

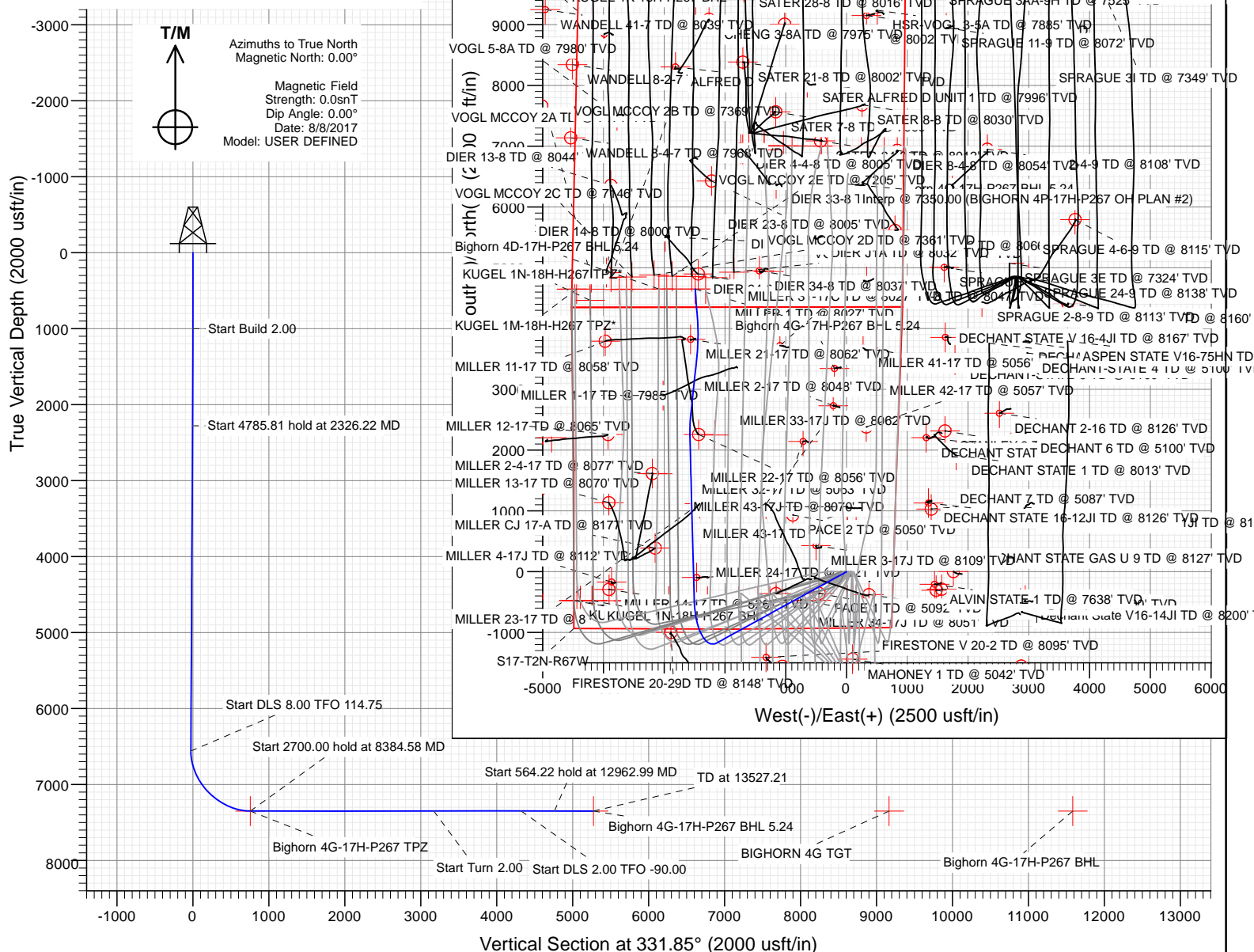


SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	1000.00	0.00	0.00	1000.00	0.00	0.00	0.00	0.00	0.00	
3	2326.22	26.52	241.24	2279.36	-145.09	-264.34	2.00	241.24	-3.22	
4	7112.03	26.52	241.24	6561.43	-1173.46	-2137.91	0.00	0.00	-26.04	
5	8384.58	90.00	358.50	7350.00	-481.81	-2506.01	8.00	114.75	757.47	Bighorn 4G-17H-P267 TPZ
6	11084.58	90.00	358.50	7350.00	2217.27	-2576.69	0.00	0.00	3170.63	
7	11459.58	90.00	6.00	7350.00	2591.71	-2561.98	2.00	90.00	3493.84	
8	12459.58	90.00	6.00	7350.00	3586.23	-2457.45	0.00	0.00	4321.41	
9	12962.99	90.00	355.93	7350.00	4088.92	-2448.97	2.00	-90.00	4760.64	
10	13527.21	90.00	355.93	7350.00	4651.72	-2489.00	0.00	0.00	5275.76	Bighorn 4G-17H-P267 BHL 5.24

PLAN #4
BIGHORN 4G-17H-P267
23' KB @ 4982.00usft
Ground Level @ 4959.00
North American Datum 1983
Well BIGHORN 4G-17H-P267, True North

Type TD	Target No Target (Freehand)	Azimuth 331.85	Origin Type Slot	N/S 0.00	E/W 0.00	From TVD 0.00
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	
BIGHORN 4G TGT	7350.00	9070.00	-2481.50	40.158581	-104.916826	
Bighorn 4G-17H-P267 BHL	7350.00	11873.84	-2363.76	40.166278	-104.916406	
Bighorn 4G-17H-P267 BHL 5.24	7350.00	4651.72	-2489.00	40.146452	-104.916852	
Bighorn 4G-17H-P267 TPZ	7350.00	-481.81	-2506.01	40.132360	-104.916911	

Project: DJ BASIN
Site: BIGHORN
Well: BIGHORN 4G-17H-P267
Wellbore: OH
Design: PLAN #4



CATHEDRAL

WELL DETAILS: BIGHORN 4G-17H-P267

			4959.00		
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	1292097.03	3165539.13	40.133683	-104.907948



Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well BIGHORN 4G-17H-P267
Company:	Crestone Peak Resources	TVD Reference:	23' KB @ 4982.00usft
Project:	DJ BASIN	MD Reference:	23' KB @ 4982.00usft
Site:	BIGHORN	North Reference:	True
Well:	BIGHORN 4G-17H-P267	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #4		

Project	DJ BASIN		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		BIGHORN			
Site Position:		Northing:	1,292,097.01 usft	Latitude:	40.133684
From:	Lat/Long	Easting:	3,165,479.29 usft	Longitude:	-104.908162
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.38 °

Well	BIGHORN 4G-17H-P267					
Well Position	+N/-S	0.00 usft	Northing:	1,292,097.03 usft	Latitude:	40.133683
	+E/-W	0.00 usft	Easting:	3,165,539.13 usft	Longitude:	-104.907948
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	4,959.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	User Defined	8/8/2017	0.00	0.00	0.00000000

Design	PLAN #4			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	331.85

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	
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,326.22	26.52	241.24	2,279.36	-145.09	-264.34	2.00	2.00	0.00	241.24	
7,112.03	26.52	241.24	6,561.43	-1,173.46	-2,137.91	0.00	0.00	0.00	0.00	
8,384.58	90.00	358.50	7,350.00	-481.81	-2,506.01	8.00	4.99	9.21	114.75	Bighorn 4G-17H-P267
11,084.58	90.00	358.50	7,350.00	2,217.27	-2,576.69	0.00	0.00	0.00	0.00	
11,459.58	90.00	6.00	7,350.00	2,591.71	-2,561.98	2.00	0.00	2.00	90.00	
12,459.58	90.00	6.00	7,350.00	3,586.23	-2,457.45	0.00	0.00	0.00	0.00	
12,962.99	90.00	355.93	7,350.00	4,088.92	-2,448.97	2.00	0.00	-2.00	-90.00	
13,527.21	90.00	355.93	7,350.00	4,651.72	-2,489.00	0.00	0.00	0.00	0.00	Bighorn 4G-17H-P267

