

Crestone Peak Resources

DJ BASIN

BIGHORN

BIGHORN 40-17H-P267

OH

PLAN #2

Anticollision Summary Report

12 April, 2018

Cathedral Energy Services

Anticollision Summary Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well BIGHORN 40-17H-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 40-17H-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 #2	Offset TVD Reference:	Offset Datum

Reference	PLAN #2		
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 #2 (OH)	VESSI_GYROFLEX	VESSI Gyroflex Gyro
2,001.00	15,307.70	PLAN #2 (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	596.31	590.85	136.48	134.61	73.199	CC
BIGHORN 4A-17H-P267 - OH - PLAN #2	600.00	594.38	136.48	134.60	72.700	ES
BIGHORN 4A-17H-P267 - OH - PLAN #2	6,100.00	5,513.17	2,217.29	2,151.86	33.893	SF
BIGHORN 4AA-17H-P267 - OH - PLAN #1	200.00	199.00	170.00	169.52	352.915	CC, ES
BIGHORN 4AA-17H-P267 - OH - PLAN #1	5,300.00	4,643.53	2,230.61	2,182.63	46.491	SF
BIGHORN 4AB-17H-P267 - OH - PLAN #2	300.00	299.00	160.22	159.39	192.852	CC, ES
BIGHORN 4AB-17H-P267 - OH - PLAN #2	5,400.00	4,708.80	2,236.63	2,181.08	40.265	SF
BIGHORN 4AC-17H-P267 - OH - PLAN #1	464.28	460.23	149.09	147.69	106.354	CC, ES
BIGHORN 4AC-17H-P267 - OH - PLAN #1	5,700.00	5,042.48	2,225.88	2,167.28	37.981	SF
BIGHORN 4B-17H-P267 - OH - PLAN #2	718.79	713.39	123.32	121.02	53.642	CC, ES
BIGHORN 4B-17H-P267 - OH - PLAN #2	6,600.00	6,049.70	2,224.79	2,153.67	31.284	SF
BIGHORN 4C-17H-P267 - OH - PLAN #1	200.00	199.00	120.23	119.75	249.594	CC, ES
BIGHORN 4C-17H-P267 - OH - PLAN #1	6,300.00	5,746.27	2,205.53	2,143.66	35.647	SF
BIGHORN 4D-17H-P267 - OH - PLAN #2	744.01	740.16	102.67	100.27	42.925	CC, ES
BIGHORN 4D-17H-P267 - OH - PLAN #2	6,600.00	6,163.17	2,030.11	1,956.89	27.725	SF
BIGHORN 4E-17H-P267 - OH - PLAN #1	253.44	252.44	100.10	99.43	149.724	CC
BIGHORN 4E-17H-P267 - OH - PLAN #1	400.00	396.61	100.38	99.20	85.001	ES
BIGHORN 4E-17H-P267 - OH - PLAN #1	6,600.00	6,231.13	1,932.72	1,865.45	28.730	SF
BIGHORN 4F-17H-P267 - OH - PLAN #1	738.31	735.60	83.59	81.21	35.207	CC, ES
BIGHORN 4F-17H-P267 - OH - PLAN #1	6,500.00	6,185.48	1,673.78	1,602.97	23.639	SF
BIGHORN 4G-17H-P267 - OH - PLAN #2	715.10	712.64	74.42	72.13	32.475	CC, ES
BIGHORN 4G-17H-P267 - OH - PLAN #2	15,307.70	15,877.80	2,179.95	1,734.31	4.892	SF
BIGHORN 4H-17H-P267 - OH - PLAN #1	421.42	419.36	69.96	68.70	55.507	CC, ES
BIGHORN 4H-17H-P267 - OH - PLAN #1	13,400.00	13,318.17	2,129.31	1,805.30	6.572	SF
BIGHORN 4I-17H-P267 - OH - PLAN #1	475.94	473.55	58.95	57.51	40.728	CC
BIGHORN 4I-17H-P267 - OH - PLAN #1	500.00	497.16	59.00	57.47	38.507	ES
BIGHORN 4I-17H-P267 - OH - PLAN #1	13,000.00	13,444.66	1,676.84	1,359.15	5.278	SF
BIGHORN 4J-17H-P267 - OH - PLAN #3	460.17	458.27	49.05	47.66	35.267	CC, ES
BIGHORN 4J-17H-P267 - OH - PLAN #3	15,307.70	15,620.25	1,300.96	954.02	3.750	SF
BIGHORN 4K-17H-P267 - OH - PLAN #2	553.30	551.62	37.56	35.84	21.847	CC, ES
BIGHORN 4K-17H-P267 - OH - PLAN #2	15,307.70	15,415.33	1,046.42	600.04	2.344	SF
BIGHORN 4L-17H-P267 - OH - PLAN #2	555.57	555.23	27.97	26.24	16.161	CC, ES
BIGHORN 4L-17H-P267 - OH - PLAN #2	15,307.70	15,431.00	723.94	282.31	1.639	SF
BIGHORN 4M-17H-P267 - OH - PLAN #1	200.00	200.00	20.13	19.65	41.641	CC, ES
BIGHORN 4M-17H-P267 - OH - PLAN #1	15,307.70	15,599.65	624.26	201.46	1.477	Level 3, SF
BIGHORN 4N-17H-P267 - OH - PLAN #2	449.25	449.17	9.36	8.00	6.898	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 4O-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 4O-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 #2	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	15,307.70	15,405.24	122.13	-253.74	0.325	Level 1, ES, SF
BIGHORN 4P-17H-P267 - OH - PLAN #2	245.71	245.72	9.78	9.14	15.205	CC
BIGHORN 4P-17H-P267 - OH - PLAN #2	13,700.00	13,732.58	233.90	-115.42	0.670	Level 1, SF
BIGHORN 4P-17H-P267 - OH - PLAN #2	13,800.00	13,832.45	238.64	-116.48	0.672	Level 1, ES
BIGHORN 4Q-17H-P267 - OH - PLAN #2	300.00	300.00	19.85	19.02	23.848	CC, ES
BIGHORN 4Q-17H-P267 - OH - PLAN #2	15,307.70	15,531.47	690.91	260.69	1.606	SF
BIGHORN 4R-17H-P267 - OH - PLAN #2	300.00	300.00	29.92	29.09	35.938	CC, ES
BIGHORN 4R-17H-P267 - OH - PLAN #2	15,307.70	15,275.22	931.00	480.32	2.066	SF
BIGHORN 4S-17H-P267 - OH - PLAN #3	200.00	200.00	39.98	39.50	82.706	CC, ES
BIGHORN 4S-17H-P267 - OH - PLAN #3	15,307.70	15,360.33	1,256.22	906.30	3.590	SF

