



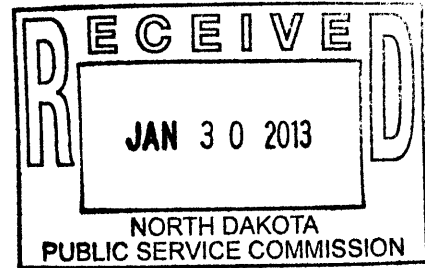
# MONTANA-DAKOTA

UTILITIES CO.

A Division of MDU Resources Group, Inc.

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

January 30, 2013



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

Re: Case No. 11,006 (Therm Billing)  
Monthly Report – December 2012

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 the above-referenced docket, dated October 20, 1987:

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 January 2013.
2. Attachment B consists of copies of the monthly Heating Value Test Reports received from our supplier for the month of December 2012. There is a report for each of the 17 thermal zones for the month.
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 December 2012.

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,

Tamie Aberle  
Director of Regulatory Affairs

MONTANA-DAKOTA UTILITIES CO.  
Therm Billing Factor  
JAN 2013

Div Nbr	Off Code	City Name	Heat Zone Nbr	Therm Billing Factor
12	314	APPLE VALLEY	271	1.1067
12	323	BERTHOLD	262	1.1003
12	327	BISMARCK	28	1.0749
12	337	BURLINGTON	262	1.1241
12	343	CARRINGTON	273	1.1087
12	344	CLEVELAND	272	1.0999
12	364	CAVALIER	273	1.1320
12	365	DAWSON	271	1.0989
12	368	DES LACS	262	1.1083
12	374	FT TOTTEN	273	1.1165
12	375	DEVILS LAKE	273	1.1165
12	379	BARLOW	273	1.1087
12	387	ELDRIDGE	272	1.1077
12	411	GLEN ULLIN	31	1.0484
12	416	GARRISON	262	1.1083
12	417	GRAFTON	273	1.1398
12	439	HANKINSON	600	1.0877
12	449	JAMESTOWN	272	1.1155
12	463	LANGDON	273	1.1087
12	475	LINTON	802	.9910
12	478	LINCOLN	28	1.0749
12	494	MEDINA	271	1.0989
12	498	MANDAN	28	1.0749
12	505	MINOT	262	1.1241
12	512	MAX	262	1.1003
12	524	NEW SALEM	28	1.0522
12	532	NEW ROCKFORD	273	1.1087
12	539	PARK RIVER	273	1.1320
12	572	RUTHVILLE	262	1.1241
12	574	SANBORN	272	1.1155
12	593	STEELE	271	1.0989
12	598	SHEYENNE	273	1.1165
12	605	SURREY	262	1.1241
12	610	TAPPEN	271	1.0989
12	619	TURTLE LAKE	262	1.1083

MONTANA-DAKOTA UTILITIES CO.  
Therm Billing Factor  
JAN 2013

Div Nbr	Off Code	City Name	Heat Zone Nbr	Therm Billing Factor
12	624	UNDERWOOD	262	1.1083
12	625	VALLEY CITY	272	1.1232
12	629	WALHALLA	273	1.1320
12	646	WASHBURN	262	1.1162
12	647	WILTON	262	1.1003
12	664	RIVERDALE	262	1.1083
12	712	MINOT AFB	262	1.1241
12	717	SPIRITWOOD	272	1.1155
12	718	FAIRMOUNT	600	1.0855
12	732	MSR SITE	273	1.1087
12	733	PAR SITE	273	1.1087
15	303	ALEXANDER	25	1.1258
15	308	ARNEGARD	25	1.1258
15	318	BEACH	32	1.0156
15	319	BELFIELD	32	1.0231
15	330	BOWMAN	34	1.0476
15	369	DICKINSON	31	1.0408
15	384	EPPING	264	1.1362
15	407	GLADSTONE	31	1.0408
15	413	GOLVA	32	1.0007
15	429	HEBRON	31	1.0484
15	459	KILLDEER	33	1.1107
15	469	LEFOR	31	1.0408
15	474	LIGNITE	263	1.0169
15	500	MARMARTH	34	1.0553
15	510	MOTT	31	1.0408
15	522	NEW ENGLAND	31	1.0333
15	540	PALERMO	262	1.1003
15	558	RAY	264	1.1362
15	561	REGENT	31	1.0408
15	563	RHAME	34	1.0399
15	564	RICHARDTON	31	1.0333
15	568	ROSS	261	1.0896
15	583	SENTINEL BUTTE	32	1.0156
15	588	SOUTH HEART	31	1.0333

MONTANA-DAKOTA UTILITIES CO.  
Therm Billing Factor  
JAN 2013

Div Nbr	Off Code	City Name	Heat Zone Nbr	Therm Billing Factor
15	590	SPRINGBROOK	264	1.1362
15	591	STANLEY	261	1.0975
15	611	TAYLOR	31	1.0333
15	616	TIOGA	261	1.0896
15	620	TRENTON	24	1.1444
15	632	WATFORD CITY	25	1.1258
15	636	WHEELLOCK	264	1.1281
15	637	WHITE EARTH	261	1.0975
15	642	WILLISTON	24	1.1444
15	691	FAIRVIEW	241	1.1330
15	743	BAKER FIELD	35	.8980

