

# **CRESTONE PEAK RESOURCES**

**ARAPAHOE COUNTY**

**SEC 35-T4S-R65W**

**STATE BIERSTADT 4-65 35-34 2BH**

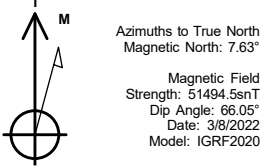
**OWB**

**Plan: PROPOSAL 1**

## **Standard Planning Report**

**23 October, 2023**

Project: ARAPAHOE COUNTY  
Site: SEC 35-T4S-R65W  
Well: STATE BIERSTADT 4-65 35-34 2BH  
Wellbore: OWB  
Design: PROPOSAL 1



WELL DETAILS: STATE BIERSTADT 4-65 35-34 2BH						
5869.90						
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1667028.44	3246495.99	39.661529°N	104.624449°W	

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	
3	1364.92	9.30	96.38	1362.88	-4.18	37.41	2.00	96.38	-37.37	
4	7447.06	9.30	96.38	7365.10	-113.36	1014.05	0.00	0.00	-1013.05	
5	8439.50	90.00	270.23	8030.00	-122.74	448.50	10.00	173.77	-447.43	LP-ST BIERSTADT 4-65 2BH
6	18508.38	90.00	270.23	8030.00	-82.33	-9620.30	0.00	0.00	9620.65	PBHL-ST BIERSTADT 4-65 2BH

ANNOTATIONS

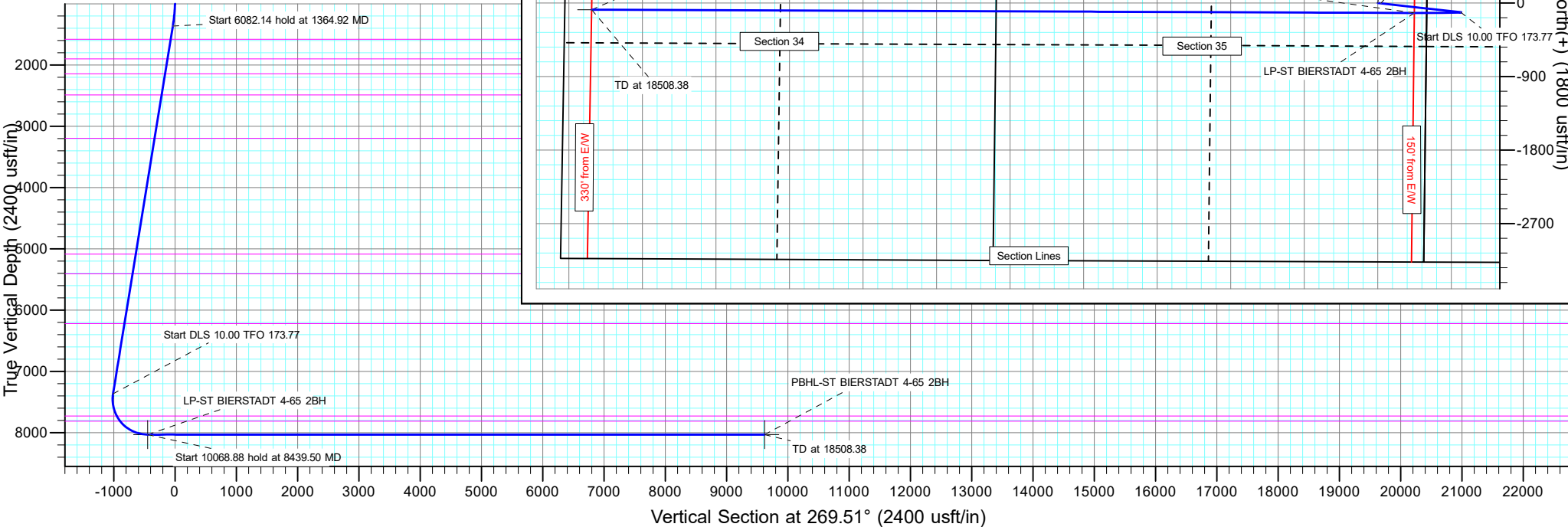
MD	Inc	Azi	TVD	+N/-S	+E/-W	VSect	Departure	Annotation
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	Start Build 2.00
1364.92	9.30	96.38	1362.88	-4.18	37.41	-37.37	37.64	Start 6082.14 hold at 1364.92 MD
7447.06	9.30	96.38	7365.10	-113.36	1014.05	-1013.05	1020.37	Start DLS 10.00 TFO 173.77
8439.50	90.00	270.23	8030.00	-122.74	448.50	-447.43	1602.19	Start 10068.88 hold at 8439.50 MD
18508.38	90.00	270.23	8030.00	-82.33	-9620.30	9620.65	11671.07	TD at 18508.38

