

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

December 15, 2021

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

Re: Case No. PU-21-002 (Therm Billing)
Monthly Report – October 2021

Montana-Dakota Utilities Co. herewith electronically 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 November 2021.
2. Attachment B consists of copies of the monthly Heating Value Test Reports received from our suppliers for the month of October 2021.
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 October 2021.

Montana-Dakota respectfully request this electronic filing, in lieu of an original and one copy, be accepted as being in full compliance with the filing requirements of this Commission.

Sincerely,

/s/ Travis R. Jacobson

Travis R. Jacobson
Director of Regulatory Affairs

Montana-Dakota Utilities Co.
Therm Billing Factors - North Dakota
Nov-21

<u>Town</u>	<u>Heat Zone</u>	<u>Therm Factor</u>
MDU-303-ALEXANDER	025	1.1381
MDU-308-ARNEGARD	025	1.1381
MDU-314-APPLE VALLEY	271	1.1549
MDU-318-BEACH	032	1.0498
MDU-319-BELFIELD	032	1.0575
MDU-323-BERTHOLD	262	1.1362
MDU-324-BEULAH	032	1.0575
MDU-327-BISMARCK	028	1.1540
MDU-330-BOWMAN	034	0.9715
MDU-337-BURLINGTON	262	1.1607
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	1.1444
MDU-369-DICKINSON	031	1.0596
MDU-374-FT TOTTEN	273	1.1611
MDU-375-DEVILS LAKE	273	1.1611
MDU-379-BARLOW	273	1.1530
MDU-384-EPPING	264	1.0994
MDU-387-ELDRIDGE	272	1.1540
MDU-407-GLADSTONE	031	1.0596
MDU-411-GLEN ULLIN	031	1.0673
MDU-413-GOLVA	032	1.0344
MDU-416-GARRISON	262	1.1444
MDU-417-GRAFTON	273	1.1855
MDU-403-GWINNER	601	1.1409
MDU-429-HEBRON	031	1.0673
MDU-432-HETTINGER	903	2.4049
MDU-449-JAMESTOWN	272	1.1621
MDU-459-KILLDEER	033	1.1136
MDU-463-LANGDON	273	1.1530
MDU-469-LEFOR	031	1.0596
MDU-474-LIGNITE	263	1.0788
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	0.9787
MDU-505-MINOT	262	1.1607
MDU-510-MOTT	031	1.0596
MDU-512-MAX	262	1.1362
MDU-513-MILNOR	601	1.1409
MDU-522-NEW ENGLAND	031	1.0519
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	1.1362

MDU-558-RAY	264	1.0994
MDU-561-REGENT	031	1.0596
MDU-563-RHAME	034	0.9643
MDU-564-RICHARDTON	031	1.0519
MDU-568-ROSS	261	1.1178
MDU-572-RUTHVILLE	262	1.1607
MDU-574-SANBORN	272	1.1621
MDU-583-SENTINEL BUTTE	032	1.0498
MDU-588-SOUTH HEART	031	1.0519
MDU-717-SPIRITWOOD	272	1.1621
MDU-590-SPRINGBROOK	264	1.0994
MDU-591-STANLEY	261	1.1258
MDU-593-STEELE	271	1.1468
MDU-594-STERLING	028	1.1540
MDU-598-SHEYENNE	273	1.1611
MDU-605-SURREY	262	1.1607
MDU-610-TAPPEN	271	1.1468
MDU-611-TAYLOR	031	1.0519
MDU-616-TIOGA	260	1.0737
MDU-619-TURTLE LAKE	262	1.1444
MDU-620-TRENTON	024	1.1102
MDU-624-UNDERWOOD	262	1.1444
MDU-625-VALLEY CITY	272	1.1702
MDU-629-WALHALLA	273	1.1774
MDU-632-WATFORD CITY	610	1.0371
MDU-636-WHEELOCK	264	1.0915
MDU-637-WHITE EARTH	261	1.1258
MDU-642-WILLISTON	024	1.1102
MDU-646-WASHBURN	262	1.1526
MDU-647-WILTON	262	1.1362
MDU-664-RIVERDALE	262	1.1444
MDU-691-FAIRVIEW	241	1.1349
MDU-712-MINOT AFB	262	1.1607
MDU-718-FAIRMOUNT	600	1.1385
MDU-732-NEKOMA	273	1.1530
MDU-732-MSR SITE	273	1.1530

Source Daily Summary

October 2021

Source #: 251
Name: SDNY BDR-MNDK JNCTN-SDNY PLT

Pressure Base:	14.730	Contract Day:	1
Temperature Base:	60	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	0.7152	1160.6	1181.2	1180.3	1.102	3.429	71.403	20.829	2.853	0.115	0.237	0.016	0.016	0.000	0.000	0.000	0.000	0.000	1396.68	
2	0.7179	1162.9	1183.5	1182.7	1.134	3.496	70.907	21.186	2.888	0.119	0.240	0.016	0.014	0.000	0.000	0.000	0.000	0.000	1396.81	
3	0.7179	1163.6	1184.2	1183.3	1.118	3.479	70.954	21.124	2.926	0.121	0.246	0.016	0.016	0.000	0.000	0.000	0.000	0.000	1397.62	
4	0.7148	1161.3	1181.8	1180.9	1.091	3.367	71.488	20.820	2.845	0.117	0.240	0.016	0.016	0.000	0.000	0.000	0.000	0.000	1397.87	
5	0.7208	1166.2	1186.8	1185.9	1.161	3.526	70.637	21.147	3.104	0.131	0.261	0.017	0.016	0.000	0.000	0.000	0.000	0.000	1397.90	
6	0.7214	1167.7	1188.4	1187.4	1.167	3.479	70.493	21.357	3.089	0.128	0.255	0.017	0.015	0.000	0.000	0.000	0.000	0.000	1399.19	
7	0.7228	1168.6	1189.3	1188.4	1.177	3.548	70.098	21.756	3.019	0.125	0.246	0.016	0.014	0.000	0.000	0.000	0.000	0.000	1398.82	
8	0.7188	1164.3	1184.9	1184.1	1.150	3.477	70.758	21.313	2.920	0.118	0.234	0.015	0.014	0.000	0.000	0.000	0.000	0.000	1397.52	
9	0.7174	1163.1	1183.7	1183.0	1.142	3.426	70.955	21.256	2.843	0.114	0.233	0.015	0.014	0.000	0.000	0.000	0.000	0.000	1397.53	
10	0.7244	1170.3	1191.1	1190.3	1.210	3.539	70.060	21.516	3.271	0.125	0.249	0.016	0.014	0.000	0.000	0.000	0.000	0.000	1399.37	
11	0.7279	1170.9	1191.6	1190.9	1.308	3.688	69.321	22.108	3.164	0.130	0.253	0.015	0.013	0.000	0.000	0.000	0.000	0.000	1396.68	
12	0.7290	1178.7	1199.6	1199.0	1.103	3.623	68.920	22.741	3.226	0.124	0.238	0.013	0.011	0.000	0.000	0.000	0.000	0.000	1405.01	
13	0.7412	1193.7	1214.8	1214.2	1.345	3.496	66.609	25.006	3.170	0.120	0.230	0.013	0.011	0.000	0.000	0.000	0.000	0.000	1410.99	
14	0.7227	1189.1	1210.1	1209.4	0.476	3.358	69.224	23.591	3.083	0.088	0.164	0.009	0.007	0.000	0.000	0.000	0.000	0.000	1423.55	
15	0.7387	1196.9	1218.1	1217.4	1.114	3.411	66.918	25.004	3.186	0.117	0.226	0.013	0.011	0.000	0.000	0.000	0.000	0.000	1417.33	
16	0.7447	1199.5	1220.8	1220.0	1.346	3.467	66.105	25.368	3.308	0.128	0.249	0.015	0.012	0.000	0.000	0.000	0.000	0.000	1414.59	
17	0.7438	1198.1	1219.3	1218.6	1.349	3.462	66.240	25.290	3.258	0.127	0.247	0.015	0.012	0.000	0.000	0.000	0.000	0.000	1413.77	
18	0.7451	1200.7	1222.0	1221.2	1.340	3.439	65.932	25.658	3.238	0.125	0.242	0.014	0.012	0.000	0.000	0.000	0.000	0.000	1415.64	
19	0.7429	1197.6	1218.8	1218.1	1.343	3.416	66.209	25.561	3.101	0.119	0.228	0.013	0.011	0.000	0.000	0.000	0.000	0.000	1414.07	
20	0.7429	1197.3	1218.5	1217.8	1.350	3.427	66.231	25.496	3.124	0.119	0.229	0.013	0.011	0.000	0.000	0.000	0.000	0.000	1413.70	
21	0.7409	1193.5	1214.7	1214.0	1.355	3.461	66.758	24.819	3.215	0.124	0.240	0.014	0.011	0.000	0.000	0.000	0.000	0.000	1411.12	
22	0.7471	1204.7	1226.0	1225.3	1.331	3.398	65.593	25.960	3.347	0.118	0.228	0.014	0.011	0.000	0.000	0.000	0.000	0.000	1418.42	
23	0.7348	1188.6	1209.6	1209.0	1.253	3.343	67.631	24.430	2.985	0.112	0.219	0.013	0.012	0.000	0.000	0.000	0.000	0.000	1411.11	
24	0.7283	1180.0	1200.9	1200.3	1.207	3.322	68.816	23.408	2.902	0.108	0.213	0.013	0.012	0.000	0.000	0.000	0.000	0.000	1407.18	
25	0.7258	1175.0	1195.8	1195.3	1.184	3.427	69.409	22.636	2.966	0.117	0.233	0.014	0.013	0.000	0.000	0.000	0.000	0.000	1403.62	
26	0.7162	1165.1	1185.8	1185.2	1.072	3.291	71.101	21.376	2.788	0.111	0.231	0.015	0.015	0.000	0.000	0.000	0.000	0.000	1401.19	
27	0.7194	1169.2	1189.9	1189.3	1.082	3.333	70.590	21.710	2.889	0.117	0.247	0.016	0.016	0.000	0.000	0.000	0.000	0.000	1402.89	
28	0.7199	1170.9	1191.6	1191.0	1.092	3.267	70.434	21.984	2.827	0.116	0.247	0.016	0.016	0.000	0.000	0.000	0.000	0.000	1404.37	
29	0.7348	1188.3	1209.3	1208.6	1.238	3.380	67.759	24.170	3.059	0.121	0.243	0.015	0.014	0.000	0.000	0.000	0.000	0.000	1410.78	
30	0.7396	1195.1	1216.2	1215.6	1.266	3.377	66.762	25.147	3.081	0.115	0.226	0.013	0.011	0.000	0.000	0.000	0.000	0.000	1414.21	
31	0.7306	1183.4	1204.4	1203.8	1.199	3.343	68.358	23.831	2.902	0.114	0.228	0.013	0.012	0.000	0.000	0.000	0.000	0.000	1409.04	
Avg	0.7293	1180.0	1201.1	1200.3	1.187	3.435	68.796	23.148	3.051	0.119	0.236	0.015	0.013	0.000	0.000	0.000	0.000	0.000	1406.41	

Source Daily Summary

October 2021

Source #: 571
Name: WILLISTON BDR-CHARBN STN

Pressure Base:	14.730	Contract Day:	1
Temperature Base:	60	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	0.6941	1139.7	1159.8	1159.1	0.870	3.076	74.642	18.959	2.163	0.083	0.178	0.013	0.016	0.000	0.000	0.000	0.000	0.000	1392.15	
2	0.6953	1139.9	1160.1	1159.4	0.870	3.177	74.447	18.975	2.236	0.085	0.182	0.013	0.015	0.000	0.000	0.000	0.000	0.000	1391.23	
3	0.6966	1143.1	1163.3	1162.6	0.870	3.102	74.256	19.204	2.261	0.087	0.189	0.014	0.017	0.000	0.000	0.000	0.000	0.000	1393.84	
4	0.6924	1138.7	1158.9	1158.1	0.850	3.001	75.078	18.535	2.235	0.086	0.185	0.014	0.016	0.000	0.000	0.000	0.000	0.000	1392.74	
5	0.6929	1139.4	1159.6	1158.9	0.844	3.011	74.957	18.669	2.217	0.087	0.185	0.014	0.016	0.000	0.000	0.000	0.000	0.000	1393.13	
6	0.6914	1137.2	1157.3	1156.5	0.849	3.005	75.213	18.443	2.202	0.084	0.177	0.013	0.015	0.000	0.000	0.000	0.000	0.000	1391.82	
7	0.6880	1129.3	1149.3	1148.6	0.859	3.147	75.921	17.578	2.199	0.085	0.182	0.014	0.016	0.000	0.000	0.000	0.000	0.000	1385.63	
8	0.6898	1133.1	1153.2	1152.5	0.866	3.080	75.517	18.067	2.180	0.083	0.178	0.013	0.015	0.000	0.000	0.000	0.000	0.000	1388.43	
9	0.6912	1135.8	1155.9	1155.2	0.879	3.023	75.231	18.445	2.130	0.083	0.179	0.014	0.016	0.000	0.000	0.000	0.000	0.000	1390.34	
10	0.6906	1135.0	1155.1	1154.4	0.877	3.020	75.330	18.357	2.130	0.082	0.176	0.013	0.015	0.000	0.000	0.000	0.000	0.000	1389.97	
11	0.6907	1135.6	1155.7	1155.1	0.887	2.977	75.271	18.507	2.074	0.080	0.174	0.013	0.016	0.000	0.000	0.000	0.000	0.000	1390.64	
12	0.6897	1134.7	1154.8	1154.2	0.886	2.943	75.430	18.423	2.040	0.079	0.170	0.013	0.015	0.000	0.000	0.000	0.000	0.000	1390.48	
13	0.6932	1138.4	1158.6	1158.0	0.907	3.014	75.000	18.531	2.229	0.090	0.194	0.017	0.019	0.000	0.000	0.000	0.000	0.000	1391.50	
14	0.6912	1136.9	1157.1	1156.5	0.906	2.914	75.308	18.424	2.144	0.086	0.188	0.014	0.017	0.000	0.000	0.000	0.000	0.000	1391.74	
15	0.6941	1138.6	1158.8	1158.3	0.905	3.080	74.896	18.487	2.313	0.090	0.197	0.015	0.017	0.000	0.000	0.000	0.000	0.000	1390.93	
16	0.6966	1140.7	1160.9	1160.5	0.903	3.196	74.480	18.671	2.416	0.095	0.207	0.015	0.017	0.000	0.000	0.000	0.000	0.000	1390.94	
17	0.6942	1139.7	1159.9	1159.4	0.907	3.024	74.813	18.694	2.242	0.090	0.198	0.015	0.018	0.000	0.000	0.000	0.000	0.000	1392.11	
18	0.6935	1139.7	1159.9	1159.5	0.907	2.961	74.916	18.685	2.216	0.089	0.195	0.015	0.017	0.000	0.000	0.000	0.000	0.000	1392.81	
19	0.6942	1138.5	1158.6	1158.2	0.896	3.116	74.909	18.399	2.350	0.094	0.204	0.015	0.017	0.000	0.000	0.000	0.000	0.000	1390.61	
20	0.6954	1140.3	1160.5	1160.0	0.907	3.105	74.621	18.726	2.318	0.092	0.199	0.015	0.017	0.000	0.000	0.000	0.000	0.000	1391.58	
21	0.6940	1138.9	1159.0	1158.6	0.905	3.062	74.800	18.686	2.242	0.087	0.189	0.014	0.016	0.000	0.000	0.000	0.000	0.000	1391.27	
22	0.6924	1137.7	1157.8	1157.4	0.909	2.981	75.038	18.617	2.156	0.084	0.184	0.014	0.016	0.000	0.000	0.000	0.000	0.000	1391.40	
23	0.6908	1135.9	1156.0	1155.6	0.892	2.965	75.266	18.495	2.096	0.081	0.177	0.013	0.015	0.000	0.000	0.000	0.000	0.000	1390.82	
24	0.6903	1134.0	1154.1	1153.7	0.886	3.041	75.457	18.146	2.171	0.085	0.184	0.014	0.016	0.000	0.000	0.000	0.000	0.000	1389.01	
25	0.6943	1138.5	1158.7	1158.2	0.877	3.145	74.975	18.237	2.415	0.100	0.218	0.015	0.018	0.000	0.000	0.000	0.000	0.000	1390.64	
26	0.6925	1136.7	1156.9	1156.4	0.863	3.110	75.251	18.083	2.352	0.097	0.212	0.015	0.017	0.000	0.000	0.000	0.000	0.000	1390.22	
27	0.7004	1145.6	1165.8	1165.4	0.913	3.235	74.079	18.730	2.645	0.113	0.248	0.017	0.019	0.000	0.000	0.000	0.000	0.000	1393.10	
28	0.7014	1147.1	1167.5	1166.9	0.968	3.152	73.841	19.086	2.566	0.110	0.241	0.017	0.020	0.000	0.000	0.000	0.000	0.000	1394.01	
29	0.7016	1145.5	1165.8	1165.3	0.989	3.238	73.779	19.052	2.567	0.106	0.234	0.016	0.019	0.000	0.000	0.000	0.000	0.000	1391.85	
30	0.6968	1139.2	1159.4	1158.9	0.966	3.209	74.470	18.646	2.361	0.098	0.215	0.015	0.018	0.000	0.000	0.000	0.000	0.000	1388.92	
31	0.6965	1139.6	1159.8	1159.3	0.970	3.150	74.485	18.736	2.325	0.096	0.208	0.014	0.017	0.000	0.000	0.000	0.000	0.000	1389.73	
Avg	0.6937	1138.0	1158.6	1158.1	0.896	3.073	74.893	18.558	2.264	0.090	0.195	0.014	0.017	0.000	0.000	0.000	0.000	0.000	1391.08	

