

Crestone Peak Resources

DJ BASIN

BIGHORN

BIGHORN 4M-17H-P267

OH

PLAN #1

Anticollision Summary Report

12 April, 2018

Cathedral Energy Services

Anticollision Summary Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well BIGHORN 4M-17H-P267
Project:	DJ BASIN	TVD Reference:	23' KB @ 4983.00usft
Reference Site:	BIGHORN	MD Reference:	23' KB @ 4983.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	BIGHORN 4M-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 #1	Offset TVD Reference:	Offset Datum

Reference	PLAN #1		
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 2,237.05 usft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program	Date	4/12/2018		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	2,000.00	PLAN #1 (OH)	VESSI_GYROFLEX	VESSI Gyroflex Gyro
2,001.00	15,596.08	PLAN #1 (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	698.28	688.89	110.64	108.40	49.412	CC
BIGHORN 4A-17H-P267 - OH - PLAN #2	700.00	690.54	110.64	108.39	49.278	ES
BIGHORN 4A-17H-P267 - OH - PLAN #2	6,800.00	6,359.25	2,058.11	1,977.84	25.640	SF
BIGHORN 4AA-17H-P267 - OH - PLAN #1	200.00	199.00	149.87	149.39	311.124	CC, ES
BIGHORN 4AA-17H-P267 - OH - PLAN #1	6,200.00	5,648.71	2,235.95	2,171.17	34.516	SF
BIGHORN 4AB-17H-P267 - OH - PLAN #2	335.93	333.20	139.84	138.88	146.272	CC, ES
BIGHORN 4AB-17H-P267 - OH - PLAN #2	6,200.00	5,627.25	2,226.84	2,152.04	29.771	SF
BIGHORN 4AC-17H-P267 - OH - PLAN #1	587.47	578.30	125.88	124.04	68.309	CC
BIGHORN 4AC-17H-P267 - OH - PLAN #1	600.00	590.30	125.89	124.01	66.710	ES
BIGHORN 4AC-17H-P267 - OH - PLAN #1	6,600.00	6,061.53	2,215.40	2,139.02	29.006	SF
BIGHORN 4B-17H-P267 - OH - PLAN #2	809.45	801.73	95.83	93.18	36.250	CC, ES
BIGHORN 4B-17H-P267 - OH - PLAN #2	1,600.00	1,584.94	129.01	123.41	23.044	SF
BIGHORN 4C-17H-P267 - OH - PLAN #1	976.25	960.45	89.20	85.86	26.730	CC, ES
BIGHORN 4C-17H-P267 - OH - PLAN #1	1,300.00	1,275.44	104.44	99.89	22.915	SF
BIGHORN 4D-17H-P267 - OH - PLAN #2	733.95	729.01	78.88	76.51	33.211	CC, ES
BIGHORN 4D-17H-P267 - OH - PLAN #2	15,596.08	16,076.32	2,180.02	1,736.01	4.910	SF
BIGHORN 4E-17H-P267 - OH - PLAN #1	546.50	540.11	77.96	76.25	45.574	CC
BIGHORN 4E-17H-P267 - OH - PLAN #1	600.00	592.25	78.06	76.16	41.013	ES
BIGHORN 4E-17H-P267 - OH - PLAN #1	13,500.00	13,528.64	2,067.24	1,745.35	6.422	SF
BIGHORN 4F-17H-P267 - OH - PLAN #1	666.24	662.82	62.83	60.70	29.453	CC, ES
BIGHORN 4F-17H-P267 - OH - PLAN #1	13,400.00	13,738.15	1,884.40	1,564.21	5.885	SF
BIGHORN 4G-17H-P267 - OH - PLAN #2	624.50	621.63	54.76	52.78	27.608	CC, ES
BIGHORN 4G-17H-P267 - OH - PLAN #2	15,596.08	15,879.77	1,601.53	1,157.54	3.607	SF
BIGHORN 4H-17H-P267 - OH - PLAN #1	852.16	844.39	40.89	38.05	14.390	CC
BIGHORN 4H-17H-P267 - OH - PLAN #1	900.00	891.55	40.97	37.95	13.570	ES
BIGHORN 4H-17H-P267 - OH - PLAN #1	12,600.00	12,490.74	1,239.78	966.61	4.538	SF
BIGHORN 4I-17H-P267 - OH - PLAN #1	648.76	645.40	34.95	32.87	16.856	CC
BIGHORN 4I-17H-P267 - OH - PLAN #1	700.00	696.21	35.13	32.87	15.555	ES
BIGHORN 4I-17H-P267 - OH - PLAN #1	13,300.00	13,444.66	997.73	678.29	3.123	SF
BIGHORN 4J-17H-P267 - OH - PLAN #3	421.45	419.97	29.36	28.10	23.292	CC, ES
BIGHORN 4J-17H-P267 - OH - PLAN #3	15,596.08	15,620.25	730.16	387.88	2.133	SF
BIGHORN 4K-17H-P267 - OH - PLAN #2	273.47	272.45	19.80	19.07	26.811	CC
BIGHORN 4K-17H-P267 - OH - PLAN #2	400.00	401.27	20.11	18.92	16.902	ES
BIGHORN 4K-17H-P267 - OH - PLAN #2	15,500.00	15,363.22	507.26	102.49	1.253	Level 3, SF
BIGHORN 4L-17H-P267 - OH - PLAN #2	257.34	257.33	10.03	9.34	14.662	CC
BIGHORN 4L-17H-P267 - OH - PLAN #2	15,596.08	15,495.70	205.13	-117.31	0.636	Level 1, 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 4M-17H-P267
Project:	DJ BASIN	TVD Reference:	23' KB @ 4983.00usft
Reference Site:	BIGHORN	MD Reference:	23' KB @ 4983.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	BIGHORN 4M-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 #1	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 4N-17H-P267 - OH - PLAN #2	200.00	200.00	10.07	9.58	20.820	CC
BIGHORN 4N-17H-P267 - OH - PLAN #2	14,500.00	14,270.34	332.55	-16.05	0.954	Level 1, ES, SF
BIGHORN 4O-17H-P267 - OH - PLAN #2	200.00	200.00	20.13	19.65	41.641	CC, ES
BIGHORN 4O-17H-P267 - OH - PLAN #2	15,596.08	15,307.70	624.27	201.57	1.477	Level 3, SF
BIGHORN 4P-17H-P267 - OH - PLAN #2	200.00	200.00	29.92	29.43	61.883	CC
BIGHORN 4P-17H-P267 - OH - PLAN #2	300.00	300.04	30.09	29.26	36.101	ES
BIGHORN 4P-17H-P267 - OH - PLAN #2	15,100.00	14,777.65	930.70	515.93	2.244	SF
BIGHORN 4Q-17H-P267 - OH - PLAN #2	200.00	200.00	39.98	39.50	82.706	CC
BIGHORN 4Q-17H-P267 - OH - PLAN #2	300.00	300.05	40.28	39.44	48.335	ES
BIGHORN 4Q-17H-P267 - OH - PLAN #2	15,596.08	15,531.47	1,239.16	788.95	2.752	SF
BIGHORN 4R-17H-P267 - OH - PLAN #2	200.00	200.00	50.05	49.57	103.526	CC
BIGHORN 4R-17H-P267 - OH - PLAN #2	300.00	299.95	50.33	49.49	60.412	ES
BIGHORN 4R-17H-P267 - OH - PLAN #2	15,596.08	15,275.09	1,531.11	1,086.02	3.440	SF
BIGHORN 4S-17H-P267 - OH - PLAN #3	200.00	200.00	60.12	59.63	124.346	CC, ES
BIGHORN 4S-17H-P267 - OH - PLAN #3	15,596.08	15,360.33	1,844.60	1,496.37	5.297	SF

