

CRESTONE PEAK RESOURCES

ARAPAHOE COUNTY

SEC 35-T4S-R65W

STATE BIERSTADT 4-65 35-34 3BH

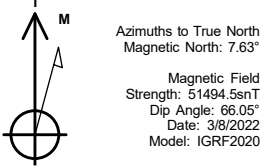
OWB

Plan: PROPOSAL 1

Standard Planning Report

23 October, 2023

Project: ARAPAHOE COUNTY
Site: SEC 35-T4S-R65W
Well: STATE BIERSTADT 4-65 35-34 3BH
Wellbore: OWB
Design: PROPOSAL 1



WELL DETAILS: STATE BIERSTADT 4-65 35-34 3BH						
5869.90						
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1666978.54	3246495.91	39.661392°N	104.624451°W	

ANNOTATIONS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	VSect	Departure	Annotation	
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	Start Build 2.00	
1194.23	13.88	141.72	1187.46	-65.71	51.85	-42.25	83.71	Start 6382.44 hold at 1194.23 MD	
7576.67	13.88	141.72	7383.41	-1268.02	-815.25	1615.29		Start DLS 10.00 TFO 127.69	
8562.61	90.00	270.24	8030.00	-1390.75	433.60	-236.68	2233.19	Start 10075.60 hold at 8562.61 MD	
18638.21	90.00	270.24	8030.00	-1349.23	-9641.91	9735.86	12308.79	TD at 18638.21	

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	500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00
3	1194.23	13.88	141.72	1187.46	-65.71	51.85	2.00	141.72	-42.25
4	7576.67	13.88	141.72	7383.41	-1268.02	1000.63	0.00	0.00	-815.25
5	8562.61	90.00	270.24	8030.00	-1390.75	433.60	10.00	127.69	-236.68
6	18638.21	90.00	270.24	8030.00	-1349.23	-9641.91	0.00	0.00	9735.86
									Target
									LP-ST BIERSTADT 4-65 3BH
									PBHL-ST BIERSTADT 4-65 3BH

DESIGN TARGET DETAILS									
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape	
LP-ST BIERSTADT 4-65 3BH	8030.00	-1390.75	433.60	1665592.05	3246942.89	39.657574°N	104.622911°W	Point	
- plan hits target center									
PBHL-ST BIERSTADT 4-65 3BH	8030.00	-1349.23	-9641.91	1665536.47	3236867.61	39.657683°N	104.658696°W	Point	
- plan hits target center									

SHL:
2159' FNL, 600' FEL
Sec 35-T4S-R65W

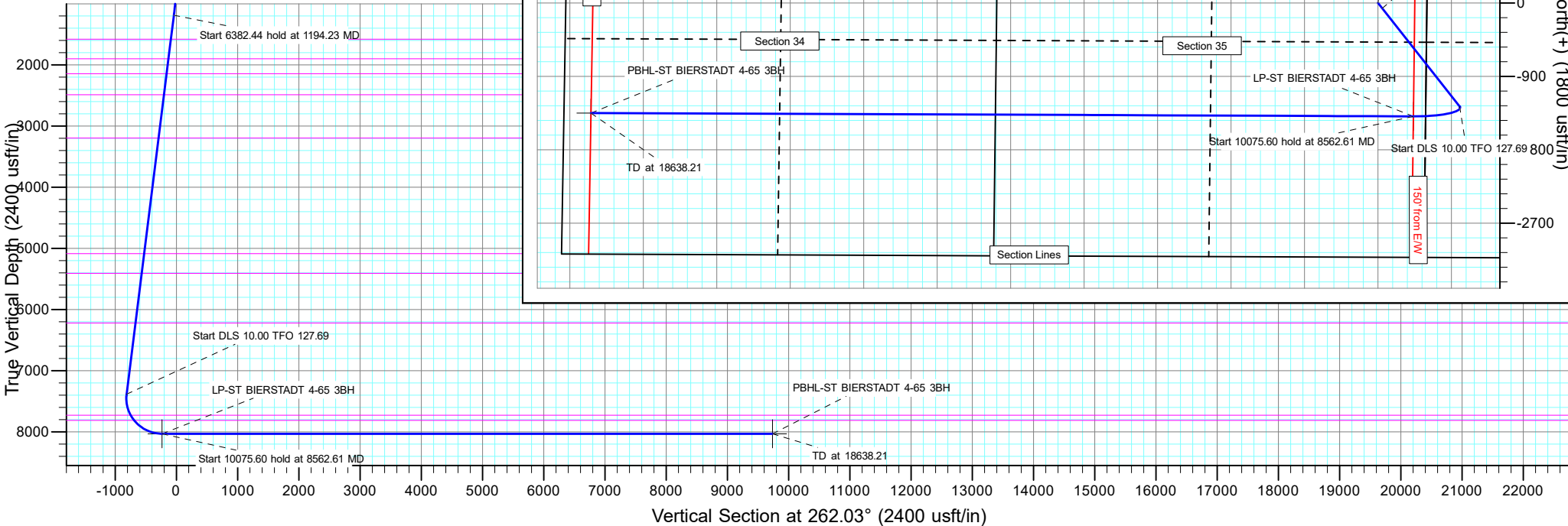
LP:
1730' FSL, 150' FEL
Sec 35-T4S-R65W

BHL:
1730' FSL, 330' FWL
Sec 34-T4S-R65W

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



Civitas Resources

Planning Report

Database:	EDM	Local Co-ordinate Reference:	Well STATE BIERSTADT 4-65 35-34 3BH
Company:	CRESTONE PEAK RESOURCES	TVD Reference:	KB 24' @ 5893.90usft
Project:	ARAPAHOE COUNTY	MD Reference:	KB 24' @ 5893.90usft
Site:	SEC 35-T4S-R65W	North Reference:	True
Well:	STATE BIERSTADT 4-65 35-34 3BH	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PROPOSAL 1		

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

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

Well	STATE BIERSTADT 4-65 35-34 3BH		
Well Position	+N/-S	482.65 usft	Northing:
	+E/-W	-594.34 usft	Easting:
Position Uncertainty	0.00 usft		Wellhead Elevation:
			Latitude:
			Longitude:
			Ground Level:

Wellbore	OWB		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF2020	3/8/2022	7.63
			Dip Angle (°)
			66.05
			Field Strength (nT)
			51,494.45679155

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)
	0.00	0.00	0.00
			Direction (°)
			262.03

Plan Survey Tool Program	Date	10/23/2023		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	18,638.21	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	
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,194.23	13.88	141.72	1,187.46	-65.71	51.85	2.00	2.00	0.00	141.72	
7,576.67	13.88	141.72	7,383.41	-1,268.02	1,000.63	0.00	0.00	0.00	0.00	
8,562.61	90.00	270.24	8,030.00	-1,390.75	433.60	10.00	7.72	13.03	127.69	LP-ST BIERSTADT 4-
18,638.21	90.00	270.24	8,030.00	-1,349.23	-9,641.91	0.00	0.00	0.00	0.00	PBHL-ST BIERSTADT

Civitas Resources

Planning Report

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Company:	CRESTONE PEAK RESOURCES	TVD Reference:	KB 24' @ 5893.90usft
Project:	ARAPAHOE COUNTY	MD Reference:	KB 24' @ 5893.90usft
Site:	SEC 35-T4S-R65W	North Reference:	True
Well:	STATE BIERSTADT 4-65 35-34 3BH	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
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
Start Build 2.00									
600.00	2.00	141.72	599.98	-1.37	1.08	-0.88	2.00	2.00	0.00
700.00	4.00	141.72	699.84	-5.48	4.32	-3.52	2.00	2.00	0.00
800.00	6.00	141.72	799.45	-12.32	9.72	-7.92	2.00	2.00	0.00
895.25	7.91	141.72	894.00	-21.37	16.86	-13.74	2.00	2.00	0.00
Arapahoe Formation									
900.00	8.00	141.72	898.70	-21.89	17.27	-14.07	2.00	2.00	0.00
1,000.00	10.00	141.72	997.47	-34.17	26.96	-21.97	2.00	2.00	0.00
1,100.00	12.00	141.72	1,095.62	-49.14	38.78	-31.60	2.00	2.00	0.00
1,194.23	13.88	141.72	1,187.46	-65.71	51.85	-42.25	2.00	2.00	0.00
Start 6382.44 hold at 1194.23 MD									
1,200.00	13.88	141.72	1,193.06	-66.80	52.71	-42.95	0.00	0.00	0.00
1,300.00	13.88	141.72	1,290.13	-85.64	67.58	-55.06	0.00	0.00	0.00
1,400.00	13.88	141.72	1,387.21	-104.47	82.44	-67.17	0.00	0.00	0.00
1,500.00	13.88	141.72	1,484.29	-123.31	97.31	-79.28	0.00	0.00	0.00
1,600.00	13.88	141.72	1,581.37	-142.15	112.17	-91.39	0.00	0.00	0.00
1,613.01	13.88	141.72	1,594.00	-144.60	114.11	-92.97	0.00	0.00	0.00
Laramie Formation									
1,700.00	13.88	141.72	1,678.45	-160.99	127.04	-103.50	0.00	0.00	0.00
1,800.00	13.88	141.72	1,775.53	-179.82	141.90	-115.61	0.00	0.00	0.00
1,900.00	13.88	141.72	1,872.60	-198.66	156.77	-127.73	0.00	0.00	0.00
1,922.04	13.88	141.72	1,894.00	-202.81	160.05	-130.40	0.00	0.00	0.00
Fox Hills sandstone									
2,000.00	13.88	141.72	1,969.68	-217.50	171.64	-139.84	0.00	0.00	0.00
2,100.00	13.88	141.72	2,066.76	-236.34	186.50	-151.95	0.00	0.00	0.00
2,169.26	13.88	141.72	2,134.00	-249.39	196.80	-160.34	0.00	0.00	0.00
Pierre Formation									
2,200.00	13.88	141.72	2,163.84	-255.18	201.37	-164.06	0.00	0.00	0.00
2,300.00	13.88	141.72	2,260.92	-274.01	216.23	-176.17	0.00	0.00	0.00
2,400.00	13.88	141.72	2,357.99	-292.85	231.10	-188.28	0.00	0.00	0.00
2,500.00	13.88	141.72	2,455.07	-311.69	245.96	-200.39	0.00	0.00	0.00
2,600.00	13.88	141.72	2,552.15	-330.53	260.83	-212.51	0.00	0.00	0.00
2,700.00	13.88	141.72	2,649.23	-349.37	275.69	-224.62	0.00	0.00	0.00
2,746.12	13.88	141.72	2,694.00	-358.05	282.55	-230.20	0.00	0.00	0.00
Upper Pierre aquifer									
2,800.00	13.88	141.72	2,746.31	-368.20	290.56	-236.73	0.00	0.00	0.00
2,900.00	13.88	141.72	2,843.38	-387.04	305.42	-248.84	0.00	0.00	0.00
3,000.00	13.88	141.72	2,940.46	-405.88	320.29	-260.95	0.00	0.00	0.00
3,100.00	13.88	141.72	3,037.54	-424.72	335.16	-273.06	0.00	0.00	0.00
3,200.00	13.88	141.72	3,134.62	-443.55	350.02	-285.17	0.00	0.00	0.00
3,300.00	13.88	141.72	3,231.70	-462.39	364.89	-297.29	0.00	0.00	0.00
3,364.18	13.88	141.72	3,294.00	-474.48	374.43	-305.06	0.00	0.00	0.00
Base of Upper Pierre aquifer									
3,400.00	13.88	141.72	3,328.77	-481.23	379.75	-309.40	0.00	0.00	0.00
3,500.00	13.88	141.72	3,425.85	-500.07	394.62	-321.51	0.00	0.00	0.00

Civitas Resources

Planning Report

Database:	EDM	Local Co-ordinate Reference:	Well STATE BIERSTADT 4-65 35-34 3BH
Company:	CRESTONE PEAK RESOURCES	TVD Reference:	KB 24' @ 5893.90usft
Project:	ARAPAHOE COUNTY	MD Reference:	KB 24' @ 5893.90usft
Site:	SEC 35-T4S-R65W	North Reference:	True
Well:	STATE BIERSTADT 4-65 35-34 3BH	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)
3,600.00	13.88	141.72	3,522.93	-518.91	409.48	-333.62	0.00	0.00	0.00
3,700.00	13.88	141.72	3,620.01	-537.74	424.35	-345.73	0.00	0.00	0.00
3,800.00	13.88	141.72	3,717.09	-556.58	439.21	-357.84	0.00	0.00	0.00
3,900.00	13.88	141.72	3,814.16	-575.42	454.08	-369.95	0.00	0.00	0.00
4,000.00	13.88	141.72	3,911.24	-594.26	468.94	-382.06	0.00	0.00	0.00
4,100.00	13.88	141.72	4,008.32	-613.09	483.81	-394.18	0.00	0.00	0.00
4,200.00	13.88	141.72	4,105.40	-631.93	498.68	-406.29	0.00	0.00	0.00
4,300.00	13.88	141.72	4,202.48	-650.77	513.54	-418.40	0.00	0.00	0.00
4,322.17	13.88	141.72	4,224.00	-654.95	516.84	-421.08	0.00	0.00	0.00
Larimer ("Parkman") sandstone									
4,400.00	13.88	141.72	4,299.56	-669.61	528.41	-430.51	0.00	0.00	0.00
4,497.29	13.88	141.72	4,394.00	-687.94	542.87	-442.29	0.00	0.00	0.00
Pierre Formation									
4,500.00	13.88	141.72	4,396.63	-688.45	543.27	-442.62	0.00	0.00	0.00
4,600.00	13.88	141.72	4,493.71	-707.28	558.14	-454.73	0.00	0.00	0.00
4,700.00	13.88	141.72	4,590.79	-726.12	573.00	-466.84	0.00	0.00	0.00
4,800.00	13.88	141.72	4,687.87	-744.96	587.87	-478.96	0.00	0.00	0.00
4,900.00	13.88	141.72	4,784.95	-763.80	602.73	-491.07	0.00	0.00	0.00
5,000.00	13.88	141.72	4,882.02	-782.64	617.60	-503.18	0.00	0.00	0.00
5,100.00	13.88	141.72	4,979.10	-801.47	632.46	-515.29	0.00	0.00	0.00
5,200.00	13.88	141.72	5,076.18	-820.31	647.33	-527.40	0.00	0.00	0.00
5,300.00	13.88	141.72	5,173.26	-839.15	662.19	-539.51	0.00	0.00	0.00
5,400.00	13.88	141.72	5,270.34	-857.99	677.06	-551.62	0.00	0.00	0.00
5,500.00	13.88	141.72	5,367.41	-876.82	691.93	-563.74	0.00	0.00	0.00
5,600.00	13.88	141.72	5,464.49	-895.66	706.79	-575.85	0.00	0.00	0.00
5,620.09	13.88	141.72	5,484.00	-899.45	709.78	-578.28	0.00	0.00	0.00
Terry ("Sussex") sandstone									
5,700.00	13.88	141.72	5,561.57	-914.50	721.66	-587.96	0.00	0.00	0.00
5,738.56	13.88	141.72	5,599.00	-921.76	727.39	-592.63	0.00	0.00	0.00
Pierre Formation									
5,800.00	13.88	141.72	5,658.65	-933.34	736.52	-600.07	0.00	0.00	0.00
5,900.00	13.88	141.72	5,755.73	-952.18	751.39	-612.18	0.00	0.00	0.00
6,000.00	13.88	141.72	5,852.80	-971.01	766.25	-624.29	0.00	0.00	0.00
6,100.00	13.88	141.72	5,949.88	-989.85	781.12	-636.40	0.00	0.00	0.00
6,200.00	13.88	141.72	6,046.96	-1,008.69	795.98	-648.52	0.00	0.00	0.00
6,300.00	13.88	141.72	6,144.04	-1,027.53	810.85	-660.63	0.00	0.00	0.00
6,400.00	13.88	141.72	6,241.12	-1,046.36	825.71	-672.74	0.00	0.00	0.00
6,500.00	13.88	141.72	6,338.20	-1,065.20	840.58	-684.85	0.00	0.00	0.00
6,505.98	13.88	141.72	6,344.00	-1,066.33	841.47	-685.57	0.00	0.00	0.00
Hygiene ("Shannon") sandstone									
6,600.00	13.88	141.72	6,435.27	-1,084.04	855.45	-696.96	0.00	0.00	0.00
6,634.74	13.88	141.72	6,469.00	-1,090.59	860.61	-701.17	0.00	0.00	0.00
Pierre Formation									
6,700.00	13.88	141.72	6,532.35	-1,102.88	870.31	-709.07	0.00	0.00	0.00
6,800.00	13.88	141.72	6,629.43	-1,121.72	885.18	-721.18	0.00	0.00	0.00
6,900.00	13.88	141.72	6,726.51	-1,140.55	900.04	-733.29	0.00	0.00	0.00
7,000.00	13.88	141.72	6,823.59	-1,159.39	914.91	-745.41	0.00	0.00	0.00
7,100.00	13.88	141.72	6,920.66	-1,178.23	929.77	-757.52	0.00	0.00	0.00
7,200.00	13.88	141.72	7,017.74	-1,197.07	944.64	-769.63	0.00	0.00	0.00
7,300.00	13.88	141.72	7,114.82	-1,215.91	959.50	-781.74	0.00	0.00	0.00
7,400.00	13.88	141.72	7,211.90	-1,234.74	974.37	-793.85	0.00	0.00	0.00
7,500.00	13.88	141.72	7,308.98	-1,253.58	989.23	-805.96	0.00	0.00	0.00
7,576.67	13.88	141.72	7,383.41	-1,268.02	1,000.63	-815.25	0.00	0.00	0.00

Civitas Resources

Planning Report

Database:	EDM	Local Co-ordinate Reference:	Well STATE BIERSTADT 4-65 35-34 3BH
Company:	CRESTONE PEAK RESOURCES	TVD Reference:	KB 24' @ 5893.90usft
Project:	ARAPAHOE COUNTY	MD Reference:	KB 24' @ 5893.90usft
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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)
Start DLS 10.00 TFO 127.69									
7,600.00	12.59	150.22	7,406.12	-1,272.43	1,003.63	-817.61	10.00	-5.54	36.42
7,650.00	11.02	173.62	7,455.09	-1,281.91	1,006.87	-819.50	10.00	-3.15	46.81
7,700.00	11.56	199.23	7,504.15	-1,291.40	1,005.75	-817.08	10.00	1.08	51.20
7,750.00	13.97	219.22	7,552.93	-1,300.81	1,000.28	-810.36	10.00	4.83	40.00
7,800.00	17.50	232.40	7,601.07	-1,310.08	990.50	-799.39	10.00	7.05	26.35
7,850.00	21.60	241.00	7,648.18	-1,319.14	976.48	-784.25	10.00	8.20	17.19
7,900.00	26.01	246.88	7,693.93	-1,327.91	958.34	-765.07	10.00	8.81	11.77
7,950.00	30.59	251.14	7,737.94	-1,336.33	936.21	-741.98	10.00	9.16	8.51
7,968.82	32.34	252.45	7,754.00	-1,339.40	926.87	-732.31	10.00	9.31	6.98
Sharon Springs									
8,000.00	35.27	254.36	7,779.90	-1,344.34	910.25	-715.16	10.00	9.40	6.15
8,050.00	40.02	256.92	7,819.48	-1,351.87	880.67	-684.83	10.00	9.50	5.11
8,082.78	43.16	258.33	7,844.00	-1,356.53	859.42	-663.13	10.00	9.58	4.31
Niobrara									
8,100.00	44.82	259.01	7,856.39	-1,358.88	847.69	-651.20	10.00	9.62	3.94
8,150.00	49.65	260.78	7,890.33	-1,365.29	811.57	-614.53	10.00	9.66	3.53
8,200.00	54.50	262.31	7,921.05	-1,371.07	772.57	-575.10	10.00	9.71	3.06
8,250.00	59.37	263.66	7,948.33	-1,376.18	730.99	-533.22	10.00	9.74	2.71
8,300.00	64.25	264.88	7,971.94	-1,380.56	687.15	-489.20	10.00	9.76	2.45
8,350.00	69.14	266.01	7,991.71	-1,384.20	641.39	-443.38	10.00	9.78	2.25
8,400.00	74.04	267.07	8,007.50	-1,387.06	594.05	-396.10	10.00	9.80	2.11
8,450.00	78.95	268.07	8,019.17	-1,389.12	545.49	-347.72	10.00	9.81	2.01
8,500.00	83.85	269.04	8,026.64	-1,390.36	496.09	-298.62	10.00	9.81	1.94
8,550.00	88.76	270.00	8,029.86	-1,390.78	446.21	-249.16	10.00	9.82	1.91
8,562.61	90.00	270.24	8,030.00	-1,390.75	433.60	-236.68	10.00	9.82	1.90
Start 10075.60 hold at 8562.61 MD									
8,600.00	90.00	270.24	8,030.00	-1,390.60	396.21	-199.67	0.00	0.00	0.00
8,700.00	90.00	270.24	8,030.00	-1,390.18	296.21	-100.70	0.00	0.00	0.00
8,800.00	90.00	270.24	8,030.00	-1,389.77	196.21	-1.72	0.00	0.00	0.00
8,900.00	90.00	270.24	8,030.00	-1,389.36	96.21	97.26	0.00	0.00	0.00
9,000.00	90.00	270.24	8,030.00	-1,388.95	-3.79	196.24	0.00	0.00	0.00
9,100.00	90.00	270.24	8,030.00	-1,388.54	-103.79	295.21	0.00	0.00	0.00
9,200.00	90.00	270.24	8,030.00	-1,388.12	-203.79	394.19	0.00	0.00	0.00
9,300.00	90.00	270.24	8,030.00	-1,387.71	-303.78	493.17	0.00	0.00	0.00
9,400.00	90.00	270.24	8,030.00	-1,387.30	-403.78	592.14	0.00	0.00	0.00
9,500.00	90.00	270.24	8,030.00	-1,386.89	-503.78	691.12	0.00	0.00	0.00
9,600.00	90.00	270.24	8,030.00	-1,386.48	-603.78	790.10	0.00	0.00	0.00
9,700.00	90.00	270.24	8,030.00	-1,386.06	-703.78	889.08	0.00	0.00	0.00
9,800.00	90.00	270.24	8,030.00	-1,385.65	-803.78	988.05	0.00	0.00	0.00
9,900.00	90.00	270.24	8,030.00	-1,385.24	-903.78	1,087.03	0.00	0.00	0.00
10,000.00	90.00	270.24	8,030.00	-1,384.83	-1,003.78	1,186.01	0.00	0.00	0.00
10,100.00	90.00	270.24	8,030.00	-1,384.41	-1,103.78	1,284.98	0.00	0.00	0.00
10,200.00	90.00	270.24	8,030.00	-1,384.00	-1,203.78	1,383.96	0.00	0.00	0.00
10,300.00	90.00	270.24	8,030.00	-1,383.59	-1,303.78	1,482.94	0.00	0.00	0.00
10,400.00	90.00	270.24	8,030.00	-1,383.18	-1,403.78	1,581.92	0.00	0.00	0.00
10,500.00	90.00	270.24	8,030.00	-1,382.77	-1,503.77	1,680.89	0.00	0.00	0.00
10,600.00	90.00	270.24	8,030.00	-1,382.35	-1,603.77	1,779.87	0.00	0.00	0.00
10,700.00	90.00	270.24	8,030.00	-1,381.94	-1,703.77	1,878.85	0.00	0.00	0.00
10,800.00	90.00	270.24	8,030.00	-1,381.53	-1,803.77	1,977.82	0.00	0.00	0.00
10,900.00	90.00	270.24	8,030.00	-1,381.12	-1,903.77	2,076.80	0.00	0.00	0.00
11,000.00	90.00	270.24	8,030.00	-1,380.71	-2,003.77	2,175.78	0.00	0.00	0.00
11,100.00	90.00	270.24	8,030.00	-1,380.29	-2,103.77	2,274.76	0.00	0.00	0.00

Civitas Resources

Planning Report

Database:	EDM	Local Co-ordinate Reference:	Well STATE BIERSTADT 4-65 35-34 3BH
Company:	CRESTONE PEAK RESOURCES	TVD Reference:	KB 24' @ 5893.90usft
Project:	ARAPAHOE COUNTY	MD Reference:	KB 24' @ 5893.90usft
Site:	SEC 35-T4S-R65W	North Reference:	True
Well:	STATE BIERSTADT 4-65 35-34 3BH	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)	
11,200.00	90.00	270.24	8,030.00	-1,379.88	-2,203.77	2,373.73	0.00	0.00	0.00	
11,300.00	90.00	270.24	8,030.00	-1,379.47	-2,303.77	2,472.71	0.00	0.00	0.00	
11,400.00	90.00	270.24	8,030.00	-1,379.06	-2,403.77	2,571.69	0.00	0.00	0.00	
11,500.00	90.00	270.24	8,030.00	-1,378.65	-2,503.77	2,670.66	0.00	0.00	0.00	
11,600.00	90.00	270.24	8,030.00	-1,378.23	-2,603.77	2,769.64	0.00	0.00	0.00	
11,700.00	90.00	270.24	8,030.00	-1,377.82	-2,703.76	2,868.62	0.00	0.00	0.00	
11,800.00	90.00	270.24	8,030.00	-1,377.41	-2,803.76	2,967.60	0.00	0.00	0.00	
11,900.00	90.00	270.24	8,030.00	-1,377.00	-2,903.76	3,066.57	0.00	0.00	0.00	
12,000.00	90.00	270.24	8,030.00	-1,376.59	-3,003.76	3,165.55	0.00	0.00	0.00	
12,100.00	90.00	270.24	8,030.00	-1,376.17	-3,103.76	3,264.53	0.00	0.00	0.00	
12,200.00	90.00	270.24	8,030.00	-1,375.76	-3,203.76	3,363.50	0.00	0.00	0.00	
12,300.00	90.00	270.24	8,030.00	-1,375.35	-3,303.76	3,462.48	0.00	0.00	0.00	
12,400.00	90.00	270.24	8,030.00	-1,374.94	-3,403.76	3,561.46	0.00	0.00	0.00	
12,500.00	90.00	270.24	8,030.00	-1,374.53	-3,503.76	3,660.44	0.00	0.00	0.00	
12,600.00	90.00	270.24	8,030.00	-1,374.11	-3,603.76	3,759.41	0.00	0.00	0.00	
12,700.00	90.00	270.24	8,030.00	-1,373.70	-3,703.76	3,858.39	0.00	0.00	0.00	
12,800.00	90.00	270.24	8,030.00	-1,373.29	-3,803.75	3,957.37	0.00	0.00	0.00	
12,900.00	90.00	270.24	8,030.00	-1,372.88	-3,903.75	4,056.34	0.00	0.00	0.00	
13,000.00	90.00	270.24	8,030.00	-1,372.46	-4,003.75	4,155.32	0.00	0.00	0.00	
13,100.00	90.00	270.24	8,030.00	-1,372.05	-4,103.75	4,254.30	0.00	0.00	0.00	
13,200.00	90.00	270.24	8,030.00	-1,371.64	-4,203.75	4,353.28	0.00	0.00	0.00	
13,300.00	90.00	270.24	8,030.00	-1,371.23	-4,303.75	4,452.25	0.00	0.00	0.00	
13,400.00	90.00	270.24	8,030.00	-1,370.82	-4,403.75	4,551.23	0.00	0.00	0.00	
13,500.00	90.00	270.24	8,030.00	-1,370.40	-4,503.75	4,650.21	0.00	0.00	0.00	
13,600.00	90.00	270.24	8,030.00	-1,369.99	-4,603.75	4,749.18	0.00	0.00	0.00	
13,700.00	90.00	270.24	8,030.00	-1,369.58	-4,703.75	4,848.16	0.00	0.00	0.00	
13,800.00	90.00	270.24	8,030.00	-1,369.17	-4,803.75	4,947.14	0.00	0.00	0.00	
13,900.00	90.00	270.24	8,030.00	-1,368.76	-4,903.75	5,046.12	0.00	0.00	0.00	
14,000.00	90.00	270.24	8,030.00	-1,368.34	-5,003.74	5,145.09	0.00	0.00	0.00	
14,100.00	90.00	270.24	8,030.00	-1,367.93	-5,103.74	5,244.07	0.00	0.00	0.00	
14,200.00	90.00	270.24	8,030.00	-1,367.52	-5,203.74	5,343.05	0.00	0.00	0.00	
14,300.00	90.00	270.24	8,030.00	-1,367.11	-5,303.74	5,442.02	0.00	0.00	0.00	
14,400.00	90.00	270.24	8,030.00	-1,366.70	-5,403.74	5,541.00	0.00	0.00	0.00	
14,500.00	90.00	270.24	8,030.00	-1,366.28	-5,503.74	5,639.98	0.00	0.00	0.00	
14,600.00	90.00	270.24	8,030.00	-1,365.87	-5,603.74	5,738.96	0.00	0.00	0.00	
14,700.00	90.00	270.24	8,030.00	-1,365.46	-5,703.74	5,837.93	0.00	0.00	0.00	
14,800.00	90.00	270.24	8,030.00	-1,365.05	-5,803.74	5,936.91	0.00	0.00	0.00	
14,900.00	90.00	270.24	8,030.00	-1,364.64	-5,903.74	6,035.89	0.00	0.00	0.00	
15,000.00	90.00	270.24	8,030.00	-1,364.22	-6,003.74	6,134.86	0.00	0.00	0.00	
15,100.00	90.00	270.24	8,030.00	-1,363.81	-6,103.74	6,233.84	0.00	0.00	0.00	
15,200.00	90.00	270.24	8,030.00	-1,363.40	-6,203.73	6,332.82	0.00	0.00	0.00	
15,300.00	90.00	270.24	8,030.00	-1,362.99	-6,303.73	6,431.80	0.00	0.00	0.00	
15,400.00	90.00	270.24	8,030.00	-1,362.57	-6,403.73	6,530.77	0.00	0.00	0.00	
15,500.00	90.00	270.24	8,030.00	-1,362.16	-6,503.73	6,629.75	0.00	0.00	0.00	
15,600.00	90.00	270.24	8,030.00	-1,361.75	-6,603.73	6,728.73	0.00	0.00	0.00	
15,700.00	90.00	270.24	8,030.00	-1,361.34	-6,703.73	6,827.70	0.00	0.00	0.00	
15,800.00	90.00	270.24	8,030.00	-1,360.93	-6,803.73	6,926.68	0.00	0.00	0.00	
15,900.00	90.00	270.24	8,030.00	-1,360.51	-6,903.73	7,025.66	0.00	0.00	0.00	
16,000.00	90.00	270.24	8,030.00	-1,360.10	-7,003.73	7,124.63	0.00	0.00	0.00	
16,100.00	90.00	270.24	8,030.00	-1,359.69	-7,103.73	7,223.61	0.00	0.00	0.00	
16,200.00	90.00	270.24	8,030.00	-1,359.28	-7,203.73	7,322.59	0.00	0.00	0.00	
16,300.00	90.00	270.24	8,030.00	-1,358.87	-7,303.73	7,421.57	0.00	0.00	0.00	
16,400.00	90.00	270.24	8,030.00	-1,358.45	-7,403.72	7,520.54	0.00	0.00	0.00	
16,500.00	90.00	270.24	8,030.00	-1,358.04	-7,503.72	7,619.52	0.00	0.00	0.00	