Gas Composition and Properties

Effective October 1, 2021

Attachment B
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Source #: 0602160
Name: FAIRVIEW BORDER

Component	Mole %	Liquid Content	Mass %
Carbon Dioxide, CO2	0.8737		1.9100
Nitrogen, N2	3.2055		4.4606
Methane, C1	74.5160		59.3823
Ethane, C2	18.5328	4.9589	27.6818
Propane, C3	2.5110	0.6921	5.5002
iso-Butane, iC4	0.1051	0.0344	0.3034
n-Butane, nC4	0.2249	0.0709	0.6493
iso-Pentane, iC5	0.0143	0.0052	0.0513
n-Pentane, nC5	0.0148	0.0054	0.0530
Neo-Pentane, neo			
Hexanes Plus, C6+	0.0019	0.0008	0.0081
Argon, Ar			
Carbon Monoxide, CO			
Hydrogen, H2			
Oxygen, O2			
Helium, He			
Water, H2O			
Hydrogen Sulfide, H2S			
Totals	100.0000	5.7670	100.0000

Property	Total Sample	C6 Plus Fraction
Pressure Base	14.730	
Temperature Base	60.00	
HCDP @ Sample Pressure		
Cricondentherm	-11.078	
HV, Dry @ Base P, T	1162.01	
HV, Sat @ Base P, T	1141.79	
HV, Sat @ Sample P, T	1162.01	
Relative Density	0.6969	
C6+: 100		

Sample

Date: 10/01/2021 Type:

Tech: Wayne Sampson

Pressure: Temp.:

Gauge: H2O:

Atm. Pressure: H2S:

Remarks:

Analysis

Date: Instrument:

Tech: Cylinder:

Remarks:

Gas Composition and Properties

Effective October 1, 2021

Attachment B
Page 4 of 24

Source #: 0602225
Name: WATFORD CITY WEST BORDER

Component	Mole %	Liquid Content	Mass %
Carbon Dioxide, CO2	1.2584		2.5957
Nitrogen, N2	3.9127		5.1372
Methane, C1	69.6955		52.4035
Ethane, C2	19.6387	5.2568	27.6767
Propane, C3	4.3975	1.2126	9.0883
iso-Butane, iC4	0.2906	0.0952	0.7916
n-Butane, nC4	0.6581	0.2077	1.7927
iso-Pentane, iC5	0.0628	0.0230	0.2124
n-Pentane, nC5	0.0673	0.0244	0.2276
Neo-Pentane, neo			
Hexanes Plus, C6+	0.0184	0.0076	0.0743
Argon, Ar			
Carbon Monoxide, CO			
Hydrogen, H2			
Oxygen, O2			
Helium, He			
Water, H2O			
Hydrogen Sulfide, H2S			
Totals	100.0000	6.8280	100.0000

Property	Total Sample	C6 Plus Fraction
Pressure Base	14.730	
Temperature Base	60.00	
HCDP @ Sample Pressure		
Cricondentherm	20.216	
HV, Dry @ Base P, T	1206.02	
HV, Sat @ Base P, T	1185.03	
HV, Sat @ Sample P, T	1206.02	
Relative Density	0.7389	
C6+:		

Sample

Date: 10/01/2021 Type:

Tech: Wayne Sampson

Pressure: Temp.:

Gauge: H2O:

Atm. Pressure: H2S:

Remarks:

Analysis

Date: Instrument:

Tech: Cylinder:

Remarks:

Source Daily Summary

October 2021

Source #: 164
Name: N TIOGA TRANSFER-NESSON PLT

Pressure Base:	14.730	Contract Day:	1
Temperature Base:	60	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	0.6843	1116.3	1136.0		0.661	3.899	76.350	16.541	2.290	0.075	0.158	0.011	0.013	0.002					1373.30	
2	0.6896	1121.3	1141.1		0.692	4.041	75.552	16.909	2.530	0.083	0.173	0.010	0.011	0.000					1374.19	
3	0.6899	1124.4	1144.3		0.674	3.913	75.464	17.174	2.490	0.082	0.175	0.012	0.013	0.002					1377.61	
4	0.6837	1118.5	1138.3		0.628	3.756	76.406	16.688	2.285	0.071	0.146	0.010	0.010	0.001					1376.68	
5	0.6872	1121.4	1141.2		0.662	3.858	76.042	16.656	2.485	0.084	0.181	0.013	0.016	0.003					1376.66	
6	0.6843	1116.4	1136.2		0.675	3.867	76.509	16.265	2.422	0.077	0.164	0.011	0.011	0.000					1373.49	
7	0.6761	1102.4	1121.9		0.688	3.935	77.992	14.880	2.252	0.072	0.156	0.011	0.013	0.002					1364.40	
8	0.6786	1106.0	1125.6		0.689	3.947	77.534	15.268	2.311	0.073	0.155	0.010	0.011	0.001					1366.35	
9	0.6793	1106.9	1126.6		0.702	3.929	77.409	15.418	2.279	0.075	0.161	0.011	0.013	0.002					1366.89	
10	0.6767	1104.7	1124.3		0.692	3.845	77.778	15.265	2.185	0.069	0.146	0.009	0.010	0.000					1366.66	
11	0.6765	1104.6	1124.1		0.713	3.801	77.706	15.500	2.054	0.065	0.140	0.010	0.011	0.001					1366.72	
12	0.6730	1100.2	1119.7		0.683	3.782	78.282	15.068	1.977	0.061	0.128	0.009	0.009	0.000					1364.85	
13	0.6851	1116.5	1136.3		0.748	3.826	76.633	15.948	2.534	0.088	0.191	0.014	0.016	0.002					1372.78	
14	0.6777	1109.4	1129.1		0.734	3.581	77.723	15.517	2.181	0.076	0.163	0.012	0.013	0.000					1371.55	
15	0.6872	1119.0	1138.8		0.761	3.852	76.219	16.305	2.558	0.088	0.189	0.013	0.014	0.000					1373.73	
16	0.6899	1120.6	1140.5		0.758	4.007	75.882	16.300	2.713	0.095	0.211	0.015	0.017	0.002					1373.08	
17	0.6847	1115.4	1135.2		0.742	3.864	76.640	15.967	2.481	0.087	0.190	0.013	0.015	0.002					1371.84	
18	0.6836	1115.3	1135.1		0.752	3.747	76.837	15.943	2.412	0.086	0.190	0.014	0.016	0.002					1372.87	
19	0.6907	1122.2	1142.1		0.778	3.957	75.753	16.444	2.723	0.098	0.215	0.014	0.015	0.002					1374.20	
20	0.6865	1116.5	1136.2		0.757	3.945	76.331	16.115	2.554	0.086	0.185	0.012	0.013	0.002					1371.36	
21	0.6838	1113.5	1133.2		0.744	3.894	76.729	15.902	2.455	0.080	0.172	0.011	0.012	0.000					1370.38	
22	0.6796	1109.6	1129.2		0.748	3.733	77.372	15.646	2.244	0.073	0.158	0.011	0.013	0.002					1369.77	
23	0.6753	1103.1	1122.7		0.701	3.794	77.993	15.172	2.115	0.066	0.140	0.009	0.010	0.000					1366.14	
24	0.6811	1110.6	1130.3		0.734	3.834	77.169	15.640	2.350	0.077	0.167	0.012	0.014	0.002					1369.51	
25	0.6871	1114.2	1133.9		0.655	4.291	76.533	15.279	2.865	0.109	0.235	0.015	0.016	0.002					1367.95	
26	0.6840	1112.4	1132.1		0.646	4.125	76.956	15.226	2.698	0.100	0.217	0.014	0.016	0.002					1368.84	
27	0.7055	1133.7	1153.8		0.783	4.637	73.975	16.401	3.664	0.151	0.340	0.022	0.024	0.004					1373.60	
28	0.7048	1136.1	1156.2		0.900	4.254	73.737	17.393	3.239	0.131	0.297	0.020	0.023	0.005					1377.14	
29	0.7022	1131.2	1151.2		0.923	4.264	74.071	17.198	3.121	0.120	0.266	0.017	0.018	0.003					1373.86	
30	0.6913	1114.7	1134.4		0.882	4.315	75.776	15.896	2.757	0.105	0.233	0.015	0.017	0.004					1364.39	
31	0.6898	1114.0	1133.7		0.878	4.217	75.984	15.882	2.689	0.100	0.220	0.013	0.015	0.002					1365.08	
Avg	0.6855	1115.0	1134.9		0.735	3.958	76.495	15.994	2.513	0.087	0.189	0.013	0.014	0.002					1370.83	

Source Daily Summary

October 2021

Source #: 601
Name: TIOGA STN-ROBINSON LAKE PLNT

Pressure Base:	14.730	Contract Day:	1
Temperature Base:	60	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	0.7559	1179.9	1200.8	1200.3	0.928	6.327	66.115	20.107	5.773	0.225	0.479	0.023	0.025	0.000	0.000	0.000	0.000	0.000	1381.11	
2	0.7564	1180.5	1201.4	1200.9	0.925	6.340	66.028	20.172	5.778	0.225	0.483	0.023	0.025	0.000	0.000	0.000	0.000	0.000	1381.34	
3	0.7560	1179.9	1200.8	1200.3	0.923	6.341	66.091	20.110	5.790	0.224	0.474	0.022	0.024	0.000	0.000	0.000	0.000	0.000	1381.08	
4	0.7573	1181.2	1202.1	1201.5	0.927	6.381	65.954	20.122	5.830	0.233	0.503	0.025	0.027	0.000	0.000	0.000	0.000	0.000	1381.34	
5	0.7376	1172.0	1192.7	1192.1	0.929	5.087	68.575	20.183	4.665	0.168	0.353	0.019	0.020	0.000	0.000	0.000	0.000	0.000	1389.00	
6	0.7581	1182.3	1203.2	1202.6	0.923	6.394	65.905	20.005	6.024	0.226	0.472	0.025	0.027	0.000	0.000	0.000	0.000	0.000	1381.88	
7	0.7600	1185.3	1206.2	1205.8	0.925	6.373	65.744	20.064	6.096	0.236	0.505	0.027	0.029	0.000	0.000	0.000	0.000	0.000	1383.68	
8	0.7492	1179.5	1200.4	1200.0	0.952	5.681	67.213	20.011	5.446	0.204	0.438	0.025	0.029	0.000	0.000	0.000	0.000	0.000	1386.95	
9	0.7653	1196.0	1217.2	1216.9	0.924	6.230	65.133	20.405	6.441	0.254	0.547	0.031	0.034	0.000	0.000	0.000	0.000	0.000	1391.33	
10	0.7633	1191.5	1212.6	1212.2	0.921	6.308	65.407	20.220	6.277	0.253	0.549	0.031	0.034	0.000	0.000	0.000	0.000	0.000	1387.96	
11	0.7611	1188.6	1209.7	1209.3	0.920	6.290	65.665	20.123	6.143	0.251	0.545	0.030	0.033	0.000	0.000	0.000	0.000	0.000	1386.59	
12	0.7480	1177.9	1198.8	1198.5	0.941	5.685	67.201	20.230	5.261	0.202	0.432	0.023	0.025	0.000	0.000	0.000	0.000	0.000	1386.16	
13	0.7498	1178.7	1199.6	1199.3	0.965	5.767	66.996	20.197	5.388	0.209	0.433	0.024	0.021	0.000	0.000	0.000	0.000	0.000	1385.39	
14	0.7549	1187.0	1208.0	1207.7	0.939	5.780	66.496	20.235	5.786	0.222	0.480	0.030	0.032	0.000	0.000	0.000	0.000	0.000	1390.43	
15	0.7114	1151.8	1172.2	1171.9	0.973	3.799	72.182	19.542	3.176	0.099	0.202	0.012	0.014	0.000	0.000	0.000	0.000	0.000	1389.99	
16	0.7280	1162.1	1182.7	1182.3	0.948	4.766	69.935	19.693	4.174	0.146	0.303	0.017	0.018	0.000	0.000	0.000	0.000	0.000	1386.41	
17	0.7607	1187.7	1208.7	1208.3	0.921	6.309	65.694	20.028	6.271	0.229	0.492	0.027	0.029	0.000	0.000	0.000	0.000	0.000	1385.85	
18	0.7581	1185.0	1206.0	1205.6	0.928	6.220	65.954	20.139	5.984	0.231	0.491	0.026	0.028	0.000	0.000	0.000	0.000	0.000	1385.07	
19	0.7512	1176.4	1197.2	1196.9	0.931	6.097	66.789	19.935	5.541	0.212	0.448	0.023	0.025	0.000	0.000	0.000	0.000	0.000	1381.32	
20	0.7492	1177.9	1198.8	1198.5	0.940	5.796	67.113	20.045	5.413	0.206	0.438	0.024	0.025	0.000	0.000	0.000	0.000	0.000	1385.12	
21	0.7579	1182.6	1203.6	1203.2	0.924	6.350	65.969	19.977	6.028	0.226	0.475	0.025	0.026	0.000	0.000	0.000	0.000	0.000	1382.49	
22	0.7529	1177.1	1197.9	1197.6	0.932	6.205	66.591	19.833	5.770	0.202	0.420	0.022	0.024	0.000	0.000	0.000	0.000	0.000	1380.64	
23	0.7473	1176.7	1197.6	1197.3	0.954	5.675	67.351	20.022	5.371	0.191	0.392	0.022	0.023	0.000	0.000	0.000	0.000	0.000	1385.39	
24	0.7568	1185.5	1206.5	1206.2	0.941	6.038	66.120	20.275	5.902	0.218	0.450	0.026	0.029	0.000	0.000	0.000	0.000	0.000	1386.93	
25	0.7664	1196.0	1217.1	1216.8	0.911	6.362	65.015	20.230	6.620	0.255	0.545	0.030	0.030	0.000	0.000	0.000	0.000	0.000	1390.29	
26	0.7735	1209.4	1230.8	1230.4	0.914	6.204	64.327	20.554	6.963	0.299	0.659	0.040	0.041	0.000	0.000	0.000	0.000	0.000	1399.42	
27	0.7621	1188.6	1209.7	1209.3	0.918	6.397	65.526	20.065	6.212	0.263	0.563	0.029	0.029	0.000	0.000	0.000	0.000	0.000	1385.68	
28	0.7385	1006.1	1023.9	1023.6	0.806	15.515	65.696	13.907	3.559	0.146	0.274	0.048	0.049	0.000	0.000	0.000	0.000	0.000	1197.37	
29	0.7367	1166.4	1187.0	1186.7	1.066	5.149	68.361	20.720	4.139	0.164	0.358	0.020	0.022	0.000	0.000	0.000	0.000	0.000	1383.13	
30	0.7589	1178.5	1199.4	1199.1	0.932	6.687	65.725	19.901	5.974	0.231	0.495	0.027	0.028	0.000	0.000	0.000	0.000	0.000	1376.73	
31	0.7570	1176.8	1197.7	1197.4	0.930	6.611	66.016	19.804	5.853	0.232	0.498	0.027	0.029	0.000	0.000	0.000	0.000	0.000	1376.54	
Avg	0.7529	1176.0	1196.5	1196.1	0.933	6.296	66.545	19.899	5.602	0.216	0.458	0.026	0.028	0.000	0.000	0.000	0.000	0.000	1379.12	

