

Lab #: 746633 Job #: 43749 IS-94649 Co. Job#:   
 Sample Name: Kats B2 / Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location: W768012   
 Formation:   
 Sampling Point: 250774   
 Date Sampled: 12/10/2019 11:10 Date Received: 12/16/2019 Date Reported: 1/23/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0093			
Hydrogen -----	0.0161			
Argon -----	0.592			
Oxygen -----	13.46			
Nitrogen -----	50.47			
Carbon Dioxide -----	1.03	-0.0		
Methane -----	27.92	-47.2	-231	
Ethane -----	3.92	-31.0		
Ethylene -----	nd			
Propane -----	1.55	-28.0		
Propylene -----	nd			
Iso-butane -----	0.235	-30.1		
N-butane -----	0.478	-28.2		
Iso-pentane -----	0.128	-28.0		
N-pentane -----	0.132	-27.9		
Hexanes + -----	0.0633			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 428

Specific gravity, calculated: 0.902

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. %.