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
LP-ST BIERSTADT 4-65 2BH	8030.00	-122.74	448.50	1666910.03	3246945.65	39.661192°N	104.622856°W	Point
- plan hits target center								
PBHL-ST BIERSTADT 4-65 2BH	8030.00	-82.33	-9620.30	1666853.41	3236877.09	39.661298°N	104.658619°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:  
2109' FNL, 600' FEL  
Sec 35-T4S-R65W  
LP:  
2230' FNL, 150' FEL  
Sec 35-T4S-R65W  
BHL:  
2230' FNL, 330' FWL  
Sec 34-T4S-R65W



# Civitas Resources

## Planning Report

<b>Database:</b>	EDM	<b>Local Co-ordinate Reference:</b>	Well STATE BIERSTADT 4-65 35-34 2BH
<b>Company:</b>	CRESTONE PEAK RESOURCES	<b>TVD Reference:</b>	KB 24' @ 5893.90usft
<b>Project:</b>	ARAPAHOE COUNTY	<b>MD Reference:</b>	KB 24' @ 5893.90usft
<b>Site:</b>	SEC 35-T4S-R65W	<b>North Reference:</b>	True
<b>Well:</b>	STATE BIERSTADT 4-65 35-34 2BH	<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

<b>Site</b>	SEC 35-T4S-R65W		
<b>Site Position:</b>		<b>Northing:</b>	1,666,501.66 usft
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,247,094.88 usft
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13.200 in
		<b>Latitude:</b>	39.660067°N
		<b>Longitude:</b>	104.622340°W
		<b>Grid Convergence:</b>	0.55 °

Well	STATE BIERSTADT 4-65 35-34 2BH					
Well Position	+N/-S	532.55 usft	Northing:	1,667,028.44 usft	Latitude:	39.661529°N
	+E/-W	-593.77 usft	Easting:	3,246,496.00 usft	Longitude:	104.624449°W
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	5,869.90 usft

Wellbore	OWB				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	3/8/2022	7.63	66.05	51,494.52969528

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	269.51

<b>Plan Survey Tool Program</b>	<b>Date</b>	10/23/2023		
<b>Depth From (usft)</b>	<b>Depth To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>
1	0.00	18,508.38	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	
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,364.92	9.30	96.38	1,362.88	-4.18	37.41	2.00	2.00	0.00	96.38	
7,447.06	9.30	96.38	7,365.10	-113.36	1,014.05	0.00	0.00	0.00	0.00	
8,439.50	90.00	270.23	8,030.00	-122.74	448.50	10.00	8.13	17.52	173.77	LP-ST BIERSTADT 4-
18,508.38	90.00	270.23	8,030.00	-82.33	-9,620.30	0.00	0.00	0.00	0.00	PBHL-ST BIERSTADT

