



# Crestone Peak Resources

Well Name:

MELBON RANCH 4D-17H-M265

Project Name:

Sec 17 T2N-R65W

Pad Name:

Melbon Ranch Pad

## ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSec	Departure	Annotation
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	Start Build 2.00
750.00	10.00	0.00	747.47	43.52	0.00	10.67	43.52	Hold 10 Inc, 0 Az
2250.00	10.00	0.00	2224.68	303.99	0.00	74.52	303.99	Begin 2/100 Build & Turn
2560.87	11.07	325.99	2530.59	355.78	-16.72	71.01	359.37	Hold 11.1 Inc, 325.99 Az
6636.24	11.07	325.99	6530.08	1004.61	-454.58	-194.44	1142.12	KOP 8/100
7837.43	90.00	89.55	7312.00	1137.75	256.54	527.61	1897.18	LP 90 Inc, 89.55 Az
12217.32	90.00	89.55	7312.00	1172.38	4636.29	4782.22	6277.07	TD at 12217.6

## Geodetic Datum:

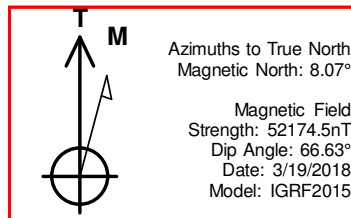
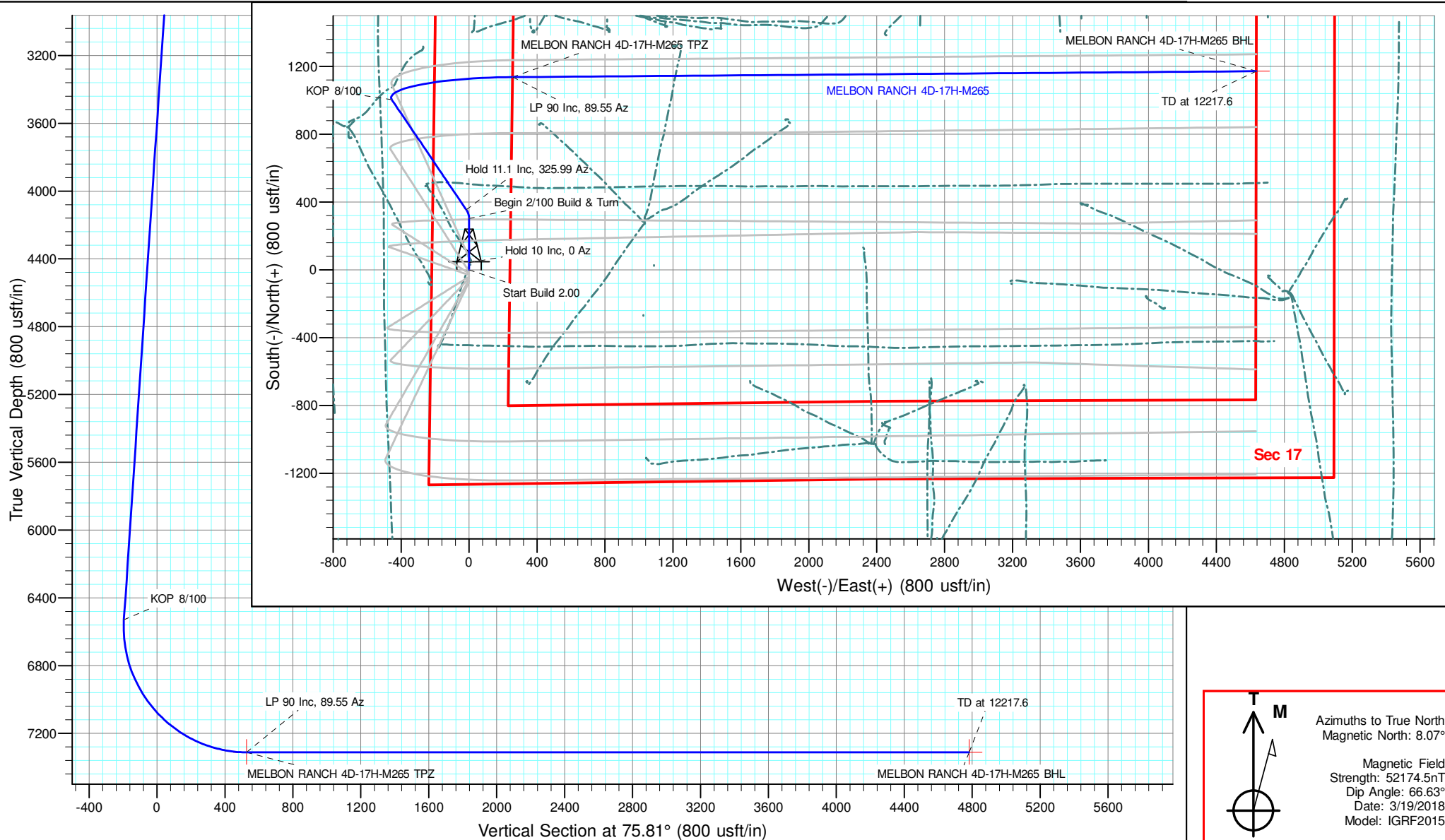
North American Datum 1983  
US State Plane 1983, Colorado Northern Zone

## Elevation:

Ground Elevation: 4956.00  
KB Elevation: WELL @ 4979.00usft (Original Well Elev)

## DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
MELBON RANCH 4D-17H-M265 BHL	1172.38	4636.29	1294192.10	3229242.90	40.138042	-104.680053	Point	
MELBON RANCH 4D-17H-M265 TPZ	1137.75	256.54	1294117.80	3224863.64	40.137948	-104.695718	Point	





# **Crestone Peak Resources**

**Sec 17 T2N-R65W**

**Melbon Ranch Pad**

**MELBON RANCH 4D-17H-M265**

**Wellbore #1**

**Plan: Design #1 19Mar18 kjs**

## **Standard Planning Report - Geographic**

**17 May, 2018**

<b>Database:</b>	EDM 5000.15 Single User Db	<b>Local Co-ordinate Reference:</b>	Well MELBON RANCH 4D-17H-M265
<b>Company:</b>	Crestone Peak Resources	<b>TVD Reference:</b>	WELL @ 4979.00usft (Original Well Elev)
<b>Project:</b>	Sec 17 T2N-R65W	<b>MD Reference:</b>	WELL @ 4979.00usft (Original Well Elev)
<b>Site:</b>	Melbon Ranch Pad	<b>North Reference:</b>	True
<b>Well:</b>	MELBON RANCH 4D-17H-M265	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 19Mar18 kjs		

<b>Project</b>	Sec 17 T2N-R65W, 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		Melbon Ranch Pad			
Site Position:		Northing:	1,292,987.77 usft	Latitude:	40.134852
From:	Map	Easting:	3,224,617.42 usft	Longitude:	-104.696635
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.52 °

Well	MELBON RANCH 4D-17H-M265					
Well Position	+N/-S	0.00 usft	Northing:	1,292,977.77 usft	Latitude:	40.134825
	+E/-W	0.00 usft	Easting:	3,224,617.42 usft	Longitude:	-104.696636
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	4,956.00 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	3/19/2018	8.07	66.63	52,174.52126293

<b>Design</b>	Design #1 19Mar18 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	75.81

<b>Plan Survey Tool Program</b>	<b>Date</b>	5/17/2018		
<b>Depth From (usft)</b>	<b>Depth To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>
1	0.00	12,217.32 Design #1 19Mar18 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	
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00	
750.00	10.00	0.00	747.47	43.52	0.00	2.00	2.00	0.00	0.00	
2,250.00	10.00	0.00	2,224.68	303.99	0.00	0.00	0.00	0.00	0.00	
2,560.87	11.07	325.99	2,530.59	355.78	-16.72	2.00	0.35	-10.94	-97.23	
6,636.24	11.07	325.99	6,530.09	1,004.61	-454.58	0.00	0.00	0.00	0.00	
7,837.43	90.00	89.55	7,312.00	1,137.75	256.54	8.00	6.57	10.29	123.07	MELBON RANCH 4D
12,217.32	90.00	89.55	7,312.00	1,172.38	4,636.29	0.00	0.00	0.00	0.00	MELBON RANCH 4D

