

Crestone Peak Resources

DJ BASIN

BIGHORN

BIGHORN 4P-17H-P267

OH

PLAN #3

Anticollision Summary Report

24 May, 2018

Cathedral Energy Services

Anticollision Summary Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well BIGHORN 4P-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 4P-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 #3	Offset TVD Reference:	Offset Datum

Reference	PLAN #3		
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	200.00	PLAN #3 (OH)	VESSI_GYROFLEX	VESSI Gyroflex Gyro	
2,001.00	14,886.86	PLAN #3 (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	370.00	368.90	149.79	148.71	139.152	CC
BIGHORN 4A-17H-P267 - OH - PLAN #2	400.00	401.16	149.80	148.61	126.344	ES
BIGHORN 4A-17H-P267 - OH - PLAN #2	4,800.00	4,200.99	1,914.49	1,873.21	46.375	SF
BIGHORN 4AA-17H-P267 - OH - PLAN #1	200.00	199.00	179.79	179.31	373.230	CC, ES
BIGHORN 4AA-17H-P267 - OH - PLAN #1	4,100.00	3,454.99	1,888.03	1,860.57	68.754	SF
BIGHORN 4AB-17H-P267 - OH - PLAN #2	307.48	306.45	169.95	169.09	198.256	CC, ES
BIGHORN 4AB-17H-P267 - OH - PLAN #2	4,300.00	3,611.98	1,913.52	1,879.93	56.971	SF
BIGHORN 4AC-17H-P267 - OH - PLAN #1	371.03	369.93	159.86	158.78	148.009	CC
BIGHORN 4AC-17H-P267 - OH - PLAN #1	400.00	398.84	159.87	158.69	135.301	ES
BIGHORN 4AC-17H-P267 - OH - PLAN #1	4,500.00	3,843.65	1,892.42	1,856.07	52.058	SF
BIGHORN 4B-17H-P267 - OH - PLAN #2	363.47	362.38	139.73	138.67	132.627	CC
BIGHORN 4B-17H-P267 - OH - PLAN #2	400.00	401.16	139.75	138.56	117.866	ES
BIGHORN 4B-17H-P267 - OH - PLAN #2	5,100.00	4,539.39	1,884.90	1,839.77	41.767	SF
BIGHORN 4C-17H-P267 - OH - PLAN #1	200.00	199.00	130.02	129.54	269.909	CC, ES
BIGHORN 4C-17H-P267 - OH - PLAN #1	1,200.00	1,160.15	206.65	202.49	49.622	SF
BIGHORN 4D-17H-P267 - OH - PLAN #3	349.93	348.86	119.89	118.88	119.166	CC
BIGHORN 4D-17H-P267 - OH - PLAN #3	400.00	401.16	119.93	118.74	101.149	ES
BIGHORN 4D-17H-P267 - OH - PLAN #3	5,400.00	4,906.51	1,894.35	1,843.22	37.047	SF
BIGHORN 4E-17H-P267 - OH - PLAN #1	339.67	338.48	109.76	108.79	113.053	CC, ES
BIGHORN 4E-17H-P267 - OH - PLAN #1	5,500.00	5,060.21	1,910.06	1,861.87	39.633	SF
BIGHORN 4F-17H-P267 - OH - PLAN #1	334.80	333.75	99.77	98.82	104.686	CC
BIGHORN 4F-17H-P267 - OH - PLAN #1	400.00	401.16	99.84	98.66	84.208	ES
BIGHORN 4F-17H-P267 - OH - PLAN #1	6,100.00	5,656.00	1,918.69	1,858.33	31.788	SF
BIGHORN 4G-17H-P267 - OH - PLAN #4	332.73	331.68	89.98	89.04	95.139	CC
BIGHORN 4G-17H-P267 - OH - PLAN #4	400.00	401.16	90.07	88.88	75.961	ES
