



UTILITIES CO.

A Subsidiary of MDU Resources Group, Inc.

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

November 12, 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 – September 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 October 2019.
2. Attachment B consists of copies of the monthly Heating Value Test Reports received from our suppliers for the month of September 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 September 2019.

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

Sincerely,

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

Tamie Aberle  
Director of Regulatory Affairs

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

Town	Heat Zone	Therm Factor
MDU-303-ALEXANDER	025	1.1306
MDU-308-ARNEGARD	025	1.1306
MDU-314-APPLE VALLEY	271	1.1549
MDU-318-BEACH	032	1.0507
MDU-319-BELFIELD	032	1.0585
MDU-323-BERTHOLD	262	1.1306
MDU-324-BEULAH	032	1.0585
MDU-327-BISMARCK	028	1.1459
MDU-330-BOWMAN	034	0.9499
MDU-337-BURLINGTON	262	1.1549
MDU-343-CARRINGTON	273	1.1530
MDU-344-CLEVELAND	272	1.1459
MDU-364-CAVALIER	273	1.1774
MDU-365-DAWSON	271	1.1468
MDU-368-DES LACS	262	1.1387
MDU-369-DICKINSON	031	1.0446
MDU-374-FT TOTTEN	273	1.1611
MDU-375-DEVILS LAKE	273	1.1611
MDU-379-BARLOW	273	1.1530
MDU-384-EPPING	264	1.0909
MDU-387-ELDRIDGE	272	1.1540
MDU-407-GLADSTONE	031	1.0446
MDU-411-GLEN ULLIN	031	1.0522
MDU-413-GOLVA	032	1.0353
MDU-416-GARRISON	262	1.1387
MDU-417-GRAFTON	273	1.1855
MDU-429-HEBRON	031	1.0522
MDU-432-HETTINGER	903	2.3875
MDU-449-JAMESTOWN	272	1.1621
MDU-459-KILLDEER	033	1.1098
MDU-463-LANGDON	273	1.1530
MDU-469-LEFOR	031	1.0446
MDU-474-LIGNITE	263	1.1064
MDU-475-LINTON	802	1.0556
MDU-478-LINCOLN	028	1.1540
MDU-488-MCKENZIE	271	1.1549
MDU-494-MEDINA	271	1.1468
MDU-498-MANDAN	028	1.1540
MDU-500-MARMARTH	034	0.9361
MDU-505-MINOT	262	1.1549
MDU-510-MOTT	031	1.0446
MDU-512-MAX	262	1.1268
MDU-513-MILNOR	601	1.1448
MDU-522-NEW ENGLAND	031	1.0307
MDU-524-NEW SALEM	028	1.1296
MDU-532-NEW ROCKFORD	273	1.1530
MDU-539-PARK RIVER	273	1.1774
MDU-540-PALERMO	262	1.1306
MDU-558-RAY	264	1.0909

MDU-561-REGENT	031	1.0446	✓
MDU-563-RHAME	034	0.9224	✓
MDU-564-RICHARDTON	031	1.0370	✓
MDU-568-ROSS	261	1.1149	✓
MDU-572-RUTHVILLE	262	1.1549	✓
MDU-574-SANBORN	272	1.1621	✓
MDU-583-SENTINEL BUTTE	032	1.0507	✓
MDU-588-SOUTH HEART	031	1.0370	✓
MDU-717-SPIRITWOOD	272	1.1621	✓
MDU-590-SPRINGBROOK	264	1.0909	✓
MDU-591-STANLEY	261	1.1230	✓
MDU-593-STEELE	271	1.1468	✓
MDU-594-STERLING	028	1.1540	✓
MDU-598-SHEYENNE	273	1.1611	✓
MDU-605-SURREY	262	1.1549	✓
MDU-610-TAPPEN	271	1.1468	✓
MDU-611-TAYLOR	031	1.0370	✓
MDU-616-TIOGA	260	1.0797	✓
MDU-619-TURTLE LAKE	262	1.1387	✓
MDU-620-TRENTON	024	1.1083	✓
MDU-624-UNDERWOOD	262	1.1387	✓
MDU-625-VALLEY CITY	272	1.1702	✓
MDU-629-WALHALLA	273	1.1774	✓
MDU-632-WATFORD CITY	610	1.1155	✓
MDU-636-WHEELOCK	264	1.0831	✓
MDU-637-WHITE EARTH	261	1.1230	✓
MDU-642-WILLISTON	024	1.1083	✓
MDU-646-WASHBURN	262	1.1468	✓
MDU-647-WILTON	262	1.1306	✓
MDU-664-RIVERDALE	262	1.1387	✓
MDU-691-FAIRVIEW	241	1.1358	✓
MDU-712-MINOT AFB	262	1.1549	✓
MDU-718-FAIRMOUNT	600	1.1425	✓
MDU-732-NEKOMA	273	1.1530	✓
MDU-732-MSR SITE	273	1.1530	✓

# Source Daily Summary

September 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	0.7454	1197.7	1218.9	1214.8	1.372	3.598	66.792	23.833	3.859	0.173	0.333	0.022	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1408.38
2	0.7460	1198.6	1219.8	1215.7	1.369	3.596	66.948	23.420	4.123	0.172	0.332	0.022	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1408.90
3	0.7456	1197.5	1218.7	1214.5	1.357	3.646	67.210	22.916	4.333	0.171	0.328	0.021	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1407.88
4	0.7478	1201.9	1223.2	1218.8	1.360	3.580	66.974	23.150	4.267	0.208	0.408	0.028	0.024	0.000	0.000	0.000	0.000	0.000	0.000	1410.99
5	0.7482	1202.9	1224.2	1219.8	1.356	3.559	66.762	23.510	4.161	0.201	0.397	0.028	0.024	0.000	0.000	0.000	0.000	0.000	0.000	1411.80
6	0.7417	1192.0	1213.1	1209.0	1.367	3.600	67.402	23.402	3.679	0.171	0.333	0.024	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1405.14
7	0.7404	1189.9	1211.0	1207.2	1.372	3.604	67.301	23.756	3.500	0.151	0.285	0.018	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1403.94
8	0.7424	1192.6	1213.7	1209.7	1.380	3.615	67.259	23.481	3.739	0.168	0.321	0.020	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1405.18
9	0.7521	1208.7	1230.1	1226.0	1.355	3.573	66.624	23.141	4.498	0.248	0.495	0.036	0.030	0.000	0.000	0.000	0.000	0.000	0.000	1414.88
10	0.7443	1196.0	1217.2	1213.1	1.362	3.608	67.169	23.367	3.907	0.182	0.357	0.026	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1407.36
11	0.7452	1197.4	1218.6	1214.7	1.364	3.605	66.981	23.502	4.004	0.175	0.330	0.021	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1408.19
12	0.7459	1198.6	1219.8	1215.9	1.363	3.604	66.758	23.828	3.882	0.180	0.344	0.022	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1408.90
13	0.7462	1199.4	1220.6	1216.6	1.363	3.585	66.508	24.251	3.766	0.168	0.321	0.021	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1409.54
14	0.7448	1196.8	1218.0	1214.0	1.362	3.608	66.696	24.091	3.753	0.157	0.298	0.019	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1407.93
15	0.7447	1197.1	1218.3	1214.1	1.361	3.589	66.731	24.076	3.740	0.160	0.306	0.020	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1408.24
16	0.7444	1196.5	1217.6	1213.5	1.363	3.589	67.075	23.498	3.937	0.171	0.327	0.021	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1407.84
17	0.7438	1194.7	1215.8	1211.6	1.367	3.638	67.143	23.433	3.871	0.174	0.334	0.022	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1406.28
18	0.7454	1197.5	1218.7	1214.6	1.371	3.607	66.663	24.069	3.783	0.162	0.309	0.020	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1408.16
19	0.7438	1194.6	1215.7	1211.6	1.373	3.636	67.045	23.596	3.831	0.165	0.316	0.020	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1406.16
20	0.7437	1194.6	1215.8	1211.7	1.373	3.625	66.830	24.027	3.653	0.157	0.299	0.019	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1406.33
21	0.7431	1193.8	1214.9	1211.0	1.370	3.624	66.812	24.164	3.560	0.151	0.286	0.017	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1405.93
22	0.7447	1196.2	1217.4	1213.5	1.369	3.625	66.788	23.963	3.721	0.165	0.325	0.023	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1407.27
23	0.7450	1196.6	1217.8	1213.7	1.368	3.627	66.759	23.931	3.801	0.163	0.313	0.020	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1407.52
24	0.7436	1194.2	1215.4	1211.4	1.369	3.643	66.949	23.795	3.748	0.158	0.302	0.019	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1405.99
25	0.7438	1195.1	1216.3	1212.3	1.373	3.608	66.756	24.135	3.668	0.149	0.280	0.017	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1406.76
26	0.7437	1195.6	1216.7	1212.9	1.364	3.581	66.843	24.035	3.702	0.153	0.288	0.018	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1407.47
27	0.7435	1194.6	1215.8	1211.9	1.371	3.607	66.730	24.249	3.591	0.146	0.274	0.017	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1406.57
28	0.7438	1195.2	1216.4	1212.6	1.371	3.607	66.621	24.389	3.566	0.145	0.271	0.016	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1406.89
29	0.7451	1197.2	1218.4	1214.6	1.364	3.609	66.425	24.525	3.632	0.145	0.271	0.016	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1408.13
30	0.7432	1194.1	1215.2	1211.5	1.372	3.613	66.996	23.799	3.733	0.159	0.296	0.017	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1406.18
Avg	0.7447	1197.0	1217.8	1213.7	1.367	3.607	66.885	23.778	3.834	0.168	0.323	0.021	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1407.69

Zone 211

# Source Daily Summary

September 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	0.6993	1147.8	1168.1	1164.5	0.933	2.972	74.006	19.311	2.476	0.085	0.185	0.014	0.018	0.000	0.000	0.000	0.000	0.000	1393.56	
2	0.6980	1144.4	1164.7	1161.2	0.914	3.083	74.233	18.985	2.492	0.083	0.179	0.014	0.017	0.000	0.000	0.000	0.000	0.000	1390.80	
3	0.6996	1147.2	1167.5	1163.9	0.918	3.059	73.893	19.373	2.464	0.083	0.179	0.014	0.018	0.000	0.000	0.000	0.000	0.000	1392.53	
4	0.6990	1145.7	1166.0	1162.4	0.907	3.113	74.022	19.154	2.508	0.085	0.183	0.013	0.016	0.000	0.000	0.000	0.000	0.000	1391.36	
5	0.6981	1145.4	1165.7	1162.1	0.907	3.039	74.202	19.088	2.462	0.086	0.185	0.014	0.017	0.000	0.000	0.000	0.000	0.000	1391.96	
6	0.6982	1144.7	1165.0	1161.5	0.927	3.062	74.135	19.159	2.424	0.085	0.178	0.014	0.017	0.000	0.000	0.000	0.000	0.000	1391.03	
7	0.6984	1145.6	1165.9	1162.4	0.914	3.051	74.267	18.910	2.536	0.091	0.191	0.018	0.022	0.000	0.000	0.000	0.000	0.000	1391.77	
8	0.7000	1148.0	1168.3	1164.8	0.896	3.082	74.085	18.878	2.755	0.088	0.185	0.014	0.017	0.000	0.000	0.000	0.000	0.000	1393.09	
9	0.6975	1144.8	1165.1	1161.6	0.904	3.032	74.414	18.778	2.575	0.085	0.176	0.016	0.019	0.000	0.000	0.000	0.000	0.000	1391.71	
10	0.6950	1143.6	1163.9	1160.4	0.891	2.884	74.778	18.721	2.447	0.080	0.170	0.013	0.016	0.000	0.000	0.000	0.000	0.000	1392.84	
11	0.6935	1142.6	1162.8	1159.4	0.922	2.759	75.002	18.749	2.284	0.081	0.166	0.018	0.020	0.000	0.000	0.000	0.000	0.000	1393.05	
12	0.6913	1138.8	1159.0	1155.7	0.904	2.813	75.286	18.517	2.212	0.076	0.161	0.014	0.017	0.000	0.000	0.000	0.000	0.000	1390.70	
13	0.6947	1140.8	1161.0	1157.6	0.890	3.033	74.728	18.684	2.393	0.077	0.165	0.013	0.016	0.000	0.000	0.000	0.000	0.000	1389.70	
14	0.6972	1143.9	1164.1	1160.6	0.894	3.074	74.454	18.746	2.508	0.090	0.197	0.016	0.020	0.000	0.000	0.000	0.000	0.000	1390.87	
15	0.6969	1144.2	1164.5	1161.0	0.889	3.031	74.472	18.778	2.525	0.088	0.187	0.013	0.016	0.000	0.000	0.000	0.000	0.000	1391.69	
16	0.6972	1144.5	1164.7	1161.2	0.896	3.029	74.416	18.847	2.512	0.086	0.184	0.014	0.017	0.000	0.000	0.000	0.000	0.000	1391.72	
17	0.7001	1144.0	1164.3	1160.7	0.892	3.338	74.010	18.726	2.708	0.094	0.201	0.014	0.017	0.000	0.000	0.000	0.000	0.000	1388.26	
18	0.6955	1141.9	1162.1	1158.7	0.889	3.041	74.650	18.691	2.441	0.082	0.176	0.014	0.017	0.000	0.000	0.000	0.000	0.000	1390.25	
19	0.6961	1143.5	1163.8	1160.2	0.899	2.981	74.495	18.943	2.400	0.081	0.173	0.013	0.015	0.000	0.000	0.000	0.000	0.000	1391.68	
20	0.6953	1143.1	1163.3	1159.9	0.903	2.928	74.575	18.996	2.325	0.078	0.166	0.013	0.016	0.000	0.000	0.000	0.000	0.000	1391.92	
21	0.6950	1141.8	1162.0	1158.6	0.888	3.003	74.670	18.785	2.379	0.078	0.168	0.013	0.016	0.000	0.000	0.000	0.000	0.000	1390.61	
22	0.6953	1141.7	1162.0	1158.5	0.884	3.038	74.670	18.699	2.426	0.081	0.173	0.014	0.017	0.000	0.000	0.000	0.000	0.000	1390.26	
23	0.6952	1142.1	1162.4	1158.8	0.881	3.013	74.619	18.819	2.394	0.079	0.166	0.012	0.015	0.000	0.000	0.000	0.000	0.000	1390.81	
24	0.6966	1144.4	1164.7	1161.2	0.887	2.991	74.446	18.945	2.439	0.085	0.178	0.013	0.016	0.000	0.000	0.000	0.000	0.000	1392.22	
25	0.6937	1141.2	1161.4	1158.0	0.866	2.947	74.922	18.629	2.353	0.081	0.171	0.014	0.016	0.000	0.000	0.000	0.000	0.000	1391.20	
26	0.6942	1142.1	1162.3	1158.9	0.849	2.962	74.864	18.641	2.389	0.084	0.178	0.014	0.018	0.000	0.000	0.000	0.000	0.000	1391.82	
27	0.6956	1145.6	1165.9	1162.4	0.849	2.882	74.809	18.594	2.541	0.092	0.198	0.016	0.020	0.000	0.000	0.000	0.000	0.000	1394.64	
28	0.6959	1145.0	1165.2	1161.8	0.864	2.925	74.879	18.389	2.588	0.098	0.210	0.021	0.025	0.000	0.000	0.000	0.000	0.000	1393.54	
29	0.6963	1144.1	1164.4	1160.9	0.840	3.058	74.781	18.317	2.653	0.097	0.218	0.017	0.019	0.000	0.000	0.000	0.000	0.000	1392.05	
30	0.6951	1144.3	1164.5	1161.1	0.849	2.913	75.088	18.147	2.641	0.100	0.225	0.017	0.019	0.000	0.000	0.000	0.000	0.000	1393.51	
Avg	0.6965	1144.0	1164.1	1160.7	0.891	3.004	74.529	18.800	2.475	0.085	0.182	0.015	0.018	0.000	0.000	0.000	0.000	0.000	1391.70	

