



30-045-24172

API 30-045-2411d

Bradenhead

Gas Analysis Certificate

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

DEC 18 2015

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 187E	Meter ID:	3004524172 (BHD)
Sampled by:	Daniel F.	Date Sampled	10-16-15
Analyzed by:	Logan Richter	Date Received:	10-19-15
Sample Pressure:	104 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	0.016	0.030	0.001
Nitrogen	0.694	1.140	0.076
Carbon Dioxide	0.000	0.000	0.000
Methane	94.354	88.792	15.991
Ethane	3.908	6.894	1.045
Propane	0.637	1.647	0.175
i-Butane	0.182	0.620	0.059
n-Butane	0.098	0.336	0.031
i-Pentane	0.036	0.153	0.013
n-Pentane	0.014	0.059	0.005
C6+	0.061	0.330	0.027
	100.000	100.000	17.424

Calculations at Pressure Base 14.696

Compressibility (Z) (Dry Gas)	0.99776	C2+	1.356
Density (G) (Dry Gas)	0.58862	C3+	0.311
Component MW Total	17.05	C5+	0.045
Heating Value (Dry Ideal) Total BTU	1052.43	Heating Value (Sat Ideal) Total BTU	1034.06
Heating Value (Dry Real) Total BTU	1054.79	Heating Value (Sat Real) Total BTU	1036.30

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API 30-045-2411d
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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 187E	Meter ID:	3004524172 (CSG)
Sampled by:	Daniel F.	Date Sampled	10-16-15
Analyzed by:	Logan Richter	Date Received:	10-15-15
Sample Pressure:	114 psig	Date Analyzed:	10-16-15
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	0.010	0.015	0.001
Nitrogen	0.681	0.853	0.075
Carbon Dioxide	1.030	2.028	0.176
Methane	77.462	55.599	13.153
Ethane	10.131	13.629	2.714
Propane	4.885	9.637	1.348
i-Butane	0.901	2.344	0.295
n-Butane	1.804	4.690	0.570
i-Pentane	0.867	2.797	0.317
n-Pentane	0.861	2.778	0.312
C6+	1.369	5.629	0.598
	100.000	100.000	19.560

Calculations at Pressure Base 14.696

Compressibility (Z) (Dry Gas)	0.99587	C2+	6.155
Density (G) (Dry Gas)	0.77232	C3+	3.441
Component MW Total	22.35	C5+	1.228
Heating Value (Dry Ideal) Total BTU	1312.09	Heating Value (Sat Ideal) Total BTU	1289.20
Heating Value (Dry Real) Total BTU	1317.54	Heating Value (Sat Real) Total BTU	1294.36

Signature

11/18/2015