





# **Crestone Peak Resources**

**Sec 33 T3N-R67W**

**Herren Pad**

**Herren 1E-33H-H367**

**Wellbore #1**

**Plan: Design #1 23Feb18 kjs**

## **Standard Planning Report**

**09 March, 2018**

<b>Database:</b>	EDM 5000.14 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Herren 1E-33H-H367
<b>Company:</b>	Crestone Peak Resources	<b>TVD Reference:</b>	WELL @ 4871.00usft (Original Well Elev)
<b>Project:</b>	Sec 33 T3N-R67W	<b>MD Reference:</b>	WELL @ 4871.00usft (Original Well Elev)
<b>Site:</b>	Herren Pad	<b>North Reference:</b>	True
<b>Well:</b>	Herren 1E-33H-H367	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 23Feb18 kjs		

<b>Project</b>	Sec 33 T3N-R67W, Weld County, CO		
<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 Northern Zone		

Site	Herren Pad				
Site Position:		Northing:	1,310,204.30 usft	Latitude:	40.183282
From:	Map	Easting:	3,171,253.06 usft	Longitude:	-104.887065
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.40

Well	Herren 1E-33H-H367					
Well Position	+N/-S	-21.07 usft	Northing:	1,310,183.08 usft	Latitude:	40.183224
	+E/-W	-21.36 usft	Easting:	3,171,231.85 usft	Longitude:	-104.887142
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	4,848.00 usft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2015	2/21/2018	8.19	66.64	52,188.63079099

<b>Design</b>	Design #1 23Feb18 kjs			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	289.79

<b>Plan Survey Tool Program</b>	<b>Date</b>	3/7/2018		
<b>Depth From (usft)</b>	<b>Depth To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>
1	0.00	12,040.83	Design #1 23Feb18 kjs (Wellbore)	MWD
				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 (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</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	
450.00	0.00	0.00	450.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,177.78	14.56	25.70	1,169.98	82.85	39.88	2.00	2.00	0.00	25.70	
6,564.45	14.56	25.70	6,383.76	1,302.66	627.05	0.00	0.00	0.00	0.00	
7,761.07	90.00	272.30	7,150.00	1,513.70	-77.67	8.00	6.30	-9.48	-112.73	Herren 1E-33H-H367 TPZ
10,361.07	90.00	272.30	7,150.00	1,618.05	-2,675.58	0.00	0.00	0.00	0.00	
10,575.87	90.00	268.00	7,150.00	1,618.62	-2,890.32	2.00	0.00	-2.00	-90.00	
12,040.85	90.00	268.00	7,150.00	1,567.59	-4,354.42	0.00	0.00	0.00	0.00	Herren 1E-33H-H367 BHL

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<b>Company:</b>	Crestone Peak Resources	<b>TVD Reference:</b>	WELL @ 4871.00usft (Original Well Elev)
<b>Project:</b>	Sec 33 T3N-R67W	<b>MD Reference:</b>	WELL @ 4871.00usft (Original Well Elev)
<b>Site:</b>	Herren Pad	<b>North Reference:</b>	True
<b>Well:</b>	Herren 1E-33H-H367	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 23Feb18 kjs		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	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
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
450.00	0.00	0.00	450.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
600.00	3.00	25.70	599.93	3.54	1.70	-0.40	2.00	2.00	0.00
800.00	7.00	25.70	799.13	19.24	9.26	-2.20	2.00	2.00	0.00
1,000.00	11.00	25.70	996.63	47.43	22.83	-5.42	2.00	2.00	0.00
1,177.78	14.56	25.70	1,169.98	82.85	39.88	-9.47	2.00	2.00	0.00
Hold 14.56 Inc, 25.7 Az									
1,200.00	14.56	25.70	1,191.48	87.88	42.30	-10.04	0.00	0.00	0.00
1,400.00	14.56	25.70	1,385.06	133.17	64.10	-15.22	0.00	0.00	0.00
1,600.00	14.56	25.70	1,578.65	178.46	85.90	-20.39	0.00	0.00	0.00
1,800.00	14.56	25.70	1,772.23	223.75	107.70	-25.57	0.00	0.00	0.00
2,000.00	14.56	25.70	1,965.81	269.04	129.51	-30.74	0.00	0.00	0.00
2,200.00	14.56	25.70	2,159.39	314.33	151.31	-35.92	0.00	0.00	0.00
2,400.00	14.56	25.70	2,352.97	359.62	173.11	-41.09	0.00	0.00	0.00
2,600.00	14.56	25.70	2,546.55	404.91	194.91	-46.27	0.00	0.00	0.00
2,800.00	14.56	25.70	2,740.13	450.20	216.71	-51.44	0.00	0.00	0.00
3,000.00	14.56	25.70	2,933.71	495.49	238.51	-56.62	0.00	0.00	0.00
3,200.00	14.56	25.70	3,127.29	540.78	260.31	-61.79	0.00	0.00	0.00
3,400.00	14.56	25.70	3,320.87	586.07	282.11	-66.97	0.00	0.00	0.00
3,600.00	14.56	25.70	3,514.45	631.36	303.91	-72.14	0.00	0.00	0.00
3,800.00	14.56	25.70	3,708.03	676.65	325.71	-77.32	0.00	0.00	0.00
4,000.00	14.56	25.70	3,901.62	721.94	347.51	-82.49	0.00	0.00	0.00
4,200.00	14.56	25.70	4,095.20	767.23	369.31	-87.67	0.00	0.00	0.00
4,400.00	14.56	25.70	4,288.78	812.52	391.11	-92.84	0.00	0.00	0.00
4,600.00	14.56	25.70	4,482.36	857.81	412.91	-98.02	0.00	0.00	0.00
4,800.00	14.56	25.70	4,675.94	903.10	434.72	-103.19	0.00	0.00	0.00
5,000.00	14.56	25.70	4,869.52	948.39	456.52	-108.37	0.00	0.00	0.00
5,200.00	14.56	25.70	5,063.10	993.68	478.32	-113.54	0.00	0.00	0.00
5,400.00	14.56	25.70	5,256.68	1,038.97	500.12	-118.72	0.00	0.00	0.00
5,600.00	14.56	25.70	5,450.26	1,084.26	521.92	-123.89	0.00	0.00	0.00
5,800.00	14.56	25.70	5,643.84	1,129.55	543.72	-129.07	0.00	0.00	0.00
6,000.00	14.56	25.70	5,837.42	1,174.84	565.52	-134.24	0.00	0.00	0.00
6,200.00	14.56	25.70	6,031.00	1,220.13	587.32	-139.42	0.00	0.00	0.00
6,400.00	14.56	25.70	6,224.59	1,265.42	609.12	-144.59	0.00	0.00	0.00
6,564.45	14.56	25.70	6,383.76	1,302.66	627.05	-148.85	0.00	0.00	0.00
KOP 8/100									
6,600.00	13.70	14.57	6,418.24	1,310.77	630.04	-148.92	8.00	-2.39	-31.33
6,800.00	18.67	317.16	6,611.39	1,357.47	614.13	-118.14	8.00	2.48	-28.71
7,000.00	31.80	294.90	6,792.29	1,403.42	544.11	-36.69	8.00	6.57	-11.13
7,200.00	46.65	285.30	6,946.93	1,445.07	425.40	89.12	8.00	7.42	-4.80
7,400.00	61.97	279.59	7,063.32	1,479.18	267.19	249.53	8.00	7.66	-2.86
7,600.00	77.47	275.34	7,132.46	1,503.12	81.75	432.12	8.00	7.75	-2.13
7,761.07	90.00	272.30	7,150.00	1,513.70	-77.67	585.70	8.00	7.78	-1.88
LP 90 Inc, 272.3 Az									
7,800.00	90.00	272.30	7,150.00	1,515.27	-116.57	622.83	0.00	0.00	0.00
8,000.00	90.00	272.30	7,150.00	1,523.29	-316.41	813.58	0.00	0.00	0.00
8,200.00	90.00	272.30	7,150.00	1,531.32	-516.25	1,004.33	0.00	0.00	0.00
8,400.00	90.00	272.30	7,150.00	1,539.34	-716.09	1,195.08	0.00	0.00	0.00
8,600.00	90.00	272.30	7,150.00	1,547.37	-915.93	1,385.83	0.00	0.00	0.00
8,800.00	90.00	272.30	7,150.00	1,555.40	-1,115.76	1,576.57	0.00	0.00	0.00

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<b>Project:</b>	Sec 33 T3N-R67W	<b>MD Reference:</b>	WELL @ 4871.00usft (Original Well Elev)
<b>Site:</b>	Herren Pad	<b>North Reference:</b>	True
<b>Well:</b>	Herren 1E-33H-H367	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 23Feb18 kjs		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
9,000.00	90.00	272.30	7,150.00	1,563.42	-1,315.60	1,767.32	0.00	0.00	0.00	
9,200.00	90.00	272.30	7,150.00	1,571.45	-1,515.44	1,958.07	0.00	0.00	0.00	
9,400.00	90.00	272.30	7,150.00	1,579.48	-1,715.28	2,148.82	0.00	0.00	0.00	
9,600.00	90.00	272.30	7,150.00	1,587.50	-1,915.12	2,339.57	0.00	0.00	0.00	
9,800.00	90.00	272.30	7,150.00	1,595.53	-2,114.96	2,530.32	0.00	0.00	0.00	
10,000.00	90.00	272.30	7,150.00	1,603.56	-2,314.80	2,721.07	0.00	0.00	0.00	
10,200.00	90.00	272.30	7,150.00	1,611.58	-2,514.64	2,911.82	0.00	0.00	0.00	
10,361.07	90.00	272.30	7,150.00	1,618.05	-2,675.58	3,065.44	0.00	0.00	0.00	
Begin 2/100 Turn										
10,400.00	90.00	271.52	7,150.00	1,619.34	-2,714.48	3,102.48	2.00	0.00	-2.00	
10,575.87	90.00	268.00	7,150.00	1,618.62	-2,890.32	3,267.69	2.00	0.00	-2.00	
Hold 268 Az										
10,600.00	90.00	268.00	7,150.00	1,617.77	-2,914.44	3,290.09	0.00	0.00	0.00	
10,800.00	90.00	268.00	7,150.00	1,610.81	-3,114.32	3,475.80	0.00	0.00	0.00	
11,000.00	90.00	268.00	7,150.00	1,603.84	-3,314.20	3,661.51	0.00	0.00	0.00	
11,200.00	90.00	268.00	7,150.00	1,596.88	-3,514.08	3,847.22	0.00	0.00	0.00	
11,400.00	90.00	268.00	7,150.00	1,589.91	-3,713.96	4,032.93	0.00	0.00	0.00	
11,600.00	90.00	268.00	7,150.00	1,582.95	-3,913.83	4,218.64	0.00	0.00	0.00	
11,800.00	90.00	268.00	7,150.00	1,575.98	-4,113.71	4,404.35	0.00	0.00	0.00	
12,000.00	90.00	268.00	7,150.00	1,569.01	-4,313.59	4,590.06	0.00	0.00	0.00	
12,040.85	90.00	268.00	7,150.00	1,567.59	-4,354.42	4,627.99	0.00	0.00	0.00	
TD at 12040.85										

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										
Herren 1E-33H-H367 TPZ	0.00	0.00	7,150.00	1,513.70	-77.67	1,311,696.21	3,171,143.72	40.187380	-104.887420	
- plan hits target center										
- Point										
Herren 1E-33H-H367 BHL	0.00	0.00	7,150.00	1,567.59	-4,354.42	1,311,720.54	3,166,866.70	40.187527	-104.902728	
- plan hits target center										
- Point										

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
450.00	450.00	0.00	0.00	Start Build 2.00	
1,177.78	1,169.98	82.85	39.88	Hold 14.56 Inc, 25.7 Az	
6,564.45	6,383.76	1,302.66	627.05	KOP 8/100	
7,761.07	7,150.00	1,513.70	-77.67	LP 90 Inc, 272.3 Az	
10,361.07	7,150.00	1,618.05	-2,675.58	Begin 2/100 Turn	
10,575.87	7,150.00	1,618.62	-2,890.32	Hold 268 Az	
12,040.85	7,150.00	1,567.59	-4,354.42	TD at 12040.85	