



API 30-045-11618
Casing

Gas Analysis Certificate

OIL CONS. DIV DIST. 3 GPA Standard 2261-13

Acquisition Method Name au_report_150_C6+
Last calibration date 9/28/2015 10:07:06 AM

DEC 18 2015

Client:	BP	Project #:	03143-0880
Site Name:	GCU 213	Meter ID:	3004511618 (CSG)
Sampled by:	Daniel F.	Date Sampled	10-16-15
Analyzed by:	Logan Richter	Date Received:	10-19-15
Sample Pressure:	180 psig	Date Analyzed:	10-26-15
Sample Temperature	NA	Analysis Time:	Standard

Component Results (14.696)

Name	Qty (Norm) [Mol %]	Wt Percent (%)	GPM
Helium	0.000	0.000	0.000
Oxygen	0.015	0.021	0.001
Nitrogen	0.676	0.832	0.075
Carbon Dioxide	0.869	1.680	0.149
Methane	72.747	51.265	12.354
Ethane	13.165	17.389	3.527
Propane	7.513	14.553	2.073
i-Butane	1.117	2.852	0.366
n-Butane	2.232	5.699	0.705
i-Pentane	0.630	1.996	0.231
n-Pentane	0.537	1.702	0.195
C6+	0.498	2.010	0.218
	100.000	100.000	19.893

Calculations at Pressure Base 14.696

Compressibility (Z) (Dry Gas)	0.99573	C2+	7.315
Density (G) (Dry Gas)	0.78623	C3+	3.788
Component MW Total	22.76	C5+	0.643
Heating Value (Dry Ideal) Total BTU	1338.18	Heating Value (Sat Ideal) Total BTU	1314.83
Heating Value (Dry Real) Total BTU	1343.91	Heating Value (Sat Real) Total BTU	1320.27

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API 30-045-11618
Bradenhead
Gas Analysis Certificate

GPA Standard 2261-13

Acquisition Method Name au_report_150_C6+
Last calibration date 9/28/2015 10:07:06 AM

Client:	BP	Project #:	03143-0880
Site Name:	GCU 213	Meter ID:	3004511618 (BHD)
Sampled by:	Daniel F.	Date Sampled:	10-16-15
Analyzed by:	Logan Richter	Date Received:	10-19-15
Sample Pressure:	25 psig	Date Analyzed:	10-26-15
Sample Temperature:	NA	Analysis Time:	Standard

Component Results (14.696)

Name	Qty (Norm) [Mol %]	Wt Percent (%)	GPM
Helium	0.000	0.000	0.000
Oxygen	0.009	0.016	0.001
Nitrogen	0.237	0.368	0.026
Carbon Dioxide	0.000	0.000	0.000
Methane	91.290	80.926	15.477
Ethane	5.266	8.749	1.408
Propane	1.554	3.785	0.428
i-Butane	0.515	1.653	0.168
n-Butane	0.482	1.547	0.152
i-Pentane	0.192	0.766	0.070
n-Pentane	0.114	0.453	0.041
C6+	0.342	1.737	0.149
	100.000	100.000	17.921

Calculations at Pressure Base 14.696

Compressibility (Z) (Dry Gas)	0.99739	C2+	2.417
Density (G) (Dry Gas)	0.62499	C3+	1.009
Component MW Total	18.10	C5+	0.261
Heating Value (Dry Ideal) Total BTU	1116.54	Heating Value (Sat Ideal) Total BTU	1097.06
Heating Value (Dry Real) Total BTU	1119.46	Heating Value (Sat Real) Total BTU	1099.83

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