

Lab #: 746654 Job #: 43749 IS-94649 Co. Job#:
 Sample Name: Salisbury 14-11 / Production Casing Co. Lab#:
 Company: Crestone Peak Resources
 API/Well:
 Container: IsoTube®
 Field/Site Name: Bradenhead Testing
 Location: W65712
 Formation:
 Sampling Point: 418470
 Date Sampled: 12/11/2019 13:02 Date Received: 12/16/2019 Date Reported: 1/23/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0117			
Hydrogen -----	0.168			
Argon -----	0.0199			
Oxygen -----	0.40			
Nitrogen -----	1.79			
Carbon Dioxide -----	1.70	2.3		
Methane -----	75.94	-49.1	-253	
Ethane -----	12.32	-33.5		
Ethylene -----	0.0007			
Propane -----	5.21	-29.6		
Propylene -----	nd			
Iso-butane -----	0.594	-31.5		
N-butane -----	1.36	-28.1		
Iso-pentane -----	0.221	-28.5		
N-pentane -----	0.209	-28.2		
Hexanes + -----	0.0582			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1207
 Specific gravity, calculated: 0.728

Remarks: Isotopes obtained online via GC-C-IRMS/GC-P-IRMS.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. All gas component carbon isotope values are reported on a scale defined by a two point calibration of LSVEC and NBS 19. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 746655 Job #: 43749 IS-94649 Co. Job#:
 Sample Name: Salisbury 14-11 / Surface Casing Co. Lab#:
 Company: Crestone Peak Resources
 API/Well:
 Container: IsoTube®
 Field/Site Name: Bradenhead Testing
 Location: W65712
 Formation:
 Sampling Point: 418470
 Date Sampled: 12/11/2019 13:02 Date Received: 12/16/2019 Date Reported: 1/23/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0283			
Hydrogen -----	0.0142			
Argon -----	0.113			
Oxygen -----	2.69			
Nitrogen -----	10.73			
Carbon Dioxide -----	0.016			
Methane -----	72.12	-51.3	-254	
Ethane -----	8.29	-35.6		
Ethylene -----	nd			
Propane -----	4.23	-30.2		
Propylene -----	nd			
Iso-butane -----	0.462	-32.4		
N-butane -----	0.933	-29.3		
Iso-pentane -----	0.176	-28.7		
N-pentane -----	0.142	-28.1		
Hexanes + -----	0.0588			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1047

Specific gravity, calculated: 0.723

Remarks: Insufficient CO2 concentration for isotopic analysis. Isotopes obtained online via GC-C-IRMS/GC-P-IRMS.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. All gas component carbon isotope values are reported on a scale defined by a two point calibration of LSVEC and NBS 19. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.