# Civitas Resources

## Planning Report

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<b>Company:</b>	CRESTONE PEAK RESOURCES	<b>TVD Reference:</b>	KB 24' @ 5893.90usft
<b>Project:</b>	ARAPAHOE COUNTY	<b>MD Reference:</b>	KB 24' @ 5893.90usft
<b>Site:</b>	SEC 35-T4S-R65W	<b>North Reference:</b>	True
<b>Well:</b>	STATE BIERSTADT 4-65 35-34 2BH	<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 Formation									
100.00	0.00	0.00	100.00	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
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
894.00	0.00	0.00	894.00	0.00	0.00	0.00	0.00	0.00	0.00
Arapahoe Formation									
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
1,000.00	2.00	96.38	999.98	-0.19	1.73	-1.73	2.00	2.00	0.00
1,100.00	4.00	96.38	1,099.84	-0.78	6.94	-6.93	2.00	2.00	0.00
1,200.00	6.00	96.38	1,199.45	-1.74	15.60	-15.58	2.00	2.00	0.00
1,300.00	8.00	96.38	1,298.70	-3.10	27.71	-27.68	2.00	2.00	0.00
1,364.92	9.30	96.38	1,362.88	-4.18	37.41	-37.37	2.00	2.00	0.00
Start 6082.14 hold at 1364.92 MD									
1,400.00	9.30	96.38	1,397.50	-4.81	43.04	-43.00	0.00	0.00	0.00
1,500.00	9.30	96.38	1,496.19	-6.61	59.10	-59.04	0.00	0.00	0.00
1,599.12	9.30	96.38	1,594.00	-8.39	75.02	-74.94	0.00	0.00	0.00
Laramie Formation									
1,600.00	9.30	96.38	1,594.87	-8.40	75.16	-75.08	0.00	0.00	0.00
1,700.00	9.30	96.38	1,693.56	-10.20	91.22	-91.12	0.00	0.00	0.00
1,800.00	9.30	96.38	1,792.25	-11.99	107.27	-107.17	0.00	0.00	0.00
1,900.00	9.30	96.38	1,890.93	-13.79	123.33	-123.21	0.00	0.00	0.00
1,903.11	9.30	96.38	1,894.00	-13.84	123.83	-123.71	0.00	0.00	0.00
Fox Hills sandstone									
2,000.00	9.30	96.38	1,989.62	-15.58	139.39	-139.25	0.00	0.00	0.00
2,100.00	9.30	96.38	2,088.30	-17.38	155.45	-155.29	0.00	0.00	0.00
2,146.31	9.30	96.38	2,134.00	-18.21	162.88	-162.72	0.00	0.00	0.00
Pierre Formation									
2,200.00	9.30	96.38	2,186.99	-19.17	171.50	-171.33	0.00	0.00	0.00
2,300.00	9.30	96.38	2,285.68	-20.97	187.56	-187.37	0.00	0.00	0.00
2,400.00	9.30	96.38	2,384.36	-22.76	203.62	-203.42	0.00	0.00	0.00
2,500.00	9.30	96.38	2,483.05	-24.56	219.68	-219.46	0.00	0.00	0.00
2,600.00	9.30	96.38	2,581.73	-26.35	235.73	-235.50	0.00	0.00	0.00
2,700.00	9.30	96.38	2,680.42	-28.15	251.79	-251.54	0.00	0.00	0.00
2,713.76	9.30	96.38	2,694.00	-28.39	254.00	-253.75	0.00	0.00	0.00
Upper Pierre aquifer									
2,800.00	9.30	96.38	2,779.11	-29.94	267.85	-267.58	0.00	0.00	0.00
2,900.00	9.30	96.38	2,877.79	-31.74	283.91	-283.62	0.00	0.00	0.00
3,000.00	9.30	96.38	2,976.48	-33.53	299.96	-299.67	0.00	0.00	0.00
3,100.00	9.30	96.38	3,075.16	-35.33	316.02	-315.71	0.00	0.00	0.00
3,200.00	9.30	96.38	3,173.85	-37.12	332.08	-331.75	0.00	0.00	0.00
3,300.00	9.30	96.38	3,272.54	-38.92	348.14	-347.79	0.00	0.00	0.00
3,321.75	9.30	96.38	3,294.00	-39.31	351.63	-351.28	0.00	0.00	0.00
Base of Upper Pierre aquifer									
3,400.00	9.30	96.38	3,371.22	-40.71	364.19	-363.83	0.00	0.00	0.00
3,500.00	9.30	96.38	3,469.91	-42.51	380.25	-379.87	0.00	0.00	0.00

# Civitas Resources

## Planning Report

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<b>Project:</b>	ARAPAHOE COUNTY	<b>MD Reference:</b>	KB 24' @ 5893.90usft
<b>Site:</b>	SEC 35-T4S-R65W	<b>North Reference:</b>	True
<b>Well:</b>	STATE BIERSTADT 4-65 35-34 2BH	<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)	
3,600.00	9.30	96.38	3,568.59	-44.30	396.31	-395.92	0.00	0.00	0.00	
3,700.00	9.30	96.38	3,667.28	-46.10	412.37	-411.96	0.00	0.00	0.00	
3,800.00	9.30	96.38	3,765.97	-47.89	428.43	-428.00	0.00	0.00	0.00	
3,900.00	9.30	96.38	3,864.65	-49.69	444.48	-444.04	0.00	0.00	0.00	
4,000.00	9.30	96.38	3,963.34	-51.48	460.54	-460.08	0.00	0.00	0.00	
4,100.00	9.30	96.38	4,062.02	-53.28	476.60	-476.12	0.00	0.00	0.00	
4,200.00	9.30	96.38	4,160.71	-55.07	492.66	-492.17	0.00	0.00	0.00	
4,264.13	9.30	96.38	4,224.00	-56.22	502.95	-502.45	0.00	0.00	0.00	
Larimer ("Parkman") sandstone										
4,300.00	9.30	96.38	4,259.40	-56.87	508.71	-508.21	0.00	0.00	0.00	
4,400.00	9.30	96.38	4,358.08	-58.66	524.77	-524.25	0.00	0.00	0.00	
4,436.40	9.30	96.38	4,394.00	-59.31	530.62	-530.09	0.00	0.00	0.00	
Pierre Formation										
4,500.00	9.30	96.38	4,456.77	-60.46	540.83	-540.29	0.00	0.00	0.00	
4,600.00	9.30	96.38	4,555.45	-62.25	556.89	-556.33	0.00	0.00	0.00	
4,700.00	9.30	96.38	4,654.14	-64.05	572.94	-572.37	0.00	0.00	0.00	
4,800.00	9.30	96.38	4,752.83	-65.84	589.00	-588.42	0.00	0.00	0.00	
4,900.00	9.30	96.38	4,851.51	-67.64	605.06	-604.46	0.00	0.00	0.00	
5,000.00	9.30	96.38	4,950.20	-69.43	621.12	-620.50	0.00	0.00	0.00	
5,100.00	9.30	96.38	5,048.88	-71.23	637.17	-636.54	0.00	0.00	0.00	
5,200.00	9.30	96.38	5,147.57	-73.02	653.23	-652.58	0.00	0.00	0.00	
5,300.00	9.30	96.38	5,246.26	-74.82	669.29	-668.62	0.00	0.00	0.00	
5,400.00	9.30	96.38	5,344.94	-76.61	685.35	-684.67	0.00	0.00	0.00	
5,500.00	9.30	96.38	5,443.63	-78.41	701.40	-700.71	0.00	0.00	0.00	
5,540.91	9.30	96.38	5,484.00	-79.14	707.97	-707.27	0.00	0.00	0.00	
Terry ("Sussex") sandstone										
5,600.00	9.30	96.38	5,542.31	-80.20	717.46	-716.75	0.00	0.00	0.00	
5,657.44	9.30	96.38	5,599.00	-81.23	726.69	-725.96	0.00	0.00	0.00	
Pierre Formation										
5,700.00	9.30	96.38	5,641.00	-82.00	733.52	-732.79	0.00	0.00	0.00	
5,800.00	9.30	96.38	5,739.69	-83.79	749.58	-748.83	0.00	0.00	0.00	
5,900.00	9.30	96.38	5,838.37	-85.59	765.63	-764.87	0.00	0.00	0.00	
6,000.00	9.30	96.38	5,937.06	-87.38	781.69	-780.92	0.00	0.00	0.00	
6,100.00	9.30	96.38	6,035.74	-89.18	797.75	-796.96	0.00	0.00	0.00	
6,200.00	9.30	96.38	6,134.43	-90.97	813.81	-813.00	0.00	0.00	0.00	
6,300.00	9.30	96.38	6,233.12	-92.77	829.86	-829.04	0.00	0.00	0.00	
6,400.00	9.30	96.38	6,331.80	-94.56	845.92	-845.08	0.00	0.00	0.00	
6,412.36	9.30	96.38	6,344.00	-94.78	847.91	-847.07	0.00	0.00	0.00	
Hygiene ("Shannon") sandstone										
6,500.00	9.30	96.38	6,430.49	-96.36	861.98	-861.12	0.00	0.00	0.00	
6,539.02	9.30	96.38	6,469.00	-97.06	868.25	-867.38	0.00	0.00	0.00	
Pierre Formation										
6,600.00	9.30	96.38	6,529.17	-98.15	878.04	-877.17	0.00	0.00	0.00	
6,700.00	9.30	96.38	6,627.86	-99.95	894.10	-893.21	0.00	0.00	0.00	
6,800.00	9.30	96.38	6,726.55	-101.74	910.15	-909.25	0.00	0.00	0.00	
6,900.00	9.30	96.38	6,825.23	-103.54	926.21	-925.29	0.00	0.00	0.00	
7,000.00	9.30	96.38	6,923.92	-105.33	942.27	-941.33	0.00	0.00	0.00	
7,100.00	9.30	96.38	7,022.60	-107.13	958.33	-957.37	0.00	0.00	0.00	
7,200.00	9.30	96.38	7,121.29	-108.92	974.38	-973.42	0.00	0.00	0.00	
7,300.00	9.30	96.38	7,219.98	-110.72	990.44	-989.46	0.00	0.00	0.00	
7,400.00	9.30	96.38	7,318.66	-112.51	1,006.50	-1,005.50	0.00	0.00	0.00	
7,447.06	9.30	96.38	7,365.10	-113.36	1,014.05	-1,013.05	0.00	0.00	0.00	
Start DLS 10.00 TFO 173.77										

