

Lab #: 800648 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Bearden 0-6-6 / Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 427330   
 Date Sampled: 8/02/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0208			
Hydrogen -----	nd			
Argon -----	nd			
Oxygen -----	0.010			
Nitrogen -----	0.61			
Carbon Dioxide -----	nd			
Methane -----	81.40	-49.3	-246	
Ethane -----	11.07	-33.3		
Ethylene -----	nd			
Propane -----	4.68	-29.5		
Propylene -----	nd			
Iso-butane -----	0.544	-31.5		
N-butane -----	1.16	-28.1		
Iso-pentane -----	0.193	-28.4		
N-pentane -----	0.182	-28.1		
Hexanes + -----	0.130			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1219

Specific gravity, calculated: 0.691

Remarks: W16179 8503

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 #: 800649 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Cosslett 1A-22H / Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 456856   
 Date Sampled: 7/19/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0534			
Hydrogen -----	0.0992			
Argon -----	0.0763			
Oxygen -----	0.020			
Nitrogen -----	5.88			
Carbon Dioxide -----	nd			
Methane -----	90.86	-49.5	-236	
Ethane -----	2.48	-33.6		
Ethylene -----	nd			
Propane -----	0.427	-28.9		
Propylene -----	nd			
Iso-butane -----	0.0336	-30.8		
N-butane -----	0.0410	-27.5		
Iso-pentane -----	0.0075			
N-pentane -----	0.0066			
Hexanes + -----	0.0129			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 980

Specific gravity, calculated: 0.596

Remarks: C10103 8503

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 #: 800650 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Cosslett 1A-22H / Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 456856   
 Date Sampled: 7/19/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0103			
Hydrogen -----	0.0663			
Argon -----	nd			
Oxygen -----	0.015			
Nitrogen -----	0.50			
Carbon Dioxide -----	0.43	-5.0		
Methane -----	78.97	-47.2	-236	
Ethane -----	13.31	-31.8		
Ethylene -----	0.0007			
Propane -----	4.74	-28.5		
Propylene -----	nd			
Iso-butane -----	0.575	-31.3		
N-butane -----	1.03	-27.7		
Iso-pentane -----	0.176	-28.5		
N-pentane -----	0.124	-27.4		
Hexanes + -----	0.0518			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1226

Specific gravity, calculated: 0.701

Remarks: C10103 8503

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 #: 800651 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Cosslett 1C-22H / Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 456848   
 Date Sampled: 7/19/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0252			
Hydrogen -----	nd			
Argon -----	nd			
Oxygen -----	0.016			
Nitrogen -----	1.04			
Carbon Dioxide -----	nd			
Methane -----	91.75	-49.9	-241	
Ethane -----	5.98	-34.8		
Ethylene -----	nd			
Propane -----	1.09	-29.0		
Propylene -----	nd			
Iso-butane -----	0.0588	-30.2		
N-butane -----	0.0341	-26.1		
Iso-pentane -----	0.0006			
N-pentane -----	0.0002			
Hexanes + -----	0.0008			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1067

Specific gravity, calculated: 0.599

Remarks: C82271 8503

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 #: 800652 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Cosslett 1C-22H / Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 456848   
 Date Sampled: 7/19/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0114			
Hydrogen -----	0.202			
Argon -----	nd			
Oxygen -----	0.017			
Nitrogen -----	0.50			
Carbon Dioxide -----	0.56	1.6		
Methane -----	79.31	-47.9	-240	
Ethane -----	12.55	-32.1		
Ethylene -----	0.0030			
Propane -----	5.05	-28.8		
Propylene -----	nd			
Iso-butane -----	0.618	-31.3		
N-butane -----	1.09	-27.8		
Iso-pentane -----	0.0665	-27.3		
N-pentane -----	0.0232	-26.0		
Hexanes + -----	0.0034			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1217

Specific gravity, calculated: 0.697

Remarks: C82271 8503

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 #: 800653 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Dowdy 32-10 / Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 261457   
 Date Sampled: 7/29/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0218			
Hydrogen -----	0.360			
Argon -----	nd			
Oxygen -----	0.015			
Nitrogen -----	0.50			
Carbon Dioxide -----	3.70	2.9		
Methane -----	79.27	-47.2	-220	
Ethane -----	10.29	-29.8		
Ethylene -----	0.0008			
Propane -----	3.06	-26.0		
Propylene -----	nd			
Iso-butane -----	0.534	-28.2		
N-butane -----	0.797	-25.5		
Iso-pentane -----	0.420	-27.3		
N-pentane -----	0.309	-25.9		
Hexanes + -----	0.719			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1174

Specific gravity, calculated: 0.720

Remarks: C761913 8503

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 #: 800654 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Echeverria 2B-2H / Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 429490   
 Date Sampled: 7/12/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0095			
Hydrogen -----	0.614			
Argon -----	nd			
Oxygen -----	0.025			
Nitrogen -----	0.37			
Carbon Dioxide -----	1.59	2.5		
Methane -----	69.92	-48.3	-248	
Ethane -----	13.82	-33.2		
Ethylene -----	0.0003			
Propane -----	7.15	-29.6		
Propylene -----	nd			
Iso-butane -----	1.24	-31.9		
N-butane -----	3.58	-28.9		
Iso-pentane -----	1.02	-28.4		
N-pentane -----	0.575	-26.4		
Hexanes + -----	0.0847			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1367

Specific gravity, calculated: 0.807

Remarks: C69725 8503

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 #: 800655 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Echeverria 2B-2H / Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 429490   
 Date Sampled: 7/12/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0933			
Hydrogen -----	nd			
Argon -----	0.0182			
Oxygen -----	0.028			
Nitrogen -----	4.93			
Carbon Dioxide -----	nd			
Methane -----	84.58	-57.4	-232	
Ethane -----	3.72	-35.4		
Ethylene -----	nd			
Propane -----	4.13	-31.9		
Propylene -----	nd			
Iso-butane -----	0.844	-32.2		
N-butane -----	1.08	-30.1		
Iso-pentane -----	0.265	-28.8		
N-pentane -----	0.204	-28.3		
Hexanes + -----	0.112			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1116

Specific gravity, calculated: 0.672

Remarks: C69725 8503

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 #: 800656 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Grant Brothers C unit 1 / Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 242745   
 Date Sampled: 7/14/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0236			
Hydrogen -----	nd			
Argon -----	nd			
Oxygen -----	0.021			
Nitrogen -----	0.70			
Carbon Dioxide -----	nd			
Methane -----	80.69	-50.2	-251	
Ethane -----	10.62	-34.7		
Ethylene -----	nd			
Propane -----	5.25	-30.3		
Propylene -----	nd			
Iso-butane -----	0.627	-32.3		
N-butane -----	1.47	-29.0		
Iso-pentane -----	0.264	-28.4		
N-pentane -----	0.229	-28.2		
Hexanes + -----	0.108			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1235

Specific gravity, calculated: 0.702

Remarks: W762386 8503

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 #: 800657 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Helen 4-6-23 / Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 419151   
 Date Sampled: 7/14/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0095			
Hydrogen -----	0.384			
Argon -----	nd			
Oxygen -----	0.025			
Nitrogen -----	0.42			
Carbon Dioxide -----	1.97	2.4		
Methane -----	70.93	-48.5	-244	
Ethane -----	13.23	-32.6		
Ethylene -----	0.0009			
Propane -----	6.86	-29.5		
Propylene -----	nd			
Iso-butane -----	1.06	-31.6		
N-butane -----	2.90	-28.8		
Iso-pentane -----	0.829	-28.7		
N-pentane -----	1.05	-28.0		
Hexanes + -----	0.332			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1353

Specific gravity, calculated: 0.805

Remarks: W61282 8503

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 #: 800658 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Helen 4-6-23 / Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 419151   
 Date Sampled: 7/14/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0869			
Hydrogen -----	nd			
Argon -----	0.0187			
Oxygen -----	0.023			
Nitrogen -----	4.70			
Carbon Dioxide -----	nd			
Methane -----	84.17	-58.6	-250	
Ethane -----	4.34	-34.0		
Ethylene -----	0.0001			
Propane -----	4.02	-30.6		
Propylene -----	0.0003			
Iso-butane -----	0.727	-31.9		
N-butane -----	1.20	-29.0		
Iso-pentane -----	0.295	-28.6		
N-pentane -----	0.270	-28.1		
Hexanes + -----	0.145			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1126

