



# **Crestone Peak Resources**

**Sec 33 T3N-R67W**

**Herren Pad**

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

**Wellbore #1**

**Design #1 23Feb18 kjs**

## **Anticollision Summary Report**

**10 March, 2018**

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well Herren 1E-33H-H367
<b>Project:</b>	Sec 33 T3N-R67W	<b>TVD Reference:</b>	WELL @ 4871.00usft (Original Well Elev)
<b>Reference Site:</b>	Herren Pad	<b>MD Reference:</b>	WELL @ 4871.00usft (Original Well Elev)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Herren 1E-33H-H367 0.00	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 5000.14 Single User Db
<b>Reference Design:</b>	Design #1 23Feb18 kjs	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	Design #1 23Feb18 kjs		
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
<b>Interpolation Method:</b>	Stations	<b>Error Model:</b>	ISCWSA
<b>Depth Range:</b>	Unlimited	<b>Scan Method:</b>	Closest Approach 3D
<b>Results Limited by:</b>	Maximum center-center distance of 9,999.98 usft	<b>Error Surface:</b>	Pedal Curve
<b>Warning Levels Evaluated at:</b>	2.00 Sigma	<b>Casing Method:</b>	Not applied

<b>Survey Tool Program</b>	<b>Date</b>	3/7/2018		
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.00	12,040.83	Design #1 23Feb18 kjs (Wellbore #1)	MWD	OWSG MWD - Standard

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Herren Pad						
Herren 1B-33H-H367 - Wellbore #1 - Design #1 21Feb18	200.00	199.00	30.00	29.01	30.325	CC, ES
Herren 1B-33H-H367 - Wellbore #1 - Design #1 21Feb18	12,041.74	12,154.93	657.37	394.00	2.496	SF
Herren 1C-33H-H367 - Wellbore #1 - Design #1 23Feb18	200.00	199.00	20.00	19.01	20.219	CC, ES
Herren 1C-33H-H367 - Wellbore #1 - Design #1 23Feb18	12,041.74	12,274.34	481.99	232.08	1.929	SF
Herren 1D-33H-H367 - Wellbore #1 - Design #1 23Feb18	400.00	400.00	10.01	7.58	4.123	CC, ES
Herren 1D-33H-H367 - Wellbore #1 - Design #1 23Feb18	12,041.74	12,058.19	369.87	108.87	1.417	Level 3, SF
Herren 1F-33H-H367 - Wellbore #1 - Design #1 23Feb18	782.70	783.82	9.58	4.42	1.857	CC
Herren 1F-33H-H367 - Wellbore #1 - Design #1 23Feb18	900.00	901.48	9.87	3.87	1.645	ES
Herren 1F-33H-H367 - Wellbore #1 - Design #1 23Feb18	1,000.00	1,001.77	10.79	4.03	1.596	SF
Herren 1G-33H-H367 - Wellbore #1 - Design #1 23Feb18	718.29	720.06	16.57	11.87	3.523	CC, ES
Herren 1G-33H-H367 - Wellbore #1 - Design #1 23Feb18	800.00	802.01	17.34	12.03	3.268	SF
Herren 1H-33H-H367 - Wellbore #1 - Design #1 23Feb18	450.00	451.00	30.00	27.21	10.758	CC, ES
Herren 1H-33H-H367 - Wellbore #1 - Design #1 23Feb18	12,041.74	12,024.74	1,292.28	1,030.74	4.941	SF
Herren 1I-33H-H367 - Wellbore #1 - Design #1 23Feb18	587.12	590.38	25.63	21.82	6.730	CC
Herren 1I-33H-H367 - Wellbore #1 - Design #1 23Feb18	600.00	603.21	25.69	21.78	6.578	ES
Herren 1I-33H-H367 - Wellbore #1 - Design #1 23Feb18	12,041.74	11,818.42	1,386.10	1,124.43	5.297	SF
Herren 1J-33H-H367 - Wellbore #1 - Design #1 23Feb18	450.00	451.00	50.00	47.21	17.928	CC, ES
Herren 1J-33H-H367 - Wellbore #1 - Design #1 23Feb18	12,041.74	11,774.97	1,751.84	1,494.10	6.797	SF

Microsoft  
Anticollision Summary Report

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<b>Project:</b>	Sec 33 T3N-R67W Herren	<b>TVD Reference:</b>	WELL @ 4871.00usft (Original Well Elev)
<b>Reference Site:</b>	Pad	<b>MD Reference:</b>	WELL @ 4871.00usft (Original Well Elev)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Herren 1E-33H-H367	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 5000.14 Single User Db
<b>Reference Design:</b>	Design #1 23Feb18 kjs	<b>Offset TVD Reference:</b>	Offset Datum

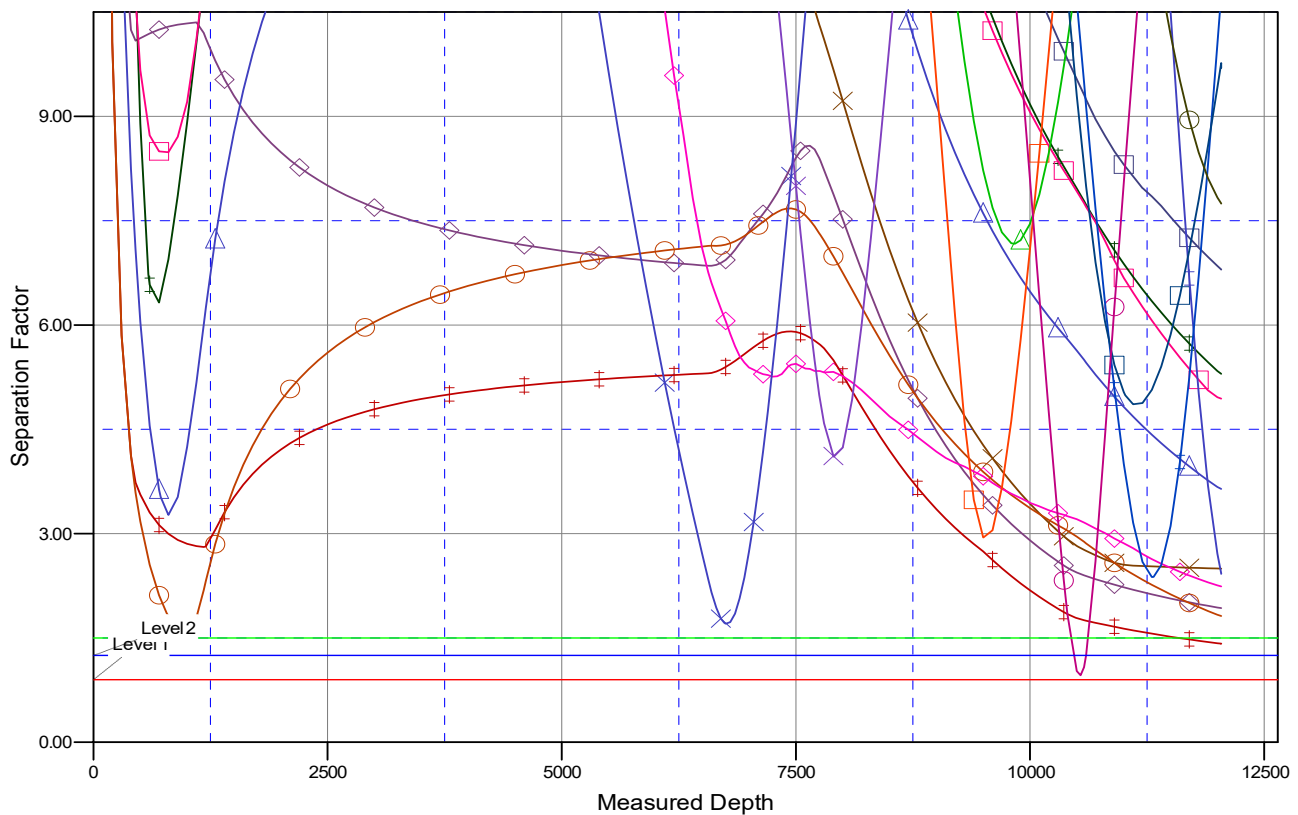
Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Relevant Existing Wells						
HERREN 1 - CPR - Gyro	8,425.73	7,127.14	821.43	754.66	12.303	CC, ES
HERREN 1 - CPR - Gyro	8,500.00	7,128.10	824.78	757.17	12.198	SF
HERREN 1A-33H - CPR - MWD Survey	7,400.00	7,035.32	238.59	194.21	5.376	ES
HERREN 1A-33H - CPR - MWD Survey	7,418.62	7,045.00	238.34	194.27	5.408	CC
HERREN 1A-33H - CPR - MWD Survey	12,041.74	11,614.85	569.12	315.04	2.240	SF
HERREN 31-33 - CPR - Gyro	9,502.22	7,086.29	267.89	176.88	2.943	CC, ES, SF
HERREN 32-33 - CPR - Gyro	9,486.57	7,083.14	1,509.69	1,419.06	16.659	CC
HERREN 32-33 - CPR - Gyro	9,500.00	7,083.25	1,509.74	1,418.88	16.615	ES
HERREN 32-33 - CPR - Gyro	9,800.00	7,085.64	1,541.88	1,446.71	16.201	SF
HERREN 41-33 - CPR - Gyro	7,905.06	7,108.20	236.90	179.22	4.107	CC, ES, SF
HERREN 42-33 - CPR - Gyro	1,029.29	1,003.80	95.91	88.96	13.793	CC, ES
HERREN 42-33 - CPR - Gyro	1,177.78	1,147.01	103.48	95.38	12.778	SF
PARKER 1 - CPR - Gyro	11,300.00	7,084.04	324.94	188.19	2.376	SF
PARKER 1 - CPR - Gyro	11,318.69	7,084.70	324.40	187.97	2.378	CC, ES
PARKER 11-33 - CPR - Gyro	12,041.74	7,074.94	338.25	198.58	2.422	CC, ES, SF
PARKER 12-33 - CPR - Gyro	12,041.74	7,092.28	1,213.59	1,056.91	7.746	CC, ES, SF
PARKER 2-0-33 - CPR - Gyro	11,017.50	7,120.19	660.65	528.24	4.989	CC, ES
PARKER 2-0-33 - CPR - Gyro	11,100.00	7,122.98	665.78	528.78	4.860	SF
PARKER 21-33 - CPR - Gyro	10,539.97	7,080.51	112.08	-4.29	0.963	Level 2, CC, ES, SF
PARKER 22-33 - CPR - Gyro	10,777.08	7,066.24	1,308.03	1,185.80	10.701	CC
PARKER 22-33 - CPR - Gyro	10,800.00	7,066.30	1,308.23	1,185.72	10.678	ES
PARKER 22-33 - CPR - Gyro	10,900.00	7,066.58	1,313.79	1,190.36	10.644	SF
PARKER 2-4-33 - CPR - Gyro	11,258.57	7,158.25	1,849.52	1,710.59	13.312	CC
PARKER 2-4-33 - CPR - Gyro	11,300.00	7,158.76	1,849.98	1,710.24	13.238	ES
PARKER 2-4-33 - CPR - Gyro	11,500.00	7,161.20	1,865.21	1,722.29	13.051	SF
PARKER 4-2-33 - CPR - Gyro	9,838.65	7,161.42	762.53	656.16	7.169	CC, ES, SF
SMITH 11-34 - KMG - Gyro	6,735.34	6,527.32	88.54	36.98	1.717	CC
SMITH 11-34 - KMG - Gyro	6,750.00	6,541.49	88.75	36.69	1.705	ES, SF
SMITH 12-34A - KMG - Gyro	2,804.67	2,728.70	838.52	816.38	37.877	CC
SMITH 12-34A - KMG - Gyro	2,900.00	2,816.71	839.21	816.26	36.557	ES
SMITH 12-34A - KMG - Gyro	5,700.00	5,527.30	1,118.01	1,073.31	25.012	SF

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Reference Depths are relative to WELL @ 4871.00usft (Original Well E  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.500000

Coordinates are relative to: Herren 1E-33H-H367  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 0.40°

## Separation Factor Plot



### LEGEND

Herren 1D33H-H367, Wellbore #1, Design #1 23Feb18 kjs V0	PARKER 22-33, CPR, Gyro V0	HERREN 42-33, CPR, Gyro V0
Herren 1J33H-H367, Wellbore #1, Design #1 23Feb18 kjs V0	HERREN 1A-33H, CPR, MWD Survey V0	PARKER 2-4-33, CPR, Gyro V0
Herren 1C33H-H367, Wellbore #1, Design #1 23Feb18 kjs V0	HERREN 1, CPR, Gyro V0	PARKER 11-33, CPR, Gyro V0
Herren 1B33H-H367, Wellbore #1, Design #1 21Feb18 kjs V0	HERREN 41-33, CPR, Gyro V0	PARKER 1, CPR, Gyro V0
Herren 1G33H-H367, Wellbore #1, Design #1 23Feb18 kjs V0	PARKER 4-2-33, CPR, Gyro V0	PARKER 2-0-33, CPR, Gyro V0
Herren 1I33H-H367, Wellbore #1, Design #1 23Feb18 kjs V0	HERREN 32-33, CPR, Gyro V0	HERREN 31-33, CPR, Gyro V0
Herren 1H33H-H367, Wellbore #1, Design #1 23Feb18 kjs V0	SMITH 12-34A, KMG, Gyro V0	PARKER 12-33, CPR, Gyro V0
Herren 1F33H-H367, Wellbore #1, Design #1 23Feb18 kjs V0		PARKER 21-33, CPR, Gyro V0