<b>Database:</b>	EDM 5000.15 Single User Db	<b>Local Co-ordinate Reference:</b>	Well MELBON RANCH 4D-17H-M265
<b>Company:</b>	Crestone Peak Resources	<b>TVD Reference:</b>	WELL @ 4979.00usft (Original Well Elev)
<b>Project:</b>	Sec 17 T2N-R65W	<b>MD Reference:</b>	WELL @ 4979.00usft (Original Well Elev)
<b>Site:</b>	Melbon Ranch Pad	<b>North Reference:</b>	True
<b>Well:</b>	MELBON RANCH 4D-17H-M265	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 19Mar18 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	1,292,977.77	3,224,617.42	40.134825	-104.696636	
100.00	0.00	0.00	100.00	0.00	0.00	1,292,977.77	3,224,617.42	40.134825	-104.696636	
200.00	0.00	0.00	200.00	0.00	0.00	1,292,977.77	3,224,617.42	40.134825	-104.696636	
250.00	0.00	0.00	250.00	0.00	0.00	1,292,977.77	3,224,617.42	40.134825	-104.696636	
Start Build 2.00										
300.00	1.00	0.00	300.00	0.44	0.00	1,292,978.21	3,224,617.42	40.134826	-104.696636	
400.00	3.00	0.00	399.93	3.93	0.00	1,292,981.69	3,224,617.39	40.134835	-104.696636	
500.00	5.00	0.00	499.68	10.90	0.00	1,292,988.67	3,224,617.32	40.134855	-104.696636	
600.00	7.00	0.00	599.13	21.35	0.00	1,292,999.12	3,224,617.23	40.134883	-104.696636	
700.00	9.00	0.00	698.15	35.27	0.00	1,293,013.04	3,224,617.10	40.134922	-104.696636	
750.00	10.00	0.00	747.47	43.52	0.00	1,293,021.29	3,224,617.03	40.134944	-104.696636	
Hold 10 Inc, 0 Az										
800.00	10.00	0.00	796.71	52.20	0.00	1,293,029.97	3,224,616.95	40.134968	-104.696636	
900.00	10.00	0.00	895.19	69.57	0.00	1,293,047.34	3,224,616.79	40.135016	-104.696636	
1,000.00	10.00	0.00	993.67	86.93	0.00	1,293,064.70	3,224,616.63	40.135063	-104.696636	
1,100.00	10.00	0.00	1,092.15	104.30	0.00	1,293,082.06	3,224,616.48	40.135111	-104.696636	
1,200.00	10.00	0.00	1,190.63	121.66	0.00	1,293,099.43	3,224,616.32	40.135159	-104.696636	
1,300.00	10.00	0.00	1,289.11	139.03	0.00	1,293,116.79	3,224,616.16	40.135206	-104.696636	
1,400.00	10.00	0.00	1,387.59	156.39	0.00	1,293,134.16	3,224,616.01	40.135254	-104.696636	
1,500.00	10.00	0.00	1,486.07	173.76	0.00	1,293,151.52	3,224,615.85	40.135302	-104.696636	
1,600.00	10.00	0.00	1,584.55	191.12	0.00	1,293,168.88	3,224,615.69	40.135349	-104.696636	
1,700.00	10.00	0.00	1,683.03	208.49	0.00	1,293,186.25	3,224,615.53	40.135397	-104.696636	
1,800.00	10.00	0.00	1,781.51	225.85	0.00	1,293,203.61	3,224,615.38	40.135445	-104.696636	
1,900.00	10.00	0.00	1,879.99	243.22	0.00	1,293,220.98	3,224,615.22	40.135492	-104.696636	
2,000.00	10.00	0.00	1,978.48	260.58	0.00	1,293,238.34	3,224,615.06	40.135540	-104.696636	
2,100.00	10.00	0.00	2,076.96	277.95	0.00	1,293,255.71	3,224,614.90	40.135588	-104.696636	
2,200.00	10.00	0.00	2,175.44	295.31	0.00	1,293,273.07	3,224,614.75	40.135635	-104.696636	
2,250.00	10.00	0.00	2,224.68	303.99	0.00	1,293,281.75	3,224,614.67	40.135659	-104.696636	
Begin 2/100 Build & Turn										
2,300.00	9.92	354.23	2,273.92	312.62	-0.43	1,293,290.37	3,224,614.16	40.135683	-104.696637	
2,400.00	10.07	342.72	2,372.42	329.54	-3.89	1,293,307.26	3,224,610.54	40.135729	-104.696650	
2,500.00	10.59	331.94	2,470.80	346.00	-10.81	1,293,323.66	3,224,603.47	40.135775	-104.696674	
2,560.87	11.07	325.99	2,530.59	355.78	-16.72	1,293,333.39	3,224,597.48	40.135801	-104.696696	
Hold 11.1 Inc, 325.99 Az										
2,600.00	11.07	325.99	2,568.99	362.01	-20.92	1,293,339.58	3,224,593.22	40.135818	-104.696711	
2,700.00	11.07	325.99	2,667.13	377.93	-31.66	1,293,355.40	3,224,582.33	40.135862	-104.696749	
2,800.00	11.07	325.99	2,765.27	393.85	-42.41	1,293,371.22	3,224,571.45	40.135906	-104.696787	
2,900.00	11.07	325.99	2,863.41	409.77	-53.15	1,293,387.05	3,224,560.56	40.135950	-104.696826	
3,000.00	11.07	325.99	2,961.55	425.70	-63.90	1,293,402.87	3,224,549.67	40.135993	-104.696864	
3,100.00	11.07	325.99	3,059.68	441.62	-74.64	1,293,418.69	3,224,538.78	40.136037	-104.696903	
3,200.00	11.07	325.99	3,157.82	457.54	-85.39	1,293,434.51	3,224,527.90	40.136081	-104.696941	
3,300.00	11.07	325.99	3,255.96	473.46	-96.13	1,293,450.34	3,224,517.01	40.136124	-104.696980	
3,400.00	11.07	325.99	3,354.10	489.38	-106.87	1,293,466.16	3,224,506.12	40.136168	-104.697018	
3,500.00	11.07	325.99	3,452.24	505.30	-117.62	1,293,481.98	3,224,495.23	40.136212	-104.697056	
3,600.00	11.07	325.99	3,550.37	521.22	-128.36	1,293,497.80	3,224,484.34	40.136256	-104.697095	
3,700.00	11.07	325.99	3,648.51	537.14	-139.11	1,293,513.63	3,224,473.46	40.136299	-104.697133	
3,800.00	11.07	325.99	3,746.65	553.06	-149.85	1,293,529.45	3,224,462.57	40.136343	-104.697172	
3,900.00	11.07	325.99	3,844.79	568.98	-160.59	1,293,545.27	3,224,451.68	40.136387	-104.697210	
4,000.00	11.07	325.99	3,942.93	584.90	-171.34	1,293,561.09	3,224,440.79	40.136430	-104.697249	
4,100.00	11.07	325.99	4,041.07	600.82	-182.08	1,293,576.92	3,224,429.90	40.136474	-104.697287	
4,200.00	11.07	325.99	4,139.20	616.74	-192.83	1,293,592.74	3,224,419.02	40.136518	-104.697325	
4,300.00	11.07	325.99	4,237.34	632.66	-203.57	1,293,608.56	3,224,408.13	40.136561	-104.697364	
4,400.00	11.07	325.99	4,335.48	648.58	-214.32	1,293,624.38	3,224,397.24	40.136605	-104.697402	
4,500.00	11.07	325.99	4,433.62	664.50	-225.06	1,293,640.21	3,224,386.35	40.136649	-104.697441	

<b>Database:</b>	EDM 5000.15 Single User Db	<b>Local Co-ordinate Reference:</b>	Well MELBON RANCH 4D-17H-M265
<b>Company:</b>	Crestone Peak Resources	<b>TVD Reference:</b>	WELL @ 4979.00usft (Original Well Elev)
<b>Project:</b>	Sec 17 T2N-R65W	<b>MD Reference:</b>	WELL @ 4979.00usft (Original Well Elev)
<b>Site:</b>	Melbon Ranch Pad	<b>North Reference:</b>	True
<b>Well:</b>	MELBON RANCH 4D-17H-M265	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 19Mar18 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
4,600.00	11.07	325.99	4,531.76	680.42	-235.80	1,293,656.03	3,224,375.46	40.136693	-104.697479
4,700.00	11.07	325.99	4,629.89	696.35	-246.55	1,293,671.85	3,224,364.58	40.136736	-104.697518
4,800.00	11.07	325.99	4,728.03	712.27	-257.29	1,293,687.67	3,224,353.69	40.136780	-104.697556
4,900.00	11.07	325.99	4,826.17	728.19	-268.04	1,293,703.50	3,224,342.80	40.136824	-104.697594
5,000.00	11.07	325.99	4,924.31	744.11	-278.78	1,293,719.32	3,224,331.91	40.136867	-104.697633
5,100.00	11.07	325.99	5,022.45	760.03	-289.52	1,293,735.14	3,224,321.02	40.136911	-104.697671
5,200.00	11.07	325.99	5,120.59	775.95	-300.27	1,293,750.97	3,224,310.14	40.136955	-104.697710
5,300.00	11.07	325.99	5,218.72	791.87	-311.01	1,293,766.79	3,224,299.25	40.136998	-104.697748
5,400.00	11.07	325.99	5,316.86	807.79	-321.76	1,293,782.61	3,224,288.36	40.137042	-104.697787
5,500.00	11.07	325.99	5,415.00	823.71	-332.50	1,293,798.43	3,224,277.47	40.137086	-104.697825
5,600.00	11.07	325.99	5,513.14	839.63	-343.24	1,293,814.26	3,224,266.58	40.137130	-104.697863
5,700.00	11.07	325.99	5,611.28	855.55	-353.99	1,293,830.08	3,224,255.70	40.137173	-104.697902
5,800.00	11.07	325.99	5,709.41	871.47	-364.73	1,293,845.90	3,224,244.81	40.137217	-104.697940
5,900.00	11.07	325.99	5,807.55	887.39	-375.48	1,293,861.72	3,224,233.92	40.137261	-104.697979
6,000.00	11.07	325.99	5,905.69	903.31	-386.22	1,293,877.55	3,224,223.03	40.137304	-104.698017
6,100.00	11.07	325.99	6,003.83	919.23	-396.97	1,293,893.37	3,224,212.15	40.137348	-104.698056
6,200.00	11.07	325.99	6,101.97	935.15	-407.71	1,293,909.19	3,224,201.26	40.137392	-104.698094
6,300.00	11.07	325.99	6,200.11	951.08	-418.45	1,293,925.01	3,224,190.37	40.137436	-104.698132
6,400.00	11.07	325.99	6,298.24	967.00	-429.20	1,293,940.84	3,224,179.48	40.137479	-104.698171
6,500.00	11.07	325.99	6,396.38	982.92	-439.94	1,293,956.66	3,224,168.59	40.137523	-104.698209
6,600.00	11.07	325.99	6,494.52	998.84	-450.69	1,293,972.48	3,224,157.71	40.137567	-104.698248
6,636.24	11.07	325.99	6,530.08	1,004.61	-454.58	1,293,978.22	3,224,153.76	40.137582	-104.698262
<b>KOP 8/100</b>									
6,700.00	9.32	353.39	6,592.87	1,014.82	-458.60	1,293,988.39	3,224,149.65	40.137611	-104.698276
6,800.00	11.60	36.91	6,691.35	1,030.92	-453.49	1,294,004.54	3,224,154.61	40.137655	-104.698258
6,900.00	17.58	58.56	6,788.16	1,046.85	-434.54	1,294,020.64	3,224,173.42	40.137698	-104.698190
7,000.00	24.71	68.79	6,881.40	1,062.32	-402.12	1,294,036.40	3,224,205.69	40.137741	-104.698074
7,100.00	32.23	74.55	6,969.26	1,077.01	-356.87	1,294,051.50	3,224,250.81	40.137781	-104.697912
7,200.00	39.92	78.31	7,050.03	1,090.63	-299.65	1,294,065.64	3,224,307.90	40.137819	-104.697708
7,300.00	47.70	81.01	7,122.15	1,102.93	-231.60	1,294,078.56	3,224,375.84	40.137852	-104.697464
7,400.00	55.53	83.12	7,184.20	1,113.66	-154.02	1,294,089.99	3,224,453.32	40.137882	-104.697187
7,500.00	63.39	84.86	7,234.99	1,122.62	-68.44	1,294,099.73	3,224,538.82	40.137906	-104.696881
7,600.00	71.26	86.38	7,273.51	1,129.63	23.49	1,294,107.57	3,224,630.68	40.137926	-104.696552
7,700.00	79.15	87.76	7,299.03	1,134.56	119.97	1,294,113.37	3,224,727.11	40.137939	-104.696207
7,800.00	87.04	89.06	7,311.03	1,137.30	219.13	1,294,117.01	3,224,826.24	40.137947	-104.695852
7,837.43	90.00	89.55	7,312.00	1,137.75	256.54	1,294,117.80	3,224,863.64	40.137948	-104.695718
<b>LP 90 Inc, 89.55 Az - MELBON RANCH 4D-17H-M265 TPZ</b>									
7,900.00	90.00	89.55	7,312.00	1,138.25	319.10	1,294,118.86	3,224,926.20	40.137949	-104.695494
8,000.00	90.00	89.55	7,312.00	1,139.04	419.10	1,294,120.56	3,225,026.19	40.137952	-104.695137
8,100.00	90.00	89.55	7,312.00	1,139.83	519.10	1,294,122.25	3,225,126.17	40.137954	-104.694779
8,200.00	90.00	89.55	7,312.00	1,140.62	619.10	1,294,123.95	3,225,226.16	40.137956	-104.694421
8,300.00	90.00	89.55	7,312.00	1,141.41	719.09	1,294,125.65	3,225,326.14	40.137958	-104.694064
8,400.00	90.00	89.55	7,312.00	1,142.20	819.09	1,294,127.34	3,225,426.13	40.137960	-104.693706
8,500.00	90.00	89.55	7,312.00	1,142.99	919.09	1,294,129.04	3,225,526.12	40.137962	-104.693348
8,600.00	90.00	89.55	7,312.00	1,143.78	1,019.08	1,294,130.74	3,225,626.10	40.137964	-104.692991
8,700.00	90.00	89.55	7,312.00	1,144.57	1,119.08	1,294,132.43	3,225,726.09	40.137967	-104.692633
8,800.00	90.00	89.55	7,312.00	1,145.36	1,219.08	1,294,134.13	3,225,826.07	40.137969	-104.692276
8,900.00	90.00	89.55	7,312.00	1,146.15	1,319.07	1,294,135.82	3,225,926.06	40.137971	-104.691918
9,000.00	90.00	89.55	7,312.00	1,146.94	1,419.07	1,294,137.52	3,226,026.04	40.137973	-104.691560
9,100.00	90.00	89.55	7,312.00	1,147.73	1,519.07	1,294,139.22	3,226,126.03	40.137975	-104.691203
9,200.00	90.00	89.55	7,312.00	1,148.52	1,619.06	1,294,140.91	3,226,226.01	40.137977	-104.690845
9,300.00	90.00	89.55	7,312.00	1,149.31	1,719.06	1,294,142.61	3,226,326.00	40.137980	-104.690487
9,400.00	90.00	89.55	7,312.00	1,150.10	1,819.06	1,294,144.31	3,226,425.99	40.137982	-104.690130
9,500.00	90.00	89.55	7,312.00	1,150.90	1,919.05	1,294,146.00	3,226,525.97	40.137984	-104.689772