Specific gravity, calculated: 0.676

Remarks: W61282 8503

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 #: 800659 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Herren 1C-33H / Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 457039   
 Date Sampled: 7/13/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0143			
Hydrogen -----	0.261			
Argon -----	0.0051			
Oxygen -----	0.021			
Nitrogen -----	0.65			
Carbon Dioxide -----	0.22	-3.7		
Methane -----	84.90	-49.0	-244	
Ethane -----	10.93	-33.1		
Ethylene -----	0.0012			
Propane -----	2.66	-29.5		
Propylene -----	nd			
Iso-butane -----	0.148	-30.8		
N-butane -----	0.160	-27.1		
Iso-pentane -----	0.0035			
N-pentane -----	0.0020			
Hexanes + -----	0.0277			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1135

Specific gravity, calculated: 0.642

Remarks: C82291 8503

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 #: 800660 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Herren 1C-33H / Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 457039   
 Date Sampled: 7/13/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0404			
Hydrogen -----	15.96			
Argon -----	0.0193			
Oxygen -----	0.028			
Nitrogen -----	2.17			
Carbon Dioxide -----	nd			
Methane -----	75.85	-51.7	-250	
Ethane -----	4.82	-36.0		
Ethylene -----	0.0024			
Propane -----	1.04	-30.3		
Propylene -----	nd			
Iso-butane -----	0.0442	-30.7		
N-butane -----	0.0160	-26.9		
Iso-pentane -----	0.0010			
N-pentane -----	0.0009			
Hexanes + -----	0.0074			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 935

Specific gravity, calculated: 0.520

Remarks: C82291 8503

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 #: 800661 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Herren 1D-33H / Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 457036   
 Date Sampled: 7/13/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0167			
Hydrogen -----	0.222			
Argon -----	0.0053			
Oxygen -----	0.026			
Nitrogen -----	0.70			
Carbon Dioxide -----	0.17	-5.9		
Methane -----	86.35	-49.7	-249	
Ethane -----	9.91	-33.9		
Ethylene -----	0.0020			
Propane -----	2.31	-29.5		
Propylene -----	nd			
Iso-butane -----	0.121	-30.8		
N-butane -----	0.138	-27.3		
Iso-pentane -----	0.0029			
N-pentane -----	0.0014			
Hexanes + -----	0.0216			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1121

Specific gravity, calculated: 0.632

Remarks: C82292 8503

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 #: 800662 Job #: 48446 IS-94649 Co. Job#:  
Sample Name: Herren 1D-33H / Surface Casing Co. Lab#:  
Company: Crestone Peak Resources  
API/Well:  
Container: IsoTube®  
Field/Site Name: Bradenhead Testing  
Location:  
Formation:  
Sampling Point: 457036  
Date Sampled: 7/13/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0331			
Hydrogen -----	0.945			
Argon -----	0.0146			
Oxygen -----	0.14			
Nitrogen -----	1.76			
Carbon Dioxide -----	nd			
Methane -----	87.76	-50.6	-245	
Ethane -----	7.04	-34.4		
Ethylene -----	0.0284			
Propane -----	1.96	-29.8		
Propylene -----	0.0003			
Iso-butane -----	0.153	-31.2		
N-butane -----	0.150	-28.4		
Iso-pentane -----	0.0124	-27.3		
N-pentane -----	0.0059			
Hexanes + -----	0.0014			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1079

Specific gravity, calculated: 0.615

Remarks: C82292 8503

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 #: 800663 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Herren 1H-33H / Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 457038   
 Date Sampled: 7/13/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0107			
Hydrogen -----	0.396			
Argon -----	0.0063			
Oxygen -----	0.070			
Nitrogen -----	0.63			
Carbon Dioxide -----	0.23	-3.7		
Methane -----	78.16	-48.2	-246	
Ethane -----	13.49	-33.0		
Ethylene -----	0.0009			
Propane -----	5.27	-29.1		
Propylene -----	nd			
Iso-butane -----	0.561	-31.6		
N-butane -----	1.03	-28.1		
Iso-pentane -----	0.0940	-28.2		
N-pentane -----	0.0506	-27.5		
Hexanes + -----	0.0045			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1226

Specific gravity, calculated: 0.700

Remarks: C82296 8503

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 #: 800664 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Herren 1H-33H / Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 457038   
 Date Sampled: 7/13/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0304			
Hydrogen -----	0.186			
Argon -----	0.0129			
Oxygen -----	0.021			
Nitrogen -----	1.91			
Carbon Dioxide -----	nd			
Methane -----	87.93	-51.0	-247	
Ethane -----	7.00	-34.9		
Ethylene -----	0.0010			
Propane -----	2.28	-30.2		
Propylene -----	nd			
Iso-butane -----	0.198	-31.8		
N-butane -----	0.327	-28.8		
Iso-pentane -----	0.0519	-28.1		
N-pentane -----	0.0408	-27.8		
Hexanes + -----	0.0156			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1096

Specific gravity, calculated: 0.627

Remarks: C82296 8503

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 #: 800665 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Herren 1G-33H / Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 457037   
 Date Sampled: 7/13/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0256			
Hydrogen -----	0.185			
Argon -----	nd			
Oxygen -----	0.023			
Nitrogen -----	0.83			
Carbon Dioxide -----	nd			
Methane -----	82.31	-50.2	-250	
Ethane -----	10.65	-34.0		
Ethylene -----	0.0081			
Propane -----	4.29	-29.7		
Propylene -----	nd			
Iso-butane -----	0.434	-31.5		
N-butane -----	0.865	-28.3		
Iso-pentane -----	0.143	-28.3		
N-pentane -----	0.140	-27.9		
Hexanes + -----	0.101			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1193

Specific gravity, calculated: 0.676

Remarks: C82295 8503

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 #: 800666 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Herren 1G-33H / Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 457037   
 Date Sampled: 7/13/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0185			
Hydrogen -----	0.249			
Argon -----	0.0071			
Oxygen -----	0.025			
Nitrogen -----	1.03			
Carbon Dioxide -----	0.027			
Methane -----	89.81	-49.8	-249	
Ethane -----	7.80	-33.7		
Ethylene -----	0.0026			
Propane -----	0.943	-29.1		
Propylene -----	nd			
Iso-butane -----	0.0159	-29.9		
N-butane -----	0.0064			
Iso-pentane -----	0.0003			
N-pentane -----	0.0004			
Hexanes + -----	0.0655			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1078

Specific gravity, calculated: 0.606

Remarks: C82295 8503

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 #: 800667 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Kiyota 4I-35H / Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 438720   
 Date Sampled: 7/12/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0163			
Hydrogen -----	0.629			
Argon -----	nd			
Oxygen -----	0.020			
Nitrogen -----	0.90			
Carbon Dioxide -----	0.79	1.4		
Methane -----	87.51	-49.1	-248	
Ethane -----	8.62	-33.5		
Ethylene -----	0.0015			
Propane -----	1.38	-29.1		
Propylene -----	nd			
Iso-butane -----	0.0446	-30.3		
N-butane -----	0.0369	-26.9		
Iso-pentane -----	0.0016			
N-pentane -----	0.0014			
Hexanes + -----	0.0534			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1083

Specific gravity, calculated: 0.620

Remarks: C77978 8503

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 #: 800668 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Kiyota 4I-35H / Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 438720   
 Date Sampled: 7/12/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0517			
Hydrogen -----	0.0236			
Argon -----	0.0188			
Oxygen -----	0.022			
Nitrogen -----	3.04			
Carbon Dioxide -----	nd			
Methane -----	94.13	-50.8	-241	
Ethane -----	2.53	-33.7		
Ethylene -----	nd			
Propane -----	0.177	-29.0		
Propylene -----	nd			
Iso-butane -----	0.0053			
N-butane -----	0.0029			
Iso-pentane -----	0.0010			
N-pentane -----	0.0011			
Hexanes + -----	0.0011			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1004

Specific gravity, calculated: 0.581

Remarks: C77978 8503

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 #: 800669 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Kiyota 4K-35H / Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 438857   
 Date Sampled: 7/12/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0058			
Hydrogen -----	0.486			
Argon -----	0.791			
Oxygen -----	0.027			
Nitrogen -----	89.05			
Carbon Dioxide -----	nd			
Methane -----	8.96	-48.9	-242	
Ethane -----	0.494	-32.9		
Ethylene -----	0.0003			
Propane -----	0.117	-29.0		
Propylene -----	0.0002			
Iso-butane -----	0.0101	-30.9		
N-butane -----	0.0203	-27.7		
Iso-pentane -----	0.0040			
N-pentane -----	0.0043			
Hexanes + -----	0.0264			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 107

