

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

July 16, 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 – May 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 June 2021.
2. Attachment B consists of copies of the monthly Heating Value Test Reports received from our suppliers for the month of May 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 May 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
Jun-21

<u>Town</u>	<u>Heat Zone</u>	<u>Therm Factor</u>
MDU-303-ALEXANDER	025	1.1325
MDU-308-ARNEGARD	025	1.1325
MDU-314-APPLE VALLEY	271	1.1443
MDU-318-BEACH	032	1.0387
MDU-319-BELFIELD	032	1.0464
MDU-323-BERTHOLD	262	1.1230
MDU-324-BEULAH	032	1.0464
MDU-327-BISMARCK	028	1.0778
MDU-330-BOWMAN	034	0.8999
MDU-337-BURLINGTON	262	1.1472
MDU-343-CARRINGTON	273	1.1424
MDU-344-CLEVELAND	272	1.1353
MDU-364-CAVALIER	273	1.1665
MDU-365-DAWSON	271	1.1363
MDU-368-DES LACS	262	1.1311
MDU-369-DICKINSON	031	1.0821
MDU-374-FT TOTTEN	273	1.1504
MDU-375-DEVILS LAKE	273	1.1504
MDU-379-BARLOW	273	1.1424
MDU-384-EPPING	264	1.1003
MDU-387-ELDRIDGE	272	1.1434
MDU-407-GLADSTONE	031	1.0821
MDU-411-GLEN ULLIN	031	1.0900
MDU-413-GOLVA	032	1.0235
MDU-416-GARRISON	262	1.1311
MDU-417-GRAFTON	273	1.1746
MDU-403-GWINNER	601	1.1370
MDU-429-HEBRON	031	1.0900
MDU-432-HETTINGER	903	2.3875
MDU-449-JAMESTOWN	272	1.1514
MDU-459-KILLDEER	033	1.1079
MDU-463-LANGDON	273	1.1424
MDU-469-LEFOR	031	1.0821
MDU-474-LIGNITE	263	1.0911
MDU-475-LINTON	802	1.0546
MDU-478-LINCOLN	028	1.0778
MDU-488-MCKENZIE	271	1.1443
MDU-494-MEDINA	271	1.1363
MDU-498-MANDAN	028	1.0778
MDU-500-MARMARTH	034	0.9066
MDU-505-MINOT	262	1.1472
MDU-510-MOTT	031	1.0821
MDU-512-MAX	262	1.1230
MDU-513-MILNOR	601	1.1370
MDU-522-NEW ENGLAND	031	1.0743
MDU-524-NEW SALEM	028	1.0550
MDU-532-NEW ROCKFORD	273	1.1424
MDU-539-PARK RIVER	273	1.1665
MDU-540-PALERMO	262	1.1230

MDU-558-RAY	264	1.1003
MDU-561-REGENT	031	1.0821
MDU-563-RHAME	034	0.8933
MDU-564-RICHARDTON	031	1.0743
MDU-568-ROSS	261	1.1065
MDU-572-RUTHVILLE	262	1.1472
MDU-574-SANBORN	272	1.1514
MDU-583-SENTINEL BUTTE	032	1.0387
MDU-588-SOUTH HEART	031	1.0743
MDU-717-SPIRITWOOD	272	1.1514
MDU-590-SPRINGBROOK	264	1.0985
MDU-591-STANLEY	261	1.1145
MDU-593-STEELE	271	1.1363
MDU-594-STERLING	028	1.0778
MDU-598-SHEYENNE	273	1.1504
MDU-605-SURREY	262	1.1472
MDU-610-TAPPEN	271	1.1363
MDU-611-TAYLOR	031	1.0743
MDU-616-TIOGA	260	1.0765
MDU-619-TURTLE LAKE	262	1.1368
MDU-620-TRENTON	024	1.1102
MDU-624-UNDERWOOD	262	1.1311
MDU-625-VALLEY CITY	272	1.1595
MDU-629-WALHALLA	273	1.1665
MDU-632-WATFORD CITY	610	1.0937
MDU-636-WHEELOCK	264	1.0906
MDU-637-WHITE EARTH	261	1.1079
MDU-642-WILLISTON	024	1.1102
MDU-646-WASHBURN	262	1.1392
MDU-647-WILTON	262	1.1230
MDU-664-RIVERDALE	262	1.1311
MDU-691-FAIRVIEW	241	1.1273
MDU-712-MINOT AFB	262	1.1472
MDU-718-FAIRMOUNT	600	1.1346
MDU-732-NEKOMA	273	1.1424
MDU-732-MSR SITE	273	1.1424

Source Daily Summary

May 2021

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	0.7300	1181.5	1202.4	1194.1	1.230	3.369	68.975	23.242	2.852	0.102	0.201	0.014	0.013	0.000	0.000	0.000	0.000	0.000	1401.25	
2	0.7306	1182.0	1202.9	1194.3	1.230	3.369	68.975	23.242	2.852	0.102	0.201	0.014	0.013	0.000	0.000	0.000	0.000	0.000	1401.25	
3	0.7313	1182.6	1203.5	1200.0	1.248	3.387	68.130	24.071	2.832	0.105	0.202	0.013	0.012	0.000	0.000	0.000	0.000	0.000	1403.98	
4	0.7355	1187.2	1208.2	1204.5	1.257	3.490	67.351	24.689	2.847	0.118	0.223	0.013	0.011	0.000	0.000	0.000	0.000	0.000	1405.36	
5	0.7339	1185.1	1206.1	1202.5	1.265	3.456	67.545	24.652	2.720	0.117	0.220	0.013	0.012	0.000	0.000	0.000	0.000	0.000	1404.44	
6	0.7303	1182.9	1203.8	1200.2	1.206	3.342	68.321	23.979	2.781	0.115	0.229	0.014	0.013	0.000	0.000	0.000	0.000	0.000	1405.25	
7	0.7313	1184.5	1205.5	1201.8	1.202	3.337	68.209	24.015	2.868	0.115	0.227	0.014	0.013	0.000	0.000	0.000	0.000	0.000	1406.25	
8	0.7361	1191.6	1212.7	1209.1	1.226	3.324	67.153	25.156	2.776	0.116	0.224	0.013	0.011	0.000	0.000	0.000	0.000	0.000	1410.00	
9	0.7358	1191.7	1212.8	1209.1	1.208	3.312	67.471	24.612	3.025	0.116	0.230	0.014	0.012	0.000	0.000	0.000	0.000	0.000	1410.42	
10	0.7353	1189.4	1210.4	1206.8	1.233	3.373	67.543	24.503	2.958	0.122	0.240	0.014	0.013	0.000	0.000	0.000	0.000	0.000	1408.14	
11	0.7346	1187.6	1208.6	1204.9	1.230	3.420	67.655	24.366	2.946	0.120	0.236	0.014	0.013	0.000	0.000	0.000	0.000	0.000	1406.68	
12	0.7331	1184.6	1205.5	1201.9	1.242	3.449	67.950	24.043	2.931	0.121	0.238	0.014	0.013	0.000	0.000	0.000	0.000	0.000	1404.52	
13	0.7262	1175.8	1196.7	1193.0	1.164	3.447	69.244	22.882	2.867	0.118	0.245	0.016	0.016	0.000	0.000	0.000	0.000	0.000	1400.80	
14	0.7260	1176.3	1197.1	1193.5	1.151	3.420	69.276	22.899	2.853	0.118	0.247	0.017	0.017	0.000	0.000	0.000	0.000	0.000	1401.52	
15	0.7250	1174.8	1195.6	1191.8	1.163	3.397	69.529	22.641	2.868	0.120	0.250	0.017	0.017	0.000	0.000	0.000	0.000	0.000	1400.71	
16	0.7273	1177.9	1198.8	1194.9	1.173	3.404	69.131	22.962	2.925	0.121	0.251	0.016	0.016	0.000	0.000	0.000	0.000	0.000	1402.25	
17	0.7337	1186.5	1207.5	1203.4	1.225	3.413	67.840	24.187	2.955	0.117	0.235	0.015	0.014	0.000	0.000	0.000	0.000	0.000	1406.19	
18	0.7262	1178.1	1199.0	1195.1	1.141	3.339	69.359	22.805	2.942	0.122	0.257	0.017	0.018	0.000	0.000	0.000	0.000	0.000	1403.55	
19	0.7244	1175.6	1196.5	1192.7	1.154	3.299	69.673	22.580	2.894	0.120	0.248	0.016	0.016	0.000	0.000	0.000	0.000	0.000	1402.36	
20	0.7293	1181.6	1202.5	1198.8	1.209	3.318	68.367	24.125	2.611	0.113	0.228	0.014	0.014	0.000	0.000	0.000	0.000	0.000	1404.73	
21	0.7329	1187.7	1208.7	1205.1	1.195	3.311	67.624	24.860	2.656	0.111	0.217	0.013	0.012	0.000	0.000	0.000	0.000	0.000	1408.47	
22	0.7278	1182.3	1203.2	1199.6	1.111	3.281	68.738	23.728	2.783	0.109	0.221	0.014	0.014	0.000	0.000	0.000	0.000	0.000	1407.00	
23	0.7293	1184.2	1205.2	1201.5	1.116	3.301	68.504	23.847	2.880	0.108	0.216	0.014	0.013	0.000	0.000	0.000	0.000	0.000	1407.81	
24	0.7347	1185.2	1206.2	1202.5	1.265	3.516	67.687	24.167	2.984	0.121	0.234	0.014	0.012	0.000	0.000	0.000	0.000	0.000	1403.88	
25	0.7381	1188.6	1209.6	1205.9	1.353	3.501	66.778	25.277	2.733	0.118	0.218	0.012	0.009	0.000	0.000	0.000	0.000	0.000	1404.61	
26	0.7388	1189.8	1210.8	1207.2	1.352	3.494	66.740	25.229	2.821	0.120	0.223	0.012	0.009	0.000	0.000	0.000	0.000	0.000	1405.34	
27	0.7402	1192.5	1213.6	1210.0	1.350	3.470	66.509	25.421	2.886	0.120	0.222	0.012	0.009	0.000	0.000	0.000	0.000	0.000	1407.13	
28	0.7352	1187.3	1208.3	1204.6	1.268	3.438	67.536	24.439	2.952	0.118	0.225	0.013	0.011	0.000	0.000	0.000	0.000	0.000	1405.77	
29	0.7241	1173.3	1194.1	1190.4	1.128	3.454	69.650	22.471	2.919	0.116	0.233	0.014	0.014	0.000	0.000	0.000	0.000	0.000	1399.90	
30	0.7235	1173.5	1194.3	1190.5	1.125	3.391	69.677	22.610	2.831	0.112	0.225	0.014	0.014	0.000	0.000	0.000	0.000	0.000	1400.67	
31	0.7271	1177.9	1198.7	1194.9	1.187	3.367	69.102	23.049	2.926	0.115	0.226	0.014	0.013	0.000	0.000	0.000	0.000	0.000	1402.43	
Avg	0.7312	1183.0	1204.2	1200.1	1.213	3.393	68.266	23.895	2.861	0.116	0.229	0.014	0.013	0.000	0.000	0.000	0.000	0.000	1404.60	

