



UTILITIES CO.

A Division of MDU Resources Group, Inc.

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

October 11, 2016

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

Re: Case No. PU-16-002 (Therm Billing)  
Monthly Report – August 2016

Montana-Dakota Utilities Co., a Division of MDU Resources Group, Inc., herewith submits the following information, pursuant to the Ordering paragraphs one and two of the Order issued in Case No. 11,006, dated October 20, 1987 and pursuant to the North Dakota Administrative Code 69-09-01-02, part 2.

1. Attachment A is a schedule showing the thermal billing factors by community that reflect the BTU values shown on Attachment B and were used for billing purposes in September 2016.
2. Attachment B consists of copies of the monthly Heating Value Test Reports received from our suppliers for the month of August 2016.
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 August 2016.

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

Sincerely,

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

Tamie Aberle  
Director of Regulatory Affairs

**Montana-Dakota Utilities Co.**  
**Therm Billing Factors - North Dakota**  
**Sep-16**

Town	Heat Zone	Therm Factor
MDU-303-ALEXANDER	025	1.1438
MDU-308-ARNEGARD	025	1.1438
MDU-314-APPLE VALLEY	271	1.1656
MDU-318-BEACH	032	1.0692
MDU-319-BELFIELD	032	1.0771
MDU-323-BERTHOLD	262	1.1410
MDU-327-BISMARCK	028	1.1656
MDU-330-BOWMAN	034	0.9137
MDU-337-BURLINGTON	262	1.1656
MDU-343-CARRINGTON	273	1.1646
MDU-344-CLEVELAND	272	1.1564
MDU-364-CAVALIER	273	1.1892
MDU-365-DAWSON	271	1.1574
MDU-368-DES LACS	262	1.1492
MDU-369-DICKINSON	031	1.0540
MDU-374-FT TOTTEN	273	1.1728
MDU-375-DEVILS LAKE	273	1.1728
MDU-379-BARLOW	273	1.1646
MDU-384-EPPING	264	1.1041
MDU-387-ELDRIDGE	272	1.1646
MDU-407-GLADSTONE	031	1.0540
MDU-411-GLEN ULLIN	031	1.0616
MDU-413-GOLVA	032	1.0535
MDU-416-GARRISON	262	1.1492
MDU-417-GRAFTON	273	1.1974
MDU-429-HEBRON	031	1.0616
MDU-432-HETTINGER	903	2.4049
MDU-449-JAMESTOWN	272	1.1728
MDU-459-KILLDEER	033	1.1183
MDU-463-LANGDON	273	1.1646
MDU-469-LEFOR	031	1.0540
MDU-474-LIGNITE	263	1.0635
MDU-475-LINTON	802	1.0170
MDU-478-LINCOLN	028	1.1656
MDU-488-MCKENZIE	271	1.1656
MDU-494-MEDINA	271	1.1574
MDU-498-MANDAN	028	1.1656
MDU-500-MARMARTH	034	0.9204
MDU-505-MINOT	262	1.1656
MDU-510-MOTT	031	1.0540
MDU-512-MAX	262	1.1656
MDU-522-NEW ENGLAND	031	1.0464
MDU-524-NEW SALEM	028	1.1410
MDU-532-NEW ROCKFORD	273	1.1646
MDU-539-PARK RIVER	273	1.1892
MDU-540-PALERMO	262	1.1410
MDU-558-RAY	264	1.1041
MDU-561-REGENT	031	1.0540
MDU-563-RHAME	034	0.9069

MDU-564-RICHARDTON	031	1.0464
MDU-568-ROSS	261	1.1309
MDU-572-RUTHVILLE	262	1.1656
MDU-574-SANBORN	272	1.1728
MDU-583-SENTINEL BUTTE	032	1.0692
MDU-588-SOUTH HEART	031	1.0464
MDU-717-SPIRITWOOD	272	1.1728
MDU-590-SPRINGBROOK	264	1.1041
MDU-591-STANLEY	261	1.1391
MDU-593-STEELE	271	1.1574
MDU-598-SHEYENNE	273	1.1728
MDU-605-SURREY	262	1.1656
MDU-610-TAPPEN	271	1.1574
MDU-611-TAYLOR	031	1.0464
MDU-616-TIOGA	261	1.1391
MDU-619-TURTLE LAKE	262	1.1492
MDU-620-TRENTON	024	1.1387
MDU-624-UNDERWOOD	262	1.1492
MDU-625-VALLEY CITY	272	1.1810
MDU-629-WALHALLA	273	1.1892
MDU-632-WATFORD CITY	610	1.1362
MDU-636-WHEELOCK	264	1.0962
MDU-637-WHITE EARTH	261	1.1391
MDU-642-WILLISTON	024	1.1387
MDU-646-WASHBURN	262	1.1574
MDU-647-WILTON	262	1.1410
MDU-664-RIVERDALE	262	1.1492
MDU-691-FAIRVIEW	241	1.1435
MDU-712-MINOT AFB	262	1.1656
MDU-718-FAIRMOUNT	600	1.1228
MDU-732-NEKOMA	273	1.1646
MDU-732-MSR SITE	273	1.1646





## GQ Source Analysis

<b>GQ Source Number:</b>	0602160	<b>Specific Gravity:</b>	0.7330
<b>GQ Source Name:</b>	FAIRVIEW BORDER	<b>Dry Heat Value:</b>	1200.00
<b>Effective Date:</b>	8/1/2016 9:00:00 AM	<b>Wet Heat Value:</b>	1179.11
<b>Effective End Date:</b>	1/18/2038 9:14:07 PM	<b>As Deliv. Heat Value:</b>	1200.00
<b>Pressure Base:</b>	14.730	<b>Sample Pressure:</b>	245.00
<b>Viscosity:</b>		<b>Sample Temperature:</b>	

		<u>Mol %</u>	<u>Liquid Content</u>			<u>Mol %</u>
C1	Methane	68.727		CO2	Carbon Dioxide	1.182
C2	Ethane	21.743	5.7976	N2	Nitrogen	3.802
C3	Propane	4.109	1.1289	O2	Oxygen	0.012
IC4	Isobutane	0.139	0.0455	He	Helium	
NC4	n-Butane	0.254	0.0798	H2	Hydrogen	
IC5	Isopentane	0.017	0.0063	H2S	Hydrogen Sulfide	
NC5	n-Pentane	0.015	0.0054	Ar	Argon	
C6	Hexanes	0.000	0.0000	CO	Carbon Monoxide	
C7	Heptanes			H2	Water	
C8	Octanes			Neo-C5	Neopentane	
C9	Nonanes					
C10	Decanes					

**Totals** 100.000% 7.063 GPM

**Sample Date:** 9/1/2016 12:00:00 AM  
**Sample Type:** Composite  
**Sample Tech:** RR  
**H2S:** ppm

**Sample Remarks:**

**Analysis Tech:** DW

**Analysis Remarks:**

Zone 241

# GQ Source Analysis

<b>GQ Source Number:</b>	0602225	<b>Specific Gravity:</b>	0.7305
<b>GQ Source Name:</b>	WATFORD CITY WEST BORDER	<b>Dry Heat Value:</b>	1212.63
<b>Effective Date:</b>	8/1/2016 9:00:00 AM	<b>Wet Heat Value:</b>	1191.53
<b>Effective End Date:</b>	1/18/2038 9:14:07 PM	<b>As Deliv. Heat Value:</b>	1212.63
<b>Pressure Base:</b>	14.730	<b>Sample Pressure:</b>	310.00
<b>Viscosity:</b>		<b>Sample Temperature:</b>	

		<u>Mol %</u>	<u>Liquid Content</u>			<u>Mol %</u>
C1	Methane	69.320		CO2	Carbon Dioxide	1.028
C2	Ethane	22.313	0.0000	N2	Nitrogen	3.046
C3	Propane	3.546	0.9742	O2	Oxygen	0.007
IC4	Isobutane	0.210	0.0686	He	Helium	
NC4	n-Butane	0.449	0.1414	H2	Hydrogen	
IC5	Isopentane	0.039	0.0143	H2S	Hydrogen Sulfide	
NC5	n-Pentane	0.040	0.0143	Ar	Argon	
C6	Hexanes	0.002	0.0012	CO	Carbon Monoxide	
C7	Heptanes			H2	Water	
C8	Octanes			Neo-C5	Neopentane	
C9	Nonanes					
C10	Decanes					
<b>Totals</b>		100.000%		1.214	GPM	

**Sample Date:** 9/1/2016 12:00:00 AM  
**Sample Type:** Composite  
**Sample Tech:** ES  
**H2S:** ppm

**Sample Remarks:**

**Analysis Tech:** DW

**Analysis Remarks:**

Zone 25

# GQ Source Daily Summary

August 2016

Number: 163

Pressure Base: 14.730

Contract Day: 1

Name: NORTH TIOGA TRANSFER-PALERMO BORDER LI

Temperature Base:

Contract Hour: 9

Day	Relative Density	Heating Value	Heating Value	CO2	N2	C1	C2	C3	IC4	NC4	ICS	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
		Wet	Dry																
1	0.6680	1092.5	1111.9	0.246	4.448	78.520	14.871	1.687	0.064	0.147	0.008	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1360.62
2	0.6725	1098.3	1117.8	0.260	4.496	77.712	15.523	1.771	0.068	0.153	0.009	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1363.24
3	0.6736	1097.9	1117.3	0.280	4.605	77.656	15.284	1.921	0.073	0.164	0.009	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1361.59
4	0.6555	1080.4	1099.6	0.139	4.178	80.132	14.421	0.991	0.039	0.089	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1358.29
5	0.6398	1063.4	1082.3	0.036	3.898	82.386	13.347	0.289	0.012	0.029	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1353.04
6	0.7332	1162.4	1183.0	0.666	5.663	69.013	19.561	4.491	0.174	0.390	0.021	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1381.77
7	0.7502	1181.1	1202.0	0.787	5.937	66.604	20.702	5.258	0.203	0.458	0.026	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1387.79
8	0.7378	1168.0	1188.7	0.711	5.688	68.415	19.816	4.732	0.182	0.410	0.023	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1383.98
9	0.7254	1156.3	1176.7	0.610	5.396	70.070	19.287	4.085	0.157	0.355	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1381.84
10	0.7051	1132.5	1152.5	0.481	5.137	73.069	17.612	3.264	0.125	0.281	0.016	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1372.82
11	0.7457	1176.1	1197.0	0.748	5.880	67.233	20.385	5.074	0.193	0.437	0.025	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1386.14
12	0.7140	1145.2	1165.5	0.515	5.146	71.578	18.807	3.487	0.133	0.301	0.017	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1379.58
13	0.6851	1114.6	1134.3	0.316	4.608	75.641	17.012	2.132	0.082	0.187	0.011	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1370.71
14	0.6449	1075.0	1094.0	0.009	3.714	81.140	14.994	0.119	0.006	0.014	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1362.32
15	0.7269	1154.3	1174.8	0.637	5.613	69.669	19.508	4.048	0.149	0.337	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1378.19
16	0.7294	1149.4	1169.7	0.737	5.994	69.606	18.696	4.425	0.158	0.347	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1369.63
17	0.6547	1058.2	1076.9	0.358	5.116	81.786	10.332	2.141	0.077	0.170	0.010	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1330.93
18	0.6055	999.1	1016.8	0.083	4.514	89.680	5.114	0.535	0.021	0.047	0.003	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1306.67
19	0.5875	976.7	994.0	0.001	4.310	92.720	2.897	0.055	0.004	0.010	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1296.82
20	0.5851	971.3	988.5	0.003	4.415	93.214	2.269	0.083	0.005	0.010	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1292.25
21	0.5839	967.6	984.7	0.001	4.534	93.411	1.982	0.056	0.004	0.010	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1288.57
22	0.5798	962.7	979.8	0.001	4.435	94.295	1.183	0.066	0.005	0.012	0.001	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1286.77
23	0.5798	963.4	980.4	0.001	4.403	94.283	1.232	0.061	0.005	0.012	0.001	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1287.53
24	0.6248	1038.5	1056.9	0.274	3.635	86.435	8.692	0.893	0.023	0.041	0.003	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1335.96
25	0.5789	961.9	978.9	0.001	4.401	94.469	1.060	0.053	0.004	0.010	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1286.63
26	0.5785	962.1	979.2	0.000	4.350	94.558	1.023	0.053	0.004	0.010	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1287.40
27	0.5789	963.0	980.0	0.000	4.335	94.482	1.112	0.053	0.004	0.011	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1288.09
28	0.5787	963.0	980.0	0.000	4.319	94.518	1.091	0.054	0.004	0.011	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1288.28
29	0.5783	962.6	979.7	0.001	4.304	94.598	1.027	0.054	0.004	0.011	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1288.25
30	0.5782	963.0	980.1	0.001	4.272	94.620	1.037	0.053	0.004	0.011	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1288.87
31	0.5790	963.0	980.1	0.002	4.337	94.479	1.101	0.060	0.005	0.013	0.001	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1288.09
Avg	0.6471	1056.0	1074.3	0.255	4.712	82.774	10.354	1.679	0.064	0.145	0.008	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1335.25

Zone 261



## GQ Source Analysis

<b>GQ Source Number:</b>	2501030	<b>Specific Gravity:</b>	0.6628
<b>GQ Source Name:</b>	LIGNITE PLANT	<b>Dry Heat Value:</b>	1127.40
<b>Effective Date:</b>	8/1/2016 9:00:00 AM	<b>Wet Heat Value:</b>	1107.78
<b>Effective End Date:</b>	1/18/2038 9:14:07 PM	<b>As Deliv. Heat Value:</b>	1127.40
<b>Pressure Base:</b>	14.730	<b>Sample Pressure:</b>	510.00
<b>Viscosity:</b>		<b>Sample Temperature:</b>	

		<u>Mol %</u>	<u>Liquid Content</u>			<u>Mol %</u>
C1	Methane	79.521		CO2	Carbon Dioxide	0.133
C2	Ethane	15.078	4.0205	N2	Nitrogen	3.157
C3	Propane	2.006	0.5512	O2	Oxygen	0.007
IC4	Isobutane	0.051	0.0168	He	Helium	
NC4	n-Butane	0.043	0.0136	H2	Hydrogen	
IC5	Isopentane	0.000	0.0000	H2S	Hydrogen Sulfide	
NC5	n-Pentane	0.000	0.0000	Ar	Argon	
C6	Hexanes	0.004	0.0017	CO	Carbon Monoxide	
C7	Heptanes			H2	Water	
C8	Octanes			Neo-C5	Neopentane	
C9	Nonanes					
C10	Decanes					

**Totals** 100.000% 4.604 GPM

**Sample Date:** 9/1/2016 12:00:00 AM  
**Sample Type:** Composite  
**Sample Tech:** ES  
**H2S:** ppm

**Sample Remarks:**

**Analysis Tech:** DW

**Analysis Remarks:**

Zone 263

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

## GQ Source Analysis

<b>GQ Source Number:</b>	0702010	<b>Specific Gravity:</b>	0.7087
<b>GQ Source Name:</b>	EPPING BORDER	<b>Dry Heat Value:</b>	1198.32
<b>Effective Date:</b>	8/1/2016 9:00:00 AM	<b>Wet Heat Value:</b>	1171.25
<b>Effective End Date:</b>	1/18/2038 9:14:07 PM	<b>As Deliv. Heat Value:</b>	1198.32
<b>Pressure Base:</b>	14.730	<b>Sample Pressure:</b>	560.00
<b>Viscosity:</b>		<b>Sample Temperature:</b>	

		<u>Mol %</u>	<u>Liquid Content</u>			<u>Mol %</u>
C1	Methane	73.935		CO2	Carbon Dioxide	0.720
C2	Ethane	19.361	5.1626	N2	Nitrogen	3.041
C3	Propane	2.637	0.7245	O2	Oxygen	0.024
IC4	Isobutane	0.084	0.0270	He	Helium	
NC4	n-Butane	0.170	0.0530	H2	Hydrogen	
IC5	Isopentane	0.013	0.0046	H2S	Hydrogen Sulfide	
NC5	n-Pentane	0.014	0.0052	Ar	Argon	
C6	Hexanes	0.000	0.0000	CO	Carbon Monoxide	
C7	Heptanes			H2	Water	
C8	Octanes			Neo-C5	Neopentane	
C9	Nonanes					
C10	Decanes					
<b>Totals</b>			100.000%		5.977 GPM	

**Sample Date:** 8/1/2016 12:00:00 AM  
**Sample Type:** Composite  
**Sample Tech:** ES  
**H2S:** ppm

**Sample Remarks:**

**Analysis Tech:** MB

**Analysis Remarks:**

Zone 2b4

# GQ Source Daily Summary

August 2016

Number: 161

Pressure Base: 14.730

Contract Day: 1

Name: NORTH TIOGA TRANSFER-PORTAL

Temperature Base:

Contract Hour: 9

Day	Relative Density	Heating Value Wet	Heating Value Dry																
				CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.7044	1153.6	1174.0	0.789	3.319	72.992	19.890	2.716	0.083	0.178	0.015	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1398.86
2	0.7060	1155.6	1176.1	0.813	3.308	72.798	19.986	2.795	0.086	0.180	0.014	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1399.71
3	0.7129	1167.4	1188.1	0.780	3.283	72.296	19.890	3.250	0.131	0.305	0.028	0.036	0.000	0.000	0.000	0.000	0.000	0.000	1407.05
4	0.7047	1154.1	1174.5	0.794	3.314	72.953	19.933	2.690	0.091	0.191	0.016	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1399.08
5	0.7062	1156.0	1176.4	0.822	3.294	72.783	20.035	2.732	0.093	0.201	0.018	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1399.93
6	0.7063	1156.4	1176.9	0.806	3.302	72.786	19.984	2.795	0.092	0.195	0.017	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1400.35
7	0.7068	1157.3	1177.8	0.800	3.304	72.680	20.048	2.861	0.090	0.185	0.015	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1400.92
8	0.7059	1156.3	1176.7	0.780	3.312	72.878	19.882	2.830	0.092	0.189	0.016	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1400.56
9	0.7076	1158.2	1178.7	0.807	3.314	72.646	20.010	2.869	0.100	0.212	0.019	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1401.22
10	0.7072	1157.8	1178.3	0.798	3.314	72.698	19.970	2.889	0.095	0.197	0.017	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1401.11
11	0.7078	1158.9	1179.4	0.798	3.299	72.618	20.037	2.909	0.096	0.204	0.017	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1401.91
12	0.7066	1156.7	1177.1	0.824	3.289	72.783	19.972	2.793	0.092	0.203	0.019	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1400.34
13	0.7086	1160.2	1180.7	0.830	3.256	72.446	20.259	2.870	0.095	0.203	0.018	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1402.57
14	0.7116	1164.8	1185.4	0.823	3.254	72.079	20.413	3.069	0.103	0.219	0.018	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1405.33
15	0.7111	1164.7	1185.3	0.806	3.248	72.288	20.163	3.104	0.109	0.233	0.021	0.026	0.000	0.000	0.000	0.000	0.000	0.000	1405.55
16	0.7102	1163.8	1184.4	0.784	3.252	72.415	20.051	3.111	0.110	0.233	0.020	0.024	0.000	0.000	0.000	0.000	0.000	0.000	1405.39
17	0.7091	1163.1	1183.7	0.776	3.196	72.681	19.840	3.120	0.113	0.228	0.020	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1405.68
18	0.7002	1148.8	1169.2	0.796	3.204	73.523	19.703	2.555	0.074	0.130	0.007	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1397.23
19	0.6777	1126.5	1146.5	0.324	3.168	77.536	16.281	2.527	0.076	0.083	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1392.65
20	0.6629	1107.5	1127.2	0.130	3.221	79.939	14.436	2.153	0.060	0.061	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1384.43
21	0.6534	1092.0	1111.3	0.120	3.297	81.186	13.813	1.483	0.039	0.058	0.002	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1374.75
22	0.6881	1149.2	1169.6	0.135	3.040	76.356	16.918	3.203	0.139	0.207	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1409.87
23	0.7006	1167.3	1188.0	0.166	3.046	76.315	15.529	3.908	0.291	0.633	0.064	0.048	0.000	0.000	0.000	0.000	0.000	0.000	1418.87
24	0.6624	1105.9	1125.4	0.162	3.233	79.521	15.381	1.652	0.033	0.017	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1382.67
25	0.6684	1116.9	1136.7	0.168	3.122	77.952	17.296	1.437	0.020	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1390.36
26	0.6695	1118.9	1138.7	0.145	3.139	77.823	17.318	1.545	0.024	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1391.67
27	0.6704	1120.3	1140.1	0.160	3.118	77.717	17.360	1.611	0.026	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1392.42
28	0.6713	1121.9	1141.8	0.145	3.122	77.676	17.275	1.736	0.033	0.013	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1393.56
29	0.6734	1125.7	1145.7	0.160	3.064	77.581	17.184	1.885	0.054	0.065	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1396.07
30	0.6695	1120.0	1139.8	0.159	3.051	78.230	16.688	1.775	0.047	0.048	0.002	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1392.95
31	0.7193	1183.1	1204.1	0.644	3.127	72.293	19.507	3.481	0.212	0.567	0.074	0.096	0.000	0.000	0.000	0.000	0.000	0.000	1419.67
Avg	0.6942	1145.0	1165.7	0.550	3.220	74.789	18.550	2.592	0.090	0.176	0.015	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1399.12

Zone 265

# GQ Source Daily Summary

August 2016

Number: 043

Pressure Base: 14.730

Contract Day: 1

Name: BISMARCK STATION-CLEVELAND STATION

Temperature Base:

Contract Hour: 9

Day	Relative Density	Heating Value Wet	Heating Value Dry																
				CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.7578	1187.4	1208.4	0.814	6.222	65.465	21.175	5.574	0.212	0.486	0.025	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1388.18
2	0.7572	1188.8	1209.9	0.818	6.079	65.592	21.203	5.549	0.214	0.492	0.026	0.026	0.000	0.000	0.000	0.000	0.000	0.000	1390.35
3	0.7568	1188.0	1209.0	0.817	6.090	65.675	21.115	5.549	0.214	0.489	0.026	0.026	0.000	0.000	0.000	0.000	0.000	0.000	1389.76
4	0.7578	1189.8	1210.8	0.817	6.073	65.509	21.269	5.571	0.215	0.493	0.026	0.026	0.000	0.000	0.000	0.000	0.000	0.000	1390.96
5	0.7579	1189.9	1211.0	0.818	6.076	65.507	21.255	5.576	0.216	0.498	0.027	0.027	0.000	0.000	0.000	0.000	0.000	0.000	1390.98
6	0.7565	1188.0	1209.0	0.821	6.055	65.760	21.056	5.548	0.213	0.492	0.027	0.027	0.000	0.000	0.000	0.000	0.000	0.000	1390.03
7	0.7558	1187.6	1208.6	0.824	6.013	65.887	20.977	5.544	0.213	0.489	0.026	0.026	0.000	0.000	0.000	0.000	0.000	0.000	1390.17
8	0.7559	1187.4	1208.4	0.823	6.027	65.899	20.928	5.567	0.213	0.490	0.026	0.026	0.000	0.000	0.000	0.000	0.000	0.000	1389.96
9	0.7570	1188.7	1209.7	0.820	6.068	65.665	21.108	5.583	0.215	0.491	0.026	0.026	0.000	0.000	0.000	0.000	0.000	0.000	1390.34
10	0.7571	1189.1	1210.1	0.819	6.046	65.673	21.114	5.590	0.214	0.490	0.026	0.026	0.000	0.000	0.000	0.000	0.000	0.000	1390.78
11	0.7562	1187.2	1208.3	0.823	6.073	65.794	21.012	5.544	0.213	0.489	0.026	0.027	0.000	0.000	0.000	0.000	0.000	0.000	1389.42
12	0.7522	1179.7	1200.6	0.823	6.160	66.247	20.762	5.304	0.199	0.456	0.024	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1384.24
13	0.7468	1170.2	1191.0	0.827	6.219	66.860	20.486	4.987	0.177	0.401	0.021	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1378.18
14	0.7469	1171.0	1191.7	0.829	6.183	66.802	20.603	4.979	0.174	0.388	0.020	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1378.92
15	0.7459	1168.9	1189.6	0.828	6.218	66.905	20.543	4.910	0.173	0.385	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1377.42
16	0.7463	1169.2	1189.9	0.829	6.237	66.815	20.618	4.904	0.172	0.386	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1377.39
17	0.7429	1162.2	1182.8	0.825	6.350	67.318	20.124	4.825	0.166	0.361	0.016	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1372.29
18	0.7350	1146.8	1167.1	0.818	6.563	68.300	19.397	4.463	0.143	0.297	0.010	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1361.31
19	0.7361	1149.4	1169.7	0.820	6.507	68.157	19.536	4.508	0.146	0.306	0.011	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1363.36
20	0.7340	1146.0	1166.3	0.811	6.523	68.451	19.354	4.403	0.141	0.296	0.011	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1361.36
21	0.7128	1122.1	1141.9	0.695	6.170	71.969	16.981	3.799	0.121	0.248	0.009	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1352.58
22	0.7158	1126.7	1146.7	0.703	6.160	71.437	17.436	3.882	0.121	0.244	0.009	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1355.25
23	0.7318	1147.8	1168.2	0.776	6.259	68.592	19.764	4.215	0.127	0.249	0.009	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1365.58
24	0.7179	1128.8	1148.8	0.726	6.189	71.093	17.662	3.956	0.120	0.236	0.009	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1355.85
25	0.7312	1148.6	1168.9	0.814	6.100	68.807	19.641	4.251	0.125	0.245	0.009	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1367.04
26	0.7373	1153.0	1173.5	0.826	6.387	67.919	19.890	4.531	0.141	0.284	0.011	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1366.58
27	0.7358	1151.0	1171.4	0.822	6.376	68.137	19.758	4.474	0.138	0.275	0.010	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1365.57
28	0.7333	1147.4	1167.8	0.820	6.356	68.516	19.526	4.366	0.133	0.263	0.010	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1363.72
29	0.7264	1139.6	1159.8	0.769	6.268	69.678	18.683	4.205	0.128	0.252	0.009	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1360.78
30	0.7277	1141.3	1161.5	0.781	6.270	69.462	18.851	4.229	0.130	0.258	0.010	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1361.54
31	0.7304	1144.8	1165.1	0.789	6.295	69.043	19.127	4.332	0.133	0.262	0.010	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1363.22
Avg	0.7423	1164.0	1184.7	0.805	6.213	67.514	20.031	4.862	0.170	0.371	0.018	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1374.94

Zone 271

# GQ Source Daily Summary

August 2016

Number: 063

Pressure Base: 14.730

Contract Day: 1

Name: CLEVELAND STATION-MAPLETON

Temperature Base:

Contract Hour: 9

Day	Relative Density	Heating Value Wet	Heating Value Dry	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.7559	1184.3	1205.3	0.833	6.202	65.736	20.976	5.524	0.209	0.470	0.025	0.025	0.000					1386.35	
2	0.7568	1186.7	1207.7	0.813	6.174	65.572	21.163	5.540	0.212	0.477	0.025	0.025	0.000					1388.30	
3	0.7560	1186.2	1207.2	0.823	6.119	65.718	21.093	5.504	0.212	0.479	0.026	0.026	0.000					1388.38	
4	0.7565	1187.0	1208.0	0.816	6.119	65.658	21.135	5.533	0.212	0.477	0.026	0.025	0.000					1388.97	
5	0.7568	1187.7	1208.7	0.821	6.107	65.619	21.165	5.537	0.214	0.484	0.027	0.026	0.000					1389.37	
6	0.7563	1186.7	1207.7	0.823	6.117	65.700	21.093	5.520	0.212	0.482	0.027	0.026	0.000					1388.67	
7	0.7555	1186.2	1207.2	0.828	6.060	65.856	21.009	5.506	0.211	0.477	0.026	0.026	0.000					1388.86	
8	0.7555	1186.8	1207.9	0.827	6.018	65.897	20.977	5.535	0.212	0.480	0.026	0.026	0.000					1389.67	
9	0.7556	1185.9	1206.9	0.820	6.099	65.825	20.989	5.531	0.211	0.475	0.025	0.025	0.000					1388.46	
10	0.7562	1186.8	1207.8	0.817	6.108	65.742	21.026	5.561	0.213	0.480	0.026	0.026	0.000					1388.94	
11	0.7560	1186.8	1207.8	0.826	6.071	65.785	21.028	5.548	0.212	0.478	0.026	0.026	0.000					1389.13	
12	0.7546	1183.8	1204.8	0.821	6.130	65.974	20.872	5.467	0.210	0.475	0.026	0.026	0.000					1386.95	
13	0.7474	1170.8	1191.5	0.824	6.249	66.755	20.518	5.029	0.180	0.402	0.022	0.022	0.000					1378.23	
14	0.7460	1168.7	1189.4	0.830	6.237	66.912	20.463	4.955	0.175	0.387	0.021	0.021	0.000					1377.08	
15	0.7455	1168.1	1188.8	0.831	6.227	66.911	20.548	4.901	0.171	0.372	0.019	0.019	0.000					1376.83	
16	0.7463	1169.1	1189.8	0.840	6.222	66.800	20.640	4.904	0.173	0.382	0.020	0.019	0.000					1377.31	
17	0.7436	1163.6	1184.2	0.802	6.365	67.141	20.306	4.831	0.164	0.354	0.020	0.019	0.000					1373.31	
18	0.7386	1152.5	1172.9	0.834	6.524	67.796	19.744	4.614	0.152	0.313	0.012	0.011	0.000					1364.79	
19	0.7361	1148.0	1168.3	0.827	6.577	68.102	19.543	4.489	0.145	0.296	0.010	0.009	0.000					1361.75	
20	0.7360	1147.6	1167.9	0.826	6.595	68.110	19.530	4.483	0.144	0.293	0.011	0.009	0.000					1361.36	
21	0.7235	1133.4	1153.5	0.757	6.391	70.144	18.205	4.080	0.132	0.271	0.010	0.009	0.000					1356.10	
22	0.7093	1117.2	1137.0	0.683	6.151	72.541	16.552	3.704	0.118	0.235	0.009	0.008	0.000					1350.10	
23	0.7279	1143.6	1163.8	0.749	6.196	69.172	19.434	4.074	0.123	0.236	0.009	0.008	0.000					1364.13	
24	0.7365	1149.8	1170.2	0.834	6.495	67.947	19.831	4.473	0.137	0.263	0.010	0.009	0.000					1363.52	
25	0.7135	1125.1	1145.0	0.720	6.011	71.749	17.413	3.772	0.110	0.209	0.008	0.008	0.000					1355.55	
26	0.7361	1151.5	1171.9	0.831	6.354	68.039	19.909	4.441	0.137	0.268	0.010	0.009	0.000					1365.94	
27	0.7372	1151.6	1172.0	0.835	6.447	67.877	19.904	4.503	0.140	0.273	0.010	0.010	0.000					1365.01	
28	0.7357	1148.9	1169.3	0.835	6.467	68.075	19.771	4.435	0.136	0.262	0.010	0.009	0.000					1363.27	
29	0.7288	1141.9	1162.1	0.799	6.305	69.237	19.030	4.235	0.129	0.247	0.009	0.009	0.000					1361.28	
30	0.7261	1138.2	1158.4	0.780	6.302	69.693	18.661	4.171	0.128	0.247	0.009	0.008	0.000					1359.45	
31	0.7337	1148.1	1168.4	0.813	6.370	68.446	19.543	4.411	0.135	0.262	0.010	0.009	0.000					1364.04	
Avg	0.7426	1164.0	1184.2	0.810	6.252	67.436	20.067	4.865	0.170	0.365	0.018	0.017	0.000					1374.23	

Zone 292

# GQ Source Daily Summary

August 2016

Number: 061

Pressure Base: 14.730

Contract Day: 1

Name: CLEVELAND STATION-GRAFTON BORDER

Temperature Base:

Contract Hour: 9

Day	Relative Density	Heating Value	Heating Value	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
		Wet	Dry																
1	0.7557	1184.2	1205.1	0.829	6.205	65.764	20.948	5.524	0.209	0.471	0.026	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1386.30
2	0.7568	1186.7	1207.7	0.814	6.178	65.561	21.170	5.539	0.212	0.477	0.025	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1388.23
3	0.7560	1186.1	1207.1	0.822	6.123	65.730	21.080	5.503	0.212	0.478	0.026	0.026	0.000	0.000	0.000	0.000	0.000	0.000	1388.28
4	0.7562	1186.5	1207.5	0.820	6.126	65.686	21.109	5.521	0.212	0.475	0.026	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1388.52
5	0.7568	1187.4	1208.5	0.828	6.110	65.612	21.169	5.531	0.213	0.483	0.027	0.026	0.000	0.000	0.000	0.000	0.000	0.000	1389.10
6	0.7562	1186.3	1207.3	0.825	6.126	65.709	21.080	5.514	0.212	0.481	0.027	0.027	0.000	0.000	0.000	0.000	0.000	0.000	1388.36
7	0.7555	1186.1	1207.1	0.833	6.060	65.847	21.021	5.499	0.211	0.477	0.027	0.026	0.000	0.000	0.000	0.000	0.000	0.000	1388.75
8	0.7553	1186.4	1207.5	0.829	6.026	65.913	20.965	5.524	0.212	0.479	0.026	0.026	0.000	0.000	0.000	0.000	0.000	0.000	1389.34
9	0.7555	1185.6	1206.6	0.823	6.103	65.835	20.981	5.524	0.211	0.473	0.025	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1388.21
10	0.7564	1187.0	1208.0	0.818	6.107	65.718	21.045	5.565	0.213	0.481	0.026	0.026	0.000	0.000	0.000	0.000	0.000	0.000	1389.03
11	0.7561	1186.8	1207.8	0.830	6.074	65.766	21.042	5.547	0.212	0.478	0.026	0.026	0.000	0.000	0.000	0.000	0.000	0.000	1389.07
12	0.7548	1184.1	1205.1	0.823	6.129	65.944	20.892	5.474	0.210	0.476	0.026	0.026	0.000	0.000	0.000	0.000	0.000	0.000	1387.09
13	0.7474	1170.8	1191.5	0.825	6.249	66.754	20.513	5.033	0.181	0.403	0.022	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1378.23
14	0.7459	1168.5	1189.2	0.830	6.241	66.927	20.450	4.949	0.175	0.386	0.021	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1376.90
15	0.7455	1167.8	1188.5	0.836	6.234	66.918	20.534	4.898	0.171	0.372	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1376.52
16	0.7462	1169.0	1189.7	0.836	6.226	66.813	20.633	4.898	0.173	0.381	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1377.27
17	0.7456	1166.6	1187.2	0.802	6.376	66.935	20.384	4.851	0.203	0.412	0.019	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1374.87
18	0.7388	1152.7	1173.1	0.838	6.524	67.773	19.751	4.623	0.153	0.315	0.012	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1364.84
19	0.7359	1147.6	1167.9	0.826	6.587	68.125	19.523	4.479	0.145	0.296	0.010	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1361.42
20	0.7360	1147.5	1167.8	0.825	6.597	68.118	19.521	4.482	0.144	0.293	0.011	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1361.28
21	0.7240	1134.0	1154.1	0.762	6.395	70.048	18.287	4.095	0.131	0.265	0.009	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1356.33
22	0.7099	1118.3	1138.1	0.681	6.152	72.429	16.638	3.730	0.119	0.236	0.009	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1350.74
23	0.7278	1143.6	1163.8	0.748	6.189	69.187	19.435	4.067	0.122	0.235	0.009	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1364.20
24	0.7365	1149.8	1170.1	0.831	6.500	67.951	19.826	4.475	0.137	0.262	0.010	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1363.49
25	0.7129	1124.2	1144.1	0.717	6.015	71.851	17.324	3.758	0.110	0.209	0.008	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1355.01
26	0.7359	1151.3	1171.7	0.832	6.352	68.058	19.899	4.436	0.137	0.266	0.010	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1365.84
27	0.7372	1151.7	1172.0	0.833	6.448	67.877	19.897	4.511	0.140	0.273	0.010	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1365.07
28	0.7357	1149.1	1169.5	0.832	6.464	68.076	19.768	4.443	0.136	0.262	0.010	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1363.45
29	0.7294	1143.0	1163.2	0.799	6.298	69.143	19.099	4.264	0.130	0.249	0.009	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1361.98
30	0.7263	1138.6	1158.8	0.777	6.307	69.646	18.695	4.184	0.128	0.246	0.009	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1359.68
31	0.7336	1148.0	1168.3	0.812	6.370	68.458	19.535	4.409	0.135	0.261	0.010	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1363.99
Avg	0.7426	1164.0	1184.3	0.811	6.255	67.425	20.071	4.866	0.171	0.366	0.018	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1374.24

Zone 273

# GQ Source Daily Summary

August 2016

Number: 041

Pressure Base: 14.730

Contract Day: 1

Name: BISMARCK STATION-GLEN ULLIN STATION

Temperature Base:

Contract Hour: 9

Day	Relative Density	Heating Value	Heating Value	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
		Wet	Dry																
1	0.7570	1186.8	1207.8	0.816	6.186	65.593	21.108	5.553	0.211	0.483	0.025	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1388.18
2	0.7571	1188.6	1209.6	0.818	6.082	65.605	21.194	5.545	0.214	0.490	0.026	0.026	0.000	0.000	0.000	0.000	0.000	0.000	1390.19
3	0.7567	1187.9	1209.0	0.817	6.086	65.686	21.110	5.547	0.214	0.489	0.026	0.026	0.000	0.000	0.000	0.000	0.000	0.000	1389.79
4	0.7577	1189.6	1210.6	0.817	6.075	65.525	21.255	5.568	0.215	0.492	0.026	0.026	0.000	0.000	0.000	0.000	0.000	0.000	1390.82
5	0.7577	1189.7	1210.7	0.819	6.074	65.530	21.241	5.569	0.216	0.497	0.027	0.027	0.000	0.000	0.000	0.000	0.000	0.000	1390.86
6	0.7565	1187.9	1208.9	0.821	6.060	65.757	21.058	5.545	0.213	0.492	0.027	0.027	0.000	0.000	0.000	0.000	0.000	0.000	1389.94
7	0.7559	1187.6	1208.6	0.825	6.015	65.878	20.987	5.542	0.213	0.489	0.026	0.026	0.000	0.000	0.000	0.000	0.000	0.000	1390.16
8	0.7558	1187.3	1208.3	0.823	6.027	65.910	20.919	5.564	0.213	0.490	0.026	0.026	0.000	0.000	0.000	0.000	0.000	0.000	1389.91
9	0.7568	1188.2	1209.3	0.820	6.073	65.699	21.079	5.574	0.214	0.489	0.026	0.026	0.000	0.000	0.000	0.000	0.000	0.000	1390.03
10	0.7571	1189.1	1210.2	0.819	6.043	65.674	21.117	5.590	0.214	0.491	0.026	0.026	0.000	0.000	0.000	0.000	0.000	0.000	1390.84
11	0.7564	1187.4	1208.4	0.823	6.074	65.776	21.019	5.552	0.213	0.489	0.026	0.026	0.000	0.000	0.000	0.000	0.000	0.000	1389.51
12	0.7527	1180.6	1201.5	0.823	6.150	66.198	20.787	5.330	0.201	0.461	0.025	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1384.83
13	0.7468	1170.3	1191.0	0.827	6.222	66.853	20.486	4.989	0.178	0.402	0.021	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1378.19
14	0.7470	1171.1	1191.8	0.829	6.186	66.797	20.595	4.986	0.175	0.391	0.021	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1378.97
15	0.7464	1169.8	1190.5	0.828	6.210	66.858	20.561	4.941	0.175	0.389	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1377.99
16	0.7465	1169.6	1190.3	0.829	6.231	66.799	20.621	4.918	0.173	0.389	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1377.68
17	0.7438	1164.0	1184.6	0.825	6.325	67.206	20.215	4.859	0.168	0.369	0.017	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1373.54
18	0.7359	1148.3	1168.7	0.818	6.555	68.203	19.431	4.521	0.147	0.306	0.011	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1362.28
19	0.7359	1149.0	1169.3	0.820	6.512	68.188	19.513	4.497	0.146	0.305	0.011	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1363.06
20	0.7348	1146.8	1167.2	0.816	6.545	68.312	19.436	4.429	0.142	0.298	0.011	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1361.54
21	0.7158	1125.7	1145.7	0.710	6.205	71.483	17.316	3.887	0.124	0.257	0.009	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1354.13
22	0.7157	1136.0	1156.1	0.622	5.700	71.332	18.249	3.693	0.121	0.261	0.012	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1366.79
23	0.6980	1148.0	1168.3	0.245	3.897	72.598	21.117	2.009	0.045	0.084	0.003	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1398.86
24	0.7181	1130.1	1150.1	0.717	6.140	71.041	17.791	3.933	0.120	0.239	0.009	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1357.25
25	0.7293	1146.2	1166.5	0.804	6.080	69.120	19.424	4.191	0.123	0.240	0.009	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1365.99
26	0.7372	1152.7	1173.2	0.826	6.388	67.941	19.880	4.521	0.141	0.282	0.011	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1366.40
27	0.7358	1151.0	1171.3	0.823	6.375	68.141	19.760	4.470	0.138	0.274	0.010	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1365.54
28	0.7337	1147.6	1167.9	0.823	6.382	68.438	19.565	4.376	0.133	0.263	0.010	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1363.51
29	0.7264	1139.8	1160.0	0.769	6.253	69.692	18.683	4.206	0.128	0.251	0.009	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1361.03
30	0.7278	1141.6	1161.8	0.780	6.258	69.467	18.852	4.237	0.130	0.257	0.010	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1361.83
31	0.7309	1145.4	1165.7	0.793	6.305	68.943	19.204	4.340	0.133	0.263	0.010	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1363.41
Avg	0.7414	1165.0	1185.3	0.785	6.120	67.621	20.115	4.790	0.167	0.367	0.018	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1376.55

Zone 28

# GQ Source Daily Summary

August 2016

Number: 271

Pressure Base: 14.730

Contract Day: 1

Name: DICKINSON STN-BELFIELD TSF-GLENULLIN STN

Temperature Base:

Contract Hour: 9

Day	Relative Density	Heating Value Wet	Heating Value Dry	CO2	N2	C1	C2	C3	TC4	NC4	TC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.6255	1061.2	1080.0	0.746	1.594	87.104	9.568	0.885	0.038	0.053	0.007	0.005	0.000	0.000	0.000	0.000	0.000	1365.58	
2	0.6768	1142.7	1162.9	0.126	2.407	75.897	20.501	1.011	0.020	0.035	0.002	0.002	0.000	0.000	0.000	0.000	0.000	1413.46	
3	0.6885	1161.5	1182.0	0.000	2.559	73.358	22.966	1.098	0.008	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1424.55	
4	0.6860	1157.6	1178.1	0.000	2.560	73.665	22.859	0.894	0.008	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1422.41	
5	0.6856	1156.8	1177.3	0.000	2.567	73.725	22.821	0.867	0.008	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1421.89	
6	0.6857	1157.0	1177.5	0.000	2.565	73.748	22.756	0.913	0.007	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1422.01	
7	0.6860	1157.4	1177.9	0.000	2.567	73.709	22.772	0.931	0.008	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1422.20	
8	0.6852	1156.0	1176.5	0.000	2.582	73.805	22.717	0.878	0.008	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1421.29	
9	0.6857	1157.1	1177.6	0.000	2.567	73.716	22.803	0.896	0.007	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1422.04	
10	0.6926	1158.8	1179.3	0.088	2.974	72.980	22.477	1.383	0.029	0.062	0.003	0.003	0.000	0.000	0.000	0.000	0.000	1417.32	
11	0.6855	1156.9	1177.4	0.000	2.560	73.705	22.874	0.842	0.007	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1422.01	
12	0.6849	1154.7	1175.1	0.003	2.629	73.883	22.575	0.889	0.008	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1419.93	
13	0.6767	1134.3	1154.4	0.027	3.066	75.667	20.170	1.045	0.011	0.014	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1403.25	
14	0.6764	1133.6	1153.7	0.026	3.073	75.725	20.120	1.030	0.011	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1402.83	
15	0.6768	1133.4	1153.5	0.027	3.122	75.711	20.013	1.098	0.012	0.017	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1402.16	
16	0.6766	1132.4	1152.5	0.029	3.168	75.784	19.839	1.151	0.012	0.016	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1401.03	
17	0.6837	1149.9	1170.2	0.010	2.793	74.330	21.744	1.100	0.010	0.013	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1415.30	
18	0.6854	1156.6	1177.0	0.000	2.570	73.710	22.877	0.827	0.007	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1421.71	
19	0.6855	1156.5	1176.9	0.000	2.583	73.664	22.936	0.800	0.007	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1421.53	
20	0.6859	1156.9	1177.4	0.000	2.595	73.666	22.837	0.883	0.008	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1421.61	
21	0.6858	1156.8	1177.3	0.000	2.592	73.665	22.854	0.870	0.007	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1421.62	
22	0.6856	1156.6	1177.1	0.000	2.585	73.704	22.829	0.865	0.007	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1421.59	
23	0.6853	1155.9	1176.4	0.000	2.597	73.728	22.828	0.829	0.007	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1421.07	
24	0.6685	1130.3	1150.4	0.198	2.270	77.447	19.229	0.819	0.014	0.019	0.002	0.001	0.000	0.000	0.000	0.000	0.000	1406.74	
25	0.6768	1143.9	1164.2	0.091	2.391	75.545	21.181	0.767	0.010	0.014	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1414.96	
26	0.6847	1156.1	1176.5	0.002	2.528	73.833	22.825	0.795	0.007	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1421.87	
27	0.6844	1155.3	1175.8	0.002	2.545	73.886	22.765	0.785	0.007	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1421.27	
28	0.6855	1157.2	1177.7	0.001	2.538	73.758	22.796	0.887	0.008	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1422.39	
29	0.6863	1158.0	1178.5	0.000	2.563	73.682	22.789	0.941	0.008	0.012	0.002	0.004	0.000	0.000	0.000	0.000	0.000	1422.60	
30	0.6865	1159.1	1179.6	0.001	2.518	73.686	22.769	1.004	0.009	0.014	0.000	0.001	0.000	0.000	0.000	0.000	0.000	1423.66	
31	0.6868	1159.5	1180.1	0.000	2.519	73.644	22.786	1.028	0.009	0.014	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1423.92	
Avg	0.6817	1149.0	1169.4	0.044	2.605	74.649	21.738	0.936	0.011	0.016	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1416.32	

Zone 31

# GQ Source Daily Summary

August 2016

**Number:** 051

**Pressure Base:** 14.730

**Contract Day:** 1

**Name:** CABIN CREEK STATION-BELFIELD TRANSFER

**Temperature Base:**

**Contract Hour:** 9

Day	Relative Density	Heating Value	Heating Value	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
		Wet	Dry																
1	0.6594	1115.6	1135.3	0.354	2.076	79.636	16.965	0.908	0.022	0.031	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1398.12
2	0.6658	1121.0	1140.9	0.273	2.470	78.297	17.870	1.033	0.021	0.031	0.003	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1398.15
3	0.6820	1142.3	1162.5	0.103	2.956	74.946	20.697	1.248	0.018	0.028	0.002	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1407.64
4	0.6877	1160.1	1180.6	0.007	2.561	73.340	23.159	0.913	0.008	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1423.64
5	0.6836	1144.6	1164.9	0.059	3.031	74.449	21.259	1.162	0.015	0.023	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1408.89
6	0.6832	1143.6	1163.9	0.065	3.048	74.582	21.058	1.208	0.015	0.023	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1408.02
7	0.6816	1140.5	1160.7	0.057	3.101	74.930	20.625	1.247	0.015	0.023	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1405.75
8	0.6798	1139.1	1159.3	0.031	3.050	75.144	20.619	1.127	0.012	0.017	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1405.96
9	0.6811	1142.7	1162.9	0.024	2.965	74.800	21.141	1.044	0.011	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1409.08
10	0.6832	1149.2	1169.6	0.016	2.784	74.255	21.991	0.931	0.009	0.013	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.93
11	0.6532	1074.6	1093.6	0.101	4.374	80.819	13.183	1.477	0.019	0.024	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1353.06
12	0.6514	1070.6	1089.5	0.105	4.444	81.195	12.722	1.487	0.020	0.025	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1349.91
13	0.6548	1076.4	1095.5	0.104	4.406	80.687	13.101	1.641	0.025	0.035	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1353.79
14	0.6554	1077.1	1096.2	0.099	4.431	80.558	13.189	1.673	0.022	0.027	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1354.02
15	0.6529	1072.6	1091.6	0.101	4.462	80.909	12.969	1.515	0.020	0.024	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1351.00
16	0.6542	1075.0	1094.0	0.097	4.447	80.702	13.138	1.570	0.021	0.025	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1352.61
17	0.6539	1074.6	1093.7	0.112	4.417	80.789	13.065	1.564	0.022	0.029	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1352.48
18	0.6572	1084.0	1103.1	0.089	4.195	79.922	14.370	1.384	0.018	0.021	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1360.63
19	0.6879	1160.4	1180.9	0.005	2.561	73.271	23.266	0.879	0.008	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1423.86
20	0.6872	1159.5	1180.1	0.003	2.549	73.325	23.310	0.795	0.007	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1423.56
21	0.6881	1160.3	1180.8	0.005	2.585	73.200	23.336	0.854	0.008	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1423.55
22	0.6884	1159.9	1180.4	0.043	2.585	73.282	23.114	0.940	0.013	0.021	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1422.68
23	0.6902	1163.6	1184.2	0.007	2.576	73.006	23.309	1.080	0.009	0.013	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1425.45
24	0.6863	1158.1	1178.6	0.027	2.517	73.562	23.056	0.815	0.009	0.014	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1422.73
25	0.6797	1146.3	1166.6	0.115	2.482	75.125	21.343	0.890	0.016	0.026	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1414.88
26	0.6861	1158.5	1179.0	0.006	2.511	73.494	23.229	0.741	0.008	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1423.34
27	0.6841	1154.6	1175.0	0.047	2.492	74.046	22.580	0.807	0.011	0.016	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1420.67
28	0.6844	1150.8	1171.1	0.153	2.587	74.420	21.710	1.058	0.025	0.043	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1415.67
29	0.6884	1155.6	1176.1	0.206	2.590	74.284	21.279	1.486	0.045	0.087	0.010	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1417.36
30	0.6873	1159.6	1180.1	0.021	2.531	73.478	23.014	0.931	0.010	0.014	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1423.46
31	0.6808	1149.0	1169.3	0.155	2.356	75.145	21.245	1.046	0.019	0.030	0.003	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1417.16
Avg	0.6755	1130.0	1150.3	0.084	3.101	76.116	19.513	1.144	0.016	0.024	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1399.42

Zone 32

# GQ Source Daily Summary

August 2016

Number: 111

Pressure Base: 14.730

Contract Day: 1

Name: LITTLE KNIFE PLANT

Temperature Base:

Contract Hour: 9

Day	Relative Density	Heating Value	Heating Value	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
		Wet	Dry																
1	0.6889	1162.3	1182.9	0.004	2.545	73.080	23.448	0.905	0.008	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1425.14	
2	0.6901	1164.2	1184.8	0.004	2.540	72.953	23.488	0.984	0.010	0.018	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1426.19	
3	0.6888	1162.4	1183.0	0.004	2.530	73.099	23.446	0.901	0.008	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1425.33	
4	0.6883	1161.5	1182.1	0.005	2.539	73.141	23.449	0.851	0.007	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1424.73	
5	0.6887	1161.9	1182.5	0.005	2.549	73.113	23.419	0.895	0.007	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1424.82	
6	0.6890	1162.5	1183.1	0.004	2.537	73.093	23.413	0.933	0.008	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1425.34	
7	0.6885	1161.7	1182.3	0.004	2.538	73.168	23.372	0.900	0.008	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1424.87	
8	0.6885	1161.6	1182.2	0.003	2.547	73.148	23.394	0.889	0.008	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1424.74	
9	0.6884	1161.7	1182.3	0.004	2.535	73.155	23.412	0.877	0.007	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1424.89	
10	0.6881	1161.5	1182.0	0.002	2.519	73.175	23.460	0.825	0.007	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1424.97	
11	0.6890	1162.6	1183.2	0.003	2.536	73.022	23.559	0.862	0.007	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1425.40	
12	0.6895	1163.0	1183.6	0.005	2.551	72.937	23.607	0.881	0.008	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1425.45	
13	0.6892	1163.0	1183.5	0.003	2.522	72.886	23.770	0.802	0.007	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1425.62	
14	0.6884	1162.7	1183.3	0.003	2.522	72.886	23.770	0.802	0.007	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1426.13	
15	0.6891	1162.7	1183.3	0.004	2.546	72.941	23.636	0.857	0.007	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1425.51	
16	0.6895	1163.0	1183.6	0.003	2.554	72.964	23.561	0.900	0.008	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1425.42	
17	0.6896	1163.4	1184.0	0.003	2.545	72.978	23.509	0.947	0.008	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1425.72	
18	0.6882	1161.4	1182.0	0.002	2.536	73.125	23.515	0.806	0.007	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1424.75	
19	0.6890	1162.0	1182.6	0.003	2.569	72.996	23.577	0.838	0.007	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1424.70	
20	0.6885	1161.2	1181.8	0.004	2.572	73.102	23.457	0.849	0.007	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1424.23	
21	0.6890	1162.1	1182.7	0.003	2.567	73.038	23.481	0.893	0.007	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1424.79	
22	0.6906	1164.5	1185.1	0.004	2.566	72.868	23.510	1.033	0.008	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1426.07	
23	0.6879	1159.7	1180.2	0.004	2.483	73.311	23.402	0.784	0.007	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1423.07	
24	0.6863	1159.4	1179.9	0.004	2.476	73.453	23.315	0.735	0.007	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1424.27	
25	0.6866	1160.0	1180.6	0.003	2.468	73.409	23.346	0.757	0.007	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1424.71	
26	0.6870	1160.3	1180.8	0.007	2.486	73.374	23.309	0.805	0.008	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1424.58	
27	0.6871	1160.1	1180.6	0.005	2.510	73.339	23.333	0.796	0.007	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1424.26	
28	0.6891	1163.1	1183.7	0.004	2.510	73.189	23.242	1.032	0.009	0.013	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1425.92	
29	0.6887	1162.6	1183.2	0.003	2.507	73.191	23.308	0.973	0.008	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1425.72	
30	0.6886	1162.8	1183.4	0.003	2.484	73.262	23.231	0.995	0.009	0.015	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1426.08	
31	0.6886	1163.1	1183.7	0.003	2.467	73.310	23.152	1.038	0.011	0.017	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1426.43	
Avg	0.6886	1162.0	1182.6	0.004	2.528	73.119	23.448	0.882	0.008	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1425.16	

Zone 33

# GQ Source Analysis

<b>GQ Source Number:</b>	1202160	<b>Specific Gravity:</b>	0.5840
<b>GQ Source Name:</b>	BOWMAN BORDER	<b>Dry Heat Value:</b>	996.12
<b>Effective Date:</b>	6/1/2016 9:00:00 AM	<b>Wet Heat Value:</b>	978.78
<b>Effective End Date:</b>	1/18/2038 9:14:00 PM	<b>As Deliv. Heat Value:</b>	996.12
<b>Pressure Base:</b>	14.730	<b>Sample Pressure:</b>	380.00
<b>Viscosity:</b>		<b>Sample Temperature:</b>	

		<u>Mol %</u>	<u>Liquid Content</u>			<u>Mol %</u>
C1	Methane	94.019		CO2	Carbon Dioxide	0.232
C2	Ethane	1.995	0.5321	N2	Nitrogen	3.460
C3	Propane	0.226	0.0621	O2	Oxygen	0.020
IC4	Isobutane	0.020	0.0066	He	Helium	
NC4	n-Butane	0.022	0.0068	H2	Hydrogen	
IC5	Isopentane	0.003	0.0010	H2S	Hydrogen Sulfide	
NC5	n-Pentane	0.002	0.0007	Ar	Argon	
C6	Hexanes	0.000	0.0000	CO	Carbon Monoxide	
C7	Heptanes			H2	Water	
C8	Octanes			Neo-C5	Neopentane	
C9	Nonanes					
C10	Decanes					

**Totals**      100.000%      0.609 GPM

**Sample Date:** 7/1/2016 12:00:00 AM  
**Sample Type:** Spot  
**Sample Tech:** MG  
**H2S:** ppm

**Sample Remarks:**

**Analysis Tech:** MB

**Analysis Remarks:**

Zone 34

# GQ Source Daily Summary

August 2016

**Number:** 471

**Pressure Base:** 14.730

**Contract Day:**

**Name:** SPRING CREEK I - NORTHERN BORDER

**Temperature Base:**

**Contract Hour:** 9

Day	Relative Density	Heating Value Wet	Heating Value Dry	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.6597	1079.3	1098.4	1.061	3.245	80.149	14.488	1.004	0.020	0.034	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1352.30	
2	0.6561	1072.1	1091.1	1.056	3.350	80.791	13.818	0.939	0.017	0.029	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1346.98	
3	0.6541	1065.1	1084.0	1.072	3.508	80.037	14.393	0.950	0.015	0.025	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1340.22	
4	0.6443	1048.1	1066.7	1.063	3.516	79.727	14.716	0.937	0.015	0.025	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1328.92	
5	0.6465	1054.1	1072.8	1.063	3.516	79.727	14.716	0.937	0.015	0.025	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1334.24	
6	0.6402	1045.5	1064.0	1.063	3.516	79.727	14.716	0.937	0.015	0.025	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1329.79	
7	0.6476	1058.6	1077.3	1.063	3.516	79.727	14.716	0.937	0.015	0.025	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1338.70	
8	0.6448	1053.9	1072.6	1.063	3.516	79.727	14.716	0.937	0.015	0.025	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1335.75	
9	0.6430	1051.8	1070.4	1.063	3.516	79.727	14.716	0.937	0.015	0.025	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1334.88	
10	0.6505	1058.6	1077.4	1.132	3.230	81.792	12.951	0.855	0.016	0.024	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1336.16	
11	0.6493	1063.1	1081.9	1.074	3.227	82.098	12.734	0.832	0.013	0.022	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1342.71	
12	0.6499	1064.0	1082.9	1.066	3.224	81.734	13.107	0.833	0.013	0.022	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1343.18	
13	0.6381	1042.9	1061.4	1.026	3.201	81.680	13.279	0.780	0.013	0.021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1328.72	
14	0.6373	1041.5	1059.9	1.026	3.201	81.680	13.279	0.780	0.013	0.021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1327.68	
15	0.6447	1054.8	1073.5	1.062	3.250	82.226	12.684	0.742	0.013	0.022	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1336.96	
16	0.6443	1053.8	1072.4	1.084	3.312	83.015	11.816	0.740	0.013	0.021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1336.06	
17	0.6614	1084.3	1103.5	1.062	3.093	79.843	14.920	1.044	0.014	0.023	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1356.87	
18	0.6772	1111.8	1131.5	1.021	2.967	77.008	17.536	1.391	0.028	0.049	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1374.92	
19	0.7041	1157.5	1178.0	0.971	2.768	73.424	19.690	2.845	0.097	0.192	0.007	0.006	0.000	0.000	0.000	0.000	0.000	1403.82	
20	0.7148	1174.9	1195.7	0.948	2.745	72.007	20.403	3.558	0.111	0.213	0.007	0.007	0.000	0.000	0.000	0.000	0.000	1414.28	
21	0.6912	1136.1	1156.2	0.974	2.880	74.062	20.612	1.444	0.012	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1390.63	
22	0.7096	1165.7	1186.4	0.952	2.819	72.236	20.753	3.058	0.062	0.115	0.003	0.003	0.000	0.000	0.000	0.000	0.000	1408.32	
23	0.6911	1134.1	1154.2	0.978	2.976	74.333	20.054	1.583	0.025	0.048	0.002	0.002	0.000	0.000	0.000	0.000	0.000	1388.36	
24	0.6831	1121.9	1141.8	0.993	2.954	75.139	20.022	0.876	0.007	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1381.46	
25	0.6791	1115.7	1135.5	0.999	2.949	75.656	19.816	0.562	0.007	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1377.85	
26	0.6776	1113.7	1133.5	1.007	2.916	76.010	19.449	0.601	0.006	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1376.93	
27	0.6779	1114.3	1134.0	1.008	2.902	76.000	19.438	0.634	0.007	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1377.38	
28	0.6770	1112.7	1132.4	1.009	2.919	76.147	19.292	0.621	0.005	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1376.29	
29	0.6780	1113.7	1133.5	1.004	2.960	75.893	19.541	0.591	0.005	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1376.51	
30	0.6776	1113.6	1133.4	1.012	2.907	75.962	19.564	0.542	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1376.89	
31	0.6760	1111.1	1130.8	1.003	2.925	76.250	19.292	0.517	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1375.40	
Avg	0.6654	1090.0	1109.3	1.031	3.146	78.179	16.491	1.095	0.020	0.036	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1359.65	

Zone 43

Aug-16

ZONE 610

Watford City

Effective 2-3-16

01325

Watford City West Border

01312

Watford City East Border

Weighted

Begin Date	End Date	MCF	DK	BTU		MCF	DK	BTU		AVG	
				Zone 25				Zone 43			
8/1/2016	8/2/2016	40	48	1.213		1	2	1.098	1.210	8/1/2016	
8/2/2016	8/3/2016	48	59	1.213		1	1	1.091	1.211	8/2/2016	
8/3/2016	8/4/2016	59	71	1.213		1	2	1.084	1.211	8/3/2016	
8/4/2016	8/5/2016	87	106	1.213		1	1	1.067	1.211	8/4/2016	
8/5/2016	8/6/2016	47	57	1.213		1	1	1.073	1.210	8/5/2016	
8/6/2016	8/7/2016	50	61	1.213		1	1	1.064	1.210	8/6/2016	
8/7/2016	8/8/2016	74	90	1.213		1	1	1.077	1.211	8/7/2016	
8/8/2016	8/9/2016	42	51	1.213		1	1	1.073	1.210	8/8/2016	
8/9/2016	8/10/2016	115	139	1.213		52	56	1.070	1.168	8/9/2016	
8/10/2016	8/11/2016	52	63	1.213		60	64	1.077	1.140	8/10/2016	
8/11/2016	8/12/2016	73	88	1.213		1	1	1.082	1.211	8/11/2016	
8/12/2016	8/13/2016	70	85	1.213		1	1	1.083	1.211	8/12/2016	
8/13/2016	8/14/2016	48	59	1.213		1	1	1.061	1.210	8/13/2016	
8/14/2016	8/15/2016	48	59	1.213		1	1	1.060	1.210	8/14/2016	
8/15/2016	8/16/2016	54	65	1.213		1	1	1.074	1.210	8/15/2016	
8/16/2016	8/17/2016	46	56	1.213		1	1	1.072	1.210	8/16/2016	
8/17/2016	8/18/2016	45	55	1.213		1	1	1.104	1.211	8/17/2016	
8/18/2016	8/19/2016	51	62	1.213		2	2	1.132	1.210	8/18/2016	
8/19/2016	8/20/2016	45	54	1.213		2	2	1.178	1.212	8/19/2016	
8/20/2016	8/21/2016	42	51	1.213		1	1	1.196	1.213	8/20/2016	
8/21/2016	8/22/2016	65	79	1.213		1	1	1.156	1.212	8/21/2016	
8/22/2016	8/23/2016	54	66	1.213		2	2	1.186	1.212	8/22/2016	
8/23/2016	8/24/2016	68	83	1.213		8	9	1.154	1.207	8/23/2016	
8/24/2016	8/25/2016	84	101	1.213		2	3	1.142	1.211	8/24/2016	
8/25/2016	8/26/2016	82	100	1.213		2	2	1.136	1.211	8/25/2016	
8/26/2016	8/27/2016	52	63	1.213		2	2	1.134	1.210	8/26/2016	
8/27/2016	8/28/2016	43	53	1.213		6	7	1.134	1.203	8/27/2016	
8/28/2016	8/29/2016	67	81	1.213		1	1	1.132	1.212	8/28/2016	
8/29/2016	8/30/2016	57	69	1.213		2	3	1.134	1.210	8/29/2016	
8/30/2016	8/31/2016	65	79	1.213		15	17	1.133	1.198	8/30/2016	
8/31/2016	9/1/2016	49	60	1.213		14	16	1.131	1.195	8/31/2016	
		1,822	2,213			187	205	1.1093	1.2059		

ROW ID	LOCATION DESCRIPTION	GROSS HEATING VALUE (BTU/CF)	SPECIFIC GRAVITY	WOBBE (cal)	CRICONDENTHERM (deg F)	NITROGEN (mole percent)	CARBON DIOXIDE (mole percent)	METHANE (mole percent)	ETHANE (mole percent)	PROPANE (mole percent)	NORMAL BUTANE (mole percent)	ISO BUTANE (mole percent)	PENTANE (mole percent)	ISO PENTANE (mole percent)	NEO PENTANE (mole percent)	HEXANES PLUS (mole percent)	HYDROGEN (mole percent)	HELIUM (mole percent)	PRODUCTION DATE	POSTING DATE	ChangeTimestamp	NOTES
11587	GLEN ULLIN	1066.6	0.6154	1359.6	-55.0	1.2021	0.8467	89.1024	7.9045	0.7193	0.0501	0.0379	0.0062	0.0082	0	0.0037	0.0082	0.0225	7/31/2016	8/1/2016	8/1/2016 2:48:40 PM	
11587	GLEN ULLIN	1065.3	0.6145	1358.9	-56.1	1.3101	0.8342	89.2472	7.7705	0.7013	0.0511	0.0382	0.0065	0.0083	0	0.0038	0.0082	0.0225	8/1/2016	8/2/2016	8/2/2016 2:46:48 PM	
11587	GLEN ULLIN	1061.7	0.6122	1356.9	-63.4	1.3313	0.8123	89.5194	7.5929	0.6133	0.039	0.0286	0.0043	0.0057	0	0.0024	0.0298	0.0225	8/2/2016	8/3/2016	8/3/2016 2:48:36 PM	
11587	GLEN ULLIN	1061.4	0.6114	1357.4	-60.3	1.2274	0.8475	89.5767	7.5291	0.599	0.0423	0.0325	0.005	0.0069	0	0.0032	0.111	0.0185	8/3/2016	8/4/2016	8/4/2016 2:47:24 PM	
11587	GLEN ULLIN	1067.7	0.6157	1360.7	-48.2	1.2516	0.85	88.958	7.9277	0.7406	0.064	0.0511	0.0089	0.0118	0	0.0061	0.1104	0.0195	8/4/2016	8/5/2016	8/5/2016 2:47:48 PM	
11587	GLEN ULLIN	1064.8	0.6139	1358.9	-56.5	1.2637	0.8518	88.9393	7.967	0.6435	0.0486	0.0385	0.0061	0.0083	0	0.0039	0.2102	0.0165	8/5/2016	8/6/2016	8/6/2016 2:47:47 PM	
11587	GLEN ULLIN	1062.8	0.613	1357.5	-61.5	1.2896	0.8558	89.0172	7.876	0.6264	0.0408	0.0319	0.0047	0.0065	0	0.0026	0.2299	0.0182	8/6/2016	8/7/2016	8/7/2016 2:46:48 PM	
11587	GLEN ULLIN	1063.6	0.6131	1358.3	-65.1	1.2598	0.85	89.0068	8.0053	0.5935	0.0345	0.0267	0.0035	0.005	0	0.0018	0.1937	0.0186	8/7/2016	8/8/2016	8/8/2016 2:48:56 PM	
11587	GLEN ULLIN	1061.8	0.6121	1357.1	-68.7	1.2836	0.8433	89.1054	7.9337	0.5484	0.029	0.022	0.0028	0.004	0	0.0009	0.2075	0.0183	8/8/2016	8/9/2016	8/9/2016 2:48:06 PM	
11587	GLEN ULLIN	1057.1	0.6097	1353.8	-72.7	1.3595	0.8288	89.497	7.5632	0.4927	0.022	0.0161	0.0018	0.0025	0	0	0.1945	0.0207	8/9/2016	8/10/2016	8/10/2016 2:48:09 PM	
11587	GLEN ULLIN	1056.1	0.6084	1354	-73.3	1.2927	0.8298	89.889	7.3009	0.4813	0.0234	0.017	0.0022	0.003	0	0.0003	0.1381	0.0203	8/10/2016	8/11/2016	8/11/2016 2:48:54 PM	
11587	GLEN ULLIN	1058.8	0.6109	1354.6	-70.6	1.383	0.8177	89.4276	7.6375	0.5217	0.0292	0.0205	0.0027	0.0038	0	0.0006	0.1325	0.021	8/11/2016	8/12/2016	8/12/2016 2:48:40 PM	
11587	GLEN ULLIN	1059.9	0.6117	1355.2	-70.4	1.392	0.8178	89.2318	7.8264	0.5162	0.0272	0.0189	0.0027	0.0035	0	0.0003	0.1406	0.0216	8/12/2016	8/13/2016	8/13/2016 2:47:57 PM	
11587	GLEN ULLIN	1056.6	0.6093	1353.6	-71.8	1.3594	0.8286	89.5837	7.4711	0.4876	0.0267	0.0188	0.0024	0.0034	0	0.0009	0.1981	0.0199	8/13/2016	8/14/2016	8/14/2016 2:47:04 PM	
11587	GLEN ULLIN	1057.9	0.61	1354.4	-66.8	1.3474	0.8279	89.4926	7.5091	0.5236	0.0339	0.0247	0.0035	0.0048	0	0.0019	0.2101	0.0203	8/14/2016	8/15/2016	8/15/2016 2:50:54 PM	
11587	GLEN ULLIN	1059.3	0.6116	1354.5	-65.8	1.3704	0.8525	89.1787	7.731	0.5429	0.035	0.0264	0.0036	0.0052	0	0.0021	0.2329	0.0189	8/15/2016	8/16/2016	8/16/2016 2:47:48 PM	
11587	GLEN ULLIN	1051.1	0.6056	1350.7	-75.9	1.3479	0.8204	90.197	6.9077	0.4349	0.0206	0.0148	0.0016	0.0024	0	0.0005	0.2319	0.019	8/16/2016	8/17/2016	8/17/2016 2:49:16 PM	
11587	GLEN ULLIN	1054	0.6072	1352.7	-70.5	1.3139	0.8225	89.9972	7.0494	0.5086	0.0274	0.0205	0.0028	0.0039	0	0.0015	0.2324	0.0183	8/17/2016	8/18/2016	8/18/2016 2:48:30 PM	
11587	GLEN ULLIN	1058.5	0.6104	1354.8	-65.7	1.3827	0.8003	89.5709	7.4247	0.5769	0.0358	0.0271	0.0043	0.0056	0	0.0021	0.1485	0.0259	8/18/2016	8/19/2016	8/19/2016 2:50:17 PM	
11587	GLEN ULLIN	1053.5	0.6075	1351.7	-75.2	1.4053	0.8081	89.8258	7.2186	0.4774	0.0187	0.011	0.0003	0.0005	0	0	0.2161	0.0208	8/19/2016	8/20/2016	8/20/2016 2:48:46 PM	
11587	GLEN ULLIN	1059.8	0.6108	1356	-66.4	1.2831	0.8413	89.5483	7.4277	0.6318	0.0383	0.0268	0.0034	0.0048	0	0.0015	0.1729	0.0183	8/20/2016	8/21/2016	8/21/2016 2:48:51 PM	
11587	GLEN ULLIN	1058.2	0.6093	1355.6	-58.8	1.2541	0.8314	89.9321	7.058	0.6442	0.0452	0.0338	0.0058	0.0076	0	0.0036	0.165	0.0179	8/21/2016	8/22/2016	8/22/2016 2:48:38 PM	
11587	GLEN ULLIN	1058.6	0.6093	1356.1	-58.4	1.2066	0.8453	89.9862	6.9821	0.6854	0.0469	0.0361	0.0056	0.0077	0	0.0035	0.1759	0.0178	8/22/2016	8/23/2016	8/23/2016 2:48:28 PM	
11587	GLEN ULLIN	1056.5	0.608	1354.9	-62.6	1.2122	0.8458	90.1636	6.9019	0.6041	0.0419	0.0327	0.0048	0.0068	0	0.0028	0.1641	0.0175	8/23/2016	8/24/2016	8/24/2016 2:49:14 PM	
11587	GLEN ULLIN	1056.5	0.608	1354.9	-62.6	1.2122	0.8458	90.1636	6.9019	0.6041	0.0419	0.0327	0.0048	0.0068	0	0.0028	0.1641	0.0175	8/23/2016	8/25/2016	8/25/2016 2:48:03 PM	
11587	GLEN ULLIN	1056.4	0.6088	1353.9	-59.1	1.2713	0.8579	89.9549	7.0214	0.58	0.0467	0.0376	0.0059	0.0081	0	0.0036	0.1933	0.0178	8/25/2016	8/26/2016	8/26/2016 2:48:07 PM	
11587	GLEN ULLIN	1055.8	0.6088	1353.2	-61	1.3067	0.8588	89.9084	7.0557	0.5627	0.0435	0.0349	0.0053	0.0075	0	0.0032	0.203	0.0188	8/26/2016	8/27/2016	8/27/2016 2:47:22 PM	
11587	GLEN ULLIN	1054.5	0.6083	1352	-71.6	1.3354	0.8582	89.8523	7.1674	0.4997	0.0295	0.0228	0.0029	0.0043	0	0.0011	0.2069	0.0181	8/27/2016	8/28/2016	8/28/2016 2:48:02 PM	
11587	GLEN ULLIN	1055.9	0.6087	1353.4	-64.9	1.2989	0.8537	89.8544	7.1496	0.5394	0.0381	0.0302	0.0041	0.0061	0	0.0024	0.2046	0.0183	8/28/2016	8/29/2016	8/29/2016 2:48:57 PM	
11587	GLEN ULLIN	1057	0.6091	1354.4	-60.4	1.2845	0.8454	89.845	7.0989	0.598	0.0449	0.0361	0.0055	0.0077	0	0.0033	0.2102	0.0185	8/29/2016	8/30/2016	8/30/2016 2:50:16 PM	
11587	GLEN ULLIN	1059.5	0.6112	1355.3	-57.9	1.3182	0.8527	89.4913	7.3709	0.6355	0.0487	0.039	0.0062	0.0084	0	0.0035	0.2046	0.0182	8/30/2016	8/31/2016	8/31/2016 2:49:50 PM	
11587	GLEN ULLIN	1059.2	0.6108	1355.3	-54.8	1.3154	0.8437	89.6361	7.217	0.655	0.0554	0.0435	0.0074	0.0098	0	0.0045	0.1928	0.0183	8/31/2016	9/1/2016	9/1/2016 2:49:44 PM	

32 record(s) retrieved

None  
8/2

NORTH DAKOTA HEATING VALUE ZONES		
<b>ZONES</b>	<b>MEASURING DEVICE</b>	<b>LOCATION</b>
211	Chromatograph	Sidney Area
24	Monthly Sampler	Williston Area
241	Monthly Sampler	Fairview Area
25	Monthly Sampler	Watford City Area
261	Chromatograph	Williston – Tioga – Minot Line
262	Chromatograph	Minot Area
263	Monthly Sampler	Tioga – Portal
264	Monthly Sampler	Williston – Ray
265	Chromatograph	North Tioga
271	Chromatograph	Bismarck – Cleveland
272	Chromatograph	Cleveland – Mapleton
273	Chromatograph	Cleveland – Grafton
28	Chromatograph	Bismarck
31	Chromatograph	Dickinson
32	Chromatograph	Cabin Creek – Dickinson
33	Chromatograph	Killdeer
34	Monthly Sampler	Bowman Area
43	Chromatograph	Spring Creek
600	Chromatograph	Hankinson Area
610	Monthly Sampler & Chromatograph	Watford City
802	Chromatograph	Linton

MONTANA DAKOTA UTILITIES CO  
 NORTH DAKOTA  
 HEATING VALUE DATA

STATE	ZONE	ZONE BOUNDARY	12 MONTH AVERAGE	AUG 16	JULY 16	JUNE 16	MAY 16	APR 16	MAR 16	FEB 16	JAN 16	DEC 15	NOV 15	OCT 15	SEPT 15	ZONE
MT/ND	211	Sidney Area	1205	1210	1208	1206	1205	1207	1213	1209	1207	1204	1195	1188	1193	211
ND	24	Williston Area	1189	1169	1197	1191	1182	1196	1194	1195	1195	1199	1183	1177	1166	24
ND	25	Watford City Border	1213	1213	1211	1206	1209	1211	1211	1213	1216	1216	1223	1216	1198	25
ND/MT	241	Fairview Area	1198	1200	1202	1197	1202	1207	1201	1201	1199	1199	1184	1182	1177	241
ND	261	Williston - Tioga - Minot Line	1098	1074	1206	1182	1179	1186	1048	1035	1052	1066	1047	1000	1042	261
ND	262	Minot Area	1197	1191	1208	1208	1208	1206	1189	1190	1189	1188	1192	1198	1201	262
ND	263	Tioga - Portal	1091	1127	1118	1116	947	1105	1082	1107	1092	1082	1112	1112	1104	263
ND	264	Williston - Ray	1182	1198	1169	1183	1184	1190	1189	1181	1183	1180	1178	1162	1154	264
ND	265	North Tioga Transfer - Portal	1181	1166	1177	1170	1173	1190	1186	1187	1190	1188	1189	1180	1188	265
ND	271	Bismarck - Cleveland	1193	1185	1208	1208	1208	1206	1186	1181	1172	1181	1192	1199	1203	271
ND	272	Cleveland - Mapleton	1192	1184	1207	1207	1206	1204	1185	1180	1171	1180	1191	1197	1202	272
ND	273	Cleveland - Grafton	1191	1184	1207	1206	1206	1201	1185	1179	1171	1180	1190	1197	1203	273
ND	28	Bismarck - Cabin Creek	1173	1185	1208	1208	1202	1190	1154	1142	1131	1137	1148	1196	1203	28
ND	31	Dickinson Area	1136	1169	1124	1128	1117	1114	1144	1139	1130	1136	1135	1161	1161	31
ND	311	Taylor Take-Off - Glen Ullin Comp	1163	0	0	0	0	0	0	0	0	0	1147	1179	1168	311
ND/MT	32	Cabin Creek - Dickinson	1131	1150	1157	1153	1137	1129	1121	1125	1117	1117	1111	1120	1176	32
ND	33	Killdeer	1184	1183	1184	1185	1184	1181	1181	1183	1182	1186	1185	1186	1186	33
ND	34	Bowman Area	1038	996	996	996	980	982	979	1082	1103	1121	1102	1084	1025	34
ND	43	Spring Creek - Garden Crk Plant	1098	1109	1089	1087	1102	1143	1112	1091	1087	1092	1088	1083	1100	43
ND	610	MDU-Watford City BTU	1180	1206	1203	1186	1184	1174	1153	1140	1155	1174	1197	1211	1197	610
ND	802	Linton	1062	1059	1054	1065	1062	1062	1057	1056	1060	1066	1073	1064	1055	802
ND	903	Hettinger Propane	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	2546	903

**THERMAL ZONE VARIANCE  
DOCUMENTATION**

**August 2016**

<b>ZONE</b>	<b><i>BTU VARIANCE</i></b>	<b><i>REASON</i></b>
24	-28	Operational Changes, Supply On & Off During Month
261	-132	Operational Changes, Supply On & Off During Month
264	29	Operational Changes, Supply On & Off During Month
271	-23	Direction Changes, Due to Maintenance at Receipt
272	-23	Direction Changes, Due to Maintenance at Receipt
273	-23	Direction Changes, Due to Maintenance at Receipt
28	-23	Direction Changes, Due to Maintenance at Receipt
31	45	Operations/ Direction Changes