# Civitas Resources

## Planning Report

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<b>Project:</b>	ARAPAHOE COUNTY	<b>MD Reference:</b>	KB 24' @ 5893.90usft
<b>Site:</b>	SEC 35-T4S-R65W	<b>North Reference:</b>	True
<b>Well:</b>	STATE BIERSTADT 4-65 35-34 2BH	<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)
7,450.00	9.01	96.58	7,368.01	-113.41	1,014.52	-1,013.51	10.00	-9.94	6.93
7,500.00	4.08	104.48	7,417.67	-114.30	1,020.13	-1,019.12	10.00	-9.86	15.79
7,550.00	1.45	226.49	7,467.63	-115.18	1,021.39	-1,020.37	10.00	-5.25	244.04
7,600.00	6.13	260.84	7,517.51	-116.04	1,018.29	-1,017.26	10.00	9.36	68.68
7,650.00	11.09	265.10	7,566.93	-116.88	1,010.86	-1,009.82	10.00	9.92	8.53
7,700.00	16.08	266.74	7,615.51	-117.69	999.15	-998.10	10.00	9.97	3.29
7,750.00	21.07	267.62	7,662.89	-118.45	983.24	-982.19	10.00	9.98	1.76
7,800.00	26.07	268.18	7,708.71	-119.18	963.27	-962.21	10.00	9.99	1.11
7,850.00	31.06	268.56	7,752.61	-119.85	939.38	-938.32	10.00	9.99	0.77
7,851.63	31.23	268.57	7,754.00	-119.87	938.53	-937.47	10.00	9.99	0.66
Sharon Springs									
7,900.00	36.06	268.85	7,794.26	-120.47	911.75	-910.68	10.00	9.99	0.57
7,950.00	41.06	269.08	7,833.34	-121.03	880.60	-879.53	10.00	10.00	0.45
7,964.29	42.49	269.13	7,844.00	-121.18	871.08	-870.01	10.00	10.00	0.40
Niobrara									
8,000.00	46.06	269.26	7,869.57	-121.53	846.16	-845.08	10.00	10.00	0.36
8,050.00	51.06	269.42	7,902.65	-121.96	808.69	-807.62	10.00	10.00	0.31
8,100.00	56.06	269.55	7,932.34	-122.32	768.48	-767.41	10.00	10.00	0.27
8,150.00	61.05	269.67	7,958.42	-122.60	725.84	-724.76	10.00	10.00	0.24
8,200.00	66.05	269.78	7,980.68	-122.81	681.09	-680.01	10.00	10.00	0.22
8,250.00	71.05	269.89	7,998.95	-122.95	634.56	-633.49	10.00	10.00	0.20
8,300.00	76.05	269.98	8,013.10	-123.00	586.62	-585.55	10.00	10.00	0.19
8,350.00	81.05	270.07	8,023.03	-122.98	537.63	-536.56	10.00	10.00	0.18
8,400.00	86.05	270.16	8,028.64	-122.88	487.97	-486.90	10.00	10.00	0.18
8,439.50	90.00	270.23	8,030.00	-122.74	448.50	-447.43	10.00	10.00	0.18
Start 10068.88 hold at 8439.50 MD									
8,500.00	90.00	270.23	8,030.00	-122.50	388.00	-386.94	0.00	0.00	0.00
8,600.00	90.00	270.23	8,030.00	-122.10	288.00	-286.94	0.00	0.00	0.00
8,700.00	90.00	270.23	8,030.00	-121.70	188.00	-186.95	0.00	0.00	0.00
8,800.00	90.00	270.23	8,030.00	-121.30	88.00	-86.96	0.00	0.00	0.00
8,900.00	90.00	270.23	8,030.00	-120.90	-12.00	13.03	0.00	0.00	0.00
9,000.00	90.00	270.23	8,030.00	-120.49	-112.00	113.02	0.00	0.00	0.00
9,100.00	90.00	270.23	8,030.00	-120.09	-212.00	213.02	0.00	0.00	0.00
9,200.00	90.00	270.23	8,030.00	-119.69	-312.00	313.01	0.00	0.00	0.00
9,300.00	90.00	270.23	8,030.00	-119.29	-412.00	413.00	0.00	0.00	0.00
9,400.00	90.00	270.23	8,030.00	-118.89	-511.99	512.99	0.00	0.00	0.00
9,500.00	90.00	270.23	8,030.00	-118.49	-611.99	612.99	0.00	0.00	0.00
9,600.00	90.00	270.23	8,030.00	-118.09	-711.99	712.98	0.00	0.00	0.00
9,700.00	90.00	270.23	8,030.00	-117.68	-811.99	812.97	0.00	0.00	0.00
9,800.00	90.00	270.23	8,030.00	-117.28	-911.99	912.96	0.00	0.00	0.00
9,900.00	90.00	270.23	8,030.00	-116.88	-1,011.99	1,012.95	0.00	0.00	0.00
10,000.00	90.00	270.23	8,030.00	-116.48	-1,111.99	1,112.95	0.00	0.00	0.00
10,100.00	90.00	270.23	8,030.00	-116.08	-1,211.99	1,212.94	0.00	0.00	0.00
10,200.00	90.00	270.23	8,030.00	-115.68	-1,311.99	1,312.93	0.00	0.00	0.00
10,300.00	90.00	270.23	8,030.00	-115.28	-1,411.99	1,412.92	0.00	0.00	0.00
10,400.00	90.00	270.23	8,030.00	-114.88	-1,511.99	1,512.91	0.00	0.00	0.00
10,500.00	90.00	270.23	8,030.00	-114.47	-1,611.99	1,612.91	0.00	0.00	0.00
10,600.00	90.00	270.23	8,030.00	-114.07	-1,711.98	1,712.90	0.00	0.00	0.00
10,700.00	90.00	270.23	8,030.00	-113.67	-1,811.98	1,812.89	0.00	0.00	0.00
10,800.00	90.00	270.23	8,030.00	-113.27	-1,911.98	1,912.88	0.00	0.00	0.00
10,900.00	90.00	270.23	8,030.00	-112.87	-2,011.98	2,012.87	0.00	0.00	0.00
11,000.00	90.00	270.23	8,030.00	-112.47	-2,111.98	2,112.87	0.00	0.00	0.00
11,100.00	90.00	270.23	8,030.00	-112.07	-2,211.98	2,212.86	0.00	0.00	0.00