Source Daily Summary

May 2021

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	0.7010	1148.5	1168.8	1165.4	0.943	3.074	73.529	19.853	2.255	0.094	0.212	0.017	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1392.72
2	0.7002	1147.1	1167.4	1164.2	0.940	3.086	73.658	19.723	2.256	0.093	0.207	0.016	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1391.91
3	0.7034	1148.4	1168.8	1165.4	0.980	3.248	73.173	19.886	2.352	0.099	0.223	0.018	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1390.27
4	0.7008	1146.7	1167.0	1163.7	0.999	3.086	73.524	19.880	2.165	0.094	0.215	0.017	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1390.70
5	0.7004	1145.9	1166.2	1162.8	0.995	3.097	73.580	19.849	2.134	0.092	0.213	0.017	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1390.17
6	0.6995	1145.0	1165.3	1162.0	0.968	3.109	73.757	19.664	2.154	0.093	0.215	0.018	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1389.99
7	0.6991	1145.6	1165.9	1162.6	0.952	3.057	73.818	19.663	2.180	0.090	0.204	0.016	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1391.13
8	0.6997	1146.5	1166.8	1163.5	0.962	3.049	73.701	19.782	2.173	0.091	0.203	0.019	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1391.59
9	0.6993	1146.0	1166.3	1162.9	0.954	3.055	73.795	19.682	2.172	0.092	0.211	0.017	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1391.32
10	0.7042	1148.0	1168.3	1164.9	0.998	3.323	73.116	19.783	2.401	0.102	0.234	0.019	0.024	0.000	0.000	0.000	0.000	0.000	0.000	1388.91
11	0.7048	1148.5	1168.9	1165.5	1.002	3.340	73.031	19.811	2.428	0.105	0.240	0.019	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1388.97
12	0.7069	1150.6	1171.0	1167.6	1.003	3.406	72.730	19.929	2.527	0.110	0.250	0.020	0.024	0.000	0.000	0.000	0.000	0.000	0.000	1389.44
13	0.7063	1149.1	1169.5	1166.1	1.005	3.433	72.842	19.795	2.525	0.109	0.247	0.020	0.024	0.000	0.000	0.000	0.000	0.000	0.000	1388.31
14	0.7061	1149.7	1170.1	1166.7	1.009	3.382	72.841	19.888	2.480	0.108	0.247	0.020	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1389.10
15	0.7062	1150.4	1170.8	1167.4	1.004	3.349	72.866	19.871	2.503	0.111	0.252	0.020	0.024	0.000	0.000	0.000	0.000	0.000	0.000	1389.95
16	0.7050	1149.7	1170.0	1166.5	0.999	3.294	73.061	19.782	2.459	0.109	0.250	0.020	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1390.15
17	0.7068	1151.5	1171.9	1168.4	0.993	3.360	72.757	19.927	2.561	0.110	0.249	0.019	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1390.66
18	0.7047	1151.1	1171.5	1168.0	0.994	3.188	73.063	19.950	2.407	0.108	0.246	0.020	0.024	0.000	0.000	0.000	0.000	0.000	0.000	1392.18
19	0.7006	1146.8	1167.1	1163.6	1.004	3.050	73.788	19.470	2.313	0.102	0.232	0.019	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1391.02
20	0.7017	1147.9	1168.2	1164.9	1.008	3.079	73.546	19.688	2.304	0.103	0.231	0.018	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1391.31
21	0.7022	1147.4	1167.8	1164.4	1.007	3.152	73.508	19.595	2.359	0.104	0.235	0.018	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1390.29
22	0.7017	1148.5	1168.8	1165.4	1.014	3.035	73.539	19.773	2.254	0.103	0.238	0.019	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1391.97
23	0.7063	1151.1	1171.5	1168.1	0.975	3.357	72.960	19.673	2.608	0.117	0.264	0.021	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1390.74
24	0.7020	1147.3	1167.6	1164.2	0.966	3.210	73.412	19.718	2.337	0.102	0.222	0.016	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1390.28
25	0.6988	1144.3	1164.6	1161.3	0.923	3.151	73.856	19.533	2.207	0.094	0.204	0.015	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1389.91
26	0.6978	1144.1	1164.4	1161.0	0.913	3.088	74.032	19.452	2.188	0.094	0.201	0.015	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1390.59
27	0.6968	1145.0	1165.2	1161.9	0.913	2.941	74.173	19.529	2.140	0.087	0.188	0.014	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1392.64
28	0.7021	1148.1	1168.4	1165.1	0.912	3.243	73.458	19.570	2.468	0.100	0.215	0.015	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1391.26
29	0.7048	1149.7	1170.1	1166.8	0.910	3.401	73.057	19.656	2.609	0.106	0.227	0.016	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1390.53
30	0.7019	1148.3	1168.7	1165.3	0.920	3.201	73.398	19.764	2.379	0.097	0.208	0.015	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1391.70
31	0.7015	1148.0	1168.3	1164.9	0.934	3.165	73.432	19.811	2.328	0.094	0.203	0.015	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1391.66
Avg	0.7023	1148.0	1168.2	1164.9	0.971	3.194	73.387	19.740	2.343	0.100	0.225	0.018	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1390.69

Gas Composition and Properties

Effective May 1, 2021

Attachment B
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Source #: 0602160
Name: FAIRVIEW BORDER

Component	Mole %	Liquid Content	Mass %
Carbon Dioxide, CO2	1.0140		2.1855
Nitrogen, N2	3.2678		4.4833
Methane, C1	72.6517		57.0809
Ethane, C2	20.1724	5.3982	29.7064
Propane, C3	2.5105	0.6921	5.4216
iso-Butane, iC4	0.1058	0.0346	0.3012
n-Butane, nC4	0.2376	0.0750	0.6763
iso-Pentane, iC5	0.0171	0.0063	0.0604
n-Pentane, nC5	0.0191	0.0069	0.0675
Neo-Pentane, NeoC5			
Hexanes Plus, C6+	0.0040	0.0016	0.0169
Water, H2O			
Hydrogen Sulfide, H2S			
Oxygen, O2			
Carbon Monoxide, CO			
Hydrogen, H2			
Helium, He			
Argon, Ar			
Totals	100.0000	6.2150	100.0000

Property	Total Sample	C6 Plus Fraction
Pressure Base	14.730	
Temperature Base	60.00	
HCDP @ Sample Pressure	-21.515	
Cricondentherm	-6.858	
HV, Dry @ Base P, T	1173.18	
HV, Sat @ Base P, T	1152.76	
HV, Sat @ Sample P, T	1173.18	
Relative Density	0.7070	

C6+: 100

Sample

Date: 05/01/2021 Pressure: 400.0
Type: Temperature:
Tech: Joshua Tipton H2O: lbs/mm
 H2S: ppm

Remarks:

Analysis

Date: 05/01/2021 Instrument:
 Cylinder: 353
Tech: Joshua Tipton

Remarks:

Gas Composition and Properties

Effective May 1, 2021

Attachment B
Page 4 of 24

Source #: 0602225
Name: WATFORD CITY WEST BORDER

Component	Mole %	Liquid Content	Mass %
Carbon Dioxide, CO2	1.3044		2.7065
Nitrogen, N2	3.6897		4.8732
Methane, C1	69.8513		52.8323
Ethane, C2	20.2618	5.4234	28.7243
Propane, C3	3.9772	1.0966	8.2685
iso-Butane, iC4	0.2454	0.0804	0.6725
n-Butane, nC4	0.5532	0.1746	1.5159
iso-Pentane, iC5	0.0506	0.0185	0.1721
n-Pentane, nC5	0.0530	0.0192	0.1803
Neo-Pentane, NeoC5			
Hexanes Plus, C6+	0.0134	0.0055	0.0544
Water, H2O			
Hydrogen Sulfide, H2S			
Oxygen, O2			
Carbon Monoxide, CO			
Hydrogen, H2			
Helium, He			
Argon, Ar			
Totals	100.0000	6.8190	100.0000

Property	Total Sample	C6 Plus Fraction
Pressure Base	14.730	
Temperature Base	60.00	
HCDP @ Sample Pressure	3.621	
Cricodentherm	15.008	
HV, Dry @ Base P, T	1201.80	
HV, Sat @ Base P, T	1180.88	
HV, Sat @ Sample P, T	1201.80	
Relative Density	0.7345	
C6+:		

Sample

Date: 05/01/2021 Pressure: 438.0
 Type: Temperature:
 Tech: Joshua Tipton H2O: lbs/mm
 H2S: ppm

Remarks:

Analysis

Date: 05/01/2021 Instrument:
 Cylinder: 25
 Tech: Joshua Tipton

Remarks:

Source Daily Summary

May 2021

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	0.7025	1142.3	1162.6		0.823	3.770	73.606	18.627	2.774	0.106	0.242	0.021	0.025	0.006					1383.91	
2	0.7026	1141.9	1162.1		0.828	3.799	73.629	18.520	2.829	0.106	0.242	0.020	0.024	0.003					1383.27	
3	0.7075	1141.6	1161.8		0.902	4.170	72.836	18.690	2.979	0.113	0.261	0.020	0.024	0.005					1378.06	
4	0.7024	1136.4	1156.6		0.928	3.966	73.617	18.424	2.640	0.107	0.259	0.023	0.029	0.007					1376.80	
5	0.7021	1135.7	1155.8		0.910	4.009	73.577	18.487	2.615	0.104	0.248	0.020	0.025	0.005					1376.21	
6	0.7000	1135.4	1155.5		0.851	3.917	73.961	18.268	2.596	0.103	0.247	0.022	0.028	0.008					1377.97	
7	0.6993	1136.1	1156.2		0.831	3.837	74.022	18.349	2.587	0.098	0.227	0.019	0.023	0.005					1379.48	
8	0.7001	1135.8	1155.9		0.837	3.930	73.847	18.428	2.576	0.098	0.229	0.020	0.023	0.010					1378.22	
9	0.7003	1137.0	1157.1		0.834	3.875	73.890	18.376	2.628	0.103	0.243	0.021	0.025	0.005					1379.56	
10	0.7107	1142.2	1162.4		0.933	4.386	72.490	18.568	3.136	0.126	0.298	0.025	0.031	0.009					1375.65	
11	0.7129	1145.4	1165.7		0.920	4.411	72.135	18.806	3.231	0.131	0.306	0.024	0.029	0.007					1377.46	
12	0.7153	1147.3	1167.6		0.934	4.500	71.837	18.839	3.368	0.138	0.321	0.026	0.030	0.008					1377.42	
13	0.7145	1145.8	1166.1		0.929	4.526	71.926	18.768	3.349	0.133	0.307	0.025	0.030	0.008					1376.36	
14	0.7139	1145.7	1166.0		0.936	4.460	72.034	18.778	3.277	0.134	0.313	0.026	0.032	0.009					1376.88	
15	0.7147	1147.1	1167.4		0.922	4.470	71.936	18.802	3.347	0.139	0.320	0.025	0.031	0.007					1377.81	
16	0.7099	1143.4	1163.6		0.890	4.302	72.549	18.725	3.038	0.128	0.301	0.026	0.032	0.009					1377.87	
17	0.7159	1149.6	1169.9		0.905	4.462	71.680	19.055	3.390	0.136	0.313	0.025	0.029	0.006					1379.57	
18	0.7070	1139.9	1160.1		0.890	4.244	72.988	18.476	2.928	0.122	0.290	0.024	0.030	0.008					1376.48	
19	0.7046	1137.6	1157.7		0.924	4.102	73.502	18.099	2.905	0.121	0.288	0.024	0.029	0.006					1376.09	
20	0.7029	1134.7	1154.8		0.947	4.085	73.723	17.992	2.806	0.117	0.275	0.022	0.027	0.005					1374.25	
21	0.7061	1137.1	1157.2		0.938	4.255	73.265	18.079	2.996	0.123	0.290	0.023	0.027	0.005					1373.97	
22	0.7032	1136.5	1156.6		0.949	4.001	73.712	18.091	2.769	0.119	0.294	0.026	0.031	0.007					1376.12	
23	0.7158	1142.0	1162.2		0.809	5.061	72.001	17.807	3.741	0.156	0.365	0.026	0.028	0.006					1370.51	
24	0.7058	1131.8	1151.8		0.787	4.778	73.130	17.762	3.110	0.122	0.269	0.018	0.020	0.003					1367.89	
25	0.6969	1124.5	1144.4		0.662	4.580	74.440	17.103	2.859	0.102	0.221	0.015	0.017	0.003					1367.72	
26	0.6937	1121.6	1141.5		0.643	4.479	74.846	17.034	2.677	0.093	0.198	0.013	0.014	0.004					1367.42	
27	0.6917	1124.6	1144.5		0.649	4.104	74.958	17.589	2.428	0.078	0.166	0.011	0.012	0.004					1373.01	
28	0.7052	1134.7	1154.8		0.686	4.701	73.188	17.781	3.270	0.111	0.232	0.015	0.016	0.001					1371.96	
29	0.7093	1138.9	1159.1		0.694	4.814	72.570	18.078	3.440	0.119	0.252	0.016	0.017	0.001					1373.13	
30	0.7025	1136.5	1156.7		0.726	4.276	73.399	18.352	2.919	0.097	0.203	0.013	0.014	0.002					1376.87	
31	0.7033	1138.1	1158.2		0.781	4.174	73.156	18.771	2.808	0.091	0.193	0.012	0.013	0.001					1377.93	
Avg	0.7056	1138.0	1158.5		0.845	4.272	73.176	18.307	2.968	0.115	0.265	0.021	0.025	0.006					1376.00	

