

CRESTONE PEAK RESOURCES

ADAMS COUNTY

SEC 15-T3S-R65W

QUICKSILVER 3-65 16-17-18-13 4AH

OWB

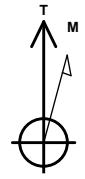
Plan: PROPOSAL 1

Standard Planning Report

25 July, 2024

PROJECT DETAILS: ADAMS COUNTY
 Geodetic System: US State Plane 1983
 Datum: North American Datum 1983
 Ellipsoid: GRS 1980
 Zone: Colorado Northern Zone
 System Datum: Mean Sea Level

Project: ADAMS COUNTY
 Site: SEC 15-T3S-R65W
 Well: QUICKSILVER 3-65 16-17-18-13 4AH
 Wellbore: OWB
 Design: PROPOSAL 1



Azimuths to True North
 Magnetic North: 7.47°
 Magnetic Field
 Strength: 51367.2nT
 Dip Angle: 66.08°
 Date: 1/8/2024
 Model: IGRF2020

WELL DETAILS: QUICKSILVER 3-65 16-17-18-13 4AH

+N/-S	+E/-W	Northing	Easting	5506.00 Latitude	Longitude	Slot
0.00	0.00	1166472.57	3236762.72	39.787249°N	104.657498°W	

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	
3	428.22	2.56	197.22	428.18	-2.74	-0.85	2.00	197.22	0.88	
4	7050.73	2.56	197.22	7044.06	-285.78	-88.56	0.00	0.00	91.68	
5	7943.23	90.00	270.22	7609.00	-307.79	-661.55	10.00	73.02	664.88	LP-QS 3-65 16-17-18-13 4AH
6	28322.50	90.00	270.22	7609.00	-230.07	-21040.68	0.00	0.00	21041.93	PBHL-QS 3-65 16-17-18-13 4AH

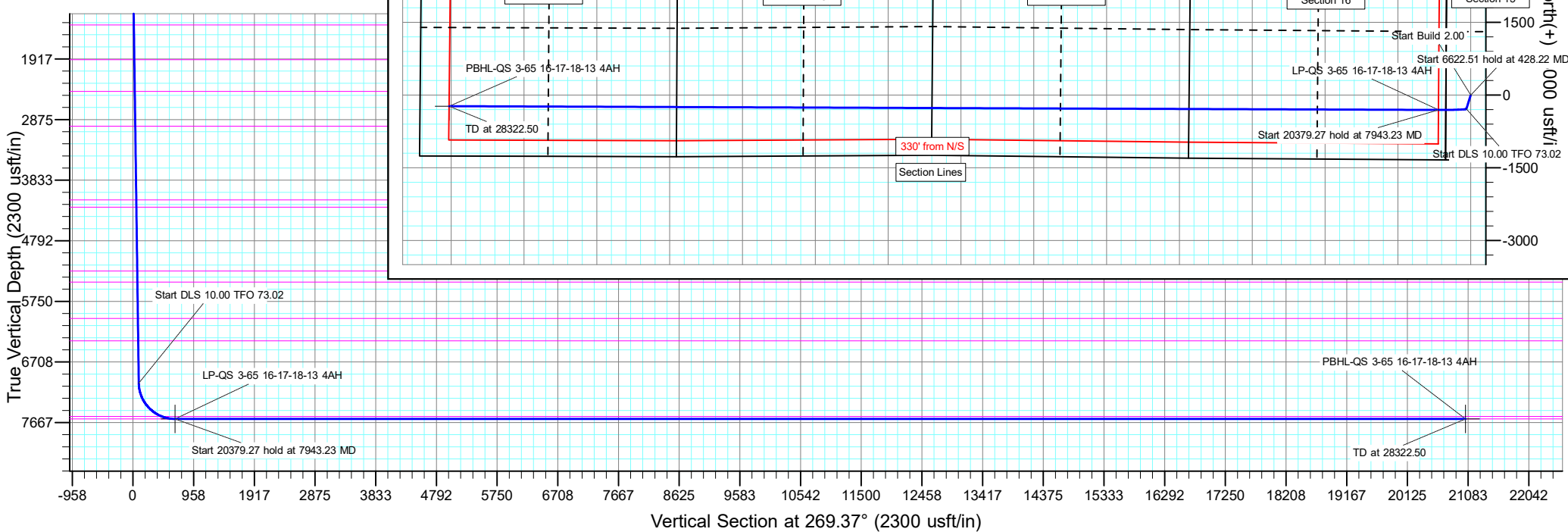
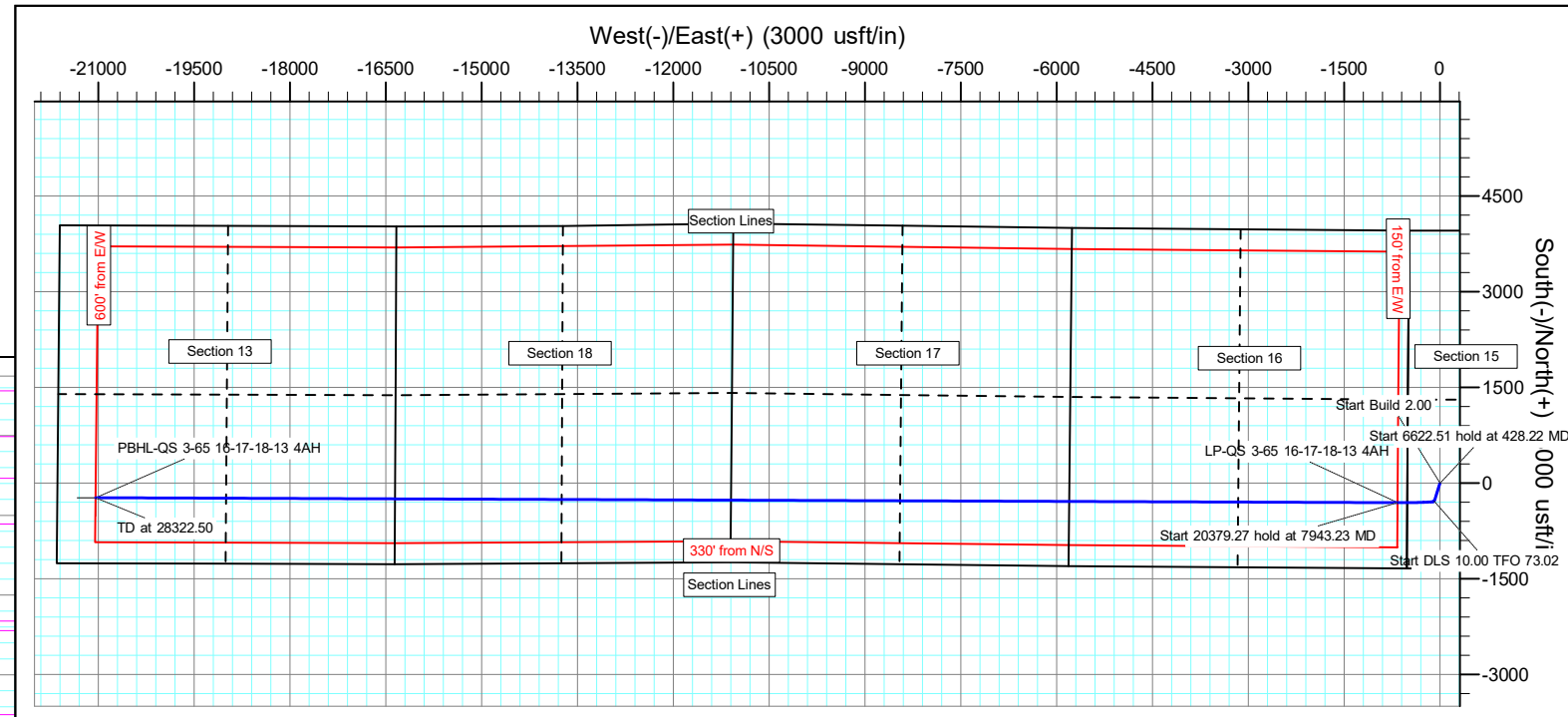
ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSec	Departure	Annotation
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	Start Build 2.00
428.22	2.56	197.22	428.18	-2.74	-0.85	0.88	2.87	Start 6622.51 hold at 428.22 MD
7050.73	2.56	197.22	7044.06	-285.78	-88.56	91.68	299.19	Start DLS 10.00 TFO 73.02
7943.23	90.00	270.22	7609.00	-307.79	-661.55	664.88	874.16	Start 20379.27 hold at 7943.23 MD
28322.50	90.00	270.22	7609.00	-230.07	-21040.68	21041.93	21253.43	TD at 28322.50