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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	342.65	355.42	1,483.98	1,482.95	1,449.001	CC
ALVIN STATE 1 - PDC WELL - GYRO	400.00	411.65	1,484.15	1,482.93	1,212.407	ES
ALVIN STATE 1 - PDC WELL - GYRO	8,900.00	7,315.47	2,062.17	1,996.80	31.547	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	300.00	290.00	1,670.86	1,669.59	1,316.673	CC, ES
DECHANT 7 - KPK WELL - NO SURVEYS	3,500.00	3,426.10	2,227.10	2,207.67	114.592	SF
DECHANT 8 - GERRITY WELL - NO SURVEYS						Out of range
DECHANT STATE 1 - KPK WELL - SURVEYS	10,496.19	6,690.69	2,070.79	1,964.86	19.549	CC
DECHANT STATE 1 - KPK WELL - SURVEYS	10,500.00	6,690.69	2,070.80	1,964.77	19.532	ES
DECHANT STATE 1 - KPK WELL - SURVEYS	11,000.00	6,627.80	2,129.07	2,014.58	18.597	SF
DECHANT STATE GAS U 9 - KMG WELL - GYRO	317.06	347.97	1,820.33	1,819.37	1,912.894	CC, ES
DECHANT STATE GAS U 9 - KMG WELL - GYRO	8,316.79	7,426.92	2,235.51	2,179.62	39.997	SF
DECHANT STATE V 16-11JI - KMG WELL - GYRO						Out of range
DECHANT STATE V 16-12JI - KMG WELL - GYRO	271.60	266.60	1,768.53	1,767.79	2,394.675	CC
DECHANT STATE V 16-12JI - KMG WELL - GYRO	9,500.00	7,213.56	1,772.42	1,690.20	21.557	ES
DECHANT STATE V 16-12JI - KMG WELL - GYRO	10,000.00	7,209.54	1,836.67	1,744.84	20.001	SF
DECHANT STATE V 16-14JI - KMG WELL - GYRO						Out of range
DECHANT STATE V 16-4JI - KMG WELL - GYRO	12,257.27	7,283.53	1,928.74	1,773.16	12.397	CC
DECHANT STATE V 16-4JI - KMG WELL - GYRO	12,300.00	7,282.83	1,929.21	1,772.57	12.316	ES
DECHANT STATE V 16-4JI - KMG WELL - GYRO	12,600.00	7,277.97	1,958.94	1,796.84	12.084	SF
DECHANT STATE V 16-5JI - KMG WELL - GYRO	10,595.67	7,280.76	1,707.81	1,596.98	15.409	CC
DECHANT STATE V 16-5JI - KMG WELL - GYRO	10,600.00	7,280.66	1,707.82	1,596.87	15.394	ES
DECHANT STATE V 16-5JI - KMG WELL - GYRO	10,900.00	7,273.25	1,734.70	1,617.81	14.841	SF
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	300.00	302.00	1,512.49	1,511.18	1,155.317	CC
DECHANT-STATE 3 - KPK WELL - NO SURVEYS	400.00	401.98	1,512.83	1,510.99	821.120	ES
DECHANT-STATE 3 - KPK WELL - NO SURVEYS	5,300.00	5,100.00	1,971.76	1,934.71	53.221	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	14,638.69	7,266.18	483.72	264.06	2.202	CC, ES
DIER 1 - CPR WELL - GYRO	14,700.00	7,266.81	487.59	266.07	2.201	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	14,861.66	7,497.67	1,980.60	1,752.86	8.697	CC
DIER 23-8 - CPR WELL - SURVEYS	14,900.00	7,495.43	1,980.97	1,752.48	8.670	ES
DIER 23-8 - CPR WELL - SURVEYS	15,000.00	7,489.49	1,985.40	1,755.32	8.629	SF
DIER 24-8 - CPR WELL - SURVEYS	13,114.51	7,599.14	2,084.17	1,900.40	11.341	CC
DIER 24-8 - CPR WELL - SURVEYS	13,200.00	7,593.03	2,085.91	1,899.60	11.196	ES
DIER 24-8 - CPR WELL - SURVEYS	13,500.00	7,564.68	2,119.25	1,926.28	10.982	SF
DIER 33-8 - CPR WELL - GYRO	14,711.20	7,232.66	876.46	654.88	3.955	CC, ES, SF
DIER 34-8 - CPR WELL - GYRO	13,181.23	7,223.08	1,180.10	999.30	6.527	CC
DIER 34-8 - CPR WELL - GYRO	13,200.00	7,223.39	1,180.25	998.90	6.508	ES
DIER 34-8 - CPR WELL - GYRO	13,300.00	7,225.03	1,186.06	1,002.50	6.462	SF
DIER 44-8 - CPR WELL - GYRO	13,108.87	7,236.93	557.89	379.21	3.122	CC, ES, SF
DIER 4-4-8 - CPR WELL - SURVEYS	15,307.70	7,296.19	1,420.67	1,176.76	5.824	CC, ES, SF