Civitas Resources

Planning Report

Database:	EDM	Local Co-ordinate Reference:	Well STATE BIERSTADT 4-65 35-34 3BH
Company:	CRESTONE PEAK RESOURCES	TVD Reference:	KB 24' @ 5893.90usft
Project:	ARAPAHOE COUNTY	MD Reference:	KB 24' @ 5893.90usft
Site:	SEC 35-T4S-R65W	North Reference:	True
Well:	STATE BIERSTADT 4-65 35-34 3BH	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)	
16,600.00	90.00	270.24	8,030.00	-1,357.63	-7,603.72	7,718.50	0.00	0.00	0.00	
16,700.00	90.00	270.24	8,030.00	-1,357.22	-7,703.72	7,817.47	0.00	0.00	0.00	
16,800.00	90.00	270.24	8,030.00	-1,356.81	-7,803.72	7,916.45	0.00	0.00	0.00	
16,900.00	90.00	270.24	8,030.00	-1,356.39	-7,903.72	8,015.43	0.00	0.00	0.00	
17,000.00	90.00	270.24	8,030.00	-1,355.98	-8,003.72	8,114.41	0.00	0.00	0.00	
17,100.00	90.00	270.24	8,030.00	-1,355.57	-8,103.72	8,213.38	0.00	0.00	0.00	
17,200.00	90.00	270.24	8,030.00	-1,355.16	-8,203.72	8,312.36	0.00	0.00	0.00	
17,300.00	90.00	270.24	8,030.00	-1,354.75	-8,303.72	8,411.34	0.00	0.00	0.00	
17,400.00	90.00	270.24	8,030.00	-1,354.33	-8,403.72	8,510.31	0.00	0.00	0.00	
17,500.00	90.00	270.24	8,030.00	-1,353.92	-8,503.72	8,609.29	0.00	0.00	0.00	
17,600.00	90.00	270.24	8,030.00	-1,353.51	-8,603.71	8,708.27	0.00	0.00	0.00	
17,700.00	90.00	270.24	8,030.00	-1,353.10	-8,703.71	8,807.25	0.00	0.00	0.00	
17,800.00	90.00	270.24	8,030.00	-1,352.69	-8,803.71	8,906.22	0.00	0.00	0.00	
17,900.00	90.00	270.24	8,030.00	-1,352.27	-8,903.71	9,005.20	0.00	0.00	0.00	
18,000.00	90.00	270.24	8,030.00	-1,351.86	-9,003.71	9,104.18	0.00	0.00	0.00	
18,100.00	90.00	270.24	8,030.00	-1,351.45	-9,103.71	9,203.15	0.00	0.00	0.00	
18,200.00	90.00	270.24	8,030.00	-1,351.04	-9,203.71	9,302.13	0.00	0.00	0.00	
18,300.00	90.00	270.24	8,030.00	-1,350.62	-9,303.71	9,401.11	0.00	0.00	0.00	
18,400.00	90.00	270.24	8,030.00	-1,350.21	-9,403.71	9,500.09	0.00	0.00	0.00	
18,500.00	90.00	270.24	8,030.00	-1,349.80	-9,503.71	9,599.06	0.00	0.00	0.00	
18,600.00	90.00	270.24	8,030.00	-1,349.39	-9,603.71	9,698.04	0.00	0.00	0.00	
18,638.21	90.00	270.24	8,030.00	-1,349.23	-9,641.91	9,735.86	0.00	0.00	0.00	
TD at 18638.21										

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	-1,390.75	433.60	1,665,592.05	3,246,942.89	39.657574°N	104.622911°W	
- plan hits target center										
- Point										
PBHL-ST BIERSTADT 4	0.00	0.00	8,030.00	-1,349.23	-9,641.91	1,665,536.47	3,236,867.61	39.657683°N	104.658696°W	
- plan hits target center										
- Point										

Civitas Resources

Planning Report

Database:	EDM	Local Co-ordinate Reference:	Well STATE BIERSTADT 4-65 35-34 3BH
Company:	CRESTONE PEAK RESOURCES	TVD Reference:	KB 24' @ 5893.90usft
Project:	ARAPAHOE COUNTY	MD Reference:	KB 24' @ 5893.90usft
Site:	SEC 35-T4S-R65W	North Reference:	True
Well:	STATE BIERSTADT 4-65 35-34 3BH	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PROPOSAL 1		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
24.00	24.00	Denver Formation				
895.25	894.00	Arapahoe Formation				
1,613.01	1,594.00	Laramie Formation				
1,922.04	1,894.00	Fox Hills sandstone				
2,169.26	2,134.00	Pierre Formation				
2,746.12	2,694.00	Upper Pierre aquifer				
3,364.18	3,294.00	Base of Upper Pierre aquifer				
4,322.17	4,224.00	Larimer ("Parkman") sandstone				
4,497.29	4,394.00	Pierre Formation				
5,620.09	5,484.00	Terry ("Sussex") sandstone				
5,738.56	5,599.00	Pierre Formation				
6,505.98	6,344.00	Hygiene ("Shannon") sandstone				
6,634.74	6,469.00	Pierre Formation				
7,968.82	7,754.00	Sharon Springs				
8,082.78	7,844.00	Niobrara				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
500.00	500.00	0.00	0.00	Start Build 2.00	
1,194.23	1,187.46	-65.71	51.85	Start 6382.44 hold at 1194.23 MD	
7,576.67	7,383.41	-1,268.02	1,000.63	Start DLS 10.00 TFO 127.69	
8,562.61	8,030.00	-1,390.75	433.60	Start 10075.60 hold at 8562.61 MD	
18,638.21	8,030.00	-1,349.23	-9,641.91	TD at 18638.21	