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
LP-QS 3-65 16-17-18-13 4AH - plan hits target center	7609.00	-307.79	-661.55	1166158.51	3236104.13	39.786404°N	104.659852°W	Point
PBHL-QS 3-65 16-17-18-13 4AH - plan hits target center	7609.00	-230.07	-21040.68	1166042.61	3215725.40	39.786593°N	104.732367°W	Point

SHL:
 1340' FSL, 510' FWL
 Sec 15-T3S-R65W
 LP:
 1030' FSL, 150' FEL
 Sec 16-T3S-R65W
 BHL:
 1030' FSL, 600' FWL
 Sec 13-T3S-R66W



Civitas Resources

Planning Report

Database:	EDM	Local Co-ordinate Reference:	Well QUICKSILVER 3-65 16-17-18-13 4AH
Company:	CRESTONE PEAK RESOURCES	TVD Reference:	KB 25' @ 5531.00usft
Project:	ADAMS COUNTY	MD Reference:	KB 25' @ 5531.00usft
Site:	SEC 15-T3S-R65W	North Reference:	True
Well:	QUICKSILVER 3-65 16-17-18-13 4AH	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PROPOSAL 1		

Project	ADAMS COUNTY		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site	SEC 15-T3S-R65W				
Site Position:		Northing:	1,165,129.40 usft	Latitude:	39.783575°N
From:	Lat/Long	Easting:	3,236,258.06 usft	Longitude:	104.659339°W
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence:	0.54 °

Well	QUICKSILVER 3-65 16-17-18-13 4AH					
Well Position	+N/-S	1,338.33 usft	Northing:	1,166,472.56 usft	Latitude:	39.787249°N
	+E/-W	517.38 usft	Easting:	3,236,762.72 usft	Longitude:	104.657498°W
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	5,506.00 usft

Wellbore	OWB				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	1/8/2024	7.47	66.08	51,367.19918467

Design	PROPOSAL 1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	269.37

Plan Survey Tool Program	Date	7/25/2024			
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	28,322.50	PROPOSAL 1 (OWB)	MWD OWSG	
				OWSG MWD - Standard	

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
428.22	2.56	197.22	428.18	-2.74	-0.85	2.00	2.00	0.00	197.22	
7,050.73	2.56	197.22	7,044.06	-285.78	-88.56	0.00	0.00	0.00	0.00	
7,943.23	90.00	270.22	7,609.00	-307.79	-661.55	10.00	9.80	8.18	73.02	LP-QS 3-65 16-17-18
28,322.50	90.00	270.22	7,609.00	-230.07	-21,040.68	0.00	0.00	0.00	0.00	PBHL-QS 3-65 16-17-

