

Crestone Peak Resources

DJ BASIN

S4-T1N-R65W

RUEGGE 3H-4H-N165

OH

PLAN #1

Anticollision Report

12 November, 2017

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,415.18usft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date	11/12/2017		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	12,154.60	PLAN #1 (OH)	MWD+HDGM	OWSG MWD + HDGM

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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 Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance		Separation Factor	Warning
			Between Centres (usft)	Between Ellipses (usft)		
S4-T1N-R65W						
ANSCHUTZ 2 - KMG WELL - NO SURVEYS						Out of range
BANE 27N1-9HZ - KMG WELL - PLAN ONLY						Out of range
BANE 27N2-9HZ - KMG WELL - SURVEYS						Out of range
BANE 28N1-9HZ - KMG WELL - PLAN ONLY	6,976.13	12,215.61	1,085.77	966.33	9.090	CC
BANE 28N1-9HZ - KMG WELL - PLAN ONLY	7,000.00	12,225.80	1,085.98	966.17	9.064	ES
BANE 28N1-9HZ - KMG WELL - PLAN ONLY	7,100.00	12,276.13	1,091.05	970.00	9.013	SF
BANE 28N2-9HZ - KMG WELL - SURVEYS	6,981.75	12,058.00	1,271.52	1,170.75	12.618	CC, ES
BANE 28N2-9HZ - KMG WELL - SURVEYS	7,000.00	12,058.00	1,271.72	1,170.86	12.608	SF
BANE 28N3-9HZ - KMG WELL - SURVEYS						Out of range
BANE 2N1-9HZ - KMG WELL - NO SURVEYS						Out of range
BANE 2N2-9HZ - KMG WELL - NO SURVEYS						Out of range
BANE 2N3-9HZ - KMG WELL - SURVEYS						Out of range
BAT 28C-9HZ - KMG WELL - SURVEYS	7,106.40	12,133.00	788.08	696.36	8.592	CC, ES
BAT 28C-9HZ - KMG WELL - SURVEYS	7,150.00	12,133.00	789.98	697.82	8.572	SF
BAT 28N-9HZ - KMG WELL - SURVEYS	7,012.14	11,953.00	913.98	810.96	8.872	CC, ES
BAT 28N-9HZ - KMG WELL - SURVEYS	7,050.00	11,953.00	915.10	811.59	8.841	SF
BAT 29C-9HZ - KMG WELL - SURVEYS	7,141.99	12,205.00	482.28	433.04	9.793	CC, ES, SF
BAT 29N1-9HZ - KMG WELL - SURVEYS	7,091.52	12,122.00	601.06	500.78	5.994	CC
BAT 29N1-9HZ - KMG WELL - SURVEYS	7,100.00	12,122.00	601.15	500.68	5.983	ES
BAT 29N1-9HZ - KMG WELL - SURVEYS	7,150.00	12,122.00	605.42	504.18	5.980	SF
BAT 29N2-9HZ - KMG WELL - SURVEYS	6,948.80	11,735.00	587.48	526.51	9.635	CC
BAT 29N2-9HZ - KMG WELL - SURVEYS	6,950.00	11,735.00	587.48	526.49	9.633	ES
BAT 29N2-9HZ - KMG WELL - SURVEYS	7,000.00	11,735.00	591.49	529.99	9.618	SF
BAT 3N1-9HZ - KMG WELL - NO SURVEYS						Out of range
BAT 3N1-9HZX - KMG WELL - SURVEYS	7,042.84	12,010.00	435.02	376.71	7.459	CC, ES
BAT 3N1-9HZX - KMG WELL - SURVEYS	7,050.00	12,010.00	435.11	376.77	7.457	SF
BAT 3N2-9HZ - KMG WELL - SURVEYS	6,973.86	11,878.00	621.38	529.04	6.729	CC, ES
BAT 3N2-9HZ - KMG WELL - SURVEYS	7,000.00	11,878.00	622.19	529.44	6.709	SF
BAT 4C-9HZ - KMG WELL - SURVEYS	7,164.25	12,230.00	839.76	739.17	8.349	CC, ES
BAT 4C-9HZ - KMG WELL - SURVEYS	7,200.00	12,230.00	841.08	739.79	8.303	SF
BOYD 1N-32HZ - KMG WELL - SURVEYS						Out of range
BOYD 26N-32HZ - KMG WELL - SURVEYS						Out of range
BOYD 27C-5HZ - KMG WELL - SURVEYS						Out of range
BOYD 27N-5HZ - KMG WELL - SURVEYS						Out of range
BOYD 28C-32HZ - KMG WELL - SURVEYS						Out of range
BOYD 2N-32HZ - KMG WELL - SURVEYS						Out of range
BOYD 43-5 - KMG WELL - NO SURVEYS						Out of range
CHAPIN 33-4 - CPR WELL - GYRO						Out of range
CHAPIN 34-4 - CPR WELL - GYRO	0.00	0.00	1,341.35			
CHAPIN 34-4 - CPR WELL - GYRO	1,215.58	1,206.41	1,343.07	1,336.93	218.733	ES
CHAPIN 34-4 - CPR WELL - GYRO	2,100.00	2,086.83	1,404.99	1,394.18	129.919	SF
CHAPIN 43-4 - CPR WELL - GYRO						Out of range
CHAPIN 44-4 - CPR WELL - GYRO						Out of range
CHAVEZ 4A-4H - CPR WELL - SURVEYS						Out of range
CHAVEZ 4B-4H - CPR WELL - SURVEYS						Out of range
COLFER 13C-34HZ - KMG WELL - SURVEYS						Out of range
COLFER 13N-34HZ - KMG WELL - SURVEYS						Out of range
COLFER 14C-34HZX - KMG WELL - SURVEYS						Out of range
COLFER 14N-34HZ - KMG WELL - SURVEYS						Out of range
COLFER 35N-34HZ - KMG WELL - SURVEYS						Out of range
COLFER 36N-34HZ - KMG WELL - SURVEYS						Out of range
DREILING 27C-32HZ - KMG WELL - SURVEYS						Out of range
DREILING 27N-32HZ - KMG 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 Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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 Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance		Separation Factor	Warning
			Between Centres (usft)	Between Ellipses (usft)		
S4-T1N-R65W						
EARL YOUNG GAS UNIT 1 - KMG WELL - NO SURVEY						Out of range
ENGLISH FARMS 13N-9HZ - KMG WELL - SURVEYS						Out of range
ENGLISH FARMS 15C-8HZ - KMG WELL - SURVEYS						Out of range
ENGLISH FARMS 15N-8HZ - KMG WELL - SURVEYS						Out of range
ENGLISH FARMS 16N-8HZ - KMG WELL - SURVEYS						Out of range
ENGLISH FARMS 34C-9HZ - KMG WELL - SURVEYS	7,359.31	7,298.63	1,337.04	1,291.12	29.117	CC, ES
ENGLISH FARMS 34C-9HZ - KMG WELL - SURVEYS	7,400.00	7,290.68	1,337.74	1,291.78	29.108	SF
ENGLISH FARMS 34N-9HZ - KMG WELL - SURVEYS	7,261.19	7,236.69	1,134.56	1,088.19	24.469	CC, ES, SF
ENGLISH FARMS 35N1-9HZ - KMG WELL - SURVEYS	7,050.00	7,198.68	815.98	768.86	17.317	SF
ENGLISH FARMS 35N1-9HZ - KMG WELL - SURVEYS	7,100.00	7,202.03	814.28	767.37	17.359	ES
ENGLISH FARMS 35N1-9HZ - KMG WELL - SURVEYS	7,101.41	7,202.07	814.28	767.37	17.361	CC
ENGLISH FARMS 36N-8HZ - KMG WELL - SURVEYS						Out of range
ENGLISH FARMS 37N-8HZ - KMG WELL - SURVEYS						Out of range
ENGLISH FARMS 38N-8HZ - KMG WELL - SURVEYS						Out of range
ENGLISH FARMS XX08-72HN - ENGLISH FARMS XX08						Out of range
GITTLEIN 1 - KMG WELL - NO SURVEYS						Out of range
GITTLEIN 11-4 - CPR WELL - GYRO	12,122.47	7,273.84	761.91	671.93	8.468	CC, ES
GITTLEIN 11-4 - CPR WELL - GYRO	12,154.60	7,273.30	762.58	672.06	8.424	SF
GITTLEIN 12-4J - CPR WELL - SURVEYS	10,630.61	7,425.69	867.44	794.62	11.913	CC, ES
GITTLEIN 12-4J - CPR WELL - SURVEYS	10,700.00	7,422.39	870.20	796.81	11.857	SF
GITTLEIN 21-4J - CPR WELL - SURVEYS	11,938.19	7,457.07	424.47	327.52	4.378	CC, ES, SF
GITTLEIN 22-4J - CPR WELL - SURVEYS	10,454.00	7,311.06	637.44	566.37	8.969	CC, ES, SF
GITTLEIN 29N-28HZ - KMG WELL - SURVEYS	12,154.60	6,851.00	887.08	829.31	15.357	CC, ES, SF
GITTLEIN 30C-28HZ - KMG WELL - SURVEYS						Out of range
GITTLEIN 30N-28HZ - KMG WELL - SURVEYS	12,154.60	6,859.00	1,171.03	1,095.48	15.502	CC, ES, SF
GITTLEIN 30N-28HZX - KMG WELL - SURVEYS	12,154.60	6,859.00	1,170.21	1,093.61	15.277	CC, ES, SF
GITTLEIN 30N-28HZXX - KMG WELL - SURVEYS	12,154.60	6,859.00	1,171.78	1,095.19	15.300	CC, ES, SF
GITTLEIN 3C-28HZ - KMG WELL - SURVEYS						Out of range
GITTLEIN 3N-28HZ - KMG WELL - SURVEYS	12,154.60	6,793.09	1,332.46	1,251.98	16.557	CC, ES, SF
GITTLEIN 4C-28HZ - KMG WELL - SURVEYS	12,154.60	7,010.00	728.71	668.54	12.111	CC, ES, SF
GITTLEIN 4C-28HZX - KMG WELL - SURVEYS	12,154.60	6,990.06	760.33	701.71	12.970	CC, ES, SF
GITTLEIN 4C-28HZXX - KMG WELL - SURVEYS	12,154.60	6,990.20	753.31	695.35	12.997	CC, ES, SF
GITTLEIN 4N-28HZ - KMG WELL - SURVEYS	12,154.60	6,809.00	817.04	771.73	18.033	CC, ES, SF
GREEN XX 8-3 - KMG WELL - NO SURVEYS						Out of range
HSR-DREILING 1-5A - KMG WELL - SURVEYS						Out of range
HSR-GITTLEIN 1A - KMG WELL - NO SURVEYS						Out of range
JOKER 1N1-9HZ - KMG WELL - SURVEYS						Out of range
JOKER 1N2-9HZ - KMG WELL - SURVEYS						Out of range
JOKER 1N3-9HZ - KMG WELL - SURVEYS						Out of range
JOKER 26N1-9HZ - KMG WELL - SURVEYS						Out of range
JOKER 26N2-9HZ - KMG WELL - SURVEYS						Out of range
JOKER 27N1-9HZ - KMG WELL - SURVEYS						Out of range
JOKER 27N2-9HZ - KMG WELL - SURVEYS						Out of range
MAYER 33-9P - KMG WELL - GYRO						Out of range
MAYER X 33-15DI - KMG WELL - GYRO						Out of range
MICHAEL R DREILING 1 - AMOCO WELL - NO SURVE						Out of range
MORITZ-ANSCHUTZ 1 - KMG WELL - NO SURVEYS						Out of range
OLIN 1 - CPR WELL - GYRO						Out of range
OLIN 1-4 - CPR WELL - GYRO	10,997.03	7,263.48	139.42	65.61	1.889	CC, ES, SF
OLIN 31-4 - CPR WELL - SURVEYS						Out of range
OLIN 32-4 - CPR WELL - GYRO						Out of range
OLIN 41-4 - CPR WELL - SURVEYS						Out of range
OLIN 42-4A - 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 Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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 Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance		Separation Factor	Warning
			Between Centres (usft)	Between Ellipses (usft)		
S4-T1N-R65W						
OTTESEN 1 - GREAT WESTERN - NO SURVEYS						Out of range
RANDLE RED XX 3-2D - KMG WELL - NO SURVEYS						Out of range
RANDLE RED XX 3-4DI - KMG WELL - NO SURVEYS						Out of range
RILEY 1 - CPR WELL - GYRO						Out of range
ROCKY 11-34A - KMG WELL - NO SURVEYS						Out of range
RUEGGE 3C-4H-N165 - OH - PLAN #1	200.00	201.00	50.00	49.00	50.173	CC, ES
RUEGGE 3C-4H-N165 - OH - PLAN #1	12,154.60	12,148.53	1,304.02	1,149.02	8.413	SF
RUEGGE 3D-4H-N165 - OH - PLAN #1	400.00	401.00	40.00	37.57	16.458	CC, ES
RUEGGE 3D-4H-N165 - OH - PLAN #1	12,154.60	12,122.72	1,053.36	898.52	6.803	SF
RUEGGE 3E-4H-N165 - OH - PLAN #1	600.00	600.00	30.00	26.14	7.770	CC, ES
RUEGGE 3E-4H-N165 - OH - PLAN #1	12,154.60	12,215.65	840.04	684.46	5.399	SF
RUEGGE 3F-4H-N165 - OH - PLAN #1	800.00	800.00	20.00	14.71	3.777	CC, ES
RUEGGE 3F-4H-N165 - OH - PLAN #1	900.00	899.37	21.49	15.50	3.586	SF
RUEGGE 3G-4H-N165 - OH - PLAN #1	1,000.00	1,000.00	10.00	3.27	1.486	Level 3, CC, ES, SF
RUEGGE 3I-4H-N165 - OH - PLAN #1	403.05	403.13	9.12	6.70	3.769	CC, ES
RUEGGE 3I-4H-N165 - OH - PLAN #1	12,154.60	12,002.34	303.46	157.62	2.081	SF
RUEGGE 3J-4H-N165 - OH - PLAN #1	203.97	202.97	20.00	18.98	19.650	CC
RUEGGE 3J-4H-N165 - OH - PLAN #1	300.00	298.94	20.12	18.43	11.893	ES
RUEGGE 3J-4H-N165 - OH - PLAN #1	12,154.60	12,172.25	787.60	631.30	5.039	SF
RUEGGE 3K-4H-N165 - OH - PLAN #1	106.34	105.34	30.00	29.68	94.375	CC
RUEGGE 3K-4H-N165 - OH - PLAN #1	200.00	198.88	30.10	29.11	30.655	ES
RUEGGE 3K-4H-N165 - OH - PLAN #1	12,154.60	12,003.15	1,036.50	881.10	6.670	SF
RUEGGE 3L-4H-N165 - OH - PLAN #1	105.05	104.05	40.00	39.69	129.615	CC
RUEGGE 3L-4H-N165 - OH - PLAN #1	200.00	198.63	40.23	39.25	40.958	ES
RUEGGE 3L-4H-N165 - OH - PLAN #1	600.00	592.07	65.72	61.87	17.106	SF
RUEGGE 3M-4H-N165 - OH - PLAN #1	400.00	399.00	50.00	47.58	20.633	CC, ES
RUEGGE 3M-4H-N165 - OH - PLAN #1	700.00	694.58	61.19	56.67	13.551	SF
RUEGGE 3N-4H-N165 - OH - PLAN #1	104.75	103.75	60.00	59.69	195.745	CC
RUEGGE 3N-4H-N165 - OH - PLAN #1	200.00	198.22	60.32	59.33	61.403	ES
RUEGGE 3N-4H-N165 - OH - PLAN #1	700.00	684.09	104.57	100.04	23.057	SF
RUEGGE 3O-4H-N165 - OH - PLAN #1	400.00	399.00	70.00	67.58	28.887	CC, ES
RUEGGE 3O-4H-N165 - OH - PLAN #1	800.00	788.86	93.32	88.11	17.927	SF
RUEGGE 3P-4H-N165 - OH - PLAN #1	104.70	103.70	80.00	79.69	261.349	CC
RUEGGE 3P-4H-N165 - OH - PLAN #1	200.00	197.88	80.34	79.36	81.838	ES
RUEGGE 3P-4H-N165 - OH - PLAN #1	800.00	774.15	144.63	139.41	27.718	SF
RUEGGE 3Q-4H-N165 - OH - PLAN #1	400.00	399.00	90.00	87.58	37.140	CC, ES
RUEGGE 3Q-4H-N165 - OH - PLAN #1	900.00	880.89	128.73	122.84	21.880	SF
RUEGGE 3R-4H-N165 - OH - PLAN #1	100.71	101.29	100.00	99.72	353.117	CC
RUEGGE 3R-4H-N165 - OH - PLAN #1	200.00	196.28	100.50	99.52	102.917	ES
RUEGGE 3R-4H-N165 - OH - PLAN #1	800.00	768.29	166.99	161.79	32.112	SF
SPARBOE 7C-3HZ - KMG WELL - SURVEYS						Out of range
SPARBOE 7N-3HZ - KMG WELL - SURVEYS						Out of range
STELLING 1 - CPR WELL - GYRO	8,761.49	7,259.12	471.94	425.03	10.062	CC, ES
STELLING 1 - CPR WELL - GYRO	8,800.00	7,260.86	473.50	426.26	10.024	SF
STELLING 13-4 - CPR WELL - GYRO	9,644.31	7,251.24	1,148.34	1,092.13	20.432	CC, ES
STELLING 13-4 - CPR WELL - GYRO	9,900.00	7,257.25	1,176.44	1,117.44	19.940	SF
STELLING 14-4 - CPR WELL - GYRO	7,896.34	7,199.70	1,106.57	1,064.96	26.594	CC, ES
STELLING 14-4 - CPR WELL - GYRO	8,000.00	7,202.80	1,111.41	1,069.58	26.572	SF
STELLING 23-4 - CPR WELL - GYRO	9,634.12	7,268.68	666.57	610.59	11.907	CC, ES
STELLING 23-4 - CPR WELL - GYRO	9,700.00	7,270.21	669.81	613.37	11.866	SF
STELLING 24-4 - CPR WELL - GYRO	2,018.62	2,001.57	92.88	82.48	8.927	CC, ES
STELLING 24-4 - CPR WELL - GYRO	2,100.00	2,081.19	94.41	83.53	8.684	SF
STELLING 3A-4H - CPR WELL - SURVEYS	279.47	270.53	95.47	94.22	76.402	CC

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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)	Between Ellipses (usft)	Separation Factor	Warning
S4-T1N-R65W						
STELLING 3A-4H - CPR WELL - SURVEYS	300.00	290.71	95.52	94.14	69.507	ES
STELLING 3A-4H - CPR WELL - SURVEYS	12,154.60	11,588.06	274.34	157.24	2.343	SF
STELLING 3B-4H - CPR WELL - SURVEYS	479.32	467.02	62.43	59.97	25.407	CC
STELLING 3B-4H - CPR WELL - SURVEYS	500.00	487.40	62.50	59.91	24.121	ES
STELLING 3B-4H - CPR WELL - SURVEYS	12,154.60	11,649.59	837.38	682.38	5.402	SF
SUMMIT 14C-32HZ - KMG WELL - SURVEYS						Out of range
SUMMIT 36C-32HZ - KMG WELL - SURVEYS						Out of range
SUMMIT 36N-32HZ - KMG WELL - SURVEYS						Out of range
YOUNG EARL 1X - KMG WELL - NO SURVEYS						Out of range
ZIEMER 35C-5HZ - KMG WELL - SURVEYS						Out of range
ZIEMER 36N-5HZ - KMG WELL - SURVEYS						Out of range

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - BANE 28N1-9HZ - KMG WELL - PLAN ONLY													Offset Site Error: 0.00 usft	
Survey Program: 2000-ISCWSA MWD													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
6,100.00	5,998.24	12,246.81	7,006.00	25.80	89.38	-126.27	-865.48	548.14	1,382.29	1,290.46	91.83	15.053		
6,200.00	6,095.98	12,228.01	7,006.00	26.27	89.08	-125.31	-884.28	548.10	1,323.82	1,228.70	95.12	13.917		
6,300.00	6,193.71	12,209.21	7,006.00	26.75	88.79	-124.35	-903.08	548.05	1,270.27	1,171.79	98.49	12.898		
6,400.00	6,291.45	12,190.40	7,006.00	27.23	88.49	-123.39	-921.88	548.00	1,222.28	1,120.28	102.00	11.983		
6,500.00	6,389.18	12,171.60	7,006.00	27.70	88.20	-122.42	-940.69	547.95	1,180.53	1,074.76	105.77	11.162		
6,536.48	6,424.83	12,164.74	7,006.00	27.88	88.09	-122.07	-947.54	547.93	1,166.98	1,059.89	107.09	10.897		
6,550.00	6,438.07	12,162.33	7,006.00	27.94	88.05	-124.04	-949.96	547.93	1,162.19	1,054.61	107.58	10.803		
6,600.00	6,487.36	12,155.58	7,006.00	28.16	87.94	-136.51	-956.71	547.91	1,145.53	1,036.18	109.36	10.475		
6,650.00	6,537.01	12,152.31	7,006.00	28.35	87.89	-163.23	-959.98	547.90	1,130.68	1,019.61	111.08	10.179		
6,700.00	6,586.76	12,152.52	7,006.00	28.51	87.90	158.77	-959.77	547.90	1,117.82	1,005.11	112.71	9.918		
6,750.00	6,636.37	12,156.22	7,006.00	28.64	87.95	133.15	-956.07	547.91	1,107.07	992.83	114.24	9.691		
6,800.00	6,685.61	12,163.39	7,006.00	28.75	88.07	120.23	-948.90	547.93	1,098.52	982.87	115.65	9.499		
6,850.00	6,734.24	12,173.99	7,006.00	28.85	88.23	113.01	-938.30	547.96	1,092.19	975.28	116.91	9.342		
6,900.00	6,782.01	12,187.98	7,006.00	28.93	88.45	108.27	-924.31	547.99	1,088.06	970.03	118.03	9.218		
6,950.00	6,828.69	12,205.27	7,006.00	28.99	88.73	104.69	-907.02	548.04	1,086.03	967.04	119.00	9.127		
6,976.13	6,852.59	12,215.61	7,006.00	29.01	88.89	103.07	-896.68	548.06	1,085.77	966.33	119.44	9.090 CC		
7,000.00	6,874.07	12,225.80	7,006.00	29.04	89.05	101.68	-886.49	548.09	1,085.98	966.17	119.82	9.064 ES		
7,050.00	6,917.91	12,249.46	7,006.00	29.07	89.42	98.95	-862.83	548.15	1,087.73	967.23	120.49	9.027		
7,100.00	6,960.00	12,276.13	7,006.00	29.09	89.84	96.36	-836.16	548.22	1,091.05	970.00	121.05	9.013 SF		
7,150.00	7,000.14	12,305.68	7,006.00	29.10	90.31	93.85	-806.61	548.29	1,095.71	974.21	121.50	9.018		
7,200.00	7,038.13	12,337.98	7,006.00	29.10	90.82	91.40	-774.31	548.38	1,101.44	979.57	121.87	9.038		
7,250.00	7,073.79	11,907.94	7,006.00	29.10	84.06	105.85	-1,204.35	547.28	1,201.55	1,095.94	105.60	11.378		
7,300.00	7,106.94	11,907.94	7,006.00	29.09	84.06	103.52	-1,204.35	547.28	1,222.87	1,118.52	104.34	11.720		
7,350.00	7,137.43	11,907.94	7,006.00	29.07	84.06	101.04	-1,204.35	547.28	1,246.16	1,143.19	102.98	12.101		
7,400.00	7,165.09	11,907.94	7,006.00	29.05	84.06	98.41	-1,204.35	547.28	1,271.22	1,169.69	101.53	12.521		
7,450.00	7,189.81	11,907.94	7,006.00	29.03	84.06	95.64	-1,204.35	547.28	1,297.80	1,197.78	100.02	12.975		
7,500.00	7,211.45	11,907.94	7,006.00	29.02	84.06	92.75	-1,204.35	547.28	1,325.71	1,227.22	98.48	13.461		
7,550.00	7,229.92	11,907.94	7,006.00	29.01	84.06	89.74	-1,204.35	547.28	1,354.72	1,257.79	96.93	13.977		
7,600.00	7,245.11	11,907.94	7,006.00	29.00	84.06	86.65	-1,204.35	547.28	1,384.63	1,289.26	95.37	14.519		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - BANE 28N2-9HZ - KMG WELL - SURVEYS												Offset Site Error:	0.00 usft
Survey Program: 20-ISWWSA MWD												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
6,500.00	6,389.18	12,058.00	7,179.70	27.70	78.39	-110.04	-1,230.18	662.25	1,397.46	1,308.00	89.46	15.621	
6,536.48	6,424.83	12,058.00	7,179.70	27.88	78.39	-110.04	-1,230.18	662.25	1,380.49	1,289.77	90.72	15.217	
6,550.00	6,438.07	12,058.00	7,179.70	27.94	78.39	-112.00	-1,230.18	662.25	1,374.40	1,283.22	91.19	15.072	
6,600.00	6,487.36	12,058.00	7,179.70	28.16	78.39	-124.38	-1,230.18	662.25	1,353.15	1,260.29	92.86	14.572	
6,650.00	6,537.01	12,058.00	7,179.70	28.35	78.39	-150.88	-1,230.18	662.25	1,333.98	1,239.56	94.43	14.127	
6,700.00	6,586.76	12,058.00	7,179.70	28.51	78.39	171.47	-1,230.18	662.25	1,317.09	1,221.22	95.87	13.738	
6,750.00	6,636.37	12,058.00	7,179.70	28.64	78.39	146.33	-1,230.18	662.25	1,302.66	1,205.49	97.17	13.406	
6,800.00	6,685.61	12,058.00	7,179.70	28.75	78.39	134.03	-1,230.18	662.25	1,290.83	1,192.52	98.30	13.131	
6,850.00	6,734.24	12,058.00	7,179.70	28.85	78.39	127.56	-1,230.18	662.25	1,281.73	1,182.47	99.25	12.914	
6,900.00	6,782.01	12,058.00	7,179.70	28.93	78.39	123.69	-1,230.18	662.25	1,275.47	1,175.46	100.01	12.754	
6,950.00	6,828.69	12,058.00	7,179.70	28.99	78.39	121.06	-1,230.18	662.25	1,272.12	1,171.58	100.54	12.652	
6,981.75	6,857.67	12,058.00	7,179.70	29.02	78.39	119.75	-1,230.18	662.25	1,271.52	1,170.75	100.77	12.618 CC, ES	
7,000.00	6,874.07	12,058.00	7,179.70	29.04	78.39	119.07	-1,230.18	662.25	1,271.72	1,170.86	100.86	12.608 SF	
7,050.00	6,917.91	12,058.00	7,179.70	29.07	78.39	117.38	-1,230.18	662.25	1,274.28	1,173.32	100.96	12.622	
7,100.00	6,960.00	12,058.00	7,179.70	29.09	78.39	115.82	-1,230.18	662.25	1,279.76	1,178.92	100.84	12.691	
7,150.00	7,000.14	12,058.00	7,179.70	29.10	78.39	114.28	-1,230.18	662.25	1,288.10	1,187.60	100.50	12.817	
7,200.00	7,038.13	12,058.00	7,179.70	29.10	78.39	112.69	-1,230.18	662.25	1,299.20	1,199.23	99.97	12.996	
7,250.00	7,073.79	12,058.00	7,179.70	29.10	78.39	111.01	-1,230.18	662.25	1,312.95	1,213.70	99.26	13.228	
7,300.00	7,106.94	12,058.00	7,179.70	29.09	78.39	109.20	-1,230.18	662.25	1,329.19	1,230.81	98.38	13.511	
7,350.00	7,137.43	12,058.00	7,179.70	29.07	78.39	107.25	-1,230.18	662.25	1,347.76	1,250.40	97.37	13.842	
7,400.00	7,165.09	12,058.00	7,179.70	29.05	78.39	105.15	-1,230.18	662.25	1,368.47	1,272.24	96.23	14.220	
7,450.00	7,189.81	12,058.00	7,179.70	29.03	78.39	102.87	-1,230.18	662.25	1,391.13	1,296.13	95.00	14.643	

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design											S4-T1N-R65W - BAT 28C-9HZ - KMG WELL - SURVEYS			Offset Site Error:		0.00 usft
Survey Program: 9-ISCWSA MWD													Offset Well Error:		0.00 usft	
Reference		Offset		Semi Major Axis			Distance									
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning			
6,200.00	6,095.98	12,133.00	7,284.43	26.27	78.07	-110.93	-1,178.38	95.60	1,329.33	1,268.89	60.44	21.994				
6,300.00	6,193.71	12,133.00	7,284.43	26.75	78.07	-110.93	-1,178.38	95.60	1,244.11	1,181.12	62.99	19.751				
6,400.00	6,291.45	12,133.00	7,284.43	27.23	78.07	-110.93	-1,178.38	95.60	1,161.25	1,095.31	65.94	17.610				
6,500.00	6,389.18	12,133.00	7,284.43	27.70	78.07	-110.93	-1,178.38	95.60	1,081.29	1,011.94	69.35	15.592				
6,536.48	6,424.83	12,133.00	7,284.43	27.88	78.07	-110.93	-1,178.38	95.60	1,052.98	982.26	70.71	14.891				
6,550.00	6,438.07	12,133.00	7,284.43	27.94	78.07	-112.16	-1,178.38	95.60	1,042.62	971.38	71.24	14.636				
6,600.00	6,487.36	12,133.00	7,284.43	28.16	78.07	-121.95	-1,178.38	95.60	1,005.21	931.99	73.22	13.729				
6,650.00	6,537.01	12,133.00	7,284.43	28.35	78.07	-146.11	-1,178.38	95.60	969.46	894.20	75.26	12.882				
6,700.00	6,586.76	12,133.00	7,284.43	28.51	78.07	178.31	-1,178.38	95.60	935.74	858.41	77.33	12.101				
6,750.00	6,636.37	12,133.00	7,284.43	28.64	78.07	154.99	-1,178.38	95.60	904.47	825.06	79.41	11.390				
6,800.00	6,685.61	12,133.00	7,284.43	28.75	78.07	144.27	-1,178.38	95.60	876.04	794.60	81.44	10.757				
6,850.00	6,734.24	12,133.00	7,284.43	28.85	78.07	139.18	-1,178.38	95.60	850.91	767.53	83.38	10.205				
6,900.00	6,782.01	12,133.00	7,284.43	28.93	78.07	136.49	-1,178.38	95.60	829.49	744.09	85.40	9.713				
6,950.00	6,828.69	12,133.00	7,284.43	28.99	78.07	134.89	-1,178.38	95.60	812.18	724.73	87.46	9.287				
7,000.00	6,874.07	12,133.00	7,284.43	29.04	78.07	133.78	-1,178.38	95.60	799.35	710.12	89.23	8.959				
7,050.00	6,917.91	12,133.00	7,284.43	29.07	78.07	132.84	-1,178.38	95.60	791.26	700.63	90.64	8.730				
7,100.00	6,960.00	12,133.00	7,284.43	29.09	78.07	131.92	-1,178.38	95.60	788.12	696.49	91.63	8.601				
7,106.40	6,965.25	12,133.00	7,284.43	29.09	78.07	131.80	-1,178.38	95.60	788.08	696.36	91.72	8.592 CC, ES				
7,150.00	7,000.14	12,133.00	7,284.43	29.10	78.07	130.91	-1,178.38	95.60	789.98	697.82	92.16	8.572 SF				
7,200.00	7,038.13	12,133.00	7,284.43	29.10	78.07	129.73	-1,178.38	95.60	796.82	704.58	92.23	8.639				
7,250.00	7,073.79	12,133.00	7,284.43	29.10	78.07	128.34	-1,178.38	95.60	808.46	716.59	91.87	8.800				
7,300.00	7,106.94	12,133.00	7,284.43	29.09	78.07	126.69	-1,178.38	95.60	824.65	733.54	91.11	9.051				
7,350.00	7,137.43	12,133.00	7,284.43	29.07	78.07	124.74	-1,178.38	95.60	845.05	755.04	90.01	9.388				
7,400.00	7,165.09	12,133.00	7,284.43	29.05	78.07	122.45	-1,178.38	95.60	869.28	780.63	88.65	9.806				
7,450.00	7,189.81	12,133.00	7,284.43	29.03	78.07	119.78	-1,178.38	95.60	896.90	809.81	87.09	10.298				
7,500.00	7,211.45	12,133.00	7,284.43	29.02	78.07	116.70	-1,178.38	95.60	927.49	842.10	85.39	10.861				
7,550.00	7,229.92	12,133.00	7,284.43	29.01	78.07	113.18	-1,178.38	95.60	960.62	877.01	83.62	11.488				
7,600.00	7,245.11	12,133.00	7,284.43	29.00	78.07	109.21	-1,178.38	95.60	995.89	914.09	81.80	12.175				
7,650.00	7,256.97	12,133.00	7,284.43	29.01	78.07	104.79	-1,178.38	95.60	1,032.91	952.93	79.98	12.915				
7,700.00	7,265.43	12,133.00	7,284.43	29.03	78.07	99.95	-1,178.38	95.60	1,071.33	993.15	78.17	13.704				
7,750.00	7,270.44	12,133.00	7,284.43	29.06	78.07	94.76	-1,178.38	95.60	1,110.83	1,034.41	76.41	14.537				
7,797.34	7,272.00	12,133.00	7,284.43	29.10	78.07	89.61	-1,178.38	95.60	1,148.95	1,074.16	74.79	15.363				
7,800.00	7,272.00	12,133.00	7,284.43	29.10	78.07	89.61	-1,178.38	95.60	1,151.11	1,076.41	74.70	15.410				
7,900.00	7,272.00	12,133.00	7,284.43	29.26	78.07	89.61	-1,178.38	95.60	1,233.69	1,162.15	71.54	17.245				
8,000.00	7,272.00	12,133.00	7,284.43	29.51	78.07	89.61	-1,178.38	95.60	1,318.68	1,249.93	68.75	19.180				
8,100.00	7,272.00	12,133.00	7,284.43	29.86	78.07	89.61	-1,178.38	95.60	1,405.65	1,339.35	66.30	21.201				

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - BAT 28N-9HZ - KMG WELL - SURVEYS												Offset Site Error:	0.00 usft
Survey Program: 20-ISCWSA MWD												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
6,100.00	5,998.24	11,953.00	7,124.83	25.80	78.12	-111.70	-1,156.59	305.72	1,373.44	1,304.39	69.05	19.890	
6,200.00	6,095.98	11,953.00	7,124.83	26.27	78.12	-111.70	-1,156.59	305.72	1,297.36	1,225.19	72.17	17.975	
6,300.00	6,193.71	11,953.00	7,124.83	26.75	78.12	-111.70	-1,156.59	305.72	1,224.73	1,149.10	75.62	16.195	
6,400.00	6,291.45	11,953.00	7,124.83	27.23	78.12	-111.70	-1,156.59	305.72	1,156.18	1,076.79	79.40	14.562	
6,500.00	6,389.18	11,953.00	7,124.83	27.70	78.12	-111.70	-1,156.59	305.72	1,092.50	1,009.04	83.46	13.090	
6,536.48	6,424.83	11,953.00	7,124.83	27.88	78.12	-111.70	-1,156.59	305.72	1,070.66	985.65	85.00	12.595	
6,550.00	6,438.07	11,953.00	7,124.83	27.94	78.12	-113.43	-1,156.59	305.72	1,062.77	977.19	85.58	12.418	
6,600.00	6,487.36	11,953.00	7,124.83	28.16	78.12	-124.99	-1,156.59	305.72	1,034.87	947.17	87.70	11.800	
6,650.00	6,537.01	11,953.00	7,124.83	28.35	78.12	-150.77	-1,156.59	305.72	1,009.17	919.10	90.07	11.204	
6,700.00	6,586.76	11,953.00	7,124.83	28.51	78.12	172.22	-1,156.59	305.72	985.96	893.53	92.43	10.667	
6,750.00	6,636.37	11,953.00	7,124.83	28.64	78.12	147.65	-1,156.59	305.72	965.54	870.84	94.69	10.196	
6,800.00	6,685.61	11,953.00	7,124.83	28.75	78.12	135.83	-1,156.59	305.72	948.19	851.38	96.81	9.794	
6,850.00	6,734.24	11,953.00	7,124.83	28.85	78.12	129.76	-1,156.59	305.72	934.18	835.45	98.73	9.462	
6,900.00	6,782.01	11,953.00	7,124.83	28.93	78.12	126.21	-1,156.59	305.72	923.72	823.32	100.40	9.200	
6,950.00	6,828.69	11,953.00	7,124.83	28.99	78.12	123.84	-1,156.59	305.72	916.99	815.21	101.78	9.010	
7,000.00	6,874.07	11,953.00	7,124.83	29.04	78.12	122.03	-1,156.59	305.72	914.10	811.27	102.82	8.890	
7,012.14	6,884.86	11,953.00	7,124.83	29.05	78.12	121.64	-1,156.59	305.72	913.98	810.96	103.02	8.872 CC, ES	
7,050.00	6,917.91	11,953.00	7,124.83	29.07	78.12	120.46	-1,156.59	305.72	915.10	811.59	103.51	8.841 SF	
7,100.00	6,960.00	11,953.00	7,124.83	29.09	78.12	118.96	-1,156.59	305.72	919.97	816.14	103.84	8.860	
7,150.00	7,000.14	11,953.00	7,124.83	29.10	78.12	117.40	-1,156.59	305.72	928.64	824.84	103.81	8.946	
7,200.00	7,038.13	11,953.00	7,124.83	29.10	78.12	115.73	-1,156.59	305.72	940.95	837.51	103.44	9.096	
7,250.00	7,073.79	11,953.00	7,124.83	29.10	78.12	113.89	-1,156.59	305.72	956.71	853.93	102.78	9.309	
7,300.00	7,106.94	11,953.00	7,124.83	29.09	78.12	111.84	-1,156.59	305.72	975.67	873.82	101.85	9.579	
7,350.00	7,137.43	11,953.00	7,124.83	29.07	78.12	109.57	-1,156.59	305.72	997.56	896.85	100.71	9.905	
7,400.00	7,165.09	11,953.00	7,124.83	29.05	78.12	107.05	-1,156.59	305.72	1,022.10	922.69	99.40	10.283	
7,450.00	7,189.81	11,953.00	7,124.83	29.03	78.12	104.27	-1,156.59	305.72	1,048.97	951.01	97.96	10.708	
7,500.00	7,211.45	11,953.00	7,124.83	29.02	78.12	101.25	-1,156.59	305.72	1,077.88	981.45	96.42	11.179	
7,550.00	7,229.92	11,953.00	7,124.83	29.01	78.12	97.98	-1,156.59	305.72	1,108.53	1,013.71	94.83	11.690	
7,600.00	7,245.11	11,953.00	7,124.83	29.00	78.12	94.50	-1,156.59	305.72	1,140.65	1,047.45	93.20	12.238	
7,650.00	7,256.97	11,953.00	7,124.83	29.01	78.12	90.83	-1,156.59	305.72	1,173.96	1,082.40	91.56	12.821	
7,700.00	7,265.43	11,953.00	7,124.83	29.03	78.12	87.03	-1,156.59	305.72	1,208.20	1,118.27	89.93	13.435	
7,750.00	7,270.44	11,953.00	7,124.83	29.06	78.12	83.15	-1,156.59	305.72	1,243.15	1,154.83	88.32	14.076	
7,797.34	7,272.00	11,953.00	7,124.83	29.10	78.12	79.45	-1,156.59	305.72	1,276.68	1,189.86	86.82	14.705	
7,800.00	7,272.00	11,953.00	7,124.83	29.10	78.12	79.45	-1,156.59	305.72	1,278.57	1,191.84	86.73	14.742	
7,900.00	7,272.00	11,953.00	7,124.83	29.26	78.12	79.45	-1,156.59	305.72	1,351.65	1,267.94	83.71	16.147	

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - BAT 29C-9HZ - KMG WELL - SURVEYS												Offset Site Error:	0.00 usft
Survey Program: 20-ISCWSA MWD												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
6,100.00	5,998.24	12,205.00	7,304.30	25.80	79.42	-42.60	-1,190.54	-556.78	1,335.40	1,288.33	47.06	28.375	
6,200.00	6,095.98	12,205.00	7,304.30	26.27	79.42	-42.60	-1,190.54	-556.78	1,235.60	1,188.36	47.24	26.155	
6,300.00	6,193.71	12,205.00	7,304.30	26.75	79.42	-42.60	-1,190.54	-556.78	1,135.83	1,088.41	47.42	23.953	
6,400.00	6,291.45	12,205.00	7,304.30	27.23	79.42	-42.60	-1,190.54	-556.78	1,036.11	988.52	47.60	21.768	
6,500.00	6,389.18	12,205.00	7,304.30	27.70	79.42	-42.60	-1,190.54	-556.78	936.46	888.68	47.78	19.601	
6,536.48	6,424.83	12,205.00	7,304.30	27.88	79.42	-42.60	-1,190.54	-556.78	900.12	852.28	47.84	18.815	
6,550.00	6,438.07	12,205.00	7,304.30	27.94	79.42	-42.54	-1,190.54	-556.78	886.67	838.80	47.87	18.524	
6,600.00	6,487.36	12,205.00	7,304.30	28.16	79.42	-52.04	-1,190.54	-556.78	837.23	789.28	47.95	17.460	
6,650.00	6,537.01	12,205.00	7,304.30	28.35	79.42	-78.14	-1,190.54	-556.78	788.55	740.51	48.04	16.414	
6,700.00	6,586.76	12,205.00	7,304.30	28.51	79.42	-116.09	-1,190.54	-556.78	741.03	692.90	48.13	15.396	
6,750.00	6,636.37	12,205.00	7,304.30	28.64	79.42	-141.70	-1,190.54	-556.78	695.17	646.94	48.24	14.412	
6,800.00	6,685.61	12,205.00	7,304.30	28.75	79.42	-154.48	-1,190.54	-556.78	651.57	603.21	48.36	13.473	
6,850.00	6,734.24	12,205.00	7,304.30	28.85	79.42	-161.34	-1,190.54	-556.78	610.94	562.42	48.51	12.593	
6,900.00	6,782.01	12,205.00	7,304.30	28.93	79.42	-165.47	-1,190.54	-556.78	574.12	525.43	48.70	11.789	
6,950.00	6,828.69	12,205.00	7,304.30	28.99	79.42	-168.19	-1,190.54	-556.78	542.11	493.21	48.90	11.085	
7,000.00	6,874.07	12,205.00	7,304.30	29.04	79.42	-170.10	-1,190.54	-556.78	515.95	466.85	49.10	10.508	
7,050.00	6,917.91	12,205.00	7,304.30	29.07	79.42	-171.52	-1,190.54	-556.78	496.72	447.48	49.24	10.087	
7,100.00	6,960.00	12,205.00	7,304.30	29.09	79.42	-172.61	-1,190.54	-556.78	485.33	436.04	49.29	9.846	
7,141.99	6,993.85	12,205.00	7,304.30	29.10	79.42	-173.36	-1,190.54	-556.78	482.28	433.04	49.25	9.793 CC, ES, SF	
7,150.00	7,000.14	12,205.00	7,304.30	29.10	79.42	-173.49	-1,190.54	-556.78	482.39	433.16	49.23	9.799	
7,200.00	7,038.13	12,205.00	7,304.30	29.10	79.42	-174.21	-1,190.54	-556.78	488.08	439.00	49.08	9.944	
7,250.00	7,073.79	12,205.00	7,304.30	29.10	79.42	-174.84	-1,190.54	-556.78	502.07	453.16	48.91	10.264	
7,300.00	7,106.94	12,205.00	7,304.30	29.09	79.42	-175.39	-1,190.54	-556.78	523.63	474.28	49.35	10.610	
7,350.00	7,137.43	12,205.00	7,304.30	29.07	79.42	-175.90	-1,190.54	-556.78	551.79	501.89	49.90	11.058	
7,400.00	7,165.09	12,205.00	7,304.30	29.05	79.42	-176.40	-1,190.54	-556.78	585.45	535.03	50.42	11.611	
7,450.00	7,189.81	12,205.00	7,304.30	29.03	79.42	-176.91	-1,190.54	-556.78	623.59	572.68	50.91	12.249	
7,500.00	7,211.45	12,205.00	7,304.30	29.02	79.42	-177.48	-1,190.54	-556.78	665.26	613.91	51.35	12.956	
7,550.00	7,229.92	12,205.00	7,304.30	29.01	79.42	-178.17	-1,190.54	-556.78	709.66	657.94	51.72	13.721	
7,600.00	7,245.11	12,205.00	7,304.30	29.00	79.42	-179.10	-1,190.54	-556.78	756.11	704.08	52.03	14.533	
7,650.00	7,256.97	12,205.00	7,304.30	29.01	79.42	179.47	-1,190.54	-556.78	804.05	751.78	52.27	15.383	
7,700.00	7,265.43	12,205.00	7,304.30	29.03	79.42	176.84	-1,190.54	-556.78	853.01	800.56	52.45	16.263	
7,750.00	7,270.44	12,205.00	7,304.30	29.06	79.42	169.96	-1,190.54	-556.78	902.62	850.04	52.58	17.167	
7,797.34	7,272.00	12,205.00	7,304.30	29.10	79.42	129.66	-1,190.54	-556.78	949.88	897.22	52.66	18.038	
7,800.00	7,272.00	12,205.00	7,304.30	29.10	79.42	129.66	-1,190.54	-556.78	952.54	899.87	52.66	18.088	
7,900.00	7,272.00	12,205.00	7,304.30	29.26	79.42	129.66	-1,190.54	-556.78	1,052.51	999.73	52.78	19.943	
8,000.00	7,272.00	12,205.00	7,304.30	29.51	79.42	129.66	-1,190.54	-556.78	1,152.48	1,099.61	52.87	21.798	
8,100.00	7,272.00	12,205.00	7,304.30	29.86	79.42	129.66	-1,190.54	-556.78	1,252.46	1,199.50	52.95	23.652	
8,200.00	7,272.00	12,205.00	7,304.30	30.31	79.42	129.66	-1,190.54	-556.78	1,352.44	1,299.41	53.02	25.507	

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - BAT 29N1-9HZ - KMG WELL - SURVEYS												Offset Site Error:	0.00 usft
Survey Program: 20-ISWWSA MWD												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
6,000.00	5,900.51	12,122.00	7,136.98	25.32	82.44	53.55	-1,156.98	-1,023.18	1,388.86	1,328.12	60.74	22.867	
6,100.00	5,998.24	12,122.00	7,136.98	25.80	82.44	53.55	-1,156.98	-1,023.18	1,295.07	1,232.70	62.37	20.765	
6,200.00	6,095.98	12,122.00	7,136.98	26.27	82.44	53.55	-1,156.98	-1,023.18	1,202.28	1,138.01	64.27	18.707	
6,300.00	6,193.71	12,122.00	7,136.98	26.75	82.44	53.55	-1,156.98	-1,023.18	1,110.75	1,044.24	66.50	16.702	
6,400.00	6,291.45	12,122.00	7,136.98	27.23	82.44	53.55	-1,156.98	-1,023.18	1,020.80	951.66	69.15	14.763	
6,500.00	6,389.18	12,122.00	7,136.98	27.70	82.44	53.55	-1,156.98	-1,023.18	932.91	860.61	72.30	12.904	
6,536.48	6,424.83	12,122.00	7,136.98	27.88	82.44	53.55	-1,156.98	-1,023.18	901.48	827.88	73.59	12.250	
6,550.00	6,438.07	12,122.00	7,136.98	27.94	82.44	49.29	-1,156.98	-1,023.18	889.93	815.83	74.10	12.010	
6,600.00	6,487.36	12,122.00	7,136.98	28.16	82.44	29.09	-1,156.98	-1,023.18	848.01	771.92	76.09	11.144	
6,650.00	6,537.01	12,122.00	7,136.98	28.35	82.44	-4.23	-1,156.98	-1,023.18	807.61	729.30	78.31	10.313	
6,700.00	6,586.76	12,122.00	7,136.98	28.51	82.44	-47.68	-1,156.98	-1,023.18	769.18	688.44	80.73	9.527	
6,750.00	6,636.37	12,122.00	7,136.98	28.64	82.44	-77.65	-1,156.98	-1,023.18	733.21	649.85	83.36	8.796	
6,800.00	6,685.61	12,122.00	7,136.98	28.75	82.44	-93.88	-1,156.98	-1,023.18	700.30	614.15	86.15	8.129	
6,850.00	6,734.24	12,122.00	7,136.98	28.85	82.44	-103.46	-1,156.98	-1,023.18	671.04	582.01	89.03	7.537	
6,900.00	6,782.01	12,122.00	7,136.98	28.93	82.44	-109.68	-1,156.98	-1,023.18	646.10	554.20	91.90	7.030	
6,950.00	6,828.69	12,122.00	7,136.98	28.99	82.44	-113.95	-1,156.98	-1,023.18	626.12	531.49	94.64	6.616	
7,000.00	6,874.07	12,122.00	7,136.98	29.04	82.44	-116.91	-1,156.98	-1,023.18	611.69	514.61	97.07	6.301	
7,050.00	6,917.91	12,122.00	7,136.98	29.07	82.44	-118.93	-1,156.98	-1,023.18	603.26	504.20	99.06	6.090	
7,091.52	6,952.99	12,122.00	7,136.98	29.09	82.44	-120.03	-1,156.98	-1,023.18	601.06	500.78	100.28	5.994 CC	
7,100.00	6,960.00	12,122.00	7,136.98	29.09	82.44	-120.20	-1,156.98	-1,023.18	601.15	500.68	100.47	5.983 ES	
7,150.00	7,000.14	12,122.00	7,136.98	29.10	82.44	-120.82	-1,156.98	-1,023.18	605.42	504.18	101.24	5.980 SF	
7,200.00	7,038.13	12,122.00	7,136.98	29.10	82.44	-120.86	-1,156.98	-1,023.18	615.93	514.56	101.37	6.076	
7,250.00	7,073.79	12,122.00	7,136.98	29.10	82.44	-120.35	-1,156.98	-1,023.18	632.31	531.38	100.93	6.265	
7,300.00	7,106.94	12,122.00	7,136.98	29.09	82.44	-119.27	-1,156.98	-1,023.18	654.04	554.02	100.02	6.539	
7,350.00	7,137.43	12,122.00	7,136.98	29.07	82.44	-117.62	-1,156.98	-1,023.18	680.52	581.74	98.78	6.889	
7,400.00	7,165.09	12,122.00	7,136.98	29.05	82.44	-115.34	-1,156.98	-1,023.18	711.09	613.76	97.32	7.306	
7,450.00	7,189.81	12,122.00	7,136.98	29.03	82.44	-112.39	-1,156.98	-1,023.18	745.10	649.35	95.75	7.781	
7,500.00	7,211.45	12,122.00	7,136.98	29.02	82.44	-108.70	-1,156.98	-1,023.18	781.97	687.81	94.15	8.305	
7,550.00	7,229.92	12,122.00	7,136.98	29.01	82.44	-104.21	-1,156.98	-1,023.18	821.12	728.54	92.58	8.869	
7,600.00	7,245.11	12,122.00	7,136.98	29.00	82.44	-98.88	-1,156.98	-1,023.18	862.09	770.87	91.22	9.451	
7,650.00	7,256.97	12,122.00	7,136.98	29.01	82.44	-92.74	-1,156.98	-1,023.18	904.42	814.43	90.00	10.049	
7,700.00	7,265.43	12,122.00	7,136.98	29.03	82.44	-85.88	-1,156.98	-1,023.18	947.76	858.93	88.83	10.669	
7,750.00	7,270.44	12,122.00	7,136.98	29.06	82.44	-78.52	-1,156.98	-1,023.18	991.77	904.05	87.72	11.306	
7,797.34	7,272.00	12,122.00	7,136.98	29.10	82.44	-71.33	-1,156.98	-1,023.18	1,033.79	947.07	86.72	11.921	
7,800.00	7,272.00	12,122.00	7,136.98	29.10	82.44	-71.33	-1,156.98	-1,023.18	1,036.16	949.49	86.67	11.955	
7,900.00	7,272.00	12,122.00	7,136.98	29.26	82.44	-71.33	-1,156.98	-1,023.18	1,126.11	1,041.34	84.76	13.285	
8,000.00	7,272.00	12,122.00	7,136.98	29.51	82.44	-71.33	-1,156.98	-1,023.18	1,217.63	1,134.54	83.09	14.654	
8,100.00	7,272.00	12,122.00	7,136.98	29.86	82.44	-71.33	-1,156.98	-1,023.18	1,310.39	1,228.77	81.62	16.054	
8,200.00	7,272.00	12,122.00	7,136.98	30.31	82.44	-71.33	-1,156.98	-1,023.18	1,404.14	1,323.82	80.32	17.481	

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - BAT 29N2-9HZ - KMG WELL - SURVEYS												Offset Site Error:	0.00 usft
Survey Program: 20-ISCSA MWD												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,900.00	5,802.77	11,735.00	7,048.01	24.85	75.23	-10.00	-1,437.08	-671.56	1,394.29	1,346.55	47.73	29.211	
6,000.00	5,900.51	11,735.00	7,048.01	25.32	75.23	-10.00	-1,437.08	-671.56	1,298.48	1,250.21	48.27	26.901	
6,100.00	5,998.24	11,735.00	7,048.01	25.80	75.23	-10.00	-1,437.08	-671.56	1,203.36	1,154.47	48.88	24.618	
6,200.00	6,095.98	11,735.00	7,048.01	26.27	75.23	-10.00	-1,437.08	-671.56	1,109.09	1,059.50	49.59	22.364	
6,300.00	6,193.71	11,735.00	7,048.01	26.75	75.23	-10.00	-1,437.08	-671.56	1,015.92	965.49	50.43	20.145	
6,400.00	6,291.45	11,735.00	7,048.01	27.23	75.23	-10.00	-1,437.08	-671.56	924.18	872.74	51.43	17.968	
6,500.00	6,389.18	11,735.00	7,048.01	27.70	75.23	-10.00	-1,437.08	-671.56	834.34	781.68	52.66	15.844	
6,536.48	6,424.83	11,735.00	7,048.01	27.88	75.23	-10.00	-1,437.08	-671.56	802.17	748.99	53.17	15.086	
6,550.00	6,438.07	11,735.00	7,048.01	27.94	75.23	-13.07	-1,437.08	-671.56	790.39	737.02	53.37	14.809	
6,600.00	6,487.36	11,735.00	7,048.01	28.16	75.23	-29.00	-1,437.08	-671.56	748.54	694.36	54.18	13.815	
6,650.00	6,537.01	11,735.00	7,048.01	28.35	75.23	-58.37	-1,437.08	-671.56	709.85	654.75	55.10	12.883	
6,700.00	6,586.76	11,735.00	7,048.01	28.51	75.23	-98.34	-1,437.08	-671.56	675.05	618.94	56.11	12.031	
6,750.00	6,636.37	11,735.00	7,048.01	28.64	75.23	-125.32	-1,437.08	-671.56	644.96	587.78	57.18	11.279	
6,800.00	6,685.61	11,735.00	7,048.01	28.75	75.23	-139.04	-1,437.08	-671.56	620.43	562.16	58.27	10.647	
6,850.00	6,734.24	11,735.00	7,048.01	28.85	75.23	-146.55	-1,437.08	-671.56	602.26	542.94	59.32	10.153	
6,900.00	6,782.01	11,735.00	7,048.01	28.93	75.23	-151.09	-1,437.08	-671.56	591.12	530.88	60.25	9.812	
6,948.80	6,827.59	11,735.00	7,048.01	28.99	75.23	-153.97	-1,437.08	-671.56	587.48	526.51	60.97	9.635 CC	
6,950.00	6,828.69	11,735.00	7,048.01	28.99	75.23	-154.03	-1,437.08	-671.56	587.48	526.49	60.99	9.633 ES	
7,000.00	6,874.07	11,735.00	7,048.01	29.04	75.23	-155.99	-1,437.08	-671.56	591.49	529.99	61.50	9.618 SF	
7,050.00	6,917.91	11,735.00	7,048.01	29.07	75.23	-157.30	-1,437.08	-671.56	602.97	540.78	62.19	9.695	
7,100.00	6,960.00	11,735.00	7,048.01	29.09	75.23	-158.11	-1,437.08	-671.56	621.47	558.66	62.81	9.894	
7,150.00	7,000.14	11,735.00	7,048.01	29.10	75.23	-158.51	-1,437.08	-671.56	646.28	583.09	63.19	10.227	
7,200.00	7,038.13	11,735.00	7,048.01	29.10	75.23	-158.53	-1,437.08	-671.56	676.61	613.23	63.38	10.675	
7,250.00	7,073.79	11,735.00	7,048.01	29.10	75.23	-158.18	-1,437.08	-671.56	711.62	648.19	63.43	11.219	
7,300.00	7,106.94	11,735.00	7,048.01	29.09	75.23	-157.38	-1,437.08	-671.56	750.48	687.12	63.37	11.843	
7,350.00	7,137.43	11,735.00	7,048.01	29.07	75.23	-156.03	-1,437.08	-671.56	792.47	729.23	63.24	12.532	
7,400.00	7,165.09	11,735.00	7,048.01	29.05	75.23	-153.90	-1,437.08	-671.56	836.91	773.85	63.06	13.272	
7,450.00	7,189.81	11,735.00	7,048.01	29.03	75.23	-150.56	-1,437.08	-671.56	883.25	820.40	62.85	14.053	
7,500.00	7,211.45	11,735.00	7,048.01	29.02	75.23	-145.13	-1,437.08	-671.56	930.98	868.35	62.63	14.866	
7,550.00	7,229.92	11,735.00	7,048.01	29.01	75.23	-135.69	-1,437.08	-671.56	979.69	917.30	62.39	15.703	
7,600.00	7,245.11	11,735.00	7,048.01	29.00	75.23	-117.92	-1,437.08	-671.56	1,029.03	966.88	62.15	16.557	
7,650.00	7,256.97	11,735.00	7,048.01	29.01	75.23	-86.50	-1,437.08	-671.56	1,078.67	1,016.76	61.91	17.423	
7,700.00	7,265.43	11,735.00	7,048.01	29.03	75.23	-52.52	-1,437.08	-671.56	1,128.36	1,066.69	61.67	18.297	
7,750.00	7,270.44	11,735.00	7,048.01	29.06	75.23	-31.80	-1,437.08	-671.56	1,177.87	1,116.43	61.43	19.174	
7,797.34	7,272.00	11,735.00	7,048.01	29.10	75.23	-21.20	-1,437.08	-671.56	1,224.38	1,163.17	61.21	20.004	
7,800.00	7,272.00	11,735.00	7,048.01	29.10	75.23	-21.20	-1,437.08	-671.56	1,226.98	1,165.78	61.19	20.051	
7,900.00	7,272.00	11,735.00	7,048.01	29.26	75.23	-21.20	-1,437.08	-671.56	1,324.92	1,264.16	60.76	21.805	