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Reference Well:	BIGHORN 4M-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 #1	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	324.96	338.08	1,503.88	1,502.92	1,560.699	CC, ES
ALVIN STATE 1 - PDC WELL - GYRO	4,900.00	4,835.44	2,223.52	2,198.92	90.394	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	200.00	190.00	1,686.72	1,685.98	2,295.991	CC, ES
DECHANT 7 - KPK WELL - NO SURVEYS	2,800.00	2,724.09	2,233.17	2,218.78	155.156	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	257.67	288.43	1,840.62	1,839.88	2,474.670	CC
DECHANT STATE GAS U 9 - KMG WELL - GYRO	300.00	330.92	1,840.65	1,839.76	2,062.512	ES
DECHANT STATE GAS U 9 - KMG WELL - GYRO	2,900.00	2,909.49	2,227.51	2,216.22	197.339	SF
DECHANT STATE V 16-11JI - KMG WELL - GYRO						Out of range
DECHANT STATE V 16-12JI - KMG WELL - GYRO	209.03	210.13	1,783.69	1,783.16	3,366.495	CC, ES
DECHANT STATE V 16-12JI - KMG WELL - GYRO	2,400.00	2,295.07	2,211.74	2,203.83	279.484	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	323.75	325.66	1,531.94	1,530.51	1,066.385	CC, ES
DECHANT-STATE 3 - KPK WELL - NO SURVEYS	4,700.00	4,577.76	2,221.67	2,189.83	69.775	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	14,965.09	7,512.76	1,102.22	881.94	5.004	CC
DIER 1 - CPR WELL - GYRO	15,000.00	7,512.70	1,102.77	881.69	4.988	ES, SF
DIER 13-8 - CPR WELL - SURVEYS						Out of range
DIER 14-8 - CPR WELL - SURVEYS						Out of range
DIER 23-8 - CPR WELL - SURVEYS	15,017.52	7,608.24	1,345.70	1,121.63	6.006	CC, ES
DIER 23-8 - CPR WELL - SURVEYS	15,100.00	7,603.00	1,348.22	1,122.06	5.961	SF
DIER 24-8 - CPR WELL - SURVEYS	13,482.09	7,698.73	1,394.83	1,209.79	7.538	CC
DIER 24-8 - CPR WELL - SURVEYS	13,500.00	7,697.83	1,394.95	1,209.36	7.517	ES
DIER 24-8 - CPR WELL - SURVEYS	13,700.00	7,689.96	1,411.71	1,221.95	7.439	SF
DIER 33-8 - CPR WELL - GYRO	14,951.80	7,454.15	253.19	33.35	1.152	Level 2, CC, ES, SF
DIER 34-8 - CPR WELL - GYRO	13,525.67	7,457.57	510.17	329.14	2.818	CC, ES, SF
DIER 44-8 - CPR WELL - GYRO	13,377.49	7,433.78	1,235.41	1,058.68	6.990	CC
DIER 44-8 - CPR WELL - GYRO	13,400.00	7,433.27	1,235.62	1,058.31	6.969	ES
DIER 44-8 - CPR WELL - GYRO	13,500.00	7,430.98	1,241.47	1,062.28	6.928	SF
DIER 4-4-8 - CPR WELL - SURVEYS	15,525.50	7,514.28	835.93	594.55	3.463	CC, ES
DIER 4-4-8 - CPR WELL - SURVEYS	15,596.08	7,515.41	838.91	595.90	3.452	SF
DIER 4-8 - CPR WELL - GYRO	14,069.47	7,442.53	1,921.22	1,725.52	9.817	CC
DIER 4-8 - CPR WELL - GYRO	14,100.00	7,442.60	1,921.47	1,724.94	9.777	ES
DIER 4-8 - CPR WELL - GYRO	14,300.00	7,443.04	1,935.00	1,734.20	9.636	SF
DIER 8-4-8 - CPR WELL - SURVEYS	15,526.24	7,530.43	1,717.51	1,476.67	7.131	CC
DIER 8-4-8 - CPR WELL - SURVEYS	15,596.08	7,532.45	1,718.93	1,476.24	7.083	ES, SF
DIER 8-6-8 - CPR WELL - SURVEYS	14,229.54	7,647.33	1,726.74	1,518.30	8.284	CC
DIER 8-6-8 - CPR WELL - SURVEYS	14,300.00	7,647.06	1,728.18	1,518.25	8.232	ES
DIER 8-6-8 - CPR WELL - SURVEYS	14,400.00	7,646.68	1,735.14	1,523.64	8.204	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 4M-17H-P267
Project:	DJ BASIN	TVD Reference:	23' KB @ 4983.00usft