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Cathedral Energy Services

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Offset Well - Wellbore - Design						
S17-T2N-R67W (OFFSETS)						
DIER 4-8 - CPR WELL - GYRO						Out of range
DIER 8-4-8 - CPR WELL - SURVEYS	15,156.27	7,336.15	1,121.82	883.09	4.699	CC
DIER 8-4-8 - CPR WELL - SURVEYS	15,200.00	7,336.90	1,122.67	882.18	4.668	ES
DIER 8-4-8 - CPR WELL - SURVEYS	15,300.00	7,338.63	1,130.99	887.75	4.650	SF
DIER 8-6-8 - CPR WELL - SURVEYS	13,867.60	7,418.02	1,060.64	853.11	5.111	CC
DIER 8-6-8 - CPR WELL - SURVEYS	13,900.00	7,418.06	1,061.27	852.68	5.088	ES
DIER 8-6-8 - CPR WELL - SURVEYS	14,000.00	7,418.15	1,069.09	858.37	5.074	SF
DIER J1A - CPR WELL - GYRO	13,800.00	7,260.59	297.00	99.34	1.503	SF
DIER J1A - CPR WELL - GYRO	13,809.65	7,260.46	296.84	99.30	1.503	CC, ES
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	4,976.11	4,902.41	1,976.41	1,938.75	52.472	CC
ELKHORN CO-B 6 - KPK WELL - NO SURVEYS	5,300.00	5,200.00	1,977.71	1,936.80	48.350	ES
ELKHORN CO-B 6 - KPK WELL - NO SURVEYS	5,600.00	5,200.00	2,005.29	1,962.85	47.251	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						Out of range
FIRESTONE V 20-04D - KMG WELL - SURVEYS						Out of range
FIRESTONE V 20-08D - KMG WELL - SURVEYS	2,853.06	2,486.00	1,645.65	1,636.36	177.280	CC
FIRESTONE V 20-08D - KMG WELL - SURVEYS	2,900.00	2,517.81	1,645.85	1,636.34	173.019	ES
FIRESTONE V 20-08D - KMG WELL - SURVEYS	6,800.00	6,806.19	1,814.77	1,773.72	44.207	SF
FIRESTONE V 20-18D - KMG WELL - SURVEYS	6,775.78	6,754.80	1,648.03	1,604.94	38.250	CC, ES
FIRESTONE V 20-18D - KMG WELL - SURVEYS	6,800.00	6,778.53	1,648.30	1,605.16	38.210	SF
FIRESTONE V 20-2 - KMG WELL - GYRO	6,856.88	6,708.15	921.73	870.72	18.068	CC, ES
FIRESTONE V 20-2 - KMG WELL - GYRO	6,900.00	6,748.11	922.26	871.20	18.063	SF
FIRESTONE V 20-3 - KMG WELL - GYRO	6,915.16	6,820.69	2,051.21	2,011.83	52.093	CC, ES, 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	5,222.63	5,042.00	662.79	625.24	17.653	CC, ES, SF
MAHONEY 2 - KPK WELL - NO SURVEYS	5,568.39	5,100.00	1,987.65	1,952.16	56.008	CC, ES
MAHONEY 2 - KPK WELL - NO SURVEYS	5,800.00	5,100.00	2,001.10	1,965.01	55.445	SF
MAHONEY-PERRIN 2 - KPK WELL - NO SURVEYS	5,358.23	5,050.00	991.65	958.00	29.471	CC, ES
MAHONEY-PERRIN 2 - KPK WELL - NO SURVEYS	5,400.00	5,050.00	992.52	958.83	29.455	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	11,653.11	7,251.63	143.99	4.87	1.035	Level 2, CC, ES, SF
MILLER 11-17 - 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