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - BAT 3N1-9HZX - KMG WELL - SURVEYS													Offset Site Error: 0.00 usft	
Survey Program: 20-ISOWSA MWD													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
5,900.00	5,802.77	12,010.00	7,134.61	24.85	79.01	-89.52	-1,193.17	-343.77	1,368.93	1,322.73	46.20	29.630		
6,000.00	5,900.51	12,010.00	7,134.61	25.32	79.01	-89.52	-1,193.17	-343.77	1,270.67	1,224.12	46.56	27.292		
6,100.00	5,998.24	12,010.00	7,134.61	25.80	79.01	-89.52	-1,193.17	-343.77	1,172.71	1,125.74	46.98	24.963		
6,200.00	6,095.98	12,010.00	7,134.61	26.27	79.01	-89.52	-1,193.17	-343.77	1,075.13	1,027.65	47.48	22.643		
6,300.00	6,193.71	12,010.00	7,134.61	26.75	79.01	-89.52	-1,193.17	-343.77	978.03	929.93	48.11	20.330		
6,400.00	6,291.45	12,010.00	7,134.61	27.23	79.01	-89.52	-1,193.17	-343.77	881.59	832.68	48.91	18.025		
6,500.00	6,389.18	12,010.00	7,134.61	27.70	79.01	-89.52	-1,193.17	-343.77	786.03	736.05	49.98	15.728		
6,536.48	6,424.83	12,010.00	7,134.61	27.88	79.01	-89.52	-1,193.17	-343.77	751.46	701.00	50.46	14.893		
6,550.00	6,438.07	12,010.00	7,134.61	27.94	79.01	-89.36	-1,193.17	-343.77	738.71	688.06	50.65	14.585		
6,600.00	6,487.36	12,010.00	7,134.61	28.16	79.01	-95.35	-1,193.17	-343.77	692.28	640.87	51.40	13.467		
6,650.00	6,537.01	12,010.00	7,134.61	28.35	79.01	-117.35	-1,193.17	-343.77	647.32	595.08	52.24	12.391		
6,700.00	6,586.76	12,010.00	7,134.61	28.51	79.01	-151.86	-1,193.17	-343.77	604.41	551.25	53.15	11.371		
6,750.00	6,636.37	12,010.00	7,134.61	28.64	79.01	-174.78	-1,193.17	-343.77	564.24	510.11	54.13	10.424		
6,800.00	6,685.61	12,010.00	7,134.61	28.75	79.01	174.49	-1,193.17	-343.77	527.66	472.54	55.12	9.572		
6,850.00	6,734.24	12,010.00	7,134.61	28.85	79.01	169.16	-1,193.17	-343.77	495.66	439.59	56.08	8.839		
6,900.00	6,782.01	12,010.00	7,134.61	28.93	79.01	166.11	-1,193.17	-343.77	469.36	412.49	56.87	8.253		
6,950.00	6,828.69	12,010.00	7,134.61	28.99	79.01	164.10	-1,193.17	-343.77	449.88	392.52	57.36	7.843		
7,000.00	6,874.07	12,010.00	7,134.61	29.04	79.01	162.56	-1,193.17	-343.77	438.23	380.31	57.92	7.566		
7,042.84	6,911.74	12,010.00	7,134.61	29.07	79.01	161.38	-1,193.17	-343.77	435.02	376.71	58.32	7.459 CC, ES		
7,050.00	6,917.91	12,010.00	7,134.61	29.07	79.01	161.19	-1,193.17	-343.77	435.11	376.77	58.35	7.457 SF		
7,100.00	6,960.00	12,010.00	7,134.61	29.09	79.01	159.83	-1,193.17	-343.77	440.72	382.48	58.24	7.567		
7,150.00	7,000.14	12,010.00	7,134.61	29.10	79.01	158.35	-1,193.17	-343.77	454.69	397.01	57.68	7.882		
7,200.00	7,038.13	12,010.00	7,134.61	29.10	79.01	156.65	-1,193.17	-343.77	476.24	419.40	56.84	8.378		
7,250.00	7,073.79	12,010.00	7,134.61	29.10	79.01	154.62	-1,193.17	-343.77	504.29	448.41	55.89	9.024		
7,300.00	7,106.94	12,010.00	7,134.61	29.09	79.01	152.14	-1,193.17	-343.77	537.71	482.77	54.94	9.788		
7,350.00	7,137.43	12,010.00	7,134.61	29.07	79.01	149.01	-1,193.17	-343.77	575.41	521.34	54.07	10.642		
7,400.00	7,165.09	12,010.00	7,134.61	29.05	79.01	145.02	-1,193.17	-343.77	616.44	563.14	53.30	11.565		
7,450.00	7,189.81	12,010.00	7,134.61	29.03	79.01	139.81	-1,193.17	-343.77	660.01	607.37	52.64	12.538		
7,500.00	7,211.45	12,010.00	7,134.61	29.02	79.01	132.93	-1,193.17	-343.77	705.44	653.38	52.06	13.551		
7,550.00	7,229.92	12,010.00	7,134.61	29.01	79.01	123.81	-1,193.17	-343.77	752.20	700.66	51.54	14.594		
7,600.00	7,245.11	12,010.00	7,134.61	29.00	79.01	111.99	-1,193.17	-343.77	799.86	748.78	51.08	15.660		
7,650.00	7,256.97	12,010.00	7,134.61	29.01	79.01	97.67	-1,193.17	-343.77	848.04	797.40	50.64	16.746		
7,700.00	7,265.43	12,010.00	7,134.61	29.03	79.01	82.26	-1,193.17	-343.77	896.45	846.21	50.23	17.846		
7,750.00	7,270.44	12,010.00	7,134.61	29.06	79.01	67.90	-1,193.17	-343.77	944.83	894.99	49.84	18.956		
7,797.34	7,272.00	12,010.00	7,134.61	29.10	79.01	56.61	-1,193.17	-343.77	990.42	940.93	49.49	20.014		
7,800.00	7,272.00	12,010.00	7,134.61	29.10	79.01	56.61	-1,193.17	-343.77	992.97	943.51	49.47	20.074		
7,900.00	7,272.00	12,010.00	7,134.61	29.26	79.01	56.61	-1,193.17	-343.77	1,089.31	1,040.44	48.88	22.287		
8,000.00	7,272.00	12,010.00	7,134.61	29.51	79.01	56.61	-1,193.17	-343.77	1,186.26	1,137.75	48.51	24.455		
8,100.00	7,272.00	12,010.00	7,134.61	29.86	79.01	56.61	-1,193.17	-343.77	1,283.68	1,235.39	48.29	26.584		
8,200.00	7,272.00	12,010.00	7,134.61	30.31	79.01	56.61	-1,193.17	-343.77	1,381.46	1,333.30	48.17	28.681		

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - BAT 3N2-9HZ - KMG WELL - SURVEYS													Offset Site Error: 0.00 usft	
Survey Program: 20-ISCWSA MWD													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
5,900.00	5,802.77	11,878.00	7,053.25	24.85	78.38	-102.54	-1,200.28	-24.30	1,351.23	1,298.31	52.93	25.530		
6,000.00	5,900.51	11,878.00	7,053.25	25.32	78.38	-102.54	-1,200.28	-24.30	1,260.38	1,205.77	54.60	23.082		
6,100.00	5,998.24	11,878.00	7,053.25	25.80	78.38	-102.54	-1,200.28	-24.30	1,171.01	1,114.40	56.60	20.688		
6,200.00	6,095.98	11,878.00	7,053.25	26.27	78.38	-102.54	-1,200.28	-24.30	1,083.50	1,024.50	59.00	18.364		
6,300.00	6,193.71	11,878.00	7,053.25	26.75	78.38	-102.54	-1,200.28	-24.30	998.34	936.45	61.89	16.132		
6,400.00	6,291.45	11,878.00	7,053.25	27.23	78.38	-102.54	-1,200.28	-24.30	916.18	850.83	65.36	14.018		
6,500.00	6,389.18	11,878.00	7,053.25	27.70	78.38	-102.54	-1,200.28	-24.30	837.92	768.39	69.52	12.052		
6,536.48	6,424.83	11,878.00	7,053.25	27.88	78.38	-102.54	-1,200.28	-24.30	810.56	739.33	71.23	11.379		
6,550.00	6,438.07	11,878.00	7,053.25	27.94	78.38	-103.92	-1,200.28	-24.30	800.62	728.74	71.89	11.137		
6,600.00	6,487.36	11,878.00	7,053.25	28.16	78.38	-114.35	-1,200.28	-24.30	765.32	690.93	74.38	10.289		
6,650.00	6,537.01	11,878.00	7,053.25	28.35	78.38	-139.26	-1,200.28	-24.30	732.63	655.69	76.94	9.523		
6,700.00	6,586.76	11,878.00	7,053.25	28.51	78.38	-175.65	-1,200.28	-24.30	703.10	623.37	79.73	8.818		
6,750.00	6,636.37	11,878.00	7,053.25	28.64	78.38	160.19	-1,200.28	-24.30	677.30	594.57	82.73	8.187		
6,800.00	6,685.61	11,878.00	7,053.25	28.75	78.38	148.62	-1,200.28	-24.30	655.79	570.21	85.58	7.663		
6,850.00	6,734.24	11,878.00	7,053.25	28.85	78.38	142.66	-1,200.28	-24.30	639.12	550.99	88.13	7.252		
6,900.00	6,782.01	11,878.00	7,053.25	28.93	78.38	139.10	-1,200.28	-24.30	627.76	537.50	90.26	6.955		
6,950.00	6,828.69	11,878.00	7,053.25	28.99	78.38	136.61	-1,200.28	-24.30	622.05	530.23	91.82	6.774		
6,973.86	6,850.53	11,878.00	7,053.25	29.01	78.38	135.60	-1,200.28	-24.30	621.38	529.04	92.35	6.729 CC, ES		
7,000.00	6,874.07	11,878.00	7,053.25	29.04	78.38	134.57	-1,200.28	-24.30	622.19	529.44	92.74	6.709 SF		
7,050.00	6,917.91	11,878.00	7,053.25	29.07	78.38	132.67	-1,200.28	-24.30	628.15	535.16	92.99	6.755		
7,100.00	6,960.00	11,878.00	7,053.25	29.09	78.38	130.71	-1,200.28	-24.30	639.77	547.17	92.60	6.909		
7,150.00	7,000.14	11,878.00	7,053.25	29.10	78.38	128.58	-1,200.28	-24.30	656.67	565.03	91.64	7.166		
7,200.00	7,038.13	11,878.00	7,053.25	29.10	78.38	126.18	-1,200.28	-24.30	678.38	588.14	90.24	7.518		
7,250.00	7,073.79	11,878.00	7,053.25	29.10	78.38	123.44	-1,200.28	-24.30	704.37	615.86	88.51	7.958		
7,300.00	7,106.94	11,878.00	7,053.25	29.09	78.38	120.28	-1,200.28	-24.30	734.05	647.48	86.57	8.479		
7,350.00	7,137.43	11,878.00	7,053.25	29.07	78.38	116.66	-1,200.28	-24.30	766.87	682.34	84.53	9.073		
7,400.00	7,165.09	11,878.00	7,053.25	29.05	78.38	112.52	-1,200.28	-24.30	802.28	719.84	82.44	9.732		
7,450.00	7,189.81	11,878.00	7,053.25	29.03	78.38	107.85	-1,200.28	-24.30	839.81	759.44	80.37	10.449		
7,500.00	7,211.45	11,878.00	7,053.25	29.02	78.38	102.65	-1,200.28	-24.30	879.00	800.65	78.35	11.219		
7,550.00	7,229.92	11,878.00	7,053.25	29.01	78.38	96.98	-1,200.28	-24.30	919.47	843.06	76.40	12.034		
7,600.00	7,245.11	11,878.00	7,053.25	29.00	78.38	90.95	-1,200.28	-24.30	960.87	886.32	74.54	12.890		
7,650.00	7,256.97	11,878.00	7,053.25	29.01	78.38	84.71	-1,200.28	-24.30	1,002.89	930.12	72.77	13.781		
7,700.00	7,265.43	11,878.00	7,053.25	29.03	78.38	78.44	-1,200.28	-24.30	1,045.28	974.19	71.09	14.703		
7,750.00	7,270.44	11,878.00	7,053.25	29.06	78.38	72.35	-1,200.28	-24.30	1,087.79	1,018.29	69.50	15.652		
7,797.34	7,272.00	11,878.00	7,053.25	29.10	78.38	66.88	-1,200.28	-24.30	1,127.96	1,059.89	68.06	16.572		
7,800.00	7,272.00	11,878.00	7,053.25	29.10	78.38	66.88	-1,200.28	-24.30	1,130.21	1,062.23	67.98	16.625		
7,900.00	7,272.00	11,878.00	7,053.25	29.26	78.38	66.88	-1,200.28	-24.30	1,216.09	1,150.84	65.25	18.638		
8,000.00	7,272.00	11,878.00	7,053.25	29.51	78.38	66.88	-1,200.28	-24.30	1,303.99	1,241.11	62.88	20.736		
8,100.00	7,272.00	11,878.00	7,053.25	29.86	78.38	66.88	-1,200.28	-24.30	1,393.52	1,332.68	60.84	22.904		

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - BAT 4C-9HZ - KMG WELL - SURVEYS												Offset Site Error:	0.00 usft
Survey Program: 20-ISCWSA MWD												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	
6,300.00	6,193.71	12,230.00	7,301.64	26.75	82.76	55.13	-1,202.01	-1,229.19	1,363.95	1,293.84	70.11	19.455	
6,400.00	6,291.45	12,230.00	7,301.64	27.23	82.76	55.13	-1,202.01	-1,229.19	1,277.08	1,204.50	72.58	17.596	
6,500.00	6,389.18	12,230.00	7,301.64	27.70	82.76	55.13	-1,202.01	-1,229.19	1,192.27	1,116.89	75.38	15.817	
6,536.48	6,424.83	12,230.00	7,301.64	27.88	82.76	55.13	-1,202.01	-1,229.19	1,161.93	1,085.44	76.49	15.191	
6,550.00	6,438.07	12,230.00	7,301.64	27.94	82.76	51.06	-1,202.01	-1,229.19	1,150.79	1,073.87	76.92	14.961	
6,600.00	6,487.36	12,230.00	7,301.64	28.16	82.76	31.41	-1,202.01	-1,229.19	1,110.27	1,031.69	78.58	14.129	
6,650.00	6,537.01	12,230.00	7,301.64	28.35	82.76	-1.55	-1,202.01	-1,229.19	1,071.10	990.71	80.38	13.325	
6,700.00	6,586.76	12,230.00	7,301.64	28.51	82.76	-44.83	-1,202.01	-1,229.19	1,033.62	951.30	82.31	12.557	
6,750.00	6,636.37	12,230.00	7,301.64	28.64	82.76	-74.77	-1,202.01	-1,229.19	998.21	913.86	84.36	11.833	
6,800.00	6,685.61	12,230.00	7,301.64	28.75	82.76	-91.09	-1,202.01	-1,229.19	965.30	878.80	86.50	11.159	
6,850.00	6,734.24	12,230.00	7,301.64	28.85	82.76	-100.84	-1,202.01	-1,229.19	935.30	846.59	88.72	10.543	
6,900.00	6,782.01	12,230.00	7,301.64	28.93	82.76	-107.29	-1,202.01	-1,229.19	908.67	817.72	90.95	9.991	
6,950.00	6,828.69	12,230.00	7,301.64	28.99	82.76	-111.85	-1,202.01	-1,229.19	885.84	792.69	93.15	9.510	
7,000.00	6,874.07	12,230.00	7,301.64	29.04	82.76	-115.16	-1,202.01	-1,229.19	867.22	771.97	95.25	9.105	
7,050.00	6,917.91	12,230.00	7,301.64	29.07	82.76	-117.57	-1,202.01	-1,229.19	853.18	756.01	97.18	8.780	
7,100.00	6,960.00	12,230.00	7,301.64	29.09	82.76	-119.29	-1,202.01	-1,229.19	844.03	745.17	98.86	8.537	
7,150.00	7,000.14	12,230.00	7,301.64	29.10	82.76	-120.43	-1,202.01	-1,229.19	839.97	739.72	100.25	8.379	
7,164.25	7,011.19	12,230.00	7,301.64	29.10	82.76	-120.66	-1,202.01	-1,229.19	839.76	739.17	100.59	8.349 CC, ES	
7,200.00	7,038.13	12,230.00	7,301.64	29.10	82.76	-121.06	-1,202.01	-1,229.19	841.08	739.79	101.30	8.303 SF	
7,250.00	7,073.79	12,230.00	7,301.64	29.10	82.76	-121.24	-1,202.01	-1,229.19	847.35	745.37	101.98	8.309	
7,300.00	7,106.94	12,230.00	7,301.64	29.09	82.76	-120.98	-1,202.01	-1,229.19	858.64	756.33	102.31	8.393	
7,350.00	7,137.43	12,230.00	7,301.64	29.07	82.76	-120.29	-1,202.01	-1,229.19	874.69	772.39	102.30	8.550	
7,400.00	7,165.09	12,230.00	7,301.64	29.05	82.76	-119.15	-1,202.01	-1,229.19	895.17	793.17	102.00	8.776	
7,450.00	7,189.81	12,230.00	7,301.64	29.03	82.76	-117.56	-1,202.01	-1,229.19	919.69	818.23	101.46	9.065	
7,500.00	7,211.45	12,230.00	7,301.64	29.02	82.76	-115.48	-1,202.01	-1,229.19	947.82	847.09	100.73	9.410	
7,550.00	7,229.92	12,230.00	7,301.64	29.01	82.76	-112.87	-1,202.01	-1,229.19	979.12	879.27	99.86	9.805	
7,600.00	7,245.11	12,230.00	7,301.64	29.00	82.76	-109.69	-1,202.01	-1,229.19	1,013.16	914.26	98.90	10.245	
7,650.00	7,256.97	12,230.00	7,301.64	29.01	82.76	-105.90	-1,202.01	-1,229.19	1,049.50	951.62	97.88	10.722	
7,700.00	7,265.43	12,230.00	7,301.64	29.03	82.76	-101.49	-1,202.01	-1,229.19	1,087.76	990.91	96.84	11.232	
7,750.00	7,270.44	12,230.00	7,301.64	29.06	82.76	-96.44	-1,202.01	-1,229.19	1,127.55	1,031.75	95.81	11.769	
7,797.34	7,272.00	12,230.00	7,301.64	29.10	82.76	-91.11	-1,202.01	-1,229.19	1,166.34	1,071.50	94.84	12.298	
7,800.00	7,272.00	12,230.00	7,301.64	29.10	82.76	-91.11	-1,202.01	-1,229.19	1,168.54	1,073.76	94.78	12.329	
7,900.00	7,272.00	12,230.00	7,301.64	29.26	82.76	-91.11	-1,202.01	-1,229.19	1,252.73	1,159.88	92.85	13.492	
8,000.00	7,272.00	12,230.00	7,301.64	29.51	82.76	-91.11	-1,202.01	-1,229.19	1,339.10	1,248.00	91.10	14.700	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - CHAPIN 34-4 - CPR WELL - GYRO												Offset Site Error:	0.00 usft
Survey Program: 100-VESSI_GYROFLEX												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	85.91	95.78	1,337.86	1,341.35				
100.00	100.00	75.25	75.25	0.14	0.06	85.91	95.74	1,338.20	1,341.67	1,341.47	0.20	6,827.516	
200.00	200.00	176.30	176.30	0.50	0.21	85.91	95.69	1,339.20	1,342.66	1,341.95	0.71	1,894.840	
300.00	300.00	280.45	280.44	0.85	0.40	85.91	95.86	1,339.84	1,343.28	1,342.03	1.25	1,073.153	
400.00	400.00	380.20	380.19	1.21	0.57	85.90	96.01	1,340.30	1,343.75	1,341.96	1.79	751.767	
500.00	500.00	490.36	490.35	1.57	0.76	85.90	96.05	1,340.52	1,343.96	1,341.63	2.34	575.099	
600.00	600.00	588.74	588.73	1.93	0.93	85.90	96.00	1,340.29	1,343.73	1,340.87	2.86	469.330	
659.57	659.57	646.58	646.57	2.14	1.03	85.90	96.10	1,340.25	1,343.69	1,340.51	3.18	422.932	
700.00	700.00	685.85	685.84	2.29	1.10	85.90	96.12	1,340.27	1,343.71	1,340.32	3.39	396.306	
800.00	800.00	789.54	789.53	2.65	1.28	85.90	96.18	1,340.24	1,343.69	1,339.76	3.93	341.929	
900.00	900.00	887.47	887.46	3.01	1.45	85.89	96.34	1,340.10	1,343.56	1,339.10	4.46	301.400	
1,000.00	1,000.00	988.70	988.69	3.36	1.63	85.88	96.45	1,340.03	1,343.50	1,338.50	4.99	269.151	
1,100.00	1,100.00	1,089.81	1,089.80	3.72	1.80	85.89	96.16	1,339.88	1,343.33	1,337.80	5.53	243.112	
1,200.00	1,200.00	1,190.55	1,190.53	4.08	1.98	85.93	95.26	1,339.70	1,343.09	1,337.03	6.06	221.652	
1,215.58	1,215.58	1,206.41	1,206.39	4.13	2.01	-121.53	95.10	1,339.67	1,343.07	1,336.93	6.14	218.733 ES	
1,300.00	1,299.98	1,293.82	1,293.79	4.42	2.16	-121.54	94.17	1,339.39	1,343.63	1,337.05	6.58	204.185	
1,400.00	1,399.84	1,386.49	1,386.47	4.75	2.32	-121.64	93.29	1,339.21	1,346.11	1,339.04	7.07	190.399	
1,500.00	1,499.45	1,502.09	1,502.06	5.09	2.52	-121.90	92.44	1,338.75	1,350.27	1,342.67	7.60	177.565	
1,600.00	1,598.70	1,602.23	1,602.19	5.43	2.70	-122.23	91.93	1,337.61	1,355.60	1,347.48	8.12	166.959	
1,700.00	1,697.47	1,699.36	1,699.31	5.78	2.87	-122.64	91.60	1,336.52	1,362.91	1,354.27	8.64	157.771	
1,800.00	1,795.62	1,799.78	1,799.73	6.15	3.04	-123.15	91.14	1,335.39	1,372.23	1,363.06	9.17	149.566	
1,810.86	1,806.25	1,810.69	1,810.64	6.19	3.06	-123.21	91.06	1,335.26	1,373.36	1,364.12	9.23	148.719	
1,900.00	1,893.36	1,900.20	1,900.14	6.54	3.22	-123.84	90.39	1,334.12	1,382.73	1,373.01	9.72	142.223	
2,000.00	1,991.10	1,991.56	1,991.49	6.93	3.38	-124.47	89.38	1,333.15	1,393.59	1,383.33	10.26	135.808	
2,100.00	2,088.83	2,086.83	2,086.74	7.34	3.55	-125.10	88.05	1,332.51	1,404.99	1,394.18	10.81	129.919 SF	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - ENGLISH FARMS 34C-9HZ - KMG WELL - SURVEYS										Offset Site Error: 0.00 usft			
Survey Program: 16-ISWWSA MWD										Offset Well Error: 0.00 usft			
Reference		Offset		Semi Major Axis			Distance					Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis		Separation Factor
6,950.00	6,828.69	7,288.63	7,130.22	28.99	19.41	-75.23	-714.55	-1,894.75	1,408.10	1,362.65	45.44	30.987	
7,000.00	6,874.07	7,306.39	7,141.63	29.04	19.33	-79.31	-728.14	-1,894.16	1,392.46	1,347.03	45.43	30.652	
7,050.00	6,917.91	7,316.81	7,148.12	29.07	19.29	-82.41	-736.29	-1,893.85	1,378.45	1,333.01	45.44	30.333	
7,100.00	6,960.00	7,321.77	7,151.16	29.09	19.27	-84.76	-740.21	-1,893.71	1,366.30	1,320.83	45.46	30.054	
7,150.00	7,000.14	7,322.61	7,151.67	29.10	19.27	-86.51	-740.88	-1,893.69	1,356.15	1,310.68	45.46	29.829	
7,200.00	7,038.13	7,320.28	7,150.25	29.10	19.28	-87.76	-739.03	-1,893.75	1,348.11	1,302.53	45.58	29.579	
7,250.00	7,073.79	7,315.47	7,147.30	29.10	19.30	-88.60	-735.24	-1,893.89	1,342.24	1,296.52	45.72	29.359	
7,300.00	7,106.94	7,308.69	7,143.08	29.09	19.32	-89.07	-729.93	-1,894.09	1,338.56	1,292.73	45.83	29.208	
7,350.00	7,137.43	7,300.33	7,137.79	29.07	19.36	-89.22	-723.46	-1,894.35	1,337.07	1,291.17	45.91	29.125	
7,359.31	7,142.80	7,298.63	7,136.70	29.07	19.36	-89.21	-722.15	-1,894.41	1,337.04	1,291.12	45.92	29.117 CC, ES	
7,400.00	7,165.09	7,290.68	7,131.56	29.05	19.40	-89.08	-716.10	-1,894.68	1,337.74	1,291.78	45.96	29.108 SF	
7,450.00	7,189.81	7,279.97	7,124.51	29.03	19.44	-88.68	-708.05	-1,895.07	1,340.50	1,294.52	45.99	29.151	
7,500.00	7,211.45	7,257.00	7,108.86	29.02	19.54	-87.60	-691.26	-1,895.99	1,345.36	1,299.25	46.11	29.178	
7,550.00	7,229.92	7,255.39	7,107.73	29.01	19.54	-87.17	-690.11	-1,896.05	1,351.96	1,305.96	46.00	29.393	
7,600.00	7,245.11	7,233.76	7,092.37	29.00	19.62	-85.80	-674.90	-1,896.91	1,360.34	1,314.28	46.06	29.534	
7,650.00	7,256.97	7,212.13	7,076.49	29.01	19.69	-84.29	-660.25	-1,897.63	1,370.23	1,324.12	46.11	29.717	
7,700.00	7,265.43	7,190.51	7,060.11	29.03	19.77	-82.65	-646.15	-1,898.21	1,381.46	1,335.31	46.15	29.934	
7,750.00	7,270.44	7,170.46	7,044.49	29.06	19.85	-80.96	-633.58	-1,898.64	1,393.88	1,347.70	46.18	30.183	
7,797.34	7,272.00	7,144.61	7,023.78	29.10	19.93	-79.03	-618.12	-1,899.00	1,406.58	1,360.34	46.24	30.418	
7,800.00	7,272.00	7,143.17	7,022.61	29.10	19.94	-78.98	-617.28	-1,899.01	1,407.32	1,361.07	46.24	30.432	

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - ENGLISH FARMS 34N-9HZ - KMG WELL - SURVEYS													Offset Site Error:	0.00 usft
Survey Program: 16-ISCWSA MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
4,700.00	4,629.95	4,924.31	4,812.87	19.17	19.67	67.17	-532.94	-1,710.54	1,411.00	1,375.47	35.53	39.713		
4,800.00	4,727.68	4,991.51	4,879.18	19.64	19.91	68.04	-525.47	-1,702.61	1,391.41	1,354.90	36.51	38.110		
4,900.00	4,825.42	5,080.92	4,967.84	20.11	20.17	69.09	-518.86	-1,693.20	1,373.43	1,336.03	37.41	36.716		
5,000.00	4,923.15	5,135.21	5,021.85	20.58	20.30	69.67	-516.26	-1,688.49	1,357.54	1,319.23	38.31	35.436		
5,100.00	5,020.89	5,192.22	5,078.73	21.06	20.42	70.27	-513.94	-1,685.37	1,345.01	1,305.83	39.18	34.330		
5,200.00	5,118.62	5,257.30	5,143.77	21.53	20.53	70.90	-512.40	-1,683.59	1,335.37	1,295.38	39.99	33.392		
5,300.00	5,216.36	5,349.30	5,235.76	22.00	20.66	71.74	-511.55	-1,682.74	1,327.64	1,286.89	40.75	32.583		
5,400.00	5,314.10	5,448.14	5,334.59	22.48	20.79	72.65	-510.55	-1,681.75	1,320.19	1,278.70	41.49	31.817		
5,500.00	5,411.83	5,546.91	5,433.35	22.95	20.92	73.58	-509.41	-1,680.63	1,312.98	1,270.74	42.24	31.084		
5,600.00	5,509.57	5,645.59	5,532.01	23.42	21.06	74.52	-508.14	-1,679.39	1,306.03	1,263.05	42.99	30.383		
5,700.00	5,607.30	5,745.42	5,631.83	23.90	21.19	75.48	-507.02	-1,678.02	1,299.31	1,255.58	43.73	29.715		
5,800.00	5,705.04	5,845.49	5,731.88	24.37	21.33	76.43	-506.41	-1,676.55	1,292.75	1,248.29	44.46	29.076		
5,900.00	5,802.77	5,945.74	5,832.12	24.85	21.47	77.37	-506.30	-1,675.00	1,286.34	1,241.15	45.19	28.465		
6,000.00	5,900.51	6,046.17	5,932.53	25.32	21.61	78.30	-506.72	-1,673.36	1,280.06	1,234.15	45.91	27.880		
6,100.00	5,998.24	6,139.66	6,026.02	25.80	21.73	79.18	-507.09	-1,671.92	1,274.21	1,227.57	46.65	27.317		
6,200.00	6,095.98	6,234.18	6,120.52	26.27	21.86	80.07	-507.24	-1,670.63	1,268.94	1,221.56	47.38	26.785		
6,300.00	6,193.71	6,328.64	6,214.98	26.75	21.99	80.99	-507.16	-1,669.52	1,264.25	1,216.15	48.10	26.282		
6,400.00	6,291.45	6,420.10	6,306.43	27.23	22.10	81.86	-507.31	-1,668.90	1,260.31	1,211.48	48.83	25.810		
6,500.00	6,389.18	6,523.31	6,409.64	27.70	22.22	82.81	-508.21	-1,668.87	1,257.10	1,207.60	49.50	25.395		
6,536.48	6,424.83	6,593.85	6,480.00	27.88	22.27	83.28	-512.96	-1,668.89	1,255.29	1,205.73	49.57	25.326		
6,550.00	6,438.07	6,606.49	6,492.57	27.94	22.27	80.77	-514.34	-1,668.90	1,254.39	1,204.76	49.64	25.271		
6,600.00	6,487.36	6,648.92	6,534.66	28.16	22.26	66.32	-519.68	-1,669.37	1,250.48	1,200.59	49.89	25.064		
6,650.00	6,537.01	6,691.37	6,576.59	28.35	22.26	37.71	-526.14	-1,670.53	1,245.65	1,195.55	50.10	24.864		
6,700.00	6,586.76	6,752.18	6,636.26	28.51	22.20	-2.26	-537.63	-1,672.89	1,239.55	1,189.47	50.08	24.751		
6,750.00	6,636.37	6,820.72	6,702.71	28.64	22.12	-30.06	-554.06	-1,675.98	1,231.89	1,181.98	49.91	24.682		
6,800.00	6,685.61	6,897.14	6,775.55	28.75	22.00	-45.50	-576.94	-1,679.19	1,222.32	1,172.76	49.56	24.663		
6,850.00	6,734.24	6,960.51	6,833.74	28.85	21.84	-55.24	-601.78	-1,682.38	1,211.32	1,162.14	49.18	24.632		
6,900.00	6,782.01	7,021.39	7,027.75	28.93	20.96	-70.63	-757.13	-1,686.66	1,195.86	1,150.10	45.76	26.134		
6,950.00	6,828.69	7,045.82	7,047.57	28.99	20.83	-76.46	-785.27	-1,686.26	1,180.67	1,135.16	45.51	25.944		
7,000.00	6,874.07	7,059.94	7,055.08	29.04	20.78	-80.31	-797.22	-1,686.07	1,167.27	1,121.73	45.53	25.635		
7,050.00	6,917.91	7,063.83	7,057.09	29.07	20.77	-82.92	-800.55	-1,686.02	1,156.01	1,110.25	45.76	25.264		
7,100.00	6,960.00	7,061.91	7,056.10	29.09	20.77	-84.69	-798.91	-1,686.05	1,147.06	1,101.08	45.98	24.948		
7,150.00	7,000.14	7,056.40	7,053.23	29.10	20.79	-85.83	-794.20	-1,686.12	1,140.49	1,094.33	46.16	24.706		
7,200.00	7,038.13	7,048.52	7,049.04	29.10	20.82	-86.47	-787.54	-1,686.22	1,136.35	1,090.06	46.29	24.548		
7,250.00	7,073.79	7,039.00	7,043.81	29.10	20.86	-86.71	-779.58	-1,686.34	1,134.62	1,088.26	46.36	24.474		
7,261.19	7,081.44	7,036.69	7,042.52	29.10	20.87	-86.71	-777.67	-1,686.37	1,134.56	1,088.19	46.37	24.469	CC, ES, SF	
7,300.00	7,106.94	7,028.30	7,037.75	29.09	20.90	-86.59	-770.76	-1,686.47	1,135.27	1,088.90	46.37	24.483		
7,350.00	7,137.43	7,016.71	7,030.95	29.07	20.94	-86.18	-761.38	-1,686.60	1,138.22	1,091.89	46.33	24.568		
7,400.00	7,165.09	7,004.46	7,023.51	29.05	20.99	-85.49	-751.65	-1,686.74	1,143.38	1,097.13	46.25	24.724		
7,450.00	7,189.81	7,011.69	7,015.48	29.03	21.04	-84.56	-741.72	-1,686.87	1,150.62	1,104.49	46.13	24.943		
7,500.00	7,211.45	7,018.50	7,006.90	29.02	21.10	-83.41	-731.70	-1,686.99	1,159.82	1,113.82	46.00	25.215		
7,550.00	7,229.92	7,015.00	6,997.83	29.01	21.16	-82.07	-721.71	-1,687.11	1,170.81	1,124.96	45.86	25.532		
7,600.00	7,245.11	7,014.06	6,986.07	29.00	21.22	-80.42	-709.51	-1,687.22	1,183.40	1,137.67	45.74	25.873		
7,650.00	7,256.97	7,010.99	6,973.83	29.01	21.28	-78.63	-697.63	-1,687.25	1,197.39	1,151.76	45.63	26.243		
7,700.00	7,265.43	7,010.00	6,958.25	29.03	21.36	-76.57	-683.55	-1,687.20	1,212.59	1,167.04	45.55	26.624		
7,750.00	7,270.44	7,006.49	6,947.94	29.06	21.41	-74.72	-674.83	-1,687.10	1,228.79	1,183.34	45.45	27.034		
7,797.34	7,272.00	7,000.00	6,935.05	29.10	21.47	-72.76	-664.54	-1,686.92	1,244.92	1,199.52	45.41	27.418		
7,800.00	7,272.00	7,009.07	6,934.32	29.10	21.47	-72.73	-663.98	-1,686.91	1,245.85	1,200.45	45.40	27.440		
7,900.00	7,272.00	7,041.77	6,904.03	29.26	21.59	-71.31	-642.21	-1,686.15	1,283.34	1,237.97	45.37	28.286		
8,000.00	7,272.00	7,008.92	6,876.28	29.51	21.69	-70.02	-624.69	-1,684.96	1,325.81	1,280.39	45.42	29.193		
8,100.00	7,272.00	6,976.00	6,847.55	29.86	21.80	-68.70	-608.73	-1,683.27	1,373.15	1,327.62	45.54	30.155		

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - ENGLISH FARMS 35N1-9HZ - KMG WELL - SURVEYS												Offset Site Error: 0.00 usft			
Survey Program: 16-ISWWSA MWD														Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor			
3,600.00	3,554.86	4,142.46	3,987.13	14.02	20.40	55.71	-641.75	-1,525.60	1,409.24	1,383.41	25.84	54.546			
3,700.00	3,652.60	4,233.70	4,073.51	14.49	20.97	56.96	-626.15	-1,500.70	1,367.56	1,340.78	26.78	51.062			
3,800.00	3,750.33	4,313.49	4,149.10	14.95	21.46	58.11	-612.68	-1,478.99	1,326.55	1,298.78	27.77	47.763			
3,900.00	3,848.07	4,387.57	4,219.42	15.42	21.90	59.23	-600.17	-1,459.33	1,286.76	1,257.95	28.81	44.661			
4,000.00	3,945.80	4,449.10	4,278.04	15.88	22.25	60.21	-589.79	-1,443.77	1,248.84	1,218.93	29.91	41.756			
4,100.00	4,043.54	4,508.00	4,334.49	16.35	22.58	61.20	-579.61	-1,430.46	1,213.92	1,182.87	31.05	39.099			
4,200.00	4,141.27	4,556.13	4,380.97	16.82	22.81	62.02	-571.52	-1,420.93	1,182.39	1,150.18	32.20	36.717			
4,300.00	4,239.01	4,612.38	4,435.75	17.29	23.07	62.97	-562.97	-1,411.46	1,154.60	1,121.24	33.36	34.612			
4,400.00	4,336.74	4,695.69	4,517.20	17.76	23.41	64.39	-550.95	-1,398.73	1,129.22	1,094.72	34.51	32.725			
4,500.00	4,434.48	4,766.35	4,586.60	18.23	23.68	65.57	-542.13	-1,388.82	1,105.92	1,070.28	35.64	31.030			
4,600.00	4,532.21	4,849.10	4,668.35	18.70	23.96	66.85	-534.39	-1,378.59	1,084.93	1,048.20	36.73	29.536			
4,700.00	4,629.95	4,932.39	4,750.76	19.17	24.21	68.15	-527.21	-1,368.86	1,065.34	1,027.53	37.81	28.175			
4,800.00	4,727.68	5,006.09	4,823.96	19.64	24.41	69.20	-523.10	-1,361.40	1,047.77	1,008.91	38.86	26.963			
4,900.00	4,825.42	5,076.00	4,893.67	20.11	24.56	70.10	-521.31	-1,356.59	1,033.44	993.59	39.85	25.933			
5,000.00	4,923.15	5,148.92	4,966.53	20.58	24.65	70.91	-521.71	-1,353.62	1,021.93	981.19	40.74	25.081			
5,100.00	5,020.89	5,230.16	5,047.71	21.06	24.73	71.73	-523.94	-1,351.84	1,012.41	970.83	41.57	24.352			
5,200.00	5,118.62	5,319.90	5,137.43	21.53	24.81	72.67	-525.71	-1,351.06	1,004.59	962.20	42.39	23.701			
5,300.00	5,216.36	5,416.35	5,233.87	22.00	24.89	73.70	-527.47	-1,350.48	997.40	954.21	43.19	23.094			
5,400.00	5,314.10	5,512.82	5,330.32	22.48	24.97	74.74	-529.18	-1,350.04	990.72	946.73	43.99	22.520			
5,500.00	5,411.83	5,609.92	5,427.40	22.95	25.06	75.81	-530.82	-1,349.72	984.52	939.72	44.80	21.975			
5,600.00	5,509.57	5,707.33	5,524.80	23.42	25.15	76.91	-532.24	-1,349.40	978.76	933.14	45.61	21.457			
5,700.00	5,607.30	5,804.65	5,622.12	23.90	25.24	78.03	-533.42	-1,349.09	973.43	927.00	46.43	20.966			
5,800.00	5,705.04	5,901.89	5,719.35	24.37	25.33	79.17	-534.35	-1,348.77	968.57	921.33	47.24	20.502			
5,900.00	5,802.77	6,000.08	5,817.54	24.85	25.42	80.35	-535.09	-1,348.42	964.15	916.09	48.06	20.061			
6,000.00	5,900.51	6,098.59	5,916.04	25.32	25.52	81.55	-535.73	-1,347.97	960.09	911.21	48.88	19.643			
6,100.00	5,998.24	6,197.04	6,014.49	25.80	25.63	82.77	-536.27	-1,347.40	956.40	906.71	49.69	19.247			
6,200.00	6,095.98	6,292.86	6,110.31	26.27	25.73	83.96	-536.74	-1,346.89	953.21	902.70	50.51	18.873			
6,300.00	6,193.71	6,388.29	6,205.73	26.75	25.82	85.15	-537.26	-1,346.65	950.70	899.39	51.31	18.527			
6,400.00	6,291.45	6,483.78	6,301.23	27.23	25.92	86.33	-537.82	-1,346.68	948.89	896.78	52.11	18.208			
6,500.00	6,389.18	6,579.96	6,523.51	27.70	25.89	87.32	-571.77	-1,347.86	943.35	892.03	51.32	18.380			
6,536.48	6,424.83	6,779.69	6,588.03	27.88	25.77	86.70	-598.14	-1,348.29	937.39	886.65	50.74	18.475			
6,550.00	6,438.07	6,794.53	6,601.47	27.94	25.73	83.83	-604.44	-1,348.40	934.88	884.18	50.70	18.439			
6,600.00	6,487.36	6,845.55	6,646.88	28.16	25.60	67.94	-627.67	-1,349.38	924.71	874.13	50.59	18.280			
6,650.00	6,537.01	6,914.76	6,706.33	28.35	25.41	37.11	-663.01	-1,351.74	913.18	863.21	49.97	18.275			
6,700.00	6,586.76	7,013.95	6,786.29	28.51	25.11	-6.67	-721.53	-1,353.52	898.94	850.48	48.46	18.550			
6,750.00	6,636.37	7,081.42	6,835.36	28.64	24.90	-37.52	-767.80	-1,353.72	882.61	835.03	47.58	18.550			
6,800.00	6,685.61	7,114.51	6,857.96	28.75	24.79	-53.93	-791.97	-1,353.84	866.67	819.18	47.48	18.253			
6,850.00	6,734.24	7,141.35	6,875.69	28.85	24.70	-63.94	-812.12	-1,354.04	852.02	804.58	47.44	17.961			
6,900.00	6,782.01	7,162.68	6,889.38	28.93	24.64	-70.72	-828.49	-1,354.26	839.20	791.80	47.41	17.703			
6,950.00	6,828.69	7,179.77	6,900.04	28.99	24.58	-75.60	-841.83	-1,354.48	828.68	781.34	47.35	17.503			
7,000.00	6,874.07	7,191.49	6,907.20	29.04	24.54	-79.07	-851.12	-1,354.63	820.84	773.58	47.26	17.369			
7,050.00	6,917.91	7,198.68	6,911.52	29.07	24.51	-81.45	-856.86	-1,354.74	815.98	768.86	47.12	17.317 SF			
7,100.00	6,960.00	7,202.03	6,913.51	29.09	24.50	-82.96	-859.55	-1,354.78	814.28	767.37	46.91	17.359 ES			
7,101.41	6,961.16	7,202.07	6,913.54	29.09	24.50	-82.99	-859.59	-1,354.78	814.28	767.37	46.90	17.361 CC			
7,150.00	7,000.14	7,202.11	6,913.56	29.10	24.50	-83.73	-859.62	-1,354.79	815.81	769.18	46.62	17.499			
7,200.00	7,038.13	7,199.42	6,911.96	29.10	24.51	-83.86	-857.45	-1,354.75	820.54	774.28	46.26	17.737			
7,250.00	7,073.79	7,194.35	6,908.92	29.10	24.53	-83.44	-853.39	-1,354.67	828.38	782.54	45.85	18.068			
7,300.00	7,106.94	7,187.24	6,904.62	29.09	24.55	-82.54	-847.73	-1,354.58	839.14	793.75	45.40	18.484			
7,350.00	7,137.43	7,178.38	6,899.19	29.07	24.58	-81.20	-840.73	-1,354.46	852.59	807.65	44.94	18.973			
7,400.00	7,165.09	7,160.00	6,887.68	29.05	24.65	-78.96	-826.41	-1,354.23	868.49	824.01	44.49	19.522			
7,450.00	7,189.81	7,160.00	6,887.68	29.03	24.65	-77.69	-826.41	-1,354.23	886.41	842.33	44.08	20.110			
7,500.00	7,211.45	7,142.81	6,876.64	29.02	24.70	-75.12	-813.23	-1,354.05	906.15	862.43	43.72	20.726			

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - ENGLISH FARMS 35N1-9HZ - KMG WELL - SURVEYS													Offset Site Error:	0.00 usft
Survey Program: 16-ISCWSA MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
7,550.00	7,229.92	7,128.26	6,867.11	29.01	24.74	-72.57	-802.23	-1,353.93	927.38	883.95	43.43	21.352		
7,600.00	7,245.11	7,112.64	6,856.71	29.00	24.79	-69.87	-790.59	-1,353.82	949.77	906.55	43.22	21.978		
7,650.00	7,256.97	7,096.08	6,845.47	29.01	24.85	-67.08	-778.42	-1,353.75	973.03	929.96	43.07	22.592		
7,700.00	7,265.43	7,065.00	6,823.84	29.03	24.96	-63.61	-756.10	-1,353.71	997.03	954.17	42.87	23.259		
7,750.00	7,270.44	7,065.00	6,823.84	29.06	24.96	-61.61	-756.10	-1,353.71	1,021.06	978.02	43.04	23.725		
7,797.34	7,272.00	7,044.51	6,809.11	29.10	25.01	-58.86	-741.86	-1,353.69	1,044.05	1,000.97	43.08	24.234		
7,800.00	7,272.00	7,043.59	6,808.44	29.10	25.02	-58.82	-741.23	-1,353.68	1,045.35	1,002.26	43.09	24.261		
7,900.00	7,272.00	7,010.93	6,783.99	29.26	25.12	-57.53	-719.59	-1,353.49	1,096.55	1,053.14	43.41	25.259		
8,000.00	7,272.00	6,970.00	6,751.80	29.51	25.25	-55.87	-694.32	-1,352.99	1,152.58	1,108.85	43.73	26.357		
8,100.00	7,272.00	6,951.75	6,736.98	29.86	25.30	-55.12	-683.68	-1,352.66	1,212.58	1,168.20	44.38	27.321		
8,200.00	7,272.00	6,921.24	6,711.75	30.31	25.39	-53.87	-666.54	-1,351.92	1,276.31	1,231.38	44.93	28.407		
8,300.00	7,272.00	6,875.00	6,672.49	30.85	25.53	-51.99	-642.17	-1,350.38	1,343.54	1,298.21	45.32	29.643		
8,400.00	7,272.00	6,875.00	6,672.49	31.47	25.53	-51.99	-642.17	-1,350.38	1,413.21	1,367.04	46.17	30.608		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - GITTLEIN 11-4 - CPR WELL - GYRO													Offset Site Error:	0.00 usft
Survey Program: 100-VESSI_GYROFLEX													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
11,000.00	7,272.00	7,293.27	7,292.01	61.37	12.67	-92.18	4,090.11	-1,294.40	1,356.51	1,304.90	51.60	26.288		
11,100.00	7,272.00	7,291.49	7,290.24	62.77	12.67	-92.05	4,090.13	-1,294.42	1,275.02	1,221.21	53.81	23.697		
11,200.00	7,272.00	7,289.72	7,288.47	64.18	12.67	-91.92	4,090.16	-1,294.45	1,196.34	1,139.98	56.36	21.228		
11,300.00	7,272.00	7,287.97	7,286.72	65.59	12.67	-91.78	4,090.19	-1,294.47	1,121.06	1,061.77	59.29	18.908		
11,400.00	7,272.00	7,286.22	7,284.97	67.01	12.66	-91.65	4,090.21	-1,294.50	1,049.92	987.29	62.63	16.765		
11,500.00	7,272.00	7,284.48	7,283.23	68.44	12.66	-91.52	4,090.24	-1,294.53	983.80	917.45	66.35	14.826		
11,600.00	7,272.00	7,282.75	7,281.50	69.88	12.66	-91.39	4,090.27	-1,294.55	923.80	853.37	70.43	13.116		
11,700.00	7,272.00	7,281.02	7,279.77	71.32	12.65	-91.26	4,090.29	-1,294.57	871.17	796.42	74.75	11.654		
11,800.00	7,272.00	7,279.31	7,278.06	72.76	12.65	-91.13	4,090.32	-1,294.60	827.32	748.21	79.12	10.457		
11,900.00	7,272.00	7,277.60	7,276.36	74.22	12.65	-91.00	4,090.34	-1,294.62	793.71	710.46	83.25	9.534		
12,000.00	7,272.00	7,275.91	7,274.66	75.67	12.65	-90.88	4,090.37	-1,294.64	771.68	684.86	86.83	8.888		
12,100.00	7,272.00	7,274.22	7,272.97	77.13	12.64	-90.75	4,090.39	-1,294.66	762.24	672.72	89.52	8.515		
12,122.47	7,272.00	7,273.84	7,272.59	77.46	12.64	-90.72	4,090.40	-1,294.67	761.91	671.93	89.97	8.468 CC, ES		
12,154.60	7,272.00	7,273.30	7,272.05	77.93	12.64	-90.68	4,090.41	-1,294.67	762.58	672.06	90.52	8.424 SF		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - GITTLEIN 12-4J - CPR WELL - SURVEYS													Offset Site Error:	0.00 usft
Survey Program: 1191-ISCWSA MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
9,600.00	7,272.00	7,468.18	7,247.78	43.06	24.74	-89.19	2,597.87	-1,413.37	1,346.40	1,288.12	58.29	23.100		
9,700.00	7,272.00	7,464.82	7,244.43	44.26	24.74	-88.97	2,597.99	-1,413.18	1,271.61	1,212.28	59.32	21.435		
9,800.00	7,272.00	7,461.33	7,240.94	45.48	24.73	-88.74	2,598.11	-1,412.99	1,200.48	1,139.95	60.53	19.832		
9,900.00	7,272.00	7,457.69	7,237.31	46.72	24.72	-88.50	2,598.24	-1,412.78	1,133.70	1,071.80	61.90	18.314		
10,000.00	7,272.00	7,453.89	7,233.53	47.98	24.72	-88.25	2,598.37	-1,412.57	1,072.10	1,008.67	63.43	16.903		
10,100.00	7,272.00	7,449.94	7,229.58	49.25	24.71	-87.99	2,598.52	-1,412.34	1,016.60	951.54	65.06	15.627		
10,200.00	7,272.00	7,446.33	7,225.98	50.55	24.70	-87.75	2,598.65	-1,412.13	968.26	901.53	66.73	14.510		
10,300.00	7,272.00	7,441.51	7,221.18	51.86	24.69	-87.44	2,598.84	-1,411.84	928.20	859.82	68.37	13.575		
10,400.00	7,272.00	7,436.71	7,216.39	53.18	24.68	-87.12	2,599.02	-1,411.55	897.51	827.64	69.87	12.845		
10,500.00	7,272.00	7,431.92	7,211.61	54.52	24.67	-86.80	2,599.21	-1,411.25	877.20	805.90	71.29	12.304		
10,600.00	7,272.00	7,427.15	7,206.85	55.87	24.66	-86.49	2,599.39	-1,410.96	867.98	795.47	72.51	11.970		
10,630.61	7,272.00	7,425.69	7,205.40	56.28	24.66	-86.39	2,599.45	-1,410.86	867.44	794.62	72.82	11.913 CC, ES		
10,700.00	7,272.00	7,422.39	7,202.11	57.23	24.65	-86.17	2,599.58	-1,410.65	870.20	796.81	73.39	11.857 SF		
10,800.00	7,272.00	7,417.65	7,197.38	58.60	24.64	-85.86	2,599.76	-1,410.35	883.79	809.85	73.94	11.952		
10,900.00	7,272.00	7,413.45	7,193.19	59.98	24.63	-85.58	2,599.92	-1,410.07	908.23	834.03	74.20	12.240		
11,000.00	7,272.00	7,407.86	7,187.61	61.37	24.62	-85.21	2,600.14	-1,409.70	942.68	868.47	74.22	12.702		
11,100.00	7,272.00	7,401.99	7,181.77	62.77	24.60	-84.83	2,600.37	-1,409.31	986.08	912.06	74.02	13.321		
11,200.00	7,272.00	7,395.84	7,175.64	64.18	24.59	-84.42	2,600.61	-1,408.88	1,037.32	963.65	73.67	14.080		
11,300.00	7,272.00	7,389.38	7,169.19	65.59	24.57	-84.00	2,600.88	-1,408.41	1,095.28	1,022.09	73.20	14.963		
11,400.00	7,272.00	7,382.58	7,162.42	67.01	24.56	-83.55	2,601.17	-1,407.91	1,158.97	1,086.33	72.64	15.955		
11,500.00	7,272.00	7,375.82	7,155.69	68.44	24.54	-83.10	2,601.46	-1,407.40	1,227.48	1,155.45	72.03	17.041		
11,600.00	7,272.00	7,369.31	7,149.21	69.88	24.53	-82.67	2,601.74	-1,406.90	1,300.06	1,228.66	71.40	18.209		
11,700.00	7,272.00	7,362.63	7,142.55	71.32	24.51	-82.23	2,602.04	-1,406.37	1,376.06	1,305.29	70.76	19.446		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - GITTLEIN 21-4J - CPR WELL - SURVEYS													Offset Site Error:	0.00 usft
Survey Program: 1154-ISCWSA MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
10,600.00	7,272.00	7,251.25	7,056.52	55.87	21.99	64.36	3,871.93	-110.65	1,395.41	1,349.39	46.02	30.323		
10,700.00	7,272.00	7,274.76	7,079.78	57.23	22.06	66.98	3,875.39	-110.45	1,301.56	1,254.45	47.11	27.631		
10,800.00	7,272.00	7,296.84	7,101.63	58.60	22.13	69.53	3,878.50	-110.29	1,208.42	1,160.02	48.40	24.968		
10,900.00	7,272.00	7,319.43	7,124.01	59.98	22.20	72.23	3,881.54	-110.17	1,116.21	1,066.24	49.97	22.336		
11,000.00	7,272.00	7,344.10	7,148.49	61.37	22.27	75.28	3,884.60	-110.05	1,025.14	973.23	51.91	19.747		
11,100.00	7,272.00	7,359.63	7,163.92	62.77	22.32	77.25	3,886.40	-109.99	935.65	881.42	54.23	17.254		
11,200.00	7,272.00	7,374.29	7,178.49	64.18	22.36	79.13	3,888.04	-109.94	848.31	791.20	57.11	14.855		
11,300.00	7,272.00	7,388.27	7,192.38	65.59	22.39	80.95	3,889.55	-109.90	763.86	703.17	60.70	12.585		
11,400.00	7,272.00	7,401.30	7,205.34	67.01	22.43	82.66	3,890.91	-109.89	683.42	618.24	65.18	10.485		
11,500.00	7,272.00	7,412.82	7,216.81	68.44	22.46	84.19	3,892.07	-109.88	608.60	537.91	70.69	8.609		
11,600.00	7,272.00	7,423.53	7,227.47	69.88	22.48	85.62	3,893.13	-109.89	541.76	464.49	77.27	7.011		
11,700.00	7,272.00	7,433.86	7,237.75	71.32	22.51	87.00	3,894.13	-109.89	486.21	401.67	84.54	5.751		
11,800.00	7,272.00	7,443.84	7,247.68	72.76	22.54	88.34	3,895.09	-109.90	446.21	354.78	91.43	4.880		
11,900.00	7,272.00	7,453.47	7,257.27	74.22	22.56	89.63	3,895.99	-109.91	426.17	330.05	96.12	4.434		
11,938.19	7,272.00	7,457.07	7,260.85	74.77	22.57	90.11	3,896.32	-109.91	424.47	327.52	96.95	4.378	CC, ES, SF	
12,000.00	7,272.00	7,462.79	7,266.54	75.67	22.58	90.88	3,896.85	-109.92	428.91	331.91	97.00	4.422		
12,100.00	7,272.00	7,471.79	7,275.51	77.13	22.61	92.09	3,897.67	-109.93	454.03	360.01	94.02	4.829		
12,154.60	7,272.00	7,476.58	7,280.28	77.93	22.62	92.74	3,898.10	-109.94	476.05	384.77	91.28	5.215		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - GITTLEIN 22-4J - CPR WELL - SURVEYS													Offset Site Error:	0.00 usft
Survey Program: 1012-ISCWSA MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
9,200.00	7,272.00	7,385.87	7,273.10	38.55	18.92	91.26	2,406.03	94.43	1,404.57	1,354.81	49.76	28.227		
9,300.00	7,272.00	7,381.37	7,268.61	39.63	18.91	90.86	2,406.28	94.05	1,316.38	1,265.74	50.64	25.995		
9,400.00	7,272.00	7,376.68	7,263.95	40.75	18.90	90.44	2,406.54	93.66	1,229.98	1,178.30	51.69	23.797		
9,500.00	7,272.00	7,371.85	7,259.15	41.89	18.88	90.01	2,406.82	93.25	1,145.78	1,092.85	52.92	21.649		
9,600.00	7,272.00	7,366.12	7,253.45	43.06	18.87	89.50	2,407.15	92.77	1,064.28	1,009.90	54.38	19.570		
9,700.00	7,272.00	7,360.35	7,247.71	44.26	18.85	88.99	2,407.49	92.27	986.16	930.06	56.09	17.580		
9,800.00	7,272.00	7,354.53	7,241.92	45.48	18.84	88.47	2,407.83	91.78	912.28	854.21	58.08	15.708		
9,900.00	7,272.00	7,348.68	7,236.10	46.72	18.82	87.94	2,408.18	91.28	843.77	783.44	60.32	13.987		
10,000.00	7,272.00	7,343.14	7,230.59	47.98	18.81	87.45	2,408.51	90.80	782.02	719.24	62.78	12.456		
10,100.00	7,272.00	7,336.34	7,223.83	49.25	18.79	86.84	2,408.91	90.22	728.77	663.45	65.32	11.157		
10,200.00	7,272.00	7,329.40	7,216.93	50.55	18.77	86.22	2,409.33	89.60	685.98	618.26	67.72	10.130		
10,300.00	7,272.00	7,322.30	7,209.87	51.86	18.75	85.58	2,409.76	88.97	655.70	586.03	69.67	9.412		
10,400.00	7,272.00	7,315.05	7,202.66	53.18	18.73	84.93	2,410.20	88.30	639.72	568.87	70.84	9.030		
10,454.00	7,272.00	7,311.06	7,198.70	53.90	18.72	84.57	2,410.45	87.93	637.44	566.37	71.07	8.969	CC, ES, SF	
10,500.00	7,272.00	7,307.72	7,195.38	54.52	18.71	84.27	2,410.66	87.61	639.09	568.06	71.03	8.997		
10,600.00	7,272.00	7,300.56	7,188.27	55.87	18.69	83.63	2,411.11	86.93	653.88	583.64	70.24	9.310		
10,700.00	7,272.00	7,292.93	7,180.69	57.23	18.66	82.95	2,411.61	86.20	683.06	614.39	68.67	9.946		
10,800.00	7,272.00	7,284.79	7,172.60	58.60	18.64	82.22	2,412.17	85.40	724.91	658.25	66.66	10.875		
10,900.00	7,272.00	7,276.09	7,163.97	59.98	18.61	81.44	2,412.78	84.55	777.36	712.87	64.49	12.054		
11,000.00	7,272.00	7,266.67	7,154.63	61.37	18.59	80.60	2,413.47	83.61	838.43	776.03	62.40	13.435		
11,100.00	7,272.00	7,256.15	7,144.19	62.77	18.55	79.66	2,414.29	82.56	906.36	845.85	60.51	14.979		
11,200.00	7,272.00	7,244.15	7,132.28	64.18	18.52	78.59	2,415.27	81.36	979.71	920.91	58.80	16.661		
11,300.00	7,272.00	7,229.69	7,117.96	65.59	18.47	77.31	2,416.53	79.88	1,057.34	1,000.04	57.30	18.453		
11,400.00	7,272.00	7,213.64	7,102.07	67.01	18.42	75.90	2,418.00	78.18	1,138.34	1,082.35	55.99	20.332		
11,500.00	7,272.00	7,196.10	7,084.72	68.44	18.36	74.37	2,419.69	76.25	1,222.03	1,167.18	54.86	22.277		
11,600.00	7,272.00	7,176.75	7,065.60	69.88	18.30	72.69	2,421.66	74.02	1,307.88	1,254.00	53.88	24.276		
11,700.00	7,272.00	11,700.00	7,029.86	71.32	34.67	69.60	2,425.75	69.64	1,395.41	1,330.93	64.48	21.640		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