Source Daily Summary

October 2021

Source #: 091
Name: MNT BRD-PLRMO BRD-BIS STN

Pressure Base:	14.730	Contract Day:	1
Temperature Base:	60	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	0.7580	1180.5	1201.4	1200.8	0.932	6.485	65.823	20.077	5.927	0.229	0.480	0.023	0.024	0.000	0.000	0.000	0.000	0.000	1379.83	
2	0.7601	1183.6	1204.6	1204.0	0.939	6.476	65.601	20.175	5.996	0.243	0.518	0.025	0.027	0.000	0.000	0.000	0.000	0.000	1381.62	
3	0.7624	1187.0	1208.0	1207.5	0.937	6.487	65.375	20.158	6.217	0.247	0.523	0.027	0.029	0.000	0.000	0.000	0.000	0.000	1383.48	
4	0.7594	1181.1	1202.0	1201.5	0.937	6.560	65.750	19.901	6.071	0.237	0.493	0.025	0.027	0.000	0.000	0.000	0.000	0.000	1379.41	
5	0.7643	1190.1	1211.1	1210.6	0.936	6.475	65.214	20.124	6.421	0.248	0.522	0.029	0.031	0.000	0.000	0.000	0.000	0.000	1385.37	
6	0.7646	1190.7	1211.8	1211.2	0.939	6.458	65.206	20.106	6.463	0.246	0.521	0.029	0.032	0.000	0.000	0.000	0.000	0.000	1385.85	
7	0.7679	1197.1	1218.3	1217.8	0.936	6.388	64.825	20.332	6.625	0.263	0.562	0.032	0.035	0.000	0.000	0.000	0.000	0.000	1390.24	
8	0.7647	1191.2	1212.3	1211.8	0.932	6.451	65.230	20.098	6.407	0.260	0.557	0.031	0.034	0.000	0.000	0.000	0.000	0.000	1386.31	
9	0.7637	1189.6	1210.7	1210.2	0.929	6.457	65.329	20.084	6.324	0.259	0.554	0.030	0.033	0.000	0.000	0.000	0.000	0.000	1385.41	
10	0.7652	1193.0	1214.1	1213.6	0.930	6.391	65.164	20.170	6.480	0.257	0.545	0.030	0.032	0.000	0.000	0.000	0.000	0.000	1387.97	
11	0.7698	1200.4	1221.7	1221.2	0.923	6.375	64.652	20.322	6.839	0.259	0.558	0.033	0.037	0.000	0.000	0.000	0.000	0.000	1392.43	
12	0.7618	1185.8	1206.8	1206.4	0.926	6.513	65.517	19.954	6.294	0.240	0.501	0.027	0.029	0.000	0.000	0.000	0.000	0.000	1382.74	
13	0.7609	1184.7	1205.7	1205.2	0.928	6.498	65.615	19.953	6.209	0.240	0.501	0.027	0.029	0.000	0.000	0.000	0.000	0.000	1382.21	
14	0.7668	1195.0	1216.1	1215.7	0.929	6.424	64.972	20.182	6.633	0.257	0.540	0.030	0.032	0.000	0.000	0.000	0.000	0.000	1388.78	
15	0.7768	1211.6	1233.1	1232.6	0.934	6.331	63.957	20.388	7.469	0.257	0.581	0.039	0.043	0.000	0.000	0.000	0.000	0.000	1399.06	
16	0.7610	1184.9	1205.9	1205.4	0.934	6.483	65.609	19.966	6.209	0.241	0.503	0.027	0.029	0.000	0.000	0.000	0.000	0.000	1382.37	
17	0.7621	1187.3	1208.4	1207.9	0.936	6.437	65.522	19.996	6.279	0.247	0.525	0.028	0.030	0.000	0.000	0.000	0.000	0.000	1384.18	
18	0.7623	1187.5	1208.5	1208.1	0.930	6.455	65.448	20.088	6.241	0.249	0.529	0.028	0.031	0.000	0.000	0.000	0.000	0.000	1384.19	
19	0.7602	1183.5	1204.5	1204.0	0.933	6.500	65.700	19.900	6.184	0.237	0.492	0.026	0.028	0.000	0.000	0.000	0.000	0.000	1381.41	
20	0.7613	1184.6	1205.5	1205.1	0.941	6.526	65.568	19.883	6.324	0.230	0.475	0.026	0.028	0.000	0.000	0.000	0.000	0.000	1381.65	
21	0.7676	1195.7	1216.8	1216.4	0.943	6.436	64.755	20.431	6.597	0.252	0.523	0.031	0.034	0.000	0.000	0.000	0.000	0.000	1388.86	
22	0.7648	1192.1	1213.2	1212.8	0.943	6.391	65.159	20.205	6.490	0.243	0.507	0.029	0.032	0.000	0.000	0.000	0.000	0.000	1387.27	
23	0.7660	1194.4	1215.5	1215.1	0.928	6.383	65.068	20.249	6.478	0.265	0.564	0.031	0.034	0.000	0.000	0.000	0.000	0.000	1388.86	
24	0.7647	1192.0	1213.1	1212.7	0.929	6.411	65.207	20.165	6.424	0.257	0.544	0.030	0.033	0.000	0.000	0.000	0.000	0.000	1387.20	
25	0.7649	1191.9	1213.0	1212.6	0.927	6.431	65.205	20.083	6.515	0.250	0.526	0.030	0.032	0.000	0.000	0.000	0.000	0.000	1386.98	
26	0.7731	1206.7	1228.1	1227.7	0.927	6.298	64.359	20.391	7.071	0.275	0.603	0.037	0.040	0.000	0.000	0.000	0.000	0.000	1396.71	
27	0.7652	1192.8	1213.9	1213.5	0.932	6.400	65.208	20.120	6.441	0.264	0.567	0.032	0.036	0.000	0.000	0.000	0.000	0.000	1387.73	
28	0.7605	1183.9	1204.9	1204.4	0.932	6.506	65.698	19.860	6.198	0.242	0.507	0.027	0.029	0.000	0.000	0.000	0.000	0.000	1381.58	
29	0.7617	1185.8	1206.8	1206.4	0.937	6.487	65.552	19.988	6.192	0.248	0.535	0.029	0.031	0.000	0.000	0.000	0.000	0.000	1382.81	
30	0.7597	1182.1	1203.0	1202.6	0.930	6.539	65.818	19.771	6.121	0.243	0.519	0.028	0.030	0.000	0.000	0.000	0.000	0.000	1380.27	
31	0.7600	1181.9	1202.8	1202.4	0.930	6.580	65.798	19.713	6.151	0.245	0.524	0.028	0.030	0.000	0.000	0.000	0.000	0.000	1379.76	
Avg	0.7639	1190.0	1211.0	1210.5	0.933	6.453	65.287	20.091	6.396	0.249	0.529	0.029	0.032	0.000	0.000	0.000	0.000	0.000	1385.57	

Gas Composition and Properties

Effective October 1, 2021

Attachment B
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Source #: 2501030
Name: LIGNITE PLANT

Component	Mole %	Liquid Content	Mass %	Property	Total Sample	C6 Plus Fraction
Carbon Dioxide, CO2	0.2283		0.5237	Pressure Base	14.730	
Nitrogen, N2	2.9631		4.3268	Temperature Base	60.00	
Methane, C1	79.4957		66.4767	HCDP @ Sample Pressure		
Ethane, C2	15.2390	4.0765	23.8852	Cricondentherm	-32.804	
Propane, C3	2.0456	0.5637	4.7019	HV, Dry @ Base P, T	1130.73	
iso-Butane, iC4	0.0244	0.0080	0.0739	HV, Sat @ Base P, T	1111.05	
n-Butane, nC4	0.0039	0.0012	0.0118	HV, Sat @ Sample P, T	1130.73	
iso-Pentane, iC5				Relative Density	0.6640	
n-Pentane, nC5						
Neo-Pentane, neo						
Hexanes Plus, C6+						
Argon, Ar						
Carbon Monoxide, CO						
Hydrogen, H2						
Oxygen, O2						
Helium, He						
Water, H2O						
Hydrogen Sulfide, H2S						
				C6+: 100		
Totals	100.0000	4.6490	100.0000			

Sample

Date: 10/01/2021 Type:

Tech: Wayne Sampson

Pressure: Temp.:

Gauge: H2O:

Atm. Pressure: H2S:

Remarks:

Analysis

Date: Instrument:

Tech: Cylinder:

Remarks:

Gas Composition and Properties

Effective October 1, 2021

Attachment B
Page 9 of 24

Source #: 3002013
Name: EPPING BORDER

Component	Mole %	Liquid Content	Mass %	Property	Total Sample	C6 Plus Fraction
Carbon Dioxide, CO2	0.8463		1.8833	Pressure Base	14.730	
Nitrogen, N2	3.1168		4.4149	Temperature Base	60.00	
Methane, C1	76.6937		62.2126	HCDP @ Sample Pressure		
Ethane, C2	16.7751	4.4881	25.5053	Cricondentherm	-17.339	
Propane, C3	2.2371	0.6166	4.9880	HV, Dry @ Base P, T	1144.79	
iso-Butane, iC4	0.0970	0.0318	0.2851	HV, Sat @ Base P, T	1124.87	
n-Butane, nC4	0.2029	0.0640	0.5963	HV, Sat @ Sample P, T	1144.79	
iso-Pentane, iC5	0.0140	0.0051	0.0511	Relative Density	0.6846	
n-Pentane, nC5	0.0157	0.0057	0.0573			
Neo-Pentane, neo						
Hexanes Plus, C6+	0.0014	0.0006	0.0061			
Argon, Ar						
Carbon Monoxide, CO						
Hydrogen, H2						
Oxygen, O2						
Helium, He						
Water, H2O						
Hydrogen Sulfide, H2S						
				C6+: 100		
Totals	100.0000	5.2130	100.0000			

Sample

Date: 10/01/2021 Type:

Tech: Wayne Sampson

Pressure: Temp.:

Gauge: H2O:

Atm. Pressure: H2S:

Remarks:

Analysis

Date: Instrument:

Tech: Cylinder:

Remarks:

*** End of Report ***

Source Daily Summary

October 2021

Source #: 603
Name: TIOGA STN-COUNTY LINE PLANT

Pressure Base:	14.730	Contract Day:	1
Temperature Base:	60	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	0.6995	1144.0	1164.2	1163.7	0.965	3.178	73.854	19.246	2.513	0.073	0.149	0.010	0.012	0.000	0.000	0.000	0.000	0.000	1392.01	
2	0.7012	1145.8	1166.1	1165.6	0.968	3.221	73.681	19.247	2.614	0.078	0.161	0.012	0.016	0.000	0.000	0.000	0.000	0.000	1392.51	
3	0.7013	1145.5	1165.8	1165.3	0.970	3.240	73.597	19.342	2.600	0.076	0.153	0.010	0.012	0.000	0.000	0.000	0.000	0.000	1392.13	
4	0.7039	1151.0	1171.4	1170.8	0.952	3.187	73.130	19.820	2.652	0.077	0.157	0.012	0.015	0.000	0.000	0.000	0.000	0.000	1396.10	
5	0.7044	1152.2	1172.6	1172.1	0.931	3.186	73.108	19.754	2.758	0.080	0.160	0.010	0.012	0.000	0.000	0.000	0.000	0.000	1397.14	
6	0.7043	1151.5	1171.9	1171.4	0.935	3.216	73.238	19.539	2.777	0.085	0.178	0.014	0.018	0.000	0.000	0.000	0.000	0.000	1396.33	
7	0.7049	1151.9	1172.3	1171.8	0.968	3.195	73.169	19.554	2.825	0.086	0.177	0.012	0.014	0.000	0.000	0.000	0.000	0.000	1396.24	
8	0.7000	1142.9	1163.2	1162.7	0.997	3.240	73.736	19.328	2.451	0.072	0.152	0.011	0.014	0.000	0.000	0.000	0.000	0.000	1390.24	
9	0.7000	1143.1	1163.4	1162.9	0.977	3.258	73.649	19.450	2.437	0.069	0.141	0.009	0.010	0.000	0.000	0.000	0.000	0.000	1390.48	
10	0.7016	1145.9	1166.2	1165.7	0.984	3.229	73.361	19.764	2.417	0.071	0.148	0.011	0.014	0.000	0.000	0.000	0.000	0.000	1392.27	
11	0.7026	1147.4	1167.7	1167.2	0.974	3.246	73.226	19.794	2.515	0.074	0.150	0.010	0.011	0.000	0.000	0.000	0.000	0.000	1393.11	
12	0.7027	1146.8	1167.1	1166.7	0.999	3.253	73.163	19.911	2.427	0.072	0.151	0.011	0.013	0.000	0.000	0.000	0.000	0.000	1392.30	
13	0.7030	1146.5	1166.8	1166.4	1.018	3.268	73.149	19.863	2.449	0.079	0.156	0.008	0.009	0.000	0.000	0.000	0.000	0.000	1391.67	
14	0.7013	1144.4	1164.7	1164.3	0.991	3.275	73.497	19.518	2.462	0.077	0.153	0.012	0.014	0.000	0.000	0.000	0.000	0.000	1390.82	
15	0.7005	1144.0	1164.3	1163.8	0.985	3.239	73.634	19.409	2.495	0.074	0.146	0.009	0.011	0.000	0.000	0.000	0.000	0.000	1391.08	
16	0.7024	1146.6	1166.9	1166.4	0.993	3.250	73.330	19.632	2.542	0.076	0.154	0.010	0.012	0.000	0.000	0.000	0.000	0.000	1392.26	
17	0.7023	1145.5	1165.8	1165.3	0.993	3.309	73.199	19.829	2.427	0.072	0.150	0.010	0.011	0.000	0.000	0.000	0.000	0.000	1391.05	
18	0.7027	1146.2	1166.5	1166.0	0.993	3.305	73.249	19.687	2.503	0.076	0.160	0.012	0.015	0.000	0.000	0.000	0.000	0.000	1391.46	
19	0.7028	1146.5	1166.8	1166.4	0.992	3.292	73.259	19.652	2.547	0.076	0.159	0.011	0.012	0.000	0.000	0.000	0.000	0.000	1391.81	
20	0.7041	1147.0	1167.3	1166.8	1.027	3.333	72.977	19.918	2.483	0.076	0.160	0.011	0.014	0.000	0.000	0.000	0.000	0.000	1391.08	
21	0.7023	1145.3	1165.5	1165.1	0.995	3.316	73.267	19.692	2.484	0.073	0.151	0.010	0.011	0.000	0.000	0.000	0.000	0.000	1390.80	
22	0.7022	1144.8	1165.1	1164.6	0.998	3.334	73.318	19.606	2.490	0.075	0.157	0.011	0.013	0.000	0.000	0.000	0.000	0.000	1390.31	
23	0.7019	1144.8	1165.0	1164.6	0.990	3.313	73.405	19.525	2.512	0.075	0.158	0.011	0.012	0.000	0.000	0.000	0.000	0.000	1390.63	
24	0.7011	1143.3	1163.5	1163.1	0.995	3.327	73.500	19.470	2.457	0.073	0.153	0.011	0.013	0.000	0.000	0.000	0.000	0.000	1389.56	
25	0.7009	1144.0	1164.3	1163.8	0.958	3.321	73.498	19.506	2.472	0.073	0.151	0.010	0.011	0.000	0.000	0.000	0.000	0.000	1390.63	
26	0.7009	1144.0	1164.3	1163.8	0.958	3.321	73.498	19.506	2.472	0.073	0.151	0.010	0.011	0.000	0.000	0.000	0.000	0.000	1390.63	
27	0.7009	1144.0	1164.3	1163.8	0.958	3.321	73.498	19.506	2.472	0.073	0.151	0.010	0.011	0.000	0.000	0.000	0.000	0.000	1390.63	
28	0.7061	1146.0	1166.3	1165.9	1.050	3.547	72.552	20.138	2.426	0.082	0.179	0.012	0.015	0.000	0.000	0.000	0.000	0.000	1387.99	
29	0.7114	1148.5	1168.8	1168.3	1.198	3.668	71.660	20.779	2.356	0.092	0.211	0.016	0.020	0.000	0.000	0.000	0.000	0.000	1385.75	
30	0.7087	1136.2	1156.3	1155.9	1.224	4.123	72.043	19.962	2.359	0.082	0.181	0.012	0.014	0.000	0.000	0.000	0.000	0.000	1373.57	
31	0.7043	1131.2	1151.3	1150.8	1.247	3.981	72.929	19.253	2.299	0.080	0.180	0.014	0.017	0.000	0.000	0.000	0.000	0.000	1371.79	
Avg	0.7028	1145.0	1165.7	1165.2	1.006	3.338	73.238	19.652	2.506	0.076	0.159	0.011	0.013	0.000	0.000	0.000	0.000	0.000	1390.46	

Source Daily Summary

October 2021

Source #: 043
Name: BISMARCK STN-CLEVELAND STN

Pressure Base:	14.730	Contract Day:	1
Temperature Base:	60	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	0.7576	1182.2	1203.1	1202.0	0.914	6.368	65.894	20.169	5.887	0.233	0.488	0.023	0.023	0.000	0.000	0.000	0.000	0.000	1382.25	
2	0.7592	1184.2	1205.1	1203.9	0.921	6.384	65.793	20.105	5.969	0.247	0.530	0.026	0.027	0.000	0.000	0.000	0.000	0.000	1383.13	
3	0.7611	1187.1	1208.1	1206.8	0.918	6.392	65.605	20.075	6.185	0.248	0.523	0.027	0.028	0.000	0.000	0.000	0.000	0.000	1384.73	
4	0.7590	1183.1	1204.1	1202.9	0.918	6.436	65.860	19.896	6.104	0.239	0.496	0.025	0.026	0.000	0.000	0.000	0.000	0.000	1382.06	
5	0.7653	1194.0	1215.1	1213.9	0.917	6.360	65.180	20.169	6.511	0.258	0.544	0.030	0.032	0.000	0.000	0.000	0.000	0.000	1389.00	
6	0.7627	1189.5	1210.6	1209.5	0.921	6.383	65.461	20.153	6.295	0.236	0.496	0.026	0.028	0.000	0.000	0.000	0.000	0.000	1386.19	
7	0.7629	1190.7	1211.8	1210.6	0.919	6.334	65.404	20.264	6.329	0.216	0.479	0.024	0.030	0.000	0.000	0.000	0.000	0.000	1387.32	
8	0.7635	1191.4	1212.5	1211.4	0.913	6.353	65.427	20.056	6.382	0.258	0.550	0.029	0.032	0.000	0.000	0.000	0.000	0.000	1387.68	
9	0.7617	1188.5	1209.5	1208.4	0.911	6.373	65.584	20.039	6.250	0.255	0.532	0.028	0.029	0.000	0.000	0.000	0.000	0.000	1385.86	
10	0.7646	1194.4	1215.6	1214.4	0.910	6.283	65.272	20.187	6.493	0.258	0.538	0.028	0.030	0.000	0.000	0.000	0.000	0.000	1390.12	
11	0.7682	1199.6	1220.9	1219.5	0.903	6.308	64.749	20.390	6.938	0.215	0.445	0.022	0.029	0.000	0.000	0.000	0.000	0.000	1392.94	
12	0.7602	1185.7	1206.7	1205.3	0.908	6.411	65.740	19.900	6.270	0.231	0.489	0.025	0.026	0.000	0.000	0.000	0.000	0.000	1383.89	
13	0.7471	1163.9	1184.5	1183.3	0.919	6.494	66.888	20.192	5.098	0.100	0.285	0.009	0.015	0.000	0.000	0.000	0.000	0.000	1370.24	
14	0.7613	1188.5	1209.5	1208.4	0.906	6.344	65.384	20.021	7.099	0.052	0.177	0.000	0.017	0.000	0.000	0.000	0.000	0.000	1386.22	
15	0.7760	1213.6	1235.0	1234.0	0.915	6.178	63.855	20.478	8.267	0.096	0.189	0.001	0.020	0.000	0.000	0.000	0.000	0.000	1401.95	
16	0.7476	1164.9	1185.5	1184.4	0.929	6.466	66.857	20.257	5.262	0.036	0.178	0.000	0.013	0.000	0.000	0.000	0.000	0.000	1371.03	
17	0.7299	1136.5	1156.6	1155.6	0.933	6.532	68.856	20.534	2.751	0.140	0.144	0.000	0.108	0.000	0.000	0.000	0.000	0.000	1353.71	
18	0.7513	1174.4	1195.2	1194.0	0.898	6.393	66.632	19.816	5.911	0.074	0.206	0.051	0.018	0.000	0.000	0.000	0.000	0.000	1378.77	
19	0.7601	1185.9	1206.9	1205.8	0.913	6.379	65.790	19.826	6.351	0.242	0.457	0.021	0.021	0.000	0.000	0.000	0.000	0.000	1384.25	
20	0.7592	1183.1	1204.0	1203.0	0.920	6.454	65.921	19.688	6.257	0.232	0.478	0.025	0.025	0.000	0.000	0.000	0.000	0.000	1381.80	
21	0.7635	1191.1	1212.2	1211.3	0.925	6.359	65.304	20.224	6.376	0.246	0.506	0.029	0.031	0.000	0.000	0.000	0.000	0.000	1387.27	
22	0.7639	1193.1	1214.3	1213.4	0.925	6.276	65.244	20.352	6.395	0.241	0.505	0.030	0.032	0.000	0.000	0.000	0.000	0.000	1389.25	
23	0.7637	1192.9	1214.0	1213.1	0.909	6.289	65.375	20.208	6.334	0.263	0.559	0.031	0.033	0.000	0.000	0.000	0.000	0.000	1389.21	
24	0.7638	1192.9	1214.0	1213.1	0.910	6.301	65.355	20.186	6.374	0.261	0.551	0.030	0.031	0.000	0.000	0.000	0.000	0.000	1389.08	
25	0.7643	1193.5	1214.7	1213.6	0.908	6.309	65.334	20.103	6.488	0.257	0.539	0.030	0.031	0.000	0.000	0.000	0.000	0.000	1389.38	
26	0.7702	1203.8	1225.1	1224.1	0.908	6.233	64.744	20.265	6.926	0.267	0.585	0.035	0.037	0.000	0.000	0.000	0.000	0.000	1395.95	
27	0.7659	1196.7	1217.9	1216.9	0.912	6.259	65.175	20.240	6.488	0.273	0.586	0.033	0.035	0.000	0.000	0.000	0.000	0.000	1391.61	
28	0.7606	1186.8	1207.8	1206.8	0.914	6.370	65.708	19.995	6.187	0.248	0.522	0.027	0.028	0.000	0.000	0.000	0.000	0.000	1384.84	
29	0.7597	1185.2	1206.2	1205.3	0.915	6.380	65.826	19.941	6.104	0.248	0.529	0.028	0.030	0.000	0.000	0.000	0.000	0.000	1383.86	
30	0.7584	1182.5	1203.4	1202.5	0.912	6.423	65.979	19.846	6.020	0.244	0.520	0.027	0.029	0.000	0.000	0.000	0.000	0.000	1381.90	
31	0.7588	1182.3	1203.2	1202.3	0.910	6.476	65.965	19.735	6.087	0.245	0.524	0.028	0.029	0.000	0.000	0.000	0.000	0.000	1381.29	
Avg	0.7604	1187.0	1207.5	1206.4	0.915	6.365	65.683	20.107	6.206	0.215	0.456	0.024	0.030	0.000	0.000	0.000	0.000	0.000	1384.74	

Source Daily Summary

October 2021

Source #: 063
Name: CLEVELAND STN-MAPLETON

Pressure Base:	14.730	Contract Day:	1
Temperature Base:	60	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	0.7584	1182.3	1203.2	1203.0	0.928	6.416	65.817	20.132	5.919	0.239	0.500	0.024	0.025	0.000	0.000	0.000	0.000	0.000	1381.63	
2	0.7577	1181.4	1202.4	1202.1	0.923	6.405	65.892	20.122	5.897	0.232	0.483	0.023	0.024	0.000	0.000	0.000	0.000	0.000	1381.33	
3	0.7584	1182.1	1203.1	1202.8	0.929	6.419	65.841	20.105	5.907	0.240	0.508	0.025	0.026	0.000	0.000	0.000	0.000	0.000	1381.49	
4	0.7609	1186.0	1207.0	1206.1	0.927	6.425	65.581	20.130	6.114	0.248	0.521	0.027	0.028	0.000	0.000	0.000	0.000	0.000	1383.66	
5	0.7592	1182.6	1203.6	1202.8	0.926	6.471	65.794	19.955	6.067	0.239	0.495	0.026	0.027	0.000	0.000	0.000	0.000	0.000	1381.31	
6	0.7659	1194.6	1215.7	1214.7	0.927	6.370	65.057	20.258	6.535	0.257	0.536	0.030	0.032	0.000	0.000	0.000	0.000	0.000	1389.13	
7	0.7652	1193.6	1214.8	1213.7	0.929	6.355	65.173	20.181	6.523	0.250	0.527	0.030	0.032	0.000	0.000	0.000	0.000	0.000	1388.69	
8	0.7660	1195.1	1216.3	1215.3	0.926	6.340	65.089	20.258	6.505	0.262	0.555	0.032	0.034	0.000	0.000	0.000	0.000	0.000	1389.76	
9	0.7638	1191.4	1212.5	1211.5	0.922	6.378	65.365	20.090	6.363	0.261	0.556	0.032	0.033	0.000	0.000	0.000	0.000	0.000	1387.29	
10	0.7624	1189.1	1210.1	1209.1	0.920	6.391	65.497	20.076	6.252	0.258	0.546	0.030	0.031	0.000	0.000	0.000	0.000	0.000	1385.87	
11	0.7651	1194.4	1215.6	1215.3	0.919	6.316	65.204	20.215	6.471	0.262	0.551	0.031	0.032	0.000	0.000	0.000	0.000	0.000	1389.69	
12	0.7683	1199.6	1220.8	1220.5	0.917	6.303	64.829	20.358	6.701	0.263	0.560	0.033	0.035	0.000	0.000	0.000	0.000	0.000	1392.77	
13	0.7607	1185.7	1206.7	1206.4	0.915	6.439	65.666	19.931	6.277	0.233	0.486	0.027	0.027	0.000	0.000	0.000	0.000	0.000	1383.56	
14	0.7602	1185.1	1206.1	1205.9	0.914	6.430	65.726	19.951	6.186	0.242	0.498	0.027	0.027	0.000	0.000	0.000	0.000	0.000	1383.34	
15	0.7632	1190.4	1211.4	1211.2	0.916	6.389	65.399	20.083	6.381	0.252	0.522	0.028	0.029	0.000	0.000	0.000	0.000	0.000	1386.69	
16	0.7765	1212.9	1234.4	1234.2	0.927	6.242	63.995	20.476	7.437	0.260	0.582	0.039	0.042	0.000	0.000	0.000	0.000	0.000	1400.80	
17	0.7614	1187.2	1208.3	1208.0	0.929	6.390	65.587	20.033	6.266	0.240	0.501	0.027	0.028	0.000	0.000	0.000	0.000	0.000	1384.71	
18	0.7606	1186.2	1207.2	1207.0	0.930	6.375	65.702	19.999	6.177	0.245	0.515	0.027	0.028	0.000	0.000	0.000	0.000	0.000	1384.25	
19	0.7624	1189.4	1210.5	1210.3	0.919	6.365	65.470	20.146	6.260	0.252	0.531	0.028	0.029	0.000	0.000	0.000	0.000	0.000	1386.35	
20	0.7608	1186.2	1207.3	1206.5	0.924	6.400	65.668	20.005	6.193	0.245	0.510	0.027	0.028	0.000	0.000	0.000	0.000	0.000	1384.11	
21	0.7595	1182.9	1203.9	1202.8	0.929	6.474	65.799	19.848	6.205	0.228	0.466	0.025	0.026	0.000	0.000	0.000	0.000	0.000	1381.40	
22	0.7650	1192.6	1213.7	1212.7	0.938	6.386	65.120	20.273	6.468	0.248	0.506	0.029	0.031	0.000	0.000	0.000	0.000	0.000	1387.67	
23	0.7654	1194.7	1215.9	1214.9	0.940	6.292	65.063	20.408	6.484	0.244	0.505	0.031	0.033	0.000	0.000	0.000	0.000	0.000	1389.78	
24	0.7654	1194.8	1215.9	1214.9	0.926	6.305	65.168	20.272	6.440	0.266	0.559	0.032	0.033	0.000	0.000	0.000	0.000	0.000	1389.89	
25	0.7639	1192.2	1213.4	1213.1	0.922	6.335	65.325	20.177	6.379	0.259	0.540	0.031	0.032	0.000	0.000	0.000	0.000	0.000	1388.21	
26	0.7639	1192.0	1213.1	1212.9	0.918	6.354	65.332	20.115	6.444	0.254	0.525	0.030	0.030	0.000	0.000	0.000	0.000	0.000	1387.96	
27	0.7686	1199.9	1221.2	1220.2	0.918	6.305	64.858	20.222	6.821	0.256	0.550	0.034	0.035	0.000	0.000	0.000	0.000	0.000	1392.92	
28	0.7663	1196.8	1218.0	1217.6	0.925	6.276	65.130	20.231	6.508	0.274	0.585	0.035	0.036	0.000	0.000	0.000	0.000	0.000	1391.32	
29	0.7603	1185.5	1206.5	1206.3	0.918	6.410	65.758	19.920	6.180	0.244	0.513	0.028	0.029	0.000	0.000	0.000	0.000	0.000	1383.65	
30	0.7586	1182.5	1203.4	1203.3	0.919	6.436	65.956	19.816	6.070	0.239	0.507	0.028	0.029	0.000	0.000	0.000	0.000	0.000	1381.67	
31	0.7580	1181.1	1202.0	1201.8	0.919	6.465	66.015	19.794	6.004	0.240	0.508	0.027	0.029	0.000	0.000	0.000	0.000	0.000	1380.60	
Avg	0.7630	1190.0	1211.1	1210.5	0.924	6.376	65.415	20.115	6.337	0.249	0.524	0.029	0.030	0.000	0.000	0.000	0.000	0.000	1386.50	

Source Daily Summary

October 2021

Source #: 061
Name: CLEVELAND STN-GRAFTON BDR

Pressure Base:	14.730	Contract Day:	1
Temperature Base:	60	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	0.7588	1182.9	1203.8	1203.7	0.928	6.413	65.786	20.136	5.940	0.241	0.506	0.025	0.025	0.000	0.000	0.000	0.000	0.000	1381.98	
2	0.7581	1182.2	1203.1	1202.9	0.923	6.404	65.845	20.134	5.925	0.234	0.488	0.023	0.024	0.000	0.000	0.000	0.000	0.000	1381.76	
3	0.7577	1181.0	1201.9	1201.3	0.931	6.429	65.932	20.027	5.891	0.238	0.501	0.025	0.026	0.000	0.000	0.000	0.000	0.000	1380.70	
4	0.7611	1186.8	1207.8	1207.2	0.928	6.394	65.535	20.202	6.124	0.247	0.517	0.026	0.027	0.000	0.000	0.000	0.000	0.000	1384.45	
5	0.7571	1178.6	1199.5	1198.7	0.929	6.516	66.038	19.816	5.941	0.232	0.478	0.025	0.026	0.000	0.000	0.000	0.000	0.000	1378.51	
6	0.7643	1191.5	1212.6	1212.0	0.927	6.405	65.247	20.159	6.422	0.252	0.526	0.030	0.031	0.000	0.000	0.000	0.000	0.000	1387.00	
7	0.7651	1193.4	1214.6	1214.0	0.930	6.356	65.187	20.171	6.515	0.251	0.528	0.030	0.032	0.000	0.000	0.000	0.000	0.000	1388.54	
8	0.7657	1194.7	1215.9	1215.3	0.926	6.341	65.120	20.249	6.480	0.262	0.556	0.032	0.034	0.000	0.000	0.000	0.000	0.000	1389.51	
9	0.7638	1191.3	1212.4	1211.9	0.923	6.379	65.372	20.080	6.363	0.261	0.557	0.032	0.034	0.000	0.000	0.000	0.000	0.000	1387.24	
10	0.7625	1189.2	1210.3	1209.7	0.920	6.389	65.488	20.083	6.255	0.258	0.546	0.030	0.031	0.000	0.000	0.000	0.000	0.000	1385.97	
11	0.7644	1193.3	1214.5	1214.2	0.921	6.315	65.281	20.192	6.427	0.259	0.545	0.030	0.031	0.000	0.000	0.000	0.000	0.000	1389.04	
12	0.7693	1201.2	1222.5	1222.3	0.921	6.286	64.746	20.375	6.760	0.268	0.574	0.035	0.037	0.000	0.000	0.000	0.000	0.000	1393.82	
13	0.7607	1185.5	1206.5	1206.3	0.917	6.448	65.668	19.922	6.275	0.232	0.485	0.026	0.027	0.000	0.000	0.000	0.000	0.000	1383.31	
14	0.7608	1186.2	1207.2	1207.1	0.914	6.422	65.660	19.973	6.225	0.244	0.505	0.027	0.028	0.000	0.000	0.000	0.000	0.000	1384.02	
15	0.7629	1189.9	1210.9	1210.8	0.915	6.396	65.430	20.064	6.365	0.251	0.520	0.029	0.030	0.000	0.000	0.000	0.000	0.000	1386.36	
16	0.7721	1205.0	1226.4	1226.2	0.935	6.295	64.366	20.405	7.202	0.235	0.505	0.028	0.028	0.000	0.000	0.000	0.000	0.000	1395.69	
17	0.7617	1187.7	1208.7	1208.6	0.934	6.388	65.552	20.036	6.291	0.241	0.504	0.027	0.028	0.000	0.000	0.000	0.000	0.000	1384.91	
18	0.7604	1185.9	1206.9	1206.8	0.932	6.374	65.727	19.990	6.162	0.244	0.513	0.028	0.029	0.000	0.000	0.000	0.000	0.000	1384.05	
19	0.7618	1188.2	1209.3	1209.1	0.920	6.380	65.539	20.098	6.233	0.249	0.524	0.028	0.029	0.000	0.000	0.000	0.000	0.000	1385.51	
20	0.7595	1183.9	1204.9	1204.4	0.927	6.418	65.791	19.954	6.133	0.238	0.489	0.025	0.026	0.000	0.000	0.000	0.000	0.000	1382.55	
21	0.7596	1182.9	1203.9	1203.2	0.939	6.472	65.783	19.855	6.205	0.228	0.467	0.025	0.026	0.000	0.000	0.000	0.000	0.000	1381.26	
22	0.7652	1192.9	1214.1	1213.4	0.940	6.385	65.095	20.281	6.478	0.249	0.510	0.030	0.032	0.000	0.000	0.000	0.000	0.000	1387.85	
23	0.7658	1195.3	1216.5	1215.8	0.941	6.289	65.018	20.437	6.498	0.245	0.508	0.031	0.033	0.000	0.000	0.000	0.000	0.000	1390.11	
24	0.7654	1194.7	1215.8	1215.1	0.933	6.306	65.160	20.275	6.434	0.266	0.559	0.032	0.033	0.000	0.000	0.000	0.000	0.000	1389.71	
25	0.7639	1192.1	1213.2	1213.0	0.925	6.336	65.327	20.174	6.377	0.259	0.540	0.031	0.032	0.000	0.000	0.000	0.000	0.000	1388.09	
26	0.7627	1189.8	1210.9	1210.8	0.920	6.370	65.442	20.083	6.377	0.247	0.506	0.027	0.027	0.000	0.000	0.000	0.000	0.000	1386.51	
27	0.7667	1196.6	1217.7	1217.2	0.919	6.328	65.042	20.166	6.710	0.248	0.526	0.030	0.030	0.000	0.000	0.000	0.000	0.000	1390.75	
28	0.7664	1196.8	1218.0	1217.7	0.925	6.277	65.110	20.260	6.504	0.273	0.582	0.034	0.036	0.000	0.000	0.000	0.000	0.000	1391.32	
29	0.7588	1182.9	1203.8	1203.7	0.918	6.427	65.898	19.879	6.101	0.237	0.491	0.025	0.025	0.000	0.000	0.000	0.000	0.000	1382.02	
30	0.7574	1180.0	1200.9	1200.8	0.926	6.464	66.054	19.791	6.000	0.231	0.484	0.025	0.026	0.000	0.000	0.000	0.000	0.000	1379.87	
31	0.7567	1178.5	1199.4	1199.3	0.924	6.485	66.142	19.751	5.928	0.233	0.486	0.025	0.026	0.000	0.000	0.000	0.000	0.000	1378.86	
Avg	0.7625	1189.0	1210.1	1209.8	0.926	6.384	65.464	20.097	6.308	0.247	0.517	0.028	0.029	0.000	0.000	0.000	0.000	0.000	1385.85	