Civitas Resources

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Company:	CRESTONE PEAK RESOURCES	TVD Reference:	KB 25' @ 5531.00usft
Project:	ADAMS COUNTY	MD Reference:	KB 25' @ 5531.00usft
Site:	SEC 15-T3S-R65W	North Reference:	True
Well:	QUICKSILVER 3-65 16-17-18-13 4AH	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PROPOSAL 1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24.00	0.00	0.00	24.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Denver										
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00										
400.00	2.00	197.22	399.98	-1.67	-0.52	0.53	2.00	2.00	0.00	0.00
428.22	2.56	197.22	428.18	-2.74	-0.85	0.88	2.00	2.00	0.00	0.00
Start 6622.51 hold at 428.22 MD										
500.00	2.56	197.22	499.89	-5.81	-1.80	1.86	0.00	0.00	0.00	0.00
600.00	2.56	197.22	599.79	-10.08	-3.12	3.23	0.00	0.00	0.00	0.00
700.00	2.56	197.22	699.69	-14.36	-4.45	4.61	0.00	0.00	0.00	0.00
754.37	2.56	197.22	754.00	-16.68	-5.17	5.35	0.00	0.00	0.00	0.00
Arapahoe										
800.00	2.56	197.22	799.58	-18.63	-5.77	5.98	0.00	0.00	0.00	0.00
900.00	2.56	197.22	899.48	-22.90	-7.10	7.35	0.00	0.00	0.00	0.00
1,000.00	2.56	197.22	999.38	-27.18	-8.42	8.72	0.00	0.00	0.00	0.00
1,100.00	2.56	197.22	1,099.28	-31.45	-9.75	10.09	0.00	0.00	0.00	0.00
1,200.00	2.56	197.22	1,199.18	-35.73	-11.07	11.46	0.00	0.00	0.00	0.00
1,300.00	2.56	197.22	1,299.08	-40.00	-12.40	12.83	0.00	0.00	0.00	0.00
1,380.00	2.56	197.22	1,379.00	-43.42	-13.45	13.93	0.00	0.00	0.00	0.00
Laramie-Fox Hills Formation										
1,400.00	2.56	197.22	1,398.98	-44.27	-13.72	14.20	0.00	0.00	0.00	0.00
1,500.00	2.56	197.22	1,498.88	-48.55	-15.04	15.57	0.00	0.00	0.00	0.00
1,600.00	2.56	197.22	1,598.78	-52.82	-16.37	16.94	0.00	0.00	0.00	0.00
1,700.00	2.56	197.22	1,698.68	-57.10	-17.69	18.32	0.00	0.00	0.00	0.00
1,800.00	2.56	197.22	1,798.58	-61.37	-19.02	19.69	0.00	0.00	0.00	0.00
1,900.00	2.56	197.22	1,898.48	-65.64	-20.34	21.06	0.00	0.00	0.00	0.00
1,930.55	2.56	197.22	1,929.00	-66.95	-20.75	21.48	0.00	0.00	0.00	0.00
Pierre Formation										
2,000.00	2.56	197.22	1,998.38	-69.92	-21.67	22.43	0.00	0.00	0.00	0.00
2,100.00	2.56	197.22	2,098.28	-74.19	-22.99	23.80	0.00	0.00	0.00	0.00
2,200.00	2.56	197.22	2,198.18	-78.46	-24.31	25.17	0.00	0.00	0.00	0.00
2,300.00	2.56	197.22	2,298.08	-82.74	-25.64	26.54	0.00	0.00	0.00	0.00
2,400.00	2.56	197.22	2,397.98	-87.01	-26.96	27.91	0.00	0.00	0.00	0.00
2,431.05	2.56	197.22	2,429.00	-88.34	-27.37	28.34	0.00	0.00	0.00	0.00
Upper Pierre aquifer										
2,500.00	2.56	197.22	2,497.88	-91.29	-28.29	29.28	0.00	0.00	0.00	0.00
2,600.00	2.56	197.22	2,597.78	-95.56	-29.61	30.66	0.00	0.00	0.00	0.00
2,700.00	2.56	197.22	2,697.68	-99.83	-30.94	32.03	0.00	0.00	0.00	0.00
2,800.00	2.56	197.22	2,797.58	-104.11	-32.26	33.40	0.00	0.00	0.00	0.00
2,900.00	2.56	197.22	2,897.48	-108.38	-33.59	34.77	0.00	0.00	0.00	0.00
2,981.60	2.56	197.22	2,979.00	-111.87	-34.67	35.89	0.00	0.00	0.00	0.00
Base of Upper Pierre aquifer										
3,000.00	2.56	197.22	2,997.38	-112.66	-34.91	36.14	0.00	0.00	0.00	0.00
3,100.00	2.56	197.22	3,097.28	-116.93	-36.23	37.51	0.00	0.00	0.00	0.00
3,200.00	2.56	197.22	3,197.18	-121.20	-37.56	38.88	0.00	0.00	0.00	0.00
3,300.00	2.56	197.22	3,297.08	-125.48	-38.88	40.25	0.00	0.00	0.00	0.00
3,400.00	2.56	197.22	3,396.98	-129.75	-40.21	41.62	0.00	0.00	0.00	0.00
3,500.00	2.56	197.22	3,496.88	-134.03	-41.53	43.00	0.00	0.00	0.00	0.00
3,600.00	2.56	197.22	3,596.78	-138.30	-42.86	44.37	0.00	0.00	0.00	0.00
3,700.00	2.56	197.22	3,696.68	-142.57	-44.18	45.74	0.00	0.00	0.00	0.00

Civitas Resources

Planning Report

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Company:	CRESTONE PEAK RESOURCES	TVD Reference:	KB 25' @ 5531.00usft