\* \* \* E N D O F R E P O R T \* \* \*

# GQ Source Daily Summary

December 2012

**Number:** 251 **Pressure Base:** 14.730 **Contract Day:** 1

**Name:** SIDNEY BORDER-MONDAK JNCTN-SIDNEY PLANT **Temperature Base:** **Contract Hour:** 9

Day	Relative Density	Heating Value Wet	Heating Value Dry	CO2	N2	C1	C2	C3	IC4	NC4	ICS	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.7106	1184.2	1205.1	0.036	3.192	70.760	23.019	2.866	0.050	0.075	0.002	0.001	0.000	0.000	0.000	0.000	0.000	1429.60	
2	0.7100	1182.7	1203.7	0.033	3.221	70.800	23.027	2.799	0.047	0.070	0.002	0.001	0.000	0.000	0.000	0.000	0.000	1428.54	
3	0.7097	1182.6	1203.6	0.032	3.204	70.768	23.157	2.730	0.043	0.063	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1428.67	
4	0.7098	1181.8	1202.8	0.029	3.268	70.631	23.319	2.661	0.037	0.053	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1427.61	
5	0.7092	1181.3	1202.2	0.031	3.237	70.777	23.194	2.667	0.039	0.054	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1427.64	
6	0.7107	1183.3	1204.2	0.035	3.254	70.585	23.271	2.735	0.047	0.071	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1428.47	
7	0.7059	1177.4	1198.2	0.046	3.147	71.303	22.921	2.487	0.040	0.056	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1426.17	
8	0.7085	1180.4	1201.3	0.050	3.205	70.854	23.213	2.579	0.040	0.057	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1427.13	
9	0.7061	1175.9	1196.8	0.051	3.243	71.084	23.201	2.336	0.034	0.049	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1424.24	
10	0.7122	1184.1	1205.1	0.051	3.317	70.402	23.302	2.774	0.057	0.092	0.003	0.002	0.000	0.000	0.000	0.000	0.000	1427.96	
11	0.7085	1178.6	1199.5	0.069	3.281	70.750	23.326	2.491	0.034	0.047	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1425.02	
12	0.7062	1175.4	1196.3	0.058	3.278	71.007	23.255	2.341	0.026	0.033	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1423.50	
13	0.7090	1178.5	1199.3	0.069	3.340	70.707	23.244	2.549	0.037	0.053	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1424.33	
14	0.7074	1176.8	1197.6	0.057	3.306	70.882	23.253	2.429	0.031	0.042	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1423.95	
15	0.7094	1180.0	1200.9	0.053	3.307	70.660	23.287	2.610	0.034	0.047	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1425.79	
16	0.7097	1180.2	1201.1	0.054	3.317	70.677	23.197	2.657	0.039	0.056	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1425.77	
17	0.7094	1180.5	1201.4	0.064	3.260	70.663	23.317	2.618	0.032	0.044	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1426.40	
18	0.7094	1178.8	1199.7	0.067	3.327	70.610	23.289	2.627	0.033	0.045	0.001	0.001	0.001	0.000	0.000	0.000	0.000	1424.37	
19	0.7105	1181.6	1202.5	0.062	3.299	70.553	23.285	2.711	0.037	0.050	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1426.62	
20	0.7094	1179.1	1200.0	0.049	3.365	70.603	23.331	2.578	0.031	0.041	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1424.76	
21	0.7098	1179.3	1200.2	0.059	3.374	70.563	23.329	2.594	0.034	0.046	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1424.60	
22	0.7081	1176.6	1197.5	0.062	3.375	70.802	23.180	2.504	0.031	0.043	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1423.05	
23	0.7088	1177.5	1198.3	0.061	3.394	70.714	23.192	2.562	0.032	0.043	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1423.33	
24	0.7070	1176.6	1197.5	0.066	3.268	71.064	23.015	2.502	0.035	0.049	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1424.13	
25	0.7096	1179.3	1200.2	0.060	3.353	70.609	23.299	2.595	0.034	0.048	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1424.78	
26	0.7095	1180.0	1200.9	0.056	3.306	70.654	23.281	2.628	0.032	0.042	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1425.76	
27	0.7087	1178.0	1198.8	0.057	3.361	70.778	23.125	2.599	0.033	0.045	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1424.01	
28	0.7082	1178.2	1199.1	0.054	3.301	70.752	23.335	2.496	0.026	0.034	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1424.83	
29	0.7098	1179.4	1200.3	0.051	3.379	70.609	23.227	2.654	0.033	0.046	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1424.73	
30	0.7107	1181.3	1202.3	0.049	3.354	70.455	23.355	2.719	0.029	0.037	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1426.09	
31	0.7064	1175.7	1196.6	0.054	3.288	71.078	23.060	2.454	0.028	0.037	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1423.62	
Avg	0.7090	1180.0	1200.4	0.052	3.294	70.747	23.220	2.598	0.036	0.051	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1425.66	

Zone 211

## GQ Source Daily Summary

### December 2012

**Number:** 372

**Pressure Base:** 14.730

**Contract Day:** 1

**Name:** NESSON PLANT-CHARBONNEAU STATION

**Temperature Base:**

**Contract Hour:** 9

Day	Relative Density	Heating Value		CO2	N2	C1	C2	C3	IC4	NC4	ICS	NCS	C6	C7	C8	C9	C10	Wobbe	CCT
		Value Wet	Value Dry																
1	0.7277	1182.7	1203.7	0.910	3.549	68.965	22.837	3.484	0.087	0.155	0.008	0.006	0.001	0.000	0.000	0.000	0.000	1411.03	
2	0.7280	1180.6	1201.5	0.940	3.664	69.008	22.570	3.552	0.091	0.160	0.008	0.007	0.001	0.000	0.000	0.000	0.000	1408.17	
3	0.7282	1180.8	1201.7	0.939	3.678	69.002	22.509	3.603	0.092	0.162	0.009	0.007	0.001	0.000	0.000	0.000	0.000	1408.14	
4	0.7282	1180.8	1201.7	0.939	3.678	69.002	22.509	3.603	0.092	0.162	0.009	0.007	0.001	0.000	0.000	0.000	0.000	1408.14	
5	0.7253	1180.3	1201.2	0.794	3.646	69.476	22.227	3.559	0.111	0.173	0.008	0.006	0.000	0.000	0.000	0.000	0.000	1410.50	
6	0.7256	1178.6	1199.5	0.885	3.635	69.305	22.509	3.384	0.096	0.169	0.009	0.007	0.000	0.000	0.000	0.000	0.000	1408.18	
7	0.7262	1183.0	1204.0	0.789	3.577	69.208	22.608	3.565	0.086	0.153	0.007	0.006	0.000	0.000	0.000	0.000	0.000	1412.82	
8	0.7249	1181.7	1202.6	0.782	3.550	69.387	22.537	3.503	0.083	0.146	0.007	0.006	0.000	0.000	0.000	0.000	0.000	1412.44	
9	0.7248	1183.1	1204.0	0.713	3.556	69.385	22.538	3.586	0.079	0.134	0.006	0.004	0.000	0.000	0.000	0.000	0.000	1414.25	
10	0.7246	1182.6	1203.5	0.726	3.550	69.346	22.664	3.491	0.079	0.134	0.006	0.005	0.000	0.000	0.000	0.000	0.000	1413.83	
11	0.7269	1184.0	1205.0	0.785	3.589	69.141	22.591	3.639	0.088	0.155	0.007	0.006	0.000	0.000	0.000	0.000	0.000	1413.30	
12	0.7273	1184.4	1205.4	0.791	3.587	69.086	22.613	3.688	0.082	0.141	0.007	0.005	0.000	0.000	0.000	0.000	0.000	1413.43	
13	0.7257	1181.6	1202.5	0.805	3.592	69.249	22.596	3.528	0.080	0.138	0.007	0.005	0.001	0.000	0.000	0.000	0.000	1411.58	
14	0.7251	1181.4	1202.3	0.766	3.609	69.274	22.654	3.460	0.082	0.142	0.007	0.005	0.001	0.000	0.000	0.000	0.000	1411.91	
15	0.7272	1179.3	1200.2	0.939	3.666	69.206	22.327	3.600	0.090	0.158	0.008	0.006	0.001	0.000	0.000	0.000	0.000	1407.42	
16	0.7319	1180.4	1201.3	1.135	3.744	68.847	22.039	3.921	0.106	0.190	0.009	0.007	0.001	0.000	0.000	0.000	0.000	1404.15	
17	0.7320	1180.3	1201.2	1.121	3.775	68.781	22.126	3.880	0.107	0.192	0.010	0.008	0.001	0.000	0.000	0.000	0.000	1404.05	
18	0.7329	1181.8	1202.7	1.139	3.746	68.757	22.013	4.024	0.109	0.194	0.010	0.008	0.001	0.000	0.000	0.000	0.000	1404.88	
19	0.7322	1183.9	1204.9	1.027	3.716	68.806	22.101	4.034	0.107	0.191	0.009	0.007	0.001	0.000	0.000	0.000	0.000	1408.13	
20	0.7292	1184.9	1205.9	0.858	3.639	68.972	22.420	3.831	0.096	0.168	0.008	0.006	0.001	0.000	0.000	0.000	0.000	1412.14	
21	0.7271	1181.4	1202.3	0.854	3.658	69.188	22.401	3.627	0.093	0.163	0.008	0.006	0.001	0.000	0.000	0.000	0.000	1410.00	
22	0.7270	1179.4	1200.3	0.914	3.685	69.186	22.368	3.584	0.090	0.157	0.008	0.006	0.001	0.000	0.000	0.000	0.000	1407.68	
23	0.7280	1180.8	1201.7	0.922	3.680	69.114	22.316	3.707	0.091	0.157	0.007	0.006	0.001	0.000	0.000	0.000	0.000	1408.39	
24	0.7289	1181.2	1202.1	0.963	3.679	69.007	22.351	3.735	0.092	0.160	0.007	0.006	0.001	0.000	0.000	0.000	0.000	1407.98	
25	0.7295	1181.4	1202.3	0.991	3.676	69.007	22.232	3.830	0.091	0.158	0.007	0.006	0.001	0.000	0.000	0.000	0.000	1407.69	
26	0.7298	1183.1	1204.1	0.943	3.668	68.947	22.305	3.883	0.088	0.153	0.007	0.005	0.001	0.000	0.000	0.000	0.000	1409.50	
27	0.7288	1182.4	1203.4	0.921	3.652	69.007	22.396	3.780	0.085	0.147	0.007	0.005	0.001	0.000	0.000	0.000	0.000	1409.62	
28	0.7311	1184.1	1205.0	0.978	3.678	68.832	22.261	3.987	0.091	0.158	0.007	0.006	0.001	0.000	0.000	0.000	0.000	1409.37	
29	0.7304	1183.4	1204.3	0.976	3.661	68.872	22.341	3.884	0.091	0.160	0.008	0.006	0.001	0.000	0.000	0.000	0.000	1409.19	
30	0.7255	1181.8	1202.8	0.766	3.616	69.253	22.609	3.522	0.081	0.140	0.007	0.005	0.001	0.000	0.000	0.000	0.000	1412.10	
31	0.7256	1182.4	1203.3	0.750	3.615	69.196	22.694	3.522	0.078	0.133	0.006	0.005	0.001	0.000	0.000	0.000	0.000	1412.67	
Avg	0.7279	1182.0	1202.8	0.896	3.646	69.091	22.428	3.677	0.091	0.158	0.008	0.006	0.001	0.000	0.000	0.000	0.000	1409.76	

