

# **CRESTONE PEAK RESOURCES**

**ARAPAHOE COUNTY**

**SEC 30-T4S-R64W**

**CHICO 4-65 25-26 4BH**

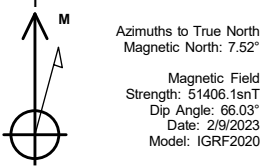
**OWB**

**Plan: PROPOSAL 1**

## **Standard Planning Report**

**20 February, 2023**

Project: ARAPAHOE COUNTY  
Site: SEC 30-T4S-R64W  
Well: CHICO 4-65 25-26 4BH  
Wellbore: OWB  
Design: PROPOSAL 1



WELL DETAILS: CHICO 4-65 25-26 4BH						
			5768.00			
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1671317.42	3252837.18	39.673133°N	104.601776°W	

SECTION DETAILS									
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00
3	788.26	13.77	189.08	781.66	-81.25	-12.98	2.00	189.08	25.50
4	7316.50	13.77	189.08	7122.40	-1615.14	-258.11	0.00	0.00	506.92
5	8195.64	90.00	270.28	7659.00	-1742.26	-831.31	10.00	81.45	1092.94
6	18060.81	90.00	270.28	7659.00	-1694.14	-10696.37	0.00	0.00	10829.70
									Target
									LP-CHICO 4-65 4BH
									PBHL-CHICO 4-65 4BH

ANNOTATIONS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	VSect	Departure	Annotation	
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	Start Build 2.00	
788.26	13.77	189.08	781.66	-81.25	-12.98	25.50	82.28	Start 6528.24 hold at 788.26 MD	
7316.50	13.77	189.08	7122.40	-1615.14	-258.11	506.92	1635.64	Start DLS 10.00 TFO 81.45	
8195.64	90.00	270.28	7659.00	-1742.26	-831.31	1092.94	2241.50	Start 9865.17 hold at 8195.64 MD	
18060.81	90.00	270.28	7659.00	-1694.14	-10696.37	10829.70	12106.68	TD at 18060.81	

DESIGN TARGET DETAILS									
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape	
LP-CHICO 4-65 4BH	7659.00	-1742.26	-831.31	1669567.05	3252023.15	39.668350°N	104.604729°W	Point	
- plan hits target center									
PBHL-CHICO 4-65 4BH	7659.00	-1694.14	-10696.37	1669517.64	3242158.24	39.668476°N	104.639772°W	Point	
- plan hits target center									

PROJECT DETAILS: ARAPAHOE COUNTY

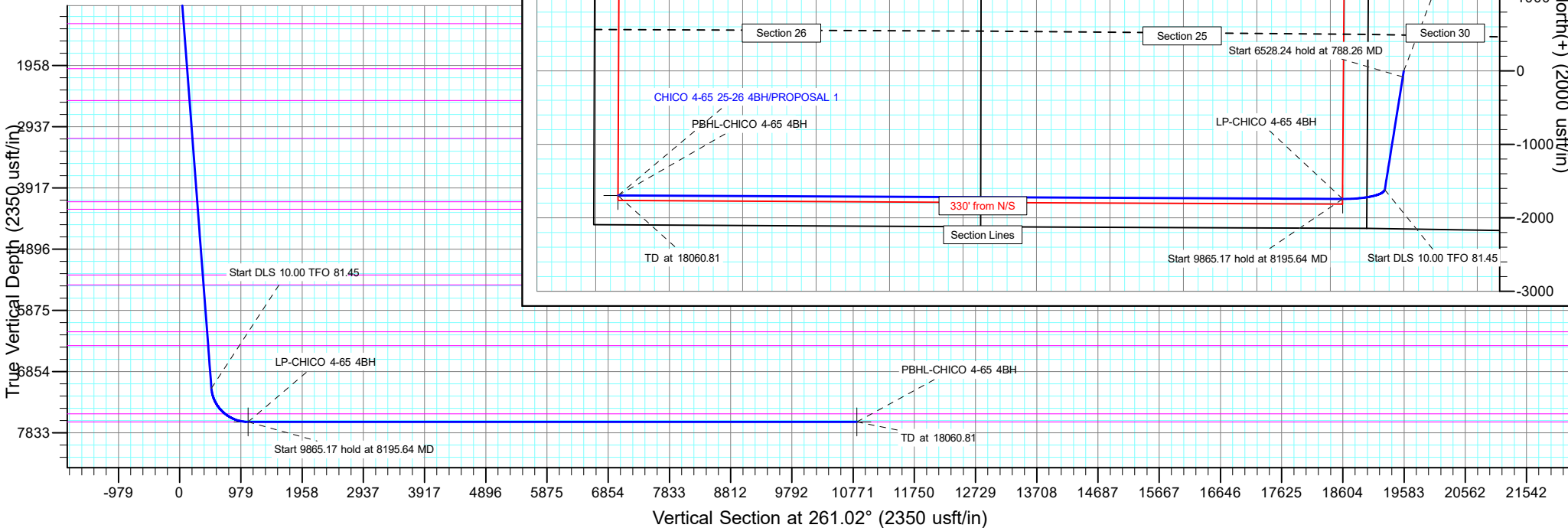
Geodetic System: US State Plane 1983  
Datum: North American Datum 1983  
Ellipsoid: GRS 1980  
Zone: Colorado Central Zone