Project:	ADAMS COUNTY	MD Reference:	KB 25' @ 5531.00usft
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Well:	QUICKSILVER 3-65 16-17-18-13 4AH	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PROPOSAL 1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
3,800.00	2.56	197.22	3,796.58	-146.85	-45.51	47.11	0.00	0.00	0.00	
3,900.00	2.56	197.22	3,896.48	-151.12	-46.83	48.48	0.00	0.00	0.00	
4,000.00	2.56	197.22	3,996.38	-155.39	-48.15	49.85	0.00	0.00	0.00	
4,100.00	2.56	197.22	4,096.28	-159.67	-49.48	51.22	0.00	0.00	0.00	
4,147.77	2.56	197.22	4,144.00	-161.71	-50.11	51.88	0.00	0.00	0.00	
Larimer ("Parkman") sandstone										
4,200.00	2.56	197.22	4,196.18	-163.94	-50.80	52.59	0.00	0.00	0.00	
4,262.88	2.56	197.22	4,259.00	-166.63	-51.64	53.45	0.00	0.00	0.00	
Pierre Formation										
4,300.00	2.56	197.22	4,296.08	-168.22	-52.13	53.96	0.00	0.00	0.00	
4,400.00	2.56	197.22	4,395.98	-172.49	-53.45	55.33	0.00	0.00	0.00	
4,500.00	2.56	197.22	4,495.88	-176.76	-54.78	56.71	0.00	0.00	0.00	
4,600.00	2.56	197.22	4,595.78	-181.04	-56.10	58.08	0.00	0.00	0.00	
4,700.00	2.56	197.22	4,695.68	-185.31	-57.43	59.45	0.00	0.00	0.00	
4,800.00	2.56	197.22	4,795.58	-189.59	-58.75	60.82	0.00	0.00	0.00	
4,900.00	2.56	197.22	4,895.48	-193.86	-60.07	62.19	0.00	0.00	0.00	
5,000.00	2.56	197.22	4,995.38	-198.13	-61.40	63.56	0.00	0.00	0.00	
5,100.00	2.56	197.22	5,095.28	-202.41	-62.72	64.93	0.00	0.00	0.00	
5,200.00	2.56	197.22	5,195.18	-206.68	-64.05	66.30	0.00	0.00	0.00	
5,273.90	2.56	197.22	5,269.00	-209.84	-65.03	67.32	0.00	0.00	0.00	
Terry ("Sussex") sandstone										
5,300.00	2.56	197.22	5,295.08	-210.96	-65.37	67.67	0.00	0.00	0.00	
5,400.00	2.56	197.22	5,394.98	-215.23	-66.70	69.05	0.00	0.00	0.00	
5,449.07	2.56	197.22	5,444.00	-217.33	-67.35	69.72	0.00	0.00	0.00	
Pierre Formation										
5,500.00	2.56	197.22	5,494.88	-219.50	-68.02	70.42	0.00	0.00	0.00	
5,600.00	2.56	197.22	5,594.78	-223.78	-69.34	71.79	0.00	0.00	0.00	
5,700.00	2.56	197.22	5,694.68	-228.05	-70.67	73.16	0.00	0.00	0.00	
5,800.00	2.56	197.22	5,794.58	-232.33	-71.99	74.53	0.00	0.00	0.00	
5,900.00	2.56	197.22	5,894.48	-236.60	-73.32	75.90	0.00	0.00	0.00	
6,000.00	2.56	197.22	5,994.38	-240.87	-74.64	77.27	0.00	0.00	0.00	
6,024.65	2.56	197.22	6,019.00	-241.93	-74.97	77.61	0.00	0.00	0.00	
Hygiene ("Shannon") sandstone										
6,100.00	2.56	197.22	6,094.28	-245.15	-75.97	78.64	0.00	0.00	0.00	
6,200.00	2.56	197.22	6,194.18	-249.42	-77.29	80.01	0.00	0.00	0.00	
6,300.00	2.56	197.22	6,294.08	-253.69	-78.62	81.38	0.00	0.00	0.00	
6,380.00	2.56	197.22	6,374.00	-257.11	-79.68	82.48	0.00	0.00	0.00	
Pierre Formation										
6,400.00	2.56	197.22	6,393.98	-257.97	-79.94	82.76	0.00	0.00	0.00	
6,500.00	2.56	197.22	6,493.88	-262.24	-81.26	84.13	0.00	0.00	0.00	
6,600.00	2.56	197.22	6,593.78	-266.52	-82.59	85.50	0.00	0.00	0.00	
6,700.00	2.56	197.22	6,693.68	-270.79	-83.91	86.87	0.00	0.00	0.00	
6,800.00	2.56	197.22	6,793.58	-275.06	-85.24	88.24	0.00	0.00	0.00	
6,900.00	2.56	197.22	6,893.48	-279.34	-86.56	89.61	0.00	0.00	0.00	
7,000.00	2.56	197.22	6,993.38	-283.61	-87.89	90.98	0.00	0.00	0.00	
7,050.73	2.56	197.22	7,044.06	-285.78	-88.56	91.68	0.00	0.00	0.00	
Start DLS 10.00 TFO 73.02										
7,100.00	6.18	246.93	7,093.19	-287.87	-91.33	94.47	10.00	7.34	100.89	
7,150.00	10.95	257.43	7,142.62	-289.96	-98.44	101.61	10.00	9.54	21.01	
7,200.00	15.86	261.55	7,191.24	-292.00	-109.85	113.03	10.00	9.82	8.24	
7,250.00	20.82	263.75	7,238.69	-293.98	-125.45	128.65	10.00	9.91	4.40	
7,300.00	25.79	265.13	7,284.60	-295.87	-145.12	148.35	10.00	9.94	2.77	
7,350.00	30.76	266.09	7,328.62	-297.66	-168.73	171.98	10.00	9.96	1.92	

Civitas Resources

Planning Report

Database:	EDM	Local Co-ordinate Reference:	Well QUICKSILVER 3-65 16-17-18-13 4AH
Company:	CRESTONE PEAK RESOURCES	TVD Reference:	KB 25' @ 5531.00usft
Project:	ADAMS COUNTY	MD Reference:	KB 25' @ 5531.00usft
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Well:	QUICKSILVER 3-65 16-17-18-13 4AH	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PROPOSAL 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
7,400.00	35.75	266.81	7,370.41	-299.35	-196.09	199.35	10.00	9.97	1.43
7,450.00	40.74	267.37	7,409.67	-300.91	-226.99	230.27	10.00	9.98	1.12
7,500.00	45.73	267.83	7,446.09	-302.34	-261.20	264.49	10.00	9.98	0.91
7,550.00	50.72	268.21	7,479.39	-303.63	-298.45	301.76	10.00	9.98	0.77
7,600.00	55.71	268.54	7,509.32	-304.76	-338.47	341.78	10.00	9.99	0.67
7,650.00	60.71	268.84	7,535.65	-305.72	-380.94	384.26	10.00	9.99	0.59
7,700.00	65.70	269.11	7,558.19	-306.52	-425.55	428.88	10.00	9.99	0.54
7,727.77	68.47	269.25	7,569.00	-306.88	-451.13	454.46	10.00	9.99	0.50
Sharon Springs Member									
7,750.00	70.69	269.36	7,576.75	-307.13	-471.96	475.29	10.00	9.99	0.49
7,800.00	75.69	269.59	7,591.21	-307.57	-519.80	523.14	10.00	9.99	0.47
7,850.00	80.69	269.82	7,601.44	-307.82	-568.73	572.06	10.00	9.99	0.45
7,900.00	85.68	270.03	7,607.37	-307.89	-618.36	621.69	10.00	9.99	0.43
7,943.23	90.00	270.22	7,609.00	-307.79	-661.55	664.88	10.00	9.99	0.43
Start 20379.27 hold at 7943.23 MD - Niobrara Formation									
8,000.00	90.00	270.22	7,609.00	-307.58	-718.32	721.64	0.00	0.00	0.00
8,100.00	90.00	270.22	7,609.00	-307.20	-818.32	821.63	0.00	0.00	0.00
8,200.00	90.00	270.22	7,609.00	-306.81	-918.32	921.62	0.00	0.00	0.00
8,300.00	90.00	270.22	7,609.00	-306.43	-1,018.32	1,021.61	0.00	0.00	0.00
8,400.00	90.00	270.22	7,609.00	-306.05	-1,118.32	1,121.60	0.00	0.00	0.00
8,500.00	90.00	270.22	7,609.00	-305.67	-1,218.32	1,221.58	0.00	0.00	0.00
8,600.00	90.00	270.22	7,609.00	-305.29	-1,318.31	1,321.57	0.00	0.00	0.00
8,700.00	90.00	270.22	7,609.00	-304.91	-1,418.31	1,421.56	0.00	0.00	0.00
8,800.00	90.00	270.22	7,609.00	-304.53	-1,518.31	1,521.55	0.00	0.00	0.00
8,900.00	90.00	270.22	7,609.00	-304.14	-1,618.31	1,621.54	0.00	0.00	0.00
9,000.00	90.00	270.22	7,609.00	-303.76	-1,718.31	1,721.53	0.00	0.00	0.00
9,100.00	90.00	270.22	7,609.00	-303.38	-1,818.31	1,821.52	0.00	0.00	0.00
9,200.00	90.00	270.22	7,609.00	-303.00	-1,918.31	1,921.51	0.00	0.00	0.00
9,300.00	90.00	270.22	7,609.00	-302.62	-2,018.31	2,021.50	0.00	0.00	0.00
9,400.00	90.00	270.22	7,609.00	-302.24	-2,118.31	2,121.49	0.00	0.00	0.00
9,500.00	90.00	270.22	7,609.00	-301.86	-2,218.31	2,221.48	0.00	0.00	0.00
9,600.00	90.00	270.22	7,609.00	-301.47	-2,318.31	2,321.47	0.00	0.00	0.00
9,700.00	90.00	270.22	7,609.00	-301.09	-2,418.31	2,421.45	0.00	0.00	0.00
9,800.00	90.00	270.22	7,609.00	-300.71	-2,518.31	2,521.44	0.00	0.00	0.00
9,900.00	90.00	270.22	7,609.00	-300.33	-2,618.31	2,621.43	0.00	0.00	0.00
10,000.00	90.00	270.22	7,609.00	-299.95	-2,718.30	2,721.42	0.00	0.00	0.00
10,100.00	90.00	270.22	7,609.00	-299.57	-2,818.30	2,821.41	0.00	0.00	0.00
10,200.00	90.00	270.22	7,609.00	-299.19	-2,918.30	2,921.40	0.00	0.00	0.00
10,300.00	90.00	270.22	7,609.00	-298.80	-3,018.30	3,021.39	0.00	0.00	0.00
10,400.00	90.00	270.22	7,609.00	-298.42	-3,118.30	3,121.38	0.00	0.00	0.00
10,500.00	90.00	270.22	7,609.00	-298.04	-3,218.30	3,221.37	0.00	0.00	0.00
10,600.00	90.00	270.22	7,609.00	-297.66	-3,318.30	3,321.36	0.00	0.00	0.00
10,700.00	90.00	270.22	7,609.00	-297.28	-3,418.30	3,421.35	0.00	0.00	0.00
10,800.00	90.00	270.22	7,609.00	-296.90	-3,518.30	3,521.33	0.00	0.00	0.00
10,900.00	90.00	270.22	7,609.00	-296.52	-3,618.30	3,621.32	0.00	0.00	0.00
11,000.00	90.00	270.22	7,609.00	-296.14	-3,718.30	3,721.31	0.00	0.00	0.00
11,100.00	90.00	270.22	7,609.00	-295.75	-3,818.30	3,821.30	0.00	0.00	0.00
11,200.00	90.00	270.22	7,609.00	-295.37	-3,918.30	3,921.29	0.00	0.00	0.00
11,300.00	90.00	270.22	7,609.00	-294.99	-4,018.30	4,021.28	0.00	0.00	0.00
11,400.00	90.00	270.22	7,609.00	-294.61	-4,118.29	4,121.27	0.00	0.00	0.00
11,500.00	90.00	270.22	7,609.00	-294.23	-4,218.29	4,221.26	0.00	0.00	0.00
11,600.00	90.00	270.22	7,609.00	-293.85	-4,318.29	4,321.25	0.00	0.00	0.00
11,700.00	90.00	270.22	7,609.00	-293.47	-4,418.29	4,421.24	0.00	0.00	0.00
11,800.00	90.00	270.22	7,609.00	-293.08	-4,518.29	4,521.23	0.00	0.00	0.00