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well BIGHORN 4G-17H-P267
Company:	Crestone Peak Resources	TVD Reference:	23' KB @ 4982.00usft
Project:	DJ BASIN	MD Reference:	23' KB @ 4982.00usft
Site:	BIGHORN	North Reference:	True
Well:	BIGHORN 4G-17H-P267	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #4		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	
1,100.00	2.00	241.24	1,099.98	-0.84	-1.53	-0.02	2.00	2.00	
1,200.00	4.00	241.24	1,199.84	-3.36	-6.12	-0.07	2.00	2.00	
1,300.00	6.00	241.24	1,299.45	-7.55	-13.76	-0.17	2.00	2.00	
1,400.00	8.00	241.24	1,398.70	-13.41	-24.44	-0.30	2.00	2.00	
1,500.00	10.00	241.24	1,497.47	-20.94	-38.15	-0.46	2.00	2.00	
1,600.00	12.00	241.24	1,595.62	-30.12	-54.88	-0.67	2.00	2.00	
1,700.00	14.00	241.24	1,693.06	-40.95	-74.60	-0.91	2.00	2.00	
1,800.00	16.00	241.24	1,789.64	-53.40	-97.29	-1.18	2.00	2.00	
1,900.00	18.00	241.24	1,885.27	-67.47	-122.91	-1.50	2.00	2.00	
2,000.00	20.00	241.24	1,979.82	-83.13	-151.45	-1.84	2.00	2.00	
2,100.00	22.00	241.24	2,073.17	-100.37	-182.87	-2.23	2.00	2.00	
2,200.00	24.00	241.24	2,165.21	-119.17	-217.12	-2.64	2.00	2.00	
2,300.00	26.00	241.24	2,255.84	-139.51	-254.16	-3.10	2.00	2.00	
2,326.22	26.52	241.24	2,279.36	-145.09	-264.34	-3.22	2.00	2.00	
2,400.00	26.52	241.24	2,345.37	-160.94	-293.22	-3.57	0.00	0.00	
2,500.00	26.52	241.24	2,434.84	-182.43	-332.37	-4.05	0.00	0.00	
2,600.00	26.52	241.24	2,524.32	-203.92	-371.52	-4.52	0.00	0.00	
2,700.00	26.52	241.24	2,613.79	-225.41	-410.66	-5.00	0.00	0.00	
2,800.00	26.52	241.24	2,703.27	-246.89	-449.81	-5.48	0.00	0.00	
2,900.00	26.52	241.24	2,792.74	-268.38	-488.96	-5.96	0.00	0.00	
3,000.00	26.52	241.24	2,882.21	-289.87	-528.11	-6.43	0.00	0.00	
3,100.00	26.52	241.24	2,971.69	-311.36	-567.26	-6.91	0.00	0.00	
3,200.00	26.52	241.24	3,061.16	-332.85	-606.41	-7.39	0.00	0.00	
3,300.00	26.52	241.24	3,150.64	-354.33	-645.56	-7.86	0.00	0.00	
3,400.00	26.52	241.24	3,240.11	-375.82	-684.70	-8.34	0.00	0.00	
3,500.00	26.52	241.24	3,329.59	-397.31	-723.85	-8.82	0.00	0.00	
3,600.00	26.52	241.24	3,419.06	-418.80	-763.00	-9.29	0.00	0.00	
3,700.00	26.52	241.24	3,508.54	-440.29	-802.15	-9.77	0.00	0.00	
3,800.00	26.52	241.24	3,598.01	-461.77	-841.30	-10.25	0.00	0.00	
3,900.00	26.52	241.24	3,687.48	-483.26	-880.45	-10.72	0.00	0.00	
4,000.00	26.52	241.24	3,776.96	-504.75	-919.59	-11.20	0.00	0.00	
4,100.00	26.52	241.24	3,866.43	-526.24	-958.74	-11.68	0.00	0.00	
4,200.00	26.52	241.24	3,955.91	-547.73	-997.89	-12.15	0.00	0.00	
4,300.00	26.52	241.24	4,045.38	-569.21	-1,037.04	-12.63	0.00	0.00	
4,400.00	26.52	241.24	4,134.86	-590.70	-1,076.19	-13.11	0.00	0.00	
4,500.00	26.52	241.24	4,224.33	-612.19	-1,115.34	-13.58	0.00	0.00	
4,600.00	26.52	241.24	4,313.80	-633.68	-1,154.49	-14.06	0.00	0.00	
4,700.00	26.52	241.24	4,403.28	-655.17	-1,193.63	-14.54	0.00	0.00	
4,800.00	26.52	241.24	4,492.75	-676.65	-1,232.78	-15.01	0.00	0.00	
4,900.00	26.52	241.24	4,582.23	-698.14	-1,271.93	-15.49	0.00	0.00	
5,000.00	26.52	241.24	4,671.70	-719.63	-1,311.08	-15.97	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well BIGHORN 4G-17H-P267
Company:	Crestone Peak Resources	TVD Reference:	23' KB @ 4982.00usft
Project:	DJ BASIN	MD Reference:	23' KB @ 4982.00usft
Site:	BIGHORN	North Reference:	True
Well:	BIGHORN 4G-17H-P267	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #4		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
5,100.00	26.52	241.24	4,761.18	-741.12	-1,350.23	-16.44	0.00	0.00	
5,200.00	26.52	241.24	4,850.65	-762.61	-1,389.38	-16.92	0.00	0.00	
5,300.00	26.52	241.24	4,940.12	-784.09	-1,428.53	-17.40	0.00	0.00	
5,400.00	26.52	241.24	5,029.60	-805.58	-1,467.67	-17.87	0.00	0.00	
5,500.00	26.52	241.24	5,119.07	-827.07	-1,506.82	-18.35	0.00	0.00	
5,600.00	26.52	241.24	5,208.55	-848.56	-1,545.97	-18.83	0.00	0.00	
5,700.00	26.52	241.24	5,298.02	-870.05	-1,585.12	-19.31	0.00	0.00	
5,800.00	26.52	241.24	5,387.50	-891.53	-1,624.27	-19.78	0.00	0.00	
5,900.00	26.52	241.24	5,476.97	-913.02	-1,663.42	-20.26	0.00	0.00	
6,000.00	26.52	241.24	5,566.45	-934.51	-1,702.56	-20.74	0.00	0.00	
6,100.00	26.52	241.24	5,655.92	-956.00	-1,741.71	-21.21	0.00	0.00	
6,200.00	26.52	241.24	5,745.39	-977.49	-1,780.86	-21.69	0.00	0.00	
6,300.00	26.52	241.24	5,834.87	-998.97	-1,820.01	-22.17	0.00	0.00	
6,400.00	26.52	241.24	5,924.34	-1,020.46	-1,859.16	-22.64	0.00	0.00	
6,500.00	26.52	241.24	6,013.82	-1,041.95	-1,898.31	-23.12	0.00	0.00	
6,600.00	26.52	241.24	6,103.29	-1,063.44	-1,937.46	-23.60	0.00	0.00	
6,700.00	26.52	241.24	6,192.77	-1,084.93	-1,976.60	-24.07	0.00	0.00	
6,800.00	26.52	241.24	6,282.24	-1,106.41	-2,015.75	-24.55	0.00	0.00	
6,900.00	26.52	241.24	6,371.71	-1,127.90	-2,054.90	-25.03	0.00	0.00	
7,000.00	26.52	241.24	6,461.19	-1,149.39	-2,094.05	-25.50	0.00	0.00	
7,100.00	26.52	241.24	6,550.66	-1,170.88	-2,133.20	-25.98	0.00	0.00	
7,112.03	26.52	241.24	6,561.43	-1,173.46	-2,137.91	-26.04	0.00	0.00	
7,200.00	24.37	256.88	6,640.95	-1,187.05	-2,172.85	-21.53	8.00	-2.45	
7,300.00	24.13	276.43	6,732.27	-1,189.45	-2,213.32	-4.55	8.00	-0.24	
7,400.00	26.29	294.59	6,822.88	-1,177.92	-2,253.83	24.72	8.00	2.16	
7,500.00	30.34	309.21	6,911.00	-1,152.70	-2,293.60	65.72	8.00	4.05	
7,600.00	35.64	320.26	6,994.93	-1,114.27	-2,331.86	117.65	8.00	5.30	
7,700.00	41.70	328.64	7,073.02	-1,063.38	-2,367.85	179.50	8.00	6.07	
7,800.00	48.24	335.17	7,143.77	-1,001.03	-2,400.88	250.06	8.00	6.54	
7,900.00	55.09	340.46	7,205.78	-928.42	-2,430.31	327.97	8.00	6.84	
8,000.00	62.12	344.93	7,257.86	-846.97	-2,455.56	411.69	8.00	7.04	
8,100.00	69.28	348.84	7,299.00	-758.27	-2,476.13	499.61	8.00	7.16	
8,200.00	76.53	352.40	7,328.38	-664.04	-2,491.64	590.02	8.00	7.24	
8,300.00	83.82	355.75	7,345.44	-566.11	-2,501.78	681.14	8.00	7.29	
8,384.58	90.00	358.50	7,350.00	-481.81	-2,506.01	757.47	8.00	7.31	Bighorn 4G-17H-P267 TPZ
8,400.00	90.00	358.50	7,350.00	-466.39	-2,506.41	771.25	0.00	0.00	
8,500.00	90.00	358.50	7,350.00	-366.43	-2,509.03	860.63	0.00	0.00	
8,600.00	90.00	358.50	7,350.00	-266.46	-2,511.65	950.00	0.00	0.00	
8,700.00	90.00	358.50	7,350.00	-166.49	-2,514.27	1,039.38	0.00	0.00	
8,800.00	90.00	358.50	7,350.00	-66.53	-2,516.88	1,128.76	0.00	0.00	
8,900.00	90.00	358.50	7,350.00	33.44	-2,519.50	1,218.13	0.00	0.00	
9,000.00	90.00	358.50	7,350.00	133.40	-2,522.12	1,307.51	0.00	0.00	
9,100.00	90.00	358.50	7,350.00	233.37	-2,524.74	1,396.89	0.00	0.00	
9,200.00	90.00	358.50	7,350.00	333.33	-2,527.36	1,486.26	0.00	0.00	
9,300.00	90.00	358.50	7,350.00	433.30	-2,529.97	1,575.64	0.00	0.00	
9,400.00	90.00	358.50	7,350.00	533.27	-2,532.59	1,665.02	0.00	0.00	
9,500.00	90.00	358.50	7,350.00	633.23	-2,535.21	1,754.39	0.00	0.00	
9,600.00	90.00	358.50	7,350.00	733.20	-2,537.83	1,843.77	0.00	0.00	
9,700.00	90.00	358.50	7,350.00	833.16	-2,540.44	1,933.14	0.00	0.00	
9,800.00	90.00	358.50	7,350.00	933.13	-2,543.06	2,022.52	0.00	0.00	
9,900.00	90.00	358.50	7,350.00	1,033.09	-2,545.68	2,111.90	0.00	0.00	
10,000.00	90.00	358.50	7,350.00	1,133.06	-2,548.30	2,201.27	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well BIGHORN 4G-17H-P267
Company:	Crestone Peak Resources	TVD Reference:	23' KB @ 4982.00usft
Project:	DJ BASIN	MD Reference:	23' KB @ 4982.00usft
Site:	BIGHORN	North Reference:	True
Well:	BIGHORN 4G-17H-P267	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #4		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
10,100.00	90.00	358.50	7,350.00	1,233.03	-2,550.91	2,290.65	0.00	0.00	
10,200.00	90.00	358.50	7,350.00	1,332.99	-2,553.53	2,380.03	0.00	0.00	
10,300.00	90.00	358.50	7,350.00	1,432.96	-2,556.15	2,469.40	0.00	0.00	
10,400.00	90.00	358.50	7,350.00	1,532.92	-2,558.77	2,558.78	0.00	0.00	
10,500.00	90.00	358.50	7,350.00	1,632.89	-2,561.39	2,648.16	0.00	0.00	
10,600.00	90.00	358.50	7,350.00	1,732.85	-2,564.00	2,737.53	0.00	0.00	
10,700.00	90.00	358.50	7,350.00	1,832.82	-2,566.62	2,826.91	0.00	0.00	
10,800.00	90.00	358.50	7,350.00	1,932.79	-2,569.24	2,916.29	0.00	0.00	
10,900.00	90.00	358.50	7,350.00	2,032.75	-2,571.86	3,005.66	0.00	0.00	
11,000.00	90.00	358.50	7,350.00	2,132.72	-2,574.47	3,095.04	0.00	0.00	
11,084.58	90.00	358.50	7,350.00	2,217.27	-2,576.69	3,170.63	0.00	0.00	
11,100.00	90.00	358.81	7,350.00	2,232.68	-2,577.05	3,184.40	2.00	0.00	
11,200.00	90.00	0.81	7,350.00	2,332.68	-2,577.38	3,272.72	2.00	0.00	
11,300.00	90.00	2.81	7,350.00	2,432.62	-2,574.23	3,359.35	2.00	0.00	
11,400.00	90.00	4.81	7,350.00	2,532.40	-2,567.59	3,444.19	2.00	0.00	
11,459.58	90.00	6.00	7,350.00	2,591.71	-2,561.98	3,493.84	2.00	0.00	
11,500.00	90.00	6.00	7,350.00	2,631.91	-2,557.75	3,527.29	0.00	0.00	
11,600.00	90.00	6.00	7,350.00	2,731.36	-2,547.30	3,610.05	0.00	0.00	
11,700.00	90.00	6.00	7,350.00	2,830.81	-2,536.84	3,692.81	0.00	0.00	
11,800.00	90.00	6.00	7,350.00	2,930.27	-2,526.39	3,775.57	0.00	0.00	
11,900.00	90.00	6.00	7,350.00	3,029.72	-2,515.94	3,858.32	0.00	0.00	
12,000.00	90.00	6.00	7,350.00	3,129.17	-2,505.49	3,941.08	0.00	0.00	
12,100.00	90.00	6.00	7,350.00	3,228.62	-2,495.03	4,023.84	0.00	0.00	
12,200.00	90.00	6.00	7,350.00	3,328.08	-2,484.58	4,106.59	0.00	0.00	
12,300.00	90.00	6.00	7,350.00	3,427.53	-2,474.13	4,189.35	0.00	0.00	
12,400.00	90.00	6.00	7,350.00	3,526.98	-2,463.67	4,272.11	0.00	0.00	
12,459.58	90.00	6.00	7,350.00	3,586.23	-2,457.45	4,321.41	0.00	0.00	
12,500.00	90.00	5.19	7,350.00	3,626.46	-2,453.51	4,355.02	2.00	0.00	
12,600.00	90.00	3.19	7,350.00	3,726.19	-2,446.20	4,439.51	2.00	0.00	
12,700.00	90.00	1.19	7,350.00	3,826.11	-2,442.37	4,525.81	2.00	0.00	
12,800.00	90.00	359.19	7,350.00	3,926.10	-2,442.04	4,613.82	2.00	0.00	
12,900.00	90.00	357.19	7,350.00	4,026.05	-2,445.19	4,703.43	2.00	0.00	
12,962.99	90.00	355.93	7,350.00	4,088.92	-2,448.97	4,760.64	2.00	0.00	
13,000.00	90.00	355.93	7,350.00	4,125.84	-2,451.60	4,794.44	0.00	0.00	
13,100.00	90.00	355.93	7,350.00	4,225.59	-2,458.69	4,885.73	0.00	0.00	
13,200.00	90.00	355.93	7,350.00	4,325.34	-2,465.79	4,977.03	0.00	0.00	
13,300.00	90.00	355.93	7,350.00	4,425.09	-2,472.88	5,068.33	0.00	0.00	
13,400.00	90.00	355.93	7,350.00	4,524.83	-2,479.98	5,159.62	0.00	0.00	
13,500.00	90.00	355.93	7,350.00	4,624.58	-2,487.07	5,250.92	0.00	0.00	
13,527.21	90.00	355.93	7,350.00	4,651.72	-2,489.00	5,275.76	0.00	0.00	Bighorn 4G-17H-P267 BHL 5.24 - Bighorn 4G-1