BIGHORN 4G-17H-P267 - OH - PLAN #4	6,400.00	6,006.41	1,903.13	1,837.15	28.848	SF
BIGHORN 4H-17H-P267 - OH - PLAN #1	409.77	408.64	79.74	78.52	65.309	CC, ES
BIGHORN 4H-17H-P267 - OH - PLAN #1	6,600.00	6,257.35	1,915.65	1,853.79	30.968	SF
BIGHORN 4I-17H-P267 - OH - PLAN #1	409.98	409.14	69.78	68.56	57.299	CC, ES
BIGHORN 4I-17H-P267 - OH - PLAN #1	13,200.00	13,444.66	1,921.96	1,599.05	5.952	SF
BIGHORN 4J-17H-P267 - OH - PLAN #3	305.63	304.60	59.80	58.95	70.297	CC
BIGHORN 4J-17H-P267 - OH - PLAN #3	400.00	398.84	60.02	58.83	50.786	ES
BIGHORN 4J-17H-P267 - OH - PLAN #3	14,886.86	15,189.67	1,649.29	1,320.53	5.017	SF
BIGHORN 4K-17H-P267 - OH - PLAN #2	294.90	306.12	49.75	48.91	59.608	CC
BIGHORN 4K-17H-P267 - OH - PLAN #2	400.00	401.16	50.04	48.85	42.195	ES
BIGHORN 4K-17H-P267 - OH - PLAN #2	14,800.00	14,875.53	1,352.62	935.20	3.240	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 4P-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 4P-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 #3	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 4L-17H-P267 - OH - PLAN #2	292.32	307.69	39.96	39.12	47.977	CC, ES
BIGHORN 4L-17H-P267 - OH - PLAN #2	14,800.00	14,923.07	997.97	579.57	2.385	SF
BIGHORN 4M-17H-P267 - OH - PLAN #1	200.00	200.00	29.92	29.43	61.883	CC
BIGHORN 4M-17H-P267 - OH - PLAN #1	300.00	299.85	30.09	29.25	36.107	ES
BIGHORN 4M-17H-P267 - OH - PLAN #1	14,800.00	15,061.35	930.56	515.06	2.240	SF
BIGHORN 4N-17H-P267 - OH - PLAN #2	265.13	265.13	19.84	19.13	27.902	CC
BIGHORN 4N-17H-P267 - OH - PLAN #2	300.00	300.02	19.86	19.03	23.848	ES
BIGHORN 4N-17H-P267 - OH - PLAN #2	14,886.86	15,054.65	541.11	121.97	1.291	Level 3, SF
BIGHORN 4O-17H-P267 - OH - PLAN #2	245.72	245.71	9.78	9.14	15.205	CC
BIGHORN 4O-17H-P267 - OH - PLAN #2	13,800.00	13,755.80	236.42	-116.13	0.671	Level 1, ES, SF
BIGHORN 4Q-17H-P267 - OH - PLAN #3	200.00	200.00	10.07	9.59	20.829	CC
BIGHORN 4Q-17H-P267 - OH - PLAN #3	300.00	300.02	10.24	9.40	12.289	ES
BIGHORN 4Q-17H-P267 - OH - PLAN #3	14,886.86	15,067.81	450.99	45.62	1.113	Level 2, SF
BIGHORN 4R-17H-P267 - OH - PLAN #2	200.00	200.00	20.13	19.65	41.646	CC
BIGHORN 4R-17H-P267 - OH - PLAN #2	300.00	299.98	20.25	19.42	24.316	ES
BIGHORN 4R-17H-P267 - OH - PLAN #2	14,886.86	14,820.90	591.67	168.33	1.398	Level 3, SF
BIGHORN 4S-17H-P267 - OH - PLAN #3	200.00	200.00	30.20	29.72	62.465	CC, ES
BIGHORN 4S-17H-P267 - OH - PLAN #3	14,886.86	14,880.78	938.35	608.65	2.846	SF

