

Lab #: 308956 Job #: 19397
 Sample Name/Number: Mulvihill-surf. casing post plug
 Company: Colorado Oil & Gas Conservation
 Date Sampled: 10/03/2012
 Container: Dissolved Gas Bottle
 Field/Site Name: Mulvihill Orphan 045-11710
 Location: Garfield County
 Formation/Depth:
 Sampling Point:
 Date Received: 10/04/2012 Date Reported: 10/09/2012

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	^{14}C conc. pMC	Tritium TU
Carbon Monoxide -----	nd				
Hydrogen Sulfide -----	na				
Helium -----	nd				
Hydrogen -----	0.0063				
Argon -----	0.121				
Oxygen -----	2.64				
Nitrogen -----	7.82				
Carbon Dioxide -----	0.018				
Methane -----	85.01	-37.28	-175.7		
Ethane -----	3.59	-23.75			
Ethylene -----	nd				
Propane -----	0.475	-20.69			
Propylene -----	nd				
Iso-butane -----	0.148	-19.61			
N-butane -----	0.0591	-20.3			
Iso-pentane -----	0.0339				
N-pentane -----	0.0156				
Hexanes + -----	0.0597				

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 949
 Specific gravity, calculated: 0.629

Remarks:

** Normal butane isotopes obtained online via GC-C-IRMS

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.