Reference Site:	BIGHORN	MD Reference:	23' KB @ 4983.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	BIGHORN 4M-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 #1	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)						
DIER J1A - CPR WELL - GYRO	14,082.70	7,478.06	385.77	189.56	1.966	CC, ES
DIER J1A - CPR WELL - GYRO	14,100.00	7,477.86	386.15	189.70	1.966	SF
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	1,513.92	1,511.48	2,174.04	2,166.11	274.218	CC
ELKHORN CO-B 6 - KPK WELL - NO SURVEYS	1,700.00	1,708.15	2,174.52	2,165.53	241.855	ES
ELKHORN CO-B 6 - KPK WELL - NO SURVEYS	3,600.00	3,533.53	2,233.72	2,208.56	88.787	SF
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	7,400.00	7,240.78	1,866.01	1,814.48	36.214	SF
FIRESTONE 20-29D - KMG WELL - SURVEYS	7,693.52	7,455.31	1,844.31	1,793.89	36.583	CC, ES
FIRESTONE V 20-04D - KMG WELL - SURVEYS						Out of range
FIRESTONE V 20-08D - KMG WELL - SURVEYS	2,699.49	2,355.21	1,654.54	1,645.11	175.558	CC
FIRESTONE V 20-08D - KMG WELL - SURVEYS	2,700.00	2,355.54	1,654.54	1,645.11	175.500	ES
FIRESTONE V 20-08D - KMG WELL - SURVEYS	7,100.00	7,067.96	2,113.21	2,059.04	39.015	SF
FIRESTONE V 20-18D - KMG WELL - SURVEYS	7,065.92	6,985.43	1,249.30	1,207.74	30.057	CC, ES
FIRESTONE V 20-18D - KMG WELL - SURVEYS	7,200.00	7,117.75	1,260.06	1,217.74	29.778	SF
FIRESTONE V 20-2 - KMG WELL - GYRO	7,114.33	6,913.14	410.11	364.76	9.042	CC, ES, SF
FIRESTONE V 20-3 - KMG WELL - GYRO	7,100.00	6,927.40	1,509.84	1,472.05	39.958	SF
FIRESTONE V 20-3 - KMG WELL - GYRO	7,237.37	7,056.99	1,503.49	1,466.00	40.104	CC, ES
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	4,858.68	4,726.58	959.39	919.97	24.339	CC
MAHONEY 1 - KPK WELL - NO SURVEYS	5,000.00	4,863.55	960.02	919.00	23.406	ES
MAHONEY 1 - KPK WELL - NO SURVEYS	5,300.00	5,042.00	972.02	928.37	22.270	SF
MAHONEY 2 - KPK WELL - NO SURVEYS	5,497.16	5,100.00	2,132.19	2,088.99	49.354	CC
MAHONEY 2 - KPK WELL - NO SURVEYS	5,500.00	5,100.00	2,132.20	2,088.98	49.334	ES
MAHONEY 2 - KPK WELL - NO SURVEYS	5,800.00	5,100.00	2,153.59	2,108.85	48.133	SF
MAHONEY-PERRIN 2 - KPK WELL - NO SURVEYS	5,391.04	5,050.00	752.00	719.96	23.469	CC, ES, 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	11,955.69	7,485.00	764.21	625.58	5.513	CC, ES
MILLER 1 - EXTRACTION WELL - GYRO	12,000.00	7,484.82	765.49	625.98	5.487	SF
MILLER 11-17 - CPR WELL - SURVEYS						Out of range
MILLER 1-17 - CPR WELL - SURVEYS	11,856.23	6,779.11	1,292.44	1,171.58	10.693	CC
MILLER 1-17 - CPR WELL - SURVEYS	11,900.00	6,774.93	1,293.17	1,171.49	10.628	ES
MILLER 1-17 - CPR WELL - SURVEYS	12,000.00	6,759.00	1,300.26	1,177.43	10.586	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 4M-17H-P267
Project:	DJ BASIN	TVD Reference:	23' KB @ 4983.00usft
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Site Error:	0.00 usft	North Reference:	True
Reference Well:	BIGHORN 4M-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 #1	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 12-17 - CPR WELL - SURVEYS						Out of range
MILLER 13-17 - CPR WELL - SURVEYS						Out of range
MILLER 14-17 - EXTRACTION WELL - NO SURVEYS						Out of range
MILLER 21-17 - CPR WELL - GYRO	12,351.07	7,464.01	1,628.07	1,478.90	10.914	CC, ES
MILLER 21-17 - CPR WELL - GYRO	12,600.00	7,464.57	1,644.34	1,489.51	10.621	SF