Source Daily Summary

May 2021

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	0.7448	1169.8	1190.5	1187.0	0.933	5.898	67.423	20.115	5.032	0.173	0.377	0.023	0.026	0.000	0.000	0.000	0.000	0.000	0.000	1376.22
2	0.7543	1175.1	1195.9	1192.6	0.910	6.498	66.315	19.809	5.752	0.208	0.452	0.027	0.028	0.000	0.000	0.000	0.000	0.000	0.000	1373.66
3	0.7585	1182.9	1203.8	1200.6	0.913	6.406	65.674	20.345	5.953	0.205	0.448	0.027	0.029	0.000	0.000	0.000	0.000	0.000	0.000	1379.02
4	0.7547	1175.5	1196.3	1193.1	0.913	6.508	66.064	20.143	5.719	0.192	0.412	0.024	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1373.79
5	0.7498	1167.0	1187.6	1184.5	0.921	6.551	66.628	19.909	5.399	0.179	0.372	0.020	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1368.37
6	0.7469	1161.4	1182.0	1178.8	0.918	6.623	66.945	19.735	5.228	0.168	0.345	0.018	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1364.50
7	0.7526	1171.4	1192.1	1188.9	0.917	6.551	66.305	20.020	5.581	0.188	0.393	0.022	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1370.98
8	0.7523	1171.9	1192.6	1189.5	0.914	6.499	66.355	20.043	5.560	0.189	0.394	0.022	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1371.81
9	0.7519	1170.2	1191.0	1187.8	0.910	6.567	66.397	19.957	5.545	0.187	0.393	0.022	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1370.26
10	0.7510	1169.1	1189.8	1186.5	0.912	6.554	66.669	19.648	5.549	0.200	0.419	0.023	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1369.64
11	0.7500	1167.3	1188.0	1184.7	0.916	6.561	66.678	19.782	5.443	0.188	0.389	0.021	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1368.52
12	0.7544	1174.2	1194.9	1191.6	0.916	6.551	66.208	19.926	5.701	0.208	0.436	0.025	0.027	0.000	0.000	0.000	0.000	0.000	0.000	1372.55
13	0.7560	1177.1	1198.0	1194.6	0.915	6.522	66.087	19.923	5.813	0.219	0.465	0.027	0.029	0.000	0.000	0.000	0.000	0.000	0.000	1374.55
14	0.7508	1168.1	1188.8	1185.4	0.921	6.576	66.714	19.587	5.530	0.200	0.422	0.024	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1368.74
15	0.7512	1168.9	1189.6	1186.2	0.915	6.574	66.573	19.766	5.524	0.196	0.405	0.022	0.024	0.000	0.000	0.000	0.000	0.000	0.000	1369.30
16	0.7535	1172.7	1193.5	1189.9	0.916	6.556	66.447	19.659	5.691	0.217	0.459	0.026	0.028	0.000	0.000	0.000	0.000	0.000	0.000	1371.65
17	0.7471	1170.0	1190.7	1187.1	0.967	6.048	67.268	19.872	5.155	0.199	0.432	0.027	0.031	0.000	0.000	0.000	0.000	0.000	0.000	1374.36
18	0.7551	1176.4	1197.2	1193.6	0.916	6.482	66.186	19.933	5.763	0.214	0.453	0.026	0.028	0.000	0.000	0.000	0.000	0.000	0.000	1374.49
19	0.7557	1181.3	1202.3	1198.6	0.938	6.204	66.351	19.952	5.721	0.232	0.524	0.035	0.041	0.000	0.000	0.000	0.000	0.000	0.000	1379.60
20	0.7540	1181.2	1202.1	1198.7	0.959	6.020	66.564	20.039	5.630	0.220	0.496	0.034	0.039	0.000	0.000	0.000	0.000	0.000	0.000	1381.08
21	0.7548	1179.6	1200.5	1197.1	0.943	6.215	66.375	19.933	5.824	0.222	0.433	0.026	0.029	0.000	0.000	0.000	0.000	0.000	0.000	1378.48
22	0.7528	1172.3	1193.0	1189.7	0.915	6.518	66.442	19.748	5.758	0.199	0.376	0.021	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1371.73
23	0.7494	1172.8	1193.6	1190.0	0.961	6.091	67.435	19.099	5.684	0.215	0.453	0.029	0.032	0.000	0.000	0.000	0.000	0.000	0.000	1375.51
24	0.7573	1181.7	1202.7	1199.0	0.931	6.335	66.561	19.182	6.050	0.252	0.602	0.041	0.046	0.000	0.000	0.000	0.000	0.000	0.000	1378.63
25	0.7569	1179.6	1200.5	1197.1	0.925	6.446	66.021	20.000	5.832	0.228	0.485	0.030	0.033	0.000	0.000	0.000	0.000	0.000	0.000	1376.53
26	0.7270	1157.3	1177.8	1174.3	0.845	5.122	69.900	19.690	3.882	0.153	0.350	0.026	0.032	0.000	0.000	0.000	0.000	0.000	0.000	1378.46
27	0.7183	1148.9	1169.3	1166.0	0.833	4.837	71.087	19.268	3.525	0.129	0.280	0.019	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1376.67
28	0.7460	1167.1	1187.8	1184.5	0.895	6.224	67.265	19.826	5.170	0.184	0.388	0.022	0.024	0.000	0.000	0.000	0.000	0.000	0.000	1372.05
29	0.7487	1171.9	1192.6	1189.2	0.897	6.190	66.909	20.038	5.328	0.190	0.400	0.023	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1375.11
30	0.7546	1176.4	1197.2	1193.6	0.906	6.442	66.205	20.064	5.678	0.210	0.442	0.026	0.027	0.000	0.000	0.000	0.000	0.000	0.000	1374.95
31	0.7571	1181.0	1201.9	1198.4	0.906	6.401	65.848	20.298	5.826	0.215	0.451	0.026	0.028	0.000	0.000	0.000	0.000	0.000	0.000	1378.10
Avg	0.7506	1172.0	1193.0	1189.6	0.916	6.309	66.771	19.849	5.479	0.199	0.424	0.025	0.028	0.000	0.000	0.000	0.000	0.000	0.000	1373.85

Source Daily Summary

May 2021

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	0.7572	1176.7	1197.5	1193.8	0.921	6.648	65.915	19.844	5.958	0.209	0.451	0.026	0.027	0.000	0.000	0.000	0.000	0.000	1373.01	
2	0.7579	1178.2	1199.1	1195.6	0.922	6.630	65.790	19.969	5.966	0.214	0.456	0.026	0.028	0.000	0.000	0.000	0.000	0.000	1374.03	
3	0.7561	1175.0	1195.8	1192.4	0.922	6.651	65.907	20.038	5.811	0.199	0.421	0.025	0.026	0.000	0.000	0.000	0.000	0.000	1371.99	
4	0.7496	1163.0	1183.6	1180.4	0.924	6.772	66.608	19.709	5.414	0.176	0.358	0.019	0.020	0.000	0.000	0.000	0.000	0.000	1363.88	
5	0.7523	1167.6	1188.3	1185.1	0.925	6.740	66.320	19.812	5.589	0.187	0.384	0.021	0.022	0.000	0.000	0.000	0.000	0.000	1366.85	
6	0.7536	1170.3	1191.0	1187.8	0.924	6.700	66.178	19.909	5.656	0.193	0.396	0.022	0.023	0.000	0.000	0.000	0.000	0.000	1368.79	
7	0.7513	1166.0	1186.6	1183.4	0.919	6.761	66.444	19.731	5.533	0.186	0.382	0.021	0.022	0.000	0.000	0.000	0.000	0.000	1365.76	
8	0.7505	1164.8	1185.5	1182.3	0.923	6.746	66.730	19.391	5.553	0.200	0.410	0.022	0.023	0.000	0.000	0.000	0.000	0.000	1365.18	
9	0.7509	1166.0	1186.7	1183.5	0.926	6.702	66.532	19.715	5.520	0.186	0.378	0.020	0.021	0.000	0.000	0.000	0.000	0.000	1366.28	
10	0.7513	1166.1	1186.7	1183.5	0.920	6.751	66.457	19.735	5.518	0.191	0.385	0.021	0.022	0.000	0.000	0.000	0.000	0.000	1365.91	
11	0.7538	1169.9	1190.6	1187.3	0.921	6.747	66.308	19.621	5.708	0.211	0.434	0.025	0.026	0.000	0.000	0.000	0.000	0.000	1368.11	
12	0.7554	1173.1	1193.9	1190.3	0.921	6.703	66.189	19.627	5.817	0.222	0.465	0.027	0.029	0.000	0.000	0.000	0.000	0.000	1370.39	
13	0.7532	1168.8	1189.5	1185.8	0.919	6.758	66.437	19.491	5.680	0.215	0.446	0.026	0.027	0.000	0.000	0.000	0.000	0.000	1367.40	
14	0.7531	1169.2	1189.9	1186.2	0.924	6.721	66.530	19.377	5.726	0.215	0.454	0.026	0.027	0.000	0.000	0.000	0.000	0.000	1367.89	
15	0.7561	1175.4	1196.2	1192.4	0.918	6.639	65.863	20.121	5.794	0.202	0.414	0.023	0.025	0.000	0.000	0.000	0.000	0.000	1372.38	
16	0.7512	1165.7	1186.4	1182.5	0.919	6.761	66.599	19.503	5.565	0.198	0.407	0.023	0.025	0.000	0.000	0.000	0.000	0.000	1365.61	
17	0.7567	1176.0	1196.8	1193.0	0.922	6.646	66.014	19.765	5.919	0.224	0.459	0.025	0.026	0.000	0.000	0.000	0.000	0.000	1372.60	
18	0.7542	1171.1	1191.9	1188.0	0.922	6.714	66.370	19.481	5.771	0.222	0.465	0.027	0.028	0.000	0.000	0.000	0.000	0.000	1369.13	
19	0.7573	1177.3	1198.1	1194.5	0.920	6.631	65.931	19.836	5.937	0.223	0.467	0.027	0.028	0.000	0.000	0.000	0.000	0.000	1373.49	
20	0.7611	1184.0	1205.0	1201.4	0.918	6.575	65.662	19.779	6.217	0.247	0.536	0.032	0.034	0.000	0.000	0.000	0.000	0.000	1377.93	
21	0.7600	1181.9	1202.9	1199.3	0.920	6.595	65.695	19.892	6.084	0.237	0.509	0.032	0.035	0.000	0.000	0.000	0.000	0.000	1376.48	
22	0.7613	1183.0	1204.0	1200.3	0.911	6.659	66.078	18.951	6.443	0.263	0.612	0.039	0.043	0.000	0.000	0.000	0.000	0.000	1376.55	
23	0.7631	1186.3	1207.3	1203.5	0.914	6.623	65.868	19.098	6.505	0.269	0.634	0.042	0.046	0.000	0.000	0.000	0.000	0.000	1378.70	
24	0.7611	1182.8	1203.8	1199.9	0.917	6.643	66.198	18.881	6.315	0.285	0.667	0.045	0.049	0.000	0.000	0.000	0.000	0.000	1376.48	
25	0.7608	1183.2	1204.2	1200.4	0.916	6.601	65.643	19.910	6.060	0.244	0.545	0.038	0.044	0.000	0.000	0.000	0.000	0.000	1377.16	
26	0.7579	1177.4	1198.2	1194.6	0.917	6.681	65.822	19.905	5.926	0.222	0.466	0.029	0.032	0.000	0.000	0.000	0.000	0.000	1373.08	
27	0.7549	1172.2	1192.9	1189.4	0.924	6.706	66.158	19.764	5.741	0.211	0.442	0.026	0.028	0.000	0.000	0.000	0.000	0.000	1369.75	
28	0.7575	1177.9	1198.8	1195.2	0.923	6.607	65.727	20.185	5.858	0.211	0.436	0.025	0.027	0.000	0.000	0.000	0.000	0.000	1374.07	
29	0.7578	1177.7	1198.6	1194.8	0.921	6.647	65.746	20.056	5.920	0.214	0.443	0.026	0.027	0.000	0.000	0.000	0.000	0.000	1373.59	
30	0.7577	1178.0	1198.8	1195.1	0.924	6.619	65.740	20.132	5.863	0.218	0.450	0.026	0.028	0.000	0.000	0.000	0.000	0.000	1373.95	
31	0.7587	1180.0	1200.9	1197.1	0.924	6.581	65.682	20.127	5.938	0.225	0.468	0.027	0.029	0.000	0.000	0.000	0.000	0.000	1375.52	
Avg	0.7559	1174.0	1195.1	1191.6	0.921	6.676	66.101	19.721	5.848	0.217	0.459	0.027	0.029	0.000	0.000	0.000	0.000	0.000	1371.35	