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well BIGHORN 4G-17H-P267
Company:	Crestone Peak Resources	TVD Reference:	23' KB @ 4982.00usft
Project:	DJ BASIN	MD Reference:	23' KB @ 4982.00usft
Site:	BIGHORN	North Reference:	True
Well:	BIGHORN 4G-17H-P267	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #4		

Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
Bighorn 4G-17H-P267 B	0.00	0.00	7,350.00	4,651.72	-2,489.00	1,296,732.03	3,163,019.12	40.146452	-104.916852
- plan hits target center									
- Point									
Bighorn 4G-17H-P267 B	0.00	0.00	7,350.00	11,873.84	-2,363.76	1,303,954.82	3,163,096.14	40.166278	-104.916406
- plan misses target center by 7223.21usft at 13527.21usft MD (7350.00 TVD, 4651.72 N, -2489.00 E)									
- Point									
BIGHORN 4G TGT	0.00	0.00	7,350.00	9,070.00	-2,481.50	1,301,150.26	3,162,997.13	40.158581	-104.916826
- plan misses target center by 4418.29usft at 13527.21usft MD (7350.00 TVD, 4651.72 N, -2489.00 E)									
- Point									
Bighorn 4G-17H-P267 T	0.00	0.00	7,350.00	-481.81	-2,506.01	1,291,598.50	3,163,036.39	40.132360	-104.916911
- plan hits target center									
- Point									

Crestone Peak Resources

DJ BASIN

BIGHORN

BIGHORN 4G-17H-P267

OH

PLAN #4

Anticollision Summary Report

24 May, 2018

Cathedral Energy Services

Anticollision Summary Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well BIGHORN 4G-17H-P267
Project:	DJ BASIN	TVD Reference:	23' KB @ 4982.00usft
Reference Site:	BIGHORN	MD Reference:	23' KB @ 4982.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	BIGHORN 4G-17H-P267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #4	Offset TVD Reference:	Offset Datum

Reference	PLAN #4		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.00usft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,933.21 usft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program	Date	5/24/2018		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	1,000.00	PLAN #4 (OH)	VESSI_GYROFLEX	VESSI Gyroflex Gyro
2,001.00	13,527.21	PLAN #4 (OH)	MWD+HDGM	OWSG MWD + HDGM