Zone 24, 264

# GQ Source Analysis

WBI Energy Transmission, Inc.

<b>GQ Source Number:</b>	0602160	<b>Specific Gravity:</b>	0.7211
<b>GQ Source Name:</b>	FAIRVIEW BORDER	<b>Dry Heat Value:</b>	1191.30
<b>Effective Date:</b>	12/1/2012 9:00:00 AM	<b>Wet Heat Value:</b>	1170.57
<b>Effective End Date:</b>	1/18/2038 9:14:07 PM	<b>As Deliv. Heat Value:</b>	1191.30
<b>Pressure Base:</b>	14.730	<b>Sample Pressure:</b>	450.00
<b>Viscosity:</b>		<b>Sample Temperature:</b>	

		<u>Mol %</u>	<u>Liquid Content</u>			<u>Mol %</u>
C1	Methane	70.025		CO2	Carbon Dioxide	0.871
C2	Ethane	21.551	5.7463	N2	Nitrogen	3.695
C3	Propane	3.603	0.9898	O2	Oxygen	0.000
IC4	Isobutane	0.088	0.0286	He	Helium	
NC4	n-Butane	0.155	0.0488	H2	Hydrogen	
IC5	Isopentane	0.007	0.0027	H2S	Hydrogen Sulfide	
NC5	n-Pentane	0.006	0.0020	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% 6.818 GPM

**Sample Date:** 12/31/2012 12:00:00 AM  
**Sample Type:** Composite  
**Sample Tech:** sampler  
**H2S:** ppm

**Sample Remarks:**

**Analysis Tech:** Lab

**Analysis Remarks:**

Zone 241

### GQ Source Analysis

WBI Energy Transmission, Inc.

<b>GQ Source Number:</b>	0602230	<b>Specific Gravity:</b>	0.7221
<b>GQ Source Name:</b>	WATFORD CITY BORDER	<b>Dry Heat Value:</b>	1192.41
<b>Effective Date:</b>	12/1/2012 9:00:00 AM	<b>Wet Heat Value:</b>	1171.65
<b>Effective End Date:</b>	1/18/2038 9:14:07 PM	<b>As Deliv. Heat Value:</b>	1192.41
<b>Pressure Base:</b>	14.730	<b>Sample Pressure:</b>	390.00
<b>Viscosity:</b>		<b>Sample Temperature:</b>	

		<u>Mol %</u>	<u>Liquid Content</u>			<u>Mol %</u>
C1	Methane	69.904		CO2	Carbon Dioxide	0.890
C2	Ethane	21.606	5.7611	N2	Nitrogen	3.690
C3	Propane	3.646	1.0016	O2	Oxygen	0.000
IC4	Isobutane	0.090	0.0294	He	Helium	
NC4	n-Butane	0.160	0.0503	H2	Hydrogen	
IC5	Isopentane	0.008	0.0027	H2S	Hydrogen Sulfide	
NC5	n-Pentane	0.006	0.0021	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%		6.847 GPM	