Gas Composition and Properties

Effective May 1, 2021

Attachment B
Page 8 of 24

Source #: 2501030
Name: LIGNITE PLANT

Component	Mole %	Liquid Content	Mass %
Carbon Dioxide, CO2	0.2213		0.5050
Nitrogen, N2	2.9176		4.2383
Methane, C1	78.3960		65.2171
Ethane, C2	16.7673	4.4855	26.1443
Propane, C3	1.6798	0.4629	3.8410
iso-Butane, iC4	0.0141	0.0046	0.0425
n-Butane, nC4	0.0039	0.0012	0.0118
iso-Pentane, iC5			
n-Pentane, nC5			
Neo-Pentane, NeoC5			
Hexanes Plus, C6+			
Water, H2O			
Hydrogen Sulfide, H2S			
Oxygen, O2			
Carbon Monoxide, CO			
Hydrogen, H2			
Helium, He			
Argon, Ar			
Totals	100.0000	4.9540	100.0000

Property	Total Sample	C6 Plus Fraction
Pressure Base	14.730	
Temperature Base	60.00	
HCDP @ Sample Pressure	-42.995	
Cricodentherm	-32.699	
HV, Dry @ Base P, T	1137.22	
HV, Sat @ Base P, T	1117.43	
HV, Sat @ Sample P, T	1137.22	
Relative Density	0.6675	
C6+: 100		

Sample

Date: 05/01/2021 Pressure: 500.0
 Type: Temperature:
 Tech: Joshua Tipton H2O: lbs/mm
 H2S: ppm

Remarks:

Analysis

Date: 05/01/2021 Instrument:
 Cylinder: 358
 Tech: Joshua Tipton

Remarks:

Gas Composition and Properties

Effective May 1, 2021

Attachment B
Page 9 of 24

Source #: 3002013
Name: EPPING BORDER

Component	Mole %	Liquid Content	Mass %
Carbon Dioxide, CO2	0.9594		2.0935
Nitrogen, N2	3.1280		4.3446
Methane, C1	74.0400		58.8918
Ethane, C2	19.3115	5.1674	28.7907
Propane, C3	2.2133	0.6101	4.8390
iso-Butane, iC4	0.0896	0.0293	0.2582
n-Butane, nC4	0.2103	0.0663	0.6060
iso-Pentane, iC5	0.0183	0.0067	0.0655
n-Pentane, nC5	0.0226	0.0082	0.0808
Neo-Pentane, NeoC5			
Hexanes Plus, C6+	0.0070	0.0029	0.0299
Water, H2O			
Hydrogen Sulfide, H2S			
Oxygen, O2			
Carbon Monoxide, CO			
Hydrogen, H2			
Helium, He			
Argon, Ar			
Totals	100.0000	5.8900	100.0000

Property	Total Sample	C6 Plus Fraction
Pressure Base	14.730	
Temperature Base	60.00	
HCDP @ Sample Pressure	-41.868	
Cricodentherm	-10.858	
HV, Dry @ Base P, T	1163.25	
HV, Sat @ Base P, T	1143.00	
HV, Sat @ Sample P, T	1163.25	
Relative Density	0.6983	
C6+: 100		

Sample		
Date: 05/01/2021	Pressure:	200.0
Type:	Temperature:	
Tech: Joshua Tipton	H2O:	lbs/mm
	H2S:	ppm
Remarks:		

Analysis		
Date: 05/01/2021	Instrument:	
	Cylinder:	390
Tech: Joshua Tipton		
Remarks:		

*** End of Report ***

Source Daily Summary

May 2021

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	0.7600	1184.8	1205.8	1201.7	0.905	6.451	65.509	20.324	6.081	0.214	0.461	0.027	0.028	0.000	0.000	0.000	0.000	0.000	1379.77	
2	0.7560	1177.8	1198.6	1194.7	0.904	6.507	65.936	20.153	5.828	0.200	0.424	0.024	0.024	0.000	0.000	0.000	0.000	0.000	1375.22	
3	0.7468	1165.3	1185.9	1182.1	0.913	6.396	67.137	19.659	5.307	0.179	0.369	0.020	0.020	0.000	0.000	0.000	0.000	0.000	1369.00	
4	0.7385	1155.5	1176.0	1172.3	0.919	6.198	68.320	19.145	4.899	0.160	0.326	0.017	0.017	0.000	0.000	0.000	0.000	0.000	1365.25	
5	0.7482	1166.9	1187.6	1183.8	0.912	6.421	66.999	19.654	5.409	0.184	0.380	0.021	0.021	0.000	0.000	0.000	0.000	0.000	1369.72	
6	0.7484	1169.9	1190.6	1186.8	0.907	6.273	67.033	19.724	5.439	0.189	0.391	0.022	0.022	0.000	0.000	0.000	0.000	0.000	1372.91	
7	0.7477	1167.4	1188.1	1184.3	0.900	6.364	67.105	19.621	5.394	0.187	0.387	0.021	0.021	0.000	0.000	0.000	0.000	0.000	1370.71	
8	0.7472	1165.1	1185.8	1182.0	0.903	6.449	67.297	19.285	5.408	0.201	0.413	0.022	0.023	0.000	0.000	0.000	0.000	0.000	1368.51	
9	0.7505	1168.7	1189.4	1185.6	0.906	6.538	66.651	19.754	5.528	0.191	0.390	0.021	0.021	0.000	0.000	0.000	0.000	0.000	1369.71	
10	0.7526	1171.2	1192.0	1188.1	0.901	6.591	66.357	19.885	5.613	0.200	0.408	0.022	0.023	0.000	0.000	0.000	0.000	0.000	1370.70	
11	0.7561	1176.9	1197.8	1193.8	0.903	6.561	66.082	19.865	5.853	0.222	0.461	0.026	0.027	0.000	0.000	0.000	0.000	0.000	1374.21	
12	0.7560	1176.9	1197.7	1193.4	0.900	6.567	66.166	19.726	5.875	0.229	0.480	0.028	0.029	0.000	0.000	0.000	0.000	0.000	1374.13	
13	0.7505	1167.4	1188.1	1183.7	0.908	6.612	66.786	19.460	5.561	0.205	0.423	0.023	0.023	0.000	0.000	0.000	0.000	0.000	1368.17	
14	0.7517	1169.4	1190.1	1185.7	0.901	6.612	66.565	19.646	5.616	0.202	0.414	0.022	0.022	0.000	0.000	0.000	0.000	0.000	1369.45	
15	0.7544	1174.0	1194.8	1190.3	0.902	6.581	66.429	19.519	5.808	0.228	0.478	0.027	0.028	0.000	0.000	0.000	0.000	0.000	1372.33	
16	0.7544	1174.1	1194.9	1190.4	0.904	6.573	66.400	19.569	5.802	0.226	0.472	0.026	0.027	0.000	0.000	0.000	0.000	0.000	1372.44	
17	0.7575	1180.1	1201.0	1196.5	0.900	6.503	65.987	19.871	5.971	0.229	0.482	0.028	0.029	0.000	0.000	0.000	0.000	0.000	1376.61	
18	0.7589	1182.4	1203.3	1198.9	0.900	6.496	66.042	19.600	6.096	0.249	0.548	0.034	0.036	0.000	0.000	0.000	0.000	0.000	1377.93	
19	0.7634	1190.6	1211.7	1207.4	0.904	6.408	65.464	19.992	6.330	0.260	0.567	0.036	0.039	0.000	0.000	0.000	0.000	0.000	1383.41	
20	0.7573	1179.7	1200.6	1196.5	0.904	6.500	66.004	19.903	5.913	0.232	0.487	0.029	0.030	0.000	0.000	0.000	0.000	0.000	1376.37	
21	0.7592	1181.7	1202.7	1198.5	0.895	6.564	66.253	19.140	6.217	0.258	0.592	0.039	0.042	0.000	0.000	0.000	0.000	0.000	1376.90	
22	0.7592	1184.9	1205.8	1201.7	0.898	6.377	66.443	19.008	6.298	0.265	0.625	0.042	0.045	0.000	0.000	0.000	0.000	0.000	1380.45	
23	0.7571	1181.1	1202.0	1197.7	0.899	6.409	66.770	18.808	6.093	0.279	0.649	0.044	0.049	0.000	0.000	0.000	0.000	0.000	1377.89	
24	0.7547	1177.8	1198.7	1194.7	0.902	6.382	66.369	19.791	5.806	0.224	0.472	0.027	0.028	0.000	0.000	0.000	0.000	0.000	1376.48	
25	0.7571	1179.1	1200.0	1196.1	0.900	6.529	65.956	19.950	5.921	0.224	0.466	0.027	0.028	0.000	0.000	0.000	0.000	0.000	1375.83	
26	0.7521	1170.0	1190.8	1187.0	0.905	6.611	66.572	19.583	5.628	0.212	0.440	0.024	0.025	0.000	0.000	0.000	0.000	0.000	1369.74	
27	0.7568	1179.1	1200.0	1196.1	0.904	6.494	65.877	20.174	5.845	0.213	0.442	0.025	0.026	0.000	0.000	0.000	0.000	0.000	1376.13	
28	0.7567	1178.6	1199.5	1195.5	0.905	6.515	65.921	20.095	5.837	0.220	0.454	0.026	0.026	0.000	0.000	0.000	0.000	0.000	1375.63	
29	0.7569	1179.0	1199.9	1195.8	0.907	6.502	65.953	20.039	5.853	0.224	0.468	0.027	0.027	0.000	0.000	0.000	0.000	0.000	1375.93	
30	0.7595	1184.0	1204.9	1200.8	0.904	6.454	65.675	20.154	6.029	0.233	0.491	0.029	0.030	0.000	0.000	0.000	0.000	0.000	1379.25	
31	0.7593	1183.7	1204.6	1200.6	0.908	6.443	65.674	20.181	6.043	0.224	0.471	0.028	0.029	0.000	0.000	0.000	0.000	0.000	1379.15	
Avg	0.7543	1176.0	1196.4	1192.3	0.904	6.480	66.378	19.719	5.784	0.218	0.462	0.027	0.028	0.000	0.000	0.000	0.000	0.000	1374.19	

