760	15.856	1.907	0.058	0.117	0.009	0.010	0.002					1367.75	
28	0.6712	1100.8	1120.3		0.599	3.708	78.418	15.209	1.885	0.057	0.110	0.007	0.007	0.000					1364.28	
29	0.6747	1104.1	1123.7		0.597	3.835	78.020	15.203	2.125	0.066	0.132	0.009	0.011	0.003					1364.85	
30	0.6774	1106.8	1126.4		0.603	3.917	77.592	15.402	2.254	0.071	0.143	0.009	0.009	0.000					1365.42	
31	0.6662	1094.2	1113.6		0.575	3.675	79.244	14.631	1.696	0.053	0.108	0.008	0.008	0.001					1361.18	
Avg	0.6684	1098.0	1117.8		0.604	3.588	78.947	14.888	1.775	0.059	0.120	0.009	0.010	0.001					1364.10	

Zone 260

Source Daily Summary

May 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	0.7068	1154.1	1174.5	1171.5	0.891	3.364	72.303	20.702	2.443	0.085	0.181	0.014	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1393.75
2	0.7051	1149.5	1169.9	1166.8	0.922	3.434	72.445	20.668	2.267	0.076	0.159	0.013	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1389.92
3	0.7053	1150.5	1170.9	1167.8	0.893	3.438	72.369	20.733	2.322	0.073	0.150	0.011	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1390.95
4	0.7043	1148.9	1169.3	1166.3	0.903	3.423	72.494	20.701	2.244	0.071	0.143	0.010	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1390.05
5	0.7039	1149.0	1169.4	1166.4	0.886	3.410	72.465	20.809	2.215	0.067	0.131	0.008	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1390.57
6	0.7042	1149.1	1169.4	1166.4	0.899	3.414	72.555	20.608	2.281	0.072	0.146	0.011	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1390.31
7	0.7035	1148.6	1169.0	1166.0	0.884	3.403	72.586	20.659	2.246	0.069	0.134	0.009	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1390.44
8	0.7078	1154.4	1174.8	1171.7	0.889	3.446	72.020	20.919	2.469	0.077	0.156	0.011	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1393.11
9	0.7103	1155.3	1175.7	1172.7	0.897	3.610	71.693	20.866	2.679	0.080	0.157	0.009	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1391.83
10	0.7106	1155.7	1176.2	1173.0	0.905	3.598	71.710	20.812	2.701	0.083	0.166	0.012	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1392.03
11	0.7066	1152.7	1173.1	1170.1	0.910	3.404	72.192	20.840	2.414	0.073	0.146	0.010	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1392.30
12	0.7075	1155.3	1175.7	1172.6	0.913	3.326	72.059	21.011	2.460	0.073	0.140	0.009	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1394.52
13	0.7040	1148.6	1168.9	1165.7	0.863	3.479	72.722	20.232	2.458	0.076	0.150	0.010	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1389.88
14	0.6458	1071.4	1090.4	1087.4	0.463	3.314	83.022	11.662	1.360	0.052	0.109	0.008	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1353.61
15	0.6566	1087.1	1106.4	1103.2	0.562	3.222	81.802	12.171	1.912	0.092	0.205	0.016	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1362.05
16	0.6409	1063.6	1082.4	1079.5	0.446	3.359	84.285	10.173	1.485	0.070	0.156	0.012	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1348.81
17	0.6581	1086.0	1105.3	1102.4	0.531	3.475	80.704	13.611	1.512	0.049	0.100	0.008	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1358.76
18	0.7090	1159.8	1180.4	1177.4	0.874	3.244	71.607	21.691	2.368	0.069	0.130	0.008	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1398.62
19	0.7112	1163.8	1184.4	1181.3	0.871	3.213	71.408	21.721	2.542	0.075	0.146	0.011	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1401.17
20	0.7070	1156.5	1176.9	1173.9	0.865	3.280	72.082	21.104	2.446	0.072	0.135	0.008	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1396.48
21	0.7051	1151.8	1172.2	1169.0	0.877	3.363	72.498	20.615	2.404	0.074	0.145	0.011	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1392.68
22	0.7060	1153.7	1174.1	1171.1	0.876	3.335	72.251	20.914	2.398	0.071	0.136	0.009	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1394.16
23	0.7054	1153.0	1173.5	1170.2	0.872	3.330	72.427	20.713	2.420	0.073	0.142	0.010	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1393.84
24	0.7048	1151.4	1171.8	1168.8	0.880	3.357	72.431	20.759	2.356	0.069	0.131	0.008	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1392.55
25	0.7108	1154.8	1175.2	1171.9	0.890	3.695	71.771	20.557	2.804	0.087	0.171	0.012	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1390.69
26	0.7102	1153.4	1173.8	1170.8	0.883	3.739	71.870	20.398	2.830	0.088	0.172	0.010	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1389.62
27	0.7096	1156.1	1176.6	1173.4	0.896	3.496	71.849	20.858	2.637	0.080	0.160	0.011	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1393.43
28	0.7096	1155.9	1176.3	1173.1	0.875	3.542	71.851	20.768	2.709	0.080	0.155	0.010	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1393.22
29	0.7128	1157.9	1178.4	1174.8	0.856	3.748	71.571	20.511	3.010	0.093	0.183	0.013	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1392.37
30	0.7137	1157.4	1177.9	1174.4	0.850	3.869	71.489	20.342	3.131	0.098	0.196	0.012	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1391.05
31	0.7087	1155.5	1176.0	1172.9	0.891	3.455	71.944	20.880	2.565	0.080	0.161	0.011	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1393.65
Avg	0.7002	1144.0	1164.2	1161.0	0.836	3.445	73.435	19.645	2.390	0.076	0.151	0.011	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1387.95

Zone 2b1

Source Daily Summary

May 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	0.7403	1163.6	1184.2	1181.2	0.930	5.857	67.792	20.197	4.729	0.147	0.321	0.014	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1373.18
2	0.7408	1163.3	1183.9	1180.7	0.930	5.933	67.701	20.181	4.755	0.149	0.325	0.014	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1372.20
3	0.7424	1167.0	1187.7	1184.4	0.932	5.842	67.559	20.296	4.836	0.155	0.345	0.017	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1375.22
4	0.7413	1163.5	1184.1	1181.0	0.932	5.956	67.702	20.079	4.811	0.154	0.334	0.015	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1372.07
5	0.7404	1162.3	1182.9	1179.7	0.933	5.943	67.868	19.940	4.812	0.153	0.324	0.014	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1371.49
6	0.7417	1164.8	1185.4	1182.2	0.932	5.920	67.691	20.046	4.895	0.155	0.331	0.015	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1373.17
7	0.7438	1167.4	1188.1	1184.8	0.931	5.959	67.422	20.139	5.010	0.162	0.345	0.016	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1374.30
8	0.7447	1169.4	1190.1	1186.8	0.934	5.914	67.352	20.180	5.063	0.166	0.358	0.017	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1375.81
9	0.7408	1161.8	1182.4	1179.2	0.930	6.014	67.789	19.918	4.850	0.150	0.321	0.014	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1370.56
10	0.7431	1166.1	1186.7	1183.3	0.935	5.969	67.523	20.061	4.980	0.160	0.341	0.016	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1373.37
11	0.7450	1170.0	1190.8	1187.5	0.937	5.893	67.349	20.165	5.089	0.168	0.364	0.018	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1376.36
12	0.7440	1168.0	1188.7	1185.3	0.934	5.934	67.441	20.112	5.025	0.164	0.355	0.017	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1374.86
13	0.7409	1161.9	1182.5	1178.9	0.934	6.018	67.795	19.888	4.854	0.153	0.328	0.015	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1370.50
14	0.7458	1171.2	1191.9	1188.2	0.936	5.906	67.196	20.268	5.140	0.166	0.356	0.016	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1376.90
15	0.7444	1168.5	1189.2	1185.5	0.921	5.956	67.426	20.042	5.100	0.164	0.357	0.017	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1375.11
16	0.7087	1147.1	1167.5	1164.1	0.809	4.078	72.783	18.634	3.300	0.117	0.252	0.012	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1383.57
17	0.7022	1136.6	1156.8	1153.5	0.849	4.058	73.598	18.289	2.859	0.103	0.220	0.011	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1377.14
18	0.7221	1144.8	1165.1	1161.9	0.874	5.385	70.547	18.833	3.963	0.128	0.253	0.009	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1368.03
19	0.7399	1159.8	1180.4	1177.2	0.930	6.048	68.139	19.387	4.970	0.166	0.337	0.012	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1369.07
20	0.7395	1161.4	1181.9	1178.6	0.921	5.936	68.258	19.371	4.975	0.169	0.346	0.013	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1371.19
21	0.7419	1163.1	1183.7	1180.3	0.930	6.040	67.921	19.457	5.089	0.174	0.360	0.015	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1371.05
22	0.7477	1173.9	1194.7	1191.4	0.930	5.922	67.204	19.919	5.404	0.191	0.396	0.017	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1378.38
23	0.7430	1165.3	1185.9	1182.5	0.928	6.012	67.765	19.579	5.159	0.171	0.354	0.015	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1372.56
24	0.7431	1166.3	1186.9	1183.7	0.932	5.956	67.772	19.595	5.192	0.173	0.352	0.014	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1373.64
25	0.7417	1163.2	1183.8	1180.4	0.931	6.014	67.983	19.397	5.122	0.172	0.352	0.015	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1371.32
26	0.7460	1170.7	1191.4	1188.2	0.932	5.957	67.442	19.700	5.380	0.182	0.375	0.016	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1376.18
27	0.7440	1166.3	1187.0	1183.7	0.925	6.045	67.671	19.531	5.263	0.174	0.360	0.015	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1372.91
28	0.7416	1162.7	1183.3	1179.8	0.929	6.037	67.944	19.451	5.104	0.165	0.342	0.014	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1370.82
29	0.7459	1170.7	1191.4	1187.7	0.930	5.947	67.399	19.806	5.354	0.174	0.360	0.015	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1376.32
30	0.7459	1170.4	1191.1	1187.2	0.931	5.963	67.386	19.820	5.329	0.174	0.365	0.016	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1375.98
31	0.7511	1180.4	1201.3	1197.8	0.937	5.838	66.775	20.188	5.621	0.192	0.412	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1382.85
Avg	0.7401	1164.0	1184.9	1181.5	0.923	5.815	68.071	19.757	4.904	0.161	0.340	0.015	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1374.07

Zone 2b2

Gas Composition and Properties

Effective May 1, 2019

Source #: 2501030
Name: LIGNITE PLANT

Component	Mole %	Liquid Content	Mass %
Carbon Dioxide, CO2	0.1582		0.3567
Nitrogen, N2	2.9165		4.1854
Methane, C1	77.3735		63.5873
Ethane, C2	17.2016	4.6021	26.4968
Propane, C3	2.2759	0.6272	5.1411
iso-Butane, iC4	0.0409	0.0134	0.1218
n-Butane, nC4	0.0254	0.0080	0.0756
iso-Pentane, iC5			
n-Pentane, nC5			
Neo-Pentane, NeoC5			
Hexanes Plus, C6+	0.0080	0.0033	0.0353
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	-31.433	
Cricondentherm	-23.757	
HV, Dry @ Base P, T	1151.74	
HV, Sat @ Base P, T	1131.70	
HV, Sat @ Sample P, T	1151.74	
Relative Density	0.6757	

C6+: 100

Totals	100.0000	5.2530	100.0000
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Sample

Date: 05/01/2019 Pressure: 500.0
 Type: Temperature:
 Tech: Kevin Moos H2O: lbs/mm
 H2S: ppm

Remarks:

Analysis

Date: 05/01/2019 Instrument:
 Cylinder: 838
 Tech: Kevin Moos

Remarks:

Zone 2b3

Gas Composition and Properties

Effective May 1, 2019

Attachment B
Page 9 of 23

Source #: 3002013
Name: EPPING BORDER

Component	Mole %	Liquid Content	Mass %
Carbon Dioxide, CO2	0.7598		1.7008
Nitrogen, N2	2.9561		4.2120
Methane, C1	77.0033		62.8326
Ethane, C2	17.0263	4.5552	26.0401
Propane, C3	2.0526	0.5657	4.6037
iso-Butane, iC4	0.0587	0.0192	0.1735
n-Butane, nC4	0.1254	0.0395	0.3707
iso-Pentane, iC5	0.0079	0.0029	0.0290
n-Pentane, nC5	0.0082	0.0030	0.0301
Neo-Pentane, NeoC5			
Hexanes Plus, C6+	0.0017	0.0007	0.0075
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	-28.248	
Cricondentherm	-22.078	
HV, Dry @ Base P, T	1143.42	
HV, Sat @ Base P, T	1123.52	
HV, Sat @ Sample P, T	1143.42	
Relative Density	0.6805	

C6+: 100

Totals	100.0000	5.1870	100.0000
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Sample			
Date: 05/01/2019	Pressure:	540.0	
Type:	Temperature:		
Tech: Kevin Moos	H2O:	lbs/mm	
	H2S:	ppm	
Remarks:			

Analysis			
Date: 05/01/2019	Instrument:		
	Cylinder:	125	
Tech: Kevin Moos			
Remarks:			

*** End of Report ***

Zone 264

Source Daily Summary

May 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	0.7061	1152.0	1172.4	1169.1	0.942	3.343	72.199	21.048	2.230	0.070	0.144	0.010	0.013	0.000	0.000	0.000	0.000	0.000	1391.91	
2	0.7081	1155.3	1175.7	1172.4	0.931	3.348	72.074	20.937	2.430	0.082	0.171	0.013	0.015	0.000	0.000	0.000	0.000	0.000	1393.86	
3	0.7064	1153.0	1173.5	1170.1	0.911	3.358	72.275	20.869	2.316	0.077	0.161	0.014	0.019	0.000	0.000	0.000	0.000	0.000	1392.76	
4	0.7071	1152.8	1173.2	1169.9	0.919	3.422	72.164	20.869	2.355	0.078	0.165	0.013	0.016	0.000	0.000	0.000	0.000	0.000	1391.87	
5	0.7047	1149.8	1170.2	1166.9	0.901	3.411	72.448	20.740	2.270	0.069	0.138	0.010	0.012	0.000	0.000	0.000	0.000	0.000	1390.63	
6	0.7051	1150.6	1171.0	1167.8	0.904	3.393	72.309	20.944	2.229	0.069	0.135	0.008	0.010	0.000	0.000	0.000	0.000	0.000	1391.26	
7	0.7050	1150.6	1170.9	1167.7	0.901	3.391	72.373	20.862	2.241	0.070	0.140	0.010	0.013	0.000	0.000	0.000	0.000	0.000	1391.26	
8	0.7043	1150.0	1170.4	1167.2	0.896	3.371	72.519	20.705	2.282	0.070	0.137	0.009	0.011	0.000	0.000	0.000	0.000	0.000	1391.27	
9	0.7050	1151.1	1171.5	1168.3	0.894	3.365	72.413	20.810	2.289	0.070	0.137	0.009	0.012	0.000	0.000	0.000	0.000	0.000	1391.96	
10	0.7075	1154.9	1175.3	1172.1	0.905	3.361	71.994	21.111	2.406	0.072	0.136	0.007	0.008	0.000	0.000	0.000	0.000	0.000	1393.99	
11	0.7079	1155.8	1176.2	1173.0	0.894	3.358	71.971	21.084	2.468	0.067	0.140	0.009	0.008	0.000	0.000	0.000	0.000	0.000	1394.69	
12	0.7063	1153.5	1173.9	1170.8	0.880	3.364	72.204	20.917	2.427	0.064	0.130	0.007	0.006	0.000	0.000	0.000	0.000	0.000	1393.59	
13	0.7073	1154.9	1175.3	1172.2	0.916	3.319	72.059	21.073	2.414	0.065	0.137	0.009	0.008	0.000	0.000	0.000	0.000	0.000	1394.27	
14	0.7073	1155.5	1175.9	1172.8	0.895	3.318	72.106	20.986	2.460	0.074	0.142	0.009	0.010	0.000	0.000	0.000	0.000	0.000	1394.98	
15	0.7090	1158.0	1178.5	1175.3	0.936	3.258	71.766	21.413	2.386	0.072	0.145	0.010	0.013	0.000	0.000	0.000	0.000	0.000	1396.33	
16	0.7177	1176.2	1197.0	1193.8	0.953	2.948	69.918	23.626	2.363	0.062	0.116	0.007	0.008	0.000	0.000	0.000	0.000	0.000	1409.63	
17	0.7162	1165.9	1186.5	1183.3	1.068	3.263	70.425	22.636	2.342	0.075	0.163	0.013	0.016	0.000	0.000	0.000	0.000	0.000	1398.67	
18	0.7073	1157.0	1177.5	1174.3	0.910	3.207	71.939	21.432	2.284	0.068	0.139	0.009	0.011	0.000	0.000	0.000	0.000	0.000	1396.76	
19	0.7116	1164.2	1184.8	1181.5	0.899	3.184	71.276	21.957	2.444	0.073	0.142	0.011	0.013	0.000	0.000	0.000	0.000	0.000	1401.16	
20	0.7118	1164.9	1185.5	1182.3	0.876	3.195	71.181	22.052	2.473	0.071	0.134	0.008	0.010	0.000	0.000	0.000	0.000	0.000	1401.90	
21	0.7110	1163.7	1184.3	1181.0	0.879	3.187	71.468	21.689	2.538	0.074	0.142	0.010	0.013	0.000	0.000	0.000	0.000	0.000	1401.19	
22	0.7058	1152.6	1173.0	1169.0	0.872	3.389	72.343	20.736	2.434	0.072	0.137	0.008	0.010	0.000	0.000	0.000	0.000	0.000	1392.91	
23	0.7046	1151.2	1171.6	1168.4	0.873	3.361	72.502	20.670	2.379	0.068	0.129	0.008	0.009	0.000	0.000	0.000	0.000	0.000	1392.44	
24	0.7066	1155.2	1175.6	1172.5	0.872	3.302	72.170	21.011	2.422	0.071	0.135	0.008	0.009	0.000	0.000	0.000	0.000	0.000	1395.35	
25	0.7059	1153.8	1174.2	1170.9	0.882	3.308	72.360	20.805	2.411	0.072	0.139	0.010	0.013	0.000	0.000	0.000	0.000	0.000	1394.23	
26	0.7068	1154.4	1174.9	1171.7	0.886	3.351	72.134	20.972	2.434	0.071	0.135	0.008	0.009	0.000	0.000	0.000	0.000	0.000	1394.19	
27	0.7057	1152.9	1173.3	1169.9	0.879	3.352	72.471	20.579	2.473	0.075	0.146	0.011	0.014	0.000	0.000	0.000	0.000	0.000	1393.28	
28	0.7074	1155.8	1176.3	1173.1	0.883	3.322	72.026	21.113	2.431	0.071	0.136	0.008	0.009	0.000	0.000	0.000	0.000	0.000	1395.32	
29	0.7090	1157.9	1178.4	1175.0	0.902	3.316	71.929	21.052	2.548	0.077	0.151	0.011	0.014	0.000	0.000	0.000	0.000	0.000	1396.14	
30	0.7082	1157.9	1178.4	1175.2	0.864	3.300	72.028	21.000	2.561	0.076	0.148	0.010	0.012	0.000	0.000	0.000	0.000	0.000	1396.99	
31	0.7079	1157.0	1177.5	1174.0	0.850	3.346	72.196	20.711	2.642	0.080	0.152	0.010	0.013	0.000	0.000	0.000	0.000	0.000	1396.09	
Avg	0.7078	1156.0	1176.5	1173.3	0.902	3.313	71.975	21.175	2.399	0.072	0.142	0.010	0.012	0.000	0.000	0.000	0.000	0.000	1395.19	

Zone 2b5

Source Daily Summary

May 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	0.7388	1163.1	1183.7	1180.0	0.906	5.791	68.040	20.083	4.684	0.145	0.319	0.016	0.016	0.000	0.000	0.000	0.000	0.000	1373.84	
2	0.7407	1165.9	1186.6	1182.8	0.909	5.788	67.826	20.170	4.780	0.153	0.338	0.018	0.018	0.000	0.000	0.000	0.000	0.000	1375.43	
3	0.7434	1169.8	1190.5	1186.6	0.915	5.791	67.537	20.248	4.941	0.163	0.363	0.020	0.021	0.000	0.000	0.000	0.000	0.000	1377.51	
4	0.7414	1165.1	1185.7	1181.9	0.915	5.895	67.788	19.998	4.860	0.159	0.347	0.018	0.019	0.000	0.000	0.000	0.000	0.000	1373.79	
5	0.7402	1163.6	1184.2	1180.4	0.915	5.873	67.964	19.888	4.837	0.156	0.332	0.017	0.017	0.000	0.000	0.000	0.000	0.000	1373.18	
6	0.7427	1167.9	1188.6	1184.7	0.917	5.846	67.628	20.108	4.958	0.161	0.346	0.018	0.019	0.000	0.000	0.000	0.000	0.000	1375.88	
7	0.7429	1167.6	1188.3	1184.4	0.915	5.885	67.593	20.086	4.980	0.161	0.344	0.018	0.018	0.000	0.000	0.000	0.000	0.000	1375.33	
8	0.7447	1171.4	1192.1	1188.1	0.915	5.817	67.434	20.172	5.082	0.170	0.368	0.021	0.021	0.000	0.000	0.000	0.000	0.000	1378.17	
9	0.7417	1165.2	1185.8	1181.9	0.911	5.923	67.756	19.955	4.925	0.157	0.337	0.018	0.018	0.000	0.000	0.000	0.000	0.000	1373.62	
10	0.7451	1171.5	1192.2	1188.3	0.919	5.846	67.401	20.117	5.131	0.172	0.372	0.021	0.021	0.000	0.000	0.000	0.000	0.000	1377.87	
11	0.7464	1174.3	1195.1	1191.1	0.921	5.793	67.280	20.190	5.204	0.178	0.388	0.022	0.023	0.000	0.000	0.000	0.000	0.000	1379.96	
12	0.7445	1170.7	1191.5	1187.4	0.919	5.838	67.458	20.114	5.099	0.168	0.363	0.020	0.020	0.000	0.000	0.000	0.000	0.000	1377.52	
13	0.7464	1173.4	1194.2	1190.1	0.919	5.846	67.255	20.171	5.209	0.174	0.381	0.021	0.022	0.000	0.000	0.000	0.000	0.000	1378.93	
14	0.7358	1164.1	1184.7	1180.5	0.860	5.512	68.884	19.424	4.773	0.158	0.347	0.021	0.022	0.000	0.000	0.000	0.000	0.000	1377.87	
15	0.7032	1141.3	1161.5	1157.5	0.790	3.954	73.387	18.617	2.929	0.101	0.200	0.011	0.011	0.000	0.000	0.000	0.000	0.000	1381.76	
16	0.7038	1140.4	1160.6	1156.6	0.837	3.990	73.499	18.303	2.991	0.113	0.236	0.015	0.016	0.000	0.000	0.000	0.000	0.000	1380.12	
17	0.6931	1125.0	1144.9	1141.1	0.749	4.066	74.935	17.402	2.573	0.085	0.170	0.009	0.010	0.000	0.000	0.000	0.000	0.000	1371.88	
18	0.7331	1152.9	1173.3	1169.6	0.896	5.890	69.087	19.027	4.615	0.153	0.306	0.013	0.013	0.000	0.000	0.000	0.000	0.000	1367.10	
19	0.7397	1162.8	1183.4	1179.6	0.906	5.889	68.295	19.347	4.997	0.173	0.359	0.017	0.016	0.000	0.000	0.000	0.000	0.000	1372.64	
20	0.7438	1168.3	1189.0	1185.1	0.914	5.927	67.765	19.576	5.211	0.185	0.385	0.019	0.019	0.000	0.000	0.000	0.000	0.000	1375.31	
21	0.7479	1175.8	1196.7	1192.7	0.915	5.842	67.298	19.844	5.444	0.197	0.415	0.022	0.022	0.000	0.000	0.000	0.000	0.000	1380.39	
22	0.7427	1166.8	1187.5	1183.5	0.913	5.915	67.873	19.557	5.175	0.175	0.358	0.017	0.017	0.000	0.000	0.000	0.000	0.000	1374.60	
23	0.7441	1169.9	1190.6	1186.7	0.914	5.857	67.754	19.602	5.273	0.184	0.378	0.019	0.019	0.000	0.000	0.000	0.000	0.000	1376.92	
24	0.7430	1167.5	1188.2	1184.3	0.913	5.898	67.905	19.467	5.230	0.181	0.369	0.018	0.018	0.000	0.000	0.000	0.000	0.000	1375.17	
25	0.7463	1172.9	1193.6	1189.6	0.915	5.875	67.501	19.674	5.419	0.187	0.390	0.019	0.019	0.000	0.000	0.000	0.000	0.000	1378.43	
26	0.7445	1169.2	1189.9	1185.9	0.910	5.942	67.671	19.582	5.309	0.180	0.370	0.018	0.018	0.000	0.000	0.000	0.000	0.000	1375.74	
27	0.7430	1167.1	1187.7	1183.7	0.913	5.923	67.857	19.521	5.217	0.173	0.360	0.018	0.017	0.000	0.000	0.000	0.000	0.000	1374.67	
28	0.7461	1172.3	1193.1	1189.0	0.919	5.884	67.468	19.758	5.368	0.180	0.383	0.020	0.020	0.000	0.000	0.000	0.000	0.000	1377.97	
29	0.7523	1185.2	1206.1	1201.9	0.922	5.677	66.788	20.201	5.715	0.200	0.446	0.025	0.026	0.000	0.000	0.000	0.000	0.000	1387.27	
30	0.7498	1178.4	1199.3	1195.0	0.917	5.861	67.056	19.938	5.554	0.196	0.429	0.024	0.024	0.000	0.000	0.000	0.000	0.000	1381.63	
31	0.7412	1163.5	1184.1	1180.0	0.916	5.968	68.061	19.419	5.087	0.168	0.347	0.017	0.017	0.000	0.000	0.000	0.000	0.000	1372.10	
Avg	0.7391	1166.0	1186.2	1182.3	0.901	5.671	68.324	19.663	4.889	0.165	0.350	0.018	0.019	0.000	0.000	0.000	0.000	0.000	1376.54	