Zone 24

# Gas Composition and Properties

Effective September 1, 2019

Attachment B  
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Source #: 0602160  
Name: FAIRVIEW BORDER

Component	Mole %	Liquid Content	Mass %
Carbon Dioxide, CO2	1.3536		2.7864
Nitrogen, N2	3.6777		4.8190
Methane, C1	67.6967		50.7985
Ethane, C2	22.8902	6.1273	32.1944
Propane, C3	3.8656	1.0660	7.9730
iso-Butane, iC4	0.1603	0.0525	0.4358
n-Butane, nC4	0.3188	0.1006	0.8667
iso-Pentane, iC5	0.0195	0.0071	0.0658
n-Pentane, nC5	0.0160	0.0058	0.0540
Neo-Pentane, NeoC5			
Hexanes Plus, C6+	0.0016	0.0007	0.0064
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	-39.565	
Cricondentherm	9.184	
HV, Dry @ Base P, T	1210.21	
HV, Sat @ Base P, T	1189.15	
HV, Sat @ Sample P, T	1210.21	
Relative Density	0.7404	

C6+: 100

Totals	100.0000	7.3610	100.0000
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## Sample

Date: 09/01/2019      Pressure: 160.0  
 Type:                      Temperature:  
 Tech: Kevin Moos      H2O: lbs/mm  
    H2S: ppm

Remarks:

## Analysis

Date: 09/01/2019      Instrument:  
    Cylinder: 1004  
 Tech: Kevin Moos

Remarks:

Zone 241

# Gas Composition and Properties

Effective September 1, 2019

Attachment B  
Page 4 of 24

Source #: 0602225  
Name: WATFORD CITY WEST BORDER

Component	Mole %	Liquid Content	Mass %
Carbon Dioxide, CO2	1.2403		2.5939
Nitrogen, N2	3.6544		4.8648
Methane, C1	70.4068		53.6748
Ethane, C2	20.1841	5.4023	28.8411
Propane, C3	3.7645	1.0379	7.8883
iso-Butane, iC4	0.2024	0.0663	0.5590
n-Butane, nC4	0.4562	0.1439	1.2600
iso-Pentane, iC5	0.0410	0.0150	0.1406
n-Pentane, nC5	0.0427	0.0155	0.1464
Neo-Pentane, NeoC5			
Hexanes Plus, C6+	0.0076	0.0031	0.0311
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	-4.437	
Cricodentherm	9.929	
HV, Dry @ Base P, T	1194.97	
HV, Sat @ Base P, T	1174.17	
HV, Sat @ Sample P, T	1194.97	
Relative Density	0.7287	

C6+: 100

Totals 100.0000 6.6830 100.0000

## Sample

Date: 09/01/2019 Pressure: 400.0  
Type: Temperature:  
Tech: Kevin Moos H2O: lbs/mm  
H2S: ppm

Remarks:

## Analysis

Date: 09/01/2019 Instrument:  
Cylinder: 452  
Tech: Kevin Moos

Remarks:

Zone 25

# Source Daily Summary

September 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	0.6852	1118.6	1138.5		0.690	3.796	76.198	16.778	2.283	0.075	0.156	0.011	0.012	0.002					1372.15	
2	0.6857	1116.8	1136.6		0.704	3.933	76.109	16.692	2.310	0.074	0.155	0.010	0.012	0.001					1369.40	
3	0.6916	1125.7	1145.6		0.726	3.917	75.043	17.640	2.406	0.078	0.163	0.011	0.013	0.003					1374.39	
4	0.6894	1121.7	1141.5		0.718	3.960	75.496	17.142	2.421	0.080	0.164	0.009	0.010	0.000					1371.71	
5	0.6885	1121.5	1141.4		0.723	3.880	75.665	17.095	2.361	0.081	0.170	0.011	0.013	0.002					1372.38	
6	0.6878	1120.8	1140.7		0.720	3.865	75.715	17.118	2.328	0.076	0.159	0.010	0.011	0.000					1372.23	
7	0.6841	1116.5	1136.3		0.683	3.836	76.345	16.637	2.259	0.072	0.146	0.010	0.012	0.001					1370.64	
8	0.6877	1121.4	1141.3		0.657	3.912	75.980	16.531	2.684	0.074	0.145	0.009	0.009	0.000					1373.05	
9	0.6855	1117.6	1137.4		0.664	3.927	76.379	16.173	2.620	0.072	0.143	0.009	0.011	0.001					1370.52	
10	0.6800	1114.8	1134.5		0.636	3.623	77.147	16.093	2.289	0.064	0.129	0.009	0.010	0.001					1372.68	
11	0.6717	1103.7	1123.3		0.635	3.518	78.334	15.495	1.853	0.051	0.099	0.007	0.008	0.001					1367.44	
12	0.6726	1104.4	1123.9		0.676	3.505	78.162	15.689	1.783	0.054	0.111	0.009	0.010	0.001					1367.27	
13	0.6845	1116.0	1135.7		0.702	3.876	76.338	16.515	2.336	0.070	0.144	0.009	0.010	0.000					1369.56	
14	0.6855	1117.9	1137.7		0.708	3.844	76.218	16.629	2.338	0.077	0.160	0.011	0.013	0.002					1370.91	
15	0.6876	1121.8	1141.7		0.682	3.837	75.960	16.733	2.509	0.086	0.173	0.009	0.010	0.000					1373.66	
16	0.6893	1122.2	1142.1		0.704	3.946	75.601	16.972	2.503	0.081	0.169	0.011	0.013	0.002					1372.39	
17	0.6923	1125.0	1145.0		0.701	4.053	75.046	17.354	2.571	0.082	0.172	0.010	0.011	0.000					1372.93	
18	0.6857	1117.3	1137.1		0.701	3.907	76.105	16.737	2.288	0.077	0.160	0.011	0.013	0.002					1370.04	
19	0.6852	1118.4	1138.2		0.711	3.778	76.093	16.986	2.198	0.070	0.144	0.009	0.010	0.000					1371.86	
20	0.6839	1117.7	1137.5		0.716	3.696	76.281	16.957	2.120	0.067	0.139	0.010	0.012	0.001					1372.25	
21	0.6846	1116.7	1136.4		0.692	3.860	76.257	16.670	2.286	0.070	0.144	0.010	0.010	0.000					1370.29	
22	0.6859	1118.8	1138.6		0.708	3.825	76.130	16.747	2.327	0.076	0.158	0.012	0.014	0.003					1371.61	
23	0.6827	1114.8	1134.5		0.674	3.817	76.567	16.499	2.213	0.071	0.140	0.009	0.009	0.000					1369.94	
24	0.6871	1121.1	1141.0		0.703	3.804	75.954	16.866	2.413	0.079	0.157	0.010	0.012	0.001					1373.28	
25	0.6804	1113.1	1132.8		0.674	3.713	76.872	16.443	2.091	0.065	0.126	0.008	0.009	0.000					1370.11	
26	0.6810	1112.5	1132.2		0.693	3.767	76.847	16.346	2.119	0.068	0.138	0.010	0.011	0.001					1368.89	
27	0.6776	1108.8	1128.5		0.688	3.683	77.336	16.127	1.962	0.061	0.124	0.009	0.010	0.000					1367.73	
28	0.6763	1105.6	1125.2		0.689	3.756	77.624	15.733	1.994	0.061	0.123	0.009	0.010	0.001					1365.08	
29	0.6819	1111.7	1131.4		0.702	3.893	76.712	16.272	2.189	0.069	0.141	0.010	0.011	0.001					1366.92	
30	0.6692	1097.8	1117.3		0.654	3.617	78.808	14.943	1.803	0.054	0.106	0.007	0.008	0.000					1362.62	
Avg	0.6837	1116.0	1135.8		0.691	3.811	76.444	16.554	2.262	0.071	0.145	0.010	0.011	0.001					1370.46	

Zone 260

# Source Daily Summary

September 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	0.7464	1171.7	1192.4	1189.0	0.914	5.955	67.160	20.203	5.200	0.171	0.357	0.020	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1377.05
2	0.7432	1169.1	1189.8	1186.5	0.919	5.803	67.721	19.947	5.017	0.174	0.373	0.022	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1376.94
3	0.7489	1176.6	1197.4	1194.0	0.910	5.894	67.074	20.029	5.440	0.190	0.412	0.024	0.026	0.000	0.000	0.000	0.000	0.000	0.000	1380.46
4	0.7401	1159.9	1180.4	1176.9	0.911	6.095	68.147	19.337	4.938	0.170	0.361	0.020	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1368.88
5	0.7380	1156.2	1176.7	1173.3	0.913	6.114	68.366	19.269	4.805	0.161	0.336	0.018	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1366.58
6	0.7424	1170.0	1190.7	1187.2	0.925	5.668	67.819	20.062	4.934	0.178	0.372	0.021	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1378.74
7	0.7467	1172.3	1193.1	1189.8	0.915	5.947	67.234	20.022	5.288	0.176	0.374	0.021	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1377.42
8	0.7433	1166.5	1187.1	1183.8	0.920	5.976	67.626	19.864	5.051	0.171	0.352	0.019	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1373.74
9	0.7404	1161.6	1182.1	1178.9	0.913	6.017	67.895	19.790	4.893	0.152	0.308	0.016	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1370.64
10	0.7441	1167.5	1188.2	1184.9	0.916	5.993	67.420	20.048	5.099	0.161	0.327	0.017	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1374.25
11	0.7372	1167.1	1187.8	1184.6	0.907	5.387	68.364	20.187	4.704	0.136	0.283	0.015	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1380.31
12	0.7076	1156.0	1176.5	1173.4	0.909	3.283	72.320	20.557	2.688	0.074	0.146	0.010	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1395.41
13	0.7037	1149.1	1169.5	1166.3	0.916	3.334	72.809	20.284	2.433	0.070	0.137	0.009	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1390.89
14	0.7345	1163.9	1184.5	1181.1	0.920	5.311	68.637	20.264	4.442	0.130	0.266	0.015	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1378.98
15	0.7440	1168.1	1188.8	1185.2	0.915	5.956	67.534	19.918	5.117	0.167	0.354	0.019	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1374.95
16	0.7452	1170.7	1191.5	1187.8	0.922	5.887	67.394	20.047	5.188	0.167	0.354	0.019	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1377.05
17	0.7446	1169.9	1190.6	1187.0	0.920	5.892	67.555	19.845	5.213	0.170	0.365	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1376.54
18	0.7458	1171.0	1191.7	1188.3	0.917	5.941	67.396	19.892	5.254	0.177	0.380	0.021	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1376.70
19	0.7465	1172.8	1193.6	1190.0	0.920	5.887	67.287	20.042	5.265	0.178	0.378	0.021	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1378.25
20	0.7513	1181.8	1202.7	1199.3	0.920	5.793	66.631	20.480	5.571	0.177	0.382	0.022	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1384.32
21	0.7345	1164.8	1185.4	1182.2	0.943	5.230	68.552	20.507	4.349	0.125	0.265	0.014	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1379.98
22	0.7487	1177.6	1198.5	1195.1	0.918	5.805	66.893	20.407	5.436	0.158	0.345	0.019	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1381.86
23	0.7442	1169.3	1190.0	1186.6	0.920	5.886	67.424	20.147	5.101	0.158	0.327	0.018	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1376.29
24	0.7463	1172.9	1193.6	1190.3	0.923	5.870	67.119	20.364	5.171	0.170	0.344	0.019	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1378.43
25	0.7478	1175.7	1196.5	1193.2	0.922	5.830	66.976	20.442	5.250	0.177	0.361	0.020	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1380.44
26	0.7391	1165.1	1185.7	1182.5	0.914	5.680	68.120	20.007	4.772	0.154	0.317	0.017	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1376.00
27	0.7440	1168.6	1189.3	1186.0	0.918	5.915	67.556	19.954	5.080	0.174	0.362	0.020	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1375.56
28	0.7384	1167.3	1187.9	1184.8	0.919	5.475	68.160	20.293	4.662	0.150	0.307	0.017	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1379.27
29	0.7496	1179.1	1200.0	1196.8	0.915	5.800	66.788	20.516	5.375	0.181	0.379	0.022	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1382.78
30	0.7457	1171.8	1192.5	1189.3	0.922	5.875	67.261	20.228	5.150	0.171	0.353	0.020	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1377.74
Avg	0.7411	1168.0	1189.2	1185.8	0.918	5.650	67.908	20.098	4.896	0.159	0.333	0.018	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1378.21

