

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

November 10, 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 – September 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 October 2021.
2. Attachment B consists of copies of the monthly Heating Value Test Reports received from our suppliers for the month of September 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 September 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
Oct-21

<u>Town</u>	<u>Heat Zone</u>	<u>Therm Factor</u>
MDU-303-ALEXANDER	025	1.1438
MDU-308-ARNEGARD	025	1.1438
MDU-314-APPLE VALLEY	271	1.1598
MDU-318-BEACH	032	1.0738
MDU-319-BELFIELD	032	1.0817
MDU-323-BERTHOLD	262	1.1353
MDU-324-BEULAH	032	1.0817
MDU-327-BISMARCK	028	1.1598
MDU-330-BOWMAN	034	0.9403
MDU-337-BURLINGTON	262	1.1598
MDU-343-CARRINGTON	273	1.1598
MDU-344-CLEVELAND	272	1.1516
MDU-364-CAVALIER	273	1.1843
MDU-365-DAWSON	271	1.1516
MDU-368-DES LACS	262	1.1435
MDU-369-DICKINSON	031	1.1168
MDU-374-FT TOTTEN	273	1.1679
MDU-375-DEVILS LAKE	273	1.1679
MDU-379-BARLOW	273	1.1598
MDU-384-EPPING	264	1.1022
MDU-387-ELDRIDGE	272	1.1598
MDU-407-GLADSTONE	031	1.1168
MDU-411-GLEN ULLIN	031	1.1249
MDU-413-GOLVA	032	1.0581
MDU-416-GARRISON	262	1.1435
MDU-417-GRAFTON	273	1.1924
MDU-403-GWINNER	601	1.1360
MDU-429-HEBRON	031	1.1249
MDU-432-HETTINGER	903	2.3875
MDU-449-JAMESTOWN	272	1.1679
MDU-459-KILLDEER	033	1.1164
MDU-463-LANGDON	273	1.1598
MDU-469-LEFOR	031	1.1168
MDU-474-LIGNITE	263	1.0740
MDU-475-LINTON	802	1.0517
MDU-478-LINCOLN	028	1.1598
MDU-488-MCKENZIE	271	1.1598
MDU-494-MEDINA	271	1.1516
MDU-498-MANDAN	028	1.1598
MDU-500-MARMARTH	034	0.9472
MDU-505-MINOT	262	1.1598
MDU-510-MOTT	031	1.1168
MDU-512-MAX	262	1.1598
MDU-513-MILNOR	601	1.3422
MDU-522-NEW ENGLAND	031	1.1087
MDU-524-NEW SALEM	028	1.1353
MDU-532-NEW ROCKFORD	273	1.1598
MDU-539-PARK RIVER	273	1.1843
MDU-540-PALERMO	262	1.1353

MDU-558-RAY	264	1.1022
MDU-561-REGENT	031	1.1087
MDU-563-RHAME	034	0.9333
MDU-564-RICHARDTON	031	1.1087
MDU-568-ROSS	261	1.1196
MDU-572-RUTHVILLE	262	1.1598
MDU-574-SANBORN	272	1.1679
MDU-583-SENTINEL BUTTE	032	1.0738
MDU-588-SOUTH HEART	031	1.1087
MDU-717-SPIRITWOOD	272	1.1679
MDU-590-SPRINGBROOK	264	1.1022
MDU-591-STANLEY	261	1.1277
MDU-593-STEELE	271	1.1516
MDU-594-STERLING	028	1.1598
MDU-598-SHEYENNE	273	1.1679
MDU-605-SURREY	262	1.1598
MDU-610-TAPPEN	271	1.1516
MDU-611-TAYLOR	031	1.1087
MDU-616-TIOGA	260	1.0868
MDU-619-TURTLE LAKE	262	1.1435
MDU-620-TRENTON	024	1.1159
MDU-624-UNDERWOOD	262	1.1435
MDU-625-VALLEY CITY	272	1.1761
MDU-629-WALHALLA	273	1.1843
MDU-632-WATFORD CITY	610	1.0446
MDU-636-WHEELOCK	264	1.0943
MDU-637-WHITE EARTH	261	1.1277
MDU-642-WILLISTON	024	1.1159
MDU-646-WASHBURN	262	1.1516
MDU-647-WILTON	262	1.1353
MDU-664-RIVERDALE	262	1.1435
MDU-691-FAIRVIEW	241	1.1425
MDU-712-MINOT AFB	262	1.1598
MDU-718-FAIRMOUNT	600	1.1336
MDU-732-NEKOMA	273	1.1598
MDU-732-MSR SITE	273	1.1598

Source Daily Summary

September 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	0.7460	1202.3	1223.6	1219.1	1.339	3.430	65.761	25.863	3.186	0.131	0.258	0.017	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1413.14
2	0.7448	1200.0	1221.2	1216.9	1.341	3.450	65.929	25.732	3.148	0.125	0.245	0.016	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1411.63
3	0.7450	1200.2	1221.5	1217.3	1.339	3.461	65.973	25.585	3.235	0.128	0.249	0.016	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1411.69
4	0.7456	1201.2	1222.5	1218.3	1.336	3.462	65.890	25.641	3.250	0.132	0.258	0.016	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1412.30
5	0.7425	1197.8	1219.0	1214.7	1.307	3.424	66.566	24.977	3.294	0.133	0.265	0.017	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1411.15
6	0.7336	1187.2	1208.2	1204.1	1.217	3.368	67.984	23.989	3.043	0.123	0.247	0.016	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1407.22
7	0.7450	1200.1	1221.3	1217.2	1.341	3.471	66.005	25.514	3.251	0.131	0.257	0.016	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1411.47
8	0.7461	1201.7	1223.0	1218.9	1.343	3.463	65.893	25.543	3.340	0.131	0.256	0.017	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1412.44
9	0.7485	1206.6	1227.9	1223.6	1.331	3.412	65.623	25.683	3.505	0.139	0.273	0.018	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1415.83
10	0.7451	1200.7	1221.9	1217.6	1.337	3.443	66.083	25.394	3.321	0.133	0.259	0.017	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1412.14
11	0.7351	1191.3	1212.4	1208.4	1.198	3.285	67.727	24.274	3.143	0.114	0.230	0.015	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1410.65
12	0.7333	1188.1	1209.1	1205.0	1.190	3.325	68.050	23.964	3.085	0.118	0.238	0.016	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1408.55
13	0.7377	1192.3	1213.4	1209.2	1.254	3.383	67.196	24.714	3.064	0.120	0.239	0.016	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1409.36
14	0.7319	1187.1	1208.1	1204.1	1.194	3.250	68.231	23.939	3.018	0.112	0.226	0.015	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1408.74
15	0.7372	1189.7	1210.8	1206.7	1.301	3.424	67.509	24.135	3.221	0.127	0.252	0.016	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1406.81
16	0.7284	1189.4	1210.5	1206.8	0.799	3.382	68.400	24.074	3.044	0.098	0.184	0.010	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1415.09
17	0.7255	1188.0	1209.1	1205.3	0.706	3.338	68.435	24.573	2.717	0.075	0.140	0.008	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1416.33
18	0.7453	1203.0	1224.3	1220.2	1.261	3.434	66.025	25.465	3.388	0.134	0.261	0.017	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1414.80
19	0.7460	1201.8	1223.1	1219.2	1.343	3.453	65.782	25.746	3.274	0.127	0.246	0.015	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1412.66
20	0.7459	1202.0	1223.2	1219.5	1.340	3.435	65.790	25.775	3.259	0.126	0.246	0.015	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1413.01
21	0.7319	1191.6	1212.7	1209.0	0.904	3.410	67.924	24.329	3.099	0.107	0.205	0.012	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1414.39
22	0.7307	1183.9	1204.8	1201.0	1.218	3.296	68.576	23.462	3.054	0.121	0.242	0.016	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1406.11
23	0.7291	1182.2	1203.2	1199.3	1.186	3.293	68.904	23.123	3.114	0.116	0.233	0.015	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1405.68
24	0.7345	1191.1	1212.2	1208.3	1.161	3.297	67.864	24.081	3.239	0.111	0.220	0.014	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1411.02
25	0.7269	1181.0	1201.9	1198.0	1.141	3.236	69.235	22.970	3.039	0.114	0.234	0.016	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1406.27
26	0.7241	1177.0	1197.8	1193.9	1.102	3.269	69.632	22.714	2.912	0.112	0.229	0.015	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1404.30
27	0.7220	1173.7	1194.5	1190.6	1.109	3.264	70.101	22.209	2.942	0.113	0.231	0.016	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1402.38
28	0.7389	1192.2	1213.3	1209.0	1.307	3.418	67.251	24.340	3.273	0.129	0.251	0.016	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1408.10
29	0.7288	1180.1	1201.0	1197.1	1.185	3.392	68.907	23.079	3.058	0.116	0.233	0.015	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1403.47
30	0.7166	1162.8	1183.3	1179.4	1.101	3.432	71.168	21.007	2.905	0.116	0.238	0.016	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1394.52
Avg	0.7364	1192.0	1212.6	1208.6	1.208	3.380	67.481	24.396	3.147	0.120	0.238	0.015	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1409.71

