

Lab #: 764919 Job #: 45319 IS-94649 Co. Job#:
 Sample Name: Cosslett 42-22 / Production Casing Co. Lab#:
 Company: Crestone Peak Resources
 API/Well:
 Container: IsoTube®
 Field/Site Name: Bradenhead Testing
 Location:
 Formation:
 Sampling Point: 420754
 Date Sampled: 6/27/2020 Date Received: 7/10/2020 Date Reported: 8/14/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0231			
Hydrogen -----	0.604			
Argon -----	0.0668			
Oxygen -----	1.29			
Nitrogen -----	4.84			
Carbon Dioxide -----	0.43	-0.7		
Methane -----	75.60	-50.5	-245	
Ethane -----	10.53	-32.1		
Ethylene -----	0.0006			
Propane -----	4.43	-29.4		
Propylene -----	0.0013			
Iso-butane -----	0.554	-31.1		
N-butane -----	1.14	-27.4		
Iso-pentane -----	0.222	-28.1		
N-pentane -----	0.201	-27.6		
Hexanes + -----	0.0718			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1145
 Specific gravity, calculated: 0.711

Remarks: AFE 16191879.1
 Isotopic components analyzed via GC-C-IRMS and 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 #: 764920 Job #: 45319 IS-94649 Co. Job#:
 Sample Name: Cosslett 42-22 / Surface Casing Co. Lab#:
 Company: Crestone Peak Resources
 API/Well:
 Container: IsoTube®
 Field/Site Name: Bradenhead Testing
 Location:
 Formation:
 Sampling Point: 420754
 Date Sampled: 6/27/2020 Date Received: 7/10/2020 Date Reported: 8/14/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0405			
Hydrogen -----	nd			
Argon -----	0.184			
Oxygen -----	3.92			
Nitrogen -----	14.32			
Carbon Dioxide -----	0.013			
Methane -----	68.72	-53.0	-246	
Ethane -----	7.32	-33.0		
Ethylene -----	nd			
Propane -----	3.72	-29.5		
Propylene -----	nd			
Iso-butane -----	0.476	-31.3		
N-butane -----	0.902	-27.9		
Iso-pentane -----	0.179	-28.5		
N-pentane -----	0.152	-28.2		
Hexanes + -----	0.0550			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 982
 Specific gravity, calculated: 0.735

Remarks: AFE 16191879.1
 Insufficient CO2 concentration for isotopic analysis.
 Isotopic components analyzed via GC-C-IRMS and 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 #: 764921 Job #: 45319 IS-94649 Co. Job#:
 Sample Name: Cosslett 32-22 / Surface Casing Co. Lab#:
 Company: Crestone Peak Resources
 API/Well:
 Container: IsoTube®
 Field/Site Name: Bradenhead Testing
 Location:
 Formation:
 Sampling Point: 420875
 Date Sampled: 6/27/2020 Date Received: 7/10/2020 Date Reported: 8/14/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	nd			
Hydrogen -----	nd			
Argon -----	0.904			
Oxygen -----	18.83			
Nitrogen -----	66.41			
Carbon Dioxide -----	0.050	-10.7		
Methane -----	9.49	-46.0	-245	
Ethane -----	1.93	-30.5		
Ethylene -----	nd			
Propane -----	1.43	-28.0		
Propylene -----	nd			
Iso-butane -----	0.238	-30.7		
N-butane -----	0.504	-27.2		
Iso-pentane -----	0.0982	-27.8		
N-pentane -----	0.0825	-27.3		
Hexanes + -----	0.0312			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 199
 Specific gravity, calculated: 0.978

Remarks: AFE 16191882
 Isotopic components analyzed via GC-C-IRMS and 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 #: 764922 Job #: 45319 IS-94649 Co. Job#:
 Sample Name: Cosslett 6-4-22 / Production Casing Co. Lab#:
 Company: Crestone Peak Resources
 API/Well:
 Container: IsoTube®
 Field/Site Name: Bradenhead Testing
 Location:
 Formation:
 Sampling Point: 420884
 Date Sampled: 7/06/2020 Date Received: 7/10/2020 Date Reported: 8/14/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	nd			
Hydrogen -----	nd			
Argon -----	0.946			
Oxygen -----	21.52			
Nitrogen -----	76.60			
Carbon Dioxide -----	0.080	-11.4		
Methane -----	0.536	-49.1	-238	
Ethane -----	0.148	-31.5		
Ethylene -----	nd			
Propane -----	0.0882	-28.5		
Propylene -----	nd			
Iso-butane -----	0.0200	-30.9		
N-butane -----	0.0389	-27.1		
Iso-pentane -----	0.0097			
N-pentane -----	0.0073			
Hexanes + -----	0.0031			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 13
 Specific gravity, calculated: 1.000

Remarks: AFE 16191878.1
 Insufficient pentane concentration for isotopic analysis.
 Isotopic components analyzed via GC-C-IRMS and 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 #: 764923 Job #: 45319 IS-94649 Co. Job#:
 Sample Name: Cosslett 6-4-22 / Surface Casing Co. Lab#:
 Company: Crestone Peak Resources
 API/Well:
 Container: IsoTube®
 Field/Site Name: Bradenhead Testing
 Location:
 Formation:
 Sampling Point: 420884
 Date Sampled: 6/27/2020 Date Received: 7/10/2020 Date Reported: 8/14/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0055			
Hydrogen -----	nd			
Argon -----	0.397			
Oxygen -----	9.23			
Nitrogen -----	31.21			
Carbon Dioxide -----	0.029			
Methane -----	43.02	-49.6	-248	
Ethane -----	8.14	-32.2		
Ethylene -----	nd			
Propane -----	4.53	-29.5		
Propylene -----	nd			
Iso-butane -----	0.727	-31.5		
N-butane -----	1.71	-27.8		
Iso-pentane -----	0.375	-28.7		
N-pentane -----	0.366	-28.1		
Hexanes + -----	0.260			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 817
 Specific gravity, calculated: 0.877

Remarks: AFE 16191878.1
 Insufficient CO2 concentration for isotopic analysis.
 Isotopic components analyzed via GC-C-IRMS and 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 #: 764924 Job #: 45319 IS-94649 Co. Job#:
 Sample Name: Cosslett 4-0-22 / Surface Casing Co. Lab#:
 Company: Crestone Peak Resources
 API/Well:
 Container: IsoTube®
 Field/Site Name: Bradenhead Testing
 Location:
 Formation:
 Sampling Point: 420763
 Date Sampled: 6/27/2020 Date Received: 7/10/2020 Date Reported: 8/14/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	nd			
Hydrogen -----	nd			
Argon -----	0.946			
Oxygen -----	21.11			
Nitrogen -----	73.91			
Carbon Dioxide -----	0.061	-10.7		
Methane -----	3.35	-51.7	-248	
Ethane -----	0.376	-32.0		
Ethylene -----	nd			
Propane -----	0.172	-28.8		
Propylene -----	nd			
Iso-butane -----	0.0215	-31.0		
N-butane -----	0.0391	-27.7		
Iso-pentane -----	0.0067			
N-pentane -----	0.0053			
Hexanes + -----	0.0013			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 47
 Specific gravity, calculated: 0.989

Remarks: AFE 16191881
 Insufficient pentane concentraion for isotopic analysis.
 Isotopic components analyzed via GC-C-IRMS and 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. %.