Zone 261

# Source Daily Summary

September 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	0.7467	1170.1	1190.9	1187.7	0.908	6.090	67.338	19.707	5.309	0.193	0.410	0.022	0.023	0.000	0.000	0.000	0.000	0.000	1374.85	14.50
2	0.7422	1161.8	1182.4	1179.2	0.907	6.179	67.817	19.483	5.036	0.175	0.364	0.019	0.019	0.000	0.000	0.000	0.000	0.000	1369.21	11.31
3	0.7398	1157.8	1178.3	1175.1	0.911	6.201	68.111	19.315	4.911	0.168	0.347	0.018	0.018	0.000	0.000	0.000	0.000	0.000	1366.60	9.80
4	0.7472	1171.1	1191.9	1188.6	0.914	6.071	67.184	19.901	5.304	0.190	0.391	0.021	0.022	0.000	0.000	0.000	0.000	0.000	1375.51	14.27
5	0.7498	1175.3	1196.1	1192.8	0.911	6.064	66.857	20.066	5.461	0.190	0.404	0.023	0.024	0.000	0.000	0.000	0.000	0.000	1377.96	15.62
6	0.7459	1169.2	1189.9	1186.8	0.915	6.065	67.265	19.971	5.196	0.181	0.368	0.020	0.020	0.000	0.000	0.000	0.000	0.000	1374.49	13.10
7	0.7432	1164.0	1184.6	1181.5	0.910	6.141	67.469	19.929	5.049	0.157	0.315	0.016	0.016	0.000	0.000	0.000	0.000	0.000	1370.86	10.71
8	0.7463	1169.5	1190.3	1187.2	0.914	6.088	67.106	20.119	5.232	0.166	0.339	0.018	0.018	0.000	0.000	0.000	0.000	0.000	1374.50	12.77
9	0.7462	1169.9	1190.7	1187.6	0.915	6.052	67.113	20.142	5.258	0.157	0.328	0.017	0.017	0.000	0.000	0.000	0.000	0.000	1375.07	12.61
10	0.7470	1170.8	1191.5	1188.4	0.916	6.069	67.033	20.170	5.258	0.170	0.347	0.018	0.019	0.000	0.000	0.000	0.000	0.000	1375.37	13.24
11	0.7455	1167.7	1188.4	1185.3	0.911	6.122	67.239	19.994	5.189	0.166	0.342	0.018	0.018	0.000	0.000	0.000	0.000	0.000	1373.16	12.40
12	0.7469	1170.2	1190.9	1187.8	0.906	6.117	67.054	20.085	5.284	0.165	0.350	0.019	0.019	0.000	0.000	0.000	0.000	0.000	1374.68	13.28
13	0.7475	1171.7	1192.5	1189.3	0.912	6.064	67.084	20.025	5.315	0.180	0.379	0.020	0.021	0.000	0.000	0.000	0.000	0.000	1375.99	14.17
14	0.7481	1173.6	1194.4	1191.3	0.919	5.990	67.042	20.081	5.365	0.180	0.382	0.020	0.021	0.000	0.000	0.000	0.000	0.000	1377.72	14.57
15	0.7481	1173.5	1194.3	1191.1	0.917	6.005	67.081	19.984	5.407	0.180	0.385	0.021	0.021	0.000	0.000	0.000	0.000	0.000	1377.52	14.76
16	0.7489	1174.7	1195.5	1192.2	0.912	6.022	67.012	19.956	5.466	0.186	0.402	0.022	0.022	0.000	0.000	0.000	0.000	0.000	1378.08	15.50
17	0.7498	1176.8	1197.6	1194.4	0.916	5.968	66.867	20.150	5.450	0.194	0.409	0.023	0.023	0.000	0.000	0.000	0.000	0.000	1379.76	15.97
18	0.7511	1179.0	1199.8	1196.6	0.915	5.953	66.563	20.427	5.577	0.166	0.359	0.019	0.019	0.000	0.000	0.000	0.000	0.000	1381.20	15.61
19	0.7512	1180.4	1201.3	1198.1	0.915	5.880	66.566	20.488	5.571	0.171	0.368	0.020	0.021	0.000	0.000	0.000	0.000	0.000	1382.74	15.96
20	0.7487	1175.3	1196.1	1192.9	0.917	5.956	66.824	20.376	5.362	0.171	0.354	0.019	0.020	0.000	0.000	0.000	0.000	0.000	1379.04	14.35
21	0.7465	1171.2	1191.9	1188.8	0.918	5.998	67.087	20.234	5.218	0.167	0.342	0.018	0.018	0.000	0.000	0.000	0.000	0.000	1376.28	12.97
22	0.7489	1175.3	1196.1	1192.9	0.919	5.971	66.792	20.416	5.315	0.181	0.366	0.020	0.020	0.000	0.000	0.000	0.000	0.000	1378.84	14.49
23	0.7498	1177.3	1198.2	1195.0	0.916	5.935	66.711	20.446	5.395	0.182	0.374	0.020	0.021	0.000	0.000	0.000	0.000	0.000	1380.42	15.14
24	0.7468	1171.4	1192.2	1189.0	0.915	6.017	67.200	20.000	5.251	0.186	0.388	0.021	0.021	0.000	0.000	0.000	0.000	0.000	1376.22	14.05
25	0.7486	1176.0	1196.8	1193.6	0.912	5.912	66.858	20.403	5.331	0.178	0.365	0.020	0.020	0.000	0.000	0.000	0.000	0.000	1379.93	14.49
26	0.7498	1177.1	1198.0	1194.8	0.912	5.953	66.703	20.439	5.398	0.181	0.374	0.021	0.021	0.000	0.000	0.000	0.000	0.000	1380.21	15.16
27	0.7488	1175.0	1195.8	1192.7	0.914	5.980	66.861	20.315	5.320	0.187	0.381	0.021	0.021	0.000	0.000	0.000	0.000	0.000	1378.69	14.76
28	0.7480	1173.8	1194.5	1191.4	0.912	5.985	66.946	20.275	5.302	0.178	0.364	0.019	0.020	0.000	0.000	0.000	0.000	0.000	1377.95	14.10
29	0.7467	1170.9	1191.7	1188.6	0.913	6.038	67.051	20.233	5.210	0.173	0.347	0.018	0.018	0.000	0.000	0.000	0.000	0.000	1375.80	13.05
30	0.7498	1175.4	1196.3	1193.1	0.911	6.059	66.650	20.377	5.442	0.169	0.353	0.019	0.019	0.000	0.000	0.000	0.000	0.000	1378.18	14.62
Avg	0.7475	1172.0	1193.0	1189.8	0.913	6.032	67.050	20.117	5.306	0.176	0.367	0.020	0.020	0.000	0.000	0.000	0.000	0.000	1376.56	13.91

Zone 2b2

# Gas Composition and Properties

Effective September 1, 2019

Attachment B  
Page 8 of 24

Source #: 2501030  
Name: LIGNITE PLANT

Component	Mole %	Liquid Content	Mass %
Carbon Dioxide, CO2	0.1668		0.3780
Nitrogen, N2	2.9216		4.2139
Methane, C1	78.4061		64.7613
Ethane, C2	15.8367	4.2367	24.5176
Propane, C3	2.5748	0.7096	5.8457
iso-Butane, iC4	0.0511	0.0167	0.1529
n-Butane, nC4	0.0414	0.0131	0.1239
iso-Pentane, iC5			
n-Pentane, nC5			
Neo-Pentane, NeoC5			
Hexanes Plus, C6+	0.0015	0.0006	0.0067
Water, H2O			
Hydrogen Sulfide, H2S			
Oxygen, O2			
Carbon Monoxide, CO			
Hydrogen, H2			
Helium, He			
Argon, Ar			
<b>Totals</b>	<b>100.0000</b>	<b>4.9780</b>	<b>100.0000</b>

Property	Total Sample	C6 Plus Fraction
Pressure Base	14.730	
Temperature Base	60.00	
HCDP @ Sample Pressure	-31.483	
Cricondentherm	-24.689	
HV, Dry @ Base P, T	1146.00	
HV, Sat @ Base P, T	1126.06	
HV, Sat @ Sample P, T	1146.00	
Relative Density	0.6723	

C6+: 100

Sample			
Date:	09/01/2019	Pressure:	540.0
Type:		Temperature:	
Tech:	Kevin Moos	H2O:	lbs/mm
		H2S:	ppm
Remarks:			

Analysis	
Date:	09/01/2019
Instrument:	
Cylinder:	
Tech:	Kevin Moos
Remarks:	

Zone 263

# Gas Composition and Properties

Effective September 1, 2019

Source #: 3002013  
Name: EPPING BORDER

Component	Mole %	Liquid Content	Mass %
Carbon Dioxide, CO2	0.7779		1.7351
Nitrogen, N2	2.8665		4.0698
Methane, C1	76.8995		62.5245
Ethane, C2	16.8899	4.5188	25.7396
Propane, C3	2.3192	0.6392	5.1831
iso-Butane, iC4	0.0701	0.0229	0.2065
n-Butane, nC4	0.1502	0.0474	0.4425
iso-Pentane, iC5	0.0118	0.0043	0.0431
n-Pentane, nC5	0.0131	0.0048	0.0479
Neo-Pentane, NeoC5			
Hexanes Plus, C6+	0.0018	0.0007	0.0079
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	-26.763	
Cricondentherm	-18.640	
HV, Dry @ Base P, T	1148.26	
HV, Sat @ Base P, T	1128.28	
HV, Sat @ Sample P, T	1148.26	
Relative Density	0.6830	

C6+: 100

Totals	100.0000	5.2380	100.0000
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Sample		
Date: 09/01/2019	Pressure:	490.0
Type:	Temperature:	
Tech: Kevin Moos	H2O:	lbs/mm
	H2S:	ppm
Remarks:		

Analysis		
Date: 09/01/2019	Instrument:	
	Cylinder:	370
Tech: Kevin Moos		
Remarks:		

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

Zone 264

# Source Daily Summary

September 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	0.7125	1160.9	1181.5	1178.1	0.951	3.391	71.232	21.613	2.553	0.080	0.159	0.010	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1396.42
2	0.7144	1162.4	1183.0	1179.5	0.977	3.433	71.098	21.518	2.670	0.090	0.185	0.012	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1396.31
3	0.7099	1156.6	1177.1	1173.8	0.934	3.435	71.749	21.053	2.566	0.081	0.160	0.010	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1393.79
4	0.7107	1157.2	1177.7	1174.2	0.976	3.405	71.545	21.370	2.440	0.077	0.159	0.012	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1393.71
5	0.7127	1161.2	1181.8	1178.4	0.958	3.379	71.173	21.709	2.519	0.080	0.161	0.010	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1396.61
6	0.7136	1162.2	1182.8	1179.3	0.972	3.383	71.164	21.588	2.594	0.089	0.183	0.012	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1396.84
7	0.7129	1161.0	1181.5	1178.2	0.969	3.398	71.164	21.667	2.527	0.084	0.169	0.010	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1396.10
8	0.7093	1156.3	1176.8	1173.4	0.951	3.374	71.725	21.301	2.391	0.078	0.156	0.011	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1393.94
9	0.7090	1158.8	1179.3	1176.0	0.869	3.312	72.115	20.624	2.840	0.077	0.145	0.009	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1397.35
10	0.7113	1162.1	1182.6	1179.3	0.893	3.290	71.873	20.692	2.996	0.079	0.152	0.010	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1398.98
11	0.7053	1154.8	1175.2	1171.9	0.862	3.220	72.793	20.131	2.754	0.076	0.144	0.009	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1396.11
12	0.7079	1157.8	1178.3	1174.9	0.902	3.225	72.264	20.656	2.715	0.074	0.143	0.010	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1397.12
13	0.7021	1146.8	1167.1	1163.8	0.922	3.316	73.059	20.132	2.350	0.068	0.135	0.009	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1389.63
14	0.7045	1150.5	1170.8	1167.5	0.943	3.284	72.701	20.430	2.396	0.073	0.148	0.011	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1391.69
15	0.7067	1153.6	1174.1	1170.7	0.946	3.299	72.279	20.825	2.390	0.077	0.157	0.013	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1393.28
16	0.7105	1159.5	1180.1	1176.7	0.928	3.323	71.707	21.150	2.619	0.086	0.165	0.009	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1396.69
17	0.7137	1163.4	1184.0	1180.5	0.959	3.337	71.330	21.321	2.726	0.099	0.198	0.013	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1398.17
18	0.7112	1160.4	1181.0	1177.7	0.924	3.340	71.353	21.682	2.452	0.077	0.151	0.010	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1397.11
19	0.7096	1156.7	1177.2	1173.8	0.941	3.389	71.621	21.443	2.346	0.077	0.157	0.012	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1394.17
20	0.7096	1156.5	1177.0	1173.7	0.951	3.391	71.616	21.413	2.378	0.078	0.153	0.010	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1393.93
21	0.7128	1161.1	1181.7	1178.2	0.979	3.359	71.227	21.644	2.513	0.084	0.169	0.011	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1396.34
22	0.7081	1154.9	1175.3	1172.0	0.934	3.368	71.957	21.076	2.417	0.076	0.150	0.010	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1393.49
23	0.7064	1151.8	1172.2	1168.8	0.921	3.412	72.362	20.618	2.420	0.079	0.160	0.013	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1391.42
24	0.7100	1157.5	1178.0	1174.6	0.937	3.385	71.678	21.233	2.514	0.079	0.153	0.009	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1394.73
25	0.7103	1158.8	1179.3	1175.9	0.938	3.336	71.734	21.144	2.574	0.086	0.164	0.010	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1395.91
26	0.7060	1152.6	1173.0	1169.7	0.907	3.355	72.491	20.441	2.559	0.080	0.148	0.009	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1392.73
27	0.7033	1148.3	1168.7	1165.3	0.918	3.342	72.849	20.304	2.346	0.074	0.144	0.010	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1390.26
28	0.7013	1144.7	1165.0	1161.8	0.919	3.372	73.129	20.088	2.272	0.069	0.133	0.008	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1387.93
29	0.6997	1141.4	1161.6	1158.3	0.934	3.404	73.506	19.643	2.280	0.071	0.140	0.010	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1385.42
30	0.6997	1141.7	1162.0	1158.7	0.923	3.397	73.428	19.783	2.252	0.069	0.131	0.008	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1385.87
Avg	0.7085	1156.0	1176.2	1172.8	0.935	3.355	71.997	20.943	2.512	0.079	0.156	0.010	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1394.07