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Site Error:	0.00 usft	North Reference:	True
Reference Well:	BIGHORN 40-17H-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 #2	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)						
MILLER 1-17 - CPR WELL - SURVEYS	11,551.92	6,590.39	1,743.14	1,612.73	13.367	CC
MILLER 1-17 - CPR WELL - SURVEYS	11,600.00	6,588.35	1,743.80	1,612.18	13.249	ES
MILLER 1-17 - CPR WELL - SURVEYS	11,900.00	6,571.00	1,777.41	1,640.36	12.969	SF
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						Out of range
MILLER 2-17 - CPR WELL - GYRO	11,042.74	7,256.39	144.60	21.92	1.179	Level 2, CC, ES, SF
MILLER 22-17 - CPR WELL - SURVEYS	10,491.77	7,806.47	2,089.89	1,963.94	16.592	CC
MILLER 22-17 - CPR WELL - SURVEYS	10,600.00	7,795.44	2,092.66	1,963.69	16.226	ES
MILLER 22-17 - CPR WELL - SURVEYS	11,000.00	7,739.82	2,149.92	2,012.45	15.640	SF
MILLER 23-17 - CPR WELL - SURVEYS	9,353.15	7,721.03	2,016.08	1,920.35	21.060	CC
MILLER 23-17 - CPR WELL - SURVEYS	9,400.00	7,723.18	2,016.62	1,919.98	20.867	ES
MILLER 23-17 - CPR WELL - SURVEYS	9,800.00	7,738.61	2,073.57	1,970.25	20.069	SF
MILLER 24-17 - CPR WELL - GYRO	8,169.39	7,250.31	2,002.60	1,949.79	37.921	CC
MILLER 24-17 - CPR WELL - GYRO	8,200.00	7,250.44	2,002.83	1,949.55	37.588	ES
MILLER 24-17 - CPR WELL - GYRO	9,100.00	7,254.19	2,208.26	2,141.10	32.881	SF
MILLER 2-4-17 - CPR WELL - SURVEYS						Out of range
MILLER 31-17C - EXTRACTION WELL - GYRO	11,976.85	7,212.25	750.93	603.07	5.079	CC
MILLER 31-17C - EXTRACTION WELL - GYRO	12,000.00	7,212.24	751.28	602.77	5.059	ES, SF
MILLER 3-17J - CPR WELL - GYRO	8,716.57	7,261.69	59.71	-4.12	0.935	Level 1, CC, ES, SF
MILLER 32-17 - EXTRACTION WELL - GYRO	10,424.78	5,065.00	2,197.49	2,158.11	55.804	CC, ES
MILLER 32-17 - EXTRACTION WELL - GYRO	10,800.00	5,065.00	2,229.29	2,185.98	51.465	SF
MILLER 33-17J - CPR WELL - SURVEYS	2,239.51	2,179.76	691.50	683.65	88.052	CC
MILLER 33-17J - CPR WELL - SURVEYS	2,300.00	2,237.14	691.72	683.60	85.193	ES
MILLER 33-17J - CPR WELL - SURVEYS	9,500.00	7,525.44	858.09	761.73	8.905	SF
MILLER 34-17J - CPR WELL - SURVEYS	2,302.81	2,255.09	572.13	564.03	70.634	CC
MILLER 34-17J - CPR WELL - SURVEYS	2,400.00	2,351.51	572.35	563.73	66.380	ES
MILLER 34-17J - CPR WELL - SURVEYS	7,954.53	7,254.60	653.82	601.59	12.518	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	318.35	306.97	1,058.93	1,058.02	1,172.788	CC, ES
MILLER 43-17 - EXTRACTION WELL - GYRO	5,200.00	5,077.51	2,003.82	1,982.17	92.528	SF
MILLER 43-17J - EXTRACTION WELL - GYRO	9,373.01	7,260.28	439.11	359.80	5.537	CC, ES
MILLER 43-17J - EXTRACTION WELL - GYRO	9,400.00	7,260.36	439.94	360.01	5.504	SF
MILLER 44-17J - CPR WELL - SURVEYS	2,275.53	2,239.25	515.96	507.93	64.295	CC
MILLER 44-17J - CPR WELL - SURVEYS	2,300.00	2,262.67	515.99	507.86	63.426	ES
MILLER 44-17J - CPR WELL - SURVEYS	8,000.00	7,317.73	779.65	726.74	14.737	SF
MILLER CJ 17-A - CPR WELL - SURVEYS						Out of range
PACE 1 - GO PUMPING & CONS WELL - NO SURVEYS	3,101.36	3,033.58	356.36	337.65	19.041	CC
PACE 1 - GO PUMPING & CONS WELL - NO SURVEYS	3,200.00	3,129.97	356.98	337.32	18.162	ES
PACE 1 - GO PUMPING & CONS WELL - NO SURVEYS	4,100.00	4,009.36	414.90	387.59	15.195	SF