Zone 271

Source Daily Summary

May 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	0.7338	1160.0	1180.5	1176.7	0.936	5.467	68.653	20.209	4.311	0.126	0.271	0.014	0.014	0.000	0.000	0.000	0.000	0.000	1374.72	
2	0.7384	1162.3	1182.9	1179.1	0.907	5.797	68.099	20.059	4.652	0.143	0.311	0.016	0.016	0.000	0.000	0.000	0.000	0.000	1373.23	
3	0.7409	1165.6	1186.3	1182.4	0.917	5.813	67.775	20.218	4.758	0.151	0.330	0.018	0.018	0.000	0.000	0.000	0.000	0.000	1374.79	
4	0.7437	1169.9	1190.6	1186.7	0.922	5.811	67.452	20.340	4.919	0.160	0.354	0.020	0.021	0.000	0.000	0.000	0.000	0.000	1377.13	
5	0.7423	1166.1	1186.7	1182.8	0.922	5.910	67.652	20.098	4.874	0.159	0.346	0.019	0.019	0.000	0.000	0.000	0.000	0.000	1373.97	
6	0.7407	1163.8	1184.4	1180.4	0.924	5.897	67.899	19.912	4.848	0.156	0.329	0.017	0.018	0.000	0.000	0.000	0.000	0.000	1372.79	
7	0.7430	1167.5	1188.2	1184.2	0.926	5.881	67.594	20.097	4.963	0.161	0.341	0.019	0.019	0.000	0.000	0.000	0.000	0.000	1375.07	
8	0.7431	1167.2	1187.9	1183.9	0.923	5.910	67.582	20.070	4.979	0.160	0.338	0.018	0.018	0.000	0.000	0.000	0.000	0.000	1374.62	
9	0.7447	1170.7	1191.4	1188.1	0.922	5.854	67.419	20.168	5.066	0.169	0.360	0.020	0.021	0.000	0.000	0.000	0.000	0.000	1377.16	
10	0.7420	1165.4	1186.0	1182.8	0.915	5.937	67.716	19.983	4.923	0.157	0.334	0.018	0.018	0.000	0.000	0.000	0.000	0.000	1373.42	
11	0.7454	1171.3	1192.0	1188.7	0.927	5.874	67.340	20.170	5.114	0.170	0.363	0.020	0.021	0.000	0.000	0.000	0.000	0.000	1377.23	
12	0.7467	1174.1	1194.9	1191.6	0.929	5.819	67.218	20.238	5.192	0.176	0.381	0.022	0.023	0.000	0.000	0.000	0.000	0.000	1379.37	
13	0.7445	1169.7	1190.5	1187.3	0.927	5.881	67.438	20.125	5.069	0.165	0.354	0.020	0.020	0.000	0.000	0.000	0.000	0.000	1376.34	
14	0.7466	1173.0	1193.8	1190.6	0.927	5.877	67.185	20.239	5.185	0.172	0.372	0.021	0.021	0.000	0.000	0.000	0.000	0.000	1378.22	
15	0.7375	1165.7	1186.3	1183.1	0.862	5.573	68.694	19.418	4.880	0.164	0.361	0.023	0.025	0.000	0.000	0.000	0.000	0.000	1378.05	
16	0.7030	1140.2	1160.4	1157.2	0.794	4.000	73.420	18.551	2.920	0.099	0.195	0.011	0.011	0.000	0.000	0.000	0.000	0.000	1380.53	
17	0.7028	1138.1	1158.2	1155.0	0.833	4.048	73.695	18.067	2.980	0.111	0.232	0.016	0.017	0.000	0.000	0.000	0.000	0.000	1378.09	
18	0.6872	1115.0	1134.7	1131.6	0.709	4.176	75.999	16.388	2.464	0.082	0.164	0.010	0.010	0.000	0.000	0.000	0.000	0.000	1365.40	
19	0.7325	1150.9	1171.3	1168.1	0.901	5.947	69.180	18.915	4.582	0.150	0.299	0.013	0.013	0.000	0.000	0.000	0.000	0.000	1365.19	
20	0.7398	1162.2	1182.8	1179.6	0.915	5.919	68.298	19.312	4.998	0.172	0.352	0.017	0.017	0.000	0.000	0.000	0.000	0.000	1371.77	
21	0.7440	1168.0	1188.7	1185.4	0.921	5.955	67.733	19.579	5.211	0.183	0.378	0.019	0.019	0.000	0.000	0.000	0.000	0.000	1374.64	
22	0.7463	1172.2	1193.0	1189.7	0.924	5.902	67.451	19.773	5.332	0.188	0.389	0.020	0.021	0.000	0.000	0.000	0.000	0.000	1377.54	
23	0.7433	1167.2	1187.9	1184.7	0.921	5.936	67.784	19.603	5.190	0.175	0.356	0.018	0.018	0.000	0.000	0.000	0.000	0.000	1374.43	
24	0.7432	1167.3	1188.0	1184.9	0.921	5.912	67.839	19.553	5.202	0.177	0.360	0.018	0.018	0.000	0.000	0.000	0.000	0.000	1374.74	
25	0.7434	1167.7	1188.4	1185.3	0.921	5.915	67.840	19.505	5.235	0.181	0.366	0.019	0.019	0.000	0.000	0.000	0.000	0.000	1374.95	
26	0.7456	1170.9	1191.6	1188.4	0.922	5.919	67.559	19.642	5.362	0.182	0.375	0.019	0.019	0.000	0.000	0.000	0.000	0.000	1376.68	
27	0.7455	1170.3	1191.0	1187.8	0.918	5.958	67.550	19.623	5.359	0.182	0.372	0.019	0.019	0.000	0.000	0.000	0.000	0.000	1376.03	
28	0.7432	1166.6	1187.2	1184.1	0.921	5.958	67.820	19.528	5.212	0.172	0.353	0.018	0.018	0.000	0.000	0.000	0.000	0.000	1373.89	
29	0.7457	1170.9	1191.6	1188.5	0.926	5.925	67.472	19.772	5.321	0.176	0.369	0.020	0.020	0.000	0.000	0.000	0.000	0.000	1376.61	
30	0.7524	1184.7	1205.7	1202.5	0.930	5.707	66.708	20.289	5.684	0.197	0.434	0.025	0.026	0.000	0.000	0.000	0.000	0.000	1386.59	
31	0.7486	1175.5	1196.3	1193.1	0.926	5.913	67.149	19.910	5.463	0.188	0.405	0.023	0.023	0.000	0.000	0.000	0.000	0.000	1379.33	
Avg	0.7387	1165.0	1185.1	1181.8	0.906	5.690	68.362	19.657	4.847	0.161	0.340	0.018	0.019	0.000	0.000	0.000	0.000	0.000	1375.57	