Source Daily Summary

September 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	0.7011	1147.2	1167.5	1163.9	0.931	3.181	73.679	19.369	2.510	0.096	0.204	0.014	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1391.12
2	0.6993	1145.1	1165.4	1161.8	0.936	3.129	73.984	19.193	2.430	0.093	0.201	0.015	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1390.36
3	0.6986	1144.1	1164.4	1160.8	0.934	3.124	74.049	19.202	2.374	0.091	0.195	0.014	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1389.92
4	0.6985	1146.4	1166.7	1163.1	0.937	2.975	74.000	19.490	2.288	0.087	0.190	0.015	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1392.70
5	0.6999	1147.9	1168.2	1164.6	0.939	3.017	73.783	19.580	2.366	0.090	0.195	0.014	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1393.11
6	0.6976	1145.5	1165.8	1162.2	0.941	2.939	74.103	19.497	2.221	0.084	0.183	0.014	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1392.54
7	0.6964	1144.1	1164.3	1160.8	0.928	2.938	74.332	19.266	2.235	0.085	0.184	0.014	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1391.94
8	0.6988	1146.2	1166.5	1162.9	0.920	3.048	74.027	19.289	2.392	0.092	0.198	0.015	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1392.07
9	0.6993	1148.3	1168.6	1165.0	0.924	2.956	73.879	19.575	2.357	0.089	0.190	0.014	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1394.22
10	0.7010	1150.6	1171.0	1167.3	0.933	2.958	73.671	19.691	2.412	0.095	0.205	0.016	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1395.35
11	0.6999	1148.9	1169.2	1165.6	0.933	2.969	73.773	19.659	2.351	0.090	0.193	0.015	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1394.24
12	0.7011	1149.4	1169.7	1166.2	0.939	3.033	73.625	19.663	2.408	0.094	0.203	0.015	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1393.75
13	0.6965	1145.9	1166.2	1162.6	0.936	2.820	74.246	19.556	2.154	0.082	0.176	0.014	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1394.10
14	0.6951	1145.5	1165.8	1162.2	0.934	2.722	74.414	19.604	2.045	0.079	0.172	0.014	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1394.97
15	0.6963	1147.2	1167.5	1163.9	0.945	2.714	74.248	19.720	2.078	0.083	0.180	0.014	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1395.83
16	0.7093	1168.9	1189.6	1185.6	0.986	2.540	72.494	20.944	2.625	0.111	0.251	0.022	0.027	0.000	0.000	0.000	0.000	0.000	0.000	1409.08
17	0.6996	1153.1	1173.5	1169.9	0.954	2.647	73.832	19.990	2.256	0.090	0.196	0.016	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1399.67
18	0.6941	1143.5	1163.7	1160.2	0.918	2.769	74.605	19.377	2.058	0.077	0.167	0.013	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1393.58
19	0.6960	1143.3	1163.5	1160.1	0.917	2.958	74.453	19.104	2.271	0.084	0.182	0.014	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1391.47
20	0.6963	1142.4	1162.6	1159.2	0.913	3.053	74.437	18.963	2.318	0.088	0.193	0.016	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1390.02
21	0.6973	1144.1	1164.3	1160.9	0.902	3.061	74.318	18.996	2.399	0.092	0.198	0.015	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1391.04
22	0.6975	1146.9	1167.2	1163.8	0.919	2.882	74.098	19.573	2.231	0.084	0.182	0.014	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1394.33
23	0.6967	1144.4	1164.7	1161.2	0.915	2.959	74.383	19.109	2.323	0.088	0.190	0.015	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1392.12
24	0.6964	1142.8	1163.1	1159.6	0.917	3.028	74.507	18.841	2.387	0.092	0.197	0.015	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1390.45
25	0.6967	1144.5	1164.8	1161.3	0.927	2.936	74.292	19.301	2.242	0.085	0.184	0.014	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1392.24
26	0.6961	1142.2	1162.4	1159.0	0.921	3.034	74.426	19.031	2.285	0.087	0.186	0.014	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1389.98
27	0.6975	1146.1	1166.4	1162.9	0.925	2.919	74.039	19.650	2.174	0.083	0.179	0.014	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1393.38
28	0.7026	1148.3	1168.6	1165.1	0.905	3.294	73.459	19.382	2.619	0.099	0.211	0.015	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1390.97
29	0.7015	1147.8	1168.2	1164.6	0.911	3.205	73.627	19.376	2.552	0.095	0.202	0.014	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1391.52
30	0.7010	1148.0	1168.4	1164.8	0.924	3.135	73.619	19.554	2.440	0.094	0.203	0.014	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1392.18
Avg	0.6986	1147.0	1167.3	1163.7	0.929	2.965	74.013	19.452	2.327	0.089	0.193	0.015	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1393.28

Gas Composition and Properties

Effective September 1, 2021

Attachment B
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Source #: 0602160
Name: FAIRVIEW BORDER

Component	Mole %	Liquid Content	Mass %
Carbon Dioxide, CO2	1.0637		2.2518
Nitrogen, N2	3.1981		4.3095
Methane, C1	70.5227		54.4209
Ethane, C2	21.8771	5.8552	31.6427
Propane, C3	2.9387	0.8102	6.2333
iso-Butane, iC4	0.1222	0.0400	0.3416
n-Butane, nC4	0.2434	0.0768	0.6805
iso-Pentane, iC5	0.0162	0.0059	0.0562
n-Pentane, nC5	0.0159	0.0058	0.0552
Neo-Pentane, NeoC5			
Hexanes Plus, C6+	0.0020	0.0008	0.0083
Water, H2O			
Hydrogen Sulfide, H2S			
Oxygen, O2			
Carbon Monoxide, CO			
Hydrogen, H2			
Helium, He			
Argon, Ar			
Totals	100.0000	6.7950	100.0000

Property	Total Sample	C6 Plus Fraction
Pressure Base	14.730	
Temperature Base	60.00	
HCDP @ Sample Pressure	-52.475	
Cricondentherm	-0.851	
HV, Dry @ Base P, T	1193.36	
HV, Sat @ Base P, T	1172.59	
HV, Sat @ Sample P, T	1193.36	
Relative Density	0.7199	

C6+: 100

Sample

Date: 09/01/2021 Pressure: 130.0
Type: Temperature:
Tech: Joshua Tipton H2O: lbs/mm
 H2S: ppm

Remarks:

Analysis

Date: 09/01/2021 Instrument:
 Cylinder: 404
Tech: Joshua Tipton

Remarks:

Gas Composition and Properties

Effective September 1, 2021

Attachment B
Page 4 of 24

Source #: 0602225
Name: WATFORD CITY WEST BORDER

Component	Mole %	Liquid Content	Mass %
Carbon Dioxide, CO2	1.2631		2.6060
Nitrogen, N2	3.9341		5.1666
Methane, C1	69.6536		52.3857
Ethane, C2	19.7105	5.2760	27.7852
Propane, C3	4.3618	1.2027	9.0169
iso-Butane, iC4	0.2868	0.0939	0.7815
n-Butane, nC4	0.6472	0.2042	1.7635
iso-Pentane, iC5	0.0606	0.0222	0.2050
n-Pentane, nC5	0.0652	0.0237	0.2205
Neo-Pentane, NeoC5			
Hexanes Plus, C6+	0.0171	0.0070	0.0691
Water, H2O			
Hydrogen Sulfide, H2S			
Oxygen, O2			
Carbon Monoxide, CO			
Hydrogen, H2			
Helium, He			
Argon, Ar			
Totals	100.0000	6.8300	100.0000

Property	Total Sample	C6 Plus Fraction
Pressure Base	14.730	
Temperature Base	60.00	
HCDP @ Sample Pressure	7.927	
Cricondentherm	19.613	
HV, Dry @ Base P, T	1205.25	
HV, Sat @ Base P, T	1184.27	
HV, Sat @ Sample P, T	1205.25	
Relative Density	0.7387	
C6+:		

Sample

Date: 09/01/2021 Pressure: 430.0
 Type: Temperature:
 Tech: Joshua Tipton H2O: lbs/mm
 H2S: ppm

Remarks:

Analysis

Date: 09/01/2021 Instrument:
 Cylinder: 100
 Tech: Joshua Tipton

Remarks:

Source Daily Summary

September 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	0.6990	1129.8	1149.8		0.814	4.225	74.231	17.451	2.958	0.097	0.199	0.012	0.013	0.000						1372.05		
2	0.6941	1122.5	1142.4		0.818	4.199	75.038	16.871	2.765	0.090	0.189	0.013	0.015	0.002							1368.07	
3	0.6930	1122.6	1142.5		0.812	4.100	75.056	17.133	2.620	0.083	0.173	0.011	0.011	0.000							1369.25	
4	0.6907	1123.6	1143.5		0.818	3.819	75.422	17.203	2.454	0.080	0.171	0.013	0.016	0.004							1372.70	
5	0.6937	1127.0	1147.0		0.812	3.894	74.928	17.496	2.586	0.084	0.176	0.012	0.013	0.000							1373.99	
6	0.6909	1123.7	1143.6		0.810	3.834	75.338	17.310	2.437	0.078	0.165	0.012	0.014	0.002							1372.78	
7	0.6895	1122.4	1142.3		0.805	3.793	75.577	17.144	2.424	0.077	0.159	0.011	0.012	0.000							1372.53	
8	0.6987	1132.9	1152.9		0.803	4.025	74.249	17.737	2.845	0.097	0.208	0.015	0.017	0.004							1376.11	
9	0.6958	1132.1	1152.2		0.788	3.820	74.619	17.764	2.719	0.087	0.178	0.012	0.013	0.000							1378.10	
10	0.6970	1132.8	1152.9		0.796	3.878	74.483	17.755	2.777	0.091	0.189	0.014	0.016	0.002							1377.74	
11	0.6953	1129.5	1149.5		0.797	3.918	74.655	17.668	2.684	0.083	0.171	0.011	0.011	0.000							1375.41	
12	0.6989	1134.1	1154.2		0.801	3.966	74.225	17.807	2.875	0.095	0.200	0.014	0.016	0.002							1377.45	
13	0.6862	1122.7	1142.6		0.773	3.512	75.944	17.357	2.206	0.063	0.127	0.008	0.009	0.000							1376.22	
14	0.6827	1119.4	1139.2		0.764	3.406	76.449	17.170	2.015	0.057	0.118	0.009	0.011	0.001							1375.59	
15	0.6802	1113.4	1133.1		0.713	3.614	76.718	16.881	1.886	0.055	0.116	0.008	0.009	0.000							1370.75	
16	0.6825	1098.4	1117.8		0.764	3.345	79.000	15.000	1.707	0.006	0.148	0.013	0.015	0.002							1353.06	
17	0.6848	1083.3	1102.5		0.699	5.912	75.216	16.285	1.714	0.049	0.106	0.008	0.009	0.001							1329.10	
18	0.6864	1125.4	1145.3		0.765	3.382	75.810	17.722	2.127	0.058	0.118	0.008	0.009	0.001							1379.25	
19	0.6935	1129.8	1149.8		0.796	3.737	74.871	17.803	2.532	0.075	0.160	0.011	0.013	0.001							1377.50	
20	0.6922	1128.9	1148.9		0.792	3.673	74.989	17.884	2.423	0.071	0.148	0.010	0.011	0.000							1377.74	
21	0.6958	1134.1	1154.1		0.786	3.702	74.521	18.112	2.595	0.081	0.172	0.012	0.014	0.004							1380.48	
22	0.6931	1131.5	1151.6		0.757	3.653	74.984	17.753	2.590	0.078	0.163	0.011	0.012	0.001							1380.02	
23	0.6904	1124.2	1144.1		0.771	3.818	75.651	16.822	2.653	0.083	0.173	0.012	0.014	0.003							1373.78	
24	0.6900	1122.8	1142.7		0.771	3.865	75.672	16.782	2.633	0.083	0.171	0.011	0.011	0.000							1372.52	
25	0.6898	1123.4	1143.3		0.779	3.800	75.649	16.947	2.554	0.079	0.164	0.012	0.014	0.003							1373.41	
26	0.6919	1125.7	1145.6		0.783	3.854	75.172	17.389	2.540	0.079	0.162	0.010	0.011	0.000							1374.12	
27	0.6927	1129.7	1149.7		0.789	3.677	74.912	17.956	2.412	0.073	0.154	0.012	0.013	0.003							1378.19	
28	0.7069	1142.9	1163.1		0.790	4.204	73.087	18.202	3.345	0.112	0.231	0.014	0.015	0.001							1380.19	
29	0.7017	1135.6	1155.7		0.784	4.166	73.920	17.629	3.150	0.103	0.216	0.014	0.016	0.003							1376.52	
30	0.7009	1135.6	1155.8		0.801	4.067	73.894	17.933	2.968	0.100	0.211	0.012	0.013	0.001							1377.31	
Avg	0.6926	1125.0	1145.3		0.785	3.895	75.143	17.365	2.540	0.078	0.168	0.011	0.013	0.001							1373.06	

Source Daily Summary

September 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	0.7571	1180.2	1201.1	1197.5	0.925	6.420	65.883	20.200	5.849	0.219	0.454	0.024	0.026	0.000	0.000	0.000	0.000	0.000	1377.19	
2	0.7572	1181.1	1202.0	1198.5	0.921	6.385	65.862	20.255	5.853	0.220	0.454	0.024	0.026	0.000	0.000	0.000	0.000	0.000	1378.11	
3	0.7553	1177.8	1198.6	1195.2	0.921	6.412	66.064	20.175	5.731	0.212	0.437	0.023	0.025	0.000	0.000	0.000	0.000	0.000	1375.92	
4	0.7456	1168.4	1189.1	1185.6	0.930	6.062	67.341	19.910	5.151	0.184	0.380	0.020	0.021	0.000	0.000	0.000	0.000	0.000	1373.90	
5	0.7531	1180.6	1201.5	1197.9	0.935	6.007	66.475	20.315	5.548	0.212	0.449	0.027	0.030	0.000	0.000	0.000	0.000	0.000	1381.29	
6	0.7483	1175.6	1196.4	1192.8	0.935	5.864	67.103	20.145	5.287	0.199	0.417	0.023	0.026	0.000	0.000	0.000	0.000	0.000	1379.89	
7	0.7367	1166.4	1187.1	1183.6	0.957	5.304	68.731	19.802	4.633	0.171	0.358	0.021	0.023	0.000	0.000	0.000	0.000	0.000	1379.92	
8	0.7467	1174.1	1194.9	1191.4	0.939	5.794	67.387	19.981	5.245	0.196	0.409	0.024	0.026	0.000	0.000	0.000	0.000	0.000	1379.67	
9	0.7584	1184.1	1205.0	1201.4	0.926	6.308	65.767	20.335	5.910	0.226	0.473	0.027	0.029	0.000	0.000	0.000	0.000	0.000	1380.44	
10	0.7542	1179.4	1200.3	1196.5	0.926	6.196	66.310	20.184	5.691	0.209	0.434	0.024	0.026	0.000	0.000	0.000	0.000	0.000	1378.85	
11	0.7576	1182.0	1202.9	1199.5	0.923	6.361	65.870	20.216	5.892	0.222	0.462	0.026	0.028	0.000	0.000	0.000	0.000	0.000	1378.75	
12	0.7584	1183.2	1204.1	1200.7	0.927	6.357	65.831	20.148	5.991	0.222	0.467	0.027	0.030	0.000	0.000	0.000	0.000	0.000	1379.44	
13	0.7573	1181.0	1201.9	1198.3	0.927	6.394	65.884	20.219	5.821	0.226	0.473	0.026	0.029	0.000	0.000	0.000	0.000	0.000	1377.80	
14	0.7253	1157.4	1177.9	1174.3	0.958	4.789	70.135	19.755	3.933	0.132	0.267	0.015	0.016	0.000	0.000	0.000	0.000	0.000	1380.02	
15	0.7109	1151.6	1172.0	1168.4	0.981	3.754	72.263	19.557	3.109	0.099	0.205	0.014	0.017	0.000	0.000	0.000	0.000	0.000	1386.91	
16	0.7026	1145.6	1165.9	1162.8	1.005	3.306	73.262	19.653	2.532	0.073	0.148	0.010	0.011	0.000	0.000	0.000	0.000	0.000	1387.72	
17	0.6902	1127.4	1147.3	1144.1	0.911	3.400	75.221	18.140	2.116	0.061	0.130	0.010	0.012	0.000	0.000	0.000	0.000	0.000	1377.76	
18	0.6934	1133.9	1154.0	1150.5	0.952	3.241	74.608	18.854	2.153	0.059	0.118	0.007	0.008	0.000	0.000	0.000	0.000	0.000	1382.61	
19	0.7002	1140.1	1160.2	1157.0	0.939	3.522	73.718	18.974	2.602	0.073	0.150	0.010	0.011	0.000	0.000	0.000	0.000	0.000	1383.37	
20	0.7421	1169.7	1190.4	1187.1	0.937	5.644	67.819	20.081	4.984	0.160	0.336	0.019	0.020	0.000	0.000	0.000	0.000	0.000	1378.71	
21	0.7533	1178.2	1199.0	1195.7	0.926	6.193	66.362	20.171	5.717	0.187	0.397	0.022	0.024	0.000	0.000	0.000	0.000	0.000	1378.24	
22	0.7491	1177.6	1198.5	1195.0	0.932	5.822	67.003	20.208	5.381	0.195	0.410	0.024	0.026	0.000	0.000	0.000	0.000	0.000	1381.56	
23	0.7566	1185.9	1206.9	1203.3	0.919	6.040	66.039	20.437	5.843	0.214	0.450	0.027	0.030	0.000	0.000	0.000	0.000	0.000	1384.21	
24	0.7519	1179.9	1200.8	1197.3	0.931	5.942	66.700	20.181	5.549	0.206	0.433	0.027	0.031	0.000	0.000	0.000	0.000	0.000	1381.61	
25	0.7579	1186.2	1207.2	1203.5	0.930	6.125	65.940	20.353	5.861	0.232	0.496	0.030	0.033	0.000	0.000	0.000	0.000	0.000	1383.35	
26	0.7437	1173.8	1194.6	1191.1	0.940	5.537	67.754	20.095	5.062	0.182	0.382	0.022	0.024	0.000	0.000	0.000	0.000	0.000	1382.10	
27	0.7507	1176.9	1197.7	1194.1	0.929	6.025	66.814	20.051	5.499	0.206	0.429	0.023	0.025	0.000	0.000	0.000	0.000	0.000	1379.11	
28	0.7374	1169.1	1189.8	1186.0	0.946	5.227	68.422	20.288	4.610	0.154	0.317	0.018	0.019	0.000	0.000	0.000	0.000	0.000	1382.49	
29	0.7540	1178.5	1199.4	1195.9	0.929	6.235	66.399	19.991	5.732	0.216	0.449	0.024	0.025	0.000	0.000	0.000	0.000	0.000	1377.94	
30	0.7609	1188.3	1209.4	1205.9	0.922	6.284	65.591	20.206	6.246	0.227	0.471	0.026	0.028	0.000	0.000	0.000	0.000	0.000	1383.20	
Avg	0.7422	1171.0	1191.9	1188.4	0.936	5.565	67.952	19.963	4.984	0.180	0.375	0.021	0.024	0.000	0.000	0.000	0.000	0.000	1380.40	