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						
BIGHORN						
BIGHORN 4A-17H-P267 - OH - PLAN #2	500.00	500.00	59.84	58.31	39.092	CC, ES
BIGHORN 4A-17H-P267 - OH - PLAN #2	13,527.21	13,804.55	1,245.98	937.79	4.043	SF
BIGHORN 4AA-17H-P267 - OH - PLAN #1	200.00	200.00	89.76	89.27	185.655	CC, ES
BIGHORN 4AA-17H-P267 - OH - PLAN #1	11,200.00	12,077.59	1,932.98	1,744.85	10.275	SF
BIGHORN 4AB-17H-P267 - OH - PLAN #2	300.00	300.00	79.97	79.14	96.057	CC, ES
BIGHORN 4AB-17H-P267 - OH - PLAN #2	11,800.00	12,183.16	1,932.38	1,721.03	9.143	SF
BIGHORN 4AC-17H-P267 - OH - PLAN #1	400.00	400.00	69.90	68.72	59.161	CC, ES
BIGHORN 4AC-17H-P267 - OH - PLAN #1	13,527.21	14,045.53	1,732.47	1,422.24	5.584	SF
BIGHORN 4B-17H-P267 - OH - PLAN #2	600.00	600.00	49.77	47.89	26.478	CC, ES
BIGHORN 4B-17H-P267 - OH - PLAN #2	13,527.21	14,157.08	1,143.86	833.83	3.690	SF
BIGHORN 4C-17H-P267 - OH - PLAN #1	200.00	200.00	39.98	39.50	82.706	CC, ES
BIGHORN 4C-17H-P267 - OH - PLAN #1	13,527.21	13,434.08	1,058.31	753.67	3.474	SF
BIGHORN 4D-17H-P267 - OH - PLAN #3	700.00	700.00	29.92	27.69	13.424	CC, ES
BIGHORN 4D-17H-P267 - OH - PLAN #3	13,527.21	13,708.29	598.39	286.01	1.916	SF
BIGHORN 4E-17H-P267 - OH - PLAN #1	233.94	233.94	19.85	19.25	32.969	CC
BIGHORN 4E-17H-P267 - OH - PLAN #1	300.00	299.92	19.99	19.15	23.983	ES
BIGHORN 4E-17H-P267 - OH - PLAN #1	13,527.21	13,523.83	476.05	165.02	1.531	SF
BIGHORN 4F-17H-P267 - OH - PLAN #1	800.00	800.00	9.79	7.21	3.798	CC, ES
BIGHORN 4F-17H-P267 - OH - PLAN #1	13,527.21	13,736.53	345.02	65.15	1.233	Level 2, SF
BIGHORN 4H-17H-P267 - OH - PLAN #1	201.72	201.72	10.07	9.58	20.565	CC
BIGHORN 4H-17H-P267 - OH - PLAN #1	13,515.45	13,342.81	182.80	-105.23	0.635	Level 1, ES, SF
BIGHORN 4I-17H-P267 - OH - PLAN #1	302.14	302.14	20.13	19.29	23.967	CC
BIGHORN 4I-17H-P267 - OH - PLAN #1	500.00	500.24	20.48	18.94	13.327	ES
BIGHORN 4I-17H-P267 - OH - PLAN #1	13,527.21	13,437.32	588.97	281.53	1.916	SF
BIGHORN 4J-17H-P267 - OH - PLAN #3	786.02	787.20	15.14	12.58	5.909	CC, ES
BIGHORN 4J-17H-P267 - OH - PLAN #3	3,700.00	3,659.36	133.78	94.42	3.399	SF
BIGHORN 4K-17H-P267 - OH - PLAN #2	913.11	914.56	26.92	23.91	8.959	CC, ES
BIGHORN 4K-17H-P267 - OH - PLAN #2	13,527.21	13,080.93	1,201.18	887.26	3.826	SF
BIGHORN 4L-17H-P267 - OH - PLAN #3	1,037.31	1,040.19	36.34	32.90	10.565	CC, ES
BIGHORN 4L-17H-P267 - OH - PLAN #3	13,527.21	13,007.16	1,362.27	1,052.98	4.404	SF
BIGHORN 4M-17H-P267 - OH - PLAN #1	621.63	624.50	54.76	52.78	27.608	CC, ES
BIGHORN 4M-17H-P267 - OH - PLAN #1	13,527.21	13,220.23	1,571.79	1,256.27	4.982	SF
BIGHORN 4N-17H-P267 - OH - PLAN #2	818.48	821.00	63.02	60.36	23.670	CC, ES
BIGHORN 4N-17H-P267 - OH - PLAN #2	13,527.21	13,038.87	1,865.66	1,548.38	5.880	SF
BIGHORN 4O-17H-P267 - OH - PLAN #2	712.65	715.10	74.42	72.13	32.475	CC, ES
BIGHORN 4O-17H-P267 - OH - PLAN #2	4,400.00	4,262.18	872.52	830.80	20.914	SF

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

Cathedral Energy Services

Anticollision Summary Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well BIGHORN 4G-17H-P267
Project:	DJ BASIN	TVD Reference:	23' KB @ 4982.00usft
Reference Site:	BIGHORN	MD Reference:	23' KB @ 4982.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	BIGHORN 4G-17H-P267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #4	Offset TVD Reference:	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						
BIGHORN						
BIGHORN 4P-17H-P267 - OH - PLAN #3	331.68	332.73	89.98	89.04	95.139	CC
BIGHORN 4P-17H-P267 - OH - PLAN #3	400.00	400.89	90.07	88.88	75.991	ES
BIGHORN 4P-17H-P267 - OH - PLAN #3	6,400.00	6,032.48	1,908.33	1,841.51	28.556	SF
BIGHORN 4Q-17H-P267 - OH - PLAN #3	400.00	401.00	100.10	98.92	84.592	CC
BIGHORN 4Q-17H-P267 - OH - PLAN #3	500.00	500.86	100.16	98.63	65.369	ES
BIGHORN 4Q-17H-P267 - OH - PLAN #3	6,200.00	5,830.81	1,900.36	1,837.38	30.171	SF
BIGHORN 4R-17H-P267 - OH - PLAN #2	300.00	301.00	110.17	109.33	132.052	CC, ES
BIGHORN 4R-17H-P267 - OH - PLAN #2	5,500.00	5,074.00	1,921.68	1,868.99	36.472	SF
BIGHORN 4S-17H-P267 - OH - PLAN #3	200.00	201.00	120.23	119.75	247.798	CC, ES
BIGHORN 4S-17H-P267 - OH - PLAN #3	5,200.00	4,767.09	1,889.25	1,846.02	43.709	SF