Civitas Resources

Planning Report

Database:	EDM	Local Co-ordinate Reference:	Well QUICKSILVER 3-65 16-17-18-13 4AH
Company:	CRESTONE PEAK RESOURCES	TVD Reference:	KB 25' @ 5531.00usft
Project:	ADAMS COUNTY	MD Reference:	KB 25' @ 5531.00usft
Site:	SEC 15-T3S-R65W	North Reference:	True
Well:	QUICKSILVER 3-65 16-17-18-13 4AH	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PROPOSAL 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
11,900.00	90.00	270.22	7,609.00	-292.70	-4,618.29	4,621.22	0.00	0.00	0.00
12,000.00	90.00	270.22	7,609.00	-292.32	-4,718.29	4,721.20	0.00	0.00	0.00
12,100.00	90.00	270.22	7,609.00	-291.94	-4,818.29	4,821.19	0.00	0.00	0.00
12,200.00	90.00	270.22	7,609.00	-291.56	-4,918.29	4,921.18	0.00	0.00	0.00
12,300.00	90.00	270.22	7,609.00	-291.18	-5,018.29	5,021.17	0.00	0.00	0.00
12,400.00	90.00	270.22	7,609.00	-290.80	-5,118.29	5,121.16	0.00	0.00	0.00
12,500.00	90.00	270.22	7,609.00	-290.41	-5,218.29	5,221.15	0.00	0.00	0.00
12,600.00	90.00	270.22	7,609.00	-290.03	-5,318.29	5,321.14	0.00	0.00	0.00
12,700.00	90.00	270.22	7,609.00	-289.65	-5,418.29	5,421.13	0.00	0.00	0.00
12,800.00	90.00	270.22	7,609.00	-289.27	-5,518.28	5,521.12	0.00	0.00	0.00
12,900.00	90.00	270.22	7,609.00	-288.89	-5,618.28	5,621.11	0.00	0.00	0.00
13,000.00	90.00	270.22	7,609.00	-288.51	-5,718.28	5,721.10	0.00	0.00	0.00
13,100.00	90.00	270.22	7,609.00	-288.13	-5,818.28	5,821.08	0.00	0.00	0.00
13,200.00	90.00	270.22	7,609.00	-287.75	-5,918.28	5,921.07	0.00	0.00	0.00
13,300.00	90.00	270.22	7,609.00	-287.36	-6,018.28	6,021.06	0.00	0.00	0.00
13,400.00	90.00	270.22	7,609.00	-286.98	-6,118.28	6,121.05	0.00	0.00	0.00
13,500.00	90.00	270.22	7,609.00	-286.60	-6,218.28	6,221.04	0.00	0.00	0.00
13,600.00	90.00	270.22	7,609.00	-286.22	-6,318.28	6,321.03	0.00	0.00	0.00
13,700.00	90.00	270.22	7,609.00	-285.84	-6,418.28	6,421.02	0.00	0.00	0.00
13,800.00	90.00	270.22	7,609.00	-285.46	-6,518.28	6,521.01	0.00	0.00	0.00
13,900.00	90.00	270.22	7,609.00	-285.08	-6,618.28	6,621.00	0.00	0.00	0.00
14,000.00	90.00	270.22	7,609.00	-284.69	-6,718.28	6,720.99	0.00	0.00	0.00
14,100.00	90.00	270.22	7,609.00	-284.31	-6,818.27	6,820.98	0.00	0.00	0.00
14,200.00	90.00	270.22	7,609.00	-283.93	-6,918.27	6,920.97	0.00	0.00	0.00
14,300.00	90.00	270.22	7,609.00	-283.55	-7,018.27	7,020.95	0.00	0.00	0.00
14,400.00	90.00	270.22	7,609.00	-283.17	-7,118.27	7,120.94	0.00	0.00	0.00
14,500.00	90.00	270.22	7,609.00	-282.79	-7,218.27	7,220.93	0.00	0.00	0.00
14,600.00	90.00	270.22	7,609.00	-282.41	-7,318.27	7,320.92	0.00	0.00	0.00
14,700.00	90.00	270.22	7,609.00	-282.02	-7,418.27	7,420.91	0.00	0.00	0.00
14,800.00	90.00	270.22	7,609.00	-281.64	-7,518.27	7,520.90	0.00	0.00	0.00
14,900.00	90.00	270.22	7,609.00	-281.26	-7,618.27	7,620.89	0.00	0.00	0.00
15,000.00	90.00	270.22	7,609.00	-280.88	-7,718.27	7,720.88	0.00	0.00	0.00
15,100.00	90.00	270.22	7,609.00	-280.50	-7,818.27	7,820.87	0.00	0.00	0.00
15,200.00	90.00	270.22	7,609.00	-280.12	-7,918.27	7,920.86	0.00	0.00	0.00
15,300.00	90.00	270.22	7,609.00	-279.74	-8,018.27	8,020.85	0.00	0.00	0.00
15,400.00	90.00	270.22	7,609.00	-279.35	-8,118.27	8,120.83	0.00	0.00	0.00
15,500.00	90.00	270.22	7,609.00	-278.97	-8,218.26	8,220.82	0.00	0.00	0.00
15,600.00	90.00	270.22	7,609.00	-278.59	-8,318.26	8,320.81	0.00	0.00	0.00
15,700.00	90.00	270.22	7,609.00	-278.21	-8,418.26	8,420.80	0.00	0.00	0.00
15,800.00	90.00	270.22	7,609.00	-277.83	-8,518.26	8,520.79	0.00	0.00	0.00
15,900.00	90.00	270.22	7,609.00	-277.45	-8,618.26	8,620.78	0.00	0.00	0.00
16,000.00	90.00	270.22	7,609.00	-277.07	-8,718.26	8,720.77	0.00	0.00	0.00
16,100.00	90.00	270.22	7,609.00	-276.69	-8,818.26	8,820.76	0.00	0.00	0.00
16,200.00	90.00	270.22	7,609.00	-276.30	-8,918.26	8,920.75	0.00	0.00	0.00
16,300.00	90.00	270.22	7,609.00	-275.92	-9,018.26	9,020.74	0.00	0.00	0.00
16,400.00	90.00	270.22	7,609.00	-275.54	-9,118.26	9,120.73	0.00	0.00	0.00
16,500.00	90.00	270.22	7,609.00	-275.16	-9,218.26	9,220.71	0.00	0.00	0.00
16,600.00	90.00	270.22	7,609.00	-274.78	-9,318.26	9,320.70	0.00	0.00	0.00
16,700.00	90.00	270.22	7,609.00	-274.40	-9,418.26	9,420.69	0.00	0.00	0.00
16,800.00	90.00	270.22	7,609.00	-274.02	-9,518.26	9,520.68	0.00	0.00	0.00
16,900.00	90.00	270.22	7,609.00	-273.63	-9,618.25	9,620.67	0.00	0.00	0.00
17,000.00	90.00	270.22	7,609.00	-273.25	-9,718.25	9,720.66	0.00	0.00	0.00
17,100.00	90.00	270.22	7,609.00	-272.87	-9,818.25	9,820.65	0.00	0.00	0.00
17,200.00	90.00	270.22	7,609.00	-272.49	-9,918.25	9,920.64	0.00	0.00	0.00

Civitas Resources

Planning Report

Database:	EDM	Local Co-ordinate Reference:	Well QUICKSILVER 3-65 16-17-18-13 4AH
Company:	CRESTONE PEAK RESOURCES	TVD Reference:	KB 25' @ 5531.00usft
Project:	ADAMS COUNTY	MD Reference:	KB 25' @ 5531.00usft
Site:	SEC 15-T3S-R65W	North Reference:	True
Well:	QUICKSILVER 3-65 16-17-18-13 4AH	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PROPOSAL 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
17,300.00	90.00	270.22	7,609.00	-272.11	-10,018.25	10,020.63	0.00	0.00	0.00
17,400.00	90.00	270.22	7,609.00	-271.73	-10,118.25	10,120.62	0.00	0.00	0.00
17,500.00	90.00	270.22	7,609.00	-271.35	-10,218.25	10,220.61	0.00	0.00	0.00
17,600.00	90.00	270.22	7,609.00	-270.96	-10,318.25	10,320.60	0.00	0.00	0.00
17,700.00	90.00	270.22	7,609.00	-270.58	-10,418.25	10,420.58	0.00	0.00	0.00
17,800.00	90.00	270.22	7,609.00	-270.20	-10,518.25	10,520.57	0.00	0.00	0.00
17,900.00	90.00	270.22	7,609.00	-269.82	-10,618.25	10,620.56	0.00	0.00	0.00
18,000.00	90.00	270.22	7,609.00	-269.44	-10,718.25	10,720.55	0.00	0.00	0.00
18,100.00	90.00	270.22	7,609.00	-269.06	-10,818.25	10,820.54	0.00	0.00	0.00
18,200.00	90.00	270.22	7,609.00	-268.68	-10,918.25	10,920.53	0.00	0.00	0.00
18,300.00	90.00	270.22	7,609.00	-268.30	-11,018.24	11,020.52	0.00	0.00	0.00
18,400.00	90.00	270.22	7,609.00	-267.91	-11,118.24	11,120.51	0.00	0.00	0.00
18,500.00	90.00	270.22	7,609.00	-267.53	-11,218.24	11,220.50	0.00	0.00	0.00
18,600.00	90.00	270.22	7,609.00	-267.15	-11,318.24	11,320.49	0.00	0.00	0.00
18,700.00	90.00	270.22	7,609.00	-266.77	-11,418.24	11,420.48	0.00	0.00	0.00
18,800.00	90.00	270.22	7,609.00	-266.39	-11,518.24	11,520.46	0.00	0.00	0.00
18,900.00	90.00	270.22	7,609.00	-266.01	-11,618.24	11,620.45	0.00	0.00	0.00
19,000.00	90.00	270.22	7,609.00	-265.63	-11,718.24	11,720.44	0.00	0.00	0.00
19,100.00	90.00	270.22	7,609.00	-265.24	-11,818.24	11,820.43	0.00	0.00	0.00
19,200.00	90.00	270.22	7,609.00	-264.86	-11,918.24	11,920.42	0.00	0.00	0.00
19,300.00	90.00	270.22	7,609.00	-264.48	-12,018.24	12,020.41	0.00	0.00	0.00
19,400.00	90.00	270.22	7,609.00	-264.10	-12,118.24	12,120.40	0.00	0.00	0.00
19,500.00	90.00	270.22	7,609.00	-263.72	-12,218.24	12,220.39	0.00	0.00	0.00
19,600.00	90.00	270.22	7,609.00	-263.34	-12,318.23	12,320.38	0.00	0.00	0.00
19,700.00	90.00	270.22	7,609.00	-262.96	-12,418.23	12,420.37	0.00	0.00	0.00
19,800.00	90.00	270.22	7,609.00	-262.57	-12,518.23	12,520.36	0.00	0.00	0.00
19,900.00	90.00	270.22	7,609.00	-262.19	-12,618.23	12,620.35	0.00	0.00	0.00
20,000.00	90.00	270.22	7,609.00	-261.81	-12,718.23	12,720.33	0.00	0.00	0.00
20,100.00	90.00	270.22	7,609.00	-261.43	-12,818.23	12,820.32	0.00	0.00	0.00
20,200.00	90.00	270.22	7,609.00	-261.05	-12,918.23	12,920.31	0.00	0.00	0.00
20,300.00	90.00	270.22	7,609.00	-260.67	-13,018.23	13,020.30	0.00	0.00	0.00
20,400.00	90.00	270.22	7,609.00	-260.29	-13,118.23	13,120.29	0.00	0.00	0.00
20,500.00	90.00	270.22	7,609.00	-259.90	-13,218.23	13,220.28	0.00	0.00	0.00
20,600.00	90.00	270.22	7,609.00	-259.52	-13,318.23	13,320.27	0.00	0.00	0.00
20,700.00	90.00	270.22	7,609.00	-259.14	-13,418.23	13,420.26	0.00	0.00	0.00
20,800.00	90.00	270.22	7,609.00	-258.76	-13,518.23	13,520.25	0.00	0.00	0.00
20,900.00	90.00	270.22	7,609.00	-258.38	-13,618.23	13,620.24	0.00	0.00	0.00
21,000.00	90.00	270.22	7,609.00	-258.00	-13,718.22	13,720.23	0.00	0.00	0.00
21,100.00	90.00	270.22	7,609.00	-257.62	-13,818.22	13,820.21	0.00	0.00	0.00
21,200.00	90.00	270.22	7,609.00	-257.24	-13,918.22	13,920.20	0.00	0.00	0.00
21,300.00	90.00	270.22	7,609.00	-256.85	-14,018.22	14,020.19	0.00	0.00	0.00
21,400.00	90.00	270.22	7,609.00	-256.47	-14,118.22	14,120.18	0.00	0.00	0.00
21,500.00	90.00	270.22	7,609.00	-256.09	-14,218.22	14,220.17	0.00	0.00	0.00
21,600.00	90.00	270.22	7,609.00	-255.71	-14,318.22	14,320.16	0.00	0.00	0.00
21,700.00	90.00	270.22	7,609.00	-255.33	-14,418.22	14,420.15	0.00	0.00	0.00
21,800.00	90.00	270.22	7,609.00	-254.95	-14,518.22	14,520.14	0.00	0.00	0.00
21,900.00	90.00	270.22	7,609.00	-254.57	-14,618.22	14,620.13	0.00	0.00	0.00
22,000.00	90.00	270.22	7,609.00	-254.18	-14,718.22	14,720.12	0.00	0.00	0.00
22,100.00	90.00	270.22	7,609.00	-253.80	-14,818.22	14,820.11	0.00	0.00	0.00
22,200.00	90.00	270.22	7,609.00	-253.42	-14,918.22	14,920.10	0.00	0.00	0.00
22,300.00	90.00	270.22	7,609.00	-253.04	-15,018.22	15,020.08	0.00	0.00	0.00
22,400.00	90.00	270.22	7,609.00	-252.66	-15,118.21	15,120.07	0.00	0.00	0.00
22,500.00	90.00	270.22	7,609.00	-252.28	-15,218.21	15,220.06	0.00	0.00	0.00
22,600.00	90.00	270.22	7,609.00	-251.90	-15,318.21	15,320.05	0.00	0.00	0.00