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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 #3	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)						
ABBAY 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	8,062.97	7,389.56	1,446.63	1,396.06	28.607	CC, ES
ALVIN STATE 1 - PDC WELL - GYRO	8,600.00	7,389.53	1,548.19	1,489.41	26.340	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	1,663.18	1,662.45	2,263.795	CC, ES
DECHANT 7 - KPK WELL - NO SURVEYS	2,400.00	2,356.47	1,921.93	1,909.63	156.341	SF
DECHANT 8 - GERRITY WELL - NO SURVEYS						Out of range
DECHANT STATE 1 - KPK WELL - SURVEYS	10,412.05	6,890.73	1,782.26	1,677.68	17.042	CC, ES
DECHANT STATE 1 - KPK WELL - SURVEYS	10,600.00	6,845.14	1,791.51	1,683.86	16.641	SF
DECHANT STATE GAS U 9 - KMG WELL - GYRO	8,223.18	7,462.51	1,784.84	1,731.35	33.367	CC, ES
DECHANT STATE GAS U 9 - KMG WELL - GYRO	8,900.00	7,477.42	1,908.79	1,843.63	29.293	SF
DECHANT STATE V 16-11JI - KMG WELL - GYRO						Out of range
DECHANT STATE V 16-12JI - KMG WELL - GYRO	9,395.15	7,297.29	1,409.32	1,329.85	17.736	CC
DECHANT STATE V 16-12JI - KMG WELL - GYRO	9,400.00	7,297.18	1,409.32	1,329.74	17.708	ES
DECHANT STATE V 16-12JI - KMG WELL - GYRO	9,800.00	7,289.43	1,452.90	1,365.80	16.680	SF
DECHANT STATE V 16-14JI - KMG WELL - GYRO						Out of range
DECHANT STATE V 16-4JI - KMG WELL - GYRO	12,226.05	7,337.85	1,662.82	1,509.15	10.821	CC
DECHANT STATE V 16-4JI - KMG WELL - GYRO	12,300.00	7,336.54	1,664.46	1,509.12	10.715	ES
DECHANT STATE V 16-4JI - KMG WELL - GYRO	12,500.00	7,333.01	1,685.23	1,526.77	10.635	SF
DECHANT STATE V 16-5JI - KMG WELL - GYRO	10,572.33	7,354.95	1,387.79	1,278.14	12.657	CC
DECHANT STATE V 16-5JI - KMG WELL - GYRO	10,600.00	7,354.46	1,388.06	1,277.80	12.589	ES
DECHANT STATE V 16-5JI - KMG WELL - GYRO	10,800.00	7,350.82	1,406.33	1,292.72	12.378	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	1,678.49	1,660.15	1,485.28	1,476.58	170.765	CC
DECHANT-STATE 3 - KPK WELL - NO SURVEYS	1,900.00	1,877.61	1,485.88	1,475.99	150.335	ES
DECHANT-STATE 3 - KPK WELL - NO SURVEYS	5,300.00	5,100.00	1,641.46	1,604.06	43.887	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	14,703.97	7,326.50	193.64	-27.44	0.876	Level 1, CC, 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						Out of range
DIER 24-8 - CPR WELL - SURVEYS						Out of range
DIER 33-8 - CPR WELL - GYRO	14,681.79	7,304.79	1,166.29	945.77	5.289	CC
DIER 33-8 - CPR WELL - GYRO	14,700.00	7,305.22	1,166.43	945.37	5.277	ES
DIER 33-8 - CPR WELL - GYRO	14,800.00	7,307.58	1,175.84	952.71	5.270	SF
DIER 34-8 - CPR WELL - GYRO	13,253.98	7,291.92	1,414.75	1,233.22	7.794	CC
DIER 34-8 - CPR WELL - GYRO	13,300.00	7,292.83	1,415.50	1,232.65	7.742	ES
DIER 34-8 - CPR WELL - GYRO	13,400.00	7,294.80	1,422.26	1,237.19	7.685	SF
DIER 44-8 - CPR WELL - GYRO	13,120.68	7,314.82	324.06	146.26	1.823	CC, ES, SF
DIER 4-4-8 - CPR WELL - SURVEYS	14,886.86	7,354.49	1,804.57	1,578.76	7.992	CC, ES, SF
DIER 4-8 - CPR WELL - GYRO						Out of range
DIER 8-4-8 - CPR WELL - SURVEYS	14,886.86	7,499.61	869.09	658.56	4.128	CC, ES, SF
DIER 8-6-8 - CPR WELL - SURVEYS	13,972.76	7,473.23	822.49	613.20	3.930	CC, ES
DIER 8-6-8 - CPR WELL - SURVEYS	14,000.00	7,473.17	822.94	613.35	3.926	SF
DIER J1A - CPR WELL - GYRO	13,820.86	7,332.87	525.28	328.14	2.665	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 4P-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 4P-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 #3	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)						
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	5,383.57	5,200.00	1,652.50	1,613.97	42.885	CC
ELKHORN CO-B 6 - KPK WELL - NO SURVEYS	5,400.00	5,200.00	1,652.58	1,613.96	42.794	ES
ELKHORN CO-B 6 - KPK WELL - NO SURVEYS	5,600.00	5,200.00	1,666.61	1,627.24	42.326	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	2,857.85	2,511.99	1,647.32	1,638.21	180.887	CC
FIRESTONE V 20-08D - KMG WELL - SURVEYS	6,746.66	6,773.72	1,669.36	1,635.13	48.773	ES
FIRESTONE V 20-08D - KMG WELL - SURVEYS	6,900.00	6,936.64	1,685.12	1,650.26	48.339	SF
FIRESTONE V 20-18D - KMG WELL - SURVEYS						Out of range
FIRESTONE V 20-2 - KMG WELL - GYRO	6,761.06	6,632.09	1,371.02	1,318.80	26.254	CC
FIRESTONE V 20-2 - KMG WELL - GYRO	6,800.00	6,671.42	1,371.19	1,318.75	26.148	ES
FIRESTONE V 20-2 - KMG WELL - GYRO	7,000.00	6,862.76	1,378.57	1,325.32	25.887	SF
FIRESTONE V 20-3 - KMG WELL - GYRO						Out of range
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	5,233.22	5,042.00	544.79	514.32	17.881	CC, ES, SF
MAHONEY 2 - KPK WELL - NO SURVEYS						Out of range
MAHONEY-PERRIN 2 - KPK WELL - NO SURVEYS	5,283.59	5,050.00	1,287.33	1,250.91	35.352	CC, ES
MAHONEY-PERRIN 2 - KPK WELL - NO SURVEYS	5,400.00	5,050.00	1,292.58	1,255.78	35.128	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	11,681.69	7,316.69	141.50	2.50	1.018	Level 2, CC, ES, SF
MILLER 11-17 - CPR WELL - SURVEYS						Out of range
MILLER 1-17 - CPR WELL - SURVEYS						Out of range
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	11,070.81	7,328.84	159.13	36.42	1.297	Level 3, CC, ES, SF
MILLER 22-17 - CPR WELL - SURVEYS						Out of range
MILLER 23-17 - CPR WELL - SURVEYS						Out of range
MILLER 24-17 - CPR WELL - GYRO						Out of range
MILLER 2-4-17 - 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

Anticollision Summary Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well BIGHORN 4P-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 4P-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 #3	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 31-17C - EXTRACTION WELL - GYRO	12,035.03	7,266.15	1,026.47	878.09	6.918	CC, ES
MILLER 31-17C - EXTRACTION WELL - GYRO	12,200.00	7,266.60	1,039.64	887.86	6.850	SF
MILLER 3-17J - CPR WELL - GYRO	8,785.58	7,337.92	472.37	407.38	7.268	CC
MILLER 3-17J - CPR WELL - GYRO	8,800.00	7,338.24	472.59	407.33	7.242	ES, SF
MILLER 32-17 - EXTRACTION WELL - GYRO						Out of range
MILLER 33-17J - CPR WELL - SURVEYS	1,127.50	1,102.28	784.84	781.25	218.402	CC
MILLER 33-17J - CPR WELL - SURVEYS	1,200.00	1,173.02	784.97	781.09	202.364	ES
MILLER 33-17J - CPR WELL - SURVEYS	9,700.00	7,589.87	1,239.67	1,138.33	12.232	SF
MILLER 34-17J - CPR WELL - SURVEYS	980.95	953.99	661.16	658.16	220.238	CC
MILLER 34-17J - CPR WELL - SURVEYS	1,000.00	972.14	661.18	658.10	215.052	ES
MILLER 34-17J - CPR WELL - SURVEYS	8,500.00	8,500.00	1,204.89	1,144.49	19.950	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	205.55	189.63	1,057.90	1,057.40	2,128.023	CC, ES
MILLER 43-17 - EXTRACTION WELL - GYRO	5,100.00	4,989.58	1,930.41	1,909.69	93.197	SF
MILLER 43-17J - EXTRACTION WELL - GYRO	9,403.18	7,339.24	72.39	-7.48	0.906	Level 1, CC, ES, SF
MILLER 44-17J - CPR WELL - SURVEYS	7,935.98	7,488.93	322.10	269.74	6.152	CC, ES, SF
MILLER CJ 17-A - CPR WELL - SURVEYS						Out of range
PACE 1 - GO PUMPING & CONS WELL - NO SURVEYS	2,454.92	2,407.39	526.46	513.61	40.973	CC
PACE 1 - GO PUMPING & CONS WELL - NO SURVEYS	2,600.00	2,549.82	527.19	513.27	37.867	ES
PACE 1 - GO PUMPING & CONS WELL - NO SURVEYS	5,200.00	5,092.00	741.75	707.06	21.382	SF
PACE 2 - TEXAS TEA WELL - NO SURVEYS	200.00	175.00	1,349.03	1,348.35	2,006.272	CC, ES
PACE 2 - TEXAS TEA WELL - NO SURVEYS	4,400.00	4,304.92	1,927.51	1,900.91	72.461	SF
PACE 3 - DENVER EAST MACHINERY WELL - NO SUR	1,253.78	1,231.20	287.29	280.92	45.086	CC
PACE 3 - DENVER EAST MACHINERY WELL - NO SUR	1,300.00	1,276.58	287.43	280.81	43.418	ES
PACE 3 - DENVER EAST MACHINERY WELL - NO SUR	5,100.00	5,007.13	786.34	755.29	25.322	SF
PERRIN GU 1 - KMG WELL - GYRO	6,752.74	6,654.33	747.92	717.52	24.606	CC, ES
PERRIN GU 1 - KMG WELL - GYRO	6,800.00	6,702.71	749.37	718.76	24.478	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						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	3,140.40	3,162.46	1,064.95	1,038.39	40.101	CC
RUCA 20-1HZ - KMG - PLAN ONLY	3,200.00	3,210.31	1,065.54	1,038.33	39.153	ES
RUCA 20-1HZ - KMG - PLAN ONLY	8,700.00	7,500.00	1,916.24	1,826.05	21.247	SF
RUCA 20-2HZ - KMG - PLAN ONLY	3,347.26	3,407.83	946.57	917.98	33.113	CC, ES
RUCA 20-2HZ - KMG - PLAN ONLY	8,500.00	7,538.00	1,531.33	1,447.54	18.277	SF
RUCA 20-3HZ - KMG - PLAN ONLY	3,478.06	3,541.74	853.60	823.97	28.808	CC
RUCA 20-3HZ - KMG - PLAN ONLY	3,500.00	3,559.77	853.69	823.82	28.575	ES
RUCA 20-3HZ - KMG - PLAN ONLY	8,300.00	7,475.20	1,319.37	1,241.75	16.999	SF
RUCA 20-4HZ - KMG - PLAN ONLY	3,578.45	3,660.74	726.54	695.84	23.661	CC
RUCA 20-4HZ - KMG - PLAN ONLY	3,600.00	3,678.74	726.64	695.69	23.483	ES
RUCA 20-4HZ - KMG - PLAN ONLY	8,000.00	7,514.73	1,022.77	952.12	14.477	SF
RUCA 20-5HZ - KMG - PLAN ONLY	3,692.77	3,807.83	580.48	548.66	18.247	CC, ES
RUCA 20-5HZ - KMG - PLAN ONLY	8,000.00	7,556.70	755.29	685.00	10.745	SF
RUCA 20-6HZ - KMG - PLAN ONLY	3,932.68	4,031.85	447.34	414.10	13.460	CC, ES
RUCA 20-6HZ - KMG - PLAN ONLY	7,700.00	7,667.31	557.32	491.91	8.520	SF
RUCA 20-7HZ - KMG - PLAN ONLY	7,537.71	7,618.15	122.05	60.03	1.968	CC, ES, SF
RUCA 20-8HZ - KMG - PLAN ONLY	3,898.92	4,021.87	113.06	80.09	3.429	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 4P-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 4P-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 #3	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 20-8HZ - KMG - PLAN ONLY	3,900.00	4,022.78	113.06	80.08	3.428	ES
RUCA 20-8HZ - KMG - PLAN ONLY	7,800.00	7,624.17	191.84	126.08	2.917	SF
RUCA 20-9HZ - KMG - PLAN ONLY	3,875.67	3,989.38	302.29	269.73	9.283	CC, ES
RUCA 20-9HZ - KMG - PLAN ONLY	7,700.00	7,645.58	438.24	374.07	6.829	SF
SATER 21-8 - KMG WELL - SURVEYS						Out of range
SATER 24-8 - KMG WELL - SURVEYS	14,886.86	7,437.26	704.76	545.86	4.435	CC, ES, SF
SATER 24C-5HZ - KMG WELL - SURVEYS	14,886.86	7,257.53	461.93	373.90	5.247	CC, ES, SF
SATER 24N-5HZ - KMG WELL - SURVEYS	14,886.86	7,099.99	908.72	714.49	4.678	CC, ES, SF
SATER 25C-5HZ - KMG WELL - SURVEYS	14,886.86	7,079.33	1,610.26	1,388.65	7.266	CC, ES, SF
SATER 2-8 - KMG WELL - SURVEYS						Out of range
SATER 28-8 - KMG WELL - SURVEYS						Out of range
SATER 40N-5HZ - KMG WELL - SURVEYS	14,886.86	7,126.94	582.96	446.44	4.270	CC, ES, SF
SATER 7-8 - KMG WELL - SURVEYS	14,886.86	7,367.54	1,579.89	1,397.76	8.675	CC, ES, SF
SATER 8-8 - KMG WELL - SURVEYS	14,886.86	7,704.90	1,160.74	1,071.12	12.952	CC, ES, SF
SATER ALFRED D UNIT 1 (P&A) - KMG WELL - GYRO	14,886.86	7,248.33	1,626.49	1,525.27	16.068	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	14,886.86	7,376.60	1,718.80	1,493.90	7.643	CC, ES, SF
SPRAGUE 14-9 - CPR WELL - GYRO	13,385.55	7,439.47	1,653.74	1,468.60	8.932	CC
SPRAGUE 14-9 - CPR WELL - GYRO	13,400.00	7,439.19	1,653.80	1,468.31	8.916	ES
SPRAGUE 14-9 - CPR WELL - GYRO	13,600.00	7,435.48	1,667.58	1,478.62	8.825	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	14,886.86	9,250.79	1,426.61	1,176.29	5.699	CC, ES, SF
SPRAGUE 3AA-9H-N267 - CPR WELL - SURVEYS	14,886.86	9,437.45	1,220.62	969.76	4.866	CC, ES, SF
SPRAGUE 3B-9H-N267 - CPR WELL - SURVEYS	14,886.86	9,360.44	1,633.89	1,383.91	6.536	CC, ES, SF
SPRAGUE 3C-9H-N267 - CPR WELL - SURVEYS	14,886.86	9,094.65	1,919.45	1,668.76	7.656	CC, ES, 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	1,786.28	1,800.03	1,395.98	1,386.58	148.612	CC
STANLEY #2 - GERRITY WELL - NO SURVEYS	2,000.00	2,009.78	1,396.57	1,386.03	132.535	ES
STANLEY #2 - GERRITY WELL - NO SURVEYS	5,300.00	5,175.00	1,549.67	1,512.01	41.154	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						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 4P-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 4P-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 #3	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)						
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						Out of range
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						Out of range
VOGL MCCOY 2F-5H-F267 - CPR WELL - SURVEYS						Out of range
VOGL MCCOY 2G-5H-F267 - CPR WELL - SURVEYS						Out of range
VOGL MCCOY 2H-5H-F267 - CPR WELL - SURVEYS	14,714.35	13,495.39	1,837.61	1,519.24	5.772	CC, ES
VOGL MCCOY 2H-5H-F267 - CPR WELL - SURVEYS	14,800.00	13,438.12	1,840.71	1,520.87	5.755	SF

Cathedral Energy Services

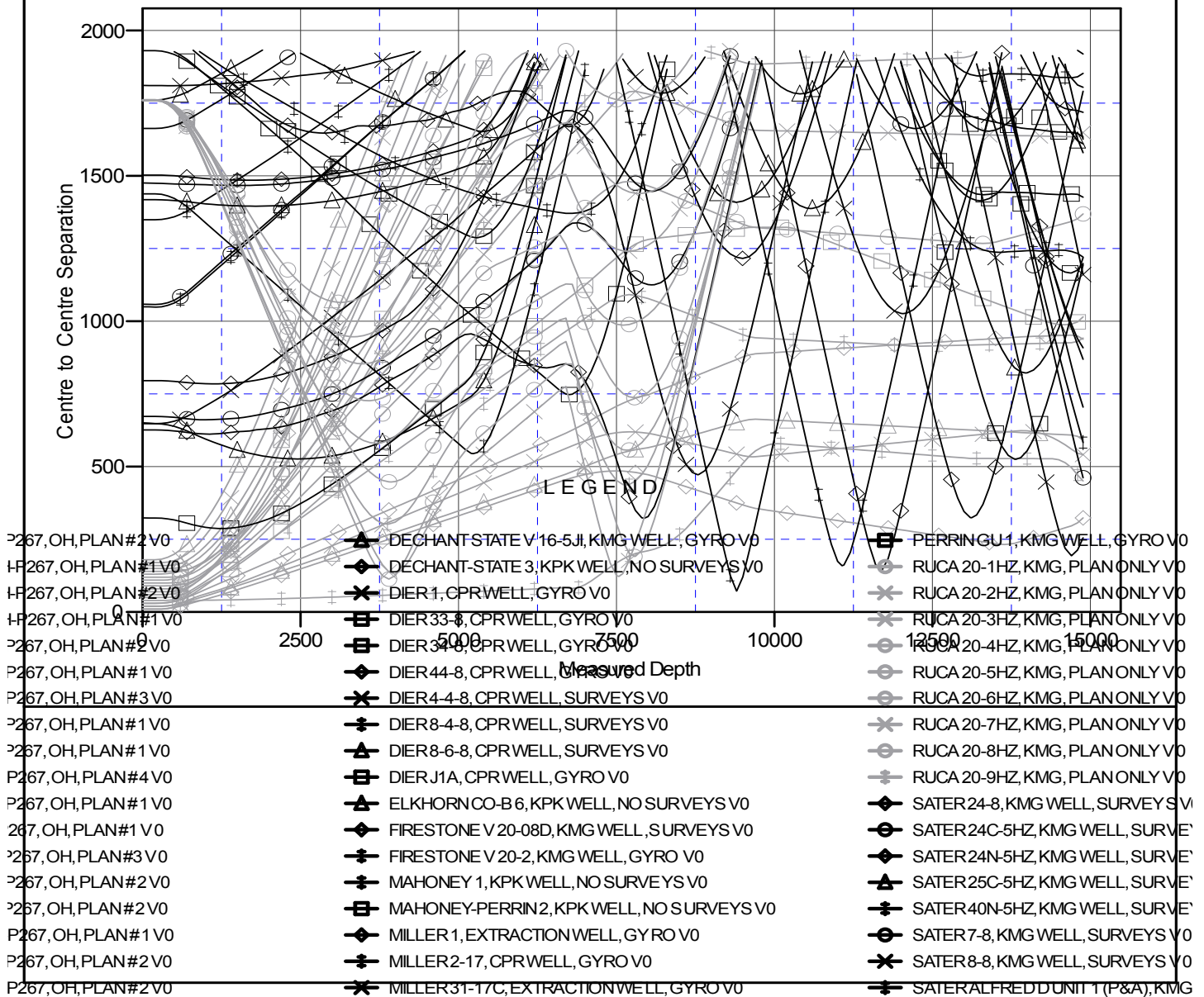
Anticollision Summary Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well BIGHORN 4P-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 4P-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 #3	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 4P-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

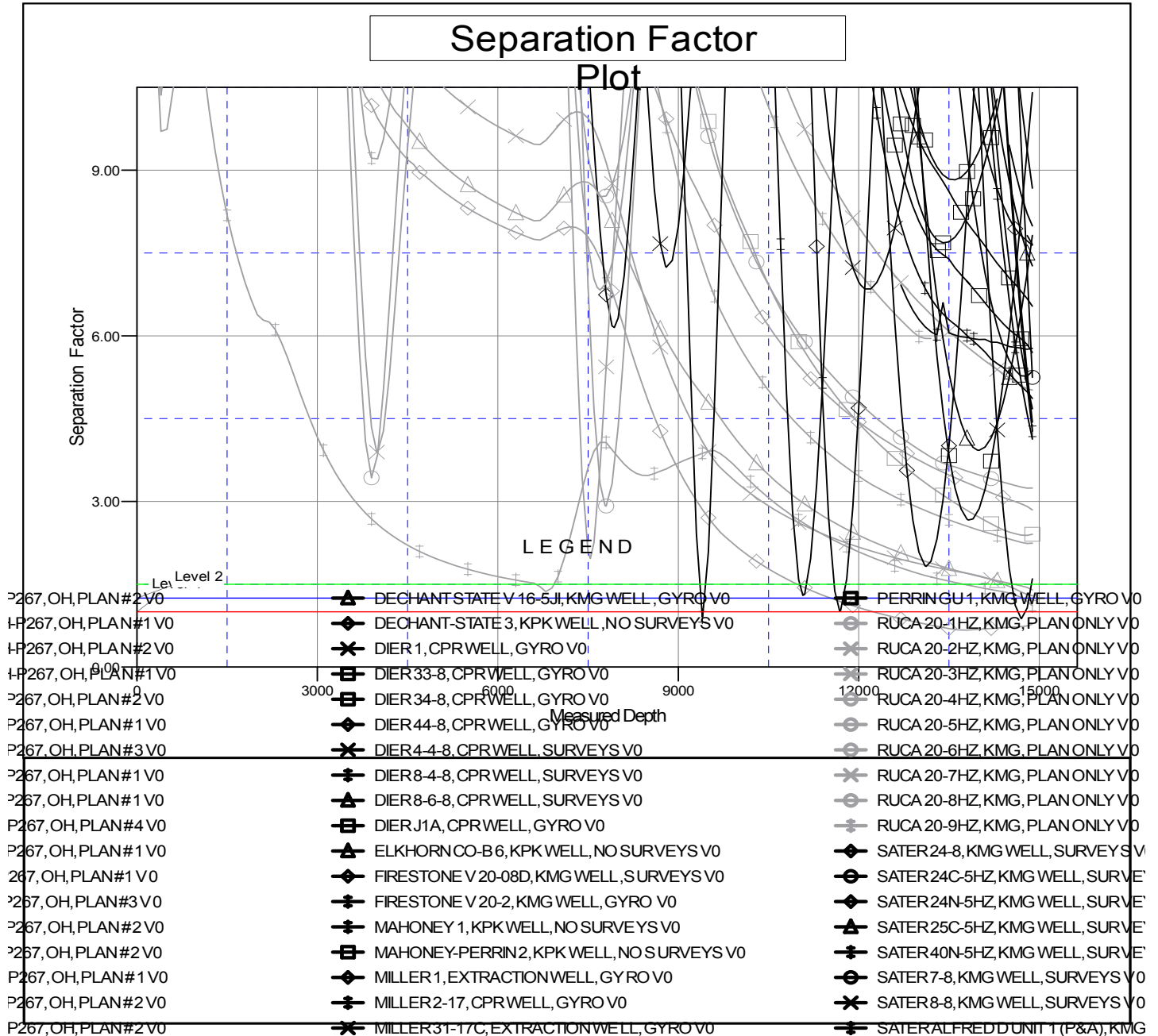
Cathedral Energy Services

Anticollision Summary Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well BIGHORN 4P-17H-P267
Project:	DJ BASIN	TVD Reference:	23' KB @ 4983.00usft
Reference Site:	BIGHORN	MD Reference:	23' KB @ 4983.00usft
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Reference Well:	BIGHORN 4P-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 #3	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 4P-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