



# Crestone Peak Resources

Well Name:

HERBERS 1G-20H-B167

Project Name:

Sec 20 T1N-R67W

Pad Name:

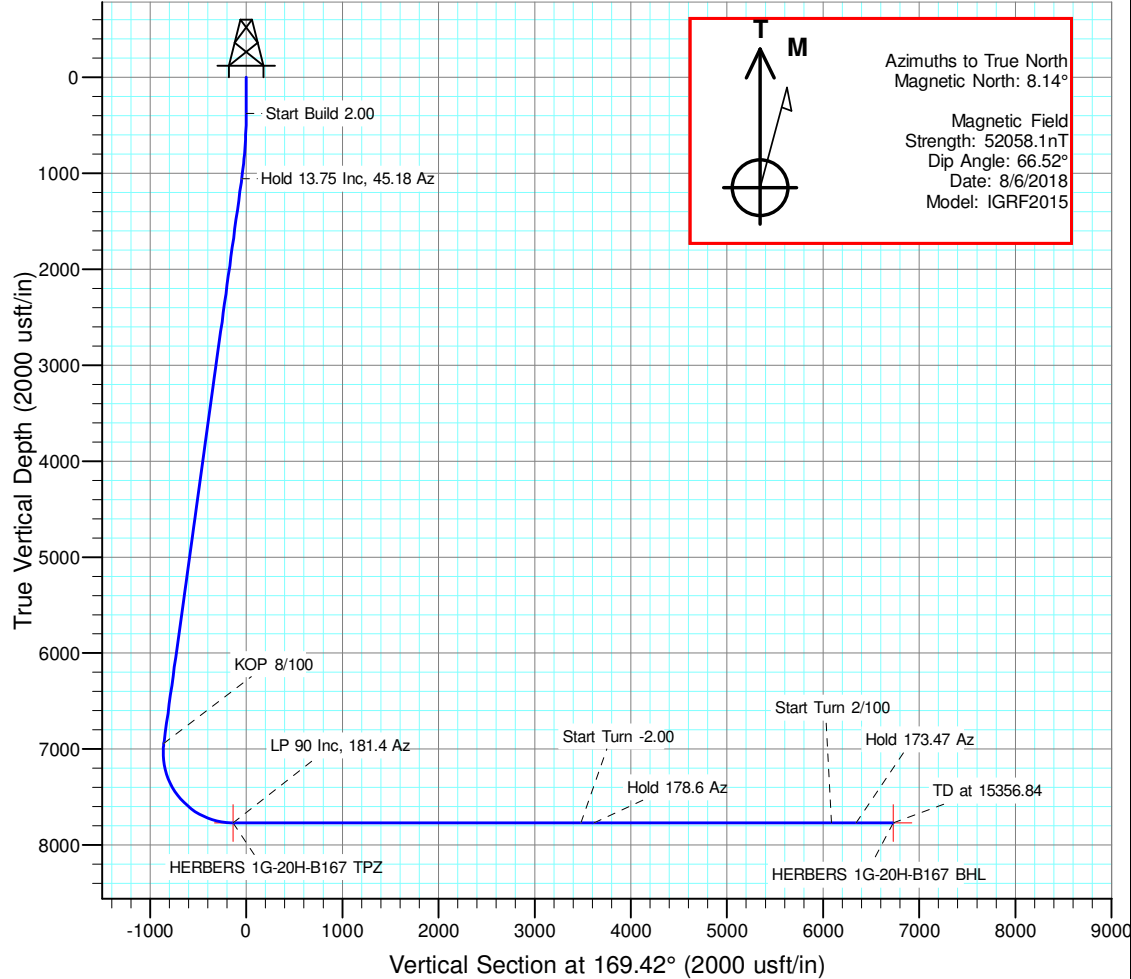
Herbers Pad

## ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Vsect	Departure	Annotation
375.00	0.00	0.00	375.00	0.00	0.00	0.00	0.00	Start Build 2.00
1062.41	13.75	45.18	1055.83	57.85	58.22	-46.18	82.08	Hold 13.75 Inc, 45.18 Az
7122.90	13.75	45.18	6942.69	1073.05	1079.91	-856.61	1522.38	KOP 8/100
8371.40	90.00	181.40	7770.00	364.26	1202.69	-137.33	2289.71	LP 90 Inc, 181.4 Az
12071.40	90.00	181.40	7770.00	-3334.64	1112.29	3482.14	5989.71	Start Turn -2.00
12211.40	90.00	178.60	7770.00	-3474.62	1112.29	3619.75	6129.71	Hold 178.6 Az
14711.40	90.00	178.60	7770.00	-5973.88	1173.37	6087.75	8629.71	Start Turn 2/100
14967.85	90.00	173.47	7770.00	-6229.63	1191.09	6342.42	8886.17	Hold 173.47 Az
15356.84	90.00	173.47	7770.00	-6616.10	1235.32	6730.43	9275.15	TD at 15356.84

## DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
HERBERS 1G-20H-B167 BHL	7770.00	-6616.10	1235.32	1251908.204	3165534.804	40.023361	-104.908922	Point
HERBERS 1G-20H-B167 TPZ	7770.00	364.26	1202.69	1258888.189	3165455.986	40.042523	-104.909037	Point

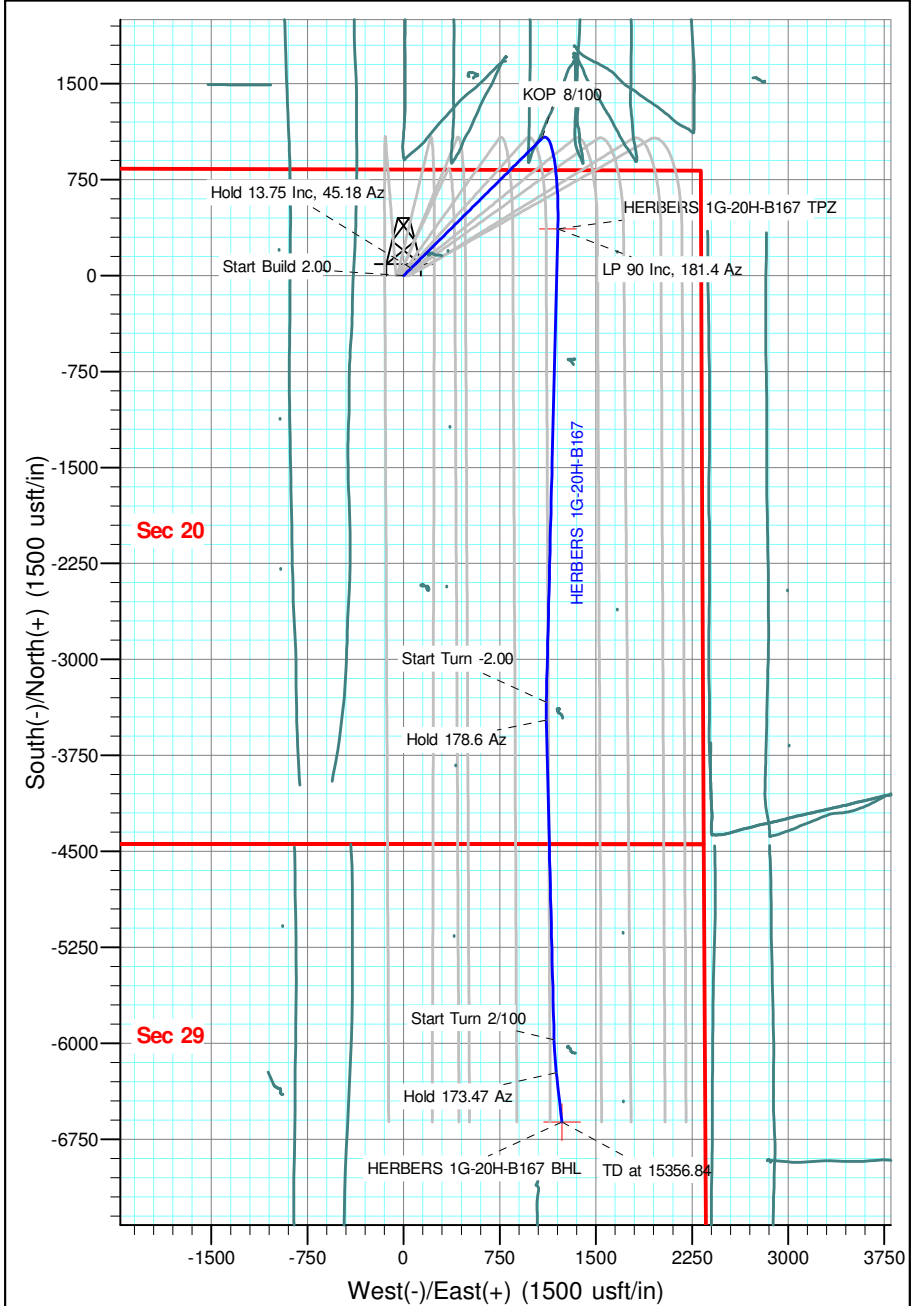


## Geodetic Datum:

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

## Elevation:

Ground Elevation: 5106.31  
KB Elevation: WELL @ 5129.31usft (Original Well Elev)





# **Crestone Peak Resources**

**Sec 20 T1N-R67W**

**Herbers Pad**

**HERBERS 1G-20H-B167**

**Wellbore #1**

**Plan: Design #1 06Aug18 kjs**

## **Standard Planning Report - Geographic**

**09 August, 2018**

<b>Database:</b>	EDM 5000.15 Single User Db	<b>Local Co-ordinate Reference:</b>	Well HERBERS 1G-20H-B167
<b>Company:</b>	Crestone Peak Resources	<b>TVD Reference:</b>	WELL @ 5129.31usft (Original Well Elev)
<b>Project:</b>	Sec 20 T1N-R67W	<b>MD Reference:</b>	WELL @ 5129.31usft (Original Well Elev)
<b>Site:</b>	Herbers Pad	<b>North Reference:</b>	True
<b>Well:</b>	HERBERS 1G-20H-B167	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 06Aug18 kjs		

<b>Project</b>	Sec 20 T1N-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		Herbers Pad			
Site Position:		Northing:	1,258,515.981 usft	Latitude:	40.041524
From:	Map	Easting:	3,164,195.736 usft	Longitude:	-104.913547
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.38 °

Well	HERBERS 1G-20H-B167					
Well Position	+N/-S	0.00 usft	Northing:	1,258,515.982 usft	Latitude:	40.041523
	+E/-W	0.00 usft	Easting:	3,164,255.736 usft	Longitude:	-104.913333
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	5,106.31 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	8/6/2018	8.14	66.52	52,058.08601849

<b>Design</b>	Design #1 06Aug18 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	169.42

<b>Plan Survey Tool Program</b>	<b>Date</b>	8/9/2018		
<b>Depth From (usft)</b>	<b>Depth To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>
1	0.00	15,356.84 Design #1 06Aug18 kjs (Wellbore)	MWD	
			OWSG MWD - Standard	

<b>Database:</b>	EDM 5000.15 Single User Db	<b>Local Co-ordinate Reference:</b>	Well HERBERS 1G-20H-B167
<b>Company:</b>	Crestone Peak Resources	<b>TVD Reference:</b>	WELL @ 5129.31usft (Original Well Elev)
<b>Project:</b>	Sec 20 T1N-R67W	<b>MD Reference:</b>	WELL @ 5129.31usft (Original Well Elev)
<b>Site:</b>	Herbers Pad	<b>North Reference:</b>	True
<b>Well:</b>	HERBERS 1G-20H-B167	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 06Aug18 kjs		

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
375.00	0.00	0.00	375.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,062.41	13.75	45.18	1,055.83	57.85	58.22	2.00	2.00	0.00	45.18	
7,122.90	13.75	45.18	6,942.69	1,073.05	1,079.91	0.00	0.00	0.00	0.00	
8,371.40	90.00	181.40	7,770.00	364.26	1,202.69	8.00	6.11	10.91	135.38	HERBERS 1G-20H-B
12,071.40	90.00	181.40	7,770.00	-3,334.64	1,112.29	0.00	0.00	0.00	0.00	
12,211.40	90.00	178.60	7,770.00	-3,474.62	1,112.29	2.00	0.00	-2.00	-90.00	
14,711.40	90.00	178.60	7,770.00	-5,973.88	1,173.37	0.00	0.00	0.00	0.00	
14,967.85	90.00	173.47	7,770.00	-6,229.63	1,191.09	2.00	0.00	-2.00	-90.00	
15,356.84	90.00	173.47	7,770.00	-6,616.10	1,235.32	0.00	0.00	0.00	0.00	HERBERS 1G-20H-B

<b>Database:</b>	EDM 5000.15 Single User Db	<b>Local Co-ordinate Reference:</b>	Well HERBERS 1G-20H-B167
<b>Company:</b>	Crestone Peak Resources	<b>TVD Reference:</b>	WELL @ 5129.31usft (Original Well Elev)
<b>Project:</b>	Sec 20 T1N-R67W	<b>MD Reference:</b>	WELL @ 5129.31usft (Original Well Elev)
<b>Site:</b>	Herbers Pad	<b>North Reference:</b>	True
<b>Well:</b>	HERBERS 1G-20H-B167	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 06Aug18 kjs		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.00	0.00	0.00	0.00	0.00	0.00	1,258,515.982	3,164,255.736	40.041523	-104.913333
100.00	0.00	0.00	100.00	0.00	0.00	1,258,515.982	3,164,255.736	40.041523	-104.913333
200.00	0.00	0.00	200.00	0.00	0.00	1,258,515.982	3,164,255.736	40.041523	-104.913333
300.00	0.00	0.00	300.00	0.00	0.00	1,258,515.982	3,164,255.736	40.041523	-104.913333
375.00	0.00	0.00	375.00	0.00	0.00	1,258,515.982	3,164,255.736	40.041523	-104.913333
Start Build 2.00									
400.00	0.50	45.18	400.00	0.08	0.08	1,258,516.060	3,164,255.813	40.041523	-104.913332
500.00	2.50	45.18	499.96	1.92	1.93	1,258,517.917	3,164,257.657	40.041528	-104.913326
600.00	4.50	45.18	599.77	6.22	6.26	1,258,522.248	3,164,261.959	40.041540	-104.913310
700.00	6.50	45.18	699.30	12.98	13.06	1,258,529.048	3,164,268.713	40.041559	-104.913286
800.00	8.50	45.18	798.44	22.18	22.32	1,258,538.309	3,164,277.910	40.041584	-104.913253
900.00	10.50	45.18	897.07	33.81	34.03	1,258,550.019	3,164,289.540	40.041616	-104.913211
1,000.00	12.50	45.18	995.05	47.86	48.17	1,258,564.164	3,164,303.588	40.041655	-104.913161
1,062.41	13.75	45.18	1,055.83	57.85	58.22	1,258,574.218	3,164,313.573	40.041682	-104.913125
Hold 13.75 Inc, 45.18 Az									
1,100.00	13.75	45.18	1,092.35	64.15	64.56	1,258,580.557	3,164,319.869	40.041699	-104.913102
1,200.00	13.75	45.18	1,189.48	80.90	81.42	1,258,597.419	3,164,336.616	40.041745	-104.913042
1,300.00	13.75	45.18	1,286.62	97.65	98.28	1,258,614.281	3,164,353.363	40.041791	-104.912982
1,400.00	13.75	45.18	1,383.75	114.40	115.13	1,258,631.143	3,164,370.110	40.041837	-104.912922
1,500.00	13.75	45.18	1,480.89	131.15	131.99	1,258,648.006	3,164,386.857	40.041883	-104.912861
1,600.00	13.75	45.18	1,578.02	147.90	148.85	1,258,664.868	3,164,403.604	40.041929	-104.912801
1,700.00	13.75	45.18	1,675.16	164.65	165.71	1,258,681.730	3,164,420.351	40.041975	-104.912741
1,800.00	13.75	45.18	1,772.29	181.41	182.57	1,258,698.592	3,164,437.098	40.042021	-104.912681
1,900.00	13.75	45.18	1,869.43	198.16	199.42	1,258,715.454	3,164,453.845	40.042067	-104.912620
2,000.00	13.75	45.18	1,966.56	214.91	216.28	1,258,732.316	3,164,470.592	40.042113	-104.912560
2,100.00	13.75	45.18	2,063.70	231.66	233.14	1,258,749.179	3,164,487.339	40.042159	-104.912500
2,200.00	13.75	45.18	2,160.83	248.41	250.00	1,258,766.041	3,164,504.086	40.042205	-104.912440
2,300.00	13.75	45.18	2,257.97	265.16	266.86	1,258,782.903	3,164,520.833	40.042251	-104.912380
2,400.00	13.75	45.18	2,355.10	281.91	283.72	1,258,799.765	3,164,537.580	40.042297	-104.912319
2,500.00	13.75	45.18	2,452.24	298.66	300.57	1,258,816.627	3,164,554.327	40.042343	-104.912259
2,600.00	13.75	45.18	2,549.37	315.41	317.43	1,258,833.489	3,164,571.074	40.042389	-104.912199
2,700.00	13.75	45.18	2,646.51	332.16	334.29	1,258,850.352	3,164,587.821	40.042435	-104.912139
2,800.00	13.75	45.18	2,743.64	348.92	351.15	1,258,867.214	3,164,604.568	40.042481	-104.912079
2,900.00	13.75	45.18	2,840.78	365.67	368.01	1,258,884.076	3,164,621.315	40.042527	-104.912018
3,000.00	13.75	45.18	2,937.91	382.42	384.87	1,258,900.938	3,164,638.062	40.042573	-104.911958
3,100.00	13.75	45.18	3,035.05	399.17	401.72	1,258,917.800	3,164,654.809	40.042619	-104.911898
3,200.00	13.75	45.18	3,132.18	415.92	418.58	1,258,934.662	3,164,671.556	40.042665	-104.911838
3,300.00	13.75	45.18	3,229.32	432.67	435.44	1,258,951.525	3,164,688.303	40.042711	-104.911778
3,400.00	13.75	45.18	3,326.45	449.42	452.30	1,258,968.387	3,164,705.050	40.042757	-104.911717
3,500.00	13.75	45.18	3,423.59	466.17	469.16	1,258,985.249	3,164,721.797	40.042803	-104.911657
3,600.00	13.75	45.18	3,520.72	482.92	486.01	1,259,002.111	3,164,738.544	40.042849	-104.911597
3,700.00	13.75	45.18	3,617.86	499.68	502.87	1,259,018.973	3,164,755.291	40.042895	-104.911537
3,800.00	13.75	45.18	3,714.99	516.43	519.73	1,259,035.835	3,164,772.038	40.042941	-104.911476
3,900.00	13.75	45.18	3,812.13	533.18	536.59	1,259,052.698	3,164,788.785	40.042987	-104.911416
4,000.00	13.75	45.18	3,909.26	549.93	553.45	1,259,069.560	3,164,805.532	40.043033	-104.911356
4,100.00	13.75	45.18	4,006.40	566.68	570.31	1,259,086.422	3,164,822.279	40.043079	-104.911296
4,200.00	13.75	45.18	4,103.53	583.43	587.16	1,259,103.284	3,164,839.026	40.043125	-104.911236
4,300.00	13.75	45.18	4,200.67	600.18	604.02	1,259,120.146	3,164,855.773	40.043171	-104.911175
4,400.00	13.75	45.18	4,297.80	616.93	620.88	1,259,137.008	3,164,872.520	40.043217	-104.911115
4,500.00	13.75	45.18	4,394.94	633.68	637.74	1,259,153.871	3,164,889.267	40.043263	-104.911055
4,600.00	13.75	45.18	4,492.07	650.43	654.60	1,259,170.733	3,164,906.015	40.043309	-104.910995
4,700.00	13.75	45.18	4,589.21	667.19	671.45	1,259,187.595	3,164,922.762	40.043355	-104.910935
4,800.00	13.75	45.18	4,686.34	683.94	688.31	1,259,204.457	3,164,939.509	40.043401	-104.910874
4,900.00	13.75	45.18	4,783.48	700.69	705.17	1,259,221.319	3,164,956.256	40.043447	-104.910814

<b>Database:</b>	EDM 5000.15 Single User Db	<b>Local Co-ordinate Reference:</b>	Well HERBERS 1G-20H-B167
<b>Company:</b>	Crestone Peak Resources	<b>TVD Reference:</b>	WELL @ 5129.31usft (Original Well Elev)
<b>Project:</b>	Sec 20 T1N-R67W	<b>MD Reference:</b>	WELL @ 5129.31usft (Original Well Elev)
<b>Site:</b>	Herbers Pad	<b>North Reference:</b>	True
<b>Well:</b>	HERBERS 1G-20H-B167	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 06Aug18 kjs		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,000.00	13.75	45.18	4,880.61	717.44	722.03	1,259,238.181	3,164,973.003	40.043493	-104.910754
5,100.00	13.75	45.18	4,977.74	734.19	738.89	1,259,255.044	3,164,989.750	40.043539	-104.910694
5,200.00	13.75	45.18	5,074.88	750.94	755.75	1,259,271.906	3,165,006.497	40.043585	-104.910633
5,300.00	13.75	45.18	5,172.01	767.69	772.60	1,259,288.768	3,165,023.244	40.043631	-104.910573
5,400.00	13.75	45.18	5,269.15	784.44	789.46	1,259,305.630	3,165,039.991	40.043677	-104.910513
5,500.00	13.75	45.18	5,366.28	801.19	806.32	1,259,322.492	3,165,056.738	40.043723	-104.910453
5,600.00	13.75	45.18	5,463.42	817.94	823.18	1,259,339.355	3,165,073.485	40.043769	-104.910393
5,700.00	13.75	45.18	5,560.55	834.70	840.04	1,259,356.217	3,165,090.232	40.043814	-104.910332
5,800.00	13.75	45.18	5,657.69	851.45	856.89	1,259,373.079	3,165,106.979	40.043860	-104.910272
5,900.00	13.75	45.18	5,754.82	868.20	873.75	1,259,389.941	3,165,123.726	40.043906	-104.910212
6,000.00	13.75	45.18	5,851.96	884.95	890.61	1,259,406.803	3,165,140.473	40.043952	-104.910152
6,100.00	13.75	45.18	5,949.09	901.70	907.47	1,259,423.665	3,165,157.220	40.043998	-104.910091
6,200.00	13.75	45.18	6,046.23	918.45	924.33	1,259,440.528	3,165,173.967	40.044044	-104.910031
6,300.00	13.75	45.18	6,143.36	935.20	941.19	1,259,457.390	3,165,190.714	40.044090	-104.909971
6,400.00	13.75	45.18	6,240.50	951.95	958.04	1,259,474.252	3,165,207.461	40.044136	-104.909911
6,500.00	13.75	45.18	6,337.63	968.70	974.90	1,259,491.114	3,165,224.208	40.044182	-104.909851
6,600.00	13.75	45.18	6,434.77	985.45	991.76	1,259,507.976	3,165,240.955	40.044228	-104.909790
6,700.00	13.75	45.18	6,531.90	1,002.21	1,008.62	1,259,524.838	3,165,257.702	40.044274	-104.909730
6,800.00	13.75	45.18	6,629.04	1,018.96	1,025.48	1,259,541.701	3,165,274.449	40.044320	-104.909670
6,900.00	13.75	45.18	6,726.17	1,035.71	1,042.33	1,259,558.563	3,165,291.196	40.044366	-104.909610
7,000.00	13.75	45.18	6,823.31	1,052.46	1,059.19	1,259,575.425	3,165,307.943	40.044412	-104.909550
7,100.00	13.75	45.18	6,920.44	1,069.21	1,076.05	1,259,592.287	3,165,324.690	40.044458	-104.909489
7,122.90	13.75	45.18	6,942.69	1,073.05	1,079.91	1,259,596.149	3,165,328.525	40.044469	-104.909476
<b>KOP 8/100</b>									
7,200.00	10.29	70.16	7,018.14	1,081.85	1,092.90	1,259,605.038	3,165,341.458	40.044493	-104.909429
7,300.00	10.51	115.59	7,116.65	1,080.94	1,109.56	1,259,604.239	3,165,358.124	40.044490	-104.909370
7,400.00	15.55	143.94	7,214.14	1,066.14	1,125.71	1,259,589.543	3,165,374.368	40.044450	-104.909312
7,500.00	22.36	157.10	7,308.70	1,037.73	1,141.03	1,259,561.238	3,165,389.875	40.044372	-104.909257
7,600.00	29.75	164.17	7,398.50	996.27	1,155.22	1,259,519.874	3,165,404.342	40.044258	-104.909207
7,700.00	37.37	168.59	7,481.78	942.57	1,168.01	1,259,466.257	3,165,417.487	40.044111	-104.909161
7,800.00	45.11	171.69	7,556.93	877.67	1,179.15	1,259,401.430	3,165,429.056	40.043932	-104.909121
7,900.00	52.91	174.05	7,622.48	802.83	1,188.42	1,259,326.654	3,165,438.823	40.043727	-104.909088
8,000.00	60.75	175.96	7,677.16	719.51	1,195.65	1,259,243.386	3,165,446.597	40.043498	-104.909062
8,100.00	68.61	177.60	7,719.90	629.33	1,200.68	1,259,153.246	3,165,452.227	40.043251	-104.909044
8,200.00	76.48	179.07	7,749.88	534.06	1,203.43	1,259,057.988	3,165,455.604	40.042989	-104.909034
8,300.00	84.37	180.44	7,766.49	435.53	1,203.83	1,258,959.467	3,165,456.662	40.042719	-104.909033
8,371.40	90.00	181.40	7,770.00	364.26	1,202.69	1,258,888.189	3,165,455.986	40.042523	-104.909037
<b>LP 90 Inc, 181.4 Az - HERBERS 1G-20H-B167 TPZ</b>									
8,400.00	90.00	181.40	7,770.00	335.66	1,201.99	1,258,859.590	3,165,455.476	40.042445	-104.909040
8,500.00	90.00	181.40	7,770.00	235.69	1,199.54	1,258,759.606	3,165,453.694	40.042170	-104.909048
8,600.00	90.00	181.40	7,770.00	135.72	1,197.10	1,258,659.622	3,165,451.912	40.041896	-104.909057
8,700.00	90.00	181.40	7,770.00	35.75	1,194.66	1,258,559.638	3,165,450.131	40.041621	-104.909066
8,800.00	90.00	181.40	7,770.00	-64.22	1,192.21	1,258,459.654	3,165,448.349	40.041347	-104.909075
8,900.00	90.00	181.40	7,770.00	-164.19	1,189.77	1,258,359.670	3,165,446.567	40.041072	-104.909083
9,000.00	90.00	181.40	7,770.00	-264.16	1,187.33	1,258,259.685	3,165,444.785	40.040798	-104.909092
9,100.00	90.00	181.40	7,770.00	-364.13	1,184.88	1,258,159.701	3,165,443.004	40.040523	-104.909101
9,200.00	90.00	181.40	7,770.00	-464.10	1,182.44	1,258,059.717	3,165,441.222	40.040249	-104.909110
9,300.00	90.00	181.40	7,770.00	-564.07	1,180.00	1,257,959.733	3,165,439.440	40.039975	-104.909118
9,400.00	90.00	181.40	7,770.00	-664.04	1,177.56	1,257,859.749	3,165,437.658	40.039700	-104.909127
9,500.00	90.00	181.40	7,770.00	-764.01	1,175.11	1,257,759.765	3,165,435.877	40.039426	-104.909136
9,600.00	90.00	181.40	7,770.00	-863.98	1,172.67	1,257,659.781	3,165,434.095	40.039151	-104.909145
9,700.00	90.00	181.40	7,770.00	-963.95	1,170.23	1,257,559.797	3,165,432.313	40.038877	-104.909153
9,800.00	90.00	181.40	7,770.00	-1,063.92	1,167.78	1,257,459.813	3,165,430.531	40.038602	-104.909162
9,900.00	90.00	181.40	7,770.00	-1,163.89	1,165.34	1,257,359.828	3,165,428.749	40.038328	-104.909171

<b>Database:</b>	EDM 5000.15 Single User Db	<b>Local Co-ordinate Reference:</b>	Well HERBERS 1G-20H-B167
<b>Company:</b>	Crestone Peak Resources	<b>TVD Reference:</b>	WELL @ 5129.31usft (Original Well Elev)
<b>Project:</b>	Sec 20 T1N-R67W	<b>MD Reference:</b>	WELL @ 5129.31usft (Original Well Elev)
<b>Site:</b>	Herbers Pad	<b>North Reference:</b>	True
<b>Well:</b>	HERBERS 1G-20H-B167	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 06Aug18 kjs		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
10,000.00	90.00	181.40	7,770.00	-1,263.86	1,162.90	1,257,259.844	3,165,426.968	40.038054	-104.909180
10,100.00	90.00	181.40	7,770.00	-1,363.83	1,160.45	1,257,159.860	3,165,425.186	40.037779	-104.909188
10,200.00	90.00	181.40	7,770.00	-1,463.80	1,158.01	1,257,059.876	3,165,423.404	40.037505	-104.909197
10,300.00	90.00	181.40	7,770.00	-1,563.77	1,155.57	1,256,959.892	3,165,421.622	40.037230	-104.909206
10,400.00	90.00	181.40	7,770.00	-1,663.74	1,153.12	1,256,859.908	3,165,419.841	40.036956	-104.909215
10,500.00	90.00	181.40	7,770.00	-1,763.71	1,150.68	1,256,759.924	3,165,418.059	40.036681	-104.909223
10,600.00	90.00	181.40	7,770.00	-1,863.68	1,148.24	1,256,659.940	3,165,416.277	40.036407	-104.909232
10,700.00	90.00	181.40	7,770.00	-1,963.65	1,145.79	1,256,559.955	3,165,414.495	40.036133	-104.909241
10,800.00	90.00	181.40	7,770.00	-2,063.62	1,143.35	1,256,459.971	3,165,412.713	40.035858	-104.909249
10,900.00	90.00	181.40	7,770.00	-2,163.59	1,140.91	1,256,359.987	3,165,410.932	40.035584	-104.909258
11,000.00	90.00	181.40	7,770.00	-2,263.56	1,138.46	1,256,260.003	3,165,409.150	40.035309	-104.909267
11,100.00	90.00	181.40	7,770.00	-2,363.53	1,136.02	1,256,160.019	3,165,407.368	40.035035	-104.909276
11,200.00	90.00	181.40	7,770.00	-2,463.50	1,133.58	1,256,060.035	3,165,405.586	40.034760	-104.909284
11,300.00	90.00	181.40	7,770.00	-2,563.47	1,131.13	1,255,960.051	3,165,403.805	40.034486	-104.909293
11,400.00	90.00	181.40	7,770.00	-2,663.44	1,128.69	1,255,860.067	3,165,402.023	40.034211	-104.909302
11,500.00	90.00	181.40	7,770.00	-2,763.41	1,126.25	1,255,760.082	3,165,400.241	40.033937	-104.909311
11,600.00	90.00	181.40	7,770.00	-2,863.38	1,123.80	1,255,660.098	3,165,398.459	40.033663	-104.909319
11,700.00	90.00	181.40	7,770.00	-2,963.35	1,121.36	1,255,560.114	3,165,396.678	40.033388	-104.909328
11,800.00	90.00	181.40	7,770.00	-3,063.32	1,118.92	1,255,460.130	3,165,394.896	40.033114	-104.909337
11,900.00	90.00	181.40	7,770.00	-3,163.29	1,116.47	1,255,360.146	3,165,393.114	40.032839	-104.909346
12,000.00	90.00	181.40	7,770.00	-3,263.26	1,114.03	1,255,260.162	3,165,391.332	40.032565	-104.909354
12,071.40	90.00	181.40	7,770.00	-3,334.64	1,112.29	1,255,188.777	3,165,390.060	40.032369	-104.909361
<b>Start Turn -2.00</b>									
12,100.00	90.00	180.83	7,770.00	-3,363.24	1,111.73	1,255,160.176	3,165,389.693	40.032290	-104.909363
12,200.00	90.00	178.83	7,770.00	-3,463.23	1,112.03	1,255,060.185	3,165,390.655	40.032016	-104.909362
12,211.40	90.00	178.60	7,770.00	-3,474.62	1,112.29	1,255,048.794	3,165,390.986	40.031985	-104.909361
<b>Hold 178.6 Az</b>									
12,300.00	90.00	178.60	7,770.00	-3,563.20	1,114.45	1,254,960.233	3,165,393.737	40.031741	-104.909353
12,400.00	90.00	178.60	7,770.00	-3,663.17	1,116.90	1,254,860.281	3,165,396.842	40.031467	-104.909344
12,500.00	90.00	178.60	7,770.00	-3,763.14	1,119.34	1,254,760.329	3,165,399.946	40.031193	-104.909335
12,600.00	90.00	178.60	7,770.00	-3,863.11	1,121.78	1,254,660.378	3,165,403.051	40.030918	-104.909327
12,700.00	90.00	178.60	7,770.00	-3,963.08	1,124.22	1,254,560.426	3,165,406.155	40.030644	-104.909318
12,800.00	90.00	178.60	7,770.00	-4,063.05	1,126.67	1,254,460.474	3,165,409.260	40.030369	-104.909309
12,900.00	90.00	178.60	7,770.00	-4,163.02	1,129.11	1,254,360.522	3,165,412.364	40.030095	-104.909301
13,000.00	90.00	178.60	7,770.00	-4,262.99	1,131.55	1,254,260.570	3,165,415.469	40.029820	-104.909292
13,100.00	90.00	178.60	7,770.00	-4,362.96	1,134.00	1,254,160.619	3,165,418.573	40.029546	-104.909283
13,200.00	90.00	178.60	7,770.00	-4,462.93	1,136.44	1,254,060.667	3,165,421.678	40.029272	-104.909275
13,300.00	90.00	178.60	7,770.00	-4,562.90	1,138.88	1,253,960.715	3,165,424.783	40.028997	-104.909266
13,400.00	90.00	178.60	7,770.00	-4,662.87	1,141.33	1,253,860.763	3,165,427.887	40.028723	-104.909257
13,500.00	90.00	178.60	7,770.00	-4,762.84	1,143.77	1,253,760.811	3,165,430.992	40.028448	-104.909248
13,600.00	90.00	178.60	7,770.00	-4,862.81	1,146.21	1,253,660.860	3,165,434.096	40.028174	-104.909240
13,700.00	90.00	178.60	7,770.00	-4,962.78	1,148.66	1,253,560.908	3,165,437.201	40.027899	-104.909231
13,800.00	90.00	178.60	7,770.00	-5,062.75	1,151.10	1,253,460.956	3,165,440.305	40.027625	-104.909222
13,900.00	90.00	178.60	7,770.00	-5,162.72	1,153.54	1,253,361.004	3,165,443.410	40.027350	-104.909214
14,000.00	90.00	178.60	7,770.00	-5,262.69	1,155.99	1,253,261.052	3,165,446.514	40.027076	-104.909205
14,100.00	90.00	178.60	7,770.00	-5,362.66	1,158.43	1,253,161.101	3,165,449.619	40.026802	-104.909196
14,200.00	90.00	178.60	7,770.00	-5,462.63	1,160.87	1,253,061.149	3,165,452.724	40.026527	-104.909187
14,300.00	90.00	178.60	7,770.00	-5,562.60	1,163.32	1,252,961.197	3,165,455.828	40.026253	-104.909179
14,400.00	90.00	178.60	7,770.00	-5,662.57	1,165.76	1,252,861.245	3,165,458.933	40.025978	-104.909170
14,500.00	90.00	178.60	7,770.00	-5,762.54	1,168.20	1,252,761.294	3,165,462.037	40.025704	-104.909161
14,600.00	90.00	178.60	7,770.00	-5,862.51	1,170.65	1,252,661.341	3,165,465.142	40.025429	-104.909153
14,700.00	90.00	178.60	7,770.00	-5,962.48	1,173.09	1,252,561.389	3,165,468.246	40.025155	-104.909144
14,711.40	90.00	178.60	7,770.00	-5,973.88	1,173.37	1,252,549.998	3,165,468.600	40.025124	-104.909143
<b>Start Turn 2/100</b>									

<b>Database:</b>	EDM 5000.15 Single User Db	<b>Local Co-ordinate Reference:</b>	Well HERBERS 1G-20H-B167
<b>Company:</b>	Crestone Peak Resources	<b>TVD Reference:</b>	WELL @ 5129.31usft (Original Well Elev)
<b>Project:</b>	Sec 20 T1N-R67W	<b>MD Reference:</b>	WELL @ 5129.31usft (Original Well Elev)
<b>Site:</b>	Herbers Pad	<b>North Reference:</b>	True
<b>Well:</b>	HERBERS 1G-20H-B167	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 06Aug18 kjs		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
14,800.00	90.00	176.83	7,770.00	-6,062.41	1,176.90	1,252,461.494	3,165,472.720	40.024881	-104.909130
14,900.00	90.00	174.83	7,770.00	-6,162.14	1,184.18	1,252,361.814	3,165,480.654	40.024607	-104.909104
14,967.85	90.00	173.47	7,770.00	-6,229.63	1,191.09	1,252,294.364	3,165,488.017	40.024422	-104.909080
<b>Hold 173.47 Az</b>									
15,000.00	90.00	173.47	7,770.00	-6,261.57	1,194.75	1,252,262.450	3,165,491.884	40.024334	-104.909067
15,100.00	90.00	173.47	7,770.00	-6,360.92	1,206.12	1,252,163.176	3,165,503.912	40.024061	-104.909026
15,200.00	90.00	173.47	7,770.00	-6,460.28	1,217.49	1,252,063.902	3,165,515.939	40.023788	-104.908985
15,300.00	90.00	173.47	7,770.00	-6,559.63	1,228.86	1,251,964.628	3,165,527.967	40.023516	-104.908945
15,356.84	90.00	173.47	7,770.00	-6,616.10	1,235.32	1,251,908.204	3,165,534.804	40.023361	-104.908922
<b>TD at 15356.84 - HERBERS 1G-20H-B167 BHL</b>									

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									
HERBERS 1G-20H-B16	0.00	0.00	7,770.00	-6,616.10	1,235.32	1,251,908.204	3,165,534.804	40.023361	-104.908922
- plan hits target center									
- Point									
HERBERS 1G-20H-B16	0.00	0.00	7,770.00	364.26	1,202.69	1,258,888.189	3,165,455.986	40.042523	-104.909037
- plan hits target center									
- Point									

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
375.00	375.00	0.00	0.00	Start Build 2.00
1,062.41	1,055.83	57.85	58.22	Hold 13.75 Inc, 45.18 Az
7,122.90	6,942.69	1,073.05	1,079.91	KOP 8/100
8,371.40	7,770.00	364.26	1,202.69	LP 90 Inc, 181.4 Az
12,071.40	7,770.00	-3,334.64	1,112.29	Start Turn -2.00
12,211.40	7,770.00	-3,474.62	1,112.29	Hold 178.6 Az
14,711.40	7,770.00	-5,973.88	1,173.37	Start Turn 2/100
14,967.85	7,770.00	-6,229.63	1,191.09	Hold 173.47 Az
15,356.84	7,770.00	-6,616.10	1,235.32	TD at 15356.84