



# Crestone Peak Resources

Well Name:

Herren 11-33H-H367

Project Name:

Sec 33 T3N-R67W

Pad Name:

Herren Pad

## ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSec	Departure	Annotation
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	Start Build 2.00
530.35	6.61	76.94	529.62	4.30	18.53	-18.30	19.03	Hold 6.61 Inc, 76.94 Az
6333.45	6.61	76.94	6294.18	155.19	668.96	-660.60	686.72	KOP 8/100
7538.56	90.00	271.00	7090.00	190.00	-42.27	51.48	1509.20	LP 90 Inc, 271 Az (Begin 2/100 Turn)
7574.73	90.00	270.28	7090.00	190.40	-78.43	87.62	1545.37	Hold 270.28 Az
11817.75	90.00	270.28	7090.00	210.89	-4321.41	4326.55	5788.39	TD at 11817.75

## Geodetic Datum:

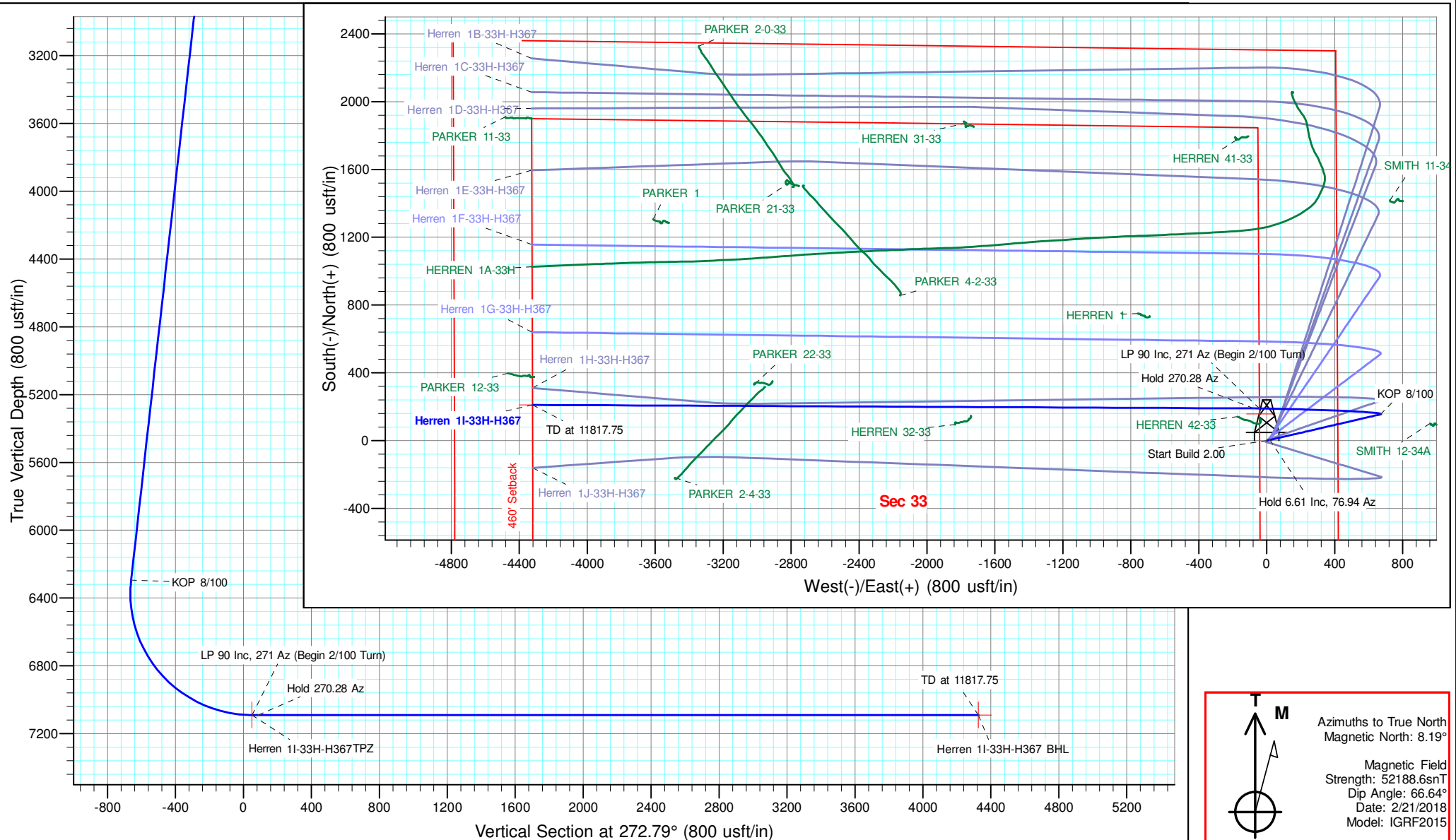
North American Datum 1983  
US State Plane 1983, Colorado Northern Zone

## Elevation:

Ground Elevation: 4849.00  
KB Elevation: WELL @ 4872.00usft (Original Well Elev)

## DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
Herren 11-33H-H367 BHL	7090.00	210.89	-4321.41	1310335.82	3166880.80	40.183725	-104.902710	Point
Herren 11-33H-H367 TPZ	7090.00	156.97	-42.27	1310311.47	3171160.21	40.183578	-104.887395	Point
- plan misses target center by 33.03usft at 7537.95usft MD (7090.00 TVD, 189.99 N, -41.67 E)								







# **Crestone Peak Resources**

**Sec 33 T3N-R67W**

**Herren Pad**

**Herren 1I-33H-H367**

**Wellbore #1**

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

## **Standard Planning Report**

**07 March, 2018**



<b>Database:</b>	EDM 5000.14 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Herren 1I-33H-H367
<b>Company:</b>	Crestone Peak Resources	<b>TVD Reference:</b>	WELL @ 4872.00usft (Original Well Elev)
<b>Project:</b>	Sec 33 T3N-R67W	<b>MD Reference:</b>	WELL @ 4872.00usft (Original Well Elev)
<b>Site:</b>	Herren Pad	<b>North Reference:</b>	True
<b>Well:</b>	Herren 1I-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 1I-33H-H367					
Well Position	+N/-S	-49.16 usft	Northing:	1,310,154.80 usft	Latitude:	40.183147
	+E/-W	-49.84 usft	Easting:	3,171,203.56 usft	Longitude:	-104.887243
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	4,849.00 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	52,188.57173382

<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	272.79

<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	11,817.75	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	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	
530.35	6.61	76.94	529.62	4.30	18.53	2.00	2.00	0.00	76.94	
6,333.45	6.61	76.94	6,294.18	155.19	668.96	0.00	0.00	0.00	0.00	
7,538.56	90.00	271.00	7,090.00	190.00	-42.27	8.00	6.92	-13.77	-165.85	
7,574.73	90.00	270.28	7,090.00	190.40	-78.43	2.00	0.00	-2.00	-90.00	
11,817.75	90.00	270.28	7,090.00	210.89	-4,321.41	0.00	0.00	0.00	0.00	Herren 1I-33H-H367 BHL