Cathedral Energy Services

Anticollision Summary Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well BIGHORN 4G-17H-P267
Project:	DJ BASIN	TVD Reference:	23' KB @ 4982.00usft
Reference Site:	BIGHORN	MD Reference:	23' KB @ 4982.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	BIGHORN 4G-17H-P267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #4	Offset TVD Reference:	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						
S17-T2N-R67W (OFFSETS)						
ABBEY STATE V16-77HN - KMG WELL - SURVEYS						Out of range
ALFRED D SATER UNIT 2 - KMG WELL - GYRO						Out of range
ALVIN STATE 1 - PDC WELL - GYRO	518.69	526.70	1,563.12	1,561.49	957.574	CC
ALVIN STATE 1 - PDC WELL - GYRO	1,011.47	1,024.57	1,564.35	1,561.00	466.624	ES
ALVIN STATE 1 - PDC WELL - GYRO	2,600.00	2,551.70	1,911.79	1,901.26	181.562	SF
ASPEN STATE V16-75HN - KMG WELL - SURVEYS						Out of range
CHENG 3-8A - KMG WELL - SURVEYS						Out of range
CIRBO 4-6-5 - CPR WELL - SURVEYS						Out of range
CIRBO 6-4-5 - CPR WELL - SURVEYS						Out of range
DECHANT 2-16 - KMG WELL - GYRO						Out of range
DECHANT 6 - KPK WELL - NO SURVEYS						Out of range
DECHANT 7 - KPK WELL - NO SURVEYS	1,000.00	1,009.00	1,734.44	1,729.37	341.660	CC, ES
DECHANT 7 - KPK WELL - NO SURVEYS	2,000.00	1,970.82	1,905.79	1,895.51	185.379	SF
DECHANT 8 - GERRITY WELL - NO SURVEYS						Out of range
DECHANT STATE 1 - KPK WELL - SURVEYS						Out of range
DECHANT STATE GAS U 9 - KMG WELL - GYRO	1,007.99	1,040.58	1,899.27	1,895.89	563.188	CC, ES
DECHANT STATE GAS U 9 - KMG WELL - GYRO	1,400.00	1,440.48	1,921.80	1,917.03	402.844	SF
DECHANT STATE V 16-11JI - KMG WELL - GYRO						Out of range
DECHANT STATE V 16-12JI - KMG WELL - GYRO	1,055.31	1,085.97	1,818.97	1,815.42	511.833	CC, ES
DECHANT STATE V 16-12JI - KMG WELL - GYRO	1,800.00	1,818.79	1,913.32	1,907.17	311.033	SF
DECHANT STATE V 16-14JI - KMG WELL - GYRO						Out of range
DECHANT STATE V 16-4JI - KMG WELL - GYRO						Out of range
DECHANT STATE V 16-5JI - KMG WELL - GYRO						Out of range
DECHANT V 16-3JI - KMG WELL - GYRO						Out of range
DECHANT-STATE 2 - KPK WELL - NO SURVEYS						Out of range
DECHANT-STATE 3 - KPK WELL - NO SURVEYS	1,000.00	1,003.00	1,591.43	1,586.38	315.475	CC, ES
DECHANT-STATE 3 - KPK WELL - NO SURVEYS	2,500.00	2,437.84	1,900.52	1,886.31	133.810	SF
DECHANT-STATE 4 - KPK WELL - NO SURVEYS						Out of range
DECHANT-STATE 5 - KPK WELL - NO SURVEYS						Out of range
DIER 1 - CPR WELL - GYRO						Out of range
DIER 13-8 - CPR WELL - SURVEYS	13,527.21	6,819.16	1,868.66	1,734.82	13.962	CC, ES, SF
DIER 14-8 - CPR WELL - SURVEYS	13,527.21	7,450.46	1,489.36	1,313.98	8.492	CC, ES, SF
DIER 23-8 - CPR WELL - SURVEYS	13,527.21	7,499.72	1,825.23	1,715.73	16.669	CC, ES, SF
DIER 24-8 - CPR WELL - SURVEYS	13,527.21	7,480.35	284.36	175.95	2.623	CC, ES, SF
DIER 33-8 - CPR WELL - GYRO						Out of range
DIER 34-8 - CPR WELL - GYRO	13,527.21	7,326.07	1,099.21	931.96	6.572	CC, ES, SF
DIER 44-8 - CPR WELL - GYRO						Out of range
DIER 4-4-8 - CPR WELL - SURVEYS						Out of range
DIER 4-8 - CPR WELL - GYRO	13,527.21	7,287.35	986.33	866.78	8.250	CC, ES, SF
DIER 8-4-8 - CPR WELL - SURVEYS						Out of range
DIER 8-6-8 - CPR WELL - SURVEYS						Out of range
DIER J1A - CPR WELL - GYRO						Out of range
ELKHORN CO B 3 - KPK WELL - NO SURVEYS						Out of range
ELKHORN CO UNIT 2 - KMG WELL - GYRO						Out of range
ELKHORN CO-B 6 - KPK WELL - NO SURVEYS						Out of range
ELKHORN CO-B 7 - KPK WELL - NO SURVEYS						Out of range
ELKHORN COMPANY B 2 - KMG WELL - GYRO						Out of range
FIRESTONE 20-29D - KMG WELL - SURVEYS	7,600.00	7,070.57	567.90	490.16	7.305	SF
FIRESTONE 20-29D - KMG WELL - SURVEYS	7,900.00	7,283.66	466.91	414.26	8.868	ES
FIRESTONE 20-29D - KMG WELL - SURVEYS	7,967.92	7,320.95	461.96	414.47	9.727	CC
FIRESTONE V 20-04D - KMG WELL - SURVEYS	7,770.25	7,299.08	1,374.37	1,330.60	31.400	CC
FIRESTONE V 20-04D - KMG WELL - SURVEYS	7,800.00	7,315.44	1,374.93	1,330.32	30.821	ES
FIRESTONE V 20-04D - KMG WELL - SURVEYS	8,600.00	7,595.26	1,764.06	1,682.79	21.705	SF

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

Cathedral Energy Services

Anticollision Summary Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well BIGHORN 4G-17H-P267
Project:	DJ BASIN	TVD Reference:	23' KB @ 4982.00usft
Reference Site:	BIGHORN	MD Reference:	23' KB @ 4982.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	BIGHORN 4G-17H-P267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #4	Offset TVD Reference:	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						
S17-T2N-R67W (OFFSETS)						
FIRESTONE V 20-08D - KMG WELL - SURVEYS	2,704.76	2,314.00	1,847.29	1,832.75	127.021	CC
FIRESTONE V 20-08D - KMG WELL - SURVEYS	2,800.00	2,369.13	1,848.46	1,832.26	114.067	ES
FIRESTONE V 20-08D - KMG WELL - SURVEYS	3,400.00	2,689.57	1,914.26	1,887.47	71.451	SF
FIRESTONE V 20-18D - KMG WELL - SURVEYS	7,133.91	6,682.65	1,117.36	1,012.43	10.649	CC, ES
FIRESTONE V 20-18D - KMG WELL - SURVEYS	7,300.00	6,843.05	1,134.64	1,026.87	10.528	SF
FIRESTONE V 20-2 - KMG WELL - GYRO	5,829.59	5,429.76	668.06	583.01	7.855	CC
FIRESTONE V 20-2 - KMG WELL - GYRO	5,900.00	5,492.36	668.79	582.51	7.751	ES
FIRESTONE V 20-2 - KMG WELL - GYRO	6,100.00	5,673.21	678.35	589.33	7.620	SF
FIRESTONE V 20-3 - KMG WELL - GYRO	7,358.59	6,805.63	546.76	468.75	7.009	CC
FIRESTONE V 20-3 - KMG WELL - GYRO	7,400.00	6,842.74	548.21	467.52	6.794	ES
FIRESTONE V 20-3 - KMG WELL - GYRO	7,600.00	7,016.14	595.63	503.37	6.457	SF
HOMESTEAD 22-4 - KMG WELL - SURVEYS						Out of range
HOMESTEAD 29-4 - KMG WELL - SURVEYS						Out of range
HOMESTEAD 31-4 - KMG WELL - SURVEYS						Out of range
HOMESTEAD 4-4 - KMG WELL - GYRO						Out of range
HSR-DODERO 6-4A - KMG WELL - GYRO						Out of range
HSR-MCHALE 7-5A - KMG WELL - GYRO						Out of range
HSR-RHOADES 8-5A - KMG WELL - GYRO						Out of range
HSR-SATER 1-8A - KMG WELL - GYRO						Out of range
HSR-VOGL 3-5A - KMG WELL - GYRO						Out of range
MAHONEY 1 - KPK WELL - NO SURVEYS	3,004.57	2,884.31	1,309.32	1,282.65	49.078	CC
MAHONEY 1 - KPK WELL - NO SURVEYS	3,100.00	2,969.69	1,310.02	1,281.40	45.769	ES
MAHONEY 1 - KPK WELL - NO SURVEYS	5,300.00	4,938.13	1,662.87	1,599.65	26.301	SF
MAHONEY 2 - KPK WELL - NO SURVEYS						Out of range
MAHONEY-PERRIN 2 - KPK WELL - NO SURVEYS	5,397.06	5,012.97	855.82	779.68	11.241	CC
MAHONEY-PERRIN 2 - KPK WELL - NO SURVEYS	5,400.00	5,015.60	855.82	779.62	11.232	ES
MAHONEY-PERRIN 2 - KPK WELL - NO SURVEYS	5,500.00	5,050.00	858.82	780.97	11.032	SF
MCCLAY 5-4A - KMG WELL - GYRO						Out of range
MCCOY 1 - CPR WELL - GYRO						Out of range
MCCOY 13-5 - CPR WELL - GYRO						Out of range
MCCOY 14-5 - CPR WELL - GYRO						Out of range
MCCOY 23-5 - CPR WELL - GYRO						Out of range
MCCOY 24-5 - CPR WELL - GYRO						Out of range
MCCOY 2-4-5 - CPR WELL - SURVEYS						Out of range
MCHALE 2-5 - KMG WELL - GYRO						Out of range
MCHALE UNIT 1 - KMG WELL - GYRO						Out of range
MCHALE-B 1 - AMOCO WELL - NO SURVEYS						Out of range
MERLE L MCHALE UNIT 2 - KMG WELL - GYRO						Out of range
MILLER 1 - EXTRACTION WELL - GYRO						Out of range
MILLER 11-17 - CPR WELL - SURVEYS	12,594.25	7,335.09	1,503.13	1,354.90	10.140	CC
MILLER 11-17 - CPR WELL - SURVEYS	12,700.00	12,700.00	1,504.89	1,341.39	9.204	ES, SF
MILLER 1-17 - CPR WELL - SURVEYS	12,028.25	7,528.08	36.12	-82.35	0.305	Level 1, CC, ES, SF
MILLER 12-17 - CPR WELL - SURVEYS	11,123.35	7,651.03	1,396.45	1,287.66	12.836	CC, ES
MILLER 12-17 - CPR WELL - SURVEYS	11,400.00	7,663.03	1,436.49	1,321.07	12.446	SF
MILLER 13-17 - CPR WELL - SURVEYS	9,988.93	7,402.10	1,339.86	1,252.06	15.262	CC
MILLER 13-17 - CPR WELL - SURVEYS	10,000.00	7,404.52	1,339.90	1,251.94	15.233	ES
MILLER 13-17 - CPR WELL - SURVEYS	10,500.00	7,484.71	1,431.86	1,332.09	14.352	SF
MILLER 14-17 - EXTRACTION WELL - NO SURVEYS						Out of range
MILLER 21-17 - CPR WELL - GYRO	12,693.30	7,310.06	123.34	-24.26	0.836	Level 1, CC, SF
MILLER 21-17 - CPR WELL - GYRO	12,700.00	7,310.07	123.51	-24.27	0.836	Level 1, ES
MILLER 2-17 - CPR WELL - GYRO						Out of range
MILLER 22-17 - CPR WELL - SURVEYS	11,180.60	7,706.69	105.86	-19.98	0.841	Level 1, CC, ES, SF
MILLER 23-17 - CPR WELL - SURVEYS	9,945.57	7,643.92	95.87	2.74	1.029	Level 2, CC

