

Crestone Peak Resources

DJ BASIN

S25-T1N-R66W (LOCHBUIE LAND)

LOCHBUIE LAND 2D-25H-D166

OH

PLAN #1

Anticollision Summary Report

25 May, 2018

Cathedral Energy Services

Anticollision Summary Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well LOCHBUIE LAND 2D-25H-D166 - Slot LOCHBUIE LAND 2D-25H-D166 SHL
Project:	DJ BASIN	TVD Reference:	KB @ 5100.00usft
Reference Site:	S25-T1N-R66W (LOCHBUIE LAND)	MD Reference:	KB @ 5100.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	LOCHBUIE LAND 2D-25H-D166	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 1,933.21 usft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program	Date	5/25/2018		
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	11,909.45	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
S25-T1N-R66W (LOCHBUIE LAND)						
AZUL 13-11HZ - KMG WELL - PLAN ONLY	8,761.66	12,171.49	1,225.32	1,145.37	15.327	CC
AZUL 13-11HZ - KMG WELL - PLAN ONLY	8,800.00	12,171.49	1,225.92	1,145.13	15.174	ES
AZUL 13-11HZ - KMG WELL - PLAN ONLY	9,500.00	12,171.49	1,430.58	1,315.17	12.396	SF
AZUL 13-12HZ - KMG WELL - PLAN ONLY	9,046.68	12,521.28	1,224.34	1,134.65	13.651	CC, ES
AZUL 13-12HZ - KMG WELL - PLAN ONLY	9,800.00	12,521.28	1,437.53	1,315.98	11.826	SF
AZUL 13-19HZ - KMG WELL - PLAN ONLY	10,397.98	12,512.25	1,219.00	1,085.11	9.104	CC
AZUL 13-19HZ - KMG WELL - PLAN ONLY	10,400.00	12,512.25	1,219.00	1,085.10	9.104	ES
AZUL 13-19HZ - KMG WELL - PLAN ONLY	10,800.00	12,512.25	1,283.58	1,141.10	9.009	SF
AZUL 13-1HZ - KMG WELL - PLAN ONLY	7,334.30	12,639.08	1,250.57	1,192.26	21.446	CC
AZUL 13-1HZ - KMG WELL - PLAN ONLY	7,400.00	12,639.08	1,252.98	1,192.10	20.581	ES
AZUL 13-1HZ - KMG WELL - PLAN ONLY	8,200.00	12,639.08	1,577.58	1,475.65	15.477	SF
AZUL 13-20HZ - KMG WELL - PLAN ONLY	10,090.45	12,681.44	1,231.17	1,108.57	10.042	CC
AZUL 13-20HZ - KMG WELL - PLAN ONLY	10,100.00	12,681.44	1,231.21	1,108.47	10.031	ES
AZUL 13-20HZ - KMG WELL - PLAN ONLY	10,600.00	12,681.44	1,332.45	1,193.13	9.564	SF
AZUL 13-21HZ - KMG WELL - PLAN ONLY	9,857.36	12,502.03	1,219.09	1,105.32	10.716	CC
AZUL 13-21HZ - KMG WELL - PLAN ONLY	9,900.00	12,502.03	1,219.83	1,105.21	10.643	ES
AZUL 13-21HZ - KMG WELL - PLAN ONLY	10,400.00	12,502.03	1,334.40	1,199.36	9.881	SF
AZUL 13-22HZ - KMG WELL - PLAN ONLY	9,627.58	12,413.56	1,218.60	1,113.15	11.557	CC, ES
AZUL 13-22HZ - KMG WELL - PLAN ONLY	10,200.00	12,413.56	1,346.35	1,215.18	10.264	SF
AZUL 13-23HZ - KMG WELL - PLAN ONLY	9,378.46	12,625.16	1,230.62	1,132.26	12.511	CC
AZUL 13-23HZ - KMG WELL - PLAN ONLY	9,400.00	12,625.16	1,230.81	1,131.72	12.421	ES
AZUL 13-23HZ - KMG WELL - PLAN ONLY	10,000.00	12,625.16	1,378.67	1,250.03	10.718	SF
AZUL 13-24HZ - KMG WELL - SURVEYS	11,909.45	13,242.00	1,273.08	1,048.89	5.678	CC, ES, SF
AZUL 13-25HZ - KMG WELL - SURVEYS	11,909.45	13,364.00	1,236.03	1,025.74	5.878	CC, ES, SF
AZUL 13-26HZ - KMG WELL - SURVEYS	11,600.00	12,966.00	1,221.67	1,027.37	6.287	SF
AZUL 13-26HZ - KMG WELL - SURVEYS	11,700.00	12,966.00	1,216.94	1,023.39	6.288	ES
AZUL 13-26HZ - KMG WELL - SURVEYS	11,707.73	12,966.00	1,216.91	1,023.45	6.290	CC
AZUL 13-27HZ - KMG WELL - SURVEYS	11,300.00	12,904.00	1,226.13	1,049.45	6.940	SF
AZUL 13-27HZ - KMG WELL - SURVEYS	11,374.69	12,904.00	1,223.85	1,047.77	6.950	CC, ES
AZUL 13-28HZ - KMG WELL - SURVEYS	11,050.04	12,857.00	1,232.78	1,071.10	7.625	CC, ES, SF
AZUL 13-29HZ - KMG WELL - SURVEYS	10,734.00	12,714.00	1,216.38	1,068.97	8.252	CC, ES, SF
AZUL 13-2HZ - KMG WELL - PLAN ONLY	7,540.56	12,395.56	1,252.19	1,194.35	21.648	CC
AZUL 13-2HZ - KMG WELL - PLAN ONLY	7,600.00	12,395.56	1,254.18	1,193.82	20.778	ES
AZUL 13-2HZ - KMG WELL - PLAN ONLY	8,400.00	12,395.56	1,562.91	1,459.65	15.136	SF
AZUL 13-3HZ - KMG WELL - PLAN ONLY	7,729.92	12,283.07	1,226.08	1,172.32	22.803	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 LOCHBUIE LAND 2D-25H-D166 - Slot LOCHBUIE LAND 2D-25H-D166 SHL
Project:	DJ BASIN	TVD Reference:	KB @ 5100.00usft
Reference Site:	S25-T1N-R66W (LOCHBUIE LAND)	MD Reference:	KB @ 5100.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	LOCHBUIE LAND 2D-25H-D166	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
S25-T1N-R66W (LOCHBUIE LAND)						
AZUL 13-3HZ - KMG WELL - PLAN ONLY	7,800.00	12,283.07	1,228.01	1,171.24	21.634	ES
AZUL 13-3HZ - KMG WELL - PLAN ONLY	8,700.00	12,283.07	1,561.06	1,452.96	14.440	SF
AZUL 13-4HZ - KMG WELL - PLAN ONLY	8,081.71	12,546.66	1,225.74	1,164.97	20.170	CC
AZUL 13-4HZ - KMG WELL - PLAN ONLY	8,100.00	12,546.66	1,225.87	1,164.46	19.960	ES
AZUL 13-4HZ - KMG WELL - PLAN ONLY	9,000.00	12,546.66	1,531.56	1,420.08	13.738	SF
AZUL 13-9HZ - KMG WELL - PLAN ONLY	8,418.53	12,663.20	1,237.51	1,166.69	17.474	CC
AZUL 13-9HZ - KMG WELL - PLAN ONLY	8,500.00	12,663.20	1,240.19	1,166.50	16.831	ES
AZUL 13-9HZ - KMG WELL - PLAN ONLY	9,200.00	12,663.20	1,463.60	1,352.08	13.124	SF
BEIERLE 2 - KMG WELL - SURVEYS	0.00	5.93	1,527.66			
BEIERLE 2 - KMG WELL - SURVEYS	400.00	401.55	1,528.25	1,527.14	1,379.328	ES
BEIERLE 2 - KMG WELL - SURVEYS	3,600.00	3,025.90	1,916.66	1,904.72	160.632	SF
CRONIN 2 - RITTER OIL - NO SURVEYS	834.86	795.00	1,614.10	1,610.06	399.872	CC, ES
CRONIN 2 - RITTER OIL - NO SURVEYS	1,700.00	795.00	1,831.33	1,825.85	333.960	SF
JOHNSON 1N-65W-30-1S - VERDAD RESOURCES LL						Out of range
JOHNSON 1N-65W-30-2S - VERDAD RESOURCES LL						Out of range
LOCHBUIE LAND 2A-25H-D166 - OH - PLAN #1	200.00	201.00	30.00	29.51	60.629	CC, ES
LOCHBUIE LAND 2A-25H-D166 - OH - PLAN #1	11,909.45	11,961.85	699.77	398.72	2.324	SF
LOCHBUIE LAND 2B-25H-D166 - OH - PLAN #1	300.00	301.00	20.00	19.15	23.508	CC, ES
LOCHBUIE LAND 2B-25H-D166 - OH - PLAN #1	11,909.45	12,111.51	526.51	241.29	1.846	SF
LOCHBUIE LAND 2C-25H-D166 - OH - PLAN #1	0.00	1.00	10.00			
LOCHBUIE LAND 2C-25H-D166 - OH - PLAN #1	11,909.45	11,861.92	402.28	105.42	1.355	Level 3, SF
LOCHBUIE LAND 2E-25H-D166 - OH - PLAN #1	500.00	500.00	10.00	8.44	6.406	CC
LOCHBUIE LAND 2E-25H-D166 - OH - PLAN #1	11,909.45	11,847.40	273.22	-17.24	0.941	Level 1, ES, SF
LOCHBUIE LAND 2F-25H-D166 - OH - PLAN #1	500.00	500.00	20.00	18.44	12.813	CC, ES
LOCHBUIE LAND 2F-25H-D166 - OH - PLAN #1	11,909.45	12,086.84	373.78	104.17	1.386	Level 3, SF
LOCHBUIE LAND 2G-25H-D166 - OH - PLAN #1	200.00	200.00	30.00	29.51	60.848	CC, ES
LOCHBUIE LAND 2G-25H-D166 - OH - PLAN #1	11,909.45	11,754.04	631.72	340.66	2.170	SF
LOCHBUIE LAND 2H-25H-D166 - OH - PLAN #1	200.00	200.00	40.00	39.51	81.131	CC, ES
LOCHBUIE LAND 2H-25H-D166 - OH - PLAN #1	11,908.23	11,920.15	659.70	358.86	2.193	SF
LOCHBUIE LAND 2I-25H-D166 - OH - PLAN #1	200.00	199.00	50.00	49.51	101.781	CC, ES
LOCHBUIE LAND 2I-25H-D166 - OH - PLAN #1	11,909.45	11,874.16	926.37	626.17	3.086	SF
LOCHBUIE LAND 2J-25H-D166 - OH - PLAN #1	200.00	199.00	60.00	59.51	122.137	CC, ES
LOCHBUIE LAND 2J-25H-D166 - OH - PLAN #1	11,907.58	12,141.67	1,174.48	876.62	3.943	SF
LOCHBUIE LAND 2K-25H-D166 - OH - PLAN #1	200.00	199.00	70.00	69.51	142.494	CC, ES
LOCHBUIE LAND 2K-25H-D166 - OH - PLAN #1	11,909.45	11,987.67	1,319.77	1,018.84	4.386	SF
LOCHBUIE LAND 2L-25H-D166 - OH - PLAN #1	200.00	199.00	80.00	79.51	162.850	CC, ES
LOCHBUIE LAND 2L-25H-D166 - OH - PLAN #1	11,909.45	11,958.60	1,585.02	1,284.40	5.273	SF
SAM 13-25 - CPR WELL - SURVEYS						Out of range
TEMPLIN 1 - VESSELS THOMAS G - SURVEYS	11,328.71	7,345.02	206.05	58.78	1.399	Level 3, 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 LOCHBUIE LAND 2D-25H-D166 - Slot LOCHBUIE LAND 2D-25H-D166 SHL
Project:	DJ BASIN	TVD Reference:	KB @ 5100.00usft
Reference Site:	S25-T1N-R66W (LOCHBUIE LAND)	MD Reference:	KB @ 5100.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	LOCHBUIE LAND 2D-25H-D166	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
S25-T1N-R66W (SAM)						
SAM 3A-25H-M166 - OH - PLAN #2						Out of range
SAM 3A-25H-M166 - OH - SURVEYS						Out of range
SAM 3B-25H-M166 - OH - PLAN #2						Out of range
SAM 3B-25H-M166 - OH - SURVEYS						Out of range
SAM 3C-25H-M166 - OH - PLAN #2						Out of range
SAM 3C-25H-M166 - OH - SURVEYS						Out of range
SAM 3D-25H-M166 - OH - PLAN #2						Out of range
SAM 3E-25H-M166 - OH - PLAN #2						Out of range
SAM 3F-25H-M166 - OH - PLAN #2						Out of range
SAM 3F-25H-M166 - OH - SURVEYS						Out of range
SAM 3G-25H-M166 - OH - PLAN #1						Out of range
SAM 3H-25H-M166 - OH - PLAN #2						Out of range
SAM 3I-25H-M166 - OH - PLAN #3						Out of range
SAM 3J-25H-M166 - OH - PLAN #2						Out of range
SAM 3K-25H-M166 - OH - PLAN #2						Out of range
SAM 3L-25H-M166 - OH - PLAN #2						Out of range

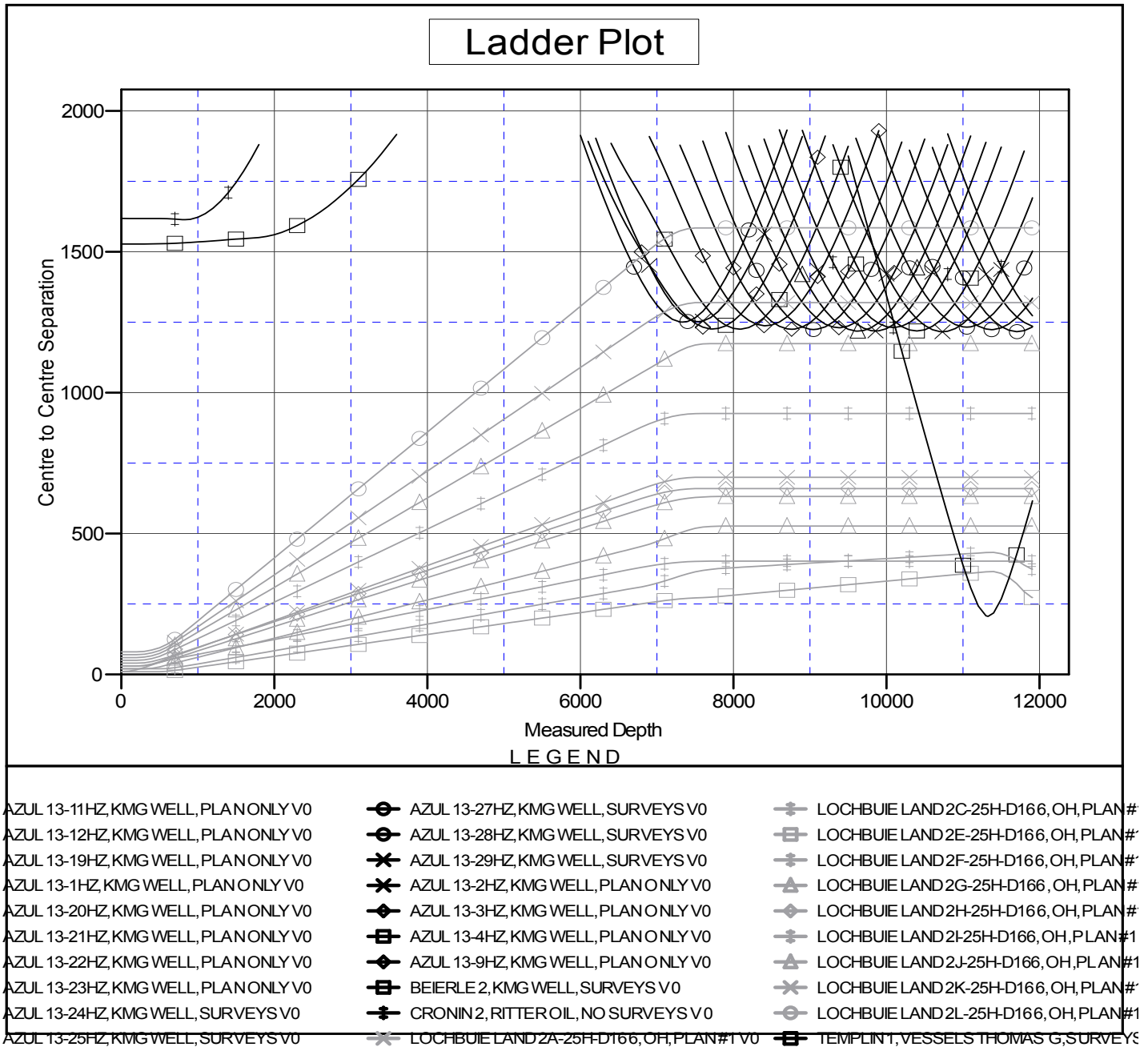
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Anticollision Summary Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well LOCHBUIE LAND 2D-25H-D166 - Slot LOCHBUIE LAND 2D-25H-D166 SHL
Project:	DJ BASIN	TVD Reference:	KB @ 5100.00usft
Reference Site:	S25-T1N-R66W (LOCHBUIE LAND)	MD Reference:	KB @ 5100.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	LOCHBUIE LAND 2D-25H-D166	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 KB @ 5100.00usft
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000

Coordinates are relative to: LOCHBUIE LAND 2D-25H-D166 - Slot LOCHBUIE LA
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.50°



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

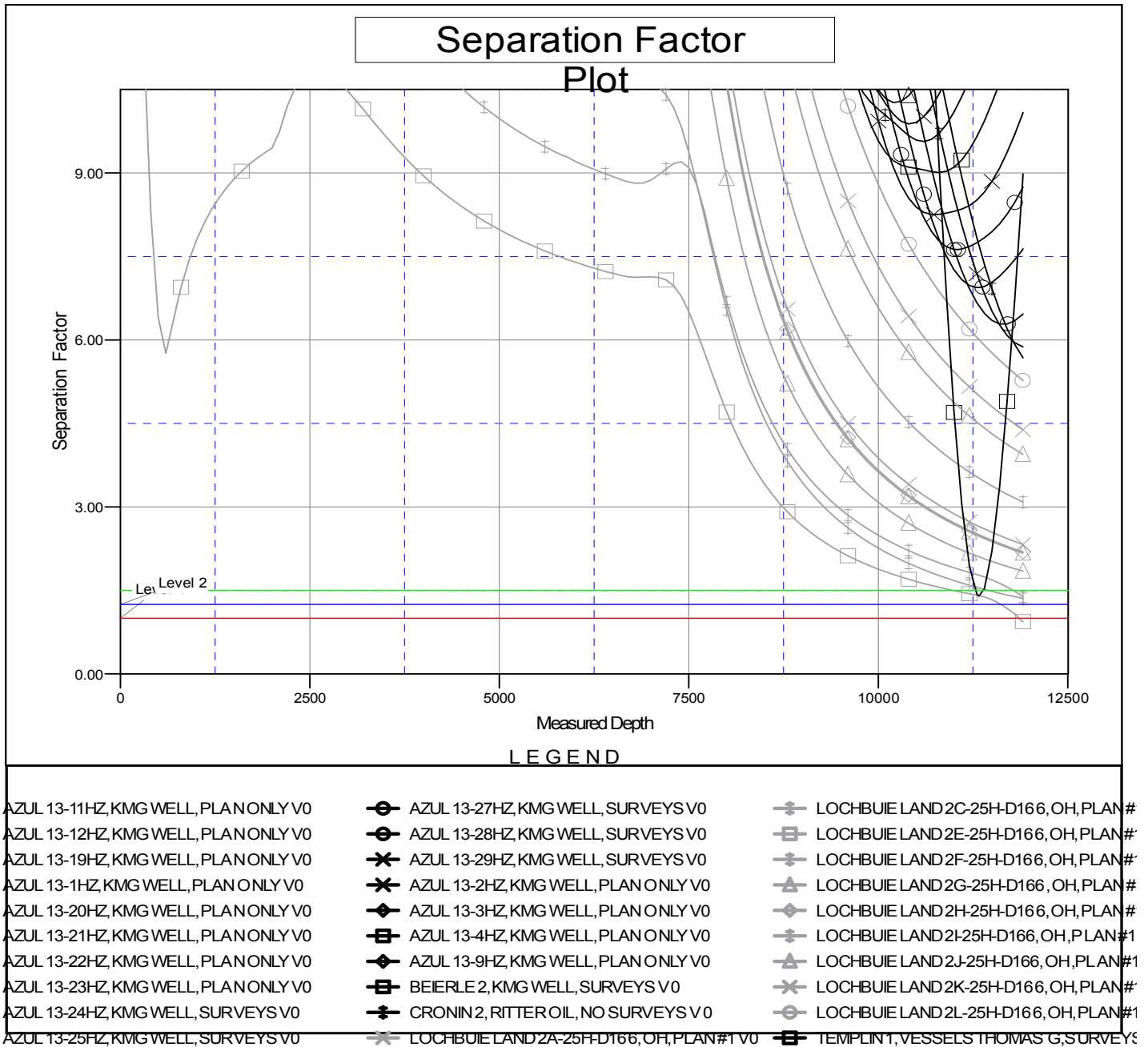
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Anticollision Summary Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well LOCHBUIE LAND 2D-25H-D166 - Slot LOCHBUIE LAND 2D-25H-D166 SHL
Project:	DJ BASIN	TVD Reference:	KB @ 5100.00usft
Reference Site:	S25-T1N-R66W (LOCHBUIE LAND)	MD Reference:	KB @ 5100.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	LOCHBUIE LAND 2D-25H-D166	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 KB @ 5100.00usft
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000

Coordinates are relative to: LOCHBUIE LAND 2D-25H-D166 - Slot LOCHBUIE LA
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.50°



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