<b>Database:</b>	EDM 5000.14 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Herren 1I-33H-H367
<b>Company:</b>	Crestone Peak Resources	<b>TVD Reference:</b>	WELL @ 4872.00usft (Original Well Elev)
<b>Project:</b>	Sec 33 T3N-R67W	<b>MD Reference:</b>	WELL @ 4872.00usft (Original Well Elev)
<b>Site:</b>	Herren Pad	<b>North Reference:</b>	True
<b>Well:</b>	Herren 1I-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
<b>Start Build 2.00</b>									
400.00	4.00	76.94	399.84	1.58	6.80	-6.71	2.00	2.00	0.00
530.35	6.61	76.94	529.62	4.30	18.53	-18.30	2.00	2.00	0.00
<b>Hold 6.61 Inc, 76.94 Az</b>									
600.00	6.61	76.94	598.81	6.11	26.34	-26.01	0.00	0.00	0.00
800.00	6.61	76.94	797.48	11.31	48.76	-48.15	0.00	0.00	0.00
1,000.00	6.61	76.94	996.15	16.51	71.17	-70.28	0.00	0.00	0.00
1,200.00	6.61	76.94	1,194.82	21.71	93.59	-92.42	0.00	0.00	0.00
1,400.00	6.61	76.94	1,393.49	26.91	116.01	-114.56	0.00	0.00	0.00
1,600.00	6.61	76.94	1,592.16	32.11	138.42	-136.69	0.00	0.00	0.00
1,800.00	6.61	76.94	1,790.84	37.31	160.84	-158.83	0.00	0.00	0.00
2,000.00	6.61	76.94	1,989.51	42.51	183.25	-180.97	0.00	0.00	0.00
2,200.00	6.61	76.94	2,188.18	47.71	205.67	-203.10	0.00	0.00	0.00
2,400.00	6.61	76.94	2,386.85	52.91	228.09	-225.24	0.00	0.00	0.00
2,600.00	6.61	76.94	2,585.52	58.11	250.50	-247.37	0.00	0.00	0.00
2,800.00	6.61	76.94	2,784.20	63.31	272.92	-269.51	0.00	0.00	0.00
3,000.00	6.61	76.94	2,982.87	68.51	295.34	-291.65	0.00	0.00	0.00
3,200.00	6.61	76.94	3,181.54	73.71	317.75	-313.78	0.00	0.00	0.00
3,400.00	6.61	76.94	3,380.21	78.91	340.17	-335.92	0.00	0.00	0.00
3,600.00	6.61	76.94	3,578.88	84.11	362.59	-358.06	0.00	0.00	0.00
3,800.00	6.61	76.94	3,777.55	89.31	385.00	-380.19	0.00	0.00	0.00
4,000.00	6.61	76.94	3,976.23	94.51	407.42	-402.33	0.00	0.00	0.00
4,200.00	6.61	76.94	4,174.90	99.72	429.84	-424.46	0.00	0.00	0.00
4,400.00	6.61	76.94	4,373.57	104.92	452.25	-446.60	0.00	0.00	0.00
4,600.00	6.61	76.94	4,572.24	110.12	474.67	-468.74	0.00	0.00	0.00
4,800.00	6.61	76.94	4,770.91	115.32	497.08	-490.87	0.00	0.00	0.00
5,000.00	6.61	76.94	4,969.58	120.52	519.50	-513.01	0.00	0.00	0.00
5,200.00	6.61	76.94	5,168.26	125.72	541.92	-535.15	0.00	0.00	0.00
5,400.00	6.61	76.94	5,366.93	130.92	564.33	-557.28	0.00	0.00	0.00
5,600.00	6.61	76.94	5,565.60	136.12	586.75	-579.42	0.00	0.00	0.00
5,800.00	6.61	76.94	5,764.27	141.32	609.17	-601.56	0.00	0.00	0.00
6,000.00	6.61	76.94	5,962.94	146.52	631.58	-623.69	0.00	0.00	0.00
6,200.00	6.61	76.94	6,161.61	151.72	654.00	-645.83	0.00	0.00	0.00
6,333.45	6.61	76.94	6,294.18	155.19	668.96	-660.60	0.00	0.00	0.00
<b>KOP 8/100</b>									
6,400.00	1.94	34.94	6,360.54	156.98	673.34	-664.88	8.00	-7.01	-63.11
6,600.00	15.00	277.03	6,558.36	162.96	649.43	-640.72	8.00	6.53	-58.96
6,800.00	30.95	273.69	6,741.90	169.48	571.91	-562.97	8.00	7.98	-1.67
7,000.00	46.94	272.51	6,896.95	176.03	446.78	-437.67	8.00	7.99	-0.59
7,200.00	62.93	271.82	7,011.49	182.10	283.73	-274.52	8.00	8.00	-0.34
7,400.00	78.92	271.32	7,076.64	187.22	95.40	-86.16	8.00	8.00	-0.25
7,538.56	90.00	271.00	7,090.00	190.00	-42.27	51.48	8.00	8.00	-0.23
<b>LP 90 Inc, 271 Az (Begin 2/100 Turn)</b>									
7,574.73	90.00	270.28	7,090.00	190.40	-78.43	87.62	2.00	0.00	-2.00
<b>Hold 270.28 Az</b>									
7,600.00	90.00	270.28	7,090.00	190.52	-103.71	112.87	0.00	0.00	0.00
7,800.00	90.00	270.28	7,090.00	191.49	-303.70	312.68	0.00	0.00	0.00
8,000.00	90.00	270.28	7,090.00	192.46	-503.70	512.48	0.00	0.00	0.00
8,200.00	90.00	270.28	7,090.00	193.42	-703.70	712.29	0.00	0.00	0.00
8,400.00	90.00	270.28	7,090.00	194.39	-903.70	912.10	0.00	0.00	0.00
8,600.00	90.00	270.28	7,090.00	195.35	-1,103.70	1,111.90	0.00	0.00	0.00