Specific gravity, calculated: 0.931

Remarks: C77980 8503

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 #: 800670 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Kiyota 4K-35H / Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 438857   
 Date Sampled: 7/12/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0189			
Hydrogen -----	0.694			
Argon -----	nd			
Oxygen -----	0.024			
Nitrogen -----	0.70			
Carbon Dioxide -----	0.98	0.9		
Methane -----	83.71	-49.4	-249	
Ethane -----	10.15	-32.9		
Ethylene -----	0.0012			
Propane -----	3.02	-29.0		
Propylene -----	nd			
Iso-butane -----	0.247	-30.9		
N-butane -----	0.387	-27.5		
Iso-pentane -----	0.0220	-27.3		
N-pentane -----	0.0131	-26.1		
Hexanes + -----	0.0338			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1132

Specific gravity, calculated: 0.652

Remarks: C77980 8503

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 #: 800671 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Kiyota 4M-35H / Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 452881   
 Date Sampled: 7/12/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0178			
Hydrogen -----	0.488			
Argon -----	nd			
Oxygen -----	0.022			
Nitrogen -----	0.59			
Carbon Dioxide -----	1.04	2.3		
Methane -----	86.26	-49.5	-247	
Ethane -----	9.26	-33.4		
Ethylene -----	0.0020			
Propane -----	2.05	-29.5		
Propylene -----	nd			
Iso-butane -----	0.107	-30.7		
N-butane -----	0.115	-27.5		
Iso-pentane -----	0.0021			
N-pentane -----	0.0008			
Hexanes + -----	0.0406			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1103

Specific gravity, calculated: 0.633

Remarks: C10100 8503

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 #: 800672 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Kiyota 4M-35H / Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 452881   
 Date Sampled: 7/12/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0550			
Hydrogen -----	0.0110			
Argon -----	0.0305			
Oxygen -----	0.024			
Nitrogen -----	3.26			
Carbon Dioxide -----	nd			
Methane -----	95.49	-50.4	-247	
Ethane -----	1.11	-32.5		
Ethylene -----	nd			
Propane -----	0.0132			
Propylene -----	nd			
Iso-butane -----	0.0015			
N-butane -----	0.0033			
Iso-pentane -----	0.0012			
N-pentane -----	0.0015			
Hexanes + -----	0.0025			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 989

Specific gravity, calculated: 0.573

Remarks: C10100 8503

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 #: 800673 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Kiyota 4L-35H / Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 438856   
 Date Sampled: 7/12/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0530			
Hydrogen -----	nd			
Argon -----	0.0265			
Oxygen -----	0.025			
Nitrogen -----	2.88			
Carbon Dioxide -----	nd			
Methane -----	95.72	-50.2	-245	
Ethane -----	1.29	-33.2		
Ethylene -----	nd			
Propane -----	0.0051			
Propylene -----	nd			
Iso-butane -----	0.0004			
N-butane -----	0.0009			
Iso-pentane -----	0.0003			
N-pentane -----	0.0003			
Hexanes + -----	0.0007			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 994

Specific gravity, calculated: 0.572

Remarks: C77972 8503

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 #: 800674 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Kiyota 4L-35H / Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 438856   
 Date Sampled: 7/12/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0193			
Hydrogen -----	0.835			
Argon -----	nd			
Oxygen -----	0.023			
Nitrogen -----	0.64			
Carbon Dioxide -----	1.04	2.4		
Methane -----	86.18	-49.6	-247	
Ethane -----	9.04	-33.3		
Ethylene -----	0.0015			
Propane -----	1.98	-29.3		
Propylene -----	nd			
Iso-butane -----	0.101	-30.7		
N-butane -----	0.110	-27.3		
Iso-pentane -----	0.0022			
N-pentane -----	0.0010			
Hexanes + -----	0.0254			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1096

Specific gravity, calculated: 0.629

Remarks: C77972 8503

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 #: 800675 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Kiyota 4N-35H / Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 452879   
 Date Sampled: 7/12/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0165			
Hydrogen -----	0.662			
Argon -----	nd			
Oxygen -----	0.022			
Nitrogen -----	0.78			
Carbon Dioxide -----	0.88	2.2		
Methane -----	88.43	-48.4	-245	
Ethane -----	8.14	-33.3		
Ethylene -----	0.0020			
Propane -----	1.01	-28.9		
Propylene -----	nd			
Iso-butane -----	0.0268	-30.5		
N-butane -----	0.0210	-27.1		
Iso-pentane -----	0.0004			
N-pentane -----	0.0002			
Hexanes + -----	0.0087			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1071

Specific gravity, calculated: 0.613

Remarks: C10101 8503

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 #: 800676 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Kiyota 4N-35H / Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 452879   
 Date Sampled: 7/12/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0272			
Hydrogen -----	0.0162			
Argon -----	0.0282			
Oxygen -----	0.025			
Nitrogen -----	2.63			
Carbon Dioxide -----	nd			
Methane -----	94.46	-49.9	-248	
Ethane -----	2.77	-33.9		
Ethylene -----	nd			
Propane -----	0.0399	-27.3		
Propylene -----	nd			
Iso-butane -----	0.0010			
N-butane -----	0.0017			
Iso-pentane -----	0.0005			
N-pentane -----	0.0005			
Hexanes + -----	0.0023			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1008

Specific gravity, calculated: 0.579

Remarks: C10101 8503

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 #: 800677 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Melbon Ranch 4D-17H / Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 457075   
 Date Sampled: 7/28/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0323			
Hydrogen -----	0.0561			
Argon -----	nd			
Oxygen -----	nd			
Nitrogen -----	1.17			
Carbon Dioxide -----	nd			
Methane -----	88.89	-50.9	-249	
Ethane -----	6.48	-35.6		
Ethylene -----	0.0002			
Propane -----	2.54	-31.2		
Propylene -----	nd			
Iso-butane -----	0.257	-32.4		
N-butane -----	0.435	-29.3		
Iso-pentane -----	0.0686	-28.3		
N-pentane -----	0.0545	-27.7		
Hexanes + -----	0.0162			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1110

Specific gravity, calculated: 0.627

Remarks: C82282 8503

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 #: 800678 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Melbon Ranch 4I-17H / Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 457068   
 Date Sampled: 7/28/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0463			
Hydrogen -----	7.94			
Argon -----	0.0141			
Oxygen -----	0.018			
Nitrogen -----	1.54			
Carbon Dioxide -----	nd			
Methane -----	87.18	-50.3	-244	
Ethane -----	2.75	-33.2		
Ethylene -----	0.0097			
Propane -----	0.309	-30.3		
Propylene -----	0.0001			
Iso-butane -----	0.0400	-32.2		
N-butane -----	0.0935	-29.2		
Iso-pentane -----	0.0240	-28.4		
N-pentane -----	0.0214	-28.0		
Hexanes + -----	0.0102			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 973

Specific gravity, calculated: 0.541

Remarks: C82287 8503

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 #: 800679 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Melbon Ranch 4K-17H / Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 457073   
 Date Sampled: 7/28/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0165			
Hydrogen -----	0.190			
Argon -----	nd			
Oxygen -----	0.013			
Nitrogen -----	0.55			
Carbon Dioxide -----	1.37	1.2		
Methane -----	87.77	-50.0	-254	
Ethane -----	9.78	-34.0		
Ethylene -----	0.0031			
Propane -----	0.285	-29.7		
Propylene -----	nd			
Iso-butane -----	0.0121	-30.6		
N-butane -----	0.0107	-27.1		
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	0.0008			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1073

Specific gravity, calculated: 0.619

Remarks: C82289 8503

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 #: 800680 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Melbon Ranch 4K-17H / Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 457073   
 Date Sampled: 7/28/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0246			
Hydrogen -----	0.0792			
Argon -----	nd			
Oxygen -----	0.014			
Nitrogen -----	0.89			
Carbon Dioxide -----	nd			
Methane -----	84.50	-50.5	-251	
Ethane -----	8.89	-35.7		
Ethylene -----	0.0006			
Propane -----	3.85	-31.1		
Propylene -----	nd			
Iso-butane -----	0.457	-32.5		
N-butane -----	0.901	-29.4		
Iso-pentane -----	0.194	-28.6		
N-pentane -----	0.145	-28.3		
Hexanes + -----	0.0522			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1174