Zone 272

Source Daily Summary

May 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	0.7341	1160.5	1181.1	1177.5	0.936	5.462	68.602	20.251	4.321	0.126	0.273	0.014	0.014	0.000	0.000	0.000	0.000	0.000	1375.08	
2	0.7389	1162.6	1183.2	1179.7	0.912	5.822	68.027	20.069	4.681	0.144	0.313	0.016	0.016	0.000	0.000	0.000	0.000	0.000	1373.06	
3	0.7408	1165.7	1186.3	1182.7	0.916	5.803	67.792	20.221	4.751	0.151	0.330	0.018	0.018	0.000	0.000	0.000	0.000	0.000	1374.91	
4	0.7439	1170.0	1190.7	1187.1	0.923	5.817	67.428	20.349	4.926	0.161	0.355	0.020	0.021	0.000	0.000	0.000	0.000	0.000	1377.15	
5	0.7424	1166.0	1186.7	1183.0	0.923	5.920	67.640	20.098	4.876	0.159	0.346	0.019	0.019	0.000	0.000	0.000	0.000	0.000	1373.83	
6	0.7408	1163.9	1184.5	1180.8	0.925	5.898	67.888	19.913	4.854	0.157	0.330	0.018	0.018	0.000	0.000	0.000	0.000	0.000	1372.84	
7	0.7429	1167.4	1188.1	1184.4	0.926	5.881	67.604	20.090	4.960	0.160	0.341	0.019	0.019	0.000	0.000	0.000	0.000	0.000	1374.98	
8	0.7433	1167.4	1188.1	1184.3	0.924	5.913	67.555	20.081	4.989	0.161	0.340	0.018	0.019	0.000	0.000	0.000	0.000	0.000	1374.72	
9	0.7447	1170.3	1191.0	1187.8	0.928	5.862	67.424	20.154	5.066	0.168	0.358	0.020	0.020	0.000	0.000	0.000	0.000	0.000	1376.79	
10	0.7399	1161.9	1182.4	1179.3	0.913	5.956	67.951	19.876	4.811	0.149	0.313	0.016	0.015	0.000	0.000	0.000	0.000	0.000	1371.26	
11	0.7402	1161.7	1182.3	1179.2	0.929	5.964	67.878	19.935	4.818	0.147	0.302	0.014	0.013	0.000	0.000	0.000	0.000	0.000	1370.89	
12	0.7416	1165.1	1185.8	1182.6	0.933	5.883	67.750	20.019	4.911	0.154	0.319	0.015	0.015	0.000	0.000	0.000	0.000	0.000	1373.58	
13	0.7418	1164.7	1185.3	1182.2	0.928	5.932	67.727	19.984	4.919	0.155	0.324	0.016	0.016	0.000	0.000	0.000	0.000	0.000	1372.95	
14	0.7436	1167.8	1188.5	1185.3	0.929	5.918	67.492	20.107	5.023	0.159	0.337	0.017	0.017	0.000	0.000	0.000	0.000	0.000	1374.83	
15	0.7419	1169.8	1190.5	1187.3	0.881	5.700	67.986	19.800	5.055	0.167	0.367	0.022	0.023	0.000	0.000	0.000	0.000	0.000	1378.87	
16	0.7017	1137.5	1157.7	1154.3	0.782	4.055	73.620	18.348	2.888	0.096	0.190	0.011	0.011	0.000	0.000	0.000	0.000	0.000	1378.62	
17	0.7030	1138.2	1158.3	1155.2	0.840	4.047	73.551	18.298	2.912	0.106	0.218	0.014	0.015	0.000	0.000	0.000	0.000	0.000	1378.09	
18	0.6926	1122.8	1142.7	1139.6	0.749	4.144	75.071	17.184	2.576	0.085	0.169	0.010	0.010	0.000	0.000	0.000	0.000	0.000	1369.66	
19	0.7319	1149.2	1169.5	1166.4	0.908	5.989	69.176	18.947	4.538	0.143	0.277	0.011	0.010	0.000	0.000	0.000	0.000	0.000	1363.67	
20	0.7375	1158.1	1178.6	1175.5	0.917	5.952	68.539	19.206	4.871	0.162	0.326	0.014	0.013	0.000	0.000	0.000	0.000	0.000	1369.08	
21	0.7430	1166.3	1186.9	1183.8	0.923	5.962	67.847	19.527	5.158	0.179	0.368	0.018	0.018	0.000	0.000	0.000	0.000	0.000	1373.59	
22	0.7436	1167.2	1187.9	1184.7	0.925	5.957	67.745	19.611	5.182	0.179	0.364	0.018	0.018	0.000	0.000	0.000	0.000	0.000	1374.15	
23	0.7432	1166.7	1187.3	1184.2	0.921	5.955	67.798	19.582	5.177	0.175	0.356	0.018	0.018	0.000	0.000	0.000	0.000	0.000	1373.93	
24	0.7420	1165.1	1185.7	1182.7	0.922	5.938	67.970	19.476	5.141	0.172	0.348	0.017	0.017	0.000	0.000	0.000	0.000	0.000	1373.21	
25	0.7429	1166.7	1187.3	1184.3	0.922	5.923	67.903	19.476	5.199	0.179	0.360	0.018	0.018	0.000	0.000	0.000	0.000	0.000	1374.26	
26	0.7451	1170.0	1190.7	1187.6	0.923	5.929	67.617	19.601	5.341	0.181	0.372	0.019	0.018	0.000	0.000	0.000	0.000	0.000	1376.09	
27	0.7450	1169.5	1190.2	1187.1	0.919	5.962	67.598	19.604	5.336	0.180	0.365	0.018	0.018	0.000	0.000	0.000	0.000	0.000	1375.52	
28	0.7426	1165.3	1185.9	1182.7	0.921	5.980	67.900	19.460	5.181	0.171	0.351	0.018	0.018	0.000	0.000	0.000	0.000	0.000	1372.93	
29	0.7481	1175.5	1196.3	1193.1	0.925	5.868	67.211	19.907	5.476	0.184	0.387	0.021	0.021	0.000	0.000	0.000	0.000	0.000	1379.82	
30	0.7556	1190.3	1211.4	1207.7	0.931	5.660	66.327	20.507	5.854	0.207	0.459	0.027	0.028	0.000	0.000	0.000	0.000	0.000	1390.17	
31	0.7574	1191.7	1212.8	1209.5	0.923	5.759	66.158	20.411	5.984	0.220	0.486	0.029	0.030	0.000	0.000	0.000	0.000	0.000	1389.98	
Avg	0.7386	1164.0	1184.6	1181.3	0.909	5.704	68.348	19.680	4.831	0.159	0.334	0.018	0.018	0.000	0.000	0.000	0.000	0.000	1375.11	

Zone 223

Source Daily Summary

May 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	0.6639	1104.7	1124.2	1121.2	0.204	3.387	78.757	16.312	1.270	0.027	0.039	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1376.51
2	0.6698	1116.2	1136.0	1132.9	0.066	3.455	77.401	17.697	1.336	0.020	0.025	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1384.75
3	0.7349	1163.0	1183.6	1180.3	0.824	5.546	68.680	19.914	4.532	0.145	0.321	0.018	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1377.59
4	0.7320	1159.9	1180.4	1177.1	0.800	5.507	69.016	19.846	4.356	0.138	0.303	0.017	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1376.64
5	0.6746	1124.0	1144.0	1140.9	0.076	3.415	76.654	18.258	1.539	0.025	0.032	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1389.48
6	0.6901	1142.9	1163.1	1159.9	0.201	3.531	73.775	20.792	1.585	0.038	0.071	0.003	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1397.02
7	0.7124	1157.9	1178.4	1175.1	0.438	4.348	70.715	21.557	2.683	0.078	0.164	0.008	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1393.35
8	0.7375	1166.6	1187.2	1183.9	0.831	5.564	68.312	20.115	4.657	0.154	0.331	0.018	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1379.32
9	0.7256	1154.6	1175.0	1171.8	0.724	5.345	69.847	19.603	4.068	0.124	0.262	0.014	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1376.56
10	0.7446	1170.5	1191.3	1187.9	0.919	5.861	67.449	20.092	5.102	0.170	0.367	0.020	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1377.19
11	0.7465	1174.7	1195.5	1192.1	0.922	5.780	67.272	20.200	5.213	0.179	0.390	0.022	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1380.30
12	0.7444	1170.4	1191.1	1187.7	0.919	5.848	67.471	20.100	5.092	0.168	0.362	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1377.23
13	0.7462	1173.2	1194.0	1190.5	0.919	5.846	67.272	20.165	5.201	0.174	0.380	0.021	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1378.82
14	0.7372	1165.6	1186.2	1182.7	0.865	5.547	68.681	19.504	4.846	0.160	0.354	0.021	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1378.30
15	0.7030	1140.9	1161.1	1157.6	0.793	3.958	73.408	18.609	2.915	0.100	0.197	0.011	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1381.46
16	0.7038	1140.5	1160.7	1157.3	0.831	3.995	73.526	18.248	3.016	0.114	0.238	0.015	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1380.20
17	0.7021	1136.4	1156.5	1153.3	0.811	4.118	73.655	18.154	2.915	0.103	0.216	0.014	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1376.95
18	0.6774	1108.1	1127.7	1124.6	0.909	3.367	78.160	14.959	2.351	0.076	0.158	0.009	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1367.36
19	0.7327	1156.3	1176.8	1173.6	0.907	5.623	69.390	18.863	4.690	0.162	0.334	0.016	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1371.60
20	0.7433	1167.5	1188.2	1184.8	0.913	5.927	67.834	19.538	5.186	0.183	0.382	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1374.87
21	0.7479	1175.7	1196.6	1193.2	0.915	5.847	67.302	19.834	5.444	0.198	0.415	0.022	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1380.30
22	0.7428	1167.0	1187.7	1184.4	0.913	5.913	67.860	19.565	5.179	0.176	0.360	0.018	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1374.75
23	0.7437	1168.9	1189.6	1186.2	0.914	5.874	67.809	19.565	5.247	0.181	0.373	0.018	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1376.17
24	0.7432	1168.0	1188.6	1185.3	0.913	5.888	67.890	19.480	5.237	0.183	0.372	0.018	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1375.50
25	0.7458	1172.0	1192.7	1189.3	0.915	5.886	67.557	19.639	5.393	0.186	0.386	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1377.80
26	0.7450	1170.0	1190.7	1187.4	0.911	5.935	67.617	19.612	5.333	0.182	0.373	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1376.27
27	0.7428	1166.7	1187.4	1184.1	0.913	5.927	67.885	19.500	5.208	0.173	0.358	0.018	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1374.43
28	0.7457	1171.6	1192.3	1188.9	0.919	5.890	67.517	19.733	5.344	0.178	0.379	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1377.49
29	0.7521	1184.8	1205.8	1202.2	0.922	5.677	66.812	20.192	5.702	0.199	0.444	0.025	0.026	0.000	0.000	0.000	0.000	0.000	0.000	1387.09
30	0.7486	1176.3	1197.1	1193.5	0.918	5.881	67.181	19.880	5.487	0.191	0.417	0.023	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1380.25
31	0.7415	1164.1	1184.7	1181.2	0.916	5.964	68.030	19.429	5.103	0.169	0.352	0.018	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1372.45
Avg	0.7265	1157.0	1177.9	1174.5	0.772	5.182	70.024	19.321	4.233	0.140	0.295	0.016	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1378.97

Zone 28

Source Daily Summary

May 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	0.6715	1119.9	1139.7	1136.8	0.058	3.397	77.134	17.948	1.415	0.021	0.027	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1387.66
2	0.6776	1131.4	1151.4	1148.4	0.070	3.258	75.847	19.436	1.338	0.022	0.030	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1395.51
3	0.6812	1141.0	1161.2	1158.2	0.045	3.052	74.701	21.206	0.960	0.015	0.021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1403.68
4	0.6841	1149.0	1169.4	1166.3	0.000	2.909	73.717	22.729	0.630	0.007	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1410.53
5	0.6777	1132.5	1152.6	1149.6	0.063	3.216	75.535	20.068	1.076	0.018	0.024	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1396.76
6	0.6813	1140.4	1160.6	1157.6	0.044	3.092	74.735	21.089	1.002	0.016	0.022	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1402.90
7	0.6835	1141.2	1161.4	1158.4	0.100	3.169	74.512	21.009	1.154	0.023	0.034	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1401.58
8	0.6848	1148.3	1168.6	1165.6	0.028	2.970	73.798	22.378	0.798	0.012	0.016	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1408.96
9	0.6840	1144.5	1164.8	1161.7	0.069	3.065	74.194	21.647	0.981	0.018	0.027	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1405.12
10	0.6849	1149.8	1170.1	1167.0	0.000	2.938	73.563	22.844	0.639	0.007	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1410.61
11	0.6856	1150.6	1171.0	1166.5	0.024	2.974	73.530	22.787	0.665	0.008	0.010	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1409.52
12	0.6848	1149.6	1170.0	1166.8	0.000	2.942	73.574	22.830	0.639	0.007	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1410.50
13	0.6845	1148.7	1169.1	1165.9	0.020	2.931	73.744	22.578	0.706	0.009	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1409.78
14	0.6848	1149.3	1169.7	1166.4	0.014	2.936	73.676	22.645	0.708	0.009	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1410.15
15	0.6982	1138.7	1158.9	1155.6	0.565	3.988	73.666	18.939	2.597	0.074	0.155	0.008	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1384.16
16	0.6790	1113.8	1133.5	1130.4	0.874	3.225	77.880	15.346	2.414	0.074	0.166	0.010	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1372.45
17	0.6829	1140.0	1160.2	1157.1	0.247	2.960	74.851	20.739	1.114	0.027	0.054	0.003	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1400.67
18	0.6875	1153.3	1173.7	1170.6	0.053	2.885	73.738	22.145	1.046	0.042	0.085	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1412.13
19	0.6863	1152.9	1173.3	1170.1	0.000	2.876	73.549	22.768	0.716	0.020	0.054	0.008	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1412.95
20	0.6848	1149.7	1170.1	1167.0	0.000	2.927	73.559	22.893	0.606	0.007	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1410.72
21	0.6845	1149.9	1170.3	1167.1	0.000	2.895	73.620	22.857	0.612	0.007	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.16
22	0.6835	1147.9	1168.2	1165.1	0.000	2.918	73.814	22.661	0.593	0.007	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1409.78
23	0.6838	1148.7	1169.0	1165.9	0.000	2.896	73.788	22.676	0.625	0.007	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1410.47
24	0.6833	1148.1	1168.5	1165.3	0.000	2.888	73.845	22.666	0.588	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1410.25
25	0.6836	1147.9	1168.2	1165.0	0.000	2.926	73.793	22.671	0.596	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1409.71
26	0.6844	1149.2	1169.5	1166.3	0.000	2.927	73.646	22.796	0.616	0.007	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1410.41
27	0.6842	1148.6	1168.9	1165.8	0.000	2.941	73.670	22.779	0.595	0.007	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1409.93
28	0.6850	1149.9	1170.3	1167.1	0.000	2.937	73.535	22.885	0.627	0.007	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1410.71
29	0.6837	1148.1	1168.4	1165.1	0.000	2.924	73.788	22.665	0.607	0.007	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1409.82
30	0.6840	1148.5	1168.8	1165.5	0.000	2.927	73.750	22.673	0.635	0.007	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1410.03
31	0.6858	1150.8	1171.2	1167.9	0.000	2.962	73.409	22.936	0.677	0.007	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1410.94
Avg	0.6837	1145.0	1164.9	1161.7	0.073	3.027	74.199	21.751	0.902	0.016	0.028	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1405.47

Zone 31

Source Daily Summary

May 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	0.6650	1103.8	1123.3	1119.5	0.666	2.841	79.715	14.890	1.715	0.058	0.100	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1374.27
2	0.6837	1134.7	1154.8	1150.8	1.078	2.085	77.255	17.051	2.196	0.111	0.190	0.018	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1393.22
3	0.6809	1123.4	1143.3	1140.2	0.388	3.563	76.673	16.875	2.326	0.063	0.102	0.005	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1382.30
4	0.6820	1127.5	1147.4	1143.5	0.636	3.035	76.848	17.000	2.251	0.080	0.132	0.010	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1386.19
5	0.6817	1126.3	1146.2	1142.3	0.671	3.029	76.884	16.975	2.218	0.076	0.131	0.008	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1385.05
6	0.6802	1124.1	1144.0	1140.2	0.665	3.029	77.102	16.843	2.146	0.073	0.127	0.008	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1383.87
7	0.6797	1121.4	1141.2	1138.0	0.411	3.539	76.984	16.535	2.353	0.064	0.105	0.005	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1381.00
8	0.6795	1120.3	1140.1	1137.0	0.361	3.660	76.845	16.704	2.270	0.059	0.094	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1379.91
9	0.6820	1123.0	1142.9	1139.8	0.428	3.627	76.437	17.050	2.293	0.060	0.096	0.004	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1380.73
10	0.6766	1115.1	1134.8	1131.7	0.360	3.709	77.336	16.237	2.209	0.055	0.087	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1376.42
11	0.6796	1119.5	1139.3	1136.2	0.388	3.678	76.789	16.758	2.233	0.057	0.090	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1378.85
12	0.6764	1119.0	1138.8	1135.6	0.634	3.035	77.552	16.657	1.952	0.059	0.100	0.006	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1381.43
13	0.6701	1112.1	1131.8	1128.6	0.633	2.860	78.547	16.141	1.669	0.051	0.088	0.006	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1379.43
14	0.6689	1113.5	1133.3	1129.9	1.025	2.070	79.259	15.902	1.559	0.059	0.109	0.008	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1382.35
15	0.6653	1106.0	1125.6	1122.3	0.970	2.270	80.038	14.907	1.594	0.070	0.128	0.011	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1376.68
16	0.6614	1101.0	1120.5	1117.3	0.924	2.274	80.722	14.321	1.546	0.068	0.124	0.010	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1374.57
17	0.6658	1107.8	1127.4	1124.3	0.868	2.359	79.869	15.023	1.678	0.065	0.118	0.009	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1378.45
18	0.6613	1099.0	1118.5	1115.4	0.585	2.905	80.250	14.471	1.653	0.046	0.078	0.006	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1372.17
19	0.6655	1106.7	1126.3	1122.9	0.624	2.768	79.507	15.263	1.696	0.048	0.082	0.006	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1377.47
20	0.6665	1107.3	1126.9	1123.5	0.486	3.046	79.181	15.369	1.784	0.047	0.077	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1377.04
21	0.6878	1142.6	1162.8	1159.5	0.588	2.739	75.570	18.660	2.248	0.065	0.114	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1398.73
22	0.6854	1141.9	1162.1	1158.8	0.621	2.503	75.867	18.804	2.042	0.055	0.094	0.006	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1400.43
23	0.6771	1125.5	1145.4	1142.1	0.648	2.680	77.396	17.246	1.858	0.058	0.101	0.007	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1388.75
24	0.6738	1115.7	1135.4	1132.1	0.612	3.027	78.027	16.247	1.913	0.059	0.101	0.007	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1379.97
25	0.6730	1116.3	1136.1	1132.8	0.590	2.944	78.081	16.402	1.816	0.057	0.097	0.007	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1381.59
26	0.6755	1119.2	1139.1	1135.7	0.637	2.924	77.918	16.284	2.039	0.067	0.116	0.008	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1382.71
27	0.6757	1120.3	1140.1	1136.8	0.552	3.017	77.671	16.588	1.997	0.060	0.102	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1383.69
28	0.6762	1120.2	1140.0	1136.7	0.600	2.994	77.790	16.299	2.122	0.066	0.114	0.008	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1383.08
29	0.6739	1117.0	1136.8	1133.6	0.598	2.967	78.221	15.940	2.082	0.065	0.110	0.008	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1381.61
30	0.6754	1118.9	1138.7	1135.4	0.563	3.047	77.888	16.202	2.117	0.063	0.106	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1382.39
31	0.6717	1113.9	1133.7	1130.4	0.527	3.067	78.369	15.933	1.941	0.056	0.094	0.006	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1379.95
Avg	0.6748	1118.0	1138.0	1134.6	0.624	2.945	77.955	16.309	1.984	0.063	0.107	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1382.07

Zone 3d

Source Daily Summary

May 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	0.6870	1153.4	1173.8	1168.9	0.000	2.912	73.138	23.300	0.637	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.95	-26.04
2	0.6860	1152.4	1172.8	1168.2	0.000	2.876	73.349	23.131	0.630	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.77	-26.51
3	0.6864	1152.6	1173.1	1168.4	0.000	2.899	73.271	23.174	0.641	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.65	-26.32
4	0.6860	1151.7	1172.1	1167.5	0.000	2.922	73.327	23.118	0.620	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.87	-26.64
5	0.6865	1152.4	1172.8	1168.1	0.000	2.929	73.219	23.215	0.623	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.19	-26.38
6	0.6869	1152.9	1173.3	1168.5	0.000	2.936	73.158	23.253	0.638	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.37	-26.14
7	0.6865	1152.9	1173.4	1168.5	0.000	2.890	73.252	23.208	0.635	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.91	-26.26
8	0.6865	1152.9	1173.3	1168.6	0.000	2.898	73.238	23.212	0.639	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.83	-26.23
9	0.6864	1152.4	1172.8	1168.3	0.000	2.919	73.251	23.179	0.637	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.31	-26.34
10	0.6868	1153.0	1173.4	1168.8	0.000	2.924	73.174	23.245	0.643	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.57	-26.12
11	0.6867	1152.3	1172.7	1168.0	0.000	2.955	73.180	23.223	0.628	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.83	-26.31
12	0.6871	1152.9	1173.3	1168.8	0.000	2.959	73.117	23.256	0.653	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.12	-26.00
13	0.6868	1153.1	1173.5	1169.1	0.000	2.913	73.208	23.189	0.675	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.78	-25.98
14	0.6860	1151.9	1172.3	1167.9	0.000	2.912	73.345	23.087	0.641	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.09	-26.52
15	0.6876	1153.6	1174.0	1169.8	0.000	2.963	73.027	23.329	0.666	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.48	-25.71
16	0.6864	1152.6	1173.1	1168.8	0.000	2.899	73.256	23.206	0.624	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.66	-26.38
17	0.6860	1152.0	1172.4	1168.0	0.000	2.908	73.282	23.211	0.586	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.21	-26.70
18	0.6987	1173.0	1193.8	1188.5	0.000	2.807	72.489	22.847	1.441	0.098	0.251	0.031	0.036	0.000	0.000	0.000	0.000	0.000	1424.31	-15.86
19	0.6864	1152.1	1172.5	1168.3	0.000	2.935	73.226	23.214	0.611	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.98	-26.48
20	0.6862	1152.4	1172.8	1168.2	0.000	2.901	73.285	23.182	0.618	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.47	-26.50
21	0.6856	1151.4	1171.7	1167.1	0.000	2.908	73.377	23.103	0.598	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.85	-26.87
22	0.6851	1150.6	1171.0	1166.2	0.000	2.910	73.485	22.987	0.604	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.39	-27.11
23	0.6850	1150.9	1171.3	1166.9	0.000	2.876	73.531	22.965	0.614	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.92	-27.08
24	0.6856	1151.5	1171.9	1167.2	0.000	2.898	73.377	23.111	0.599	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.05	-26.84
25	0.6861	1151.8	1172.2	1167.7	0.000	2.924	73.323	23.107	0.632	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.88	-26.57
26	0.6859	1151.5	1171.8	1167.4	0.000	2.932	73.322	23.120	0.611	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.64	-26.71
27	0.6863	1151.9	1172.3	1167.8	0.000	2.941	73.246	23.181	0.619	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.82	-26.49
28	0.6856	1151.0	1171.4	1167.2	0.000	2.931	73.399	23.028	0.628	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.40	-26.80
29	0.6854	1150.8	1171.2	1166.8	0.000	2.916	73.479	22.948	0.643	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.44	-26.88
30	0.6874	1153.6	1174.0	1169.4	0.000	2.945	73.083	23.276	0.681	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.68	-25.71
31	0.6872	1153.7	1174.2	1169.5	0.000	2.912	73.120	23.289	0.663	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.12	-25.84
Avg	0.6867	1153.0	1173.4	1168.8	0.000	2.915	73.243	23.158	0.657	0.009	0.016	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1412.63	-26.08

Zone 33

Source Daily Summary

May 2019

Number: 351

Pressure Base: 14.730

Contract Day: 1

Name: BADLANDS PLANT

Temperature Base:

Contract Hour: 9

Day	Relative Density	Heating Value Wet	Heating Value Dry	Heating Value As Del	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.5727	961.8	978.8	976.2	0.108	3.664	95.894	0.309	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1290.38
2	0.5729	961.3	978.3	975.6	0.106	3.713	95.851	0.307	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1289.54
3	0.5729	961.4	978.4	975.7	0.107	3.702	95.860	0.307	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1289.72
4	0.5728	961.5	978.5	975.9	0.108	3.688	95.872	0.308	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1289.95
5	0.5729	961.3	978.3	975.7	0.107	3.709	95.853	0.307	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1289.58
6	0.5727	961.9	978.9	976.3	0.109	3.656	95.902	0.309	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1290.53
7	0.5728	961.4	978.5	975.8	0.107	3.696	95.866	0.307	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1289.82
8	0.5729	961.3	978.4	975.7	0.107	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	0.000	1289.64
9	0.5728	961.6	978.6	976.0	0.108	3.681	95.880	0.307	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1290.08
10	0.5726	962.0	979.1	976.4	0.109	3.637	95.920	0.309	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1290.86
11	0.5727	961.9	979.0	976.3	0.109	3.649	95.909	0.309	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1290.64
12	0.5727	961.9	978.9	976.2	0.109	3.651	95.907	0.309	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1290.60
13	0.5729	961.4	978.4	975.6	0.107	3.703	95.860	0.306	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1289.70
14	0.5729	961.3	978.4	975.5	0.107	3.706	95.856	0.306	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1289.64
15	0.5732	960.6	977.6	974.8	0.107	3.787	95.771	0.310	0.016	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1288.20
16	0.5727	961.7	978.8	976.0	0.108	3.669	95.890	0.309	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1290.29
17	0.5727	961.9	978.9	976.3	0.109	3.652	95.904	0.310	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1290.57
18	0.5727	961.8	978.8	976.2	0.108	3.665	95.893	0.309	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1290.36
19	0.5727	961.9	979.0	976.3	0.109	3.649	95.907	0.310	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1290.64
20	0.5727	962.0	979.0	976.4	0.110	3.644	95.911	0.311	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1290.73
21	0.5726	962.0	979.0	976.4	0.109	3.642	95.915	0.310	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1290.78
22	0.5727	961.9	978.9	976.3	0.108	3.653	95.905	0.310	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1290.59
23	0.5726	962.1	979.1	976.4	0.109	3.632	95.923	0.310	0.017	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1290.95
24	0.5727	962.0	979.0	976.3	0.109	3.643	95.913	0.310	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1290.74
25	0.5727	962.0	979.0	976.2	0.109	3.645	95.911	0.309	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1290.71
26	0.5729	961.4	978.4	975.6	0.107	3.702	95.859	0.307	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1289.71
27	0.5728	961.5	978.5	975.8	0.108	3.691	95.869	0.308	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1289.89
28	0.5729	961.2	978.2	975.5	0.107	3.719	95.844	0.306	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1289.42
29	0.5728	961.5	978.5	975.7	0.107	3.690	95.870	0.308	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1289.93
30	0.5729	961.4	978.4	975.6	0.107	3.704	95.858	0.307	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1289.69
31	0.5730	961.1	978.1	975.3	0.106	3.733	95.830	0.306	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1289.17
Avg	0.5728	962.0	978.6	975.9	0.108	3.680	95.879	0.308	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1290.10

Zone 34

Source Daily Summary

May 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	0.6756	1109.9	1129.5	1126.6	1.062	2.882	76.190	19.527	0.333	0.002	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1371.01	-36.62
2	0.6761	1110.5	1130.1	1127.3	1.046	2.919	76.069	19.616	0.347	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1371.22	-36.36
3	0.6835	1123.3	1143.2	1140.2	1.036	2.842	75.071	20.208	0.830	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1379.55	-30.17
4	0.6893	1133.1	1153.2	1150.2	1.030	2.795	74.127	20.976	1.048	0.010	0.014	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1385.78	-26.03
5	0.6898	1133.9	1153.9	1151.0	1.030	2.798	73.885	21.355	0.911	0.008	0.013	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1386.20	-26.27
6	0.6896	1133.2	1153.3	1150.4	1.029	2.820	73.930	21.275	0.926	0.008	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1385.61	-26.37
7	0.6855	1126.3	1146.2	1143.3	1.042	2.841	74.687	20.567	0.847	0.007	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1381.17	-28.93
8	0.6903	1133.9	1153.9	1151.0	1.034	2.838	74.178	20.607	1.327	0.007	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1385.66	-24.67
9	0.6905	1134.6	1154.7	1151.8	1.031	2.812	73.926	21.118	1.092	0.009	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1386.43	-25.32
10	0.6919	1137.0	1157.2	1154.2	1.024	2.808	73.836	21.016	1.291	0.010	0.014	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1387.94	-23.78
11	0.6861	1126.9	1146.8	1143.9	1.042	2.857	74.806	20.185	1.098	0.006	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1381.35	-27.77
12	0.6862	1127.0	1147.0	1144.0	1.047	2.853	74.804	20.165	1.118	0.006	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1381.39	-27.65
13	0.6834	1122.7	1142.6	1139.6	1.050	2.848	75.009	20.345	0.740	0.004	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1378.93	-30.62
14	0.6864	1130.1	1150.2	1147.2	1.026	2.709	74.607	20.704	0.939	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1385.05	-27.83
15	0.6909	1134.0	1154.1	1151.0	1.026	2.888	74.523	19.843	1.638	0.024	0.047	0.005	0.006	0.000	0.000	0.000	0.000	0.000	1385.20	-22.40
16	0.6824	1120.1	1140.0	1137.0	1.043	2.925	75.143	20.220	0.632	0.012	0.022	0.001	0.002	0.000	0.000	0.000	0.000	0.000	1376.67	-31.55
17	0.6818	1121.2	1141.1	1138.2	1.050	2.787	74.984	20.797	0.374	0.003	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1378.75	-32.78
18	0.6962	1144.2	1164.5	1161.5	1.010	2.804	72.684	22.432	1.048	0.009	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1392.30	-22.84
19	0.6879	1130.8	1150.8	1147.9	1.040	2.799	73.826	21.837	0.487	0.004	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1384.31	-28.95
20	0.6938	1142.8	1163.0	1160.0	1.015	2.657	73.286	21.907	1.098	0.016	0.021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1392.91	-23.70
21	0.6845	1123.7	1143.6	1140.7	1.045	2.896	74.785	20.511	0.748	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1379.10	-30.01
22	0.6826	1122.2	1142.1	1139.1	1.046	2.807	75.411	19.748	0.979	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1379.15	-29.99
23	0.6845	1124.8	1144.7	1141.7	1.046	2.829	74.842	20.480	0.790	0.005	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1380.39	-29.72
24	0.6848	1125.8	1145.8	1142.8	1.030	2.819	75.235	19.633	1.269	0.007	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1381.34	-27.63
25	0.6828	1122.1	1142.0	1139.0	1.046	2.831	75.406	19.692	1.014	0.005	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1378.79	-29.79
26	0.6858	1127.1	1147.0	1144.1	1.042	2.812	75.116	19.691	1.325	0.007	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1381.92	-26.96
27	0.6848	1125.1	1145.0	1142.1	1.047	2.835	75.114	19.862	1.129	0.006	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1380.46	-28.30
28	0.6942	1141.5	1161.8	1158.8	1.023	2.752	73.499	21.292	1.400	0.013	0.021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1391.13	-22.01
29	0.6878	1130.4	1150.5	1147.5	1.048	2.790	74.379	20.779	0.986	0.007	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1384.01	-27.19
30	0.6826	1123.0	1142.9	1140.0	1.045	2.763	75.333	19.946	0.902	0.005	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1380.12	-30.15
31	0.6912	1137.5	1157.7	1154.7	1.004	2.743	74.572	19.748	1.905	0.012	0.014	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1389.18	-21.72
Avg	0.6865	1128.0	1148.3	1145.4	1.037	2.818	74.622	20.519	0.986	0.008	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1382.68	-27.87

Zone 43

May-19

ZONE 550

MANDAN BORDER

NBPL - St Anthony

Weighted

Start Date	End Date	MCF	DK	BTU	MCF	DK	BTU Zone 28	AVG BTU	
5/1/2019	5/2/2019				3460	3895	1.1242	1.124	5/1/2019
5/2/2019	5/3/2019				2111	2398	1.1360	1.136	5/2/2019
5/3/2019	5/4/2019				1692	2003	1.1836	1.184	5/3/2019
5/4/2019	5/5/2019				2163	2549	1.1804	1.180	5/4/2019
5/5/2019	5/6/2019				2697	3087	1.1440	1.144	5/5/2019
5/6/2019	5/7/2019				2314	2693	1.1631	1.163	5/6/2019
5/7/2019	5/8/2019				2332	2750	1.1784	1.178	5/7/2019
5/8/2019	5/9/2019				2797	3322	1.1872	1.187	5/8/2019
5/9/2019	5/10/2019				2358	2773	1.1750	1.175	5/9/2019
5/10/2019	5/11/2019				1673	1995	1.1913	1.191	5/10/2019
5/11/2019	5/12/2019				1946	2328	1.1955	1.196	5/11/2019
5/12/2019	5/13/2019				1232	1469	1.1911	1.191	5/12/2019
5/13/2019	5/14/2019				1118	1336	1.1940	1.194	5/13/2019
5/14/2019	5/15/2019				1026	1214	1.1862	1.186	5/14/2019
5/15/2019	5/16/2019				1011	1174	1.1611	1.161	5/15/2019
5/16/2019	5/17/2019				1400	1625	1.1607	1.161	5/16/2019
5/17/2019	5/18/2019				2446	2832	1.1565	1.157	5/17/2019
5/18/2019	5/19/2019				3070	3463	1.1277	1.128	5/18/2019
5/19/2019	5/20/2019				2478	2916	1.1768	1.177	5/19/2019
5/20/2019	5/21/2019				1640	1951	1.1882	1.188	5/20/2019
5/21/2019	5/22/2019				1759	2105	1.1966	1.197	5/21/2019
5/22/2019	5/23/2019				2356	2799	1.1877	1.188	5/22/2019
5/23/2019	5/24/2019				1372	1635	1.1896	1.190	5/23/2019
5/24/2019	5/25/2019				1777	2114	1.1886	1.189	5/24/2019
5/25/2019	5/26/2019				1085	1296	1.1927	1.193	5/25/2019
5/26/2019	5/27/2019				1623	1933	1.1907	1.191	5/26/2019
5/27/2019	5/28/2019				1566	1862	1.1874	1.187	5/27/2019
5/28/2019	5/29/2019				1113	1328	1.1923	1.192	5/28/2019
5/29/2019	5/30/2019	1798	1973	1.0977	964	1162	1.2058	1.135	5/29/2019
5/30/2019	5/31/2019				886	1062	1.1971	1.197	5/30/2019
5/31/2019	6/1/2019				1002	1188	1.1847	1.185	5/31/2019
		1,798	1,973	1.0977	56,467	66,257	1.1779	1.1756	



Alliance Pipeline

DAILY ANALYSIS — USA
 ND07MD1 — Hankinson Sales
 May 2019

DAY	Heating Value (BTU/M3)	Relative Density	C1 Mol%	C2 Mol%	C3 Mol%	IC4 Mol%	NC4 Mol%	IC5 Mol%	NC5 Mol%	C6+ Mol%	N2 Mol%	CO2 Mol%	Hel Mol%
1	1,158.869	0.6638	83.9922	9.8532	3.5778	0.3898	0.6834	0.0575	0.0442	0.0210	0.9691	0.4003	0.0115
2	1,166.990	0.6694	83.5449	9.7596	3.9175	0.4373	0.8015	0.0623	0.0452	0.0213	0.9928	0.4062	0.0115
3	1,164.795	0.6681	83.6742	9.7356	3.8287	0.4305	0.7875	0.0602	0.0452	0.0201	0.9936	0.4125	0.0119
4	1,164.838	0.6677	83.6740	9.7891	3.8145	0.4269	0.7790	0.0581	0.0442	0.0197	0.9979	0.3848	0.0118
5	1,167.953	0.6698	83.4405	9.8490	3.9228	0.4411	0.8044	0.0626	0.0467	0.0213	1.0246	0.3760	0.0111
6	1,170.714	0.6721	83.2721	9.7677	4.0246	0.4736	0.8674	0.0651	0.0480	0.0221	1.0643	0.3842	0.0110
7	1,168.208	0.6697	83.5851	9.6817	3.9201	0.4630	0.8361	0.0635	0.0471	0.0218	0.9933	0.3775	0.0109
8	1,166.586	0.6685	83.6628	9.7117	3.9142	0.4403	0.7683	0.0663	0.0488	0.0218	0.9742	0.3803	0.0112
9	1,168.167	0.6696	83.6214	9.6771	3.8992	0.4591	0.8378	0.0676	0.0494	0.0221	0.9650	0.3902	0.0111
10	1,168.693	0.6705	83.4218	9.7974	3.9780	0.4431	0.8062	0.0664	0.0489	0.0228	0.9869	0.4165	0.0118
11	1,173.118	0.6741	82.9546	9.9963	4.1520	0.4560	0.8294	0.0665	0.0500	0.0221	1.0310	0.4296	0.0126
12	1,172.929	0.6742	82.8919	10.0577	4.1391	0.4553	0.8175	0.0684	0.0509	0.0217	1.0558	0.4293	0.0124
13	1,172.011	0.6732	83.0228	10.0150	4.0976	0.4529	0.8082	0.0680	0.0507	0.0212	1.0314	0.4196	0.0124
14	1,167.965	0.6703	83.3597	9.9004	3.9623	0.4342	0.7778	0.0633	0.0473	0.0204	1.0062	0.4159	0.0124
15	1,167.473	0.6704	83.3722	9.8116	3.9734	0.4319	0.8031	0.0629	0.0461	0.0202	1.0561	0.4099	0.0125
16	1,169.437	0.6715	83.3277	9.7218	4.0492	0.4517	0.8394	0.0656	0.0482	0.0214	1.0731	0.3903	0.0116
17	1,166.687	0.6696	83.5515	9.6571	3.9618	0.4400	0.8069	0.0623	0.0467	0.0215	1.0397	0.4007	0.0119
18	1,165.273	0.6683	83.7056	9.6110	3.9085	0.4368	0.7891	0.0609	0.0459	0.0209	1.0109	0.3988	0.0114
19	1,167.861	0.6701	83.5031	9.6916	3.9861	0.4460	0.8064	0.0642	0.0489	0.0233	1.0250	0.3946	0.0110
20	1,170.464	0.6714	83.3296	9.8249	4.0494	0.4509	0.8135	0.0637	0.0496	0.0226	0.9895	0.3950	0.0113
21	1,170.211	0.6710	83.4280	9.7144	4.0624	0.4526	0.8227	0.0647	0.0488	0.0231	0.9836	0.3887	0.0110
22	1,170.497	0.6720	83.2382	9.8272	4.0603	0.4521	0.8309	0.0660	0.0490	0.0219	1.0422	0.4011	0.0111
23	1,172.669	0.6733	83.0913	9.8704	4.1609	0.4526	0.8470	0.0642	0.0471	0.0205	1.0328	0.4022	0.0110
24	1,169.669	0.6711	83.3753	9.7581	4.0498	0.4464	0.8247	0.0616	0.0469	0.0206	1.0128	0.3928	0.0111
25	1,167.954	0.6694	83.5597	9.7597	3.9462	0.4413	0.7974	0.0616	0.0474	0.0218	0.9640	0.3894	0.0114
26	1,166.103	0.6688	83.6024	9.7281	3.9074	0.4308	0.7860	0.0614	0.0473	0.0218	1.0019	0.4012	0.0118
27	1,168.584	0.6704	83.4834	9.6996	3.9991	0.4451	0.8253	0.0644	0.0479	0.0209	1.0017	0.4010	0.0116
28	1,168.527	0.6707	83.4102	9.7469	3.9974	0.4441	0.8157	0.0664	0.0499	0.0224	1.0389	0.3969	0.0111
29	1,170.239	0.6715	83.2992	9.8378	4.0272	0.4507	0.8244	0.0655	0.0495	0.0225	1.0167	0.3957	0.0107
30	1,172.323	0.6733	83.1080	9.8629	4.0972	0.4631	0.8650	0.0668	0.0496	0.0226	1.0560	0.3982	0.0108
31	1,172.208	0.6730	83.1508	9.8608	4.0852	0.4601	0.8535	0.0680	0.0526	0.0246	1.0395	0.3942	0.0108
Volume	1,168.998	0.6708	83.3869	9.7910	3.9974	0.4472	0.8159	0.0643	0.0482	0.0217	1.0171	0.3988	0.0115
Weight Avg Energy	1,169.004	0.6708	83.3865	9.7912	3.9976	0.4472	0.8159	0.0643	0.0482	0.0217	1.0171	0.3988	0.0115

None
 10/30

May-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		
5/1/2019	5/2/2019	397	472	1.1881	341	385	1.1295	1.161	5/1/2019
5/2/2019	5/3/2019	340	404	1.1881	213	241	1.1301	1.166	5/2/2019
5/3/2019	5/4/2019	285	338	1.1881	121	138	1.1432	1.175	5/3/2019
5/4/2019	5/5/2019	378	449	1.1881	325	374	1.1532	1.172	5/4/2019
5/5/2019	5/6/2019	377	448	1.1881	288	332	1.1539	1.173	5/5/2019
5/6/2019	5/7/2019	324	385	1.1881	292	337	1.1533	1.172	5/6/2019
5/7/2019	5/8/2019	352	418	1.1881	223	256	1.1462	1.172	5/7/2019
5/8/2019	5/9/2019	341	405	1.1881	220	254	1.1539	1.175	5/8/2019
5/9/2019	5/10/2019	312	370	1.1881	146	169	1.1547	1.177	5/9/2019
5/10/2019	5/11/2019	254	301	1.1881	83	95	1.1572	1.180	5/10/2019
5/11/2019	5/12/2019	332	394	1.1881	164	188	1.1468	1.174	5/11/2019
5/12/2019	5/13/2019	212	252	1.1881	71	81	1.1470	1.178	5/12/2019
5/13/2019	5/14/2019	202	240	1.1881	49	55	1.1426	1.179	5/13/2019
5/14/2019	5/15/2019	197	233	1.1881	43	50	1.1502	1.181	5/14/2019
5/15/2019	5/16/2019	205	243	1.1881	63	72	1.1541	1.180	5/15/2019
5/16/2019	5/17/2019	252	299	1.1881	106	121	1.1400	1.174	5/16/2019
5/17/2019	5/18/2019	359	426	1.1881	240	273	1.1411	1.169	5/17/2019
5/18/2019	5/19/2019	355	422	1.1881	227	264	1.1645	1.179	5/18/2019
5/19/2019	5/20/2019	296	352	1.1881	114	132	1.1508	1.178	5/19/2019
5/20/2019	5/21/2019	270	320	1.1881	109	128	1.1630	1.181	5/20/2019
5/21/2019	5/22/2019	271	323	1.1881	105	120	1.1436	1.176	5/21/2019
5/22/2019	5/23/2019	300	356	1.1881	146	167	1.1421	1.173	5/22/2019
5/23/2019	5/24/2019	248	295	1.1881	85	97	1.1447	1.177	5/23/2019
5/24/2019	5/25/2019	313	372	1.1881	124	142	1.1458	1.176	5/24/2019
5/25/2019	5/26/2019	215	256	1.1881	58	66	1.1420	1.178	5/25/2019
5/26/2019	5/27/2019	258	306	1.1881	82	94	1.1470	1.178	5/26/2019
5/27/2019	5/28/2019	254	302	1.1881	100	115	1.1450	1.176	5/27/2019
5/28/2019	5/29/2019	210	250	1.1881	56	65	1.1618	1.183	5/28/2019
5/29/2019	5/30/2019	187	222	1.1881	54	62	1.1505	1.180	5/29/2019
5/30/2019	5/31/2019	178	211	1.1881	39	44	1.1429	1.180	5/30/2019
5/31/2019	6/1/2019	226	268	1.1881	62	72	1.1577	1.182	5/31/2019
		8,700	10,332		4,349	4,989	1.1483	1.1759	

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	1106.2	0.6461	1376.2	-38.6	1.7159	0.9122	82.9672	12.9501	1.0948	0.0785	0.0561	0.008	0.0103	0	0.0055	0.1835	0.0179	4/30/2019	5/1/2019	5/1/2019 3:39:11 PM	
11587	GLEN ULLIN	1117.5	0.6535	1382.3	-26.1	1.7324	0.9165	81.9153	13.6741	1.3351	0.1135	0.0861	0.0134	0.0181	0	0.0122	0.1657	0.0179	5/1/2019	5/2/2019	5/2/2019 3:38:05 PM	
11587	GLEN ULLIN	1106.5	0.6456	1377.1	-39.3	1.6738	0.8944	83.0586	13.1088	0.9835	0.0707	0.0525	0.0075	0.0101	0	0.0059	0.1167	0.0176	5/2/2019	5/3/2019	5/3/2019 3:47:57 PM	
11587	GLEN ULLIN	1097.6	0.6411	1370.8	-49.2	1.7851	0.8999	83.4757	12.7849	0.7949	0.0393	0.0212	0.0033	0.0032	0	0.0011	0.1733	0.0183	5/3/2019	5/4/2019	5/4/2019 3:36:45 PM	
11587	GLEN ULLIN	1105.2	0.6474	1373.6	-45.4	1.8977	0.9133	82.2517	13.7431	0.9158	0.0367	0.0203	0.0029	0.0028	0	0.0006	0.1963	0.0188	5/4/2019	5/5/2019	5/5/2019 3:35:39 PM	
11587	GLEN ULLIN	1103	0.6455	1372.8	-47.3	1.848	0.9181	82.607	13.52	0.862	0.0296	0.0163	0.002	0.0019	0	0	0.1765	0.0186	5/5/2019	5/6/2019	5/6/2019 3:43:19 PM	
11587	GLEN ULLIN	1104.2	0.6463	1373.6	-46.8	1.8559	0.9142	82.4726	13.6706	0.8581	0.0321	0.0175	0.002	0.0019	0	0	0.1564	0.0188	5/6/2019	5/7/2019	5/7/2019 3:38:13 PM	
11587	GLEN ULLIN	1105.6	0.6477	1373.7	-45.7	1.9181	0.9032	82.2701	13.8423	0.8581	0.039	0.021	0.0026	0.0026	0	0.0006	0.1227	0.0197	5/7/2019	5/8/2019	5/8/2019 3:40:34 PM	
11587	GLEN ULLIN	1109.4	0.6503	1375.8	-43	1.9457	0.8976	81.8135	14.1008	0.9973	0.0432	0.0226	0.0033	0.0031	0	0.001	0.1526	0.0196	5/8/2019	5/9/2019	5/9/2019 3:36:10 PM	
11587	GLEN ULLIN	1104.2	0.647	1372.8	-46	1.9194	0.9157	82.3231	13.6855	0.8926	0.0373	0.0199	0.0023	0.0022	0	0.0002	0.1826	0.0194	5/9/2019	5/10/2019	5/10/2019 3:36:51 PM	
11587	GLEN ULLIN	1104.7	0.6481	1372.3	-45.2	1.9797	0.9235	82.1188	13.7932	0.9116	0.0398	0.0207	0.0028	0.0026	0	0.0003	0.1874	0.0198	5/10/2019	5/11/2019	5/11/2019 3:39:23 PM	
11587	GLEN ULLIN	1103.1	0.6471	1371.3	-45.5	1.9601	0.938	82.3757	13.5306	0.9224	0.0425	0.0217	0.0034	0.0031	0	0.0007	0.1826	0.0194	5/11/2019	5/12/2019	5/12/2019 3:33:14 PM	
11587	GLEN ULLIN	1102.2	0.6459	1371.4	-46.4	1.8841	0.9506	82.6537	13.3079	0.9396	0.0396	0.0208	0.0028	0.0026	0	0	0.1792	0.0192	5/12/2019	5/13/2019	5/13/2019 3:36:25 PM	
11587	GLEN ULLIN	1101.5	0.645	1371.5	-46.6	1.8692	0.9315	82.7304	13.326	0.8595	0.0416	0.0209	0.0039	0.0035	0	0.0011	0.1937	0.019	5/13/2019	5/14/2019	5/14/2019 3:43:07 PM	
11587	GLEN ULLIN	1097	0.641	1370.2	-48.5	1.8035	0.9032	83.667	12.5765	0.8351	0.0444	0.0222	0.0045	0.004	0	0.0017	0.1187	0.0191	5/14/2019	5/15/2019	5/15/2019 3:43:02 PM	
11587	GLEN ULLIN	1093	0.6378	1368.6	-50.7	1.7804	0.879	84.2371	12.118	0.783	0.0383	0.0191	0.0046	0.0038	0	0.0019	0.1157	0.0192	5/15/2019	5/16/2019	5/16/2019 3:36:51 PM	
11587	GLEN ULLIN	1087.5	0.6338	1366	-52	1.7151	0.8907	84.8939	11.4445	0.7472	0.0467	0.0223	0.0055	0.0046	0	0.0024	0.2086	0.0187	5/16/2019	5/17/2019	5/17/2019 3:38:34 PM	
11587	GLEN ULLIN	1095.8	0.6407	1369	-47.2	1.8141	0.9257	83.6711	12.4361	0.8615	0.05	0.0242	0.0061	0.0051	0	0.0028	0.1843	0.0192	5/17/2019	5/18/2019	5/18/2019 3:37:16 PM	
11587	GLEN ULLIN	1101.2	0.6446	1371.6	-46.2	1.8279	0.9467	82.9546	13.1704	0.8625	0.0454	0.0228	0.0046	0.0039	0	0.0021	0.14	0.0194	5/18/2019	5/19/2019	5/19/2019 3:38:11 PM	
11587	GLEN ULLIN	1098.6	0.6425	1370.6	-47.6	1.8014	0.931	83.3526	12.8631	0.8158	0.0473	0.0251	0.0044	0.0041	0	0.0018	0.1346	0.0192	5/19/2019	5/20/2019	5/20/2019 3:36:55 PM	
11587	GLEN ULLIN	1100.8	0.6435	1372.2	-47.2	1.7879	0.9178	83.1233	13.1548	0.7915	0.046	0.0234	0.0044	0.0039	0	0.0017	0.1267	0.0187	5/20/2019	5/21/2019	5/21/2019 3:37:34 PM	
11587	GLEN ULLIN	1100.7	0.6425	1373.2	-47.4	1.7111	0.9108	83.3999	12.9638	0.8056	0.049	0.0259	0.0045	0.0044	0	0.0017	0.1051	0.0183	5/21/2019	5/22/2019	5/22/2019 3:43:02 PM	
11587	GLEN ULLIN	1095.8	0.6394	1370.4	-49.4	1.7312	0.8953	83.9639	12.4397	0.7585	0.0479	0.0244	0.0048	0.0044	0	0.002	0.1096	0.0183	5/22/2019	5/23/2019	5/23/2019 3:36:30 PM	
11587	GLEN ULLIN	1098.8	0.6418	1371.6	-48.3	1.7925	0.887	83.5089	12.8252	0.7941	0.0473	0.0251	0.0041	0.004	0	0.0016	0.0913	0.019	5/23/2019	5/24/2019	5/24/2019 3:37:06 PM	
11587	GLEN ULLIN	1097.7	0.6408	1371.2	-48.4	1.7764	0.8783	83.6734	12.658	0.7942	0.0477	0.0245	0.0046	0.0042	0	0.0019	0.1184	0.0186	5/24/2019	5/25/2019	5/25/2019 3:36:20 PM	
11587	GLEN ULLIN	1097.1	0.6403	1371.1	-48.5	1.7541	0.8885	83.8216	12.5129	0.8105	0.0505	0.0256	0.0051	0.0047	0	0.0017	0.1063	0.0186	5/25/2019	5/26/2019	5/26/2019 3:34:31 PM	
11587	GLEN ULLIN	1101.6	0.6438	1372.9	-44.8	1.8121	0.8905	83.2203	12.9399	0.9042	0.0591	0.0291	0.0071	0.0062	0	0.0027	0.1097	0.0192	5/26/2019	5/27/2019	5/27/2019 3:34:43 PM	
11587	GLEN ULLIN	1105.7	0.6474	1374.2	-41.8	1.9046	0.8897	82.5822	13.3526	1.0159	0.0636	0.0324	0.0081	0.0071	0	0.0032	0.1215	0.0193	5/27/2019	5/28/2019	5/28/2019 3:37:02 PM	
11587	GLEN ULLIN	1105.2	0.648	1372.9	-42.8	1.9855	0.8922	82.4156	13.4811	0.9899	0.0586	0.0288	0.0066	0.0058	0	0.0024	0.1145	0.0194	5/28/2019	5/29/2019	5/29/2019 3:35:54 PM	
11587	GLEN ULLIN	1096.4	0.6404	1370.1	-48.7	1.7802	0.9037	83.8537	12.3767	0.8651	0.0527	0.0267	0.0045	0.0042	0	0.001	0.1131	0.0186	5/29/2019	5/30/2019	5/30/2019 3:42:13 PM	
11587	GLEN ULLIN	1097.6	0.6402	1371.7	-49.2	1.6689	0.9174	83.9323	12.3882	0.8746	0.0524	0.0262	0.0038	0.0034	0	0	0.1137	0.0191	5/30/2019	5/31/2019	5/31/2019 3:41:05 PM	
11587	GLEN ULLIN	1097.6	0.6402	1371.7	-49.2	1.6689	0.9174	83.9323	12.3882	0.8746	0.0524	0.0262	0.0038	0.0034	0	0	0.1137	0.0191	5/31/2019	6/1/2019	6/1/2019 3:34:22 PM	

32 record(s) retrieved

FORN

NORTH DAKOTA HEATING VALUE ZONES		
ZONES	MEASURING DEVICE	LOCATION
211	Chromatograph	Sidney Border
24	Chromatograph	Williston Border
241	Accumulated Sample	Fairview Border
25	Accumulated Sample	Watford City West Border
260	Chromatograph	North Tioga Transfer
261	Chromatograph	Tioga Comp Station – Robinson Lake Plant
262	Chromatograph	Minot Border
263	Accumulated Sample	Lignite Plant
264	Accumulated Sample	Epping Border
265	Chromatograph	Tioga Comp Station – County Line Plant
271	Chromatograph	Bismarck – Cleveland
272	Chromatograph	Cleveland – Mapleton
273	Chromatograph	Cleveland – Grafton
28	Chromatograph	Bismarck Station
31	Chromatograph	Dickinson Border
32	Chromatograph	Cabin Creek Station
33	Chromatograph	Little Knife Plant
34	Chromatograph	Bowman Border
43	Chromatograph	Spring Creek
550	Accumulated Sample & Chromatograph	Mandan Border
600	Chromatograph	Hankinson Area
610	Accumulated Sample & Chromatograph	Watford City
802	Chromatograph	Linton

MONTANA DAKOTA UTILITIES CO
NORTH DAKOTA
HEATING VALUE DATA

STATE	ZONE	ZONE BOUNDARY	12 MONTH AVERAGE	MAY 19	APR 19	MAR 19	FEB 19	JAN 19	DEC 18	NOV 18	OCT 18	SEPT 18	AUG 18	JULY 18	JUNE 18	ZONE
MT/ND	211	Sidney Border - MonDak Tfr - Sidney Plt	1200	1207	1202	1205	1207	1202	1200	1207	1202	1191	1203	1202	1171	211
ND	24	Williston Border - Charbonneau Station	1156	1158	1164	1166	1162	1163	1164	1163	1140	1152	1136	1158	1141	24
ND	25	Watford City West Border	1198	1188	1202	1198	1204	1191	1196	1199	1199	1200	1197	1204	1202	25
ND	28	Bismarck Station - Glen Ullin Station	1148	1178	1147	1144	1115	1141	1120	1112	1153	1173	1162	1153	1173	28
ND	31	Dickinson Brd - Belfield Trf - G Ullin Stn	1138	1165	1152	1143	1116	1139	1132	1110	1134	1144	1132	1147	1139	31
ND/MT	32	Cabin Creek Station - Belfied Transfer	1118	1138	1131	1139	1104	1128	1093	1068	1110	1106	1133	1136	1127	32
ND	33	Little Knife Plant	1173	1173	1173	1173	1173	1172	1173	1174	1172	1172	1176	1175	1174	33
ND	34	Badlands Plant/Bowman Border	1019	979	979	1013	1062	1048	1042	1073	1063	1018	979	983	984	34
ND	43	Spring Creek I - Sax Valve I	1118	1148	1136	1127	1061	1044	1051	1062	1144	1158	1172	1152	1155	43
ND/MT	241	Fairview Border	1189	1202	1196	1188	1204	1173	1181	1193	1175	1186	1195	1196	1180	241
ND	260	North Tioga Transfer - Nesson Plant	1111	1118	1121	1127	1109	1113	1104	1095	1102	1120	1101	1127	1089	260
ND	261	Tioga Comp Station - Robinson Lake Plan	1177	1164	1170	1179	1184	1180	1173	1177	1183	1181	1175	1177	1178	261
ND	262	Minot Bdr - Palermo Bdr - Bismarck Stn	1177	1185	1183	1182	1182	1183	1182	1182	1179	1175	1160	1156	1175	262
ND	263	Lignite Plant	1143	1152	1148	1149	1146	1149	1146	1127	1140	1146	1162	1135	1115	263
ND	264	Epping Border	1146	1143	1151	1153	1148	1149	1147	1153	1139	1135	1135	1148	1148	264
ND	265	Tioga Comp Station - County Line Plant	1178	1177	1171	1176	1170	1177	1173	1177	1183	1182	1178	1176	1178	265
ND	266	County Line Plant	1177	1171	1174	1176	1170	1177	1179	1180	1181	1180	1178	1181	1181	266
ND	271	Bismarck Station - Cleveland Station	1174	1186	1183	1181	1168	1176	1180	1180	1178	1173	1162	1153	1173	271
ND	272	Cleveland Station - Mapleton	1174	1185	1183	1180	1167	1176	1180	1179	1177	1173	1160	1154	1173	272
ND	273	Cleveland Station - Grafton Border	1174	1185	1180	1181	1167	1176	1180	1179	1177	1173	1161	1153	1173	273
ND	550	Mandan Border / NBPL-St Anthony	1140	1176	1147	1119	1107	1121	1106	1102	1145	1173	1162	1150	1173	550
ND	610	MDU-Watford City BTU	1151	1176	1175	1158	1113	1101	1109	1131	1180	1181	1175	1152	1156	610
ND	802	NBPL - Linton	1092	1101	1101	1083	1083	1083	1084	1086	1092	1097	1092	1101	1097	802
ND	903	Hettinger Propane	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	903
ND	600	Alliance Pipeline - Hankinson	1157	1169	1163	1157	1151	1155	1153	1155	1155	1160	1159	1159	1153	600

**THERMAL ZONE VARIANCE
DOCUMENTATION**

May 2019

ZONE	<i>BTU VARIANCE</i>	<i>REASON</i>
28	31	Direction of Flow