# Civitas Resources

## Planning Report

<b>Database:</b>	EDM	<b>Local Co-ordinate Reference:</b>	Well STATE BIERSTADT 4-65 35-34 2BH
<b>Company:</b>	CRESTONE PEAK RESOURCES	<b>TVD Reference:</b>	KB 24' @ 5893.90usft
<b>Project:</b>	ARAPAHOE COUNTY	<b>MD Reference:</b>	KB 24' @ 5893.90usft
<b>Site:</b>	SEC 35-T4S-R65W	<b>North Reference:</b>	True
<b>Well:</b>	STATE BIERSTADT 4-65 35-34 2BH	<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)
11,200.00	90.00	270.23	8,030.00	-111.66	-2,311.98	2,312.85	0.00	0.00	0.00
11,300.00	90.00	270.23	8,030.00	-111.26	-2,411.98	2,412.84	0.00	0.00	0.00
11,400.00	90.00	270.23	8,030.00	-110.86	-2,511.98	2,512.84	0.00	0.00	0.00
11,500.00	90.00	270.23	8,030.00	-110.46	-2,611.98	2,612.83	0.00	0.00	0.00
11,600.00	90.00	270.23	8,030.00	-110.06	-2,711.98	2,712.82	0.00	0.00	0.00
11,700.00	90.00	270.23	8,030.00	-109.66	-2,811.98	2,812.81	0.00	0.00	0.00
11,800.00	90.00	270.23	8,030.00	-109.26	-2,911.98	2,912.80	0.00	0.00	0.00
11,900.00	90.00	270.23	8,030.00	-108.85	-3,011.97	3,012.80	0.00	0.00	0.00
12,000.00	90.00	270.23	8,030.00	-108.45	-3,111.97	3,112.79	0.00	0.00	0.00
12,100.00	90.00	270.23	8,030.00	-108.05	-3,211.97	3,212.78	0.00	0.00	0.00
12,200.00	90.00	270.23	8,030.00	-107.65	-3,311.97	3,312.77	0.00	0.00	0.00
12,300.00	90.00	270.23	8,030.00	-107.25	-3,411.97	3,412.76	0.00	0.00	0.00
12,400.00	90.00	270.23	8,030.00	-106.85	-3,511.97	3,512.76	0.00	0.00	0.00
12,500.00	90.00	270.23	8,030.00	-106.45	-3,611.97	3,612.75	0.00	0.00	0.00
12,600.00	90.00	270.23	8,030.00	-106.04	-3,711.97	3,712.74	0.00	0.00	0.00
12,700.00	90.00	270.23	8,030.00	-105.64	-3,811.97	3,812.73	0.00	0.00	0.00
12,800.00	90.00	270.23	8,030.00	-105.24	-3,911.97	3,912.72	0.00	0.00	0.00
12,900.00	90.00	270.23	8,030.00	-104.84	-4,011.97	4,012.72	0.00	0.00	0.00
13,000.00	90.00	270.23	8,030.00	-104.44	-4,111.97	4,112.71	0.00	0.00	0.00
13,100.00	90.00	270.23	8,030.00	-104.04	-4,211.96	4,212.70	0.00	0.00	0.00
13,200.00	90.00	270.23	8,030.00	-103.64	-4,311.96	4,312.69	0.00	0.00	0.00
13,300.00	90.00	270.23	8,030.00	-103.23	-4,411.96	4,412.68	0.00	0.00	0.00
13,400.00	90.00	270.23	8,030.00	-102.83	-4,511.96	4,512.68	0.00	0.00	0.00
13,500.00	90.00	270.23	8,030.00	-102.43	-4,611.96	4,612.67	0.00	0.00	0.00
13,600.00	90.00	270.23	8,030.00	-102.03	-4,711.96	4,712.66	0.00	0.00	0.00
13,700.00	90.00	270.23	8,030.00	-101.63	-4,811.96	4,812.65	0.00	0.00	0.00
13,800.00	90.00	270.23	8,030.00	-101.23	-4,911.96	4,912.65	0.00	0.00	0.00
13,900.00	90.00	270.23	8,030.00	-100.83	-5,011.96	5,012.64	0.00	0.00	0.00
14,000.00	90.00	270.23	8,030.00	-100.42	-5,111.96	5,112.63	0.00	0.00	0.00
14,100.00	90.00	270.23	8,030.00	-100.02	-5,211.96	5,212.62	0.00	0.00	0.00
14,200.00	90.00	270.23	8,030.00	-99.62	-5,311.96	5,312.61	0.00	0.00	0.00
14,300.00	90.00	270.23	8,030.00	-99.22	-5,411.96	5,412.61	0.00	0.00	0.00
14,400.00	90.00	270.23	8,030.00	-98.82	-5,511.95	5,512.60	0.00	0.00	0.00
14,500.00	90.00	270.23	8,030.00	-98.42	-5,611.95	5,612.59	0.00	0.00	0.00
14,600.00	90.00	270.23	8,030.00	-98.02	-5,711.95	5,712.58	0.00	0.00	0.00
14,700.00	90.00	270.23	8,030.00	-97.61	-5,811.95	5,812.57	0.00	0.00	0.00
14,800.00	90.00	270.23	8,030.00	-97.21	-5,911.95	5,912.57	0.00	0.00	0.00
14,900.00	90.00	270.23	8,030.00	-96.81	-6,011.95	6,012.56	0.00	0.00	0.00
15,000.00	90.00	270.23	8,030.00	-96.41	-6,111.95	6,112.55	0.00	0.00	0.00
15,100.00	90.00	270.23	8,030.00	-96.01	-6,211.95	6,212.54	0.00	0.00	0.00
15,200.00	90.00	270.23	8,030.00	-95.61	-6,311.95	6,312.53	0.00	0.00	0.00
15,300.00	90.00	270.23	8,030.00	-95.21	-6,411.95	6,412.53	0.00	0.00	0.00
15,400.00	90.00	270.23	8,030.00	-94.80	-6,511.95	6,512.52	0.00	0.00	0.00
15,500.00	90.00	270.23	8,030.00	-94.40	-6,611.95	6,612.51	0.00	0.00	0.00
15,600.00	90.00	270.23	8,030.00	-94.00	-6,711.94	6,712.50	0.00	0.00	0.00
15,700.00	90.00	270.23	8,030.00	-93.60	-6,811.94	6,812.50	0.00	0.00	0.00
15,800.00	90.00	270.23	8,030.00	-93.20	-6,911.94	6,912.49	0.00	0.00	0.00
15,900.00	90.00	270.23	8,030.00	-92.80	-7,011.94	7,012.48	0.00	0.00	0.00
16,000.00	90.00	270.23	8,030.00	-92.40	-7,111.94	7,112.47	0.00	0.00	0.00
16,100.00	90.00	270.23	8,030.00	-91.99	-7,211.94	7,212.46	0.00	0.00	0.00
16,200.00	90.00	270.23	8,030.00	-91.59	-7,311.94	7,312.46	0.00	0.00	0.00
16,300.00	90.00	270.23	8,030.00	-91.19	-7,411.94	7,412.45	0.00	0.00	0.00
16,400.00	90.00	270.23	8,030.00	-90.79	-7,511.94	7,512.44	0.00	0.00	0.00
16,500.00	90.00	270.23	8,030.00	-90.39	-7,611.94	7,612.43	0.00	0.00	0.00

# Civitas Resources

## Planning Report

<b>Database:</b>	EDM	<b>Local Co-ordinate Reference:</b>	Well STATE BIERSTADT 4-65 35-34 2BH
<b>Company:</b>	CRESTONE PEAK RESOURCES	<b>TVD Reference:</b>	KB 24' @ 5893.90usft
<b>Project:</b>	ARAPAHOE COUNTY	<b>MD Reference:</b>	KB 24' @ 5893.90usft
<b>Site:</b>	SEC 35-T4S-R65W	<b>North Reference:</b>	True
<b>Well:</b>	STATE BIERSTADT 4-65 35-34 2BH	<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)	
16,600.00	90.00	270.23	8,030.00	-89.99	-7,711.94	7,712.42	0.00	0.00	0.00	
16,700.00	90.00	270.23	8,030.00	-89.59	-7,811.94	7,812.42	0.00	0.00	0.00	
16,800.00	90.00	270.23	8,030.00	-89.18	-7,911.94	7,912.41	0.00	0.00	0.00	
16,900.00	90.00	270.23	8,030.00	-88.78	-8,011.93	8,012.40	0.00	0.00	0.00	
17,000.00	90.00	270.23	8,030.00	-88.38	-8,111.93	8,112.39	0.00	0.00	0.00	
17,100.00	90.00	270.23	8,030.00	-87.98	-8,211.93	8,212.38	0.00	0.00	0.00	
17,200.00	90.00	270.23	8,030.00	-87.58	-8,311.93	8,312.38	0.00	0.00	0.00	
17,300.00	90.00	270.23	8,030.00	-87.18	-8,411.93	8,412.37	0.00	0.00	0.00	
17,400.00	90.00	270.23	8,030.00	-86.78	-8,511.93	8,512.36	0.00	0.00	0.00	
17,500.00	90.00	270.23	8,030.00	-86.37	-8,611.93	8,612.35	0.00	0.00	0.00	
17,600.00	90.00	270.23	8,030.00	-85.97	-8,711.93	8,712.35	0.00	0.00	0.00	
17,700.00	90.00	270.23	8,030.00	-85.57	-8,811.93	8,812.34	0.00	0.00	0.00	
17,800.00	90.00	270.23	8,030.00	-85.17	-8,911.93	8,912.33	0.00	0.00	0.00	
17,900.00	90.00	270.23	8,030.00	-84.77	-9,011.93	9,012.32	0.00	0.00	0.00	
18,000.00	90.00	270.23	8,030.00	-84.37	-9,111.93	9,112.31	0.00	0.00	0.00	
18,100.00	90.00	270.23	8,030.00	-83.97	-9,211.92	9,212.31	0.00	0.00	0.00	
18,200.00	90.00	270.23	8,030.00	-83.57	-9,311.92	9,312.30	0.00	0.00	0.00	
18,300.00	90.00	270.23	8,030.00	-83.16	-9,411.92	9,412.29	0.00	0.00	0.00	
18,400.00	90.00	270.23	8,030.00	-82.76	-9,511.92	9,512.28	0.00	0.00	0.00	
18,508.38	90.00	270.23	8,030.00	-82.33	-9,620.30	9,620.65	0.00	0.00	0.00	
TD at 18508.38										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
- hit/miss target										
- Shape										
LP-ST BIERSTADT 4-65	0.00	0.00	8,030.00	-122.74	448.50	1,666,910.03	3,246,945.65	39.661192°N	104.622856°W	
- plan hits target center										
- Point										
PBHL-ST BIERSTADT 4	0.00	0.00	8,030.00	-82.33	-9,620.30	1,666,853.40	3,236,877.09	39.661298°N	104.658619°W	
- plan hits target center										
- Point										



# Civitas Resources

## Planning Report

<b>Database:</b>	EDM	<b>Local Co-ordinate Reference:</b>	Well STATE BIERSTADT 4-65 35-34 2BH
<b>Company:</b>	CRESTONE PEAK RESOURCES	<b>TVD Reference:</b>	KB 24' @ 5893.90usft
<b>Project:</b>	ARAPAHOE COUNTY	<b>MD Reference:</b>	KB 24' @ 5893.90usft
<b>Site:</b>	SEC 35-T4S-R65W	<b>North Reference:</b>	True
<b>Well:</b>	STATE BIERSTADT 4-65 35-34 2BH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OWB		
<b>Design:</b>	PROPOSAL 1		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
24.00	24.00	Denver Formation				
894.00	894.00	Arapahoe Formation				
1,599.12	1,594.00	Laramie Formation				
1,903.11	1,894.00	Fox Hills sandstone				
2,146.31	2,134.00	Pierre Formation				
2,713.76	2,694.00	Upper Pierre aquifer				
3,321.75	3,294.00	Base of Upper Pierre aquifer				
4,264.13	4,224.00	Larimer ("Parkman") sandstone				
4,436.40	4,394.00	Pierre Formation				
5,540.91	5,484.00	Terry ("Sussex") sandstone				
5,657.44	5,599.00	Pierre Formation				
6,412.36	6,344.00	Hygiene ("Shannon") sandstone				
6,539.02	6,469.00	Pierre Formation				
7,851.63	7,754.00	Sharon Springs				
7,964.29	7,844.00	Niobrara				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
900.00	900.00	0.00	0.00	Start Build 2.00	
1,364.92	1,362.88	-4.18	37.41	Start 6082.14 hold at 1364.92 MD	
7,447.06	7,365.10	-113.36	1,014.05	Start DLS 10.00 TFO 173.77	
8,439.50	8,030.00	-122.74	448.50	Start 10068.88 hold at 8439.50 MD	
18,508.38	8,030.00	-82.33	-9,620.30	TD at 18508.38	