Source Daily Summary

May 2021

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	0.7599	1184.5	1205.4	1201.6	0.904	6.459	65.526	20.305	6.075	0.214	0.461	0.027	0.028	0.000	0.000	0.000	0.000	0.000	0.000	1379.51
2	0.7539	1175.7	1196.5	1192.9	0.908	6.429	66.262	20.011	5.733	0.195	0.415	0.023	0.024	0.000	0.000	0.000	0.000	0.000	0.000	1374.73
3	0.6530	1082.5	1101.7	1098.7	1.030	2.459	81.373	14.304	0.795	0.014	0.023	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1360.27
4	0.6529	1082.6	1101.7	1098.6	1.029	2.451	81.392	14.302	0.787	0.013	0.022	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1360.31
5	0.6514	1082.4	1101.5	1098.8	0.994	2.378	81.624	14.189	0.775	0.014	0.023	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1361.77
6	0.6534	1086.8	1106.1	1102.9	0.929	2.383	81.221	14.651	0.769	0.016	0.028	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1365.21
7	0.6564	1092.4	1111.7	1108.6	0.867	2.422	80.567	15.298	0.801	0.015	0.026	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1369.05
8	0.6550	1091.6	1111.0	1108.5	0.832	2.397	80.685	15.283	0.758	0.014	0.026	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1369.76
9	0.6637	1105.3	1124.8	1121.7	0.736	2.523	79.046	16.755	0.878	0.021	0.036	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1377.55
10	0.6674	1110.4	1130.1	1126.8	0.627	2.729	78.287	17.293	0.981	0.028	0.049	0.003	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1380.02
11	0.7436	1167.6	1188.3	1184.7	0.869	6.011	67.782	19.543	5.157	0.193	0.398	0.023	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1375.02
12	0.7561	1177.0	1197.8	1194.2	0.900	6.564	66.152	19.746	5.874	0.228	0.478	0.028	0.028	0.000	0.000	0.000	0.000	0.000	0.000	1374.22
13	0.7504	1167.0	1187.7	1184.2	0.908	6.625	66.822	19.402	5.562	0.206	0.427	0.023	0.024	0.000	0.000	0.000	0.000	0.000	0.000	1367.80
14	0.7514	1169.1	1189.8	1186.3	0.901	6.613	66.582	19.650	5.600	0.201	0.410	0.022	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1369.22
15	0.7541	1173.5	1194.3	1190.6	0.902	6.586	66.455	19.512	5.790	0.227	0.474	0.027	0.027	0.000	0.000	0.000	0.000	0.000	0.000	1371.99
16	0.7543	1173.8	1194.6	1190.9	0.904	6.577	66.420	19.555	5.793	0.226	0.472	0.026	0.027	0.000	0.000	0.000	0.000	0.000	0.000	1372.25
17	0.7566	1178.6	1199.4	1195.7	0.900	6.519	66.082	19.819	5.924	0.226	0.474	0.027	0.028	0.000	0.000	0.000	0.000	0.000	0.000	1375.59
18	0.7589	1182.3	1203.2	1199.3	0.900	6.500	66.049	19.592	6.091	0.250	0.549	0.034	0.036	0.000	0.000	0.000	0.000	0.000	0.000	1377.83
19	0.7633	1190.4	1211.5	1207.5	0.903	6.413	65.470	19.987	6.329	0.258	0.565	0.036	0.039	0.000	0.000	0.000	0.000	0.000	0.000	1383.28
20	0.7576	1180.4	1201.3	1197.4	0.904	6.497	65.971	19.903	5.936	0.235	0.493	0.029	0.031	0.000	0.000	0.000	0.000	0.000	0.000	1376.75
21	0.7583	1180.9	1201.8	1198.2	0.901	6.531	65.971	19.764	6.016	0.237	0.514	0.032	0.034	0.000	0.000	0.000	0.000	0.000	0.000	1376.77
22	0.6538	1080.9	1100.0	1096.9	0.987	2.698	81.605	13.501	1.103	0.031	0.066	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1357.28
23	0.6564	1084.3	1103.5	1100.4	1.003	2.712	81.071	14.007	1.102	0.031	0.065	0.004	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1358.90
24	0.6867	1113.2	1132.9	1129.8	0.975	3.835	76.421	15.966	2.533	0.084	0.168	0.009	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1364.56
25	0.7436	1166.2	1186.8	1183.4	0.912	6.033	67.986	19.136	5.271	0.199	0.415	0.024	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1373.28
26	0.6510	1078.9	1098.0	1095.0	1.012	2.514	81.812	13.803	0.810	0.016	0.028	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1357.76
27	0.6721	1098.7	1118.1	1115.0	0.961	3.366	78.770	14.751	1.957	0.061	0.121	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1360.89
28	0.7474	1169.4	1190.1	1186.7	0.912	6.194	67.323	19.495	5.408	0.203	0.417	0.024	0.024	0.000	0.000	0.000	0.000	0.000	0.000	1373.46
29	0.7560	1177.2	1198.1	1194.6	0.906	6.533	66.041	19.984	5.803	0.220	0.459	0.026	0.027	0.000	0.000	0.000	0.000	0.000	0.000	1374.60
30	0.7578	1180.7	1201.6	1198.1	0.905	6.492	65.854	20.066	5.927	0.226	0.474	0.027	0.029	0.000	0.000	0.000	0.000	0.000	0.000	1377.03
31	0.7585	1182.2	1203.1	1199.5	0.908	6.461	65.779	20.105	6.000	0.222	0.469	0.027	0.028	0.000	0.000	0.000	0.000	0.000	0.000	1378.12
Avg	0.7147	1141.0	1161.1	1157.7	0.911	4.868	72.206	17.732	3.817	0.139	0.292	0.017	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1370.80

Source Daily Summary
May 2021

Number: 224

Pressure Base: 14.730

Contract Day: 1

Name: GARLAND TRNS-EB STN-LOVELL 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	0.5892	987.4	1004.9	1000.5	1.591	1.357	95.154	1.443	0.368	0.030	0.046	0.008	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1305.52
2	0.5904	988.5	1006.0	1001.7	1.581	1.412	94.964	1.544	0.397	0.034	0.053	0.009	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1305.71
3	0.5918	990.4	1008.0	1002.4	1.575	1.425	94.877	1.603	0.417	0.036	0.055	0.009	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1306.11
4	0.5916	989.6	1007.2	1002.1	1.629	1.379	94.891	1.591	0.407	0.035	0.054	0.009	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1305.45
5	0.5912	988.9	1006.4	1001.7	1.639	1.380	94.901	1.576	0.406	0.034	0.052	0.008	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1305.05
6	0.5914	988.9	1006.4	1000.7	1.670	1.341	95.000	1.512	0.389	0.031	0.046	0.007	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1304.41
7	0.5906	989.0	1006.5	1001.9	1.593	1.390	94.953	1.560	0.401	0.035	0.054	0.009	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1305.93
8	0.5911	990.7	1008.3	1003.7	1.528	1.425	94.847	1.663	0.423	0.038	0.060	0.010	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1307.66
9	0.5901	990.6	1008.2	1002.4	1.507	1.335	95.134	1.580	0.366	0.028	0.041	0.006	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1308.40
10	0.5907	989.5	1007.0	1002.3	1.607	1.348	94.934	1.631	0.394	0.031	0.045	0.007	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1306.35
11	0.5923	992.1	1009.7	1004.5	1.565	1.387	94.715	1.799	0.431	0.035	0.053	0.009	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1308.00
12	0.5908	990.4	1007.9	1003.6	1.582	1.352	94.843	1.717	0.412	0.032	0.049	0.008	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1307.57
13	0.5898	988.0	1005.5	1000.5	1.642	1.296	95.134	1.501	0.357	0.026	0.037	0.005	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1305.29
14	0.5913	990.1	1007.7	1002.6	1.569	1.414	94.899	1.596	0.415	0.037	0.057	0.010	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1306.46
15	0.5906	989.4	1006.9	1002.2	1.592	1.368	94.964	1.577	0.402	0.034	0.051	0.008	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1306.35
16	0.5900	987.6	1005.1	1000.9	1.626	1.382	95.009	1.498	0.384	0.034	0.053	0.009	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1304.83
17	0.5906	988.4	1005.9	1000.4	1.650	1.326	95.083	1.494	0.369	0.028	0.041	0.006	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1304.78
18	0.5970	987.7	1005.2	999.4	1.909	1.579	94.172	1.766	0.473	0.035	0.054	0.008	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1297.23
19	0.5908	989.2	1006.8	1002.0	1.616	1.357	94.949	1.575	0.407	0.034	0.050	0.008	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1305.99
20	0.5916	990.5	1008.1	1003.4	1.640	1.316	94.817	1.713	0.427	0.032	0.045	0.007	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1306.83
21	0.5925	992.7	1010.2	1005.6	1.563	1.379	94.638	1.855	0.459	0.037	0.055	0.009	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1308.75
22	0.5918	991.5	1009.1	1004.5	1.590	1.339	94.731	1.828	0.425	0.031	0.045	0.007	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1308.11
23	0.5953	994.5	1012.1	1008.1	1.510	1.634	94.068	2.063	0.544	0.059	0.096	0.017	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1308.23
24	0.5932	991.7	1009.3	1004.6	1.643	1.383	94.572	1.831	0.465	0.038	0.055	0.009	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1306.74
25	0.5914	992.1	1009.7	1005.3	1.510	1.386	94.755	1.795	0.452	0.036	0.053	0.008	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1309.49
26	0.5909	992.5	1010.1	1005.8	1.457	1.410	94.792	1.772	0.453	0.039	0.061	0.011	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1310.44
27	0.5918	991.0	1008.6	1003.9	1.609	1.348	94.782	1.727	0.431	0.034	0.053	0.010	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1307.36
28	0.5900	993.1	1010.7	1006.0	1.399	1.363	94.964	1.729	0.446	0.035	0.052	0.008	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1312.19
29	0.5898	993.8	1011.4	1006.0	1.332	1.378	95.073	1.681	0.438	0.035	0.052	0.008	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1313.21
30	0.5929	991.3	1008.9	1004.3	1.657	1.359	94.618	1.806	0.462	0.036	0.052	0.008	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1306.57
31	0.5915	990.7	1008.3	1003.2	1.642	1.279	94.880	1.698	0.426	0.029	0.038	0.005	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1307.18
Avg	0.5914	990.0	1007.9	1003.1	1.588	1.381	94.842	1.668	0.421	0.034	0.052	0.008	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1306.84