Source Daily Summary

October 2021

Source #: 041
Name: BISMARCK STN-GLEN ULLIN STN

Pressure Base:	14.730	Contract Day:	1
Temperature Base:	60	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	0.7573	1181.5	1202.4	1201.7	0.915	6.381	65.923	20.155	5.865	0.232	0.485	0.022	0.023	0.000	0.000	0.000	0.000	0.000	1381.72	
2	0.7585	1183.1	1204.0	1203.3	0.920	6.388	65.866	20.076	5.934	0.244	0.522	0.025	0.026	0.000	0.000	0.000	0.000	0.000	1382.48	
3	0.7608	1186.5	1207.5	1206.6	0.919	6.398	65.639	20.067	6.147	0.249	0.526	0.027	0.028	0.000	0.000	0.000	0.000	0.000	1384.32	
4	0.7584	1182.0	1202.9	1202.1	0.918	6.449	65.923	19.871	6.059	0.237	0.492	0.025	0.026	0.000	0.000	0.000	0.000	0.000	1381.27	
5	0.7650	1193.5	1214.6	1213.8	0.917	6.362	65.207	20.163	6.493	0.257	0.540	0.030	0.031	0.000	0.000	0.000	0.000	0.000	1388.72	
6	0.7617	1188.4	1209.4	1208.6	0.924	6.355	65.558	20.196	6.180	0.232	0.500	0.026	0.028	0.000	0.000	0.000	0.000	0.000	1385.73	
7	0.7626	1190.2	1211.3	1210.6	0.920	6.335	65.407	20.268	6.325	0.214	0.476	0.025	0.030	0.000	0.000	0.000	0.000	0.000	1387.03	
8	0.7635	1191.5	1212.6	1211.9	0.913	6.352	65.422	20.051	6.403	0.255	0.546	0.029	0.029	0.000	0.000	0.000	0.000	0.000	1387.72	
9	0.7618	1188.6	1209.6	1209.0	0.911	6.371	65.563	20.031	6.322	0.238	0.508	0.026	0.030	0.000	0.000	0.000	0.000	0.000	1385.93	
10	0.7646	1194.3	1215.5	1214.8	0.910	6.286	65.272	20.178	6.512	0.250	0.536	0.028	0.029	0.000	0.000	0.000	0.000	0.000	1390.05	
11	0.7693	1202.1	1223.3	1222.7	0.902	6.269	64.631	20.385	7.104	0.218	0.440	0.022	0.028	0.000	0.000	0.000	0.000	0.000	1394.72	
12	0.7601	1185.3	1206.3	1205.6	0.909	6.412	65.763	19.886	6.265	0.231	0.484	0.025	0.026	0.000	0.000	0.000	0.000	0.000	1383.69	
13	0.7465	1163.0	1183.5	1183.0	0.920	6.497	66.968	20.223	4.981	0.097	0.289	0.009	0.014	0.000	0.000	0.000	0.000	0.000	1369.67	
14	0.7584	1183.6	1204.5	1203.9	0.909	6.370	65.679	20.090	6.730	0.045	0.159	0.000	0.015	0.000	0.000	0.000	0.000	0.000	1383.10	
15	0.7739	1210.0	1231.4	1230.8	0.919	6.196	64.033	20.564	7.940	0.111	0.215	0.002	0.020	0.000	0.000	0.000	0.000	0.000	1399.68	
16	0.7472	1164.2	1184.8	1184.2	0.930	6.469	66.919	20.314	5.159	0.027	0.166	0.000	0.014	0.000	0.000	0.000	0.000	0.000	1370.56	
17	0.7293	1135.7	1155.8	1155.2	0.936	6.522	68.932	20.579	2.455	0.004	0.411	0.052	0.107	0.000	0.000	0.000	0.000	0.000	1353.27	
18	0.7550	1166.6	1187.3	1186.7	0.897	7.102	65.897	19.780	5.879	0.102	0.214	0.004	0.124	0.000	0.000	0.000	0.000	0.000	1366.28	
19	0.7588	1183.4	1204.4	1203.8	0.912	6.404	65.956	19.744	6.238	0.238	0.468	0.020	0.020	0.000	0.000	0.000	0.000	0.000	1382.61	
20	0.7189	1163.1	1183.7	1183.1	0.465	4.592	70.464	20.620	3.447	0.124	0.261	0.013	0.014	0.000	0.000	0.000	0.000	0.000	1396.79	
21	0.6778	1119.8	1139.7	1139.1	0.254	3.694	76.124	18.401	1.436	0.031	0.054	0.003	0.003	0.000	0.000	0.000	0.000	0.000	1384.33	
22	0.6730	1112.5	1132.2	1131.7	0.231	3.723	76.958	17.669	1.333	0.028	0.052	0.003	0.003	0.000	0.000	0.000	0.000	0.000	1380.20	
23	0.6728	1115.6	1135.3	1134.8	0.332	3.371	77.115	17.781	1.324	0.027	0.045	0.002	0.003	0.000	0.000	0.000	0.000	0.000	1384.10	
24	0.6970	1136.0	1156.1	1155.6	0.587	4.002	74.092	18.392	2.632	0.091	0.184	0.010	0.011	0.000	0.000	0.000	0.000	0.000	1384.85	
25	0.7432	1175.7	1196.5	1195.9	0.796	5.594	68.017	19.666	5.261	0.201	0.418	0.023	0.024	0.000	0.000	0.000	0.000	0.000	1388.03	
26	0.7518	1188.8	1209.8	1209.3	0.802	5.592	67.078	19.912	5.850	0.221	0.484	0.030	0.032	0.000	0.000	0.000	0.000	0.000	1395.38	
27	0.7152	1156.4	1176.9	1176.3	0.605	4.440	71.692	19.161	3.636	0.136	0.292	0.018	0.019	0.000	0.000	0.000	0.000	0.000	1391.99	
28	0.6915	1140.4	1160.6	1160.1	0.408	3.494	74.237	19.694	1.987	0.058	0.110	0.007	0.006	0.000	0.000	0.000	0.000	0.000	1395.71	
29	0.6892	1135.1	1155.2	1154.6	0.461	3.523	74.591	19.388	1.883	0.050	0.092	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1391.49	
30	0.6579	1089.1	1108.4	1107.9	0.876	2.748	80.716	14.332	1.231	0.031	0.059	0.003	0.003	0.000	0.000	0.000	0.000	0.000	1366.52	
31	0.6629	1100.4	1119.9	1119.4	0.757	2.714	79.479	15.823	1.149	0.026	0.047	0.002	0.002	0.000	0.000	0.000	0.000	0.000	1375.28	
Avg	0.7343	1165.0	1185.3	1184.7	0.773	5.465	69.068	19.467	4.715	0.145	0.325	0.017	0.025	0.000	0.000	0.000	0.000	0.000	1383.65	

Source Daily Summary

October 2021

Source #: 271
Name: DCKSN BRD-BLFD TSF-G.U. STN

Pressure Base:	14.730	Contract Day:	1
Temperature Base:	60	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	0.6790	1134.2	1154.3	1153.6	0.341	2.806	75.723	19.923	1.150	0.022	0.033	0.002	0.001	0.000	0.000	0.000	0.000	0.000	1400.59	
2	0.6931	1121.0	1140.8	1140.1	0.960	3.978	75.800	15.842	3.059	0.112	0.226	0.011	0.011	0.000	0.000	0.000	0.000	0.000	1370.46	
3	0.6921	1120.5	1140.3	1139.3	0.959	3.921	75.924	15.864	2.969	0.112	0.230	0.011	0.011	0.000	0.000	0.000	0.000	0.000	1370.68	
4	0.6629	1092.1	1111.4	1110.2	0.995	2.851	80.427	13.876	1.679	0.056	0.109	0.005	0.004	0.000	0.000	0.000	0.000	0.000	1365.13	
5	0.6653	1094.6	1114.0	1112.7	0.994	2.921	80.081	14.007	1.813	0.060	0.114	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1365.88	
6	0.6608	1089.7	1109.0	1107.7	1.008	2.785	80.723	13.748	1.588	0.049	0.091	0.004	0.003	0.000	0.000	0.000	0.000	0.000	1364.19	
7	0.6582	1087.2	1106.4	1105.6	0.987	2.723	81.174	13.443	1.535	0.046	0.087	0.003	0.003	0.000	0.000	0.000	0.000	0.000	1363.79	
8	0.6601	1088.5	1107.8	1107.0	1.001	2.796	80.917	13.508	1.624	0.050	0.096	0.004	0.004	0.000	0.000	0.000	0.000	0.000	1363.50	
9	0.6614	1092.1	1111.4	1110.9	1.001	2.703	80.850	13.531	1.716	0.067	0.116	0.008	0.007	0.000	0.000	0.000	0.000	0.000	1366.61	
10	0.6556	1085.1	1104.3	1103.6	0.985	2.610	81.642	13.181	1.439	0.048	0.087	0.005	0.004	0.000	0.000	0.000	0.000	0.000	1363.84	
11	0.6675	1098.1	1117.5	1116.9	0.970	2.952	79.814	14.090	1.962	0.068	0.134	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1367.93	
12	0.6862	1118.2	1138.0	1137.4	0.961	3.498	77.105	15.193	2.890	0.109	0.220	0.011	0.012	0.000	0.000	0.000	0.000	0.000	1373.78	
13	0.6866	1127.3	1147.3	1146.6	0.985	3.937	75.262	16.168	3.213	0.130	0.276	0.015	0.015	0.000	0.000	0.000	0.000	0.000	1384.60	
14	0.6870	1136.5	1156.6	1155.8	0.954	4.370	73.937	16.652	3.653	0.134	0.272	0.014	0.014	0.000	0.000	0.000	0.000	0.000	1395.42	
15	0.6874	1145.6	1165.9	1165.1	0.047	3.049	73.909	21.971	0.991	0.012	0.019	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1406.23	
16	0.6878	1154.8	1175.2	1174.5	0.013	2.885	73.242	22.961	0.875	0.009	0.014	0.000	0.001	0.000	0.000	0.000	0.000	0.000	1417.03	
17	0.6872	1154.1	1174.5	1173.9	0.000	2.886	73.295	22.973	0.830	0.007	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1416.86	
18	0.6881	1155.7	1176.2	1175.6	0.000	2.869	73.157	23.107	0.839	0.009	0.017	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1417.96	
19	0.6853	1147.2	1167.5	1167.0	0.047	3.049	73.909	21.972	0.991	0.012	0.019	0.000	0.001	0.000	0.000	0.000	0.000	0.000	1410.38	
20	0.6784	1122.6	1142.5	1142.0	0.238	3.613	75.976	18.642	1.442	0.031	0.054	0.002	0.002	0.000	0.000	0.000	0.000	0.000	1387.08	
21	0.6728	1113.9	1133.6	1133.1	0.232	3.623	77.007	17.711	1.339	0.029	0.054	0.001	0.002	0.000	0.000	0.000	0.000	0.000	1382.01	
22	0.6737	1118.3	1138.1	1137.6	0.360	3.247	76.999	17.967	1.344	0.030	0.050	0.001	0.002	0.000	0.000	0.000	0.000	0.000	1386.54	
23	0.6771	1121.6	1141.5	1141.1	0.437	3.238	76.514	18.292	1.413	0.037	0.064	0.003	0.003	0.000	0.000	0.000	0.000	0.000	1387.29	
24	0.6774	1122.3	1142.2	1141.7	0.427	3.241	76.453	18.345	1.427	0.036	0.063	0.003	0.003	0.000	0.000	0.000	0.000	0.000	1387.78	
25	0.6743	1118.2	1138.0	1137.5	0.418	3.217	76.926	18.047	1.297	0.033	0.057	0.003	0.003	0.000	0.000	0.000	0.000	0.000	1385.85	
26	0.6804	1127.8	1147.8	1147.4	0.335	3.334	75.717	19.070	1.448	0.033	0.060	0.002	0.001	0.000	0.000	0.000	0.000	0.000	1391.48	
27	0.6905	1140.1	1160.3	1159.8	0.418	3.407	74.352	19.736	1.921	0.053	0.102	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1396.26	
28	0.6852	1130.6	1150.6	1150.2	0.475	3.398	75.320	18.886	1.764	0.051	0.096	0.006	0.005	0.000	0.000	0.000	0.000	0.000	1390.03	
29	0.6881	1135.2	1155.4	1154.8	0.472	3.390	74.777	19.397	1.800	0.053	0.099	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1392.82	
30	0.6928	1149.0	1169.4	1169.0	0.312	3.237	73.420	21.274	1.634	0.041	0.076	0.004	0.004	0.000	0.000	0.000	0.000	0.000	1404.88	
31	0.6827	1126.7	1146.6	1146.2	0.406	3.509	75.591	18.678	1.698	0.041	0.070	0.003	0.003	0.000	0.000	0.000	0.000	0.000	1387.72	
Avg	0.6782	1122.0	1141.4	1140.8	0.572	3.227	76.643	17.679	1.721	0.051	0.097	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1385.96	