S4-T1N-R65W - GITTLEIN 29N-28HZ - KMG WELL - SURVEYS												Offset Site Error:	0.00 usft
Survey Program: 100-VESSI_GYROFLEX, 1140-ISCWSA MWD												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	
11,600.00	7,272.00	6,741.16	6,716.19	69.88	12.12	36.53	4,697.05	-118.23	1,330.50	1,283.73	46.77	28.445	
11,700.00	7,272.00	6,756.00	6,729.24	71.32	12.14	37.10	4,704.01	-119.50	1,245.63	1,197.47	48.16	25.866	
11,800.00	7,272.00	6,776.61	6,747.09	72.76	12.16	37.90	4,714.15	-121.31	1,162.41	1,112.66	49.75	23.366	
11,900.00	7,272.00	6,803.00	6,769.46	74.22	12.20	38.98	4,727.99	-123.34	1,081.34	1,029.76	51.58	20.965	
12,000.00	7,272.00	6,803.00	6,769.46	75.67	12.20	38.98	4,727.99	-123.34	1,002.67	948.85	53.82	18.629	
12,100.00	7,272.00	6,831.42	6,792.73	77.13	12.24	40.17	4,744.19	-125.28	926.81	870.52	56.29	16.464	
12,154.60	7,272.00	6,851.00	6,808.11	77.93	12.27	41.01	4,756.23	-126.52	887.08	829.31	57.76	15.357	CC, ES, SF

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - GITTLEIN 30N-28HZ - KMG WELL - SURVEYS												Offset Site Error:	0.00 usft
Survey Program: 1225-ISCWSA MWD												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
11,800.00	7,272.00	6,787.09	6,731.69	72.76	15.54	-57.70	4,714.62	-1,387.03	1,388.68	1,324.04	64.64	21.483	
11,900.00	7,272.00	6,811.00	6,752.20	74.22	15.57	-58.69	4,726.91	-1,387.02	1,322.30	1,254.89	67.41	19.616	
12,000.00	7,272.00	6,811.00	6,752.20	75.67	15.57	-58.69	4,726.91	-1,387.02	1,259.70	1,189.14	70.55	17.855	
12,100.00	7,272.00	6,842.71	6,778.65	77.13	15.61	-60.01	4,744.40	-1,387.36	1,201.00	1,127.30	73.70	16.296	
12,154.60	7,272.00	6,859.00	6,791.87	77.93	15.64	-60.68	4,753.91	-1,387.71	1,171.03	1,095.48	75.54	15.502	CC, ES, SF

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - GITTLEIN 30N-28HZX - KMG WELL - SURVEYS													Offset Site Error: 0.00 usft
Survey Program: 25-ISCWSA MWD													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	
11,800.00	7,272.00	6,787.31	6,731.89	72.76	16.57	-57.70	4,713.40	-1,386.90	1,387.68	1,322.02	65.66	21.134	
11,900.00	7,272.00	6,811.00	6,752.21	74.22	16.60	-58.68	4,725.58	-1,386.89	1,321.35	1,252.90	68.44	19.305	
12,000.00	7,272.00	6,811.00	6,752.21	75.67	16.60	-58.68	4,725.58	-1,386.89	1,258.80	1,187.22	71.59	17.585	
12,100.00	7,272.00	6,842.98	6,778.88	77.13	16.65	-60.01	4,743.23	-1,387.23	1,200.15	1,125.40	74.75	16.056	
12,154.60	7,272.00	6,859.00	6,791.87	77.93	16.67	-60.68	4,752.58	-1,387.58	1,170.21	1,093.61	76.60	15.277	CC, ES, SF

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - GITTLEIN 30N-28HZXX - KMG WELL - SURVEYS													Offset Site Error: 0.00 usft
Survey Program: 25-ISCWSA MWD													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	
11,800.00	7,272.00	6,787.06	6,731.67	72.76	16.57	-57.72	4,714.77	-1,387.94	1,389.34	1,323.68	65.66	21.159	
11,900.00	7,272.00	6,811.00	6,752.21	74.22	16.60	-58.72	4,727.07	-1,387.93	1,322.99	1,254.55	68.44	19.331	
12,000.00	7,272.00	6,811.00	6,752.21	75.67	16.60	-58.72	4,727.07	-1,387.93	1,260.41	1,188.83	71.58	17.609	
12,100.00	7,272.00	6,842.67	6,778.62	77.13	16.65	-60.03	4,744.54	-1,388.26	1,201.74	1,127.00	74.74	16.080	
12,154.60	7,272.00	6,859.00	6,791.87	77.93	16.67	-60.71	4,754.07	-1,388.62	1,171.78	1,095.19	76.59	15.300 CC, ES, SF	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - GITTLEIN 3N-28HZ - KMG WELL - SURVEYS													Offset Site Error:	0.00 usft
Survey Program: 100-VESSI_GYROFLEX, 1215-ISCWSA MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance								
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning	
12,000.00	7,272.00	6,763.00	6,711.01	75.67	14.82	62.29	4,689.00	534.38	1,407.67	1,331.71	75.96	18.532		
12,100.00	7,272.00	6,784.75	6,730.60	77.13	14.88	63.22	4,697.28	538.93	1,357.58	1,278.68	78.89	17.207		
12,154.60	7,272.00	6,793.09	6,738.01	77.93	14.90	63.57	4,700.69	540.69	1,332.46	1,251.98	80.48	16.557 CC, ES, SF		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - GITTLEIN 4C-28HZ - KMG WELL - SURVEYS													Offset Site Error:	0.00 usft
Survey Program: 25-ISCWSA MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
11,400.00	7,272.00	6,893.15	6,880.27	67.01	14.54	-42.47	4,638.08	-889.60	1,381.34	1,337.00	44.34	31.150		
11,500.00	7,272.00	6,915.00	6,901.12	68.44	14.57	-44.08	4,644.60	-890.24	1,289.66	1,244.40	45.26	28.492		
11,600.00	7,272.00	6,915.00	6,901.12	69.88	14.57	-44.08	4,644.60	-890.24	1,198.84	1,152.44	46.40	25.838		
11,700.00	7,272.00	6,930.75	6,916.04	71.32	14.59	-45.29	4,649.63	-890.77	1,109.31	1,061.50	47.81	23.202		
11,800.00	7,272.00	6,943.86	6,928.36	72.76	14.61	-46.33	4,654.05	-891.31	1,021.34	971.76	49.58	20.601		
11,900.00	7,272.00	6,963.00	6,946.21	74.22	14.63	-47.92	4,660.91	-892.27	935.31	883.53	51.77	18.065		
12,000.00	7,272.00	6,963.00	6,946.21	75.67	14.63	-47.92	4,660.91	-892.27	851.79	797.21	54.58	15.606		
12,100.00	7,272.00	6,991.69	6,972.55	77.13	14.67	-50.43	4,672.11	-894.04	771.03	713.04	57.99	13.296		
12,154.60	7,272.00	7,010.00	6,989.10	77.93	14.70	-52.11	4,679.86	-895.36	728.71	668.54	60.17	12.111	CC, ES, SF	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - GITTLEIN 4C-28HZX - KMG WELL - SURVEYS													Offset Site Error: 0.00 usft
Survey Program: 25-ISCWSA MWD													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	
11,400.00	7,272.00	6,870.00	6,852.94	67.01	14.42	-41.15	4,659.13	-896.99	1,410.61	1,366.34	44.27	31.861	
11,500.00	7,272.00	6,870.00	6,852.94	68.44	14.42	-41.15	4,659.13	-896.99	1,319.45	1,274.26	45.18	29.201	
11,600.00	7,272.00	6,884.90	6,866.84	69.88	14.44	-42.03	4,664.40	-895.98	1,229.39	1,183.12	46.27	26.571	
11,700.00	7,272.00	6,897.80	6,878.78	71.32	14.46	-42.82	4,669.22	-895.20	1,140.60	1,092.99	47.61	23.956	
11,800.00	7,272.00	6,917.00	6,896.37	72.76	14.49	-44.05	4,676.84	-894.19	1,053.36	1,004.13	49.23	21.395	
11,900.00	7,272.00	6,931.87	6,909.87	74.22	14.51	-45.03	4,683.04	-893.46	967.84	916.58	51.26	18.880	
12,000.00	7,272.00	6,955.76	6,931.35	75.67	14.55	-46.68	4,693.42	-892.23	884.32	830.64	53.69	16.471	
12,100.00	7,272.00	6,978.05	6,951.13	77.13	14.58	-48.29	4,703.62	-891.05	803.25	746.56	56.69	14.168	
12,154.60	7,272.00	6,990.06	6,961.65	77.93	14.60	-49.18	4,709.40	-890.46	760.33	701.71	58.62	12.970 CC, ES, SF	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - GITTLEIN 4C-28HZXX - KMG WELL - SURVEYS													Offset Site Error:	0.00 usft
Survey Program: 25-ISCWSA MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
11,400.00	7,272.00	6,870.00	6,852.94	67.01	14.42	-40.21	4,657.34	-884.87	1,405.94	1,361.90	44.04	31.924		
11,500.00	7,272.00	6,870.00	6,852.94	68.44	14.42	-40.21	4,657.34	-884.87	1,314.58	1,269.67	44.91	29.272		
11,600.00	7,272.00	6,884.86	6,866.81	69.88	14.44	-41.08	4,662.60	-883.87	1,224.30	1,178.35	45.95	26.644		
11,700.00	7,272.00	6,897.80	6,878.78	71.32	14.46	-41.86	4,667.43	-883.09	1,135.26	1,088.02	47.24	24.031		
11,800.00	7,272.00	6,917.00	6,896.37	72.76	14.49	-43.08	4,675.05	-882.07	1,047.74	998.94	48.81	21.467		
11,900.00	7,272.00	6,931.95	6,909.95	74.22	14.51	-44.07	4,681.29	-881.34	961.90	911.12	50.77	18.945		
12,000.00	7,272.00	6,955.85	6,931.43	75.67	14.55	-45.72	4,691.68	-880.11	878.00	824.87	53.13	16.525		
12,100.00	7,272.00	6,978.15	6,951.22	77.13	14.58	-47.32	4,701.88	-878.93	796.49	740.42	56.07	14.206		
12,154.60	7,272.00	6,990.20	6,961.77	77.93	14.60	-48.22	4,707.68	-878.34	753.31	695.35	57.96	12.997	CC, ES, SF	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - GITTLEIN 4N-28HZ - KMG WELL - SURVEYS													Offset Site Error: 0.00 usft
Survey Program: 25-ISCWSA MWD													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Total Uncertainty Axis	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
11,500.00	7,272.00	6,714.00	6,685.36	68.44	14.66	-8.16	4,701.61	-612.28	1,375.02	1,333.85	41.17	33.399	
11,600.00	7,272.00	6,714.00	6,685.36	69.88	14.66	-8.16	4,701.61	-612.28	1,285.62	1,244.14	41.48	30.993	
11,700.00	7,272.00	6,740.14	6,708.74	71.32	14.70	-8.52	4,713.29	-612.46	1,196.82	1,154.99	41.83	28.609	
11,800.00	7,272.00	6,762.00	6,727.73	72.76	14.73	-8.88	4,724.10	-613.05	1,109.88	1,067.60	42.28	26.253	
11,900.00	7,272.00	6,762.00	6,727.73	74.22	14.73	-8.88	4,724.10	-613.05	1,024.44	981.49	42.95	23.851	
12,000.00	7,272.00	6,784.82	6,746.94	75.67	14.76	-9.31	4,736.36	-614.00	940.99	897.32	43.68	21.545	
12,100.00	7,272.00	6,809.00	6,766.56	77.13	14.79	-9.81	4,750.43	-615.28	860.06	815.49	44.57	19.296	
12,154.60	7,272.00	6,809.00	6,766.56	77.93	14.79	-9.81	4,750.43	-615.28	817.04	771.73	45.31	18.033 CC, ES, SF	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - OLIN 1-4 - CPR WELL - GYRO												Offset Site Error:	0.00 usft
Survey Program: 100-VESSI_GYROFLEX												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
9,600.00	7,272.00	7,263.17	7,262.27	43.06	12.59	89.70	2,957.56	-402.74	1,403.97	1,364.32	39.65	35.412	
9,700.00	7,272.00	7,263.19	7,262.29	44.26	12.59	89.71	2,957.56	-402.74	1,304.50	1,264.74	39.77	32.804	
9,800.00	7,272.00	7,263.21	7,262.31	45.48	12.59	89.72	2,957.56	-402.74	1,205.12	1,165.21	39.91	30.195	
9,900.00	7,272.00	7,263.24	7,262.34	46.72	12.59	89.73	2,957.56	-402.74	1,105.86	1,065.76	40.09	27.583	
10,000.00	7,272.00	7,263.26	7,262.36	47.98	12.59	89.74	2,957.56	-402.74	1,006.73	966.41	40.32	24.970	
10,100.00	7,272.00	7,263.28	7,262.38	49.25	12.59	89.75	2,957.56	-402.74	907.80	867.19	40.61	22.355	
10,200.00	7,272.00	7,263.30	7,262.40	50.55	12.59	89.75	2,957.56	-402.74	809.13	768.14	41.00	19.737	
10,300.00	7,272.00	7,263.33	7,262.43	51.86	12.59	89.76	2,957.56	-402.74	710.84	669.31	41.53	17.116	
10,400.00	7,272.00	7,263.35	7,262.45	53.18	12.59	89.77	2,957.56	-402.74	613.09	570.80	42.30	14.495	
10,500.00	7,272.00	7,263.37	7,262.47	54.52	12.59	89.78	2,957.56	-402.74	516.21	472.75	43.46	11.877	
10,600.00	7,272.00	7,263.39	7,262.49	55.87	12.59	89.79	2,957.56	-402.74	420.80	375.45	45.34	9.280	
10,700.00	7,272.00	7,263.41	7,262.51	57.23	12.59	89.80	2,957.56	-402.74	328.12	279.50	48.62	6.749	
10,800.00	7,272.00	7,263.43	7,262.53	58.60	12.60	89.81	2,957.56	-402.73	241.37	186.64	54.73	4.410	
10,900.00	7,272.00	7,263.46	7,262.56	59.98	12.60	89.82	2,957.56	-402.73	169.86	104.25	65.61	2.589	
10,997.03	7,272.00	7,263.48	7,262.58	61.33	12.60	89.83	2,957.56	-402.73	139.42	65.61	73.81	1.889 CC, ES, SF	
11,000.00	7,272.00	7,263.48	7,262.58	61.37	12.60	89.83	2,957.56	-402.73	139.45	65.67	73.78	1.890	
11,100.00	7,272.00	7,263.50	7,262.60	62.77	12.60	89.84	2,957.56	-402.73	173.32	109.56	63.76	2.718	
11,200.00	7,272.00	7,263.52	7,262.62	64.18	12.60	89.84	2,957.56	-402.73	246.24	193.30	52.94	4.651	
11,300.00	7,272.00	7,263.54	7,262.64	65.59	12.60	89.85	2,957.56	-402.73	333.51	286.32	47.19	7.068	
11,400.00	7,272.00	7,263.57	7,262.67	67.01	12.60	89.86	2,957.56	-402.73	426.40	382.18	44.23	9.642	
11,500.00	7,272.00	7,263.59	7,262.69	68.44	12.60	89.87	2,957.56	-402.73	521.93	479.33	42.60	12.252	
11,600.00	7,272.00	7,263.61	7,262.71	69.88	12.60	89.88	2,957.56	-402.73	618.88	577.23	41.65	14.860	
11,700.00	7,272.00	7,263.63	7,262.73	71.32	12.60	89.89	2,957.56	-402.73	716.66	675.60	41.06	17.455	
11,800.00	7,272.00	7,263.65	7,262.75	72.76	12.60	89.90	2,957.56	-402.73	814.98	774.30	40.68	20.035	
11,900.00	7,272.00	7,263.67	7,262.77	74.22	12.60	89.91	2,957.56	-402.73	913.67	873.24	40.43	22.601	
12,000.00	7,272.00	7,263.69	7,262.79	75.67	12.60	89.92	2,957.56	-402.73	1,012.61	972.35	40.26	25.154	
12,100.00	7,272.00	7,263.72	7,262.82	77.13	12.60	89.92	2,957.56	-402.73	1,111.74	1,071.60	40.14	27.695	
12,154.60	7,272.00	7,263.73	7,262.83	77.93	12.60	89.93	2,957.56	-402.73	1,165.93	1,125.83	40.10	29.078	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - RUEGGE 3C-4H-N165 - OH - PLAN #1													Offset Site Error: 0.00 usft	
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
0.00	0.00	1.00	1.00	0.00	0.00	-98.45	-7.35	-49.46	50.00					
100.00	100.00	101.00	101.00	0.14	0.14	-98.45	-7.35	-49.46	50.00	49.72	0.28	178.822		
200.00	200.00	201.00	201.00	0.50	0.50	-98.45	-7.35	-49.46	50.00	49.00	1.00	50.173	CC, ES	
300.00	300.00	299.35	299.34	0.85	0.84	-99.18	-8.23	-50.94	51.63	49.92	1.70	30.356		
400.00	400.00	397.49	397.34	1.21	1.19	-101.08	-10.83	-55.31	56.47	54.07	2.40	23.485		
500.00	500.00	495.17	494.65	1.57	1.54	-103.59	-15.12	-62.51	64.63	61.52	3.11	20.772		
600.00	600.00	592.16	590.94	1.93	1.91	-106.19	-21.05	-72.49	76.15	72.34	3.82	19.954		
700.00	700.00	688.25	685.89	2.29	2.30	-108.55	-28.57	-85.13	91.06	86.54	4.52	20.163		
800.00	800.00	783.25	779.23	2.65	2.70	-110.55	-37.60	-100.31	109.31	104.10	5.21	20.985		
900.00	900.00	876.97	870.69	3.01	3.13	-112.17	-48.05	-117.88	130.86	124.96	5.89	22.202		
1,000.00	1,000.00	969.23	960.02	3.36	3.58	-113.49	-59.83	-137.69	155.61	149.04	6.57	23.683		
1,100.00	1,100.00	1,059.89	1,047.04	3.72	4.06	-114.53	-72.82	-159.54	183.49	176.27	7.22	25.400		
1,200.00	1,200.00	1,152.13	1,134.82	4.08	4.57	-115.40	-87.29	-183.87	214.03	206.11	7.92	27.038		
1,300.00	1,299.98	1,247.63	1,225.60	4.42	5.12	36.35	-102.45	-209.35	243.63	235.01	8.62	28.270		
1,400.00	1,399.84	1,343.93	1,317.15	4.75	5.68	36.14	-117.73	-235.05	270.53	261.22	9.31	29.043		
1,500.00	1,499.45	1,440.93	1,409.35	5.09	6.26	36.36	-133.12	-260.92	294.73	284.70	10.03	29.389		
1,600.00	1,598.70	1,538.49	1,502.09	5.43	6.84	36.92	-148.60	-286.95	316.23	305.47	10.76	29.393		
1,700.00	1,697.47	1,636.50	1,595.26	5.78	7.43	37.78	-164.16	-313.10	335.08	323.57	11.51	29.119		
1,800.00	1,795.62	1,734.84	1,688.75	6.15	8.02	38.91	-179.76	-339.34	351.37	339.09	12.28	28.620		
1,810.86	1,806.25	1,745.54	1,698.92	6.19	8.09	39.05	-181.46	-342.20	352.98	340.62	12.36	28.557		
1,900.00	1,893.36	1,833.33	1,782.37	6.54	8.62	40.32	-195.39	-365.62	366.24	353.17	13.07	28.022		
2,000.00	1,991.10	1,931.82	1,876.00	6.93	9.22	41.64	-211.02	-391.90	381.30	367.42	13.88	27.472		
2,100.00	2,088.83	2,030.31	1,969.62	7.34	9.83	42.85	-226.65	-418.18	396.55	381.84	14.70	26.970		
2,200.00	2,186.57	2,128.80	2,063.25	7.76	10.43	43.98	-242.28	-444.45	411.96	396.42	15.54	26.510		
2,300.00	2,284.30	2,227.29	2,156.87	8.18	11.03	45.03	-257.91	-470.73	427.51	411.13	16.39	26.087		
2,400.00	2,382.04	2,325.78	2,250.49	8.61	11.64	46.00	-273.53	-497.01	443.20	425.95	17.25	25.699		
2,500.00	2,479.77	2,424.27	2,344.12	9.04	12.25	46.91	-289.16	-523.29	459.00	440.89	18.11	25.341		
2,600.00	2,577.51	2,522.76	2,437.74	9.48	12.85	47.75	-304.79	-549.56	474.91	455.92	18.99	25.010		
2,700.00	2,675.24	2,621.25	2,531.37	9.93	13.46	48.54	-320.42	-575.84	490.91	471.04	19.87	24.703		
2,800.00	2,772.98	2,719.74	2,624.99	10.37	14.07	49.29	-336.05	-602.12	507.00	486.24	20.76	24.419		
2,900.00	2,870.71	2,818.23	2,718.62	10.82	14.68	49.98	-351.68	-628.40	523.17	501.51	21.66	24.155		
3,000.00	2,968.45	2,916.73	2,812.24	11.27	15.29	50.64	-367.31	-654.68	539.40	516.84	22.56	23.909		
3,100.00	3,066.19	3,015.22	2,905.87	11.73	15.90	51.25	-382.94	-680.95	555.70	532.24	23.47	23.679		
3,200.00	3,163.92	3,113.71	2,999.49	12.18	16.51	51.84	-398.57	-707.23	572.07	547.69	24.38	23.465		
3,300.00	3,261.66	3,212.20	3,093.12	12.64	17.12	52.38	-414.19	-733.51	588.48	563.19	25.30	23.264		
3,400.00	3,359.39	3,310.69	3,186.74	13.10	17.73	52.90	-429.82	-759.79	604.95	578.73	26.22	23.075		
3,500.00	3,457.13	3,409.18	3,280.37	13.56	18.34	53.40	-445.45	-786.07	621.46	594.32	27.14	22.898		
3,600.00	3,554.86	3,507.67	3,373.99	14.02	18.95	53.86	-461.08	-812.34	638.01	609.95	28.07	22.732		
3,700.00	3,652.60	3,606.16	3,467.61	14.49	19.56	54.30	-476.71	-838.62	654.61	625.61	29.00	22.575		
3,800.00	3,750.33	3,704.65	3,561.24	14.95	20.17	54.73	-492.34	-864.90	671.23	641.30	29.93	22.427		
3,900.00	3,848.07	3,803.14	3,654.86	15.42	20.79	55.13	-507.97	-891.18	687.90	657.03	30.86	22.287		
4,000.00	3,945.80	3,901.63	3,748.49	15.88	21.40	55.51	-523.60	-917.45	704.59	672.79	31.80	22.155		
4,100.00	4,043.54	4,000.12	3,842.11	16.35	22.01	55.87	-539.23	-943.73	721.31	688.57	32.74	22.030		
4,200.00	4,141.27	4,101.39	3,935.74	16.82	22.64	56.22	-554.85	-970.01	738.06	704.37	33.70	21.903		
4,300.00	4,239.01	4,202.90	4,029.36	17.29	23.27	56.55	-570.48	-996.29	754.84	720.18	34.65	21.782		
4,400.00	4,336.74	4,304.41	4,122.99	17.76	23.90	56.87	-586.11	-1,022.57	771.64	736.02	35.61	21.666		
4,500.00	4,434.48	4,405.92	4,216.61	18.23	24.53	57.17	-601.74	-1,048.84	788.46	751.88	36.58	21.557		
4,600.00	4,532.21	4,507.43	4,310.24	18.70	25.16	57.46	-617.37	-1,075.12	805.30	767.76	37.54	21.453		
4,700.00	4,629.95	4,608.94	4,403.86	19.17	25.79	57.74	-633.00	-1,101.40	822.16	783.66	38.50	21.353		
4,800.00	4,727.68	4,689.55	4,497.49	19.64	26.29	58.01	-648.63	-1,127.68	839.04	799.67	39.37	21.312		
4,900.00	4,825.42	4,788.04	4,591.11	20.11	26.91	58.27	-664.26	-1,153.95	855.94	815.62	40.32	21.227		
5,000.00	4,923.15	4,886.53	4,684.74	20.58	27.52	58.52	-679.89	-1,180.23	872.85	831.57	41.28	21.147		

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - RUEGGE 3C-4H-N165 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,100.00	5,020.89	4,985.02	4,778.36	21.06	28.13	58.76	-695.51	-1,206.51	889.78	847.55	42.23	21.070	
5,200.00	5,118.62	5,083.51	4,871.98	21.53	28.75	58.99	-711.14	-1,232.79	906.72	863.54	43.19	20.996	
5,300.00	5,216.36	5,182.00	4,965.61	22.00	29.36	59.21	-726.77	-1,259.07	923.68	879.53	44.14	20.925	
5,400.00	5,314.10	5,280.50	5,059.23	22.48	29.97	59.42	-742.40	-1,285.34	940.65	895.55	45.10	20.857	
5,500.00	5,411.83	5,378.99	5,152.86	22.95	30.58	59.63	-758.03	-1,311.62	957.63	911.57	46.06	20.791	
5,600.00	5,509.57	5,477.48	5,246.48	23.42	31.20	59.82	-773.66	-1,337.90	974.62	927.60	47.02	20.729	
5,700.00	5,607.30	5,575.97	5,340.11	23.90	31.81	60.02	-789.29	-1,364.18	991.62	943.65	47.98	20.668	
5,800.00	5,705.04	5,674.46	5,433.73	24.37	32.42	60.20	-804.92	-1,390.45	1,008.64	959.70	48.94	20.610	
5,900.00	5,802.77	5,772.95	5,527.36	24.85	33.04	60.38	-820.55	-1,416.73	1,025.66	975.76	49.90	20.554	
6,000.00	5,900.51	5,871.44	5,620.98	25.32	33.65	60.55	-836.17	-1,443.01	1,042.70	991.83	50.86	20.501	
6,100.00	5,998.24	5,969.93	5,714.61	25.80	34.26	60.72	-851.80	-1,469.29	1,059.74	1,007.91	51.82	20.449	
6,200.00	6,095.98	6,068.42	5,808.23	26.27	34.88	60.88	-867.43	-1,495.57	1,076.79	1,024.00	52.79	20.399	
6,300.00	6,193.71	6,166.91	5,901.86	26.75	35.49	61.04	-883.06	-1,521.84	1,093.85	1,040.10	53.75	20.350	
6,400.00	6,291.45	6,265.40	5,995.48	27.23	36.10	61.19	-898.69	-1,548.12	1,110.92	1,056.20	54.72	20.303	
6,500.00	6,389.18	6,363.89	6,089.11	27.70	36.72	61.34	-914.32	-1,574.40	1,127.99	1,072.31	55.68	20.258	
6,536.48	6,424.83	6,399.81	6,123.26	27.88	36.94	61.39	-920.02	-1,583.98	1,134.22	1,078.19	56.03	20.242	
6,550.00	6,438.07	6,413.14	6,135.92	27.94	37.02	59.09	-922.13	-1,587.54	1,136.53	1,080.37	56.16	20.237	
6,600.00	6,487.36	6,462.37	6,182.72	28.16	37.33	45.49	-929.95	-1,600.67	1,145.11	1,088.52	56.59	20.235	
6,650.00	6,537.01	6,511.38	6,229.31	28.35	37.63	17.82	-937.72	-1,613.75	1,153.71	1,096.76	56.95	20.259	
6,700.00	6,586.76	6,559.94	6,275.47	28.51	37.94	-20.94	-945.43	-1,626.71	1,162.34	1,105.10	57.24	20.308	
6,750.00	6,636.37	6,608.13	6,321.43	28.64	38.23	-47.05	-952.00	-1,639.60	1,171.02	1,113.56	57.46	20.380	
6,800.00	6,685.61	6,656.95	6,368.32	28.75	38.50	-60.11	-955.42	-1,652.73	1,179.73	1,122.08	57.65	20.464	
6,850.00	6,734.24	6,706.52	6,416.04	28.85	38.76	-67.11	-955.49	-1,666.08	1,188.44	1,130.63	57.81	20.558	
6,900.00	6,782.01	6,756.88	6,464.42	28.93	38.99	-71.29	-952.05	-1,679.59	1,197.11	1,139.17	57.94	20.662	
6,950.00	6,828.69	6,808.08	6,513.25	28.99	39.19	-74.00	-944.95	-1,693.21	1,205.68	1,147.64	58.04	20.772	
7,000.00	6,874.07	6,860.17	6,562.31	29.04	39.36	-75.87	-934.02	-1,706.86	1,214.12	1,155.99	58.13	20.886	
7,050.00	6,917.91	6,913.19	6,611.32	29.07	39.51	-77.22	-919.13	-1,720.48	1,222.38	1,164.18	58.20	21.003	
7,100.00	6,960.00	6,967.18	6,660.01	29.09	39.64	-78.22	-900.15	-1,733.98	1,230.41	1,172.16	58.26	21.120	
7,150.00	7,000.14	7,022.16	6,708.05	29.10	39.74	-78.98	-876.95	-1,747.28	1,238.17	1,179.86	58.31	21.235	
7,200.00	7,038.13	7,078.18	6,755.08	29.10	39.81	-79.57	-849.47	-1,760.27	1,245.61	1,187.26	58.35	21.346	
7,250.00	7,073.79	7,135.23	6,800.71	29.10	39.85	-80.04	-817.65	-1,772.84	1,252.68	1,194.28	58.40	21.450	
7,300.00	7,106.94	7,193.32	6,844.52	29.09	39.88	-80.41	-781.48	-1,784.88	1,259.33	1,200.88	58.45	21.547	
7,350.00	7,137.43	7,252.43	6,886.07	29.07	39.87	-80.71	-741.02	-1,796.26	1,265.51	1,207.01	58.50	21.632	
7,400.00	7,165.09	7,312.53	6,924.87	29.05	39.84	-80.96	-696.38	-1,806.84	1,271.19	1,212.62	58.57	21.704	
7,450.00	7,189.81	7,373.58	6,960.46	29.03	39.79	-81.15	-647.75	-1,816.51	1,276.32	1,217.66	58.65	21.760	
7,500.00	7,211.45	7,435.51	6,992.36	29.02	39.71	-81.31	-595.40	-1,825.12	1,280.85	1,222.09	58.76	21.799	
7,550.00	7,229.92	7,498.22	7,020.11	29.01	39.62	-81.43	-539.68	-1,832.55	1,284.75	1,225.87	58.88	21.819	
7,600.00	7,245.11	7,561.61	7,043.29	29.00	39.51	-81.52	-481.02	-1,838.68	1,288.00	1,228.96	59.04	21.817	
7,650.00	7,256.97	7,625.55	7,061.52	29.01	39.40	-81.58	-419.94	-1,843.41	1,290.55	1,231.33	59.22	21.793	
7,700.00	7,265.43	7,689.90	7,074.50	29.03	39.27	-81.61	-357.02	-1,846.67	1,292.40	1,232.97	59.43	21.747	
7,750.00	7,270.44	7,754.51	7,082.01	29.06	39.14	-81.62	-292.89	-1,848.39	1,293.51	1,233.85	59.67	21.679	
7,797.34	7,272.00	7,814.21	7,084.00	29.10	39.02	-81.60	-233.24	-1,848.59	1,293.90	1,233.99	59.91	21.599	
7,800.00	7,272.00	7,816.87	7,084.00	29.10	39.02	-81.60	-230.58	-1,848.57	1,293.90	1,233.99	59.92	21.595	
7,900.00	7,272.00	7,916.87	7,084.00	29.26	38.83	-81.60	-130.58	-1,847.97	1,294.13	1,233.77	60.36	21.439	
8,000.00	7,272.00	8,016.87	7,084.00	29.51	38.68	-81.60	-30.59	-1,847.38	1,294.36	1,233.40	60.96	21.231	
8,100.00	7,272.00	8,116.87	7,084.00	29.86	38.56	-81.61	69.41	-1,846.78	1,294.59	1,232.87	61.72	20.976	
8,200.00	7,272.00	8,216.87	7,084.00	30.31	38.47	-81.61	169.41	-1,846.18	1,294.81	1,232.20	62.62	20.677	
8,300.00	7,272.00	8,316.87	7,084.00	30.85	38.41	-81.61	269.41	-1,845.59	1,295.04	1,231.38	63.66	20.343	
8,400.00	7,272.00	8,416.87	7,084.00	31.47	38.41	-81.61	369.41	-1,844.99	1,295.27	1,230.43	64.84	19.977	
8,500.00	7,272.00	8,516.87	7,084.00	32.16	38.46	-81.61	469.40	-1,844.40	1,295.50	1,229.36	66.14	19.587	
8,600.00	7,272.00	8,616.87	7,084.00	32.92	38.58	-81.61	569.40	-1,843.80	1,295.73	1,228.16	67.56	19.178	
8,700.00	7,272.00	8,716.87	7,084.00	33.73	38.79	-81.61	669.40	-1,843.20	1,295.95	1,226.85	69.10	18.755	

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - RUEGGE 3C-4H-N165 - OH - PLAN #1													Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
8,800.00	7,272.00	8,816.87	7,084.00	34.61	39.11	-81.62	769.40	-1,842.61	1,296.18	1,225.44	70.74	18.323		
8,900.00	7,272.00	8,916.87	7,084.00	35.53	39.54	-81.62	869.40	-1,842.01	1,296.41	1,223.93	72.48	17.887		
9,000.00	7,272.00	9,016.87	7,084.00	36.50	40.10	-81.62	969.39	-1,841.41	1,296.64	1,222.33	74.31	17.450		
9,100.00	7,272.00	9,116.87	7,084.00	37.51	40.77	-81.62	1,069.39	-1,840.82	1,296.86	1,220.64	76.22	17.015		
9,200.00	7,272.00	9,216.87	7,084.00	38.55	41.54	-81.62	1,169.39	-1,840.22	1,297.09	1,218.88	78.21	16.585		
9,300.00	7,272.00	9,316.87	7,084.00	39.63	42.40	-81.62	1,269.39	-1,839.63	1,297.32	1,217.04	80.27	16.161		
9,400.00	7,272.00	9,416.87	7,084.00	40.75	43.32	-81.62	1,369.39	-1,839.03	1,297.55	1,215.14	82.40	15.746		
9,500.00	7,272.00	9,516.87	7,084.00	41.89	44.29	-81.63	1,469.38	-1,838.43	1,297.77	1,213.18	84.60	15.341		
9,600.00	7,272.00	9,616.87	7,084.00	43.06	45.32	-81.63	1,569.38	-1,837.84	1,298.00	1,211.15	86.85	14.946		
9,700.00	7,272.00	9,716.87	7,084.00	44.26	46.38	-81.63	1,669.38	-1,837.24	1,298.23	1,209.08	89.15	14.562		
9,800.00	7,272.00	9,816.87	7,084.00	45.48	47.48	-81.63	1,769.38	-1,836.64	1,298.46	1,206.96	91.50	14.191		
9,900.00	7,272.00	9,916.87	7,084.00	46.72	48.61	-81.63	1,869.38	-1,836.05	1,298.68	1,204.79	93.90	13.831		
10,000.00	7,272.00	10,016.87	7,084.00	47.98	49.77	-81.63	1,969.37	-1,835.45	1,298.91	1,202.58	96.34	13.483		
10,100.00	7,272.00	10,116.87	7,084.00	49.25	50.95	-81.63	2,069.37	-1,834.85	1,299.14	1,200.33	98.81	13.147		
10,200.00	7,272.00	10,216.86	7,084.00	50.55	52.16	-81.64	2,169.37	-1,834.26	1,299.37	1,198.04	101.33	12.823		
10,300.00	7,272.00	10,316.86	7,084.00	51.86	53.38	-81.64	2,269.37	-1,833.66	1,299.59	1,195.72	103.87	12.511		
10,400.00	7,272.00	10,416.86	7,084.00	53.18	54.63	-81.64	2,369.36	-1,833.07	1,299.82	1,193.37	106.45	12.210		
10,500.00	7,272.00	10,516.86	7,084.00	54.52	55.89	-81.64	2,469.36	-1,832.47	1,300.05	1,190.99	109.06	11.921		
10,600.00	7,272.00	10,616.86	7,084.00	55.87	57.16	-81.64	2,569.36	-1,831.87	1,300.28	1,188.58	111.69	11.642		
10,700.00	7,272.00	10,716.86	7,084.00	57.23	58.46	-81.64	2,669.36	-1,831.28	1,300.50	1,186.15	114.35	11.373		
10,800.00	7,272.00	10,816.86	7,084.00	58.60	59.76	-81.65	2,769.36	-1,830.68	1,300.73	1,183.70	117.03	11.114		
10,900.00	7,272.00	10,916.86	7,084.00	59.98	61.08	-81.65	2,869.35	-1,830.08	1,300.96	1,181.22	119.74	10.865		
11,000.00	7,272.00	11,016.86	7,084.00	61.37	62.41	-81.65	2,969.35	-1,829.49	1,301.19	1,178.73	122.46	10.626		
11,100.00	7,272.00	11,116.86	7,084.00	62.77	63.75	-81.65	3,069.35	-1,828.89	1,301.42	1,176.21	125.20	10.395		
11,200.00	7,272.00	11,216.86	7,084.00	64.18	65.10	-81.65	3,169.35	-1,828.30	1,301.64	1,173.68	127.96	10.172		
11,300.00	7,272.00	11,316.86	7,084.00	65.59	66.46	-81.65	3,269.35	-1,827.70	1,301.87	1,171.13	130.74	9.958		
11,400.00	7,272.00	11,416.86	7,084.00	67.01	67.83	-81.65	3,369.34	-1,827.10	1,302.10	1,168.57	133.53	9.751		
11,500.00	7,272.00	11,516.86	7,084.00	68.44	69.21	-81.66	3,469.34	-1,826.51	1,302.33	1,165.99	136.34	9.552		
11,600.00	7,272.00	11,616.86	7,084.00	69.88	70.59	-81.66	3,569.34	-1,825.91	1,302.55	1,163.40	139.16	9.360		
11,700.00	7,272.00	11,716.86	7,084.00	71.32	71.99	-81.66	3,669.34	-1,825.31	1,302.78	1,160.79	141.99	9.175		
11,800.00	7,272.00	11,816.86	7,084.00	72.76	73.39	-81.66	3,769.34	-1,824.72	1,303.01	1,158.17	144.84	8.996		
11,900.00	7,272.00	11,916.86	7,084.00	74.22	74.80	-81.66	3,869.33	-1,824.12	1,303.24	1,155.54	147.69	8.824		
12,000.00	7,272.00	12,016.86	7,084.00	75.67	76.21	-81.66	3,969.33	-1,823.52	1,303.46	1,152.90	150.56	8.657		
12,100.00	7,272.00	12,116.86	7,084.00	77.13	77.63	-81.66	4,069.33	-1,822.93	1,303.69	1,150.25	153.44	8.497		
12,154.60	7,272.00	12,148.53	7,084.00	77.93	78.08	-81.66	4,100.99	-1,822.74	1,304.02	1,149.02	155.00	8.413 SF		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - RUEGGE 3D-4H-N165 - OH - PLAN #1													Offset Site Error: 0.00 usft	
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
0.00	0.00	1.00	1.00	0.00	0.00	-98.45	-5.88	-39.56	40.00					
100.00	100.00	101.00	101.00	0.14	0.14	-98.45	-5.88	-39.56	40.00	39.72	0.28	143.055		
200.00	200.00	201.00	201.00	0.50	0.50	-98.45	-5.88	-39.56	40.00	39.00	1.00	40.138		
300.00	300.00	301.00	301.00	0.85	0.86	-98.45	-5.88	-39.56	40.00	38.29	1.71	23.344		
400.00	400.00	401.00	401.00	1.21	1.22	-98.45	-5.88	-39.56	40.00	37.57	2.43	16.458	CC, ES	
500.00	500.00	499.71	499.69	1.57	1.56	-99.51	-6.87	-40.99	41.58	38.45	3.13	13.282		
600.00	600.00	598.20	598.04	1.93	1.90	-102.20	-9.77	-45.20	46.34	42.52	3.82	12.117		
700.00	700.00	696.21	695.69	2.29	2.24	-105.61	-14.57	-52.16	54.41	49.89	4.52	12.039		
800.00	800.00	793.54	792.31	2.65	2.60	-108.95	-21.21	-61.77	65.89	60.68	5.21	12.642		
900.00	900.00	889.97	887.58	3.01	2.98	-111.83	-29.63	-73.96	80.80	74.90	5.90	13.698		
1,000.00	1,000.00	985.28	981.22	3.36	3.37	-114.15	-39.73	-88.59	99.09	92.51	6.58	15.066		
1,100.00	1,100.00	1,079.30	1,072.95	3.72	3.78	-115.98	-51.42	-105.53	120.70	113.45	7.25	16.657		
1,200.00	1,200.00	1,171.85	1,162.55	4.08	4.21	-117.40	-64.60	-124.61	145.54	137.63	7.90	18.420		
1,300.00	1,299.98	1,264.49	1,251.45	4.42	4.67	34.02	-79.38	-146.02	172.04	163.49	8.55	20.130		
1,400.00	1,399.84	1,361.41	1,344.22	4.75	5.18	33.68	-95.32	-169.11	196.65	187.41	9.23	21.302		
1,500.00	1,499.45	1,458.99	1,437.62	5.09	5.70	33.91	-111.37	-192.36	218.44	208.50	9.93	21.989		
1,600.00	1,598.70	1,557.10	1,531.53	5.43	6.24	34.57	-127.51	-215.74	237.42	226.77	10.65	22.286		
1,700.00	1,697.47	1,655.64	1,625.85	5.78	6.78	35.59	-143.72	-239.22	253.66	242.27	11.39	22.269		
1,800.00	1,795.62	1,754.47	1,720.45	6.15	7.33	36.93	-159.98	-262.77	267.24	255.09	12.15	21.995		
1,810.86	1,806.25	1,765.22	1,730.74	6.19	7.39	37.10	-161.75	-265.33	268.56	256.32	12.23	21.954		
1,900.00	1,893.36	1,853.43	1,815.17	6.54	7.89	38.55	-176.26	-286.35	279.34	266.41	12.93	21.602		
2,000.00	1,991.10	1,952.40	1,909.90	6.93	8.45	40.05	-192.54	-309.93	291.64	277.91	13.73	21.240		
2,100.00	2,088.83	2,051.36	2,004.62	7.34	9.01	41.42	-208.82	-333.51	304.12	289.57	14.54	20.910		
2,200.00	2,186.57	2,150.32	2,099.35	7.76	9.57	42.69	-225.10	-357.09	316.76	301.38	15.37	20.607		
2,300.00	2,284.30	2,249.29	2,194.07	8.18	10.14	43.86	-241.38	-380.67	329.53	313.32	16.21	20.329		
2,400.00	2,382.04	2,348.25	2,288.79	8.61	10.71	44.94	-257.66	-404.25	342.44	325.38	17.06	20.073		
2,500.00	2,479.77	2,447.21	2,383.52	9.04	11.28	45.94	-273.94	-427.83	355.46	337.54	17.92	19.836		
2,600.00	2,577.51	2,546.18	2,478.24	9.48	11.85	46.88	-290.22	-451.41	368.57	349.78	18.79	19.618		
2,700.00	2,675.24	2,645.14	2,572.97	9.93	12.42	47.75	-306.50	-474.99	381.78	362.11	19.66	19.415		
2,800.00	2,772.98	2,744.10	2,667.69	10.37	12.99	48.56	-322.78	-498.57	395.06	374.52	20.55	19.227		
2,900.00	2,870.71	2,843.07	2,762.41	10.82	13.57	49.31	-339.06	-522.15	408.42	386.99	21.44	19.052		
3,000.00	2,968.45	2,942.03	2,857.14	11.27	14.14	50.02	-355.34	-545.73	421.85	399.52	22.33	18.889		
3,100.00	3,066.19	3,040.99	2,951.86	11.73	14.71	50.69	-371.62	-569.31	435.34	412.10	23.23	18.737		
3,200.00	3,163.92	3,139.96	3,046.59	12.18	15.29	51.32	-387.90	-592.89	448.88	424.74	24.14	18.595		
3,300.00	3,261.66	3,238.92	3,141.31	12.64	15.87	51.91	-404.18	-616.47	462.47	437.42	25.05	18.462		
3,400.00	3,359.39	3,337.88	3,236.03	13.10	16.44	52.46	-420.46	-640.05	476.10	450.14	25.96	18.337		
3,500.00	3,457.13	3,436.84	3,330.76	13.56	17.02	52.99	-436.74	-663.63	489.78	462.89	26.88	18.219		
3,600.00	3,554.86	3,535.81	3,425.48	14.02	17.60	53.48	-453.02	-687.21	503.49	475.69	27.80	18.109		
3,700.00	3,652.60	3,634.77	3,520.21	14.49	18.17	53.95	-469.30	-710.79	517.24	488.51	28.73	18.005		
3,800.00	3,750.33	3,733.73	3,614.93	14.95	18.75	54.40	-485.58	-734.37	531.02	501.37	29.65	17.907		
3,900.00	3,848.07	3,832.70	3,709.65	15.42	19.33	54.82	-501.86	-757.95	544.84	514.25	30.58	17.814		
4,000.00	3,945.80	3,931.66	3,804.38	15.88	19.91	55.23	-518.14	-781.53	558.68	527.16	31.52	17.727		
4,100.00	4,043.54	4,030.62	3,899.10	16.35	20.48	55.61	-534.42	-805.11	572.54	540.09	32.45	17.644		
4,200.00	4,141.27	4,129.59	3,993.83	16.82	21.06	55.97	-550.70	-828.69	586.43	553.05	33.39	17.565		
4,300.00	4,239.01	4,228.55	4,088.55	17.29	21.64	56.32	-566.98	-852.27	600.34	566.02	34.32	17.490		
4,400.00	4,336.74	4,327.51	4,183.27	17.76	22.22	56.65	-583.26	-875.85	614.28	579.01	35.26	17.419		
4,500.00	4,434.48	4,426.48	4,278.00	18.23	22.80	56.97	-599.54	-899.43	628.23	592.02	36.21	17.352		
4,600.00	4,532.21	4,525.44	4,372.72	18.70	23.38	57.27	-615.82	-923.01	642.20	605.05	37.15	17.287		
4,700.00	4,629.95	4,624.40	4,467.45	19.17	23.96	57.56	-632.10	-946.59	656.19	618.09	38.09	17.226		
4,800.00	4,727.68	4,723.37	4,562.17	19.64	24.54	57.84	-648.38	-970.17	670.19	631.15	39.04	17.168		
4,900.00	4,825.42	4,822.33	4,656.90	20.11	25.12	58.11	-664.66	-993.75	684.21	644.22	39.98	17.112		
5,000.00	4,923.15	4,921.29	4,751.62	20.58	25.70	58.37	-680.94	-1,017.33	698.24	657.31	40.93	17.058		

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - RUEGGE 3D-4H-N165 - OH - PLAN #1													Offset Site Error: 0.00 usft	
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft	
Reference				Offset		Semi Major Axis			Distance				Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
5,100.00	5,020.89	5,020.26	4,846.34	21.06	26.28	58.61	-697.22	-1,040.91	712.29	670.40	41.88	17.007		
5,200.00	5,118.62	5,119.22	4,941.07	21.53	26.86	58.85	-713.50	-1,064.49	726.34	683.51	42.83	16.958		
5,300.00	5,216.36	5,218.18	5,035.79	22.00	27.44	59.08	-729.78	-1,088.07	740.41	696.63	43.78	16.911		
5,400.00	5,314.10	5,317.14	5,130.52	22.48	28.02	59.30	-746.06	-1,111.65	754.49	709.76	44.73	16.866		
5,500.00	5,411.83	5,416.11	5,225.24	22.95	28.60	59.51	-762.34	-1,135.23	768.58	722.90	45.69	16.823		
5,600.00	5,509.57	5,515.07	5,319.96	23.42	29.18	59.71	-778.62	-1,158.81	782.69	736.05	46.64	16.781		
5,700.00	5,607.30	5,614.03	5,414.69	23.90	29.76	59.91	-794.90	-1,182.39	796.80	749.20	47.59	16.742		
5,800.00	5,705.04	5,713.00	5,509.41	24.37	30.34	60.10	-811.18	-1,205.97	810.91	762.37	48.55	16.703		
5,900.00	5,802.77	5,811.96	5,604.14	24.85	30.92	60.28	-827.46	-1,229.55	825.04	775.54	49.50	16.666		
6,000.00	5,900.51	5,910.92	5,698.86	25.32	31.50	60.46	-843.74	-1,253.13	839.18	788.72	50.46	16.631		
6,100.00	5,998.24	6,009.89	5,793.58	25.80	32.08	60.63	-860.02	-1,276.71	853.32	801.90	51.42	16.596		
6,200.00	6,095.98	6,108.85	5,888.31	26.27	32.66	60.80	-876.30	-1,300.29	867.47	815.10	52.37	16.563		
6,300.00	6,193.71	6,207.81	5,983.03	26.75	33.24	60.96	-892.58	-1,323.87	881.63	828.30	53.33	16.531		
6,400.00	6,291.45	6,306.78	6,077.76	27.23	33.82	61.11	-908.86	-1,347.45	895.79	841.50	54.29	16.500		
6,500.00	6,389.18	6,405.74	6,172.48	27.70	34.40	61.26	-925.14	-1,371.03	909.96	854.71	55.25	16.471		
6,536.48	6,424.83	6,441.84	6,207.03	27.88	34.61	61.31	-931.08	-1,379.63	915.13	859.53	55.60	16.460		
6,550.00	6,438.07	6,455.22	6,219.84	27.94	34.69	58.98	-933.28	-1,382.82	917.05	861.33	55.72	16.457		
6,600.00	6,487.36	6,504.68	6,267.18	28.16	34.98	45.23	-941.41	-1,394.61	924.18	868.03	56.15	16.460		
6,650.00	6,537.01	6,553.83	6,314.27	28.35	35.27	17.38	-949.26	-1,406.33	931.36	874.86	56.49	16.486		
6,700.00	6,586.76	6,603.01	6,361.72	28.51	35.54	-21.43	-954.42	-1,418.12	938.58	881.80	56.79	16.529		
6,750.00	6,636.37	6,652.56	6,409.77	28.64	35.78	-47.49	-956.21	-1,430.04	945.83	888.80	57.03	16.585		
6,800.00	6,685.61	6,702.50	6,458.21	28.75	36.00	-60.49	-954.55	-1,442.04	953.06	895.83	57.23	16.652		
6,850.00	6,734.24	6,752.85	6,506.82	28.85	36.19	-67.43	-949.35	-1,454.06	960.25	902.84	57.40	16.728		
6,900.00	6,782.01	6,803.63	6,555.36	28.93	36.35	-71.55	-940.57	-1,466.04	967.34	909.80	57.54	16.811		
6,950.00	6,828.69	6,854.85	6,603.60	28.99	36.49	-74.20	-928.14	-1,477.93	974.32	916.67	57.65	16.900		
7,000.00	6,874.07	6,906.51	6,651.26	29.04	36.60	-76.00	-912.04	-1,489.65	981.14	923.40	57.74	16.992		
7,050.00	6,917.91	6,958.64	6,698.08	29.07	36.69	-77.28	-892.26	-1,501.14	987.77	929.96	57.81	17.086		
7,100.00	6,960.00	7,011.23	6,743.78	29.09	36.75	-78.21	-868.80	-1,512.33	994.17	936.30	57.87	17.180		
7,150.00	7,000.14	7,064.28	6,788.08	29.10	36.79	-78.90	-841.69	-1,523.15	1,000.31	942.40	57.91	17.273		
7,200.00	7,038.13	7,117.80	6,830.67	29.10	36.81	-79.41	-811.02	-1,533.52	1,006.16	948.21	57.95	17.363		
7,250.00	7,073.79	7,171.77	6,871.25	29.10	36.81	-79.81	-776.85	-1,543.38	1,011.68	953.69	57.98	17.448		
7,300.00	7,106.94	7,226.17	6,909.52	29.09	36.78	-80.11	-739.32	-1,552.64	1,016.84	958.82	58.02	17.526		
7,350.00	7,137.43	7,281.00	6,945.18	29.07	36.74	-80.33	-698.59	-1,561.24	1,021.61	963.55	58.06	17.596		
7,400.00	7,165.09	7,336.23	6,977.94	29.05	36.68	-80.51	-654.85	-1,569.10	1,025.97	967.85	58.11	17.655		
7,450.00	7,189.81	7,391.82	7,007.52	29.03	36.61	-80.63	-608.34	-1,576.16	1,029.88	971.70	58.18	17.702		
7,500.00	7,211.45	7,447.73	7,033.65	29.02	36.52	-80.73	-559.30	-1,582.34	1,033.33	975.07	58.26	17.736		
7,550.00	7,229.92	7,503.94	7,056.11	29.01	36.41	-80.80	-508.06	-1,587.60	1,036.30	977.93	58.37	17.755		
7,600.00	7,245.11	7,560.39	7,074.66	29.00	36.30	-80.84	-454.93	-1,591.89	1,038.76	980.26	58.50	17.757		
7,650.00	7,256.97	7,617.04	7,089.15	29.01	36.18	-80.86	-400.29	-1,595.15	1,040.70	982.05	58.65	17.744		
7,700.00	7,265.43	7,673.82	7,099.42	29.03	36.06	-80.87	-344.50	-1,597.36	1,042.11	983.28	58.83	17.714		
7,750.00	7,270.44	7,730.69	7,105.37	29.06	35.93	-80.86	-287.97	-1,598.50	1,042.98	983.95	59.03	17.667		
7,797.34	7,272.00	7,784.55	7,106.98	29.10	35.82	-80.84	-234.14	-1,598.58	1,043.31	984.06	59.25	17.610		
7,800.00	7,272.00	7,786.63	7,107.00	29.10	35.81	-80.84	-232.07	-1,598.57	1,043.32	984.06	59.25	17.608		
7,900.00	7,272.00	7,886.63	7,107.00	29.26	35.62	-80.85	-132.07	-1,597.98	1,043.54	983.82	59.72	17.474		
8,000.00	7,272.00	7,986.62	7,107.00	29.51	35.44	-80.85	-32.08	-1,597.38	1,043.77	983.43	60.34	17.298		
8,100.00	7,272.00	8,086.62	7,107.00	29.86	35.30	-80.85	67.92	-1,596.78	1,044.00	982.88	61.12	17.082		
8,200.00	7,272.00	8,186.62	7,107.00	30.31	35.19	-80.85	167.92	-1,596.19	1,044.22	982.19	62.04	16.832		
8,300.00	7,272.00	8,286.62	7,107.00	30.85	35.12	-80.85	267.92	-1,595.59	1,044.45	981.35	63.10	16.552		
8,400.00	7,272.00	8,386.62	7,107.00	31.47	35.10	-80.86	367.92	-1,594.99	1,044.68	980.38	64.30	16.247		
8,500.00	7,272.00	8,486.62	7,107.00	32.16	35.18	-80.86	467.91	-1,594.40	1,044.91	979.28	65.62	15.923		
8,600.00	7,272.00	8,586.62	7,107.00	32.92	35.39	-80.86	567.91	-1,593.80	1,045.13	978.07	67.07	15.583		
8,700.00	7,272.00	8,686.62	7,107.00	33.73	35.78	-80.86	667.91	-1,593.21	1,045.36	976.74	68.62	15.234		