System Datum: Mean Sea Level

SHL:  
2152' FSL, 490' FWL  
Sec 30-T4S-R64W

LP:  
400' FSL, 330' FEL  
Sec 25-T4S-R65W

BHL:  
400' FSL, 330' FWL  
Sec 26-T4S-R65W



## Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well CHICO 4-65 25-26 4BH
<b>Company:</b>	CRESTONE PEAK RESOURCES	<b>TVD Reference:</b>	KB 25' @ 5793.00usft
<b>Project:</b>	ARAPAHOE COUNTY	<b>MD Reference:</b>	KB 25' @ 5793.00usft
<b>Site:</b>	SEC 30-T4S-R64W	<b>North Reference:</b>	True
<b>Well:</b>	CHICO 4-65 25-26 4BH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OWB		
<b>Design:</b>	PROPOSAL 1		

<b>Project</b>	ARAPAHOE COUNTY		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Central Zone		Using geodetic scale factor

Site		SEC 30-T4S-R64W			
Site Position:		Northing:	1,669,168.52 usft	Latitude:	39.667247°N
From:	Lat/Long	Easting:	3,252,354.22 usft	Longitude:	104.603567°W
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence:	0.57 °

Well	CHICO 4-65 25-26 4BH					
Well Position	+N/-S	2,144.06 usft	Northing:	1,671,317.42 usft	Latitude:	39.673133°N
	+E/-W	504.16 usft	Easting:	3,252,837.19 usft	Longitude:	104.601776°W
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	5,768.00 usft

<b>Wellbore</b>	OWB				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2020	2/9/2023	7.52	66.03	51,406.07680001

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	261.02

<b>Plan Survey Tool Program</b>	<b>Date</b>	2/20/2023			
<b>Depth From (usft)</b>	<b>Depth To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>	
1	0.00	18,060.81	PROPOSAL 1 (OWB)	MWD OWSG	
				OWSG MWD - Standard	

<b>Plan Sections</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Turn Rate (°/100ft)</b>	<b>TFO (°)</b>	<b>Target</b>
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	
788.26	13.77	189.08	781.66	-81.25	-12.98	2.00	2.00	0.00	189.08	
7,316.50	13.77	189.08	7,122.40	-1,615.14	-258.11	0.00	0.00	0.00	0.00	
8,195.64	90.00	270.28	7,659.00	-1,742.26	-831.31	10.00	8.67	9.24	81.45	LP-CHICO 4-65 4BH
18,060.81	90.00	270.28	7,659.00	-1,694.14	-10,696.37	0.00	0.00	0.00	0.00	PBHL-CHICO 4-65 4BH

# Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well CHICO 4-65 25-26 4BH
<b>Company:</b>	CRESTONE PEAK RESOURCES	<b>TVD Reference:</b>	KB 25' @ 5793.00usft
<b>Project:</b>	ARAPAHOE COUNTY	<b>MD Reference:</b>	KB 25' @ 5793.00usft
<b>Site:</b>	SEC 30-T4S-R64W	<b>North Reference:</b>	True
<b>Well:</b>	CHICO 4-65 25-26 4BH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OWB		
<b>Design:</b>	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
24.00	0.00	0.00	24.00	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
Start Build 2.00									
200.00	2.00	189.08	199.98	-1.72	-0.28	0.54	2.00	2.00	0.00
300.00	4.00	189.08	299.84	-6.89	-1.10	2.16	2.00	2.00	0.00
400.00	6.00	189.08	399.45	-15.50	-2.48	4.86	2.00	2.00	0.00
500.00	8.00	189.08	498.70	-27.53	-4.40	8.64	2.00	2.00	0.00
600.00	10.00	189.08	597.47	-42.98	-6.87	13.49	2.00	2.00	0.00
693.23	11.86	189.08	689.00	-60.44	-9.66	18.97	2.00	2.00	0.00
Arapahoe									
700.00	12.00	189.08	695.62	-61.82	-9.88	19.40	2.00	2.00	0.00
788.26	13.77	189.08	781.66	-81.25	-12.98	25.50	2.00	2.00	0.00
Start 6528.24 hold at 788.26 MD									
800.00	13.77	189.08	793.06	-84.01	-13.42	26.37	0.00	0.00	0.00
900.00	13.77	189.08	890.19	-107.50	-17.18	33.74	0.00	0.00	0.00
1,000.00	13.77	189.08	987.32	-131.00	-20.93	41.11	0.00	0.00	0.00
1,100.00	13.77	189.08	1,084.44	-154.50	-24.69	48.49	0.00	0.00	0.00
1,200.00	13.77	189.08	1,181.57	-177.99	-28.44	55.86	0.00	0.00	0.00
1,300.00	13.77	189.08	1,278.70	-201.49	-32.20	63.24	0.00	0.00	0.00
1,310.60	13.77	189.08	1,289.00	-203.98	-32.60	64.02	0.00	0.00	0.00
Laramie-Fox Hills Formation									
1,400.00	13.77	189.08	1,375.83	-224.99	-35.95	70.61	0.00	0.00	0.00
1,500.00	13.77	189.08	1,472.96	-248.48	-39.71	77.99	0.00	0.00	0.00
1,600.00	13.77	189.08	1,570.08	-271.98	-43.46	85.36	0.00	0.00	0.00
1,700.00	13.77	189.08	1,667.21	-295.47	-47.22	92.74	0.00	0.00	0.00
1,800.00	13.77	189.08	1,764.34	-318.97	-50.97	100.11	0.00	0.00	0.00
1,900.00	13.77	189.08	1,861.47	-342.47	-54.73	107.48	0.00	0.00	0.00
2,000.00	13.77	189.08	1,958.60	-365.96	-58.48	114.86	0.00	0.00	0.00
2,051.90	13.77	189.08	2,009.00	-378.16	-60.43	118.69	0.00	0.00	0.00
Pierre Formation									
2,100.00	13.77	189.08	2,055.72	-389.46	-62.24	122.23	0.00	0.00	0.00
2,200.00	13.77	189.08	2,152.85	-412.96	-65.99	129.61	0.00	0.00	0.00
2,300.00	13.77	189.08	2,249.98	-436.45	-69.75	136.98	0.00	0.00	0.00
2,400.00	13.77	189.08	2,347.11	-459.95	-73.50	144.36	0.00	0.00	0.00
2,500.00	13.77	189.08	2,444.23	-483.44	-77.26	151.73	0.00	0.00	0.00
2,576.98	13.77	189.08	2,519.00	-501.53	-80.15	157.41	0.00	0.00	0.00
Upper Pierre aquifer									
2,600.00	13.77	189.08	2,541.36	-506.94	-81.01	159.11	0.00	0.00	0.00
2,700.00	13.77	189.08	2,638.49	-530.44	-84.77	166.48	0.00	0.00	0.00
2,800.00	13.77	189.08	2,735.62	-553.93	-88.52	173.85	0.00	0.00	0.00
2,900.00	13.77	189.08	2,832.75	-577.43	-92.28	181.23	0.00	0.00	0.00
3,000.00	13.77	189.08	2,929.87	-600.93	-96.03	188.60	0.00	0.00	0.00
3,100.00	13.77	189.08	3,027.00	-624.42	-99.78	195.98	0.00	0.00	0.00
3,199.87	13.77	189.08	3,124.00	-647.89	-103.53	203.34	0.00	0.00	0.00
Base of Upper Pierre aquifer									
3,200.00	13.77	189.08	3,124.13	-647.92	-103.54	203.35	0.00	0.00	0.00
3,300.00	13.77	189.08	3,221.26	-671.41	-107.29	210.73	0.00	0.00	0.00
3,400.00	13.77	189.08	3,318.39	-694.91	-111.05	218.10	0.00	0.00	0.00
3,500.00	13.77	189.08	3,415.51	-718.41	-114.80	225.48	0.00	0.00	0.00
3,600.00	13.77	189.08	3,512.64	-741.90	-118.56	232.85	0.00	0.00	0.00
3,700.00	13.77	189.08	3,609.77	-765.40	-122.31	240.22	0.00	0.00	0.00

# Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well CHICO 4-65 25-26 4BH
<b>Company:</b>	CRESTONE PEAK RESOURCES	<b>TVD Reference:</b>	KB 25' @ 5793.00usft
<b>Project:</b>	ARAPAHOE COUNTY	<b>MD Reference:</b>	KB 25' @ 5793.00usft
<b>Site:</b>	SEC 30-T4S-R64W	<b>North Reference:</b>	True
<b>Well:</b>	CHICO 4-65 25-26 4BH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OWB		
<b>Design:</b>	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	13.77	189.08	3,706.90	-788.90	-126.07	247.60	0.00	0.00	0.00
3,900.00	13.77	189.08	3,804.03	-812.39	-129.82	254.97	0.00	0.00	0.00
4,000.00	13.77	189.08	3,901.15	-835.89	-133.58	262.35	0.00	0.00	0.00
4,100.00	13.77	189.08	3,998.28	-859.39	-137.33	269.72	0.00	0.00	0.00
4,200.00	13.77	189.08	4,095.41	-882.88	-141.09	277.10	0.00	0.00	0.00
4,244.88	13.77	189.08	4,139.00	-893.43	-142.77	280.41	0.00	0.00	0.00
Larimer ("Parkman") sandstone									
4,300.00	13.77	189.08	4,192.54	-906.38	-144.84	284.47	0.00	0.00	0.00
4,368.43	13.77	189.08	4,259.00	-922.46	-147.41	289.52	0.00	0.00	0.00
Pierre Formation									
4,400.00	13.77	189.08	4,289.66	-929.87	-148.60	291.84	0.00	0.00	0.00
4,500.00	13.77	189.08	4,386.79	-953.37	-152.35	299.22	0.00	0.00	0.00
4,600.00	13.77	189.08	4,483.92	-976.87	-156.11	306.59	0.00	0.00	0.00
4,700.00	13.77	189.08	4,581.05	-1,000.36	-159.86	313.97	0.00	0.00	0.00
4,800.00	13.77	189.08	4,678.18	-1,023.86	-163.62	321.34	0.00	0.00	0.00
4,900.00	13.77	189.08	4,775.30	-1,047.36	-167.37	328.72	0.00	0.00	0.00
5,000.00	13.77	189.08	4,872.43	-1,070.85	-171.13	336.09	0.00	0.00	0.00
5,100.00	13.77	189.08	4,969.56	-1,094.35	-174.88	343.47	0.00	0.00	0.00
5,200.00	13.77	189.08	5,066.69	-1,117.84	-178.64	350.84	0.00	0.00	0.00
5,300.00	13.77	189.08	5,163.82	-1,141.34	-182.39	358.21	0.00	0.00	0.00
5,400.00	13.77	189.08	5,260.94	-1,164.84	-186.14	365.59	0.00	0.00	0.00
5,449.48	13.77	189.08	5,309.00	-1,176.46	-188.00	369.24	0.00	0.00	0.00
Terry ("Sussex") sandstone									
5,500.00	13.77	189.08	5,358.07	-1,188.33	-189.90	372.96	0.00	0.00	0.00
5,600.00	13.77	189.08	5,455.20	-1,211.83	-193.65	380.34	0.00	0.00	0.00
5,614.21	13.77	189.08	5,469.00	-1,215.17	-194.19	381.39	0.00	0.00	0.00
Pierre Formation									
5,700.00	13.77	189.08	5,552.33	-1,235.33	-197.41	387.71	0.00	0.00	0.00
5,800.00	13.77	189.08	5,649.46	-1,258.82	-201.16	395.09	0.00	0.00	0.00
5,900.00	13.77	189.08	5,746.58	-1,282.32	-204.92	402.46	0.00	0.00	0.00
6,000.00	13.77	189.08	5,843.71	-1,305.81	-208.67	409.84	0.00	0.00	0.00
6,100.00	13.77	189.08	5,940.84	-1,329.31	-212.43	417.21	0.00	0.00	0.00
6,200.00	13.77	189.08	6,037.97	-1,352.81	-216.18	424.58	0.00	0.00	0.00
6,300.00	13.77	189.08	6,135.09	-1,376.30	-219.94	431.96	0.00	0.00	0.00
6,386.39	13.77	189.08	6,219.00	-1,396.60	-223.18	438.33	0.00	0.00	0.00
Hygiene ("Shannon") sandstone									
6,400.00	13.77	189.08	6,232.22	-1,399.80	-223.69	439.33	0.00	0.00	0.00
6,500.00	13.77	189.08	6,329.35	-1,423.30	-227.45	446.71	0.00	0.00	0.00
6,600.00	13.77	189.08	6,426.48	-1,446.79	-231.20	454.08	0.00	0.00	0.00
6,612.89	13.77	189.08	6,439.00	-1,449.82	-231.69	455.03	0.00	0.00	0.00
Pierre Formation									
6,700.00	13.77	189.08	6,523.61	-1,470.29	-234.96	461.46	0.00	0.00	0.00
6,800.00	13.77	189.08	6,620.73	-1,493.79	-238.71	468.83	0.00	0.00	0.00
6,900.00	13.77	189.08	6,717.86	-1,517.28	-242.47	476.21	0.00	0.00	0.00
7,000.00	13.77	189.08	6,814.99	-1,540.78	-246.22	483.58	0.00	0.00	0.00
7,100.00	13.77	189.08	6,912.12	-1,564.27	-249.98	490.95	0.00	0.00	0.00
7,200.00	13.77	189.08	7,009.25	-1,587.77	-253.73	498.33	0.00	0.00	0.00
7,300.00	13.77	189.08	7,106.37	-1,611.27	-257.49	505.70	0.00	0.00	0.00
7,316.50	13.77	189.08	7,122.40	-1,615.14	-258.11	506.92	0.00	0.00	0.00
Start DLS 10.00 TFO 81.45									
7,350.00	14.64	202.30	7,154.88	-1,623.00	-260.34	510.35	10.00	2.60	39.46
7,400.00	17.09	218.33	7,203.00	-1,634.61	-267.30	519.04	10.00	4.91	32.07
7,450.00	20.47	229.84	7,250.35	-1,646.02	-278.54	531.92	10.00	6.76	23.02

# Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well CHICO 4-65 25-26 4BH
<b>Company:</b>	CRESTONE PEAK RESOURCES	<b>TVD Reference:</b>	KB 25' @ 5793.00usft
<b>Project:</b>	ARAPAHOE COUNTY	<b>MD Reference:</b>	KB 25' @ 5793.00usft
<b>Site:</b>	SEC 30-T4S-R64W	<b>North Reference:</b>	True
<b>Well:</b>	CHICO 4-65 25-26 4BH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OWB		
<b>Design:</b>	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)
7,500.00	24.39	238.01	7,296.57	-1,657.13	-293.99	548.92	10.00	7.84	16.33
7,550.00	28.63	243.96	7,341.31	-1,667.87	-313.52	569.88	10.00	8.48	11.90
7,600.00	33.07	248.45	7,384.23	-1,678.15	-336.99	594.67	10.00	8.88	9.00
7,650.00	37.64	251.98	7,425.00	-1,687.89	-364.21	623.08	10.00	9.13	7.06
7,700.00	42.29	254.84	7,463.32	-1,697.01	-394.99	654.90	10.00	9.30	5.72
7,750.00	47.00	257.23	7,498.88	-1,705.46	-429.08	689.89	10.00	9.42	4.78
7,796.09	51.38	259.13	7,529.00	-1,712.58	-463.22	724.72	10.00	9.50	4.11
Sharon Springs Member									
7,800.00	51.75	259.28	7,531.43	-1,713.15	-466.22	727.78	10.00	9.54	3.83
7,850.00	56.54	261.07	7,560.71	-1,720.05	-506.14	768.29	10.00	9.57	3.59
7,900.00	61.34	262.68	7,586.50	-1,726.09	-548.53	811.10	10.00	9.61	3.21
7,950.00	66.17	264.14	7,608.60	-1,731.22	-593.07	855.89	10.00	9.65	2.93
8,000.00	71.01	265.50	7,626.85	-1,735.41	-639.41	902.32	10.00	9.68	2.72
8,050.00	75.85	266.78	7,641.11	-1,738.63	-687.21	950.04	10.00	9.69	2.56
8,100.00	80.71	268.01	7,651.26	-1,740.85	-736.11	998.68	10.00	9.71	2.46
8,150.00	85.56	269.20	7,657.23	-1,742.05	-785.72	1,047.87	10.00	9.71	2.39
8,195.64	90.00	270.28	7,659.00	-1,742.26	-831.31	1,092.94	10.00	9.72	2.36
Start 9865.17 hold at 8195.64 MD - Niobrara Formation									
8,200.00	90.00	270.28	7,659.00	-1,742.24	-835.67	1,097.24	0.00	0.00	0.00
8,300.00	90.00	270.28	7,659.00	-1,741.75	-935.67	1,195.94	0.00	0.00	0.00
8,400.00	90.00	270.28	7,659.00	-1,741.26	-1,035.67	1,294.64	0.00	0.00	0.00
8,500.00	90.00	270.28	7,659.00	-1,740.77	-1,135.67	1,393.34	0.00	0.00	0.00
8,600.00	90.00	270.28	7,659.00	-1,740.29	-1,235.67	1,492.03	0.00	0.00	0.00
8,700.00	90.00	270.28	7,659.00	-1,739.80	-1,335.66	1,590.73	0.00	0.00	0.00
8,800.00	90.00	270.28	7,659.00	-1,739.31	-1,435.66	1,689.43	0.00	0.00	0.00
8,900.00	90.00	270.28	7,659.00	-1,738.82	-1,535.66	1,788.13	0.00	0.00	0.00
9,000.00	90.00	270.28	7,659.00	-1,738.33	-1,635.66	1,886.83	0.00	0.00	0.00
9,100.00	90.00	270.28	7,659.00	-1,737.85	-1,735.66	1,985.53	0.00	0.00	0.00
9,200.00	90.00	270.28	7,659.00	-1,737.36	-1,835.66	2,084.22	0.00	0.00	0.00
9,300.00	90.00	270.28	7,659.00	-1,736.87	-1,935.66	2,182.92	0.00	0.00	0.00
9,400.00	90.00	270.28	7,659.00	-1,736.38	-2,035.66	2,281.62	0.00	0.00	0.00
9,500.00	90.00	270.28	7,659.00	-1,735.90	-2,135.65	2,380.32	0.00	0.00	0.00
9,600.00	90.00	270.28	7,659.00	-1,735.41	-2,235.65	2,479.02	0.00	0.00	0.00
9,700.00	90.00	270.28	7,659.00	-1,734.92	-2,335.65	2,577.72	0.00	0.00	0.00
9,800.00	90.00	270.28	7,659.00	-1,734.43	-2,435.65	2,676.41	0.00	0.00	0.00
9,900.00	90.00	270.28	7,659.00	-1,733.94	-2,535.65	2,775.11	0.00	0.00	0.00
10,000.00	90.00	270.28	7,659.00	-1,733.46	-2,635.65	2,873.81	0.00	0.00	0.00
10,100.00	90.00	270.28	7,659.00	-1,732.97	-2,735.65	2,972.51	0.00	0.00	0.00
10,200.00	90.00	270.28	7,659.00	-1,732.48	-2,835.65	3,071.21	0.00	0.00	0.00
10,300.00	90.00	270.28	7,659.00	-1,731.99	-2,935.65	3,169.90	0.00	0.00	0.00
10,400.00	90.00	270.28	7,659.00	-1,731.51	-3,035.64	3,268.60	0.00	0.00	0.00
10,500.00	90.00	270.28	7,659.00	-1,731.02	-3,135.64	3,367.30	0.00	0.00	0.00
10,600.00	90.00	270.28	7,659.00	-1,730.53	-3,235.64	3,466.00	0.00	0.00	0.00
10,700.00	90.00	270.28	7,659.00	-1,730.04	-3,335.64	3,564.70	0.00	0.00	0.00
10,800.00	90.00	270.28	7,659.00	-1,729.55	-3,435.64	3,663.40	0.00	0.00	0.00
10,900.00	90.00	270.28	7,659.00	-1,729.07	-3,535.64	3,762.09	0.00	0.00	0.00
11,000.00	90.00	270.28	7,659.00	-1,728.58	-3,635.64	3,860.79	0.00	0.00	0.00
11,100.00	90.00	270.28	7,659.00	-1,728.09	-3,735.64	3,959.49	0.00	0.00	0.00
11,200.00	90.00	270.28	7,659.00	-1,727.60	-3,835.63	4,058.19	0.00	0.00	0.00
11,300.00	90.00	270.28	7,659.00	-1,727.12	-3,935.63	4,156.89	0.00	0.00	0.00
11,400.00	90.00	270.28	7,659.00	-1,726.63	-4,035.63	4,255.59	0.00	0.00	0.00
11,500.00	90.00	270.28	7,659.00	-1,726.14	-4,135.63	4,354.28	0.00	0.00	0.00
11,600.00	90.00	270.28	7,659.00	-1,725.65	-4,235.63	4,452.98	0.00	0.00	0.00
11,700.00	90.00	270.28	7,659.00	-1,725.16	-4,335.63	4,551.68	0.00	0.00	0.00

## Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well CHICO 4-65 25-26 4BH
<b>Company:</b>	CRESTONE PEAK RESOURCES	<b>TVD Reference:</b>	KB 25' @ 5793.00usft
<b>Project:</b>	ARAPAHOE COUNTY	<b>MD Reference:</b>	KB 25' @ 5793.00usft
<b>Site:</b>	SEC 30-T4S-R64W	<b>North Reference:</b>	True
<b>Well:</b>	CHICO 4-65 25-26 4BH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OWB		
<b>Design:</b>	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)	
11,800.00	90.00	270.28	7,659.00	-1,724.68	-4,435.63	4,650.38	0.00	0.00	0.00	
11,900.00	90.00	270.28	7,659.00	-1,724.19	-4,535.63	4,749.08	0.00	0.00	0.00	
12,000.00	90.00	270.28	7,659.00	-1,723.70	-4,635.63	4,847.78	0.00	0.00	0.00	
12,100.00	90.00	270.28	7,659.00	-1,723.21	-4,735.62	4,946.47	0.00	0.00	0.00	
12,200.00	90.00	270.28	7,659.00	-1,722.73	-4,835.62	5,045.17	0.00	0.00	0.00	
12,300.00	90.00	270.28	7,659.00	-1,722.24	-4,935.62	5,143.87	0.00	0.00	0.00	
12,400.00	90.00	270.28	7,659.00	-1,721.75	-5,035.62	5,242.57	0.00	0.00	0.00	
12,500.00	90.00	270.28	7,659.00	-1,721.26	-5,135.62	5,341.27	0.00	0.00	0.00	
12,600.00	90.00	270.28	7,659.00	-1,720.77	-5,235.62	5,439.97	0.00	0.00	0.00	
12,700.00	90.00	270.28	7,659.00	-1,720.29	-5,335.62	5,538.66	0.00	0.00	0.00	
12,800.00	90.00	270.28	7,659.00	-1,719.80	-5,435.62	5,637.36	0.00	0.00	0.00	
12,900.00	90.00	270.28	7,659.00	-1,719.31	-5,535.61	5,736.06	0.00	0.00	0.00	
13,000.00	90.00	270.28	7,659.00	-1,718.82	-5,635.61	5,834.76	0.00	0.00	0.00	
13,100.00	90.00	270.28	7,659.00	-1,718.34	-5,735.61	5,933.46	0.00	0.00	0.00	
13,200.00	90.00	270.28	7,659.00	-1,717.85	-5,835.61	6,032.16	0.00	0.00	0.00	
13,300.00	90.00	270.28	7,659.00	-1,717.36	-5,935.61	6,130.85	0.00	0.00	0.00	
13,400.00	90.00	270.28	7,659.00	-1,716.87	-6,035.61	6,229.55	0.00	0.00	0.00	
13,500.00	90.00	270.28	7,659.00	-1,716.38	-6,135.61	6,328.25	0.00	0.00	0.00	
13,600.00	90.00	270.28	7,659.00	-1,715.90	-6,235.61	6,426.95	0.00	0.00	0.00	
13,700.00	90.00	270.28	7,659.00	-1,715.41	-6,335.60	6,525.65	0.00	0.00	0.00	
13,800.00	90.00	270.28	7,659.00	-1,714.92	-6,435.60	6,624.35	0.00	0.00	0.00	
13,900.00	90.00	270.28	7,659.00	-1,714.43	-6,535.60	6,723.04	0.00	0.00	0.00	
14,000.00	90.00	270.28	7,659.00	-1,713.95	-6,635.60	6,821.74	0.00	0.00	0.00	
14,100.00	90.00	270.28	7,659.00	-1,713.46	-6,735.60	6,920.44	0.00	0.00	0.00	
14,200.00	90.00	270.28	7,659.00	-1,712.97	-6,835.60	7,019.14	0.00	0.00	0.00	
14,300.00	90.00	270.28	7,659.00	-1,712.48	-6,935.60	7,117.84	0.00	0.00	0.00	
14,400.00	90.00	270.28	7,659.00	-1,711.99	-7,035.60	7,216.54	0.00	0.00	0.00	
14,500.00	90.00	270.28	7,659.00	-1,711.51	-7,135.60	7,315.23	0.00	0.00	0.00	
14,600.00	90.00	270.28	7,659.00	-1,711.02	-7,235.59	7,413.93	0.00	0.00	0.00	
14,700.00	90.00	270.28	7,659.00	-1,710.53	-7,335.59	7,512.63	0.00	0.00	0.00	
14,800.00	90.00	270.28	7,659.00	-1,710.04	-7,435.59	7,611.33	0.00	0.00	0.00	
14,900.00	90.00	270.28	7,659.00	-1,709.56	-7,535.59	7,710.03	0.00	0.00	0.00	
15,000.00	90.00	270.28	7,659.00	-1,709.07	-7,635.59	7,808.73	0.00	0.00	0.00	
15,100.00	90.00	270.28	7,659.00	-1,708.58	-7,735.59	7,907.42	0.00	0.00	0.00	
15,200.00	90.00	270.28	7,659.00	-1,708.09	-7,835.59	8,006.12	0.00	0.00	0.00	
15,300.00	90.00	270.28	7,659.00	-1,707.60	-7,935.59	8,104.82	0.00	0.00	0.00	
15,400.00	90.00	270.28	7,659.00	-1,707.12	-8,035.58	8,203.52	0.00	0.00	0.00	
15,500.00	90.00	270.28	7,659.00	-1,706.63	-8,135.58	8,302.22	0.00	0.00	0.00	
15,600.00	90.00	270.28	7,659.00	-1,706.14	-8,235.58	8,400.92	0.00	0.00	0.00	
15,700.00	90.00	270.28	7,659.00	-1,705.65	-8,335.58	8,499.61	0.00	0.00	0.00	
15,800.00	90.00	270.28	7,659.00	-1,705.17	-8,435.58	8,598.31	0.00	0.00	0.00	
15,900.00	90.00	270.28	7,659.00	-1,704.68	-8,535.58	8,697.01	0.00	0.00	0.00	
16,000.00	90.00	270.28	7,659.00	-1,704.19	-8,635.58	8,795.71	0.00	0.00	0.00	
16,100.00	90.00	270.28	7,659.00	-1,703.70	-8,735.58	8,894.41	0.00	0.00	0.00	
16,200.00	90.00	270.28	7,659.00	-1,703.21	-8,835.58	8,993.11	0.00	0.00	0.00	
16,300.00	90.00	270.28	7,659.00	-1,702.73	-8,935.57	9,091.80	0.00	0.00	0.00	
16,400.00	90.00	270.28	7,659.00	-1,702.24	-9,035.57	9,190.50	0.00	0.00	0.00	
16,500.00	90.00	270.28	7,659.00	-1,701.75	-9,135.57	9,289.20	0.00	0.00	0.00	
16,600.00	90.00	270.28	7,659.00	-1,701.26	-9,235.57	9,387.90	0.00	0.00	0.00	
16,700.00	90.00	270.28	7,659.00	-1,700.78	-9,335.57	9,486.60	0.00	0.00	0.00	
16,800.00	90.00	270.28	7,659.00	-1,700.29	-9,435.57	9,585.30	0.00	0.00	0.00	
16,900.00	90.00	270.28	7,659.00	-1,699.80	-9,535.57	9,683.99	0.00	0.00	0.00	
17,000.00	90.00	270.28	7,659.00	-1,699.31	-9,635.57	9,782.69	0.00	0.00	0.00	
17,100.00	90.00	270.28	7,659.00	-1,698.82	-9,735.56	9,881.39	0.00	0.00	0.00	

## Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well CHICO 4-65 25-26 4BH
<b>Company:</b>	CRESTONE PEAK RESOURCES	<b>TVD Reference:</b>	KB 25' @ 5793.00usft
<b>Project:</b>	ARAPAHOE COUNTY	<b>MD Reference:</b>	KB 25' @ 5793.00usft
<b>Site:</b>	SEC 30-T4S-R64W	<b>North Reference:</b>	True
<b>Well:</b>	CHICO 4-65 25-26 4BH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OWB		
<b>Design:</b>	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)	
17,200.00	90.00	270.28	7,659.00	-1,698.34	-9,835.56	9,980.09	0.00	0.00	0.00	
17,300.00	90.00	270.28	7,659.00	-1,697.85	-9,935.56	10,078.79	0.00	0.00	0.00	
17,400.00	90.00	270.28	7,659.00	-1,697.36	-10,035.56	10,177.49	0.00	0.00	0.00	
17,500.00	90.00	270.28	7,659.00	-1,696.87	-10,135.56	10,276.18	0.00	0.00	0.00	
17,600.00	90.00	270.28	7,659.00	-1,696.39	-10,235.56	10,374.88	0.00	0.00	0.00	
17,700.00	90.00	270.28	7,659.00	-1,695.90	-10,335.56	10,473.58	0.00	0.00	0.00	
17,800.00	90.00	270.28	7,659.00	-1,695.41	-10,435.56	10,572.28	0.00	0.00	0.00	
17,900.00	90.00	270.28	7,659.00	-1,694.92	-10,535.56	10,670.98	0.00	0.00	0.00	
18,000.00	90.00	270.28	7,659.00	-1,694.43	-10,635.55	10,769.68	0.00	0.00	0.00	
18,060.81	90.00	270.28	7,659.00	-1,694.14	-10,696.37	10,829.70	0.00	0.00	0.00	
TD at 18060.81										

Design Targets										
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude Longitude		
LP-CHICO 4-65 4BH - plan hits target center - Point	0.00	0.00	7,659.00	-1,742.26	-831.31	1,669,567.05	3,252,023.15	39.668350°N		104.604729°W
PBHL-CHICO 4-65 4BH - plan hits target center - Point	0.00	0.00	7,659.00	-1,694.14	-10,696.37	1,669,517.63	3,242,158.24	39.668476°N		104.639772°W

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
24.00	24.00	Denver				
693.23	689.00	Arapahoe				
1,310.60	1,289.00	Laramie-Fox Hills Formation				
2,051.90	2,009.00	Pierre Formation				
2,576.98	2,519.00	Upper Pierre aquifer				
3,199.87	3,124.00	Base of Upper Pierre aquifer				
4,244.88	4,139.00	Larimer ("Parkman") sandstone				
4,368.43	4,259.00	Pierre Formation				
5,449.48	5,309.00	Terry ("Sussex") sandstone				
5,614.21	5,469.00	Pierre Formation				
6,386.39	6,219.00	Hygiene ("Shannon") sandstone				
6,612.89	6,439.00	Pierre Formation				
7,796.09	7,529.00	Sharon Springs Member				
8,195.64	7,659.00	Niobrara Formation				



## Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well CHICO 4-65 25-26 4BH
<b>Company:</b>	CRESTONE PEAK RESOURCES	<b>TVD Reference:</b>	KB 25' @ 5793.00usft
<b>Project:</b>	ARAPAHOE COUNTY	<b>MD Reference:</b>	KB 25' @ 5793.00usft
<b>Site:</b>	SEC 30-T4S-R64W	<b>North Reference:</b>	True
<b>Well:</b>	CHICO 4-65 25-26 4BH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OWB		
<b>Design:</b>	PROPOSAL 1		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
100.00	100.00	0.00	0.00	Start Build 2.00
788.26	781.66	-81.25	-12.98	Start 6528.24 hold at 788.26 MD
7,316.50	7,122.40	-1,615.14	-258.11	Start DLS 10.00 TFO 81.45
8,195.64	7,659.00	-1,742.26	-831.31	Start 9865.17 hold at 8195.64 MD
18,060.81	7,659.00	-1,694.14	-10,696.37	TD at 18060.81