<b>Database:</b>	EDM 5000.15 Single User Db	<b>Local Co-ordinate Reference:</b>	Well MELBON RANCH 4D-17H-M265
<b>Company:</b>	Crestone Peak Resources	<b>TVD Reference:</b>	WELL @ 4979.00usft (Original Well Elev)
<b>Project:</b>	Sec 17 T2N-R65W	<b>MD Reference:</b>	WELL @ 4979.00usft (Original Well Elev)
<b>Site:</b>	Melbon Ranch Pad	<b>North Reference:</b>	True
<b>Well:</b>	MELBON RANCH 4D-17H-M265	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 19Mar18 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
9,600.00	90.00	89.55	7,312.00	1,151.69	2,019.05	1,294,147.70	3,226,625.96	40.137986	-104.689414
9,700.00	90.00	89.55	7,312.00	1,152.48	2,119.05	1,294,149.40	3,226,725.94	40.137988	-104.689057
9,800.00	90.00	89.55	7,312.00	1,153.27	2,219.05	1,294,151.09	3,226,825.93	40.137990	-104.688699
9,900.00	90.00	89.55	7,312.00	1,154.06	2,319.04	1,294,152.79	3,226,925.91	40.137992	-104.688341
10,000.00	90.00	89.55	7,312.00	1,154.85	2,419.04	1,294,154.48	3,227,025.90	40.137995	-104.687984
10,100.00	90.00	89.55	7,312.00	1,155.64	2,519.04	1,294,156.18	3,227,125.88	40.137997	-104.687626
10,200.00	90.00	89.55	7,312.00	1,156.43	2,619.03	1,294,157.88	3,227,225.87	40.137999	-104.687268
10,300.00	90.00	89.55	7,312.00	1,157.22	2,719.03	1,294,159.57	3,227,325.86	40.138001	-104.686911
10,400.00	90.00	89.55	7,312.00	1,158.01	2,819.03	1,294,161.27	3,227,425.84	40.138003	-104.686553
10,500.00	90.00	89.55	7,312.00	1,158.80	2,919.02	1,294,162.97	3,227,525.83	40.138005	-104.686195
10,600.00	90.00	89.55	7,312.00	1,159.59	3,019.02	1,294,164.66	3,227,625.81	40.138007	-104.685838
10,700.00	90.00	89.55	7,312.00	1,160.38	3,119.02	1,294,166.36	3,227,725.80	40.138010	-104.685480
10,800.00	90.00	89.55	7,312.00	1,161.17	3,219.01	1,294,168.06	3,227,825.78	40.138012	-104.685122
10,900.00	90.00	89.55	7,312.00	1,161.96	3,319.01	1,294,169.75	3,227,925.77	40.138014	-104.684765
11,000.00	90.00	89.55	7,312.00	1,162.75	3,419.01	1,294,171.45	3,228,025.76	40.138016	-104.684407
11,100.00	90.00	89.55	7,312.00	1,163.54	3,519.00	1,294,173.14	3,228,125.74	40.138018	-104.684049
11,200.00	90.00	89.55	7,312.00	1,164.33	3,619.00	1,294,174.84	3,228,225.73	40.138020	-104.683692
11,300.00	90.00	89.55	7,312.00	1,165.12	3,719.00	1,294,176.54	3,228,325.71	40.138022	-104.683334
11,400.00	90.00	89.55	7,312.00	1,165.91	3,819.00	1,294,178.23	3,228,425.70	40.138025	-104.682976
11,500.00	90.00	89.55	7,312.00	1,166.71	3,918.99	1,294,179.93	3,228,525.68	40.138027	-104.682619
11,600.00	90.00	89.55	7,312.00	1,167.50	4,018.99	1,294,181.63	3,228,625.67	40.138029	-104.682261
11,700.00	90.00	89.55	7,312.00	1,168.29	4,118.99	1,294,183.32	3,228,725.65	40.138031	-104.681903
11,800.00	90.00	89.55	7,312.00	1,169.08	4,218.98	1,294,185.02	3,228,825.64	40.138033	-104.681546
11,900.00	90.00	89.55	7,312.00	1,169.87	4,318.98	1,294,186.72	3,228,925.63	40.138035	-104.681188
12,000.00	90.00	89.55	7,312.00	1,170.66	4,418.98	1,294,188.41	3,229,025.61	40.138037	-104.680830
12,100.00	90.00	89.55	7,312.00	1,171.45	4,518.97	1,294,190.11	3,229,125.60	40.138039	-104.680473
12,200.00	90.00	89.55	7,312.00	1,172.24	4,618.97	1,294,191.81	3,229,225.58	40.138041	-104.680115
12,217.32	90.00	89.55	7,312.00	1,172.38	4,636.29	1,294,192.10	3,229,242.90	40.138042	-104.680053
TD at 12217.6 - MELBON RANCH 4D-17H-M265 BHL									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
MELBON RANCH 4D-17 - hit/miss target - Shape - Point	0.00	0.53	7,312.00	1,172.38	4,636.29	1,294,192.10	3,229,242.90	40.138042	-104.680053
MELBON RANCH 4D-17 - plan hits target center - Point	0.00	0.52	7,312.00	1,137.75	256.54	1,294,117.80	3,224,863.64	40.137948	-104.695718



## Planning Report - Geographic

<b>Database:</b>	EDM 5000.15 Single User Db	<b>Local Co-ordinate Reference:</b>	Well MELBON RANCH 4D-17H-M265
<b>Company:</b>	Crestone Peak Resources	<b>TVD Reference:</b>	WELL @ 4979.00usft (Original Well Elev)
<b>Project:</b>	Sec 17 T2N-R65W	<b>MD Reference:</b>	WELL @ 4979.00usft (Original Well Elev)
<b>Site:</b>	Melbon Ranch Pad	<b>North Reference:</b>	True
<b>Well:</b>	MELBON RANCH 4D-17H-M265	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 19Mar18 kjs		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
250.00	250.00	0.00	0.00	Start Build 2.00
750.00	747.47	43.52	0.00	Hold 10 Inc, 0 Az
2,250.00	2,224.68	303.99	0.00	Begin 2/100 Build & Turn
2,560.87	2,530.59	355.78	-16.72	Hold 11.1 Inc, 325.99 Az
6,636.24	6,530.08	1,004.61	-454.58	KOP 8/100
7,837.43	7,312.00	1,137.75	256.54	LP 90 Inc, 89.55 Az
12,217.32	7,312.00	1,172.38	4,636.29	TD at 12217.6



# **Crestone Peak Resources**

**Sec 17 T2N-R65W**

**Melbon Ranch Pad**

**MELBON RANCH 4D-17H-M265**

**Wellbore #1**

**Design #1 19Mar18 kjs**

## **Anticollision Summary Report**

**17 May, 2018**



## Anticollision Summary Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well MELBON RANCH 4D-17H-M265
<b>Project:</b>	Sec 17 T2N-R65W	<b>TVD Reference:</b>	WELL @ 4979.00usft (Original Well Elev)
<b>Reference Site:</b>	Melbon Ranch Pad	<b>MD Reference:</b>	WELL @ 4979.00usft (Original Well Elev)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	MELBON RANCH 4D-17H-M265	<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 5000.15 Single User Db
<b>Reference Design:</b>	Design #1 19Mar18 kjs	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	Design #1 19Mar18 kjs		
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
<b>Interpolation Method:</b>	MD Interval 100.00usft	<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> 5/17/2018			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.00	12,217.32	Design #1 19Mar18 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						
Existing Wells (Melbon Ranch)						
ADAMSON 13N-28HZ - KMG - MWD	12,217.65	6,604.00	4,638.96	4,479.25	29.046	CC, ES, SF
ADAMSON 14N-28HZ - KMG - MWD	12,217.65	6,510.00	4,875.57	4,724.30	32.233	CC, ES, SF
ADAMSON 28N-28HZ - KMG - MWD	12,217.65	6,699.00	5,437.08	5,285.14	35.784	CC, ES, SF
ADAMSON 35C-28HZ - KMG - MWD	12,217.65	6,697.00	4,712.76	4,557.60	30.374	CC, ES, SF
ADAMSON 36N-28HZ - KMG - MWD	12,217.65	6,510.00	5,003.42	4,853.02	33.267	CC, ES, SF
ADAMSON 37C-28HZ - KMG - MWD	12,217.65	6,699.00	5,171.16	5,019.66	34.135	CC, ES, SF
ADAMSON 37C-28HZX - KMG - MWD	12,217.65	6,699.00	5,171.16	5,019.66	34.135	CC, ES, SF
BYDALEK 28C-20HZ - KMG - MWD	9,622.42	12,039.00	2,933.89	2,831.85	28.751	CC, ES
BYDALEK 28C-20HZ - KMG - MWD	11,300.00	12,039.00	3,379.64	3,244.15	24.943	SF
BYDALEK 28N-20HZ - KMG - MWD	9,699.24	11,830.00	2,938.79	2,834.15	28.086	CC
BYDALEK 28N-20HZ - KMG - MWD	9,700.00	11,830.00	2,938.79	2,834.15	28.083	ES
BYDALEK 28N-20HZ - KMG - MWD	11,400.00	11,830.00	3,395.45	3,257.73	24.655	SF
BYDALEK 29C-20HZ - KMG - MWD	8,526.34	11,880.00	2,937.56	2,868.87	42.769	CC
BYDALEK 29C-20HZ - KMG - MWD	8,600.00	11,880.00	2,938.48	2,868.42	41.942	ES
BYDALEK 29C-20HZ - KMG - MWD	10,700.00	11,880.00	3,654.32	3,526.66	28.625	SF
BYDALEK 29N-20HZ - KMG - MWD	8,409.57	11,671.00	2,943.61	2,877.70	44.659	CC
BYDALEK 29N-20HZ - KMG - MWD	8,500.00	11,671.00	2,945.00	2,877.38	43.549	ES
BYDALEK 29N-20HZ - KMG - MWD	10,600.00	11,671.00	3,669.17	3,543.69	29.240	SF
BYDALEK 30C-20HZ - KMG - MWD	7,375.94	11,950.00	2,876.53	2,819.89	50.787	CC
BYDALEK 30C-20HZ - KMG - MWD	7,400.00	11,950.00	2,876.58	2,819.76	50.627	ES
BYDALEK 30C-20HZ - KMG - MWD	9,900.00	11,950.00	3,676.82	3,555.73	30.364	SF
BYDALEK 3N-20HZ - KMG - MWD	9,125.52	11,597.00	3,098.56	3,014.21	36.733	CC
BYDALEK 3N-20HZ - KMG - MWD	9,200.00	11,597.00	3,099.45	3,013.92	36.236	ES
BYDALEK 3N-20HZ - KMG - MWD	11,200.00	11,597.00	3,728.88	3,596.08	28.080	SF
BYDALEK 4N-20HZ - KMG - MWD	7,900.00	11,755.00	2,942.26	2,882.49	49.225	CC, ES
BYDALEK 4N-20HZ - KMG - MWD	10,200.00	11,755.00	3,752.82	3,629.96	30.547	SF
CAMPBELL JF 17-13D - GW O&G - MWD	10,039.38	7,525.97	229.89	117.84	2.052	CC, ES
CAMPBELL JF 17-13D - GW O&G - MWD	10,100.00	7,526.13	237.75	121.80	2.050	SF
CAMPBELL JF 17-41D - GW O&G - MWD	12,217.65	7,459.02	1,612.48	1,449.94	9.920	CC, ES, SF
CAMPBELL JF 17-6D - GW O&G - No Survey	1,209.38	730.00	4,316.19	4,310.45	751.732	CC, ES
CAMPBELL JF 17-6D - GW O&G - No Survey	12,200.00	730.00	6,750.35	6,695.97	124.115	SF
CAMPBELL JF 17-6D-1 - GW O&G - MWD	10,438.30	7,308.28	1,553.45	1,436.32	13.262	CC
CAMPBELL JF 17-6D-1 - GW O&G - MWD	10,500.00	7,308.68	1,554.68	1,435.75	13.072	ES
CAMPBELL JF 17-6D-1 - GW O&G - MWD	10,800.00	7,310.65	1,595.00	1,469.37	12.696	SF
CAMPBELL JF 17-7D - GW O&G - MWD	11,362.54	7,229.22	1,557.75	1,419.74	11.287	CC
CAMPBELL JF 17-7D - GW O&G - MWD	11,400.00	7,228.86	1,558.20	1,419.03	11.196	ES
CAMPBELL JF 17-7D - GW O&G - MWD	11,700.00	7,225.84	1,593.88	1,447.74	10.907	SF

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

## Anticollision Summary Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well MELBON RANCH 4D-17H-M265
<b>Project:</b>	Sec 17 T2N-R65W	<b>TVD Reference:</b>	WELL @ 4979.00usft (Original Well Elev)
<b>Reference Site:</b>	Melbon Ranch Pad	<b>MD Reference:</b>	WELL @ 4979.00usft (Original Well Elev)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	MELBON RANCH 4D-17H-M265	<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 5000.15 Single User Db
<b>Reference Design:</b>	Design #1 19Mar18 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						
Existing Wells (Melbon Ranch)						
CAMPBELL JF 17-8D - GW O&G - MWD	12,068.48	7,363.97	904.14	743.25	5.619	CC
CAMPBELL JF 17-8D - GW O&G - MWD	12,100.00	7,364.57	904.69	742.87	5.591	ES
CAMPBELL JF 17-8D - GW O&G - MWD	12,200.00	7,366.50	913.66	749.95	5.581	SF
CAMPBELL JF 17-9D - GW O&G - MWD	10,685.96	7,316.78	901.29	778.87	7.362	CC
CAMPBELL JF 17-9D - GW O&G - MWD	10,700.00	7,316.54	901.40	778.46	7.332	ES
CAMPBELL JF 17-9D - GW O&G - MWD	10,800.00	7,314.81	908.47	782.46	7.210	SF
COOK 28N-16HZ - KMG - MWD	12,217.65	9,864.51	3,244.89	3,159.32	37.919	CC, ES, SF
CROWDER 1-18 - KMG - No Survey	7,096.54	6,949.32	2,541.50	2,502.91	65.852	CC
CROWDER 1-18 - KMG - No Survey	7,100.00	6,952.26	2,541.50	2,502.90	65.827	ES
CROWDER 1-18 - KMG - No Survey	8,800.00	7,295.00	3,282.27	3,224.33	56.657	SF
CROWDER 15C-18HZ - KMG - MWD	6,973.91	10,009.00	1,363.15	1,283.61	17.138	CC, ES
CROWDER 15C-18HZ - KMG - MWD	7,100.00	9,997.85	1,379.83	1,297.90	16.840	SF
CROWDER 15N-18HZ - KMG - MWD	6,870.83	9,852.52	2,065.47	1,984.20	25.414	CC, ES
CROWDER 15N-18HZ - KMG - MWD	7,000.00	9,844.38	2,080.93	1,998.24	25.167	SF
CROWDER 16C-19HZ - KMG - MWD	7,154.32	9,521.99	590.52	522.20	8.644	CC, ES
CROWDER 16C-19HZ - KMG - MWD	7,300.00	9,508.67	622.05	546.16	8.197	SF
CROWDER 16N-19HZ - KMG - MWD	7,006.61	9,405.00	800.35	726.24	10.800	CC, ES
CROWDER 16N-19HZ - KMG - MWD	7,100.00	9,401.53	811.75	734.60	10.521	SF
CROWDER 36N-18HZ - KMG - MWD	6,872.95	9,879.47	1,660.13	1,577.24	20.026	CC, ES
CROWDER 36N-18HZ - KMG - MWD	7,000.00	9,857.63	1,675.99	1,591.64	19.871	SF
CROWDER 38N-19HZ - KMG - MWD	7,173.91	9,355.70	266.79	198.75	3.921	CC
CROWDER 38N-19HZ - KMG - MWD	7,200.00	9,353.39	268.52	196.96	3.752	ES, SF
DECHANT 13-9 - KMG - No Survey	12,217.65	7,245.00	3,467.96	3,327.62	24.712	CC, ES, SF
DECHANT 14-9 - KMG - MWD	12,217.65	7,507.14	4,217.16	4,077.26	30.144	CC, ES, SF
DECHANT 23-9 - KMG - MWD	12,217.65	7,770.00	5,142.30	5,001.15	36.433	CC, ES, SF
DECHANT 31-19 - KMG - Gyro	0.00	0.00	2,966.79			
DECHANT 31-19 - KMG - Gyro	7,000.00	6,960.68	3,447.89	3,394.00	63.972	SF
DECHANT 32-19 - KMG - Gyro	208.69	212.77	4,000.28	3,999.18	3,641.676	CC
DECHANT 32-19 - KMG - Gyro	300.00	300.00	4,000.58	3,998.85	2,308.312	ES
DECHANT 32-19 - KMG - Gyro	10,700.00	6,758.90	7,057.28	6,974.53	85.285	SF
DECHANT 35-9 - KMG - MWD	12,217.65	7,381.73	3,437.25	3,296.12	24.355	CC, ES, SF
DECHANT 36-9 - KMG - MWD	12,217.65	7,670.15	4,194.97	4,063.73	31.965	CC, ES, SF
DECHANT 38-8 - KMG - MWD	12,217.65	7,429.94	2,929.43	2,764.59	17.771	CC, ES, SF
DECHANT 41-19 - KMG - Gyro	100.00	82.49	1,843.31	1,843.03	6,522.813	CC
DECHANT 41-19 - KMG - Gyro	300.00	283.67	1,843.99	1,842.31	1,102.178	ES
DECHANT 41-19 - KMG - Gyro	8,500.00	7,258.12	3,222.19	3,159.95	51.770	SF
DECHANT 42-19 - KMG - No Survey	200.00	198.00	3,548.13	3,547.28	4,170.158	CC
DECHANT 42-19 - KMG - No Survey	300.00	298.00	3,548.56	3,547.17	2,555.304	ES
DECHANT 42-19 - KMG - No Survey	11,300.00	7,310.00	6,416.74	6,326.72	71.275	SF
DECHANT 9-19A - KMG - No Survey	200.00	193.00	4,472.62	4,471.78	5,312.619	CC
DECHANT 9-19A - KMG - No Survey	300.00	293.00	4,473.05	4,471.67	3,241.912	ES
DECHANT 9-19A - KMG - No Survey	12,217.65	7,305.00	7,723.35	7,616.07	71.988	SF
DECHANT X 08-15 - KMG - Gyro	10,646.67	7,273.24	3,483.37	3,364.15	29.219	CC
DECHANT X 08-15 - KMG - Gyro	10,700.00	7,272.71	3,483.77	3,363.07	28.862	ES
DECHANT X 08-15 - KMG - Gyro	12,100.00	7,258.76	3,774.36	3,623.40	25.002	SF
DECHANT X 08-24D - KMG - MWD	10,181.24	7,433.60	4,197.30	4,089.30	38.861	CC
DECHANT X 08-24D - KMG - MWD	10,300.00	7,434.75	4,198.98	4,087.85	37.784	ES
DECHANT X 08-24D - KMG - MWD	12,217.65	7,455.53	4,665.18	4,514.00	30.859	SF
DECHANT X 19-3 - KMG - Gyro	0.00	0.00	3,897.21			
DECHANT X 19-3 - KMG - Gyro	300.00	299.44	3,898.80	3,897.07	2,253.095	ES
DECHANT X 19-3 - KMG - Gyro	6,900.00	6,700.00	4,192.46	4,139.22	78.746	SF
DOM RED X 20-02D - KMG - Gyro	214.73	172.21	3,231.14	3,230.16	3,304.541	CC
DOM RED X 20-02D - KMG - Gyro	300.00	254.81	3,231.36	3,229.79	2,054.619	ES