Source Daily Summary

September 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	0.7594	1182.0	1202.9	1199.4	0.931	6.518	65.582	20.236	5.986	0.227	0.466	0.025	0.027	0.000	0.000	0.000	0.000	0.000	0.000	1377.19
2	0.7583	1180.0	1200.9	1197.4	0.930	6.535	65.685	20.218	5.903	0.223	0.456	0.024	0.026	0.000	0.000	0.000	0.000	0.000	0.000	1375.92
3	0.7576	1178.5	1199.4	1195.9	0.930	6.567	65.789	20.097	5.896	0.221	0.451	0.024	0.026	0.000	0.000	0.000	0.000	0.000	0.000	1374.72
4	0.7619	1186.1	1207.1	1203.5	0.933	6.499	65.335	20.317	6.114	0.242	0.502	0.028	0.030	0.000	0.000	0.000	0.000	0.000	0.000	1379.64
5	0.7604	1183.4	1204.3	1200.7	0.933	6.522	65.522	20.198	6.048	0.234	0.485	0.027	0.030	0.000	0.000	0.000	0.000	0.000	0.000	1377.85
6	0.7635	1188.6	1209.6	1206.0	0.934	6.496	65.161	20.361	6.226	0.246	0.513	0.030	0.033	0.000	0.000	0.000	0.000	0.000	0.000	1381.08
7	0.7611	1184.9	1205.9	1202.4	0.936	6.495	65.426	20.260	6.108	0.234	0.484	0.027	0.030	0.000	0.000	0.000	0.000	0.000	0.000	1378.98
8	0.7627	1187.2	1208.3	1204.7	0.934	6.506	65.228	20.349	6.184	0.241	0.500	0.028	0.031	0.000	0.000	0.000	0.000	0.000	0.000	1380.23
9	0.7579	1179.0	1199.9	1196.4	0.935	6.558	65.788	20.071	5.911	0.224	0.461	0.025	0.028	0.000	0.000	0.000	0.000	0.000	0.000	1375.00
10	0.7623	1187.2	1208.2	1204.6	0.938	6.466	65.322	20.288	6.194	0.238	0.494	0.029	0.032	0.000	0.000	0.000	0.000	0.000	0.000	1380.51
11	0.7605	1182.9	1203.9	1200.3	0.938	6.551	65.551	20.104	6.069	0.235	0.492	0.029	0.031	0.000	0.000	0.000	0.000	0.000	0.000	1377.25
12	0.7574	1177.7	1198.5	1195.0	0.939	6.586	65.821	20.086	5.826	0.225	0.465	0.025	0.028	0.000	0.000	0.000	0.000	0.000	0.000	1373.90
13	0.7569	1177.2	1198.0	1194.5	0.937	6.571	65.860	20.084	5.844	0.216	0.439	0.023	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1373.81
14	0.7556	1176.4	1197.2	1193.6	0.959	6.469	65.777	20.519	5.674	0.172	0.384	0.022	0.024	0.000	0.000	0.000	0.000	0.000	0.000	1374.05
15	0.7564	1178.0	1198.9	1195.3	0.960	6.439	65.622	20.697	5.693	0.166	0.378	0.022	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1375.28
16	0.7332	1162.8	1183.4	1179.9	0.968	5.184	69.020	19.975	4.378	0.133	0.301	0.019	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1379.03
17	0.7312	1159.2	1179.7	1176.3	0.917	5.295	69.231	19.757	4.379	0.124	0.265	0.015	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1376.46
18	0.7589	1182.2	1203.1	1199.6	0.935	6.457	65.571	20.379	5.960	0.212	0.436	0.024	0.026	0.000	0.000	0.000	0.000	0.000	0.000	1377.84
19	0.7631	1187.1	1208.1	1204.6	0.930	6.558	65.133	20.331	6.310	0.220	0.463	0.027	0.028	0.000	0.000	0.000	0.000	0.000	0.000	1379.71
20	0.7617	1186.0	1207.0	1203.5	0.934	6.486	65.349	20.323	6.124	0.235	0.488	0.028	0.031	0.000	0.000	0.000	0.000	0.000	0.000	1379.69
21	0.7645	1191.4	1212.5	1209.0	0.929	6.423	65.027	20.489	6.337	0.237	0.495	0.030	0.033	0.000	0.000	0.000	0.000	0.000	0.000	1383.48
22	0.7608	1184.6	1205.6	1202.0	0.937	6.483	65.501	20.207	6.089	0.235	0.488	0.029	0.032	0.000	0.000	0.000	0.000	0.000	0.000	1378.88
23	0.7632	1188.4	1209.5	1205.9	0.937	6.474	65.246	20.301	6.202	0.249	0.525	0.031	0.034	0.000	0.000	0.000	0.000	0.000	0.000	1381.13
24	0.7631	1188.4	1209.4	1205.8	0.933	6.473	65.261	20.267	6.253	0.241	0.508	0.030	0.033	0.000	0.000	0.000	0.000	0.000	0.000	1381.18
25	0.7605	1183.6	1204.6	1201.0	0.934	6.515	65.567	20.097	6.105	0.236	0.492	0.026	0.028	0.000	0.000	0.000	0.000	0.000	0.000	1378.04
26	0.7591	1181.1	1202.0	1198.5	0.934	6.541	65.734	19.975	6.064	0.228	0.471	0.025	0.027	0.000	0.000	0.000	0.000	0.000	0.000	1376.35
27	0.7622	1187.0	1208.1	1204.5	0.933	6.468	65.405	20.172	6.198	0.247	0.518	0.028	0.031	0.000	0.000	0.000	0.000	0.000	0.000	1380.48
28	0.7615	1185.0	1206.0	1202.3	0.932	6.537	65.447	20.043	6.305	0.224	0.459	0.025	0.028	0.000	0.000	0.000	0.000	0.000	0.000	1378.67
29	0.7632	1189.2	1210.2	1206.6	0.934	6.435	65.285	20.191	6.372	0.237	0.489	0.027	0.029	0.000	0.000	0.000	0.000	0.000	0.000	1382.00
30	0.7597	1182.8	1203.8	1200.2	0.939	6.480	65.651	20.142	5.991	0.239	0.506	0.025	0.027	0.000	0.000	0.000	0.000	0.000	0.000	1377.88
Avg	0.7586	1182.0	1203.2	1199.7	0.937	6.420	65.730	20.218	5.958	0.221	0.462	0.026	0.028	0.000	0.000	0.000	0.000	0.000	0.000	1378.21

Gas Composition and Properties

Effective September 1, 2021

Attachment B
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Source #: 2501030
Name: LIGNITE PLANT

Component	Mole %	Liquid Content	Mass %
Carbon Dioxide, CO2	0.2484		0.5671
Nitrogen, N2	3.0229		4.3932
Methane, C1	78.9445		65.7030
Ethane, C2	15.6310	4.1814	24.3836
Propane, C3	2.1182	0.5837	4.8457
iso-Butane, iC4	0.0271	0.0089	0.0817
n-Butane, nC4	0.0066	0.0021	0.0199
iso-Pentane, iC5			
n-Pentane, nC5			
Neo-Pentane, NeoC5			
Hexanes Plus, C6+	0.0013	0.0005	0.0058
Water, H2O			
Hydrogen Sulfide, H2S			
Oxygen, O2			
Carbon Monoxide, CO			
Hydrogen, H2			
Helium, He			
Argon, Ar			
Totals	100.0000	4.7770	100.0000

Property	Total Sample	C6 Plus Fraction
Pressure Base	14.730	
Temperature Base	60.00	
HCDP @ Sample Pressure	-35.177	
Cricodentherm	-30.717	
HV, Dry @ Base P, T	1134.22	
HV, Sat @ Base P, T	1114.48	
HV, Sat @ Sample P, T	1134.22	
Relative Density	0.6672	
C6+: 100		

Sample

Date: 09/01/2021 Pressure: 600.0
 Type: Temperature:
 Tech: Joshua Tipton H2O: lbs/mm
 H2S: ppm

Remarks:

Analysis

Date: 09/01/2021 Instrument:
 Cylinder: 127
 Tech: Joshua Tipton

Remarks:

Gas Composition and Properties

Effective September 1, 2021

Attachment B
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Source #: 3002013
Name: EPPING BORDER

Component	Mole %	Liquid Content	Mass %
Carbon Dioxide, CO2	0.8703		1.9011
Nitrogen, N2	3.1577		4.3907
Methane, C1	74.3416		59.1978
Ethane, C2	18.7943	5.0290	28.0509
Propane, C3	2.5030	0.6899	5.4784
iso-Butane, iC4	0.1007	0.0330	0.2905
n-Butane, nC4	0.2053	0.0648	0.5923
iso-Pentane, iC5	0.0121	0.0044	0.0433
n-Pentane, nC5	0.0132	0.0048	0.0473
Neo-Pentane, NeoC5			
Hexanes Plus, C6+	0.0018	0.0007	0.0077
Water, H2O			
Hydrogen Sulfide, H2S			
Oxygen, O2			
Carbon Monoxide, CO			
Hydrogen, H2			
Helium, He			
Argon, Ar			
Totals	100.0000	5.8270	100.0000

Property	Total Sample	C6 Plus Fraction
Pressure Base	14.730	
Temperature Base	60.00	
HCDP @ Sample Pressure	-19.081	
Cricondentherm	-11.400	
HV, Dry @ Base P, T	1163.76	
HV, Sat @ Base P, T	1143.51	
HV, Sat @ Sample P, T	1163.76	
Relative Density	0.6975	
C6+: 100		

Sample		
Date: 09/01/2021	Pressure:	520.0
Type:	Temperature:	
Tech: Joshua Tipton	H2O:	lbs/mm
	H2S:	ppm
Remarks:		

Analysis		
Date: 09/01/2021	Instrument:	
	Cylinder:	356
Tech: Joshua Tipton		
Remarks:		

*** End of Report ***

Gas Composition and Properties

Effective September 1, 2021

Attachment B
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Source #: 2702230
Name: WATFORD CITY EAST BORDER

Component	Mole %	Liquid Content	Mass %
Carbon Dioxide, CO2	1.1665		2.7927
Nitrogen, N2	3.0038		4.5775
Methane, C1	84.7332		73.9468
Ethane, C2	10.4421	2.7923	17.0805
Propane, C3	0.6115	0.1684	1.4668
iso-Butane, iC4	0.0146	0.0048	0.0462
n-Butane, nC4	0.0283	0.0089	0.0895
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	2.9740	100.0000

Property	Total Sample	C6 Plus Fraction
Pressure Base	14.730	
Temperature Base	60.00	
HCDP @ Sample Pressure	-98.612	
Cricodentherm	-60.163	
HV, Dry @ Base P, T	1062.42	
HV, Sat @ Base P, T	1043.93	
HV, Sat @ Sample P, T	1062.42	
Relative Density	0.6360	
C6+: 100		

Sample

Date: 09/01/2021 Pressure: 160.0
 Type: Temperature:
 Tech: Joshua Tipton H2O: lbs/mm
 H2S: ppm

Remarks:

Analysis

Date: 09/01/2021 Instrument:
 Cylinder: 367
 Tech: Joshua Tipton

Remarks:

September-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	
9/1/2021	9/2/2021	0	0	0.00	762	917	1202.7	1202.700	9/1/2021
9/2/2021	9/3/2021	0	0	0.00	769	923	1200.5	1200.500	9/2/2021
9/3/2021	9/4/2021	0	0	0.00	761	913	1199.9	1199.900	9/3/2021
9/4/2021	9/5/2021	0	0	0.00	706	852	1206.5	1206.500	9/4/2021
9/5/2021	9/6/2021	0	0	0.00	737	889	1205.9	1205.900	9/5/2021
9/6/2021	9/7/2021	0	0	0.00	788	953	1208.9	1208.900	9/6/2021
9/7/2021	9/8/2021	0	0	0.00	740	891	1205.2	1205.200	9/7/2021
9/8/2021	9/9/2021	0	0	0.00	863	1043	1208.3	1208.300	9/8/2021
9/9/2021	9/10/2021	0	0	0.00	774	928	1199.9	1199.900	9/9/2021
9/10/2021	9/11/2021	0	0	0.00	718	867	1208.3	1208.300	9/10/2021
9/11/2021	9/12/2021	0	0	0.00	800	963	1203.8	1203.800	9/11/2021
9/12/2021	9/13/2021	0	0	0.00	723	868	1199.4	1199.400	9/12/2021
9/13/2021	9/14/2021	0	0	0.00	824	987	1198.1	1198.100	9/13/2021
9/14/2021	9/15/2021	0	0	0.00	853	959	1129.1	1129.100	9/14/2021
9/15/2021	9/16/2021	0	0	0.00	812	887	1092.9	1092.900	9/15/2021
9/16/2021	9/17/2021	0	0	0.00	873	1005	1150.2	1150.200	9/16/2021
9/17/2021	9/18/2021	0	0	0.00	893	1050	1176.1	1176.100	9/17/2021
9/18/2021	9/19/2021	0	0	0.00	721	866	1202.5	1202.500	9/18/2021
9/19/2021	9/20/2021	0	0	0.00	771	931	1207.4	1207.400	9/19/2021
9/20/2021	9/21/2021	0	0	0.00	890	1074	1206.7	1206.700	9/20/2021
9/21/2021	9/22/2021	0	0	0.00	864	1049	1213.3	1213.300	9/21/2021
9/22/2021	9/23/2021	0	0	0.00	837	1010	1206.5	1206.500	9/22/2021
9/23/2021	9/24/2021	0	0	0.00	955	1155	1209.3	1209.300	9/23/2021
9/24/2021	9/25/2021	0	0	0.00	1029	1244	1209.2	1209.200	9/24/2021
9/25/2021	9/26/2021	0	0	0.00	816	984	1206.6	1206.600	9/25/2021
9/26/2021	9/27/2021	0	0	0.00	759	913	1203	1203.000	9/26/2021
9/27/2021	9/28/2021	0	0	0.00	737	891	1208.1	1208.100	9/27/2021
9/28/2021	9/29/2021	0	0	0.00	721	869	1203.9	1203.900	9/28/2021
9/29/2021	9/30/2021	0	0	0.00	807	977	1209.5	1209.500	9/29/2021
9/30/2021	10/1/2021	0	0	0.00	977	1177	1204	1204.000	9/30/2021
		0	0	0.0000	24,280	29,035	1196.1900	1196.1900	



Alliance Pipeline

DAILY ANALYSIS --- USA
 ND07MD1 --- Hankinson Sales
 September 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	1,152.665	0.6599	84.7197	9.1404	3.6484	0.3519	0.5997	0.0660	0.0547	0.0329	0.9686	0.4076	0.0101
2	1,152.516	0.6600	84.5779	9.4183	3.4976	0.3501	0.6149	0.0627	0.0522	0.0319	0.9628	0.4213	0.0103
3	1,150.685	0.6584	84.8598	9.1864	3.4736	0.3524	0.6160	0.0625	0.0522	0.0309	0.9496	0.4062	0.0102
4	1,152.499	0.6597	84.7159	9.2381	3.5325	0.3609	0.6306	0.0648	0.0535	0.0299	0.9623	0.4012	0.0103
5	1,155.841	0.6616	84.4840	9.3859	3.5863	0.3830	0.6637	0.0655	0.0520	0.0279	0.9425	0.4003	0.0090
6	1,154.569	0.6609	84.5685	9.3342	3.5451	0.3792	0.6634	0.0647	0.0517	0.0283	0.9515	0.4039	0.0094
7	1,156.965	0.6624	84.4104	9.3998	3.6043	0.3898	0.6864	0.0661	0.0533	0.0304	0.9428	0.4073	0.0093
8	1,156.862	0.6624	84.4253	9.3663	3.6198	0.3915	0.6851	0.0653	0.0526	0.0303	0.9440	0.4109	0.0089
9	1,157.892	0.6632	84.3282	9.4077	3.6371	0.4002	0.7011	0.0661	0.0532	0.0295	0.9518	0.4161	0.0088
10	1,158.393	0.6637	84.2630	9.4439	3.6552	0.4013	0.6992	0.0676	0.0539	0.0295	0.9600	0.4176	0.0087
11	1,155.471	0.6617	84.4683	9.3967	3.5583	0.3837	0.6697	0.0647	0.0528	0.0297	0.9398	0.4275	0.0088
12	1,154.469	0.6612	84.5478	9.3260	3.5427	0.3827	0.6682	0.0648	0.0520	0.0289	0.9473	0.4308	0.0088
13	1,153.579	0.6606	84.6218	9.3044	3.5040	0.3798	0.6610	0.0663	0.0524	0.0286	0.9383	0.4345	0.0089
14	1,154.465	0.6602	84.7520	9.2194	3.5442	0.3827	0.6601	0.0659	0.0522	0.0289	0.8738	0.4117	0.0091
15	1,152.568	0.6605	84.5369	9.3932	3.4946	0.3683	0.6384	0.0618	0.0488	0.0277	0.9909	0.4303	0.0092
16	1,154.841	0.6620	84.3825	9.3950	3.5901	0.3848	0.6675	0.0603	0.0480	0.0272	1.0124	0.4232	0.0091
17	1,156.280	0.6619	84.4295	9.4204	3.5675	0.3998	0.6887	0.0595	0.0469	0.0265	0.9669	0.3853	0.0091
18	1,156.379	0.6619	84.3782	9.5077	3.5933	0.3806	0.6503	0.0625	0.0497	0.0279	0.9341	0.4067	0.0090
19	1,158.607	0.6632	84.2765	9.5071	3.6623	0.3920	0.6814	0.0644	0.0510	0.0277	0.9350	0.3938	0.0089
20	1,158.211	0.6630	84.3242	9.4526	3.6585	0.3910	0.6829	0.0654	0.0522	0.0294	0.9449	0.3902	0.0087
21	1,157.399	0.6622	84.3699	9.4741	3.6699	0.3800	0.6391	0.0649	0.0513	0.0275	0.9261	0.3882	0.0089
22	1,158.871	0.6640	84.0447	9.5858	3.8669	0.3664	0.5890	0.0627	0.0509	0.0271	1.0097	0.3883	0.0083
23	1,158.049	0.6637	84.0893	9.5511	3.8358	0.3648	0.5918	0.0639	0.0510	0.0281	1.0276	0.3881	0.0086
24	1,155.890	0.6619	84.3813	9.3298	3.8121	0.3622	0.5855	0.0614	0.0495	0.0256	1.0038	0.3803	0.0085
25	1,159.719	0.6637	84.3351	9.3137	3.8231	0.3931	0.6398	0.0760	0.0634	0.0327	0.9337	0.3805	0.0088
26	1,164.141	0.6664	84.0591	9.3904	3.9532	0.4055	0.6713	0.0861	0.0725	0.0397	0.9493	0.3643	0.0088
27	1,165.833	0.6674	83.9317	9.4574	4.0139	0.4104	0.6780	0.0847	0.0712	0.0391	0.9447	0.3602	0.0087
28	1,166.146	0.6678	83.6813	9.7774	3.9825	0.3936	0.6478	0.0787	0.0659	0.0379	0.9648	0.3613	0.0087
29	1,163.592	0.6658	83.9486	9.6408	3.9099	0.3859	0.6342	0.0745	0.0636	0.0375	0.9379	0.3586	0.0085
30	1,163.467	0.6662	83.8755	9.6396	3.9494	0.3838	0.6341	0.0714	0.0617	0.0356	0.9795	0.3607	0.0086
Volume	1,157.678	0.6628	84.3321	9.4251	3.6909	0.3839	0.6538	0.0675	0.0549	0.0305	0.9558	0.3966	0.0090
Weight Avg Energy	1,157.691	0.6628	84.3312	9.4254	3.6915	0.3839	0.6538	0.0675	0.0549	0.0305	0.9558	0.3965	0.0090



Alliance Pipeline

DAILY ANALYSIS --- USA
 ND14MD1 --- Milnor Sales
 September 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	1,152.239	0.6597	84.7533	9.1272	3.6338	0.3510	0.5965	0.0658	0.0545	0.0327	0.9669	0.4082	0.0102
2	1,152.523	0.6601	84.6489	9.2496	3.5858	0.3531	0.6119	0.0637	0.0526	0.0319	0.9823	0.4100	0.0101
3	1,151.860	0.6592	84.7763	9.2296	3.5000	0.3579	0.6251	0.0638	0.0529	0.0313	0.9484	0.4044	0.0101
4	1,153.677	0.6604	84.6237	9.2964	3.5601	0.3660	0.6365	0.0651	0.0535	0.0299	0.9574	0.4015	0.0100
5	1,155.490	0.6615	84.5098	9.3623	3.5797	0.3826	0.6639	0.0654	0.0518	0.0279	0.9427	0.4050	0.0089
6	1,155.520	0.6615	84.4872	9.4026	3.5516	0.3813	0.6701	0.0653	0.0529	0.0289	0.9523	0.3983	0.0095
7	1,157.066	0.6626	84.3995	9.4028	3.6107	0.3895	0.6861	0.0662	0.0534	0.0305	0.9440	0.4079	0.0093
8	1,156.824	0.6625	84.4357	9.3566	3.6171	0.3926	0.6861	0.0656	0.0529	0.0305	0.9419	0.4122	0.0088
9	1,157.816	0.6633	84.3209	9.4165	3.6358	0.3990	0.6993	0.0659	0.0531	0.0293	0.9535	0.4178	0.0089
10	1,157.967	0.6635	84.2949	9.4282	3.6445	0.3990	0.6947	0.0677	0.0542	0.0298	0.9597	0.4186	0.0087
11	1,155.635	0.6617	84.4904	9.3872	3.5539	0.3852	0.6700	0.0658	0.0542	0.0310	0.9328	0.4205	0.0089
12	1,153.316	0.6607	84.6291	9.2746	3.5148	0.3802	0.6614	0.0648	0.0517	0.0282	0.9497	0.4366	0.0088
13	1,153.870	0.6608	84.6114	9.3186	3.5109	0.3794	0.6605	0.0664	0.0523	0.0286	0.9303	0.4328	0.0089
14	1,154.887	0.6606	84.7123	9.2131	3.5693	0.3847	0.6671	0.0661	0.0521	0.0289	0.8879	0.4094	0.0091
15	1,152.215	0.6603	84.5498	9.3984	3.4856	0.3660	0.6322	0.0608	0.0482	0.0276	0.9888	0.4335	0.0092
16	1,156.224	0.6630	84.3082	9.3994	3.6027	0.4076	0.6981	0.0602	0.0479	0.0270	1.0229	0.4169	0.0091
17	1,155.397	0.6612	84.4901	9.4157	3.5704	0.3799	0.6627	0.0595	0.0470	0.0268	0.9558	0.3829	0.0091
18	1,156.351	0.6620	84.3844	9.4983	3.5957	0.3806	0.6512	0.0624	0.0496	0.0277	0.9331	0.4079	0.0090
19	1,159.113	0.6635	84.2270	9.5403	3.6750	0.3921	0.6849	0.0645	0.0511	0.0269	0.9388	0.3904	0.0089
20	1,157.995	0.6629	84.3513	9.4343	3.6528	0.3908	0.6818	0.0655	0.0523	0.0296	0.9424	0.3903	0.0087
21	1,157.391	0.6623	84.3522	9.4847	3.6898	0.3771	0.6284	0.0642	0.0507	0.0270	0.9294	0.3874	0.0089
22	1,158.912	0.6643	83.9997	9.6108	3.8720	0.3653	0.5882	0.0628	0.0507	0.0269	1.0249	0.3903	0.0083
23	1,157.611	0.6633	84.1405	9.5323	3.8193	0.3635	0.5884	0.0631	0.0505	0.0280	1.0195	0.3860	0.0086
24	1,156.361	0.6624	84.3303	9.3504	3.8260	0.3640	0.5901	0.0619	0.0500	0.0259	1.0100	0.3828	0.0085
25	1,158.493	0.6630	84.4074	9.2863	3.7944	0.3896	0.6324	0.0723	0.0597	0.0310	0.9330	0.3852	0.0086
26	1,164.446	0.6665	84.0523	9.3959	3.9691	0.4052	0.6719	0.0849	0.0715	0.0386	0.9485	0.3533	0.0088
27	1,166.076	0.6676	83.8850	9.5027	4.0141	0.4093	0.6769	0.0841	0.0708	0.0394	0.9472	0.3618	0.0087
28	1,165.699	0.6675	83.7086	9.7746	3.9673	0.3918	0.6457	0.0774	0.0646	0.0370	0.9661	0.3585	0.0086
29	1,163.247	0.6657	83.9675	9.6217	3.9119	0.3845	0.6308	0.0736	0.0630	0.0370	0.9404	0.3612	0.0085
30	1,164.242	0.6668	83.8257	9.6383	3.9749	0.3881	0.6431	0.0735	0.0639	0.0366	0.9858	0.3615	0.0086
Volume	1,157.907	0.6631	84.3044	9.4250	3.7203	0.3822	0.6476	0.0676	0.0551	0.0308	0.9635	0.3946	0.0089
Weight Avg Energy	1,157.925	0.6631	84.3039	9.4250	3.7207	0.3823	0.6478	0.0676	0.0551	0.0308	0.9633	0.3945	0.0089

September-21

ZONE 610

Watford City

Start Date	End Date	Watford City West Border			Watford City East Border			Weighted AVG BTU	
		MCF	DK	BTU Zone 25	MCF	DK	BTU Zone 43		
9/1/2021	9/2/2021	3	4	1205.3	104	111	1062.4	1066.407	9/1/2021
9/2/2021	9/3/2021	38	46	1205.3	153	163	1062.4	1090.830	9/2/2021
9/3/2021	9/4/2021	10	12	1205.3	99	106	1062.4	1075.510	9/3/2021
9/4/2021	9/5/2021	1	1	1205.3	123	131	1062.4	1063.552	9/4/2021
9/5/2021	9/6/2021	1	1	1205.3	81	86	1062.4	1064.143	9/5/2021
9/6/2021	9/7/2021	3	4	1205.3	90	96	1062.4	1067.010	9/6/2021
9/7/2021	9/8/2021	6	7	1205.3	107	114	1062.4	1069.988	9/7/2021
9/8/2021	9/9/2021	11	14	1205.3	141	150	1062.4	1072.741	9/8/2021
9/9/2021	9/10/2021	9	11	1205.3	110	117	1062.4	1073.208	9/9/2021
9/10/2021	9/11/2021	9	11	1205.3	93	99	1062.4	1075.009	9/10/2021
9/11/2021	9/12/2021	25	30	1205.3	132	140	1062.4	1085.155	9/11/2021
9/12/2021	9/13/2021	13	16	1205.3	113	120	1062.4	1077.144	9/12/2021
9/13/2021	9/14/2021	21	26	1205.3	103	109	1062.4	1086.601	9/13/2021
9/14/2021	9/15/2021	7	8	1205.3	119	126	1062.4	1070.339	9/14/2021
9/15/2021	9/16/2021	76	91	1205.3	105	112	1062.4	1122.402	9/15/2021
9/16/2021	9/17/2021	159	191	1205.3	176	187	1062.4	1130.224	9/16/2021
9/17/2021	9/18/2021	109	131	1205.3	127	135	1062.4	1128.400	9/17/2021
9/18/2021	9/19/2021	39	47	1205.3	90	95	1062.4	1105.602	9/18/2021
9/19/2021	9/20/2021	103	124	1205.3	124	132	1062.4	1127.240	9/19/2021
9/20/2021	9/21/2021	122	147	1205.3	149	158	1062.4	1126.731	9/20/2021
9/21/2021	9/22/2021	103	124	1205.3	140	149	1062.4	1122.971	9/21/2021
9/22/2021	9/23/2021	81	98	1205.3	135	144	1062.4	1115.988	9/22/2021
9/23/2021	9/24/2021	106	128	1205.3	139	148	1062.4	1124.226	9/23/2021
9/24/2021	9/25/2021	144	173	1205.3	162	172	1062.4	1129.647	9/24/2021
9/25/2021	9/26/2021	75	90	1205.3	184	195	1062.4	1103.780	9/25/2021
9/26/2021	9/27/2021	38	46	1205.3	134	142	1062.4	1093.971	9/26/2021
9/27/2021	9/28/2021	57	69	1205.3	132	140	1062.4	1105.497	9/27/2021
9/28/2021	9/29/2021	55	66	1205.3	103	109	1062.4	1112.144	9/28/2021
9/29/2021	9/30/2021	132	158	1205.3	143	152	1062.4	1130.992	9/29/2021
9/30/2021	10/1/2021	131	158	1207.5	142	151	1062.4	1132.027	9/30/2021
		1,687	2,032	1205.3733	3,753	3,989	1062.4000	1098.3159	

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	1091	0.644	1359.5	-48.4	2.3243	0.9794	83.0141	12.3518	1.0254	0.0392	0.0238	0.0017	N/A	0	0.2163	0.0232	8/31/2021	9/1/2021	9/1/2021 15:25		
11587	GLEN ULLIN	1094.1	0.6459	1361.3	-47.5	2.3177	0.9819	83.0017	12.5121	1.0554	0.0401	0.0249	0.0013	0.002	N/A	0.0001	0.0391	0.0237	9/1/2021	9/2/2021	9/2/2021 16:35	
11587	GLEN ULLIN	1094.4	0.6463	1361.3	-47.9	2.3356	0.9822	82.8532	12.6948	1.0173	0.0335	0.0201	0.0005	0.0013	N/A	0	0.0377	0.024	9/2/2021	9/3/2021	9/3/2021 15:22	
11587	GLEN ULLIN	1093.7	0.6457	1361.1	-48.4	2.3192	0.978	82.9584	12.6214	1.0023	0.0325	0.0197	0.0003	0.001	N/A	0	0.0432	0.0241	9/3/2021	9/4/2021	9/4/2021 15:20	
11587	GLEN ULLIN	1093.2	0.6453	1360.8	-48.8	2.3348	0.9663	82.9941	12.6017	0.9826	0.0311	0.019	0.0002	0.0006	N/A	0	0.0457	0.024	9/4/2021	9/5/2021	9/5/2021 15:18	
11587	GLEN ULLIN	1095	0.6466	1361.8	-47.7	2.314	0.9852	82.8211	12.7551	1.0107	0.0334	0.0212	0.001	0.0013	N/A	0	0.0332	0.0239	9/5/2021	9/6/2021	9/6/2021 15:19	
11587	GLEN ULLIN	1096	0.6475	1362	-46.6	2.3263	0.997	82.6985	12.7945	1.0566	0.038	0.024	0.0015	0.0021	N/A	0.0002	0.0373	0.0242	9/6/2021	9/7/2021	9/7/2021 15:18	
11587	GLEN ULLIN	1096.2	0.6472	1362.6	-45.9	2.304	0.985	82.8052	12.6946	1.0756	0.0434	0.029	0.0025	0.0033	N/A	0.0008	0.0326	0.0241	9/7/2021	9/8/2021	9/8/2021 15:15	
11587	GLEN ULLIN	1095	0.646	1362.3	-46.5	2.277	0.9737	82.9681	12.6465	0.9952	0.0426	0.0281	0.0026	0.0034	N/A	0.0017	0.0373	0.0239	9/8/2021	9/9/2021	9/9/2021 15:15	
11587	GLEN ULLIN	1095.2	0.6466	1362	-47.2	2.2962	0.9921	82.798	12.8363	0.9481	0.041	0.0268	0.0023	0.0031	N/A	0.0007	0.0311	0.0243	9/9/2021	9/10/2021	9/10/2021 15:19	
11587	GLEN ULLIN	1095.2	0.6466	1362	-47.4	2.293	0.9922	82.8123	12.8355	0.9476	0.0383	0.0253	0.0022	0.0029	N/A	0.0007	0.0259	0.0241	9/10/2021	9/11/2021	9/11/2021 15:21	
11587	GLEN ULLIN	1095.3	0.647	1361.7	-46.9	2.3258	0.9979	82.6373	12.8954	0.9744	0.0383	0.0252	0.0021	0.0027	N/A	0.0005	0.0766	0.0239	9/11/2021	9/12/2021	9/12/2021 15:21	
11587	GLEN ULLIN	1091.7	0.6445	1359.9	-48.5	2.3094	0.9927	82.982	12.5377	0.9398	0.0384	0.0246	0.002	0.0027	N/A	0.0003	0.1467	0.0238	9/12/2021	9/13/2021	9/13/2021 15:15	
11587	GLEN ULLIN	1092.4	0.644	1361.2	-48.2	2.2392	0.9849	83.0154	12.554	0.9345	0.038	0.0253	0.0022	0.003	N/A	0.0008	0.1797	0.0233	9/13/2021	9/14/2021	9/14/2021 15:15	
11587	GLEN ULLIN	1092.2	0.6445	1360.5	-48.2	2.2763	0.9957	82.9101	12.5886	0.9487	0.0366	0.0246	0.0019	0.0027	N/A	0.0005	0.1909	0.0236	9/14/2021	9/15/2021	9/15/2021 15:14	
11587	GLEN ULLIN	1090.3	0.6432	1359.5	-50	2.2906	0.9844	83.1095	12.4646	0.903	0.0302	0.0191	0.0007	0.0015	N/A	0	0.173	0.0235	9/15/2021	9/16/2021	9/16/2021 15:14	
11587	GLEN ULLIN	1086.5	0.6405	1357.6	-52.1	2.2806	0.974	83.6179	12.0266	0.8684	0.0268	0.0173	0.0001	0.0008	N/A	0	0.1645	0.0232	9/16/2021	9/17/2021	9/17/2021 15:18	
11587	GLEN ULLIN	1085.5	0.6403	1356.6	-52.4	2.2937	0.9864	83.7597	11.8844	0.8785	0.0274	0.0171	0.0001	0.0002	N/A	0	0.1293	0.0234	9/17/2021	9/18/2021	9/18/2021 15:14	
11587	GLEN ULLIN	1087.8	0.6422	1357.4	-50.8	2.3374	0.987	83.429	12.1459	0.9138	0.029	0.0179	0.0001	0.0003	N/A	0.0005	0.1154	0.0237	9/18/2021	9/19/2021	9/19/2021 15:15	
11587	GLEN ULLIN	1089.9	0.6435	1358.7	-49.4	2.3178	0.9988	83.2431	12.2217	1.0066	0.0337	0.0207	0.0001	0.0005	N/A	0	0.1335	0.0236	9/19/2021	9/20/2021	9/20/2021 15:22	
11587	GLEN ULLIN	1091.5	0.645	1359.1	-48.6	2.3683	0.9923	82.9285	12.4918	1.0025	0.0345	0.0206	0.0006	0.0009	N/A	0	0.1363	0.0239	9/20/2021	9/21/2021	9/21/2021 15:16	
11587	GLEN ULLIN	1092.4	0.6462	1358.9	-48.6	2.4177	1.0006	82.6262	12.7967	0.9542	0.0298	0.0179	0.0001	0.0004	N/A	0	0.1324	0.0241	9/21/2021	9/22/2021	9/22/2021 15:15	
11587	GLEN ULLIN	1100.3	0.6504	1364.3	-41.1	2.3317	1.0038	82.3312	12.9659	1.1857	0.0585	0.0425	0.0043	0.006	N/A	0.0034	0.0431	0.024	9/22/2021	9/23/2021	9/23/2021 15:19	
11587	GLEN ULLIN	1100	0.6506	1363.8	-36	2.3609	1.0088	82.3496	12.6901	1.2771	0.0816	0.0614	0.0079	0.0109	N/A	0.0064	0.1218	0.0238	9/23/2021	9/24/2021	9/24/2021 16:00	
11587	GLEN ULLIN	1099	0.6506	1362.5	-35	2.3957	1.0223	82.3643	12.5594	1.3025	0.089	0.0644	0.0092	0.0118	N/A	0.0068	0.1508	0.0239	9/24/2021	9/25/2021	9/25/2021 16:03	
11587	GLEN ULLIN	1097.7	0.6503	1361.3	-36.8	2.4414	1.03	82.3258	12.5955	1.2664	0.0789	0.06	0.0075	0.0105	N/A	0.006	0.1542	0.024	9/25/2021	9/26/2021	9/26/2021 15:59	
11587	GLEN ULLIN	1099.3	0.6512	1362.3	-34	2.4315	1.0278	82.2833	12.5294	1.3632	0.0872	0.0669	0.0087	0.0124	N/A	0.0075	0.1578	0.0244	9/26/2021	9/27/2021	9/27/2021 15:21	
11587	GLEN ULLIN	1101.3	0.6529	1363	-33.2	2.4671	1.031	81.9116	12.9219	1.3236	0.0847	0.0642	0.009	0.0126	N/A	0.008	0.1417	0.0249	9/27/2021	9/28/2021	9/28/2021 15:23	
11587	GLEN ULLIN	1104	0.6527	1366.5	-27.9	2.3017	1.016	82.2486	12.6593	1.4079	0.1079	0.0828	0.0123	0.0174	N/A	0.0113	0.1109	0.0241	9/28/2021	9/29/2021	9/29/2021 15:24	
11587	GLEN ULLIN	1095.5	0.6474	1361.5	-37	2.3323	1.0065	82.7976	12.3657	1.1553	0.0751	0.0562	0.0076	0.0109	N/A	0.0073	0.1628	0.023	9/29/2021	9/30/2021	9/30/2021 15:30	
11587	GLEN ULLIN	1089.1	0.6424	1358.8	-49.7	2.2742	0.9925	83.3768	12.1517	0.9558	0.0361	0.0225	0.0013	0.002	N/A	0.0003	0.1635	0.0235	9/30/2021	10/1/2021	10/1/2021 15:27	

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	SEP21	AUG21	JUL21	JUN 21	MAY 21	APR 21	MAR 21	FEB 21	JAN 21	DEC 20	NOV 20	OCT 20	ZONE
MT/ND	211	Sidney Border - MonDak Tfr - Sidney Plt	1202	1213	1216	1210	1152	1204	1198	1208	1206	1209	1207	1198	1200	211
ND	24	Williston Border - Charbonneau Station	1170	1167	1173	1172	1164	1168	1167	1176	1176	1177	1175	1167	1158	24
ND	25	Watford City West Border	1199	1205	1211	1203	1199	1202	1199	1194	1194	1195	1195	1193	1193	25
ND	28	Bismarck Station - Glen Ullin Station	1156	1196	1202	1200	1202	1161	1117	1148	1110	1121	1135	1131	1152	28
ND	31	Dickinson Brd - Belfield Trf - G Ullin Stn	1137	1130	1191	1123	1129	1160	1154	1127	1113	1122	1131	1129	1136	31
ND/MT	32	Cabin Creek Station - Belfield Transfer	1124	1136	1162	1135	1127	1122	1124	1121	1091	1105	1119	1123	1127	32
ND	33	Little Knife Plant	1175	1179	1182	1184	1179	1175	1173	1172	1171	1172	1172	1172	1172	33
ND	34	Badlands Plant/Bowman Border	1044	1059	1025	980	980	989	981	1040	1079	1172	1094	1070	1060	34
ND	43	Watford City East Border	1116	1062	1088	1109	1119	1123	1119	1126	1106	1104	1147	1147	1140	43
ND/MT	241	Fairview Border	1193	1193	1201	1213	1185	1173	1185	1198	1204	1192	1195	1203	1169	241
ND	260	North Tioga Transfer - Nesson Plant	1148	1145	1159	1167	1153	1159	1148	1160	1149	1144	1142	1134	1114	260
ND	261	Tioga Comp Station - Robinson Lake Plan	1179	1192	1194	1196	1195	1193	1180	1173	1171	1168	1166	1159	1164	261
ND	262	Minot Bdr - Palermo Bdr - Bismarck Stn	1191	1203	1202	1200	1203	1195	1189	1191	1187	1184	1181	1178	1182	262
ND	263	Lignite Plant	1138	1134	1129	1143	1147	1137	1147	1148	1125	1133	1134	1137	1137	263
ND	264	Epping Border	1165	1164	1167	1172	1165	1163	1165	1168	1168	1167	1165	1163	1156	264
ND	265	Tioga Comp Station - County Line Plant	1167	1165	1163	1166	1165	1172	1170	1172	1171	1168	1166	1159	1164	265
ND	266	County Line Plant	1171	1185	1175	1174	1169	1171	1169	1174	1176	1164	1166	1165	1161	266
ND	271	Bismarck Station - Cleveland Station	1188	1197	1202	1200	1202	1196	1186	1191	1165	1180	1179	1174	1181	271
ND	272	Cleveland Station - Mapleton	1187	1196	1202	1199	1200	1196	1185	1190	1165	1179	1178	1173	1182	272
ND	273	Cleveland Station - Grafton Border	1187	1195	1202	1200	1200	1195	1184	1189	1164	1179	1178	1173	1181	273
ND	550	Mandan Border / NBPL-St Anthony	1153	1196	1196	1190	1182	1161	1120	1148	1110	1121	1133	1131	1152	550
ND	610	MDU-Watford City BTU	1143	1098	1106	1121	1132	1162	1158	1158	1141	1140	1167	1166	1165	610
ND	802	NBPL - Linton	1099	1094	1090	1089	1090	1094	1093	1099	1101	1103	1111	1113	1110	802
ND	903	Hettinger Propane	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	903
ND	600	Alliance Pipeline - Hankinson	1155	1158	1153	1156	1157	1158	1154	1150	1146	1148	1155	1155	1166	600
ND	601	Alliance Pipeline - Milnor	1155	1158	1153	1156	1157	1158	1154	1150	1146	1148	1155	1155	1166	602

THERMAL ZONE VARIANCE DOCUMENTATION		
September 2021		
<i>ZONE</i>	<i>BTU VARIANCE</i>	<i>REASON</i>
31	-61	Direction/Blend
32	-26	Operational
34	124	Direction/Blend
43	-26	Blend