MILLER 2-17 - CPR WELL - GYRO	11,343.19	7,488.73	756.14	633.87	6.184	CC, ES
MILLER 2-17 - CPR WELL - GYRO	11,400.00	7,487.66	758.27	634.87	6.145	SF
MILLER 22-17 - CPR WELL - SURVEYS	10,827.12	7,965.79	1,475.57	1,348.92	11.651	CC
MILLER 22-17 - CPR WELL - SURVEYS	10,900.00	7,958.91	1,477.36	1,348.73	11.486	ES
MILLER 22-17 - CPR WELL - SURVEYS	11,100.00	7,940.36	1,500.38	1,367.66	11.305	SF
MILLER 23-17 - CPR WELL - SURVEYS	9,500.00	9,500.00	1,428.62	1,330.05	14.493	SF
MILLER 23-17 - CPR WELL - SURVEYS	9,641.72	7,891.52	1,421.58	1,325.84	14.848	CC, ES
MILLER 24-17 - CPR WELL - GYRO	8,450.31	7,478.50	1,406.80	1,353.49	26.390	CC, ES
MILLER 24-17 - CPR WELL - GYRO	8,900.00	7,480.31	1,476.93	1,418.43	25.250	SF
MILLER 2-4-17 - CPR WELL - SURVEYS	10,142.65	7,706.38	2,196.85	2,089.83	20.526	CC
MILLER 2-4-17 - CPR WELL - SURVEYS	10,200.00	7,706.19	2,197.60	2,089.22	20.277	ES
MILLER 2-4-17 - CPR WELL - SURVEYS	10,500.00	7,705.19	2,225.73	2,111.12	19.420	SF
MILLER 31-17C - EXTRACTION WELL - GYRO	12,300.92	7,449.25	129.29	-18.54	0.875	Level 1, CC, ES, SF
MILLER 3-17J - CPR WELL - GYRO	9,027.72	7,478.91	533.28	468.87	8.279	CC, ES
MILLER 3-17J - CPR WELL - GYRO	9,100.00	7,480.14	538.16	471.81	8.111	SF
MILLER 32-17 - EXTRACTION WELL - GYRO						Out of range
MILLER 33-17J - CPR WELL - SURVEYS	9,675.74	7,765.95	279.32	186.18	2.999	CC, ES
MILLER 33-17J - CPR WELL - SURVEYS	9,700.00	7,766.70	280.37	186.38	2.983	SF
MILLER 34-17J - CPR WELL - SURVEYS	8,234.61	7,574.38	77.34	24.21	1.456	Level 3, CC, ES, SF
MILLER 41-17 - EXTRACTION WELL - GYRO						Out of range
MILLER 4-17J - CPR WELL - GYRO						Out of range
MILLER 42-17 - EXTRACTION WELL - NO SURVEYS						Out of range
MILLER 43-17 - EXTRACTION WELL - GYRO	204.11	188.39	1,062.47	1,061.98	2,156.819	CC, ES
MILLER 43-17 - EXTRACTION WELL - GYRO	5,300.00	5,056.00	2,123.82	2,100.53	91.161	SF
MILLER 43-17J - EXTRACTION WELL - GYRO	9,686.56	7,472.75	1,024.56	944.91	12.864	CC
MILLER 43-17J - EXTRACTION WELL - GYRO	9,700.00	7,472.77	1,024.65	944.65	12.808	ES
MILLER 43-17J - EXTRACTION WELL - GYRO	9,900.00	7,473.04	1,046.55	962.51	12.452	SF
MILLER 44-17J - CPR WELL - SURVEYS	2,417.42	2,357.84	382.07	373.00	42.101	CC, ES
MILLER 44-17J - CPR WELL - SURVEYS	8,800.00	7,487.22	1,512.47	1,450.02	24.221	SF
MILLER CJ 17-A - CPR WELL - SURVEYS	8,907.52	7,619.15	1,982.90	1,908.57	26.679	CC, ES
MILLER CJ 17-A - CPR WELL - SURVEYS	9,700.00	7,640.73	2,135.25	2,047.57	24.354	SF
PACE 1 - GO PUMPING & CONS WELL - NO SURVEYS	2,991.59	2,906.79	164.54	145.94	8.848	CC
PACE 1 - GO PUMPING & CONS WELL - NO SURVEYS	3,000.00	2,914.95	164.56	145.87	8.807	ES
PACE 1 - GO PUMPING & CONS WELL - NO SURVEYS	3,200.00	3,108.81	172.34	151.82	8.399	SF
PACE 2 - TEXAS TEA WELL - NO SURVEYS	200.00	175.00	1,327.55	1,326.87	1,974.108	CC, ES
PACE 2 - TEXAS TEA WELL - NO SURVEYS	5,300.00	5,050.00	1,838.11	1,799.39	47.468	SF
PACE 3 - DENVER EAST MACHINERY WELL - NO SUR	428.58	418.21	347.50	345.55	178.423	CC, ES
PACE 3 - DENVER EAST MACHINERY WELL - NO SUR	5,100.00	4,953.48	1,248.62	1,217.29	39.854	SF
PERRIN GU 1 - KMG WELL - GYRO	6,900.00	6,745.57	1,061.86	1,011.39	21.036	CC, ES
PERRIN GU 1 - KMG WELL - GYRO	7,000.00	6,837.81	1,068.63	1,017.47	20.891	SF
PERRIN GU 2-20 - KMG WELL - GYRO						Out of range