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

## Anticollision Summary Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well MELBON RANCH 4D-17H-M265
<b>Project:</b>	Sec 17 T2N-R65W	<b>TVD Reference:</b>	WELL @ 4979.00usft (Original Well Elev)
<b>Reference Site:</b>	Melbon Ranch Pad	<b>MD Reference:</b>	WELL @ 4979.00usft (Original Well Elev)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	MELBON RANCH 4D-17H-M265	<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 5000.15 Single User Db
<b>Reference Design:</b>	Design #1 19Mar18 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						
Existing Wells (Melbon Ranch)						
DOM RED X 20-02D - KMG - Gyro	11,100.00	7,208.93	4,565.44	4,450.70	39.791	SF
DOM RED X 20-3 - NOBLE - Gyro	100.00	34.66	2,564.99	2,564.80	10,000.000	CC, ES
DOM RED X 20-3 - NOBLE - Gyro	10,500.00	7,336.94	3,212.64	3,106.42	30.246	SF
DOM RED X20-2D - KMG - No Survey	200.00	163.00	3,026.60	3,025.81	3,840.040	CC
DOM RED X20-2D - KMG - No Survey	300.00	263.00	3,027.02	3,025.70	2,282.846	ES
DOM RED X20-2D - KMG - No Survey	11,100.00	7,275.00	4,919.00	4,821.40	50.399	SF
EWERTZ 3-18 - KMG - No Survey	6,813.17	6,727.24	3,749.89	3,711.83	98.517	CC, ES
EWERTZ 3-18 - KMG - No Survey	7,500.00	7,257.99	3,993.79	3,951.20	93.762	SF
FOUR WAY 1 - KMG - No Survey	12,217.65	7,229.00	2,452.97	2,371.69	30.182	CC, ES, SF
FOUR WAY 12-16 - KMG - Gyro	12,217.65	7,182.65	1,268.33	1,165.11	12.288	CC, ES, SF
HAYMAKER 29N-9HZ - KMG - MWD	12,217.65	6,600.00	3,446.41	3,306.41	24.616	CC, ES, SF
HAYMAKER 4C-9HZ - KMG - MWD	12,217.65	6,761.00	3,369.28	3,223.62	23.131	CC, ES, SF
HAYMAKER 4N-9HZ - KMG - MWD	12,217.65	6,537.00	3,240.20	3,095.18	22.342	CC, ES, SF
HSR-WARNER 6-18 - KMG - No Survey	6,748.00	6,651.24	3,014.38	2,974.65	75.874	CC, ES
HSR-WARNER 6-18 - KMG - No Survey	7,100.00	6,980.26	3,096.55	3,054.69	73.970	SF
HUDCO 16-18 - KMG - Gyro	0.00	0.00	1,138.06			
HUDCO 16-18 - KMG - Gyro	6,800.00	6,710.75	1,745.22	1,694.28	34.263	SF
HUDCO 24-18 - KMG - MWD	6,760.48	6,774.37	954.29	902.21	18.321	CC, ES
HUDCO 24-18 - KMG - MWD	6,900.00	6,913.64	967.55	914.27	18.160	SF
HUDCO 39-18 - KMG - MWD	3,126.60	3,174.22	374.62	345.88	13.033	CC, ES
HUDCO 39-18 - KMG - MWD	3,300.00	3,332.25	382.20	352.26	12.766	SF
HUDCO 40-18 - KMG - MWD	7,289.19	7,184.72	216.09	162.44	4.028	CC, ES
HUDCO 40-18 - KMG - MWD	7,300.00	7,191.66	216.26	162.53	4.025	SF
HUDCO 9-18 - KMG - Gyro	6,700.00	6,611.12	280.10	227.27	5.302	CC, ES, SF
LUCERO X 20-04 - KMG - Gyro	300.00	281.69	1,892.06	1,890.39	1,133.433	CC, ES
LUCERO X 20-04 - KMG - Gyro	9,600.00	7,278.22	3,450.78	3,369.09	42.244	SF
MARKHAM 13-8 - KMG - MWD	7,887.41	7,391.18	3,349.95	3,291.84	57.657	CC, ES
MARKHAM 13-8 - KMG - MWD	10,200.00	7,365.63	4,072.99	3,971.19	40.007	SF
MARKHAM 34-8 - KMG - MWD	7,634.21	7,408.03	2,944.84	2,886.92	50.839	CC, ES
MARKHAM 34-8 - KMG - MWD	9,600.00	7,437.88	3,613.96	3,520.04	38.480	SF
MARKHAM 35-8 - KMG - MWD	8,662.36	7,509.79	2,900.64	2,826.34	39.039	CC
MARKHAM 35-8 - KMG - MWD	8,700.00	7,509.14	2,900.88	2,825.78	38.626	ES
MARKHAM 35-8 - KMG - MWD	10,200.00	7,481.04	3,282.86	3,177.72	31.224	SF
MEGUIRE 28C-16HZ - KMG - MWD	12,217.65	12,696.00	2,792.52	2,660.51	21.154	CC, ES, SF
MEGUIRE 29C-16HZ - KMG - MWD	12,217.65	12,781.19	1,637.34	1,506.28	12.492	CC, ES, SF
MEGUIRE 29N-16HZ - KMG - MWD	12,217.65	12,440.01	1,910.62	1,780.28	14.658	CC, ES, SF
MEGUIRE 30N-16HZ - KMG - MWD	12,217.65	12,519.30	844.72	713.74	6.449	CC, ES, SF
MEGUIRE 3N-16HZ - KMG - No Survey	12,217.65	7,242.00	5,575.21	5,438.01	40.637	CC, ES, SF
MEGUIRE 4N-16HZ - KMG - MWD	12,217.65	12,572.96	1,376.41	1,245.25	10.494	CC, ES, SF
MEGUIRE X 21-04 - KMG - Gyro	12,217.65	7,186.92	3,283.06	3,126.13	20.920	CC, ES, SF
MEGUIRE X 21-06 - KMG - No Survey	12,217.65	7,234.00	5,132.38	4,994.88	37.326	CC, ES, SF
MEGUIRE X 21-5JI - KMG - No Survey	12,217.65	7,239.00	4,724.62	4,577.12	32.030	CC, ES, SF
MELBON 12C-8HZ - KMG - MWD	7,943.05	7,090.44	443.55	391.56	8.532	CC, ES
MELBON 12C-8HZ - KMG - MWD	8,000.00	7,090.33	447.19	394.09	8.422	SF
MELBON 12N-8HZ - KMG - MWD	7,100.00	6,802.09	589.33	537.50	11.371	SF
MELBON 12N-8HZ - KMG - MWD	7,436.78	6,926.64	558.85	511.99	11.926	CC, ES
MELBON 19C-8HZ - KMG - MWD	8,741.41	7,074.78	479.78	415.34	7.445	CC, ES
MELBON 19C-8HZ - KMG - MWD	8,800.00	7,074.76	483.34	417.29	7.318	SF
MELBON 19N-E8HZ - KMG - MWD	9,073.66	6,993.23	575.71	509.55	8.702	CC
MELBON 19N-E8HZ - KMG - MWD	9,100.00	6,993.80	576.31	509.43	8.617	ES
MELBON 19N-E8HZ - KMG - MWD	9,200.00	6,995.97	589.39	520.10	8.506	SF
MELBON 19N-W8HZ - KMG - MWD	8,394.90	7,008.00	545.67	490.45	9.882	CC
MELBON 19N-W8HZ - KMG - MWD	8,400.00	7,007.97	545.69	490.37	9.863	ES

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

# Anticollision Summary Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well MELBON RANCH 4D-17H-M265
<b>Project:</b>	Sec 17 T2N-R65W	<b>TVD Reference:</b>	WELL @ 4979.00usft (Original Well Elev)
<b>Reference Site:</b>	Melbon Ranch Pad	<b>MD Reference:</b>	WELL @ 4979.00usft (Original Well Elev)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	MELBON RANCH 4D-17H-M265	<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 5000.15 Single User Db
<b>Reference Design:</b>	Design #1 19Mar18 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						
Existing Wells (Melbon Ranch)						
MELBON 19N-W8HZ - KMG - MWD	8,500.00	7,007.27	555.70	498.14	9.655	SF
MELBON 23C-8HZ - KMG - MWD	9,746.53	7,170.00	520.89	430.33	5.752	CC, ES
MELBON 23C-8HZ - KMG - MWD	9,800.00	7,170.00	523.63	431.62	5.691	SF
MELBON 23N-8HZ - KMG - MWD	9,856.17	7,059.40	652.34	566.39	7.590	CC, ES
MELBON 23N-8HZ - KMG - MWD	10,000.00	7,072.00	667.92	577.95	7.424	SF
MELBON RANCH 1 - V O&G - No Survey	653.99	618.65	1,088.63	1,085.35	332.430	CC
MELBON RANCH 1 - V O&G - No Survey	8,660.73	7,278.00	1,115.86	1,057.19	19.019	ES
MELBON RANCH 1 - V O&G - No Survey	8,900.00	7,278.00	1,141.22	1,079.30	18.429	SF
MELBON RANCH 13-17 - CPR - MWD	7,994.43	7,361.38	282.58	221.15	4.600	CC
MELBON RANCH 13-17 - CPR - MWD	8,000.00	7,361.37	282.63	221.12	4.595	ES, SF
MELBON RANCH 14-17 - CPR - MWD	2,063.73	2,112.76	871.90	853.84	48.289	CC
MELBON RANCH 14-17 - CPR - MWD	2,100.00	2,146.05	872.01	853.60	47.379	ES
MELBON RANCH 14-17 - CPR - MWD	8,500.00	7,370.25	1,892.98	1,826.04	28.278	SF
MELBON RANCH 17-14 - V O&G - No Survey	200.00	166.00	1,059.64	1,058.85	1,335.230	CC
MELBON RANCH 17-14 - V O&G - No Survey	300.00	266.00	1,059.75	1,058.42	796.251	ES
MELBON RANCH 17-14 - V O&G - No Survey	9,000.00	7,278.00	1,466.72	1,403.63	23.246	SF
MELBON RANCH 23-17 - CPR - MWD	9,442.29	7,413.29	262.03	168.47	2.800	CC, ES, SF
MELBON RANCH 24-17 - CPR - MWD	9,215.86	7,349.12	1,793.85	1,706.89	20.627	CC, ES
MELBON RANCH 24-17 - CPR - MWD	9,700.00	7,344.52	1,858.03	1,762.73	19.497	SF
MELBON RANCH 2-4-17 - CPR - MWD	8,799.45	7,406.46	173.68	98.41	2.307	CC
MELBON RANCH 2-4-17 - CPR - MWD	8,800.00	7,406.45	173.68	98.37	2.306	ES, SF
MELBON RANCH 2-8-17 - CPR - MWD	2,776.16	3,227.16	2,221.07	2,194.24	82.794	CC
MELBON RANCH 2-8-17 - CPR - MWD	8,605.97	7,451.79	2,254.81	2,175.08	28.282	ES
MELBON RANCH 2-8-17 - CPR - MWD	9,300.00	7,446.72	2,359.19	2,268.72	26.077	SF
MELBON RANCH 33-17 - CPR - MWD	10,758.89	7,498.70	1,236.89	1,100.18	9.047	CC
MELBON RANCH 33-17 - CPR - MWD	10,800.00	7,499.09	1,237.57	1,100.09	9.002	ES
MELBON RANCH 33-17 - CPR - MWD	10,900.00	7,500.04	1,244.91	1,106.07	8.966	SF
MELBON RANCH 34-17 - CPR - MWD	10,583.34	7,315.32	1,819.14	1,698.98	15.139	CC
MELBON RANCH 34-17 - CPR - MWD	10,600.00	7,315.83	1,819.22	1,698.72	15.097	ES
MELBON RANCH 34-17 - CPR - MWD	10,900.00	7,324.92	1,846.47	1,721.16	14.735	SF
MELBON RANCH 3A-17H - CPR - MWD	689.76	679.09	5.35	0.71	1.152	Level 3, CC, ES, SF
MELBON RANCH 3B-17H - CPR - MWD	811.92	800.42	11.15	5.61	2.014	CC, ES, SF
MELBON RANCH 43-17 43-17 - CPR - Gyro	12,217.65	7,243.93	1,209.01	1,048.22	7.519	CC, ES, SF
MELBON RANCH 4-6-17 - CPR - MWD	9,885.78	7,407.88	1,022.71	921.34	10.089	CC
MELBON RANCH 4-6-17 - CPR - MWD	9,900.00	7,407.94	1,022.81	921.18	10.065	ES
MELBON RANCH 4-6-17 - CPR - MWD	10,000.00	7,408.34	1,029.06	925.95	9.980	SF
MELBON RANCH 4-8-17 - CPR - Gyro	10,021.63	7,209.29	2,060.42	1,957.39	19.997	CC
MELBON RANCH 4-8-17 - CPR - Gyro	10,100.00	7,209.37	2,061.91	1,957.24	19.698	ES
MELBON RANCH 4-8-17 - CPR - Gyro	10,500.00	7,209.80	2,115.22	2,003.85	18.992	SF
MELBON RANCH 6-4-17 - CPR - MWD	11,205.22	7,431.21	778.18	636.01	5.473	CC, ES
MELBON RANCH 6-4-17 - CPR - MWD	11,300.00	7,433.18	783.93	640.41	5.462	SF
Melbon Ranch 6-8-17 - CPR - MWD	11,311.35	7,449.12	2,287.69	2,140.91	15.586	CC
Melbon Ranch 6-8-17 - CPR - MWD	11,400.00	7,449.78	2,289.40	2,140.66	15.392	ES
Melbon Ranch 6-8-17 - CPR - MWD	11,800.00	7,452.80	2,339.29	2,184.02	15.066	SF
MELBON RANCH 8-4-17 - CPR - MWD	12,217.65	7,312.02	919.58	775.12	6.365	CC, ES, SF
MELBON RANCH 8-6-17 - CPR - MWD	12,217.65	7,328.24	1,962.21	1,803.35	12.352	CC, ES, SF
MELBON RANCH 8-8-17 - CPR - MWD	12,217.65	7,638.91	3,228.58	3,065.12	19.751	CC, ES, SF
MELBON RANCH E UNIT 1 - CPR - Gyro	11,565.45	7,220.84	1,335.10	1,192.03	9.331	CC
MELBON RANCH E UNIT 1 - CPR - Gyro	11,600.00	7,221.26	1,335.55	1,191.81	9.292	ES
MELBON RANCH E UNIT 1 - CPR - Gyro	11,700.00	7,222.49	1,341.87	1,196.64	9.240	SF
MEQUIRE 21-3P - KMG - No Survey	12,217.65	7,229.00	4,067.36	3,931.42	29.920	CC, ES, SF
MUSE 1 - KMG - Gyro	6,911.64	6,760.17	1,734.59	1,685.64	35.432	CC, ES
MUSE 1 - KMG - Gyro	7,300.00	7,103.80	1,793.59	1,741.66	34.540	SF