Specific gravity, calculated: 0.665

Remarks: C82289 8503

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 #: 800681 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Morgan Hills 1E-7H / Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 466282   
 Date Sampled: 7/16/2021 12:35 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.102			
Hydrogen -----	nd			
Argon -----	0.0094			
Oxygen -----	0.14			
Nitrogen -----	2.18			
Carbon Dioxide -----	0.009			
Methane -----	90.31	-48.5	-242	
Ethane -----	5.50	-33.9		
Ethylene -----	nd			
Propane -----	1.47	-28.9		
Propylene -----	nd			
Iso-butane -----	0.119	-31.3		
N-butane -----	0.161	-27.3		
Iso-pentane -----	0.0029			
N-pentane -----	0.0006			
Hexanes + -----	0.0008			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1060

Specific gravity, calculated: 0.609

Remarks: C81148 8503

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 #: 800682 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Morgan Hills 1E-7H / Intermediate Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 466282   
 Date Sampled: 7/16/2021 12:35 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	nd			
Hydrogen -----	0.0574			
Argon -----	0.0183			
Oxygen -----	0.25			
Nitrogen -----	1.07			
Carbon Dioxide -----	0.011			
Methane -----	92.17	-47.3	-243	
Ethane -----	6.04	-31.8		
Ethylene -----	nd			
Propane -----	0.313	-28.0		
Propylene -----	nd			
Iso-butane -----	0.0215	-30.8		
N-butane -----	0.0285	-27.1		
Iso-pentane -----	0.0052			
N-pentane -----	0.0044			
Hexanes + -----	0.0075			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1053

Specific gravity, calculated: 0.593

Remarks: C81148 8503

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 #: 800683 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Morgan Hills 1F-7H / Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 446289   
 Date Sampled: 7/16/2021 13:25 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0818			
Hydrogen -----	nd			
Argon -----	0.0074			
Oxygen -----	0.090			
Nitrogen -----	1.40			
Carbon Dioxide -----	0.007			
Methane -----	89.70	-49.6	-242	
Ethane -----	7.54	-33.8		
Ethylene -----	nd			
Propane -----	1.15	-28.7		
Propylene -----	nd			
Iso-butane -----	0.0189	-29.9		
N-butane -----	0.0042			
Iso-pentane -----	0.0003			
N-pentane -----	0.0004			
Hexanes + -----	0.0012			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1074

Specific gravity, calculated: 0.608

Remarks: C81149 8503

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 #: 800684 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Pratt 4E-29H / Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 434529   
 Date Sampled: 7/20/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0087			
Hydrogen -----	0.0244			
Argon -----	0.0411			
Oxygen -----	0.019			
Nitrogen -----	3.90			
Carbon Dioxide -----	0.49	-8.8		
Methane -----	72.73	-48.4	-245	
Ethane -----	13.02	-32.5		
Ethylene -----	0.0010			
Propane -----	6.20	-28.7		
Propylene -----	nd			
Iso-butane -----	0.833	-31.5		
N-butane -----	1.99	-28.3		
Iso-pentane -----	0.362	-28.2		
N-pentane -----	0.324	-27.4		
Hexanes + -----	0.0604			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1251

Specific gravity, calculated: 0.754

Remarks: C73992 8503

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 #: 800685 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Pratt 4E-29H / Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 434529   
 Date Sampled: 7/20/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0432			
Hydrogen -----	nd			
Argon -----	0.0308			
Oxygen -----	0.020			
Nitrogen -----	3.03			
Carbon Dioxide -----	nd			
Methane -----	96.36	-51.6	-234	
Ethane -----	0.512	-31.4		
Ethylene -----	nd			
Propane -----	0.0043			
Propylene -----	nd			
Iso-butane -----	0.0006			
N-butane -----	0.0013			
Iso-pentane -----	0.0006			
N-pentane -----	0.0007			
Hexanes + -----	0.0014			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 986

Specific gravity, calculated: 0.569

Remarks: C73992 8503

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 #: 800686 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Vogl McCoy 2F-5H / Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 433790   
 Date Sampled: 6/24/2021 8:00 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0249			
Hydrogen -----	3.79			
Argon -----	nd			
Oxygen -----	0.029			
Nitrogen -----	0.74			
Carbon Dioxide -----	0.34	-2.1		
Methane -----	81.83	-52.3	-252	
Ethane -----	9.96	-33.7		
Ethylene -----	0.0096			
Propane -----	2.77	-29.2		
Propylene -----	0.0002			
Iso-butane -----	0.182	-31.0		
N-butane -----	0.244	-27.4		
Iso-pentane -----	0.0102	-27.2		
N-pentane -----	0.0058			
Hexanes + -----	0.0671			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1108

Specific gravity, calculated: 0.625

Remarks: C74810 8503

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 #: 800687 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Wandell 0-6-7 / Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 415295   
 Date Sampled: 7/14/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0271			
Hydrogen -----	nd			
Argon -----	0.0170			
Oxygen -----	0.24			
Nitrogen -----	2.17			
Carbon Dioxide -----	0.013			
Methane -----	80.79	-52.3	-253	
Ethane -----	8.90	-36.5		
Ethylene -----	nd			
Propane -----	5.50	-31.5		
Propylene -----	nd			
Iso-butane -----	0.670	-32.6		
N-butane -----	1.23	-29.9		
Iso-pentane -----	0.215	-28.4		
N-pentane -----	0.161	-28.5		
Hexanes + -----	0.0704			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1198

Specific gravity, calculated: 0.697

Remarks: W57622 8503

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 #: 800688 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Wandell 0-6-7 / Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 415295   
 Date Sampled: 7/14/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0159			
Hydrogen -----	0.738			
Argon -----	nd			
Oxygen -----	0.024			
Nitrogen -----	0.55			
Carbon Dioxide -----	1.51	2.3		
Methane -----	74.35	-49.6	-249	
Ethane -----	13.36	-33.7		
Ethylene -----	0.0011			
Propane -----	6.43	-29.8		
Propylene -----	nd			
Iso-butane -----	0.771	-31.8		
N-butane -----	1.72	-28.5		
Iso-pentane -----	0.207	-27.9		
N-pentane -----	0.163	-27.3		
Hexanes + -----	0.158			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1262

Specific gravity, calculated: 0.741

Remarks: W57622 8503

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 #: 800689 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Waste Connections 3C-29H / Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 434372   
 Date Sampled: 7/21/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0168			
Hydrogen -----	0.675			
Argon -----	nd			
Oxygen -----	0.021			
Nitrogen -----	0.60			
Carbon Dioxide -----	0.75	1.2		
Methane -----	88.27	-48.9	-240	
Ethane -----	8.21	-32.8		
Ethylene -----	0.0034			
Propane -----	1.38	-28.4		
Propylene -----	nd			
Iso-butane -----	0.0478	-30.2		
N-butane -----	0.0296	-26.4		
Iso-pentane -----	0.0001			
N-pentane -----	nd			
Hexanes + -----	0.0011			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1081

Specific gravity, calculated: 0.615

Remarks: C73985 8503

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 #: 800690 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Waste Connections 3C-29H / Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 434372   
 Date Sampled: 7/21/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0315			
Hydrogen -----	nd			
Argon -----	0.0060			
Oxygen -----	0.019			
Nitrogen -----	1.50			
Carbon Dioxide -----	nd			
Methane -----	91.08	-51.0	-248	
Ethane -----	5.46	-35.6		
Ethylene -----	nd			
Propane -----	1.72	-30.1		
Propylene -----	nd			
Iso-butane -----	0.105	-31.3		
N-butane -----	0.0770	-27.2		
Iso-pentane -----	0.0029			
N-pentane -----	0.0008			
Hexanes + -----	0.0004			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1070

Specific gravity, calculated: 0.606

Remarks: C73985 8503

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 #: 800691 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: William Peltier 12-20 / Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 280827   
 Date Sampled: 7/14/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0183			
Hydrogen -----	nd			
Argon -----	0.0091			
Oxygen -----	0.15			
Nitrogen -----	1.02			
Carbon Dioxide -----	0.014			
Methane -----	80.51	-48.9	-243	
Ethane -----	10.92	-33.1		
Ethylene -----	nd			
Propane -----	4.93	-28.9		
Propylene -----	nd			
Iso-butane -----	0.585	-31.4		
N-butane -----	1.17	-28.6		
Iso-pentane -----	0.248	-28.4		
N-pentane -----	0.247	-27.9		
Hexanes + -----	0.179			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1222