Source Daily Summary

October 2021

Source #: 051
Name: CABIN CRK STN-BELFIELD TRSFR

Pressure Base:	14.730	Contract Day:	1
Temperature Base:	60	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	0.6818	1129.0	1149.0	1148.0	0.432	3.242	75.985	18.473	1.688	0.059	0.106	0.008	0.007	0.000	0.000	0.000	0.000	0.000	1391.48	
2	0.6835	1129.0	1149.0	1148.2	0.460	3.355	75.869	18.251	1.865	0.066	0.117	0.009	0.008	0.000	0.000	0.000	0.000	0.000	1389.83	
3	0.6789	1120.5	1140.4	1139.6	0.552	3.299	76.878	17.230	1.843	0.065	0.117	0.008	0.007	0.000	0.000	0.000	0.000	0.000	1384.03	
4	0.6781	1120.4	1140.2	1139.5	0.531	3.265	76.974	17.236	1.800	0.064	0.114	0.008	0.007	0.000	0.000	0.000	0.000	0.000	1384.67	
5	0.6756	1116.9	1136.6	1135.9	0.601	3.135	77.439	16.933	1.727	0.053	0.101	0.006	0.005	0.000	0.000	0.000	0.000	0.000	1382.90	
6	0.6711	1110.7	1130.3	1129.6	0.630	3.053	78.197	16.393	1.580	0.047	0.090	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1379.75	
7	0.6714	1110.7	1130.4	1129.7	0.628	3.082	78.182	16.327	1.633	0.047	0.091	0.005	0.004	0.000	0.000	0.000	0.000	0.000	1379.48	
8	0.6706	1109.3	1129.0	1128.3	0.644	3.065	78.300	16.272	1.577	0.045	0.087	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1378.62	
9	0.6704	1109.8	1129.5	1128.8	0.680	2.962	78.407	16.235	1.559	0.051	0.094	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1379.43	
10	0.6701	1111.0	1130.7	1130.0	0.630	2.936	78.342	16.458	1.489	0.048	0.087	0.006	0.005	0.000	0.000	0.000	0.000	0.000	1381.22	
11	0.6674	1110.2	1129.8	1129.1	0.622	2.748	78.545	16.757	1.232	0.031	0.058	0.003	0.003	0.000	0.000	0.000	0.000	0.000	1382.97	
12	0.6809	1126.9	1146.8	1146.1	0.378	3.363	76.303	17.878	1.898	0.058	0.112	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1389.85	
13	0.6776	1121.2	1141.1	1139.9	0.117	3.790	76.933	16.798	2.181	0.063	0.108	0.005	0.004	0.000	0.000	0.000	0.000	0.000	1386.27	
14	0.6724	1112.1	1131.8	1130.7	0.120	3.862	77.760	16.057	2.065	0.048	0.080	0.004	0.003	0.000	0.000	0.000	0.000	0.000	1380.18	
15	0.6738	1115.4	1135.2	1133.9	0.086	3.834	77.577	16.225	2.109	0.058	0.102	0.005	0.004	0.000	0.000	0.000	0.000	0.000	1382.96	
16	0.6699	1108.9	1128.5	1127.6	0.099	3.849	77.970	16.156	1.812	0.040	0.067	0.003	0.003	0.000	0.000	0.000	0.000	0.000	1378.83	
17	0.6717	1112.4	1132.1	1131.3	0.117	3.787	77.553	16.664	1.778	0.036	0.059	0.003	0.002	0.000	0.000	0.000	0.000	0.000	1381.25	
18	0.6732	1117.7	1137.5	1136.9	0.147	3.558	76.836	18.018	1.379	0.022	0.037	0.002	0.001	0.000	0.000	0.000	0.000	0.000	1386.37	
19	0.6738	1107.7	1127.3	1125.9	0.287	4.003	77.270	16.586	1.738	0.038	0.069	0.004	0.004	0.000	0.000	0.000	0.000	0.000	1373.39	
20	0.6700	1105.6	1125.2	1123.9	0.224	3.876	77.791	16.443	1.563	0.034	0.061	0.003	0.004	0.000	0.000	0.000	0.000	0.000	1374.59	
21	0.6669	1093.1	1112.4	1111.5	0.412	4.053	78.810	14.902	1.670	0.045	0.094	0.005	0.008	0.000	0.000	0.000	0.000	0.000	1362.31	
22	0.6684	1096.4	1115.8	1115.0	0.669	3.608	78.865	15.004	1.685	0.051	0.104	0.006	0.008	0.000	0.000	0.000	0.000	0.000	1364.75	
23	0.6690	1097.0	1116.5	1115.5	0.677	3.608	78.817	14.982	1.750	0.052	0.102	0.006	0.007	0.000	0.000	0.000	0.000	0.000	1365.03	
24	0.6600	1084.3	1103.5	1102.6	0.653	3.577	80.374	13.729	1.514	0.048	0.094	0.006	0.007	0.000	0.000	0.000	0.000	0.000	1358.32	
25	0.6645	1094.6	1113.9	1112.9	0.647	3.386	79.367	14.995	1.483	0.040	0.072	0.004	0.004	0.000	0.000	0.000	0.000	0.000	1366.50	
26	0.6792	1118.6	1138.4	1137.1	0.632	3.323	76.951	16.955	1.963	0.057	0.107	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1381.34	
27	0.6762	1113.1	1132.9	1131.7	0.665	3.325	77.391	16.672	1.785	0.051	0.098	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1377.63	
28	0.6816	1118.8	1138.7	1137.3	0.727	3.387	76.592	17.143	1.950	0.062	0.123	0.008	0.008	0.000	0.000	0.000	0.000	0.000	1379.23	
29	0.6798	1113.9	1133.6	1132.6	0.650	3.638	76.841	16.722	1.946	0.062	0.123	0.008	0.008	0.000	0.000	0.000	0.000	0.000	1374.92	
30	0.6752	1110.0	1129.7	1128.5	0.653	3.435	77.529	16.458	1.782	0.047	0.084	0.005	0.004	0.000	0.000	0.000	0.000	0.000	1374.82	
31	0.6826	1120.4	1140.3	1138.9	0.597	3.587	76.158	17.519	1.984	0.052	0.093	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1380.12	
Avg	0.6737	1112.0	1131.5	1130.5	0.483	3.451	77.639	16.531	1.743	0.050	0.092	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1378.49	

Source Daily Summary

October 2021

Source #: 111
Name: LITTLE KNIFE PLANT

Pressure Base:	14.730	Contract Day:	1
Temperature Base:	60	Contract Hour:	9

Day	Relative Density	Heating Value Wet	Heating Value Dry	Heating Value As Del	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.6897	1158.3	1178.8	1177.5	0.000	2.864	72.995	23.109	1.001	0.010	0.019	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1419.45	-22.99
2	0.6884	1155.9	1176.4	1174.6	0.000	2.886	73.165	23.010	0.915	0.008	0.014	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1417.85	-24.11
3	0.6888	1156.8	1177.2	1175.5	0.000	2.873	73.085	23.085	0.942	0.007	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1418.48	-23.94
4	0.6892	1157.1	1177.6	1175.9	0.000	2.889	73.035	23.093	0.959	0.008	0.014	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1418.51	-23.56
5	0.6889	1156.5	1177.0	1175.5	0.000	2.896	73.080	23.062	0.939	0.008	0.013	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1418.09	-23.83
6	0.6887	1156.5	1177.0	1175.6	0.000	2.879	73.096	23.085	0.917	0.008	0.013	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1418.28	-23.97
7	0.6879	1155.2	1175.6	1174.1	0.000	2.885	73.166	23.100	0.828	0.007	0.012	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1417.47	-24.72
8	0.6876	1154.7	1175.1	1173.5	0.000	2.889	73.201	23.081	0.808	0.007	0.012	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1417.15	-24.94
9	0.6866	1152.9	1173.3	1171.7	0.000	2.900	73.348	22.979	0.758	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1416.05	-25.78
10	0.6874	1154.4	1174.9	1173.3	0.000	2.881	73.245	23.057	0.796	0.007	0.012	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1417.10	-25.09
11	0.6876	1154.9	1175.3	1173.8	0.000	2.877	73.194	23.115	0.793	0.007	0.012	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1417.38	-24.98
12	0.6877	1154.5	1175.0	1173.3	0.000	2.910	73.181	23.069	0.820	0.007	0.011	0.000	0.001	0.000	0.000	0.000	0.000	0.000	1416.83	-24.91
13	0.6862	1152.2	1172.6	1171.1	0.000	2.910	73.435	22.869	0.766	0.007	0.011	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1415.54	-25.86
14	0.6874	1154.0	1174.4	1172.9	0.000	2.911	73.234	23.033	0.808	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1416.51	-25.24
15	0.6883	1155.4	1175.9	1174.1	0.000	2.910	73.096	23.124	0.849	0.007	0.012	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1417.33	-24.50
16	0.6879	1154.7	1175.2	1173.5	0.000	2.918	73.160	23.064	0.838	0.007	0.012	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1416.86	-24.74
17	0.6883	1155.5	1175.9	1174.4	0.000	2.905	73.114	23.103	0.857	0.007	0.013	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1417.41	-24.46
18	0.6884	1155.8	1176.3	1174.4	0.000	2.893	73.091	23.137	0.858	0.007	0.012	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1417.75	-24.38
19	0.6875	1154.4	1174.8	1172.9	0.000	2.893	73.195	23.115	0.784	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1416.96	-25.23
20	0.6877	1154.6	1175.1	1173.1	0.000	2.900	73.168	23.126	0.785	0.007	0.013	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1416.99	-25.00
21	0.6879	1154.9	1175.4	1173.7	0.000	2.904	73.171	23.065	0.838	0.007	0.013	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1417.12	-24.70
22	0.6876	1154.4	1174.8	1173.1	0.000	2.905	73.203	23.068	0.804	0.007	0.012	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1416.81	-25.00
23	0.6873	1153.8	1174.3	1172.8	0.000	2.910	73.248	23.034	0.787	0.007	0.012	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1416.45	-25.23
24	0.6870	1153.6	1174.0	1172.2	0.000	2.900	73.276	23.035	0.775	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1416.43	-25.51
25	0.6872	1153.5	1173.9	1172.1	0.000	2.925	73.264	22.997	0.794	0.007	0.012	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1416.08	-25.29
26	0.6877	1154.5	1175.0	1173.3	0.000	2.905	73.195	23.065	0.814	0.007	0.012	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1416.89	-24.93
27	0.6946	1163.4	1184.0	1182.8	0.000	3.015	72.075	23.768	1.108	0.012	0.020	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1420.65	-20.55
28	0.6956	1165.1	1185.7	1184.5	0.000	3.009	71.890	23.929	1.148	0.010	0.014	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1421.63	-20.07
29	0.6959	1166.2	1186.9	1185.6	0.000	2.965	71.919	23.884	1.194	0.013	0.024	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1422.75	-19.47
30	0.6958	1165.6	1186.3	1185.3	0.000	2.992	71.897	23.913	1.159	0.013	0.024	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1422.13	-19.68
31	0.6946	1163.5	1184.1	1182.8	0.000	3.008	72.118	23.702	1.136	0.012	0.022	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1420.76	-20.42
Avg	0.6891	1157.0	1177.0	1175.4	0.000	2.913	72.985	23.190	0.890	0.008	0.013	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1417.93	-23.97

Source Daily Summary

October 2021

Source #: 351
Name: BADLANDS PLANT

Pressure Base:	14.730	Contract Day:	1
Temperature Base:	60	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	0.6134	1022.0	1040.1	1039.3	0.520	3.186	89.008	6.426	0.755	0.040	0.054	0.007	0.005	0.000	0.000	0.000	0.000	0.000	1328.08	
2	0.6101	1017.8	1035.8	1034.9	0.489	3.189	89.627	5.849	0.734	0.043	0.056	0.007	0.005	0.000	0.000	0.000	0.000	0.000	1326.04	
3	0.6274	1043.9	1062.4	1061.5	0.669	2.942	86.711	8.493	1.030	0.057	0.080	0.010	0.008	0.000	0.000	0.000	0.000	0.000	1341.32	
4	0.6197	1032.2	1050.5	1049.4	0.612	3.027	87.825	7.644	0.799	0.034	0.050	0.005	0.004	0.000	0.000	0.000	0.000	0.000	1334.40	
5	0.6191	1031.7	1050.0	1048.9	0.599	3.021	87.915	7.577	0.806	0.030	0.046	0.003	0.003	0.000	0.000	0.000	0.000	0.000	1334.38	
6	0.6237	1038.9	1057.3	1056.2	0.654	2.925	87.102	8.380	0.856	0.030	0.047	0.003	0.003	0.000	0.000	0.000	0.000	0.000	1338.85	
7	0.6257	1041.8	1060.3	1059.3	0.683	2.896	86.739	8.727	0.871	0.031	0.048	0.003	0.003	0.000	0.000	0.000	0.000	0.000	1340.39	
8	0.6265	1043.4	1061.9	1061.0	0.699	2.853	86.593	8.892	0.879	0.030	0.047	0.003	0.003	0.000	0.000	0.000	0.000	0.000	1341.52	
9	0.6273	1043.6	1062.1	1061.3	0.700	2.913	86.488	8.887	0.919	0.033	0.053	0.004	0.003	0.000	0.000	0.000	0.000	0.000	1340.94	
10	0.6268	1042.4	1060.9	1060.1	0.689	2.949	86.595	8.738	0.938	0.033	0.051	0.003	0.003	0.000	0.000	0.000	0.000	0.000	1340.04	
11	0.6268	1042.6	1061.1	1060.4	0.697	2.929	86.572	8.795	0.918	0.032	0.051	0.003	0.003	0.000	0.000	0.000	0.000	0.000	1340.25	
12	0.6192	1031.5	1049.7	1049.2	0.613	3.021	87.886	7.611	0.791	0.029	0.044	0.003	0.003	0.000	0.000	0.000	0.000	0.000	1334.00	
13	0.5980	1000.2	1017.9	1017.4	0.380	3.285	91.574	4.251	0.457	0.022	0.027	0.002	0.002	0.000	0.000	0.000	0.000	0.000	1316.23	
14	0.5723	962.4	979.4	978.9	0.107	3.591	95.982	0.298	0.014	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1294.66	
15	0.5723	962.5	979.5	979.0	0.108	3.581	95.991	0.298	0.014	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1294.80	
16	0.5724	962.6	979.7	979.0	0.108	3.582	95.970	0.314	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1294.88	
17	0.5723	962.5	979.5	978.8	0.107	3.584	95.990	0.297	0.014	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1294.76	
18	0.5723	962.6	979.6	978.9	0.107	3.574	95.999	0.297	0.014	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1294.94	
19	0.5723	962.4	979.4	978.9	0.108	3.589	95.984	0.298	0.014	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1294.67	
20	0.5723	962.5	979.6	979.0	0.108	3.575	95.997	0.298	0.014	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1294.91	
21	0.5723	962.6	979.6	979.0	0.107	3.575	95.998	0.298	0.014	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1294.94	
22	0.5723	962.6	979.6	979.0	0.108	3.573	96.000	0.298	0.014	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1294.96	
23	0.5723	962.6	979.6	979.1	0.108	3.573	95.998	0.299	0.014	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1294.97	
24	0.5879	985.2	1002.6	1002.0	0.272	3.413	93.331	2.656	0.290	0.018	0.018	0.002	0.001	0.000	0.000	0.000	0.000	0.000	1307.58	
25	0.6070	1006.3	1024.1	1023.4	0.464	3.633	89.891	5.391	0.558	0.023	0.034	0.003	0.002	0.000	0.000	0.000	0.000	0.000	1314.24	
26	0.6129	1021.5	1039.6	1039.0	0.540	3.146	88.943	6.630	0.673	0.025	0.038	0.003	0.002	0.000	0.000	0.000	0.000	0.000	1327.93	
27	0.6139	1023.6	1041.7	1041.1	0.559	3.083	88.799	6.796	0.691	0.026	0.040	0.003	0.002	0.000	0.000	0.000	0.000	0.000	1329.56	
28	0.6152	1026.4	1044.6	1043.9	0.594	2.985	88.419	7.372	0.581	0.019	0.027	0.002	0.001	0.000	0.000	0.000	0.000	0.000	1331.74	
29	0.6157	1027.5	1045.7	1045.0	0.609	2.936	88.265	7.625	0.528	0.015	0.020	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1332.75	
30	0.6028	1008.9	1026.7	1026.2	0.454	3.103	90.580	5.427	0.408	0.013	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1322.31	
31	0.5723	962.5	979.5	979.1	0.108	3.579	95.992	0.299	0.014	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1294.84	
Avg	0.6005	1004.0	1021.6	1020.9	0.409	3.252	91.121	4.692	0.472	0.022	0.027	0.002	0.002	0.000	0.000	0.000	0.000	0.000	1318.25	

Gas Composition and Properties

Effective October 1, 2021

Attachment B
Page 19 of 24

Source #: 2702230
Name: WATFORD CITY EAST BORDER

Component	Mole %	Liquid Content	Mass %
Carbon Dioxide, CO2	1.2225		2.9324
Nitrogen, N2	2.9311		4.4753
Methane, C1	85.0288		74.3472
Ethane, C2	10.1859	2.7238	16.6934
Propane, C3	0.5878	0.1619	1.4127
iso-Butane, iC4	0.0181	0.0059	0.0573
n-Butane, nC4	0.0258	0.0081	0.0817
iso-Pentane, iC5			
n-Pentane, nC5			
Neo-Pentane, neo			
Hexanes Plus, C6+			
Argon, Ar			
Carbon Monoxide, CO			
Hydrogen, H2			
Oxygen, O2			
Helium, He			
Water, H2O			
Hydrogen Sulfide, H2S			
Totals	100.0000	2.9000	100.0000

Property	Total Sample	C6 Plus Fraction
Pressure Base	14.730	
Temperature Base	60.00	
HCDP @ Sample Pressure		
Cricondentherm	-61.186	
HV, Dry @ Base P, T	1060.28	
HV, Sat @ Base P, T	1041.83	
HV, Sat @ Sample P, T	1060.28	
Relative Density	0.6348	
C6+: 100		

Sample

Date: 10/01/2021 Type:

Tech: Wayne Sampson

Pressure: Temp.:

Gauge: H2O:

Atm. Pressure: H2S:

Remarks:

Analysis

Date: Instrument:

Tech: Cylinder:

Remarks:

October-21

ZONE 550

MANDAN BORDER

NBPL - St Anthony

WBI - Mandan Border

Weighted

Start Date	End Date	MCF	DK	BTU	MCF	DK	BTU Zone 28	AVG BTU	
10/1/2021	10/2/2021	332	362	1090.90	847	1,019	1202.4	1171.002	10/1/2021
10/2/2021	10/3/2021	3,877	4,227	1090.30	848	1,022	1204	1110.706	10/2/2021
10/3/2021	10/4/2021	2,550	2,776	1089.00	836	1,011	1207.5	1118.258	10/3/2021
10/4/2021	10/5/2021	4,379	4,771	1089.60	833	1,002	1202.9	1107.708	10/4/2021
10/5/2021	10/6/2021	0	0	0.00	761	924	1214.6	1214.600	10/5/2021
10/6/2021	10/7/2021	0	0	0.00	809	978	1209.4	1209.400	10/6/2021
10/7/2021	10/8/2021	0	0	0.00	829	1,004	1211.3	1211.300	10/7/2021
10/8/2021	10/9/2021	1,961	2,137	1089.30	857	1,038	1212.6	1126.798	10/8/2021
10/9/2021	10/10/2021	0	0	0.00	1,050	1,270	1209.6	1209.600	10/9/2021
10/10/2021	10/11/2021	0	0	0.00	1,145	1,393	1215.5	1215.500	10/10/2021
10/11/2021	10/12/2021	0	0	0.00	1,513	1,849	1223.3	1223.300	10/11/2021
10/12/2021	10/13/2021	0	0	0.00	1,924	2,322	1206.3	1206.300	10/12/2021
10/13/2021	10/14/2021	0	0	0.00	2,584	3,060	1183.5	1183.500	10/13/2021
10/14/2021	10/15/2021	0	0	0.00	2,521	3,038	1204.5	1204.500	10/14/2021
10/15/2021	10/16/2021	0	0	0.00	2,226	2,740	1231.4	1231.400	10/15/2021
10/16/2021	10/17/2021	0	0	0.00	1,660	1,966	1184.8	1184.800	10/16/2021
10/17/2021	10/18/2021	0	0	0.00	1,384	1,603	1155.8	1155.800	10/17/2021
10/18/2021	10/19/2021	0	0	0.00	1,577	1,878	1187.3	1187.300	10/18/2021
10/19/2021	10/20/2021	0	0	0.00	2,730	3,288	1204.4	1204.400	10/19/2021
10/20/2021	10/21/2021	0	0	0.00	3,578	4,223	1183.7	1183.700	10/20/2021
10/21/2021	10/22/2021	0	0	0.00	2,852	3,251	1139.7	1139.700	10/21/2021
10/22/2021	10/23/2021	0	0	0.00	2,741	3,103	1132.2	1132.200	10/22/2021
10/23/2021	10/24/2021	0	0	0.00	2,506	2,845	1135.3	1135.300	10/23/2021
10/24/2021	10/25/2021	0	0	0.00	2,999	3,467	1156.1	1156.100	10/24/2021
10/25/2021	10/26/2021	0	0	0.00	2,901	3,468	1196.5	1196.500	10/25/2021
10/26/2021	10/27/2021	0	0	0.00	2,610	3,154	1209.8	1209.800	10/26/2021
10/27/2021	10/28/2021	0	0	0.00	2,370	2,775	1176.9	1176.900	10/27/2021
10/28/2021	10/29/2021	0	0	0.00	2,548	2,952	1160.6	1160.600	10/28/2021
10/29/2021	10/30/2021	0	0	0.00	1,948	2,251	1155.2	1155.200	10/29/2021
10/30/2021	10/31/2021	0	0	0.00	2,992	3,312	1108.4	1108.400	10/30/2021
10/31/2021	11/1/2021	0	0	0.00	3,571	4,018	1119.9	1119.900	10/31/2021
		13,099	14,273	175.7774	60,550	71,224	1185.3355	1172.5958	



Alliance Pipeline

DAILY ANALYSIS --- USA
 ND07MD1 --- Hankinson Sales
 October 2021

DAY	Heating Value (BTU/ft3)	Relative Density	C1 Mol%	C2 Mol%	C3 Mol%	IC4 Mol%	NC4 Mol%	IC5 Mol%	NC5 Mol%	C6+ Mol%	N2 Mol%	CO2 Mol%	Hel Mol%
1	1,169.724	0.6710	83.4850	9.6081	4.1534	0.4249	0.7164	0.0884	0.0760	0.0413	1.0083	0.3897	0.0086
2	1,170.760	0.6714	83.4057	9.6943	4.1938	0.4288	0.7096	0.0850	0.0696	0.0364	0.9702	0.3981	0.0084
3	1,170.682	0.6714	83.4367	9.6963	4.1181	0.4398	0.7291	0.0907	0.0746	0.0376	0.9632	0.4052	0.0087
4	1,167.966	0.6694	83.6128	9.7297	3.9497	0.4305	0.7137	0.0881	0.0725	0.0414	0.9615	0.3920	0.0081
5	1,167.675	0.6687	83.6585	9.7921	3.8673	0.4266	0.7194	0.0884	0.0754	0.0421	0.9581	0.3633	0.0087
6	1,167.333	0.6690	83.5626	9.7981	3.9441	0.4159	0.7096	0.0809	0.0696	0.0377	1.0092	0.3632	0.0090
7	1,169.172	0.6707	83.3598	9.8694	4.0014	0.4254	0.7348	0.0838	0.0692	0.0363	1.0375	0.3735	0.0089
8	1,160.759	0.6646	84.1040	9.5071	3.8066	0.3955	0.6672	0.0718	0.0576	0.0281	0.9977	0.3551	0.0091
9	1,159.503	0.6634	84.3398	9.3408	3.7530	0.3997	0.6792	0.0743	0.0597	0.0273	0.9579	0.3588	0.0095
10	1,157.262	0.6621	84.4504	9.3394	3.6634	0.3905	0.6594	0.0717	0.0584	0.0284	0.9686	0.3603	0.0095
11	1,156.564	0.6611	84.6499	9.2035	3.6669	0.3902	0.6423	0.0724	0.0602	0.0301	0.9191	0.3559	0.0095
12	1,158.854	0.6633	84.3393	9.3298	3.7516	0.3975	0.6745	0.0723	0.0573	0.0272	0.9757	0.3654	0.0093
13	1,159.617	0.6636	84.3009	9.3568	3.7781	0.3993	0.6697	0.0716	0.0595	0.0280	0.9648	0.3620	0.0093
14	1,159.397	0.6632	84.3108	9.4310	3.7413	0.3933	0.6520	0.0723	0.0604	0.0281	0.9386	0.3628	0.0094
15	1,154.855	0.6583	85.0211	9.1452	3.5674	0.3781	0.5991	0.0715	0.0603	0.0288	0.7622	0.3566	0.0096
16	1,157.930	0.6622	84.4978	9.2685	3.7137	0.3929	0.6648	0.0703	0.0581	0.0281	0.9433	0.3530	0.0095
17	1,157.217	0.6618	84.4122	9.4138	3.7231	0.3734	0.6203	0.0645	0.0526	0.0257	0.9501	0.3546	0.0095
18	1,154.162	0.6599	84.5873	9.3386	3.6742	0.3610	0.5929	0.0557	0.0441	0.0208	0.9633	0.3525	0.0095
19	1,151.939	0.6585	84.6355	9.4629	3.5495	0.3458	0.5628	0.0536	0.0418	0.0189	0.9724	0.3471	0.0097
20	1,151.681	0.6581	84.7288	9.3987	3.5569	0.3470	0.5513	0.0551	0.0428	0.0187	0.9391	0.3515	0.0100
21	1,151.187	0.6566	84.9870	9.3199	3.4938	0.3476	0.5389	0.0578	0.0451	0.0203	0.8314	0.3479	0.0103
22	1,152.494	0.6575	84.9776	9.2313	3.4917	0.3604	0.5874	0.0665	0.0529	0.0276	0.8648	0.3292	0.0106
23	1,154.400	0.6604	84.4568	9.5047	3.6323	0.3465	0.5775	0.0617	0.0501	0.0242	0.9763	0.3603	0.0096
24	1,155.737	0.6610	84.4554	9.4295	3.6781	0.3632	0.5960	0.0633	0.0531	0.0281	0.9717	0.3520	0.0097
25	1,154.419	0.6598	84.5824	9.4205	3.6109	0.3586	0.5872	0.0605	0.0503	0.0266	0.9590	0.3345	0.0096
26	1,156.781	0.6613	84.3395	9.6195	3.6590	0.3604	0.5908	0.0605	0.0490	0.0251	0.9403	0.3469	0.0090
27	1,154.708	0.6598	84.4656	9.6131	3.6083	0.3421	0.5632	0.0554	0.0446	0.0239	0.9324	0.3422	0.0091
28	1,154.662	0.6600	84.4053	9.6610	3.6131	0.3393	0.5633	0.0521	0.0421	0.0221	0.9454	0.3472	0.0091
29	1,152.076	0.6587	84.5083	9.7396	3.3940	0.3416	0.5702	0.0550	0.0436	0.0232	0.9436	0.3717	0.0093
30	1,151.591	0.6584	84.5133	9.8188	3.2717	0.3492	0.5885	0.0597	0.0481	0.0218	0.9516	0.3679	0.0094
31	1,144.006	0.6532	85.2050	9.4340	3.0584	0.3250	0.5388	0.0603	0.0488	0.0229	0.9571	0.3404	0.0092
Volume	1,158.172	0.6625	84.3196	9.5004	3.6976	0.3800	0.6306	0.0688	0.0563	0.0282	0.9492	0.3600	0.0093
Weight Avg Energy	1,158.210	0.6625	84.3168	9.5010	3.6989	0.3802	0.6309	0.0688	0.0563	0.0283	0.9493	0.3601	0.0093



Alliance Pipeline

DAILY ANALYSIS --- USA
 ND14MD1 --- Milnor Sales
 October 2021

DAY	Heating Value (BTU/ft3)	Relative Density	C1 Mol%	C2 Mol%	C3 Mol%	IC4 Mol%	NC4 Mol%	IC5 Mol%	NC5 Mol%	C6+ Mol%	N2 Mol%	CO2 Mol%	Hel Mol%
1	1,169.632	0.6710	83.4854	9.6106	4.1551	0.4237	0.7144	0.0879	0.0752	0.0407	1.0069	0.3914	0.0087
2	1,171.239	0.6718	83.3754	9.7060	4.2067	0.4315	0.7128	0.0857	0.0700	0.0366	0.9670	0.3997	0.0084
3	1,170.314	0.6712	83.4562	9.7011	4.0918	0.4383	0.7283	0.0911	0.0753	0.0386	0.9671	0.4036	0.0086
4	1,167.954	0.6695	83.6034	9.7469	3.9461	0.4292	0.7115	0.0879	0.0722	0.0415	0.9622	0.3910	0.0081
5	1,167.968	0.6691	83.6122	9.7995	3.8944	0.4261	0.7201	0.0876	0.0752	0.0417	0.9721	0.3623	0.0088
6	1,167.616	0.6693	83.5399	9.8145	3.9428	0.4176	0.7154	0.0809	0.0696	0.0379	1.0078	0.3645	0.0090
7	1,168.646	0.6704	83.3863	9.8650	3.9951	0.4214	0.7267	0.0826	0.0679	0.0351	1.0415	0.3695	0.0089
8	1,159.830	0.6640	84.2000	9.4540	3.7823	0.3932	0.6613	0.0712	0.0571	0.0277	0.9873	0.3567	0.0091
9	1,160.687	0.6642	84.2418	9.3967	3.7883	0.4023	0.6845	0.0734	0.0597	0.0286	0.9599	0.3555	0.0093
10	1,156.840	0.6622	84.4594	9.3040	3.6666	0.3893	0.6571	0.0732	0.0593	0.0296	0.9833	0.3688	0.0094
11	1,156.851	0.6614	84.6002	9.2331	3.6769	0.3899	0.6435	0.0721	0.0601	0.0301	0.9306	0.3541	0.0094
12	1,159.209	0.6638	84.2770	9.3533	3.7717	0.3973	0.6774	0.0720	0.0572	0.0269	0.9937	0.3641	0.0094
13	1,159.684	0.6637	84.2746	9.4076	3.7672	0.3954	0.6654	0.0708	0.0594	0.0282	0.9623	0.3597	0.0094
14	1,159.055	0.6631	84.3224	9.4411	3.7278	0.3905	0.6458	0.0721	0.0605	0.0281	0.9387	0.3636	0.0094
15	1,155.331	0.6589	84.9560	9.1715	3.5811	0.3793	0.6043	0.0729	0.0613	0.0291	0.7739	0.3609	0.0096
16	1,158.187	0.6625	84.4542	9.2967	3.7243	0.3920	0.6613	0.0711	0.0588	0.0283	0.9454	0.3585	0.0093
17	1,156.884	0.6617	84.4267	9.4101	3.7188	0.3711	0.6178	0.0631	0.0512	0.0251	0.9526	0.3541	0.0095
18	1,154.325	0.6602	84.5599	9.3562	3.6792	0.3610	0.5924	0.0557	0.0443	0.0211	0.9654	0.3554	0.0094
19	1,151.200	0.6580	84.6863	9.4559	3.5258	0.3425	0.5542	0.0529	0.0408	0.0176	0.9671	0.3471	0.0099
20	1,151.693	0.6581	84.7401	9.3994	3.5508	0.3471	0.5515	0.0553	0.0430	0.0190	0.9322	0.3516	0.0101
21	1,150.210	0.6556	85.1490	9.2437	3.4556	0.3459	0.5305	0.0582	0.0454	0.0206	0.7978	0.3429	0.0104
22	1,152.145	0.6573	84.9907	9.2411	3.4735	0.3568	0.5809	0.0673	0.0540	0.0288	0.8678	0.3282	0.0107
23	1,154.014	0.6602	84.4925	9.4801	3.6237	0.3465	0.5747	0.0616	0.0502	0.0242	0.9751	0.3618	0.0096
24	1,155.680	0.6610	84.4632	9.4312	3.6734	0.3624	0.5958	0.0631	0.0530	0.0280	0.9742	0.3460	0.0097
25	1,154.775	0.6600	84.5573	9.4343	3.6185	0.3613	0.5910	0.0601	0.0500	0.0264	0.9576	0.3341	0.0096
26	1,156.965	0.6615	84.3245	9.6269	3.6655	0.3608	0.5915	0.0605	0.0490	0.0251	0.9397	0.3473	0.0090
27	1,154.399	0.6596	84.4930	9.5977	3.6005	0.3411	0.5619	0.0550	0.0444	0.0237	0.9311	0.3425	0.0091
28	1,154.761	0.6601	84.3947	9.6609	3.6201	0.3397	0.5640	0.0520	0.0420	0.0222	0.9466	0.3487	0.0091
29	1,152.188	0.6589	84.4951	9.7133	3.4341	0.3397	0.5663	0.0539	0.0427	0.0225	0.9515	0.3717	0.0092
30	1,151.700	0.6585	84.5170	9.8043	3.2800	0.3502	0.5913	0.0596	0.0482	0.0217	0.9519	0.3666	0.0093
31	1,143.683	0.6530	85.2188	9.4364	3.0463	0.3240	0.5343	0.0600	0.0486	0.0230	0.9595	0.3398	0.0092
Volume	1,157.139	0.6618	84.4027	9.4765	3.6663	0.3750	0.6204	0.0673	0.0549	0.0274	0.9417	0.3583	0.0094
Weight Avg Energy	1,157.174	0.6618	84.4003	9.4767	3.6678	0.3752	0.6207	0.0673	0.0550	0.0275	0.9419	0.3584	0.0094

October-21

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		
10/1/2021	10/2/2021	117	141	1206	120	127	1060.3	1132.228	10/1/2021
10/2/2021	10/3/2021	111	134	1206	136	144	1060.3	1125.777	10/2/2021
10/3/2021	10/4/2021	115	138	1206	116	123	1060.3	1132.835	10/3/2021
10/4/2021	10/5/2021	76	92	1206	118	125	1060.3	1117.378	10/4/2021
10/5/2021	10/6/2021	91	110	1206	129	137	1060.3	1120.567	10/5/2021
10/6/2021	10/7/2021	76	91	1206	96	102	1060.3	1124.679	10/6/2021
10/7/2021	10/8/2021	112	135	1206	137	145	1060.3	1125.836	10/7/2021
10/8/2021	10/9/2021	113	136	1206	135	144	1060.3	1126.688	10/8/2021
10/9/2021	10/10/2021	171	207	1206	173	184	1060.3	1132.726	10/9/2021
10/10/2021	10/11/2021	155	187	1206	165	175	1060.3	1130.873	10/10/2021
10/11/2021	10/12/2021	214	258	1206	200	212	1060.3	1135.614	10/11/2021
10/12/2021	10/13/2021	309	373	1206	308	326	1060.3	1133.268	10/12/2021
10/13/2021	10/14/2021	380	458	1206	434	460	1060.3	1128.317	10/13/2021
10/14/2021	10/15/2021	347	418	1206	373	396	1060.3	1130.519	10/14/2021
10/15/2021	10/16/2021	291	351	1206	278	295	1060.3	1134.814	10/15/2021
10/16/2021	10/17/2021	203	245	1206	194	206	1060.3	1134.802	10/16/2021
10/17/2021	10/18/2021	161	194	1206	171	181	1060.3	1130.956	10/17/2021
10/18/2021	10/19/2021	180	217	1206	201	213	1060.3	1129.135	10/18/2021
10/19/2021	10/20/2021	320	386	1206	374	396	1060.3	1127.482	10/19/2021
10/20/2021	10/21/2021	340	410	1206	403	427	1060.3	1126.973	10/20/2021
10/21/2021	10/22/2021	305	368	1206	305	323	1060.3	1133.150	10/21/2021
10/22/2021	10/23/2021	289	349	1206	296	314	1060.3	1132.278	10/22/2021
10/23/2021	10/24/2021	306	369	1206	303	321	1060.3	1133.509	10/23/2021
10/24/2021	10/25/2021	328	396	1206	368	391	1060.3	1128.963	10/24/2021
10/25/2021	10/26/2021	300	361	1206	301	319	1060.3	1133.029	10/25/2021
10/26/2021	10/27/2021	279	336	1206	294	312	1060.3	1131.243	10/26/2021
10/27/2021	10/28/2021	267	322	1206	297	315	1060.3	1129.275	10/27/2021
10/28/2021	10/29/2021	286	344	1206	285	302	1060.3	1133.278	10/28/2021
10/29/2021	10/30/2021	202	244	1206	204	216	1060.3	1132.791	10/29/2021
10/30/2021	10/31/2021	345	416	1206	404	429	1060.3	1127.411	10/30/2021
10/31/2021	11/1/2021	400	482	1206	493	522	1060.3	1125.563	10/31/2021
		7,189	8,668	1206.0000	7,811	8,282	1060.3000	1129.7405	

Tsp	EffDate	EndDate	Device	GasDay	EndDt	BTU	SpecGrav	CriconTherm	WobbeIndex	CO2	N2	Methane	Ethane	Propane	IButane	NButane	IPentane	NPentane	NeoPentane	C6Plus	Hydrogen	Helium	WaterVapor	TotalSulfur	HydrogenSulfur	Oxygen
NBPL	10/1/2021 0:00	12/1/2021 0:00	GLNU1 - GLEN ULLIN	10/1/2021	10/2/2021	1089	0.6431	-49.9	1357.965151	0.9918	2.3018	83.154	12.375	0.9274	0.0187	0.0319	0.0011	0.0006	N/A	0	0.1742	0.0236	0.4207	0.0629	0.0668	0.0008
NBPL	10/1/2021 0:00	12/1/2021 0:00	GLNU1 - GLEN ULLIN	10/2/2021	10/3/2021	1090	0.6434	-50	1358.895216	1.0009	2.2807	83.1642	12.4007	0.9292	0.0182	0.0307	0.0006	0.0001	N/A	0	0.1514	0.0235	0.4104	0.0598	0.0603	0.0008
NBPL	10/1/2021 0:00	12/1/2021 0:00	GLNU1 - GLEN ULLIN	10/3/2021	10/4/2021	1088	0.6425	-50.9	1357.351507	1.0104	2.2805	83.2592	12.3434	0.8722	0.0175	0.0282	0.0009	0.0002	N/A	0	0.1641	0.0235	0.4377	0.063	0.062	0.0008
NBPL	10/1/2021 0:00	12/1/2021 0:00	GLNU1 - GLEN ULLIN	10/4/2021	10/5/2021	1089	0.6433	-49.9	1357.754041	1.0215	2.2646	83.2239	12.3215	0.9439	0.0197	0.031	0.0008	0.0003	N/A	0	0.1491	0.0239	0.4442	0.0641	0.062	0.0008
NBPL	10/1/2021 0:00	12/1/2021 0:00	GLNU1 - GLEN ULLIN	10/5/2021	10/6/2021	1090	0.6442	-48.7	1358.051181	1.0247	2.3106	83.0328	12.3681	0.9924	0.0225	0.0382	0.0014	0.001	N/A	0.0001	0.1842	0.0241	0.4388	0.0604	0.0602	0.0008
NBPL	10/1/2021 0:00	12/1/2021 0:00	GLNU1 - GLEN ULLIN	10/6/2021	10/7/2021	1090	0.6451	-48.3	1357.10352	1.0313	2.37	82.8976	12.406	1.0386	0.022	0.0358	0.0009	0.0002	N/A	0	0.1734	0.0245	0.4225	0.058	0.0615	0.0008
NBPL	10/1/2021 0:00	12/1/2021 0:00	GLNU1 - GLEN ULLIN	10/7/2021	10/8/2021	1088	0.643	-49.8	1356.823662	1.0205	2.3148	83.163	12.2411	0.9685	0.0199	0.0324	0.0007	0.0002	N/A	0	0.2152	0.0237	0.4172	0.0593	0.0652	0.0008
NBPL	10/1/2021 0:00	12/1/2021 0:00	GLNU1 - GLEN ULLIN	10/8/2021	10/9/2021	1089	0.644	-48.5	1357.015931	1.0302	2.3256	83.079	12.2527	1.0202	0.0243	0.0394	0.0019	0.0009	N/A	0.0002	0.2022	0.0235	0.422	0.062	0.0675	0.0008
NBPL	10/1/2021 0:00	12/1/2021 0:00	GLNU1 - GLEN ULLIN	10/9/2021	10/10/2021	1094	0.6461	-42.9	1361.029227	1.0146	2.2644	82.9425	12.2459	1.1817	0.0461	0.0661	0.0065	0.0044	N/A	0.0026	0.2019	0.0234	0.42	0.076	0.0707	0.0008
NBPL	10/1/2021 0:00	12/1/2021 0:00	GLNU1 - GLEN ULLIN	10/10/2021	10/11/2021	1090	0.6435	-48	1358.789625	0.9991	2.2973	83.2014	12.1357	1.0583	0.0269	0.0433	0.0025	0.0018	N/A	0.0003	0.2105	0.0231	0.4085	0.1823	0.066	0.0008
NBPL	10/1/2021 0:00	12/1/2021 0:00	GLNU1 - GLEN ULLIN	10/11/2021	10/12/2021	1091	0.6433	-48.2	1360.247621	0.9968	2.2358	83.2708	12.1386	1.0661	0.0252	0.0434	0.002	0.0015	N/A	0.0001	0.1968	0.0231	0.413	0.0954	0.0582	0.0008
NBPL	10/1/2021 0:00	12/1/2021 0:00	GLNU1 - GLEN ULLIN	10/12/2021	10/13/2021	1093	0.6453	-46.4	1360.627766	0.9914	2.2558	83.0975	12.272	1.1427	0.0297	0.0547	0.0022	0.0019	N/A	0	0.1286	0.0235	0.4239	0.0924	0.0578	0.0008
NBPL	10/1/2021 0:00	12/1/2021 0:00	GLNU1 - GLEN ULLIN	10/13/2021	10/14/2021	1095	0.6473	-46.4	1361.009998	0.9818	2.3383	82.6158	12.7596	1.1112	0.0224	0.0365	0.0013	0.0008	N/A	0	0.1082	0.0244	0.3729	0.0956	0.0618	0.0008
NBPL	10/1/2021 0:00	12/1/2021 0:00	GLNU1 - GLEN ULLIN	10/14/2021	10/15/2021	1099	0.6507	-44.6	1362.408326	1.0054	2.3991	81.9995	13.3284	1.102	0.0231	0.0397	0.0017	0.0014	N/A	0	0.0748	0.025	0.3912	0.0902	0.0574	0.0008
NBPL	10/1/2021 0:00	12/1/2021 0:00	GLNU1 - GLEN ULLIN	10/15/2021	10/16/2021	1096	0.6476	-44.8	1361.937362	0.9868	2.3453	82.6248	12.7257	1.0908	0.0293	0.0584	0.0042	0.0046	N/A	0.0008	0.1049	0.0245	0.4027	0.1266	0.0477	0.0008
NBPL	10/1/2021 0:00	12/1/2021 0:00	GLNU1 - GLEN ULLIN	10/16/2021	10/17/2021	1097	0.6484	-44.5	1362.338796	0.9801	2.3549	82.4925	12.8798	1.0915	0.0281	0.0549	0.0038	0.0041	N/A	0.001	0.085	0.0244	0.3869	0.0827	0.0553	0.0008
NBPL	10/1/2021 0:00	12/1/2021 0:00	GLNU1 - GLEN ULLIN	10/17/2021	10/18/2021	1093	0.6462	-47.8	1359.679924	1.0013	2.3596	82.8196	12.6426	1.0072	0.0221	0.0369	0.002	0.0015	N/A	0.0001	0.0829	0.0244	0.406	0.1017	0.0693	0.0008
NBPL	10/1/2021 0:00	12/1/2021 0:00	GLNU1 - GLEN ULLIN	10/18/2021	10/19/2021	1089	0.6428	-49.9	1358.282001	0.9939	2.2769	83.4139	12.1855	0.9455	0.022	0.0364	0.0021	0.0017	N/A	0	0.0983	0.0241	0.4252	0.1047	0.0686	0.0008
NBPL	10/1/2021 0:00	12/1/2021 0:00	GLNU1 - GLEN ULLIN	10/19/2021	10/20/2021	1088	0.6418	-50.8	1358.091525	0.9689	2.2865	83.5629	12.0988	0.9099	0.0199	0.034	0.0017	0.0012	N/A	0	0.0922	0.024	0.448	0.0953	0.0611	0.0008
NBPL	10/1/2021 0:00	12/1/2021 0:00	GLNU1 - GLEN ULLIN	10/20/2021	10/21/2021	1087	0.6415	-51.3	1357.160508	0.966	2.3114	83.5857	12.0677	0.9015	0.0179	0.0313	0.0011	0.0006	N/A	0	0.093	0.0241	0.431	0.0924	0.0589	0.0008
NBPL	10/1/2021 0:00	12/1/2021 0:00	GLNU1 - GLEN ULLIN	10/21/2021	10/22/2021	1090	0.6444	-49.4	1357.840418	0.9798	2.3868	82.9819	12.4973	0.9486	0.0183	0.0316	0.0009	0.0004	N/A	0	0.1302	0.0245	0.4207	0.092	0.0585	0.0008
NBPL	10/1/2021 0:00	12/1/2021 0:00	GLNU1 - GLEN ULLIN	10/22/2021	10/23/2021	1087	0.6419	-51.2	1356.737585	0.9852	2.3252	83.4362	12.1509	0.8981	0.0172	0.0299	0.0009	0.0003	N/A	0	0.132	0.0243	0.407	0.0921	0.0597	0.0008
NBPL	10/1/2021 0:00	12/1/2021 0:00	GLNU1 - GLEN ULLIN	10/23/2021	10/24/2021	1085	0.6404	-52.6	1355.82637	1.001	2.2708	83.7121	11.9808	0.8374	0.016	0.0274	0.0004	0.0001	N/A	0	0.1303	0.0238	0.4074	0.0918	0.0596	0.0008
NBPL	10/1/2021 0:00	12/1/2021 0:00	GLNU1 - GLEN ULLIN	10/24/2021	10/25/2021	1083	0.6388	-53.4	1355.020928	0.9835	2.2858	83.9463	11.7172	0.8388	0.016	0.0273	0.0002	0.0001	N/A	0	0.1615	0.0235	0.4151	0.0902	0.0607	0.0008
NBPL	10/1/2021 0:00	12/1/2021 0:00	GLNU1 - GLEN ULLIN	10/25/2021	10/26/2021	1082	0.6386	-53.1	1353.981728	0.9899	2.3082	83.9146	11.6169	0.8688	0.0179	0.0305	0.0005	0.0004	N/A	0	0.2292	0.0233	0.4165	0.0899	0.0617	0.0008
NBPL	10/1/2021 0:00	12/1/2021 0:00	GLNU1 - GLEN ULLIN	10/26/2021	10/27/2021	1081	0.6378	-53.1	1353.578466	0.9779	2.2969	84.1507	11.3323	0.9402	0.0193	0.0325	0.0006	0.0003	N/A	0	0.2262	0.0232	0.4158	0.0772	0.0523	0.0008
NBPL	10/1/2021 0:00	12/1/2021 0:00	GLNU1 - GLEN ULLIN	10/26/2021	10/28/2021	1081	0.6378	-53.1	1353.578466	0.9779	2.2969	84.1507	11.3323	0.9402	0.0193	0.0325	0.0006	0.0003	N/A	0	0.2262	0.0232	0.4158	0.0772	0.0523	0.0008
NBPL	10/1/2021 0:00	12/1/2021 0:00	GLNU1 - GLEN ULLIN	10/29/2021	10/30/2021	1085	0.6421	-50.6	1354.030363	1.0239	2.4002	83.4937	11.8705	0.9774	0.0201	0.0359	0.0012	0.001	N/A	0	0.1523	0.0238	0.3976	0.0804	0.0563	0.0008
NBPL	10/1/2021 0:00	12/1/2021 0:00	GLNU1 - GLEN ULLIN	10/30/2021	10/31/2021	1089	0.6442	-48.8	1356.805263	1.0193	2.3732	83.271	12.0812	1.0694	0.0221	0.0383	0.0012	0.0005	N/A	0	0.0998	0.0241	0.399	0.0822	0.0561	0.0008
NBPL	10/1/2021 0:00	12/1/2021 0:00	GLNU1 - GLEN ULLIN	10/31/2021	11/1/2021	1088	0.6432	-49.2	1356.612697	1.0104	2.3372	83.3754	11.9831	1.0711	0.0208	0.0356	0.0011	0.0003	N/A	0	0.1414	0.0236	0.3987	0.0792	0.051	0.0008

NORTH DAKOTA HEATING VALUE ZONES		
ZONES	MEASURING DEVICE	LOCATION
211	Chromatograph	Sidney Border
24	Chromatograph	Williston Border
241	Accumulated Sample	Fairview Border
25	Accumulated Sample	Watford City West Border
260	Chromatograph	North Tioga Transfer
261	Chromatograph	Tioga Comp Station – Robinson Lake Plant
262	Chromatograph	Minot Border
263	Accumulated Sample	Lignite Plant
264	Accumulated Sample	Epping Border
265	Chromatograph	Tioga Comp Station – County Line Plant
271	Chromatograph	Bismarck – Cleveland
272	Chromatograph	Cleveland – Mapleton
273	Chromatograph	Cleveland – Grafton
28	Chromatograph	Bismarck Station
31	Chromatograph	Dickinson Border
32	Chromatograph	Cabin Creek Station
33	Chromatograph	Little Knife Plant
34	Chromatograph	Bowman Border
43	Accumulated Sample	Watford City East Border
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	OCT21	SEP21	AUG21	JUL21	JUN 21	MAY 21	APR 21	MAR 21	FEB 21	JAN 21	DEC 20	NOV 20	ZONE
MT/ND	211	Sidney Border - MonDak Tfr - Sidney Plt	1202	1201	1213	1216	1210	1152	1204	1198	1208	1206	1209	1207	1198	211
ND	24	Williston Border - Charbonneau Station	1170	1159	1167	1173	1172	1164	1168	1167	1176	1176	1177	1175	1167	24
ND	25	Watford City West Border	1200	1206	1205	1211	1203	1199	1202	1199	1194	1194	1195	1195	1193	25
ND	28	Bismarck Station - Glen Ullin Station	1159	1185	1196	1202	1200	1202	1161	1117	1148	1110	1121	1135	1131	28
ND	31	Dickinson Brd - Belfield Trf - G Ullin Stn	1138	1141	1130	1191	1123	1129	1160	1154	1127	1113	1122	1131	1129	31
ND/MT	32	Cabin Creek Station - Belfied Transfer	1125	1132	1136	1162	1135	1127	1122	1124	1121	1091	1105	1119	1123	32
ND	33	Little Knife Plant	1176	1177	1179	1182	1184	1179	1175	1173	1172	1171	1172	1172	1172	33
ND	34	Badlands Plant/Bowman Border	1041	1022	1059	1025	980	980	989	981	1040	1079	1172	1094	1070	34
ND	43	Watford City East Border	1109	1060	1062	1088	1109	1119	1123	1119	1126	1106	1104	1147	1147	43
ND/MT	241	Fairview Border	1192	1162	1193	1201	1213	1185	1173	1185	1198	1204	1192	1195	1203	241
ND	260	North Tioga Transfer - Nesson Plant	1150	1135	1145	1159	1167	1153	1159	1148	1160	1149	1144	1142	1134	260
ND	261	Tioga Comp Station - Robinson Lake Plan	1182	1197	1192	1194	1196	1195	1193	1180	1173	1171	1168	1166	1159	261
ND	262	Minot Bdr - Palermo Bdr - Bismarck Stn	1194	1211	1203	1202	1200	1203	1195	1189	1191	1187	1184	1181	1178	262
ND	263	Lignite Plant	1137	1131	1134	1129	1143	1147	1137	1147	1148	1125	1133	1134	1137	263
ND	264	Epping Border	1164	1145	1164	1167	1172	1165	1163	1165	1168	1168	1167	1165	1163	264
ND	265	Tioga Comp Station - County Line Plant	1167	1166	1165	1163	1166	1165	1172	1170	1172	1171	1168	1166	1159	265
ND	266	County Line Plant	1172	1174	1185	1175	1174	1169	1171	1169	1174	1176	1164	1166	1165	266
ND	271	Bismarck Station - Cleveland Station	1190	1208	1197	1202	1200	1202	1196	1186	1191	1165	1180	1179	1174	271
ND	272	Cleveland Station - Mapleton	1190	1211	1196	1202	1199	1200	1196	1185	1190	1165	1179	1178	1173	272
ND	273	Cleveland Station - Grafton Border	1189	1210	1195	1202	1200	1200	1195	1184	1189	1164	1179	1178	1173	273
ND	550	Mandan Border / NBPL-St Anthony	1155	1173	1196	1196	1190	1182	1161	1120	1148	1110	1121	1133	1131	550
ND	610	MDU-Watford City BTU	1140	1130	1098	1106	1121	1132	1162	1158	1158	1141	1140	1167	1166	610
ND	802	NBPL - Linton	1097	1089	1094	1090	1089	1090	1094	1093	1099	1101	1103	1111	1113	802
ND	903	Hettinger Propane	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	903
ND	600	Alliance Pipeline - Hankinson	1154	1158	1158	1153	1156	1157	1158	1154	1150	1146	1148	1155	1155	600
ND	601	Alliance Pipeline - Milnor	1154	1158	1158	1153	1156	1157	1158	1154	1150	1146	1148	1155	1155	602

THERMAL ZONE VARIANCE DOCUMENTATION		
October 2021		
<i>ZONE</i>	<i>BTU VARIANCE</i>	<i>REASON</i>
34	-37	Operational – Blend
241	-31	Operational – Blend
550	-23	Blend
610	32	Blend