PACE 2 - TEXAS TEA WELL - NO SURVEYS	300.00	275.00	1,341.97	1,340.76	1,111.715	CC, ES
PACE 2 - TEXAS TEA WELL - NO SURVEYS	5,200.00	5,050.00	1,931.54	1,896.70	55.455	SF
PACE 3 - DENVER EAST MACHINERY WELL - NO SUR	763.50	751.48	329.84	326.11	88.272	CC
PACE 3 - DENVER EAST MACHINERY WELL - NO SUR	800.00	787.47	329.90	325.97	83.898	ES
PACE 3 - DENVER EAST MACHINERY WELL - NO SUR	5,100.00	4,989.46	976.19	944.88	31.184	SF
PERRIN GU 1 - KMG WELL - GYRO	6,696.50	6,585.30	757.40	721.10	20.865	CC
PERRIN GU 1 - KMG WELL - GYRO	6,700.00	6,589.04	757.41	721.08	20.852	ES
PERRIN GU 1 - KMG WELL - GYRO	6,800.00	6,691.92	764.13	727.33	20.764	SF
PERRIN GU 2-20 - KMG WELL - GYRO						Out of range
PERRIN V 20-5D - 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 40-17H-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 40-17H-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 #2	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)						
PERRIN V 20-7DI - KMG WELL - GYRO	6,721.34	6,593.57	2,003.97	1,974.18	67.269	CC, ES
PERRIN V 20-7DI - KMG WELL - GYRO	6,900.00	6,785.48	2,024.59	1,993.99	66.171	SF
PERRIN-MAHONEY 1 - KPK WELL - NO SURVEYS	5,644.62	5,100.00	2,014.88	1,982.16	61.580	CC, ES
PERRIN-MAHONEY 1 - KPK WELL - NO SURVEYS	5,800.00	5,100.00	2,020.86	1,987.85	61.220	SF
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	3,503.03	3,528.97	898.82	867.98	29.142	CC, ES
RUCA 20-1HZ - KMG - PLAN ONLY	8,300.00	7,539.12	1,384.98	1,303.20	16.934	SF
RUCA 20-2HZ - KMG - PLAN ONLY	3,707.62	3,754.01	754.62	722.13	23.222	CC, ES
RUCA 20-2HZ - KMG - PLAN ONLY	8,100.00	7,586.10	999.92	923.83	13.140	SF
RUCA 20-3HZ - KMG - PLAN ONLY	3,802.70	3,869.03	647.98	614.67	19.453	CC, ES
RUCA 20-3HZ - KMG - PLAN ONLY	7,900.00	7,582.86	784.76	713.61	11.030	SF
RUCA 20-4HZ - KMG - PLAN ONLY	3,864.77	3,947.43	505.65	471.73	14.906	CC
RUCA 20-4HZ - KMG - PLAN ONLY	7,610.66	7,684.20	506.00	440.01	7.668	ES
RUCA 20-4HZ - KMG - PLAN ONLY	7,700.00	7,627.01	510.77	443.69	7.614	SF
RUCA 20-5HZ - KMG - PLAN ONLY	7,775.00	7,606.77	261.81	194.37	3.882	CC, ES
RUCA 20-5HZ - KMG - PLAN ONLY	7,800.00	7,591.96	262.62	194.73	3.868	SF
RUCA 20-6HZ - KMG - PLAN ONLY	7,677.77	7,608.44	78.58	13.09	1.200	Level 2, CC, ES, SF
RUCA 20-7HZ - KMG - PLAN ONLY	3,990.37	4,101.63	126.28	91.99	3.683	CC, ES
RUCA 20-7HZ - KMG - PLAN ONLY	4,000.00	4,106.60	126.38	92.03	3.680	SF
RUCA 20-8HZ - KMG - PLAN ONLY	3,792.22	3,913.67	357.81	325.32	11.013	CC
RUCA 20-8HZ - KMG - PLAN ONLY	3,800.00	3,920.20	357.83	325.26	10.985	ES
RUCA 20-8HZ - KMG - PLAN ONLY	7,900.00	7,491.76	668.59	600.58	9.832	SF
RUCA 20-9HZ - KMG - PLAN ONLY	3,688.75	3,800.63	537.83	506.53	17.184	CC
RUCA 20-9HZ - KMG - PLAN ONLY	3,700.00	3,810.04	537.86	506.44	17.115	ES
RUCA 20-9HZ - KMG - PLAN ONLY	8,000.00	7,410.23	938.57	869.52	13.593	SF
SATER 21-8 - KMG WELL - SURVEYS	15,307.70	7,345.46	1,947.09	1,763.29	10.593	CC, ES, SF
SATER 24-8 - KMG WELL - SURVEYS	15,307.70	7,371.79	137.09	-54.82	0.714	Level 1, CC, ES, SF
SATER 24C-5HZ - KMG WELL - SURVEYS	15,305.27	7,387.16	205.72	-36.27	0.850	Level 1, CC
SATER 24C-5HZ - KMG WELL - SURVEYS	15,307.70	7,388.45	205.73	-36.43	0.850	Level 1, ES, SF
