



J-W MEASUREMENT COMPANY
 222 N. Cole Creek Rd.
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**Certificate of Analysis
 Natural Gas Analysis**

Company:	Chesapeake Operating	Study Number	5-2012
Lab Number	State 16-3-61 1H	Analysis Date	5/30/2012
Date Sampled	5-30-2012	Meter	12642649.01
Sample Identification	State 16-3-61 1H	Sample Temp.	On Sight
Sample Location	642649	County/State	Weld, CO.
Sample Pressure			
Flow Rate, MCFD	H2S-0 ppm		

<u>Component</u>	<u>Mole %</u>	<u>BTU</u>	<u>GPM</u>
NITROGEN	0.7065	0.0000	0.0000
METHANE	57.0085	575.7863	0.0000
CARBON DIOXIDE	3.4297	0.0000	0.0000
ETHANE	11.0047	194.7503	2.9347
PROPANE	15.2979	384.9264	4.2024
I-BUTANE	2.0612	67.0289	0.6727
N-BUTANE	6.4684	211.0236	2.0345
I-PENTANE	1.2719	50.8883	0.4644
N-PENTANE	1.3525	54.2174	0.4887
C6+	1.3986	71.0157	0.6009
Totals	100.0000	1609.6368	11.3982

ALL CALCULATIONS BASED ON GPA PUBLICATION 2145 DATA AT 14.696 PSIA DRY AT IDEAL CONDITIONS UNLESS OTHERWISE STATED.

AVERAGE MOLECULAR WEIGHT 29.0461
 COMPRESSIBILITY FACTOR 0.9929
 SPECIFIC GRAVITY AIR=1.0 1.0097
 MOLAR MASS RATIO 1.0029

PRESSURE PSIA	14.650PSIA	14.696PSIA	14.73PSIA	15.025PSIA
IDEAL DRY BTU	1604.5985	1609.6368	1613.3608	1645.6718
REAL DRY BTU	1616.1319	1621.2065	1624.9572	1657.5005
IDEAL WEY BTU	1576.6076	1581.5580	1585.2170	1616.9644
REAL WET BTU	1587.9398	1592.9258	1596.6111	1628.5867

Stan McLean
 ANALYST