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - RUEGGE 3D-4H-N165 - OH - PLAN #1													Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
8,800.00	7,272.00	8,786.62	7,107.00	34.61	36.35	-80.86	767.91	-1,592.61	1,045.59	975.30	70.28	14.877		
8,900.00	7,272.00	8,886.62	7,107.00	35.53	37.08	-80.87	867.91	-1,592.01	1,045.81	973.77	72.04	14.517		
9,000.00	7,272.00	8,986.62	7,107.00	36.50	37.90	-80.87	967.90	-1,591.42	1,046.04	972.15	73.88	14.158		
9,100.00	7,272.00	9,086.62	7,107.00	37.51	38.81	-80.87	1,067.90	-1,590.82	1,046.27	970.45	75.82	13.800		
9,200.00	7,272.00	9,186.62	7,107.00	38.55	39.77	-80.87	1,167.90	-1,590.22	1,046.49	968.67	77.82	13.447		
9,300.00	7,272.00	9,286.62	7,107.00	39.63	40.77	-80.87	1,267.90	-1,589.63	1,046.72	966.82	79.90	13.100		
9,400.00	7,272.00	9,386.62	7,107.00	40.75	41.82	-80.88	1,367.90	-1,589.03	1,046.95	964.90	82.05	12.760		
9,500.00	7,272.00	9,486.62	7,107.00	41.89	42.90	-80.88	1,467.89	-1,588.43	1,047.17	962.92	84.25	12.429		
9,600.00	7,272.00	9,586.62	7,107.00	43.06	44.01	-80.88	1,567.89	-1,587.84	1,047.40	960.88	86.52	12.106		
9,700.00	7,272.00	9,686.62	7,107.00	44.26	45.15	-80.88	1,667.89	-1,587.24	1,047.63	958.80	88.83	11.793		
9,800.00	7,272.00	9,786.62	7,107.00	45.48	46.32	-80.88	1,767.89	-1,586.64	1,047.86	956.66	91.20	11.490		
9,900.00	7,272.00	9,886.62	7,107.00	46.72	47.51	-80.89	1,867.89	-1,586.05	1,048.08	954.48	93.60	11.197		
10,000.00	7,272.00	9,986.62	7,107.00	47.98	48.72	-80.89	1,967.88	-1,585.45	1,048.31	952.26	96.05	10.914		
10,100.00	7,272.00	10,086.62	7,107.00	49.25	49.95	-80.89	2,067.88	-1,584.85	1,048.54	950.00	98.54	10.641		
10,200.00	7,272.00	10,186.62	7,107.00	50.55	51.19	-80.89	2,167.88	-1,584.26	1,048.76	947.70	101.06	10.377		
10,300.00	7,272.00	10,286.62	7,107.00	51.86	52.46	-80.89	2,267.88	-1,583.66	1,048.99	945.37	103.62	10.124		
10,400.00	7,272.00	10,386.62	7,107.00	53.18	53.74	-80.90	2,367.88	-1,583.06	1,049.22	943.01	106.20	9.879		
10,500.00	7,272.00	10,486.62	7,107.00	54.52	55.03	-80.90	2,467.87	-1,582.47	1,049.44	940.63	108.82	9.644		
10,600.00	7,272.00	10,586.62	7,107.00	55.87	56.34	-80.90	2,567.87	-1,581.87	1,049.67	938.21	111.46	9.418		
10,700.00	7,272.00	10,686.62	7,107.00	57.23	57.66	-80.90	2,667.87	-1,581.28	1,049.90	935.77	114.12	9.200		
10,800.00	7,272.00	10,786.62	7,107.00	58.60	58.99	-80.90	2,767.87	-1,580.68	1,050.13	933.31	116.81	8.990		
10,900.00	7,272.00	10,886.62	7,107.00	59.98	60.34	-80.91	2,867.87	-1,580.08	1,050.35	930.83	119.52	8.788		
11,000.00	7,272.00	10,986.62	7,107.00	61.37	61.69	-80.91	2,967.86	-1,579.49	1,050.58	928.33	122.25	8.594		
11,100.00	7,272.00	11,086.62	7,107.00	62.77	63.05	-80.91	3,067.86	-1,578.89	1,050.81	925.81	124.99	8.407		
11,200.00	7,272.00	11,186.62	7,107.00	64.18	64.43	-80.91	3,167.86	-1,578.29	1,051.03	923.27	127.76	8.227		
11,300.00	7,272.00	11,286.62	7,107.00	65.59	65.81	-80.91	3,267.86	-1,577.70	1,051.26	920.72	130.54	8.053		
11,400.00	7,272.00	11,386.62	7,107.00	67.01	67.20	-80.92	3,367.86	-1,577.10	1,051.49	918.15	133.33	7.886		
11,500.00	7,272.00	11,486.62	7,107.00	68.44	68.60	-80.92	3,467.85	-1,576.50	1,051.71	915.57	136.14	7.725		
11,600.00	7,272.00	11,586.62	7,107.00	69.88	70.00	-80.92	3,567.85	-1,575.91	1,051.94	912.97	138.97	7.570		
11,700.00	7,272.00	11,686.62	7,107.00	71.32	71.41	-80.92	3,667.85	-1,575.31	1,052.17	910.36	141.80	7.420		
11,800.00	7,272.00	11,786.61	7,107.00	72.76	72.83	-80.92	3,767.85	-1,574.71	1,052.39	907.74	144.65	7.275		
11,900.00	7,272.00	11,886.61	7,107.00	74.22	74.26	-80.93	3,867.85	-1,574.12	1,052.62	905.11	147.51	7.136		
12,000.00	7,272.00	11,986.61	7,107.00	75.67	75.69	-80.93	3,967.84	-1,573.52	1,052.85	902.47	150.38	7.001		
12,100.00	7,272.00	12,086.61	7,107.00	77.13	77.12	-80.93	4,067.84	-1,572.92	1,053.08	899.82	153.26	6.871		
12,154.60	7,272.00	12,122.72	7,107.00	77.93	77.64	-80.93	4,103.95	-1,572.71	1,053.36	898.52	154.84	6.803 SF		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - RUEGGE 3E-4H-N165 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	-98.45	-4.41	-29.67	30.00				
100.00	100.00	100.00	100.00	0.14	0.14	-98.45	-4.41	-29.67	30.00	29.72	0.28	108.684	
200.00	200.00	200.00	200.00	0.50	0.50	-98.45	-4.41	-29.67	30.00	29.01	0.99	30.212	
300.00	300.00	300.00	300.00	0.85	0.85	-98.45	-4.41	-29.67	30.00	28.29	1.71	17.544	
400.00	400.00	400.00	400.00	1.21	1.21	-98.45	-4.41	-29.67	30.00	27.57	2.43	12.361	
500.00	500.00	500.00	500.00	1.57	1.57	-98.45	-4.41	-29.67	30.00	26.86	3.14	9.542	
600.00	600.00	600.00	600.00	1.93	1.93	-98.45	-4.41	-29.67	30.00	26.14	3.86	7.770 CC, ES	
700.00	700.00	699.08	699.06	2.29	2.27	-100.10	-5.52	-30.98	31.48	26.92	4.56	6.904	
800.00	800.00	797.92	797.76	2.65	2.61	-104.21	-8.83	-34.88	36.05	30.81	5.25	6.871	
900.00	900.00	896.29	895.77	3.01	2.95	-109.10	-14.32	-41.34	43.96	38.02	5.93	7.408	
1,000.00	1,000.00	993.97	992.73	3.36	3.30	-113.55	-21.92	-50.29	55.34	48.72	6.62	8.365	
1,100.00	1,100.00	1,090.74	1,088.34	3.72	3.66	-117.10	-31.55	-61.64	70.21	62.93	7.29	9.632	
1,200.00	1,200.00	1,186.38	1,182.30	4.08	4.04	-119.81	-43.12	-75.26	88.52	80.57	7.95	11.129	
1,300.00	1,299.98	1,281.07	1,274.67	4.42	4.44	30.95	-56.56	-91.10	108.72	100.13	8.59	12.656	
1,400.00	1,399.84	1,376.55	1,367.13	4.75	4.87	30.25	-71.98	-109.26	129.01	119.79	9.22	13.985	
1,500.00	1,499.45	1,474.90	1,462.20	5.09	5.33	30.35	-88.29	-128.47	147.02	137.11	9.92	14.827	
1,600.00	1,598.70	1,573.73	1,557.73	5.43	5.80	31.06	-104.68	-147.77	162.08	151.46	10.62	15.258	
1,700.00	1,697.47	1,672.91	1,653.60	5.78	6.29	32.25	-121.13	-167.14	174.24	162.90	11.35	15.356	
1,800.00	1,795.62	1,772.32	1,749.69	6.15	6.78	33.90	-137.61	-186.55	183.60	171.51	12.09	15.184	
1,810.86	1,806.25	1,783.13	1,760.14	6.19	6.84	34.10	-139.40	-188.67	184.45	172.28	12.17	15.152	
1,900.00	1,893.36	1,871.81	1,845.86	6.54	7.28	35.83	-154.11	-205.99	191.40	178.54	12.86	14.886	
2,000.00	1,991.10	1,971.30	1,942.03	6.93	7.79	37.62	-170.60	-225.42	199.39	185.75	13.64	14.616	
2,100.00	2,088.83	2,070.80	2,038.20	7.34	8.29	39.28	-187.10	-244.85	207.56	193.12	14.44	14.373	
2,200.00	2,186.57	2,170.29	2,134.38	7.76	8.81	40.81	-203.60	-264.28	215.89	200.64	15.26	14.152	
2,300.00	2,284.30	2,269.78	2,230.55	8.18	9.32	42.22	-220.10	-283.71	224.37	208.28	16.08	13.952	
2,400.00	2,382.04	2,369.28	2,326.72	8.61	9.84	43.53	-236.60	-303.14	232.96	216.04	16.92	13.769	
2,500.00	2,479.77	2,468.77	2,422.89	9.04	10.36	44.75	-253.09	-322.57	241.67	223.90	17.77	13.601	
2,600.00	2,577.51	2,568.26	2,519.07	9.48	10.88	45.88	-269.59	-342.00	250.48	231.86	18.63	13.447	
2,700.00	2,675.24	2,667.75	2,615.24	9.93	11.40	46.94	-286.09	-361.43	259.39	239.89	19.49	13.306	
2,800.00	2,772.98	2,767.25	2,711.41	10.37	11.92	47.92	-302.59	-380.86	268.37	248.00	20.37	13.175	
2,900.00	2,870.71	2,866.74	2,807.58	10.82	12.44	48.84	-319.08	-400.29	277.43	256.18	21.25	13.055	
3,000.00	2,968.45	2,966.23	2,903.76	11.27	12.97	49.70	-335.58	-419.72	286.55	264.41	22.14	12.943	
3,100.00	3,066.19	3,065.73	2,999.93	11.73	13.49	50.51	-352.08	-439.15	295.74	272.70	23.03	12.839	
3,200.00	3,163.92	3,165.22	3,096.10	12.18	14.02	51.27	-368.58	-458.58	304.98	281.04	23.93	12.742	
3,300.00	3,261.66	3,264.71	3,192.27	12.64	14.55	51.99	-385.07	-478.01	314.27	289.43	24.84	12.652	
3,400.00	3,359.39	3,364.20	3,288.45	13.10	15.08	52.66	-401.57	-497.44	323.60	297.86	25.75	12.568	
3,500.00	3,457.13	3,463.70	3,384.62	13.56	15.61	53.30	-418.07	-516.87	332.98	306.32	26.66	12.490	
3,600.00	3,554.86	3,563.19	3,480.79	14.02	16.13	53.90	-434.57	-536.31	342.40	314.82	27.58	12.416	
3,700.00	3,652.60	3,662.68	3,576.96	14.49	16.66	54.47	-451.06	-555.74	351.85	323.35	28.50	12.347	
3,800.00	3,750.33	3,762.18	3,673.14	14.95	17.19	55.01	-467.56	-575.17	361.33	331.92	29.42	12.282	
3,900.00	3,848.07	3,861.67	3,769.31	15.42	17.72	55.52	-484.06	-594.60	370.85	340.50	30.34	12.221	
4,000.00	3,945.80	3,961.16	3,865.48	15.88	18.25	56.01	-500.56	-614.03	380.39	349.12	31.27	12.164	
4,100.00	4,043.54	4,060.66	3,961.65	16.35	18.78	56.47	-517.05	-633.46	389.96	357.76	32.20	12.109	
4,200.00	4,141.27	4,160.15	4,057.82	16.82	19.32	56.91	-533.55	-652.89	399.55	366.42	33.14	12.058	
4,300.00	4,239.01	4,259.64	4,154.00	17.29	19.85	57.33	-550.05	-672.32	409.17	375.10	34.07	12.010	
4,400.00	4,336.74	4,359.13	4,250.17	17.76	20.38	57.74	-566.55	-691.75	418.80	383.80	35.01	11.964	
4,500.00	4,434.48	4,458.63	4,346.34	18.23	20.91	58.12	-583.04	-711.18	428.46	392.52	35.94	11.920	
4,600.00	4,532.21	4,558.12	4,442.51	18.70	21.44	58.48	-599.54	-730.61	438.13	401.25	36.88	11.879	
4,700.00	4,629.95	4,657.61	4,538.69	19.17	21.97	58.83	-616.04	-750.04	447.82	410.00	37.82	11.840	
4,800.00	4,727.68	4,757.11	4,634.86	19.64	22.51	59.17	-632.54	-769.47	457.53	418.76	38.77	11.802	
4,900.00	4,825.42	4,856.60	4,731.03	20.11	23.04	59.49	-649.03	-788.90	467.25	427.54	39.71	11.767	
5,000.00	4,923.15	4,956.09	4,827.20	20.58	23.57	59.80	-665.53	-808.33	476.99	436.33	40.65	11.733	

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - RUEGGE 3E-4H-N165 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,100.00	5,020.89	5,055.58	4,923.38	21.06	24.10	60.09	-682.03	-827.76	486.73	445.13	41.60	11.700	
5,200.00	5,118.62	5,155.08	5,019.55	21.53	24.64	60.38	-698.53	-847.20	496.49	453.95	42.55	11.669	
5,300.00	5,216.36	5,254.57	5,115.72	22.00	25.17	60.65	-715.02	-866.63	506.27	462.77	43.49	11.640	
5,400.00	5,314.10	5,354.06	5,211.89	22.48	25.70	60.91	-731.52	-886.06	516.05	471.61	44.44	11.612	
5,500.00	5,411.83	5,453.56	5,308.07	22.95	26.24	61.17	-748.02	-905.49	525.84	480.45	45.39	11.584	
5,600.00	5,509.57	5,553.05	5,404.24	23.42	26.77	61.41	-764.52	-924.92	535.65	489.30	46.34	11.559	
5,700.00	5,607.30	5,652.54	5,500.41	23.90	27.30	61.65	-781.01	-944.35	545.46	498.17	47.29	11.534	
5,800.00	5,705.04	5,752.04	5,596.58	24.37	27.84	61.87	-797.51	-963.78	555.28	507.04	48.24	11.510	
5,900.00	5,802.77	5,851.53	5,692.76	24.85	28.37	62.09	-814.01	-983.21	565.11	515.91	49.20	11.487	
6,000.00	5,900.51	5,951.02	5,788.93	25.32	28.90	62.30	-830.51	-1,002.64	574.95	524.80	50.15	11.465	
6,100.00	5,998.24	6,050.51	5,885.10	25.80	29.44	62.51	-847.00	-1,022.07	584.79	533.69	51.10	11.444	
6,200.00	6,095.98	6,150.01	5,981.27	26.27	29.97	62.70	-863.50	-1,041.50	594.64	542.59	52.06	11.423	
6,300.00	6,193.71	6,249.50	6,077.44	26.75	30.51	62.89	-880.00	-1,060.93	604.50	551.49	53.01	11.404	
6,400.00	6,291.45	6,348.99	6,173.62	27.23	31.04	63.08	-896.50	-1,080.36	614.37	560.40	53.96	11.385	
6,500.00	6,389.18	6,448.49	6,269.79	27.70	31.57	63.26	-912.99	-1,099.79	624.24	569.32	54.92	11.366	
6,536.48	6,424.83	6,484.78	6,304.87	27.88	31.77	63.32	-919.01	-1,106.88	627.84	572.57	55.27	11.360	
6,550.00	6,438.07	6,501.77	6,317.88	27.94	31.86	60.94	-921.24	-1,109.51	629.17	573.76	55.41	11.355	
6,600.00	6,487.36	6,547.95	6,365.94	28.16	32.11	46.94	-929.49	-1,119.22	634.07	578.26	55.81	11.361	
6,650.00	6,537.01	6,602.56	6,413.77	28.35	32.40	18.73	-937.69	-1,128.88	638.91	582.75	56.16	11.376	
6,700.00	6,586.76	6,646.30	6,461.01	28.51	32.64	-20.69	-945.77	-1,138.43	643.76	587.39	56.38	11.418	
6,750.00	6,636.37	6,694.30	6,507.68	28.64	32.88	-47.44	-951.71	-1,147.87	648.76	592.20	56.55	11.472	
6,800.00	6,685.61	6,742.93	6,555.25	28.75	33.10	-61.13	-954.46	-1,157.52	653.91	597.22	56.69	11.535	
6,850.00	6,734.24	6,792.23	6,603.55	28.85	33.30	-68.76	-953.89	-1,167.35	659.21	602.42	56.80	11.607	
6,900.00	6,782.01	6,842.23	6,652.38	28.93	33.47	-73.55	-949.84	-1,177.31	664.63	607.75	56.88	11.686	
6,950.00	6,828.69	6,892.97	6,701.51	28.99	33.62	-76.85	-942.19	-1,187.35	670.12	613.19	56.94	11.770	
7,000.00	6,874.07	6,944.49	6,750.72	29.04	33.74	-79.30	-930.82	-1,197.44	675.68	618.70	56.98	11.858	
7,050.00	6,917.91	6,996.81	6,799.74	29.07	33.84	-81.19	-915.60	-1,207.52	681.25	624.24	57.01	11.950	
7,100.00	6,960.00	7,049.96	6,848.28	29.09	33.92	-82.72	-896.44	-1,217.54	686.80	629.77	57.03	12.043	
7,150.00	7,000.14	7,103.96	6,896.03	29.10	33.98	-83.98	-873.27	-1,227.42	692.30	635.26	57.04	12.137	
7,200.00	7,038.13	7,158.84	6,942.65	29.10	34.01	-85.04	-846.02	-1,237.10	697.71	640.66	57.05	12.230	
7,250.00	7,073.79	7,214.59	6,987.78	29.10	34.02	-85.95	-814.69	-1,246.51	702.97	645.92	57.05	12.321	
7,300.00	7,106.94	7,271.22	7,031.04	29.09	34.01	-86.73	-779.30	-1,255.57	708.06	651.00	57.06	12.409	
7,350.00	7,137.43	7,328.72	7,072.00	29.07	33.98	-87.40	-739.90	-1,264.20	712.92	655.84	57.07	12.492	
7,400.00	7,165.09	7,387.08	7,110.27	29.05	33.93	-87.99	-696.62	-1,272.30	717.51	660.41	57.09	12.567	
7,450.00	7,189.81	7,446.25	7,145.42	29.03	33.86	-88.49	-649.63	-1,279.80	721.79	664.66	57.13	12.634	
7,500.00	7,211.45	7,506.20	7,177.02	29.02	33.77	-88.91	-599.17	-1,286.60	725.72	668.53	57.19	12.689	
7,550.00	7,229.92	7,566.86	7,204.67	29.01	33.66	-89.26	-545.53	-1,292.62	729.26	671.98	57.28	12.732	
7,600.00	7,245.11	7,628.16	7,227.99	29.00	33.55	-89.54	-489.10	-1,297.79	732.38	674.98	57.40	12.760	
7,650.00	7,256.97	7,690.01	7,246.63	29.01	33.42	-89.75	-430.30	-1,302.02	735.04	677.49	57.55	12.772	
7,700.00	7,265.43	7,752.31	7,260.32	29.03	33.29	-89.90	-369.62	-1,305.26	737.21	679.47	57.74	12.767	
7,750.00	7,270.44	7,814.96	7,268.82	29.06	33.15	-89.98	-307.61	-1,307.45	738.88	680.90	57.98	12.745	
7,797.34	7,272.00	7,874.49	7,271.95	29.10	33.02	-90.00	-248.19	-1,308.53	739.98	681.75	58.23	12.708	
7,800.00	7,272.00	7,877.84	7,271.98	29.10	33.01	-90.00	-244.84	-1,308.56	740.02	681.78	58.24	12.705	
7,900.00	7,272.00	7,978.92	7,272.00	29.26	32.80	-90.00	-143.77	-1,309.32	741.60	682.91	58.70	12.634	
8,000.00	7,272.00	8,078.90	7,272.00	29.51	32.62	-90.00	-43.78	-1,310.07	743.18	683.88	59.30	12.533	
8,100.00	7,272.00	8,178.89	7,272.00	29.86	32.45	-90.00	56.20	-1,310.82	744.75	684.69	60.06	12.400	
8,200.00	7,272.00	8,278.88	7,272.00	30.31	32.31	-90.00	156.19	-1,311.57	746.33	685.35	60.98	12.239	
8,300.00	7,272.00	8,378.87	7,272.00	30.85	32.18	-90.00	256.17	-1,312.31	747.90	685.86	62.04	12.055	
8,400.00	7,272.00	8,478.86	7,272.00	31.47	32.16	-90.00	356.16	-1,313.06	749.48	686.23	63.25	11.850	
8,500.00	7,272.00	8,578.84	7,272.00	32.16	32.71	-90.00	456.14	-1,313.81	751.05	686.47	64.58	11.629	
8,600.00	7,272.00	8,678.83	7,272.00	32.92	33.49	-90.00	556.13	-1,314.56	752.62	686.58	66.05	11.395	
8,700.00	7,272.00	8,778.82	7,272.00	33.73	34.33	-90.00	656.11	-1,315.31	754.20	686.57	67.62	11.153	

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - RUEGGE 3E-4H-N165 - OH - PLAN #1													Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
8,800.00	7,272.00	8,878.81	7,272.00	34.61	35.22	-90.00	756.10	-1,316.06	755.77	686.46	69.31	10.904		
8,900.00	7,272.00	8,978.79	7,272.00	35.53	36.15	-90.00	856.08	-1,316.80	757.35	686.25	71.10	10.652		
9,000.00	7,272.00	9,078.78	7,272.00	36.50	37.12	-90.00	956.07	-1,317.55	758.92	685.94	72.98	10.399		
9,100.00	7,272.00	9,178.77	7,272.00	37.51	38.12	-90.00	1,056.05	-1,318.30	760.50	685.55	74.95	10.147		
9,200.00	7,272.00	9,278.76	7,272.00	38.55	39.16	-90.00	1,156.03	-1,319.05	762.07	685.08	76.99	9.898		
9,300.00	7,272.00	9,378.74	7,272.00	39.63	40.24	-90.00	1,256.02	-1,319.80	763.65	684.53	79.11	9.653		
9,400.00	7,272.00	9,478.73	7,272.00	40.75	41.34	-90.00	1,356.00	-1,320.54	765.22	683.92	81.30	9.412		
9,500.00	7,272.00	9,578.72	7,272.00	41.89	42.47	-90.00	1,455.99	-1,321.29	766.80	683.24	83.55	9.177		
9,600.00	7,272.00	9,678.71	7,272.00	43.06	43.63	-90.00	1,555.97	-1,322.04	768.37	682.51	85.86	8.949		
9,700.00	7,272.00	9,778.69	7,272.00	44.26	44.81	-90.00	1,655.96	-1,322.79	769.95	681.72	88.22	8.727		
9,800.00	7,272.00	9,878.68	7,272.00	45.48	46.01	-90.00	1,755.94	-1,323.54	771.52	680.89	90.63	8.513		
9,900.00	7,272.00	9,978.67	7,272.00	46.72	47.23	-90.00	1,855.93	-1,324.29	773.09	680.01	93.09	8.305		
10,000.00	7,272.00	10,078.66	7,272.00	47.98	48.48	-90.00	1,955.91	-1,325.03	774.67	679.08	95.58	8.105		
10,100.00	7,272.00	10,178.64	7,272.00	49.25	49.74	-90.00	2,055.90	-1,325.78	776.24	678.12	98.12	7.911		
10,200.00	7,272.00	10,278.63	7,272.00	50.55	51.02	-90.00	2,155.88	-1,326.53	777.82	677.13	100.69	7.725		
10,300.00	7,272.00	10,378.62	7,272.00	51.86	52.31	-90.00	2,255.87	-1,327.28	779.39	676.10	103.29	7.545		
10,400.00	7,272.00	10,478.61	7,272.00	53.18	53.62	-90.00	2,355.85	-1,328.03	780.97	675.04	105.93	7.373		
10,500.00	7,272.00	10,578.59	7,272.00	54.52	54.94	-90.00	2,455.84	-1,328.77	782.54	673.95	108.59	7.206		
10,600.00	7,272.00	10,678.58	7,272.00	55.87	56.28	-90.00	2,555.82	-1,329.52	784.12	672.84	111.28	7.046		
10,700.00	7,272.00	10,778.57	7,272.00	57.23	57.41	-90.00	2,639.27	-1,330.85	786.57	672.60	113.97	6.902		
10,800.00	7,272.00	10,861.97	7,272.00	58.60	58.78	-90.00	2,739.16	-1,333.70	790.25	673.53	116.72	6.771		
10,900.00	7,272.00	10,961.90	7,272.00	59.98	60.17	-90.00	2,839.05	-1,336.55	793.92	674.44	119.49	6.644		
11,000.00	7,272.00	11,061.84	7,272.00	61.37	61.57	-90.00	2,938.94	-1,339.40	797.60	675.32	122.28	6.523		
11,100.00	7,272.00	11,161.77	7,272.00	62.77	62.97	-90.00	3,038.83	-1,342.25	801.28	676.19	125.09	6.406		
11,200.00	7,272.00	11,261.70	7,272.00	64.18	64.39	-90.00	3,138.73	-1,345.09	804.95	677.04	127.91	6.293		
11,300.00	7,272.00	11,361.63	7,272.00	65.59	65.81	-90.00	3,238.62	-1,347.94	808.63	677.87	130.76	6.184		
11,400.00	7,272.00	11,461.57	7,272.00	67.01	67.24	-90.00	3,338.51	-1,350.79	812.30	678.69	133.61	6.079		
11,500.00	7,272.00	11,561.50	7,272.00	68.44	68.68	-90.00	3,438.40	-1,353.64	815.98	679.49	136.49	5.978		
11,600.00	7,272.00	11,661.43	7,272.00	69.88	70.12	-90.00	3,538.29	-1,356.49	819.66	680.28	139.37	5.881		
11,700.00	7,272.00	11,761.36	7,272.00	71.32	71.57	-90.00	3,638.18	-1,359.34	823.33	681.06	142.27	5.787		
11,800.00	7,272.00	11,861.30	7,272.00	72.76	73.03	-90.00	3,738.08	-1,362.18	827.01	681.83	145.18	5.696		
11,900.00	7,272.00	11,961.23	7,272.00	74.22	74.49	-90.00	3,837.97	-1,365.03	830.68	682.58	148.10	5.609		
12,000.00	7,272.00	12,061.16	7,272.00	75.67	75.96	-90.00	3,937.86	-1,367.88	834.36	683.33	151.03	5.524		
12,100.00	7,272.00	12,161.09	7,272.00	77.13	77.44	-90.00	4,037.75	-1,370.73	838.04	684.06	153.97	5.443		
12,154.60	7,272.00	12,215.65	7,272.00	77.93	78.24	-90.00	4,092.29	-1,372.28	840.04	684.46	155.58	5.399 SF		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - RUEGGE 3F-4H-N165 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	-98.45	-2.94	-19.78	20.00	19.72	0.28	72.456	
100.00	100.00	100.00	100.00	0.14	0.14	-98.45	-2.94	-19.78	20.00	19.01	0.99	20.141	
200.00	200.00	200.00	200.00	0.50	0.50	-98.45	-2.94	-19.78	20.00	18.29	1.71	11.696	
300.00	300.00	300.00	300.00	0.85	0.85	-98.45	-2.94	-19.78	20.00	17.57	2.43	8.241	
400.00	400.00	400.00	400.00	1.21	1.21	-98.45	-2.94	-19.78	20.00	16.86	3.14	6.362	
500.00	500.00	500.00	500.00	1.57	1.57	-98.45	-2.94	-19.78	20.00	16.14	3.86	5.180	
600.00	600.00	600.00	600.00	1.93	1.93	-98.45	-2.94	-19.78	20.00	15.42	4.58	4.369	
700.00	700.00	700.00	700.00	2.29	2.29	-98.45	-2.94	-19.78	20.00	14.71	5.29	3.777 CC, ES	
800.00	800.00	800.00	800.00	2.65	2.65	-98.45	-2.94	-19.78	20.00	14.01	5.99	3.586 SF	
900.00	900.00	899.37	899.35	3.01	2.99	-100.88	-4.05	-21.10	21.49	15.50	6.68	3.916	
1,000.00	1,000.00	998.50	998.34	3.36	3.32	-106.44	-7.39	-25.03	26.15	19.47			
1,100.00	1,100.00	1,097.16	1,096.63	3.72	3.66	-112.25	-12.90	-31.53	34.23	26.87	7.36	4.653	
1,200.00	1,200.00	1,195.12	1,193.87	4.08	4.01	-116.87	-20.53	-40.53	45.85	37.82	8.03	5.710	
1,300.00	1,299.98	1,292.40	1,289.98	4.42	4.37	33.09	-30.24	-51.98	59.52	50.84	8.67	6.861	
1,400.00	1,399.84	1,389.19	1,385.05	4.75	4.74	32.40	-41.99	-65.83	73.62	64.33	9.30	7.919	
1,500.00	1,499.45	1,485.46	1,478.94	5.09	5.14	32.70	-55.72	-82.03	88.10	78.18	9.92	8.883	
1,600.00	1,598.70	1,582.80	1,573.19	5.43	5.56	33.62	-71.44	-100.57	102.59	92.01	10.58	9.699	
1,700.00	1,697.47	1,682.00	1,669.13	5.78	6.01	35.25	-87.74	-119.80	114.72	103.43	11.29	10.160	
1,800.00	1,795.62	1,781.42	1,765.29	6.15	6.48	37.53	-104.08	-139.07	124.17	112.14	12.03	10.322	
1,810.86	1,806.25	1,792.23	1,775.75	6.19	6.53	37.82	-105.85	-141.16	125.04	112.93	12.11	10.325	
1,900.00	1,893.36	1,880.92	1,861.53	6.54	6.95	40.15	-120.43	-158.35	132.20	119.40	12.79	10.332	
2,000.00	1,991.10	1,980.43	1,957.77	6.93	7.43	42.49	-136.78	-177.64	140.46	126.87	13.58	10.342	
2,100.00	2,088.83	2,079.93	2,054.01	7.34	7.92	44.56	-153.14	-196.93	148.92	134.53	14.39	10.352	
2,200.00	2,186.57	2,179.44	2,150.25	7.76	8.41	46.40	-169.49	-216.21	157.56	142.35	15.21	10.361	
2,300.00	2,284.30	2,278.94	2,246.48	8.18	8.91	48.06	-185.84	-235.50	166.34	150.30	16.04	10.369	
2,400.00	2,382.04	2,378.45	2,342.72	8.61	9.41	49.55	-202.19	-254.79	175.25	158.36	16.89	10.375	
2,500.00	2,479.77	2,477.95	2,438.96	9.04	9.92	50.89	-218.55	-274.07	184.26	166.51	17.75	10.380	
2,600.00	2,577.51	2,577.45	2,535.20	9.48	10.42	52.11	-234.90	-293.36	193.37	174.74	18.62	10.384	
2,700.00	2,675.24	2,676.96	2,631.44	9.93	10.93	53.21	-251.25	-312.64	202.55	183.05	19.50	10.386	
2,800.00	2,772.98	2,776.46	2,727.67	10.37	11.45	54.23	-267.60	-331.93	211.80	191.41	20.39	10.388	
2,900.00	2,870.71	2,875.97	2,823.91	10.82	11.96	55.15	-283.96	-351.22	221.11	199.83	21.28	10.389	
3,000.00	2,968.45	2,975.47	2,920.15	11.27	12.48	56.00	-300.31	-370.50	230.48	208.29	22.18	10.390	
3,100.00	3,066.19	3,074.98	3,016.39	11.73	12.99	56.79	-316.66	-389.79	239.89	216.80	23.09	10.390	
3,200.00	3,163.92	3,174.48	3,112.63	12.18	13.51	57.51	-333.01	-409.08	249.34	225.34	24.00	10.390	
3,300.00	3,261.66	3,273.99	3,208.86	12.64	14.03	58.19	-349.36	-428.36	258.83	233.92	24.91	10.389	
3,400.00	3,359.39	3,373.49	3,305.10	13.10	14.55	58.81	-365.72	-447.65	268.35	242.52	25.83	10.388	
3,500.00	3,457.13	3,472.99	3,401.34	13.56	15.08	59.39	-382.07	-466.94	277.91	251.15	26.76	10.387	
3,600.00	3,554.86	3,572.50	3,497.58	14.02	15.60	59.94	-398.42	-486.22	287.48	259.80	27.68	10.385	
3,700.00	3,652.60	3,672.00	3,593.82	14.49	16.12	60.45	-414.77	-505.51	297.09	268.48	28.61	10.384	
3,800.00	3,750.33	3,771.51	3,690.05	14.95	16.64	60.92	-431.13	-524.79	306.71	277.17	29.54	10.383	
3,900.00	3,848.07	3,871.01	3,786.29	15.42	17.17	61.37	-447.48	-544.08	316.35	285.88	30.47	10.381	
4,000.00	3,945.80	3,970.52	3,882.53	15.88	17.69	61.79	-463.83	-563.37	326.02	294.61	31.41	10.379	
4,100.00	4,043.54	4,070.02	3,978.77	16.35	18.22	62.19	-480.18	-582.65	335.69	303.35	32.35	10.378	
4,200.00	4,141.27	4,169.53	4,075.01	16.82	18.74	62.56	-496.54	-601.94	345.39	312.10	33.29	10.376	
4,300.00	4,239.01	4,269.03	4,171.24	17.29	19.27	62.92	-512.89	-621.23	355.09	320.87	34.23	10.375	
4,400.00	4,336.74	4,368.53	4,267.48	17.76	19.80	63.25	-529.24	-640.51	364.81	329.64	35.17	10.373	
4,500.00	4,434.48	4,468.04	4,363.72	18.23	20.32	63.57	-545.59	-659.80	374.55	338.43	36.11	10.371	
4,600.00	4,532.21	4,567.54	4,459.96	18.70	20.85	63.87	-561.95	-679.09	384.29	347.23	37.06	10.370	
4,700.00	4,629.95	4,667.05	4,556.20	19.17	21.38	64.16	-578.30	-698.37	394.04	356.04	38.00	10.368	
4,800.00	4,727.68	4,766.55	4,652.43	19.64	21.91	64.43	-594.65	-717.66	403.80	364.85	38.95	10.367	
4,900.00	4,825.42	4,866.06	4,748.67	20.11	22.43	64.69	-611.00	-736.95	413.57	373.67	39.90	10.365	
5,000.00	4,923.15	4,965.56	4,844.91	20.58	22.96	64.94	-627.36	-756.23	423.35	382.50	40.85	10.364	

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - RUEGGE 3F-4H-N165 - OH - PLAN #1													Offset Site Error: 0.00 usft	
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
5,100.00	5,020.89	5,065.07	4,941.15	21.06	23.49	65.17	-643.71	-775.52	433.14	391.34	41.80	10.362		
5,200.00	5,118.62	5,164.57	5,037.39	21.53	24.02	65.40	-660.06	-794.80	442.93	400.18	42.75	10.361		
5,300.00	5,216.36	5,264.07	5,133.63	22.00	24.55	65.62	-676.41	-814.09	452.73	409.03	43.70	10.359		
5,400.00	5,314.10	5,363.58	5,229.86	22.48	25.08	65.83	-692.77	-833.38	462.53	417.88	44.65	10.358		
5,500.00	5,411.83	5,463.08	5,326.10	22.95	25.61	66.02	-709.12	-852.66	472.35	426.74	45.61	10.357		
5,600.00	5,509.57	5,562.59	5,422.34	23.42	26.14	66.21	-725.47	-871.95	482.16	435.60	46.56	10.355		
5,700.00	5,607.30	5,662.09	5,518.58	23.90	26.67	66.40	-741.82	-891.24	491.99	444.47	47.52	10.354		
5,800.00	5,705.04	5,761.60	5,614.82	24.37	27.20	66.57	-758.18	-910.52	501.81	453.34	48.47	10.353		
5,900.00	5,802.77	5,861.10	5,711.05	24.85	27.73	66.74	-774.53	-929.81	511.64	462.22	49.43	10.352		
6,000.00	5,900.51	5,960.61	5,807.29	25.32	28.26	66.91	-790.88	-949.10	521.48	471.10	50.38	10.351		
6,100.00	5,998.24	6,060.11	5,903.53	25.80	28.79	67.06	-807.23	-968.38	531.32	479.98	51.34	10.349		
6,200.00	6,095.98	6,159.61	5,999.77	26.27	29.32	67.21	-823.58	-987.67	541.16	488.87	52.29	10.348		
6,300.00	6,193.71	6,259.12	6,096.01	26.75	29.85	67.36	-839.94	-1,006.95	551.01	497.76	53.25	10.347		
6,400.00	6,291.45	6,358.62	6,192.24	27.23	30.38	67.50	-856.29	-1,026.24	560.86	506.65	54.21	10.346		
6,500.00	6,389.18	6,456.20	6,286.67	27.70	30.89	67.67	-871.98	-1,045.16	570.75	515.60	55.15	10.349		
6,536.48	6,424.83	6,489.45	6,319.07	27.88	31.06	67.89	-875.65	-1,051.64	574.57	519.09	55.48	10.357		
6,550.00	6,438.07	6,501.72	6,331.07	27.94	31.12	65.61	-876.62	-1,054.04	576.02	520.42	55.60	10.360		
6,600.00	6,487.36	6,546.92	6,375.36	28.16	31.32	52.19	-878.37	-1,062.86	581.42	525.42	56.00	10.382		
6,650.00	6,537.01	6,591.89	6,419.44	28.35	31.49	24.83	-877.29	-1,071.63	586.84	530.51	56.33	10.417		
6,700.00	6,586.76	6,636.64	6,463.16	28.51	31.64	-13.50	-873.41	-1,080.30	592.24	535.65	56.60	10.464		
6,750.00	6,636.37	6,681.20	6,506.39	28.64	31.77	-39.12	-866.79	-1,088.84	597.60	540.80	56.80	10.522		
6,800.00	6,685.61	6,725.60	6,548.97	28.75	31.88	-51.73	-857.48	-1,097.24	602.88	545.93	56.94	10.588		
6,850.00	6,734.24	6,769.86	6,590.78	28.85	31.98	-58.32	-845.54	-1,105.46	608.04	551.00	57.04	10.660		
6,900.00	6,782.01	6,814.00	6,631.69	28.93	32.05	-62.14	-831.04	-1,113.48	613.07	555.97	57.10	10.738		
6,950.00	6,828.69	6,858.04	6,671.56	28.99	32.11	-64.53	-814.04	-1,121.27	617.93	560.82	57.11	10.819		
7,000.00	6,874.07	6,902.01	6,710.26	29.04	32.16	-66.12	-794.61	-1,128.82	622.60	565.51	57.10	10.904		
7,050.00	6,917.91	6,945.93	6,747.69	29.07	32.19	-67.23	-772.82	-1,136.08	627.06	570.01	57.05	10.991		
7,100.00	6,960.00	6,989.82	6,783.71	29.09	32.21	-68.02	-748.75	-1,143.05	631.28	574.29	56.99	11.077		
7,150.00	7,000.14	7,033.70	6,818.22	29.10	32.21	-68.63	-722.49	-1,149.70	635.24	578.33	56.91	11.162		
7,200.00	7,038.13	7,077.59	6,851.10	29.10	32.20	-69.10	-694.12	-1,156.01	638.93	582.11	56.82	11.244		
7,250.00	7,073.79	7,121.51	6,882.23	29.10	32.18	-69.49	-663.73	-1,161.96	642.33	585.59	56.74	11.321		
7,300.00	7,106.94	7,165.48	6,911.52	29.09	32.14	-69.83	-631.41	-1,167.52	645.42	588.76	56.66	11.392		
7,350.00	7,137.43	7,209.52	6,938.85	29.07	32.10	-70.13	-597.27	-1,172.67	648.19	591.60	56.59	11.455		
7,400.00	7,165.09	7,253.65	6,964.13	29.05	32.05	-70.43	-561.41	-1,177.41	650.63	594.10	56.54	11.508		
7,450.00	7,189.81	7,297.90	6,987.24	29.03	31.99	-70.71	-523.95	-1,181.70	652.74	596.23	56.51	11.551		
7,500.00	7,211.45	7,342.26	7,008.11	29.02	31.92	-71.01	-484.98	-1,185.53	654.51	597.99	56.51	11.582		
7,550.00	7,229.92	7,386.78	7,026.62	29.01	31.85	-71.31	-444.65	-1,188.88	655.92	599.38	56.55	11.600		
7,600.00	7,245.11	7,431.46	7,042.70	29.00	31.77	-71.63	-403.07	-1,191.74	656.99	600.38	56.61	11.605		
7,650.00	7,256.97	7,476.32	7,056.26	29.01	31.68	-71.97	-360.38	-1,194.08	657.71	600.99	56.72	11.596		
7,700.00	7,265.43	7,521.38	7,067.22	29.03	31.59	-72.33	-316.71	-1,195.90	658.07	601.21	56.86	11.573		
7,750.00	7,270.44	7,566.67	7,075.49	29.06	31.50	-72.72	-272.22	-1,197.18	658.09	601.06	57.04	11.538		
7,797.34	7,272.00	7,609.76	7,080.79	29.10	31.41	-73.10	-229.46	-1,197.88	657.80	600.56	57.24	11.493		
7,800.00	7,272.00	7,612.19	7,081.01	29.10	31.41	-73.12	-227.05	-1,197.90	657.77	600.53	57.25	11.490		
7,900.00	7,272.00	7,706.31	7,084.00	29.26	31.22	-73.38	-133.01	-1,197.72	657.46	599.71	57.74	11.386		
8,000.00	7,272.00	7,806.31	7,084.00	29.51	31.03	-73.38	-33.01	-1,196.89	657.45	599.06	58.40	11.259		
8,100.00	7,272.00	7,906.31	7,084.00	29.86	30.87	-73.38	66.98	-1,196.07	657.45	598.25	59.20	11.106		
8,200.00	7,272.00	8,006.31	7,084.00	30.31	30.72	-73.38	166.98	-1,195.24	657.45	597.30	60.15	10.930		
8,300.00	7,272.00	8,106.31	7,084.00	30.85	30.58	-73.38	266.98	-1,194.41	657.45	596.22	61.24	10.736		
8,400.00	7,272.00	8,206.31	7,084.00	31.47	30.60	-73.38	366.97	-1,193.59	657.45	595.00	62.45	10.527		
8,500.00	7,272.00	8,306.31	7,084.00	32.16	31.30	-73.38	466.97	-1,192.76	657.45	593.66	63.79	10.306		
8,600.00	7,272.00	8,406.31	7,084.00	32.92	32.09	-73.38	566.96	-1,191.93	657.45	592.20	65.25	10.076		
8,700.00	7,272.00	8,506.31	7,084.00	33.73	32.92	-73.38	666.96	-1,191.11	657.45	590.64	66.81	9.840		

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - RUEGGE 3F-4H-N165 - OH - PLAN #1													Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
8,800.00	7,272.00	8,806.31	7,084.00	34.61	33.80	-73.38	766.96	-1,190.28	657.45	588.98	68.48	9.601		
8,900.00	7,272.00	8,706.31	7,084.00	35.53	34.72	-73.38	866.95	-1,189.46	657.45	587.22	70.23	9.361		
9,000.00	7,272.00	8,806.31	7,084.00	36.50	35.68	-73.38	966.95	-1,188.63	657.45	585.38	72.07	9.122		
9,100.00	7,272.00	8,906.31	7,084.00	37.51	36.68	-73.38	1,066.95	-1,187.80	657.45	583.45	74.00	8.885		
9,200.00	7,272.00	9,006.31	7,084.00	38.55	37.72	-73.38	1,166.94	-1,186.98	657.45	581.46	76.00	8.651		
9,300.00	7,272.00	9,106.31	7,084.00	39.63	38.79	-73.38	1,266.94	-1,186.15	657.45	579.39	78.06	8.422		
9,400.00	7,272.00	9,206.31	7,084.00	40.75	39.89	-73.38	1,366.94	-1,185.32	657.45	577.26	80.19	8.198		
9,500.00	7,272.00	9,306.31	7,084.00	41.89	41.01	-73.38	1,466.93	-1,184.50	657.45	575.07	82.38	7.981		
9,600.00	7,272.00	9,406.31	7,084.00	43.06	42.17	-73.38	1,566.93	-1,183.67	657.45	572.83	84.62	7.770		
9,700.00	7,272.00	9,506.31	7,084.00	44.26	43.35	-73.38	1,666.93	-1,182.84	657.45	570.54	86.91	7.565		
9,800.00	7,272.00	9,606.31	7,084.00	45.48	44.55	-73.38	1,766.92	-1,182.02	657.45	568.21	89.25	7.367		
9,900.00	7,272.00	9,706.31	7,084.00	46.72	45.77	-73.38	1,866.92	-1,181.19	657.45	565.83	91.62	7.176		
10,000.00	7,272.00	9,806.31	7,084.00	47.98	47.01	-73.38	1,966.92	-1,180.36	657.45	563.41	94.04	6.991		
10,100.00	7,272.00	9,906.31	7,084.00	49.25	48.27	-73.38	2,066.91	-1,179.54	657.45	560.96	96.49	6.813		
10,200.00	7,272.00	10,006.31	7,084.00	50.55	49.55	-73.38	2,166.91	-1,178.71	657.45	558.47	98.98	6.642		
10,300.00	7,272.00	10,106.31	7,084.00	51.86	50.84	-73.38	2,266.91	-1,177.88	657.45	555.95	101.50	6.478		
10,400.00	7,272.00	10,206.31	7,084.00	53.18	52.15	-73.38	2,366.90	-1,177.06	657.45	553.41	104.04	6.319		
10,500.00	7,272.00	10,306.31	7,084.00	54.52	53.47	-73.38	2,466.90	-1,176.23	657.45	550.84	106.61	6.167		
10,600.00	7,272.00	10,406.31	7,084.00	55.87	54.80	-73.38	2,566.90	-1,175.40	657.45	548.24	109.21	6.020		
10,700.00	7,272.00	10,506.31	7,084.00	57.23	56.15	-73.38	2,666.89	-1,174.58	657.45	545.62	111.83	5.879		
10,800.00	7,272.00	10,606.31	7,084.00	58.60	57.50	-73.38	2,766.89	-1,173.75	657.45	542.98	114.47	5.743		
10,900.00	7,272.00	10,706.31	7,084.00	59.98	58.87	-73.38	2,866.89	-1,172.92	657.45	540.31	117.14	5.613		
11,000.00	7,272.00	10,806.31	7,084.00	61.37	60.25	-73.38	2,966.88	-1,172.10	657.45	537.63	119.82	5.487		
11,100.00	7,272.00	10,906.31	7,084.00	62.77	61.63	-73.38	3,066.88	-1,171.27	657.45	534.94	122.51	5.366		
11,200.00	7,272.00	11,006.31	7,084.00	64.18	63.03	-73.38	3,166.88	-1,170.44	657.45	532.22	125.23	5.250		
11,300.00	7,272.00	11,106.31	7,084.00	65.59	64.43	-73.38	3,266.87	-1,169.62	657.45	529.49	127.96	5.138		
11,400.00	7,272.00	11,206.31	7,084.00	67.01	65.84	-73.38	3,366.87	-1,168.79	657.45	526.75	130.70	5.030		
11,500.00	7,272.00	11,306.31	7,084.00	68.44	67.25	-73.38	3,466.87	-1,167.96	657.45	523.99	133.46	4.926		
11,600.00	7,272.00	11,406.31	7,084.00	69.88	68.68	-73.38	3,566.86	-1,167.14	657.45	521.22	136.23	4.826		
11,700.00	7,272.00	11,506.31	7,084.00	71.32	70.11	-73.38	3,666.86	-1,166.31	657.45	518.44	139.01	4.730		
11,800.00	7,272.00	11,606.31	7,084.00	72.76	71.54	-73.38	3,766.86	-1,165.49	657.45	515.65	141.80	4.636		
11,900.00	7,272.00	11,706.31	7,084.00	74.22	72.98	-73.38	3,866.85	-1,164.66	657.45	512.84	144.60	4.547		
12,000.00	7,272.00	11,806.31	7,084.00	75.67	74.43	-73.38	3,966.85	-1,163.83	657.45	510.03	147.42	4.460		
12,100.00	7,272.00	11,906.31	7,084.00	77.13	75.88	-73.38	4,066.85	-1,163.01	657.45	507.21	150.24	4.376		
12,144.04	7,272.00	11,950.35	7,084.00	77.78	76.52	-73.38	4,110.88	-1,162.64	657.45	505.96	151.49	4.340		
12,154.60	7,272.00	11,948.26	7,084.00	77.93	76.49	-73.38	4,108.79	-1,162.66	657.57	505.72	151.85	4.330		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - RUEGGE 3G-4H-N165 - OH - PLAN #1													Offset Site Error: 0.00 usft	
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	-98.46	-1.47	-9.89	10.00					
100.00	100.00	100.00	100.00	0.14	0.14	-98.46	-1.47	-9.89	10.00	9.72	0.28	36.228		
200.00	200.00	200.00	200.00	0.50	0.50	-98.46	-1.47	-9.89	10.00	9.01	0.99	10.071		
300.00	300.00	300.00	300.00	0.85	0.85	-98.46	-1.47	-9.89	10.00	8.29	1.71	5.848		
400.00	400.00	400.00	400.00	1.21	1.21	-98.46	-1.47	-9.89	10.00	7.57	2.43	4.121		
500.00	500.00	500.00	500.00	1.57	1.57	-98.46	-1.47	-9.89	10.00	6.86	3.14	3.181		
600.00	600.00	600.00	600.00	1.93	1.93	-98.46	-1.47	-9.89	10.00	6.14	3.86	2.590		
700.00	700.00	700.00	700.00	2.29	2.29	-98.46	-1.47	-9.89	10.00	5.42	4.58	2.184		
800.00	800.00	800.00	800.00	2.65	2.65	-98.46	-1.47	-9.89	10.00	4.71	5.29	1.889		
900.00	900.00	900.00	900.00	3.01	3.01	-98.46	-1.47	-9.89	10.00	3.99	6.01	1.663		
1,000.00	1,000.00	1,000.00	1,000.00	3.36	3.36	-98.46	-1.47	-9.89	10.00	3.27	6.73	1.486	Level 3, CC, ES, SF	
1,100.00	1,100.00	1,099.74	1,099.72	3.72	3.71	-105.45	-2.97	-10.76	11.17	3.74	7.43	1.504		
1,200.00	1,200.00	1,199.24	1,199.08	4.08	4.04	-119.22	-7.47	-13.35	15.33	7.22	8.10	1.891		
1,300.00	1,299.98	1,298.43	1,297.89	4.42	4.37	24.04	-14.92	-17.66	21.61	12.85	8.76	2.468		
1,400.00	1,399.84	1,397.37	1,396.10	4.75	4.71	19.32	-25.30	-23.65	28.22	18.83	9.39	3.005		
1,500.00	1,499.45	1,496.09	1,493.61	5.09	5.07	16.65	-38.58	-31.31	34.95	24.93	10.02	3.488		
1,600.00	1,598.70	1,594.57	1,590.31	5.43	5.44	15.06	-54.71	-40.63	41.72	31.07	10.65	3.918		
1,700.00	1,697.47	1,693.19	1,686.58	5.78	5.83	15.70	-72.59	-52.38	48.13	36.83	11.29	4.262		
1,800.00	1,795.62	1,808.04	1,782.49	6.15	6.31	19.51	-90.75	-67.39	53.81	41.79	12.02	4.478		
1,810.86	1,806.25	1,802.80	1,793.00	6.19	6.28	20.02	-92.75	-69.15	54.33	42.29	12.04	4.514		
1,900.00	1,893.36	1,908.25	1,879.23	6.54	6.74	23.97	-109.17	-83.53	58.58	45.83	12.75	4.595		
2,000.00	1,991.10	2,008.46	1,975.97	6.93	7.19	27.75	-127.59	-99.67	63.64	50.13	13.51	4.712		
2,100.00	2,088.83	2,108.67	2,072.71	7.34	7.64	30.97	-146.01	-115.81	68.93	54.65	14.28	4.826		
2,200.00	2,186.57	2,208.88	2,169.45	7.76	8.11	33.72	-164.43	-131.95	74.41	59.34	15.08	4.936		
2,300.00	2,284.30	2,290.91	2,266.19	8.18	8.49	36.09	-182.85	-148.09	80.04	64.23	15.81	5.061		
2,400.00	2,382.04	2,409.30	2,362.93	8.61	9.06	38.15	-201.27	-164.23	85.79	69.08	16.71	5.134		
2,500.00	2,479.77	2,490.50	2,459.66	9.04	9.45	39.94	-219.69	-180.37	91.63	74.16	17.47	5.245		
2,600.00	2,577.51	2,609.71	2,556.40	9.48	10.02	41.52	-238.11	-196.51	97.55	79.16	18.39	5.304		
2,700.00	2,675.24	2,690.08	2,653.14	9.93	10.42	42.92	-256.53	-212.65	103.53	84.37	19.17	5.402		
2,800.00	2,772.98	2,789.87	2,749.88	10.37	10.91	44.16	-274.95	-228.79	109.57	89.55	20.03	5.472		
2,900.00	2,870.71	2,889.66	2,846.62	10.82	11.40	45.28	-293.37	-244.93	115.66	94.77	20.89	5.535		
3,000.00	2,968.45	2,989.45	2,943.36	11.27	11.89	46.28	-311.79	-261.07	121.79	100.02	21.77	5.594		
3,100.00	3,066.19	3,089.24	3,040.10	11.73	12.39	47.18	-330.21	-277.21	127.95	105.30	22.65	5.649		
3,200.00	3,163.92	3,189.03	3,136.84	12.18	12.89	48.01	-348.63	-293.35	134.14	110.60	23.54	5.699		
3,300.00	3,261.66	3,288.82	3,233.57	12.64	13.39	48.76	-367.05	-309.49	140.35	115.92	24.43	5.746		
3,400.00	3,359.39	3,388.61	3,330.31	13.10	13.89	49.44	-385.47	-325.63	146.58	121.27	25.32	5.790		
3,500.00	3,457.13	3,488.40	3,427.05	13.56	14.39	50.07	-403.89	-341.77	152.84	126.62	26.22	5.830		
3,600.00	3,554.86	3,588.19	3,523.79	14.02	14.90	50.65	-422.31	-357.91	159.11	131.99	27.12	5.868		
3,700.00	3,652.60	3,687.98	3,620.53	14.49	15.40	51.19	-440.73	-374.05	165.40	137.38	28.02	5.903		
3,800.00	3,750.33	3,787.77	3,717.27	14.95	15.91	51.69	-459.14	-390.19	171.70	142.77	28.93	5.936		
3,900.00	3,848.07	3,887.56	3,814.01	15.42	16.42	52.15	-477.56	-406.33	178.01	148.18	29.83	5.967		
4,000.00	3,945.80	3,987.36	3,910.75	15.88	16.92	52.58	-495.98	-422.47	184.33	153.59	30.75	5.995		
4,100.00	4,043.54	4,087.15	4,007.48	16.35	17.43	52.98	-514.40	-438.61	190.67	159.01	31.66	6.023		
4,200.00	4,141.27	4,186.94	4,104.22	16.82	17.94	53.36	-532.82	-454.75	197.01	164.43	32.57	6.048		
4,300.00	4,239.01	4,286.73	4,200.96	17.29	18.45	53.71	-551.24	-470.89	203.36	169.87	33.49	6.072		
4,400.00	4,336.74	4,386.52	4,297.70	17.76	18.96	54.04	-569.66	-487.03	209.71	175.31	34.41	6.095		
4,500.00	4,434.48	4,486.31	4,394.44	18.23	19.47	54.35	-588.08	-503.17	216.08	180.75	35.33	6.117		
4,600.00	4,532.21	4,586.10	4,491.18	18.70	19.99	54.65	-606.50	-519.31	222.44	186.20	36.25	6.137		
4,700.00	4,629.95	4,685.89	4,587.92	19.17	20.50	54.92	-624.92	-535.45	228.82	191.65	37.17	6.157		
4,800.00	4,727.68	4,785.68	4,684.66	19.64	21.01	55.19	-643.34	-551.59	235.20	197.11	38.09	6.175		
4,900.00	4,825.42	4,885.47	4,781.39	20.11	21.52	55.43	-661.76	-567.73	241.58	202.57	39.01	6.192		
5,000.00	4,923.15	4,985.26	4,878.13	20.58	22.04	55.67	-680.18	-583.87	247.97	208.03	39.94	6.209		

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - RUEGGE 3G-4H-N165 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,100.00	5,020.89	5,085.05	4,974.87	21.06	22.55	55.89	-698.60	-600.01	254.36	213.50	40.86	6.225	
5,200.00	5,118.62	5,184.84	5,071.61	21.53	23.06	56.11	-717.02	-616.15	260.76	218.97	41.79	6.240	
5,300.00	5,216.36	5,284.63	5,168.35	22.00	23.58	56.31	-735.44	-632.29	267.16	224.44	42.72	6.254	
5,400.00	5,314.10	5,384.42	5,265.09	22.48	24.09	56.50	-753.86	-648.43	273.56	229.92	43.64	6.268	
5,500.00	5,411.83	5,484.22	5,361.83	22.95	24.61	56.69	-772.28	-664.57	279.97	235.40	44.57	6.281	
5,600.00	5,509.57	5,584.01	5,458.57	23.42	25.12	56.86	-790.70	-680.71	286.38	240.88	45.50	6.294	
5,700.00	5,607.30	5,683.80	5,555.30	23.90	25.64	57.03	-809.12	-696.85	292.79	246.36	46.43	6.306	
5,800.00	5,705.04	5,783.59	5,652.04	24.37	26.15	57.19	-827.54	-712.99	299.20	251.84	47.36	6.318	
5,900.00	5,802.77	5,883.38	5,748.78	24.85	26.67	57.35	-845.96	-729.13	305.62	257.33	48.29	6.329	
6,000.00	5,900.51	5,983.17	5,845.52	25.32	27.18	57.50	-864.38	-745.27	312.04	262.81	49.22	6.339	
6,100.00	5,998.24	6,082.96	5,942.26	25.80	27.70	57.64	-882.80	-761.41	318.45	268.30	50.15	6.350	
6,200.00	6,095.98	6,182.75	6,039.00	26.27	28.21	57.77	-901.22	-777.55	324.88	273.79	51.09	6.359	
6,300.00	6,193.71	6,282.54	6,135.74	26.75	28.73	57.91	-919.64	-793.69	331.30	279.28	52.02	6.369	
6,400.00	6,291.45	6,382.33	6,232.48	27.23	29.25	58.03	-938.06	-809.83	337.73	284.77	52.95	6.378	
6,500.00	6,389.18	6,483.88	6,331.36	27.70	29.75	58.63	-954.00	-826.31	343.99	290.04	53.95	6.376	
6,536.48	6,424.83	6,520.90	6,367.78	27.88	29.90	59.37	-966.61	-832.35	346.13	291.76	54.37	6.366	
6,550.00	6,438.07	6,534.51	6,381.21	27.94	29.96	57.26	-957.09	-834.57	346.93	292.40	54.53	6.362	
6,600.00	6,487.36	6,584.52	6,430.53	28.16	30.14	44.47	-956.63	-842.72	350.00	294.94	55.07	6.356	
6,650.00	6,537.01	6,634.03	6,479.23	28.35	30.29	17.76	-952.75	-850.74	353.25	297.71	55.53	6.361	
6,700.00	6,586.76	6,683.06	6,527.07	28.51	30.41	-19.91	-945.55	-858.58	356.64	300.71	55.93	6.377	
6,750.00	6,636.37	6,731.63	6,573.89	28.64	30.51	-44.86	-935.16	-866.24	360.15	303.90	56.25	6.402	
6,800.00	6,685.61	6,779.76	6,619.50	28.75	30.59	-56.79	-921.73	-873.66	363.77	307.26	56.51	6.437	
6,850.00	6,734.24	6,827.47	6,663.73	28.85	30.65	-62.71	-905.37	-880.84	367.45	310.74	56.71	6.480	
6,900.00	6,782.01	6,874.79	6,706.44	28.93	30.70	-65.85	-886.24	-887.74	371.17	314.33	56.84	6.530	
6,950.00	6,828.69	6,921.73	6,747.50	28.99	30.72	-67.57	-864.49	-894.34	374.90	317.99	56.92	6.587	
7,000.00	6,874.07	6,968.32	6,786.77	29.04	30.74	-68.49	-840.24	-900.63	378.62	321.67	56.94	6.649	
7,050.00	6,917.91	7,014.58	6,824.16	29.07	30.74	-68.94	-813.66	-906.59	382.27	325.36	56.91	6.717	
7,100.00	6,960.00	7,060.53	6,859.54	29.09	30.72	-69.09	-784.90	-912.20	385.85	329.01	56.84	6.788	
7,150.00	7,000.14	7,106.20	6,892.83	29.10	30.70	-69.05	-754.09	-917.45	389.32	332.59	56.73	6.862	
7,200.00	7,038.13	7,151.60	6,923.95	29.10	30.66	-68.90	-721.40	-922.32	392.66	336.06	56.60	6.938	
7,250.00	7,073.79	7,196.77	6,952.81	29.10	30.62	-68.67	-686.96	-926.81	395.83	339.39	56.44	7.013	
7,300.00	7,106.94	7,241.71	6,979.35	29.09	30.56	-68.41	-650.94	-930.90	398.81	342.53	56.28	7.086	
7,350.00	7,137.43	7,286.45	7,003.51	29.07	30.50	-68.13	-613.47	-934.58	401.58	345.47	56.12	7.156	
7,400.00	7,165.09	7,331.02	7,025.24	29.05	30.44	-67.85	-574.70	-937.85	404.13	348.16	55.96	7.221	
7,450.00	7,189.81	7,375.42	7,044.48	29.03	30.37	-67.58	-534.79	-940.70	406.42	350.58	55.83	7.279	
7,500.00	7,211.45	7,419.69	7,061.20	29.02	30.30	-67.33	-493.89	-943.13	408.44	352.71	55.73	7.329	
7,550.00	7,229.92	7,463.83	7,075.36	29.01	30.23	-67.11	-452.13	-945.12	410.18	354.53	55.66	7.370	
7,600.00	7,245.11	7,507.88	7,086.94	29.00	30.15	-66.92	-409.67	-946.68	411.63	356.00	55.63	7.400	
7,650.00	7,256.97	7,551.84	7,095.90	29.01	30.08	-66.76	-366.65	-947.81	412.77	357.12	55.64	7.418	
7,700.00	7,265.43	7,595.75	7,102.24	29.03	30.01	-66.65	-323.22	-948.50	413.59	357.88	55.71	7.424	
7,750.00	7,270.44	7,639.60	7,105.93	29.06	29.94	-66.57	-279.52	-948.75	414.10	358.27	55.83	7.417	
7,797.34	7,272.00	7,681.41	7,107.00	29.10	29.88	-66.53	-237.73	-948.58	414.28	358.28	56.00	7.398	
7,800.00	7,272.00	7,684.07	7,107.00	29.10	29.87	-66.53	-235.07	-948.55	414.28	358.27	56.01	7.397	
7,900.00	7,272.00	7,784.07	7,107.00	29.26	29.77	-66.53	-135.08	-947.73	414.28	357.69	56.59	7.321	
8,000.00	7,272.00	7,884.07	7,107.00	29.51	29.73	-66.53	-35.08	-946.90	414.28	356.97	57.31	7.229	
8,100.00	7,272.00	7,984.07	7,107.00	29.86	29.80	-66.53	64.92	-946.08	414.28	356.10	58.17	7.121	
8,200.00	7,272.00	8,084.07	7,107.00	30.31	30.03	-66.53	164.91	-945.25	414.28	355.11	59.17	7.001	
8,300.00	7,272.00	8,184.07	7,107.00	30.85	30.45	-66.53	264.91	-944.42	414.28	353.98	60.30	6.870	
8,400.00	7,272.00	8,284.07	7,107.00	31.47	31.02	-66.53	364.91	-943.60	414.28	352.73	61.55	6.731	
8,500.00	7,272.00	8,384.07	7,107.00	32.16	31.69	-66.53	464.90	-942.77	414.28	351.37	62.91	6.585	
8,600.00	7,272.00	8,484.07	7,107.00	32.92	32.45	-66.53	564.90	-941.94	414.28	349.90	64.38	6.435	
8,700.00	7,272.00	8,584.07	7,107.00	33.73	33.28	-66.53	664.89	-941.12	414.28	348.33	65.95	6.282	

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - RUEGGE 3G-4H-N165 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
8,800.00	7,272.00	8,684.07	7,107.00	34.61	34.16	-66.53	764.89	-940.29	414.28	346.66	67.61	6.127	
8,900.00	7,272.00	8,784.07	7,107.00	35.53	35.09	-66.53	864.89	-939.46	414.28	344.91	69.36	5.973	
9,000.00	7,272.00	8,884.07	7,107.00	36.50	36.06	-66.53	964.88	-938.64	414.28	343.09	71.19	5.819	
9,100.00	7,272.00	8,984.07	7,107.00	37.51	37.08	-66.53	1,064.88	-937.81	414.28	341.18	73.09	5.668	
9,200.00	7,272.00	9,084.07	7,107.00	38.55	38.13	-66.53	1,164.88	-936.98	414.28	339.21	75.07	5.519	
9,300.00	7,272.00	9,184.07	7,107.00	39.63	39.22	-66.53	1,264.87	-936.16	414.28	337.18	77.10	5.373	
9,400.00	7,272.00	9,284.07	7,107.00	40.75	40.33	-66.53	1,364.87	-935.33	414.28	335.08	79.19	5.231	
9,500.00	7,272.00	9,384.07	7,107.00	41.89	41.48	-66.53	1,464.87	-934.50	414.28	332.94	81.34	5.093	
9,600.00	7,272.00	9,484.07	7,107.00	43.06	42.65	-66.53	1,564.86	-933.68	414.28	330.74	83.53	4.959	
9,700.00	7,272.00	9,584.07	7,107.00	44.26	43.84	-66.53	1,664.86	-932.85	414.28	328.50	85.77	4.830	
9,800.00	7,272.00	9,684.07	7,107.00	45.48	45.06	-66.53	1,764.86	-932.03	414.28	326.22	88.06	4.705	
9,900.00	7,272.00	9,784.07	7,107.00	46.72	46.30	-66.53	1,864.85	-931.20	414.28	323.90	90.38	4.584	
10,000.00	7,272.00	9,884.07	7,107.00	47.98	47.55	-66.53	1,964.85	-930.37	414.28	321.54	92.74	4.467	
10,100.00	7,272.00	9,984.07	7,107.00	49.25	48.83	-66.53	2,064.85	-929.55	414.28	319.14	95.13	4.355	
10,200.00	7,272.00	10,084.07	7,107.00	50.55	50.12	-66.53	2,164.84	-928.72	414.28	316.72	97.55	4.247	
10,300.00	7,272.00	10,184.07	7,107.00	51.86	51.42	-66.53	2,264.84	-927.89	414.28	314.27	100.01	4.143	
10,400.00	7,272.00	10,284.07	7,107.00	53.18	52.74	-66.53	2,364.84	-927.07	414.28	311.79	102.48	4.042	
10,500.00	7,272.00	10,384.07	7,107.00	54.52	54.08	-66.53	2,464.83	-926.24	414.28	309.29	104.99	3.946	
10,600.00	7,272.00	10,484.07	7,107.00	55.87	55.42	-66.53	2,564.83	-925.41	414.28	306.76	107.51	3.853	
10,700.00	7,272.00	10,584.07	7,107.00	57.23	56.78	-66.53	2,664.83	-924.59	414.27	304.21	110.06	3.764	
10,800.00	7,272.00	10,684.07	7,107.00	58.60	58.15	-66.53	2,764.82	-923.76	414.27	301.65	112.63	3.678	
10,900.00	7,272.00	10,784.07	7,107.00	59.98	59.53	-66.53	2,864.82	-922.93	414.27	299.06	115.22	3.596	
11,000.00	7,272.00	10,884.07	7,107.00	61.37	60.91	-66.53	2,964.82	-922.11	414.27	296.46	117.82	3.516	
11,100.00	7,272.00	10,984.07	7,107.00	62.77	62.31	-66.53	3,064.81	-921.28	414.27	293.84	120.44	3.440	
11,200.00	7,272.00	11,084.07	7,107.00	64.18	63.71	-66.53	3,164.81	-920.45	414.27	291.20	123.07	3.366	
11,300.00	7,272.00	11,184.07	7,107.00	65.59	65.12	-66.53	3,264.81	-919.63	414.27	288.55	125.72	3.295	
11,400.00	7,272.00	11,284.07	7,107.00	67.01	66.54	-66.53	3,364.80	-918.80	414.27	285.89	128.39	3.227	
11,500.00	7,272.00	11,384.07	7,107.00	68.44	67.97	-66.53	3,464.80	-917.98	414.27	283.21	131.06	3.161	
11,600.00	7,272.00	11,484.07	7,107.00	69.88	69.40	-66.53	3,564.80	-917.15	414.27	280.52	133.75	3.097	
11,700.00	7,272.00	11,584.07	7,107.00	71.32	70.84	-66.53	3,664.79	-916.32	414.27	277.82	136.45	3.036	
11,800.00	7,272.00	11,684.07	7,107.00	72.76	72.28	-66.53	3,764.79	-915.50	414.27	275.12	139.16	2.977	
11,900.00	7,272.00	11,784.07	7,107.00	74.22	73.73	-66.53	3,864.79	-914.67	414.27	272.40	141.88	2.920	
12,000.00	7,272.00	11,884.07	7,107.00	75.67	75.18	-66.53	3,964.78	-913.84	414.27	269.67	144.61	2.865	
12,100.00	7,272.00	11,984.07	7,107.00	77.13	76.64	-66.53	4,064.78	-913.02	414.27	266.93	147.34	2.812	
12,150.06	7,272.00	12,034.13	7,107.00	77.87	77.30	-66.53	4,114.84	-912.60	414.27	265.67	148.61	2.788	
12,154.60	7,272.00	12,031.04	7,107.00	77.93	77.26	-66.53	4,111.74	-912.63	414.34	265.50	148.84	2.784	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - RUEGGE 3I-4H-N165 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	81.55	1.47	9.89	10.00				
100.00	100.00	100.00	100.00	0.14	0.14	81.55	1.47	9.89	10.00	9.72	0.28	36.228	
200.00	200.00	200.00	200.00	0.50	0.50	81.55	1.47	9.89	10.00	9.01	0.99	10.071	
300.00	300.00	300.07	300.06	0.85	0.85	83.88	1.05	9.77	9.83	8.13	1.70	5.775	
400.00	400.00	400.08	400.01	1.21	1.19	104.69	-2.31	8.83	9.12	6.73	2.40	3.804	
403.05	403.05	403.13	403.05	1.22	1.20	105.70	-2.47	8.78	9.12	6.70	2.42	3.769 CC, ES	
500.00	500.00	499.72	499.41	1.57	1.54	142.35	-9.00	6.94	11.38	8.27	3.11	3.659	
600.00	600.00	598.77	597.91	1.93	1.90	167.65	-18.94	4.15	19.50	15.68	3.82	5.102	
700.00	700.00	696.98	695.17	2.29	2.28	179.17	-32.03	0.46	32.39	27.87	4.53	7.158	
800.00	800.00	795.22	792.07	2.65	2.68	-175.29	-47.62	-3.92	48.44	43.21	5.23	9.259	
900.00	900.00	906.18	889.28	3.01	3.14	-172.48	-63.45	-8.38	64.89	58.90	5.99	10.833	
1,000.00	1,000.00	1,007.58	986.50	3.36	3.57	-170.80	-79.28	-12.84	81.44	74.73	6.71	12.129	
1,100.00	1,100.00	1,091.02	1,083.72	3.72	3.93	-169.70	-95.11	-17.29	98.04	90.66	7.38	13.291	
1,200.00	1,200.00	1,189.62	1,180.94	4.08	4.35	-168.91	-110.95	-21.75	114.65	106.56	8.10	14.163	
1,300.00	1,299.98	1,288.48	1,278.42	4.42	4.77	-15.92	-126.82	-26.21	129.63	120.83	8.80	14.734	
1,400.00	1,399.84	1,387.80	1,376.34	4.75	5.20	-15.94	-142.77	-30.70	141.28	131.79	9.49	14.886	
1,500.00	1,499.45	1,487.44	1,474.58	5.09	5.63	-16.34	-158.76	-35.21	149.60	139.40	10.19	14.676	
1,600.00	1,598.70	1,587.29	1,573.03	5.43	6.06	-17.08	-174.80	-39.72	154.59	143.69	10.90	14.177	
1,700.00	1,697.47	1,687.22	1,671.57	5.78	6.50	-18.18	-190.84	-44.23	156.29	144.67	11.62	13.446	
1,800.00	1,795.62	1,787.12	1,770.07	6.15	6.93	-19.71	-206.88	-48.75	154.76	142.41	12.35	12.528	
1,810.86	1,806.25	1,802.03	1,780.76	6.19	6.99	-19.90	-208.62	-49.24	154.40	141.95	12.45	12.403	
1,900.00	1,893.36	1,886.94	1,868.49	6.54	7.36	-21.54	-222.91	-53.26	151.38	138.29	13.09	11.562	
2,000.00	1,991.10	1,986.77	1,966.92	6.93	7.80	-23.46	-238.94	-57.77	148.14	134.30	13.84	10.702	
2,100.00	2,088.83	2,086.59	2,065.34	7.34	8.23	-25.46	-254.97	-62.28	145.08	130.48	14.60	9.934	
2,200.00	2,186.57	2,186.41	2,163.76	7.76	8.67	-27.54	-270.99	-66.79	142.20	126.82	15.38	9.247	
2,300.00	2,284.30	2,286.23	2,262.19	8.18	9.10	-29.70	-287.02	-71.30	139.52	123.35	16.17	8.630	
2,400.00	2,382.04	2,386.05	2,360.61	8.61	9.54	-31.95	-303.05	-75.81	137.04	120.08	16.97	8.076	
2,500.00	2,479.77	2,485.87	2,459.03	9.04	9.97	-34.28	-319.08	-80.32	134.79	117.00	17.79	7.578	
2,600.00	2,577.51	2,585.70	2,557.46	9.48	10.41	-36.68	-335.10	-84.83	132.76	114.14	18.62	7.130	
2,700.00	2,675.24	2,685.52	2,655.88	9.93	10.85	-39.15	-351.13	-89.35	130.97	111.50	19.47	6.726	
2,800.00	2,772.98	2,785.34	2,754.30	10.37	11.28	-41.68	-367.16	-93.86	129.44	109.10	20.34	6.363	
2,900.00	2,870.71	2,885.16	2,852.73	10.82	11.72	-44.27	-383.19	-98.37	128.16	106.93	21.23	6.037	
3,000.00	2,968.45	2,984.98	2,951.15	11.27	12.15	-46.90	-399.21	-102.88	127.15	105.02	22.13	5.745	
3,100.00	3,066.19	3,084.81	3,049.57	11.73	12.59	-49.57	-415.24	-107.39	126.42	103.36	23.06	5.483	
3,200.00	3,163.92	3,184.63	3,148.00	12.18	13.03	-52.27	-431.27	-111.90	125.96	101.97	23.99	5.250	
3,300.00	3,261.66	3,284.45	3,246.42	12.64	13.46	-54.98	-447.30	-116.41	125.79	100.84	24.95	5.042	
3,311.97	3,273.35	3,296.40	3,258.20	12.69	13.52	-55.30	-449.22	-116.95	125.78	100.72	25.06	5.019	
3,400.00	3,359.39	3,384.27	3,344.84	13.10	13.90	-57.69	-463.33	-120.92	125.89	99.98	25.91	4.859	
3,500.00	3,457.13	3,484.09	3,443.27	13.56	14.34	-60.39	-479.35	-125.43	126.28	99.40	26.89	4.697	
3,600.00	3,554.86	3,583.92	3,541.69	14.02	14.77	-63.07	-495.38	-129.94	126.95	99.08	27.87	4.555	
3,700.00	3,652.60	3,683.74	3,640.12	14.49	15.21	-65.71	-511.41	-134.45	127.90	99.04	28.86	4.432	
3,800.00	3,750.33	3,783.56	3,738.54	14.95	15.65	-68.31	-527.44	-138.96	129.11	99.26	29.85	4.325	
3,900.00	3,848.07	3,883.38	3,836.96	15.42	16.08	-70.86	-543.46	-143.47	130.58	99.74	30.84	4.234	
4,000.00	3,945.80	3,983.20	3,935.39	15.88	16.52	-73.34	-559.49	-147.99	132.31	100.48	31.83	4.156	
4,100.00	4,043.54	4,083.03	4,033.81	16.35	16.96	-75.76	-575.52	-152.50	134.28	101.46	32.82	4.091	
4,200.00	4,141.27	4,182.85	4,132.23	16.82	17.40	-78.11	-591.55	-157.01	136.48	102.68	33.81	4.037	
4,300.00	4,239.01	4,282.67	4,230.66	17.29	17.83	-80.37	-607.57	-161.52	138.91	104.12	34.78	3.994	
4,400.00	4,336.74	4,382.49	4,329.08	17.76	18.27	-82.56	-623.60	-166.03	141.54	105.79	35.75	3.959	
4,500.00	4,434.48	4,482.31	4,427.50	18.23	18.71	-84.66	-639.63	-170.54	144.37	107.66	36.72	3.932	
4,600.00	4,532.21	4,582.13	4,525.93	18.70	19.14	-86.68	-655.66	-175.05	147.39	109.72	37.67	3.913	
4,700.00	4,629.95	4,681.96	4,624.35	19.17	19.58	-88.61	-671.69	-179.56	150.59	111.97	38.62	3.899	
4,800.00	4,727.68	4,781.78	4,722.77	19.64	20.02	-90.47	-687.71	-184.07	153.95	114.39	39.56	3.892	

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - RUEGGE 3H-4H-N165 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
4,900.00	4,825.42	4,881.60	4,821.20	20.11	20.46	-92.24	-703.74	-188.58	157.47	116.98	40.49	3.889	
5,000.00	4,923.15	4,981.42	4,919.62	20.58	20.89	-93.93	-719.77	-193.09	161.13	119.72	41.41	3.891	
5,100.00	5,020.89	5,081.24	5,018.04	21.06	21.33	-95.55	-735.80	-197.60	164.92	122.60	42.32	3.897	
5,200.00	5,118.62	5,181.07	5,116.47	21.53	21.77	-97.09	-751.82	-202.12	168.84	125.61	43.23	3.905	
5,300.00	5,216.36	5,280.89	5,214.89	22.00	22.21	-98.57	-767.85	-206.63	172.88	128.74	44.13	3.917	
5,400.00	5,314.10	5,380.71	5,313.31	22.48	22.64	-99.97	-783.88	-211.14	177.02	131.99	45.03	3.931	
5,500.00	5,411.83	5,480.53	5,411.74	22.95	23.08	-101.31	-799.91	-215.65	181.27	135.35	45.92	3.948	
5,600.00	5,509.57	5,580.35	5,510.16	23.42	23.52	-102.59	-815.93	-220.16	185.61	138.81	46.80	3.966	
5,700.00	5,607.30	5,680.18	5,608.58	23.90	23.95	-103.81	-831.96	-224.67	190.04	142.36	47.68	3.986	
5,800.00	5,705.04	5,780.00	5,707.01	24.37	24.39	-104.97	-847.99	-229.18	194.55	146.00	48.55	4.007	
5,900.00	5,802.77	5,879.82	5,805.43	24.85	24.83	-106.08	-864.02	-233.69	199.14	149.72	49.42	4.030	
6,000.00	5,900.51	5,979.64	5,903.85	25.32	25.27	-107.14	-880.04	-238.20	203.80	153.52	50.28	4.053	
6,100.00	5,998.24	6,079.46	6,002.28	25.80	25.70	-108.15	-896.07	-242.71	208.53	157.38	51.14	4.077	
6,200.00	6,095.98	6,179.29	6,100.70	26.27	26.14	-109.12	-912.10	-247.22	213.31	161.31	52.00	4.102	
6,300.00	6,193.71	6,279.11	6,199.13	26.75	26.58	-110.05	-928.13	-251.73	218.16	165.30	52.86	4.127	
6,400.00	6,291.45	6,378.93	6,297.55	27.23	27.02	-110.93	-944.16	-256.25	223.06	169.35	53.71	4.153	
6,500.00	6,389.18	6,480.63	6,398.31	27.70	27.43	-112.76	-956.64	-260.83	227.70	173.23	54.47	4.180	
6,536.48	6,424.83	6,517.31	6,434.94	27.88	27.55	-114.24	-957.80	-262.47	229.27	174.61	54.66	4.194	
6,550.00	6,438.07	6,530.78	6,448.39	27.94	27.59	-117.41	-957.76	-263.07	229.87	175.16	54.72	4.201	
6,600.00	6,487.36	6,580.15	6,497.65	28.16	27.72	-134.08	-955.43	-265.24	232.36	177.49	54.87	4.234	
6,650.00	6,537.01	6,628.91	6,546.03	28.35	27.83	-164.59	-949.79	-267.35	235.22	180.25	54.97	4.279	
6,700.00	6,586.76	6,677.10	6,593.35	28.51	27.92	154.05	-941.01	-269.38	238.42	183.41	55.01	4.334	
6,750.00	6,636.37	6,724.73	6,639.45	28.64	28.00	125.53	-929.21	-271.33	241.91	186.91	55.00	4.398	
6,800.00	6,685.61	6,771.85	6,684.18	28.75	28.07	110.17	-914.55	-273.20	245.64	190.69	54.95	4.471	
6,850.00	6,734.24	6,818.47	6,727.40	28.85	28.12	100.98	-897.18	-274.98	249.56	194.72	54.85	4.550	
6,900.00	6,782.01	6,864.63	6,769.00	28.93	28.17	94.72	-877.24	-276.67	253.64	198.92	54.71	4.636	
6,950.00	6,828.69	6,910.37	6,808.85	28.99	28.20	90.05	-854.88	-278.25	257.80	203.27	54.54	4.727	
7,000.00	6,874.07	6,955.70	6,846.87	29.04	28.23	86.35	-830.26	-279.74	262.01	207.68	54.33	4.823	
7,050.00	6,917.91	7,000.65	6,882.97	29.07	28.25	83.30	-803.51	-281.13	266.21	212.13	54.09	4.922	
7,100.00	6,960.00	7,045.26	6,917.06	29.09	28.27	80.73	-774.77	-282.41	270.36	216.54	53.82	5.023	
7,150.00	7,000.14	7,089.56	6,949.08	29.10	28.29	78.51	-744.20	-283.58	274.41	220.87	53.55	5.125	
7,200.00	7,038.13	7,133.56	6,978.95	29.10	28.30	76.59	-711.92	-284.64	278.32	225.06	53.26	5.226	
7,250.00	7,073.79	7,177.29	7,006.63	29.10	28.31	74.92	-678.08	-285.59	282.05	229.07	52.98	5.324	
7,300.00	7,106.94	7,220.79	7,032.06	29.09	28.33	73.46	-642.82	-286.43	285.57	232.86	52.72	5.417	
7,350.00	7,137.43	7,264.06	7,055.20	29.07	28.35	72.20	-606.26	-287.16	288.84	236.37	52.47	5.505	
7,400.00	7,165.09	7,307.15	7,076.00	29.05	28.37	71.10	-568.54	-287.77	291.84	239.57	52.26	5.584	
7,450.00	7,189.81	7,350.06	7,094.43	29.03	28.40	70.16	-529.80	-288.27	294.53	242.43	52.10	5.654	
7,500.00	7,211.45	7,392.83	7,110.45	29.02	28.43	69.36	-490.15	-288.66	296.90	244.92	51.98	5.712	
7,550.00	7,229.92	7,435.47	7,124.05	29.01	28.47	68.71	-449.74	-288.93	298.93	247.00	51.93	5.757	
7,600.00	7,245.11	7,478.02	7,135.20	29.00	28.52	68.18	-408.69	-289.08	300.60	248.66	51.94	5.788	
7,650.00	7,256.97	7,520.48	7,143.88	29.01	28.58	67.79	-367.13	-289.13	301.89	249.88	52.02	5.804	
7,700.00	7,265.43	7,562.89	7,150.08	29.03	28.65	67.51	-325.19	-289.06	302.81	250.64	52.16	5.805	
7,750.00	7,270.44	7,605.26	7,153.79	29.06	28.72	67.36	-282.99	-288.87	303.33	250.95	52.38	5.791	
7,797.34	7,272.00	7,648.70	7,155.00	29.10	28.81	67.32	-243.19	-288.60	303.46	250.79	52.67	5.762	
7,800.00	7,272.00	7,647.74	7,155.00	29.10	28.81	67.32	-240.53	-288.58	303.46	250.79	52.67	5.761	
7,900.00	7,272.00	7,747.74	7,155.00	29.26	29.08	67.32	-140.53	-287.75	303.46	250.30	53.16	5.708	
8,000.00	7,272.00	7,847.74	7,155.00	29.51	29.43	67.32	-40.54	-286.92	303.46	249.65	53.81	5.640	
8,100.00	7,272.00	7,947.74	7,155.00	29.86	29.85	67.32	59.46	-286.10	303.46	248.86	54.61	5.557	
8,200.00	7,272.00	8,047.74	7,155.00	30.31	30.36	67.32	159.46	-285.27	303.46	247.91	55.55	5.463	
8,300.00	7,272.00	8,147.74	7,155.00	30.85	30.94	67.32	259.45	-284.44	303.46	246.82	56.64	5.358	
8,400.00	7,272.00	8,247.74	7,155.00	31.47	31.60	67.32	359.45	-283.62	303.46	245.61	57.86	5.245	
8,500.00	7,272.00	8,347.74	7,155.00	32.16	32.32	67.32	459.45	-282.79	303.46	244.26	59.20	5.126	

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - RUEGGE 3I-4H-N165 - OH - PLAN #1													Offset Site Error: 0.00 usft	
Survey Program: O-MWD+HDGM													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
8,600.00	7,272.00	8,447.74	7,155.00	32.92	33.10	67.32	559.44	-281.97	303.46	242.80	60.66	5.003		
8,700.00	7,272.00	8,547.74	7,155.00	33.73	33.93	67.32	659.44	-281.14	303.46	241.24	62.22	4.877		
8,800.00	7,272.00	8,647.74	7,155.00	34.61	34.82	67.32	759.44	-280.31	303.46	239.57	63.89	4.750		
8,900.00	7,272.00	8,747.74	7,155.00	35.53	35.76	67.32	859.43	-279.49	303.46	237.81	65.65	4.623		
9,000.00	7,272.00	8,847.74	7,155.00	36.50	36.74	67.32	959.43	-278.66	303.46	235.97	67.49	4.496		
9,100.00	7,272.00	8,947.74	7,155.00	37.51	37.76	67.32	1,059.43	-277.83	303.46	234.05	69.41	4.372		
9,200.00	7,272.00	9,047.74	7,155.00	38.55	38.81	67.32	1,159.42	-277.01	303.46	232.05	71.41	4.250		
9,300.00	7,272.00	9,147.74	7,155.00	39.63	39.91	67.32	1,259.42	-276.18	303.46	229.99	73.47	4.131		
9,400.00	7,272.00	9,247.74	7,155.00	40.75	41.03	67.32	1,359.42	-275.35	303.46	227.87	75.59	4.015		
9,500.00	7,272.00	9,347.74	7,155.00	41.89	42.18	67.32	1,459.41	-274.53	303.46	225.70	77.76	3.902		
9,600.00	7,272.00	9,447.74	7,155.00	43.06	43.36	67.32	1,559.41	-273.70	303.46	223.47	79.99	3.794		
9,700.00	7,272.00	9,547.74	7,155.00	44.26	44.56	67.32	1,659.41	-272.88	303.46	221.20	82.27	3.689		
9,800.00	7,272.00	9,647.74	7,155.00	45.48	45.79	67.32	1,759.40	-272.05	303.46	218.88	84.58	3.588		
9,900.00	7,272.00	9,747.74	7,155.00	46.72	47.04	67.32	1,859.40	-271.22	303.46	216.52	86.94	3.490		
10,000.00	7,272.00	9,847.74	7,155.00	47.98	48.30	67.32	1,959.40	-270.40	303.46	214.13	89.34	3.397		
10,100.00	7,272.00	9,947.74	7,155.00	49.25	49.59	67.32	2,059.39	-269.57	303.46	211.70	91.76	3.307		
10,200.00	7,272.00	10,047.74	7,155.00	50.55	50.89	67.32	2,159.39	-268.74	303.46	209.24	94.22	3.221		
10,300.00	7,272.00	10,147.74	7,155.00	51.86	52.20	67.32	2,259.39	-267.92	303.46	206.75	96.71	3.138		
10,400.00	7,272.00	10,247.74	7,155.00	53.18	53.53	67.32	2,359.38	-267.09	303.46	204.24	99.23	3.058		
10,500.00	7,272.00	10,347.74	7,155.00	54.52	54.88	67.32	2,459.38	-266.27	303.46	201.70	101.76	2.982		
10,600.00	7,272.00	10,447.74	7,155.00	55.87	56.23	67.32	2,559.38	-265.44	303.46	199.13	104.33	2.909		
10,700.00	7,272.00	10,547.74	7,155.00	57.23	57.60	67.32	2,659.37	-264.61	303.46	196.55	106.91	2.838		
10,800.00	7,272.00	10,647.74	7,155.00	58.60	58.97	67.32	2,759.37	-263.79	303.46	193.95	109.51	2.771		
10,900.00	7,272.00	10,747.74	7,155.00	59.98	60.36	67.32	2,859.37	-262.96	303.46	191.33	112.13	2.706		
11,000.00	7,272.00	10,847.74	7,155.00	61.37	61.75	67.32	2,959.36	-262.13	303.46	188.69	114.77	2.644		
11,100.00	7,272.00	10,947.74	7,155.00	62.77	63.16	67.32	3,059.36	-261.31	303.46	186.03	117.43	2.584		
11,200.00	7,272.00	11,047.74	7,155.00	64.18	64.57	67.32	3,159.36	-260.48	303.46	183.36	120.10	2.527		
11,300.00	7,272.00	11,147.74	7,155.00	65.59	65.99	67.32	3,259.35	-259.66	303.46	180.68	122.78	2.472		
11,400.00	7,272.00	11,247.74	7,155.00	67.01	67.41	67.32	3,359.35	-258.83	303.46	177.99	125.47	2.418		
11,500.00	7,272.00	11,347.74	7,155.00	68.44	68.85	67.32	3,459.34	-258.00	303.46	175.28	128.18	2.367		
11,600.00	7,272.00	11,447.74	7,155.00	69.88	70.28	67.32	3,559.34	-257.18	303.46	172.56	130.90	2.318		
11,700.00	7,272.00	11,547.74	7,155.00	71.32	71.73	67.32	3,659.34	-256.35	303.46	169.83	133.63	2.271		
11,800.00	7,272.00	11,647.74	7,155.00	72.76	73.18	67.32	3,759.33	-255.52	303.46	167.09	136.37	2.225		
11,900.00	7,272.00	11,747.74	7,155.00	74.22	74.63	67.32	3,859.33	-254.70	303.46	164.34	139.12	2.181		
12,000.00	7,272.00	11,847.74	7,155.00	75.67	76.09	67.32	3,959.33	-253.87	303.46	161.58	141.88	2.139		
12,100.00	7,272.00	11,947.74	7,155.00	77.13	77.41	67.32	4,059.32	-253.04	303.46	158.96	144.50	2.100		
12,154.60	7,272.00	12,002.34	7,155.00	77.93	78.03	67.32	4,113.92	-252.59	303.46	157.62	145.84	2.081 SF		

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - RUEGGE 3J-4H-N165 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.00	0.00	1.00	-1.00	0.00	0.00	81.55	2.94	19.78	20.00	19.72	0.28	71.531	
100.00	100.00	101.00	99.00	0.14	0.14	81.55	2.94	19.78	20.00	19.72	0.28	71.531	
200.00	200.00	199.00	199.00	0.50	0.49	81.55	2.94	19.78	20.00	19.01	0.99	20.215	
203.97	203.97	202.97	202.97	0.51	0.51	81.55	2.94	19.78	20.00	18.98	1.02	19.650 CC	
300.00	300.00	298.94	298.92	0.85	0.84	86.42	1.26	20.08	20.12	18.43	1.69	11.893 ES	
400.00	400.00	398.64	398.49	1.21	1.19	100.38	-3.84	20.97	21.33	18.93	2.40	8.903	
500.00	500.00	497.87	497.33	1.57	1.54	118.71	-12.30	22.46	25.66	22.55	3.11	8.244	
600.00	600.00	596.38	595.12	1.93	1.92	134.43	-24.03	24.51	34.54	30.71	3.83	9.024	
700.00	700.00	705.40	692.20	2.29	2.35	145.01	-38.70	27.08	47.72	43.14	4.58	10.425	
800.00	800.00	793.36	789.73	2.65	2.71	151.13	-53.97	29.76	62.33	57.08	5.25	11.872	
900.00	900.00	907.88	887.26	3.01	3.19	154.90	-69.25	32.44	77.37	71.34	6.02	12.844	
1,000.00	1,000.00	1,009.13	984.80	3.36	3.61	157.44	-84.53	35.12	92.63	85.88	6.75	13.724	
1,100.00	1,100.00	1,089.63	1,082.33	3.72	3.95	159.26	-99.80	37.80	108.01	100.62	7.40	14.598	
1,200.00	1,200.00	1,188.39	1,179.86	4.08	4.37	160.62	-115.08	40.48	123.48	115.36	8.12	15.209	
1,300.00	1,299.98	1,287.35	1,277.59	4.42	4.79	-46.10	-130.39	43.16	137.80	128.98	8.82	15.618	
1,400.00	1,399.84	1,386.62	1,375.63	4.75	5.21	-46.45	-145.74	45.85	149.73	140.22	9.52	15.730	
1,500.00	1,499.45	1,486.09	1,473.86	5.09	5.64	-47.68	-161.13	48.55	159.33	149.10	10.23	15.580	
1,600.00	1,598.70	1,585.63	1,572.17	5.43	6.06	-49.69	-176.52	51.25	166.74	155.79	10.95	15.229	
1,700.00	1,697.47	1,685.11	1,670.42	5.78	6.49	-52.45	-191.91	53.95	172.21	160.52	11.69	14.734	
1,800.00	1,795.62	1,784.43	1,768.51	6.15	6.91	-55.96	-207.27	56.64	176.11	163.66	12.45	14.142	
1,810.86	1,806.25	1,804.79	1,779.15	6.19	7.00	-56.39	-208.94	56.94	176.46	163.89	12.57	14.034	
1,900.00	1,893.36	1,883.60	1,866.44	6.54	7.34	-59.93	-222.61	59.33	179.62	166.37	13.25	13.559	
2,000.00	1,991.10	1,982.76	1,964.38	6.93	7.76	-63.74	-237.95	62.02	183.95	169.89	14.06	13.080	
2,100.00	2,088.83	2,081.92	2,062.31	7.34	8.19	-67.36	-253.29	64.71	189.07	174.17	14.90	12.690	
2,200.00	2,186.57	2,181.09	2,160.24	7.76	8.61	-70.78	-268.63	67.40	194.91	179.16	15.75	12.374	
2,300.00	2,284.30	2,280.25	2,258.17	8.18	9.04	-74.00	-283.97	70.09	201.41	184.80	16.62	12.121	
2,400.00	2,382.04	2,379.41	2,356.10	8.61	9.46	-77.00	-299.31	72.78	208.52	191.02	17.49	11.920	
2,500.00	2,479.77	2,478.57	2,454.04	9.04	9.89	-79.81	-314.64	75.47	216.16	197.78	18.38	11.762	
2,600.00	2,577.51	2,577.73	2,551.97	9.48	10.31	-82.42	-329.98	78.16	224.28	205.01	19.27	11.641	
2,700.00	2,675.24	2,676.90	2,649.90	9.93	10.74	-84.84	-345.32	80.85	232.84	212.68	20.16	11.549	
2,800.00	2,772.98	2,776.06	2,747.83	10.37	11.17	-87.09	-360.66	83.54	241.78	220.73	21.06	11.483	
2,900.00	2,870.71	2,875.22	2,845.76	10.82	11.59	-89.18	-376.00	86.23	251.07	229.12	21.95	11.437	
3,000.00	2,968.45	2,974.38	2,943.69	11.27	12.02	-91.11	-391.34	88.92	260.67	237.82	22.85	11.408	
3,100.00	3,066.19	3,073.55	3,041.63	11.73	12.44	-92.91	-406.67	91.61	270.55	246.80	23.75	11.393	
3,200.00	3,163.92	3,172.71	3,139.56	12.18	12.87	-94.58	-422.01	94.30	280.67	256.03	24.64	11.390	
3,300.00	3,261.66	3,271.87	3,237.49	12.64	13.30	-96.14	-437.35	96.99	291.02	265.48	25.54	11.396	
3,400.00	3,359.39	3,371.03	3,335.42	13.10	13.72	-97.59	-452.69	99.68	301.56	275.13	26.43	11.409	
3,500.00	3,457.13	3,470.19	3,433.35	13.56	14.15	-98.94	-468.03	102.36	312.28	284.96	27.32	11.429	
3,600.00	3,554.86	3,569.36	3,531.29	14.02	14.58	-100.20	-483.37	105.05	323.17	294.95	28.22	11.453	
3,700.00	3,652.60	3,668.52	3,629.22	14.49	15.00	-101.37	-498.70	107.74	334.19	305.09	29.11	11.482	
3,800.00	3,750.33	3,767.68	3,727.15	14.95	15.43	-102.47	-514.04	110.43	345.35	315.36	30.00	11.513	
3,900.00	3,848.07	3,866.84	3,825.08	15.42	15.86	-103.51	-529.38	113.12	356.63	325.74	30.88	11.548	
4,000.00	3,945.80	3,966.01	3,923.01	15.88	16.28	-104.48	-544.72	115.81	368.01	336.24	31.77	11.584	
4,100.00	4,043.54	4,065.17	4,020.94	16.35	16.71	-105.39	-560.06	118.50	379.50	346.84	32.66	11.621	
4,200.00	4,141.27	4,164.33	4,118.88	16.82	17.14	-106.25	-575.40	121.19	391.07	357.53	33.54	11.660	
4,300.00	4,239.01	4,263.49	4,216.81	17.29	17.56	-107.05	-590.74	123.88	402.72	368.30	34.42	11.699	
4,400.00	4,336.74	4,362.65	4,314.74	17.76	17.99	-107.82	-606.07	126.57	414.45	379.15	35.31	11.739	
4,500.00	4,434.48	4,461.82	4,412.67	18.23	18.42	-108.54	-621.41	129.26	426.25	390.06	36.19	11.779	
4,600.00	4,532.21	4,560.98	4,510.60	18.70	18.84	-109.22	-636.75	131.95	438.11	401.04	37.07	11.819	
4,700.00	4,629.95	4,660.14	4,608.54	19.17	19.27	-109.87	-652.09	134.64	450.03	412.08	37.95	11.860	
4,800.00	4,727.68	4,759.30	4,706.47	19.64	19.70	-110.48	-667.43	137.33	462.00	423.18	38.83	11.899	
4,900.00	4,825.42	4,858.47	4,804.40	20.11	20.12	-111.06	-682.77	140.02	474.03	434.32	39.70	11.939	

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - RUEGGE 3J-4H-N165 - OH - PLAN #1													Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
5,000.00	4,923.15	4,957.63	4,902.33	20.58	20.55	-111.62	-698.10	142.71	486.09	445.51	40.58	11.978		
5,100.00	5,020.89	5,056.79	5,000.26	21.06	20.98	-112.14	-713.44	145.40	498.21	456.75	41.46	12.017		
5,200.00	5,118.62	5,155.95	5,098.19	21.53	21.40	-112.64	-728.78	148.09	510.36	468.02	42.33	12.055		
5,300.00	5,216.36	5,255.11	5,196.13	22.00	21.83	-113.12	-744.12	150.78	522.54	479.33	43.21	12.093		
5,400.00	5,314.10	5,354.28	5,294.06	22.48	22.26	-113.58	-759.46	153.47	534.76	490.68	44.09	12.130		
5,500.00	5,411.83	5,453.44	5,391.99	22.95	22.68	-114.01	-774.80	156.15	547.02	502.06	44.96	12.166		
5,600.00	5,509.57	5,552.60	5,489.92	23.42	23.11	-114.43	-790.14	158.84	559.30	513.47	45.84	12.202		
5,700.00	5,607.30	5,651.76	5,587.85	23.90	23.54	-114.83	-805.47	161.53	571.61	524.90	46.71	12.238		
5,800.00	5,705.04	5,750.92	5,685.79	24.37	23.96	-115.21	-820.81	164.22	583.95	536.37	47.58	12.272		
5,900.00	5,802.77	5,850.09	5,783.72	24.85	24.39	-115.58	-836.15	166.91	596.31	547.86	48.46	12.306		
6,000.00	5,900.51	5,949.25	5,881.65	25.32	24.82	-115.93	-851.49	169.60	608.70	559.37	49.33	12.339		
6,100.00	5,998.24	6,048.41	5,979.58	25.80	25.24	-116.27	-866.83	172.29	621.10	570.90	50.20	12.372		
6,200.00	6,095.98	6,147.57	6,077.51	26.27	25.67	-116.59	-882.17	174.98	633.53	582.46	51.08	12.404		
6,300.00	6,193.71	6,246.74	6,175.44	26.75	26.10	-116.90	-897.50	177.67	645.98	594.03	51.95	12.435		
6,400.00	6,291.45	6,345.90	6,273.38	27.23	26.53	-117.20	-912.84	180.36	658.44	605.62	52.82	12.466		
6,500.00	6,389.18	6,445.06	6,371.31	27.70	26.95	-117.49	-928.18	183.05	670.92	617.23	53.69	12.496		
6,536.48	6,424.83	6,481.23	6,407.03	27.88	27.11	-117.59	-933.78	184.03	675.48	621.47	54.01	12.507		
6,550.00	6,438.07	6,494.65	6,420.28	27.94	27.17	-120.26	-935.85	184.39	677.17	623.04	54.13	12.511		
6,600.00	6,487.36	6,544.23	6,469.25	28.16	27.38	-134.91	-943.52	185.74	683.41	628.86	54.55	12.528		
6,650.00	6,537.01	6,593.47	6,517.89	28.35	27.59	-163.17	-951.08	187.08	689.62	634.67	54.95	12.549		
6,700.00	6,586.76	6,642.13	6,566.24	28.51	27.78	157.73	-956.33	188.42	695.86	640.55	55.31	12.582		
6,750.00	6,636.37	6,691.16	6,615.19	28.64	27.94	131.38	-958.28	189.81	702.13	646.52	55.61	12.625		
6,800.00	6,685.61	6,740.57	6,664.56	28.75	28.08	118.10	-956.86	191.25	708.40	652.53	55.87	12.678		
6,850.00	6,734.24	6,790.39	6,714.10	28.85	28.19	110.87	-951.98	192.71	714.64	658.54	56.10	12.739		
6,900.00	6,782.01	6,840.63	6,763.60	28.93	28.30	106.48	-943.59	194.20	720.81	664.51	56.30	12.803		
6,950.00	6,828.69	6,891.31	6,812.81	28.99	28.39	103.56	-931.62	195.72	726.89	670.42	56.47	12.872		
7,000.00	6,874.07	6,942.43	6,861.47	29.04	28.46	101.51	-916.06	197.25	732.84	676.23	56.61	12.945		
7,050.00	6,917.91	6,994.01	6,909.32	29.07	28.53	99.99	-896.87	198.78	738.64	681.91	56.73	13.020		
7,100.00	6,960.00	7,046.06	6,956.07	29.09	28.59	98.83	-874.08	200.31	744.25	687.42	56.83	13.096		
7,150.00	7,000.14	7,098.57	7,001.44	29.10	28.63	97.93	-847.69	201.84	749.65	692.74	56.91	13.173		
7,200.00	7,038.13	7,151.56	7,045.13	29.10	28.67	97.21	-817.78	203.34	754.79	697.82	56.97	13.249		
7,250.00	7,073.79	7,205.01	7,086.84	29.10	28.71	96.64	-784.41	204.81	759.65	702.64	57.02	13.324		
7,300.00	7,106.94	7,258.91	7,126.27	29.09	28.74	96.17	-747.70	206.25	764.21	707.15	57.06	13.394		
7,350.00	7,137.43	7,313.26	7,163.11	29.07	28.77	95.79	-707.79	207.64	768.43	711.34	57.09	13.459		
7,400.00	7,165.09	7,368.02	7,197.07	29.05	28.80	95.48	-664.86	208.97	772.29	715.16	57.13	13.518		
7,450.00	7,189.81	7,423.18	7,227.86	29.03	28.84	95.24	-619.13	210.23	775.76	718.58	57.18	13.567		
7,500.00	7,211.45	7,478.71	7,255.21	29.02	28.88	95.04	-570.83	211.42	778.82	721.58	57.24	13.606		
7,550.00	7,229.92	7,534.58	7,278.87	29.01	28.93	94.89	-520.26	212.52	781.45	724.13	57.32	13.634		
7,600.00	7,245.11	7,590.73	7,298.61	29.00	29.00	94.78	-467.71	213.52	783.63	726.21	57.42	13.647		
7,650.00	7,256.97	7,647.13	7,314.23	29.01	29.07	94.70	-413.54	214.42	785.34	727.80	57.55	13.647		
7,700.00	7,265.43	7,703.73	7,325.58	29.03	29.17	94.66	-358.10	215.20	786.59	728.88	57.71	13.631		
7,750.00	7,270.44	7,760.48	7,332.52	29.06	29.28	94.64	-301.80	215.87	787.34	729.44	57.90	13.599		
7,797.34	7,272.00	7,814.30	7,334.98	29.10	29.39	94.66	-248.06	216.38	787.60	729.50	58.11	13.555		
7,800.00	7,272.00	7,817.32	7,334.99	29.10	29.40	94.66	-245.03	216.41	787.61	729.49	58.12	13.552		
7,900.00	7,272.00	7,917.65	7,335.00	29.26	29.68	94.66	-144.70	217.24	787.61	728.94	58.66	13.426		
8,000.00	7,272.00	8,017.65	7,335.00	29.51	30.04	94.66	-44.71	218.06	787.61	728.24	59.36	13.267		
8,100.00	7,272.00	8,117.65	7,335.00	29.86	30.47	94.66	55.29	218.89	787.61	727.38	60.22	13.079		
8,200.00	7,272.00	8,217.65	7,335.00	30.31	30.99	94.66	155.29	219.71	787.61	726.38	61.23	12.864		
8,300.00	7,272.00	8,317.65	7,335.00	30.85	31.57	94.66	255.28	220.54	787.61	725.23	62.38	12.627		
8,400.00	7,272.00	8,417.65	7,335.00	31.47	32.22	94.66	355.28	221.37	787.61	723.95	63.66	12.372		
8,500.00	7,272.00	8,517.65	7,335.00	32.16	32.93	94.66	455.28	222.19	787.61	722.53	65.07	12.104		
8,600.00	7,272.00	8,617.65	7,335.00	32.92	33.70	94.66	555.27	223.02	787.60	721.01	66.60	11.826		

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - RUEGGE 3J-4H-N165 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
8,700.00	7,272.00	8,717.65	7,335.00	33.73	34.53	94.66	655.27	223.84	787.60	719.37	68.24	11.542	
8,800.00	7,272.00	8,817.65	7,335.00	34.61	35.41	94.66	755.27	224.67	787.60	717.62	69.98	11.255	
8,900.00	7,272.00	8,917.65	7,335.00	35.53	36.33	94.66	855.26	225.50	787.60	715.79	71.82	10.967	
9,000.00	7,272.00	9,017.65	7,335.00	36.50	37.30	94.66	955.26	226.32	787.60	713.86	73.74	10.680	
9,100.00	7,272.00	9,117.65	7,335.00	37.51	38.31	94.66	1,055.26	227.15	787.60	711.85	75.75	10.397	
9,200.00	7,272.00	9,217.65	7,335.00	38.55	39.36	94.66	1,155.25	227.98	787.60	709.77	77.84	10.119	
9,300.00	7,272.00	9,317.65	7,335.00	39.63	40.44	94.66	1,255.25	228.80	787.60	707.62	79.99	9.847	
9,400.00	7,272.00	9,417.65	7,335.00	40.75	41.55	94.66	1,355.25	229.63	787.60	705.40	82.20	9.581	
9,500.00	7,272.00	9,517.65	7,335.00	41.89	42.70	94.66	1,455.24	230.45	787.60	703.12	84.48	9.323	
9,600.00	7,272.00	9,617.65	7,335.00	43.06	43.87	94.66	1,555.24	231.28	787.60	700.79	86.81	9.073	
9,700.00	7,272.00	9,717.65	7,335.00	44.26	45.06	94.66	1,655.23	232.11	787.60	698.42	89.19	8.831	
9,800.00	7,272.00	9,817.65	7,335.00	45.48	46.28	94.66	1,755.23	232.93	787.60	695.99	91.61	8.597	
9,900.00	7,272.00	9,917.65	7,335.00	46.72	47.51	94.66	1,855.23	233.76	787.60	693.52	94.08	8.372	
10,000.00	7,272.00	10,017.65	7,335.00	47.98	48.77	94.66	1,955.22	234.58	787.60	691.01	96.59	8.154	
10,100.00	7,272.00	10,117.65	7,335.00	49.25	50.05	94.66	2,055.22	235.41	787.60	688.47	99.13	7.945	
10,200.00	7,272.00	10,217.65	7,335.00	50.55	51.34	94.66	2,155.22	236.24	787.60	685.89	101.71	7.744	
10,300.00	7,272.00	10,317.65	7,335.00	51.86	52.65	94.66	2,255.21	237.06	787.60	683.29	104.32	7.550	
10,400.00	7,272.00	10,417.65	7,335.00	53.18	53.97	94.66	2,355.21	237.89	787.60	680.65	106.95	7.364	
10,500.00	7,272.00	10,517.65	7,335.00	54.52	55.30	94.66	2,455.21	238.71	787.60	677.98	109.62	7.185	
10,600.00	7,272.00	10,617.65	7,335.00	55.87	56.65	94.66	2,555.20	239.54	787.60	675.30	112.31	7.013	
10,700.00	7,272.00	10,717.65	7,335.00	57.23	58.01	94.66	2,655.20	240.37	787.60	672.58	115.02	6.848	
10,800.00	7,272.00	10,817.65	7,335.00	58.60	59.38	94.66	2,755.20	241.19	787.60	669.85	117.75	6.689	
10,900.00	7,272.00	10,917.65	7,335.00	59.98	60.76	94.66	2,855.19	242.02	787.60	667.10	120.50	6.536	
11,000.00	7,272.00	11,017.65	7,335.00	61.37	62.15	94.66	2,955.19	242.85	787.60	664.32	123.27	6.389	
11,100.00	7,272.00	11,117.65	7,335.00	62.77	63.55	94.66	3,055.19	243.67	787.60	661.54	126.06	6.248	
11,200.00	7,272.00	11,217.65	7,335.00	64.18	64.95	94.66	3,155.18	244.50	787.60	658.73	128.87	6.112	
11,300.00	7,272.00	11,317.65	7,335.00	65.59	66.37	94.66	3,255.18	245.32	787.60	655.91	131.69	5.981	
11,400.00	7,272.00	11,417.65	7,335.00	67.01	67.79	94.66	3,355.18	246.15	787.60	653.07	134.53	5.855	
11,500.00	7,272.00	11,517.65	7,335.00	68.44	69.21	94.66	3,455.17	246.98	787.60	650.22	137.37	5.733	
11,600.00	7,272.00	11,617.65	7,335.00	69.88	70.65	94.66	3,555.17	247.80	787.60	647.36	140.24	5.616	
11,700.00	7,272.00	11,717.65	7,335.00	71.32	72.09	94.66	3,655.17	248.63	787.60	644.49	143.11	5.503	
11,800.00	7,272.00	11,817.65	7,335.00	72.76	73.53	94.66	3,755.16	249.45	787.60	641.60	145.99	5.395	
11,900.00	7,272.00	11,917.65	7,335.00	74.22	74.98	94.66	3,855.16	250.28	787.60	638.71	148.89	5.290	
12,000.00	7,272.00	12,017.65	7,335.00	75.67	76.44	94.66	3,955.16	251.11	787.60	635.81	151.79	5.189	
12,100.00	7,272.00	12,117.65	7,335.00	77.13	77.90	94.66	4,055.15	251.93	787.60	632.89	154.71	5.091	
12,154.60	7,272.00	12,172.25	7,335.00	77.93	78.70	94.66	4,109.75	252.38	787.60	631.30	156.30	5.039 SF	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - RUEGGE 3K-4H-N165 - OH - PLAN #1													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning	
0.00	0.00	1.00	-1.00	0.00	0.00	81.55	4.41	29.67	30.00					
100.00	100.00	101.00	99.00	0.14	0.14	81.55	4.41	29.67	30.00	29.72	0.28	107.294		
106.34	106.34	105.34	105.34	0.16	0.16	81.55	4.41	29.67	30.00	29.68	0.32	94.375 CC		
200.00	200.00	198.88	198.88	0.50	0.49	82.32	4.02	29.83	30.10	29.11	0.98	30.655 ES		
300.00	300.00	298.52	298.45	0.85	0.83	88.48	0.82	31.08	31.09	29.41	1.69	18.440		
400.00	400.00	397.80	397.49	1.21	1.19	99.41	-5.57	33.57	34.07	31.66	2.40	14.165		
500.00	500.00	496.49	495.64	1.57	1.56	112.02	-15.08	37.29	40.37	37.24	3.13	12.899		
600.00	600.00	594.35	592.58	1.93	1.95	123.21	-27.62	42.19	50.84	46.99	3.85	13.206		
700.00	700.00	707.76	689.09	2.29	2.42	131.65	-42.80	48.13	65.17	60.54	4.62	14.094		
800.00	800.00	809.22	786.20	2.65	2.85	137.13	-58.42	54.23	80.73	75.38	5.35	15.087		
900.00	900.00	889.32	883.30	3.01	3.20	140.82	-74.03	60.33	96.79	90.79	6.00	16.136		
1,000.00	1,000.00	987.87	980.41	3.36	3.62	143.46	-89.65	66.44	113.12	106.41	6.71	16.848		
1,100.00	1,100.00	1,086.41	1,077.51	3.72	4.05	145.43	-105.26	72.54	129.63	122.19	7.44	17.434		
1,200.00	1,200.00	1,184.95	1,174.62	4.08	4.48	146.95	-120.88	78.64	146.26	138.10	8.16	17.931		
1,300.00	1,299.98	1,283.67	1,271.90	4.42	4.91	-59.56	-136.52	84.76	162.09	153.22	8.86	18.288		
1,400.00	1,399.84	1,382.66	1,369.44	4.75	5.35	-59.74	-152.21	90.89	176.18	166.62	9.56	18.426		
1,500.00	1,499.45	1,481.79	1,467.14	5.09	5.78	-60.82	-167.92	97.03	188.59	178.31	10.27	18.355		
1,600.00	1,598.70	1,580.96	1,564.86	5.43	6.22	-62.64	-183.63	103.17	199.47	188.47	11.00	18.129		
1,700.00	1,697.47	1,680.04	1,662.49	5.78	6.65	-65.13	-199.33	109.30	209.10	197.35	11.75	17.793		
1,800.00	1,795.62	1,778.90	1,759.91	6.15	7.09	-68.23	-215.00	115.43	217.83	205.31	12.53	17.388		
1,810.86	1,806.25	1,789.63	1,770.48	6.19	7.14	-68.60	-216.70	116.09	218.75	206.13	12.61	17.342		
1,900.00	1,893.36	1,877.59	1,857.16	6.54	7.52	-71.70	-230.64	121.54	226.56	213.23	13.33	16.993		
2,000.00	1,991.10	1,976.27	1,954.40	6.93	7.96	-74.94	-246.27	127.65	236.07	221.91	14.16	16.676		
2,100.00	2,088.83	2,074.95	2,051.64	7.34	8.39	-77.91	-261.91	133.76	246.28	231.28	15.00	16.422		
2,200.00	2,186.57	2,173.63	2,148.89	7.76	8.83	-80.65	-277.55	139.87	257.10	241.25	15.85	16.222		
2,300.00	2,284.30	2,272.31	2,246.13	8.18	9.26	-83.17	-293.18	145.98	268.46	251.75	16.71	16.065		
2,400.00	2,382.04	2,370.99	2,343.37	8.61	9.70	-85.47	-308.82	152.10	280.30	262.72	17.58	15.943		
2,500.00	2,479.77	2,469.67	2,440.61	9.04	10.13	-87.59	-324.46	158.21	292.55	274.09	18.46	15.850		
2,600.00	2,577.51	2,568.36	2,537.86	9.48	10.57	-89.54	-340.10	164.32	305.17	285.83	19.34	15.781		
2,700.00	2,675.24	2,667.04	2,635.10	9.93	11.01	-91.34	-355.73	170.43	318.11	297.89	20.22	15.732		
2,800.00	2,772.98	2,765.72	2,732.34	10.37	11.44	-92.99	-371.37	176.54	331.34	310.23	21.11	15.698		
2,900.00	2,870.71	2,864.40	2,829.58	10.82	11.88	-94.52	-387.01	182.65	344.82	322.83	21.99	15.678		
3,000.00	2,968.45	2,963.08	2,926.83	11.27	12.31	-95.93	-402.65	188.76	358.53	335.64	22.88	15.667		
3,100.00	3,066.19	3,061.76	3,024.07	11.73	12.75	-97.24	-418.28	194.88	372.43	348.66	23.77	15.666		
3,200.00	3,163.92	3,160.44	3,121.31	12.18	13.19	-98.45	-433.92	200.99	386.51	361.85	24.66	15.671		
3,300.00	3,261.66	3,259.12	3,218.55	12.64	13.62	-99.58	-449.56	207.10	400.75	375.20	25.55	15.683		
3,400.00	3,359.39	3,357.81	3,315.80	13.10	14.06	-100.63	-465.19	213.21	415.14	388.69	26.44	15.698		
3,500.00	3,457.13	3,456.49	3,413.04	13.56	14.49	-101.61	-480.83	219.32	429.65	402.31	27.34	15.718		
3,600.00	3,554.86	3,555.17	3,510.28	14.02	14.93	-102.53	-496.47	225.43	444.28	416.05	28.23	15.740		
3,700.00	3,652.60	3,653.85	3,607.52	14.49	15.37	-103.38	-512.11	231.54	459.01	429.89	29.12	15.765		
3,800.00	3,750.33	3,752.53	3,704.77	14.95	15.80	-104.19	-527.74	237.66	473.84	443.83	30.01	15.792		
3,900.00	3,848.07	3,851.21	3,802.01	15.42	16.24	-104.95	-543.38	243.77	488.75	457.85	30.90	15.820		
4,000.00	3,945.80	3,949.89	3,899.25	15.88	16.67	-105.66	-559.02	249.88	503.74	471.96	31.78	15.849		
4,100.00	4,043.54	4,048.57	3,996.49	16.35	17.11	-106.33	-574.65	255.99	518.81	486.13	32.67	15.878		
4,200.00	4,141.27	4,147.26	4,093.74	16.82	17.55	-106.96	-590.29	262.10	533.93	500.37	33.56	15.909		
4,300.00	4,239.01	4,245.94	4,190.98	17.29	17.98	-107.56	-605.93	268.21	549.12	514.67	34.45	15.939		
4,400.00	4,336.74	4,344.62	4,288.22	17.76	18.42	-108.12	-621.57	274.33	564.37	529.03	35.34	15.970		
4,500.00	4,434.48	4,443.30	4,385.46	18.23	18.86	-108.66	-637.20	280.44	579.67	543.44	36.23	16.001		
4,600.00	4,532.21	4,541.98	4,482.71	18.70	19.29	-109.17	-652.84	286.55	595.01	557.90	37.11	16.032		
4,700.00	4,629.95	4,640.66	4,579.95	19.17	19.73	-109.65	-668.48	292.66	610.40	572.40	38.00	16.062		
4,800.00	4,727.68	4,739.34	4,677.19	19.64	20.16	-110.11	-684.12	298.77	625.82	586.94	38.89	16.093		
4,900.00	4,825.42	4,838.02	4,774.44	20.11	20.60	-110.55	-699.75	304.88	641.29	601.51	39.78	16.123		

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - RUEGGE 3K-4H-N165 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,000.00	4,923.15	4,936.71	4,871.68	20.58	21.04	-110.96	-715.39	310.99	656.79	616.13	40.66	16.153	
5,100.00	5,020.89	5,035.39	4,968.92	21.06	21.47	-111.36	-731.03	317.11	672.32	630.77	41.55	16.182	
5,200.00	5,118.62	5,134.07	5,066.16	21.53	21.91	-111.74	-746.66	323.22	687.88	645.45	42.43	16.211	
5,300.00	5,216.36	5,232.75	5,163.41	22.00	22.35	-112.10	-762.30	329.33	703.47	660.15	43.32	16.239	
5,400.00	5,314.10	5,331.43	5,260.65	22.48	22.78	-112.45	-777.94	335.44	719.09	674.88	44.21	16.267	
5,500.00	5,411.83	5,430.11	5,357.89	22.95	23.22	-112.78	-793.58	341.55	734.73	689.64	45.09	16.295	
5,600.00	5,509.57	5,528.79	5,455.13	23.42	23.66	-113.10	-809.21	347.66	750.40	704.42	45.98	16.321	
5,700.00	5,607.30	5,627.47	5,552.38	23.90	24.09	-113.41	-824.85	353.77	766.08	719.22	46.86	16.348	
5,800.00	5,705.04	5,726.16	5,649.62	24.37	24.53	-113.70	-840.49	359.89	781.79	734.04	47.75	16.374	
5,900.00	5,802.77	5,824.84	5,746.86	24.85	24.97	-113.98	-856.12	366.00	797.51	748.88	48.63	16.399	
6,000.00	5,900.51	5,923.52	5,844.10	25.32	25.40	-114.25	-871.76	372.11	813.26	763.74	49.52	16.424	
6,100.00	5,998.24	6,022.20	5,941.35	25.80	25.84	-114.51	-887.40	378.22	829.02	778.62	50.40	16.449	
6,200.00	6,095.98	6,120.88	6,038.59	26.27	26.27	-114.76	-903.04	384.33	844.80	793.51	51.28	16.473	
6,300.00	6,193.71	6,219.56	6,135.83	26.75	26.71	-115.00	-918.67	390.44	860.59	808.42	52.17	16.496	
6,400.00	6,291.45	6,318.24	6,233.07	27.23	27.15	-115.24	-934.31	396.56	876.39	823.34	53.05	16.519	
6,500.00	6,389.18	6,416.94	6,330.34	27.70	27.58	-115.46	-949.94	402.67	892.22	838.28	53.94	16.542	
6,536.48	6,424.83	6,453.07	6,366.08	27.88	27.73	-115.61	-954.62	404.92	897.99	843.74	54.25	16.553	
6,550.00	6,438.07	6,466.40	6,379.33	27.94	27.78	-118.37	-955.89	405.76	900.13	845.77	54.36	16.559	
6,600.00	6,487.36	6,515.51	6,428.26	28.16	27.96	-133.52	-958.42	408.88	908.13	853.40	54.73	16.593	
6,650.00	6,537.01	6,564.33	6,476.96	28.35	28.10	-162.56	-957.60	412.01	916.20	861.16	55.04	16.646	
6,700.00	6,586.76	6,612.88	6,525.23	28.51	28.22	157.48	-953.49	415.15	924.30	869.00	55.30	16.715	
6,750.00	6,636.37	6,661.18	6,572.86	28.64	28.32	130.29	-946.16	418.26	932.40	876.89	55.51	16.796	
6,800.00	6,685.61	6,709.26	6,619.68	28.75	28.41	116.18	-935.69	421.35	940.45	884.76	55.69	16.887	
6,850.00	6,734.24	6,757.13	6,665.49	28.85	28.48	108.15	-922.16	424.41	948.40	892.56	55.84	16.984	
6,900.00	6,782.01	6,804.82	6,710.12	28.93	28.54	102.98	-905.67	427.41	956.23	900.27	55.96	17.087	
6,950.00	6,828.69	6,852.34	6,753.40	28.99	28.59	99.31	-886.30	430.34	963.88	907.83	56.06	17.194	
7,000.00	6,874.07	6,899.70	6,795.18	29.04	28.63	96.52	-864.18	433.21	971.33	915.20	56.13	17.304	
7,050.00	6,917.91	6,946.94	6,835.29	29.07	28.66	94.31	-839.41	435.99	978.52	922.33	56.19	17.415	
7,100.00	6,960.00	6,994.06	6,873.60	29.09	28.68	92.50	-812.12	438.67	985.43	929.20	56.23	17.526	
7,150.00	7,000.14	7,041.08	6,909.96	29.10	28.70	90.97	-782.42	441.25	992.02	935.77	56.26	17.634	
7,200.00	7,038.13	7,088.02	6,944.23	29.10	28.71	89.67	-750.46	443.71	998.26	941.98	56.28	17.738	
7,250.00	7,073.79	7,134.89	6,976.30	29.10	28.72	88.55	-716.37	446.05	1,004.11	947.81	56.30	17.836	
7,300.00	7,106.94	7,181.70	7,006.03	29.09	28.73	87.58	-680.29	448.26	1,009.55	953.23	56.32	17.926	
7,350.00	7,137.43	7,228.47	7,033.33	29.07	28.74	86.74	-642.38	450.32	1,014.55	958.21	56.34	18.007	
7,400.00	7,165.09	7,275.21	7,058.07	29.05	28.75	86.01	-602.79	452.24	1,019.09	962.71	56.38	18.076	
7,450.00	7,189.81	7,321.91	7,080.18	29.03	28.77	85.39	-561.69	454.00	1,023.14	966.71	56.43	18.132	
7,500.00	7,211.45	7,368.61	7,099.56	29.02	28.79	84.87	-519.25	455.59	1,026.68	970.19	56.49	18.174	
7,550.00	7,229.92	7,415.29	7,116.14	29.01	28.81	84.45	-475.64	457.02	1,029.70	973.12	56.57	18.201	
7,600.00	7,245.11	7,461.98	7,129.85	29.00	28.85	84.11	-431.04	458.26	1,032.18	975.50	56.68	18.210	
7,650.00	7,256.97	7,508.66	7,140.63	29.01	28.90	83.85	-385.64	459.33	1,034.11	977.29	56.81	18.203	
7,700.00	7,265.43	7,555.36	7,148.43	29.03	28.95	83.68	-339.61	460.21	1,035.48	978.51	56.97	18.177	
7,750.00	7,270.44	7,602.08	7,153.23	29.06	29.02	83.59	-293.16	460.90	1,036.28	979.13	57.15	18.134	
7,797.34	7,272.00	7,646.33	7,154.97	29.10	29.09	83.57	-248.95	461.38	1,036.52	979.18	57.34	18.077	
7,800.00	7,272.00	7,656.54	7,155.00	29.10	29.11	83.57	-246.72	461.40	1,036.51	979.14	57.37	18.067	
7,900.00	7,272.00	7,748.55	7,155.00	29.26	29.33	83.57	-146.73	462.23	1,036.51	978.63	57.88	17.907	
8,000.00	7,272.00	7,848.55	7,155.00	29.51	29.65	83.57	-46.73	463.05	1,036.51	977.94	58.57	17.697	
8,100.00	7,272.00	7,948.55	7,155.00	29.86	30.05	83.57	53.27	463.88	1,036.51	977.10	59.41	17.445	
8,200.00	7,272.00	8,048.55	7,155.00	30.31	30.54	83.57	153.26	464.71	1,036.51	976.10	60.41	17.158	
8,300.00	7,272.00	8,148.55	7,155.00	30.85	31.10	83.57	253.26	465.53	1,036.51	974.96	61.55	16.840	
8,400.00	7,272.00	8,248.55	7,155.00	31.47	31.74	83.57	353.26	466.36	1,036.51	973.69	62.83	16.498	
8,500.00	7,272.00	8,348.55	7,155.00	32.16	32.45	83.57	453.25	467.18	1,036.51	972.28	64.23	16.138	
8,600.00	7,272.00	8,448.55	7,155.00	32.92	33.22	83.57	553.25	468.01	1,036.51	970.76	65.75	15.764	

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - RUEGGE 3K-4H-N165 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
8,700.00	7,272.00	8,548.55	7,155.00	33.73	34.05	83.57	653.25	468.84	1,036.51	969.12	67.39	15.381	
8,800.00	7,272.00	8,648.55	7,155.00	34.61	34.93	83.57	753.24	469.66	1,036.51	967.38	69.13	14.994	
8,900.00	7,272.00	8,748.55	7,155.00	35.53	35.85	83.57	853.24	470.49	1,036.51	965.55	70.96	14.606	
9,000.00	7,272.00	8,848.55	7,155.00	36.50	36.83	83.57	953.24	471.31	1,036.51	963.62	72.89	14.221	
9,100.00	7,272.00	8,948.55	7,155.00	37.51	37.84	83.57	1,053.23	472.14	1,036.51	961.62	74.89	13.840	
9,200.00	7,272.00	9,048.55	7,155.00	38.55	38.89	83.57	1,153.23	472.97	1,036.51	959.54	76.98	13.466	
9,300.00	7,272.00	9,148.55	7,155.00	39.63	39.98	83.57	1,253.23	473.79	1,036.51	957.38	79.13	13.099	
9,400.00	7,272.00	9,248.55	7,155.00	40.75	41.10	83.57	1,353.22	474.62	1,036.51	955.17	81.34	12.743	
9,500.00	7,272.00	9,348.55	7,155.00	41.89	42.25	83.57	1,453.22	475.44	1,036.51	952.89	83.62	12.396	
9,600.00	7,272.00	9,448.55	7,155.00	43.06	43.42	83.57	1,553.21	476.27	1,036.51	950.56	85.95	12.060	
9,700.00	7,272.00	9,548.55	7,155.00	44.26	44.62	83.57	1,653.21	477.10	1,036.51	948.18	88.33	11.735	
9,800.00	7,272.00	9,648.55	7,155.00	45.48	45.84	83.57	1,753.21	477.92	1,036.51	945.76	90.75	11.422	
9,900.00	7,272.00	9,748.55	7,155.00	46.72	47.08	83.57	1,853.20	478.75	1,036.51	943.29	93.22	11.119	
10,000.00	7,272.00	9,848.55	7,155.00	47.98	48.35	83.57	1,953.20	479.58	1,036.51	940.78	95.73	10.828	
10,100.00	7,272.00	9,948.55	7,155.00	49.25	49.63	83.57	2,053.20	480.40	1,036.51	938.24	98.27	10.548	
10,200.00	7,272.00	10,048.55	7,155.00	50.55	50.92	83.57	2,153.19	481.23	1,036.51	935.66	100.85	10.278	
10,300.00	7,272.00	10,148.55	7,155.00	51.86	52.23	83.57	2,253.19	482.05	1,036.51	933.05	103.45	10.019	
10,400.00	7,272.00	10,248.55	7,155.00	53.18	53.56	83.57	2,353.19	482.88	1,036.51	930.42	106.09	9.770	
10,500.00	7,272.00	10,348.55	7,155.00	54.52	54.90	83.57	2,453.18	483.71	1,036.51	927.75	108.75	9.531	
10,600.00	7,272.00	10,448.55	7,155.00	55.87	56.25	83.57	2,553.18	484.53	1,036.51	925.07	111.44	9.301	
10,700.00	7,272.00	10,548.55	7,155.00	57.23	57.61	83.57	2,653.18	485.36	1,036.51	922.36	114.15	9.080	
10,800.00	7,272.00	10,648.55	7,155.00	58.60	58.99	83.57	2,753.17	486.18	1,036.51	919.62	116.88	8.868	
10,900.00	7,272.00	10,748.55	7,155.00	59.98	60.37	83.57	2,853.17	487.01	1,036.51	916.87	119.63	8.664	
11,000.00	7,272.00	10,848.55	7,155.00	61.37	61.76	83.57	2,953.17	487.84	1,036.51	914.10	122.40	8.468	
11,100.00	7,272.00	10,948.55	7,155.00	62.77	63.16	83.57	3,053.16	488.66	1,036.50	911.31	125.19	8.279	
11,200.00	7,272.00	11,048.55	7,155.00	64.18	64.57	83.57	3,153.16	489.49	1,036.50	908.51	128.00	8.098	
11,300.00	7,272.00	11,148.55	7,155.00	65.59	65.99	83.57	3,253.16	490.31	1,036.50	905.69	130.81	7.923	
11,400.00	7,272.00	11,248.55	7,155.00	67.01	67.41	83.57	3,353.15	491.14	1,036.50	902.86	133.65	7.755	
11,500.00	7,272.00	11,348.55	7,155.00	68.44	68.84	83.57	3,453.15	491.97	1,036.50	900.01	136.49	7.594	
11,600.00	7,272.00	11,448.55	7,155.00	69.88	70.28	83.57	3,553.15	492.79	1,036.50	897.15	139.35	7.438	
11,700.00	7,272.00	11,548.55	7,155.00	71.32	71.72	83.57	3,653.14	493.62	1,036.50	894.28	142.22	7.288	
11,800.00	7,272.00	11,648.55	7,155.00	72.76	73.17	83.57	3,753.14	494.44	1,036.50	891.40	145.11	7.143	
11,900.00	7,272.00	11,748.55	7,155.00	74.22	74.62	83.57	3,853.14	495.27	1,036.50	888.50	148.00	7.004	
12,000.00	7,272.00	11,848.55	7,155.00	75.67	76.08	83.57	3,953.13	496.10	1,036.50	885.60	150.90	6.869	
12,100.00	7,272.00	11,948.55	7,155.00	77.13	77.54	83.57	4,053.13	496.92	1,036.50	882.69	153.81	6.739	
12,154.60	7,272.00	12,003.15	7,155.00	77.93	78.34	83.57	4,107.72	497.37	1,036.50	881.10	155.40	6.670 SF	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - RUEGGE 3L-4H-N165 - OH - PLAN #1													Offset Site Error: 0.00 usft	
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
0.00	0.00	1.00	-1.00	0.00	0.00	81.55	5.88	39.57	40.00					
100.00	100.00	101.00	99.00	0.14	0.14	81.55	5.88	39.57	40.00	39.72	0.28	143.058		
105.05	105.05	104.05	104.05	0.16	0.15	81.55	5.88	39.57	40.00	39.69	0.31	129.615 CC		
200.00	200.00	198.63	198.62	0.50	0.49	82.04	5.57	39.84	40.23	39.25	0.98	40.958 ES		
300.00	300.00	297.74	297.68	0.85	0.83	85.89	3.03	42.09	42.22	40.53	1.69	25.014		
400.00	400.00	396.51	396.20	1.21	1.19	92.53	-2.06	46.59	46.72	44.31	2.40	19.429		
500.00	500.00	494.69	493.86	1.57	1.56	100.25	-9.64	53.29	54.39	51.27	3.12	17.407		
600.00	600.00	592.07	590.31	1.93	1.94	107.53	-19.62	62.12	65.72	61.87	3.84	17.106 SF		
700.00	700.00	688.42	685.26	2.29	2.35	113.62	-31.91	72.98	80.83	76.28	4.55	17.761		
800.00	800.00	784.09	778.94	2.65	2.77	118.42	-46.44	85.83	99.63	94.38	5.25	18.968		
900.00	900.00	881.78	874.37	3.01	3.22	121.92	-62.09	99.67	119.98	114.01	5.97	20.094		
1,000.00	1,000.00	979.47	969.79	3.36	3.68	124.41	-77.74	113.51	140.64	133.96	6.68	21.039		
1,100.00	1,100.00	1,077.15	1,065.22	3.72	4.14	126.25	-93.38	127.35	161.49	154.08	7.41	21.799		
1,200.00	1,200.00	1,174.84	1,160.65	4.08	4.61	127.68	-109.03	141.18	182.46	174.33	8.13	22.441		
1,300.00	1,299.98	1,272.64	1,256.19	4.42	5.08	-78.73	-124.70	155.04	203.19	194.35	8.84	22.985		
1,400.00	1,399.84	1,370.59	1,351.87	4.75	5.55	-78.71	-140.39	168.91	223.26	213.72	9.54	23.395		
1,500.00	1,499.45	1,468.57	1,447.58	5.09	6.02	-79.45	-156.09	182.79	242.71	232.45	10.26	23.657		
1,600.00	1,598.70	1,566.46	1,543.21	5.43	6.49	-80.80	-171.77	196.66	261.70	250.70	10.99	23.805		
1,700.00	1,697.47	1,664.14	1,638.63	5.78	6.97	-82.63	-187.42	210.50	280.44	268.69	11.75	23.872		
1,800.00	1,795.62	1,761.49	1,733.73	6.15	7.44	-84.84	-203.01	224.29	299.24	286.71	12.53	23.883		
1,810.86	1,806.25	1,772.05	1,744.04	6.19	7.49	-85.10	-204.70	225.78	301.30	288.68	12.62	23.882		
1,900.00	1,893.36	1,858.60	1,828.59	6.54	7.91	-87.45	-218.57	238.04	318.47	305.13	13.34	23.880		
2,000.00	1,991.10	1,955.70	1,923.44	6.93	8.38	-89.81	-234.12	251.80	338.29	324.13	14.16	23.892		
2,100.00	2,088.83	2,052.80	2,018.29	7.34	8.86	-91.91	-249.67	265.55	358.62	343.62	14.99	23.916		
2,200.00	2,186.57	2,149.90	2,113.15	7.76	9.33	-93.78	-265.23	279.31	379.36	363.52	15.84	23.949		
2,300.00	2,284.30	2,247.00	2,208.00	8.18	9.80	-95.46	-280.78	293.06	400.46	383.76	16.69	23.989		
2,400.00	2,382.04	2,344.09	2,302.86	8.61	10.27	-96.98	-296.34	306.82	421.85	404.30	17.55	24.032		
2,500.00	2,479.77	2,441.19	2,397.71	9.04	10.75	-98.34	-311.89	320.57	443.51	425.09	18.42	24.079		
2,600.00	2,577.51	2,538.29	2,492.56	9.48	11.22	-99.59	-327.45	334.32	465.38	446.09	19.29	24.128		
2,700.00	2,675.24	2,635.39	2,587.42	9.93	11.70	-100.72	-343.00	348.08	487.44	467.28	20.16	24.177		
2,800.00	2,772.98	2,732.49	2,682.27	10.37	12.17	-101.75	-358.56	361.83	509.68	488.64	21.04	24.227		
2,900.00	2,870.71	2,829.59	2,777.12	10.82	12.64	-102.70	-374.11	375.59	532.05	510.14	21.92	24.277		
3,000.00	2,968.45	2,926.69	2,871.98	11.27	13.12	-103.57	-389.67	389.34	554.56	531.76	22.80	24.327		
3,100.00	3,066.19	3,023.79	2,966.83	11.73	13.59	-104.37	-405.22	403.10	577.17	553.50	23.68	24.376		
3,200.00	3,163.92	3,120.89	3,061.68	12.18	14.07	-105.11	-420.78	416.85	599.89	575.33	24.56	24.424		
3,300.00	3,261.66	3,217.99	3,156.54	12.64	14.54	-105.80	-436.33	430.61	622.70	597.25	25.45	24.471		
3,400.00	3,359.39	3,315.09	3,251.39	13.10	15.02	-106.44	-451.88	444.36	645.59	619.25	26.33	24.517		
3,500.00	3,457.13	3,412.19	3,346.25	13.56	15.49	-107.04	-467.44	458.12	668.54	641.33	27.22	24.562		
3,600.00	3,554.86	3,509.29	3,441.10	14.02	15.97	-107.60	-482.99	471.87	691.57	663.46	28.11	24.606		
3,700.00	3,652.60	3,606.39	3,535.95	14.49	16.44	-108.12	-498.55	485.63	714.65	685.65	28.99	24.648		
3,800.00	3,750.33	3,703.49	3,630.81	14.95	16.92	-108.61	-514.10	499.38	737.78	707.90	29.88	24.689		
3,900.00	3,848.07	3,800.59	3,725.66	15.42	17.39	-109.07	-529.66	513.14	760.96	730.19	30.77	24.729		
4,000.00	3,945.80	3,902.31	3,820.51	15.88	17.89	-109.50	-545.21	526.89	784.19	752.51	31.68	24.752		
4,100.00	4,043.54	4,005.21	3,915.37	16.35	18.39	-109.91	-560.77	540.65	807.45	774.86	32.60	24.770		
4,200.00	4,141.27	4,091.89	4,010.22	16.82	18.82	-110.29	-576.32	554.40	830.75	797.31	33.44	24.841		
4,300.00	4,239.01	4,188.99	4,105.08	17.29	19.29	-110.65	-591.88	568.16	854.09	819.76	34.33	24.876		
4,400.00	4,336.74	4,286.09	4,199.93	17.76	19.77	-111.00	-607.43	581.91	877.46	842.23	35.22	24.910		
4,500.00	4,434.48	4,383.19	4,294.78	18.23	20.24	-111.33	-622.98	595.67	900.85	864.74	36.12	24.943		
4,600.00	4,532.21	4,480.29	4,389.64	18.70	20.72	-111.64	-638.54	609.42	924.27	887.26	37.01	24.975		
4,700.00	4,629.95	4,577.39	4,484.49	19.17	21.19	-111.93	-654.09	623.18	947.72	909.82	37.90	25.006		
4,800.00	4,727.68	4,674.49	4,579.34	19.64	21.67	-112.21	-669.65	636.93	971.19	932.39	38.79	25.036		
4,900.00	4,825.42	4,771.59	4,674.20	20.11	22.14	-112.48	-685.20	650.68	994.67	954.99	39.68	25.065		

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - RUEGGE 3L-4H-N165 - OH - PLAN #1													Offset Site Error: 0.00 usft	
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
5,000.00	4,923.15	4,868.69	4,769.05	20.58	22.62	-112.73	-700.76	664.44	1,018.18	977.61	40.58	25.093		
5,100.00	5,020.89	4,965.79	4,863.91	21.06	23.09	-112.98	-716.31	678.19	1,041.71	1,000.24	41.47	25.120		
5,200.00	5,118.62	5,062.89	4,958.76	21.53	23.57	-113.21	-731.87	691.95	1,065.25	1,022.89	42.36	25.146		
5,300.00	5,216.36	5,159.99	5,053.61	22.00	24.04	-113.43	-747.42	705.70	1,088.81	1,045.56	43.26	25.172		
5,400.00	5,314.10	5,257.09	5,148.47	22.48	24.52	-113.64	-762.98	719.46	1,112.39	1,068.24	44.15	25.197		
5,500.00	5,411.83	5,354.19	5,243.32	22.95	24.99	-113.85	-778.53	733.21	1,135.98	1,090.93	45.04	25.221		
5,600.00	5,509.57	5,451.29	5,338.17	23.42	25.47	-114.05	-794.09	746.97	1,159.58	1,113.64	45.94	25.244		
5,700.00	5,607.30	5,548.39	5,433.03	23.90	25.94	-114.23	-809.64	760.72	1,183.19	1,136.36	46.83	25.266		
5,800.00	5,705.04	5,645.49	5,527.88	24.37	26.42	-114.41	-825.19	774.48	1,206.82	1,159.09	47.72	25.288		
5,900.00	5,802.77	5,742.59	5,622.73	24.85	26.89	-114.59	-840.75	788.23	1,230.45	1,181.84	48.62	25.310		
6,000.00	5,900.51	5,839.69	5,717.59	25.32	27.37	-114.76	-856.30	801.99	1,254.10	1,204.59	49.51	25.330		
6,100.00	5,998.24	5,936.79	5,812.44	25.80	27.85	-114.92	-871.86	815.74	1,277.76	1,227.35	50.40	25.350		
6,200.00	6,095.98	6,033.89	5,907.30	26.27	28.32	-115.07	-887.41	829.50	1,301.42	1,250.13	51.30	25.370		
6,300.00	6,193.71	6,130.99	6,002.15	26.75	28.80	-115.22	-902.97	843.25	1,325.10	1,272.91	52.19	25.389		
6,400.00	6,291.45	6,228.09	6,097.00	27.23	29.27	-115.37	-918.52	857.01	1,348.78	1,295.69	53.09	25.407		
6,500.00	6,389.18	6,325.18	6,191.86	27.70	29.75	-115.51	-934.08	870.76	1,372.47	1,318.49	53.98	25.425		
6,536.48	6,424.83	6,360.60	6,226.46	27.88	29.92	-115.56	-939.75	875.78	1,381.11	1,326.81	54.31	25.432		
6,550.00	6,438.07	6,373.74	6,239.29	27.94	29.98	-118.34	-941.85	877.64	1,384.32	1,329.90	54.43	25.435		
6,600.00	6,487.36	6,422.27	6,286.70	28.16	30.22	-133.51	-949.63	884.51	1,396.24	1,341.39	54.85	25.456		
6,650.00	6,537.01	6,469.54	6,333.10	28.35	30.44	-162.50	-955.60	891.26	1,408.23	1,353.02	55.21	25.507		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - RUEGGE 3M-4H-N165 - OH - PLAN #1													Offset Site Error: 0.00 usft	
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
0.00	0.00	1.00	-1.00	0.00	0.00	81.55	7.35	49.46	50.00					
100.00	100.00	101.00	99.00	0.14	0.14	81.55	7.35	49.46	50.00	49.72	0.28	178.822		
200.00	200.00	201.00	199.00	0.50	0.50	81.55	7.35	49.46	50.00	49.00	1.00	50.173		
300.00	300.00	301.00	299.00	0.85	0.86	81.55	7.35	49.46	50.00	48.29	1.71	29.180		
400.00	400.00	399.00	399.00	1.21	1.21	81.55	7.35	49.46	50.00	47.58	2.42	20.633 CC, ES		
500.00	500.00	497.84	497.82	1.57	1.55	82.96	6.26	50.72	51.12	48.00	3.12	16.368		
600.00	600.00	596.44	596.29	1.93	1.89	86.89	2.96	54.57	54.71	50.90	3.82	14.333		
700.00	700.00	694.58	694.06	2.29	2.24	92.36	-2.51	60.94	61.19	56.67	4.52	13.551 SF		
800.00	800.00	792.03	790.80	2.65	2.59	98.23	-10.10	69.78	70.98	65.77	5.21	13.616		
900.00	900.00	888.57	886.20	3.01	2.97	103.69	-19.72	80.99	84.33	78.43	5.90	14.282		
1,000.00	1,000.00	984.01	979.97	3.36	3.36	108.33	-31.29	94.47	101.32	94.73	6.59	15.380		
1,100.00	1,100.00	1,078.15	1,071.83	3.72	3.77	112.10	-44.69	110.07	121.87	114.61	7.26	16.785		
1,200.00	1,200.00	1,173.15	1,163.91	4.08	4.21	115.12	-59.93	127.82	145.46	137.52	7.94	18.315		
1,300.00	1,299.98	1,270.06	1,257.75	4.42	4.68	-90.20	-75.70	146.18	169.72	161.08	8.64	19.639		
1,400.00	1,399.84	1,367.05	1,351.66	4.75	5.16	-89.52	-91.48	164.57	194.04	184.71	9.34	20.783		
1,500.00	1,499.45	1,464.00	1,445.54	5.09	5.65	-89.82	-107.26	182.94	218.36	208.31	10.05	21.736		
1,600.00	1,598.70	1,560.80	1,539.27	5.43	6.14	-90.81	-123.01	201.29	242.76	231.99	10.77	22.534		
1,700.00	1,697.47	1,657.32	1,632.73	5.78	6.63	-92.28	-138.72	219.59	267.43	255.91	11.52	23.210		
1,800.00	1,795.62	1,753.45	1,725.81	6.15	7.13	-94.10	-154.36	237.81	292.60	280.31	12.30	23.794		
1,810.86	1,806.25	1,763.87	1,735.90	6.19	7.18	-94.32	-156.05	239.78	295.38	283.00	12.38	23.853		
1,900.00	1,893.36	1,849.30	1,818.62	6.54	7.62	-96.39	-169.96	255.97	318.39	305.30	13.10	24.312		
2,000.00	1,991.10	1,945.14	1,911.42	6.93	8.12	-98.40	-185.55	274.14	344.62	330.71	13.91	24.775		
2,100.00	2,088.83	2,040.98	2,004.23	7.34	8.62	-100.12	-201.15	292.31	371.18	356.45	14.74	25.189		
2,200.00	2,186.57	2,136.83	2,097.03	7.76	9.13	-101.61	-216.75	310.47	398.02	382.45	15.57	25.561		
2,300.00	2,284.30	2,232.67	2,189.83	8.18	9.63	-102.92	-232.34	328.64	425.08	408.67	16.42	25.895		
2,400.00	2,382.04	2,328.51	2,282.64	8.61	10.14	-104.07	-247.94	346.80	452.32	435.06	17.27	26.197		
2,500.00	2,479.77	2,424.35	2,375.44	9.04	10.64	-105.09	-263.54	364.97	479.72	461.59	18.12	26.470		
2,600.00	2,577.51	2,520.19	2,468.24	9.48	11.15	-106.00	-279.13	383.14	507.23	488.25	18.98	26.719		
2,700.00	2,675.24	2,616.04	2,561.05	9.93	11.66	-106.81	-294.73	401.30	534.86	515.01	19.85	26.946		
2,800.00	2,772.98	2,711.88	2,653.85	10.37	12.16	-107.55	-310.32	419.47	562.57	541.86	20.72	27.154		
2,900.00	2,870.71	2,807.72	2,746.65	10.82	12.67	-108.22	-325.92	437.63	590.37	568.78	21.59	27.344		
3,000.00	2,968.45	2,903.56	2,839.46	11.27	13.18	-108.82	-341.52	455.80	618.23	595.76	22.46	27.520		
3,100.00	3,066.19	3,000.60	2,932.26	11.73	13.70	-109.38	-357.11	473.96	646.15	622.80	23.35	27.676		
3,200.00	3,163.92	3,104.75	3,025.06	12.18	14.25	-109.89	-372.71	492.13	674.12	649.86	24.26	27.783		
3,300.00	3,261.66	3,208.91	3,117.87	12.64	14.81	-110.36	-388.31	510.30	702.14	676.96	25.18	27.882		
3,400.00	3,359.39	3,286.93	3,210.67	13.10	15.22	-110.79	-403.90	528.46	730.20	704.21	25.98	28.101		
3,500.00	3,457.13	3,382.77	3,303.47	13.56	15.74	-111.19	-419.50	546.63	758.29	731.42	26.87	28.223		
3,600.00	3,554.86	3,478.61	3,396.28	14.02	16.25	-111.57	-435.10	564.79	786.41	758.66	27.75	28.336		
3,700.00	3,652.60	3,574.46	3,489.08	14.49	16.76	-111.91	-450.69	582.96	814.57	785.93	28.64	28.442		
3,800.00	3,750.33	3,670.30	3,581.88	14.95	17.27	-112.24	-466.29	601.13	842.75	813.22	29.53	28.541		
3,900.00	3,848.07	3,766.14	3,674.69	15.42	17.78	-112.54	-481.89	619.29	870.95	840.53	30.42	28.635		
4,000.00	3,945.80	3,861.98	3,767.49	15.88	18.30	-112.82	-497.48	637.46	899.17	867.87	31.31	28.723		
4,100.00	4,043.54	3,957.82	3,860.29	16.35	18.81	-113.09	-513.08	655.62	927.42	895.22	32.20	28.806		
4,200.00	4,141.27	4,053.67	3,953.10	16.82	19.32	-113.34	-528.67	673.79	955.68	922.59	33.09	28.884		
4,300.00	4,239.01	4,149.51	4,045.90	17.29	19.83	-113.58	-544.27	691.96	983.95	949.97	33.98	28.958		
4,400.00	4,336.74	4,245.35	4,138.70	17.76	20.35	-113.80	-559.87	710.12	1,012.24	977.37	34.87	29.028		
4,500.00	4,434.48	4,341.19	4,231.51	18.23	20.86	-114.01	-575.46	728.29	1,040.55	1,004.78	35.76	29.095		
4,600.00	4,532.21	4,437.04	4,324.31	18.70	21.37	-114.21	-591.06	746.45	1,068.86	1,032.21	36.66	29.158		
4,700.00	4,629.95	4,532.88	4,417.11	19.17	21.89	-114.40	-606.66	764.62	1,097.19	1,059.64	37.55	29.219		
4,800.00	4,727.68	4,628.72	4,509.92	19.64	22.40	-114.58	-622.25	782.78	1,125.53	1,087.08	38.45	29.276		
4,900.00	4,825.42	4,724.56	4,602.72	20.11	22.91	-114.75	-637.85	800.95	1,153.88	1,114.54	39.34	29.330		
5,000.00	4,923.15	4,820.40	4,695.52	20.58	23.43	-114.92	-653.45	819.12	1,182.23	1,142.00	40.24	29.382		

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design													S4-T1N-R65W - RUEGGE 3M-4H-N165 - OH - PLAN #1		Offset Site Error:		0.00 usft
Survey Program:													0-MWD+HDGM		Offset Well Error:		0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor					
5,100.00	5,020.89	4,916.25	4,788.33	21.06	23.94	-115.07	-669.04	837.28	1,210.60	1,169.47	41.13	29.432					
5,200.00	5,118.62	5,012.09	4,881.13	21.53	24.45	-115.22	-684.64	855.45	1,238.97	1,196.94	42.03	29.480					
5,300.00	5,216.36	5,107.93	4,973.93	22.00	24.97	-115.36	-700.24	873.61	1,267.35	1,224.43	42.92	29.525					
5,400.00	5,314.10	5,203.77	5,066.74	22.48	25.48	-115.50	-715.83	891.78	1,295.74	1,251.92	43.82	29.569					
5,500.00	5,411.83	5,300.39	5,159.54	22.95	26.00	-115.63	-731.43	909.95	1,324.13	1,279.41	44.72	29.608					
5,600.00	5,509.57	5,404.54	5,252.34	23.42	26.56	-115.75	-747.03	928.11	1,352.53	1,306.88	45.66	29.623					
5,700.00	5,607.30	5,508.70	5,345.15	23.90	27.12	-115.87	-762.62	946.28	1,380.94	1,334.34	46.60	29.637					
5,800.00	5,705.04	5,587.14	5,437.95	24.37	27.54	-115.98	-778.22	964.44	1,409.35	1,361.94	47.41	29.725					

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - RUEGGE 3N-4H-N165 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.00	0.00	1.00	-1.00	0.00	0.00	81.55	8.82	59.35	60.00	59.72	0.28	214.586	
100.00	100.00	101.00	99.00	0.14	0.14	81.55	8.82	59.35	60.00	59.69	0.31	195.745 CC	
104.75	104.75	103.75	103.75	0.16	0.15	81.55	8.82	59.35	60.00	59.69	0.31	195.745 CC	
200.00	200.00	198.22	198.22	0.50	0.49	81.80	8.61	59.69	60.32	59.33	0.98	61.403 ES	
300.00	300.00	296.53	296.46	0.85	0.83	83.75	6.85	62.53	62.96	61.27	1.69	37.293	
400.00	400.00	394.49	394.19	1.21	1.19	87.21	3.33	68.21	68.46	66.06	2.40	28.505	
500.00	500.00	491.88	491.06	1.57	1.55	91.43	-1.91	76.67	77.10	73.98	3.12	24.738	
600.00	600.00	588.48	586.77	1.93	1.93	95.73	-8.82	87.82	89.10	85.27	3.83	23.269	
700.00	700.00	684.09	681.00	2.29	2.33	99.68	-17.33	101.55	104.57	100.04	4.54	23.057 SF	
800.00	800.00	778.51	773.48	2.65	2.75	103.08	-27.35	117.72	123.52	118.29	5.23	23.602	
900.00	900.00	871.56	863.95	3.01	3.20	105.90	-38.79	136.18	145.87	139.95	5.92	24.633	
1,000.00	1,000.00	963.08	952.21	3.36	3.67	108.20	-51.55	156.77	171.54	164.93	6.60	25.985	
1,100.00	1,100.00	1,054.23	1,039.32	3.72	4.17	110.09	-65.68	179.59	200.32	193.05	7.27	27.548	
1,200.00	1,200.00	1,149.51	1,130.10	4.08	4.72	111.62	-80.92	204.19	230.19	222.20	7.99	28.806	
1,300.00	1,299.98	1,244.81	1,220.89	4.42	5.28	-94.44	-96.17	228.79	260.31	251.61	8.70	29.917	
1,400.00	1,399.84	1,340.07	1,311.66	4.75	5.85	-93.90	-111.40	253.38	290.71	281.30	9.41	30.905	
1,500.00	1,499.45	1,435.18	1,402.28	5.09	6.42	-94.00	-126.61	277.93	321.35	311.23	10.13	31.736	
1,600.00	1,598.70	1,530.02	1,492.64	5.43	6.99	-94.54	-141.78	302.41	352.32	341.46	10.86	32.438	
1,700.00	1,697.47	1,624.48	1,582.64	5.78	7.56	-95.43	-156.89	326.79	383.75	372.13	11.62	33.032	
1,800.00	1,795.62	1,718.44	1,672.16	6.15	8.14	-96.56	-171.92	351.05	415.79	403.39	12.40	33.536	
1,810.86	1,806.25	1,728.61	1,681.85	6.19	8.20	-96.69	-173.55	353.67	419.31	406.83	12.49	33.584	
1,900.00	1,893.36	1,812.05	1,761.34	6.54	8.71	-98.31	-186.89	375.21	448.44	435.24	13.20	33.968	
2,000.00	1,991.10	1,905.65	1,850.53	6.93	9.29	-99.88	-201.86	399.37	481.45	467.43	14.02	34.341	
2,100.00	2,088.83	2,000.74	1,939.71	7.34	9.87	-101.26	-216.83	423.53	514.76	499.90	14.86	34.649	
2,200.00	2,186.57	2,092.86	2,028.90	7.76	10.44	-102.47	-231.81	447.70	548.29	532.60	15.69	34.947	
2,300.00	2,284.30	2,186.46	2,118.08	8.18	11.02	-103.55	-246.78	471.86	582.03	565.49	16.54	35.194	
2,400.00	2,382.04	2,280.07	2,207.26	8.61	11.60	-104.50	-261.75	496.02	615.92	598.53	17.39	35.413	
2,500.00	2,479.77	2,373.67	2,296.45	9.04	12.17	-105.36	-276.72	520.18	649.95	631.70	18.25	35.607	
2,600.00	2,577.51	2,467.27	2,385.63	9.48	12.75	-106.14	-291.69	544.34	684.11	664.99	19.12	35.781	
2,700.00	2,675.24	2,560.88	2,474.81	9.93	13.33	-106.84	-306.66	568.51	718.36	698.37	19.99	35.936	
2,800.00	2,772.98	2,654.48	2,564.00	10.37	13.92	-107.47	-321.63	592.67	752.69	731.83	20.86	36.077	
2,900.00	2,870.71	2,748.09	2,653.18	10.82	14.50	-108.05	-336.60	616.83	787.11	765.37	21.74	36.204	
3,000.00	2,968.45	2,841.69	2,742.36	11.27	15.08	-108.59	-351.58	640.99	821.58	798.96	22.62	36.320	
3,100.00	3,066.19	2,935.29	2,831.55	11.73	15.66	-109.08	-366.55	665.16	856.12	832.62	23.50	36.426	
3,200.00	3,163.92	3,028.90	2,920.73	12.18	16.24	-109.53	-381.52	689.32	890.71	866.32	24.39	36.523	
3,300.00	3,261.66	3,122.50	3,009.91	12.64	16.82	-109.95	-396.49	713.48	925.34	900.07	25.27	36.612	
3,400.00	3,359.39	3,216.10	3,099.10	13.10	17.41	-110.34	-411.46	737.64	960.02	933.85	26.16	36.695	
3,500.00	3,457.13	3,309.71	3,188.28	13.56	17.99	-110.70	-426.43	761.80	994.73	967.67	27.05	36.771	
3,600.00	3,554.86	3,403.31	3,277.47	14.02	18.57	-111.03	-441.40	785.97	1,029.47	1,001.52	27.94	36.842	
3,700.00	3,652.60	3,503.08	3,366.65	14.49	19.19	-111.35	-456.37	810.13	1,064.24	1,035.38	28.86	36.870	
3,800.00	3,750.33	3,609.48	3,455.83	14.95	19.86	-111.65	-471.35	834.29	1,099.04	1,069.22	29.82	36.856	
3,900.00	3,848.07	3,684.12	3,545.02	15.42	20.32	-111.92	-486.32	858.45	1,133.86	1,103.24	30.62	37.025	
4,000.00	3,945.80	3,777.73	3,634.20	15.88	20.90	-112.18	-501.29	882.62	1,168.71	1,137.19	31.52	37.079	
4,100.00	4,043.54	3,871.33	3,723.38	16.35	21.49	-112.43	-516.26	906.78	1,203.57	1,171.15	32.42	37.129	
4,200.00	4,141.27	3,964.93	3,812.57	16.82	22.07	-112.66	-531.23	930.94	1,238.45	1,205.14	33.31	37.176	
4,300.00	4,239.01	4,058.54	3,901.75	17.29	22.65	-112.88	-546.20	955.10	1,273.35	1,239.14	34.21	37.220	
4,400.00	4,336.74	4,152.14	3,990.93	17.76	23.24	-113.09	-561.17	979.26	1,308.27	1,273.16	35.11	37.262	
4,500.00	4,434.48	4,245.74	4,080.12	18.23	23.82	-113.28	-576.14	1,003.43	1,343.20	1,307.19	36.01	37.301	
4,600.00	4,532.21	4,339.35	4,169.30	18.70	24.41	-113.47	-591.12	1,027.59	1,378.14	1,341.23	36.91	37.338	
4,700.00	4,629.95	4,432.95	4,258.48	19.17	24.99	-113.65	-606.09	1,051.75	1,413.10	1,375.29	37.81	37.374	

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - RUEGGE 30-4H-N165 - OH - PLAN #1													Offset Site Error: 0.00 usft	
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning	
0.00	0.00	1.00	-1.00	0.00	0.00	81.55	10.29	69.24	70.00					
100.00	100.00	101.00	99.00	0.14	0.14	81.55	10.29	69.24	70.00	69.72	0.28	250.353		
200.00	200.00	201.00	199.00	0.50	0.50	81.55	10.29	69.24	70.00	69.00	1.00	70.243		
300.00	300.00	301.00	299.00	0.85	0.86	81.55	10.29	69.24	70.00	68.29	1.71	40.853		
400.00	400.00	399.00	399.00	1.21	1.21	81.55	10.29	69.24	70.00	67.58	2.42	28.887	CC, ES	
500.00	500.00	497.04	497.02	1.57	1.55	82.32	9.53	70.70	71.36	68.24	3.12	22.855		
600.00	600.00	594.84	594.69	1.93	1.89	84.50	7.23	75.11	75.58	71.77	3.82	19.808		
700.00	700.00	692.18	691.68	2.29	2.23	87.63	3.41	82.44	82.84	78.33	4.51	18.362		
800.00	800.00	788.86	787.66	2.65	2.59	91.17	-1.88	92.61	93.32	88.11	5.21	17.927	SF	
900.00	900.00	884.65	882.34	3.01	2.96	94.66	-8.60	105.51	107.16	101.27	5.89	18.180		
1,000.00	1,000.00	979.35	975.41	3.36	3.35	97.85	-16.68	121.02	124.42	117.84	6.58	18.921		
1,100.00	1,100.00	1,072.80	1,066.63	3.72	3.76	100.61	-26.04	138.99	145.06	137.82	7.25	20.016		
1,200.00	1,200.00	1,164.80	1,155.75	4.08	4.19	102.94	-36.59	159.24	169.02	161.12	7.90	21.386		
1,300.00	1,299.98	1,255.20	1,242.56	4.42	4.65	-102.51	-48.24	181.61	196.57	188.03	8.54	23.020		
1,400.00	1,399.84	1,343.78	1,326.80	4.75	5.14	-101.47	-60.88	205.87	227.82	218.66	9.15	24.885		
1,500.00	1,499.45	1,430.90	1,408.80	5.09	5.65	-101.05	-74.48	231.97	262.54	252.76	9.77	26.860		
1,600.00	1,598.70	1,523.88	1,495.91	5.43	6.24	-101.18	-89.50	260.82	299.09	288.60	10.49	28.510		
1,700.00	1,697.47	1,616.41	1,582.59	5.78	6.83	-101.73	-104.45	289.52	336.38	325.15	11.23	29.957		
1,800.00	1,795.62	1,708.38	1,668.75	6.15	7.43	-102.54	-119.31	318.05	374.52	362.53	11.99	31.230		
1,810.86	1,806.25	1,718.33	1,678.07	6.19	7.50	-102.64	-120.92	321.14	378.72	366.64	12.08	31.355		
1,900.00	1,893.36	1,800.05	1,754.53	6.54	8.04	-104.07	-134.11	346.46	413.35	400.57	12.78	32.345		
2,000.00	1,991.10	1,908.48	1,840.32	6.93	8.77	-105.42	-148.91	374.86	452.42	438.77	13.66	33.126		
2,100.00	2,088.83	1,983.08	1,926.10	7.34	9.27	-106.55	-163.70	403.27	491.68	477.28	14.40	34.153		
2,200.00	2,186.57	2,074.65	2,011.88	7.76	9.90	-107.52	-178.50	431.67	531.07	515.85	15.22	34.887		
2,300.00	2,284.30	2,166.22	2,097.67	8.18	10.52	-108.36	-193.30	460.08	570.57	554.52	16.06	35.530		
2,400.00	2,382.04	2,257.79	2,183.45	8.61	11.16	-109.09	-208.09	488.49	610.17	593.27	16.90	36.098		
2,500.00	2,479.77	2,349.35	2,269.23	9.04	11.79	-109.73	-222.89	516.89	649.84	632.08	17.75	36.601		
2,600.00	2,577.51	2,440.92	2,355.02	9.48	12.42	-110.29	-237.69	545.30	689.56	670.95	18.61	37.050		
2,700.00	2,675.24	2,532.49	2,440.80	9.93	13.06	-110.80	-252.48	573.70	729.34	709.87	19.47	37.451		
2,800.00	2,772.98	2,624.06	2,526.59	10.37	13.70	-111.25	-267.28	602.11	769.17	748.82	20.34	37.812		
2,900.00	2,870.71	2,715.63	2,612.37	10.82	14.34	-111.66	-282.08	630.52	809.02	787.81	21.21	38.138		
3,000.00	2,968.45	2,807.19	2,698.15	11.27	14.98	-112.03	-296.87	658.92	848.91	826.83	22.09	38.434		
3,100.00	3,066.19	2,898.76	2,783.94	11.73	15.63	-112.36	-311.67	687.33	888.83	865.86	22.97	38.702		
3,200.00	3,163.92	2,990.33	2,869.72	12.18	16.27	-112.67	-326.47	715.73	928.77	904.92	23.85	38.947		
3,300.00	3,261.66	3,081.90	2,955.50	12.64	16.91	-112.95	-341.26	744.14	968.73	944.00	24.73	39.172		
3,400.00	3,359.39	3,173.47	3,041.29	13.10	17.56	-113.22	-356.06	772.55	1,008.71	983.10	25.62	39.378		
3,500.00	3,457.13	3,265.03	3,127.07	13.56	18.20	-113.46	-370.86	800.95	1,048.71	1,022.20	26.50	39.568		
3,600.00	3,554.86	3,356.60	3,212.85	14.02	18.85	-113.68	-385.65	829.36	1,088.72	1,061.32	27.39	39.744		
3,700.00	3,652.60	3,448.17	3,298.64	14.49	19.50	-113.89	-400.45	857.76	1,128.74	1,100.46	28.28	39.906		
3,800.00	3,750.33	3,539.74	3,384.42	14.95	20.14	-114.08	-415.25	886.17	1,168.77	1,139.60	29.18	40.057		
3,900.00	3,848.07	3,631.30	3,470.20	15.42	20.79	-114.26	-430.04	914.58	1,208.82	1,178.75	30.07	40.197		
4,000.00	3,945.80	3,722.87	3,555.99	15.88	21.44	-114.43	-444.84	942.98	1,248.87	1,217.91	30.97	40.328		
4,100.00	4,043.54	3,814.44	3,641.77	16.35	22.09	-114.59	-459.64	971.39	1,288.94	1,257.07	31.86	40.450		
4,200.00	4,141.27	3,906.01	3,727.56	16.82	22.74	-114.73	-474.43	999.79	1,329.01	1,296.24	32.76	40.564		
4,300.00	4,239.01	4,002.42	3,813.34	17.29	23.42	-114.87	-489.23	1,028.20	1,369.09	1,335.40	33.69	40.642		
4,400.00	4,336.74	4,089.14	3,899.12	17.76	24.03	-115.01	-504.03	1,056.61	1,409.17	1,374.61	34.56	40.772		

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - RUEGGE 3P-4H-N165 - OH - PLAN #1													Offset Site Error: 0.00 usft	
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis				Distance					Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
0.00	0.00	1.00	-1.00	0.00	0.00	81.55	11.76	79.13	80.00					
100.00	100.00	101.00	99.00	0.14	0.14	81.55	11.76	79.13	80.00	79.72	0.28	286.116		
104.70	104.70	103.70	103.70	0.15	0.15	81.55	11.76	79.13	80.00	79.69	0.31	261.349 CC		
200.00	200.00	197.88	197.88	0.50	0.48	81.70	11.59	79.49	80.34	79.36	0.98	81.838 ES		
300.00	300.00	295.48	295.42	0.85	0.83	82.95	10.20	82.48	83.19	81.50	1.69	49.326		
400.00	400.00	392.75	392.45	1.21	1.18	85.20	7.42	88.45	89.00	86.60	2.40	37.125		
500.00	500.00	489.45	488.66	1.57	1.54	88.07	3.28	97.34	97.95	94.84	3.11	31.505		
600.00	600.00	585.39	583.71	1.93	1.92	91.14	-2.17	109.07	110.16	106.34	3.82	28.852		
700.00	700.00	680.35	677.33	2.29	2.32	94.12	-8.89	123.51	125.71	121.19	4.52	27.802		
800.00	800.00	774.15	769.22	2.65	2.73	96.82	-16.81	140.53	144.63	139.41	5.22	27.718 SF		
900.00	900.00	866.61	859.16	3.01	3.18	99.18	-25.86	159.97	166.87	160.97	5.91	28.258		
1,000.00	1,000.00	957.57	946.91	3.36	3.64	101.19	-35.95	181.65	192.36	185.77	6.58	29.213		
1,100.00	1,100.00	1,046.88	1,032.30	3.72	4.14	102.89	-46.99	205.38	220.99	213.75	7.24	30.519		
1,200.00	1,200.00	1,134.43	1,115.17	4.08	4.66	104.31	-58.90	230.98	252.68	244.79	7.90	32.003		
1,300.00	1,299.98	1,220.07	1,195.36	4.42	5.21	-101.57	-71.58	258.22	287.64	279.12	8.52	33.752		
1,400.00	1,399.84	1,309.57	1,278.40	4.75	5.83	-100.63	-85.67	288.50	325.45	316.26	9.19	35.412		
1,500.00	1,499.45	1,401.79	1,363.90	5.09	6.49	-100.27	-100.25	319.82	364.04	354.13	9.90	36.756		
1,600.00	1,598.70	1,506.39	1,449.03	5.43	7.25	-100.33	-114.76	351.01	403.25	392.56	10.69	37.717		
1,700.00	1,697.47	1,584.92	1,533.69	5.78	7.82	-100.69	-129.20	382.03	443.16	431.77	11.39	38.923		
1,800.00	1,795.62	1,675.61	1,617.78	6.15	8.49	-101.26	-143.54	412.84	483.87	471.71	12.16	39.791		
1,810.86	1,806.25	1,685.42	1,626.87	6.19	8.56	-101.34	-145.09	416.17	488.34	476.10	12.25	39.874		
1,900.00	1,893.36	1,765.89	1,701.47	6.54	9.16	-102.63	-157.81	443.51	525.23	512.27	12.96	40.537		
2,000.00	1,991.10	1,856.15	1,785.17	6.93	9.83	-103.89	-172.08	474.17	566.84	553.07	13.77	41.173		
2,100.00	2,088.83	1,946.42	1,868.86	7.34	10.50	-104.98	-186.35	504.84	608.64	594.05	14.59	41.716		
2,200.00	2,186.57	2,036.69	1,952.55	7.76	11.18	-105.93	-200.62	535.50	650.61	635.19	15.42	42.182		
2,300.00	2,284.30	2,126.96	2,036.24	8.18	11.86	-106.76	-214.89	566.17	692.71	676.44	16.27	42.584		
2,400.00	2,382.04	2,217.23	2,119.93	8.61	12.54	-107.50	-229.16	596.83	734.91	717.80	17.12	42.935		
2,500.00	2,479.77	2,307.49	2,203.63	9.04	13.22	-108.16	-243.43	627.50	777.21	759.24	17.97	43.241		
2,600.00	2,577.51	2,402.24	2,287.32	9.48	13.94	-108.75	-257.70	658.16	819.58	800.72	18.86	43.460		
2,700.00	2,675.24	2,488.03	2,371.01	9.93	14.59	-109.29	-271.97	688.82	862.02	842.32	19.70	43.748		
2,800.00	2,772.98	2,578.30	2,454.70	10.37	15.28	-109.77	-286.24	719.49	904.51	883.94	20.58	43.960		
2,900.00	2,870.71	2,668.57	2,538.39	10.82	15.96	-110.21	-300.51	750.15	947.06	925.61	21.45	44.149		
3,000.00	2,968.45	2,758.84	2,622.09	11.27	16.65	-110.62	-314.78	780.82	989.64	967.31	22.33	44.319		
3,100.00	3,066.19	2,849.10	2,705.78	11.73	17.34	-110.99	-329.05	811.48	1,032.26	1,009.05	23.21	44.471		
3,200.00	3,163.92	2,939.37	2,789.47	12.18	18.02	-111.33	-343.32	842.15	1,074.92	1,050.82	24.10	44.609		
3,300.00	3,261.66	3,029.64	2,873.16	12.64	18.71	-111.64	-357.59	872.81	1,117.60	1,092.62	24.98	44.734		
3,400.00	3,359.39	3,119.91	2,956.86	13.10	19.40	-111.94	-371.86	903.48	1,160.31	1,134.44	25.87	44.848		
3,500.00	3,457.13	3,210.18	3,040.55	13.56	20.09	-112.21	-386.13	934.14	1,203.04	1,176.28	26.76	44.952		
3,600.00	3,554.86	3,300.44	3,124.24	14.02	20.78	-112.46	-400.40	964.81	1,245.79	1,218.14	27.66	45.047		
3,700.00	3,652.60	3,409.29	3,207.93	14.49	21.61	-112.70	-414.67	995.47	1,288.57	1,259.92	28.64	44.985		
3,800.00	3,750.33	3,480.98	3,291.62	14.95	22.16	-112.92	-428.94	1,026.13	1,331.35	1,301.91	29.45	45.215		
3,900.00	3,848.07	3,571.25	3,375.32	15.42	22.85	-113.12	-443.21	1,056.80	1,374.16	1,343.81	30.34	45.289		

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - RUEGGE 3Q-4H-N165 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.00	0.00	1.00	-1.00	0.00	0.00	81.55	13.23	89.02	90.00				
100.00	100.00	101.00	99.00	0.14	0.14	81.55	13.23	89.02	90.00	89.72	0.28	321.880	
200.00	200.00	201.00	199.00	0.50	0.50	81.55	13.23	89.02	90.00	89.00	1.00	90.312	
300.00	300.00	301.00	299.00	0.85	0.86	81.55	13.23	89.02	90.00	88.29	1.71	52.524	
400.00	400.00	399.00	399.00	1.21	1.21	81.55	13.23	89.02	90.00	87.58	2.42	37.140 CC, ES	
500.00	500.00	496.28	496.26	1.57	1.55	82.01	12.70	90.55	91.48	88.36	3.12	29.310	
600.00	600.00	593.31	593.16	1.93	1.89	83.34	11.11	95.19	96.01	92.20	3.81	25.177	
700.00	700.00	689.89	689.40	2.29	2.23	85.29	8.47	102.88	103.68	99.17	4.51	23.005	
800.00	800.00	785.82	784.66	2.65	2.58	87.58	4.80	113.56	114.56	109.36	5.20	22.041	
900.00	900.00	880.89	878.64	3.01	2.95	89.93	0.15	127.10	128.73	122.84	5.88	21.880 SF	
1,000.00	1,000.00	974.90	971.05	3.36	3.34	92.18	-5.45	143.40	146.19	139.63	6.56	22.280	
1,100.00	1,100.00	1,067.68	1,061.65	3.72	3.75	94.21	-11.94	162.27	166.94	159.71	7.23	23.087	
1,200.00	1,200.00	1,159.05	1,150.20	4.08	4.17	95.99	-19.26	183.57	190.92	183.03	7.89	24.212	
1,300.00	1,299.98	1,248.77	1,236.41	4.42	4.63	-109.82	-27.33	207.07	218.61	210.09	8.52	25.662	
1,400.00	1,399.84	1,336.54	1,319.95	4.75	5.11	-108.94	-36.07	232.52	250.37	241.24	9.13	27.417	
1,500.00	1,499.45	1,422.11	1,400.56	5.09	5.62	-108.57	-45.39	259.64	286.00	276.26	9.74	29.360	
1,600.00	1,598.70	1,505.26	1,478.05	5.43	6.15	-108.50	-55.20	288.17	325.37	315.02	10.35	31.440	
1,700.00	1,697.47	1,585.83	1,552.25	5.78	6.71	-108.60	-65.39	317.83	368.37	357.41	10.96	33.611	
1,800.00	1,795.62	1,663.65	1,623.07	6.15	7.30	-108.76	-75.87	348.35	414.90	403.32	11.58	35.839	
1,810.86	1,806.25	1,671.94	1,630.56	6.19	7.36	-108.78	-77.03	351.71	420.16	408.51	11.65	36.078	
1,900.00	1,893.36	1,738.95	1,690.73	6.54	7.90	-109.74	-86.61	379.60	464.45	452.25	12.20	38.085	
2,000.00	1,991.10	1,822.74	1,765.39	6.93	8.62	-110.69	-98.97	415.57	515.54	502.60	12.94	39.844	
2,100.00	2,088.83	1,908.38	1,841.69	7.34	9.36	-111.48	-111.61	452.36	566.75	553.03	13.72	41.303	
2,200.00	2,186.57	1,994.03	1,917.99	7.76	10.12	-112.15	-124.25	489.16	618.03	603.51	14.52	42.564	
2,300.00	2,284.30	2,079.68	1,994.29	8.18	10.89	-112.71	-136.90	525.96	669.36	654.03	15.33	43.663	
2,400.00	2,382.04	2,165.33	2,070.59	8.61	11.67	-113.20	-149.54	562.75	720.73	704.58	16.15	44.625	
2,500.00	2,479.77	2,250.98	2,146.89	9.04	12.45	-113.62	-162.18	599.55	772.14	755.16	16.98	45.473	
2,600.00	2,577.51	2,336.62	2,223.19	9.48	13.24	-113.99	-174.83	636.34	823.57	805.75	17.82	46.222	
2,700.00	2,675.24	2,422.27	2,299.49	9.93	14.04	-114.31	-187.47	673.14	875.02	856.36	18.66	46.889	
2,800.00	2,772.98	2,507.92	2,375.79	10.37	14.84	-114.60	-200.11	709.93	926.49	906.98	19.51	47.484	
2,900.00	2,870.71	2,606.43	2,452.09	10.82	15.76	-114.86	-212.75	746.73	977.98	957.54	20.44	47.853	
3,000.00	2,968.45	2,679.21	2,528.39	11.27	16.44	-115.09	-225.40	783.52	1,029.48	1,008.25	21.23	48.497	
3,100.00	3,066.19	2,764.86	2,604.69	11.73	17.25	-115.30	-238.04	820.32	1,080.99	1,058.90	22.09	48.931	
3,200.00	3,163.92	2,850.51	2,680.99	12.18	18.05	-115.49	-250.68	857.11	1,132.51	1,109.55	22.96	49.325	
3,300.00	3,261.66	2,936.16	2,757.30	12.64	18.86	-115.66	-263.32	893.91	1,184.04	1,160.21	23.83	49.684	
3,400.00	3,359.39	3,021.80	2,833.60	13.10	19.68	-115.82	-275.97	930.70	1,235.58	1,210.87	24.71	50.011	
3,500.00	3,457.13	3,107.45	2,909.90	13.56	20.49	-115.97	-288.61	967.50	1,287.12	1,261.54	25.58	50.311	
3,600.00	3,554.86	3,193.10	2,986.20	14.02	21.30	-116.11	-301.25	1,004.29	1,338.67	1,312.21	26.46	50.586	
3,700.00	3,652.60	3,278.75	3,062.50	14.49	22.12	-116.23	-313.89	1,041.09	1,390.23	1,362.88	27.35	50.840	

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - RUEGGE 3R-4H-N165 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.00	0.00	2.00	-2.00	0.00	0.00	81.55	14.70	98.91	100.00				
100.00	100.00	102.00	98.00	0.14	0.15	81.55	14.70	98.91	100.00	99.72	0.28	353.117	
100.71	100.71	101.29	98.71	0.14	0.14	81.55	14.70	98.91	100.00	99.72	0.28	353.117 CC	
200.00	200.00	196.28	196.28	0.50	0.48	81.70	14.50	99.43	100.50	99.52	0.98	102.917 ES	
300.00	300.00	293.18	293.11	0.85	0.82	82.65	13.24	102.74	103.71	102.03	1.68	61.700	
400.00	400.00	389.74	389.43	1.21	1.18	84.33	10.83	109.08	109.95	107.56	2.39	46.012	
500.00	500.00	485.73	484.89	1.57	1.53	86.47	7.29	118.39	119.34	116.24	3.10	38.514	
600.00	600.00	580.95	579.21	1.93	1.91	88.83	2.66	130.57	131.94	128.14	3.80	34.677	
700.00	700.00	675.20	672.09	2.29	2.31	91.19	-3.02	145.51	147.83	143.32	4.51	32.805	
800.00	800.00	768.29	763.26	2.65	2.72	93.40	-9.69	163.05	166.99	161.79	5.20	32.112 SF	
900.00	900.00	860.05	852.49	3.01	3.16	95.40	-17.29	183.05	189.41	183.53	5.89	32.181	
1,000.00	1,000.00	950.32	939.56	3.36	3.63	97.15	-25.76	205.32	215.02	208.46	6.56	32.757	
1,100.00	1,100.00	1,038.97	1,024.29	3.72	4.12	98.67	-35.02	229.68	243.74	236.52	7.22	33.760	
1,200.00	1,200.00	1,125.88	1,106.54	4.08	4.65	99.97	-45.00	255.92	275.47	267.60	7.87	34.991	
1,300.00	1,299.98	1,210.85	1,186.09	4.42	5.20	-105.96	-55.61	283.82	310.57	302.07	8.50	36.542	
1,400.00	1,399.84	1,293.65	1,262.72	4.75	5.78	-104.97	-66.75	313.12	349.27	340.17	9.11	38.356	
1,500.00	1,499.45	1,374.07	1,336.26	5.09	6.40	-104.35	-78.32	343.54	391.38	381.67	9.71	40.300	
1,600.00	1,598.70	1,458.55	1,412.68	5.43	7.08	-104.04	-91.11	377.20	436.36	425.98	10.38	42.031	
1,700.00	1,697.47	1,547.02	1,492.62	5.78	7.81	-104.05	-104.58	412.62	482.41	471.29	11.12	43.374	
1,800.00	1,795.62	1,634.76	1,571.91	6.15	8.55	-104.26	-117.94	447.75	529.36	517.48	11.89	44.538	
1,810.86	1,806.25	1,644.25	1,580.48	6.19	8.63	-104.29	-119.39	451.55	534.52	522.55	11.97	44.649	
1,900.00	1,893.36	1,722.03	1,650.76	6.54	9.30	-105.41	-131.23	482.70	576.98	564.31	12.67	45.538	
2,000.00	1,991.10	1,809.30	1,729.62	6.93	10.05	-106.48	-144.51	517.64	624.79	611.32	13.47	46.387	
2,100.00	2,088.83	1,896.56	1,808.47	7.34	10.80	-107.41	-157.80	552.58	672.74	658.46	14.28	47.107	
2,200.00	2,186.57	1,983.83	1,887.32	7.76	11.56	-108.21	-171.09	587.52	720.82	705.71	15.10	47.721	
2,300.00	2,284.30	2,071.09	1,966.17	8.18	12.32	-108.91	-184.37	622.46	768.98	753.05	15.94	48.248	
2,400.00	2,382.04	2,158.36	2,045.02	8.61	13.09	-109.53	-197.66	657.40	817.23	800.45	16.78	48.703	
2,500.00	2,479.77	2,245.62	2,123.88	9.04	13.85	-110.09	-210.94	692.34	865.55	847.92	17.63	49.098	
2,600.00	2,577.51	2,332.88	2,202.73	9.48	14.62	-110.58	-224.23	727.29	913.92	895.43	18.48	49.444	
2,700.00	2,675.24	2,420.15	2,281.58	9.93	15.39	-111.02	-237.51	762.23	962.34	942.99	19.34	49.748	
2,800.00	2,772.98	2,507.41	2,360.43	10.37	16.16	-111.43	-250.80	797.17	1,010.79	990.58	20.21	50.016	
2,900.00	2,870.71	2,605.32	2,439.29	10.82	17.03	-111.79	-264.09	832.11	1,059.28	1,038.15	21.13	50.120	
3,000.00	2,968.45	2,681.94	2,518.14	11.27	17.71	-112.12	-277.37	867.05	1,107.81	1,085.85	21.95	50.465	
3,100.00	3,066.19	2,769.21	2,596.99	11.73	18.48	-112.43	-290.66	901.99	1,156.36	1,133.53	22.83	50.654	
3,200.00	3,163.92	2,856.47	2,675.84	12.18	19.26	-112.71	-303.94	936.93	1,204.93	1,181.22	23.71	50.824	
3,300.00	3,261.66	2,943.74	2,754.70	12.64	20.03	-112.97	-317.23	971.87	1,253.52	1,228.93	24.59	50.977	
3,400.00	3,359.39	3,031.00	2,833.55	13.10	20.81	-113.21	-330.52	1,006.81	1,302.13	1,276.66	25.47	51.115	
3,500.00	3,457.13	3,118.26	2,912.40	13.56	21.58	-113.43	-343.80	1,041.76	1,350.76	1,324.40	26.36	51.241	
3,600.00	3,554.86	3,205.53	2,991.25	14.02	22.36	-113.64	-357.09	1,076.70	1,399.40	1,372.15	27.25	51.355	

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - STELLING 1 - CPR WELL - GYRO													Offset Site Error: 0.00 usft	
Survey Program: 77-VESSI_GYROFLEX													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	-59.18	635.99	-1,065.97	1,241.31					
100.00	100.00	89.58	89.58	0.14	0.08	-59.19	635.85	-1,066.11	1,241.33	1,241.11	0.22	5,677.018		
200.00	200.00	188.33	188.33	0.50	0.26	-59.20	635.71	-1,066.39	1,241.50	1,240.75	0.75	1,654.324		
300.00	300.00	287.35	287.34	0.85	0.43	-59.19	635.94	-1,066.54	1,241.75	1,240.46	1.28	967.617		
400.00	400.00	384.99	384.98	1.21	0.60	-59.17	636.51	-1,066.66	1,242.15	1,240.34	1.81	684.913		
500.00	500.00	489.01	489.00	1.57	0.78	-59.16	636.98	-1,066.77	1,242.48	1,240.12	2.36	527.518		
600.00	600.00	589.62	589.62	1.93	0.96	-59.13	637.55	-1,066.63	1,242.65	1,239.76	2.89	430.029		
700.00	700.00	692.80	692.79	2.29	1.14	-59.10	638.11	-1,066.23	1,242.60	1,239.17	3.43	362.584		
800.00	800.00	791.08	791.07	2.65	1.31	-59.07	638.58	-1,065.88	1,242.53	1,238.57	3.96	314.082		
900.00	900.00	891.24	891.23	3.01	1.49	-59.03	639.45	-1,065.35	1,242.53	1,238.04	4.49	276.809		
1,000.00	1,000.00	992.28	992.26	3.36	1.67	-58.98	640.25	-1,064.78	1,242.45	1,237.43	5.02	247.339		
1,082.54	1,082.54	1,073.56	1,073.54	3.66	1.81	-58.94	640.91	-1,064.34	1,242.41	1,236.95	5.46	227.520		
1,100.00	1,100.00	1,090.50	1,090.48	3.72	1.84	-58.94	641.08	-1,064.24	1,242.41	1,236.86	5.55	223.745		
1,200.00	1,200.00	1,188.29	1,188.25	4.08	2.02	-58.87	642.43	-1,063.62	1,242.58	1,236.50	6.08	204.309		
1,300.00	1,299.98	1,295.32	1,295.25	4.42	2.21	93.87	644.56	-1,062.24	1,242.62	1,236.01	6.61	187.997		
1,400.00	1,399.84	1,399.45	1,399.34	4.75	2.39	94.26	646.78	-1,060.22	1,242.46	1,235.34	7.12	174.520		
1,480.29	1,479.85	1,480.91	1,480.76	5.02	2.54	94.68	648.53	-1,058.42	1,242.39	1,234.86	7.53	164.998		
1,500.00	1,499.45	1,501.13	1,500.97	5.09	2.57	94.81	648.95	-1,057.96	1,242.39	1,234.76	7.63	162.813		
1,600.00	1,598.70	1,601.47	1,601.27	5.43	2.75	95.48	650.64	-1,055.76	1,242.54	1,234.39	8.15	152.484		
1,700.00	1,697.47	1,695.98	1,695.74	5.78	2.92	96.27	652.52	-1,053.69	1,243.41	1,234.75	8.67	143.446		
1,800.00	1,795.62	1,792.92	1,792.65	6.15	3.09	97.18	654.05	-1,052.01	1,245.14	1,235.93	9.21	135.241		
1,810.86	1,806.25	1,803.26	1,802.99	6.19	3.11	97.28	654.17	-1,051.87	1,245.38	1,236.11	9.27	134.401		
1,900.00	1,893.36	1,888.21	1,887.93	6.54	3.26	98.16	655.10	-1,050.83	1,247.64	1,237.88	9.76	127.854		
2,000.00	1,991.10	1,984.35	1,984.05	6.93	3.43	99.16	656.29	-1,049.70	1,250.68	1,240.35	10.32	121.162		
2,100.00	2,088.83	2,084.34	2,084.03	7.34	3.61	100.16	657.10	-1,048.78	1,254.06	1,243.16	10.90	115.030		
2,200.00	2,186.57	2,178.29	2,177.99	7.76	3.77	101.09	657.64	-1,048.15	1,257.88	1,246.40	11.48	109.585		
2,300.00	2,284.30	2,273.76	2,273.45	8.18	3.94	102.03	658.32	-1,047.67	1,262.28	1,250.21	12.06	104.633		
2,400.00	2,382.04	2,365.91	2,365.60	8.61	4.10	102.92	658.94	-1,047.58	1,267.32	1,254.67	12.65	100.199		
2,500.00	2,479.77	2,470.02	2,469.71	9.04	4.29	103.90	659.38	-1,047.74	1,272.73	1,259.47	13.26	95.994		
2,600.00	2,577.51	2,564.29	2,563.98	9.48	4.46	104.78	659.73	-1,047.65	1,278.28	1,264.43	13.85	92.272		
2,700.00	2,675.24	2,670.89	2,670.57	9.93	4.64	105.78	660.19	-1,047.33	1,284.06	1,269.58	14.47	88.722		
2,800.00	2,772.98	2,770.86	2,770.54	10.37	4.82	106.70	660.14	-1,046.76	1,289.65	1,274.57	15.08	85.516		
2,900.00	2,870.71	2,876.78	2,876.45	10.82	5.00	107.68	660.00	-1,045.70	1,295.21	1,279.51	15.70	82.494		
3,000.00	2,968.45	2,970.95	2,970.62	11.27	5.17	108.56	659.93	-1,044.41	1,300.91	1,284.61	16.30	79.811		
3,100.00	3,066.19	3,067.51	3,067.17	11.73	5.34	109.47	660.32	-1,042.86	1,307.12	1,290.22	16.90	77.327		
3,200.00	3,163.92	3,153.31	3,152.95	12.18	5.49	110.28	661.15	-1,041.50	1,314.11	1,296.63	17.49	75.150		
3,300.00	3,261.66	3,245.37	3,245.00	12.64	5.65	111.13	662.36	-1,040.75	1,322.20	1,304.11	18.08	73.126		
3,400.00	3,359.39	3,339.15	3,338.77	13.10	5.82	111.98	663.52	-1,040.42	1,330.85	1,312.17	18.68	71.250		
3,500.00	3,457.13	3,435.27	3,434.88	13.56	5.99	112.85	665.13	-1,039.94	1,340.07	1,320.79	19.28	69.506		
3,600.00	3,554.86	3,540.85	3,540.44	14.02	6.18	113.79	666.80	-1,039.21	1,349.42	1,329.52	19.90	67.808		
3,700.00	3,652.60	3,650.57	3,650.13	14.49	6.37	114.79	668.21	-1,037.29	1,358.24	1,337.71	20.53	66.166		
3,800.00	3,750.33	3,749.51	3,749.06	14.95	6.55	115.66	668.74	-1,035.57	1,366.81	1,345.68	21.13	64.684		
3,900.00	3,848.07	3,844.31	3,843.85	15.42	6.72	116.45	668.87	-1,034.65	1,375.81	1,354.08	21.72	63.331		
4,000.00	3,945.80	3,936.95	3,936.48	15.88	6.88	117.21	669.16	-1,033.93	1,385.35	1,363.04	22.31	62.091		
4,100.00	4,043.54	4,032.43	4,031.97	16.35	7.05	117.99	669.83	-1,033.24	1,395.49	1,372.59	22.90	60.929		
4,200.00	4,141.27	4,127.34	4,126.87	16.82	7.22	118.76	670.61	-1,032.44	1,405.96	1,382.47	23.49	59.847		
7,450.00	7,189.81	7,126.48	7,125.36	29.03	12.51	-32.03	720.78	-1,032.00	1,378.89	1,338.96	39.92	34.537		
7,500.00	7,211.45	7,146.15	7,145.01	29.02	12.54	-37.01	721.66	-1,031.96	1,336.95	1,296.99	39.96	33.455		
7,550.00	7,229.92	7,163.40	7,162.24	29.01	12.57	-42.92	722.48	-1,031.96	1,293.89	1,253.90	40.00	32.350		
7,600.00	7,245.11	7,178.30	7,177.13	29.00	12.60	-49.83	723.21	-1,031.98	1,249.94	1,209.91	40.03	31.228		
7,650.00	7,256.97	7,192.38	7,191.19	29.01	12.62	-57.88	723.91	-1,032.03	1,205.31	1,165.25	40.06	30.087		
7,700.00	7,265.43	7,203.10	7,201.90	29.03	12.64	-66.66	724.44	-1,032.08	1,160.28	1,120.19	40.09	28.940		

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - STELLING 1 - CPR WELL - GYRO													Offset Site Error:	0.00 usft
Survey Program: 77-VESI_GYROFLEX													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)						
7,750.00	7,270.44	7,210.44	7,209.22	29.06	12.66	-75.69	724.79	-1,032.12	1,115.12	1,074.99	40.12	27.793		
7,797.34	7,272.00	7,214.24	7,213.02	29.10	12.66	-83.95	724.98	-1,032.14	1,072.50	1,032.34	40.15	26.710		
7,800.00	7,272.00	7,214.37	7,213.15	29.10	12.66	-83.96	724.99	-1,032.14	1,070.11	1,029.96	40.15	26.650		
7,900.00	7,272.00	7,219.14	7,217.91	29.26	12.67	-84.54	725.22	-1,032.17	981.45	941.21	40.25	24.387		
8,000.00	7,272.00	7,223.88	7,222.65	29.51	12.68	-85.11	725.45	-1,032.20	895.16	854.76	40.40	22.158		
8,100.00	7,272.00	7,228.60	7,227.36	29.86	12.69	-85.68	725.68	-1,032.24	811.99	771.35	40.64	19.979		
8,200.00	7,272.00	7,233.29	7,232.05	30.31	12.70	-86.25	725.90	-1,032.27	733.01	691.99	41.02	17.868		
8,300.00	7,272.00	7,237.95	7,236.70	30.85	12.70	-86.81	726.13	-1,032.31	659.72	618.13	41.59	15.861		
8,400.00	7,272.00	7,242.58	7,241.33	31.47	12.71	-87.37	726.35	-1,032.35	594.23	551.82	42.42	14.009		
8,500.00	7,272.00	7,247.19	7,245.93	32.16	12.72	-87.93	726.57	-1,032.39	539.40	495.87	43.52	12.393		
8,600.00	7,272.00	7,251.77	7,250.51	32.92	12.73	-88.48	726.79	-1,032.44	498.74	453.89	44.86	11.118		
8,700.00	7,272.00	7,256.33	7,255.06	33.73	12.74	-89.04	727.01	-1,032.48	475.92	429.71	46.20	10.301		
8,761.49	7,272.00	7,259.12	7,257.85	34.27	12.74	-89.37	727.14	-1,032.51	471.94	425.03	46.90	10.062 CC, ES		
8,800.00	7,272.00	7,260.86	7,259.58	34.61	12.75	-89.59	727.22	-1,032.53	473.50	426.26	47.24	10.024 SF		
8,900.00	7,272.00	7,265.36	7,264.08	35.53	12.75	-90.13	727.43	-1,032.58	491.80	444.06	47.74	10.302		
9,000.00	7,272.00	7,269.84	7,268.56	36.50	12.76	-90.67	727.65	-1,032.63	528.67	480.95	47.72	11.079		
9,100.00	7,272.00	7,274.29	7,273.00	37.51	12.77	-91.21	727.86	-1,032.68	580.58	533.22	47.36	12.260		
9,200.00	7,272.00	7,278.76	7,277.47	38.55	12.78	-91.76	728.07	-1,032.74	643.90	597.06	46.84	13.746		
9,300.00	7,272.00	7,283.30	7,281.99	39.63	12.79	-92.30	728.28	-1,032.79	715.62	669.32	46.30	15.456		
9,400.00	7,272.00	7,287.83	7,286.53	40.75	12.79	-92.85	728.49	-1,032.85	793.45	747.66	45.79	17.328		
9,500.00	7,272.00	7,292.38	7,291.07	41.89	12.80	-93.40	728.70	-1,032.91	875.77	830.43	45.34	19.315		
9,600.00	7,272.00	7,296.93	7,295.61	43.06	12.81	-93.95	728.92	-1,032.98	961.43	916.47	44.95	21.388		
9,700.00	7,272.00	7,301.49	7,300.17	44.26	12.82	-94.50	729.13	-1,033.04	1,049.60	1,004.98	44.62	23.523		
9,800.00	7,272.00	7,306.05	7,304.72	45.48	12.83	-95.05	729.35	-1,033.11	1,139.71	1,095.38	44.34	25.704		
9,900.00	7,272.00	7,310.62	7,309.29	46.72	12.83	-95.59	729.56	-1,033.17	1,231.34	1,187.24	44.10	27.921		
10,000.00	7,272.00	7,315.20	7,313.86	47.98	12.84	-96.14	729.78	-1,033.24	1,324.15	1,280.26	43.90	30.165		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - STELLING 13-4 - CPR WELL - GYRO												Offset Site Error:	0.00 usft
Survey Program: 100-VESSI_GYROFLEX												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	
8,900.00	7,272.00	7,234.14	7,231.05	35.53	12.70	-88.21	1,615.16	-1,701.18	1,368.36	1,322.95	45.41	30.136	
9,000.00	7,272.00	7,236.41	7,233.32	36.50	12.71	-88.32	1,615.20	-1,701.22	1,316.67	1,270.06	46.61	28.250	
9,100.00	7,272.00	7,238.68	7,235.59	37.51	12.71	-88.43	1,615.25	-1,701.26	1,270.75	1,222.80	47.95	26.499	
9,200.00	7,272.00	7,240.96	7,237.87	38.55	12.72	-88.55	1,615.30	-1,701.30	1,231.26	1,181.83	49.42	24.913	
9,300.00	7,272.00	7,243.26	7,240.16	39.63	12.72	-88.66	1,615.35	-1,701.34	1,198.82	1,147.85	50.97	23.519	
9,400.00	7,272.00	7,245.56	7,242.47	40.75	12.72	-88.78	1,615.40	-1,701.37	1,174.03	1,121.47	52.56	22.338	
9,500.00	7,272.00	7,247.88	7,244.78	41.89	12.73	-88.89	1,615.45	-1,701.41	1,157.36	1,103.25	54.12	21.386	
9,600.00	7,272.00	7,250.21	7,247.11	43.06	12.73	-89.01	1,615.50	-1,701.45	1,149.19	1,093.60	55.59	20.672	
9,644.31	7,272.00	7,251.24	7,248.14	43.59	12.73	-89.06	1,615.52	-1,701.47	1,148.34	1,092.13	56.20	20.432 CC, ES	
9,700.00	7,272.00	7,252.54	7,249.45	44.26	12.74	-89.12	1,615.55	-1,701.49	1,149.68	1,092.76	56.92	20.198	
9,800.00	7,272.00	7,254.89	7,251.80	45.48	12.74	-89.24	1,615.60	-1,701.53	1,158.84	1,100.77	58.07	19.957	
9,900.00	7,272.00	7,257.25	7,254.15	46.72	12.75	-89.36	1,615.66	-1,701.56	1,176.44	1,117.44	59.00	19.940 SF	
10,000.00	7,272.00	7,259.62	7,256.53	47.98	12.75	-89.48	1,615.71	-1,701.60	1,202.13	1,142.42	59.71	20.132	
10,100.00	7,272.00	7,262.01	7,258.91	49.25	12.75	-89.60	1,615.76	-1,701.64	1,235.40	1,175.19	60.21	20.518	
10,200.00	7,272.00	7,264.40	7,261.30	50.55	12.76	-89.72	1,615.81	-1,701.68	1,275.66	1,215.15	60.51	21.081	
10,300.00	7,272.00	7,266.81	7,263.70	51.86	12.76	-89.84	1,615.87	-1,701.71	1,322.26	1,261.61	60.65	21.803	
10,400.00	7,272.00	7,269.22	7,266.12	53.18	12.77	-89.96	1,615.92	-1,701.75	1,374.57	1,313.93	60.64	22.666	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - STELLING 14-4 - CPR WELL - GYRO													Offset Site Error: 0.00 usft	
Survey Program: 100-VESSI_GYROFLEX													Offset Well Error: 0.00 usft	
Reference				Offset		Semi Major Axis			Distance				Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
4,200.00	4,141.27	4,146.81	4,146.33	16.82	7.21	75.96	-186.29	-1,639.79	1,413.37	1,389.51	23.86	59.248		
4,300.00	4,239.01	4,243.19	4,242.68	17.29	7.38	76.87	-183.73	-1,639.02	1,408.13	1,383.62	24.50	57.468		
4,400.00	4,336.74	4,342.52	4,341.95	17.76	7.56	77.84	-180.67	-1,637.93	1,403.09	1,377.94	25.16	55.774		
4,500.00	4,434.48	4,443.51	4,442.88	18.23	7.74	78.83	-177.52	-1,636.73	1,398.40	1,372.58	25.81	54.173		
4,600.00	4,532.21	4,546.15	4,545.47	18.70	7.92	79.84	-174.59	-1,635.00	1,393.57	1,367.10	26.47	52.642		
4,700.00	4,629.95	4,638.88	4,638.15	19.17	8.08	80.76	-171.88	-1,633.39	1,389.14	1,362.02	27.12	51.224		
4,800.00	4,727.68	4,729.39	4,728.58	19.64	8.24	81.70	-168.34	-1,632.04	1,385.64	1,357.88	27.76	49.912		
4,900.00	4,825.42	4,826.25	4,825.34	20.11	8.41	82.71	-164.30	-1,630.65	1,382.75	1,354.34	28.41	48.663		
5,000.00	4,923.15	4,921.50	4,920.50	20.58	8.58	83.70	-160.48	-1,629.34	1,380.32	1,351.25	29.06	47.492		
5,100.00	5,020.89	5,012.23	5,011.18	21.06	8.74	84.63	-157.31	-1,628.64	1,378.68	1,348.98	29.71	46.412		
5,200.00	5,118.62	5,110.86	5,109.77	21.53	8.92	85.58	-155.03	-1,628.49	1,377.61	1,347.25	30.36	45.377		
5,300.00	5,216.36	5,200.61	5,199.52	22.00	9.08	86.41	-153.61	-1,628.90	1,377.16	1,346.16	31.00	44.430		
5,305.82	5,222.05	5,206.16	5,205.07	22.03	9.09	86.46	-153.53	-1,628.94	1,377.16	1,346.13	31.03	44.376		
5,400.00	5,314.10	5,295.96	5,294.85	22.48	9.25	87.30	-152.06	-1,629.65	1,377.39	1,345.74	31.64	43.529		
5,500.00	5,411.83	5,392.93	5,391.81	22.95	9.42	88.18	-150.66	-1,630.60	1,378.07	1,345.78	32.29	42.676		
5,600.00	5,509.57	5,489.91	5,488.78	23.42	9.59	89.04	-149.94	-1,631.92	1,379.14	1,346.20	32.94	41.869		
5,700.00	5,607.30	5,595.21	5,594.07	23.90	9.77	89.95	-149.65	-1,633.35	1,380.31	1,346.71	33.60	41.077		
5,800.00	5,705.04	5,685.62	5,684.46	24.37	9.93	90.72	-149.66	-1,634.65	1,381.74	1,347.50	34.24	40.360		
5,900.00	5,802.77	5,794.60	5,793.43	24.85	10.12	91.63	-149.88	-1,636.33	1,383.47	1,348.57	34.90	39.638		
6,000.00	5,900.51	5,888.19	5,887.01	25.32	10.28	92.43	-149.91	-1,637.28	1,385.12	1,349.58	35.54	38.975		
6,100.00	5,998.24	5,989.53	5,988.35	25.80	10.46	93.31	-149.63	-1,638.24	1,387.18	1,350.99	36.19	38.332		
6,200.00	6,095.98	6,076.37	6,075.18	26.27	10.61	94.08	-148.85	-1,638.89	1,389.72	1,352.91	36.81	37.757		
6,300.00	6,193.71	6,177.92	6,176.72	26.75	10.79	94.99	-147.25	-1,639.79	1,393.06	1,355.61	37.45	37.195		
6,400.00	6,291.45	6,276.08	6,274.87	27.23	10.97	95.86	-146.36	-1,640.62	1,396.34	1,358.25	38.09	36.658		
6,500.00	6,389.18	6,363.64	6,362.42	27.70	11.12	96.63	-145.30	-1,641.53	1,400.28	1,361.58	38.70	36.180		
6,536.48	6,424.83	6,394.60	6,393.37	27.88	11.18	96.90	-144.84	-1,642.02	1,402.01	1,363.09	38.92	36.021		
6,550.00	6,438.07	6,406.91	6,405.68	27.94	11.20	94.53	-144.64	-1,642.24	1,402.62	1,363.62	39.00	35.960		
6,600.00	6,487.36	6,455.41	6,454.17	28.16	11.28	80.71	-143.85	-1,643.11	1,403.67	1,364.37	39.30	35.715		
6,650.00	6,537.01	6,504.89	6,503.63	28.35	11.37	52.75	-143.00	-1,644.00	1,402.78	1,363.20	39.58	35.444		
6,700.00	6,586.76	6,560.50	6,559.22	28.51	11.47	13.62	-142.16	-1,644.94	1,399.79	1,359.95	39.84	35.135		
6,750.00	6,636.37	6,615.98	6,614.70	28.64	11.57	-13.03	-141.54	-1,645.74	1,394.60	1,354.52	40.08	34.795		
6,800.00	6,685.61	6,664.83	6,663.53	28.75	11.65	-26.89	-141.06	-1,646.42	1,387.38	1,347.09	40.29	34.438		
6,850.00	6,734.24	6,712.52	6,711.22	28.85	11.74	-34.94	-140.64	-1,647.09	1,378.22	1,337.74	40.47	34.052		
6,900.00	6,782.01	6,754.80	6,753.49	28.93	11.81	-40.38	-140.28	-1,647.85	1,367.37	1,326.73	40.63	33.651		
6,950.00	6,828.69	6,796.16	6,794.84	28.99	11.89	-44.58	-139.93	-1,648.80	1,354.99	1,314.21	40.78	33.229		
7,000.00	6,874.07	6,834.65	6,833.31	29.04	11.95	-48.13	-139.60	-1,649.89	1,341.23	1,300.33	40.90	32.793		
7,050.00	6,917.91	6,871.74	6,870.38	29.07	12.02	-51.35	-139.24	-1,651.15	1,326.28	1,285.28	41.01	32.344		
7,100.00	6,960.00	6,906.61	6,905.22	29.09	12.08	-54.40	-138.86	-1,652.54	1,310.31	1,269.22	41.09	31.887		
7,150.00	7,000.14	6,936.93	6,935.50	29.10	12.13	-57.29	-138.51	-1,653.98	1,293.59	1,252.44	41.16	31.432		
7,200.00	7,038.13	6,965.72	6,964.24	29.10	12.18	-60.13	-138.14	-1,655.59	1,276.36	1,235.16	41.20	30.977		
7,250.00	7,073.79	6,992.84	6,991.31	29.10	12.23	-62.93	-137.78	-1,657.32	1,258.83	1,217.59	41.24	30.526		
7,300.00	7,106.94	7,022.29	7,020.68	29.09	12.28	-65.83	-137.32	-1,659.38	1,241.19	1,199.92	41.27	30.073		
7,350.00	7,137.43	7,051.21	7,049.53	29.07	12.33	-68.72	-136.76	-1,661.40	1,223.58	1,182.27	41.30	29.625		
7,400.00	7,165.09	7,077.85	7,076.09	29.05	12.38	-71.53	-136.13	-1,663.28	1,206.27	1,164.94	41.32	29.190		
7,450.00	7,189.81	7,102.29	7,100.46	29.03	12.42	-74.22	-135.47	-1,664.99	1,189.53	1,148.19	41.34	28.774		
7,500.00	7,211.45	7,126.10	7,124.20	29.02	12.47	-76.82	-134.79	-1,666.66	1,173.63	1,132.27	41.36	28.377		
7,550.00	7,229.92	7,146.62	7,144.66	29.01	12.50	-79.17	-134.22	-1,668.09	1,158.85	1,117.48	41.37	28.009		
7,600.00	7,245.11	7,163.74	7,161.74	29.00	12.53	-81.24	-133.74	-1,669.27	1,145.47	1,104.08	41.39	27.676		
7,650.00	7,256.97	7,177.40	7,175.36	29.01	12.56	-82.98	-133.37	-1,670.21	1,133.76	1,092.35	41.41	27.381		
7,700.00	7,265.43	7,187.53	7,185.46	29.03	12.57	-84.37	-133.09	-1,670.90	1,123.95	1,082.52	41.43	27.130		
7,750.00	7,270.44	7,194.09	7,192.01	29.06	12.59	-85.37	-132.91	-1,671.35	1,116.23	1,074.78	41.46	26.926		
7,797.34	7,272.00	7,197.00	7,194.90	29.10	12.59	-85.95	-132.83	-1,671.55	1,110.98	1,069.50	41.49	26.779		

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - STELLING 14-4 - CPR WELL - GYRO													Offset Site Error:	0.00 usft
Survey Program: 100-VESSI_GYROFLEX													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning	
7,800.00	7,272.00	7,197.07	7,194.98	29.10	12.59	-85.96	-132.83	-1,671.55	1,110.75	1,069.26	41.49	26.772		
7,896.34	7,272.00	7,199.70	7,197.60	29.25	12.60	-86.09	-132.76	-1,671.73	1,106.57	1,064.96	41.61	26.594 CC, ES		
7,900.00	7,272.00	7,199.79	7,197.70	29.26	12.60	-86.10	-132.76	-1,671.74	1,106.57	1,064.96	41.61	26.591		
8,000.00	7,272.00	7,202.80	7,200.69	29.51	12.60	-86.25	-132.68	-1,671.94	1,111.41	1,069.58	41.83	26.572 SF		
8,100.00	7,272.00	7,205.76	7,203.64	29.86	12.61	-86.41	-132.60	-1,672.14	1,125.14	1,083.03	42.11	26.718		
8,200.00	7,272.00	7,208.64	7,206.52	30.31	12.61	-86.56	-132.52	-1,672.33	1,147.45	1,105.00	42.45	27.030		
8,300.00	7,272.00	7,211.45	7,209.33	30.85	12.62	-86.70	-132.45	-1,672.52	1,177.84	1,135.02	42.82	27.505		
8,400.00	7,272.00	7,214.20	7,212.06	31.47	12.62	-86.84	-132.38	-1,672.70	1,215.72	1,172.52	43.21	28.138		
8,500.00	7,272.00	7,216.88	7,214.74	32.16	12.63	-86.98	-132.31	-1,672.88	1,260.41	1,216.83	43.58	28.920		
8,600.00	7,272.00	7,219.50	7,217.35	32.92	12.63	-87.12	-132.25	-1,673.05	1,311.21	1,267.27	43.94	29.840		
8,700.00	7,272.00	7,222.06	7,219.90	33.73	12.64	-87.25	-132.18	-1,673.22	1,367.44	1,323.17	44.28	30.885		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - STELLING 23-4 - CPR WELL - GYRO												Offset Site Error:	0.00 usft
Survey Program: 100-VESSI_GYROFLEX												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
8,400.00	7,272.00	7,233.39	7,231.17	31.47	12.68	86.84	1,589.44	113.02	1,402.27	1,362.24	40.03	35.034	
8,500.00	7,272.00	7,236.82	7,234.59	32.16	12.68	87.13	1,589.53	113.03	1,315.18	1,274.68	40.51	32.468	
8,600.00	7,272.00	7,240.12	7,237.90	32.92	12.69	87.41	1,589.62	113.05	1,230.05	1,188.95	41.10	29.926	
8,700.00	7,272.00	7,243.32	7,241.09	33.73	12.69	87.69	1,589.71	113.06	1,147.32	1,105.48	41.84	27.422	
8,800.00	7,272.00	7,246.41	7,244.18	34.61	12.70	87.95	1,589.79	113.07	1,067.54	1,024.79	42.74	24.975	
8,900.00	7,272.00	7,249.39	7,247.17	35.53	12.70	88.21	1,589.86	113.08	991.42	947.57	43.85	22.610	
9,000.00	7,272.00	7,252.29	7,250.06	36.50	12.71	88.46	1,589.94	113.09	919.88	874.70	45.18	20.361	
9,100.00	7,272.00	7,255.09	7,252.86	37.51	12.71	88.70	1,590.01	113.10	854.07	807.32	46.75	18.270	
9,200.00	7,272.00	7,257.80	7,255.57	38.55	12.72	88.93	1,590.07	113.10	795.40	746.87	48.54	16.388	
9,300.00	7,272.00	7,260.44	7,258.20	39.63	12.72	89.16	1,590.14	113.11	745.58	695.10	50.48	14.770	
9,400.00	7,272.00	7,262.99	7,260.76	40.75	12.73	89.38	1,590.20	113.12	706.47	654.02	52.45	13.471	
9,500.00	7,272.00	7,265.47	7,263.23	41.89	12.73	89.59	1,590.26	113.13	679.92	625.68	54.24	12.536	
9,600.00	7,272.00	7,267.87	7,265.64	43.06	12.74	89.80	1,590.31	113.13	667.44	611.81	55.63	11.998	
9,634.12	7,272.00	7,268.68	7,266.44	43.47	12.74	89.87	1,590.33	113.13	666.57	610.59	55.98	11.907 CC, ES	
9,700.00	7,272.00	7,270.21	7,267.97	44.26	12.74	90.00	1,590.37	113.14	669.81	613.37	56.45	11.866 SF	
9,800.00	7,272.00	7,272.48	7,270.24	45.48	12.74	90.19	1,590.42	113.14	666.89	630.25	56.64	12.128	
9,900.00	7,272.00	7,274.69	7,272.45	46.72	12.75	90.38	1,590.47	113.15	717.61	661.35	56.27	12.754	
10,000.00	7,272.00	7,276.83	7,274.59	47.98	12.75	90.57	1,590.51	113.15	760.34	704.85	55.49	13.702	
10,100.00	7,272.00	7,278.92	7,276.68	49.25	12.76	90.75	1,590.56	113.16	813.17	758.70	54.48	14.927	
10,200.00	7,272.00	7,280.95	7,278.71	50.55	12.76	90.92	1,590.60	113.16	874.29	820.92	53.37	16.381	
10,300.00	7,272.00	7,282.93	7,280.69	51.86	12.76	91.09	1,590.64	113.17	942.07	889.80	52.27	18.024	
10,400.00	7,272.00	7,284.85	7,282.61	53.18	12.77	91.26	1,590.68	113.17	1,015.19	963.97	51.22	19.820	
10,500.00	7,272.00	7,286.73	7,284.49	54.52	12.77	91.42	1,590.72	113.17	1,092.57	1,042.31	50.26	21.740	
10,600.00	7,272.00	7,288.56	7,286.32	55.87	12.77	91.57	1,590.76	113.18	1,173.37	1,123.98	49.39	23.758	
10,700.00	7,272.00	7,290.34	7,288.10	57.23	12.78	91.73	1,590.79	113.18	1,256.94	1,208.32	48.62	25.854	
10,800.00	7,272.00	7,292.08	7,289.84	58.60	12.78	91.88	1,590.83	113.18	1,342.75	1,294.82	47.93	28.014	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - STELLING 24-4 - CPR WELL - GYRO												Offset Site Error:	0.00 usft
Survey Program: 100-VESSI_GYROFLEX												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	-111.16	-48.87	-126.28	135.64				
100.00	100.00	91.66	91.66	0.14	0.07	-110.97	-48.49	-126.55	135.52	135.31	0.21	654.326	
200.00	200.00	192.37	192.37	0.50	0.24	-110.54	-47.57	-126.92	135.54	134.81	0.73	184.865	
252.35	252.35	244.36	244.35	0.68	0.33	-110.33	-47.05	-127.02	135.45	134.44	1.01	133.921	
300.00	300.00	291.55	291.54	0.85	0.42	-110.08	-46.54	-127.29	135.53	134.27	1.26	107.168	
400.00	400.00	390.82	390.80	1.21	0.59	-109.53	-45.51	-128.31	136.15	134.35	1.80	75.769	
500.00	500.00	490.02	489.98	1.57	0.77	-109.18	-45.12	-129.68	137.32	134.99	2.33	58.944	
600.00	600.00	590.02	589.97	1.93	0.94	-108.90	-44.96	-131.32	138.82	135.95	2.86	48.465	
700.00	700.00	691.40	691.34	2.29	1.12	-108.42	-44.17	-132.67	139.83	136.43	3.40	41.117	
800.00	800.00	791.32	791.26	2.65	1.30	-108.08	-43.53	-133.35	140.28	136.35	3.93	35.654	
900.00	900.00	890.88	890.81	3.01	1.48	-108.01	-43.59	-134.05	140.96	136.49	4.47	31.548	
1,000.00	1,000.00	990.78	990.70	3.36	1.65	-108.37	-44.70	-134.62	141.85	136.85	5.00	28.357	
1,100.00	1,100.00	1,090.68	1,090.59	3.72	1.82	-108.80	-46.03	-135.17	142.80	137.26	5.54	25.793	
1,200.00	1,200.00	1,190.98	1,190.88	4.08	1.99	-109.26	-47.40	-135.65	143.70	137.63	6.07	23.669	
1,300.00	1,299.98	1,291.36	1,291.25	4.42	2.17	43.22	-48.90	-135.81	143.07	136.48	6.59	21.717	
1,400.00	1,399.84	1,391.07	1,390.95	4.75	2.34	44.18	-50.35	-135.90	139.84	132.75	7.09	19.722	
1,500.00	1,499.45	1,490.90	1,490.78	5.09	2.52	46.42	-51.49	-136.15	134.27	126.67	7.60	17.670	
1,600.00	1,598.70	1,591.74	1,591.61	5.43	2.69	50.45	-51.83	-135.98	126.07	117.96	8.11	15.539	
1,700.00	1,697.47	1,690.73	1,690.60	5.78	2.86	56.45	-51.88	-135.10	115.80	107.16	8.63	13.415	
1,800.00	1,795.62	1,789.05	1,788.91	6.15	3.03	64.98	-52.21	-133.97	105.16	95.99	9.17	11.472	
1,810.86	1,806.25	1,799.67	1,799.53	6.19	3.05	66.12	-52.20	-133.84	104.06	94.84	9.23	11.279	
1,900.00	1,893.36	1,886.56	1,886.41	6.54	3.20	76.02	-52.47	-132.89	96.77	87.05	9.72	9.952	
2,000.00	1,991.10	1,983.52	1,983.37	6.93	3.37	88.05	-53.16	-132.35	92.98	82.68	10.30	9.030	
2,018.62	2,009.29	2,001.57	2,001.42	7.01	3.40	90.36	-53.23	-132.35	92.88	82.48	10.40	8.927 CC, ES	
2,100.00	2,088.83	2,081.19	2,081.04	7.34	3.54	100.40	-53.64	-132.46	94.41	83.53	10.87	8.684 SF	
2,200.00	2,186.57	2,178.29	2,178.13	7.76	3.71	111.72	-54.04	-132.87	100.44	89.01	11.43	8.789	
2,300.00	2,284.30	2,276.18	2,276.02	8.18	3.88	121.41	-54.12	-133.81	110.60	98.63	11.97	9.241	
2,400.00	2,382.04	2,374.70	2,374.53	8.61	4.05	129.13	-54.83	-135.07	122.96	110.46	12.50	9.836	
2,500.00	2,479.77	2,471.99	2,471.81	9.04	4.23	135.44	-55.51	-135.97	137.06	124.03	13.02	10.524	
2,600.00	2,577.51	2,570.13	2,569.95	9.48	4.40	140.77	-55.66	-136.50	152.96	139.42	13.54	11.294	
2,700.00	2,675.24	2,667.77	2,667.59	9.93	4.57	145.24	-56.01	-136.50	169.67	155.61	14.06	12.066	
2,800.00	2,772.98	2,764.40	2,764.22	10.37	4.74	148.75	-55.99	-136.87	187.60	173.02	14.58	12.871	
2,900.00	2,870.71	2,862.73	2,862.55	10.82	4.91	151.72	-55.56	-137.17	206.51	191.41	15.10	13.675	
3,000.00	2,968.45	2,961.00	2,960.82	11.27	5.08	154.22	-55.74	-137.38	225.28	209.65	15.63	14.414	
3,100.00	3,066.19	3,058.11	3,057.93	11.73	5.25	156.49	-55.80	-136.83	244.56	228.41	16.15	15.143	
3,200.00	3,163.92	3,155.44	3,155.25	12.18	5.42	158.26	-55.58	-137.03	264.36	247.68	16.68	15.853	
3,300.00	3,261.66	3,252.33	3,252.14	12.64	5.59	159.72	-55.19	-137.48	284.51	267.31	17.20	16.540	
3,400.00	3,359.39	3,348.28	3,348.09	13.10	5.76	160.96	-54.36	-137.97	305.26	287.54	17.72	17.223	
3,500.00	3,457.13	3,444.76	3,444.55	13.56	5.93	161.98	-52.94	-138.71	326.67	308.42	18.25	17.898	
3,600.00	3,554.86	3,544.60	3,544.38	14.02	6.10	162.83	-51.46	-139.98	348.10	329.30	18.80	18.514	
3,700.00	3,652.60	3,642.68	3,642.43	14.49	6.27	163.48	-50.80	-141.95	368.67	349.32	19.34	19.058	
3,800.00	3,750.33	3,735.53	3,735.26	14.95	6.44	164.05	-49.27	-143.44	390.27	370.42	19.86	19.656	
3,900.00	3,848.07	3,831.79	3,831.49	15.42	6.60	164.73	-47.09	-143.84	412.77	392.38	20.39	20.248	
4,000.00	3,945.80	3,929.73	3,929.41	15.88	6.77	165.45	-45.37	-143.64	434.97	414.04	20.93	20.786	
4,100.00	4,043.54	4,022.39	4,022.04	16.35	6.94	166.07	-43.03	-143.18	458.02	436.59	21.43	21.369	
4,200.00	4,141.27	4,119.99	4,119.60	16.82	7.11	166.65	-40.25	-142.71	481.42	459.45	21.97	21.909	
4,300.00	4,239.01	4,216.80	4,216.38	17.29	7.27	167.24	-37.64	-141.70	504.86	482.35	22.51	22.429	
4,400.00	4,336.74	4,313.08	4,312.61	17.76	7.44	167.79	-35.03	-140.54	528.41	505.37	23.04	22.933	
4,500.00	4,434.48	4,406.98	4,406.45	18.23	7.61	168.23	-31.95	-139.79	552.43	528.87	23.56	23.447	
4,600.00	4,532.21	4,506.12	4,505.54	18.70	7.78	168.65	-28.63	-139.01	576.53	552.41	24.11	23.909	
4,700.00	4,629.95	4,602.84	4,602.21	19.17	7.95	169.04	-25.56	-138.16	600.52	575.86	24.65	24.360	
4,800.00	4,727.68	4,705.26	4,704.58	19.64	8.13	169.37	-22.56	-137.97	624.11	598.88	25.23	24.741	

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - STELLING 24-4 - CPR WELL - GYRO												Offset Site Error:	0.00 usft
Survey Program: 100-VESSI_GYROFLEX												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
4,900.00	4,825.42	4,797.66	4,796.94	20.11	8.29	169.58	-19.69	-138.40	647.69	621.95	25.74	25.162	
5,000.00	4,923.15	4,893.84	4,893.05	20.58	8.46	169.78	-16.30	-138.80	671.68	645.40	26.28	25.559	
5,100.00	5,020.89	4,996.86	4,996.02	21.06	8.64	170.04	-13.19	-138.76	695.35	668.49	26.86	25.889	
5,200.00	5,118.62	5,093.98	5,093.12	21.53	8.81	170.32	-10.92	-138.16	718.57	691.17	27.40	26.223	
5,300.00	5,216.36	5,186.85	5,185.95	22.00	8.97	170.63	-8.75	-136.73	742.10	714.18	27.92	26.580	
5,400.00	5,314.10	5,286.51	5,285.55	22.48	9.14	171.04	-6.59	-134.03	765.85	737.37	28.48	26.895	
5,500.00	5,411.83	5,386.58	5,385.56	22.95	9.32	171.46	-4.97	-131.08	789.21	760.17	29.03	27.182	
5,600.00	5,509.57	5,491.64	5,490.59	23.42	9.50	171.82	-3.69	-128.78	811.98	782.36	29.62	27.413	
5,700.00	5,607.30	5,586.65	5,585.58	23.90	9.67	172.09	-2.70	-127.48	834.36	804.21	30.15	27.672	
5,800.00	5,705.04	5,687.52	5,686.44	24.37	9.84	172.33	-1.49	-126.37	856.80	826.08	30.72	27.893	
5,900.00	5,802.77	5,790.40	5,789.31	24.85	10.02	172.57	-0.80	-125.47	878.70	847.40	31.29	28.080	
6,000.00	5,900.51	5,882.10	5,881.01	25.32	10.18	172.77	-0.21	-124.71	900.56	868.75	31.81	28.312	
6,100.00	5,998.24	5,989.76	5,988.66	25.80	10.37	172.97	0.58	-124.09	922.46	890.05	32.41	28.463	
6,200.00	6,095.98	6,094.37	6,093.27	26.27	10.55	173.18	0.12	-123.55	943.24	910.25	32.99	28.592	
6,300.00	6,193.71	6,183.79	6,182.69	26.75	10.71	173.36	-0.32	-122.83	964.10	930.61	33.50	28.783	
6,400.00	6,291.45	6,295.08	6,293.97	27.23	10.90	173.61	-1.02	-121.61	984.98	950.87	34.11	28.877	
6,500.00	6,389.18	6,388.53	6,387.40	27.70	11.06	173.83	-2.35	-120.50	1,005.14	970.51	34.64	29.021	
6,536.48	6,424.83	6,426.49	6,425.34	27.88	11.13	173.93	-2.92	-119.73	1,012.58	977.74	34.85	29.059	
6,550.00	6,438.07	6,441.42	6,440.27	27.94	11.15	171.39	-3.19	-119.43	1,015.19	980.27	34.93	29.066	
6,600.00	6,487.36	6,497.03	6,495.86	28.16	11.25	157.16	-4.41	-118.31	1,022.61	987.39	35.22	29.031	
6,650.00	6,537.01	6,555.31	6,554.11	28.35	11.35	129.22	-6.08	-117.32	1,026.46	990.94	35.53	28.894	
6,700.00	6,586.76	6,614.04	6,612.79	28.51	11.45	90.53	-8.16	-116.69	1,026.67	990.86	35.82	28.665	
6,750.00	6,636.37	6,673.24	6,671.94	28.64	11.55	64.79	-10.69	-116.45	1,023.23	987.13	36.10	28.347	
6,800.00	6,685.61	6,726.50	6,725.14	28.75	11.64	52.26	-13.30	-116.54	1,016.23	979.89	36.34	27.964	
6,850.00	6,734.24	6,774.55	6,773.12	28.85	11.73	45.94	-15.69	-116.66	1,006.10	969.55	36.55	27.524	
6,900.00	6,782.01	6,821.57	6,820.09	28.93	11.81	42.65	-18.03	-116.77	992.98	956.23	36.76	27.016	
6,950.00	6,828.69	6,867.35	6,865.81	28.99	11.89	41.08	-20.31	-116.88	976.97	940.03	36.94	26.445	
7,000.00	6,874.07	6,911.65	6,910.06	29.04	11.97	40.62	-22.52	-116.99	958.20	921.08	37.12	25.814	
7,050.00	6,917.91	6,954.27	6,952.62	29.07	12.04	41.00	-24.65	-117.10	936.83	899.55	37.28	25.127	
7,100.00	6,960.00	6,994.99	6,993.29	29.09	12.11	42.06	-26.68	-117.19	913.03	875.59	37.44	24.388	
7,150.00	7,000.14	7,033.62	7,031.87	29.10	12.18	43.74	-28.60	-117.29	887.00	849.41	37.58	23.601	
7,200.00	7,038.13	7,069.96	7,068.17	29.10	12.24	46.01	-30.41	-117.38	858.96	821.24	37.72	22.772	
7,250.00	7,073.79	7,103.84	7,102.01	29.10	12.30	48.86	-32.10	-117.46	829.17	791.32	37.85	21.904	
7,300.00	7,106.94	7,135.10	7,133.23	29.09	12.36	52.27	-33.66	-117.54	797.91	759.92	37.99	21.005	
7,350.00	7,137.43	7,163.58	7,161.67	29.07	12.40	56.21	-35.08	-117.61	765.49	727.37	38.12	20.080	
7,400.00	7,165.09	7,189.15	7,187.21	29.05	12.45	60.59	-36.35	-117.67	732.25	693.99	38.26	19.137	
7,450.00	7,189.81	7,211.68	7,209.71	29.03	12.49	65.30	-37.47	-117.72	698.59	660.17	38.42	18.183	
7,500.00	7,211.45	7,231.05	7,229.06	29.02	12.52	70.16	-38.44	-117.77	664.92	626.32	38.60	17.228	
7,550.00	7,229.92	7,247.18	7,245.17	29.01	12.55	74.97	-39.24	-117.81	631.71	592.91	38.80	16.282	
7,600.00	7,245.11	7,259.99	7,257.96	29.00	12.57	79.50	-39.88	-117.84	599.49	560.45	39.03	15.359	
7,650.00	7,256.97	7,269.42	7,267.38	29.01	12.59	83.55	-40.35	-117.86	568.81	529.50	39.31	14.471	
7,700.00	7,265.43	7,275.41	7,273.36	29.03	12.60	86.96	-40.65	-117.88	540.28	500.65	39.62	13.635	
7,750.00	7,270.44	7,277.94	7,275.89	29.06	12.61	89.63	-40.78	-117.88	514.53	474.55	39.98	12.869	
7,797.34	7,272.00	7,277.14	7,275.09	29.10	12.60	91.41	-40.74	-117.88	493.27	452.92	40.35	12.225	
7,800.00	7,272.00	7,277.00	7,274.95	29.10	12.60	91.40	-40.73	-117.88	492.18	451.80	40.37	12.191	
7,900.00	7,272.00	7,272.02	7,269.97	29.26	12.59	90.76	-40.48	-117.87	460.40	419.20	41.20	11.174	
8,000.00	7,272.00	7,267.03	7,265.00	29.51	12.59	90.13	-40.23	-117.86	449.06	407.11	41.95	10.704	
8,001.70	7,272.00	7,266.95	7,264.91	29.51	12.59	90.12	-40.23	-117.86	449.06	407.10	41.96	10.701	
8,100.00	7,272.00	7,262.05	7,260.02	29.86	12.58	89.49	-39.98	-117.85	459.66	417.25	42.41	10.839	
8,200.00	7,272.00	7,257.06	7,255.04	30.31	12.57	88.86	-39.74	-117.83	490.79	448.28	42.51	11.544	
8,300.00	7,272.00	7,252.08	7,250.06	30.85	12.56	88.22	-39.49	-117.82	538.90	496.55	42.35	12.724	
8,400.00	7,272.00	7,247.09	7,245.08	31.47	12.55	87.59	-39.24	-117.81	599.92	557.85	42.06	14.263	

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - STELLING 24-4 - CPR WELL - GYRO												Offset Site Error:	0.00 usft
Survey Program: 100-VESSI_GYROFLEX												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
8,500.00	7,272.00	7,242.11	7,240.10	32.16	12.54	86.95	-38.99	-117.80	670.32	628.59	41.74	16.060	
8,600.00	7,272.00	7,237.12	7,235.12	32.92	12.53	86.32	-38.74	-117.78	747.48	706.04	41.43	18.041	
8,700.00	7,272.00	7,232.13	7,230.14	33.73	12.52	85.69	-38.49	-117.77	829.49	788.33	41.16	20.151	
8,800.00	7,272.00	7,227.15	7,225.16	34.61	12.52	85.06	-38.25	-117.76	915.07	874.13	40.93	22.355	
8,900.00	7,272.00	7,222.16	7,220.18	35.53	12.51	84.43	-38.00	-117.75	1,003.29	962.55	40.74	24.628	
9,000.00	7,272.00	7,217.18	7,215.20	36.50	12.50	83.80	-37.75	-117.74	1,093.51	1,052.94	40.58	26.950	
9,100.00	7,272.00	7,212.19	7,210.22	37.51	12.49	83.17	-37.50	-117.72	1,185.29	1,144.85	40.44	29.310	
9,200.00	7,272.00	7,207.21	7,205.24	38.55	12.48	82.55	-37.25	-117.71	1,278.28	1,237.95	40.33	31.699	
9,300.00	7,272.00	7,202.22	7,200.27	39.63	12.47	81.92	-37.00	-117.70	1,372.24	1,332.01	40.23	34.110	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - STELLING 3A-4H - CPR WELL - SURVEYS												Offset Site Error:	0.00 usft
Survey Program: 108-ISCWSA MWD												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	-104.28	-23.73	-93.26	96.65				
100.00	100.00	91.45	91.45	0.14	0.09	-104.44	-23.94	-92.98	96.02	95.79	0.23	418.970	
200.00	200.00	191.27	191.26	0.50	0.29	-104.97	-24.69	-92.35	95.60	94.81	0.79	121.561	
279.47	279.47	270.53	270.50	0.78	0.47	-106.28	-26.76	-91.64	95.47	94.22	1.25	76.402 CC	
300.00	300.00	290.71	290.65	0.85	0.52	-106.84	-27.66	-91.42	95.52	94.14	1.37	69.507 ES	
400.00	400.00	389.42	389.08	1.21	0.77	-111.18	-34.95	-90.18	96.74	94.75	1.99	48.717	
500.00	500.00	486.76	485.73	1.57	1.05	-117.64	-46.30	-88.41	99.93	97.32	2.61	38.216	
600.00	600.00	581.92	580.04	1.93	1.33	-123.32	-58.85	-89.53	107.70	104.47	3.23	33.341	
700.00	700.00	678.66	675.82	2.29	1.60	-126.95	-71.31	-94.81	119.60	115.80	3.80	31.469	
800.00	800.00	777.14	773.42	2.65	1.88	-128.49	-81.77	-102.83	132.55	128.18	4.37	30.303	
900.00	900.00	874.25	869.57	3.01	2.18	-129.50	-92.10	-111.74	146.38	141.44	4.94	29.634	
1,000.00	1,000.00	972.12	966.27	3.36	2.50	-130.22	-103.16	-122.00	161.67	156.16	5.51	29.319	
1,100.00	1,100.00	1,074.76	1,067.82	3.72	2.79	-131.05	-114.54	-131.52	175.94	169.85	6.09	28.891	
1,200.00	1,200.00	1,172.99	1,165.18	4.08	3.08	-131.82	-124.85	-139.54	189.01	182.36	6.65	28.403	
1,300.00	1,299.98	1,271.01	1,262.21	4.42	3.40	20.26	-135.45	-148.53	201.44	194.23	7.21	27.923	
1,400.00	1,399.84	1,371.06	1,361.23	4.75	3.72	20.27	-146.13	-158.03	210.78	203.01	7.77	27.143	
1,500.00	1,499.45	1,473.29	1,462.51	5.09	4.02	20.70	-156.42	-167.36	216.15	207.83	8.32	25.968	
1,600.00	1,598.70	1,572.65	1,561.04	5.43	4.31	21.45	-165.97	-176.01	217.69	208.80	8.88	24.503	
1,700.00	1,697.47	1,666.70	1,654.06	5.78	4.62	22.60	-175.82	-185.73	217.84	208.39	9.45	23.060	
1,800.00	1,795.62	1,767.23	1,753.32	6.15	4.96	24.28	-186.90	-197.23	216.11	206.06	10.06	21.487	
1,810.86	1,806.25	1,778.60	1,764.54	6.19	5.00	24.49	-188.12	-198.47	215.69	205.56	10.13	21.298	
1,900.00	1,893.36	1,871.08	1,856.07	6.54	5.30	26.20	-197.69	-207.70	211.21	200.52	10.69	19.760	
2,000.00	1,991.10	1,973.74	1,957.87	6.93	5.60	28.22	-207.38	-216.75	204.93	193.61	11.32	18.105	
2,100.00	2,088.83	2,071.89	2,055.32	7.34	5.89	30.38	-215.83	-224.81	197.96	186.00	11.96	16.553	
2,200.00	2,186.57	2,172.45	2,154.99	7.76	6.19	32.51	-225.75	-233.73	192.49	179.87	12.62	15.249	
2,300.00	2,284.30	2,271.38	2,253.15	8.18	6.50	34.54	-235.53	-241.19	186.13	172.83	13.30	13.991	
2,400.00	2,382.04	2,373.31	2,354.20	8.61	6.81	36.47	-246.60	-248.71	180.32	166.32	14.00	12.880	
2,500.00	2,479.77	2,468.93	2,449.04	9.04	7.10	38.56	-256.44	-255.81	174.53	159.81	14.72	11.859	
2,600.00	2,577.51	2,568.71	2,547.87	9.48	7.42	41.24	-266.40	-265.23	170.76	155.29	15.47	11.040	
2,700.00	2,675.24	2,669.68	2,647.97	9.93	7.73	44.08	-276.18	-274.09	166.65	150.41	16.24	10.263	
2,800.00	2,772.98	2,768.80	2,746.22	10.37	8.03	46.75	-286.38	-282.28	162.63	145.60	17.03	9.549	
2,900.00	2,870.71	2,864.51	2,840.98	10.82	8.34	49.57	-296.19	-291.53	160.36	142.50	17.86	8.980	
3,000.00	2,968.45	2,966.35	2,941.81	11.27	8.66	53.06	-305.62	-302.19	159.13	140.42	18.71	8.504	
3,046.13	3,013.54	3,010.02	2,985.07	11.48	8.81	54.60	-309.57	-306.81	158.80	139.69	19.12	8.306	
3,100.00	3,066.19	3,061.91	3,036.36	11.73	8.98	56.39	-314.47	-312.93	159.25	139.66	19.59	8.129	
3,200.00	3,163.92	3,165.14	3,138.57	12.18	9.31	60.18	-323.47	-324.27	159.69	139.19	20.50	7.791	
3,300.00	3,261.66	3,266.06	3,238.56	12.64	9.62	63.53	-333.16	-333.85	159.26	137.87	21.39	7.445	
3,400.00	3,359.39	3,366.24	3,337.76	13.10	9.94	66.45	-344.02	-342.63	158.56	136.27	22.29	7.115	
3,437.39	3,395.93	3,402.95	3,374.09	13.27	10.06	67.49	-348.07	-345.92	158.47	135.84	22.63	7.004	
3,500.00	3,457.13	3,464.99	3,435.48	13.56	10.26	69.23	-354.95	-351.72	158.68	135.49	23.19	6.842	
3,600.00	3,554.86	3,565.18	3,534.65	14.02	10.58	72.12	-365.84	-360.92	159.20	135.10	24.10	6.606	
3,700.00	3,652.60	3,665.32	3,633.76	14.49	10.91	74.87	-377.11	-369.86	159.78	134.78	25.00	6.391	
3,800.00	3,750.33	3,765.70	3,733.10	14.95	11.23	77.60	-388.48	-378.57	160.48	134.59	25.89	6.198	
3,900.00	3,848.07	3,864.67	3,831.24	15.42	11.54	80.73	-398.53	-386.45	161.21	134.42	26.79	6.018	
4,000.00	3,945.80	3,962.59	3,928.39	15.88	11.84	84.07	-407.32	-395.07	163.63	135.95	27.68	5.911	
4,100.00	4,043.54	4,062.11	4,026.98	16.35	12.15	87.00	-417.01	-404.55	166.96	138.41	28.55	5.849	
4,200.00	4,141.27	4,160.31	4,124.17	16.82	12.47	89.57	-427.07	-414.34	170.86	141.45	29.41	5.810	
4,300.00	4,239.01	4,260.39	4,223.05	17.29	12.81	91.74	-437.77	-425.48	175.89	145.65	30.24	5.816	
4,400.00	4,336.74	4,360.51	4,322.27	17.76	13.12	94.41	-447.21	-435.01	180.46	149.40	31.05	5.811	
4,500.00	4,434.48	4,460.57	4,421.45	18.23	13.44	97.00	-456.51	-444.39	185.35	153.51	31.84	5.821	
4,600.00	4,532.21	4,559.70	4,519.50	18.70	13.77	98.95	-467.12	-454.46	190.38	157.74	32.64	5.832	
4,700.00	4,629.95	4,660.41	4,618.94	19.17	14.12	100.49	-478.74	-465.40	195.66	162.22	33.45	5.850	

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - STELLING 3A-4H - CPR WELL - SURVEYS												Offset Site Error:	0.00 usft
Survey Program: 108-ISCWSA MWD												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
4,800.00	4,727.68	4,761.29	4,718.46	19.64	14.47	101.82	-491.19	-476.18	200.42	166.17	34.24	5.852	
4,900.00	4,825.42	4,860.98	4,816.87	20.11	14.82	103.17	-503.39	-486.39	205.01	169.97	35.04	5.851	
5,000.00	4,923.15	4,956.09	4,910.85	20.58	15.14	104.56	-513.88	-496.53	210.83	174.99	35.84	5.882	
5,100.00	5,020.89	5,054.49	5,008.03	21.06	15.47	105.84	-523.94	-508.26	218.24	181.62	36.63	5.959	
5,200.00	5,118.62	5,153.52	5,105.97	21.53	15.80	107.30	-533.12	-519.64	226.13	188.75	37.38	6.049	
5,300.00	5,216.36	5,255.01	5,206.49	22.00	16.12	108.94	-542.07	-530.39	233.87	195.78	38.09	6.140	
5,400.00	5,314.10	5,356.74	5,307.14	22.48	16.46	110.28	-552.29	-541.13	240.84	202.03	38.81	6.206	
5,500.00	5,411.83	5,457.32	5,406.89	22.95	16.77	111.96	-561.64	-549.96	247.37	207.88	39.49	6.264	
5,600.00	5,509.57	5,558.30	5,507.03	23.42	17.08	113.57	-571.42	-558.44	253.54	213.39	40.15	6.315	
5,700.00	5,607.30	5,658.99	5,606.71	23.90	17.41	114.83	-582.23	-567.65	259.52	218.68	40.84	6.354	
5,800.00	5,705.04	5,760.73	5,707.44	24.37	17.74	116.08	-593.61	-576.39	264.92	223.41	41.51	6.382	
5,900.00	5,802.77	5,860.88	5,806.49	24.85	18.07	117.15	-605.56	-585.06	269.86	227.66	42.20	6.394	
6,000.00	5,900.51	5,960.09	5,904.64	25.32	18.40	118.19	-617.19	-593.72	275.12	232.22	42.90	6.413	
6,100.00	5,998.24	6,059.30	6,002.82	25.80	18.72	119.24	-628.63	-602.20	280.52	236.93	43.58	6.436	
6,200.00	6,095.98	6,154.62	6,097.17	26.27	19.02	120.20	-639.12	-610.75	286.69	242.38	44.30	6.471	
6,300.00	6,193.71	6,249.49	6,191.40	26.75	19.29	121.52	-646.85	-618.49	294.96	250.02	44.94	6.564	
6,400.00	6,291.45	6,344.60	6,286.32	27.23	19.50	123.70	-651.17	-622.50	304.65	259.26	45.40	6.711	
6,500.00	6,389.18	6,435.31	6,377.00	27.70	19.66	126.25	-652.41	-624.20	316.63	270.87	45.75	6.920	
6,536.48	6,424.83	6,462.36	6,404.04	27.88	19.69	127.07	-651.99	-624.45	322.03	276.15	45.88	7.019	
6,550.00	6,438.07	6,470.57	6,412.25	27.94	19.70	124.90	-651.63	-624.55	324.27	278.35	45.91	7.063	
6,600.00	6,487.36	6,501.18	6,442.75	28.16	19.72	111.83	-649.15	-624.97	332.42	286.46	45.96	7.233	
6,650.00	6,537.01	6,531.50	6,472.75	28.35	19.73	84.80	-644.86	-625.23	340.27	294.41	45.86	7.419	
6,700.00	6,586.76	6,561.84	6,502.48	28.51	19.72	46.75	-638.82	-625.53	347.79	302.16	45.63	7.622	
6,750.00	6,636.37	6,592.40	6,532.06	28.64	19.69	21.31	-631.18	-626.16	354.84	309.55	45.29	7.835	
6,800.00	6,685.61	6,623.32	6,561.54	28.75	19.66	8.81	-621.90	-627.12	361.34	316.48	44.86	8.055	
6,850.00	6,734.24	6,655.97	6,592.13	28.85	19.61	2.29	-610.57	-628.30	367.08	322.68	44.40	8.268	
6,900.00	6,782.01	6,692.06	6,625.37	28.93	19.54	-1.49	-596.61	-629.78	371.69	327.71	43.98	8.452	
6,950.00	6,828.69	6,729.57	6,659.42	28.99	19.46	-3.89	-580.91	-631.17	374.67	331.10	43.57	8.600	
7,000.00	6,874.07	6,763.64	6,689.75	29.04	19.39	-5.55	-565.45	-632.34	376.22	333.24	42.98	8.753	
7,050.00	6,917.91	6,800.00	6,721.29	29.07	19.29	-6.71	-547.40	-633.34	376.66	334.23	42.43	8.877	
7,100.00	6,960.00	6,837.46	6,753.02	29.09	19.17	-7.48	-527.48	-633.54	375.50	333.63	41.86	8.970	
7,150.00	7,000.14	6,874.15	6,783.43	29.10	19.05	-8.03	-506.97	-633.16	372.51	331.29	41.21	9.039	
7,200.00	7,038.13	6,906.96	6,809.80	29.10	18.94	-8.48	-487.46	-632.59	368.25	327.91	40.34	9.129	
7,250.00	7,073.79	6,939.06	6,834.61	29.10	18.82	-8.87	-467.11	-632.06	363.09	323.72	39.37	9.222	
7,300.00	7,106.94	6,973.75	6,860.45	29.09	18.70	-9.26	-443.96	-631.83	356.85	318.33	38.52	9.264	
7,350.00	7,137.43	7,008.03	6,885.10	29.07	18.57	-9.72	-420.15	-632.04	349.27	311.63	37.64	9.279	
7,400.00	7,165.09	7,040.88	6,907.65	29.05	18.46	-10.26	-396.28	-632.58	340.70	304.03	36.68	9.290	
7,450.00	7,189.81	7,073.42	6,928.77	29.03	18.34	-10.79	-371.53	-632.92	331.20	295.53	35.67	9.285	
7,500.00	7,211.45	7,105.12	6,948.04	29.02	18.23	-11.33	-346.37	-633.08	320.93	286.33	34.60	9.274	
7,550.00	7,229.92	7,136.49	6,965.68	29.01	18.11	-11.89	-320.42	-633.15	310.06	276.53	33.53	9.247	
7,600.00	7,245.11	7,167.64	6,981.69	29.00	18.01	-12.51	-293.71	-633.27	298.70	266.20	32.50	9.192	
7,650.00	7,256.97	7,199.56	6,996.42	29.01	17.90	-13.18	-265.39	-633.32	286.94	255.34	31.60	9.080	
7,700.00	7,265.43	7,233.65	7,010.42	29.03	17.79	-13.95	-234.32	-633.31	274.63	243.65	30.98	8.866	
7,750.00	7,270.44	7,268.05	7,022.95	29.06	17.69	-14.85	-202.29	-633.29	261.56	231.01	30.55	8.562	
7,797.34	7,272.00	7,299.02	7,032.63	29.10	17.61	-15.83	-172.87	-633.36	248.78	218.48	30.29	8.212	
7,800.00	7,272.00	7,300.75	7,033.12	29.10	17.61	-15.87	-171.21	-633.37	248.06	217.77	30.29	8.190	
7,900.00	7,272.00	7,372.00	7,048.60	29.26	17.49	-17.13	-101.71	-633.51	227.21	196.61	30.60	7.425	
8,000.00	7,272.00	7,447.19	7,056.75	29.51	17.49	-17.84	-27.01	-633.19	216.93	185.28	31.65	6.853	
8,056.68	7,272.00	7,493.23	7,058.08	29.70	17.57	-18.08	19.01	-633.36	215.57	183.08	32.49	6.636	
8,100.00	7,272.00	7,534.92	7,057.99	29.86	17.70	-18.35	60.70	-634.09	215.99	182.96	33.03	6.538	
8,200.00	7,272.00	7,639.46	7,060.24	30.31	18.16	-19.85	165.11	-638.43	215.58	181.16	34.42	6.263	
8,300.00	7,272.00	7,746.28	7,064.89	30.85	18.78	-21.52	271.75	-642.47	213.16	177.28	35.87	5.942	

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - STELLING 3A-4H - CPR WELL - SURVEYS												Offset Site Error:	0.00 usft
Survey Program: 108-ISCWSA MWD												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Uncertainty Axis		
8,400.00	7,272.00	7,847.54	7,072.42	31.47	19.46	-23.57	372.64	-646.68	208.18	170.48	37.70	5.523	
8,500.00	7,272.00	7,944.26	7,078.28	32.16	20.30	-25.16	469.14	-649.48	204.19	164.55	39.64	5.151	
8,600.00	7,272.00	8,038.75	7,080.42	32.92	21.23	-25.63	563.59	-649.54	202.51	161.13	41.37	4.895	
8,663.47	7,272.00	8,101.11	7,080.81	33.43	21.87	-25.73	625.95	-649.21	202.24	159.91	42.33	4.778	
8,700.00	7,272.00	8,135.98	7,080.75	33.73	22.24	-25.77	660.82	-649.14	202.39	159.46	42.93	4.715	
8,800.00	7,272.00	8,234.80	7,079.85	34.61	23.40	-25.85	759.63	-649.07	203.54	159.08	44.46	4.578	
8,900.00	7,272.00	8,336.86	7,078.92	35.53	24.57	-25.95	861.68	-649.07	204.72	158.88	45.84	4.466	
9,000.00	7,272.00	8,436.40	7,078.61	36.50	25.71	-25.97	961.22	-648.46	205.10	157.75	47.35	4.332	
9,100.00	7,272.00	8,532.52	7,076.96	37.51	27.01	-25.82	1,057.33	-647.87	206.73	157.67	49.07	4.213	
9,200.00	7,272.00	8,631.62	7,074.58	38.55	28.39	-25.97	1,156.39	-648.82	209.67	158.89	50.78	4.129	
9,300.00	7,272.00	8,732.41	7,072.75	39.63	29.76	-26.12	1,257.16	-649.49	211.95	159.55	52.40	4.045	
9,400.00	7,272.00	8,832.19	7,070.84	40.75	31.18	-26.30	1,356.91	-650.38	214.43	160.29	54.14	3.961	
9,500.00	7,272.00	8,933.35	7,068.99	41.89	32.67	-26.69	1,458.04	-652.11	217.20	161.27	55.94	3.883	
9,600.00	7,272.00	9,032.52	7,068.47	43.06	34.20	-27.50	1,557.17	-655.02	219.39	161.25	58.14	3.774	
9,700.00	7,272.00	9,130.94	7,067.31	44.26	35.77	-28.23	1,655.54	-657.99	222.22	161.83	60.39	3.680	
9,800.00	7,272.00	9,231.45	7,065.52	45.48	37.35	-28.67	1,756.01	-660.09	225.18	162.78	62.40	3.609	
9,900.00	7,272.00	9,333.98	7,063.64	46.72	38.92	-28.91	1,858.51	-661.35	227.78	163.61	64.17	3.549	
10,000.00	7,272.00	9,434.62	7,063.63	47.98	40.42	-29.44	1,959.13	-662.91	228.95	162.70	66.25	3.456	
10,100.00	7,272.00	9,530.82	7,063.33	49.25	41.98	-30.27	2,055.28	-666.13	231.30	162.43	68.86	3.359	
10,200.00	7,272.00	9,631.83	7,062.96	50.55	43.62	-31.50	2,156.15	-671.35	234.69	163.18	71.52	3.282	
10,300.00	7,272.00	9,732.67	7,062.20	51.86	45.27	-32.10	2,256.96	-673.93	237.12	163.31	73.81	3.212	
10,400.00	7,272.00	9,829.20	7,060.75	53.18	46.88	-32.60	2,353.44	-676.51	240.26	163.93	76.33	3.147	
10,500.00	7,272.00	9,933.24	7,059.48	54.52	48.53	-33.30	2,457.41	-680.01	243.58	165.01	78.56	3.100	
10,600.00	7,272.00	10,032.52	7,058.74	55.87	50.16	-33.79	2,556.66	-682.14	245.84	164.87	80.97	3.036	
10,700.00	7,272.00	10,135.06	7,056.48	57.23	51.85	-33.60	2,659.17	-681.82	247.96	165.27	82.69	2.999	
10,800.00	7,272.00	10,234.13	7,055.22	58.60	53.44	-33.53	2,758.24	-681.49	249.30	164.60	84.69	2.944	
10,900.00	7,272.00	10,332.29	7,053.36	59.98	55.11	-33.59	2,856.37	-682.21	251.74	164.85	86.89	2.897	
11,000.00	7,272.00	10,431.79	7,052.32	61.37	56.80	-33.99	2,955.85	-684.21	254.19	164.86	89.32	2.846	
11,100.00	7,272.00	10,531.13	7,051.20	62.77	58.48	-34.51	3,055.14	-686.96	257.14	165.26	91.89	2.798	
11,200.00	7,272.00	10,634.72	7,049.70	64.18	60.23	-34.87	3,158.70	-689.11	260.00	165.91	94.09	2.763	
11,300.00	7,272.00	10,737.17	7,049.90	65.59	61.90	-35.25	3,261.14	-690.25	260.94	164.57	96.37	2.708	
11,400.00	7,272.00	10,834.22	7,049.92	67.01	63.54	-35.56	3,358.19	-691.19	261.98	163.00	98.98	2.647	
11,500.00	7,272.00	10,932.85	7,048.31	68.44	65.26	-35.68	3,456.79	-692.18	264.37	163.05	101.32	2.609	
11,600.00	7,272.00	11,033.00	7,047.55	69.88	66.96	-36.01	3,556.93	-693.80	266.41	162.63	103.78	2.567	
11,700.00	7,272.00	11,131.46	7,045.99	71.32	68.66	-36.31	3,655.35	-695.88	269.42	163.07	106.35	2.533	
11,800.00	7,272.00	11,239.18	7,045.44	72.76	70.45	-36.51	3,763.06	-696.57	270.69	162.45	108.24	2.501	
11,871.63	7,272.00	11,310.73	7,045.94	73.80	71.65	-36.67	3,834.61	-696.51	270.61	160.65	109.96	2.461	
11,900.00	7,272.00	11,338.59	7,045.98	74.22	72.12	-36.69	3,862.48	-696.38	270.64	160.00	110.64	2.446	
12,000.00	7,272.00	11,436.44	7,045.88	75.67	73.82	-36.78	3,960.32	-696.19	271.10	158.02	113.08	2.397	
12,100.00	7,272.00	11,531.35	7,045.12	77.13	75.47	-37.01	4,055.21	-697.35	272.97	157.12	115.86	2.356	
12,154.60	7,272.00	11,588.06	7,044.39	77.93	76.44	-37.15	4,111.92	-698.28	274.34	157.24	117.10	2.343 SF	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - STELLING 3B-4H - CPR WELL - SURVEYS												Offset Site Error:	0.00 usft
Survey Program: 140-ISCWSA MWD												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	-101.79	-14.26	-68.35	71.02				
100.00	100.00	87.54	87.54	0.14	0.09	-101.93	-14.36	-67.98	69.48	69.25	0.23	299.723	
200.00	200.00	188.51	188.50	0.50	0.26	-102.75	-15.03	-66.44	68.13	67.37	0.76	89.867	
300.00	300.00	288.83	288.70	0.85	0.50	-106.07	-18.10	-62.84	65.42	64.07	1.35	48.525	
400.00	400.00	388.45	388.10	1.21	0.74	-111.63	-23.30	-58.77	63.23	61.27	1.95	32.376	
479.32	479.32	467.02	466.32	1.50	0.96	-118.32	-29.62	-54.96	62.43	59.97	2.46	25.407 CC	
500.00	500.00	487.40	486.57	1.57	1.02	-120.43	-31.66	-53.89	62.50	59.91	2.59	24.121 ES	
600.00	600.00	586.45	584.86	1.93	1.29	-131.24	-42.59	-48.57	64.64	61.42	3.22	20.073	
700.00	700.00	685.53	683.17	2.29	1.57	-141.23	-53.74	-43.17	69.04	65.20	3.84	17.985	
800.00	800.00	784.62	781.39	2.65	1.88	-150.31	-65.47	-37.33	75.57	71.12	4.46	16.961	
900.00	900.00	883.51	879.40	3.01	2.19	-157.79	-77.31	-31.57	83.85	78.80	5.05	16.593	
1,000.00	1,000.00	981.86	976.82	3.36	2.52	-163.98	-89.50	-25.71	93.68	88.03	5.65	16.588	
1,100.00	1,100.00	1,078.78	1,072.54	3.72	2.86	-169.18	-103.42	-19.77	106.28	100.06	6.22	17.081	
1,200.00	1,200.00	1,179.22	1,171.77	4.08	3.16	-173.39	-117.70	-13.63	119.46	112.68	6.78	17.618	
1,300.00	1,299.98	1,279.08	1,270.56	4.42	3.45	-24.46	-130.87	-7.38	130.53	123.21	7.32	17.836	
1,400.00	1,399.84	1,379.34	1,369.83	4.75	3.76	-28.19	-143.43	-1.06	138.31	130.47	7.84	17.639	
1,500.00	1,499.45	1,479.75	1,469.34	5.09	4.06	-32.21	-155.36	5.11	143.00	134.63	8.36	17.099	
1,600.00	1,598.70	1,580.17	1,568.98	5.43	4.36	-36.70	-166.36	10.89	144.57	135.69	8.89	16.268	
1,700.00	1,697.47	1,678.17	1,666.20	5.78	4.66	-42.03	-177.09	16.98	144.51	135.10	9.41	15.363	
1,800.00	1,795.62	1,775.74	1,762.86	6.15	4.97	-48.41	-188.58	23.69	144.40	134.45	9.95	14.517	
1,810.86	1,806.25	1,786.46	1,773.48	6.19	5.01	-49.17	-189.86	24.45	144.39	134.38	10.01	14.426	
1,818.10	1,813.32	1,793.60	1,780.55	6.22	5.03	-49.69	-190.71	24.95	144.38	134.33	10.05	14.365	
1,900.00	1,893.36	1,874.25	1,860.43	6.54	5.29	-55.51	-200.20	30.71	145.10	134.55	10.54	13.761	
2,000.00	1,991.10	1,973.06	1,958.31	6.93	5.59	-62.41	-211.87	37.53	147.93	136.73	11.20	13.203	
2,100.00	2,088.83	2,072.29	2,056.68	7.34	5.90	-68.94	-223.26	43.90	152.29	140.36	11.92	12.774	
2,200.00	2,186.57	2,172.26	2,155.83	7.76	6.20	-74.81	-234.88	49.34	157.88	145.20	12.68	12.448	
2,300.00	2,284.30	2,271.27	2,254.17	8.18	6.49	-80.58	-244.95	54.71	164.14	150.66	13.48	12.180	
2,400.00	2,382.04	2,368.44	2,350.75	8.61	6.76	-86.57	-253.05	61.62	172.48	158.19	14.29	12.070	
2,500.00	2,479.77	2,465.64	2,447.35	9.04	7.04	-92.34	-260.33	69.57	183.22	168.11	15.11	12.127	
2,600.00	2,577.51	2,564.82	2,545.86	9.48	7.32	-97.08	-269.18	76.89	195.36	179.44	15.92	12.272	
2,700.00	2,675.24	2,666.04	2,646.43	9.93	7.61	-101.03	-279.00	82.97	207.57	190.85	16.73	12.411	
2,800.00	2,772.98	2,762.47	2,742.22	10.37	7.89	-104.29	-288.53	88.49	220.38	202.87	17.51	12.584	
2,900.00	2,870.71	2,858.32	2,837.31	10.82	8.19	-107.02	-298.81	94.66	234.68	216.39	18.29	12.831	
3,000.00	2,968.45	2,956.92	2,935.01	11.27	8.50	-109.33	-310.22	101.58	250.14	231.07	19.07	13.114	
3,100.00	3,066.19	3,055.07	3,032.23	11.73	8.81	-111.26	-322.02	108.20	265.73	245.88	19.85	13.386	
3,200.00	3,163.92	3,155.05	3,131.32	12.18	9.12	-113.10	-333.53	114.86	281.46	260.83	20.62	13.648	
3,300.00	3,261.66	3,255.30	3,230.77	12.64	9.43	-114.85	-344.61	120.89	296.79	275.40	21.39	13.877	
3,400.00	3,359.39	3,349.73	3,324.51	13.10	9.71	-116.46	-354.32	126.88	312.67	290.55	22.13	14.131	
3,500.00	3,457.13	3,449.13	3,423.15	13.56	10.01	-118.01	-364.50	133.72	329.33	306.46	22.88	14.396	
3,600.00	3,554.86	3,548.48	3,521.64	14.02	10.31	-119.22	-375.74	140.22	345.82	322.19	23.63	14.634	
3,700.00	3,652.60	3,647.95	3,620.27	14.49	10.62	-120.32	-387.07	146.44	362.14	337.76	24.38	14.851	
3,800.00	3,750.33	3,745.27	3,716.90	14.95	10.91	-121.49	-396.94	152.40	378.57	353.45	25.11	15.074	
3,900.00	3,848.07	3,840.66	3,811.68	15.42	11.18	-122.68	-405.60	158.83	395.84	370.01	25.83	15.325	
4,000.00	3,945.80	3,945.49	3,915.79	15.88	11.49	-123.77	-416.01	165.23	412.54	385.97	26.57	15.527	
4,100.00	4,043.54	4,046.15	4,015.62	16.35	11.80	-124.50	-427.76	170.64	428.42	401.11	27.31	15.685	
4,200.00	4,141.27	4,143.93	4,112.53	16.82	12.11	-125.09	-439.79	175.64	444.02	415.96	28.07	15.821	
4,300.00	4,239.01	4,239.24	4,206.82	17.29	12.42	-125.50	-452.40	181.50	460.53	431.71	28.82	15.982	
4,400.00	4,336.74	4,341.09	4,307.75	17.76	12.74	-126.05	-464.69	187.38	476.88	447.31	29.57	16.128	
4,500.00	4,434.48	4,440.06	4,405.98	18.23	13.03	-126.68	-475.68	192.34	492.68	462.38	30.30	16.259	
4,600.00	4,532.21	4,536.79	4,501.89	18.70	13.33	-127.17	-487.08	197.74	508.98	477.94	31.04	16.398	
4,700.00	4,629.95	4,634.96	4,599.17	19.17	13.64	-127.60	-498.97	203.34	525.37	493.59	31.78	16.530	
4,800.00	4,727.68	4,731.65	4,694.94	19.64	13.95	-127.96	-510.94	209.15	542.03	509.50	32.53	16.662	

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - STELLING 3B-4H - CPR WELL - SURVEYS												Offset Site Error:	0.00 usft
Survey Program: 140-ISCWSA MWD												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
4,900.00	4,825.42	4,828.35	4,790.58	20.11	14.27	-128.21	-523.77	215.49	559.07	525.79	33.29	16.796	
5,000.00	4,923.15	4,926.20	4,887.50	20.58	14.58	-128.56	-535.55	221.90	576.36	542.33	34.02	16.939	
5,100.00	5,020.89	5,022.22	4,982.86	21.06	14.86	-129.09	-545.00	227.88	593.81	559.07	34.74	17.093	
5,200.00	5,118.62	5,121.26	5,081.16	21.53	15.15	-129.56	-555.16	234.51	611.67	576.21	35.46	17.250	
5,300.00	5,216.36	5,221.23	5,180.42	22.00	15.45	-130.04	-565.27	240.74	629.16	592.98	36.18	17.389	
5,400.00	5,314.10	5,318.50	5,276.91	22.48	15.75	-130.40	-575.91	246.98	646.67	609.76	36.91	17.520	
5,500.00	5,411.83	5,414.26	5,371.83	22.95	16.05	-130.70	-586.71	253.50	664.50	626.86	37.64	17.655	
5,600.00	5,509.57	5,524.41	5,481.24	23.42	16.37	-131.17	-597.57	260.15	681.98	643.62	38.36	17.778	
5,700.00	5,607.30	5,619.35	5,575.56	23.90	16.65	-131.55	-607.25	264.98	698.49	659.42	39.07	17.877	
5,800.00	5,705.04	5,710.63	5,666.11	24.37	16.92	-131.83	-617.27	270.64	715.89	676.09	39.79	17.990	
5,900.00	5,802.77	5,815.81	5,770.42	24.85	17.25	-132.11	-628.93	277.39	733.48	692.95	40.53	18.098	
6,000.00	5,900.51	5,931.81	5,885.97	25.32	17.54	-132.76	-638.04	281.56	749.26	708.07	41.19	18.191	
6,100.00	5,998.24	6,036.11	5,990.08	25.80	17.76	-133.52	-644.14	282.94	763.52	721.72	41.81	18.264	
6,200.00	6,095.98	6,132.07	6,085.98	26.27	17.94	-134.38	-647.33	283.43	777.89	735.49	42.40	18.345	
6,300.00	6,193.71	6,230.28	6,184.18	26.75	18.10	-135.41	-648.12	283.31	792.64	749.68	42.96	18.452	
6,400.00	6,291.45	6,329.92	6,283.82	27.23	18.24	-136.48	-648.30	282.74	807.41	763.92	43.49	18.567	
6,500.00	6,389.18	6,409.82	6,363.68	27.70	18.34	-137.44	-646.40	282.06	823.15	779.12	44.03	18.695	
6,536.48	6,424.83	6,434.17	6,387.98	27.88	18.36	-137.79	-644.78	282.00	829.70	785.48	44.22	18.765	
6,550.00	6,438.07	6,442.89	6,396.68	27.94	18.36	-140.61	-644.09	282.03	832.22	787.94	44.28	18.794	
6,600.00	6,487.36	6,474.22	6,427.86	28.16	18.38	-155.93	-641.08	282.32	841.44	796.94	44.50	18.909	
6,650.00	6,537.01	6,509.88	6,463.22	28.35	18.39	174.94	-636.57	282.96	850.38	805.71	44.67	19.035	
6,700.00	6,586.76	6,554.05	6,506.87	28.51	18.39	135.00	-629.86	283.75	858.54	813.73	44.81	19.159	
6,750.00	6,636.37	6,595.21	6,547.38	28.64	18.39	108.02	-622.59	284.32	865.64	820.71	44.92	19.269	
6,800.00	6,685.61	6,646.89	6,597.99	28.75	18.36	94.30	-612.15	284.92	871.71	826.70	45.01	19.368	
6,850.00	6,734.24	6,687.65	6,637.80	28.85	18.34	86.88	-603.42	285.14	876.31	831.22	45.09	19.433	
6,900.00	6,782.01	6,725.53	6,674.55	28.93	18.31	82.43	-594.22	285.49	880.16	835.00	45.16	19.488	
6,950.00	6,828.69	6,766.35	6,713.89	28.99	18.27	79.65	-583.36	285.91	883.10	837.89	45.21	19.532	
7,000.00	6,874.07	6,807.69	6,753.40	29.04	18.22	77.88	-571.18	286.18	885.03	839.78	45.25	19.561	
7,050.00	6,917.91	6,838.87	6,782.75	29.07	18.17	76.64	-560.70	286.36	886.34	841.07	45.27	19.580	
7,100.00	6,960.00	6,862.00	6,804.09	29.09	18.13	75.69	-551.78	286.53	887.43	842.16	45.27	19.603	
7,150.00	7,000.14	6,893.00	6,831.91	29.10	18.06	75.12	-538.12	286.92	888.43	843.19	45.24	19.639	
7,200.00	7,038.13	6,925.00	6,859.61	29.10	17.97	74.76	-522.11	287.42	889.29	844.11	45.18	19.683	
7,250.00	7,073.79	6,951.73	6,881.74	29.10	17.88	74.49	-507.15	287.75	889.90	844.79	45.11	19.728	
7,300.00	7,106.94	6,988.00	6,909.86	29.09	17.75	74.41	-484.25	288.03	890.39	845.37	45.02	19.779	
7,301.26	7,107.75	6,988.00	6,909.86	29.09	17.75	74.40	-484.25	288.03	890.39	845.37	45.02	19.779	
7,350.00	7,137.43	7,008.83	6,924.86	29.07	17.67	74.23	-469.82	288.12	890.64	845.69	44.94	19.818	
7,400.00	7,165.09	7,037.00	6,943.65	29.05	17.55	74.18	-448.84	288.21	890.86	846.01	44.85	19.864	
7,450.00	7,189.81	7,066.67	6,961.30	29.03	17.41	74.15	-425.00	288.15	890.96	846.20	44.75	19.908	
7,500.00	7,211.45	7,097.47	6,977.09	29.02	17.26	74.14	-398.57	287.85	890.85	846.18	44.66	19.946	
7,550.00	7,229.92	7,131.82	6,991.95	29.01	17.09	74.16	-367.61	287.30	890.46	845.88	44.58	19.975	
7,600.00	7,245.11	7,163.96	7,003.87	29.00	16.93	74.23	-337.78	286.67	889.60	845.07	44.53	19.977	
7,650.00	7,256.97	7,192.81	7,012.49	29.01	16.79	74.32	-310.27	286.18	888.63	844.11	44.53	19.958	
7,700.00	7,265.43	7,225.52	7,019.61	29.03	16.64	74.43	-278.35	285.62	887.52	842.98	44.54	19.928	
7,750.00	7,270.44	7,270.78	7,025.48	29.06	16.45	74.59	-233.51	284.27	885.76	841.21	44.55	19.883	
7,797.34	7,272.00	7,309.25	7,028.08	29.10	16.30	74.82	-195.16	282.72	883.26	838.62	44.63	19.790	
7,800.00	7,272.00	7,311.42	7,028.17	29.10	16.29	74.82	-192.99	282.63	883.10	838.46	44.64	19.784	
7,900.00	7,272.00	7,391.78	7,029.52	29.26	16.05	74.84	-112.70	279.70	878.33	833.39	44.94	19.545	
8,000.00	7,272.00	7,484.50	7,029.73	29.51	16.01	74.80	-20.02	276.95	874.64	829.19	45.45	19.243	
8,100.00	7,272.00	7,561.07	7,028.97	29.86	16.24	74.72	56.53	276.14	873.09	826.92	46.17	18.912	
8,107.23	7,272.00	7,566.58	7,028.88	29.89	16.26	74.72	62.04	276.16	873.08	826.86	46.23	18.887	
8,200.00	7,272.00	7,655.58	7,027.60	30.31	16.65	74.64	151.03	277.06	873.60	826.58	47.02	18.581	
8,300.00	7,272.00	7,768.68	7,027.18	30.85	17.22	74.60	264.13	277.14	872.92	824.91	48.02	18.180	

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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

Offset Design S4-T1N-R65W - STELLING 3B-4H - CPR WELL - SURVEYS												Offset Site Error:	0.00 usft
Survey Program: 140-ISCWSA MWD												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
8,400.00	7,272.00	7,867.34	7,027.83	31.47	17.87	74.63	362.79	277.28	872.08	822.76	49.32	17.682	
8,500.00	7,272.00	7,960.28	7,028.25	32.16	18.64	74.65	455.72	277.52	871.43	820.54	50.89	17.123	
8,600.00	7,272.00	8,066.60	7,028.76	32.92	19.65	74.67	562.04	278.19	871.12	818.43	52.69	16.532	
8,700.00	7,272.00	8,161.97	7,029.59	33.73	20.61	74.72	657.41	278.52	870.44	815.89	54.55	15.958	
8,800.00	7,272.00	8,261.42	7,031.18	34.61	21.69	74.82	756.83	279.63	870.29	813.73	56.56	15.387	
8,859.52	7,272.00	8,318.94	7,032.69	35.15	22.36	74.93	814.33	280.40	870.18	812.36	57.82	15.050	
8,900.00	7,272.00	8,357.95	7,033.80	35.53	22.83	75.00	853.32	281.07	870.23	811.53	58.70	14.826	
9,000.00	7,272.00	8,452.65	7,037.15	36.50	24.04	75.24	947.94	283.07	870.58	809.61	60.97	14.279	
9,100.00	7,272.00	8,543.03	7,039.02	37.51	25.25	75.38	1,038.27	285.56	871.91	808.63	63.29	13.778	
9,200.00	7,272.00	8,638.63	7,039.78	38.55	26.61	75.47	1,133.80	288.86	874.25	808.50	65.75	13.297	
9,300.00	7,272.00	8,741.14	7,039.65	39.63	28.12	75.50	1,236.26	292.07	876.51	808.16	68.35	12.824	
9,400.00	7,272.00	8,845.86	7,038.75	40.75	29.67	75.48	1,340.95	294.70	878.36	807.36	71.00	12.371	
9,500.00	7,272.00	8,954.62	7,038.38	41.89	31.28	75.47	1,449.68	296.85	879.57	805.85	73.72	11.931	
9,600.00	7,272.00	9,057.74	7,038.43	43.06	32.85	75.48	1,552.80	298.03	879.86	803.39	76.47	11.506	
9,700.00	7,272.00	9,165.82	7,038.01	44.26	34.58	75.45	1,660.87	298.69	879.76	800.39	79.37	11.084	
9,800.00	7,272.00	9,265.41	7,037.32	45.48	36.14	75.40	1,760.46	298.89	879.34	797.16	82.18	10.701	
9,900.00	7,272.00	9,373.35	7,037.69	46.72	37.84	75.40	1,868.40	298.53	878.12	793.04	85.08	10.321	
10,000.00	7,272.00	9,492.07	7,037.92	47.98	39.77	75.37	1,987.09	296.73	875.86	787.72	88.14	9.937	
10,100.00	7,272.00	9,591.03	7,038.34	49.25	41.39	75.33	2,086.01	293.62	871.91	780.82	91.09	9.572	
10,200.00	7,272.00	9,691.32	7,038.49	50.55	43.07	75.28	2,186.26	290.94	868.49	774.40	94.10	9.230	
10,300.00	7,272.00	9,794.99	7,038.59	51.86	44.81	75.22	2,289.88	287.55	864.50	767.37	97.13	8.900	
10,400.00	7,272.00	9,898.80	7,039.11	53.18	46.54	75.17	2,393.61	283.62	859.91	759.73	100.18	8.584	
10,500.00	7,272.00	9,982.59	7,039.20	54.52	47.93	75.12	2,477.36	281.13	856.22	753.12	103.11	8.304	
10,600.00	7,272.00	10,066.90	7,038.93	55.87	49.33	75.08	2,561.67	280.33	854.58	748.58	106.01	8.062	
10,700.00	7,272.00	10,177.02	7,039.21	57.23	51.16	75.08	2,671.78	280.33	853.77	744.65	109.12	7.824	
10,800.00	7,272.00	10,270.65	7,039.06	58.60	52.78	75.04	2,765.41	279.27	851.93	739.75	112.18	7.595	
10,861.22	7,272.00	10,321.35	7,038.79	59.44	53.65	75.01	2,816.11	279.29	851.55	737.58	113.97	7.472	
10,900.00	7,272.00	10,353.48	7,038.49	59.98	54.19	74.99	2,848.24	279.60	851.70	736.61	115.09	7.400	
11,000.00	7,272.00	10,455.16	7,038.05	61.37	55.88	74.98	2,949.89	281.17	852.50	734.34	118.16	7.215	
11,100.00	7,272.00	10,557.08	7,037.62	62.77	57.66	74.96	3,051.81	282.38	852.97	731.65	121.31	7.031	
11,200.00	7,272.00	10,660.29	7,037.54	64.18	59.40	74.95	3,155.02	283.23	852.98	728.54	124.43	6.855	
11,205.82	7,272.00	10,665.95	7,037.54	64.26	59.49	74.95	3,160.68	283.27	852.98	728.37	124.61	6.845	
11,300.00	7,272.00	10,752.44	7,037.69	65.59	60.96	74.97	3,247.15	284.46	853.43	725.96	127.47	6.695	
11,400.00	7,272.00	10,858.50	7,038.17	67.01	62.75	75.01	3,353.20	286.09	853.99	723.35	130.65	6.537	
11,500.00	7,272.00	10,960.63	7,038.19	68.44	64.55	75.02	3,455.33	286.95	854.00	720.14	133.86	6.380	
11,600.00	7,272.00	11,065.91	7,037.64	69.88	66.42	74.97	3,560.60	287.40	853.76	716.66	137.10	6.227	
11,700.00	7,272.00	11,180.63	7,037.79	71.32	68.34	74.95	3,675.32	286.67	852.33	712.01	140.32	6.074	
11,800.00	7,272.00	11,286.79	7,039.10	72.76	70.18	75.00	3,781.46	285.06	849.75	706.20	143.56	5.919	
11,900.00	7,272.00	11,386.28	7,040.41	74.22	71.90	75.03	3,880.91	282.90	846.52	699.75	146.77	5.768	
12,000.00	7,272.00	11,491.43	7,041.61	75.67	73.74	75.05	3,986.03	280.35	843.08	693.06	150.03	5.620	
12,100.00	7,272.00	11,590.91	7,042.60	77.13	75.47	75.05	4,085.47	277.68	839.43	686.19	153.25	5.478	
12,154.60	7,272.00	11,649.59	7,043.39	77.93	76.47	75.07	4,144.12	276.09	837.38	682.38	155.00	5.402 SF	

Cathedral Energy Services

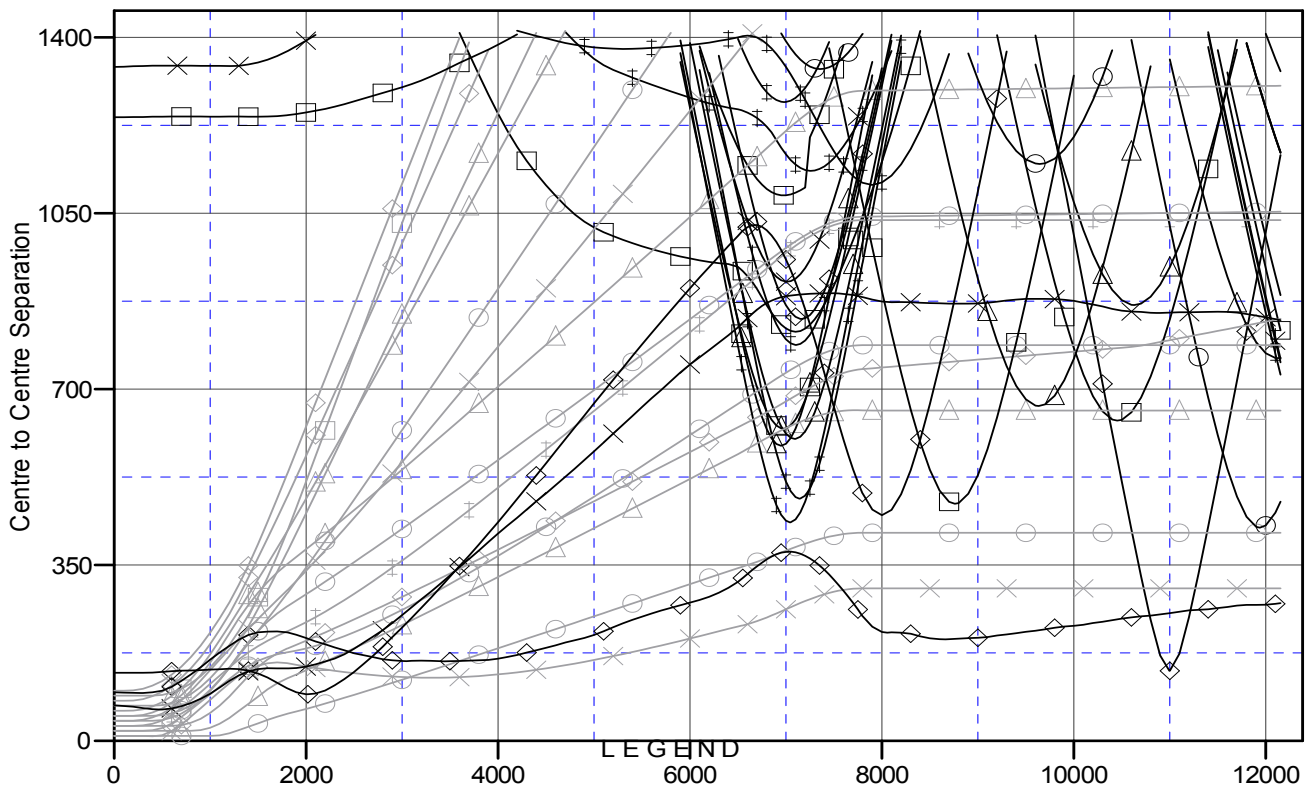
Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3H-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4939.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4939.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3H-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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 @ 4939.00usft
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: RUEGGE 3H-4H-N165 - Slot RUEGGE 3H-4H-N165
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.54°

Ladder Plot



3N1-9HZ,KMG WELL,PLAN ONLY V0	GITTEIN22-4J,CPRWELL,GYRO V0	RUEGGE 3J-4H-N165,OH,PLAN#1 V0
3N2-9HZ,KMG WELL,SURVEYS V0	GITTEIN29N-28HZ,KMG WELL,SURVEYS V0	RUEGGE 3K-4H-N165,OH,PLAN#1 V0
3N3-9HZ,KMG WELL,SURVEYS V0	GITTEIN30N-28HZ,KMG WELL,SURVEYS V0	RUEGGE 3L-4H-N165,OH,PLAN#1 V0
3N4-9HZ,KMG WELL,SURVEYS V0	GITTEIN30N-28HZX,KMG WELL,SURVEYS V0	RUEGGE 3M-4H-N165,OH,PLAN#1 V0
3N5-9HZ,KMG WELL,SURVEYS V0	GITTEIN30N-28HZXX,KMG WELL,SURVEYS V0	RUEGGE 3N-4H-N165,OH,PLAN#1 V0
3N6-9HZ,KMG WELL,SURVEYS V0	GITTEIN3N-28HZ,KMG WELL,SURVEYS V0	RUEGGE 3O-4H-N165,OH,PLAN#1 V0
3N7-9HZ,KMG WELL,SURVEYS V0	GITTEIN4C-28HZ,KMG WELL,SURVEYS V0	RUEGGE 3P-4H-N165,OH,PLAN#1 V0
3N8-9HZ,KMG WELL,SURVEYS V0	GITTEIN4C-28HZX,KMG WELL,SURVEYS V0	RUEGGE 3Q-4H-N165,OH,PLAN#1 V0
3N9-9HZ,KMG WELL,SURVEYS V0	GITTEIN4C-28HZXX,KMG WELL,SURVEYS V0	RUEGGE 3R-4H-N165,OH,PLAN#1 V0
3N10-9HZ,KMG WELL,SURVEYS V0	GITTEIN4N-28HZ,KMG WELL,SURVEYS V0	STELLING 1,CPRWELL,GYRO V0
3N11-9HZ,KMG WELL,SURVEYS V0	OLIN 1-4,CPRWELL,GYRO V0	STELLING 13-4,CPRWELL,GYRO V0
3N12-9HZ,KMG WELL,SURVEYS V0	RUEGGE 3C-4H-N165,OH,PLAN#1 V0	STELLING 14-4,CPRWELL,GYRO V0
3N13-9HZ,KMG WELL,SURVEYS V0	RUEGGE 3D-4H-N165,OH,PLAN#1 V0	STELLING 23-4,CPRWELL,GYRO V0