SATER 24N-5HZ - KMG WELL - SURVEYS	15,307.70	7,290.77	430.05	199.64	1.866	CC, ES, SF
SATER 25C-5HZ - KMG WELL - SURVEYS	15,307.70	7,158.59	1,211.90	970.48	5.020	CC, ES, SF
SATER 2-8 - KMG WELL - SURVEYS	15,307.70	7,636.36	2,125.96	2,017.90	19.674	CC, ES, SF
SATER 28-8 - KMG WELL - SURVEYS						Out of range
SATER 40N-5HZ - KMG WELL - SURVEYS	15,307.70	7,295.00	668.23	429.28	2.796	CC, ES, SF
SATER 7-8 - KMG WELL - SURVEYS	15,307.70	7,299.09	1,035.44	825.55	4.933	CC, ES, SF
SATER 8-8 - KMG WELL - SURVEYS	15,307.70	7,642.79	900.07	724.64	5.131	CC, ES, SF
SATER ALFRED D UNIT 1 (P&A) - KMG WELL - GYRO	15,307.70	7,193.16	1,076.85	991.03	12.549	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	14,557.84	7,314.94	2,013.61	1,796.09	9.257	CC
SPRAGUE 13-9 - CPR WELL - GYRO	14,600.00	7,315.34	2,014.05	1,795.13	9.200	ES
SPRAGUE 13-9 - CPR WELL - GYRO	14,900.00	7,318.21	2,042.47	1,816.24	9.028	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 40-17H-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 40-17H-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 #2	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 14-9 - CPR WELL - GYRO	13,415.61	7,374.42	1,884.41	1,697.08	10.059	CC
SPRAGUE 14-9 - CPR WELL - GYRO	13,500.00	7,373.15	1,886.30	1,696.98	9.963	ES
SPRAGUE 14-9 - CPR WELL - GYRO	13,600.00	7,371.73	1,894.70	1,703.49	9.909	SF
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	13,356.74	7,714.81	1,663.47	1,470.65	8.627	CC
SPRAGUE 3A-9H-N267 - CPR WELL - SURVEYS	13,700.00	8,117.45	1,665.63	1,460.81	8.132	ES
SPRAGUE 3A-9H-N267 - CPR WELL - SURVEYS	15,307.70	9,706.80	1,772.83	1,502.46	6.557	SF
SPRAGUE 3AA-9H-N267 - CPR WELL - SURVEYS	13,565.81	8,111.00	1,466.87	1,267.49	7.357	CC
SPRAGUE 3AA-9H-N267 - CPR WELL - SURVEYS	13,700.00	8,252.31	1,470.33	1,266.24	7.204	ES
SPRAGUE 3AA-9H-N267 - CPR WELL - SURVEYS	15,307.70	9,882.36	1,567.43	1,297.74	5.812	SF
SPRAGUE 3B-9H-N267 - CPR WELL - SURVEYS	13,766.91	8,387.44	1,901.20	1,694.17	9.183	CC
SPRAGUE 3B-9H-N267 - CPR WELL - SURVEYS	13,900.00	8,463.00	1,904.75	1,693.26	9.007	ES
SPRAGUE 3B-9H-N267 - CPR WELL - SURVEYS	15,307.70	9,893.80	1,984.95	1,714.12	7.329	SF
SPRAGUE 3C-9H-N267 - CPR WELL - SURVEYS	13,738.08	8,059.32	2,192.84	1,987.37	10.672	CC
SPRAGUE 3C-9H-N267 - CPR WELL - SURVEYS	14,300.00	8,589.22	2,204.26	1,976.18	9.664	ES
SPRAGUE 3C-9H-N267 - CPR WELL - SURVEYS	14,800.00	9,042.91	2,232.09	1,983.68	8.985	SF
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
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	300.00	336.00	1,427.72	1,426.30	1,000.137	CC
STANLEY #2 - GERRITY WELL - NO SURVEYS	400.00	435.98	1,428.03	1,426.07	728.300	ES
STANLEY #2 - GERRITY WELL - NO SURVEYS	5,300.00	5,175.00	1,879.56	1,842.26	50.400	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	5,525.58	5,100.00	2,195.30	2,156.77	56.979	CC, ES
TEETS-PERRIN 2 - KPK WELL - NO SURVEYS	5,800.00	5,100.00	2,212.38	2,172.79	55.878	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	5,128.50	4,711.00	2,064.11	2,029.76	60.080	CC, ES
TEETS-PERRIN 5 - KPK WELL - NO SURVEYS	5,400.00	4,711.00	2,081.89	2,046.54	58.902	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

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 4O-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 4O-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 #2	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)						
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						Out of range
VOGL MCCOY 2F-5H-F267 - CPR WELL - SURVEYS	15,307.70	13,000.68	2,230.77	1,906.90	6.888	CC, ES, SF
VOGL MCCOY 2G-5H-F267 - CPR WELL - SURVEYS	15,307.70	12,535.84	1,798.86	1,475.35	5.560	CC, ES, SF
VOGL MCCOY 2H-5H-F267 - CPR WELL - SURVEYS	15,000.00	15,000.00	1,536.65	1,184.61	4.365	ES, SF
VOGL MCCOY 2H-5H-F267 - CPR WELL - SURVEYS	15,307.70	12,914.99	1,513.91	1,190.58	4.682	CC

Cathedral Energy Services

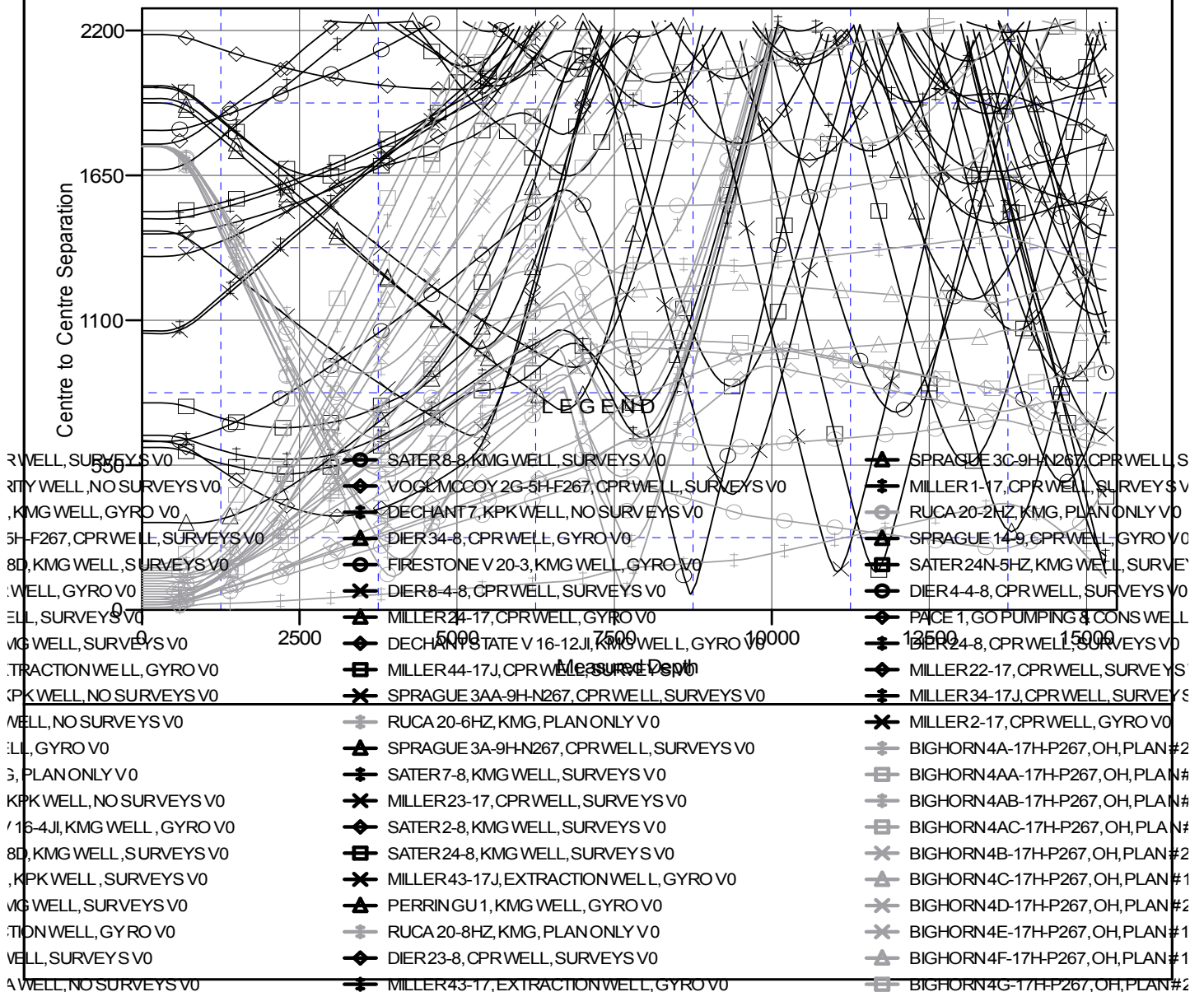
Anticollision Summary Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well BIGHORN 40-17H-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 40-17H-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 #2	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 40-17H-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

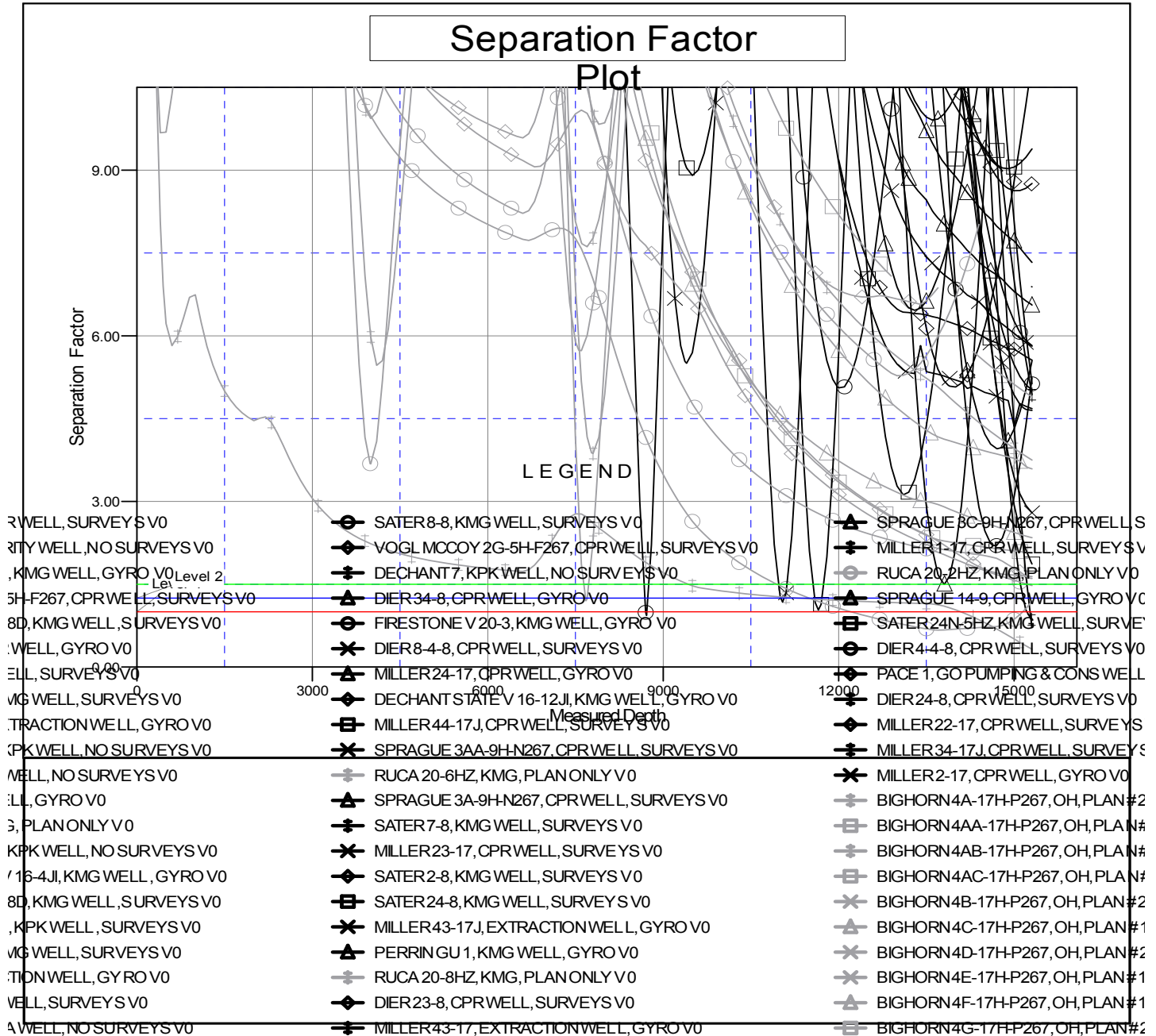
Cathedral Energy Services

Anticollision Summary Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well BIGHORN 40-17H-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 40-17H-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 #2	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 40-17H-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