Source Daily Summary

May 2021

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	0.6761	1117.1	1136.9	1133.8	1.077	2.448	77.878	16.787	1.603	0.067	0.122	0.010	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1379.42
2	0.6751	1118.9	1138.7	1135.7	0.910	2.498	77.532	17.566	1.341	0.049	0.090	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1382.70
3	0.6700	1108.3	1127.9	1125.1	1.091	2.396	78.841	16.106	1.404	0.053	0.095	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1374.71
4	0.6674	1101.9	1121.4	1118.7	1.020	2.645	79.283	15.475	1.413	0.053	0.097	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1369.48
5	0.6678	1101.7	1121.2	1118.4	0.975	2.764	79.251	15.335	1.495	0.058	0.107	0.008	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1368.81
6	0.6605	1092.4	1111.7	1108.9	0.932	2.712	80.322	14.683	1.221	0.042	0.076	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1364.74
7	0.6653	1098.7	1118.2	1115.4	0.953	2.743	79.591	15.170	1.382	0.052	0.095	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1367.70
8	0.6690	1105.4	1125.0	1122.2	1.028	2.569	79.054	15.710	1.462	0.057	0.105	0.008	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1372.19
9	0.6669	1103.7	1123.2	1120.5	1.071	2.407	79.362	15.695	1.310	0.050	0.091	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1372.26
10	0.6681	1105.4	1125.0	1122.1	1.101	2.370	79.167	15.884	1.320	0.051	0.092	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1373.17
11	0.6669	1104.3	1123.8	1121.1	1.107	2.316	79.480	15.574	1.357	0.054	0.098	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1373.02
12	0.6659	1102.4	1121.9	1119.0	1.111	2.333	79.738	15.243	1.398	0.058	0.104	0.008	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1371.67
13	0.6698	1107.7	1127.4	1124.5	1.152	2.311	79.237	15.515	1.570	0.069	0.126	0.010	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1374.28
14	0.6662	1101.7	1121.2	1118.3	1.112	2.406	79.624	15.313	1.373	0.055	0.101	0.008	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1370.46
15	0.6674	1104.0	1123.5	1120.5	1.021	2.517	79.127	15.916	1.276	0.047	0.084	0.006	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1372.09
16	0.6672	1103.3	1122.8	1119.7	1.061	2.477	79.330	15.614	1.355	0.052	0.096	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1371.44
17	0.6681	1103.8	1123.4	1120.3	1.048	2.552	79.076	15.832	1.339	0.050	0.090	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1371.17
18	0.6698	1105.4	1124.9	1121.7	1.038	2.634	78.714	16.112	1.353	0.048	0.088	0.006	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1371.33
19	0.6664	1101.9	1121.4	1118.3	1.032	2.531	79.382	15.591	1.316	0.048	0.087	0.006	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1370.57
20	0.6631	1097.7	1117.1	1114.0	1.076	2.412	80.125	14.925	1.307	0.050	0.090	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1368.66
21	0.6588	1091.2	1110.5	1107.6	1.071	2.406	80.792	14.451	1.157	0.040	0.071	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1365.06
22	0.6671	1102.4	1121.9	1119.2	1.142	2.404	79.443	15.471	1.383	0.053	0.093	0.006	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1370.38
23	0.6664	1101.7	1121.2	1118.4	1.124	2.405	79.463	15.559	1.307	0.048	0.084	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1370.32
24	0.6667	1101.7	1121.2	1118.4	1.120	2.439	79.381	15.628	1.293	0.047	0.082	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1369.98
25	0.6665	1101.5	1121.0	1118.1	1.122	2.430	79.442	15.552	1.309	0.048	0.085	0.006	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1369.96
26	0.6675	1102.6	1122.1	1119.5	1.125	2.447	79.271	15.680	1.333	0.048	0.085	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1370.35
27	0.6644	1099.3	1118.8	1116.1	1.102	2.388	79.923	15.086	1.353	0.050	0.086	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1369.47
28	0.6646	1099.9	1119.4	1116.4	1.099	2.382	79.904	15.076	1.390	0.050	0.087	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1369.91
29	0.6649	1100.5	1119.9	1116.9	1.107	2.360	79.855	15.157	1.370	0.051	0.089	0.006	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1370.34
30	0.6649	1101.2	1120.7	1117.6	1.021	2.450	79.686	15.376	1.324	0.047	0.084	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1371.20
31	0.6650	1100.3	1119.8	1116.7	1.041	2.485	79.676	15.327	1.329	0.047	0.084	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1370.01
Avg	0.6669	1103.0	1122.4	1119.4	1.064	2.472	79.385	15.562	1.359	0.051	0.092	0.007	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1371.19

Gas Composition and Properties

Effective May 1, 2021

Attachment B
Page 19 of 24

Source #: 2702230
Name: WATFORD CITY EAST BORDER

Component	Mole %	Liquid Content	Mass %
Carbon Dioxide, CO2	1.1282		2.5661
Nitrogen, N2	2.6297		3.8073
Methane, C1	77.8287		64.5292
Ethane, C2	17.7563	4.7500	27.5941
Propane, C3	0.6491	0.1789	1.4793
iso-Butane, iC4	0.0033	0.0011	0.0099
n-Butane, nC4	0.0047	0.0015	0.0141
iso-Pentane, iC5			
n-Pentane, nC5			
Neo-Pentane, NeoC5			
Hexanes Plus, C6+			
Water, H2O			
Hydrogen Sulfide, H2S			
Oxygen, O2			
Carbon Monoxide, CO			
Hydrogen, H2			
Helium, He			
Argon, Ar			
Totals	100.0000	4.9310	100.0000

Property	Total Sample	C6 Plus Fraction
Pressure Base	14.730	
Temperature Base	60.00	
HCDP @ Sample Pressure	-83.904	
Cricodentherm	-38.273	
HV, Dry @ Base P, T	1122.63	
HV, Sat @ Base P, T	1103.09	
HV, Sat @ Sample P, T	1122.63	
Relative Density	0.6697	
C6+: 100		

Sample

Date: 05/01/2021 Pressure: 190.0
 Type: Temperature:
 Tech: Joshua Tipton H2O: lbs/mm
 H2S: ppm

Remarks:

Analysis

Date: 05/01/2021 Instrument:
 Cylinder: 327
 Tech: Joshua Tipton

Remarks:

May-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	
5/1/2021	5/2/2021				986	1,189	1205.4	1205.400	5/1/2021
5/2/2021	5/3/2021				1,719	2,055	1196.5	1196.500	5/2/2021
5/3/2021	5/4/2021				2,348	2,587	1101.7	1101.700	5/3/2021
5/4/2021	5/5/2021				1,966	2,167	1101.7	1101.700	5/4/2021
5/5/2021	5/6/2021				2,188	2,410	1101.5	1101.500	5/5/2021
5/6/2021	5/7/2021				1,873	2,072	1106.1	1106.100	5/6/2021
5/7/2021	5/8/2021				1,734	1,928	1111.7	1111.700	5/7/2021
5/8/2021	5/9/2021				3,187	3,542	1111	1111.000	5/8/2021
5/9/2021	5/10/2021				2,100	2,362	1124.8	1124.800	5/9/2021
5/10/2021	5/11/2021				1,975	2,233	1130.1	1130.100	5/10/2021
5/11/2021	5/12/2021				1,556	1,849	1188.3	1188.300	5/11/2021
5/12/2021	5/13/2021				1,292	1,549	1197.8	1197.800	5/12/2021
5/13/2021	5/14/2021				1,146	1,362	1187.7	1187.700	5/13/2021
5/14/2021	5/15/2021				970	1,154	1189.8	1189.800	5/14/2021
5/15/2021	5/16/2021				818	977	1194.3	1194.300	5/15/2021
5/16/2021	5/17/2021				870	1,040	1194.6	1194.600	5/16/2021
5/17/2021	5/18/2021				863	1,036	1199.4	1199.400	5/17/2021
5/18/2021	5/19/2021				900	1,084	1203.2	1203.200	5/18/2021
5/19/2021	5/20/2021				896	1,085	1211.5	1211.500	5/19/2021
5/20/2021	5/21/2021				847	1,018	1201.3	1201.300	5/20/2021
5/21/2021	5/22/2021				966	1,160	1201.8	1201.800	5/21/2021
5/22/2021	5/23/2021				1,553	1,708	1100	1100.000	5/22/2021
5/23/2021	5/24/2021				1,308	1,442	1103.5	1103.500	5/23/2021
5/24/2021	5/25/2021				1,075	1,218	1132.9	1132.900	5/24/2021
5/25/2021	5/26/2021				1,354	1,599	1186.8	1186.800	5/25/2021
5/26/2021	5/27/2021				2,153	2,364	1098	1098.000	5/26/2021
5/27/2021	5/28/2021				2,448	2,734	1118.1	1118.100	5/27/2021
5/28/2021	5/29/2021				1,526	1,811	1190.1	1190.100	5/28/2021
5/29/2021	5/30/2021				1,174	1,407	1198.1	1198.100	5/29/2021
5/30/2021	5/31/2021				1,106	1,329	1201.6	1201.600	5/30/2021
5/31/2021	6/1/2021				964	1,159	1203.1	1203.100	5/31/2021
		0	0	#DIV/0!	45,861	52,630	1161.0452	1161.0452	



Alliance Pipeline

DAILY ANALYSIS --- USA
 ND07MD1 --- Hankinson Sales
 May 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	1,157.445	0.6639	84.2023	9.4040	3.7046	0.3892	0.7082	0.0651	0.0483	0.0203	1.0058	0.4413	0.0109
2	1,161.381	0.6669	83.8488	9.5299	3.8268	0.4089	0.7539	0.0655	0.0483	0.0204	1.0365	0.4506	0.0105
3	1,160.654	0.6666	83.8890	9.5031	3.8080	0.4091	0.7519	0.0641	0.0471	0.0202	1.0502	0.4471	0.0103
4	1,156.139	0.6634	84.2580	9.3805	3.6611	0.3886	0.7051	0.0630	0.0464	0.0190	1.0165	0.4509	0.0109
5	1,157.768	0.6639	84.2041	9.4307	3.6928	0.3915	0.7131	0.0642	0.0461	0.0207	0.9897	0.4365	0.0107
6	1,156.458	0.6629	84.3289	9.3943	3.6335	0.3903	0.6984	0.0628	0.0470	0.0231	0.9814	0.4296	0.0105
7	1,157.269	0.6638	84.2687	9.3327	3.6843	0.3990	0.7254	0.0640	0.0475	0.0229	1.0015	0.4434	0.0105
8	1,157.799	0.6640	84.2131	9.4104	3.6782	0.3976	0.7207	0.0643	0.0483	0.0233	0.9948	0.4390	0.0103
9	1,159.644	0.6666	83.8387	9.5396	3.7574	0.4036	0.7563	0.0641	0.0480	0.0229	1.1060	0.4531	0.0103
10	1,160.606	0.6671	83.7880	9.5632	3.7976	0.4048	0.7552	0.0650	0.0478	0.0229	1.0935	0.4517	0.0103
11	1,157.975	0.6643	84.1751	9.4317	3.6747	0.4010	0.7282	0.0637	0.0472	0.0229	0.9939	0.4513	0.0103
12	1,159.867	0.6662	83.8933	9.5415	3.7643	0.4019	0.7466	0.0617	0.0464	0.0229	1.0661	0.4450	0.0104
13	1,158.060	0.6644	84.1410	9.4658	3.6778	0.3964	0.7271	0.0620	0.0469	0.0232	1.0000	0.4493	0.0106
14	1,159.259	0.6650	84.0730	9.5295	3.6927	0.4016	0.7241	0.0650	0.0497	0.0245	0.9723	0.4573	0.0103
15	1,159.504	0.6656	83.9529	9.5963	3.7036	0.3979	0.7286	0.0655	0.0500	0.0232	1.0232	0.4482	0.0105
16	1,160.713	0.6666	83.8008	9.6675	3.7380	0.4032	0.7392	0.0659	0.0507	0.0240	1.0550	0.4452	0.0105
17	1,164.669	0.6687	83.5292	9.8439	3.8416	0.4160	0.7573	0.0648	0.0493	0.0245	1.0358	0.4283	0.0093
18	1,158.840	0.6661	83.9398	9.4477	3.7360	0.4071	0.7716	0.0613	0.0463	0.0211	1.0966	0.4623	0.0101
19	1,153.686	0.6626	84.4134	9.1790	3.6191	0.3909	0.7264	0.0585	0.0449	0.0210	1.0789	0.4575	0.0103
20	1,155.220	0.6617	84.6996	9.0158	3.6319	0.4011	0.7434	0.0604	0.0483	0.0233	0.9272	0.4388	0.0104
21	1,151.931	0.6578	85.1649	8.9632	3.4519	0.3843	0.6820	0.0612	0.0485	0.0238	0.7798	0.4299	0.0106
22	1,153.825	0.6600	84.9158	8.9793	3.5424	0.3976	0.7220	0.0633	0.0479	0.0243	0.8607	0.4365	0.0103
23	1,158.199	0.6646	84.2556	9.2214	3.7267	0.4097	0.7719	0.0642	0.0478	0.0244	1.0459	0.4225	0.0100
24	1,157.298	0.6635	84.3236	9.2987	3.6671	0.4013	0.7374	0.0620	0.0483	0.0248	1.0192	0.4075	0.0099
25	1,157.867	0.6636	84.2887	9.3639	3.6638	0.3996	0.7329	0.0629	0.0492	0.0244	0.9994	0.4053	0.0100
26	1,158.019	0.6634	84.2877	9.3979	3.6590	0.3994	0.7270	0.0607	0.0482	0.0245	0.9847	0.4010	0.0100
27	1,159.615	0.6641	84.2065	9.4606	3.6932	0.4041	0.7344	0.0614	0.0487	0.0242	0.9584	0.3985	0.0100
28	1,160.048	0.6654	84.0302	9.4810	3.7490	0.4078	0.7477	0.0602	0.0474	0.0239	1.0241	0.4189	0.0099
29	1,157.774	0.6640	84.1833	9.4245	3.6874	0.3964	0.7248	0.0591	0.0457	0.0237	1.0202	0.4251	0.0099
30	1,160.333	0.6659	83.9919	9.4414	3.7787	0.4114	0.7632	0.0613	0.0469	0.0233	1.0604	0.4119	0.0096
31	1,156.862	0.6632	84.3872	9.2450	3.6722	0.4031	0.7380	0.0588	0.0454	0.0230	0.9929	0.4246	0.0096
Volume	1,158.258	0.6644	84.1779	9.4085	3.6974	0.4000	0.7322	0.0630	0.0477	0.0230	1.0060	0.4341	0.0103
Weight Avg Energy	1,158.261	0.6644	84.1774	9.4087	3.6975	0.4001	0.7322	0.0630	0.0477	0.0230	1.0061	0.4341	0.0103



Alliance Pipeline

DAILY ANALYSIS --- USA
 ND14MD1 --- Milnor Sales
 May 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	1,158.321	0.6647	84.1221	9.4308	3.7341	0.3934	0.7169	0.0657	0.0486	0.0204	1.0133	0.4438	0.0109
2	1,159.935	0.6662	83.9512	9.4798	3.7830	0.4049	0.7373	0.0672	0.0499	0.0217	1.0408	0.4538	0.0102
3	1,160.363	0.6665	83.8934	9.5022	3.8017	0.4076	0.7510	0.0634	0.0464	0.0196	1.0598	0.4444	0.0104
4	1,155.904	0.6631	84.2987	9.3724	3.6495	0.3868	0.7010	0.0629	0.0462	0.0190	1.0027	0.4498	0.0110
5	1,157.587	0.6637	84.2206	9.4446	3.6767	0.3909	0.7074	0.0641	0.0461	0.0212	0.9844	0.4334	0.0106
6	1,156.900	0.6633	84.2935	9.3871	3.6575	0.3926	0.7070	0.0625	0.0467	0.0229	0.9885	0.4311	0.0105
7	1,157.113	0.6638	84.2973	9.3019	3.6836	0.3996	0.7242	0.0655	0.0489	0.0234	1.0028	0.4423	0.0105
8	1,158.419	0.6648	84.1081	9.4636	3.6962	0.3995	0.7316	0.0631	0.0473	0.0223	1.0151	0.4430	0.0103
9	1,158.853	0.6664	83.8617	9.5006	3.7593	0.3984	0.7520	0.0637	0.0471	0.0228	1.1337	0.4506	0.0102
10	1,160.952	0.6672	83.7749	9.5836	3.8000	0.4065	0.7561	0.0647	0.0475	0.0227	1.0821	0.4515	0.0102
11	1,157.830	0.6643	84.1841	9.4328	3.6706	0.3992	0.7262	0.0632	0.0470	0.0230	0.9931	0.4505	0.0104
12	1,159.639	0.6661	83.9112	9.5351	3.7585	0.4005	0.7443	0.0614	0.0462	0.0227	1.0654	0.4443	0.0104
13	1,158.550	0.6647	84.1112	9.4848	3.6886	0.3989	0.7298	0.0621	0.0469	0.0233	0.9926	0.4513	0.0105
14	1,159.088	0.6649	84.0807	9.5322	3.6836	0.4008	0.7230	0.0651	0.0498	0.0243	0.9760	0.4541	0.0103
15	1,159.857	0.6658	83.9168	9.6248	3.7061	0.3989	0.7327	0.0653	0.0498	0.0231	1.0252	0.4467	0.0106
16	1,162.785	0.6678	83.6596	9.7477	3.8002	0.4094	0.7478	0.0661	0.0504	0.0244	1.0434	0.4413	0.0098
17	1,159.030	0.6652	84.0239	9.5164	3.7106	0.3990	0.7349	0.0629	0.0482	0.0230	1.0371	0.4338	0.0101
18	1,158.432	0.6657	84.0231	9.3995	3.7220	0.4061	0.7670	0.0627	0.0475	0.0220	1.0831	0.4573	0.0097
19	1,154.223	0.6626	84.4131	9.2144	3.6212	0.3910	0.7203	0.0584	0.0453	0.0219	1.0506	0.4537	0.0101
20	1,156.895	0.6646	84.1783	9.2790	3.7290	0.3989	0.7466	0.0584	0.0460	0.0221	1.0894	0.4424	0.0099
21	1,152.393	0.6582	85.1215	8.9943	3.4606	0.3853	0.6847	0.0612	0.0483	0.0240	0.7809	0.4285	0.0106
22	1,153.280	0.6599	84.9325	8.9737	3.5288	0.3949	0.7184	0.0626	0.0472	0.0241	0.8657	0.4417	0.0103
23	1,158.463	0.6647	84.2184	9.2739	3.7303	0.4067	0.7615	0.0648	0.0485	0.0244	1.0473	0.4142	0.0099
24	1,157.265	0.6634	84.3318	9.3017	3.6631	0.4013	0.7361	0.0617	0.0481	0.0248	1.0142	0.4073	0.0099
25	1,158.475	0.6641	84.2166	9.3967	3.6865	0.4012	0.7373	0.0626	0.0492	0.0243	1.0109	0.4049	0.0099
26	1,157.631	0.6630	84.3505	9.3820	3.6391	0.3981	0.7218	0.0604	0.0480	0.0245	0.9662	0.3994	0.0100
27	1,160.025	0.6645	84.1530	9.4935	3.7036	0.4044	0.7365	0.0618	0.0488	0.0242	0.9648	0.3994	0.0100
28	1,160.727	0.6660	83.9578	9.5226	3.7666	0.4099	0.7495	0.0609	0.0484	0.0244	1.0264	0.4237	0.0098
29	1,158.683	0.6648	84.1023	9.4561	3.7119	0.4008	0.7354	0.0602	0.0459	0.0236	1.0305	0.4235	0.0098
30	1,158.429	0.6646	84.1902	9.3293	3.7255	0.4075	0.7514	0.0605	0.0467	0.0232	1.0377	0.4184	0.0097
31	1,156.459	0.6628	84.4264	9.2553	3.6589	0.3979	0.7218	0.0599	0.0460	0.0229	0.9837	0.4177	0.0096
Volume	1,158.163	0.6645	84.1631	9.4145	3.6975	0.3994	0.7320	0.0626	0.0475	0.0228	1.0148	0.4355	0.0102
Weight Avg Energy	1,158.172	0.6645	84.1620	9.4151	3.6978	0.3994	0.7321	0.0626	0.0475	0.0228	1.0148	0.4356	0.0102

May-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		
5/1/2021	5/2/2021	105	126	1201.8	94	106	1122.6	1164.389	5/1/2021
5/2/2021	5/3/2021	196	236	1201.8	186	209	1122.6	1163.237	5/2/2021
5/3/2021	5/4/2021	253	304	1201.8	267	299	1122.6	1161.134	5/3/2021
5/4/2021	5/5/2021	239	287	1201.8	190	213	1122.6	1166.723	5/4/2021
5/5/2021	5/6/2021	217	261	1201.8	204	229	1122.6	1163.423	5/5/2021
5/6/2021	5/7/2021	198	238	1201.8	185	207	1122.6	1163.544	5/6/2021
5/7/2021	5/8/2021	198	238	1201.8	160	180	1122.6	1166.403	5/7/2021
5/8/2021	5/9/2021	334	401	1201.8	350	393	1122.6	1161.274	5/8/2021
5/9/2021	5/10/2021	231	277	1201.8	207	232	1122.6	1164.370	5/9/2021
5/10/2021	5/11/2021	201	241	1201.8	185	208	1122.6	1163.841	5/10/2021
5/11/2021	5/12/2021	152	182	1201.8	132	148	1122.6	1164.989	5/11/2021
5/12/2021	5/13/2021	167	201	1201.8	153	172	1122.6	1163.933	5/12/2021
5/13/2021	5/14/2021	146	176	1201.8	128	144	1122.6	1164.801	5/13/2021
5/14/2021	5/15/2021	117	141	1201.8	116	131	1122.6	1162.370	5/14/2021
5/15/2021	5/16/2021	61	74	1201.8	104	117	1122.6	1151.880	5/15/2021
5/16/2021	5/17/2021	63	76	1201.8	83	93	1122.6	1156.775	5/16/2021
5/17/2021	5/18/2021	72	86	1201.8	95	107	1122.6	1156.746	5/17/2021
5/18/2021	5/19/2021	46	56	1201.8	80	90	1122.6	1151.514	5/18/2021
5/19/2021	5/20/2021	104	125	1201.8	117	132	1122.6	1159.871	5/19/2021
5/20/2021	5/21/2021	153	183	1201.8	150	168	1122.6	1162.592	5/20/2021
5/21/2021	5/22/2021	250	300	1201.8	217	243	1122.6	1164.998	5/21/2021
5/22/2021	5/23/2021	202	243	1201.8	169	190	1122.6	1165.722	5/22/2021
5/23/2021	5/24/2021	191	230	1201.8	171	192	1122.6	1164.388	5/23/2021
5/24/2021	5/25/2021	131	158	1201.8	111	125	1122.6	1165.473	5/24/2021
5/25/2021	5/26/2021	195	234	1201.8	177	198	1122.6	1164.116	5/25/2021
5/26/2021	5/27/2021	219	263	1201.8	205	230	1122.6	1163.508	5/26/2021
5/27/2021	5/28/2021	211	254	1201.8	206	231	1122.6	1162.675	5/27/2021
5/28/2021	5/29/2021	132	158	1201.8	123	138	1122.6	1163.598	5/28/2021
5/29/2021	5/30/2021	100	121	1201.8	111	125	1122.6	1160.136	5/29/2021
5/30/2021	5/31/2021	108	130	1201.8	114	127	1122.6	1161.130	5/30/2021
5/31/2021	6/1/2021	100	121	1201.8	109	122	1122.6	1160.495	5/31/2021
		5,092	6,121	1201.8000	4,899	5,499	1122.6000	1162.2596	

ROW ID	LOCATION DESCRIPTION	GROSS HEATING VALUE (BTU/CF)	SPECIFIC GRAVITY	WOBBE (cal)	CRICONDENTH ERM (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	Changetimesamp	NOTES
11587	GLEN ULLIN	1097.7	0.6512	1360.3	-47	2.4915	1.0538	81.3882	14.0453	0.797	0.0205	0.0125	0	0.0001	N/A	0	0.1667	0.0241	4/30/2021	5/1/2021	5/1/2021 17:20	
11587	GLEN ULLIN	1099.2	0.6514	1362	-46.6	2.453	1.0332	81.3432	14.1513	0.803	0.0198	0.0124	0.0001	0.0001	N/A	0	0.1603	0.0239	5/1/2021	5/2/2021	5/2/2021 16:47	
11587	GLEN ULLIN	1099.5	0.651	1362.7	-46.5	2.3846	1.0433	81.51	14.0097	0.8385	0.023	0.0143	0.0001	0.0004	N/A	0	0.1527	0.0235	5/2/2021	5/3/2021	5/3/2021 16:51	
11587	GLEN ULLIN	1099.6	0.6514	1362.4	-46.4	2.4185	1.0383	81.4145	14.0972	0.8229	0.0231	0.0138	0	0.0002	N/A	0	0.148	0.0237	5/3/2021	5/4/2021	5/4/2021 17:16	
11587	GLEN ULLIN	1099.4	0.6501	1363.6	-46.9	2.3518	1.0134	81.6109	13.9984	0.8013	0.0239	0.0144	0.0003	0.0007	N/A	0	0.1619	0.0233	5/4/2021	5/5/2021	5/5/2021 16:54	
11587	GLEN ULLIN	1099.3	0.6496	1363.9	-46.9	2.311	1.01	81.7585	13.8926	0.8033	0.0273	0.0157	0.0011	0.0014	N/A	0.0001	0.1563	0.023	5/5/2021	5/6/2021	5/6/2021 17:08	
11587	GLEN ULLIN	1101.9	0.6509	1365.8	-45.8	2.3118	0.9922	81.5281	14.1036	0.8477	0.0279	0.0155	0.0018	0.0018	N/A	0	0.147	0.0228	5/6/2021	5/7/2021	5/7/2021 17:02	
11587	GLEN ULLIN	1098.1	0.6483	1363.8	-47.4	2.2964	0.9911	81.9143	13.7387	0.795	0.0276	0.015	0.0019	0.0018	N/A	0.0001	0.1951	0.0232	5/7/2021	5/8/2021	5/8/2021 16:55	
11587	GLEN ULLIN	1098.1	0.6489	1363.2	-47.3	2.3328	1.0032	81.8345	13.7824	0.8013	0.0268	0.0152	0.0016	0.0017	N/A	0	0.1772	0.0234	5/8/2021	5/9/2021	5/9/2021 16:54	
11587	GLEN ULLIN	1096.5	0.6477	1362.4	-48.4	2.3462	0.9818	81.8832	13.7365	0.7562	0.0213	0.0129	0.0006	0.0006	N/A	0	0.2374	0.0233	5/9/2021	5/10/2021	5/10/2021 16:42	
11587	GLEN ULLIN	1086.2	0.6402	1357.6	-53.2	2.3063	0.951	83.2482	12.4608	0.7059	0.0184	0.0117	0	0.0001	N/A	0	0.2744	0.0233	5/10/2021	5/11/2021	5/11/2021 16:46	
11587	GLEN ULLIN	1083.6	0.6391	1355.4	-54	2.3527	0.9554	83.5057	12.1521	0.7132	0.0195	0.0122	0.0002	0.0003	N/A	0	0.2654	0.0234	5/11/2021	5/12/2021	5/12/2021 16:41	
11587	GLEN ULLIN	1085.9	0.6413	1356	-52.9	2.402	0.9667	83.0895	12.5253	0.712	0.0192	0.0116	0.0002	0.0002	N/A	0	0.2493	0.0241	5/12/2021	5/13/2021	5/13/2021 16:51	
11587	GLEN ULLIN	1086.7	0.642	1356.2	-52.4	2.4242	0.97	82.9038	12.6794	0.7096	0.0185	0.0115	0.0001	0.0002	N/A	0	0.2588	0.0241	5/13/2021	5/14/2021	5/14/2021 16:58	
11587	GLEN ULLIN	1090.5	0.6457	1357.1	-50.2	2.5152	0.9836	82.2628	13.1931	0.7535	0.0205	0.0127	0.0002	0.0005	N/A	0	0.2335	0.0246	5/14/2021	5/15/2021	5/15/2021 16:53	
11587	GLEN ULLIN	1091.7	0.6459	1358.4	-49.4	2.4618	0.9841	82.31	13.1422	0.808	0.0258	0.0153	0.0004	0.0008	N/A	0	0.2273	0.0244	5/15/2021	5/16/2021	5/16/2021 16:39	
11587	GLEN ULLIN	1093.4	0.6481	1358.1	-48.2	2.5601	0.9923	81.8936	13.4327	0.8389	0.0251	0.0152	0.0001	0.0006	N/A	0	0.2163	0.0252	5/16/2021	5/17/2021	5/17/2021 16:43	
11587	GLEN ULLIN	1095.6	0.6499	1359	-47.3	2.5778	1.0015	81.5297	13.7674	0.8397	0.0231	0.014	0.0002	0.0002	N/A	0	0.2212	0.0251	5/17/2021	5/18/2021	5/18/2021 17:01	
11587	GLEN ULLIN	1091.3	0.6464	1357.3	-49.4	2.5242	0.9932	82.2284	13.167	0.8139	0.0234	0.014	0.0003	0.0003	N/A	0	0.2109	0.0246	5/18/2021	5/19/2021	5/19/2021 16:48	
11587	GLEN ULLIN	1087.5	0.6424	1356.8	-52	2.3801	0.9864	83.0474	12.5755	0.7587	0.0209	0.0131	0	0.0001	N/A	0	0.1937	0.0242	5/19/2021	5/20/2021	5/20/2021 17:46	
11587	GLEN ULLIN	1089.1	0.6439	1357.3	-51.1	2.409	0.9972	82.742	12.8316	0.7675	0.0211	0.013	0	0	N/A	0	0.1943	0.0244	5/20/2021	5/21/2021	5/21/2021 16:42	
11587	GLEN ULLIN	1089.9	0.6446	1357.6	-50.2	2.4151	1.0054	82.6503	12.8826	0.7855	0.0271	0.015	0.0013	0.0012	N/A	0	0.1925	0.0242	5/21/2021	5/22/2021	5/22/2021 16:40	
11587	GLEN ULLIN	1096.6	0.6494	1360.7	-47.5	2.4438	1.0202	81.8666	13.6506	0.8299	0.0269	0.0155	0.0007	0.0008	N/A	0	0.1206	0.0245	5/22/2021	5/23/2021	5/23/2021 16:40	
11587	GLEN ULLIN	1096.5	0.6495	1360.5	-47.2	2.4486	1.0228	81.7882	13.6751	0.8317	0.0284	0.0169	0.0009	0.001	N/A	0.0001	0.162	0.0245	5/23/2021	5/24/2021	5/24/2021 16:53	
11587	GLEN ULLIN	1096.9	0.6497	1360.8	-46.6	2.4503	1.0204	81.8535	13.6036	0.8621	0.0336	0.0185	0.0019	0.002	N/A	0.0003	0.1292	0.025	5/24/2021	5/25/2021	5/25/2021 17:14	
11587	GLEN ULLIN	1096.7	0.65	1360.3	-47.2	2.473	1.0294	81.7705	13.7053	0.8377	0.0268	0.0158	0.0005	0.0005	N/A	0	0.1153	0.0252	5/25/2021	5/26/2021	5/26/2021 16:54	
11587	GLEN ULLIN	1091.3	0.6449	1358.9	-49.8	2.3939	0.9836	82.6805	12.8676	0.8413	0.0263	0.0165	0.0002	0.0009	N/A	0	0.1647	0.0247	5/26/2021	5/27/2021	5/27/2021 17:06	
11587	GLEN ULLIN	1092.3	0.6458	1359.2	-49	2.3819	1.0036	82.6493	12.8546	0.9011	0.0282	0.0174	0.0004	0.0011	N/A	0	0.1385	0.0245	5/27/2021	5/28/2021	5/28/2021 16:59	
11587	GLEN ULLIN	1091.7	0.6451	1359.2	-49.6	2.3548	1.002	82.7206	12.8452	0.8589	0.0266	0.0162	0.0005	0.0011	N/A	0	0.1501	0.0243	5/28/2021	5/29/2021	5/29/2021 17:01	
11587	GLEN ULLIN	1091.7	0.6457	1358.6	-48.6	2.4244	0.9927	82.62	12.8091	0.9051	0.0351	0.0198	0.0014	0.0018	N/A	0	0.1655	0.0252	5/29/2021	5/30/2021	5/30/2021 16:58	
11587	GLEN ULLIN	1090.5	0.6452	1357.6	-49.8	2.4602	0.99	82.6121	12.854	0.8465	0.0268	0.0161	0.0001	0.0005	N/A	0	0.1686	0.0252	5/30/2021	5/31/2021	5/31/2021 17:10	
11587	GLEN ULLIN	1093.7	0.6479	1358.7	-48.4	2.5091	0.9919	82.3616	13.1515	0.8758	0.0282	0.0171	0.0005	0.001	N/A	0	0.0376	0.0259	5/31/2021	6/1/2021	6/1/2021 17:05	
11587	GLEN ULLIN	1096.6	0.6496	1360.5	-47.2	2.4977	0.9954	82.0673	13.4317	0.9135	0.028	0.0172	0.0002	0.0005	N/A	0	0.023	0.0256	6/1/2021	6/2/2021	6/2/2021 17:20	

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	MAY 21	APR 21	MAR 21	FEB 21	JAN 21	DEC 20	NOV 20	OCT 20	SEPT 20	AUG 20	JULY 20	JUNE 20	ZONE
MT/ND	211	Sidney Border - MonDak Tfr - Sidney Plt	1199	1204	1198	1208	1206	1209	1207	1198	1200	1202	1196	1191	1169	211
ND	24	Williston Border - Charbonneau Station	1166	1168	1167	1176	1176	1177	1175	1167	1158	1157	1157	1153	1163	24
ND	25	Watford City West Border	1192	1202	1199	1194	1194	1195	1195	1193	1193	1194	1191	1194	1161	25
ND	28	Bismarck Station - Glen Ullin Station	1152	1161	1117	1148	1110	1121	1135	1131	1152	1174	1195	1190	1186	28
ND	31	Dickinson Brd - Belfield Trf - G Ullin Stn	1123	1160	1154	1127	1113	1122	1131	1129	1136	1125	1104	1092	1085	31
ND/MT	32	Cabin Creek Station - Belfied Transfer	1118	1122	1124	1121	1091	1105	1119	1123	1127	1134	1120	1115	1109	32
ND	33	Little Knife Plant	1175	1175	1173	1172	1171	1172	1172	1172	1172	1174	1179	1183	1182	33
ND	34	Badlands Plant/Bowman Border	1043	989	981	1040	1079	1172	1094	1070	1060	1025	984	984	1036	34
ND	43 1/	Watford City East Border	1131	1123	1119	1126	1106	1104	1147	1147	1140	1139	1137	1142	1138	43
ND/MT	241	Fairview Border	1180	1173	1185	1198	1204	1192	1195	1203	1169	1157	1172	1153	1159	241
ND	260	North Tioga Transfer - Nesson Plant	1137	1159	1148	1160	1149	1144	1142	1134	1114	1131	1129	1116	1116	260
ND	261	Tioga Comp Station - Robinson Lake Plan	1171	1193	1180	1173	1171	1168	1166	1159	1164	1162	1172	1167	1177	261
ND	262	Minot Bdr - Palermo Bdr - Bismarck Stn	1188	1195	1189	1191	1187	1184	1181	1178	1182	1191	1195	1189	1192	262
ND	263	Lignite Plant	1141	1137	1147	1148	1125	1133	1134	1137	1137	1149	1147	1143	1149	263
ND	264	Epping Border	1160	1163	1165	1168	1168	1167	1165	1163	1156	1155	1147	1147	1153	264
ND	265	Tioga Comp Station - County Line Plant	1169	1172	1170	1172	1171	1168	1166	1159	1164	1163	1173	1168	1178	265
ND	266	County Line Plant	1176	1171	1169	1174	1176	1164	1166	1165	1161	1190	1194	1191	1194	266
ND	271	Bismarck Station - Cleveland Station	1185	1196	1186	1191	1165	1180	1179	1174	1181	1191	1195	1190	1193	271
ND	272	Cleveland Station - Mapleton	1185	1196	1185	1190	1165	1179	1178	1173	1182	1191	1195	1190	1192	272
ND	273	Cleveland Station - Grafton Border	1184	1195	1184	1189	1164	1179	1178	1173	1181	1190	1194	1190	1192	273
ND	550	Mandan Border / NBPL-St Anthony	1151	1161	1120	1148	1110	1121	1133	1131	1152	1174	1190	1181	1186	550
ND	610	MDU-Watford City BTU	1159	1162	1158	1158	1141	1140	1167	1166	1165	1170	1163	1163	1149	610
ND	802	NBPL - Linton	1101	1094	1093	1099	1101	1103	1111	1113	1110	1120	1102	1088	1082	802
ND	903	Hettinger Propane	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	903
ND	600	Alliance Pipeline - Hankinson	1157	1158	1154	1150	1146	1148	1155	1155	1166	1166	1160	1158	1164	600
ND	601	Alliance Pipeline - Milnor	1157	1158	1154	1150	1146	1148	1155	1155	1166	1167	1161	1158	1164	602

1/ Values for June 2020 forward reflect the BTU from the accumulated sampler and previous values were from the chromatograph

THERMAL ZONE VARIANCE DOCUMENTATION		
May 2021		
<i>ZONE</i>	<i>BTU VARIANCE</i>	<i>REASON</i>
28	44	Operational/Blend of Gas
550	41	Operational/Blend of Gas
434	-48	Operational