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

Cathedral Energy Services

Anticollision Summary Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well BIGHORN 4G-17H-P267
Project:	DJ BASIN	TVD Reference:	23' KB @ 4982.00usft
Reference Site:	BIGHORN	MD Reference:	23' KB @ 4982.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	BIGHORN 4G-17H-P267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #4	Offset TVD Reference:	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						
S17-T2N-R67W (OFFSETS)						
MILLER 23-17 - CPR WELL - SURVEYS	10,000.00	7,648.74	110.14	-0.41	0.996	Level 1, ES, SF
MILLER 24-17 - CPR WELL - GYRO	8,768.80	7,346.76	60.72	4.24	1.075	Level 2, CC
MILLER 24-17 - CPR WELL - GYRO	8,800.00	7,346.95	68.27	-13.33	0.837	Level 1, ES, SF
MILLER 2-4-17 - CPR WELL - SURVEYS	10,503.03	7,548.18	637.10	530.58	5.981	CC, ES, SF
MILLER 31-17C - EXTRACTION WELL - GYRO	12,645.20	7,373.37	1,381.25	1,234.64	9.422	CC, ES
MILLER 31-17C - EXTRACTION WELL - GYRO	12,800.00	7,374.71	1,394.04	1,244.30	9.310	SF
MILLER 3-17J - CPR WELL - GYRO	1,998.35	1,956.39	550.67	543.89	81.226	CC
MILLER 3-17J - CPR WELL - GYRO	2,000.00	1,957.95	550.67	543.89	81.156	ES
MILLER 3-17J - CPR WELL - GYRO	3,400.00	3,227.23	810.75	788.38	36.245	SF
MILLER 32-17 - EXTRACTION WELL - GYRO						Out of range
MILLER 33-17J - CPR WELL - SURVEYS	3,158.91	3,010.37	256.66	231.76	10.309	CC
MILLER 33-17J - CPR WELL - SURVEYS	3,200.00	3,046.86	257.35	231.66	10.019	ES
MILLER 33-17J - CPR WELL - SURVEYS	3,300.00	3,135.98	264.58	237.38	9.726	SF
MILLER 34-17J - CPR WELL - SURVEYS	2,947.56	2,826.74	171.61	150.79	8.242	CC, ES
MILLER 34-17J - CPR WELL - SURVEYS	3,000.00	2,873.42	173.22	151.55	7.994	SF
MILLER 41-17 - EXTRACTION WELL - GYRO						Out of range
MILLER 4-17J - CPR WELL - GYRO	8,000.00	7,242.47	1,567.18	1,482.96	18.609	SF
MILLER 4-17J - CPR WELL - GYRO	8,700.00	7,350.84	1,352.48	1,295.70	23.824	ES
MILLER 4-17J - CPR WELL - GYRO	8,737.03	7,350.98	1,351.97	1,296.03	24.170	CC
MILLER 42-17 - EXTRACTION WELL - NO SURVEYS						Out of range
MILLER 43-17 - EXTRACTION WELL - GYRO	979.56	962.59	1,072.45	1,069.22	332.709	CC
MILLER 43-17 - EXTRACTION WELL - GYRO	1,000.00	982.48	1,072.45	1,069.16	325.537	ES
MILLER 43-17 - EXTRACTION WELL - GYRO	4,000.00	3,801.72	1,910.50	1,887.20	82.015	SF
MILLER 43-17J - EXTRACTION WELL - GYRO	1,004.47	994.50	1,053.28	1,049.95	316.723	CC, ES
MILLER 43-17J - EXTRACTION WELL - GYRO	4,200.00	4,015.11	1,926.85	1,900.67	73.601	SF
MILLER 44-17J - CPR WELL - SURVEYS	2,748.29	2,647.87	162.11	144.96	9.453	CC, ES
MILLER 44-17J - CPR WELL - SURVEYS	2,800.00	2,693.42	163.90	145.90	9.104	SF
MILLER CJ 17-A - CPR WELL - SURVEYS	8,900.00	7,411.86	740.49	645.40	7.787	SF
MILLER CJ 17-A - CPR WELL - SURVEYS	9,255.09	7,424.45	649.93	574.80	8.651	CC, ES
PACE 1 - GO PUMPING & CONS WELL - NO SURVEYS	2,920.18	2,801.20	95.84	70.91	3.844	CC, ES, SF
PACE 2 - TEXAS TEA WELL - NO SURVEYS	2,382.04	2,305.44	1,243.13	1,228.76	86.481	CC
PACE 2 - TEXAS TEA WELL - NO SURVEYS	2,500.00	2,410.84	1,244.26	1,227.73	75.264	ES
PACE 2 - TEXAS TEA WELL - NO SURVEYS	5,100.00	4,737.18	1,737.64	1,681.86	31.149	SF
PACE 3 - DENVER EAST MACHINERY WELL - NO SUR	1,000.00	1,009.00	404.33	399.27	79.861	CC, ES
PACE 3 - DENVER EAST MACHINERY WELL - NO SUR	2,800.00	2,705.73	825.71	809.30	50.321	SF
PERRIN GU 1 - KMG WELL - GYRO	4,079.50	3,884.43	1,614.11	1,572.19	38.502	CC
PERRIN GU 1 - KMG WELL - GYRO	4,200.00	3,989.05	1,615.12	1,570.96	36.569	ES
PERRIN GU 1 - KMG WELL - GYRO	6,400.00	5,964.83	1,928.46	1,853.91	25.870	SF
PERRIN GU 2-20 - KMG WELL - GYRO	7,384.23	6,816.27	1,484.48	1,409.49	19.795	CC
PERRIN GU 2-20 - KMG WELL - GYRO	7,400.00	6,830.65	1,484.66	1,409.11	19.652	ES
PERRIN GU 2-20 - KMG WELL - GYRO	7,800.00	7,150.67	1,607.45	1,518.30	18.032	SF
PERRIN V 20-5D - KMG WELL - GYRO						Out of range
PERRIN V 20-7DI - KMG WELL - GYRO						Out of range
PERRIN-MAHONEY 1 - KPK WELL - NO SURVEYS						Out of range
PROMINENCE 4-8 - KMG WELL - GYRO						Out of range
RHOADES 1-5A - KMG WELL - GYRO						Out of range
ROBERT E BALDWIN 2 - KMG WELL - GYRO						Out of range
RUCA 20-1HZ - KMG - PLAN ONLY	4,729.24	4,761.57	175.07	124.45	3.459	CC
RUCA 20-1HZ - KMG - PLAN ONLY	4,800.00	4,822.61	178.69	124.26	3.283	ES
RUCA 20-1HZ - KMG - PLAN ONLY	4,900.00	4,908.89	195.20	135.44	3.266	SF
RUCA 20-2HZ - KMG - PLAN ONLY	4,600.00	4,660.29	40.61	-15.04	0.730	Level 1, ES, SF
RUCA 20-2HZ - KMG - PLAN ONLY	4,627.67	4,684.04	38.05	-13.41	0.739	Level 1, CC
RUCA 20-3HZ - KMG - PLAN ONLY	4,498.42	4,586.78	152.38	102.07	3.029	CC, ES, SF