PERRIN V 20-5D - KMG WELL - GYRO						Out of range
PERRIN V 20-7DI - KMG WELL - GYRO	7,002.03	6,857.08	1,913.45	1,872.14	46.320	CC, ES
PERRIN V 20-7DI - KMG WELL - GYRO	7,200.00	7,023.15	1,941.99	1,899.38	45.575	SF
PERRIN-MAHONEY 1 - KPK WELL - NO SURVEYS	5,631.79	5,100.00	2,011.74	1,971.93	50.536	CC, ES
PERRIN-MAHONEY 1 - KPK WELL - NO SURVEYS	5,900.00	5,100.00	2,029.54	1,988.80	49.812	SF
PROMINENCE 4-8 - KMG WELL - GYRO						Out of range
RHOADES 1-5A - KMG WELL - GYRO						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 4M-17H-P267
Project:	DJ BASIN	TVD Reference:	23' KB @ 4983.00usft
Reference Site:	BIGHORN	MD Reference:	23' KB @ 4983.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	BIGHORN 4M-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 #1	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)						
ROBERT E BALDWIN 2 - KMG WELL - GYRO						Out of range
RUCA 20-1HZ - KMG - PLAN ONLY	3,889.35	3,935.87	668.08	632.94	19.013	CC
RUCA 20-1HZ - KMG - PLAN ONLY	7,703.69	8,091.87	683.34	614.10	9.869	ES
RUCA 20-1HZ - KMG - PLAN ONLY	7,800.00	8,028.09	687.20	617.48	9.856	SF
RUCA 20-2HZ - KMG - PLAN ONLY	7,896.25	7,989.58	361.75	292.91	5.255	CC
RUCA 20-2HZ - KMG - PLAN ONLY	7,900.00	7,986.97	361.76	292.87	5.251	ES, SF
RUCA 20-3HZ - KMG - PLAN ONLY	7,709.91	7,980.68	164.62	97.60	2.456	CC, ES, SF
RUCA 20-4HZ - KMG - PLAN ONLY	7,611.15	7,950.85	85.74	20.02	1.305	Level 3, CC, ES, SF
RUCA 20-5HZ - KMG - PLAN ONLY	4,060.29	4,172.83	55.48	19.41	1.538	CC, ES, SF
RUCA 20-6HZ - KMG - PLAN ONLY	4,166.34	4,280.42	112.78	76.28	3.090	CC, ES, SF
RUCA 20-7HZ - KMG - PLAN ONLY	3,860.80	3,979.27	416.49	382.92	12.409	CC, ES
RUCA 20-7HZ - KMG - PLAN ONLY	4,000.00	4,101.86	422.74	387.97	12.157	SF
RUCA 20-8HZ - KMG - PLAN ONLY	3,565.18	3,703.74	622.44	591.70	20.246	CC
RUCA 20-8HZ - KMG - PLAN ONLY	3,600.00	3,725.27	622.74	591.64	20.025	ES
RUCA 20-8HZ - KMG - PLAN ONLY	8,500.00	7,500.00	1,337.16	1,264.31	18.355	SF
RUCA 20-9HZ - KMG - PLAN ONLY	3,389.99	3,511.00	783.96	755.26	27.314	CC
RUCA 20-9HZ - KMG - PLAN ONLY	3,400.00	3,519.27	783.98	755.16	27.201	ES
RUCA 20-9HZ - KMG - PLAN ONLY	8,600.00	7,400.00	1,620.57	1,546.43	21.859	SF
SATER 21-8 - KMG WELL - SURVEYS	15,596.08	7,578.81	1,586.67	1,449.89	11.600	CC, ES, SF
SATER 24-8 - KMG WELL - SURVEYS	15,596.08	7,619.23	477.83	239.03	2.001	CC, ES, SF
SATER 24C-5HZ - KMG WELL - SURVEYS	15,596.08	7,493.40	806.72	569.61	3.402	CC, ES, SF
SATER 24N-5HZ - KMG WELL - SURVEYS	15,596.08	7,374.57	381.05	245.46	2.810	CC, ES, SF
SATER 25C-5HZ - KMG WELL - SURVEYS	15,596.08	7,341.55	678.84	446.98	2.928	CC, ES, SF
SATER 2-8 - KMG WELL - SURVEYS	15,596.08	7,851.94	2,002.54	1,944.15	34.297	CC, ES, SF
SATER 28-8 - KMG WELL - SURVEYS						Out of range
SATER 40N-5HZ - KMG WELL - SURVEYS	15,596.08	7,343.00	1,282.09	1,047.15	5.457	CC, ES, SF
SATER 7-8 - KMG WELL - SURVEYS	15,596.08	7,497.50	623.45	497.95	4.968	CC, ES, SF
SATER 8-8 - KMG WELL - SURVEYS	15,596.08	7,883.99	1,346.59	1,130.65	6.236	CC, ES, SF
SATER ALFRED D UNIT 1 (P&A) - KMG WELL - GYRO	15,596.08	7,425.07	1,060.92	985.60	14.085	CC, ES, SF
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	15,596.08	9,878.56	2,136.48	1,865.60	7.887	CC, ES, SF
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