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<b>Project:</b>	Sec 33 T3N-R67W	<b>MD Reference:</b>	WELL @ 4872.00usft (Original Well Elev)
<b>Site:</b>	Herren Pad	<b>North Reference:</b>	True
<b>Well:</b>	Herren 11-33H-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)	
8,800.00	90.00	270.28	7,090.00	196.32	-1,303.69	1,311.71	0.00	0.00	0.00	
9,000.00	90.00	270.28	7,090.00	197.28	-1,503.69	1,511.52	0.00	0.00	0.00	
9,200.00	90.00	270.28	7,090.00	198.25	-1,703.69	1,711.33	0.00	0.00	0.00	
9,400.00	90.00	270.28	7,090.00	199.21	-1,903.69	1,911.13	0.00	0.00	0.00	
9,600.00	90.00	270.28	7,090.00	200.18	-2,103.68	2,110.94	0.00	0.00	0.00	
9,800.00	90.00	270.28	7,090.00	201.15	-2,303.68	2,310.75	0.00	0.00	0.00	
10,000.00	90.00	270.28	7,090.00	202.11	-2,503.68	2,510.55	0.00	0.00	0.00	
10,200.00	90.00	270.28	7,090.00	203.08	-2,703.68	2,710.36	0.00	0.00	0.00	
10,400.00	90.00	270.28	7,090.00	204.04	-2,903.67	2,910.17	0.00	0.00	0.00	
10,600.00	90.00	270.28	7,090.00	205.01	-3,103.67	3,109.98	0.00	0.00	0.00	
10,800.00	90.00	270.28	7,090.00	205.97	-3,303.67	3,309.78	0.00	0.00	0.00	
11,000.00	90.00	270.28	7,090.00	206.94	-3,503.67	3,509.59	0.00	0.00	0.00	
11,200.00	90.00	270.28	7,090.00	207.90	-3,703.67	3,709.40	0.00	0.00	0.00	
11,400.00	90.00	270.28	7,090.00	208.87	-3,903.66	3,909.20	0.00	0.00	0.00	
11,600.00	90.00	270.28	7,090.00	209.84	-4,103.66	4,109.01	0.00	0.00	0.00	
11,800.00	90.00	270.28	7,090.00	210.80	-4,303.66	4,308.82	0.00	0.00	0.00	
11,817.75	90.00	270.28	7,090.00	210.89	-4,321.41	4,326.55	0.00	0.00	0.00	
TD at 11817.75										

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 11-33H-H367 BHL	0.00	0.00	7,090.00	210.89	-4,321.41	1,310,335.82	3,166,880.80	40.183725	-104.902711	
- plan hits target center										
- Point										
Herren 11-33H-H367 TPZ	0.00	0.00	7,090.00	156.97	-42.27	1,310,311.47	3,171,160.21	40.183578	-104.887395	
- plan misses target center by 33.03usft at 7537.89usft MD (7090.00 TVD, 189.99 N, -41.60 E)										
- Point										

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
200.00	200.00	0.00	0.00	Start Build 2.00	
530.35	529.62	4.30	18.53	Hold 6.61 Inc, 76.94 Az	
6,333.45	6,294.18	155.19	668.96	KOP 8/100	
7,538.56	7,090.00	190.00	-42.27	LP 90 Inc, 271 Az (Begin 2/100 Turn)	
7,574.73	7,090.00	190.40	-78.43	Hold 270.28 Az	
11,817.75	7,090.00	210.89	-4,321.41	TD at 11817.75	