Specific gravity, calculated: 0.699

Remarks: W35071 8503

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 #: 800692 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: William Peltier 12-20 / Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 280827   
 Date Sampled: 7/14/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0099			
Hydrogen -----	0.0536			
Argon -----	nd			
Oxygen -----	0.029			
Nitrogen -----	0.36			
Carbon Dioxide -----	1.54	4.0		
Methane -----	77.96	-46.9	-231	
Ethane -----	12.30	-31.8		
Ethylene -----	nd			
Propane -----	4.62	-28.3		
Propylene -----	nd			
Iso-butane -----	0.661	-31.4		
N-butane -----	1.39	-27.5		
Iso-pentane -----	0.393	-28.4		
N-pentane -----	0.377	-27.3		
Hexanes + -----	0.306			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1241

Specific gravity, calculated: 0.727

Remarks: W35071 8503

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 #: 800693 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Woolley 33-8 / Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 267688   
 Date Sampled: 7/22/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0139			
Hydrogen -----	0.0245			
Argon -----	nd			
Oxygen -----	0.018			
Nitrogen -----	0.37			
Carbon Dioxide -----	2.38	2.0		
Methane -----	78.93	-46.5	-223	
Ethane -----	10.99	-30.7		
Ethylene -----	nd			
Propane -----	4.17	-28.1		
Propylene -----	nd			
Iso-butane -----	0.656	-30.8		
N-butane -----	1.50	-27.8		
Iso-pentane -----	0.440	-28.6		
N-pentane -----	0.437	-27.7		
Hexanes + -----	0.0734			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1212

Specific gravity, calculated: 0.722

Remarks: W17666 8503

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 #: 800694 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Woolley 33-8 / Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 267688   
 Date Sampled: 7/22/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0205			
Hydrogen -----	nd			
Argon -----	nd			
Oxygen -----	0.031			
Nitrogen -----	0.67			
Carbon Dioxide -----	0.006			
Methane -----	80.70	-48.5	-244	
Ethane -----	10.90	-32.5		
Ethylene -----	nd			
Propane -----	4.66	-28.1		
Propylene -----	nd			
Iso-butane -----	0.665	-31.2		
N-butane -----	1.36	-27.4		
Iso-pentane -----	0.372	-28.3		
N-pentane -----	0.309	-27.4		
Hexanes + -----	0.302			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1239

Specific gravity, calculated: 0.705

Remarks: W17666 8503

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 #: 800695 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Woolley Sosa 2F-7H / Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 434342   
 Date Sampled: 7/27/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0182			
Hydrogen -----	0.833			
Argon -----	nd			
Oxygen -----	0.014			
Nitrogen -----	0.64			
Carbon Dioxide -----	0.42	-0.9		
Methane -----	91.55	-49.3	-243	
Ethane -----	6.12	-33.1		
Ethylene -----	0.0228			
Propane -----	0.286	-28.1		
Propylene -----	0.0002			
Iso-butane -----	0.0042			
N-butane -----	0.0054			
Iso-pentane -----	0.0004			
N-pentane -----	0.0002			
Hexanes + -----	0.0843			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1052

Specific gravity, calculated: 0.591

Remarks: C77447 8503

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 #: 800696 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Woolley Sosa 2F-7H / Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 434342   
 Date Sampled: 7/27/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0976			
Hydrogen -----	0.0257			
Argon -----	0.0298			
Oxygen -----	0.014			
Nitrogen -----	4.50			
Carbon Dioxide -----	nd			
Methane -----	95.03	-51.5	-237	
Ethane -----	0.304	-28.4		
Ethylene -----	0.0002			
Propane -----	0.0016			
Propylene -----	nd			
Iso-butane -----	0.0002			
N-butane -----	0.0005			
Iso-pentane -----	0.0001			
N-pentane -----	0.0001			
Hexanes + -----	0.0004			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 969

Specific gravity, calculated: 0.574

Remarks: C77447 8503

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 #: 800697 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Woolley Sosa 2F-7H / Intermediate Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 434342   
 Date Sampled: 7/27/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	nd			
Hydrogen -----	0.448			
Argon -----	0.0361			
Oxygen -----	0.015			
Nitrogen -----	2.52			
Carbon Dioxide -----	nd			
Methane -----	92.68	-48.1	-241	
Ethane -----	3.63	-30.5		
Ethylene -----	nd			
Propane -----	0.477	-28.0		
Propylene -----	0.0001			
Iso-butane -----	0.0554	-30.5		
N-butane -----	0.0893	-27.6		
Iso-pentane -----	0.0179	-27.9		
N-pentane -----	0.0170	-27.3		
Hexanes + -----	0.0120			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1025

Specific gravity, calculated: 0.588

Remarks: C77447 8503

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 #: 800698 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Bearden 0-6-6 / Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 427330   
 Date Sampled: 8/02/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0198			
Hydrogen -----	nd			
Argon -----	nd			
Oxygen -----	nd			
Nitrogen -----	0.38			
Carbon Dioxide -----	2.36	3.9		
Methane -----	82.84	-47.5	-217	
Ethane -----	9.54	-29.3		
Ethylene -----	nd			
Propane -----	2.87	-26.4		
Propylene -----	nd			
Iso-butane -----	0.516	-28.0		
N-butane -----	0.819	-26.3		
Iso-pentane -----	0.287	-27.2		
N-pentane -----	0.236	-27.1		
Hexanes + -----	0.130			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1154

Specific gravity, calculated: 0.685

Remarks: W72724 8503

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 #: 800699 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Bearden 14-6 / Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 277971   
 Date Sampled: 7/27/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0270			
Hydrogen -----	0.114			
Argon -----	nd			
Oxygen -----	0.015			
Nitrogen -----	0.62			
Carbon Dioxide -----	1.02	0.6		
Methane -----	83.65	-48.5	-225	
Ethane -----	9.43	-30.0		
Ethylene -----	nd			
Propane -----	3.02	-26.9		
Propylene -----	nd			
Iso-butane -----	0.492	-28.1		
N-butane -----	0.764	-26.3		
Iso-pentane -----	0.268	-26.9		
N-pentane -----	0.220	-26.9		
Hexanes + -----	0.363			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1172

Specific gravity, calculated: 0.677

Remarks: W19969 8503

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 #: 800700 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Bearden 14-6 / Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 277971   
 Date Sampled: 7/27/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0190			
Hydrogen -----	nd			
Argon -----	nd			
Oxygen -----	0.014			
Nitrogen -----	0.39			
Carbon Dioxide -----	2.39	3.6		
Methane -----	83.79	-47.1	-216	
Ethane -----	9.03	-28.6		
Ethylene -----	nd			
Propane -----	2.41	-25.5		
Propylene -----	nd			
Iso-butane -----	0.460	-26.7		
N-butane -----	0.617	-25.6		
Iso-pentane -----	0.271	-26.5		
N-pentane -----	0.217	-26.7		
Hexanes + -----	0.397			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1146

Specific gravity, calculated: 0.680

Remarks: W19969 8503

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 #: 800701 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Bearden 23-6 / Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 272014   
 Date Sampled: 7/27/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0655			
Hydrogen -----	nd			
Argon -----	0.0087			
Oxygen -----	0.016			
Nitrogen -----	1.99			
Carbon Dioxide -----	nd			
Methane -----	82.64	-54.8	-234	
Ethane -----	7.59	-33.6		
Ethylene -----	nd			
Propane -----	4.81	-30.2		
Propylene -----	nd			
Iso-butane -----	0.726	-32.0		
N-butane -----	1.33	-28.7		
Iso-pentane -----	0.333	-28.6		
N-pentane -----	0.288	-28.2		
Hexanes + -----	0.198			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1197

Specific gravity, calculated: 0.692

Remarks: W16179 8503

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 #: 800702 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Bearden 23-6 / Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 272014   
 Date Sampled: 7/27/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0247			
Hydrogen -----	nd			
Argon -----	nd			
Oxygen -----	0.014			
Nitrogen -----	0.80			
Carbon Dioxide -----	3.20	-0.6		
Methane -----	82.89	-47.3	-207	
Ethane -----	8.20	-28.9		
Ethylene -----	nd			
Propane -----	2.71	-26.3		
Propylene -----	0.0003			
Iso-butane -----	0.659	-27.1		
N-butane -----	0.638	-25.5		
Iso-pentane -----	0.265	-26.8		
N-pentane -----	0.172	-26.7		
Hexanes + -----	0.428			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1136