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

Cathedral Energy Services

Anticollision Summary Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well BIGHORN 4G-17H-P267
Project:	DJ BASIN	TVD Reference:	23' KB @ 4982.00usft
Reference Site:	BIGHORN	MD Reference:	23' KB @ 4982.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	BIGHORN 4G-17H-P267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #4	Offset TVD Reference:	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						
S17-T2N-R67W (OFFSETS)						
RUCA 20-4HZ - KMG - PLAN ONLY	4,271.98	4,378.62	292.18	243.48	6.000	CC, ES, SF
RUCA 20-5HZ - KMG - PLAN ONLY	4,047.36	4,180.14	432.98	386.73	9.361	CC, ES
RUCA 20-5HZ - KMG - PLAN ONLY	4,100.00	4,223.37	434.02	387.58	9.346	SF
RUCA 20-6HZ - KMG - PLAN ONLY	3,970.85	4,116.53	606.56	561.27	13.392	CC
RUCA 20-6HZ - KMG - PLAN ONLY	4,000.00	4,140.20	606.80	561.25	13.322	ES
RUCA 20-6HZ - KMG - PLAN ONLY	4,100.00	4,221.36	611.23	565.02	13.227	SF
RUCA 20-7HZ - KMG - PLAN ONLY	3,477.36	3,643.69	818.46	780.10	21.337	CC
RUCA 20-7HZ - KMG - PLAN ONLY	3,500.00	3,661.42	818.58	779.87	21.145	ES
RUCA 20-7HZ - KMG - PLAN ONLY	3,800.00	3,903.63	842.69	800.27	19.866	SF
RUCA 20-8HZ - KMG - PLAN ONLY	3,166.35	3,363.67	959.64	926.24	28.730	CC
RUCA 20-8HZ - KMG - PLAN ONLY	3,200.00	3,388.75	959.90	925.89	28.226	ES
RUCA 20-8HZ - KMG - PLAN ONLY	3,700.00	3,761.47	1,023.44	982.71	25.128	SF
RUCA 20-9HZ - KMG - PLAN ONLY	2,971.64	3,169.60	1,084.50	1,054.51	36.156	CC
RUCA 20-9HZ - KMG - PLAN ONLY	3,000.00	3,209.82	1,084.68	1,054.02	35.383	ES
RUCA 20-9HZ - KMG - PLAN ONLY	3,700.00	3,701.88	1,194.70	1,154.14	29.455	SF
SATER 21-8 - KMG WELL - SURVEYS						Out of range
SATER 24-8 - KMG WELL - SURVEYS						Out of range
SATER 24C-5HZ - KMG WELL - SURVEYS						Out of range
SATER 24N-5HZ - KMG WELL - SURVEYS						Out of range
SATER 25C-5HZ - KMG WELL - SURVEYS						Out of range
SATER 2-8 - KMG WELL - SURVEYS						Out of range
SATER 28-8 - KMG WELL - SURVEYS						Out of range
SATER 40N-5HZ - KMG WELL - SURVEYS						Out of range
SATER 7-8 - KMG WELL - SURVEYS						Out of range
SATER 8-8 - KMG WELL - SURVEYS						Out of range
SATER ALFRED D UNIT 1 (P&A) - KMG WELL - GYRO						Out of range
SCOTT 1C-32HZ - KMG WELL - SURVEYS						Out of range
SCOTT 26N-32HZ - KMG WELL - SURVEYS						Out of range
SCOTT 27N-32HZ - KMG WELL - SURVEYS						Out of range
SCOTT 28C-32HZ - KMG WELL - SURVEYS						Out of range
SHELEY 1 - CPR WELL - GYRO						Out of range
SHELEY 14-4 - CPR WELL - GYRO						Out of range
SHELEY 24-4 - MACHII-ROSS WELL - GYRO						Out of range
SHELEY 3A-4H - CPR WELL - SURVEYS						Out of range
SHELEY 3B-4H - CPR WELL - SURVEYS						Out of range
SHELEY 4-6-4 - CPR WELL - SURVEYS						Out of range
SPRAGUE 11-9 - CPR WELL - GYRO						Out of range
SPRAGUE 13-9 - CPR WELL - GYRO						Out of range
SPRAGUE 14-9 - CPR WELL - GYRO						Out of range
SPRAGUE 24-9 - CPR WELL - GYRO						Out of range
SPRAGUE 2-4-9 - CPR WELL - SURVEYS						Out of range
SPRAGUE 2-8-9 - CPR WELL - SURVEYS						Out of range
SPRAGUE 3A-9H-N267 - CPR WELL - SURVEYS						Out of range
SPRAGUE 3AA-9H-N267 - CPR WELL - SURVEYS						Out of range
SPRAGUE 3B-9H-N267 - CPR WELL - SURVEYS						Out of range
SPRAGUE 3C-9H-N267 - CPR WELL - SURVEYS						Out of range
SPRAGUE 3D-9H-N267 - CPR WELL - SURVEYS						Out of range
SPRAGUE 3E-9H-N267 - CPR WELL - SURVEYS						Out of range
SPRAGUE 3E-9HX1-N267 - CPR WELL - SURVEYS						Out of range
SPRAGUE 3F-9H-N267 - CPR WELL - SURVEYS						Out of range
SPRAGUE 3G-9H-N267 - CPR WELL - SURVEYS						Out of range
SPRAGUE 3H-9H-N267 - CPR WELL - SURVEYS						Out of range
SPRAGUE 3I-9H-N267 - CPR WELL - SURVEYS						Out of range

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

Cathedral Energy Services

Anticollision Summary Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well BIGHORN 4G-17H-P267
Project:	DJ BASIN	TVD Reference:	23' KB @ 4982.00usft
Reference Site:	BIGHORN	MD Reference:	23' KB @ 4982.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	BIGHORN 4G-17H-P267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #4	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
S17-T2N-R67W (OFFSETS)						
SPRAGUE 3J-9H-N267 - CPR WELL - SURVEYS						Out of range
SPRAGUE 4-6-9 - CPR WELL - SURVEYS						Out of range
SPRAGUE 4-8-9 - CPR WELL - SURVEYS						Out of range
STANLEY #2 - GERRITY WELL - NO SURVEYS	1,000.00	1,037.00	1,506.31	1,501.15	291.745	CC, ES
STANLEY #2 - GERRITY WELL - NO SURVEYS	2,800.00	2,740.27	1,925.89	1,908.29	109.428	SF
STANLEY 3 - GERRITY WELL - NO SURVEYS						Out of range
TEETS PERRIN 1 - KPK WELL - NO SURVEYS						Out of range
TEETS-PERRIN 2 - KPK WELL - NO SURVEYS	6,011.43	5,100.00	1,063.92	1,022.84	25.895	CC, ES, SF
TEETS-PERRIN 3 - KPK WELL - NO SURVEYS						Out of range
TEETS-PERRIN 4 - KPK WELL - NO SURVEYS						Out of range
TEETS-PERRIN 5 - KPK WELL - NO SURVEYS	5,584.76	4,711.00	1,107.97	1,067.63	27.461	CC, ES
TEETS-PERRIN 5 - KPK WELL - NO SURVEYS	5,600.00	4,711.00	1,108.08	1,067.71	27.448	SF
TOWNSEND 33-5 - CPR WELL - GYRO						Out of range
TOWNSEND 34-5 - CPR WELL - GYRO						Out of range
TOWNSEND 43-5 - CPR WELL - GYRO						Out of range
TOWNSEND 44-5 - CPR WELL - GYRO						Out of range
VOGL 21-5 - KMG WELL - SURVEYS						Out of range
VOGL 21-5X - KMG WELL - SURVEYS						Out of range
VOGL 5-5 - KMG WELL - GYRO						Out of range
VOGL 5-8A - KMG WELL - GYRO						Out of range
VOGL 6-5A - KMG WELL - GYRO						Out of range
VOGL GEIST 2A-5H-E267 - CPR WELL - SURVEYS						Out of range
VOGL GEIST 2B-5H-E267 - CPR WELL - SURVEYS						Out of range
VOGL GEIST 2C-5H-E267 - CPR WELL - SURVEYS						Out of range
VOGL GEIST 2D-5H-F267 - CPR WELL - SURVEYS						Out of range
VOGL GEIST 2E-5H-F267 - CPR WELL - SURVEYS						Out of range
VOGL GEIST 2F-5H-F267 - CPR WELL - SURVEYS						Out of range
VOGL MCCOY 2A-5H-E267 - CPR WELL - SURVEYS	13,527.21	14,819.00	1,722.07	1,428.34	5.863	CC, ES, SF
VOGL MCCOY 2B-5H-E267 - CPR WELL - SURVEYS	13,527.21	14,846.00	1,404.45	1,114.34	4.841	CC, ES, SF
VOGL MCCOY 2C-5H-E267 - CPR WELL - SURVEYS	13,527.21	14,648.00	1,065.24	776.34	3.687	CC, ES, SF
VOGL MCCOY 2D-5H-E267 - CPR WELL - SURVEYS	13,527.21	15,056.00	725.50	453.08	2.663	CC, ES, SF
VOGL MCCOY 2E-5H-F267 - CPR WELL - SURVEYS	13,527.21	14,740.00	437.06	167.38	1.621	CC, ES, SF
VOGL MCCOY 2F-5H-F267 - CPR WELL - SURVEYS	13,527.21	15,187.00	256.91	118.55	1.857	CC, ES, SF
VOGL MCCOY 2G-5H-F267 - CPR WELL - SURVEYS	13,527.21	14,805.00	354.41	99.01	1.388	Level 3, CC, ES, SF
VOGL MCCOY 2H-5H-F267 - CPR WELL - SURVEYS	13,527.21	15,000.00	707.45	427.98	2.531	CC, ES, SF