Zone 265

# Source Daily Summary

September 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	0.7474	1172.8	1193.5	1189.6	0.906	5.996	67.326	19.724	5.386	0.196	0.419	0.023	0.024	0.000	0.000	0.000	0.000	0.000	0.000	1377.29
2	0.7409	1160.7	1181.3	1177.4	0.906	6.121	68.143	19.196	5.037	0.179	0.378	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1369.15
3	0.7415	1162.3	1182.8	1179.0	0.906	6.091	67.973	19.412	5.038	0.176	0.366	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1370.33
4	0.7403	1159.7	1180.3	1176.4	0.911	6.125	68.190	19.195	4.993	0.178	0.369	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1368.44
5	0.7487	1175.0	1195.8	1191.8	0.908	5.986	67.028	20.011	5.447	0.186	0.390	0.022	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1378.62
6	0.7460	1170.4	1191.1	1187.0	0.912	6.003	67.420	19.766	5.277	0.187	0.390	0.021	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1375.74
7	0.7409	1161.5	1182.0	1178.1	0.910	6.079	67.875	19.674	4.950	0.160	0.322	0.016	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1369.97
8	0.7432	1165.2	1185.8	1181.8	0.909	6.063	67.567	19.856	5.083	0.162	0.327	0.016	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1372.29
9	0.7446	1168.1	1188.8	1184.9	0.913	6.015	67.403	19.952	5.197	0.159	0.329	0.017	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1374.37
10	0.7455	1169.7	1190.4	1186.6	0.914	6.000	67.277	20.039	5.241	0.161	0.333	0.017	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1375.44
11	0.7435	1165.7	1186.3	1182.5	0.913	6.062	67.555	19.821	5.116	0.164	0.336	0.017	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1372.54
12	0.7453	1168.8	1189.5	1185.7	0.906	6.045	67.324	19.967	5.211	0.166	0.345	0.018	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1374.57
13	0.7461	1169.9	1190.6	1186.7	0.904	6.057	67.268	19.924	5.279	0.170	0.360	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1375.12
14	0.7469	1172.3	1193.0	1189.1	0.914	5.971	67.286	19.875	5.336	0.185	0.390	0.021	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1377.15
15	0.7462	1171.8	1192.6	1188.4	0.915	5.929	67.393	19.830	5.338	0.177	0.377	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1377.29
16	0.7464	1171.9	1192.6	1188.4	0.911	5.951	67.407	19.756	5.362	0.181	0.391	0.021	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1377.16
17	0.7468	1171.8	1192.5	1188.2	0.912	5.992	67.353	19.749	5.375	0.183	0.395	0.021	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1376.69
18	0.7497	1178.3	1199.2	1194.9	0.911	5.871	66.909	20.181	5.500	0.187	0.397	0.022	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1381.65
19	0.7490	1176.8	1197.6	1193.4	0.911	5.903	66.904	20.202	5.537	0.159	0.349	0.018	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1380.46
20	0.7481	1176.1	1196.9	1192.9	0.915	5.854	67.040	20.207	5.406	0.173	0.364	0.019	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1380.49
21	0.7453	1170.3	1191.0	1187.2	0.915	5.943	67.324	20.061	5.223	0.162	0.337	0.018	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1376.31
22	0.7464	1172.1	1192.8	1189.0	0.917	5.936	67.185	20.160	5.232	0.176	0.356	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1377.36
23	0.7489	1176.9	1197.7	1193.8	0.917	5.874	66.904	20.332	5.367	0.186	0.378	0.021	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1380.71
24	0.7453	1170.4	1191.1	1187.2	0.911	5.945	67.405	19.948	5.214	0.176	0.364	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1376.37
25	0.7466	1172.9	1193.7	1189.7	0.912	5.906	67.271	20.036	5.267	0.184	0.383	0.021	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1378.18
26	0.7475	1174.9	1195.7	1191.8	0.910	5.880	67.074	20.237	5.313	0.179	0.367	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1379.65
27	0.7459	1171.4	1192.1	1188.2	0.910	5.943	67.242	20.131	5.213	0.171	0.352	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1376.99
28	0.7477	1174.6	1195.4	1191.4	0.911	5.909	67.082	20.189	5.298	0.187	0.382	0.021	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1379.14
29	0.7456	1170.6	1191.4	1187.5	0.910	5.962	67.298	20.050	5.224	0.171	0.350	0.018	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1376.40
30	0.7329	1163.5	1184.1	1180.4	0.814	5.349	68.975	19.908	4.486	0.143	0.294	0.015	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1379.88
Avg	0.7453	1170.0	1190.9	1187.0	0.908	5.959	67.413	19.913	5.232	0.174	0.363	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1376.19

Zone 271

# Source Daily Summary

September 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	0.7476	1172.6	1193.4	1189.5	0.915	6.018	67.182	19.888	5.372	0.186	0.394	0.022	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1376.86
2	0.7441	1165.8	1186.5	1182.7	0.916	6.095	67.686	19.507	5.176	0.185	0.390	0.022	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1372.24
3	0.7414	1161.1	1181.6	1177.8	0.913	6.144	68.024	19.282	5.045	0.178	0.372	0.020	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1369.01
4	0.7409	1160.5	1181.1	1177.2	0.914	6.130	68.026	19.362	5.004	0.172	0.354	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1368.86
5	0.7425	1163.1	1183.7	1180.5	0.918	6.114	67.878	19.394	5.094	0.183	0.377	0.021	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1370.42
6	0.7474	1171.9	1192.7	1189.5	0.916	6.041	67.154	19.927	5.366	0.180	0.374	0.021	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1376.25
7	0.7453	1168.5	1189.2	1186.0	0.921	6.037	67.472	19.746	5.223	0.182	0.376	0.021	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1374.23
8	0.7411	1161.0	1181.5	1178.3	0.917	6.113	67.838	19.667	4.958	0.158	0.316	0.016	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1369.23
9	0.7435	1165.1	1185.8	1181.9	0.917	6.089	67.505	19.872	5.099	0.162	0.323	0.017	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1371.89
10	0.7450	1168.2	1188.8	1185.0	0.921	6.036	67.324	19.993	5.207	0.159	0.325	0.017	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1374.09
11	0.7461	1170.0	1190.7	1186.8	0.921	6.025	67.184	20.086	5.256	0.161	0.331	0.018	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1375.24
12	0.7440	1166.0	1186.6	1182.8	0.920	6.080	67.482	19.846	5.143	0.162	0.331	0.018	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1372.40
13	0.7459	1169.1	1189.8	1186.0	0.914	6.069	67.226	20.008	5.239	0.165	0.341	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1374.42
14	0.7467	1170.4	1191.1	1187.2	0.913	6.070	67.166	19.983	5.299	0.170	0.358	0.020	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1375.16
15	0.7466	1171.2	1192.0	1188.0	0.924	5.998	67.247	19.942	5.295	0.179	0.374	0.021	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1376.21
16	0.7470	1172.7	1193.5	1189.5	0.924	5.938	67.240	19.946	5.363	0.175	0.372	0.021	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1377.63
17	0.7455	1169.8	1190.5	1187.2	0.919	5.988	67.500	19.694	5.281	0.184	0.390	0.022	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1375.53
18	0.7485	1174.6	1195.4	1191.4	0.919	5.968	67.093	19.944	5.448	0.185	0.396	0.023	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1378.49
19	0.7501	1178.1	1199.0	1194.9	0.918	5.906	66.846	20.182	5.528	0.184	0.391	0.022	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1381.10
20	0.7483	1175.0	1195.8	1191.8	0.921	5.926	66.952	20.210	5.458	0.156	0.338	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1379.11
21	0.7485	1175.7	1196.5	1192.7	0.924	5.898	66.923	20.306	5.377	0.174	0.358	0.020	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1379.74
22	0.7455	1169.9	1190.6	1186.7	0.924	5.972	67.278	20.085	5.211	0.161	0.332	0.018	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1375.65
23	0.7470	1172.5	1193.3	1189.4	0.926	5.952	67.075	20.236	5.243	0.176	0.353	0.019	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1377.36
24	0.7501	1178.3	1199.2	1196.0	0.924	5.888	66.709	20.455	5.417	0.186	0.377	0.021	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1381.33
25	0.7452	1169.4	1190.1	1186.9	0.920	5.977	67.381	19.970	5.186	0.173	0.354	0.019	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1375.38
26	0.7460	1171.2	1191.9	1188.8	0.920	5.949	67.313	19.993	5.231	0.181	0.372	0.020	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1376.69
27	0.7477	1174.4	1195.2	1192.0	0.918	5.914	67.024	20.256	5.309	0.177	0.361	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1378.89
28	0.7461	1170.9	1191.6	1188.4	0.919	5.977	67.210	20.118	5.218	0.171	0.348	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1376.23
29	0.7478	1173.9	1194.7	1191.4	0.919	5.948	67.044	20.194	5.291	0.185	0.375	0.021	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1378.24
30	0.7461	1170.8	1191.5	1187.5	0.918	5.981	67.223	20.093	5.229	0.172	0.347	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1376.16
Avg	0.7459	1170.0	1190.8	1187.1	0.919	6.008	67.307	19.940	5.252	0.174	0.360	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1375.47

Zone 272

# Source Daily Summary

September 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	0.7462	1169.8	1190.5	1187.2	0.916	6.050	67.366	19.768	5.286	0.183	0.386	0.022	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1374.93
2	0.7434	1164.6	1185.2	1181.9	0.916	6.114	67.770	19.443	5.142	0.184	0.387	0.022	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1371.30
3	0.7410	1160.1	1180.6	1177.3	0.914	6.158	68.088	19.233	5.020	0.177	0.370	0.020	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1368.31
4	0.7400	1158.6	1179.1	1175.9	0.915	6.153	68.146	19.288	4.944	0.169	0.347	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1367.50
5	0.7397	1157.8	1178.3	1175.2	0.918	6.172	68.210	19.196	4.938	0.173	0.355	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1366.81
6	0.7487	1174.2	1195.0	1191.9	0.916	6.019	66.990	20.035	5.427	0.185	0.384	0.022	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1377.78
7	0.7460	1169.6	1190.3	1187.2	0.921	6.041	67.385	19.771	5.271	0.184	0.383	0.021	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1374.82
8	0.7414	1161.6	1182.2	1179.1	0.919	6.106	67.823	19.650	4.981	0.162	0.325	0.017	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1369.63
9	0.7426	1163.3	1183.9	1180.6	0.917	6.107	67.623	19.801	5.046	0.158	0.316	0.016	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1370.68
10	0.7445	1167.2	1187.9	1184.6	0.921	6.047	67.386	19.949	5.180	0.158	0.323	0.017	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1373.47
11	0.7454	1168.7	1189.4	1186.1	0.922	6.037	67.268	20.037	5.216	0.159	0.326	0.018	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1374.37
12	0.7436	1164.9	1185.6	1182.3	0.921	6.099	67.568	19.751	5.128	0.163	0.334	0.018	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1371.60
13	0.7453	1168.0	1188.7	1185.4	0.914	6.084	67.311	19.934	5.216	0.164	0.340	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1373.63
14	0.7460	1169.0	1189.7	1186.4	0.913	6.089	67.257	19.921	5.257	0.168	0.353	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1374.13
15	0.7462	1170.2	1190.9	1187.2	0.924	6.019	67.315	19.874	5.272	0.179	0.375	0.021	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1375.39
16	0.7464	1171.6	1192.3	1188.6	0.925	5.954	67.283	19.940	5.322	0.172	0.364	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1376.81
17	0.7454	1169.2	1189.9	1186.7	0.921	6.004	67.519	19.661	5.284	0.181	0.386	0.021	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1375.03
18	0.7486	1175.2	1196.0	1192.3	0.919	5.951	67.094	19.943	5.456	0.188	0.403	0.023	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1378.97
19	0.7496	1177.5	1198.3	1194.5	0.920	5.900	66.910	20.162	5.481	0.187	0.394	0.022	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1380.76
20	0.7452	1168.5	1189.2	1185.8	0.921	6.030	67.304	19.975	5.270	0.148	0.317	0.017	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1374.40
21	0.7479	1174.3	1195.1	1191.8	0.924	5.925	66.997	20.239	5.353	0.170	0.352	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1378.70
22	0.7449	1168.9	1189.6	1186.2	0.924	5.983	67.346	20.036	5.184	0.160	0.329	0.018	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1374.97
23	0.7465	1171.6	1192.3	1189.0	0.927	5.961	67.138	20.197	5.214	0.174	0.350	0.019	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1376.71
24	0.7492	1176.8	1197.6	1194.4	0.925	5.901	66.814	20.396	5.367	0.184	0.371	0.021	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1380.29
25	0.7452	1169.2	1189.9	1186.9	0.920	5.986	67.382	19.961	5.185	0.173	0.354	0.019	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1375.19
26	0.7461	1171.2	1191.9	1188.9	0.920	5.956	67.312	19.980	5.236	0.181	0.374	0.021	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1376.60
27	0.7476	1174.2	1195.0	1191.9	0.918	5.920	67.040	20.235	5.307	0.177	0.362	0.020	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1378.71
28	0.7459	1170.5	1191.2	1188.1	0.919	5.983	67.238	20.094	5.209	0.171	0.348	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1375.93
29	0.7478	1173.9	1194.6	1191.6	0.919	5.949	67.048	20.188	5.292	0.186	0.376	0.021	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1378.22
30	0.7461	1170.7	1191.4	1188.1	0.919	5.987	67.221	20.087	5.229	0.172	0.348	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1376.03
Avg	0.7454	1169.0	1189.7	1186.4	0.920	6.023	67.372	19.891	5.224	0.173	0.358	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1374.72