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



## Anticollision Summary Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well MELBON RANCH 4D-17H-M265
<b>Project:</b>	Sec 17 T2N-R65W	<b>TVD Reference:</b>	WELL @ 4979.00usft (Original Well Elev)
<b>Reference Site:</b>	Melbon Ranch Pad	<b>MD Reference:</b>	WELL @ 4979.00usft (Original Well Elev)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	MELBON RANCH 4D-17H-M265	<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 5000.15 Single User Db
<b>Reference Design:</b>	Design #1 19Mar18 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						
Existing Wells (Melbon Ranch)						
MUSE 2 - KMG - No Survey	5,459.72	5,390.47	1,439.33	1,405.78	42.905	CC
MUSE 2 - KMG - No Survey	5,700.00	5,626.28	1,440.07	1,405.00	41.065	ES
MUSE 2 - KMG - No Survey	6,800.00	6,706.35	1,475.80	1,433.98	35.288	SF
PALMER 11-20 - KMG - No Survey	200.00	163.00	4,970.11	4,969.32	6,305.672	CC
PALMER 11-20 - KMG - No Survey	300.00	263.00	4,970.51	4,969.18	3,748.579	ES
PALMER 11-20 - KMG - No Survey	12,217.65	7,275.00	6,316.63	6,184.19	47.694	SF
PALMER X 20-05 - KMG - Gyro	100.00	59.24	3,152.10	3,151.86	10,000.000	CC
PALMER X 20-05 - KMG - Gyro	300.00	291.66	3,152.37	3,150.66	1,850.532	ES
PALMER X 20-05 - KMG - Gyro	10,900.00	7,272.11	5,065.41	4,959.10	47.648	SF
PALMER X 20-06 - KMG - Gyro	100.00	36.06	3,786.39	3,786.18	10,000.000	CC, ES
PALMER X 20-06 - KMG - Gyro	11,600.00	7,213.59	4,906.27	4,778.80	38.489	SF
PALMER X 20-20 - KMG - Gyro	219.30	193.26	4,068.13	4,067.05	3,774.917	CC
PALMER X 20-20 - KMG - Gyro	300.00	250.47	4,068.46	4,066.90	2,598.100	ES
PALMER X 20-20 - KMG - Gyro	11,900.00	7,302.06	5,831.61	5,702.43	45.144	SF
POTTS X 18-10 - KMG - Gyro	6,700.00	6,584.71	1,831.50	1,779.17	35.000	CC, ES
POTTS X 18-10 - KMG - Gyro	6,900.00	6,811.19	1,863.97	1,810.03	34.558	SF
POTTS X 18-15 - KMG - Gyro	223.00	246.28	2,349.97	2,348.70	1,855.607	CC
POTTS X 18-15 - KMG - Gyro	300.00	318.73	2,350.05	2,348.25	1,308.690	ES
POTTS X 18-15 - KMG - Gyro	6,900.00	6,780.75	2,566.69	2,513.21	47.994	SF
RUSSIAN FIDDLER 15N-18HZ - KMG - MWD	6,797.45	12,713.00	2,619.78	2,524.52	27.503	CC
RUSSIAN FIDDLER 15N-18HZ - KMG - MWD	6,800.00	12,713.00	2,619.78	2,524.51	27.498	ES
RUSSIAN FIDDLER 15N-18HZ - KMG - MWD	7,000.00	12,713.00	2,646.27	2,549.54	27.358	SF
RUSSIAN FIDDLER 36C-18HZ - KMG - MWD	6,812.99	12,872.00	3,022.17	2,913.67	27.852	CC, ES
RUSSIAN FIDDLER 36C-18HZ - KMG - MWD	7,000.00	12,872.00	3,046.31	2,936.29	27.689	SF
RUSSIAN FIDDLER 36N-18HZ - KMG - MWD	6,741.47	12,128.00	3,617.82	3,527.32	39.975	CC, ES
RUSSIAN FIDDLER 36N-18HZ - KMG - MWD	6,800.00	12,128.00	3,620.00	3,529.30	39.914	SF
RUSSIAN FIDDLER 36N-18HZ - KMG - MWD	6,775.56	12,416.00	3,462.61	3,364.46	35.280	CC, ES
RUSSIAN FIDDLER 36N-18HZ - KMG - MWD	6,900.00	12,416.00	3,472.94	3,374.27	35.197	SF
RUSSIAN FIDDLER 37C-18HZ - KMG - MWD	6,861.35	12,903.00	2,313.35	2,232.91	28.759	CC, ES
RUSSIAN FIDDLER 37C-18HZ - KMG - MWD	7,300.00	12,903.00	2,418.91	2,333.50	28.323	SF
RUSSIAN FIDDLER 37N-18HZ - KMG - MWD	6,810.57	12,711.00	2,424.44	2,337.45	27.869	CC, ES
RUSSIAN FIDDLER 37N-18HZ - KMG - MWD	7,000.00	12,711.00	2,446.36	2,358.00	27.687	SF
SANDLIN-WELD COUNTY 1 - KMG - No Survey	11,712.80	7,249.00	1,596.13	1,461.27	11.835	CC
SANDLIN-WELD COUNTY 1 - KMG - No Survey	11,800.00	7,249.00	1,598.51	1,461.06	11.630	ES
SANDLIN-WELD COUNTY 1 - KMG - No Survey	12,000.00	7,249.00	1,621.76	1,479.73	11.419	SF
SANDLIN-WELD-COUNTY UNIT 2 - KMG - Gyro	8,968.20	7,265.07	1,567.50	1,489.82	20.179	CC
SANDLIN-WELD-COUNTY UNIT 2 - KMG - Gyro	9,000.00	7,264.79	1,567.83	1,489.30	19.965	ES
SANDLIN-WELD-COUNTY UNIT 2 - KMG - Gyro	9,500.00	7,260.41	1,655.25	1,565.33	18.407	SF
SARCHET 1 - KMG - No Survey	11,213.76	7,251.00	4,101.00	3,979.24	33.682	CC
SARCHET 1 - KMG - No Survey	11,300.00	7,251.00	4,101.91	3,978.09	33.129	ES
SARCHET 1 - KMG - No Survey	12,217.65	7,251.00	4,222.08	4,079.57	29.627	SF
SARCHET 15N-20HZ - KMG - MWD	10,847.23	6,782.00	1,996.66	1,879.63	17.060	CC
SARCHET 15N-20HZ - KMG - MWD	10,900.00	6,782.00	1,997.36	1,879.40	16.933	ES
SARCHET 15N-20HZ - KMG - MWD	11,200.00	6,782.00	2,027.59	1,905.42	16.597	SF
SARCHET 16N-20HZ - KMG - No Survey	12,217.65	7,255.00	2,895.97	2,747.56	19.513	CC, ES, SF
SARCHET 20-1 - KMG - Gyro	11,936.09	7,239.62	2,886.61	2,733.58	18.863	CC
SARCHET 20-1 - KMG - Gyro	12,000.00	7,237.96	2,887.32	2,732.82	18.689	ES
SARCHET 20-1 - KMG - Gyro	12,217.65	7,232.31	2,900.30	2,741.28	18.239	SF
SARCHET 20-2 - NOBLE - No Survey	10,664.24	7,254.00	3,087.76	2,980.30	28.733	CC
SARCHET 20-2 - NOBLE - No Survey	10,700.00	7,254.00	3,087.97	2,979.68	28.516	ES
SARCHET 20-2 - NOBLE - No Survey	11,700.00	7,254.00	3,256.85	3,130.90	25.857	SF
SARCHET 36G-20HZ - KMG - Proposed	10,254.73	7,265.00	2,806.15	2,709.10	28.916	CC
SARCHET 36G-20HZ - KMG - Proposed	10,300.00	7,265.00	2,806.51	2,708.45	28.620	ES

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

# Anticollision Summary Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well MELBON RANCH 4D-17H-M265
<b>Project:</b>	Sec 17 T2N-R65W	<b>TVD Reference:</b>	WELL @ 4979.00usft (Original Well Elev)
<b>Reference Site:</b>	Melbon Ranch Pad	<b>MD Reference:</b>	WELL @ 4979.00usft (Original Well Elev)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	MELBON RANCH 4D-17H-M265	<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 5000.15 Single User Db
<b>Reference Design:</b>	Design #1 19Mar18 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						
Existing Wells (Melbon Ranch)						
SARCHET 36G-20HZ - KMG - Proposed	11,200.00	7,265.00	2,961.08	2,847.42	26.053	SF
SARCHET 36N-20HZ - KMG - MWD	10,289.93	6,688.00	1,956.78	1,855.91	19.398	CC
SARCHET 36N-20HZ - KMG - MWD	10,300.00	6,688.00	1,956.81	1,855.73	19.360	ES
SARCHET 36N-20HZ - KMG - MWD	10,800.00	6,688.00	2,022.17	1,913.02	18.528	SF
SARCHET 37C-20HZ - KMG - Proposed	10,314.81	7,264.00	2,739.22	2,640.74	27.813	CC
SARCHET 37C-20HZ - KMG - Proposed	10,400.00	7,264.00	2,740.55	2,640.16	27.301	ES
SARCHET 37C-20HZ - KMG - Proposed	11,200.00	7,264.00	2,878.70	2,764.65	25.242	SF
SARCHET 37N-20HZ - KMG - Proposed	10,348.43	7,264.00	2,774.01	2,674.67	27.923	CC
SARCHET 37N-20HZ - KMG - Proposed	10,400.00	7,264.00	2,774.49	2,673.99	27.606	ES
SARCHET 37N-20HZ - KMG - Proposed	11,200.00	7,264.00	2,901.78	2,787.18	25.321	SF
SARCHET 38C-20HZ - KMG - Proposed	12,217.65	7,246.00	2,906.30	2,757.80	19.571	CC, ES, SF
SARCHET X 20-8 - KMG - Gyro	12,098.88	7,227.00	4,491.11	4,333.91	28.570	CC
SARCHET X 20-8 - KMG - Gyro	12,200.00	7,227.00	4,492.25	4,332.59	28.138	ES
SARCHET X 20-8 - KMG - Gyro	12,217.65	7,223.55	4,492.68	4,332.62	28.070	SF
SEATON 2-18 - KMG - No Survey	6,896.00	6,782.34	2,909.32	2,871.69	77.303	CC
SEATON 2-18 - KMG - No Survey	6,900.00	6,786.16	2,909.33	2,871.67	77.257	ES
SEATON 2-18 - KMG - No Survey	8,400.00	7,310.00	3,666.56	3,615.47	71.761	SF
SEATON 7-18 - KMG - No Survey	6,771.98	6,678.85	1,713.83	1,674.88	44.001	CC, ES
SEATON 7-18 - KMG - No Survey	7,000.00	6,896.40	1,746.82	1,706.36	43.172	SF
SEATON 8-18 - KMG - Gyro	6,917.57	6,806.35	1,014.16	964.96	20.614	CC, ES
SEATON 8-18 - KMG - Gyro	7,100.00	6,971.41	1,028.17	977.59	20.329	SF
SUNFLOWER 24N-17HZ - KMG - MWD	11,189.00	12,650.00	338.07	204.04	2.522	CC
SUNFLOWER 24N-17HZ - KMG - MWD	11,200.00	12,650.00	338.25	203.14	2.503	ES
SUNFLOWER 24N-17HZ - KMG - MWD	11,300.00	12,650.00	355.82	206.20	2.378	SF
SUNFLOWER 25G-17HZ - KMG - MWD	10,239.11	12,664.00	296.29	180.40	2.557	CC
SUNFLOWER 25G-17HZ - KMG - MWD	10,300.00	12,664.00	302.48	173.39	2.343	ES
SUNFLOWER 25G-17HZ - KMG - MWD	10,400.00	12,664.00	337.15	190.33	2.296	SF
SUNFLOWER 40C-17HZ - KMG - MWD	12,217.65	12,840.00	327.48	156.73	1.918	CC, ES, SF
SUNFLOWER 40N-17HZ - KMG - MWD	12,217.65	12,495.00	561.92	388.93	3.248	CC, ES, SF
SUNFLOWER 7C-17HZ - KMG - MWD	2,576.72	1,800.00	7,616.01	7,601.50	525.071	CC, ES
SUNFLOWER 7C-17HZ - KMG - MWD	12,217.65	1,800.00	8,065.08	7,955.88	73.855	SF
SUNFLOWER 7N-17HZ - KMG - MWD	11,064.80	12,615.00	266.03	138.29	2.083	CC
SUNFLOWER 7N-17HZ - KMG - MWD	11,100.00	12,615.00	268.35	135.60	2.022	ES
SUNFLOWER 7N-17HZ - KMG - MWD	11,200.00	12,615.00	298.42	147.78	1.981	SF
SUNFLOWER 8N-17HZ - KMG - MWD	11,573.87	12,665.00	383.32	244.96	2.770	CC
SUNFLOWER 8N-17HZ - KMG - MWD	11,600.00	12,665.00	384.21	244.47	2.749	ES
SUNFLOWER 8N-17HZ - KMG - MWD	11,700.00	12,665.00	403.54	254.38	2.705	SF
THOMASON 1 - PETERSON - No Survey	12,217.65	7,233.00	2,514.43	2,410.61	24.219	CC, ES, SF
THOMASON 14-16 - KMG - MWD	12,217.65	7,491.57	3,254.78	3,130.93	26.282	CC, ES, SF
THOMASON 16-5 - KMG - Gyro	12,217.65	7,214.62	1,671.51	1,550.69	13.834	CC, ES, SF
THOMASON 21-16 - KMG - MWD	12,217.65	7,476.15	3,345.82	3,251.27	35.387	CC, ES, SF
THOMASON 23-16 - KMG - MWD	12,217.65	7,358.22	3,270.31	3,177.98	35.422	CC, ES, SF
THOMASON 25-16 - KMG - No Survey	12,217.65	945.00	6,784.65	6,739.50	150.279	CC, ES, SF
THOMASON 25-16R - KMG - MWD	12,217.65	7,417.00	3,056.08	2,992.52	48.084	CC, ES, SF
THOMASON 34N-9HZ - KMG - MWD	12,217.65	11,537.00	3,172.15	2,926.25	12.900	CC, ES, SF
THOMASON 36-16 - KMG - MWD	12,217.65	7,558.91	3,842.68	3,714.72	30.031	CC, ES, SF
THOMASON 6-16 - KMG - MWD	12,217.65	7,391.92	2,688.89	2,614.05	35.929	CC, ES, SF
THOMASON X 16-11 - KMG - No Survey	12,217.65	7,226.00	2,468.58	2,408.31	40.960	CC, ES, SF
THOMASON X 16-12 - KMG - Gyro	12,217.65	7,190.25	1,210.67	1,113.76	12.494	CC, ES, SF
THOMASON X 16-4 - KMG - No Survey	12,217.65	7,229.00	2,463.22	2,333.29	18.958	CC, ES, SF
THOMASON X16-13 - KMG - Gyro	12,217.65	7,247.17	1,979.61	1,834.11	13.606	CC, ES, SF
THOMSEN 1C-18HZ - KMG - MWD	7,069.75	14,563.00	2,715.86	2,621.08	28.655	CC
THOMSEN 1C-18HZ - KMG - MWD	7,100.00	14,563.00	2,716.41	2,620.85	28.428	ES

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

## Anticollision Summary Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well MELBON RANCH 4D-17H-M265
<b>Project:</b>	Sec 17 T2N-R65W	<b>TVD Reference:</b>	WELL @ 4979.00usft (Original Well Elev)
<b>Reference Site:</b>	Melbon Ranch Pad	<b>MD Reference:</b>	WELL @ 4979.00usft (Original Well Elev)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	MELBON RANCH 4D-17H-M265	<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 5000.15 Single User Db
<b>Reference Design:</b>	Design #1 19Mar18 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						
Existing Wells (Melbon Ranch)						
THOMSEN 1C-18HZ - KMG - MWD	7,900.00	14,563.00	3,061.77	2,942.60	25.692	SF
THOMSEN 1N-18HZ - KMG - Proposed	6,978.21	13,958.15	3,194.55	3,096.78	32.675	CC
THOMSEN 1N-18HZ - KMG - Proposed	7,000.00	13,958.15	3,194.82	3,096.66	32.546	ES
THOMSEN 1N-18HZ - KMG - Proposed	7,800.00	13,958.15	3,524.95	3,408.75	30.338	SF
THOMSEN 2N-18HZ - KMG - MWD	7,093.32	13,966.00	2,208.95	2,126.47	26.781	CC
THOMSEN 2N-18HZ - KMG - MWD	7,100.00	13,966.00	2,208.98	2,126.30	26.717	ES
THOMSEN 2N-18HZ - KMG - MWD	8,100.00	13,966.00	2,654.57	2,536.31	22.446	SF
THOMSEN 36C-18HZ - KMG - MWD	6,876.85	12,659.07	2,717.44	2,588.79	21.123	CC, ES
THOMSEN 36C-18HZ - KMG - MWD	7,000.00	12,645.37	2,730.70	2,600.86	21.032	SF
THOMSEN 36N-18HZ - KMG - MWD	6,854.51	12,899.09	2,420.35	2,284.04	17.756	CC, ES
THOMSEN 36N-18HZ - KMG - MWD	6,900.00	12,894.59	2,422.21	2,285.41	17.707	SF
THOMSEN 3N-18HZ - KMG - MWD	7,235.25	14,148.00	2,395.49	2,335.70	40.062	CC
THOMSEN 3N-18HZ - KMG - MWD	7,300.00	14,148.00	2,397.15	2,335.41	38.830	ES
THOMSEN 3N-18HZ - KMG - MWD	9,100.00	14,148.00	3,245.70	3,116.83	25.186	SF
THOMSEN 4N-18HZ - KMG - MWD	7,474.90	14,792.00	1,747.89	1,691.44	30.965	CC
THOMSEN 4N-18HZ - KMG - MWD	7,500.00	14,792.00	1,748.14	1,691.20	30.699	ES
THOMSEN 4N-18HZ - KMG - MWD	9,000.00	14,792.00	2,395.70	2,266.76	18.580	SF
UPRR 38 PAN AM X 1 - KMG - Gyro	0.00	0.00	2,637.08			
UPRR 38 PAN AM X 1 - KMG - Gyro	100.00	64.26	2,637.12	2,636.86	10,000.000	ES
UPRR 38 PAN AM X 1 - KMG - Gyro	9,200.00	7,200.00	4,515.99	4,447.17	65.622	SF
WALTERS 21-18 - KMG - MWD	6,786.38	6,774.62	2,812.52	2,759.68	53.236	CC, ES
WALTERS 21-18 - KMG - MWD	7,100.00	7,035.85	2,871.33	2,816.29	52.160	SF
WALTERS 25-18 - KMG - MWD	6,724.57	6,803.36	2,228.39	2,167.09	36.353	CC, ES
WALTERS 25-18 - KMG - MWD	6,900.00	6,959.74	2,250.02	2,187.57	36.031	SF
WALTERS 28-18 - KMG - MWD	928.63	479.54	3,067.47	3,062.79	655.138	CC, ES
WALTERS 28-18 - KMG - MWD	7,800.00	7,629.94	3,981.65	3,921.84	66.568	SF
WARNER 12-18 - KMG - MWD	0.00	17.14	3,385.82			
WARNER 12-18 - KMG - MWD	7,000.00	7,395.97	4,406.24	4,346.25	73.445	SF
WARNER 14-18 - KMG - No Survey	6,605.51	6,532.93	3,405.94	3,364.86	82.913	CC, ES
WARNER 14-18 - KMG - No Survey	6,900.00	6,821.16	3,445.66	3,402.95	80.690	SF
WARNER 18-18 - KMG - MWD	142.47	161.47	3,387.26	3,386.64	5,425.445	CC
WARNER 18-18 - KMG - MWD	200.00	212.00	3,387.40	3,386.40	3,367.536	ES
WARNER 18-18 - KMG - MWD	7,200.00	7,330.14	4,092.44	4,035.06	71.322	SF
WARNER 22-18 - KMG - MWD	836.62	592.00	3,382.56	3,377.79	708.872	CC
WARNER 22-18 - KMG - MWD	900.00	622.68	3,382.89	3,377.74	657.195	ES
WARNER 22-18 - KMG - MWD	7,100.00	7,027.23	3,750.70	3,694.52	66.761	SF
WARNER 23-18 - KMG - MWD	6,634.52	6,632.27	2,646.28	2,588.50	45.795	CC
WARNER 23-18 - KMG - MWD	6,700.00	6,688.00	2,646.69	2,588.47	45.463	ES
WARNER 23-18 - KMG - MWD	6,800.00	6,784.00	2,659.05	2,600.20	45.180	SF
WARNER 31-18 - KMG - MWD	800.00	548.64	3,386.43	3,381.97	759.253	CC, ES
WARNER 31-18 - KMG - MWD	7,500.00	7,824.77	5,465.96	5,403.98	88.188	SF
WARNER 32-18 - KMG - MWD	0.00	19.10	3,386.38			
WARNER 32-18 - KMG - MWD	800.00	542.53	3,389.70	3,385.24	759.936	ES
WARNER 32-18 - KMG - MWD	6,900.00	5,818.00	4,722.17	4,668.31	87.672	SF
WARNER 33-18 - KMG - MWD	0.00	27.82	3,222.32			
WARNER 33-18 - KMG - MWD	200.00	197.67	3,222.99	3,222.03	3,350.728	ES
WARNER 33-18 - KMG - MWD	7,000.00	7,484.34	5,031.46	4,959.48	69.898	SF
WARNER 35-18 - KMG - MWD	100.00	119.00	3,231.83	3,231.51	9,930.041	CC
WARNER 35-18 - KMG - MWD	200.00	212.00	3,232.17	3,231.16	3,184.789	ES
WARNER 35-18 - KMG - MWD	7,000.00	7,010.89	4,233.61	4,176.99	74.770	SF

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

## Anticollision Summary Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well MELBON RANCH 4D-17H-M265
<b>Project:</b>	Sec 17 T2N-R65W	<b>TVD Reference:</b>	WELL @ 4979.00usft (Original Well Elev)
<b>Reference Site:</b>	Melbon Ranch Pad	<b>MD Reference:</b>	WELL @ 4979.00usft (Original Well Elev)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	MELBON RANCH 4D-17H-M265	<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 5000.15 Single User Db
<b>Reference Design:</b>	Design #1 19Mar18 kjs	<b>Offset TVD Reference:</b>	Offset Datum

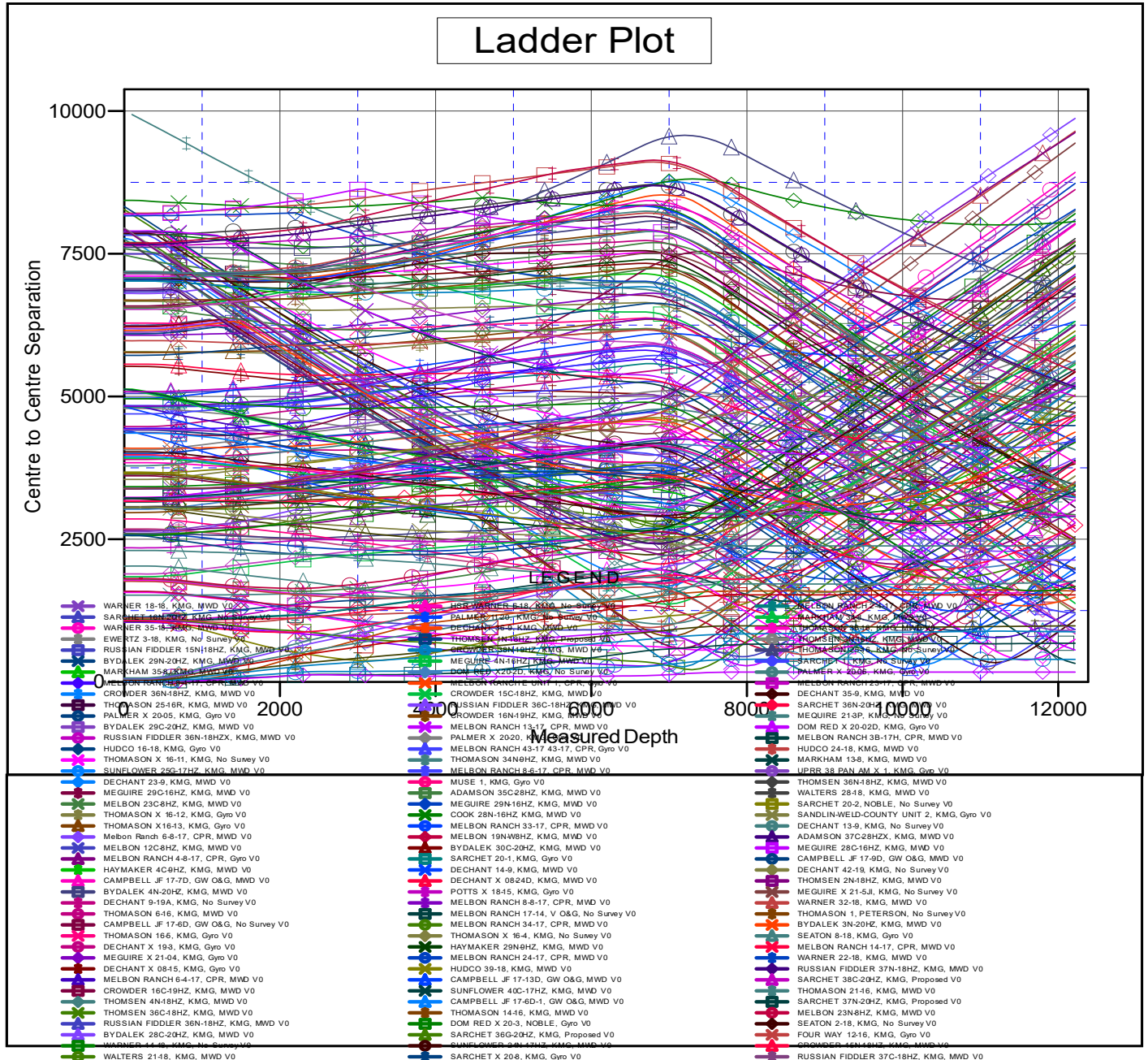
Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Melbon Ranch Pad						
MELBON RANCH 4C-17H-M265 - Wellbore #1 - Design	200.00	200.00	9.99	8.99	10.058	CC
MELBON RANCH 4C-17H-M265 - Wellbore #1 - Design	12,217.65	12,083.92	173.62	-1.86	0.989	Level 3, ES, SF
MELBON RANCH 4E-17H-M265 - Wellbore #1 - Plan #2	200.00	200.00	10.01	9.02	10.079	CC
MELBON RANCH 4E-17H-M265 - Wellbore #1 - Plan #2	300.00	300.00	10.44	8.73	6.107	ES
MELBON RANCH 4E-17H-M265 - Wellbore #1 - Plan #2	12,214.20	11,952.69	396.52	170.52	1.755	SF
MELBON RANCH 4F-17H-M265 - Wellbore #1 - Plan #2	200.00	200.00	20.01	19.02	20.150	CC
MELBON RANCH 4F-17H-M265 - Wellbore #1 - Plan #2	300.00	300.00	20.44	18.73	11.953	ES
MELBON RANCH 4F-17H-M265 - Wellbore #1 - Plan #2	12,217.65	12,117.57	879.77	610.07	3.262	SF
MELBON RANCH 4G-17H-M265 - Wellbore #1 - Plan #2	200.00	200.00	30.01	29.02	30.221	CC
MELBON RANCH 4G-17H-M265 - Wellbore #1 - Plan #2	300.00	300.00	30.44	28.73	17.800	ES
MELBON RANCH 4G-17H-M265 - Wellbore #1 - Plan #2	12,217.65	11,917.09	984.64	722.03	3.749	SF
MELBON RANCH 4H-17H-M265 - Wellbore #1 - Design	200.00	200.00	40.00	39.01	40.283	CC, ES
MELBON RANCH 4H-17H-M265 - Wellbore #1 - Design	12,217.65	11,926.51	1,525.55	1,258.48	5.712	SF
MELBON RANCH 4I-17H-M265 - Wellbore #1 - Design #	200.00	200.00	50.15	49.15	50.501	CC
MELBON RANCH 4I-17H-M265 - Wellbore #1 - Design #	300.00	300.00	50.58	48.87	29.574	ES
MELBON RANCH 4I-17H-M265 - Wellbore #1 - Design #	12,217.65	12,086.95	1,758.77	1,490.61	6.559	SF
MELBON RANCH 4J-17H-M265 - Wellbore #1 - Design #	200.00	200.00	60.01	59.02	60.438	CC
MELBON RANCH 4J-17H-M265 - Wellbore #1 - Design #	200.01	200.01	60.01	59.02	60.432	ES
MELBON RANCH 4J-17H-M265 - Wellbore #1 - Design #	12,217.65	11,996.28	2,135.77	1,866.94	7.945	SF
MELBON RANCH 4K-17H-M265 - Wellbore #1 - Design	200.00	200.00	70.01	69.02	70.508	CC, ES
MELBON RANCH 4K-17H-M265 - Wellbore #1 - Design	12,217.65	12,108.94	2,383.60	2,113.64	8.829	SF



<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well MELBON RANCH 4D-17H-M265
<b>Project:</b>	Sec 17 T2N-R65W	<b>TVD Reference:</b>	WELL @ 4979.00usft (Original Well Elev)
<b>Reference Site:</b>	Melbon Ranch Pad	<b>MD Reference:</b>	WELL @ 4979.00usft (Original Well Elev)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	MELBON RANCH 4D-17H-M265	<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 5000.15 Single User Db
<b>Reference Design:</b>	Design #1 19Mar18 kjs	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4979.00usft (Original Well E  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.500000

Coordinates are relative to: MELBON RANCH 4D-17H-M265  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 0.52°



CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

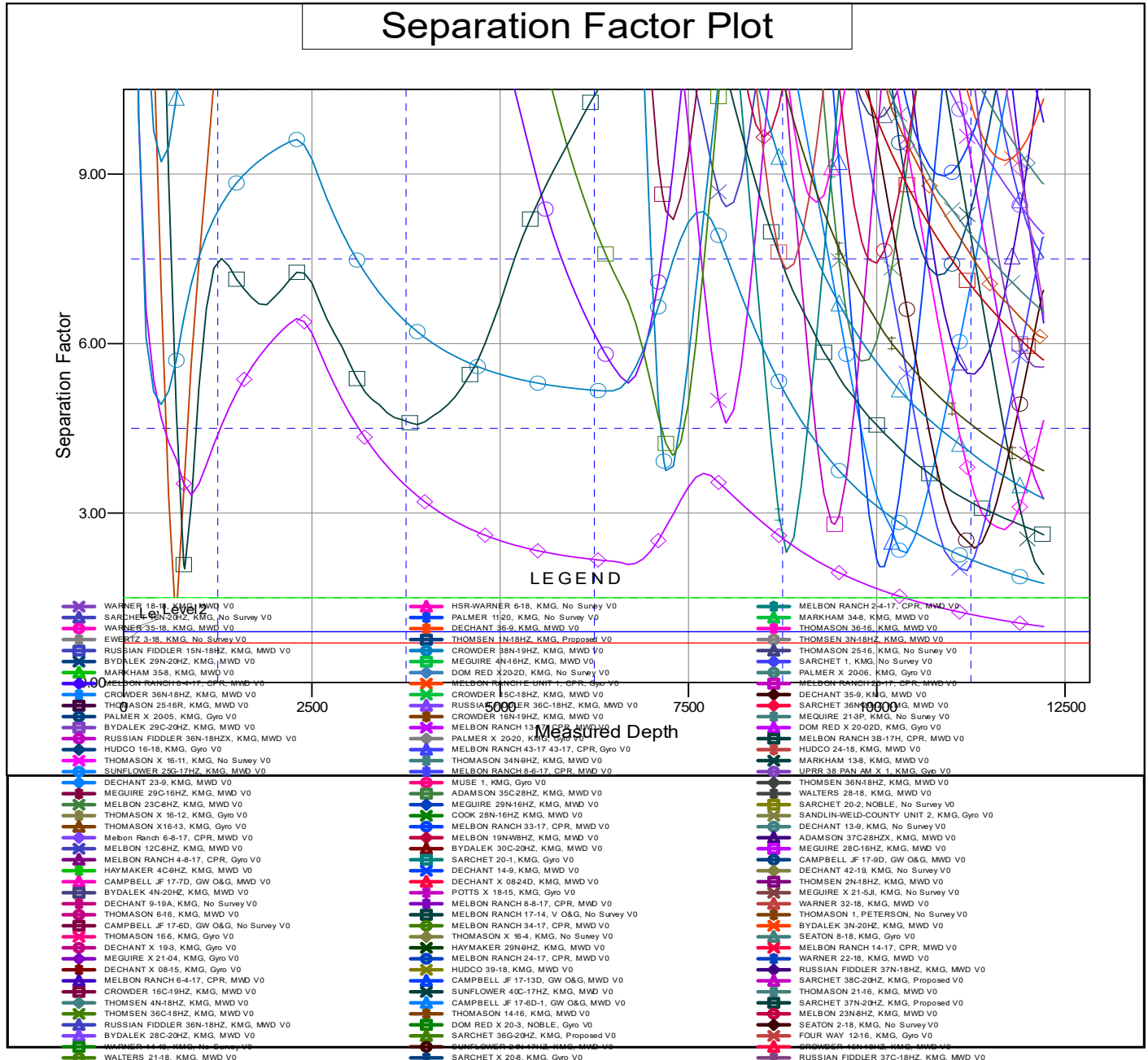
## Anticollision Summary Report

**Company:** Crestone Peak Resources  
**Project:** Sec 17 T2N-R65W  
**Reference Site:** Melbon Ranch Pad  
**Site Error:** 0.00 usft  
**Reference Well:** MELBON RANCH 4D-17H-M265  
**Well Error:** 0.00 usft  
**Reference Wellbore:** Wellbore #1  
**Reference Design:** Design #1 19Mar18 kjs

**Local Co-ordinate Reference:** Well MELBON RANCH 4D-17H-M265  
**TVD Reference:** WELL @ 4979.00usft (Original Well Elev)  
**MD Reference:** WELL @ 4979.00usft (Original Well Elev)  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature  
**Output errors are at** 2.00 sigma  
**Database:** EDM 5000.15 Single User Db  
**Offset TVD Reference:** Offset Datum

Reference Depths are relative to WELL @ 4979.00usft (Original Well E  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.500000

Coordinates are relative to: MELBON RANCH 4D-17H-M265  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 0.52°



CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation