envirotech

Gas Analysis Certificate

30-045-09636

GPA Standard 2261-13

Method Name	au_report_150_C6+
Last calibration date	1/15/2015 1:00:58 PM

Client:	McElvain Energy	Project #:	06039-0058
Site Name:	Farnsworth Gas Com B-1	Meter ID:	Bradenhead
Sampled by:	Glenn Hise	Date Sampled	05-07-15
Analysed by:	Logan Richter	Date Received:	05-07-15
Sample Pressure:	24 psig	Date Analyzed:	05-13-15
Sample Temperature	N/R	Analysis Time:	Standard

Component Results (14.696)

Name	Qty (Norm) [Mol %]	Wt Percent (%)	GPM
Helium	0.000	0.000	0.000
Oxygen	0.023	0.043	0.002
Nitrogen	1.576	2.600	0.173
Carbon Dioxide	0.000	0.000	0.000
Methane	95.211	89.959	16.135
Ethane	2.348	4.159	0.628
Propane	0.300	0.780	0.083
i-Butane	0.072	0.247	0.024
n-Butane	0.079	0.271	0.025
i-Pentane	0.069	0.294	0.025
n-Pentane	0.075	0.320	0.027
C6+	0.245	1.327	0.107
	100.000	100.000	17.229

Calculations at Pressure Base 14.696

Compressibility (Z) (Dry Gas)	0.99783	C2+	0.919
Density (G) (Dry Gas)	0.58635	C3+	0.291
Component MW Total	16.98	C5+	0.160
Heating Value (Dry Ideal) Total BTU	1034.05	Heating Value (Sat Ideal) Total BTU	1016.01
Heating Value (Dry Real) Total BTU	1036.30	Heating Value (Sat Real) Total BTU	1018.14

Reviewed by

05/20/2015
mm/dd/yyyy

envirotech

Gas Analysis Certificate

GPA Standard 2261-13

Method Name	au_report_150_C6+
Last calibration date	1/15/2015 1:00:58 PM

Client:	McElvain Energy	Project #:	06039-0058
Site Name:	Farnsworth Gas Com B #1	Meter ID:	Production Casing
Sampled by:	Glenn Hise	Date Sampled	05-07-15
Analysed by:	Logan Richter	Date Received:	05-07-15
Sample Pressure:	100 psig	Date Analyzed:	05-13-15
Sample Temperature	N/R	Analysis Time:	Standard

Component Results (14.696)

Name	Qty (Norm) [Mol %]	Wt Percent (%)	GPM
Helium	0.000	0.000	0.000
Oxygen	0.013	0.020	0.001
Nitrogen	0.651	0.875	0.072
Carbon Dioxide	1.319	2.785	0.225
Methane	79.601	61.251	13.507
Ethane	10.412	15.016	2.787
Propane	4.830	10.216	1.332
i-Butane	0.737	2.053	0.241
n-Butane	1.370	3.819	0.432
i-Pentane	0.423	1.463	0.155
n-Pentane	0.359	1.241	0.130
C6+	0.286	1.262	0.125
	100.000	100.000	19.007

Calculations at Pressure Base 14.696

Compressibility (Z) (Dry Gas)	0.99654	C2+	5.202
Density (G) (Dry Gas)	0.71997	C3+	2.415
Component MW Total	20.85	C5+	0.410
Heating Value (Dry Ideal) Total BTU	1224.36	Heating Value (Sat Ideal) Total BTU	1202.99
Heating Value (Dry Real) Total BTU	1228.61	Heating Value (Sat Real) Total BTU	1207.03

Reviewed by

05/20/2015
mm/dd/yyyy