Zone 273

# Source Daily Summary

September 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	0.7475	1173.1	1193.9	1190.0	0.906	5.992	67.304	19.740	5.396	0.195	0.419	0.024	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1377.51
2	0.7409	1160.8	1181.4	1177.7	0.905	6.123	68.142	19.187	5.042	0.179	0.380	0.020	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1369.18
3	0.7411	1161.4	1182.0	1178.4	0.906	6.105	68.025	19.371	5.016	0.175	0.364	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1369.72
4	0.7392	1157.6	1178.1	1174.4	0.910	6.147	68.326	19.111	4.935	0.174	0.360	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1367.03
5	0.7484	1174.5	1195.3	1191.5	0.908	5.988	67.056	20.007	5.425	0.184	0.387	0.022	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1378.33
6	0.7457	1169.9	1190.6	1186.9	0.912	6.010	67.452	19.737	5.270	0.186	0.389	0.021	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1375.42
7	0.7411	1161.7	1182.3	1178.8	0.910	6.080	67.869	19.659	4.959	0.162	0.326	0.017	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1370.08
8	0.7427	1164.4	1185.0	1181.4	0.909	6.069	67.627	19.822	5.058	0.160	0.323	0.016	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1371.77
9	0.7448	1168.4	1189.0	1185.5	0.913	6.013	67.390	19.950	5.208	0.160	0.331	0.017	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1374.54
10	0.7452	1169.2	1189.9	1186.3	0.914	6.004	67.316	20.007	5.236	0.159	0.330	0.017	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1375.13
11	0.7437	1166.0	1186.6	1183.0	0.913	6.060	67.535	19.831	5.125	0.164	0.337	0.018	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1372.72
12	0.7449	1168.0	1188.7	1185.2	0.907	6.051	67.385	19.919	5.191	0.166	0.344	0.018	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1374.06
13	0.7457	1169.1	1189.8	1186.2	0.904	6.065	67.320	19.888	5.260	0.168	0.357	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1374.60
14	0.7465	1171.5	1192.3	1188.5	0.914	5.985	67.333	19.838	5.315	0.184	0.389	0.021	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1376.59
15	0.7459	1171.4	1192.1	1188.3	0.915	5.934	67.425	19.812	5.318	0.177	0.377	0.020	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1376.98
16	0.7461	1171.4	1192.2	1188.1	0.912	5.951	67.440	19.741	5.344	0.180	0.388	0.021	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1376.90
17	0.7469	1172.0	1192.7	1188.7	0.911	5.996	67.336	19.744	5.394	0.182	0.394	0.021	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1376.77
18	0.7489	1176.8	1197.7	1193.6	0.912	5.885	67.019	20.113	5.446	0.186	0.395	0.022	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1380.64
19	0.7488	1176.2	1197.1	1193.2	0.911	5.916	66.927	20.181	5.522	0.159	0.347	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1380.03
20	0.7482	1176.4	1197.3	1193.5	0.915	5.843	67.038	20.202	5.424	0.173	0.365	0.020	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1380.81
21	0.7453	1170.2	1190.9	1187.4	0.915	5.951	67.318	20.061	5.221	0.162	0.336	0.018	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1376.19
22	0.7457	1170.8	1191.6	1187.9	0.917	5.943	67.279	20.101	5.197	0.173	0.351	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1376.58
23	0.7483	1175.5	1196.4	1192.6	0.917	5.898	66.972	20.285	5.332	0.183	0.372	0.020	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1379.73
24	0.7469	1173.4	1194.1	1190.5	0.911	5.913	67.213	20.062	5.303	0.181	0.376	0.020	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1378.39
25	0.7458	1171.4	1192.1	1188.5	0.913	5.924	67.375	19.962	5.226	0.182	0.378	0.020	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1377.13
26	0.7471	1174.1	1194.9	1191.3	0.909	5.884	67.132	20.206	5.289	0.177	0.364	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1379.17
27	0.7461	1171.7	1192.5	1188.9	0.910	5.939	67.222	20.142	5.224	0.172	0.353	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1377.23
28	0.7474	1174.0	1194.8	1191.2	0.911	5.918	67.119	20.162	5.280	0.187	0.381	0.021	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1378.72
29	0.7455	1170.5	1191.2	1187.7	0.910	5.959	67.322	20.029	5.222	0.171	0.350	0.018	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1376.34
30	0.6809	1126.2	1146.2	1142.8	0.528	3.185	76.126	18.383	1.639	0.044	0.087	0.004	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1386.07
Avg	0.7434	1169.0	1189.3	1185.6	0.898	5.891	67.678	19.842	5.127	0.170	0.355	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1376.15

Zone 28

# Source Daily Summary

September 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	0.6706	1123.0	1142.9	1139.3	0.408	2.597	77.434	18.452	1.051	0.020	0.035	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1392.24
2	0.6838	1150.4	1170.8	1167.2	0.000	2.797	73.837	22.680	0.671	0.007	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.51
3	0.6840	1150.6	1171.0	1167.4	0.000	2.796	73.830	22.667	0.691	0.007	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.65
4	0.6838	1150.8	1171.1	1167.2	0.000	2.774	73.921	22.539	0.750	0.007	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.96
5	0.6842	1151.5	1171.9	1168.4	0.000	2.762	73.866	22.593	0.761	0.008	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.51
6	0.6832	1150.2	1170.5	1167.0	0.000	2.748	74.033	22.483	0.720	0.008	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.93
7	0.6838	1150.3	1170.7	1167.4	0.000	2.800	73.832	22.691	0.662	0.007	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.45
8	0.6836	1149.4	1169.7	1166.3	0.000	2.835	73.848	22.670	0.632	0.007	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.52
9	0.6844	1151.0	1171.4	1168.0	0.000	2.815	73.706	22.800	0.665	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.67
10	0.6856	1152.0	1172.4	1169.0	0.000	2.869	73.463	22.975	0.678	0.007	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.63
11	0.6823	1141.0	1161.2	1157.8	0.214	2.893	74.904	20.820	1.089	0.028	0.047	0.003	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1402.54
12	0.6806	1134.3	1154.3	1151.0	0.363	2.920	75.640	19.671	1.307	0.035	0.059	0.003	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1395.98
13	0.6810	1133.2	1153.3	1149.9	0.399	2.959	75.754	19.343	1.430	0.040	0.068	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1394.35
14	0.6815	1134.9	1155.0	1151.6	0.320	3.031	75.430	19.780	1.342	0.035	0.059	0.003	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1395.83
15	0.6817	1137.7	1157.8	1154.0	0.335	2.854	75.308	20.184	1.230	0.032	0.053	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1399.11
16	0.6841	1145.5	1165.8	1161.9	0.129	2.917	74.274	21.653	0.979	0.019	0.030	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1406.29
17	0.6843	1148.5	1168.9	1165.2	0.095	2.813	74.032	22.189	0.836	0.014	0.021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1409.70
18	0.6840	1147.6	1167.9	1164.4	0.087	2.845	74.093	22.108	0.830	0.014	0.021	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1408.94
19	0.6825	1139.4	1159.6	1155.8	0.179	3.065	74.812	20.742	1.136	0.026	0.039	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1400.36
20	0.6832	1141.7	1161.9	1158.4	0.204	2.950	74.726	20.914	1.135	0.028	0.042	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1402.50
21	0.6964	1134.6	1154.7	1151.5	0.711	3.836	74.545	17.777	2.849	0.084	0.179	0.009	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1380.89
22	0.6733	1108.3	1127.9	1124.7	0.858	3.053	78.720	14.935	2.242	0.060	0.123	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1371.49
23	0.6678	1105.8	1125.4	1121.9	0.826	2.736	80.075	14.085	1.712	0.061	0.504	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1373.77
24	0.6823	1145.8	1166.1	1162.8	0.052	2.851	74.272	22.068	0.734	0.008	0.013	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1408.47
25	0.6836	1149.2	1169.6	1166.3	0.000	2.852	73.831	22.666	0.637	0.006	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.24
26	0.6833	1148.9	1169.2	1165.9	0.000	2.837	73.894	22.633	0.623	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.23
27	0.6836	1149.1	1169.4	1166.2	0.000	2.853	73.837	22.670	0.626	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.16
28	0.6838	1149.0	1169.4	1166.2	0.000	2.875	73.790	22.695	0.625	0.007	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1410.90
29	0.6841	1149.5	1169.9	1166.6	0.000	2.877	73.823	22.579	0.688	0.012	0.020	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1411.15
30	0.6841	1149.1	1169.5	1166.3	0.010	2.881	73.797	22.617	0.678	0.007	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1410.73
Avg	0.6825	1142.0	1162.6	1159.2	0.173	2.890	74.711	21.156	1.000	0.020	0.048	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1404.09

Zone 31

# Source Daily Summary

September 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	0.6697	1113.7	1133.5	1129.9	1.049	2.096	79.280	15.688	1.688	0.066	0.117	0.009	0.009	0.000	0.000	0.000	0.000	0.000	1381.76	
2	0.6672	1110.7	1130.4	1126.8	1.030	2.065	79.664	15.455	1.606	0.059	0.105	0.008	0.008	0.000	0.000	0.000	0.000	0.000	1380.70	
3	0.6626	1105.1	1124.7	1121.2	1.001	2.024	80.396	14.942	1.479	0.051	0.092	0.007	0.007	0.000	0.000	0.000	0.000	0.000	1378.44	
4	0.6620	1104.5	1124.0	1120.5	0.987	2.026	80.441	14.966	1.438	0.047	0.083	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1378.27	
5	0.6614	1103.5	1123.0	1119.5	0.988	2.028	80.545	14.881	1.411	0.048	0.086	0.007	0.006	0.000	0.000	0.000	0.000	0.000	1377.69	
6	0.6621	1105.0	1124.5	1121.0	0.986	2.007	80.438	14.984	1.432	0.050	0.090	0.007	0.007	0.000	0.000	0.000	0.000	0.000	1378.78	
7	0.6700	1115.0	1134.7	1131.1	1.034	2.064	79.221	15.783	1.707	0.062	0.112	0.009	0.009	0.000	0.000	0.000	0.000	0.000	1383.06	
8	0.6696	1114.9	1134.6	1131.0	1.034	2.036	79.279	15.774	1.686	0.062	0.111	0.009	0.008	0.000	0.000	0.000	0.000	0.000	1383.30	
9	0.6740	1121.0	1140.8	1137.3	1.065	2.034	78.640	16.179	1.862	0.072	0.128	0.010	0.010	0.000	0.000	0.000	0.000	0.000	1386.28	
10	0.6730	1118.9	1138.7	1135.4	1.069	2.057	78.807	16.020	1.827	0.071	0.128	0.010	0.010	0.000	0.000	0.000	0.000	0.000	1384.79	
11	0.6816	1129.7	1149.7	1146.3	1.133	2.106	77.516	16.874	2.091	0.091	0.164	0.013	0.013	0.000	0.000	0.000	0.000	0.000	1389.28	
12	0.6727	1118.4	1138.2	1134.9	1.084	2.034	78.973	15.814	1.850	0.079	0.143	0.011	0.011	0.000	0.000	0.000	0.000	0.000	1384.48	
13	0.6737	1119.4	1139.2	1135.7	1.084	2.066	78.765	15.987	1.856	0.078	0.141	0.011	0.011	0.000	0.000	0.000	0.000	0.000	1384.70	
14	0.6723	1117.7	1137.5	1134.3	1.078	2.047	78.944	15.931	1.767	0.076	0.136	0.011	0.011	0.000	0.000	0.000	0.000	0.000	1384.07	
15	0.6700	1115.1	1134.9	1131.0	1.057	2.022	79.294	15.707	1.700	0.071	0.128	0.010	0.010	0.000	0.000	0.000	0.000	0.000	1383.21	
16	0.6715	1116.4	1136.1	1132.3	1.070	2.072	79.019	15.888	1.733	0.070	0.128	0.010	0.010	0.000	0.000	0.000	0.000	0.000	1383.15	
17	0.6705	1115.1	1134.9	1116.1	1.061	2.066	79.198	15.745	1.716	0.070	0.126	0.010	0.010	0.000	0.000	0.000	0.000	0.000	1382.67	
18	0.6687	1113.1	1132.8	1128.9	1.040	2.051	79.502	15.517	1.681	0.068	0.122	0.010	0.010	0.000	0.000	0.000	0.000	0.000	1382.02	
19	0.6778	1125.0	1144.9	1141.0	1.103	2.083	78.084	16.517	1.954	0.084	0.152	0.012	0.012	0.000	0.000	0.000	0.000	0.000	1387.36	
20	0.6812	1129.2	1149.2	1145.6	1.119	2.119	77.563	16.842	2.082	0.089	0.161	0.013	0.012	0.000	0.000	0.000	0.000	0.000	1389.11	
21	0.6620	1104.4	1123.9	1120.4	0.986	2.038	80.472	14.897	1.450	0.052	0.092	0.007	0.007	0.000	0.000	0.000	0.000	0.000	1378.11	
22	0.6587	1099.8	1119.2	1115.8	0.971	2.030	80.960	14.584	1.316	0.045	0.081	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1375.81	
23	0.6566	1097.0	1116.5	1113.0	0.963	2.011	81.263	14.411	1.228	0.040	0.072	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1374.61	
24	0.6581	1098.9	1118.4	1114.9	0.988	2.000	81.058	14.545	1.274	0.044	0.079	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1375.38	
25	0.6602	1101.7	1121.2	1117.8	0.988	2.028	80.686	14.834	1.319	0.047	0.085	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1376.68	
26	0.6580	1098.4	1117.8	1114.5	0.962	2.062	80.964	14.665	1.222	0.041	0.073	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1374.84	
27	0.6577	1097.8	1117.2	1113.9	0.966	2.068	81.024	14.600	1.212	0.042	0.076	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1374.35	
28	0.6585	1099.1	1118.6	1115.2	0.974	2.051	80.946	14.629	1.257	0.046	0.084	0.007	0.006	0.000	0.000	0.000	0.000	0.000	1375.17	
29	0.6602	1102.1	1121.6	1118.0	0.957	2.053	80.657	14.860	1.326	0.047	0.086	0.007	0.007	0.000	0.000	0.000	0.000	0.000	1377.14	
30	0.6604	1100.8	1120.3	1116.7	0.965	2.131	80.616	14.824	1.321	0.046	0.084	0.007	0.007	0.000	0.000	0.000	0.000	0.000	1375.42	
Avg	0.6667	1110.0	1130.0	1126.0	1.026	2.053	79.741	15.411	1.583	0.061	0.109	0.008	0.008	0.000	0.000	0.000	0.000	0.000	1380.69	

Zone 32

# Source Daily Summary

September 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	0.6860	1153.8	1174.2	1169.8	0.000	2.795	73.423	23.070	0.698	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.42	-26.08
2	0.6856	1152.9	1173.3	1168.9	0.000	2.815	73.455	23.052	0.664	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.71	-26.42
3	0.6854	1153.1	1173.5	1168.8	0.000	2.782	73.534	22.979	0.691	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.19	-26.36
4	0.6865	1155.1	1175.5	1171.0	0.000	2.765	73.436	22.967	0.815	0.007	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1415.46	-25.28
5	0.6857	1154.0	1174.4	1170.0	0.000	2.750	73.558	22.920	0.757	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1415.01	-25.92
6	0.6860	1154.0	1174.4	1170.2	0.000	2.788	73.416	23.081	0.701	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.60	-26.03
7	0.6852	1152.1	1172.5	1167.9	0.000	2.828	73.491	23.046	0.622	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.12	-26.81
8	0.6863	1154.0	1174.4	1169.9	0.000	2.814	73.311	23.204	0.657	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.32	-26.10
9	0.6873	1154.6	1175.0	1170.6	0.000	2.866	73.130	23.313	0.678	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.10	-25.65
10	0.6875	1154.6	1175.0	1170.4	0.000	2.891	73.071	23.350	0.674	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.81	-25.60
11	0.6866	1153.9	1174.4	1169.7	0.000	2.841	73.229	23.283	0.633	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.01	-26.11
12	0.6870	1153.5	1174.0	1169.4	0.011	2.891	73.147	23.304	0.631	0.006	0.008	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1413.04	-25.98
13	0.6883	1155.5	1176.0	1171.7	0.000	2.908	72.933	23.454	0.687	0.006	0.009	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1414.13	-25.09
14	0.6877	1154.3	1174.8	1170.4	0.000	2.918	73.042	23.348	0.678	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.39	-25.57
15	0.6885	1155.5	1176.0	1171.6	0.000	2.919	72.967	23.345	0.743	0.009	0.015	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1414.05	-24.73
16	0.6875	1155.1	1175.6	1171.1	0.000	2.857	73.116	23.296	0.718	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.52	-25.34
17	0.6870	1154.3	1174.7	1170.2	0.000	2.863	73.191	23.241	0.691	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.95	-25.73
18	0.6863	1153.2	1173.6	1169.2	0.000	2.861	73.323	23.127	0.675	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.36	-26.15
19	0.6867	1153.7	1174.1	1169.7	0.000	2.869	73.277	23.120	0.719	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.57	-25.78
20	0.6860	1152.9	1173.3	1168.8	0.000	2.844	73.407	23.052	0.684	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.41	-26.25
21	0.6855	1152.3	1172.7	1168.2	0.000	2.838	73.469	23.036	0.643	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.09	-26.65
22	0.6859	1152.9	1173.3	1168.4	0.000	2.836	73.407	23.077	0.667	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.50	-26.34
23	0.6860	1153.0	1173.4	1169.0	0.000	2.844	73.419	23.023	0.700	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.41	-26.19
24	0.6857	1152.2	1172.6	1168.0	0.000	2.861	73.418	23.066	0.641	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.82	-26.60
25	0.6856	1152.7	1173.2	1168.8	0.000	2.823	73.428	23.100	0.634	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.54	-26.56
26	0.6851	1151.6	1172.0	1167.2	0.000	2.842	73.514	23.016	0.614	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.70	-26.95
27	0.6855	1151.8	1172.2	1167.0	0.000	2.874	73.431	23.051	0.630	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.46	-26.72
28	0.6872	1154.5	1174.9	1170.4	0.000	2.863	73.268	23.096	0.729	0.013	0.026	0.002	0.002	0.000	0.000	0.000	0.000	0.000	1414.03	-25.06
29	0.6856	1151.9	1172.3	1167.6	0.000	2.874	73.410	23.077	0.626	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.52	-26.70
30	0.6865	1153.1	1173.6	1169.0	0.000	2.878	73.257	23.206	0.646	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.17	-26.21
Avg	0.6864	1154.0	1174.0	1169.4	0.000	2.847	73.316	23.143	0.678	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.71	-26.03

Zone 33

# Source Daily Summary

September 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	0.6169	1029.6	1047.8	1044.2	0.532	3.038	88.367	7.151	0.805	0.038	0.060	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1330.97	
2	0.6077	1017.5	1035.5	1032.1	0.448	3.042	89.914	5.894	0.624	0.029	0.043	0.004	0.003	0.000	0.000	0.000	0.000	0.000	1325.07	
3	0.5988	1003.1	1020.9	1017.6	0.360	3.217	91.398	4.515	0.455	0.022	0.029	0.002	0.002	0.000	0.000	0.000	0.000	0.000	1316.10	
4	0.6113	1022.3	1040.4	1036.9	0.477	3.042	89.287	6.417	0.691	0.031	0.048	0.004	0.003	0.000	0.000	0.000	0.000	0.000	1327.56	
5	0.5927	993.6	1011.2	1007.8	0.297	3.315	92.495	3.468	0.373	0.021	0.027	0.002	0.002	0.000	0.000	0.000	0.000	0.000	1310.37	
6	0.5730	965.0	982.0	978.8	0.118	3.486	95.889	0.462	0.035	0.009	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1294.29	
7	0.5743	966.8	983.9	980.9	0.130	3.474	95.669	0.657	0.057	0.010	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1295.33	
8	0.5740	966.3	983.4	980.4	0.127	3.479	95.730	0.601	0.050	0.010	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1294.99	
9	0.5724	963.2	980.2	977.2	0.109	3.545	95.986	0.332	0.019	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1292.64	
10	0.5724	962.4	979.5	976.4	0.106	3.594	95.975	0.301	0.015	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1291.66	
11	0.5727	961.7	978.8	975.8	0.106	3.664	95.906	0.301	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1290.41	
12	0.5727	961.7	978.7	975.8	0.105	3.667	95.902	0.302	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1290.36	
13	0.5724	962.5	979.5	976.4	0.106	3.592	95.976	0.302	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1291.70	
14	0.5724	962.4	979.5	976.4	0.105	3.593	95.976	0.302	0.015	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1291.70	
15	0.5724	962.4	979.5	976.3	0.105	3.596	95.974	0.301	0.015	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1291.64	
16	0.5723	962.7	979.8	976.6	0.106	3.566	96.000	0.303	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1292.16	
17	0.5724	962.4	979.4	976.3	0.106	3.603	95.963	0.303	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1291.50	
18	0.5723	962.6	979.7	976.6	0.107	3.578	95.985	0.305	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1291.95	
19	0.5722	962.8	979.9	976.7	0.106	3.557	96.010	0.303	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1292.35	
20	0.5720	963.5	980.5	977.5	0.108	3.494	96.068	0.306	0.017	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1293.46	
21	0.5881	978.3	995.6	992.6	0.241	3.904	93.110	2.471	0.242	0.014	0.016	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1295.16	
22	0.6095	1018.3	1036.4	1033.1	0.462	3.139	89.585	6.077	0.651	0.032	0.046	0.004	0.004	0.000	0.000	0.000	0.000	0.000	1324.22	
23	0.5910	989.9	1007.4	1004.2	0.289	3.400	92.763	3.168	0.331	0.020	0.024	0.002	0.002	0.000	0.000	0.000	0.000	0.000	1307.18	
24	0.5736	965.8	982.9	979.9	0.124	3.482	95.788	0.552	0.043	0.009	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1294.70	
25	0.5955	997.4	1015.0	1012.0	0.319	3.317	92.049	3.792	0.457	0.026	0.034	0.003	0.003	0.000	0.000	0.000	0.000	0.000	1312.09	
26	0.6240	1041.6	1060.1	1056.7	0.593	2.883	87.096	8.410	0.905	0.040	0.063	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1338.77	
27	0.6206	1037.8	1056.1	1052.9	0.578	2.822	87.547	8.240	0.734	0.028	0.044	0.004	0.003	0.000	0.000	0.000	0.000	0.000	1337.53	
28	0.6042	1010.9	1028.8	1025.8	0.420	3.161	90.357	5.548	0.462	0.020	0.027	0.003	0.002	0.000	0.000	0.000	0.000	0.000	1320.41	
29	0.5782	971.0	988.2	985.3	0.165	3.527	94.954	1.240	0.097	0.010	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1296.60	
30	0.5910	988.6	1006.1	1003.1	0.291	3.472	92.662	3.273	0.269	0.015	0.015	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1305.61	
Avg	0.5864	984.0	1001.2	998.1	0.242	3.408	93.546	2.520	0.249	0.016	0.016	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1304.28	

Zone 34

# Source Daily Summary

September 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	0.6869	1130.9	1150.9	1147.9	1.053	2.676	74.538	20.772	0.939	0.009	0.013	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1385.40	-27.41
2	0.6846	1127.0	1147.0	1144.0	1.051	2.696	74.950	20.393	0.890	0.008	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1383.02	-28.87
3	0.6857	1127.8	1147.7	1144.7	1.062	2.735	75.021	19.980	1.189	0.006	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1382.81	-27.40
4	0.6840	1125.3	1145.2	1142.2	1.065	2.726	75.040	20.294	0.864	0.005	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1381.46	-29.53
5	0.6854	1128.2	1148.2	1145.2	1.054	2.696	74.693	20.748	0.793	0.007	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1383.64	-28.89
6	0.6889	1133.9	1154.0	1151.0	1.045	2.683	74.231	20.985	1.030	0.010	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1387.20	-26.03
7	0.6966	1147.1	1167.4	1164.4	1.020	2.645	73.065	21.794	1.432	0.017	0.027	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1395.50	-20.33
8	0.6841	1125.5	1145.5	1142.5	1.057	2.735	74.883	20.576	0.737	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1381.64	-30.05
9	0.6779	1114.4	1134.1	1131.2	1.079	2.795	75.656	20.225	0.243	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1374.29	-35.61
10	0.6924	1139.5	1159.6	1156.6	1.054	2.658	74.171	20.440	1.632	0.019	0.026	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1390.39	-22.21
11	0.6829	1121.6	1141.5	1138.5	1.047	2.864	75.431	19.589	1.057	0.006	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1378.14	-29.97
12	0.6745	1108.8	1128.5	1125.6	1.075	2.822	76.414	19.365	0.321	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1370.83	-37.25
13	0.6749	1109.4	1129.0	1126.1	1.079	2.814	76.484	19.169	0.450	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1371.18	-36.51
14	0.6788	1116.2	1135.9	1132.9	1.066	2.791	75.984	19.394	0.758	0.004	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1375.52	-32.94
15	0.6800	1118.5	1138.3	1135.3	1.066	2.760	75.847	19.458	0.860	0.004	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1377.16	-31.80
16	0.6802	1119.2	1139.1	1136.1	1.067	2.737	75.595	19.941	0.655	0.003	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1377.86	-32.46
17	0.6798	1118.8	1138.6	1135.6	1.061	2.732	75.774	19.673	0.752	0.004	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1377.75	-32.26
18	0.6842	1125.9	1145.8	1142.8	1.052	2.724	75.088	20.172	0.953	0.006	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1382.04	-29.05
19	0.6860	1128.6	1148.6	1145.6	1.045	2.734	74.725	20.530	0.946	0.008	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1383.61	-28.05
20	0.6874	1131.3	1151.3	1148.3	1.058	2.691	74.553	20.626	1.049	0.009	0.014	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1385.38	-26.77
21	0.6825	1123.1	1143.0	1140.0	1.070	2.707	75.406	19.891	0.914	0.005	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1380.32	-30.14
22	0.6784	1116.4	1136.2	1133.3	1.074	2.725	75.910	19.696	0.590	0.003	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1376.27	-33.70
23	0.6818	1118.9	1138.7	1135.8	1.073	2.900	74.940	20.734	0.350	0.002	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1375.84	-33.22
24	0.6845	1123.3	1143.2	1140.3	1.055	2.910	74.327	21.401	0.303	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1378.60	-31.86
25	0.6842	1122.9	1142.8	1139.9	1.058	2.899	74.490	21.153	0.395	0.002	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1378.42	-31.67
26	0.6780	1112.1	1131.8	1128.9	1.079	2.940	75.766	19.825	0.387	0.002	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1371.40	-35.35
27	0.6817	1120.1	1139.9	1137.0	1.066	2.829	75.307	20.110	0.675	0.005	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1377.34	-31.75
28	0.6930	1140.9	1161.1	1158.1	1.028	2.676	73.546	21.524	1.190	0.014	0.023	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1391.52	-23.15
29	0.6804	1119.2	1139.0	1136.0	1.059	2.762	75.744	19.592	0.834	0.004	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1377.67	-31.70
30	0.6798	1118.6	1138.4	1135.5	1.058	2.748	75.851	19.506	0.828	0.004	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1377.48	-31.99
Avg	0.6833	1124.0	1143.7	1140.7	1.059	2.760	75.114	20.252	0.800	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1380.32	-30.26

Zone 43

MANDAN BORDER

Start Date	End Date	Mandan Border			Mandan Border			Weighted AVG BTU	
		MCF	DK	BTU	MCF	DK	BTU Zone 28		
9/1/2019	9/2/2019				676	807	1.1939	1.194	9/1/2019
9/2/2019	9/3/2019				844	997	1.1814	1.181	9/2/2019
9/3/2019	9/4/2019				890	1051	1.1820	1.182	9/3/2019
9/4/2019	9/5/2019				841	991	1.1781	1.178	9/4/2019
9/5/2019	9/6/2019				832	994	1.1953	1.195	9/5/2019
9/6/2019	9/7/2019				752	894	1.1906	1.191	9/6/2019
9/7/2019	9/8/2019				1060	1254	1.1823	1.182	9/7/2019
9/8/2019	9/9/2019				990	1174	1.1850	1.185	9/8/2019
9/9/2019	9/10/2019				994	1182	1.1890	1.189	9/9/2019
9/10/2019	9/11/2019				899	1070	1.1899	1.190	9/10/2019
9/11/2019	9/12/2019				964	1144	1.1866	1.187	9/11/2019
9/12/2019	9/13/2019				1358	1614	1.1887	1.189	9/12/2019
9/13/2019	9/14/2019				983	1169	1.1898	1.190	9/13/2019
9/14/2019	9/15/2019				759	905	1.1923	1.192	9/14/2019
9/15/2019	9/16/2019				782	933	1.1921	1.192	9/15/2019
9/16/2019	9/17/2019				799	953	1.1922	1.192	9/16/2019
9/17/2019	9/18/2019				814	971	1.1927	1.193	9/17/2019
9/18/2019	9/19/2019				848	1016	1.1977	1.198	9/18/2019
9/19/2019	9/20/2019				786	941	1.1971	1.197	9/19/2019
9/20/2019	9/21/2019				753	902	1.1973	1.197	9/20/2019
9/21/2019	9/22/2019				848	1010	1.1909	1.191	9/21/2019
9/22/2019	9/23/2019				931	1110	1.1916	1.192	9/22/2019
9/23/2019	9/24/2019				870	1041	1.1964	1.196	9/23/2019
9/24/2019	9/25/2019				986	1178	1.1941	1.194	9/24/2019
9/25/2019	9/26/2019				1190	1419	1.1921	1.192	9/25/2019
9/26/2019	9/27/2019				1293	1546	1.1949	1.195	9/26/2019
9/27/2019	9/28/2019				1452	1732	1.1925	1.193	9/27/2019
9/28/2019	9/29/2019				1491	1781	1.1948	1.195	9/28/2019
9/29/2019	9/30/2019				1782	2123	1.1912	1.191	9/29/2019
9/30/2019	10/1/2019				2269	2600	1.1462	1.146	9/30/2019
		0	0	#DIV/0!	30,736	36,502	1.1893	1.1893	



# Alliance Pipeline

DAILY ANALYSIS — USA  
 ND07MD1 — Hankinson Sales  
 September 2019

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%	He1 Mol%
1	1,165.186	0.6685	83.5595	9.8649	3.8000	0.4158	0.7750	0.0673	0.0520	0.0266	1.0182	0.4092	0.0115
2	1,164.470	0.6684	83.6082	9.7800	3.8166	0.4132	0.7695	0.0689	0.0537	0.0270	1.0333	0.4176	0.0121
3	1,167.747	0.6706	83.2800	9.9734	3.9160	0.4182	0.7851	0.0694	0.0531	0.0261	1.0505	0.4165	0.0118
4	1,168.428	0.6708	83.3689	9.8382	3.9591	0.4287	0.8115	0.0671	0.0521	0.0263	1.0143	0.4221	0.0116
5	1,167.322	0.6701	83.3815	9.9258	3.8654	0.4267	0.7919	0.0684	0.0545	0.0293	1.0207	0.4242	0.0115
6	1,166.334	0.6696	83.4472	9.8732	3.8721	0.4159	0.7837	0.0657	0.0523	0.0281	1.0231	0.4272	0.0116
7	1,166.049	0.6694	83.4817	9.8359	3.8748	0.4159	0.7823	0.0665	0.0516	0.0281	1.0323	0.4195	0.0113
8	1,167.615	0.6707	83.3155	9.9145	3.9287	0.4188	0.7878	0.0693	0.0536	0.0284	1.0379	0.4338	0.0118
9	1,165.548	0.6695	83.4375	9.8706	3.8818	0.4128	0.7549	0.0680	0.0528	0.0292	1.0328	0.4484	0.0113
10	1,167.009	0.6698	83.5265	9.7561	3.9048	0.4239	0.7969	0.0703	0.0553	0.0306	0.9889	0.4351	0.0116
11	1,166.618	0.6696	83.5644	9.7070	3.9094	0.4245	0.8034	0.0678	0.0528	0.0297	1.0032	0.4264	0.0115
12	1,165.453	0.6690	83.5979	9.7033	3.8790	0.4149	0.7899	0.0681	0.0536	0.0306	1.0373	0.4136	0.0116
13	1,166.015	0.6690	83.4892	9.9555	3.7821	0.4133	0.7604	0.0750	0.0604	0.0326	0.9960	0.4231	0.0123
14	1,166.854	0.6705	83.3036	9.9746	3.8639	0.4147	0.7691	0.0742	0.0611	0.0322	1.0559	0.4386	0.0121
15	1,170.061	0.6728	83.0134	10.0696	3.9962	0.4268	0.7950	0.0734	0.0607	0.0299	1.0881	0.4341	0.0128
16	1,167.718	0.6708	83.3069	9.9064	3.9113	0.4211	0.7922	0.0720	0.0598	0.0325	1.0690	0.4171	0.0119
17	1,165.867	0.6697	83.4526	9.8647	3.8438	0.4145	0.7740	0.0729	0.0596	0.0307	1.0312	0.4441	0.0118
18	1,165.002	0.6692	83.5040	9.8322	3.8358	0.4096	0.7670	0.0706	0.0579	0.0296	1.0376	0.4437	0.0118
19	1,164.163	0.6682	83.6475	9.7728	3.7944	0.4066	0.7606	0.0726	0.0585	0.0300	1.0096	0.4358	0.0115
20	1,166.582	0.6699	83.4025	9.8858	3.8738	0.4127	0.7771	0.0743	0.0600	0.0301	1.0551	0.4166	0.0121
21	1,169.176	0.6717	83.1879	9.9980	3.9266	0.4237	0.8003	0.0781	0.0625	0.0311	1.0591	0.4207	0.0120
22	1,169.819	0.6719	83.1114	10.1034	3.9393	0.4215	0.7857	0.0743	0.0608	0.0309	1.0355	0.4249	0.0123
23	1,169.574	0.6723	83.0725	10.0862	3.9559	0.4221	0.7961	0.0723	0.0574	0.0285	1.0486	0.4486	0.0117
24	1,167.378	0.6706	83.3090	9.9464	3.8869	0.4202	0.7830	0.0735	0.0587	0.0296	1.0569	0.4242	0.0117
25	1,167.628	0.6708	83.2881	9.9529	3.9002	0.4206	0.7869	0.0714	0.0582	0.0289	1.0503	0.4305	0.0119
26	1,167.979	0.6718	83.0450	10.0790	3.9687	0.4122	0.7658	0.0708	0.0556	0.0277	1.1358	0.4279	0.0118
27	1,166.881	0.6704	83.1837	10.1083	3.9181	0.3996	0.7268	0.0696	0.0558	0.0275	1.0826	0.4157	0.0123
28	1,167.875	0.6709	83.1160	10.1769	3.8963	0.4083	0.7450	0.0707	0.0565	0.0285	1.0761	0.4136	0.0121
29	1,168.759	0.6716	83.1405	10.0123	3.9949	0.4131	0.7600	0.0761	0.0602	0.0295	1.0880	0.4139	0.0115
30	1,170.074	0.6719	83.0641	10.1457	3.9848	0.4154	0.7607	0.0753	0.0585	0.0289	1.0462	0.4087	0.0118
Volume	1,166.965	0.6701	83.3753	9.9086	3.8892	0.4169	0.7782	0.0709	0.0564	0.0294	1.0382	0.4250	0.0118
Weight Avg	1,166.968	0.6701	83.3751	9.9087	3.8893	0.4169	0.7782	0.0709	0.0564	0.0294	1.0382	0.4250	0.0118
Energy													

*Zone 100*



# Alliance Pipeline

DAILY ANALYSIS — USA  
 ND14MD1 — Milnor Sales  
 September 2019

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%	He1 Mol%
1	1,165.277	0.6686	83.5610	9.8526	3.8051	0.4165	0.7773	0.0678	0.0527	0.0270	1.0181	0.4102	0.0116
2	1,165.378	0.6691	83.4983	9.8397	3.8533	0.4139	0.7690	0.0698	0.0541	0.0263	1.0484	0.4152	0.0120
3	1,167.853	0.6707	83.2963	9.9474	3.9293	0.4192	0.7877	0.0688	0.0526	0.0259	1.0462	0.4149	0.0117
4	1,168.554	0.6709	83.3563	9.8600	3.9537	0.4288	0.8108	0.0672	0.0523	0.0266	1.0102	0.4225	0.0116
5	1,166.874	0.6699	83.4252	9.9050	3.8515	0.4251	0.7881	0.0685	0.0546	0.0294	1.0165	0.4245	0.0116
6	1,166.291	0.6697	83.4310	9.8820	3.8791	0.4140	0.7790	0.0655	0.0523	0.0283	1.0256	0.4317	0.0115
7	1,166.138	0.6695	83.4751	9.8320	3.8828	0.4160	0.7820	0.0668	0.0518	0.0283	1.0317	0.4221	0.0113
8	1,167.543	0.6709	83.2753	9.9396	3.9240	0.4191	0.7914	0.0686	0.0524	0.0274	1.0591	0.4314	0.0117
9	1,165.818	0.6697	83.4462	9.8566	3.8902	0.4149	0.7584	0.0684	0.0531	0.0291	1.0250	0.4467	0.0113
10	1,166.843	0.6698	83.5391	9.7461	3.8996	0.4237	0.7980	0.0700	0.0552	0.0307	0.9890	0.4369	0.0117
11	1,166.377	0.6694	83.5862	9.6939	3.9073	0.4229	0.8011	0.0673	0.0522	0.0297	1.0037	0.4243	0.0115
12	1,165.645	0.6691	83.5817	9.7145	3.8890	0.4136	0.7900	0.0675	0.0531	0.0304	1.0353	0.4132	0.0116
13	1,166.108	0.6692	83.4687	9.9657	3.7845	0.4134	0.7607	0.0753	0.0611	0.0328	1.0020	0.4236	0.0122
14	1,166.341	0.6702	83.3282	9.9741	3.8444	0.4129	0.7633	0.0741	0.0611	0.0321	1.0577	0.4400	0.0121
15	1,171.292	0.6736	82.9150	10.1300	4.0309	0.4329	0.7994	0.0728	0.0600	0.0295	1.0813	0.4352	0.0130
16	1,167.112	0.6704	83.3601	9.8839	3.8882	0.4187	0.7894	0.0724	0.0601	0.0322	1.0684	0.4149	0.0117
17	1,165.607	0.6695	83.4635	9.8641	3.8471	0.4114	0.7646	0.0725	0.0594	0.0305	1.0291	0.4458	0.0119
18	1,164.929	0.6691	83.5211	9.8239	3.8238	0.4109	0.7720	0.0707	0.0578	0.0296	1.0342	0.4440	0.0118
19	1,164.452	0.6684	83.6252	9.7797	3.8056	0.4073	0.7627	0.0727	0.0587	0.0302	1.0119	0.4345	0.0116
20	1,167.397	0.6705	83.3537	9.8760	3.9144	0.4160	0.7872	0.0746	0.0599	0.0302	1.0637	0.4123	0.0119
21	1,169.301	0.6718	83.1797	10.0092	3.9285	0.4232	0.7993	0.0780	0.0625	0.0313	1.0562	0.4200	0.0120
22	1,169.392	0.6722	83.0658	10.1009	3.9340	0.4236	0.7954	0.0734	0.0595	0.0292	1.0740	0.4320	0.0123
23	1,169.553	0.6723	83.0831	10.0612	3.9647	0.4225	0.7986	0.0723	0.0575	0.0286	1.0544	0.4456	0.0117
24	1,167.399	0.6707	83.2913	9.9682	3.8884	0.4169	0.7787	0.0733	0.0589	0.0301	1.0584	0.4241	0.0117
25	1,168.022	0.6712	83.2328	9.9783	3.9208	0.4206	0.7866	0.0717	0.0580	0.0288	1.0614	0.4293	0.0119
26	1,168.430	0.6724	82.9552	10.1352	3.9886	0.4109	0.7634	0.0702	0.0555	0.0277	1.1499	0.4314	0.0119
27	1,167.336	0.6708	83.1544	10.0902	3.9429	0.4037	0.7371	0.0688	0.0557	0.0276	1.0899	0.4176	0.0121
28	1,167.987	0.6712	83.0781	10.1973	3.9017	0.4095	0.7455	0.0701	0.0559	0.0284	1.0901	0.4114	0.0121
29	1,168.771	0.6716	83.1535	9.9959	4.0037	0.4120	0.7580	0.0763	0.0604	0.0302	1.0875	0.4111	0.0113
30	1,169.887	0.6718	83.0803	10.1527	3.9723	0.4144	0.7576	0.0749	0.0582	0.0290	1.0412	0.4075	0.0119
Volume	1,167.348	0.6706	83.3183	9.9326	3.9105	0.4171	0.7787	0.0708	0.0563	0.0291	1.0481	0.4268	0.0118
Weight Avg	1,167.349	0.6706	83.3181	9.9330	3.9104	0.4171	0.7786	0.0708	0.0563	0.0291	1.0481	0.4268	0.0118
Energy													

ZONE  
1001

September-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		
9/1/2019	9/2/2019	77	92	1.1950	45	52	1.1509	1.179	9/1/2019
9/2/2019	9/3/2019	118	141	1.1950	62	72	1.1470	1.178	9/2/2019
9/3/2019	9/4/2019	112	134	1.1950	57	66	1.1477	1.179	9/3/2019
9/4/2019	9/5/2019	100	119	1.1950	51	58	1.1452	1.178	9/4/2019
9/5/2019	9/6/2019	103	123	1.1950	41	48	1.1482	1.182	9/5/2019
9/6/2019	9/7/2019	86	103	1.1950	49	56	1.1540	1.180	9/6/2019
9/7/2019	9/8/2019	144	173	1.1950	80	93	1.1674	1.185	9/7/2019
9/8/2019	9/9/2019	137	163	1.1950	52	59	1.1455	1.181	9/8/2019
9/9/2019	9/10/2019	161	192	1.1950	75	85	1.1341	1.176	9/9/2019
9/10/2019	9/11/2019	136	163	1.1950	65	75	1.1596	1.184	9/10/2019
9/11/2019	9/12/2019	195	233	1.1950	82	94	1.1415	1.179	9/11/2019
9/12/2019	9/13/2019	220	262	1.1950	101	114	1.1285	1.174	9/12/2019
9/13/2019	9/14/2019	119	142	1.1950	60	67	1.1290	1.173	9/13/2019
9/14/2019	9/15/2019	89	106	1.1950	41	47	1.1359	1.176	9/14/2019
9/15/2019	9/16/2019	87	103	1.1950	35	40	1.1383	1.179	9/15/2019
9/16/2019	9/17/2019	89	106	1.1950	40	45	1.1391	1.178	9/16/2019
9/17/2019	9/18/2019	93	111	1.1950	65	74	1.1386	1.172	9/17/2019
9/18/2019	9/19/2019	116	139	1.1950	65	74	1.1458	1.177	9/18/2019
9/19/2019	9/20/2019	83	99	1.1950	56	64	1.1486	1.176	9/19/2019
9/20/2019	9/21/2019	80	95	1.1950	80	92	1.1513	1.173	9/20/2019
9/21/2019	9/22/2019	141	169	1.1950	68	78	1.1430	1.178	9/21/2019
9/22/2019	9/23/2019	126	150	1.1950	55	63	1.1362	1.177	9/22/2019
9/23/2019	9/24/2019	114	137	1.1950	62	70	1.1387	1.175	9/23/2019
9/24/2019	9/25/2019	136	163	1.1950	72	82	1.1432	1.177	9/24/2019
9/25/2019	9/26/2019	193	231	1.1950	73	83	1.1428	1.181	9/25/2019
9/26/2019	9/27/2019	210	250	1.1950	93	105	1.1318	1.176	9/26/2019
9/27/2019	9/28/2019	250	299	1.1950	112	128	1.1399	1.178	9/27/2019
9/28/2019	9/29/2019	300	359	1.1950	146	169	1.1611	1.184	9/28/2019
9/29/2019	9/30/2019	325	388	1.1950	181	206	1.1390	1.175	9/29/2019
9/30/2019	10/1/2019	348	416	1.1950	251	286	1.1384	1.171	9/30/2019
		4,488	5,361		2,315	2,645	1.1437	1.1777	