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 4M-17H-P267
Project:	DJ BASIN	TVD Reference:	23' KB @ 4983.00usft
Reference Site:	BIGHORN	MD Reference:	23' KB @ 4983.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	BIGHORN 4M-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 #1	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)						
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
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	330.08	365.99	1,446.99	1,445.40	910.742	CC, ES
STANLEY #2 - GERRITY WELL - NO SURVEYS	5,200.00	5,103.59	2,230.45	2,194.37	61.813	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	5,664.90	5,100.00	1,805.61	1,768.96	49.270	CC, ES
TEETS-PERRIN 2 - KPK WELL - NO SURVEYS	5,800.00	5,100.00	1,810.65	1,773.66	48.941	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	5,254.98	4,711.00	1,714.69	1,682.32	52.961	CC, ES
TEETS-PERRIN 5 - KPK WELL - NO SURVEYS	5,400.00	4,711.00	1,720.81	1,688.11	52.621	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						Out of range
VOGL MCCOY 2B-5H-E267 - CPR WELL - SURVEYS						Out of range
VOGL MCCOY 2C-5H-E267 - CPR WELL - SURVEYS						Out of range
VOGL MCCOY 2D-5H-E267 - CPR WELL - SURVEYS						Out of range
VOGL MCCOY 2E-5H-F267 - CPR WELL - SURVEYS	13,425.61	14,740.00	1,957.45	1,654.72	6.466	CC, ES
VOGL MCCOY 2E-5H-F267 - CPR WELL - SURVEYS	15,596.08	12,546.91	2,028.64	1,705.48	6.277	SF
VOGL MCCOY 2F-5H-F267 - CPR WELL - SURVEYS	14,751.83	13,859.00	1,616.02	1,299.83	5.111	CC
VOGL MCCOY 2F-5H-F267 - CPR WELL - SURVEYS	14,800.00	13,835.94	1,616.42	1,299.49	5.100	ES
VOGL MCCOY 2F-5H-F267 - CPR WELL - SURVEYS	15,596.08	13,013.31	1,638.03	1,313.70	5.050	SF
VOGL MCCOY 2G-5H-F267 - CPR WELL - SURVEYS	15,596.08	12,563.93	1,244.24	927.56	3.929	CC, ES, SF
VOGL MCCOY 2H-5H-F267 - CPR WELL - SURVEYS	15,519.96	12,983.39	916.66	592.91	2.831	CC
VOGL MCCOY 2H-5H-F267 - CPR WELL - SURVEYS	15,596.08	12,917.27	917.32	592.63	2.825	ES, SF