Cathedral Energy Services

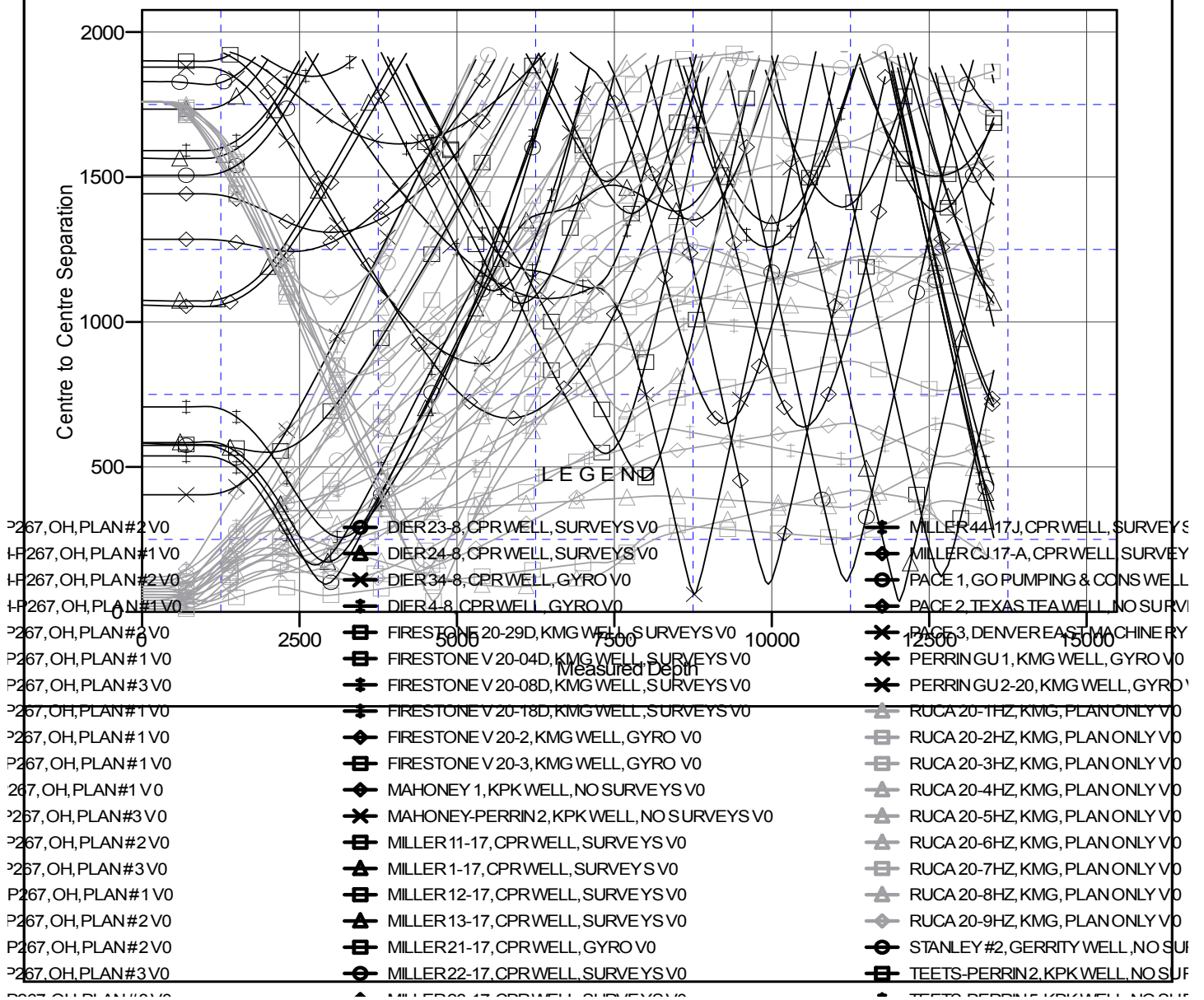
Anticollision Summary Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well BIGHORN 4G-17H-P267
Project:	DJ BASIN	TVD Reference:	23' KB @ 4982.00usft
Reference Site:	BIGHORN	MD Reference:	23' KB @ 4982.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	BIGHORN 4G-17H-P267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #4	Offset TVD Reference:	Offset Datum

Reference Depths are relative to 23' KB @ 4982.00usft
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000

Coordinates are relative to: BIGHORN 4G-17H-P267
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.38°

Ladder Plot



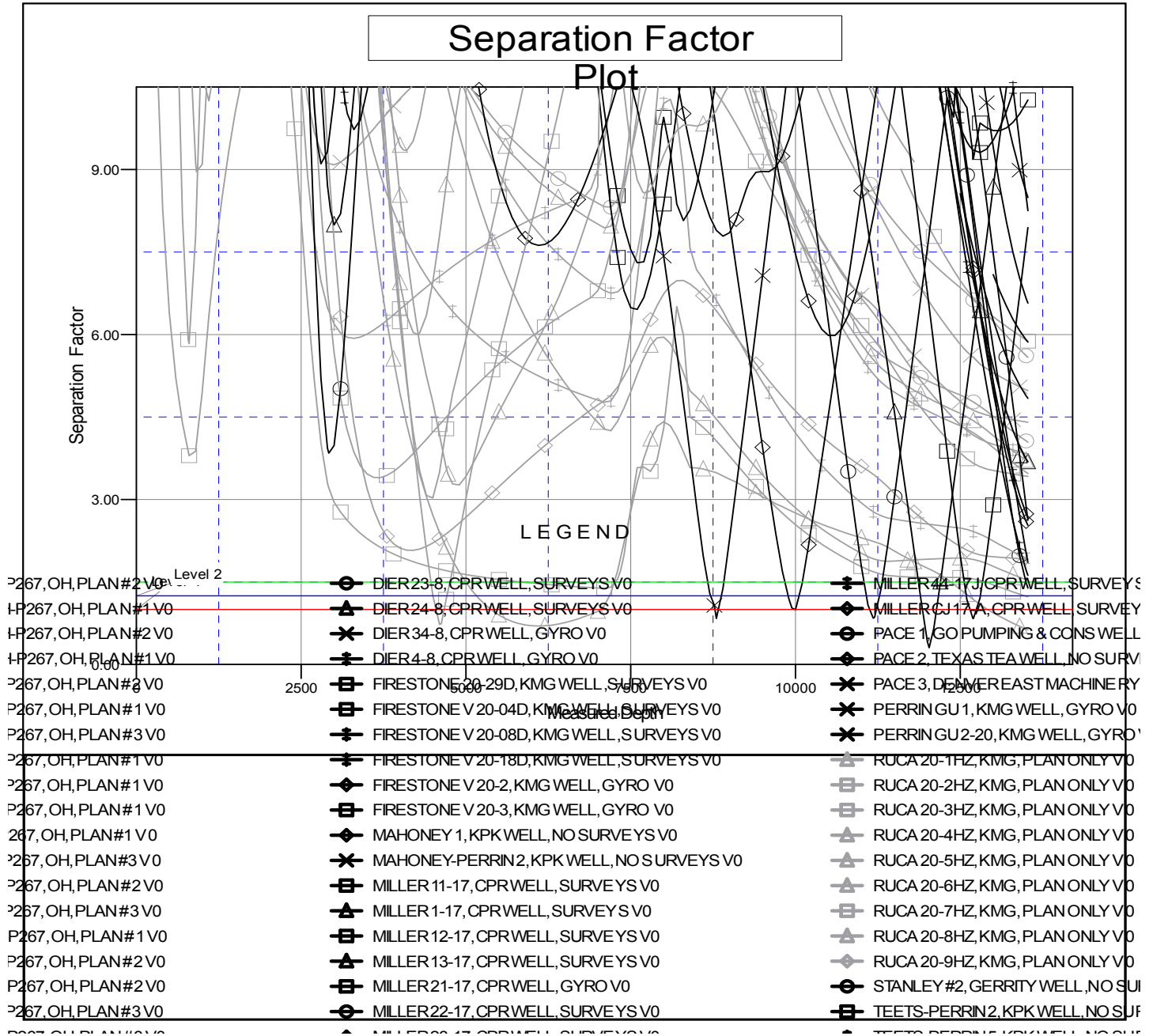
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Cathedral Energy Services
Anticollision Summary Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well BIGHORN 4G-17H-P267
Project:	DJ BASIN	TVD Reference:	23' KB @ 4982.00usft
Reference Site:	BIGHORN	MD Reference:	23' KB @ 4982.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	BIGHORN 4G-17H-P267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #4	Offset TVD Reference:	Offset Datum

Reference Depths are relative to 23' KB @ 4982.00usft
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000

Coordinates are relative to: BIGHORN 4G-17H-P267
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.38°



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