ROW ID	LOCATION DESCRIPTION	GROSS HEATING VALUE (BTU/CF)	SPECIFIC GRAVITY	WOBBE (cal/c)	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	1091.9	0.6386	1366.4	-52.7	1.9395	0.8651	83.9365	12.3006	0.772	0.0246	0.0139	0.0009	0.0011	0	0	0.1256	0.0205	9/30/2019	10/1/2019	10/1/2019 3:30:00 PM	
11587	GLEN ULLIN	1098.3	0.643	1369.7	-48.6	1.9223	0.8934	83.205	12.8052	0.9466	0.0287	0.0176	0.0013	0.0016	0	0	0.158	0.0205	8/31/2019	9/1/2019	9/1/2019 3:25:29 PM	
11587	GLEN ULLIN	1086	0.6335	1364.5	-56.5	1.7887	0.8807	84.9054	11.5857	0.6635	0.0201	0.012	0.0004	0.0006	0	0	0.1233	0.0196	9/9/2019	9/10/2019	9/10/2019 3:27:20 PM	
11587	GLEN ULLIN	1082.2	0.6307	1362.7	-58.6	1.7713	0.8657	85.4063	11.1507	0.6204	0.0188	0.0121	0.0004	0.0006	0	0	0.1346	0.0192	9/10/2019	9/11/2019	9/11/2019 3:27:54 PM	
11587	GLEN ULLIN	1088.7	0.6358	1365.3	-55.2	1.8552	0.8711	84.4208	12.004	0.6725	0.0181	0.0109	0.0004	0.0005	0	0	0.1265	0.0199	9/11/2019	9/12/2019	9/12/2019 3:29:56 PM	
11587	GLEN ULLIN	1086.1	0.6335	1364.6	-57.4	1.8123	0.857	84.7958	11.8257	0.5569	0.0145	0.0097	0.0002	0.0005	0	0	0.1078	0.0197	9/12/2019	9/13/2019	9/13/2019 3:22:32 PM	
11587	GLEN ULLIN	1088.4	0.6346	1366.3	-56.2	1.7909	0.85	84.6321	11.9736	0.6043	0.0168	0.011	0.0004	0.0007	0	0	0.1013	0.0192	9/13/2019	9/14/2019	9/14/2019 3:18:39 PM	
11587	GLEN ULLIN	1091.2	0.6377	1366.4	-54.1	1.8789	0.8772	84.0594	12.356	0.6698	0.018	0.0106	0.0005	0.0005	0	0	0.1093	0.02	9/14/2019	9/15/2019	9/15/2019 3:27:32 PM	
11587	GLEN ULLIN	1091.7	0.6382	1366.5	-53.5	1.8993	0.874	84.0436	12.3298	0.7112	0.0209	0.0121	0.0008	0.0008	0	0	0.0866	0.0209	9/15/2019	9/16/2019	9/16/2019 3:24:46 PM	
11587	GLEN ULLIN	1091.9	0.6378	1367.2	-53.1	1.882	0.8519	84.1746	12.1977	0.7467	0.0262	0.0152	0.0014	0.0016	0	0.0001	0.0822	0.0206	9/16/2019	9/17/2019	9/17/2019 3:26:01 PM	
11587	GLEN ULLIN	1093.1	0.6392	1367.3	-52	1.9264	0.865	83.8667	12.3475	0.8088	0.027	0.0161	0.0006	0.0011	0	0	0.1201	0.0209	9/17/2019	9/18/2019	9/18/2019 3:25:51 PM	
11587	GLEN ULLIN	1093.1	0.6385	1368	-52.7	1.8787	0.8535	83.9735	12.3426	0.782	0.0219	0.0133	0.0002	0.0005	0	0	0.1135	0.0206	9/18/2019	9/19/2019	9/19/2019 3:25:34 PM	
11587	GLEN ULLIN	1097.4	0.6422	1369.4	-49.6	1.9054	0.8948	83.3419	12.7532	0.9054	0.0251	0.0153	0.0007	0.0009	0	0	0.1372	0.0203	9/1/2019	9/2/2019	9/2/2019 3:24:18 PM	
11587	GLEN ULLIN	1093.9	0.6396	1367.8	-51.9	1.9307	0.8577	83.8023	12.4314	0.8154	0.0234	0.0139	0.0006	0.0007	0	0	0.1026	0.0213	9/19/2019	9/20/2019	9/20/2019 3:25:33 PM	
11587	GLEN ULLIN	1095.5	0.6407	1368.6	-51.1	1.9257	0.8642	83.6208	12.6029	0.8302	0.0232	0.0145	0.0006	0.001	0	0	0.0959	0.021	9/20/2019	9/21/2019	9/21/2019 3:31:32 PM	
11587	GLEN ULLIN	1094	0.6396	1367.9	-52	1.9115	0.8647	83.77	12.4933	0.7921	0.022	0.0131	0.0005	0.0006	0	0	0.1116	0.0207	9/21/2019	9/22/2019	9/22/2019 3:24:20 PM	
11587	GLEN ULLIN	1092.8	0.639	1367.1	-52.8	1.9053	0.8762	83.8479	12.4604	0.7435	0.0195	0.0115	0.0003	0.0003	0	0	0.1145	0.0208	9/22/2019	9/23/2019	9/23/2019 3:22:28 PM	
11587	GLEN ULLIN	1091.7	0.6382	1366.6	-53.7	1.8766	0.8862	84.0031	12.3863	0.6926	0.0187	0.0114	0.0002	0.0003	0	0	0.1042	0.0204	9/23/2019	9/24/2019	9/24/2019 3:24:01 PM	
11587	GLEN ULLIN	1092.5	0.6388	1366.9	-53.2	1.9093	0.8788	83.82	12.5139	0.7017	0.0196	0.0114	0.0001	0.0002	0	0	0.1249	0.0202	9/24/2019	9/25/2019	9/25/2019 3:24:56 PM	
11587	GLEN ULLIN	1093.8	0.6402	1367	-52.3	1.9648	0.8715	83.5425	12.7141	0.7264	0.0188	0.0111	0	0	0	0	0.13	0.0208	9/25/2019	9/26/2019	9/26/2019 3:23:19 PM	
11587	GLEN ULLIN	1092.9	0.6398	1366.3	-52.6	1.9829	0.8753	83.6121	12.6431	0.7062	0.0214	0.0126	0.0005	0.0008	0	0	0.1244	0.021	9/26/2019	9/27/2019	9/27/2019 3:24:00 PM	
11587	GLEN ULLIN	1091.9	0.6388	1366.1	-52.9	1.9378	0.8789	83.8766	12.4234	0.7069	0.0257	0.0137	0.0014	0.0014	0	0	0.1136	0.0205	9/27/2019	9/28/2019	9/28/2019 3:21:53 PM	
11587	GLEN ULLIN	1098.2	0.6427	1369.8	-49.1	1.9434	0.8682	83.2454	12.8866	0.8603	0.0345	0.019	0.0023	0.0023	0	0	0.1174	0.0206	9/28/2019	9/29/2019	9/29/2019 3:23:21 PM	
11587	GLEN ULLIN	1097.6	0.6422	1369.7	-49	1.8879	0.8963	83.4355	12.6255	0.9516	0.0313	0.0182	0.0015	0.0018	0	0	0.1302	0.0202	9/2/2019	9/3/2019	9/3/2019 3:27:19 PM	
11587	GLEN ULLIN	1097.6	0.6437	1368	-48.5	2.0698	0.8706	83.0037	12.9604	0.8821	0.033	0.0174	0.0024	0.0023	0	0.0003	0.1369	0.0212	9/29/2019	9/30/2019	9/30/2019 3:24:15 PM	
11587	GLEN ULLIN	1099.5	0.6432	1371	-48.5	1.8837	0.8874	83.2042	12.8658	0.9586	0.0272	0.0164	0.001	0.0014	0	0	0.1338	0.0205	9/3/2019	9/4/2019	9/4/2019 3:29:19 PM	
11587	GLEN ULLIN	1098.3	0.6425	1370.1	-49.4	1.8946	0.8837	83.35	12.7983	0.9021	0.0271	0.016	0.0011	0.0013	0	0	0.1054	0.0207	9/4/2019	9/5/2019	9/5/2019 3:32:51 PM	
11587	GLEN ULLIN	1099.2	0.643	1370.8	-48.9	1.8959	0.8737	83.2679	12.8738	0.9185	0.0274	0.0162	0.0014	0.0015	0	0	0.1036	0.0204	9/5/2019	9/6/2019	9/6/2019 3:29:24 PM	
11587	GLEN ULLIN	1100.7	0.6441	1371.5	-48.2	1.8994	0.8817	83.0898	13.0097	0.962	0.0241	0.0149	0.0008	0.0012	0	0	0.0965	0.0201	9/6/2019	9/7/2019	9/7/2019 3:25:29 PM	
11587	GLEN ULLIN	1098.5	0.6421	1370.8	-49.5	1.8481	0.8808	83.4599	12.7186	0.9314	0.0222	0.0143	0.0007	0.0011	0	0	0.1033	0.0198	9/7/2019	9/8/2019	9/8/2019 3:26:52 PM	
11587	GLEN ULLIN	1094.6	0.6398	1368.5	-51.4	1.8529	0.8891	83.8163	12.3976	0.8645	0.021	0.013	0.0005	0.0006	0	0	0.1248	0.0199	9/8/2019	9/9/2019	9/9/2019 3:27:20 PM	

31 record(s) retrieved

*Done*

<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
601	Chromatograph	Milnor 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	SEPT 19	AUG 19	JULY 19	JUNE 19	MAY 19	APR 19	MAR 19	FEB 19	JAN 19	DEC 18	NOV 18	OCT 18	ZONE
MT/ND	211	Sidney Border - MonDak Trf - Sidney Plt	1205	1218	1200	1199	1208	1207	1202	1205	1207	1202	1200	1207	1202	211
ND	24	Williston Border - Charbonneau Station	1161	1164	1165	1165	1152	1158	1164	1166	1162	1163	1164	1163	1140	24
ND	25	Watford City West Border	1197	1195	1197	1195	1199	1188	1202	1198	1204	1191	1196	1199	1199	25
ND	28	Bismarck Station - Glen Ullin Station	1157	1189	1196	1186	1205	1178	1147	1144	1115	1141	1120	1112	1153	28
ND	31	Dickinson Brd - Belfield Trf - G Ullin Stn	1139	1163	1114	1128	1168	1165	1152	1143	1116	1139	1132	1110	1134	31
ND/MT	32	Cabin Creek Station - Belfield Transfer	1122	1130	1137	1133	1147	1138	1131	1139	1104	1128	1093	1068	1110	32
ND	33	Little Knife Plant	1173	1174	1175	1175	1174	1173	1173	1173	1173	1172	1173	1174	1172	33
ND	34	Badlands Plant/Bowman Border	1020	1001	1013	989	978	979	979	1013	1062	1048	1042	1073	1063	34
ND	43	Spring Creek I - Sax Valve I	1113	1144	1150	1140	1149	1148	1136	1127	1061	1044	1051	1062	1144	43
ND/MT	241	Fairview Border	1192	1210	1194	1191	1200	1202	1196	1188	1204	1173	1181	1193	1175	241
ND	260	North Tioga Transfer - Nesson Plant	1117	1136	1135	1132	1115	1118	1121	1127	1109	1113	1104	1095	1102	260
ND	261	Tioga Comp Station - Robinson Lake Plan	1179	1189	1189	1179	1175	1164	1170	1179	1184	1180	1173	1177	1183	261
ND	262	Minot Bdr - Palermo Bdr - Bismarck Stn	1188	1193	1197	1198	1205	1185	1183	1182	1182	1183	1182	1182	1179	262
ND	263	Lignite Plant	1149	1146	1163	1164	1160	1152	1148	1149	1146	1149	1146	1127	1140	263
ND	264	Epping Border	1149	1148	1155	1154	1150	1143	1151	1153	1148	1149	1147	1153	1139	264
ND	265	Tioga Comp Station - County Line Plant	1177	1176	1177	1175	1175	1177	1171	1181	1184	1179	1173	1177	1183	265
ND	266	County Line Plant	1174	1172	1170	1166	1170	1171	1174	1176	1170	1177	1179	1180	1181	266
ND	271	Bismarck Station - Cleveland Station	1185	1191	1197	1196	1206	1185	1183	1181	1168	1176	1180	1180	1178	271
ND	272	Cleveland Station - Mapleton	1185	1191	1196	1195	1206	1185	1183	1180	1167	1176	1180	1179	1177	272
ND	273	Cleveland Station - Grafton Border	1184	1190	1195	1194	1204	1185	1180	1181	1167	1176	1180	1179	1177	273
ND	550	Mandan Border / NBPL-St Anthony	1150	1189	1196	1186	1202	1176	1147	1119	1107	1121	1106	1102	1145	550
ND	610	MDU-Watford City BTU	1156	1178	1181	1180	1187	1176	1175	1158	1113	1101	1109	1131	1180	610
ND	802	NBPL - Linton	1091	1094	1094	1091	1098	1101	1101	1083	1083	1084	1084	1086	1092	802
ND	903	Hettinger Propane	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	903
ND	600	Alliance Pipeline - Hankinson	1159	1167	1162	1161	1158	1169	1163	1157	1151	1155	1153	1155	1155	600
ND	601	Alliance Pipeline - Milnor	1159	1167	1162	1160	1156	1169	1162	1156	1151	1155	1153	1154	0	602

<b>THERMAL ZONE VARIANCE DOCUMENTATION</b>		
<b>September 2019</b>		
<b><i>ZONE</i></b>	<b><i>BTU VARIANCE</i></b>	<b><i>REASON</i></b>
31	49	Source of Gas and Direction of Flow