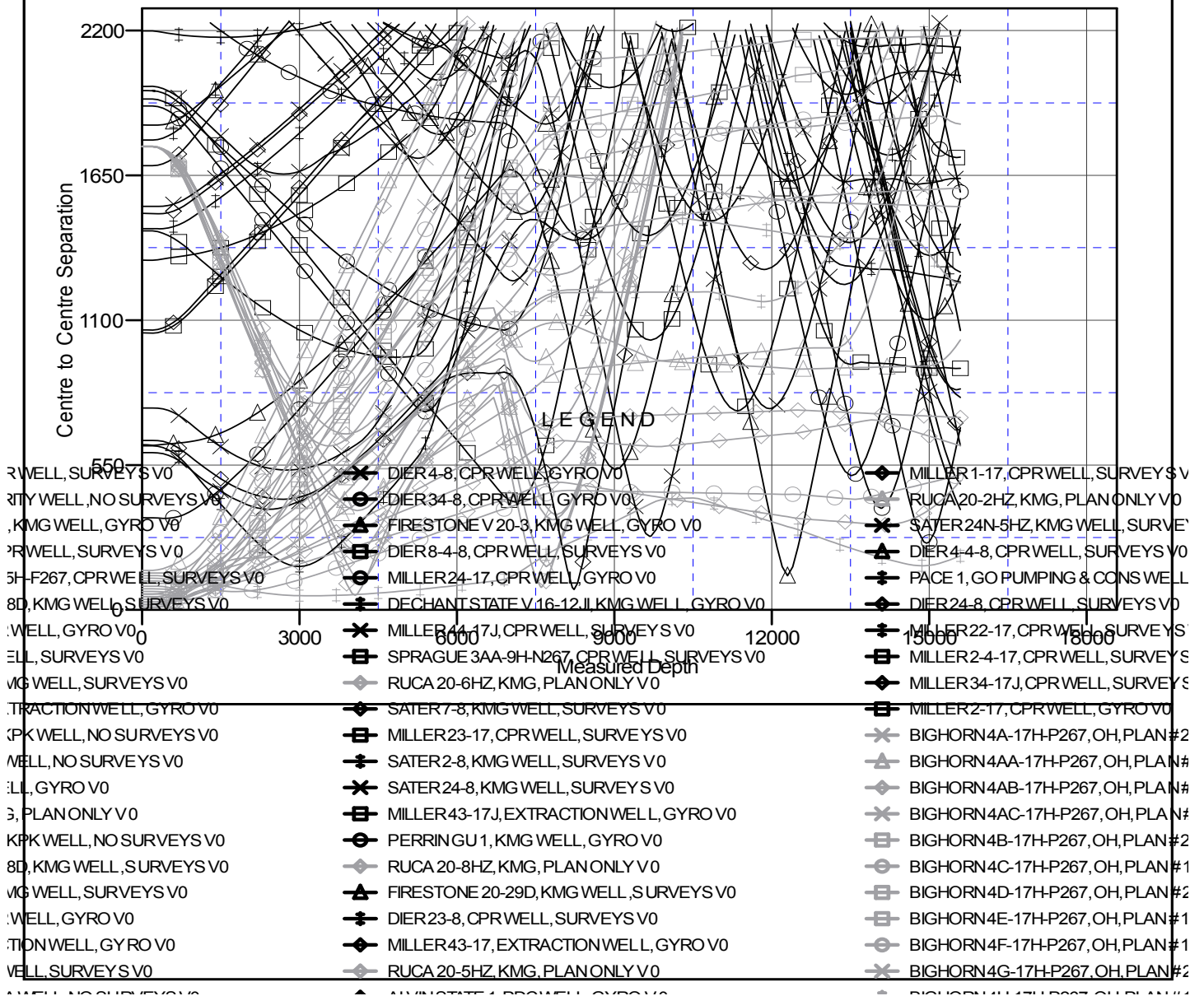
Cathedral Energy Services
Anticollision Summary Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well BIGHORN 4M-17H-P267
Project:	DJ BASIN	TVD Reference:	23' KB @ 4983.00usft
Reference Site:	BIGHORN	MD Reference:	23' KB @ 4983.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	BIGHORN 4M-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 #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to 23' KB @ 4983.00usft
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000