**Sample Date:** 12/31/2012 12:00:00 AM  
**Sample Type:** Composite  
**Sample Tech:** sampler  
**H2S:** ppm

**Sample Remarks:**

**Analysis Tech:** Lab

**Analysis Remarks:**

Zone 25

# GQ Source Daily Summary

December 2012

**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 Wet	Heating Value Dry	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.6918	1139.7	1159.8	0.496	3.439	74.337	19.491	2.051	0.059	0.107	0.006	0.007	0.008					1394.42	
2	0.6906	1137.4	1157.5	0.485	3.474	74.594	19.202	2.055	0.060	0.109	0.006	0.006	0.009					1392.92	
3	0.6924	1140.2	1160.4	0.500	3.454	74.405	19.261	2.152	0.069	0.133	0.009	0.010	0.006					1394.47	
4	0.6925	1140.2	1160.3	0.496	3.471	74.281	19.437	2.116	0.064	0.117	0.006	0.006	0.007					1394.35	
5	0.6921	1140.4	1160.6	0.477	3.447	74.416	19.309	2.134	0.068	0.127	0.007	0.007	0.009					1395.04	
6	0.6861	1130.1	1150.1	0.502	3.385	73.399	19.345	2.116	0.069	0.127	0.006	0.006	0.003					1388.49	
7	0.6943	1143.7	1164.0	0.486	3.433	74.092	19.536	2.224	0.072	0.136	0.008	0.008	0.006					1396.95	
8	0.6942	1142.3	1162.5	0.484	3.513	73.939	19.747	2.097	0.069	0.133	0.008	0.008	0.001					1395.34	
9	0.6955	1144.5	1164.8	0.470	3.530	73.714	19.918	2.140	0.067	0.135	0.010	0.011	0.005					1396.63	
10	0.6925	1140.7	1160.9	0.466	3.479	74.281	19.464	2.092	0.063	0.124	0.009	0.010	0.010					1395.08	
11	0.6930	1141.0	1161.2	0.479	3.493	74.169	19.536	2.124	0.063	0.116	0.007	0.007	0.007					1394.88	
12	0.6948	1141.9	1162.1	0.468	3.625	73.712	19.903	2.109	0.057	0.107	0.007	0.007	0.004					1394.18	
13	0.6940	1142.7	1163.0	0.487	3.464	74.015	19.677	2.161	0.063	0.114	0.006	0.005	0.007					1396.05	
14	0.6931	1142.7	1163.0	0.482	3.388	74.241	19.521	2.146	0.068	0.129	0.008	0.009	0.006					1396.94	
15	0.6937	1144.5	1164.8	0.498	3.309	74.241	19.519	2.194	0.072	0.140	0.009	0.010	0.008					1398.52	
16	0.6939	1141.9	1162.1	0.545	3.423	74.274	19.261	2.253	0.075	0.144	0.009	0.009	0.006					1395.04	
17	0.6931	1138.0	1158.2	0.538	3.594	74.341	19.097	2.187	0.073	0.142	0.010	0.010	0.008					1391.12	
18	0.6934	1138.7	1158.8	0.551	3.562	74.388	18.975	2.284	0.075	0.143	0.009	0.009	0.004					1391.62	
19	0.6934	1138.5	1158.6	0.548	3.582	74.251	19.181	2.228	0.069	0.127	0.007	0.007	0.000					1391.36	
20	0.6962	1144.9	1165.1	0.519	3.495	73.758	19.719	2.293	0.070	0.128	0.007	0.007	0.004					1396.40	
21	0.6944	1142.6	1162.9	0.494	3.498	73.993	19.599	2.211	0.067	0.121	0.006	0.006	0.004					1395.50	
22	0.6947	1142.5	1162.8	0.527	3.485	73.941	19.638	2.211	0.066	0.118	0.006	0.005	0.001					1395.07	
23	0.6952	1144.0	1164.2	0.520	3.455	73.904	19.658	2.255	0.069	0.126	0.007	0.007	0.000					1396.30	
24	0.6955	1144.4	1164.6	0.518	3.456	73.913	19.602	2.290	0.073	0.130	0.008	0.007	0.002					1396.56	
25	0.6948	1143.9	1164.1	0.531	3.408	73.975	19.640	2.247	0.066	0.121	0.006	0.006	0.001					1396.57	
26	0.6953	1144.9	1165.2	0.526	3.398	74.000	19.534	2.322	0.069	0.131	0.007	0.007	0.005					1397.33	
27	0.6942	1141.3	1161.6	0.527	3.507	74.143	19.336	2.272	0.071	0.128	0.006	0.006	0.002					1394.13	
28	0.6942	1141.3	1161.6	0.527	3.507	74.143	19.336	2.272	0.071	0.128	0.006	0.006	0.002					1394.13	
29	0.6952	1142.9	1163.2	0.529	3.506	74.018	19.416	2.299	0.073	0.133	0.007	0.008	0.011					1395.01	
30	0.6932	1141.2	1161.4	0.491	3.498	74.213	19.402	2.194	0.069	0.125	0.006	0.006	0.004					1394.90	
31	0.6945	1143.9	1164.1	0.497	3.424	74.409	18.991	2.342	0.091	0.203	0.016	0.020	0.007					1396.90	
Avg	0.6936	1142.0	1161.7	0.505	3.474	74.113	19.460	2.196	0.069	0.129	0.008	0.008	0.005					1394.91	

Zone 261



**GQ Source Analysis**

WBI Energy Transmission, Inc.

<b>GQ Source Number:</b>	2501030	<b>Specific Gravity:</b>	0.6401
<b>GQ Source Name:</b>	LIGNITE PLANT	<b>Dry Heat Value:</b>	1068.72
<b>Effective Date:</b>	12/1/2012 9:00:00 AM	<b>Wet Heat Value:</b>	1050.12
<b>Effective End Date:</b>	1/18/2038 9:14:07 PM	<b>As Deliv. Heat Value:</b>	1068.72
<b>Pressure Base:</b>	14.730	<b>Sample Pressure:</b>	316.00
<b>Viscosity:</b>		<b>Sample Temperature:</b>	

		<u>Mol %</u>	<u>Liquid Content</u>			<u>Mol %</u>
C1	Methane	82.407		CO2	Carbon Dioxide	0.064
C2	Ethane	12.231	3.2614	N2	Nitrogen	4.665
C3	Propane	0.614	0.1686	O2	Oxygen	0.000
IC4	Isobutane	0.000	0.0000	He	Helium	
NC4	n-Butane	0.000	0.0000	H2	Hydrogen	
IC5	Isopentane	0.000	0.0000	H2S	Hydrogen Sulfide	
NC5	n-Pentane	0.000	0.0000	Ar	Argon	
C6	Hexanes	0.019	0.0087	CO	Carbon Monoxide	
C7	Heptanes			H2	Water	
C8	Octanes			Neo-C5	Neopentane	
C9	Nonanes					
C10	Decanes					
<b>Totals</b>			100.000%		3.439 GPM	

**Sample Date:** 12/31/2012 12:00:00 AM  
**Sample Type:** Composite  
**Sample Tech:** sampler  
**H2S:** ppm

**Sample Remarks:**

**Analysis Tech:** Lab

**Analysis Remarks:**

Zone 263

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

## GQ Source Daily Summary

December 2012

**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	0.6864	1132.6	1152.7	0.462	3.411	75.334	18.660	1.936	0.058	0.112	0.006	0.006	0.014	0.000	0.000	0.000	0.000	1391.24	
2	0.6902	1137.6	1157.7	0.508	3.394	74.649	19.271	1.993	0.056	0.102	0.005	0.005	0.017	0.000	0.000	0.000	0.000	1393.51	
3	0.6894	1137.3	1157.4	0.470	3.393	74.951	18.876	2.084	0.066	0.127	0.008	0.009	0.017	0.000	0.000	0.000	0.000	1393.95	
4	0.6835	1128.1	1148.1	0.452	3.426	75.765	18.346	1.839	0.053	0.096	0.005	0.005	0.013	0.000	0.000	0.000	0.000	1388.70	
5	0.6862	1132.1	1152.2	0.458	3.418	75.396	18.573	1.964	0.058	0.108	0.006	0.006	0.013	0.000	0.000	0.000	0.000	1390.97	
6	0.6865	1133.8	1153.9	0.446	3.372	75.314	18.719	1.951	0.060	0.111	0.006	0.006	0.014	0.000	0.000	0.000	0.000	1392.60	
7	0.6822	1128.0	1148.0	0.414	3.364	76.054	18.123	1.857	0.059	0.108	0.006	0.005	0.011	0.000	0.000	0.000	0.000	1389.92	
8	0.6796	1123.5	1143.4	0.385	3.441	76.449	17.768	1.783	0.054	0.099	0.006	0.006	0.011	0.000	0.000	0.000	0.000	1386.98	
9	0.6787	1122.3	1142.1	0.381	3.439	76.559	17.728	1.716	0.053	0.101	0.006	0.007	0.009	0.000	0.000	0.000	0.000	1386.37	
10	0.6811	1125.8	1145.8	0.381	3.449	76.181	17.988	1.811	0.055	0.108	0.007	0.008	0.010	0.000	0.000	0.000	0.000	1388.29	
11	0.6794	1123.5	1143.4	0.380	3.431	76.428	17.851	1.745	0.049	0.091	0.006	0.006	0.012	0.000	0.000	0.000	0.000	1387.17	
12	0.6808	1125.4	1145.3	0.378	3.452	76.172	18.051	1.778	0.051	0.096	0.006	0.006	0.010	0.000	0.000	0.000	0.000	1388.06	
13	0.6823	1126.1	1146.1	0.396	3.523	75.874	18.231	1.819	0.049	0.088	0.005	0.005	0.010	0.000	0.000	0.000	0.000	1387.41	
14	0.6843	1130.4	1150.4	0.420	3.413	75.604	18.507	1.887	0.054	0.096	0.005	0.004	0.011	0.000	0.000	0.000	0.000	1390.66	
15	0.6842	1131.4	1151.4	0.414	3.350	75.716	18.423	1.896	0.059	0.113	0.007	0.008	0.013	0.000	0.000	0.000	0.000	1391.98	
16	0.6850	1132.6	1152.6	0.435	3.320	75.668	18.401	1.967	0.062	0.120	0.007	0.008	0.013	0.000	0.000	0.000	0.000	1392.63	
17	0.6853	1130.7	1150.7	0.457	3.434	75.584	18.352	1.973	0.061	0.115	0.006	0.006	0.011	0.000	0.000	0.000	0.000	1389.97	
18	0.6872	1131.4	1151.4	0.484	3.521	75.327	18.423	2.025	0.064	0.125	0.008	0.009	0.014	0.000	0.000	0.000	0.000	1388.99	
19	0.6913	1136.5	1156.7	0.543	3.501	74.695	18.871	2.166	0.067	0.128	0.007	0.007	0.014	0.000	0.000	0.000	0.000	1391.20	
20	0.6864	1131.2	1151.3	0.462	3.497	75.361	18.485	2.006	0.059	0.110	0.006	0.006	0.010	0.000	0.000	0.000	0.000	1389.54	
21	0.6834	1128.4	1148.4	0.405	3.468	75.830	18.187	1.936	0.055	0.098	0.005	0.005	0.010	0.000	0.000	0.000	0.000	1389.15	
22	0.6818	1125.9	1145.8	0.393	3.493	76.013	18.099	1.840	0.052	0.092	0.005	0.004	0.009	0.000	0.000	0.000	0.000	1387.65	
23	0.6784	1121.3	1141.2	0.360	3.494	76.606	17.607	1.782	0.049	0.086	0.004	0.004	0.007	0.000	0.000	0.000	0.000	1385.58	
24	0.6792	1122.8	1142.7	0.367	3.476	76.480	17.708	1.811	0.050	0.090	0.005	0.005	0.008	0.000	0.000	0.000	0.000	1386.50	
25	0.6800	1124.2	1144.1	0.361	3.470	76.369	17.793	1.845	0.051	0.093	0.005	0.005	0.008	0.000	0.000	0.000	0.000	1387.46	
26	0.6788	1122.4	1142.3	0.372	3.452	76.567	17.646	1.812	0.049	0.087	0.004	0.004	0.007	0.000	0.000	0.000	0.000	1386.45	
27	0.6804	1124.4	1144.3	0.387	3.457	76.364	17.742	1.884	0.053	0.094	0.005	0.005	0.009	0.000	0.000	0.000	0.000	1387.26	
28	0.6781	1120.1	1140.0	0.378	3.516	76.733	17.395	1.815	0.052	0.093	0.005	0.005	0.009	0.000	0.000	0.000	0.000	1384.34	
29	0.6786	1120.6	1140.4	0.385	3.519	76.685	17.397	1.848	0.053	0.095	0.005	0.005	0.008	0.000	0.000	0.000	0.000	1384.47	
30	0.6797	1122.0	1141.9	0.397	3.519	76.521	17.513	1.874	0.055	0.100	0.006	0.006	0.010	0.000	0.000	0.000	0.000	1385.08	
31	0.6756	1116.4	1136.1	0.350	3.552	77.132	17.066	1.742	0.051	0.090	0.005	0.004	0.009	0.000	0.000	0.000	0.000	1382.27	
Avg	0.6827	1127.0	1147.3	0.416	3.450	75.948	18.123	1.883	0.055	0.102	0.006	0.006	0.011	0.000	0.000	0.000	0.000	1388.59	

Zone 271





## GQ Source Daily Summary

### December 2012

**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 Wet	Heating Value Dry	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.6428	1072.9	1091.9	0.146	3.425	82.539	13.004	0.828	0.021	0.032	0.002	0.002	0.002	0.000	0.000	0.000	0.000	1361.96	
2	0.6498	1084.0	1103.2	0.142	3.417	81.240	14.173	0.963	0.023	0.036	0.002	0.002	0.002	0.000	0.000	0.000	0.000	1368.58	
3	0.6514	1086.5	1105.7	0.141	3.417	80.933	14.469	0.973	0.024	0.037	0.002	0.002	0.002	0.000	0.000	0.000	0.000	1370.01	
4	0.6498	1083.2	1102.3	0.140	3.468	81.253	14.098	0.974	0.024	0.037	0.002	0.002	0.002	0.000	0.000	0.000	0.000	1367.52	
5	0.6507	1084.2	1103.4	0.168	3.446	81.168	14.118	1.023	0.027	0.043	0.003	0.002	0.002	0.000	0.000	0.000	0.000	1367.93	
6	0.6569	1094.4	1113.8	0.163	3.422	80.012	15.194	1.123	0.028	0.049	0.003	0.003	0.003	0.000	0.000	0.000	0.000	1374.16	
7	0.6548	1090.5	1109.8	0.168	3.450	80.392	14.823	1.088	0.027	0.044	0.003	0.002	0.002	0.000	0.000	0.000	0.000	1371.54	
8	0.6551	1090.0	1109.3	0.179	3.499	80.404	14.681	1.150	0.030	0.049	0.003	0.003	0.003	0.000	0.000	0.000	0.000	1370.50	
9	0.6537	1088.1	1107.4	0.197	3.445	80.742	14.373	1.153	0.030	0.051	0.003	0.003	0.003	0.000	0.000	0.000	0.000	1369.69	
10	0.6582	1094.8	1114.2	0.211	3.442	79.853	15.041	1.252	0.034	0.057	0.004	0.004	0.003	0.000	0.000	0.000	0.000	1373.37	
11	0.6594	1096.7	1116.2	0.202	3.453	79.685	15.312	1.248	0.033	0.056	0.003	0.003	0.003	0.000	0.000	0.000	0.000	1374.50	
12	0.6595	1096.7	1116.1	0.196	3.480	79.644	15.333	1.250	0.033	0.055	0.003	0.003	0.003	0.000	0.000	0.000	0.000	1374.28	
13	0.6569	1092.1	1111.4	0.193	3.512	80.098	14.922	1.188	0.030	0.049	0.003	0.003	0.003	0.000	0.000	0.000	0.000	1371.32	
14	0.6576	1093.5	1112.8	0.197	3.491	79.951	15.096	1.176	0.030	0.051	0.003	0.003	0.003	0.000	0.000	0.000	0.000	1372.30	
15	0.6598	1096.6	1116.1	0.188	3.519	79.563	15.387	1.254	0.031	0.050	0.003	0.003	0.003	0.000	0.000	0.000	0.000	1373.98	
16	0.6601	1097.8	1117.2	0.174	3.492	79.480	15.525	1.247	0.028	0.046	0.003	0.002	0.002	0.000	0.000	0.000	0.000	1375.16	
17	0.6614	1100.3	1119.8	0.162	3.484	79.222	15.778	1.275	0.028	0.044	0.002	0.002	0.002	0.000	0.000	0.000	0.000	1376.90	
18	0.6624	1102.2	1121.7	0.168	3.457	79.119	15.822	1.336	0.032	0.056	0.004	0.004	0.003	0.000	0.000	0.000	0.000	1378.19	
19	0.6613	1099.8	1119.3	0.181	3.479	79.262	15.719	1.276	0.029	0.047	0.003	0.002	0.003	0.000	0.000	0.000	0.000	1376.36	
20	0.6626	1101.0	1120.5	0.189	3.516	79.069	15.800	1.333	0.031	0.052	0.003	0.003	0.002	0.000	0.000	0.000	0.000	1376.50	
21	0.6608	1097.2	1116.6	0.195	3.565	79.470	15.334	1.338	0.033	0.055	0.003	0.003	0.003	0.000	0.000	0.000	0.000	1373.64	
22	0.6616	1098.8	1118.3	0.182	3.561	79.235	15.629	1.303	0.031	0.051	0.003	0.003	0.002	0.000	0.000	0.000	0.000	1374.86	
23	0.6626	1100.0	1119.5	0.188	3.573	79.102	15.690	1.353	0.032	0.054	0.003	0.003	0.003	0.000	0.000	0.000	0.000	1375.31	
24	0.6624	1099.6	1119.1	0.192	3.571	79.153	15.632	1.356	0.033	0.054	0.003	0.003	0.003	0.000	0.000	0.000	0.000	1375.04	
25	0.6641	1102.4	1121.9	0.184	3.574	78.842	15.902	1.403	0.033	0.054	0.003	0.003	0.003	0.000	0.000	0.000	0.000	1376.75	
26	0.6628	1100.5	1120.0	0.193	3.560	79.098	15.664	1.386	0.034	0.056	0.003	0.003	0.003	0.000	0.000	0.000	0.000	1375.65	
27	0.6626	1099.6	1119.1	0.199	3.587	79.146	15.579	1.388	0.034	0.057	0.004	0.004	0.003	0.000	0.000	0.000	0.000	1374.73	
28	0.6597	1094.8	1114.2	0.196	3.604	79.704	15.043	1.356	0.033	0.054	0.003	0.003	0.003	0.000	0.000	0.000	0.000	1371.81	
29	0.6596	1094.5	1113.9	0.194	3.614	79.706	15.046	1.345	0.033	0.053	0.003	0.003	0.003	0.000	0.000	0.000	0.000	1371.58	
30	0.6589	1093.3	1112.6	0.200	3.624	79.820	14.937	1.322	0.033	0.054	0.003	0.003	0.003	0.000	0.000	0.000	0.000	1370.63	
31	0.6577	1090.6	1109.9	0.203	3.667	80.045	14.686	1.303	0.033	0.055	0.004	0.003	0.003	0.000	0.000	0.000	0.000	1368.60	
Avg	0.6580	1094.0	1113.5	0.182	3.510	79.905	15.091	1.225	0.030	0.050	0.003	0.003	0.003	0.000	0.000	0.000	0.000	1372.69	

Zone 28

# GQ Source Daily Summary

December 2012

**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	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.6481	1081.5	1100.6	0.131	3.421	81.524	13.907	0.965	0.019	0.033	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1367.10	
2	0.6492	1083.4	1102.6	0.128	3.414	81.302	14.131	0.971	0.020	0.034	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1368.35	
3	0.6509	1085.6	1104.8	0.123	3.444	81.023	14.318	1.033	0.022	0.037	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1369.36	
4	0.6461	1077.3	1096.3	0.144	3.467	81.951	13.418	0.964	0.021	0.036	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1363.93	
5	0.6508	1086.4	1105.7	0.148	3.338	81.164	14.203	1.076	0.025	0.046	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1370.61	
6	0.6524	1088.7	1108.0	0.147	3.355	80.816	14.538	1.080	0.023	0.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1371.75	
7	0.6499	1083.8	1103.0	0.157	3.402	81.358	13.914	1.098	0.025	0.045	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1368.23	
8	0.6537	1087.2	1106.5	0.175	3.528	80.655	14.400	1.166	0.027	0.049	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1368.51	
9	0.6545	1089.4	1108.7	0.195	3.441	80.583	14.486	1.213	0.029	0.054	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1370.39	
10	0.6556	1090.8	1110.1	0.197	3.457	80.355	14.692	1.215	0.029	0.054	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1371.00	
11	0.6568	1094.0	1113.4	0.178	3.401	80.164	14.900	1.270	0.031	0.056	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1373.81	
12	0.6531	1087.8	1107.1	0.176	3.435	80.782	14.370	1.166	0.026	0.047	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1369.89	
13	0.6531	1087.6	1106.9	0.182	3.431	80.793	14.366	1.154	0.026	0.048	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1369.72	
14	0.6564	1091.1	1110.5	0.180	3.532	80.167	14.826	1.219	0.027	0.049	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1370.65	
15	0.6590	1095.8	1115.2	0.166	3.512	79.679	15.293	1.277	0.026	0.046	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1373.81	
16	0.6582	1095.2	1114.6	0.151	3.498	79.785	15.255	1.245	0.024	0.042	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1373.85	
17	0.6605	1099.0	1118.5	0.152	3.482	79.461	15.461	1.357	0.030	0.055	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1376.22	
18	0.6594	1097.2	1116.6	0.164	3.471	79.588	15.438	1.268	0.025	0.045	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1375.09	
19	0.6593	1096.1	1115.5	0.171	3.524	79.639	15.283	1.309	0.027	0.047	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1373.74	
20	0.6587	1094.1	1113.4	0.185	3.566	79.809	15.030	1.325	0.030	0.054	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1371.88	
21	0.6595	1095.5	1114.9	0.176	3.569	79.634	15.210	1.330	0.029	0.052	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1372.83	
22	0.6602	1096.8	1116.2	0.170	3.568	79.483	15.364	1.335	0.028	0.051	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1373.67	
23	0.6606	1096.7	1116.2	0.176	3.590	79.454	15.332	1.365	0.030	0.052	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1373.31	
24	0.6606	1096.8	1116.2	0.180	3.590	79.449	15.331	1.367	0.030	0.054	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1373.27	
25	0.6631	1100.6	1120.1	0.173	3.595	79.003	15.721	1.423	0.031	0.054	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1375.56	
26	0.6587	1094.6	1113.9	0.184	3.540	79.846	14.984	1.359	0.031	0.056	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1372.47	
27	0.6577	1092.8	1112.1	0.181	3.555	80.050	14.771	1.359	0.030	0.054	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1371.32	
28	0.6581	1092.3	1111.7	0.182	3.621	79.955	14.796	1.362	0.030	0.053	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1370.32	
29	0.6566	1090.6	1109.9	0.181	3.582	80.232	14.605	1.320	0.029	0.051	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1369.73	
30	0.6551	1087.5	1106.8	0.187	3.622	80.509	14.305	1.295	0.029	0.053	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1367.41	
31	0.6541	1085.3	1104.5	0.188	3.659	80.705	14.081	1.286	0.029	0.052	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1365.70	
Avg	0.6558	1091.0	1110.3	0.169	3.504	80.288	14.733	1.231	0.027	0.048	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1371.08	

Zone 31, 311



## GQ Source Daily Summary

### December 2012

**Number:** 111

**Pressure Base:** 14.730

**Contract Day:** 1

**Name:** LITTLE KNIFE-BELFIELD TRANSFER

**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	0.6852	1155.9	1176.4	0.000	2.593	73.309	23.689	0.397	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1421.13	
2	0.6857	1156.7	1177.2	0.000	2.587	73.224	23.769	0.407	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1421.67	
3	0.6858	1156.8	1177.3	0.000	2.592	73.195	23.802	0.397	0.005	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1421.66	
4	0.6854	1156.0	1176.5	0.000	2.605	73.254	23.740	0.389	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1421.08	
5	0.6863	1157.8	1178.3	0.000	2.584	73.164	23.762	0.474	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1422.28	
6	0.6858	1157.1	1177.6	0.000	2.577	73.185	23.829	0.397	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1422.00	
7	0.6854	1156.5	1176.9	0.000	2.575	73.281	23.734	0.396	0.005	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1421.65	
8	0.6857	1157.0	1177.5	0.000	2.574	73.197	23.834	0.384	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1421.95	
9	0.6865	1158.2	1178.7	0.000	2.582	73.044	23.958	0.404	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1422.51	
10	0.6861	1157.5	1178.0	0.000	2.584	73.125	23.880	0.400	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1422.11	
11	0.6859	1157.6	1178.1	0.000	2.556	73.179	23.851	0.402	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1422.47	
12	0.6852	1155.9	1176.3	0.000	2.591	73.316	23.686	0.395	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1421.13	
13	0.6856	1156.9	1177.4	0.000	2.566	73.253	23.766	0.398	0.006	0.010	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1422.00	
14	0.6849	1156.5	1177.0	0.000	2.527	73.381	23.690	0.392	0.005	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1422.18	
15	0.6843	1154.5	1174.9	0.009	2.589	73.483	23.516	0.388	0.006	0.007	0.001	0.001	0.001	0.000	0.000	0.000	0.000	1420.32	
16	0.6848	1155.7	1176.2	0.000	2.572	73.373	23.659	0.386	0.005	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1421.26	
17	0.6881	1160.8	1181.4	0.000	2.562	73.151	23.503	0.730	0.017	0.034	0.002	0.002	0.000	0.000	0.000	0.000	0.000	1424.16	
18	0.6847	1155.1	1175.5	0.000	2.598	73.439	23.521	0.430	0.005	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1420.60	
19	0.6843	1154.3	1174.7	0.000	2.611	73.511	23.437	0.430	0.005	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1420.02	
20	0.6842	1153.4	1173.8	0.000	2.650	73.537	23.378	0.424	0.005	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1419.10	
21	0.6851	1155.0	1175.4	0.000	2.643	73.346	23.569	0.431	0.005	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1420.06	
22	0.6850	1155.1	1175.5	0.000	2.622	73.366	23.586	0.415	0.004	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1420.36	
23	0.6846	1154.5	1174.9	0.000	2.622	73.439	23.520	0.408	0.004	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1420.01	
24	0.6848	1155.3	1175.8	0.000	2.592	73.400	23.579	0.417	0.004	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1420.83	
25	0.6843	1154.5	1174.9	0.000	2.592	73.514	23.474	0.410	0.004	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1420.34	
26	0.6841	1154.4	1174.8	0.000	2.579	73.551	23.455	0.405	0.004	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1420.42	
27	0.6844	1154.7	1175.1	0.000	2.588	73.496	23.492	0.413	0.004	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1420.50	
28	0.6848	1155.0	1175.5	0.000	2.606	73.406	23.568	0.409	0.004	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1420.49	
29	0.6845	1154.9	1175.4	0.000	2.583	73.480	23.508	0.419	0.004	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1420.71	
30	0.6845	1154.7	1175.2	0.000	2.601	73.459	23.515	0.414	0.004	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1420.40	
31	0.6844	1154.2	1174.6	0.000	2.622	73.512	23.416	0.439	0.005	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1419.85	
Avg	0.6852	1156.0	1176.3	0.000	2.591	73.341	23.635	0.419	0.005	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1421.14	

Zone 33

## GQ Source Daily Summary December 2012

Number: 331

Pressure Base: 14.730

Contract Day: 1

Name: MARMARTH PLANT-BOWMAN 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	0.7918	1121.0	1140.9	1.889	11.884	54.553	28.973	2.392	0.067	0.205	0.009	0.024	0.005	0.000	0.000	0.000	0.000	1282.07	
2	0.7961	1122.6	1142.5	2.107	11.854	53.900	29.447	2.376	0.069	0.209	0.009	0.024	0.005	0.000	0.000	0.000	0.000	1280.50	
3	0.7917	1123.5	1143.4	1.725	11.965	54.250	29.503	2.263	0.064	0.195	0.009	0.023	0.004	0.000	0.000	0.000	0.000	1285.10	
4	0.7877	1121.4	1141.3	1.717	11.736	55.022	29.017	2.223	0.062	0.189	0.008	0.022	0.004	0.000	0.000	0.000	0.000	1285.93	
5	0.7934	1126.1	1146.0	1.781	11.881	54.125	29.535	2.360	0.069	0.211	0.009	0.025	0.004	0.000	0.000	0.000	0.000	1286.65	
6	0.7929	1128.3	1148.3	1.696	11.897	54.075	29.700	2.355	0.069	0.211	0.009	0.024	0.004	0.000	0.000	0.000	0.000	1289.54	
7	0.7945	1123.7	1143.6	1.898	11.960	54.054	29.356	2.403	0.071	0.218	0.009	0.026	0.005	0.000	0.000	0.000	0.000	1282.92	
8	0.7652	1112.8	1132.5	1.641	10.248	60.026	25.384	2.380	0.072	0.211	0.010	0.024	0.004	0.000	0.000	0.000	0.000	1296.82	
9	0.6521	1078.7	1097.8	0.304	3.706	81.271	13.370	1.228	0.039	0.069	0.005	0.005	0.003	0.000	0.000	0.000	0.000	1359.52	
10	0.7013	1088.9	1108.1	0.741	7.059	72.046	18.112	1.731	0.064	0.191	0.014	0.034	0.009	0.000	0.000	0.000	0.000	1326.48	
11	0.7108	1099.3	1118.8	0.841	7.165	69.909	20.195	1.677	0.051	0.131	0.008	0.018	0.005	0.000	0.000	0.000	0.000	1330.12	
12	0.7722	1096.3	1115.7	2.743	10.240	59.387	25.165	2.189	0.062	0.181	0.008	0.021	0.004	0.000	0.000	0.000	0.000	1272.52	
13	0.7974	1118.8	1138.6	2.404	11.765	53.821	29.413	2.296	0.065	0.200	0.009	0.024	0.004	0.000	0.000	0.000	0.000	1275.03	
14	0.7938	1130.1	1150.1	1.806	11.643	54.027	29.897	2.320	0.067	0.204	0.009	0.024	0.004	0.000	0.000	0.000	0.000	1290.85	
15	0.7932	1123.9	1143.8	1.885	11.841	54.350	29.166	2.435	0.070	0.214	0.009	0.026	0.005	0.000	0.000	0.000	0.000	1284.28	
16	0.7946	1130.8	1150.8	1.773	11.722	53.994	29.746	2.430	0.072	0.221	0.010	0.026	0.005	0.000	0.000	0.000	0.000	1291.00	
17	0.7936	1128.5	1148.5	1.719	11.843	54.242	29.349	2.490	0.076	0.236	0.010	0.029	0.005	0.000	0.000	0.000	0.000	1289.28	
18	0.7948	1127.6	1147.6	1.789	11.909	54.056	29.393	2.500	0.076	0.234	0.010	0.028	0.005	0.000	0.000	0.000	0.000	1287.22	
19	0.7952	1124.5	1144.4	1.967	11.861	54.117	29.217	2.503	0.072	0.221	0.010	0.026	0.004	0.000	0.000	0.000	0.000	1283.41	
20	0.7963	1123.0	1142.9	2.061	11.914	54.035	29.104	2.546	0.074	0.226	0.010	0.026	0.005	0.000	0.000	0.000	0.000	1280.80	
21	0.7994	1128.7	1148.7	2.072	11.840	54.086	28.580	2.971	0.096	0.298	0.014	0.037	0.006	0.000	0.000	0.000	0.000	1284.68	
22	0.7962	1125.5	1145.4	2.055	11.762	54.082	29.203	2.561	0.073	0.223	0.010	0.026	0.005	0.000	0.000	0.000	0.000	1283.69	
23	0.7975	1125.0	1144.9	2.096	11.856	53.959	29.079	2.656	0.077	0.236	0.010	0.027	0.004	0.000	0.000	0.000	0.000	1282.07	
24	0.7960	1127.1	1147.0	1.922	11.777	53.971	29.440	2.505	0.073	0.222	0.010	0.026	0.005	0.000	0.000	0.000	0.000	1285.64	
25	0.7940	1126.6	1146.6	1.760	11.941	54.033	29.524	2.413	0.071	0.218	0.009	0.026	0.004	0.000	0.000	0.000	0.000	1286.74	
26	0.7915	1134.5	1154.5	1.433	11.727	54.156	30.033	2.333	0.070	0.210	0.009	0.024	0.005	0.000	0.000	0.000	0.000	1297.71	
27	0.8032	1151.8	1172.2	1.333	11.906	53.783	28.689	3.537	0.147	0.498	0.026	0.072	0.009	0.000	0.000	0.000	0.000	1307.77	
28	0.7931	1124.9	1144.8	1.734	12.006	54.260	29.274	2.350	0.069	0.227	0.016	0.053	0.012	0.000	0.000	0.000	0.000	1285.43	
29	0.7945	1126.2	1146.2	1.814	11.930	53.847	29.804	2.298	0.065	0.198	0.009	0.025	0.011	0.000	0.000	0.000	0.000	1285.87	
30	0.7940	1129.9	1149.9	1.721	11.803	53.909	29.920	2.331	0.069	0.210	0.009	0.024	0.005	0.000	0.000	0.000	0.000	1290.46	
31	0.7939	1129.2	1149.2	1.640	11.950	53.961	29.697	2.423	0.071	0.219	0.010	0.026	0.004	0.000	0.000	0.000	0.000	1289.85	
Avg	0.7826	1122.0	1141.8	1.744	11.180	56.429	27.945	2.370	0.071	0.217	0.010	0.027	0.005	0.000	0.000	0.000	0.000	1291.61	

Zone 34

**GQ Source Analysis**

WBI Energy Transmission, Inc.

<b>GQ Source Number:</b>	1201140	<b>Specific Gravity:</b>	0.5728
<b>GQ Source Name:</b>	EAGLE 8B ND LMD	<b>Dry Heat Value:</b>	979.13
<b>Effective Date:</b>	6/8/2012 9:00:00 AM	<b>Wet Heat Value:</b>	962.09
<b>Effective End Date:</b>	1/18/2038 9:14:07 PM	<b>As Deliv. Heat Value:</b>	979.13
<b>Pressure Base:</b>	14.730	<b>Sample Pressure:</b>	28.00
<b>Viscosity:</b>		<b>Sample Temperature:</b>	

	<u>Mol %</u>	<u>Liquid Content</u>			<u>Mol %</u>	
C1	Methane	95.902		CO2	Carbon Dioxide	0.106
C2	Ethane	0.323	0.0860	N2	Nitrogen	3.640
C3	Propane	0.020	0.0054	O2	Oxygen	0.000
IC4	Isobutane	0.008	0.0026	He	Helium	
NC4	n-Butane	0.001	0.0002	H2	Hydrogen	
IC5	Isopentane	0.000	0.0000	H2S	Hydrogen Sulfide	
NC5	n-Pentane	0.000	0.0000	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%      0.094 GPM

**Sample Date:** 6/8/2012 12:00:00 AM  
**Sample Type:** Spot  
**Sample Tech:** MG  
**H2S:** ppm

**Sample Remarks:**

**Analysis Tech:** M. Barney

**Analysis Remarks:**

Zone 35

<b>NORTH DAKOTA HEATING VALUE ZONES</b>		
<b>ZONES</b>	<b>MEASURING DEVICE</b>	<b>LOCATION</b>
211	Chromatograph	Sidney Area
24	Chromatograph	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	Chromatograph	Williston – Ray
271	Chromatograph	Bismarck – Cleveland
272	Chromatograph	Cleveland – Mapleton
273	Chromatograph	Cleveland – Grafton
28	Chromatograph	Bismarck
31	Chromatograph	Dickinson
311	Chromatograph	Taylor Take-Off – Glen Ullin Comp
32	Chromatograph	Cabin Creek – Dickinson
33	Chromatograph	Killdeer
34	Chromatograph	Bowman Area
35	Yearly Sampler	Baker Field – North Dakota

MONTANA DAKOTA UTILITIES CO  
 NORTH DAKOTA  
 HEATING VALUE DATA  
 12 MONTH ACCUMULATIVE AT 14.73 psia, 60 f. DRY

STATE	ZONE	ZONE BOUNDARY	12 MONTH AVERAGE	DEC 12	NOV 12	OCT 12	SEPT 12	AUG 12	JULY 12	JUNE 12	MAY 12	APR 12	MAR 12	FEB 12	JAN 12	ZONE
MT/ND	211	Sidney Area	1200	1200	1201	1200	1202	1197	1197	1200	1194	1196	1199	1206	1210	211
ND	24	Williston Area	1197	1203	1199	1195	1197	1198	1203	1197	1196	1194	1199	1195	1184	24
ND	25	Watford City Area	1163	1192	1188	1176	1183	1184	1176	1151	1159	1139	1138	1132	1140	25
ND/MT	241	Fairview Area	1189	1191	1192	1189	1191	1187	1185	1191	1184	1185	1189	1193	1194	241
ND	261	Williston - Tioga - Minot Line	1160	1162	1162	1164	1170	1151	1161	1157	1157	1155	1162	1156	1160	261
ND	262	Minot Area	1165	1165	1165	1171	1175	1179	1163	1160	1159	1157	1162	1158	1161	262
ND	263	Tioga - Portal	1118	1069	1135	1140	1142	1143	1132	1136	1126	1099	1135	1081	1075	263
ND	264	Williston - Ray	1197	1203	1199	1195	1197	1198	1203	1197	1196	1194	1199	1195	1184	264
ND	271	Bismarck - Cleveland	1155	1147	1154	1170	1173	1178	1161	1157	1157	1157	1154	1123	1124	271
ND	272	Cleveland - Mapleton	1155	1148	1155	1171	1175	1180	1162	1159	1158	1156	1153	1121	1122	272
ND	273	Cleveland - Grafton	1155	1149	1155	1171	1175	1180	1162	1159	1158	1157	1153	1121	1123	273
ND	28	Bismarck - Cabin Creek	1133	1114	1104	1149	1173	1178	1160	1157	1157	1143	1117	1065	1073	28
ND	31	Dickinson Area	1102	1110	1111	1152	1074	1102	1150	1092	1070	1111	1114	1064	1072	31
ND	311	Taylor Take-Off - Glen Ullin Comp		1110												
ND/MT	32	Cabin Creek - Dickinson	1103	1099	1056	1121	1131	1135	1164	1152	1142	1092	1047	1044	1057	32
ND	33	Killdeer	1180	1176	1177	1177	1180	1179	1181	1184	1181	1181	1183	1182	1179	33
ND	34	Bowman Area	1131	1142	1142	1140	1136	1130	1126	1098	1134	1130	1126	1126	1147	34
ND	35	Baker Field - North Dakota	979	979	979	979	979	979	979	979	979	979	979	979	979	35

**THERMAL ZONE VARIANCE  
DOCUMENTATION**

**December 2012**

<b>ZONE</b>	<b>BTU VARIANCE</b>	<b>REASON</b>
263	-66	Mix of gas in the area.
32	43	Mix of gas in the area.