Civitas Resources

Planning Report

Database:	EDM	Local Co-ordinate Reference:	Well QUICKSILVER 3-65 16-17-18-13 4AH
Company:	CRESTONE PEAK RESOURCES	TVD Reference:	KB 25' @ 5531.00usft
Project:	ADAMS COUNTY	MD Reference:	KB 25' @ 5531.00usft
Site:	SEC 15-T3S-R65W	North Reference:	True
Well:	QUICKSILVER 3-65 16-17-18-13 4AH	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PROPOSAL 1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
22,700.00	90.00	270.22	7,609.00	-251.51	-15,418.21	15,420.04	0.00	0.00	0.00	
22,800.00	90.00	270.22	7,609.00	-251.13	-15,518.21	15,520.03	0.00	0.00	0.00	
22,900.00	90.00	270.22	7,609.00	-250.75	-15,618.21	15,620.02	0.00	0.00	0.00	
23,000.00	90.00	270.22	7,609.00	-250.37	-15,718.21	15,720.01	0.00	0.00	0.00	
23,100.00	90.00	270.22	7,609.00	-249.99	-15,818.21	15,820.00	0.00	0.00	0.00	
23,200.00	90.00	270.22	7,609.00	-249.61	-15,918.21	15,919.99	0.00	0.00	0.00	
23,300.00	90.00	270.22	7,609.00	-249.23	-16,018.21	16,019.98	0.00	0.00	0.00	
23,400.00	90.00	270.22	7,609.00	-248.85	-16,118.21	16,119.96	0.00	0.00	0.00	
23,500.00	90.00	270.22	7,609.00	-248.46	-16,218.21	16,219.95	0.00	0.00	0.00	
23,600.00	90.00	270.22	7,609.00	-248.08	-16,318.21	16,319.94	0.00	0.00	0.00	
23,700.00	90.00	270.22	7,609.00	-247.70	-16,418.21	16,419.93	0.00	0.00	0.00	
23,800.00	90.00	270.22	7,609.00	-247.32	-16,518.20	16,519.92	0.00	0.00	0.00	
23,900.00	90.00	270.22	7,609.00	-246.94	-16,618.20	16,619.91	0.00	0.00	0.00	
24,000.00	90.00	270.22	7,609.00	-246.56	-16,718.20	16,719.90	0.00	0.00	0.00	
24,100.00	90.00	270.22	7,609.00	-246.18	-16,818.20	16,819.89	0.00	0.00	0.00	
24,200.00	90.00	270.22	7,609.00	-245.79	-16,918.20	16,919.88	0.00	0.00	0.00	
24,300.00	90.00	270.22	7,609.00	-245.41	-17,018.20	17,019.87	0.00	0.00	0.00	
24,400.00	90.00	270.22	7,609.00	-245.03	-17,118.20	17,119.86	0.00	0.00	0.00	
24,500.00	90.00	270.22	7,609.00	-244.65	-17,218.20	17,219.85	0.00	0.00	0.00	
24,600.00	90.00	270.22	7,609.00	-244.27	-17,318.20	17,319.83	0.00	0.00	0.00	
24,700.00	90.00	270.22	7,609.00	-243.89	-17,418.20	17,419.82	0.00	0.00	0.00	
24,800.00	90.00	270.22	7,609.00	-243.51	-17,518.20	17,519.81	0.00	0.00	0.00	
24,900.00	90.00	270.22	7,609.00	-243.12	-17,618.20	17,619.80	0.00	0.00	0.00	
25,000.00	90.00	270.22	7,609.00	-242.74	-17,718.20	17,719.79	0.00	0.00	0.00	
25,100.00	90.00	270.22	7,609.00	-242.36	-17,818.20	17,819.78	0.00	0.00	0.00	
25,200.00	90.00	270.22	7,609.00	-241.98	-17,918.19	17,919.77	0.00	0.00	0.00	
25,300.00	90.00	270.22	7,609.00	-241.60	-18,018.19	18,019.76	0.00	0.00	0.00	
25,400.00	90.00	270.22	7,609.00	-241.22	-18,118.19	18,119.75	0.00	0.00	0.00	
25,500.00	90.00	270.22	7,609.00	-240.84	-18,218.19	18,219.74	0.00	0.00	0.00	
25,600.00	90.00	270.22	7,609.00	-240.45	-18,318.19	18,319.73	0.00	0.00	0.00	
25,700.00	90.00	270.22	7,609.00	-240.07	-18,418.19	18,419.71	0.00	0.00	0.00	
25,800.00	90.00	270.22	7,609.00	-239.69	-18,518.19	18,519.70	0.00	0.00	0.00	
25,900.00	90.00	270.22	7,609.00	-239.31	-18,618.19	18,619.69	0.00	0.00	0.00	
26,000.00	90.00	270.22	7,609.00	-238.93	-18,718.19	18,719.68	0.00	0.00	0.00	
26,100.00	90.00	270.22	7,609.00	-238.55	-18,818.19	18,819.67	0.00	0.00	0.00	
26,200.00	90.00	270.22	7,609.00	-238.17	-18,918.19	18,919.66	0.00	0.00	0.00	
26,300.00	90.00	270.22	7,609.00	-237.79	-19,018.19	19,019.65	0.00	0.00	0.00	
26,400.00	90.00	270.22	7,609.00	-237.40	-19,118.19	19,119.64	0.00	0.00	0.00	
26,500.00	90.00	270.22	7,609.00	-237.02	-19,218.18	19,219.63	0.00	0.00	0.00	
26,600.00	90.00	270.22	7,609.00	-236.64	-19,318.18	19,319.62	0.00	0.00	0.00	
26,700.00	90.00	270.22	7,609.00	-236.26	-19,418.18	19,419.61	0.00	0.00	0.00	
26,800.00	90.00	270.22	7,609.00	-235.88	-19,518.18	19,519.60	0.00	0.00	0.00	
26,900.00	90.00	270.22	7,609.00	-235.50	-19,618.18	19,619.58	0.00	0.00	0.00	
27,000.00	90.00	270.22	7,609.00	-235.12	-19,718.18	19,719.57	0.00	0.00	0.00	
27,100.00	90.00	270.22	7,609.00	-234.73	-19,818.18	19,819.56	0.00	0.00	0.00	
27,200.00	90.00	270.22	7,609.00	-234.35	-19,918.18	19,919.55	0.00	0.00	0.00	
27,300.00	90.00	270.22	7,609.00	-233.97	-20,018.18	20,019.54	0.00	0.00	0.00	
27,400.00	90.00	270.22	7,609.00	-233.59	-20,118.18	20,119.53	0.00	0.00	0.00	
27,500.00	90.00	270.22	7,609.00	-233.21	-20,218.18	20,219.52	0.00	0.00	0.00	
27,600.00	90.00	270.22	7,609.00	-232.83	-20,318.18	20,319.51	0.00	0.00	0.00	
27,700.00	90.00	270.22	7,609.00	-232.45	-20,418.18	20,419.50	0.00	0.00	0.00	
27,800.00	90.00	270.22	7,609.00	-232.06	-20,518.18	20,519.49	0.00	0.00	0.00	
27,900.00	90.00	270.22	7,609.00	-231.68	-20,618.17	20,619.48	0.00	0.00	0.00	
28,000.00	90.00	270.22	7,609.00	-231.30	-20,718.17	20,719.46	0.00	0.00	0.00	

Civitas Resources

Planning Report

Database:	EDM	Local Co-ordinate Reference:	Well QUICKSILVER 3-65 16-17-18-13 4AH
Company:	CRESTONE PEAK RESOURCES	TVD Reference:	KB 25' @ 5531.00usft
Project:	ADAMS COUNTY	MD Reference:	KB 25' @ 5531.00usft
Site:	SEC 15-T3S-R65W	North Reference:	True
Well:	QUICKSILVER 3-65 16-17-18-13 4AH	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PROPOSAL 1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
28,100.00	90.00	270.22	7,609.00	-230.92	-20,818.17	20,819.45	0.00	0.00	0.00	
28,200.00	90.00	270.22	7,609.00	-230.54	-20,918.17	20,919.44	0.00	0.00	0.00	
28,300.00	90.00	270.22	7,609.00	-230.16	-21,018.17	21,019.43	0.00	0.00	0.00	
28,322.50	90.00	270.22	7,609.00	-230.07	-21,040.68	21,041.93	0.00	0.00	0.00	
TD at 28322.50										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
PBHL-QS 3-65 16-17-18-13 - hit/miss target - Shape - plan hits target center - Point	0.00	0.00	7,609.00	-230.07	-21,040.68	1,166,042.60	3,215,725.40	39.786593°N	104.732367°W	
LP-QS 3-65 16-17-18-13 - plan hits target center - Point	0.00	0.00	7,609.00	-307.79	-661.55	1,166,158.50	3,236,104.13	39.786404°N	104.659852°W	

Formations							
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)		
24.00	24.00	Denver					
754.37	754.00	Arapahoe					
1,380.00	1,379.00	Laramie-Fox Hills Formation					
1,930.55	1,929.00	Pierre Formation					
2,431.05	2,429.00	Upper Pierre aquifer					
2,981.60	2,979.00	Base of Upper Pierre aquifer					
4,147.77	4,144.00	Larimer ("Parkman") sandstone					
4,262.88	4,259.00	Pierre Formation					
5,273.90	5,269.00	Terry ("Sussex") sandstone					
5,449.07	5,444.00	Pierre Formation					
6,024.65	6,019.00	Hygiene ("Shannon") sandstone					
6,380.00	6,374.00	Pierre Formation					
7,727.77	7,569.00	Sharon Springs Member					
7,943.23	7,609.00	Niobrara Formation					

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
300.00	300.00	0.00	0.00	Start Build 2.00	
428.22	428.18	-2.74	-0.85	Start 6622.51 hold at 428.22 MD	
7,050.73	7,044.06	-285.78	-88.56	Start DLS 10.00 TFO 73.02	
7,943.23	7,609.00	-307.79	-661.55	Start 20379.27 hold at 7943.23 MD	
28,322.50	7,609.00	-230.07	-21,040.68	TD at 28322.50	