

# ANALYSIS REPORT

Lab #: 668652 Job #: 38653 IS-94649 Co. Job#:   
 Sample Name: Canyon Creek 8-6-13X / Production CSG Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 416934   
 Date Sampled: 5/29/2018 11:00 Date Received: 6/18/2018 Date Reported: 9/06/2018

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0131			
Hydrogen -----	0.624			
Argon -----	0.0098			
Oxygen -----	0.21			
Nitrogen -----	0.71			
Carbon Dioxide -----	1.50	1.69		
Methane -----	77.00	-47.85	-226.8	
Ethane -----	12.36	-31.59		
Ethylene -----	nd			
Propane -----	5.13	-28.08		
Propylene -----	0.0002			
Iso-butane -----	0.656	-31.00		
N-butane -----	1.34	-27.36		
Iso-pentane -----	0.209	-27.92		
N-pentane -----	0.182	-26.80		
Hexanes + -----	0.0596			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1218

Specific gravity, calculated: 0.717

Delta O-18 of carbon dioxide = -0.41‰ vs VPDB

Remarks: LOE / AFE - W70747 / 8503

Ethane calibrated up to 10%

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 #: 668653      Job #: 38653      IS-94649      Co. Job#: \_\_\_\_\_  
 Sample Name: Canyon Creek 8-6-13X / Surface CSG      Co. Lab#: \_\_\_\_\_  
 Company: Crestone Peak Resources  
 API/Well: \_\_\_\_\_  
 Container: IsoTube®  
 Field/Site Name: Bradenhead Testing  
 Location: \_\_\_\_\_  
 Formation: \_\_\_\_\_  
 Sampling Point: 416934  
 Date Sampled: 5/29/2018 11:00      Date Received: 6/18/2018      Date Reported: 9/06/2018

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0212			
Hydrogen -----	0.0251			
Argon -----	0.0263			
Oxygen -----	0.61			
Nitrogen -----	2.62			
Carbon Dioxide -----	0.014			
Methane -----	79.14	-49.27	-238.3	
Ethane -----	10.31	-32.56		
Ethylene -----	nd			
Propane -----	4.67	-28.41		
Propylene -----	nd			
Iso-butane -----	0.616	-31.24		
N-butane -----	1.29	-27.86		
Iso-pentane -----	0.291	-28.23		
N-pentane -----	0.257	-27.29		
Hexanes + -----	0.114			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1195

Specific gravity, calculated: 0.705

Remarks: LOE / AFE - W70747 / 8503  
 Ethane calibrated up to 10%

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. %.