Specific gravity, calculated: 0.692

Remarks: W16179 8503

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 #: 800703 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Bearden 24-6 / Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 282845   
 Date Sampled: 7/27/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0243			
Hydrogen -----	0.0198			
Argon -----	nd			
Oxygen -----	0.016			
Nitrogen -----	0.77			
Carbon Dioxide -----	0.094	3.1		
Methane -----	79.06	-51.1	-245	
Ethane -----	10.35	-32.9		
Ethylene -----	nd			
Propane -----	5.02	-29.5		
Propylene -----	nd			
Iso-butane -----	0.743	-31.5		
N-butane -----	1.75	-28.2		
Iso-pentane -----	0.562	-29.0		
N-pentane -----	0.618	-28.4		
Hexanes + -----	0.973			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1290

Specific gravity, calculated: 0.739

Remarks: W34887 8503

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 #: 800704 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Bearden 24-6 / Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 282845   
 Date Sampled: 7/27/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0109			
Hydrogen -----	0.146			
Argon -----	nd			
Oxygen -----	0.015			
Nitrogen -----	0.40			
Carbon Dioxide -----	1.77	3.7		
Methane -----	76.48	-49.7	-248	
Ethane -----	12.57	-33.0		
Ethylene -----	nd			
Propane -----	5.26	-29.4		
Propylene -----	0.0001			
Iso-butane -----	0.661	-31.7		
N-butane -----	1.59	-28.4		
Iso-pentane -----	0.371	-28.7		
N-pentane -----	0.448	-28.1		
Hexanes + -----	0.275			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1254

Specific gravity, calculated: 0.739

Remarks: W34887 8503

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 #: 800705 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Davis 1J-9H / Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 454359   
 Date Sampled: 7/23/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0120			
Hydrogen -----	2.77			
Argon -----	nd			
Oxygen -----	0.020			
Nitrogen -----	0.53			
Carbon Dioxide -----	nd			
Methane -----	72.79	-49.6	-248	
Ethane -----	16.06	-32.6		
Ethylene -----	0.0029			
Propane -----	6.44	-28.1		
Propylene -----	0.0001			
Iso-butane -----	0.548	-30.5		
N-butane -----	0.657	-26.2		
Iso-pentane -----	0.0676	-27.6		
N-pentane -----	0.0418	-26.9		
Hexanes + -----	0.0562			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1243

Specific gravity, calculated: 0.704

Remarks: C82236 8503

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 #: 800706 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Davis 1J-9H / Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 454359   
 Date Sampled: 7/23/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0137			
Hydrogen -----	0.711			
Argon -----	0.0056			
Oxygen -----	0.025			
Nitrogen -----	0.63			
Carbon Dioxide -----	0.24	0.4		
Methane -----	89.34	-49.6	-241	
Ethane -----	8.03	-31.7		
Ethylene -----	0.0063			
Propane -----	0.809	-27.8		
Propylene -----	nd			
Iso-butane -----	0.0133	-28.9		
N-butane -----	0.0040			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	0.171			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1080

Specific gravity, calculated: 0.607

Remarks: C82236 8503

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 #: 800707 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Davis 2-4-9 / Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 417131   
 Date Sampled: 7/23/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0094			
Hydrogen -----	0.613			
Argon -----	nd			
Oxygen -----	0.029			
Nitrogen -----	0.40			
Carbon Dioxide -----	2.23	4.1		
Methane -----	73.33	-50.6	-246	
Ethane -----	13.42	-33.0		
Ethylene -----	0.0003			
Propane -----	6.02	-29.4		
Propylene -----	nd			
Iso-butane -----	0.802	-31.4		
N-butane -----	1.94	-28.1		
Iso-pentane -----	0.447	-28.5		
N-pentane -----	0.504	-27.8		
Hexanes + -----	0.258			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1279

Specific gravity, calculated: 0.762

Remarks: W58049 8503

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 #: 800708 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Devore 1C-34H / Intermediate Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 432684   
 Date Sampled: 7/22/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	nd			
Hydrogen -----	0.0107			
Argon -----	0.0117			
Oxygen -----	0.13			
Nitrogen -----	0.60			
Carbon Dioxide -----	0.031			
Methane -----	98.76	-55.0	-279	
Ethane -----	0.137	-30.6		
Ethylene -----	0.0004			
Propane -----	0.135	-27.9		
Propylene -----	0.0004			
Iso-butane -----	0.0332	-30.6		
N-butane -----	0.0684	-27.9		
Iso-pentane -----	0.0268	-29.1		
N-pentane -----	0.0242	-27.7		
Hexanes + -----	0.0264			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1014

Specific gravity, calculated: 0.563

Remarks: C73375 8503

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 #: 800709 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Devore 1C-34H / Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 432684   
 Date Sampled: 7/22/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0165			
Hydrogen -----	3.43			
Argon -----	0.0074			
Oxygen -----	0.025			
Nitrogen -----	0.76			
Carbon Dioxide -----	0.046			
Methane -----	86.72	-51.5	-230	
Ethane -----	7.96	-30.9		
Ethylene -----	0.0214			
Propane -----	0.951	-26.7		
Propylene -----	0.0002			
Iso-butane -----	0.0277	-28.6		
N-butane -----	0.0158	-25.7		
Iso-pentane -----	0.0010			
N-pentane -----	0.0007			
Hexanes + -----	0.0174			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1059

Specific gravity, calculated: 0.590

Remarks: C73375 8503

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 #: 800710 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Dowdy 32-10 / Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 261457   
 Date Sampled: 7/29/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0156			
Hydrogen -----	nd			
Argon -----	nd			
Oxygen -----	nd			
Nitrogen -----	0.54			
Carbon Dioxide -----	nd			
Methane -----	78.12	-49.3	-248	
Ethane -----	13.03	-32.7		
Ethylene -----	nd			
Propane -----	5.22	-29.3		
Propylene -----	0.0003			
Iso-butane -----	0.653	-31.3		
N-butane -----	1.50	-28.2		
Iso-pentane -----	0.321	-28.4		
N-pentane -----	0.359	-27.8		
Hexanes + -----	0.246			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1267

Specific gravity, calculated: 0.720

Remarks: C761913 8503

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 #: 800711 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Dowdy 4-2-10 / Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 430088   
 Date Sampled: 7/29/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0079			
Hydrogen -----	0.101			
Argon -----	nd			
Oxygen -----	nd			
Nitrogen -----	0.34			
Carbon Dioxide -----	2.28	4.0		
Methane -----	72.60	-49.3	-247	
Ethane -----	14.01	-32.8		
Ethylene -----	0.0003			
Propane -----	6.33	-29.3		
Propylene -----	0.0004			
Iso-butane -----	0.861	-31.6		
N-butane -----	2.16	-28.3		
Iso-pentane -----	0.547	-28.8		
N-pentane -----	0.674	-28.2		
Hexanes + -----	0.0918			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1300

Specific gravity, calculated: 0.776

Remarks: W71692 8503

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 #: 800712 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Dowdy 4-2-10 / Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 430088   
 Date Sampled: 7/29/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0173			
Hydrogen -----	nd			
Argon -----	nd			
Oxygen -----	nd			
Nitrogen -----	0.74			
Carbon Dioxide -----	nd			
Methane -----	81.38	-51.1	-251	
Ethane -----	9.94	-35.4		
Ethylene -----	nd			
Propane -----	5.06	-30.8		
Propylene -----	nd			
Iso-butane -----	0.633	-32.8		
N-butane -----	1.37	-29.5		
Iso-pentane -----	0.341	-28.9		
N-pentane -----	0.305	-28.8		
Hexanes + -----	0.209			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1233

Specific gravity, calculated: 0.701

Remarks: W71692 8503

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 #: 800713 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Dowdy 4-6-10 / Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 430089   
 Date Sampled: 7/29/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0067			
Hydrogen -----	0.0770			
Argon -----	nd			
Oxygen -----	nd			
Nitrogen -----	0.37			
Carbon Dioxide -----	1.99	3.3		
Methane -----	72.84	-48.5	-247	
Ethane -----	14.62	-32.7		
Ethylene -----	0.0002			
Propane -----	6.50	-29.2		
Propylene -----	nd			
Iso-butane -----	0.878	-31.4		
N-butane -----	2.10	-28.0		
Iso-pentane -----	0.343	-28.2		
N-pentane -----	0.264	-27.1		
Hexanes + -----	0.0073			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1287

Specific gravity, calculated: 0.763

Remarks: W71693 8503

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 #: 800714 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Dowdy 4-6-10 / Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 430089   
 Date Sampled: 7/29/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0480			
Hydrogen -----	0.0187			
Argon -----	0.0085			
Oxygen -----	0.021			
Nitrogen -----	2.58			
Carbon Dioxide -----	0.10	1.2		
Methane -----	84.61	-55.3	-236	
Ethane -----	5.25	-33.9		
Ethylene -----	nd			
Propane -----	4.60	-31.5		
Propylene -----	nd			
Iso-butane -----	0.868	-32.5		
N-butane -----	1.18	-30.2		
Iso-pentane -----	0.330	-29.7		
N-pentane -----	0.214	-28.9		
Hexanes + -----	0.168			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1166

Specific gravity, calculated: 0.680

Remarks: W71693 8503

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 #: 800715 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Dowdy 44-10 / Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 430093   
 Date Sampled: 7/29/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0080			
Hydrogen -----	0.305			
Argon -----	nd			
Oxygen -----	0.022			
Nitrogen -----	0.38			
Carbon Dioxide -----	2.08	3.2		
Methane -----	71.50	-49.9	-253	
Ethane -----	14.00	-33.5		
Ethylene -----	0.0015			
Propane -----	6.75	-29.4		
Propylene -----	nd			
Iso-butane -----	0.955	-31.7		
N-butane -----	2.50	-28.4		
Iso-pentane -----	0.675	-28.7		
N-pentane -----	0.707	-27.7		
Hexanes + -----	0.118			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1322

Specific gravity, calculated: 0.787

Remarks: W71557 8503

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 #: 800716 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Dowdy 44-10 / Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 430093   
 Date Sampled: 7/29/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0259			
Hydrogen -----	nd			
Argon -----	0.0057			
Oxygen -----	0.017			
Nitrogen -----	1.33			
Carbon Dioxide -----	nd			
Methane -----	87.48	-53.1	-252	
Ethane -----	6.62	-35.5		
Ethylene -----	nd			
Propane -----	2.93	-31.0		
Propylene -----	nd			
Iso-butane -----	0.342	-32.4		
N-butane -----	0.644	-29.5		
Iso-pentane -----	0.154	-28.9		
N-pentane -----	0.164	-28.9		
Hexanes + -----	0.285			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1138

Specific gravity, calculated: 0.647

Remarks: W71557 8503

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 #: 800717 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Dreamweaver 3K-21H / Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 458256   
 Date Sampled: 7/14/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	nd			
Hydrogen -----	0.225			
Argon -----	0.0283			
Oxygen -----	nd			
Nitrogen -----	72.14			
Carbon Dioxide -----	0.052	-5.8		
Methane -----	21.73	-49.3	-247	
Ethane -----	3.48	-33.5		
Ethylene -----	0.0002			
Propane -----	1.43	-29.8		
Propylene -----	0.0001			
Iso-butane -----	0.183	-31.8		
N-butane -----	0.406	-28.4		
Iso-pentane -----	0.0819	-28.6		
N-pentane -----	0.0874	-28.2		
Hexanes + -----	0.154			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 352

Specific gravity, calculated: 0.898

Remarks: C81106 8503

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 #: 800718 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: East Rinn 23-15 / Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 257921   
 Date Sampled: 7/27/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0136			
Hydrogen -----	0.0972			
Argon -----	nd			
Oxygen -----	0.028			
Nitrogen -----	0.49			
Carbon Dioxide -----	1.44	2.8		
Methane -----	76.59	-49.7	-250	
Ethane -----	12.28	-33.3		
Ethylene -----	0.0002			
Propane -----	5.66	-29.3		
Propylene -----	nd			
Iso-butane -----	0.780	-31.8		
N-butane -----	1.93	-28.4		
Iso-pentane -----	0.376	-28.5		
N-pentane -----	0.316	-27.7		
Hexanes + -----	0.0035			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1257

Specific gravity, calculated: 0.737

Remarks: W20698 8503

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 #: 800719 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: East Rinn 23-15 / Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 257921   
 Date Sampled: 7/27/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0728			
Hydrogen -----	0.0139			
Argon -----	0.0210			
Oxygen -----	0.13			
Nitrogen -----	2.98			
Carbon Dioxide -----	0.018			
Methane -----	83.52	-54.5	-244	
Ethane -----	7.29	-33.9		
Ethylene -----	nd			
Propane -----	3.98	-29.3		
Propylene -----	nd			
Iso-butane -----	0.630	-31.7		
N-butane -----	0.943	-28.2		
Iso-pentane -----	0.215	-28.5		
N-pentane -----	0.137	-27.8		
Hexanes + -----	0.0495			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1146

Specific gravity, calculated: 0.672

Remarks: W20698 8503

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 #: 800720 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Melbon Ranch 4D-17H / Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 457075   
 Date Sampled: 7/28/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0118			
Hydrogen -----	0.278			
Argon -----	0.0085			
Oxygen -----	0.023			
Nitrogen -----	0.81			
Carbon Dioxide -----	0.044			
Methane -----	89.83	-49.6	-249	
Ethane -----	8.35	-32.3		
Ethylene -----	0.0038			
Propane -----	0.581	-28.1		
Propylene -----	nd			
Iso-butane -----	0.0033			
N-butane -----	0.0013			
Iso-pentane -----	0.0006			
N-pentane -----	0.0008			
Hexanes + -----	0.0587			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1078

Specific gravity, calculated: 0.604

Remarks: C82282 8503

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 #: 800721 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Horn Libsack 1 / Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 242428   
 Date Sampled: 7/22/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	nd			
Hydrogen -----	0.0940			
Argon -----	nd			
Oxygen -----	0.034			
Nitrogen -----	0.24			
Carbon Dioxide -----	2.84	4.5		
Methane -----	75.27	-46.7	-226	
Ethane -----	12.42	-28.9		
Ethylene -----	0.0004			
Propane -----	5.10	-25.7		
Propylene -----	nd			
Iso-butane -----	0.881	-29.5		
N-butane -----	1.77	-25.6		
Iso-pentane -----	0.558	-27.6		
N-pentane -----	0.557	-25.6		
Hexanes + -----	0.235			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1258

Specific gravity, calculated: 0.757

Remarks: W768125 8503

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 #: 800722 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Melbon Ranch 4I-17H / Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 457068   
 Date Sampled: 7/28/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0140			
Hydrogen -----	0.370			
Argon -----	0.0102			
Oxygen -----	0.023			
Nitrogen -----	1.15			
Carbon Dioxide -----	0.13	-4.8		
Methane -----	90.67	-50.1	-251	
Ethane -----	7.20	-33.1		
Ethylene -----	0.0016			
Propane -----	0.373	-28.2		
Propylene -----	nd			
Iso-butane -----	0.0012			
N-butane -----	0.0002			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	0.0612			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1061

Specific gravity, calculated: 0.598

Remarks: C82287 8503

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 #: 800723 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Woolley Becky 2B-7H / Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 434338   
 Date Sampled: 7/26/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0305			
Hydrogen -----	0.0210			
Argon -----	0.0059			
Oxygen -----	0.024			
Nitrogen -----	1.01			
Carbon Dioxide -----	nd			
Methane -----	91.03	-50.2	-245	
Ethane -----	6.47	-32.7		
Ethylene -----	nd			
Propane -----	1.21	-28.6		
Propylene -----	nd			
Iso-butane -----	0.0862	-31.0		
N-butane -----	0.0854	-28.1		
Iso-pentane -----	0.0117	-28.1		
N-pentane -----	0.0082			
Hexanes + -----	0.0023			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1076

Specific gravity, calculated: 0.604

Remarks: C75028 8503

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 #: 800724 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Woolley Becky 2B-7H / Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 434338   
 Date Sampled: 7/26/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0188			
Hydrogen -----	0.350			
Argon -----	0.0054			
Oxygen -----	0.025			
Nitrogen -----	0.67			
Carbon Dioxide -----	0.80	2.9		
Methane -----	91.12	-50.1	-249	
Ethane -----	6.61	-33.1		
Ethylene -----	0.0115			
Propane -----	0.291	-28.0		
Propylene -----	0.0001			
Iso-butane -----	0.0019			
N-butane -----	0.0033			
Iso-pentane -----	0.0005			
N-pentane -----	0.0004			
Hexanes + -----	0.0879			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1055

Specific gravity, calculated: 0.600

Remarks: C75028 8503

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 #: 800725 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Woolley Becky 2C-7H / Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 436731   
 Date Sampled: 7/26/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0127			
Hydrogen -----	0.398			
Argon -----	nd			
Oxygen -----	0.023			
Nitrogen -----	0.52			
Carbon Dioxide -----	0.81	1.5		
Methane -----	84.97	-48.8	-243	
Ethane -----	10.91	-32.7		
Ethylene -----	0.0085			
Propane -----	2.16	-28.7		
Propylene -----	nd			
Iso-butane -----	0.0622	-30.1		
N-butane -----	0.0291	-26.5		
Iso-pentane -----	0.0004			
N-pentane -----	0.0002			
Hexanes + -----	0.0947			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1120

Specific gravity, calculated: 0.639

Remarks: C75029 8503

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 #: 800726 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Woolley Becky 2C-7H / Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 436731   
 Date Sampled: 7/26/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0338			
Hydrogen -----	0.0244			
Argon -----	nd			
Oxygen -----	0.024			
Nitrogen -----	0.92			
Carbon Dioxide -----	nd			
Methane -----	92.40	-49.6	-243	
Ethane -----	4.94	-32.5		
Ethylene -----	nd			
Propane -----	1.24	-28.1		
Propylene -----	nd			
Iso-butane -----	0.125	-31.4		
N-butane -----	0.226	-27.8		
Iso-pentane -----	0.0404	-28.0		
N-pentane -----	0.0267	-27.0		
Hexanes + -----	0.0022			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1071

Specific gravity, calculated: 0.600

Remarks: C75029 8503

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 #: 800727 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Woolley Becky 2F-7H / Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 434334   
 Date Sampled: 7/26/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0154			
Hydrogen -----	0.284			
Argon -----	nd			
Oxygen -----	0.020			
Nitrogen -----	0.53			
Carbon Dioxide -----	1.12	3.0		
Methane -----	83.92	-49.4	-249	
Ethane -----	10.82	-32.7		
Ethylene -----	0.0091			
Propane -----	2.77	-28.8		
Propylene -----	0.0001			
Iso-butane -----	0.146	-31.0		
N-butane -----	0.184	-27.4		
Iso-pentane -----	0.0201	-26.9		
N-pentane -----	0.0166	-26.0		
Hexanes + -----	0.149			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1134

Specific gravity, calculated: 0.654

Remarks: C75032 8503

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 #: 800728 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Woolley Becky 2F-7H / Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 434334   
 Date Sampled: 7/26/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0291			
Hydrogen -----	nd			
Argon -----	nd			
Oxygen -----	0.019			
Nitrogen -----	0.81			
Carbon Dioxide -----	nd			
Methane -----	89.63	-49.6	-244	
Ethane -----	7.34	-32.6		
Ethylene -----	nd			
Propane -----	1.90	-28.4		
Propylene -----	nd			
Iso-butane -----	0.144	-30.5		
N-butane -----	0.121	-25.9		
Iso-pentane -----	0.0020			
N-pentane -----	0.0011			
Hexanes + -----	0.0070			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1097

Specific gravity, calculated: 0.615

Remarks: C75032 8503

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 #: 800729 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Woolley Becky 2G-7H / Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 436733   
 Date Sampled: 7/26/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0141			
Hydrogen -----	0.449			
Argon -----	nd			
Oxygen -----	0.019			
Nitrogen -----	0.50			
Carbon Dioxide -----	0.93	2.7		
Methane -----	85.37	-48.7	-240	
Ethane -----	10.55	-32.3		
Ethylene -----	0.0117			
Propane -----	1.93	-28.8		
Propylene -----	nd			
Iso-butane -----	0.0621	-30.5		
N-butane -----	0.0396	-26.9		
Iso-pentane -----	0.0016			
N-pentane -----	0.0008			
Hexanes + -----	0.120			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1113

Specific gravity, calculated: 0.637

Remarks: C75033 8503

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 #: 800730 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Woolley Becky 2G-7H / Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 436733   
 Date Sampled: 7/26/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0274			
Hydrogen -----	0.0214			
Argon -----	nd			
Oxygen -----	0.021			
Nitrogen -----	0.89			
Carbon Dioxide -----	nd			
Methane -----	87.52	-50.5	-248	
Ethane -----	8.01	-34.1		
Ethylene -----	nd			
Propane -----	2.78	-29.2		
Propylene -----	nd			
Iso-butane -----	0.269	-31.6		
N-butane -----	0.403	-27.5		
Iso-pentane -----	0.0345	-27.6		
N-pentane -----	0.0179	-26.1		
Hexanes + -----	0.0058			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1125

Specific gravity, calculated: 0.634

Remarks: C75033 8503

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 #: 800731 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Woolley Sosa 2C-7H / Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 436738   
 Date Sampled: 7/26/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0281			
Hydrogen -----	0.0531			
Argon -----	0.0053			
Oxygen -----	0.019			
Nitrogen -----	0.84			
Carbon Dioxide -----	0.005			
Methane -----	88.78	-49.7	-245	
Ethane -----	8.06	-33.0		
Ethylene -----	nd			
Propane -----	1.91	-28.6		
Propylene -----	0.0001			
Iso-butane -----	0.131	-30.7		
N-butane -----	0.146	-28.1		
Iso-pentane -----	0.0153	-27.9		
N-pentane -----	0.0094			
Hexanes + -----	0.0025			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1103

Specific gravity, calculated: 0.619

Remarks: C77446 8503

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 #: 800732 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Woolley Sosa 2C-7H / Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 436738   
 Date Sampled: 7/26/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0132			
Hydrogen -----	0.486			
Argon -----	nd			
Oxygen -----	0.017			
Nitrogen -----	0.52			
Carbon Dioxide -----	1.09	3.0		
Methane -----	83.20	-48.1	-235	
Ethane -----	11.24	-31.3		
Ethylene -----	0.0073			
Propane -----	2.90	-28.0		
Propylene -----	0.0001			
Iso-butane -----	0.206	-30.8		
N-butane -----	0.208	-27.0		
Iso-pentane -----	0.0089			
N-pentane -----	0.0057			
Hexanes + -----	0.0934			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1138

Specific gravity, calculated: 0.655

Remarks: C77446 8503

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 #: 800733 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Woolley Sosa 2D-7H / Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 434335   
 Date Sampled: 7/27/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0351			
Hydrogen -----	0.0198			
Argon -----	0.0065			
Oxygen -----	0.015			
Nitrogen -----	1.04			
Carbon Dioxide -----	nd			
Methane -----	93.12	-50.2	-243	
Ethane -----	5.13	-33.0		
Ethylene -----	0.0001			
Propane -----	0.525	-29.1		
Propylene -----	nd			
Iso-butane -----	0.0354	-30.9		
N-butane -----	0.0518	-27.8		
Iso-pentane -----	0.0074			
N-pentane -----	0.0058			
Hexanes + -----	0.0045			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1053

Specific gravity, calculated: 0.590

Remarks: C77448 8503

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 #: 800734 Job #: 48446 IS-94649 Co. Job#:   
 Sample Name: Woolley Sosa 2D-7H / Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 434335   
 Date Sampled: 7/27/2021 Date Received: 8/10/2021 Date Reported: 9/20/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0172			
Hydrogen -----	0.450			
Argon -----	nd			
Oxygen -----	0.016			
Nitrogen -----	0.66			
Carbon Dioxide -----	0.62	2.0		
Methane -----	87.92	-49.7	-245	
Ethane -----	8.53	-32.9		
Ethylene -----	0.0051			
Propane -----	1.59	-29.0		
Propylene -----	nd			
Iso-butane -----	0.0634	-30.6		
N-butane -----	0.0435	-26.8		
Iso-pentane -----	0.0002			
N-pentane -----	nd			
Hexanes + -----	0.0842			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1093

Specific gravity, calculated: 0.621

Remarks: C77448 8503

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. %.