Coordinates are relative to: BIGHORN 4M-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

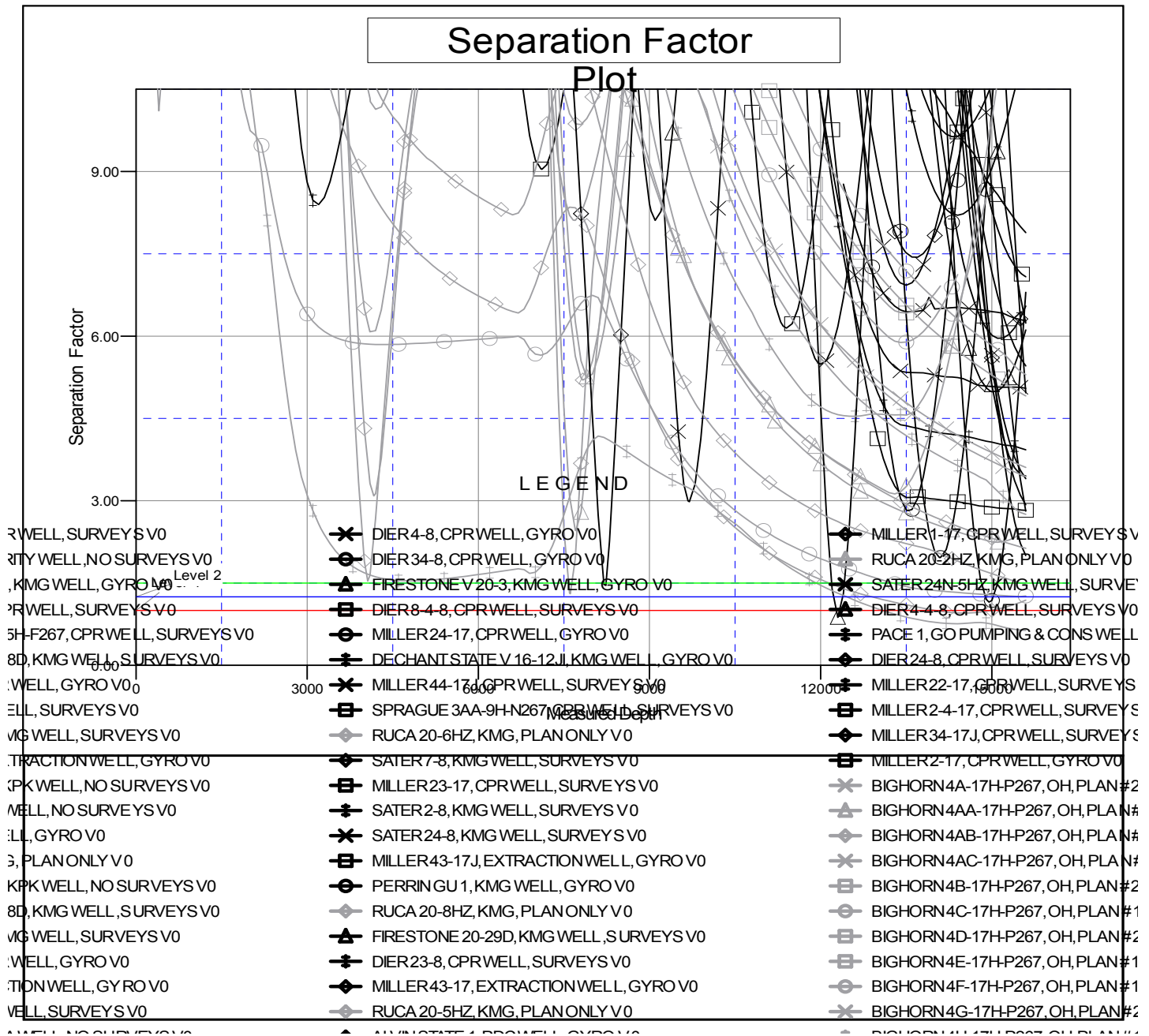
Cathedral Energy Services

Anticollision Summary Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well BIGHORN 4M-17H-P267
Project:	DJ BASIN	TVD Reference:	23' KB @ 4983.00usft
Reference Site:	BIGHORN	MD Reference:	23' KB @ 4983.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	BIGHORN 4M-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 #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to 23' KB @ 4983.00usft
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000

Coordinates are relative to: BIGHORN 4M-17H-P267
Coordinate System is US State Plane 1983, Colorado Northern Zone
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CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation