

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well SAM 3K-25H-M166
Company:	Crestone Peak Resources	TVD Reference:	23' KB @ 5109.00usft
Project:	DJ BASIN	MD Reference:	23' KB @ 5109.00usft
Site:	S25-T1N-R66W (SAM)	North Reference:	Grid
Well:	SAM 3K-25H-M166	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1		

Project	DJ BASIN		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		S25-T1N-R66W (SAM)			
Site Position:		Northing:	1,250,656.77 usft	Latitude:	40.018895
From:	Lat/Long	Easting:	3,214,576.98 usft	Longitude:	-104.733852
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.50 °

Well	SAM 3K-25H-M166					
Well Position	+N/-S	0.00 usft	Northing:	1,250,556.58 usft	Latitude:	40.018620
	+E/-W	0.00 usft	Easting:	3,214,577.00 usft	Longitude:	-104.733855
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	5,086.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	HDGM	11/17/2016	8.32	66.47	52,248

Design	PLAN #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(°)
	0.00	0.00	0.00	89.42

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,000.53	8.01	203.38	999.22	-25.66	-11.09	2.00	2.00	0.00	203.38	
5,647.42	8.01	203.38	5,600.78	-620.04	-268.10	0.00	0.00	0.00	0.00	
6,047.95	0.00	0.00	6,000.00	-645.70	-279.19	2.00	-2.00	0.00	180.00	
6,741.75	0.00	0.00	6,693.80	-645.70	-279.19	0.00	0.00	0.00	0.00	
7,866.75	90.00	89.42	7,410.00	-638.42	436.97	8.00	8.00	0.00	89.42	
11,936.55	90.00	89.42	7,410.00	-597.06	4,506.56	0.00	0.00	0.00	0.00	SAM 3K-25H PBHL

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Company:	Crestone Peak Resources	TVD Reference:	23' KB @ 5109.00usft
Project:	DJ BASIN	MD Reference:	23' KB @ 5109.00usft
Site:	S25-T1N-R66W (SAM)	North Reference:	Grid
Well:	SAM 3K-25H-M166	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	KOP @ 600'
700.00	2.00	203.38	699.98	-1.60	-0.69	-0.71	2.00	2.00	
800.00	4.00	203.38	799.84	-6.41	-2.77	-2.83	2.00	2.00	
900.00	6.00	203.38	899.45	-14.40	-6.23	-6.37	2.00	2.00	
1,000.00	8.00	203.38	998.70	-25.59	-11.06	-11.32	2.00	2.00	
1,000.53	8.01	203.38	999.22	-25.66	-11.09	-11.35	2.00	2.00	EOB; INC=8°
1,100.00	8.01	203.38	1,097.73	-38.38	-16.60	-16.98	0.00	0.00	
1,200.00	8.01	203.38	1,196.75	-51.17	-22.13	-22.64	0.00	0.00	
1,300.00	8.01	203.38	1,295.77	-63.96	-27.66	-28.30	0.00	0.00	
1,400.00	8.01	203.38	1,394.80	-76.75	-33.19	-33.96	0.00	0.00	
1,500.00	8.01	203.38	1,493.82	-89.55	-38.72	-39.62	0.00	0.00	
1,600.00	8.01	203.38	1,592.85	-102.34	-44.25	-45.28	0.00	0.00	
1,700.00	8.01	203.38	1,691.87	-115.13	-49.78	-50.94	0.00	0.00	
1,800.00	8.01	203.38	1,790.90	-127.92	-55.31	-56.60	0.00	0.00	
1,900.00	8.01	203.38	1,889.92	-140.71	-60.84	-62.26	0.00	0.00	
2,000.00	8.01	203.38	1,988.94	-153.50	-66.37	-67.92	0.00	0.00	
2,100.00	8.01	203.38	2,087.97	-166.29	-71.90	-73.58	0.00	0.00	
2,200.00	8.01	203.38	2,186.99	-179.08	-77.43	-79.24	0.00	0.00	
2,300.00	8.01	203.38	2,286.02	-191.87	-82.96	-84.90	0.00	0.00	
2,400.00	8.01	203.38	2,385.04	-204.66	-88.49	-90.56	0.00	0.00	
2,500.00	8.01	203.38	2,484.07	-217.46	-94.02	-96.22	0.00	0.00	
2,600.00	8.01	203.38	2,583.09	-230.25	-99.55	-101.88	0.00	0.00	
2,700.00	8.01	203.38	2,682.11	-243.04	-105.09	-107.54	0.00	0.00	
2,800.00	8.01	203.38	2,781.14	-255.83	-110.62	-113.20	0.00	0.00	
2,900.00	8.01	203.38	2,880.16	-268.62	-116.15	-118.86	0.00	0.00	
3,000.00	8.01	203.38	2,979.19	-281.41	-121.68	-124.52	0.00	0.00	
3,100.00	8.01	203.38	3,078.21	-294.20	-127.21	-130.18	0.00	0.00	
3,200.00	8.01	203.38	3,177.24	-306.99	-132.74	-135.84	0.00	0.00	
3,300.00	8.01	203.38	3,276.26	-319.78	-138.27	-141.50	0.00	0.00	
3,400.00	8.01	203.38	3,375.28	-332.57	-143.80	-147.16	0.00	0.00	
3,500.00	8.01	203.38	3,474.31	-345.37	-149.33	-152.82	0.00	0.00	
3,600.00	8.01	203.38	3,573.33	-358.16	-154.86	-158.48	0.00	0.00	
3,700.00	8.01	203.38	3,672.36	-370.95	-160.39	-164.14	0.00	0.00	
3,800.00	8.01	203.38	3,771.38	-383.74	-165.92	-169.80	0.00	0.00	
3,900.00	8.01	203.38	3,870.40	-396.53	-171.45	-175.46	0.00	0.00	
4,000.00	8.01	203.38	3,969.43	-409.32	-176.98	-181.12	0.00	0.00	
4,100.00	8.01	203.38	4,068.45	-422.11	-182.51	-186.78	0.00	0.00	
4,200.00	8.01	203.38	4,167.48	-434.90	-188.04	-192.44	0.00	0.00	
4,300.00	8.01	203.38	4,266.50	-447.69	-193.58	-198.10	0.00	0.00	
4,400.00	8.01	203.38	4,365.53	-460.48	-199.11	-203.76	0.00	0.00	
4,500.00	8.01	203.38	4,464.55	-473.28	-204.64	-209.42	0.00	0.00	
4,600.00	8.01	203.38	4,563.57	-486.07	-210.17	-215.08	0.00	0.00	
4,700.00	8.01	203.38	4,662.60	-498.86	-215.70	-220.74	0.00	0.00	
4,800.00	8.01	203.38	4,761.62	-511.65	-221.23	-226.40	0.00	0.00	
4,900.00	8.01	203.38	4,860.65	-524.44	-226.76	-232.06	0.00	0.00	
5,000.00	8.01	203.38	4,959.67	-537.23	-232.29	-237.72	0.00	0.00	

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Site:	S25-T1N-R66W (SAM)	North Reference:	Grid
Well:	SAM 3K-25H-M166	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
5,100.00	8.01	203.38	5,058.70	-550.02	-237.82	-243.38	0.00	0.00	
5,200.00	8.01	203.38	5,157.72	-562.81	-243.35	-249.04	0.00	0.00	
5,300.00	8.01	203.38	5,256.74	-575.60	-248.88	-254.70	0.00	0.00	
5,400.00	8.01	203.38	5,355.77	-588.39	-254.41	-260.36	0.00	0.00	
5,500.00	8.01	203.38	5,454.79	-601.19	-259.94	-266.02	0.00	0.00	
5,600.00	8.01	203.38	5,553.82	-613.98	-265.47	-271.67	0.00	0.00	
5,647.42	8.01	203.38	5,600.78	-620.04	-268.10	-274.36	0.00	0.00	Start Drop -2.00
5,700.00	6.96	203.38	5,652.91	-626.33	-270.81	-277.14	2.00	-2.00	
5,800.00	4.96	203.38	5,752.36	-635.86	-274.93	-281.36	2.00	-2.00	
5,900.00	2.96	203.38	5,852.12	-642.19	-277.67	-284.16	2.00	-2.00	
6,000.00	0.96	203.38	5,952.05	-645.33	-279.03	-285.55	2.00	-2.00	
6,047.95	0.00	0.00	6,000.00	-645.70	-279.19	-285.71	2.00	-2.00	EOD; INC=0°
6,100.00	0.00	0.00	6,052.05	-645.70	-279.19	-285.71	0.00	0.00	
6,200.00	0.00	0.00	6,152.05	-645.70	-279.19	-285.71	0.00	0.00	
6,300.00	0.00	0.00	6,252.05	-645.70	-279.19	-285.71	0.00	0.00	
6,400.00	0.00	0.00	6,352.05	-645.70	-279.19	-285.71	0.00	0.00	
6,500.00	0.00	0.00	6,452.05	-645.70	-279.19	-285.71	0.00	0.00	
6,600.00	0.00	0.00	6,552.05	-645.70	-279.19	-285.71	0.00	0.00	
6,700.00	0.00	0.00	6,652.05	-645.70	-279.19	-285.71	0.00	0.00	
6,741.75	0.00	0.00	6,693.80	-645.70	-279.19	-285.71	0.00	0.00	Start Build 8.00
6,800.00	4.66	89.42	6,751.99	-645.68	-276.82	-283.34	8.00	8.00	
6,900.00	12.66	89.42	6,850.77	-645.52	-261.78	-268.30	8.00	8.00	
7,000.00	20.66	89.42	6,946.49	-645.23	-233.13	-239.65	8.00	8.00	
7,100.00	28.66	89.42	7,037.30	-644.81	-191.45	-197.97	8.00	8.00	
7,200.00	36.66	89.42	7,121.42	-644.26	-137.53	-144.04	8.00	8.00	
7,300.00	44.66	89.42	7,197.22	-643.60	-72.43	-78.94	8.00	8.00	
7,400.00	52.66	89.42	7,263.21	-642.84	2.59	-3.92	8.00	8.00	
7,500.00	60.66	89.42	7,318.13	-641.99	86.06	79.55	8.00	8.00	
7,600.00	68.66	89.42	7,360.89	-641.07	176.36	169.86	8.00	8.00	
7,700.00	76.66	89.42	7,390.68	-640.10	271.73	265.24	8.00	8.00	
7,800.00	84.66	89.42	7,406.89	-639.10	370.32	363.83	8.00	8.00	
7,866.75	90.00	89.42	7,410.00	-638.42	436.97	430.49	8.00	8.00	LP @ 7410' TVD; 90°
7,900.00	90.00	89.42	7,410.00	-638.08	470.22	463.73	0.00	0.00	
8,000.00	90.00	89.42	7,410.00	-637.07	570.21	563.73	0.00	0.00	
8,100.00	90.00	89.42	7,410.00	-636.05	670.21	663.73	0.00	0.00	
8,200.00	90.00	89.42	7,410.00	-635.03	770.20	763.73	0.00	0.00	
8,300.00	90.00	89.42	7,410.00	-634.02	870.20	863.73	0.00	0.00	
8,400.00	90.00	89.42	7,410.00	-633.00	970.19	963.73	0.00	0.00	
8,500.00	90.00	89.42	7,410.00	-631.99	1,070.19	1,063.73	0.00	0.00	
8,600.00	90.00	89.42	7,410.00	-630.97	1,170.18	1,163.73	0.00	0.00	
8,700.00	90.00	89.42	7,410.00	-629.95	1,270.18	1,263.73	0.00	0.00	
8,800.00	90.00	89.42	7,410.00	-628.94	1,370.17	1,363.73	0.00	0.00	
8,900.00	90.00	89.42	7,410.00	-627.92	1,470.16	1,463.73	0.00	0.00	
9,000.00	90.00	89.42	7,410.00	-626.90	1,570.16	1,563.73	0.00	0.00	
9,100.00	90.00	89.42	7,410.00	-625.89	1,670.15	1,663.73	0.00	0.00	
9,200.00	90.00	89.42	7,410.00	-624.87	1,770.15	1,763.73	0.00	0.00	
9,300.00	90.00	89.42	7,410.00	-623.86	1,870.14	1,863.73	0.00	0.00	
9,400.00	90.00	89.42	7,410.00	-622.84	1,970.14	1,963.73	0.00	0.00	
9,500.00	90.00	89.42	7,410.00	-621.82	2,070.13	2,063.73	0.00	0.00	
9,600.00	90.00	89.42	7,410.00	-620.81	2,170.13	2,163.73	0.00	0.00	
9,700.00	90.00	89.42	7,410.00	-619.79	2,270.12	2,263.73	0.00	0.00	
9,800.00	90.00	89.42	7,410.00	-618.77	2,370.12	2,363.73	0.00	0.00	

Cathedral Energy Services

Planning Report

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Company:	Crestone Peak Resources	TVD Reference:	23' KB @ 5109.00usft
Project:	DJ BASIN	MD Reference:	23' KB @ 5109.00usft
Site:	S25-T1N-R66W (SAM)	North Reference:	Grid
Well:	SAM 3K-25H-M166	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
9,900.00	90.00	89.42	7,410.00	-617.76	2,470.11	2,463.73	0.00	0.00	
10,000.00	90.00	89.42	7,410.00	-616.74	2,570.11	2,563.73	0.00	0.00	
10,100.00	90.00	89.42	7,410.00	-615.73	2,670.10	2,663.73	0.00	0.00	
10,200.00	90.00	89.42	7,410.00	-614.71	2,770.10	2,763.73	0.00	0.00	
10,300.00	90.00	89.42	7,410.00	-613.69	2,870.09	2,863.73	0.00	0.00	
10,400.00	90.00	89.42	7,410.00	-612.68	2,970.09	2,963.73	0.00	0.00	
10,500.00	90.00	89.42	7,410.00	-611.66	3,070.08	3,063.73	0.00	0.00	
10,600.00	90.00	89.42	7,410.00	-610.64	3,170.08	3,163.73	0.00	0.00	
10,700.00	90.00	89.42	7,410.00	-609.63	3,270.07	3,263.73	0.00	0.00	
10,800.00	90.00	89.42	7,410.00	-608.61	3,370.07	3,363.73	0.00	0.00	
10,900.00	90.00	89.42	7,410.00	-607.60	3,470.06	3,463.73	0.00	0.00	
11,000.00	90.00	89.42	7,410.00	-606.58	3,570.06	3,563.73	0.00	0.00	
11,100.00	90.00	89.42	7,410.00	-605.56	3,670.05	3,663.73	0.00	0.00	
11,200.00	90.00	89.42	7,410.00	-604.55	3,770.05	3,763.73	0.00	0.00	
11,300.00	90.00	89.42	7,410.00	-603.53	3,870.04	3,863.73	0.00	0.00	
11,400.00	90.00	89.42	7,410.00	-602.51	3,970.04	3,963.73	0.00	0.00	
11,500.00	90.00	89.42	7,410.00	-601.50	4,070.03	4,063.73	0.00	0.00	
11,600.00	90.00	89.42	7,410.00	-600.48	4,170.03	4,163.73	0.00	0.00	
11,700.00	90.00	89.42	7,410.00	-599.47	4,270.02	4,263.73	0.00	0.00	
11,800.00	90.00	89.42	7,410.00	-598.45	4,370.02	4,363.73	0.00	0.00	
11,900.00	90.00	89.42	7,410.00	-597.43	4,470.01	4,463.73	0.00	0.00	
11,936.55	90.00	89.42	7,410.00	-597.06	4,506.56	4,500.29	0.00	0.00	TD at 11936.55

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SAM 3K-25H PBHL - plan hits target center - Point	0.00	0.00	7,410.00	-597.06	4,506.56	1,249,959.52	3,219,083.56	40.016873	-104.717784
SAM 3K-25H TPZ - plan hits target center - Point	0.00	0.00	7,360.58	-641.08	175.56	1,249,915.50	3,214,752.56	40.016856	-104.733248

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
600.00	600.00	0.00	0.00	KOP @ 600'
1,000.53	999.22	-25.66	-11.09	EOB; INC=8°
5,647.42	5,600.78	-620.04	-268.10	Start Drop -2.00
6,047.95	6,000.00	-645.70	-279.19	EOD; INC=0°
6,741.75	6,693.80	-645.70	-279.19	Start Build 8.00
7,866.75	7,410.00	-638.42	436.97	LP @ 7410' TVD; 90°
11,936.55	7,410.00	-597.06	4,506.56	TD at 11936.55

Crestone Peak Resources

DJ BASIN

S25-T1N-R66W (SAM)

SAM 3K-25H-M166

OH

PLAN #1

Anticollision Report

18 November, 2016

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3K-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3K-25H-M166	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 1,500.00usft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date	11/18/2016		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	11,935.60	PLAN #1 (OH)	MWD+HDGM	OWSG MWD + HDGM

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3K-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3K-25H-M166	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	Offset	Distance		Separation Factor	Warning
	Measured Depth (usft)	Measured Depth (usft)	Between Centres (usft)	Between Ellipses (usft)		
S25-T1N-R66W (SAM)						
Bare Spaces 11-36 (EXISTING) - CPR WELL - NO SURV						Out of range
Beierle 1 (EXISTING) - CPR WELL - NO SURVEYS						Out of range
Beierle 1-A (EXISTING) - CPR WELL - NO SURVEYS						Out of range
Beierle 2 (EXISTING) - CPR WELL - SURVEYS	5,310.43	5,541.99	1,457.59	1,419.48	38.252	CC, ES
Beierle 2 (EXISTING) - CPR WELL - SURVEYS	7,050.00	7,193.78	1,490.89	1,444.00	31.799	SF
Beierle KE 26-361HN - GWOG WELL - GWOG WELL	7,322.12	12,355.32	362.10	276.08	4.210	CC
Beierle KE 26-361HN - GWOG WELL - GWOG WELL	7,350.00	12,355.28	363.71	273.23	4.020	ES
Beierle KE 26-361HN - GWOG WELL - GWOG WELL	7,400.00	12,355.21	374.48	277.16	3.848	SF
Gilmore 1-30 (EXISTING) - CPR WELL - NO SURVEYS						Out of range
Lehl 1 (EXISTING) - CPR WELL - NO SURVEYS						Out of range
Lochbuie 1 (EXISTING) - CPR WELL - NO SURVEYS						Out of range
Lochbuie 21-31 (EXISTING) - CPR WELL - GYRO						Out of range
Lochbuie 2A-31H-D165 (EXISTING) - CPR WELL - SUR	11,936.55	7,064.00	1,107.36	987.50	9.239	CC, ES, SF
Lochbuie 2B-31H-D165 (EXISTING) - CPR WELL - SUR	11,936.55	7,176.58	1,306.42	1,204.67	12.840	CC, ES, SF
Lochbuie 2C-31H-D165 (EXISTING) - CPR WELL - SUR						Out of range
Lochbuie 2D-31H-D165 (EXISTING) - CPR WELL - SUR						Out of range
Lochbuie 2E-31H-D165 (EXISTING) - CPR WELL - SUR	11,936.55	7,064.00	1,127.35	1,009.29	9.549	CC, ES, SF
Lochbuie 2F-31H-D165 (PLAN) - CPR WELL - PLAN ON						Out of range
Lochbuie 2G-31H-D165 (EXISTING) - CPR WELL - SUR						Out of range
Lochbuie 2H-31H-D165 (EXISTING) - CPR WELL - SUR						Out of range
Lutz 1-A (EXISTING) - CPR WELL - NO SURVEYS						Out of range
Sam 1 (EXISTING) - CPR WELL - NO SURVEYS	504.51	465.51	1,337.06	1,334.96	636.788	CC, ES
Sam 1 (EXISTING) - CPR WELL - NO SURVEYS	1,100.00	500.00	1,469.34	1,464.13	281.937	SF
Sam 13-25 (EXISTING) - CPR WELL - SURVEYS	3,361.10	3,555.64	1,260.53	1,236.55	52.556	CC
Sam 13-25 (EXISTING) - CPR WELL - SURVEYS	3,500.00	3,689.85	1,261.25	1,235.77	49.493	ES
Sam 13-25 (EXISTING) - CPR WELL - SURVEYS	8,000.00	7,652.30	1,405.15	1,347.39	24.330	SF
SAM 3A-25H-M166 - OH - PLAN #1	200.00	200.00	100.17	99.18	100.884	CC, ES
SAM 3A-25H-M166 - OH - PLAN #1	700.00	678.87	142.67	137.87	29.725	SF
SAM 3B-25H-M166 - OH - PLAN #1	300.00	300.00	89.96	88.26	52.614	CC, ES
SAM 3B-25H-M166 - OH - PLAN #1	700.00	685.73	117.69	112.98	25.010	SF
SAM 3C-25H-M166 - OH - PLAN #1	400.00	400.00	80.14	77.71	33.021	CC, ES
SAM 3C-25H-M166 - OH - PLAN #1	700.00	691.05	96.35	91.72	20.786	SF
SAM 3D-25H-M166 - OH - PLAN #1	500.00	500.00	69.94	66.80	22.248	CC, ES
SAM 3D-25H-M166 - OH - PLAN #1	11,936.55	11,942.40	1,425.03	1,124.10	4.735	SF
SAM 3E-25H-M166 - OH - PLAN #1	600.00	600.00	60.11	56.25	15.569	CC, ES
SAM 3E-25H-M166 - OH - PLAN #1	11,936.55	11,842.04	1,132.14	831.89	3.771	SF
SAM 3F-25H-M166 - OH - PLAN #1	600.00	600.00	49.90	46.04	12.926	CC, ES
SAM 3F-25H-M166 - OH - PLAN #1	11,936.55	11,903.96	979.89	679.06	3.257	SF
SAM 3G-25H-M166 - OH - PLAN #1	600.00	600.00	40.07	36.21	10.379	CC, ES
SAM 3G-25H-M166 - OH - PLAN #1	11,936.55	11,800.39	772.48	474.43	2.592	SF
SAM 3H-25H-M166 - OH - PLAN #1	600.00	600.00	29.87	26.01	7.737	CC, ES
SAM 3H-25H-M166 - OH - PLAN #1	11,936.55	12,067.05	585.13	296.06	2.024	SF
SAM 3I-25H-M166 - OH - PLAN #1	600.00	600.00	20.04	16.18	5.190	CC, ES
SAM 3I-25H-M166 - OH - PLAN #1	11,936.55	11,903.77	454.98	155.56	1.520	SF
SAM 3J-25H-M166 - OH - PLAN #1	600.00	600.00	10.20	6.33	2.641	CC
SAM 3J-25H-M166 - OH - PLAN #1	11,936.55	11,843.91	240.28	-46.92	0.837	Level 1, ES, SF
SAM 3L-25H-M166 - OH - PLAN #1	500.00	500.00	9.85	6.70	3.132	CC
SAM 3L-25H-M166 - OH - PLAN #1	11,936.55	11,886.52	211.89	-73.97	0.741	Level 1, ES, SF
SAM 3M-25H-M166 - OH - PLAN #1	400.00	400.00	20.04	17.61	8.256	CC, ES
SAM 3M-25H-M166 - OH - PLAN #1	11,936.55	11,975.04	445.15	144.34	1.480	Level 3, SF
SAM 3N-25H-M166 - OH - PLAN #1	300.00	300.00	29.87	28.16	17.470	CC, ES
SAM 3N-25H-M166 - OH - PLAN #1	11,936.55	12,155.71	570.86	283.90	1.989	SF
SAM 3O-25H-M166 - OH - PLAN #1	200.00	200.00	40.08	39.09	40.362	CC, ES

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 SAM 3K-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3K-25H-M166	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)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
S25-T1N-R66W (SAM)						
SAM 3O-25H-M166 - OH - PLAN #1	11,936.55	11,932.12	648.92	349.31	2.166	SF
State 7-36 CG (EXISTING) - CPR WELL - NO SURVEYS						Out of range
Templin 1 (EXISTING) - CPR WELL - NO SURVEYS						Out of range
Wenzel 1 (EXISTING) - CPR WELL - NO SURVEYS	11,483.82	7,331.00	677.92	533.39	4.690	CC
Wenzel 1 (EXISTING) - CPR WELL - NO SURVEYS	11,500.00	7,331.00	678.12	533.17	4.678	ES, SF

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3K-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3K-25H-M166	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 S25-T1N-R66W (SAM) - Beierle 2 (EXISTING) - CPR WELL - SURVEYS													Offset Site Error:	0.00 usft
Survey Program: 1357-ISCWSA MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance				Total		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	Separation Factor		
4,700.00	4,662.60	5,090.00	4,946.26	18.38	18.67	128.18	774.28	-933.19	1,489.25	1,455.69	33.56	44.379		
4,800.00	4,761.62	5,161.87	5,015.23	18.79	19.04	127.87	755.48	-940.68	1,479.55	1,445.19	34.36	43.056		
4,900.00	4,860.65	5,234.60	5,085.34	19.21	19.39	127.59	737.70	-948.24	1,471.52	1,436.36	35.15	41.859		
5,000.00	4,959.67	5,306.67	5,155.16	19.62	19.72	127.33	721.55	-955.86	1,465.43	1,429.51	35.92	40.795		
5,100.00	5,058.70	5,378.00	5,224.66	20.04	20.03	127.12	707.18	-962.99	1,461.15	1,424.50	36.66	39.858		
5,200.00	5,157.72	5,457.35	5,302.45	20.45	20.34	126.95	693.17	-970.03	1,458.56	1,421.18	37.38	39.025		
5,300.00	5,256.74	5,533.99	5,377.99	20.87	20.61	126.86	681.66	-975.81	1,457.59	1,419.56	38.04	38.320		
5,310.43	5,267.07	5,541.99	5,385.90	20.91	20.63	126.86	680.57	-976.37	1,457.59	1,419.48	38.10	38.252 CC, ES		
5,400.00	5,355.77	5,610.97	5,454.18	21.29	20.85	126.84	671.91	-980.88	1,458.22	1,419.56	38.66	37.718		
5,500.00	5,454.79	5,689.23	5,531.85	21.70	21.07	126.85	663.59	-985.69	1,460.41	1,421.15	39.26	37.200		
5,600.00	5,553.82	5,770.46	5,612.59	22.12	21.28	126.89	656.20	-990.72	1,463.95	1,424.11	39.84	36.743		
5,647.42	5,600.78	5,809.77	5,651.72	22.31	21.37	126.93	653.17	-992.91	1,466.07	1,425.96	40.11	36.554		
5,700.00	5,652.91	5,858.00	5,699.80	22.53	21.48	127.03	650.10	-995.06	1,468.43	1,428.02	40.41	36.337		
5,800.00	5,752.36	5,931.88	5,773.55	22.92	21.61	127.18	646.66	-997.65	1,472.33	1,431.45	40.88	36.013		
5,900.00	5,852.12	6,017.89	5,859.51	23.29	21.74	127.30	644.47	-999.63	1,475.41	1,434.06	41.35	35.679		
6,000.00	5,952.05	6,116.73	5,958.35	23.63	21.86	127.41	643.74	-999.84	1,476.94	1,435.12	41.82	35.317		
6,047.95	6,000.00	6,166.80	6,008.42	23.78	21.92	-29.21	643.31	-999.88	1,476.85	1,434.81	42.04	35.129		
6,100.00	6,052.05	6,221.07	6,062.68	23.93	21.99	-29.22	642.80	-999.86	1,476.41	1,434.13	42.27	34.924		
6,200.00	6,152.05	6,327.01	6,168.61	24.22	22.12	-29.23	641.60	-999.59	1,475.29	1,432.57	42.73	34.527		
6,300.00	6,252.05	6,427.98	6,269.57	24.52	22.25	-29.24	640.29	-999.08	1,473.92	1,430.75	43.17	34.141		
6,400.00	6,352.05	6,530.59	6,372.18	24.81	22.38	-29.24	638.94	-998.39	1,472.44	1,428.82	43.62	33.757		
6,500.00	6,452.05	6,633.36	6,474.93	25.11	22.52	-29.24	637.45	-997.56	1,470.78	1,426.71	44.07	33.376		
6,600.00	6,552.05	6,736.27	6,577.82	25.40	22.66	-29.25	635.66	-996.83	1,468.92	1,424.39	44.53	32.991		
6,700.00	6,652.05	6,839.03	6,680.56	25.70	22.80	-29.28	633.47	-996.42	1,466.86	1,421.87	44.99	32.604		
6,741.75	6,693.80	6,881.73	6,723.25	25.83	22.87	-29.30	632.46	-996.32	1,465.95	1,420.76	45.19	32.441		
6,750.00	6,702.05	6,890.17	6,731.68	25.85	22.88	-118.73	632.25	-996.30	1,465.79	1,420.56	45.23	32.409		
6,775.46	6,727.50	6,916.20	6,757.70	25.93	22.92	-118.78	631.60	-996.26	1,465.58	1,420.23	45.35	32.317		
6,800.00	6,751.99	6,941.24	6,782.73	26.00	22.96	-118.83	630.96	-996.24	1,465.77	1,420.30	45.47	32.234		
6,850.00	6,801.64	6,992.01	6,833.49	26.14	23.03	-118.95	629.60	-996.22	1,467.42	1,421.69	45.73	32.088		
6,900.00	6,850.77	7,043.46	6,884.92	26.28	23.12	-119.07	628.14	-996.25	1,470.73	1,424.73	46.00	31.969		
6,950.00	6,899.13	7,094.72	6,936.15	26.41	23.20	-119.19	626.57	-996.28	1,475.72	1,429.43	46.29	31.880		
7,000.00	6,946.49	7,144.91	6,986.32	26.53	23.28	-119.30	624.92	-996.31	1,482.42	1,435.83	46.58	31.823		
7,050.00	6,992.62	7,193.78	7,035.15	26.65	23.36	-119.38	623.20	-996.34	1,490.89	1,444.00	46.88	31.799 SF		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3K-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3K-25H-M166	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 S25-T1N-R66W (SAM) - Beierle KE 26-361HN - GWOG WELL - GWOG WELL													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		
6,047.95	6,000.00	12,355.71	7,499.06	23.78	87.89	-90.48	-645.93	-306.20	1,475.31	1,432.30	43.01	34.303		
6,100.00	6,052.05	12,355.71	7,499.06	23.93	87.89	-90.48	-645.93	-306.20	1,423.26	1,380.22	43.04	33.065		
6,200.00	6,152.05	12,355.71	7,499.06	24.22	87.89	-90.48	-645.93	-306.20	1,323.28	1,280.16	43.12	30.688		
6,300.00	6,252.05	12,355.71	7,499.06	24.52	87.89	-90.48	-645.93	-306.20	1,223.31	1,180.10	43.21	28.313		
6,400.00	6,352.05	12,355.71	7,499.06	24.81	87.89	-90.48	-645.93	-306.20	1,123.33	1,080.03	43.30	25.940		
6,500.00	6,452.05	12,355.71	7,499.06	25.11	87.89	-90.48	-645.93	-306.20	1,023.36	979.95	43.41	23.572		
6,600.00	6,552.05	12,355.71	7,499.06	25.40	87.89	-90.48	-645.93	-306.20	923.40	879.86	43.54	21.209		
6,700.00	6,652.05	12,355.71	7,499.06	25.70	87.89	-90.48	-645.93	-306.20	823.45	779.77	43.68	18.851		
6,741.75	6,693.80	12,355.71	7,499.06	25.83	87.89	-90.48	-645.93	-306.20	781.72	737.97	43.75	17.868		
6,750.00	6,702.05	12,355.71	7,499.06	25.85	87.89	-179.92	-645.93	-306.20	773.48	729.72	43.76	17.674		
6,800.00	6,751.99	12,355.71	7,499.06	26.00	87.89	-179.97	-645.92	-306.20	723.67	679.77	43.90	16.483		
6,850.00	6,801.64	12,355.70	7,499.06	26.14	87.89	-179.97	-645.91	-306.20	674.34	630.17	44.16	15.269		
6,900.00	6,850.77	12,355.68	7,499.06	26.28	87.89	-179.97	-645.90	-306.20	625.87	581.23	44.64	14.020		
6,950.00	6,899.13	12,355.66	7,499.06	26.41	87.89	-179.97	-645.87	-306.20	578.75	533.25	45.50	12.720		
7,000.00	6,946.49	12,355.63	7,499.06	26.53	87.89	-179.97	-645.84	-306.20	533.60	486.60	46.99	11.355		
7,050.00	6,992.62	12,355.60	7,499.06	26.65	87.89	-179.97	-645.81	-306.20	491.19	441.75	49.44	9.935		
7,100.00	7,037.30	12,355.56	7,499.06	26.76	87.89	-179.96	-645.77	-306.20	452.55	399.38	53.18	8.510		
7,150.00	7,080.30	12,355.51	7,499.06	26.85	87.89	-179.96	-645.72	-306.21	418.93	360.47	58.47	7.165		
7,200.00	7,121.42	12,355.46	7,499.06	26.95	87.89	-179.95	-645.67	-306.21	391.81	326.45	65.37	5.994		
7,250.00	7,160.45	12,355.40	7,499.06	27.03	87.89	-179.94	-645.62	-306.21	372.75	299.20	73.55	5.068		
7,300.00	7,197.22	12,355.34	7,499.06	27.11	87.88	-179.93	-645.56	-306.21	363.12	280.85	82.26	4.414		
7,322.12	7,212.71	12,355.32	7,499.06	27.14	87.88	-179.93	-645.53	-306.21	362.10	276.08	86.02	4.210 CC		
7,350.00	7,231.52	12,355.28	7,499.06	27.18	87.88	-179.92	-645.49	-306.21	363.71	273.23	90.48	4.020 ES		
7,400.00	7,263.21	12,355.21	7,499.06	27.24	87.88	-179.91	-645.42	-306.21	374.48	277.16	97.33	3.848 SF		
7,450.00	7,292.13	12,355.14	7,499.06	27.32	87.88	-179.90	-645.35	-306.21	394.55	292.12	102.43	3.852		
7,500.00	7,318.13	12,355.06	7,499.06	27.42	87.88	-179.88	-645.27	-306.21	422.50	316.61	105.89	3.990		
7,550.00	7,341.09	12,354.98	7,499.06	27.65	87.88	-179.85	-645.19	-306.21	456.77	348.71	108.06	4.227		
7,600.00	7,360.89	12,354.90	7,499.06	28.06	87.88	-179.82	-645.11	-306.21	495.90	386.57	109.34	4.536		
7,650.00	7,377.45	12,354.82	7,499.06	28.61	87.88	-179.78	-645.03	-306.21	538.67	428.62	110.05	4.895		
7,700.00	7,390.68	12,354.73	7,499.06	29.26	87.87	-179.73	-644.94	-306.21	584.09	473.65	110.43	5.289		
7,750.00	7,400.50	12,354.64	7,499.06	29.99	87.87	-179.63	-644.86	-306.21	631.39	520.77	110.63	5.707		
7,800.00	7,406.89	12,354.55	7,499.06	30.79	87.87	-179.47	-644.77	-306.21	679.98	569.26	110.72	6.142		
7,850.00	7,409.80	12,354.46	7,499.06	31.64	87.87	-179.10	-644.68	-306.21	729.39	618.63	110.76	6.585		
7,866.75	7,410.00	12,354.43	7,499.06	31.93	87.87	-178.83	-644.65	-306.21	746.05	635.29	110.76	6.736		
7,900.00	7,410.00	12,354.38	7,499.06	32.54	87.87	-178.78	-644.59	-306.21	779.18	668.41	110.77	7.034		
8,000.00	7,410.00	12,354.20	7,499.06	34.50	87.86	-178.62	-644.41	-306.22	878.87	768.08	110.79	7.933		
8,100.00	7,410.00	12,354.02	7,499.06	36.63	87.86	-178.47	-644.23	-306.22	978.62	867.82	110.80	8.832		
8,200.00	7,410.00	12,353.84	7,499.06	38.91	87.86	-178.31	-644.05	-306.22	1,078.42	967.62	110.81	9.733		
8,300.00	7,410.00	12,353.66	7,499.06	41.31	87.85	-178.15	-643.87	-306.22	1,178.26	1,067.45	110.81	10.633		
8,400.00	7,410.00	12,353.48	7,499.06	43.82	87.85	-177.99	-643.70	-306.22	1,278.11	1,167.30	110.81	11.534		
8,500.00	7,410.00	12,353.30	7,499.06	46.41	87.85	-177.84	-643.52	-306.22	1,377.99	1,267.18	110.81	12.435		
8,600.00	7,410.00	12,353.13	7,499.06	49.07	87.85	-177.68	-643.34	-306.23	1,477.89	1,367.07	110.82	13.336		

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 SAM 3K-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3K-25H-M166	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 S25-T1N-R66W (SAM) - Lochbuie 2A-31H-D165 (EXISTING) - CPR WELL - SURVEYS													Offset Site Error: 0.00 usft
Survey Program: 164-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
11,500.00	7,410.00	7,064.00	6,964.42	136.83	21.54	63.65	-1,346.03	5,231.11	1,429.25	1,338.85	90.40	15.811	
11,600.00	7,410.00	7,064.00	6,964.42	139.98	21.54	63.65	-1,346.03	5,231.11	1,349.84	1,253.71	96.13	14.042	
11,700.00	7,410.00	7,064.00	6,964.42	143.13	21.54	63.65	-1,346.03	5,231.11	1,273.33	1,170.85	102.48	12.425	
11,800.00	7,410.00	7,064.00	6,964.42	146.28	21.54	63.65	-1,346.03	5,231.11	1,200.28	1,090.80	109.48	10.963	
11,900.00	7,410.00	7,064.00	6,964.42	149.43	21.54	63.65	-1,346.03	5,231.11	1,131.37	1,014.23	117.14	9.658	
11,936.55	7,410.00	7,064.00	6,964.42	150.10	21.54	63.65	-1,346.03	5,231.11	1,107.36	987.50	119.85	9.239 CC, ES, SF	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3K-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3K-25H-M166	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 S25-T1N-R66W (SAM) - Lochbuie 2B-31H-D165 (EXISTING) - CPR WELL - SURVEYS													Offset Site Error:	0.00 usft
Survey Program: 133-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	7,410.00	7,179.05	7,145.36	146.28	18.04	75.34	-1,322.64	5,575.76	1,419.64	1,326.15	93.49	15.185		
11,900.00	7,410.00	7,177.24	7,143.65	149.43	18.04	75.20	-1,322.07	5,575.83	1,336.30	1,236.80	99.50	13.430		
11,936.55	7,410.00	7,176.58	7,143.02	150.10	18.04	75.16	-1,321.86	5,575.86	1,306.42	1,204.67	101.75	12.840 CC, ES, SF		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3K-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3K-25H-M166	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 S25-T1N-R66W (SAM) - Lochbuie 2E-31H-D165 (EXISTING) - CPR WELL - SURVEYS												Offset Site Error:	0.00 usft
Survey Program: 164-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
11,500.00	7,410.00	7,064.00	6,964.42	136.83	21.55	64.76	-1,345.68	5,270.32	1,456.59	1,367.43	89.16	16.336	
11,600.00	7,410.00	7,064.00	6,964.42	139.98	21.55	64.76	-1,345.68	5,270.32	1,375.91	1,281.16	94.75	14.522	
11,700.00	7,410.00	7,064.00	6,964.42	143.13	21.55	64.76	-1,345.68	5,270.32	1,297.92	1,196.97	100.95	12.857	
11,800.00	7,410.00	7,064.00	6,964.42	146.28	21.55	64.76	-1,345.68	5,270.32	1,223.13	1,115.32	107.82	11.344	
11,900.00	7,410.00	7,064.00	6,964.42	149.43	21.55	64.76	-1,345.68	5,270.32	1,152.18	1,036.82	115.36	9.988	
11,936.55	7,410.00	7,064.00	6,964.42	150.10	21.55	64.76	-1,345.68	5,270.32	1,127.35	1,009.29	118.06	9.549 CC, ES, SF	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3K-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3K-25H-M166	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 S25-T1N-R66W (SAM) - Sam 1 (EXISTING) - CPR WELL - NO SURVEYS													Offset Site Error:	0.00 usft
Survey Program: 500-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		
0.00	0.00	0.00	0.00	0.00	0.00	82.55	173.36	1,325.77	1,337.63					
100.00	100.00	61.00	61.00	0.14	0.07	82.55	173.36	1,325.77	1,337.06	1,336.85	0.21	6,520.422		
200.00	200.00	161.00	161.00	0.50	0.18	82.55	173.36	1,325.77	1,337.06	1,336.39	0.67	1,985.419		
300.00	300.00	261.00	261.00	0.85	0.29	82.55	173.36	1,325.77	1,337.06	1,335.92	1.14	1,170.988		
400.00	400.00	361.00	361.00	1.21	0.40	82.55	173.36	1,325.77	1,337.06	1,335.45	1.61	830.367		
500.00	500.00	461.00	461.00	1.57	0.51	82.55	173.36	1,325.77	1,337.06	1,334.98	2.08	643.254		
504.51	504.51	465.51	465.51	1.59	0.51	82.55	173.36	1,325.77	1,337.06	1,334.96	2.10	636.788	CC, ES	
600.00	600.00	500.00	500.00	1.93	0.55	82.55	173.36	1,325.77	1,338.45	1,335.94	2.51	532.675		
700.00	699.98	500.00	500.00	2.27	0.55	-120.67	173.36	1,325.77	1,347.60	1,344.59	3.01	447.018		
800.00	799.84	500.00	500.00	2.61	0.55	-120.36	173.36	1,325.77	1,365.79	1,362.22	3.57	382.283		
900.00	899.45	500.00	500.00	2.95	0.55	-119.87	173.36	1,325.77	1,392.63	1,388.48	4.14	336.002		
1,000.53	999.22	500.00	500.00	3.31	0.55	-119.22	173.36	1,325.77	1,427.80	1,423.10	4.70	303.760		
1,100.00	1,097.73	500.00	500.00	3.68	0.55	-119.22	173.36	1,325.77	1,469.34	1,464.13	5.21	281.937	SF	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3K-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3K-25H-M166	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 S25-T1N-R66W (SAM) - Sam 13-25 (EXISTING) - CPR WELL - SURVEYS													Offset Site Error: 0.00 usft	
Survey Program: 1386-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		
0.00	0.00	0.00	0.00	0.00	0.00	82.78	166.33	1,312.95	1,323.55					
100.00	100.00	83.00	83.00	0.14	0.09	82.78	166.33	1,312.95	1,323.44	1,323.21	0.23	5,748.783		
200.00	200.00	183.00	183.00	0.50	0.20	82.78	166.33	1,312.95	1,323.44	1,322.74	0.70	1,891.255		
300.00	300.00	283.00	283.00	0.85	0.31	82.78	166.33	1,312.95	1,323.44	1,322.27	1.17	1,131.799		
400.00	400.00	383.00	383.00	1.21	0.43	82.78	166.33	1,312.95	1,323.44	1,321.80	1.64	807.527		
500.00	500.00	483.00	483.00	1.57	0.54	82.78	166.33	1,312.95	1,323.44	1,321.34	2.11	627.688		
600.00	600.00	583.00	583.00	1.93	0.65	82.78	166.33	1,312.95	1,323.44	1,320.87	2.58	513.361		
700.00	699.98	682.98	682.98	2.27	0.76	-120.65	166.33	1,312.95	1,324.33	1,321.30	3.03	436.972		
800.00	799.84	782.84	782.84	2.61	0.87	-120.80	166.33	1,312.95	1,327.01	1,323.54	3.47	381.925		
900.00	899.45	882.45	882.45	2.95	0.98	-121.04	166.33	1,312.95	1,331.50	1,327.57	3.93	338.974		
1,000.53	999.22	982.22	982.22	3.31	1.09	-121.38	166.33	1,312.95	1,337.89	1,333.50	4.39	304.423		
1,100.00	1,097.73	1,080.73	1,080.73	3.68	1.20	-121.88	166.33	1,312.95	1,345.21	1,340.35	4.87	276.436		
1,200.00	1,196.75	1,179.75	1,179.75	4.06	1.31	-122.38	166.33	1,312.95	1,352.68	1,347.33	5.35	253.000		
1,300.00	1,295.77	1,278.77	1,278.77	4.44	1.42	-122.87	166.33	1,312.95	1,360.24	1,354.41	5.83	233.231		
1,400.00	1,394.80	1,377.80	1,377.80	4.83	1.53	-123.36	166.33	1,312.95	1,367.91	1,361.59	6.32	216.382		
1,500.00	1,493.82	1,467.00	1,467.00	5.23	1.72	-123.80	166.46	1,313.22	1,376.00	1,369.11	6.89	199.777		
1,600.00	1,592.85	1,621.41	1,621.37	5.63	2.04	-124.62	168.20	1,311.40	1,383.13	1,375.50	7.63	181.358		
1,700.00	1,691.87	1,804.11	1,803.48	6.03	2.45	-125.84	174.42	1,298.61	1,385.11	1,376.65	8.46	163.778		
1,800.00	1,790.90	1,972.00	1,969.44	6.43	2.90	-127.23	184.43	1,275.58	1,380.97	1,371.69	9.28	148.861		
1,900.00	1,889.92	2,120.35	2,114.39	6.83	3.41	-128.79	199.43	1,247.91	1,373.62	1,363.51	10.11	135.874		
2,000.00	1,988.94	2,253.86	2,243.07	7.24	3.98	-130.47	217.61	1,217.38	1,363.55	1,352.57	10.98	124.204		
2,100.00	2,087.97	2,394.04	2,376.64	7.65	4.70	-132.41	238.90	1,180.59	1,351.43	1,339.46	11.96	112.973		
2,200.00	2,186.99	2,491.91	2,469.05	8.05	5.24	-133.85	254.51	1,152.39	1,337.87	1,325.05	12.82	104.341		
2,300.00	2,286.02	2,579.47	2,551.71	8.46	5.72	-135.18	269.04	1,127.42	1,325.66	1,312.00	13.65	97.089		
2,400.00	2,385.04	2,668.85	2,636.30	8.87	6.19	-136.54	283.35	1,102.34	1,314.61	1,300.11	14.51	90.630		
2,500.00	2,484.07	2,752.52	2,715.58	9.28	6.64	-137.82	296.80	1,079.22	1,304.88	1,289.54	15.34	85.040		
2,600.00	2,583.09	2,846.41	2,804.94	9.69	7.16	-139.22	311.21	1,054.32	1,296.79	1,280.54	16.25	79.804		
2,700.00	2,682.11	2,951.74	2,904.70	10.10	7.77	-140.88	328.08	1,025.00	1,288.67	1,271.43	17.25	74.723		
2,800.00	2,781.14	3,043.09	2,991.27	10.52	8.31	-142.31	342.22	999.49	1,281.25	1,263.05	18.19	70.424		
2,900.00	2,880.16	3,136.78	3,079.82	10.93	8.89	-143.83	357.73	973.11	1,275.05	1,255.86	19.19	66.437		
3,000.00	2,979.19	3,233.08	3,170.45	11.34	9.52	-145.46	374.53	945.21	1,269.60	1,249.34	20.26	62.679		
3,100.00	3,078.21	3,319.88	3,251.80	11.75	10.10	-146.98	390.54	919.57	1,265.28	1,244.00	21.28	59.454		
3,200.00	3,177.24	3,411.25	3,337.56	12.17	10.68	-148.59	407.62	893.06	1,262.69	1,240.36	22.33	56.554		
3,300.00	3,276.26	3,504.65	3,425.42	12.58	11.26	-150.20	424.22	866.03	1,260.86	1,237.48	23.38	53.933		
3,361.10	3,336.76	3,555.64	3,473.39	12.83	11.58	-151.09	433.42	851.42	1,260.53	1,236.55	23.98	52.556 CC		
3,400.00	3,375.28	3,594.11	3,509.59	12.99	11.83	-151.75	440.40	840.43	1,260.59	1,236.18	24.41	51.637		
3,500.00	3,474.31	3,689.85	3,599.74	13.41	12.43	-153.40	457.35	813.02	1,261.25	1,235.77	25.48	49.493 ES		
3,600.00	3,573.33	3,777.74	3,682.70	13.82	12.97	-154.88	472.48	788.23	1,263.07	1,236.58	26.49	47.676		
3,700.00	3,672.36	3,863.23	3,763.41	14.23	13.50	-156.32	487.68	764.49	1,266.62	1,239.13	27.49	46.082		
3,800.00	3,771.38	3,962.69	3,857.53	14.65	14.11	-157.96	504.85	737.31	1,271.25	1,242.68	28.57	44.502		
3,900.00	3,870.40	4,067.76	3,957.06	15.06	14.75	-159.66	521.99	708.33	1,276.10	1,246.43	29.67	43.008		
4,000.00	3,969.43	4,158.02	4,042.59	15.48	15.31	-161.10	536.19	683.25	1,281.46	1,250.78	30.68	41.775		
4,100.00	4,068.45	4,248.72	4,128.51	15.89	15.87	-162.54	551.27	658.40	1,288.62	1,256.94	31.68	40.673		
4,200.00	4,167.48	4,365.63	4,239.11	16.30	16.60	-164.39	569.36	625.13	1,295.24	1,262.36	32.88	39.395		
4,300.00	4,266.50	4,453.18	4,321.99	16.72	17.15	-165.74	582.34	600.11	1,302.37	1,268.51	33.86	38.465		
4,400.00	4,365.53	4,536.28	4,400.51	17.13	17.68	-167.04	595.63	576.36	1,311.27	1,276.45	34.81	37.666		
4,500.00	4,464.55	4,625.85	4,484.73	17.55	18.28	-168.48	610.99	550.00	1,321.54	1,285.71	35.84	36.877		
4,600.00	4,563.57	4,717.03	4,570.17	17.96	18.90	-169.96	627.16	522.60	1,332.96	1,296.08	36.87	36.149		
4,700.00	4,662.60	4,811.86	4,659.50	18.38	19.52	-171.41	643.33	495.19	1,345.42	1,307.52	37.90	35.498		
4,800.00	4,761.62	4,907.76	4,750.21	18.79	20.12	-172.82	658.73	468.13	1,358.32	1,319.41	38.90	34.914		
4,900.00	4,860.65	4,991.22	4,829.04	19.21	20.65	-174.03	672.68	444.54	1,372.57	1,332.76	39.81	34.481		
5,000.00	4,959.67	5,085.13	4,917.57	19.62	21.26	-175.40	688.74	417.64	1,387.82	1,347.02	40.80	34.017		

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 SAM 3K-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3K-25H-M166	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 S25-T1N-R66W (SAM) - Sam 13-25 (EXISTING) - CPR WELL - SURVEYS													Offset Site Error:	0.00 usft
Survey Program: 1386-ISCWSA MWD													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)						
5,100.00	5,058.70	5,173.84	5,001.48	20.04	21.82	-176.63	703.69	393.05	1,404.06	1,362.35	41.71	33.663		
5,200.00	5,157.72	5,268.53	5,091.50	20.45	22.38	-177.85	719.13	368.06	1,421.14	1,378.51	42.62	33.341		
5,300.00	5,256.74	5,371.36	5,190.25	20.87	22.93	-179.02	734.26	343.76	1,438.55	1,395.01	43.54	33.039		
5,400.00	5,355.77	5,484.62	5,300.34	21.29	23.46	179.91	748.00	320.98	1,455.51	1,411.07	44.44	32.750		
5,500.00	5,454.79	5,600.09	5,413.63	21.70	23.91	179.04	758.83	301.55	1,471.57	1,426.30	45.27	32.504		
5,600.00	5,553.82	5,703.14	5,515.41	22.12	24.26	178.42	766.24	287.20	1,486.91	1,440.93	45.97	32.342		
5,647.42	5,600.78	5,752.55	5,564.33	22.31	24.41	178.16	769.44	281.02	1,494.18	1,447.88	46.30	32.275		
6,900.00	6,850.77	7,107.67	6,916.87	26.28	26.34	-71.28	763.20	230.02	1,494.41	1,442.09	52.33	28.558		
6,950.00	6,899.13	7,157.71	6,966.83	26.41	26.37	-72.25	760.25	229.92	1,487.45	1,434.96	52.48	28.340		
7,000.00	6,946.49	7,206.18	7,015.21	26.53	26.40	-73.41	757.31	229.93	1,479.50	1,426.87	52.63	28.113		
7,050.00	6,992.62	7,253.47	7,062.41	26.65	26.43	-74.75	754.37	230.06	1,470.69	1,417.94	52.76	27.878		
7,100.00	7,037.30	7,299.37	7,108.21	26.76	26.46	-76.26	751.43	230.29	1,461.19	1,408.32	52.87	27.636		
7,150.00	7,080.30	7,346.43	7,155.16	26.85	26.48	-77.96	748.33	230.64	1,451.16	1,398.18	52.98	27.392		
7,200.00	7,121.42	7,398.06	7,206.66	26.95	26.51	-79.93	744.62	231.06	1,440.60	1,387.53	53.06	27.149		
7,250.00	7,160.45	7,446.36	7,254.81	27.03	26.53	-81.99	740.80	231.48	1,429.69	1,376.55	53.15	26.901		
7,300.00	7,197.22	7,490.99	7,299.28	27.11	26.55	-84.08	737.00	231.89	1,418.75	1,365.51	53.24	26.650		
7,350.00	7,231.52	7,521.00	7,329.16	27.18	26.56	-85.82	734.31	232.19	1,408.09	1,354.72	53.37	26.384		
7,400.00	7,263.21	7,551.35	7,359.39	27.24	26.58	-87.59	731.66	232.35	1,398.16	1,344.64	53.52	26.123		
7,450.00	7,292.13	7,572.22	7,380.20	27.32	26.59	-89.01	730.02	232.31	1,389.36	1,335.64	53.72	25.864		
7,500.00	7,318.13	7,590.65	7,398.58	27.42	26.61	-90.27	728.68	232.17	1,381.87	1,327.93	53.94	25.617		
7,550.00	7,341.09	7,615.00	7,422.88	27.65	26.62	-91.67	727.07	231.83	1,375.91	1,321.72	54.19	25.391		
7,600.00	7,360.89	7,615.00	7,422.88	28.06	26.62	-92.02	727.07	231.83	1,371.54	1,317.02	54.52	25.158		
7,650.00	7,377.45	7,632.29	7,440.13	28.61	26.64	-92.91	726.03	231.53	1,368.97	1,314.12	54.85	24.960		
7,692.30	7,388.86	7,640.38	7,448.21	29.16	26.65	-93.30	725.57	231.39	1,368.27	1,313.11	55.16	24.804		
7,700.00	7,390.68	7,641.66	7,449.49	29.26	26.65	-93.35	725.50	231.36	1,368.30	1,313.08	55.22	24.780		
7,750.00	7,400.50	7,648.46	7,456.27	29.99	26.65	-93.52	725.12	231.25	1,369.59	1,313.97	55.62	24.626		
7,800.00	7,406.89	7,652.64	7,460.44	30.79	26.66	-93.43	724.90	231.18	1,372.89	1,316.85	56.03	24.501		
7,850.00	7,409.80	7,654.18	7,461.98	31.64	26.66	-93.07	724.81	231.15	1,378.19	1,321.73	56.46	24.411		
7,866.75	7,410.00	7,654.10	7,461.91	31.93	26.66	-92.89	724.82	231.15	1,380.41	1,323.81	56.60	24.389		
7,900.00	7,410.00	7,653.65	7,461.46	32.54	26.66	-92.87	724.84	231.16	1,385.42	1,328.54	56.88	24.355		
8,000.00	7,410.00	7,652.30	7,460.11	34.50	26.66	-92.81	724.91	231.18	1,405.15	1,347.39	57.75	24.330 SF		
8,100.00	7,410.00	7,650.95	7,458.76	36.63	26.66	-92.76	724.99	231.20	1,431.60	1,372.99	58.61	24.425		
8,200.00	7,410.00	7,649.60	7,457.41	38.91	26.65	-92.70	725.06	231.23	1,464.41	1,404.98	59.43	24.641		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3K-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3K-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3A-25H-M166 - 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	-0.01	100.17	-0.03	100.17				
100.00	100.00	100.00	100.00	0.14	0.14	-0.01	100.17	-0.03	100.17	99.90	0.28	362.921	
200.00	200.00	200.00	200.00	0.50	0.50	-0.01	100.17	-0.03	100.17	99.18	0.99	100.884 CC, ES	
300.00	300.00	296.69	296.67	0.85	0.84	-0.24	101.75	-0.43	101.81	100.07	1.74	58.555	
400.00	400.00	393.16	393.01	1.21	1.20	-0.89	106.48	-1.65	106.72	104.21	2.51	42.500	
500.00	500.00	489.19	488.70	1.57	1.55	-1.84	114.29	-3.68	114.91	111.63	3.28	34.986	
600.00	600.00	584.57	583.42	1.93	1.90	-2.96	125.13	-6.48	126.39	122.34	4.05	31.187	
700.00	699.98	678.87	676.64	2.27	2.27	152.65	138.83	-10.02	142.67	137.87	4.80	29.725 SF	
800.00	799.84	771.42	767.63	2.61	2.65	152.13	155.17	-14.24	165.15	159.62	5.53	29.877	
900.00	899.45	864.51	858.64	2.95	3.05	151.96	174.12	-19.14	193.33	187.12	6.20	31.168	
1,000.53	999.22	959.88	951.79	3.31	3.47	152.15	193.94	-24.26	225.04	218.18	6.86	32.790	
1,100.00	1,097.73	1,053.74	1,043.47	3.68	3.89	152.71	213.43	-29.30	257.91	250.39	7.52	34.300	
1,200.00	1,196.75	1,148.10	1,135.63	4.06	4.32	153.15	233.04	-34.37	290.97	282.78	8.18	35.550	
1,300.00	1,295.77	1,242.45	1,227.79	4.44	4.74	153.50	252.64	-39.44	324.03	315.17	8.86	36.569	
1,400.00	1,394.80	1,336.81	1,319.95	4.83	5.18	153.78	272.24	-44.51	357.11	347.57	9.55	37.412	
1,500.00	1,493.82	1,431.17	1,412.11	5.23	5.61	154.02	291.84	-49.57	390.20	379.96	10.24	38.117	
1,600.00	1,592.85	1,525.53	1,504.27	5.63	6.04	154.21	311.45	-54.64	423.28	412.35	10.93	38.714	
1,700.00	1,691.87	1,619.88	1,596.43	6.03	6.48	154.38	331.05	-59.71	456.38	444.74	11.63	39.225	
1,800.00	1,790.90	1,714.24	1,688.59	6.43	6.92	154.53	350.65	-64.77	489.47	477.13	12.34	39.666	
1,900.00	1,889.92	1,808.60	1,780.74	6.83	7.35	154.66	370.25	-69.84	522.57	509.52	13.05	40.050	
2,000.00	1,988.94	1,902.96	1,872.90	7.24	7.79	154.77	389.85	-74.91	555.67	541.91	13.76	40.387	
2,100.00	2,087.97	1,997.31	1,965.06	7.65	8.23	154.87	409.46	-79.98	588.77	574.30	14.47	40.685	
2,200.00	2,186.99	2,091.67	2,057.22	8.05	8.67	154.96	429.06	-85.04	621.88	606.69	15.19	40.950	
2,300.00	2,286.02	2,186.03	2,149.38	8.46	9.11	155.04	448.66	-90.11	654.98	639.08	15.90	41.187	
2,400.00	2,385.04	2,280.39	2,241.54	8.87	9.55	155.12	468.26	-95.18	688.09	671.47	16.62	41.400	
2,500.00	2,484.07	2,374.75	2,333.70	9.28	9.99	155.18	487.86	-100.25	721.20	703.86	17.34	41.592	
2,600.00	2,583.09	2,469.10	2,425.86	9.69	10.43	155.24	507.47	-105.31	754.30	736.24	18.06	41.766	
2,700.00	2,682.11	2,563.46	2,518.02	10.10	10.87	155.30	527.07	-110.38	787.41	768.63	18.78	41.925	
2,800.00	2,781.14	2,657.82	2,610.18	10.52	11.31	155.35	546.67	-115.45	820.52	801.02	19.50	42.071	
2,900.00	2,880.16	2,752.18	2,702.34	10.93	11.75	155.40	566.27	-120.51	853.63	833.40	20.23	42.204	
3,000.00	2,979.19	2,846.53	2,794.50	11.34	12.19	155.44	585.88	-125.58	886.74	865.79	20.95	42.327	
3,100.00	3,078.21	2,940.89	2,886.66	11.75	12.63	155.48	605.48	-130.65	919.85	898.18	21.67	42.440	
3,200.00	3,177.24	3,035.25	2,978.82	12.17	13.07	155.52	625.08	-135.72	952.96	930.56	22.40	42.545	
3,300.00	3,276.26	3,129.61	3,070.98	12.58	13.51	155.55	644.68	-140.78	986.07	962.95	23.12	42.643	
3,400.00	3,375.28	3,223.96	3,163.14	12.99	13.96	155.58	664.28	-145.85	1,019.18	995.33	23.85	42.734	
3,500.00	3,474.31	3,318.32	3,255.30	13.41	14.40	155.62	683.89	-150.92	1,052.30	1,027.72	24.58	42.818	
3,600.00	3,573.33	3,412.68	3,347.46	13.82	14.84	155.64	703.49	-155.99	1,085.41	1,060.10	25.30	42.897	
3,700.00	3,672.36	3,507.04	3,439.62	14.23	15.28	155.67	723.09	-161.05	1,118.52	1,092.49	26.03	42.971	
3,800.00	3,771.38	3,601.39	3,531.78	14.65	15.72	155.70	742.69	-166.12	1,151.63	1,124.87	26.76	43.041	
3,900.00	3,870.40	3,695.75	3,623.94	15.06	16.16	155.72	762.29	-171.19	1,184.74	1,157.26	27.48	43.106	
4,000.00	3,969.43	3,790.11	3,716.10	15.48	16.61	155.74	781.90	-176.25	1,217.86	1,189.64	28.21	43.168	
4,100.00	4,068.45	3,884.47	3,808.26	15.89	17.05	155.77	801.50	-181.32	1,250.97	1,222.03	28.94	43.226	
4,200.00	4,167.48	3,978.82	3,900.42	16.30	17.49	155.79	821.10	-186.39	1,284.08	1,254.41	29.67	43.281	
4,300.00	4,266.50	4,073.18	3,992.58	16.72	17.93	155.81	840.70	-191.46	1,317.20	1,286.80	30.40	43.333	
4,400.00	4,365.53	4,167.54	4,084.74	17.13	18.37	155.82	860.31	-196.52	1,350.31	1,319.18	31.13	43.382	
4,500.00	4,464.55	4,261.90	4,176.90	17.55	18.81	155.84	879.91	-201.59	1,383.42	1,351.57	31.86	43.429	
4,600.00	4,563.57	4,356.25	4,269.06	17.96	19.26	155.86	899.51	-206.66	1,416.54	1,383.95	32.58	43.473	
4,700.00	4,662.60	4,450.61	4,361.22	18.38	19.70	155.87	919.11	-211.73	1,449.65	1,416.34	33.31	43.515	
4,800.00	4,761.62	4,544.97	4,453.38	18.79	20.14	155.89	938.71	-216.79	1,482.76	1,448.72	34.04	43.555	

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 SAM 3K-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3K-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3B-25H-M166 - 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	-0.14	89.96	-0.22	89.96				
100.00	100.00	100.00	100.00	0.14	0.14	-0.14	89.96	-0.22	89.96	89.69	0.28	325.932	
200.00	200.00	200.00	200.00	0.50	0.50	-0.14	89.96	-0.22	89.96	88.97	0.99	90.602	
300.00	300.00	300.00	300.00	0.85	0.85	-0.14	89.96	-0.22	89.96	88.26	1.71	52.614 CC, ES	
400.00	400.00	397.03	397.01	1.21	1.20	-0.42	91.54	-0.67	91.59	89.15	2.44	37.493	
500.00	500.00	493.84	493.69	1.57	1.56	-1.21	96.26	-2.04	96.49	93.29	3.20	30.154	
600.00	600.00	590.21	589.71	1.93	1.91	-2.36	104.08	-4.29	104.67	100.71	3.96	26.425	
700.00	699.98	685.73	684.57	2.27	2.26	153.18	114.88	-7.41	117.69	112.98	4.71	25.010 SF	
800.00	799.84	779.77	777.53	2.61	2.62	152.62	128.47	-11.33	136.98	131.54	5.43	25.206	
900.00	899.45	871.79	868.00	2.95	2.99	152.43	144.61	-15.99	162.39	156.23	6.15	26.396	
1,000.53	999.22	966.77	961.01	3.31	3.39	152.54	163.11	-21.33	192.87	186.06	6.81	28.309	
1,100.00	1,097.73	1,061.04	1,053.32	3.68	3.80	153.04	181.51	-26.65	224.56	217.08	7.48	30.033	
1,200.00	1,196.75	1,155.82	1,146.11	4.06	4.21	153.42	200.01	-31.99	256.42	248.28	8.15	31.481	
1,300.00	1,295.77	1,250.59	1,238.91	4.44	4.62	153.72	218.51	-37.33	288.30	279.47	8.82	32.672	
1,400.00	1,394.80	1,345.37	1,331.71	4.83	5.04	153.96	237.00	-42.67	320.18	310.67	9.51	33.664	
1,500.00	1,493.82	1,440.14	1,424.51	5.23	5.47	154.16	255.50	-48.01	352.06	341.86	10.20	34.501	
1,600.00	1,592.85	1,534.92	1,517.31	5.63	5.89	154.32	274.00	-53.35	383.95	373.05	10.90	35.215	
1,700.00	1,691.87	1,629.69	1,610.11	6.03	6.32	154.46	292.50	-58.69	415.84	404.23	11.61	35.829	
1,800.00	1,790.90	1,724.47	1,702.90	6.43	6.74	154.57	311.00	-64.03	447.73	435.42	12.31	36.363	
1,900.00	1,889.92	1,819.24	1,795.70	6.83	7.17	154.68	329.49	-69.37	479.62	466.60	13.02	36.831	
2,000.00	1,988.94	1,914.01	1,888.50	7.24	7.60	154.77	347.99	-74.71	511.52	497.78	13.73	37.243	
2,100.00	2,087.97	2,008.79	1,981.30	7.65	8.03	154.85	366.49	-80.05	543.41	528.97	14.45	37.609	
2,200.00	2,186.99	2,103.56	2,074.10	8.05	8.46	154.92	384.99	-85.39	575.31	560.15	15.17	37.936	
2,300.00	2,286.02	2,198.34	2,166.90	8.46	8.89	154.98	403.48	-90.73	607.21	591.32	15.88	38.230	
2,400.00	2,385.04	2,293.11	2,259.69	8.87	9.32	155.04	421.98	-96.07	639.10	622.50	16.60	38.496	
2,500.00	2,484.07	2,387.89	2,352.49	9.28	9.75	155.09	440.48	-101.41	671.00	653.68	17.32	38.736	
2,600.00	2,583.09	2,482.66	2,445.29	9.69	10.18	155.13	458.98	-106.75	702.90	684.86	18.04	38.955	
2,700.00	2,682.11	2,577.44	2,538.09	10.10	10.61	155.18	477.48	-112.09	734.80	716.03	18.77	39.156	
2,800.00	2,781.14	2,672.21	2,630.89	10.52	11.04	155.21	495.97	-117.43	766.70	747.21	19.49	39.340	
2,900.00	2,880.16	2,766.99	2,723.69	10.93	11.48	155.25	514.47	-122.77	798.60	778.39	20.21	39.509	
3,000.00	2,979.19	2,861.76	2,816.48	11.34	11.91	155.28	532.97	-128.11	830.50	809.56	20.94	39.665	
3,100.00	3,078.21	2,956.53	2,909.28	11.75	12.34	155.31	551.47	-133.45	862.40	840.73	21.66	39.810	
3,200.00	3,177.24	3,051.31	3,002.08	12.17	12.77	155.34	569.96	-138.79	894.30	871.91	22.39	39.944	
3,300.00	3,276.26	3,146.08	3,094.88	12.58	13.21	155.37	588.46	-144.13	926.20	903.08	23.12	40.069	
3,400.00	3,375.28	3,240.86	3,187.68	12.99	13.64	155.39	606.96	-149.47	958.10	934.26	23.84	40.186	
3,500.00	3,474.31	3,335.63	3,280.48	13.41	14.07	155.42	625.46	-154.81	990.00	965.43	24.57	40.295	
3,600.00	3,573.33	3,430.41	3,373.27	13.82	14.50	155.44	643.96	-160.15	1,021.90	996.60	25.30	40.397	
3,700.00	3,672.36	3,525.18	3,466.07	14.23	14.94	155.46	662.45	-165.49	1,053.80	1,027.78	26.02	40.493	
3,800.00	3,771.38	3,619.96	3,558.87	14.65	15.37	155.48	680.95	-170.83	1,085.70	1,058.95	26.75	40.584	
3,900.00	3,870.40	3,714.73	3,651.67	15.06	15.80	155.50	699.45	-176.17	1,117.60	1,090.12	27.48	40.669	
4,000.00	3,969.43	3,809.51	3,744.47	15.48	16.24	155.51	717.95	-181.51	1,149.50	1,121.29	28.21	40.749	
4,100.00	4,068.45	3,904.28	3,837.27	15.89	16.67	155.53	736.44	-186.85	1,181.41	1,152.47	28.94	40.825	
4,200.00	4,167.48	3,999.05	3,930.06	16.30	17.11	155.55	754.94	-192.19	1,213.31	1,183.64	29.67	40.897	
4,300.00	4,266.50	4,093.83	4,022.86	16.72	17.54	155.56	773.44	-197.53	1,245.21	1,214.81	30.40	40.965	
4,400.00	4,365.53	4,188.60	4,115.66	17.13	17.97	155.57	791.94	-202.87	1,277.11	1,245.98	31.13	41.029	
4,500.00	4,464.55	4,283.38	4,208.46	17.55	18.41	155.59	810.44	-208.21	1,309.01	1,277.15	31.86	41.091	
4,600.00	4,563.57	4,378.15	4,301.26	17.96	18.84	155.60	828.93	-213.55	1,340.91	1,308.33	32.59	41.149	
4,700.00	4,662.60	4,472.93	4,394.06	18.38	19.27	155.61	847.43	-218.89	1,372.81	1,339.50	33.32	41.204	
4,800.00	4,761.62	4,567.70	4,486.85	18.79	19.71	155.62	865.93	-224.23	1,404.72	1,370.67	34.05	41.257	
4,900.00	4,860.65	4,662.48	4,579.65	19.21	20.14	155.63	884.43	-229.57	1,436.62	1,401.84	34.78	41.308	
5,000.00	4,959.67	4,757.25	4,672.45	19.62	20.58	155.64	902.92	-234.91	1,468.52	1,433.01	35.51	41.356	

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 SAM 3K-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3K-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3C-25H-M166 - 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	
0.00	0.00	0.00	0.00	0.00	0.00	-0.09	80.14	-0.13	80.14				
100.00	100.00	100.00	100.00	0.14	0.14	-0.09	80.14	-0.13	80.14	79.86	0.28	290.331	
200.00	200.00	200.00	200.00	0.50	0.50	-0.09	80.14	-0.13	80.14	79.15	0.99	80.706	
300.00	300.00	300.00	300.00	0.85	0.85	-0.09	80.14	-0.13	80.14	78.43	1.71	46.867	
400.00	400.00	400.00	400.00	1.21	1.21	-0.09	80.14	-0.13	80.14	77.71	2.43	33.021 CC, ES	
500.00	500.00	497.37	497.35	1.57	1.56	-0.45	81.71	-0.64	81.76	78.61	3.15	25.928	
600.00	600.00	594.51	594.36	1.93	1.91	-1.42	86.43	-2.14	86.64	82.74	3.90	22.219	
700.00	699.98	691.05	690.55	2.27	2.27	154.17	94.21	-4.63	96.35	91.72	4.64	20.786 SF	
800.00	799.84	786.40	785.23	2.61	2.62	153.61	104.92	-8.05	112.41	107.04	5.36	20.965	
900.00	899.45	879.99	877.75	2.95	2.97	153.42	118.35	-12.34	134.66	128.58	6.08	22.141	
1,000.53	999.22	973.56	969.77	3.31	3.34	153.45	134.46	-17.49	162.93	156.15	6.78	24.039	
1,100.00	1,097.73	1,068.36	1,062.90	3.68	3.73	153.85	151.37	-22.89	193.03	185.59	7.44	25.945	
1,200.00	1,196.75	1,163.67	1,156.52	4.06	4.13	154.14	168.38	-28.33	223.29	215.18	8.11	27.523	
1,300.00	1,295.77	1,258.97	1,250.13	4.44	4.53	154.36	185.38	-33.76	253.56	244.76	8.80	28.829	
1,400.00	1,394.80	1,354.28	1,343.75	4.83	4.94	154.54	202.38	-39.19	283.83	274.35	9.49	29.923	
1,500.00	1,493.82	1,449.58	1,437.37	5.23	5.35	154.68	219.39	-44.62	314.10	303.92	10.18	30.851	
1,600.00	1,592.85	1,544.89	1,530.99	5.63	5.76	154.80	236.39	-50.06	344.38	333.49	10.88	31.645	
1,700.00	1,691.87	1,640.19	1,624.61	6.03	6.17	154.89	253.39	-55.49	374.65	363.06	11.59	32.332	
1,800.00	1,790.90	1,735.50	1,718.23	6.43	6.58	154.98	270.40	-60.92	404.93	392.63	12.30	32.931	
1,900.00	1,889.92	1,830.80	1,811.85	6.83	7.00	155.05	287.40	-66.36	435.20	422.20	13.01	33.458	
2,000.00	1,988.94	1,926.11	1,905.46	7.24	7.41	155.11	304.40	-71.79	465.48	451.76	13.72	33.924	
2,100.00	2,087.97	2,021.41	1,999.08	7.65	7.83	155.17	321.41	-77.22	495.76	481.32	14.44	34.339	
2,200.00	2,186.99	2,116.72	2,092.70	8.05	8.25	155.21	338.41	-82.65	526.04	510.88	15.15	34.711	
2,300.00	2,286.02	2,212.02	2,186.32	8.46	8.67	155.26	355.41	-88.09	556.32	540.44	15.87	35.046	
2,400.00	2,385.04	2,307.33	2,279.94	8.87	9.08	155.30	372.42	-93.52	586.59	570.00	16.59	35.350	
2,500.00	2,484.07	2,402.63	2,373.56	9.28	9.50	155.33	389.42	-98.95	616.87	599.56	17.32	35.626	
2,600.00	2,583.09	2,497.94	2,467.18	9.69	9.92	155.36	406.42	-104.39	647.15	629.11	18.04	35.877	
2,700.00	2,682.11	2,593.24	2,560.80	10.10	10.34	155.39	423.42	-109.82	677.43	658.67	18.76	36.108	
2,800.00	2,781.14	2,688.55	2,654.41	10.52	10.76	155.42	440.43	-115.25	707.71	688.22	19.49	36.320	
2,900.00	2,880.16	2,783.85	2,748.03	10.93	11.18	155.44	457.43	-120.68	737.99	717.78	20.21	36.516	
3,000.00	2,979.19	2,879.16	2,841.65	11.34	11.61	155.46	474.43	-126.12	768.27	747.33	20.94	36.697	
3,100.00	3,078.21	2,974.46	2,935.27	11.75	12.03	155.49	491.44	-131.55	798.55	776.89	21.66	36.865	
3,200.00	3,177.24	3,069.77	3,028.89	12.17	12.45	155.50	508.44	-136.98	828.83	806.44	22.39	37.021	
3,300.00	3,276.26	3,165.07	3,122.51	12.58	12.87	155.52	525.44	-142.42	859.11	835.99	23.11	37.167	
3,400.00	3,375.28	3,260.38	3,216.13	12.99	13.29	155.54	542.45	-147.85	889.39	865.55	23.84	37.303	
3,500.00	3,474.31	3,355.68	3,309.74	13.41	13.71	155.55	559.45	-153.28	919.67	895.10	24.57	37.430	
3,600.00	3,573.33	3,450.99	3,403.36	13.82	14.13	155.57	576.45	-158.71	949.95	924.65	25.30	37.550	
3,700.00	3,672.36	3,546.29	3,496.98	14.23	14.56	155.58	593.46	-164.15	980.23	954.20	26.03	37.663	
3,800.00	3,771.38	3,641.60	3,590.60	14.65	14.98	155.59	610.46	-169.58	1,010.51	983.75	26.76	37.768	
3,900.00	3,870.40	3,736.91	3,684.22	15.06	15.40	155.61	627.46	-175.01	1,040.79	1,013.30	27.48	37.868	
4,000.00	3,969.43	3,832.21	3,777.84	15.48	15.82	155.62	644.47	-180.44	1,071.07	1,042.85	28.21	37.963	
4,100.00	4,068.45	3,927.52	3,871.46	15.89	16.24	155.63	661.47	-185.88	1,101.35	1,072.40	28.94	38.052	
4,200.00	4,167.48	4,022.82	3,965.08	16.30	16.67	155.64	678.47	-191.31	1,131.63	1,101.95	29.67	38.137	
4,300.00	4,266.50	4,118.13	4,058.69	16.72	17.09	155.65	695.48	-196.74	1,161.91	1,131.50	30.40	38.217	
4,400.00	4,365.53	4,213.43	4,152.31	17.13	17.51	155.66	712.48	-202.18	1,192.19	1,161.05	31.13	38.293	
4,500.00	4,464.55	4,308.74	4,245.93	17.55	17.94	155.67	729.48	-207.61	1,222.47	1,190.60	31.86	38.366	
4,600.00	4,563.57	4,404.04	4,339.55	17.96	18.36	155.67	746.48	-213.04	1,252.75	1,220.15	32.59	38.435	
4,700.00	4,662.60	4,499.35	4,433.17	18.38	18.78	155.68	763.49	-218.47	1,283.03	1,249.70	33.32	38.501	
4,800.00	4,761.62	4,594.65	4,526.79	18.79	19.20	155.69	780.49	-223.91	1,313.31	1,279.25	34.06	38.564	
4,900.00	4,860.65	4,689.96	4,620.41	19.21	19.63	155.70	797.49	-229.34	1,343.59	1,308.80	34.79	38.624	
5,000.00	4,959.67	4,785.26	4,714.02	19.62	20.05	155.70	814.50	-234.77	1,373.87	1,338.35	35.52	38.681	
5,100.00	5,058.70	4,880.57	4,807.64	20.04	20.47	155.71	831.50	-240.21	1,404.15	1,367.90	36.25	38.736	

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 SAM 3K-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3K-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3C-25H-M166 - 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		
5,200.00	5,157.72	4,975.87	4,901.26	20.45	20.90	155.72	848.50	-245.64	1,434.43	1,397.45	36.98	38.789		
5,300.00	5,256.74	5,071.18	4,994.88	20.87	21.32	155.72	865.51	-251.07	1,464.71	1,427.00	37.71	38.839		
5,400.00	5,355.77	5,166.48	5,088.50	21.29	21.74	155.73	882.51	-256.50	1,494.99	1,456.55	38.44	38.887		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3K-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3K-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3D-25H-M166 - 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				Total Uncertainty Axis	Separation Factor	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)			
0.00	0.00	0.00	0.00	0.00	0.00	-0.04	69.94	-0.04	69.94				
100.00	100.00	100.00	100.00	0.14	0.14	-0.04	69.94	-0.04	69.94	69.67	0.28	253.395	
200.00	200.00	200.00	200.00	0.50	0.50	-0.04	69.94	-0.04	69.94	68.95	0.99	70.438	
300.00	300.00	300.00	300.00	0.85	0.85	-0.04	69.94	-0.04	69.94	68.23	1.71	40.904	
400.00	400.00	400.00	400.00	1.21	1.21	-0.04	69.94	-0.04	69.94	67.52	2.43	28.820	
500.00	500.00	500.00	500.00	1.57	1.57	-0.04	69.94	-0.04	69.94	66.80	3.14	22.248	CC, ES
600.00	600.00	597.75	597.73	1.93	1.92	-0.54	71.49	-0.68	71.52	67.66	3.87	18.501	
700.00	699.98	695.18	695.03	2.27	2.27	155.16	76.09	-2.57	77.87	73.28	4.59	16.972	
800.00	799.84	791.72	791.21	2.61	2.62	154.54	83.67	-5.69	90.53	85.22	5.31	17.059	
900.00	899.45	886.81	885.63	2.95	2.97	154.19	94.06	-9.96	109.40	103.38	6.03	18.155	
1,000.53	999.22	982.63	980.43	3.31	3.33	154.09	107.01	-15.29	134.06	127.33	6.73	19.934	
1,100.00	1,097.73	1,078.58	1,075.30	3.68	3.71	154.41	120.28	-20.74	160.29	152.89	7.40	21.662	
1,200.00	1,196.75	1,175.04	1,170.67	4.06	4.08	154.65	133.62	-26.23	186.67	178.58	8.09	23.083	
1,300.00	1,295.77	1,271.50	1,266.04	4.44	4.47	154.82	146.95	-31.71	213.04	204.26	8.78	24.265	
1,400.00	1,394.80	1,367.95	1,361.42	4.83	4.85	154.96	160.29	-37.20	239.42	229.94	9.48	25.258	
1,500.00	1,493.82	1,464.41	1,456.79	5.23	5.24	155.07	173.63	-42.68	265.80	255.62	10.18	26.101	
1,600.00	1,592.85	1,560.87	1,552.16	5.63	5.63	155.15	186.97	-48.17	292.18	281.29	10.89	26.826	
1,700.00	1,691.87	1,657.32	1,647.53	6.03	6.02	155.23	200.31	-53.65	318.56	306.96	11.60	27.455	
1,800.00	1,790.90	1,753.78	1,742.91	6.43	6.41	155.29	213.64	-59.14	344.94	332.62	12.32	28.005	
1,900.00	1,889.92	1,850.24	1,838.28	6.83	6.80	155.35	226.98	-64.62	371.32	358.29	13.03	28.489	
2,000.00	1,988.94	1,946.69	1,933.65	7.24	7.19	155.39	240.32	-70.11	397.70	383.95	13.75	28.920	
2,100.00	2,087.97	2,043.15	2,029.03	7.65	7.59	155.44	253.66	-75.59	424.08	409.61	14.47	29.304	
2,200.00	2,186.99	2,139.61	2,124.40	8.05	7.98	155.47	267.00	-81.08	450.46	435.27	15.19	29.649	
2,300.00	2,286.02	2,236.06	2,219.77	8.46	8.38	155.50	280.33	-86.56	476.85	460.93	15.92	29.961	
2,400.00	2,385.04	2,332.52	2,315.14	8.87	8.77	155.53	293.67	-92.05	503.23	486.59	16.64	30.244	
2,500.00	2,484.07	2,428.98	2,410.52	9.28	9.17	155.56	307.01	-97.53	529.61	512.25	17.36	30.501	
2,600.00	2,583.09	2,525.44	2,505.89	9.69	9.57	155.58	320.35	-103.02	555.99	537.90	18.09	30.737	
2,700.00	2,682.11	2,621.89	2,601.26	10.10	9.96	155.60	333.69	-108.50	582.37	563.56	18.81	30.953	
2,800.00	2,781.14	2,718.35	2,696.63	10.52	10.36	155.62	347.02	-113.99	608.76	589.21	19.54	31.153	
2,900.00	2,880.16	2,814.81	2,792.01	10.93	10.76	155.64	360.36	-119.47	635.14	614.87	20.27	31.337	
3,000.00	2,979.19	2,911.26	2,887.38	11.34	11.15	155.66	373.70	-124.96	661.52	640.52	21.00	31.507	
3,100.00	3,078.21	3,007.72	2,982.75	11.75	11.55	155.67	387.04	-130.44	687.90	666.18	21.72	31.666	
3,200.00	3,177.24	3,104.18	3,078.13	12.17	11.95	155.69	400.38	-135.92	714.29	691.83	22.45	31.814	
3,300.00	3,276.26	3,200.63	3,173.50	12.58	12.35	155.70	413.71	-141.41	740.67	717.49	23.18	31.952	
3,400.00	3,375.28	3,297.09	3,268.87	12.99	12.74	155.71	427.05	-146.89	767.05	743.14	23.91	32.081	
3,500.00	3,474.31	3,393.55	3,364.24	13.41	13.14	155.72	440.39	-152.38	793.43	768.79	24.64	32.202	
3,600.00	3,573.33	3,490.00	3,459.62	13.82	13.54	155.74	453.73	-157.86	819.81	794.45	25.37	32.315	
3,700.00	3,672.36	3,586.46	3,554.99	14.23	13.94	155.75	467.07	-163.35	846.20	820.10	26.10	32.422	
3,800.00	3,771.38	3,682.92	3,650.36	14.65	14.34	155.75	480.40	-168.83	872.58	845.75	26.83	32.523	
3,900.00	3,870.40	3,779.38	3,745.73	15.06	14.74	155.76	493.74	-174.32	898.96	871.40	27.56	32.619	
4,000.00	3,969.43	3,875.83	3,841.11	15.48	15.13	155.77	507.08	-179.80	925.35	897.06	28.29	32.709	
4,100.00	4,068.45	3,972.29	3,936.48	15.89	15.53	155.78	520.42	-185.29	951.73	922.71	29.02	32.794	
4,200.00	4,167.48	4,068.75	4,031.85	16.30	15.93	155.79	533.76	-190.77	978.11	948.36	29.75	32.875	
4,300.00	4,266.50	4,165.20	4,127.23	16.72	16.33	155.79	547.09	-196.26	1,004.49	974.01	30.48	32.952	
4,400.00	4,365.53	4,261.66	4,222.60	17.13	16.73	155.80	560.43	-201.74	1,030.88	999.66	31.21	33.025	
4,500.00	4,464.55	4,358.12	4,317.97	17.55	17.13	155.81	573.77	-207.23	1,057.26	1,025.31	31.95	33.095	
4,600.00	4,563.57	4,454.57	4,413.34	17.96	17.53	155.81	587.11	-212.71	1,083.64	1,050.96	32.68	33.161	
4,700.00	4,662.60	4,551.03	4,508.72	18.38	17.93	155.82	600.45	-218.20	1,110.02	1,076.61	33.41	33.225	
4,800.00	4,761.62	4,647.49	4,604.09	18.79	18.32	155.82	613.78	-223.68	1,136.41	1,102.27	34.14	33.285	
4,900.00	4,860.65	4,743.95	4,699.46	19.21	18.72	155.83	627.12	-229.17	1,162.79	1,127.92	34.87	33.343	
5,000.00	4,959.67	4,840.40	4,794.83	19.62	19.12	155.83	640.46	-234.65	1,189.17	1,153.57	35.61	33.399	
5,100.00	5,058.70	4,936.86	4,890.21	20.04	19.52	155.84	653.80	-240.14	1,215.56	1,179.22	36.34	33.452	

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 SAM 3K-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3K-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3D-25H-M166 - 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)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning			
5,200.00	5,157.72	5,033.32	4,985.58	20.45	19.92	155.84	667.14	-245.62	1,241.94	1,204.87	37.07	33.502				
5,300.00	5,256.74	5,129.77	5,080.95	20.87	20.32	155.85	680.47	-251.11	1,268.32	1,230.52	37.80	33.551				
5,400.00	5,355.77	5,226.23	5,176.33	21.29	20.72	155.85	693.81	-256.59	1,294.70	1,256.17	38.54	33.598				
5,500.00	5,454.79	5,322.69	5,271.70	21.70	21.12	155.86	707.15	-262.08	1,321.09	1,281.82	39.27	33.643				
5,600.00	5,553.82	5,419.14	5,367.07	22.12	21.52	155.86	720.49	-267.56	1,347.47	1,307.47	40.00	33.686				
5,647.42	5,600.78	5,464.89	5,412.30	22.31	21.71	155.86	726.81	-270.16	1,359.98	1,319.63	40.35	33.706				
5,700.00	5,652.91	5,515.71	5,462.56	22.53	21.92	155.97	733.84	-273.05	1,373.43	1,332.69	40.73	33.718				
5,800.00	5,752.36	5,612.97	5,558.72	22.92	22.32	156.11	747.29	-278.58	1,396.64	1,355.18	41.46	33.686				
5,900.00	5,852.12	5,782.67	5,727.07	23.29	22.99	156.12	766.83	-286.62	1,414.59	1,371.91	42.68	33.146				
6,000.00	5,952.05	5,967.01	5,911.01	23.63	23.65	156.12	777.60	-291.05	1,423.58	1,379.76	43.82	32.488				
6,047.95	6,000.00	6,056.01	6,000.00	23.78	23.94	-0.50	778.88	-291.57	1,424.64	1,380.34	44.29	32.164				
6,100.00	6,052.05	6,108.06	6,052.05	23.93	24.10	-0.50	778.88	-291.57	1,424.64	1,380.00	44.63	31.918				
6,200.00	6,152.05	6,208.06	6,152.05	24.22	24.42	-0.50	778.88	-291.57	1,424.64	1,379.35	45.29	31.456				
6,300.00	6,252.05	6,308.06	6,252.05	24.52	24.74	-0.50	778.88	-291.57	1,424.64	1,378.69	45.95	31.006				
6,400.00	6,352.05	6,408.06	6,352.05	24.81	25.06	-0.50	778.88	-291.57	1,424.64	1,378.03	46.61	30.567				
6,500.00	6,452.05	6,508.06	6,452.05	25.11	25.37	-0.50	778.88	-291.57	1,424.64	1,377.37	47.27	30.140				
6,600.00	6,552.05	6,608.06	6,552.05	25.40	25.69	-0.50	778.88	-291.57	1,424.64	1,376.71	47.93	29.723				
6,700.00	6,652.05	6,708.06	6,652.05	25.70	26.02	-0.50	778.88	-291.57	1,424.64	1,376.04	48.59	29.317				
6,741.75	6,693.80	6,749.81	6,693.80	25.83	26.15	-0.50	778.88	-291.57	1,424.64	1,375.77	48.87	29.151				
6,750.00	6,702.05	6,758.04	6,702.03	25.85	26.18	-89.92	778.88	-291.53	1,424.64	1,375.71	48.93	29.119				
6,800.00	6,751.99	6,807.88	6,751.81	26.00	26.33	-89.92	778.91	-289.22	1,424.64	1,375.39	49.24	28.930				
6,850.00	6,801.64	6,857.73	6,801.31	26.14	26.47	-89.92	778.97	-283.46	1,424.64	1,375.09	49.55	28.753				
6,900.00	6,850.77	6,907.58	6,850.29	26.28	26.61	-89.92	779.06	-274.27	1,424.64	1,374.80	49.84	28.584				
6,950.00	6,899.13	6,957.43	6,898.52	26.41	26.74	-89.92	779.19	-261.69	1,424.64	1,374.52	50.12	28.422				
7,000.00	6,946.49	7,007.28	6,945.76	26.53	26.87	-89.92	779.35	-245.79	1,424.64	1,374.24	50.40	28.267				
7,050.00	6,992.62	7,057.14	6,991.79	26.65	26.98	-89.92	779.55	-226.64	1,424.64	1,373.97	50.67	28.114				
7,100.00	7,037.30	7,107.00	7,036.37	26.76	27.09	-89.93	779.78	-204.34	1,424.64	1,373.69	50.95	27.961				
7,150.00	7,080.30	7,156.87	7,079.30	26.85	27.19	-89.93	780.04	-178.98	1,424.65	1,373.40	51.24	27.803				
7,200.00	7,121.42	7,206.74	7,120.36	26.95	27.29	-89.93	780.33	-150.70	1,424.65	1,373.09	51.55	27.634				
7,250.00	7,160.45	7,256.62	7,159.36	27.03	27.37	-89.94	780.64	-119.62	1,424.65	1,372.75	51.90	27.449				
7,300.00	7,197.22	7,306.51	7,196.11	27.11	27.46	-89.94	780.99	-85.90	1,424.65	1,372.35	52.30	27.239				
7,350.00	7,231.52	7,356.40	7,230.43	27.18	27.54	-89.94	781.36	-49.70	1,424.66	1,371.89	52.77	26.998				
7,400.00	7,263.21	7,406.31	7,262.15	27.24	27.63	-89.95	781.76	-11.19	1,424.66	1,371.34	53.32	26.718				
7,450.00	7,292.13	7,456.22	7,291.11	27.32	27.74	-89.95	782.17	29.44	1,424.66	1,370.69	53.98	26.394				
7,500.00	7,318.13	7,506.14	7,317.18	27.42	27.93	-89.96	782.61	71.99	1,424.67	1,369.92	54.75	26.022				
7,550.00	7,341.09	7,556.06	7,340.23	27.65	28.25	-89.96	783.06	116.27	1,424.67	1,369.02	55.65	25.601				
7,600.00	7,360.89	7,606.00	7,360.14	28.06	28.72	-89.97	783.53	162.06	1,424.67	1,367.98	56.69	25.131				
7,650.00	7,377.45	7,655.95	7,376.82	28.61	29.29	-89.97	784.01	209.13	1,424.68	1,366.81	57.87	24.618				
7,700.00	7,390.68	7,705.91	7,390.18	29.26	29.94	-89.98	784.51	257.25	1,424.68	1,365.49	59.20	24.067				
7,750.00	7,400.50	7,755.88	7,400.15	29.99	30.67	-89.99	785.01	306.20	1,424.68	1,364.03	60.66	23.488				
7,800.00	7,406.89	7,805.86	7,406.68	30.79	31.45	-89.99	785.52	355.74	1,424.69	1,362.45	62.24	22.891				
7,850.00	7,409.80	7,855.85	7,409.75	31.64	32.30	-90.00	786.03	405.63	1,424.69	1,360.76	63.93	22.285				
7,866.75	7,410.00	7,872.60	7,410.00	31.93	32.59	-90.00	786.20	422.37	1,424.69	1,360.18	64.52	22.082				
7,900.00	7,410.00	7,905.85	7,410.00	32.54	33.19	-90.00	786.54	455.62	1,424.70	1,358.97	65.72	21.677				
8,000.00	7,410.00	8,005.85	7,410.00	34.50	35.12	-90.00	787.56	555.61	1,424.71	1,355.10	69.60	20.470				
8,100.00	7,410.00	8,105.85	7,410.00	36.63	37.23	-90.00	788.59	655.61	1,424.71	1,350.88	73.83	19.296				
8,200.00	7,410.00	8,205.85	7,410.00	38.91	39.49	-90.00	789.61	755.60	1,424.72	1,346.36	78.36	18.181				
8,300.00	7,410.00	8,305.85	7,410.00	41.31	41.87	-90.00	790.64	855.60	1,424.73	1,341.59	83.14	17.136				
8,400.00	7,410.00	8,405.85	7,410.00	43.82	44.36	-90.00	791.66	955.59	1,424.74	1,336.61	88.13	16.167				
8,500.00	7,410.00	8,505.85	7,410.00	46.41	46.93	-90.00	792.69	1,055.59	1,424.75	1,331.46	93.29	15.273				
8,600.00	7,410.00	8,605.85	7,410.00	49.07	49.57	-90.00	793.71	1,155.58	1,424.76	1,326.16	98.59	14.451				
8,700.00	7,410.00	8,705.85	7,410.00	51.80	52.28	-90.00	794.74	1,255.58	1,424.76	1,320.74	104.03	13.696				

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 SAM 3K-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3K-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3D-25H-M166 - 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		
8,800.00	7,410.00	8,805.85	7,410.00	54.57	55.04	-90.00	795.76	1,355.57	1,424.77	1,315.21	109.56	13.004		
8,900.00	7,410.00	8,905.85	7,410.00	57.39	57.85	-90.00	796.78	1,455.57	1,424.78	1,309.59	115.19	12.369		
9,000.00	7,410.00	9,005.85	7,410.00	60.25	60.70	-90.00	797.81	1,555.56	1,424.79	1,303.89	120.90	11.785		
9,100.00	7,410.00	9,105.85	7,410.00	63.15	63.58	-90.00	798.83	1,655.56	1,424.80	1,298.12	126.67	11.248		
9,200.00	7,410.00	9,205.85	7,410.00	66.07	66.49	-90.00	799.86	1,755.55	1,424.81	1,292.30	132.51	10.753		
9,300.00	7,410.00	9,305.85	7,410.00	69.02	69.43	-90.00	800.88	1,855.55	1,424.81	1,286.42	138.39	10.295		
9,400.00	7,410.00	9,405.85	7,410.00	71.99	72.39	-90.00	801.91	1,955.54	1,424.82	1,280.50	144.32	9.873		
9,500.00	7,410.00	9,505.85	7,410.00	74.98	75.37	-90.00	802.93	2,055.54	1,424.83	1,274.54	150.29	9.480		
9,600.00	7,410.00	9,605.85	7,410.00	77.98	78.36	-90.00	803.96	2,155.53	1,424.84	1,268.54	156.30	9.116		
9,700.00	7,410.00	9,705.85	7,410.00	81.00	81.38	-90.00	804.98	2,255.53	1,424.85	1,262.52	162.33	8.777		
9,800.00	7,410.00	9,805.85	7,410.00	84.04	84.40	-90.00	806.01	2,355.52	1,424.85	1,256.46	168.39	8.461		
9,900.00	7,410.00	9,905.85	7,410.00	87.09	87.45	-90.00	807.03	2,455.51	1,424.86	1,250.38	174.48	8.166		
10,000.00	7,410.00	10,005.85	7,410.00	90.14	90.50	-90.00	808.05	2,555.51	1,424.87	1,244.28	180.59	7.890		
10,100.00	7,410.00	10,105.85	7,410.00	93.21	93.56	-90.00	809.08	2,655.50	1,424.88	1,238.15	186.73	7.631		
10,200.00	7,410.00	10,205.85	7,410.00	96.29	96.63	-90.00	810.10	2,755.50	1,424.89	1,232.01	192.87	7.388		
10,300.00	7,410.00	10,305.85	7,410.00	99.37	99.71	-90.00	811.13	2,855.49	1,424.90	1,225.86	199.04	7.159		
10,400.00	7,410.00	10,405.85	7,410.00	102.47	102.80	-90.00	812.15	2,955.49	1,424.90	1,219.68	205.22	6.943		
10,500.00	7,410.00	10,505.85	7,410.00	105.57	105.89	-90.00	813.18	3,055.48	1,424.91	1,213.50	211.42	6.740		
10,600.00	7,410.00	10,605.85	7,410.00	108.67	108.99	-90.00	814.20	3,155.48	1,424.92	1,207.30	217.62	6.548		
10,700.00	7,410.00	10,705.85	7,410.00	111.78	112.10	-90.00	815.23	3,255.47	1,424.93	1,201.09	223.84	6.366		
10,800.00	7,410.00	10,805.85	7,410.00	114.90	115.21	-90.00	816.25	3,355.47	1,424.94	1,194.86	230.07	6.193		
10,900.00	7,410.00	10,905.85	7,410.00	118.02	118.33	-90.00	817.28	3,455.46	1,424.95	1,188.63	236.31	6.030		
11,000.00	7,410.00	11,005.85	7,410.00	121.15	121.45	-90.00	818.30	3,555.46	1,424.95	1,182.39	242.56	5.875		
11,100.00	7,410.00	11,105.85	7,410.00	124.28	124.58	-90.00	819.32	3,655.45	1,424.96	1,176.14	248.82	5.727		
11,200.00	7,410.00	11,205.85	7,410.00	127.41	127.71	-90.00	820.35	3,755.45	1,424.97	1,169.89	255.08	5.586		
11,300.00	7,410.00	11,305.85	7,410.00	130.55	130.84	-90.00	821.37	3,855.44	1,424.98	1,163.62	261.36	5.452		
11,400.00	7,410.00	11,405.85	7,410.00	133.69	133.98	-90.00	822.40	3,955.44	1,424.99	1,157.35	267.63	5.324		
11,500.00	7,410.00	11,505.85	7,410.00	136.83	137.12	-90.00	823.42	4,055.43	1,425.00	1,151.08	273.92	5.202		
11,600.00	7,410.00	11,605.85	7,410.00	139.98	140.27	-90.00	824.45	4,155.43	1,425.00	1,144.79	280.21	5.085		
11,700.00	7,410.00	11,705.85	7,410.00	143.13	143.41	-90.00	825.47	4,255.42	1,425.01	1,138.51	286.51	4.974		
11,800.00	7,410.00	11,805.85	7,410.00	146.28	146.56	-90.00	826.50	4,355.41	1,425.02	1,132.21	292.81	4.867		
11,900.00	7,410.00	11,905.85	7,410.00	149.43	149.71	-90.00	827.52	4,455.41	1,425.03	1,125.92	299.11	4.764		
11,936.55	7,410.00	11,942.40	7,410.00	150.10	150.86	-90.00	827.90	4,491.96	1,425.03	1,124.10	300.93	4.735 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 SAM 3K-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3K-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3E-25H-M166 - 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	0.04	60.11	0.04	60.11					
100.00	100.00	100.00	100.00	0.14	0.14	0.04	60.11	0.04	60.11	59.83	0.28	217.764		
200.00	200.00	200.00	200.00	0.50	0.50	0.04	60.11	0.04	60.11	59.11	0.99	60.534		
300.00	300.00	300.00	300.00	0.85	0.85	0.04	60.11	0.04	60.11	58.40	1.71	35.153		
400.00	400.00	400.00	400.00	1.21	1.21	0.04	60.11	0.04	60.11	57.68	2.43	24.768		
500.00	500.00	500.00	500.00	1.57	1.57	0.04	60.11	0.04	60.11	56.96	3.14	19.120		
600.00	600.00	600.00	600.00	1.93	1.93	0.04	60.11	0.04	60.11	56.25	3.86	15.569 CC, ES		
700.00	699.98	698.21	698.19	2.27	2.28	156.39	61.50	-0.91	63.13	58.56	4.56	13.833		
800.00	799.84	795.88	795.72	2.61	2.63	155.71	65.64	-3.73	72.17	66.90	5.27	13.699		
900.00	899.45	892.64	892.13	2.95	2.98	154.87	72.44	-8.36	87.18	81.20	5.98	14.580		
1,000.53	999.22	991.25	990.25	3.31	3.34	154.59	80.58	-13.91	106.66	99.98	6.68	15.969		
1,100.00	1,097.73	1,088.52	1,087.03	3.68	3.70	154.86	88.61	-19.38	127.47	120.10	7.37	17.292		
1,200.00	1,196.75	1,186.31	1,184.33	4.06	4.06	155.05	96.68	-24.88	148.40	140.33	8.07	18.385		
1,300.00	1,295.77	1,284.09	1,281.63	4.44	4.43	155.20	104.75	-30.37	169.33	160.55	8.78	19.291		
1,400.00	1,394.80	1,381.88	1,378.92	4.83	4.80	155.31	112.82	-35.87	190.26	180.77	9.49	20.053		
1,500.00	1,493.82	1,479.66	1,476.22	5.23	5.16	155.40	120.89	-41.37	211.19	200.99	10.20	20.701		
1,600.00	1,592.85	1,577.44	1,573.51	5.63	5.53	155.48	128.96	-46.87	232.12	221.20	10.92	21.259		
1,700.00	1,691.87	1,675.23	1,670.81	6.03	5.90	155.54	137.03	-52.37	253.05	241.42	11.64	21.744		
1,800.00	1,790.90	1,773.01	1,768.10	6.43	6.27	155.59	145.10	-57.86	273.98	261.63	12.36	22.169		
1,900.00	1,889.92	1,870.80	1,865.40	6.83	6.65	155.64	153.18	-63.36	294.92	281.83	13.08	22.544		
2,000.00	1,988.94	1,968.58	1,962.70	7.24	7.02	155.68	161.25	-68.86	315.85	302.04	13.81	22.878		
2,100.00	2,087.97	2,066.37	2,059.99	7.65	7.39	155.71	169.32	-74.36	336.78	322.25	14.53	23.176		
2,200.00	2,186.99	2,164.15	2,157.29	8.05	7.76	155.74	177.39	-79.86	357.71	342.46	15.26	23.445		
2,300.00	2,286.02	2,261.94	2,254.58	8.46	8.13	155.77	185.46	-85.35	378.65	362.66	15.98	23.688		
2,400.00	2,385.04	2,359.72	2,351.88	8.87	8.51	155.80	193.53	-90.85	399.58	382.87	16.71	23.909		
2,500.00	2,484.07	2,457.51	2,449.17	9.28	8.88	155.82	201.60	-96.35	420.51	403.07	17.44	24.110		
2,600.00	2,583.09	2,555.29	2,546.47	9.69	9.25	155.84	209.67	-101.85	441.44	423.27	18.17	24.295		
2,700.00	2,682.11	2,653.07	2,643.77	10.10	9.63	155.85	217.74	-107.35	462.38	443.48	18.90	24.465		
2,800.00	2,781.14	2,750.86	2,741.06	10.52	10.00	155.87	225.81	-112.84	483.31	463.68	19.63	24.621		
2,900.00	2,880.16	2,848.64	2,838.36	10.93	10.37	155.89	233.88	-118.34	504.24	483.88	20.36	24.766		
3,000.00	2,979.19	2,946.43	2,935.65	11.34	10.75	155.90	241.95	-123.84	525.17	504.08	21.09	24.900		
3,100.00	3,078.21	3,044.21	3,032.95	11.75	11.12	155.91	250.02	-129.34	546.11	524.28	21.82	25.025		
3,200.00	3,177.24	3,142.00	3,130.24	12.17	11.50	155.92	258.09	-134.84	567.04	544.49	22.55	25.142		
3,300.00	3,276.26	3,239.78	3,227.54	12.58	11.87	155.94	266.16	-140.33	587.97	564.69	23.29	25.251		
3,400.00	3,375.28	3,337.57	3,324.84	12.99	12.24	155.95	274.23	-145.83	608.90	584.89	24.02	25.353		
3,500.00	3,474.31	3,435.35	3,422.13	13.41	12.62	155.96	282.30	-151.33	629.84	605.09	24.75	25.449		
3,600.00	3,573.33	3,533.13	3,519.43	13.82	12.99	155.96	290.37	-156.83	650.77	625.29	25.48	25.539		
3,700.00	3,672.36	3,630.92	3,616.72	14.23	13.37	155.97	298.44	-162.33	671.70	645.49	26.21	25.624		
3,800.00	3,771.38	3,728.70	3,714.02	14.65	13.74	155.98	306.51	-167.82	692.64	665.69	26.95	25.704		
3,900.00	3,870.40	3,826.49	3,811.31	15.06	14.12	155.99	314.59	-173.32	713.57	685.89	27.68	25.780		
4,000.00	3,969.43	3,924.27	3,908.61	15.48	14.49	155.99	322.66	-178.82	734.50	706.09	28.41	25.851		
4,100.00	4,068.45	4,022.06	4,005.90	15.89	14.86	156.00	330.73	-184.32	755.43	726.29	29.15	25.919		
4,200.00	4,167.48	4,119.84	4,103.20	16.30	15.24	156.01	338.80	-189.82	776.37	746.49	29.88	25.984		
4,300.00	4,266.50	4,217.63	4,200.50	16.72	15.61	156.01	346.87	-195.32	797.30	766.69	30.61	26.045		
4,400.00	4,365.53	4,315.41	4,297.79	17.13	15.99	156.02	354.94	-200.81	818.23	786.89	31.35	26.103		
4,500.00	4,464.55	4,413.20	4,395.09	17.55	16.36	156.02	363.01	-206.31	839.17	807.09	32.08	26.159		
4,600.00	4,563.57	4,510.98	4,492.38	17.96	16.74	156.03	371.08	-211.81	860.10	827.29	32.81	26.212		
4,700.00	4,662.60	4,608.76	4,589.68	18.38	17.11	156.03	379.15	-217.31	881.03	847.48	33.55	26.263		
4,800.00	4,761.62	4,706.55	4,686.97	18.79	17.49	156.04	387.22	-222.81	901.96	867.68	34.28	26.311		
4,900.00	4,860.65	4,804.33	4,784.27	19.21	17.86	156.04	395.29	-228.30	922.90	887.88	35.01	26.357		
5,000.00	4,959.67	4,902.12	4,881.57	19.62	18.24	156.05	403.36	-233.80	943.83	908.08	35.75	26.402		
5,100.00	5,058.70	4,999.90	4,978.86	20.04	18.61	156.05	411.43	-239.30	964.76	928.28	36.48	26.444		

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 SAM 3K-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3K-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3E-25H-M166 - 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		
5,200.00	5,157.72	5,097.69	5,076.16	20.45	18.99	156.06	419.50	-244.80	985.70	948.48	37.22	26.485		
5,300.00	5,256.74	5,195.47	5,173.45	20.87	19.36	156.06	427.57	-250.30	1,006.63	968.68	37.95	26.524		
5,400.00	5,355.77	5,293.26	5,270.75	21.29	19.74	156.06	435.64	-255.79	1,027.56	988.88	38.69	26.562		
5,500.00	5,454.79	5,391.04	5,368.04	21.70	20.11	156.07	443.71	-261.29	1,048.49	1,009.07	39.42	26.598		
5,600.00	5,553.82	5,488.82	5,465.34	22.12	20.49	156.07	451.78	-266.79	1,069.43	1,029.27	40.15	26.633		
5,647.42	5,600.78	5,535.20	5,511.48	22.31	20.67	156.07	455.61	-269.40	1,079.35	1,038.85	40.50	26.649		
5,700.00	5,652.91	5,586.70	5,562.72	22.53	20.86	156.15	459.86	-272.29	1,089.93	1,049.04	40.89	26.656		
5,800.00	5,752.36	5,685.10	5,660.64	22.92	21.24	156.22	467.98	-277.83	1,107.65	1,066.03	41.62	26.614		
5,900.00	5,852.12	5,805.85	5,780.85	23.29	21.70	156.18	477.30	-284.17	1,121.78	1,079.28	42.50	26.396		
6,000.00	5,952.05	5,953.90	5,928.69	23.63	22.23	156.13	483.50	-288.40	1,129.12	1,085.62	43.49	25.961		
6,047.95	6,000.00	6,025.21	6,000.00	23.78	22.48	-0.49	484.24	-288.90	1,129.98	1,086.05	43.93	25.724		
6,100.00	6,052.05	6,077.26	6,052.05	23.93	22.65	-0.49	484.24	-288.90	1,129.98	1,085.71	44.27	25.524		
6,200.00	6,152.05	6,177.26	6,152.05	24.22	22.99	-0.49	484.24	-288.90	1,129.98	1,085.05	44.93	25.148		
6,300.00	6,252.05	6,277.26	6,252.05	24.52	23.33	-0.49	484.24	-288.90	1,129.98	1,084.38	45.60	24.783		
6,400.00	6,352.05	6,377.26	6,352.05	24.81	23.66	-0.49	484.24	-288.90	1,129.98	1,083.72	46.26	24.426		
6,500.00	6,452.05	6,477.26	6,452.05	25.11	24.00	-0.49	484.24	-288.90	1,129.98	1,083.05	46.93	24.080		
6,600.00	6,552.05	6,577.26	6,552.05	25.40	24.34	-0.49	484.24	-288.90	1,129.98	1,082.38	47.59	23.742		
6,605.62	6,557.67	6,582.88	6,557.67	25.42	24.36	-0.49	484.24	-288.90	1,129.98	1,082.35	47.63	23.723		
6,700.00	6,652.05	6,677.18	6,651.96	25.70	24.68	-0.46	484.24	-288.35	1,129.98	1,081.72	48.26	23.415		
6,741.75	6,693.80	6,718.62	6,693.30	25.83	24.81	-0.32	484.27	-285.52	1,129.99	1,081.47	48.52	23.287		
6,750.00	6,702.05	6,726.77	6,701.40	25.85	24.83	-89.70	484.28	-284.68	1,129.99	1,081.42	48.58	23.262		
6,800.00	6,751.99	6,775.96	6,750.08	26.00	24.98	-89.46	484.35	-277.68	1,130.03	1,081.15	48.88	23.118		
6,850.00	6,801.64	6,824.83	6,797.86	26.14	25.12	-89.22	484.46	-267.43	1,130.09	1,080.91	49.17	22.982		
6,900.00	6,850.77	6,873.40	6,844.54	26.28	25.25	-88.98	484.59	-254.04	1,130.16	1,080.70	49.46	22.852		
6,950.00	6,899.13	6,921.68	6,889.93	26.41	25.38	-88.75	484.76	-237.62	1,130.25	1,080.52	49.73	22.728		
7,000.00	6,946.49	6,969.67	6,933.86	26.53	25.50	-88.53	484.96	-218.31	1,130.35	1,080.36	50.00	22.609		
7,050.00	6,992.62	7,017.40	6,976.16	26.65	25.61	-88.31	485.18	-196.23	1,130.47	1,080.21	50.26	22.491		
7,100.00	7,037.30	7,064.88	7,016.69	26.76	25.72	-88.10	485.43	-171.52	1,130.60	1,080.07	50.54	22.372		
7,150.00	7,080.30	7,112.12	7,055.30	26.85	25.83	-87.90	485.71	-144.33	1,130.74	1,079.91	50.83	22.247		
7,200.00	7,121.42	7,159.13	7,091.87	26.95	25.95	-87.71	486.01	-114.79	1,130.88	1,079.74	51.14	22.113		
7,250.00	7,160.45	7,205.94	7,126.27	27.03	26.08	-87.54	486.33	-83.07	1,131.03	1,079.53	51.50	21.963		
7,300.00	7,197.22	7,252.55	7,158.40	27.11	26.25	-87.37	486.67	-49.31	1,131.17	1,079.27	51.90	21.793		
7,350.00	7,231.52	7,300.00	7,188.78	27.18	26.47	-87.21	487.04	-12.87	1,131.32	1,078.93	52.39	21.595		
7,400.00	7,263.21	7,345.26	7,215.45	27.24	26.73	-87.07	487.41	23.68	1,131.46	1,078.51	52.95	21.370		
7,450.00	7,292.13	7,391.39	7,240.20	27.32	27.07	-86.95	487.81	62.60	1,131.59	1,077.98	53.61	21.108		
7,500.00	7,318.13	7,437.39	7,262.34	27.42	27.46	-86.83	488.22	102.91	1,131.71	1,077.32	54.39	20.809		
7,550.00	7,341.09	7,483.28	7,281.80	27.65	27.92	-86.73	488.64	144.46	1,131.82	1,076.54	55.28	20.473		
7,600.00	7,360.89	7,529.07	7,298.52	28.06	28.44	-86.65	489.07	187.08	1,131.92	1,075.61	56.31	20.102		
7,650.00	7,377.45	7,574.78	7,312.47	28.61	29.01	-86.58	489.52	230.60	1,132.00	1,074.53	57.47	19.698		
7,700.00	7,390.68	7,620.43	7,323.59	29.26	29.65	-86.52	489.97	274.86	1,132.06	1,073.31	58.76	19.267		
7,750.00	7,400.50	7,666.02	7,331.87	29.99	30.33	-86.48	490.42	319.69	1,132.11	1,071.94	60.17	18.816		
7,800.00	7,406.89	7,711.59	7,337.28	30.79	31.07	-86.46	490.88	364.92	1,132.14	1,070.44	61.69	18.351		
7,850.00	7,409.80	7,757.14	7,339.80	31.64	31.85	-86.45	491.34	410.39	1,132.14	1,068.83	63.32	17.881		
7,866.75	7,410.00	7,772.40	7,340.00	31.93	32.12	-86.46	491.50	425.65	1,132.14	1,068.26	63.88	17.723		
7,878.62	7,410.00	7,784.11	7,340.00	32.15	32.33	-86.46	491.62	437.36	1,132.14	1,067.84	64.31	17.606		
7,900.00	7,410.00	7,805.49	7,340.00	32.54	32.72	-86.46	491.84	458.73	1,132.14	1,067.06	65.09	17.394		
8,000.00	7,410.00	7,905.49	7,340.00	34.50	34.67	-86.46	492.85	558.73	1,132.14	1,063.16	68.98	16.412		
8,100.00	7,410.00	8,005.49	7,340.00	36.63	36.80	-86.46	493.87	658.72	1,132.14	1,058.91	73.23	15.460		
8,200.00	7,410.00	8,105.49	7,340.00	38.91	39.08	-86.46	494.88	758.72	1,132.14	1,054.37	77.77	14.557		
8,300.00	7,410.00	8,205.49	7,340.00	41.31	41.48	-86.46	495.90	858.71	1,132.14	1,049.58	82.57	13.712		
8,400.00	7,410.00	8,305.49	7,340.00	43.82	43.98	-86.46	496.92	958.71	1,132.14	1,044.58	87.56	12.930		
8,500.00	7,410.00	8,405.49	7,340.00	46.41	46.57	-86.46	497.93	1,058.70	1,132.14	1,039.41	92.73	12.209		

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 SAM 3K-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3K-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3E-25H-M166 - 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	7,410.00	8,505.49	7,340.00	49.07	49.23	-86.46	498.95	1,158.70	1,132.14	1,034.10	98.05	11.547	
8,700.00	7,410.00	8,605.49	7,340.00	51.80	51.95	-86.46	499.96	1,258.69	1,132.14	1,028.66	103.49	10.940	
8,800.00	7,410.00	8,705.49	7,340.00	54.57	54.73	-86.46	500.98	1,358.69	1,132.14	1,023.11	109.03	10.384	
8,900.00	7,410.00	8,805.49	7,340.00	57.39	57.55	-86.46	502.00	1,458.68	1,132.14	1,017.48	114.66	9.874	
9,000.00	7,410.00	8,905.49	7,340.00	60.25	60.40	-86.46	503.01	1,558.68	1,132.14	1,011.77	120.37	9.405	
9,100.00	7,410.00	9,005.49	7,340.00	63.15	63.30	-86.46	504.03	1,658.67	1,132.14	1,006.00	126.15	8.975	
9,200.00	7,410.00	9,105.49	7,340.00	66.07	66.22	-86.46	505.04	1,758.67	1,132.14	1,000.16	131.98	8.578	
9,300.00	7,410.00	9,205.49	7,340.00	69.02	69.16	-86.46	506.06	1,858.66	1,132.14	994.28	137.86	8.212	
9,400.00	7,410.00	9,305.49	7,340.00	71.99	72.13	-86.46	507.08	1,958.66	1,132.14	988.35	143.79	7.873	
9,500.00	7,410.00	9,405.49	7,340.00	74.98	75.12	-86.46	508.09	2,058.65	1,132.14	982.38	149.76	7.560	
9,600.00	7,410.00	9,505.49	7,340.00	77.98	78.12	-86.46	509.11	2,158.65	1,132.14	976.38	155.76	7.268	
9,700.00	7,410.00	9,605.49	7,340.00	81.00	81.14	-86.46	510.13	2,258.64	1,132.14	970.35	161.80	6.997	
9,800.00	7,410.00	9,705.49	7,340.00	84.04	84.18	-86.46	511.14	2,358.64	1,132.14	964.29	167.86	6.745	
9,900.00	7,410.00	9,805.49	7,340.00	87.09	87.22	-86.46	512.16	2,458.63	1,132.14	958.20	173.94	6.509	
10,000.00	7,410.00	9,905.49	7,340.00	90.14	90.28	-86.46	513.17	2,558.63	1,132.14	952.09	180.05	6.288	
10,100.00	7,410.00	10,005.49	7,340.00	93.21	93.35	-86.46	514.19	2,658.62	1,132.14	945.97	186.17	6.081	
10,200.00	7,410.00	10,105.49	7,340.00	96.29	96.43	-86.46	515.21	2,758.62	1,132.14	939.82	192.32	5.887	
10,300.00	7,410.00	10,205.49	7,340.00	99.37	99.51	-86.46	516.22	2,858.61	1,132.14	933.66	198.48	5.704	
10,400.00	7,410.00	10,305.49	7,340.00	102.47	102.60	-86.46	517.24	2,958.61	1,132.14	927.49	204.65	5.532	
10,500.00	7,410.00	10,405.49	7,340.00	105.57	105.70	-86.46	518.25	3,058.60	1,132.14	921.30	210.84	5.370	
10,600.00	7,410.00	10,505.49	7,340.00	108.67	108.81	-86.46	519.27	3,158.60	1,132.14	915.10	217.04	5.216	
10,700.00	7,410.00	10,605.49	7,340.00	111.78	111.92	-86.46	520.29	3,258.59	1,132.14	908.88	223.26	5.071	
10,800.00	7,410.00	10,705.49	7,340.00	114.90	115.03	-86.46	521.30	3,358.58	1,132.14	902.66	229.48	4.934	
10,900.00	7,410.00	10,805.49	7,340.00	118.02	118.15	-86.46	522.32	3,458.58	1,132.14	896.43	235.71	4.803	
11,000.00	7,410.00	10,905.49	7,340.00	121.15	121.28	-86.46	523.34	3,558.57	1,132.14	890.19	241.95	4.679	
11,100.00	7,410.00	11,005.49	7,340.00	124.28	124.41	-86.46	524.35	3,658.57	1,132.14	883.94	248.20	4.561	
11,200.00	7,410.00	11,105.49	7,340.00	127.41	127.54	-86.46	525.37	3,758.56	1,132.14	877.68	254.46	4.449	
11,300.00	7,410.00	11,205.49	7,340.00	130.55	130.68	-86.46	526.38	3,858.56	1,132.14	871.42	260.72	4.342	
11,400.00	7,410.00	11,305.49	7,340.00	133.69	133.82	-86.46	527.40	3,958.55	1,132.14	865.15	266.99	4.240	
11,500.00	7,410.00	11,405.49	7,340.00	136.83	136.96	-86.46	528.42	4,058.55	1,132.14	858.87	273.27	4.143	
11,600.00	7,410.00	11,505.49	7,340.00	139.98	140.11	-86.46	529.43	4,158.54	1,132.14	852.59	279.55	4.050	
11,700.00	7,410.00	11,605.49	7,340.00	143.13	143.26	-86.46	530.45	4,258.54	1,132.14	846.30	285.84	3.961	
11,800.00	7,410.00	11,705.49	7,340.00	146.28	146.41	-86.46	531.46	4,358.53	1,132.14	840.01	292.13	3.875	
11,900.00	7,410.00	11,805.49	7,340.00	149.43	149.56	-86.46	532.48	4,458.53	1,132.14	833.71	298.43	3.794	
11,936.55	7,410.00	11,842.04	7,340.00	150.10	150.72	-86.46	532.85	4,495.08	1,132.14	831.89	300.24	3.771 SF	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3K-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3K-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3F-25H-M166 - 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	-0.17	49.90	-0.15	49.90				
100.00	100.00	100.00	100.00	0.14	0.14	-0.17	49.90	-0.15	49.90	49.63	0.28	180.790	
200.00	200.00	200.00	200.00	0.50	0.50	-0.17	49.90	-0.15	49.90	48.91	0.99	50.256	
300.00	300.00	300.00	300.00	0.85	0.85	-0.17	49.90	-0.15	49.90	48.19	1.71	29.184	
400.00	400.00	400.00	400.00	1.21	1.21	-0.17	49.90	-0.15	49.90	47.48	2.43	20.563	
500.00	500.00	500.00	500.00	1.57	1.57	-0.17	49.90	-0.15	49.90	46.76	3.14	15.873	
600.00	600.00	600.00	600.00	1.93	1.93	-0.17	49.90	-0.15	49.90	46.04	3.86	12.926 CC, ES	
700.00	699.98	699.98	699.98	2.27	2.29	157.21	49.90	-0.15	51.51	46.94	4.56	11.291	
800.00	799.84	799.84	799.84	2.61	2.65	159.23	49.90	-0.15	56.37	51.11	5.25	10.727	
900.00	899.45	899.45	899.45	2.95	3.00	161.92	49.90	-0.15	64.59	58.64	5.95	10.847	
1,000.53	999.22	999.22	999.22	3.31	3.36	164.72	49.90	-0.15	76.35	69.68	6.66	11.458	
1,100.00	1,097.73	1,096.00	1,095.98	3.68	3.71	166.16	51.03	-1.29	90.73	83.37	7.36	12.332	
1,200.00	1,196.75	1,192.72	1,192.58	4.06	4.05	165.74	54.46	-4.76	107.13	99.08	8.05	13.306	
1,300.00	1,295.77	1,289.88	1,289.42	4.44	4.40	164.34	59.94	-10.30	125.27	116.52	8.75	14.316	
1,400.00	1,394.80	1,388.12	1,387.31	4.83	4.75	163.13	65.78	-16.21	143.74	134.28	9.46	15.198	
1,500.00	1,493.82	1,486.36	1,485.19	5.23	5.11	162.20	71.63	-22.13	162.26	152.09	10.17	15.955	
1,600.00	1,592.85	1,584.60	1,583.08	5.63	5.47	161.46	77.48	-28.05	180.81	169.93	10.89	16.611	
1,700.00	1,691.87	1,682.84	1,680.97	6.03	5.83	160.86	83.33	-33.96	199.39	187.78	11.60	17.184	
1,800.00	1,790.90	1,781.08	1,778.86	6.43	6.19	160.36	89.18	-39.88	217.98	205.66	12.32	17.688	
1,900.00	1,889.92	1,879.32	1,876.74	6.83	6.55	159.94	95.03	-45.79	236.59	223.54	13.05	18.134	
2,000.00	1,988.94	1,977.56	1,974.63	7.24	6.91	159.58	100.88	-51.71	255.21	241.43	13.77	18.532	
2,100.00	2,087.97	2,075.80	2,072.52	7.65	7.28	159.27	106.73	-57.63	273.83	259.33	14.50	18.889	
2,200.00	2,186.99	2,174.04	2,170.40	8.05	7.64	158.99	112.58	-63.54	292.46	277.24	15.22	19.211	
2,300.00	2,286.02	2,272.28	2,268.29	8.46	8.01	158.75	118.43	-69.46	311.10	295.15	15.95	19.503	
2,400.00	2,385.04	2,370.52	2,366.18	8.87	8.37	158.54	124.28	-75.37	329.74	313.06	16.68	19.768	
2,500.00	2,484.07	2,468.76	2,464.06	9.28	8.74	158.35	130.13	-81.29	348.39	330.98	17.41	20.011	
2,600.00	2,583.09	2,567.00	2,561.95	9.69	9.10	158.18	135.98	-87.20	367.04	348.90	18.14	20.233	
2,700.00	2,682.11	2,665.24	2,659.84	10.10	9.47	158.03	141.83	-93.12	385.69	366.82	18.87	20.438	
2,800.00	2,781.14	2,763.48	2,757.73	10.52	9.84	157.89	147.68	-99.04	404.35	384.75	19.60	20.627	
2,900.00	2,880.16	2,861.72	2,855.61	10.93	10.21	157.76	153.53	-104.95	423.01	402.67	20.34	20.802	
3,000.00	2,979.19	2,959.96	2,953.50	11.34	10.57	157.65	159.37	-110.87	441.67	420.60	21.07	20.964	
3,100.00	3,078.21	3,058.20	3,051.39	11.75	10.94	157.54	165.22	-116.78	460.33	438.53	21.80	21.115	
3,200.00	3,177.24	3,156.44	3,149.27	12.17	11.31	157.44	171.07	-122.70	478.99	456.45	22.53	21.256	
3,300.00	3,276.26	3,254.68	3,247.16	12.58	11.68	157.35	176.92	-128.62	497.65	474.38	23.27	21.388	
3,400.00	3,375.28	3,352.92	3,345.05	12.99	12.04	157.27	182.77	-134.53	516.32	492.32	24.00	21.512	
3,500.00	3,474.31	3,451.16	3,442.94	13.41	12.41	157.19	188.62	-140.45	534.98	510.25	24.74	21.628	
3,600.00	3,573.33	3,549.40	3,540.82	13.82	12.78	157.11	194.47	-146.36	553.65	528.18	25.47	21.737	
3,700.00	3,672.36	3,647.64	3,638.71	14.23	13.15	157.05	200.32	-152.28	572.32	546.11	26.20	21.840	
3,800.00	3,771.38	3,745.88	3,736.60	14.65	13.52	156.98	206.17	-158.19	590.98	564.04	26.94	21.938	
3,900.00	3,870.40	3,844.12	3,834.48	15.06	13.89	156.92	212.02	-164.11	609.65	581.98	27.67	22.029	
4,000.00	3,969.43	3,942.36	3,932.37	15.48	14.26	156.86	217.87	-170.03	628.32	599.91	28.41	22.117	
4,100.00	4,068.45	4,040.60	4,030.26	15.89	14.62	156.81	223.72	-175.94	646.99	617.85	29.15	22.199	
4,200.00	4,167.48	4,138.84	4,128.14	16.30	14.99	156.76	229.57	-181.86	665.66	635.78	29.88	22.277	
4,300.00	4,266.50	4,237.08	4,226.03	16.72	15.36	156.71	235.42	-187.77	684.33	653.72	30.62	22.352	
4,400.00	4,365.53	4,335.32	4,323.92	17.13	15.73	156.67	241.27	-193.69	703.00	671.65	31.35	22.423	
4,500.00	4,464.55	4,433.56	4,421.81	17.55	16.10	156.63	247.12	-199.61	721.68	689.59	32.09	22.490	
4,600.00	4,563.57	4,531.80	4,519.69	17.96	16.47	156.58	252.97	-205.52	740.35	707.52	32.82	22.555	
4,700.00	4,662.60	4,630.04	4,617.58	18.38	16.84	156.55	258.81	-211.44	759.02	725.46	33.56	22.617	
4,800.00	4,761.62	4,728.28	4,715.47	18.79	17.21	156.51	264.66	-217.35	777.69	743.40	34.30	22.675	
4,900.00	4,860.65	4,826.52	4,813.35	19.21	17.58	156.47	270.51	-223.27	796.37	761.33	35.03	22.732	
5,000.00	4,959.67	4,924.76	4,911.24	19.62	17.95	156.44	276.36	-229.19	815.04	779.27	35.77	22.786	
5,100.00	5,058.70	5,023.00	5,009.13	20.04	18.32	156.41	282.21	-235.10	833.71	797.21	36.51	22.838	

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 SAM 3K-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3K-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3F-25H-M166 - 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
5,200.00	5,157.72	5,121.24	5,107.02	20.45	18.69	156.38	288.06	-241.02	852.39	815.14	37.24	22.887	
5,300.00	5,256.74	5,219.48	5,204.90	20.87	19.06	156.35	293.91	-246.93	871.06	833.08	37.98	22.935	
5,400.00	5,355.77	5,317.72	5,302.79	21.29	19.43	156.32	299.76	-252.85	889.74	851.02	38.72	22.981	
5,500.00	5,454.79	5,415.96	5,400.68	21.70	19.79	156.29	305.61	-258.76	908.41	868.96	39.45	23.025	
5,600.00	5,553.82	5,514.20	5,498.56	22.12	20.16	156.27	311.46	-264.68	927.08	886.89	40.19	23.067	
5,647.42	5,600.78	5,560.79	5,544.99	22.31	20.34	156.26	314.23	-267.49	935.94	895.40	40.54	23.087	
5,700.00	5,652.91	5,612.52	5,596.53	22.53	20.53	156.31	317.31	-270.60	945.32	904.40	40.93	23.098	
5,800.00	5,752.36	5,711.30	5,694.95	22.92	20.91	156.32	323.20	-276.55	960.77	919.11	41.66	23.063	
5,900.00	5,852.12	5,822.04	5,805.33	23.29	21.32	156.22	329.51	-282.93	972.84	930.37	42.47	22.906	
6,000.00	5,952.05	5,953.57	5,936.72	23.63	21.80	156.13	333.67	-287.14	979.16	935.77	43.38	22.570	
6,047.95	6,000.00	6,016.86	6,000.00	23.78	22.02	-0.49	334.16	-287.64	979.90	936.11	43.79	22.377	
6,100.00	6,052.05	6,068.91	6,052.05	23.93	22.20	-0.49	334.16	-287.64	979.90	935.76	44.14	22.202	
6,200.00	6,152.05	6,168.91	6,152.05	24.22	22.54	-0.49	334.16	-287.64	979.90	935.10	44.80	21.874	
6,300.00	6,252.05	6,268.91	6,252.05	24.52	22.88	-0.49	334.16	-287.64	979.90	934.44	45.46	21.554	
6,400.00	6,352.05	6,368.91	6,352.05	24.81	23.23	-0.49	334.16	-287.64	979.90	933.77	46.13	21.243	
6,500.00	6,452.05	6,468.91	6,452.05	25.11	23.57	-0.49	334.16	-287.64	979.90	933.10	46.80	20.940	
6,600.00	6,552.05	6,568.91	6,552.05	25.40	23.92	-0.49	334.16	-287.64	979.90	932.43	47.47	20.645	
6,700.00	6,652.05	6,668.91	6,652.05	25.70	24.26	-0.49	334.16	-287.64	979.90	931.76	48.14	20.357	
6,741.75	6,693.80	6,710.66	6,693.80	25.83	24.41	-0.49	334.16	-287.64	979.90	931.48	48.42	20.239	
6,750.00	6,702.05	6,718.89	6,702.03	25.85	24.43	-89.91	334.16	-287.59	979.90	931.43	48.47	20.217	
6,800.00	6,751.99	6,768.79	6,751.86	26.00	24.60	-89.91	334.19	-285.28	979.90	931.11	48.79	20.084	
6,850.00	6,801.64	6,818.68	6,801.42	26.14	24.75	-89.91	334.24	-279.51	979.90	930.80	49.10	19.959	
6,900.00	6,850.77	6,868.58	6,850.44	26.28	24.90	-89.91	334.34	-270.30	979.90	930.51	49.39	19.840	
6,950.00	6,899.13	6,918.48	6,898.72	26.41	25.04	-89.92	334.47	-257.70	979.90	930.22	49.68	19.726	
7,000.00	6,946.49	6,966.38	6,945.99	26.53	25.18	-89.92	334.63	-241.77	979.90	929.94	49.96	19.615	
7,050.00	6,992.62	7,018.28	6,992.05	26.65	25.31	-89.92	334.82	-222.59	979.90	929.67	50.23	19.508	
7,100.00	7,037.30	7,068.19	7,036.66	26.76	25.44	-89.92	335.05	-200.24	979.90	929.39	50.51	19.399	
7,150.00	7,080.30	7,118.10	7,079.62	26.85	25.58	-89.93	335.31	-174.85	979.90	929.09	50.80	19.288	
7,200.00	7,121.42	7,168.01	7,120.70	26.95	25.72	-89.93	335.60	-146.52	979.90	928.78	51.12	19.169	
7,250.00	7,160.45	7,217.93	7,159.71	27.03	25.88	-89.93	335.91	-115.39	979.90	928.43	51.47	19.038	
7,300.00	7,197.22	7,267.85	7,196.46	27.11	26.07	-89.94	336.26	-81.62	979.90	928.02	51.87	18.890	
7,350.00	7,231.52	7,317.78	7,230.78	27.18	26.30	-89.94	336.62	-45.37	979.90	927.55	52.35	18.720	
7,400.00	7,263.21	7,367.71	7,262.49	27.24	26.57	-89.95	337.02	-6.82	979.90	926.99	52.90	18.523	
7,450.00	7,292.13	7,417.65	7,291.44	27.32	26.91	-89.95	337.43	33.86	979.90	926.34	53.56	18.295	
7,500.00	7,318.13	7,467.60	7,317.49	27.42	27.30	-89.96	337.86	76.46	979.90	925.56	54.34	18.033	
7,550.00	7,341.09	7,517.55	7,340.51	27.65	27.76	-89.96	338.31	120.78	979.90	924.65	55.25	17.737	
7,600.00	7,360.89	7,567.51	7,360.38	28.06	28.29	-89.97	338.78	166.60	979.90	923.60	56.29	17.407	
7,650.00	7,377.45	7,617.47	7,377.02	28.61	28.88	-89.97	339.26	213.70	979.90	922.41	57.48	17.047	
7,700.00	7,390.68	7,667.44	7,390.34	29.26	29.55	-89.98	339.75	261.85	979.90	921.08	58.81	16.661	
7,750.00	7,400.50	7,717.42	7,400.26	29.99	30.29	-89.99	340.24	310.82	979.90	919.61	60.28	16.255	
7,800.00	7,406.89	7,767.41	7,406.75	30.79	31.09	-89.99	340.75	360.37	979.90	918.02	61.87	15.837	
7,850.00	7,409.80	7,817.40	7,409.77	31.64	31.94	-90.00	341.25	410.26	979.90	916.33	63.57	15.414	
7,866.75	7,410.00	7,834.16	7,410.00	31.93	32.23	-90.00	341.42	427.01	979.90	915.74	64.16	15.273	
7,900.00	7,410.00	7,867.40	7,410.00	32.54	32.84	-90.00	341.76	460.26	979.90	914.52	65.38	14.989	
8,000.00	7,410.00	7,967.40	7,410.00	34.50	34.80	-90.00	342.78	560.25	979.90	910.61	69.28	14.144	
8,100.00	7,410.00	8,067.40	7,410.00	36.63	36.92	-90.00	343.79	660.25	979.90	906.37	73.53	13.327	
8,200.00	7,410.00	8,167.40	7,410.00	38.91	39.19	-90.00	344.81	760.24	979.90	901.82	78.07	12.551	
8,300.00	7,410.00	8,267.40	7,410.00	41.31	41.58	-90.00	345.83	860.24	979.90	897.03	82.86	11.825	
8,400.00	7,410.00	8,367.40	7,410.00	43.82	44.08	-90.00	346.84	960.23	979.90	892.03	87.86	11.153	
8,500.00	7,410.00	8,467.40	7,410.00	46.41	46.66	-90.00	347.86	1,060.23	979.90	886.86	93.03	10.533	
8,600.00	7,410.00	8,567.40	7,410.00	49.07	49.31	-90.00	348.88	1,160.22	979.90	881.54	98.35	9.963	
8,700.00	7,410.00	8,667.40	7,410.00	51.80	52.03	-90.00	349.89	1,260.22	979.90	876.10	103.80	9.441	

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 SAM 3K-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3K-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3F-25H-M166 - 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	7,410.00	8,767.40	7,410.00	54.57	54.80	-90.00	350.91	1,360.21	979.90	870.55	109.34	8.962		
8,900.00	7,410.00	8,867.40	7,410.00	57.39	57.62	-90.00	351.92	1,460.21	979.90	864.91	114.98	8.522		
9,000.00	7,410.00	8,967.40	7,410.00	60.25	60.48	-90.00	352.94	1,560.20	979.90	859.20	120.70	8.119		
9,100.00	7,410.00	9,067.40	7,410.00	63.15	63.36	-90.00	353.96	1,660.20	979.90	853.42	126.48	7.747		
9,200.00	7,410.00	9,167.40	7,410.00	66.07	66.28	-90.00	354.97	1,760.19	979.89	847.58	132.32	7.406		
9,300.00	7,410.00	9,267.40	7,410.00	69.02	69.23	-90.00	355.99	1,860.19	979.89	841.68	138.21	7.090		
9,400.00	7,410.00	9,367.40	7,410.00	71.99	72.19	-90.00	357.00	1,960.18	979.89	835.75	144.15	6.798		
9,500.00	7,410.00	9,467.40	7,410.00	74.98	75.18	-90.00	358.02	2,060.18	979.89	829.77	150.12	6.527		
9,600.00	7,410.00	9,567.40	7,410.00	77.98	78.18	-90.00	359.04	2,160.17	979.89	823.76	156.13	6.276		
9,700.00	7,410.00	9,667.40	7,410.00	81.00	81.20	-90.00	360.05	2,260.17	979.89	817.72	162.17	6.042		
9,800.00	7,410.00	9,767.40	7,410.00	84.04	84.23	-90.00	361.07	2,360.16	979.89	811.65	168.24	5.824		
9,900.00	7,410.00	9,867.40	7,410.00	87.09	87.28	-90.00	362.09	2,460.16	979.89	805.56	174.33	5.621		
10,000.00	7,410.00	9,967.40	7,410.00	90.14	90.33	-90.00	363.10	2,560.15	979.89	799.45	180.45	5.430		
10,100.00	7,410.00	10,067.40	7,410.00	93.21	93.40	-90.00	364.12	2,660.15	979.89	793.31	186.58	5.252		
10,200.00	7,410.00	10,167.40	7,410.00	96.29	96.48	-90.00	365.13	2,760.14	979.89	787.16	192.74	5.084		
10,300.00	7,410.00	10,267.40	7,410.00	99.37	99.56	-90.00	366.15	2,860.14	979.89	780.99	198.91	4.926		
10,400.00	7,410.00	10,367.40	7,410.00	102.47	102.65	-90.00	367.17	2,960.13	979.89	774.80	205.09	4.778		
10,500.00	7,410.00	10,467.40	7,410.00	105.57	105.75	-90.00	368.18	3,060.13	979.89	768.60	211.29	4.638		
10,600.00	7,410.00	10,567.40	7,410.00	108.67	108.85	-90.00	369.20	3,160.12	979.89	762.39	217.50	4.505		
10,700.00	7,410.00	10,667.40	7,410.00	111.78	111.96	-90.00	370.21	3,260.11	979.89	756.17	223.72	4.380		
10,800.00	7,410.00	10,767.40	7,410.00	114.90	115.08	-90.00	371.23	3,360.11	979.89	749.94	229.95	4.261		
10,900.00	7,410.00	10,867.40	7,410.00	118.02	118.20	-90.00	372.25	3,460.10	979.89	743.70	236.20	4.149		
11,000.00	7,410.00	10,967.40	7,410.00	121.15	121.32	-90.00	373.26	3,560.10	979.89	737.45	242.45	4.042		
11,100.00	7,410.00	11,067.40	7,410.00	124.28	124.45	-90.00	374.28	3,660.09	979.89	731.19	248.71	3.940		
11,200.00	7,410.00	11,167.40	7,410.00	127.41	127.59	-90.00	375.30	3,760.09	979.89	724.92	254.97	3.843		
11,300.00	7,410.00	11,267.40	7,410.00	130.55	130.72	-90.00	376.31	3,860.08	979.89	718.65	261.25	3.751		
11,400.00	7,410.00	11,367.40	7,410.00	133.69	133.86	-90.00	377.33	3,960.08	979.89	712.36	267.53	3.663		
11,500.00	7,410.00	11,467.40	7,410.00	136.83	137.00	-90.00	378.34	4,060.07	979.89	706.08	273.81	3.579		
11,600.00	7,410.00	11,567.40	7,410.00	139.98	140.15	-90.00	379.36	4,160.07	979.89	699.79	280.11	3.498		
11,700.00	7,410.00	11,667.40	7,410.00	143.13	143.30	-90.00	380.38	4,260.06	979.89	693.49	286.40	3.421		
11,800.00	7,410.00	11,767.40	7,410.00	146.28	146.45	-90.00	381.39	4,360.06	979.89	687.18	292.71	3.348		
11,900.00	7,410.00	11,867.40	7,410.00	149.43	149.60	-90.00	382.41	4,460.05	979.89	680.88	299.01	3.277		
11,936.55	7,410.00	11,903.96	7,410.00	150.10	150.75	-90.00	382.78	4,496.60	979.89	679.06	300.83	3.257 SF		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3K-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3K-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3G-25H-M166 - 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				Total Uncertainty Axis	Separation Factor	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)			
0.00	0.00	0.00	0.00	0.00	0.00	-0.09	40.07	-0.07	40.07				
100.00	100.00	100.00	100.00	0.14	0.14	-0.09	40.07	-0.07	40.07	39.80	0.28	145.173	
200.00	200.00	200.00	200.00	0.50	0.50	-0.09	40.07	-0.07	40.07	39.08	0.99	40.355	
300.00	300.00	300.00	300.00	0.85	0.85	-0.09	40.07	-0.07	40.07	38.36	1.71	23.435	
400.00	400.00	400.00	400.00	1.21	1.21	-0.09	40.07	-0.07	40.07	37.64	2.43	16.512	
500.00	500.00	500.00	500.00	1.57	1.57	-0.09	40.07	-0.07	40.07	36.93	3.14	12.746	
600.00	600.00	600.00	600.00	1.93	1.93	-0.09	40.07	-0.07	40.07	36.21	3.86	10.379 CC, ES	
700.00	699.98	699.98	699.98	2.27	2.29	157.47	40.07	-0.07	41.68	37.12	4.56	9.136	
800.00	799.84	799.84	799.84	2.61	2.65	159.90	40.07	-0.07	46.56	41.30	5.25	8.859	
900.00	899.45	899.92	899.90	2.95	3.00	161.22	39.80	-1.79	54.39	48.44	5.95	9.145	
1,000.53	999.22	1,000.08	999.95	3.31	3.34	160.64	39.08	-6.37	64.91	58.27	6.64	9.772	
1,100.00	1,097.73	1,098.83	1,098.58	3.68	3.68	160.50	38.32	-11.19	76.90	69.56	7.34	10.482	
1,200.00	1,196.75	1,198.10	1,197.73	4.06	4.03	160.40	37.56	-16.03	88.95	80.91	8.04	11.065	
1,300.00	1,295.77	1,297.37	1,296.88	4.44	4.38	160.32	36.80	-20.87	101.00	92.25	8.75	11.548	
1,400.00	1,394.80	1,396.64	1,396.03	4.83	4.74	160.26	36.04	-25.71	113.04	103.59	9.46	11.952	
1,500.00	1,493.82	1,495.91	1,495.18	5.23	5.09	160.21	35.27	-30.55	125.09	114.92	10.17	12.295	
1,600.00	1,592.85	1,595.18	1,594.33	5.63	5.45	160.17	34.51	-35.39	137.14	126.25	10.89	12.590	
1,700.00	1,691.87	1,694.46	1,693.48	6.03	5.80	160.14	33.75	-40.23	149.19	137.58	11.61	12.846	
1,800.00	1,790.90	1,793.73	1,792.63	6.43	6.16	160.11	32.99	-45.07	161.24	148.91	12.34	13.070	
1,900.00	1,889.92	1,893.00	1,891.78	6.83	6.52	160.08	32.23	-49.92	173.29	160.23	13.06	13.268	
2,000.00	1,988.94	1,992.27	1,990.93	7.24	6.88	160.06	31.47	-54.76	185.34	171.56	13.79	13.443	
2,100.00	2,087.97	2,091.54	2,090.08	7.65	7.24	160.04	30.71	-59.60	197.39	182.88	14.51	13.600	
2,200.00	2,186.99	2,190.81	2,189.23	8.05	7.60	160.02	29.94	-64.44	209.44	194.20	15.24	13.741	
2,300.00	2,286.02	2,290.08	2,288.38	8.46	7.96	160.01	29.18	-69.28	221.49	205.52	15.97	13.868	
2,400.00	2,385.04	2,389.36	2,387.53	8.87	8.32	160.00	28.42	-74.12	233.54	216.84	16.70	13.984	
2,500.00	2,484.07	2,488.63	2,486.68	9.28	8.68	159.98	27.66	-78.96	245.59	228.16	17.43	14.089	
2,600.00	2,583.09	2,587.90	2,585.83	9.69	9.04	159.97	26.90	-83.80	257.64	239.48	18.16	14.186	
2,700.00	2,682.11	2,687.17	2,684.98	10.10	9.40	159.96	26.14	-88.64	269.69	250.80	18.89	14.275	
2,800.00	2,781.14	2,786.44	2,784.13	10.52	9.76	159.95	25.37	-93.48	281.74	262.12	19.62	14.356	
2,900.00	2,880.16	2,885.71	2,883.28	10.93	10.12	159.94	24.61	-98.32	293.79	273.43	20.36	14.432	
3,000.00	2,979.19	2,984.98	2,982.44	11.34	10.48	159.94	23.85	-103.16	305.84	284.75	21.09	14.502	
3,100.00	3,078.21	3,084.26	3,081.59	11.75	10.85	159.93	23.09	-108.00	317.89	296.07	21.82	14.567	
3,200.00	3,177.24	3,183.53	3,180.74	12.17	11.21	159.92	22.33	-112.85	329.94	307.38	22.56	14.628	
3,300.00	3,276.26	3,282.80	3,279.89	12.58	11.57	159.92	21.57	-117.69	341.99	318.70	23.29	14.685	
3,400.00	3,375.28	3,382.07	3,379.04	12.99	11.93	159.91	20.81	-122.53	354.04	330.02	24.02	14.738	
3,500.00	3,474.31	3,481.34	3,478.19	13.41	12.29	159.91	20.04	-127.37	366.09	341.33	24.76	14.788	
3,600.00	3,573.33	3,580.61	3,577.34	13.82	12.66	159.90	19.28	-132.21	378.14	352.65	25.49	14.835	
3,700.00	3,672.36	3,679.88	3,676.49	14.23	13.02	159.90	18.52	-137.05	390.19	363.96	26.22	14.879	
3,800.00	3,771.38	3,779.15	3,775.64	14.65	13.38	159.89	17.76	-141.89	402.24	375.28	26.96	14.920	
3,900.00	3,870.40	3,878.43	3,874.79	15.06	13.74	159.89	17.00	-146.73	414.29	386.60	27.69	14.960	
4,000.00	3,969.43	3,977.70	3,973.94	15.48	14.11	159.88	16.24	-151.57	426.34	397.91	28.43	14.997	
4,100.00	4,068.45	4,076.97	4,073.09	15.89	14.47	159.88	15.47	-156.41	438.39	409.23	29.16	15.032	
4,200.00	4,167.48	4,176.24	4,172.24	16.30	14.83	159.88	14.71	-161.25	450.44	420.54	29.90	15.066	
4,300.00	4,266.50	4,275.51	4,271.39	16.72	15.19	159.87	13.95	-166.09	462.49	431.85	30.63	15.098	
4,400.00	4,365.53	4,374.78	4,370.54	17.13	15.56	159.87	13.19	-170.93	474.54	443.17	31.37	15.128	
4,500.00	4,464.55	4,474.05	4,469.69	17.55	15.92	159.87	12.43	-175.77	486.59	454.48	32.10	15.157	
4,600.00	4,563.57	4,573.33	4,568.84	17.96	16.28	159.86	11.67	-180.62	498.64	465.80	32.84	15.184	
4,700.00	4,662.60	4,672.60	4,667.99	18.38	16.65	159.86	10.91	-185.46	510.69	477.11	33.57	15.211	
4,800.00	4,761.62	4,771.87	4,767.14	18.79	17.01	159.86	10.14	-190.30	522.74	488.43	34.31	15.236	
4,900.00	4,860.65	4,871.14	4,866.29	19.21	17.37	159.86	9.38	-195.14	534.79	499.74	35.05	15.260	
5,000.00	4,959.67	4,970.41	4,965.44	19.62	17.73	159.85	8.62	-199.98	546.84	511.06	35.78	15.283	
5,100.00	5,058.70	5,069.68	5,064.59	20.04	18.10	159.85	7.86	-204.82	558.89	522.37	36.52	15.305	

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 SAM 3K-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3K-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3G-25H-M166 - 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		
5,200.00	5,157.72	5,168.95	5,163.74	20.45	18.46	159.85	7.10	-209.66	570.94	533.68	37.25	15.326		
5,300.00	5,256.74	5,268.22	5,262.89	20.87	18.82	159.85	6.34	-214.50	582.99	545.00	37.99	15.346		
5,400.00	5,355.77	5,367.50	5,362.04	21.29	19.19	159.84	5.57	-219.34	595.04	556.31	38.72	15.366		
5,500.00	5,454.79	5,466.77	5,461.19	21.70	19.55	159.84	4.81	-224.18	607.09	567.63	39.46	15.385		
5,600.00	5,553.82	5,566.04	5,560.34	22.12	19.91	159.84	4.05	-229.02	619.14	578.94	40.20	15.403		
5,647.42	5,600.78	5,613.12	5,607.36	22.31	20.08	159.84	3.69	-231.32	624.85	584.30	40.55	15.411		
5,700.00	5,652.91	5,665.36	5,659.55	22.53	20.28	159.86	3.29	-233.87	630.74	589.80	40.93	15.409		
5,800.00	5,752.36	5,764.97	5,759.03	22.92	20.64	159.81	2.53	-238.72	639.44	597.78	41.67	15.347		
5,900.00	5,852.12	5,864.79	5,858.73	23.29	21.00	159.63	1.76	-243.59	644.89	602.50	42.39	15.212		
6,000.00	5,952.05	5,964.69	5,958.51	23.63	21.37	159.33	0.99	-248.46	647.08	603.96	43.12	15.007		
6,047.95	6,000.00	6,012.59	6,006.35	23.78	21.55	2.52	0.63	-250.80	646.98	603.52	43.46	14.888		
6,100.00	6,052.05	6,064.58	6,058.27	23.93	21.74	2.29	0.23	-253.33	646.47	602.66	43.82	14.754		
6,200.00	6,152.05	6,164.46	6,158.03	24.22	22.10	1.86	-0.54	-258.20	645.53	601.02	44.51	14.504		
6,300.00	6,252.05	6,264.33	6,257.79	24.52	22.47	1.43	-1.31	-263.07	644.62	599.42	45.20	14.261		
6,400.00	6,352.05	6,364.21	6,357.54	24.81	22.83	1.00	-2.07	-267.94	643.75	597.85	45.90	14.026		
6,500.00	6,452.05	6,464.09	6,457.30	25.11	23.20	0.57	-2.84	-272.81	642.91	596.32	46.59	13.799		
6,600.00	6,552.05	6,563.97	6,557.06	25.40	23.56	0.13	-3.60	-277.68	642.12	594.83	47.29	13.578		
6,700.00	6,652.05	6,661.72	6,654.75	25.70	23.90	-0.02	-4.24	-279.41	641.47	593.52	47.95	13.379		
6,741.75	6,693.80	6,701.94	6,694.86	25.83	24.03	0.24	-4.36	-276.54	641.34	593.15	48.19	13.308		
6,750.00	6,702.05	6,709.85	6,702.72	25.85	24.05	-89.11	-4.38	-275.71	641.33	593.09	48.24	13.295		
6,773.90	6,725.94	6,732.70	6,725.39	25.92	24.12	-88.91	-4.40	-272.83	641.32	592.94	48.37	13.257		
6,800.00	6,751.99	6,757.59	6,749.96	26.00	24.19	-88.70	-4.40	-268.87	641.33	592.81	48.52	13.218		
6,850.00	6,801.64	6,805.05	6,796.36	26.14	24.33	-88.29	-4.29	-258.96	641.46	592.67	48.78	13.149		
6,900.00	6,850.77	6,852.23	6,841.75	26.28	24.47	-87.89	-4.07	-246.10	641.71	592.67	49.04	13.086		
6,950.00	6,899.13	6,900.00	6,886.73	26.41	24.60	-87.49	-3.73	-230.05	642.07	592.79	49.29	13.028		
7,000.00	6,946.49	6,945.84	6,928.81	26.53	24.73	-87.12	-3.28	-211.88	642.54	593.03	49.51	12.977		
7,050.00	6,992.62	6,992.30	6,970.17	26.65	24.86	-86.76	-2.73	-190.75	643.12	593.37	49.74	12.929		
7,100.00	7,037.30	7,038.56	7,009.91	26.76	25.00	-86.42	-2.06	-167.09	643.79	593.81	49.98	12.881		
7,150.00	7,080.30	7,084.62	7,047.88	26.85	25.15	-86.09	-1.30	-141.04	644.55	594.32	50.23	12.833		
7,200.00	7,121.42	7,130.51	7,083.97	26.95	25.31	-85.78	-0.44	-112.71	645.39	594.89	50.50	12.780		
7,250.00	7,160.45	7,176.25	7,118.05	27.03	25.49	-85.49	0.52	-82.24	646.30	595.49	50.81	12.721		
7,300.00	7,197.22	7,221.85	7,150.03	27.11	25.70	-85.22	1.56	-49.77	647.28	596.11	51.17	12.651		
7,350.00	7,231.52	7,267.32	7,179.79	27.18	25.94	-84.97	2.68	-15.41	648.31	596.72	51.59	12.566		
7,400.00	7,263.21	7,312.69	7,207.26	27.24	26.22	-84.75	3.89	20.67	649.39	597.29	52.10	12.464		
7,450.00	7,292.13	7,357.98	7,232.34	27.32	26.54	-84.55	5.17	58.34	650.52	597.81	52.71	12.342		
7,500.00	7,318.13	7,403.19	7,254.95	27.42	26.91	-84.37	6.51	97.47	651.67	598.25	53.42	12.198		
7,550.00	7,341.09	7,450.00	7,275.71	27.65	27.36	-84.22	7.98	139.38	652.86	598.57	54.29	12.026		
7,600.00	7,360.89	7,493.48	7,292.50	28.06	27.83	-84.10	9.40	179.46	654.06	598.81	55.25	11.839		
7,650.00	7,377.45	7,538.59	7,307.32	28.61	28.38	-84.00	10.92	222.03	655.28	598.91	56.36	11.626		
7,700.00	7,390.68	7,583.70	7,319.43	29.26	28.99	-83.93	12.49	265.45	656.50	598.88	57.62	11.395		
7,750.00	7,400.50	7,628.82	7,328.78	29.99	29.65	-83.89	14.11	309.56	657.73	598.73	59.00	11.148		
7,800.00	7,406.89	7,673.99	7,335.33	30.79	30.36	-83.87	15.76	354.20	658.95	598.45	60.50	10.892		
7,850.00	7,409.80	7,719.20	7,339.07	31.64	31.12	-83.88	17.44	399.22	660.17	598.06	62.11	10.629		
7,866.75	7,410.00	7,734.36	7,339.68	31.93	31.38	-83.89	18.01	414.36	660.57	597.90	62.67	10.540		
7,900.00	7,410.00	7,765.38	7,340.00	32.54	31.93	-83.92	19.18	445.36	661.44	597.62	63.82	10.364		
8,000.00	7,410.00	7,865.34	7,340.00	34.50	33.86	-83.95	22.95	545.25	664.19	596.51	67.68	9.813		
8,100.00	7,410.00	7,965.31	7,340.00	36.63	35.95	-83.97	26.73	645.14	666.94	595.06	71.88	9.278		
8,200.00	7,410.00	8,065.27	7,340.00	38.91	38.19	-84.00	30.51	745.03	669.69	593.31	76.38	8.767		
8,300.00	7,410.00	8,165.23	7,340.00	41.31	40.56	-84.02	34.29	844.92	672.44	591.30	81.14	8.288		
8,400.00	7,410.00	8,265.19	7,340.00	43.82	43.04	-84.05	38.07	944.81	675.19	589.09	86.10	7.842		
8,500.00	7,410.00	8,365.15	7,340.00	46.41	45.61	-84.07	41.85	1,044.70	677.94	586.70	91.24	7.430		
8,600.00	7,410.00	8,465.12	7,340.00	49.07	48.25	-84.10	45.62	1,144.59	680.69	584.16	96.52	7.052		

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 SAM 3K-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3K-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3G-25H-M166 - 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	
8,700.00	7,410.00	8,565.08	7,340.00	51.80	50.96	-84.12	49.40	1,244.48	683.44	581.50	101.93	6.705	
8,800.00	7,410.00	8,665.04	7,340.00	54.57	53.72	-84.14	53.18	1,344.37	686.19	578.73	107.45	6.386	
8,900.00	7,410.00	8,765.00	7,340.00	57.39	56.52	-84.17	56.96	1,444.26	688.94	575.88	113.06	6.094	
9,000.00	7,410.00	8,864.96	7,340.00	60.25	59.37	-84.19	60.74	1,544.15	691.68	572.94	118.74	5.825	
9,100.00	7,410.00	8,964.92	7,340.00	63.15	62.25	-84.21	64.52	1,644.04	694.43	569.94	124.50	5.578	
9,200.00	7,410.00	9,064.89	7,340.00	66.07	65.16	-84.24	68.29	1,743.93	697.18	566.88	130.31	5.350	
9,300.00	7,410.00	9,164.85	7,340.00	69.02	68.09	-84.26	72.07	1,843.82	699.93	563.77	136.17	5.140	
9,400.00	7,410.00	9,264.81	7,340.00	71.99	71.05	-84.28	75.85	1,943.71	702.69	560.61	142.07	4.946	
9,500.00	7,410.00	9,364.77	7,340.00	74.98	74.02	-84.30	79.63	2,043.60	705.44	557.42	148.02	4.766	
9,600.00	7,410.00	9,464.73	7,340.00	77.98	77.02	-84.33	83.41	2,143.49	708.19	554.19	154.00	4.599	
9,700.00	7,410.00	9,564.70	7,340.00	81.00	80.03	-84.35	87.19	2,243.38	710.94	550.92	160.01	4.443	
9,800.00	7,410.00	9,664.66	7,340.00	84.04	83.05	-84.37	90.96	2,343.27	713.69	547.64	166.05	4.298	
9,900.00	7,410.00	9,764.62	7,340.00	87.09	86.09	-84.39	94.74	2,443.16	716.44	544.32	172.11	4.163	
10,000.00	7,410.00	9,864.58	7,340.00	90.14	89.13	-84.41	98.52	2,543.05	719.19	540.99	178.20	4.036	
10,100.00	7,410.00	9,964.54	7,340.00	93.21	92.19	-84.43	102.30	2,642.94	721.94	537.63	184.31	3.917	
10,200.00	7,410.00	10,064.50	7,340.00	96.29	95.26	-84.45	106.08	2,742.83	724.69	534.26	190.43	3.806	
10,300.00	7,410.00	10,164.47	7,340.00	99.37	98.33	-84.48	109.85	2,842.73	727.44	530.87	196.57	3.701	
10,400.00	7,410.00	10,264.43	7,340.00	102.47	101.41	-84.50	113.63	2,942.62	730.19	527.47	202.73	3.602	
10,500.00	7,410.00	10,364.39	7,340.00	105.57	104.50	-84.52	117.41	3,042.51	732.94	524.05	208.90	3.509	
10,600.00	7,410.00	10,464.35	7,340.00	108.67	107.59	-84.54	121.19	3,142.40	735.70	520.62	215.08	3.421	
10,700.00	7,410.00	10,564.31	7,340.00	111.78	110.69	-84.56	124.97	3,242.29	738.45	517.17	221.27	3.337	
10,800.00	7,410.00	10,664.27	7,340.00	114.90	113.80	-84.58	128.75	3,342.18	741.20	513.72	227.48	3.258	
10,900.00	7,410.00	10,764.24	7,340.00	118.02	116.91	-84.60	132.52	3,442.07	743.95	510.26	233.69	3.183	
11,000.00	7,410.00	10,864.20	7,340.00	121.15	120.02	-84.62	136.30	3,541.96	746.70	506.79	239.91	3.112	
11,100.00	7,410.00	10,964.16	7,340.00	124.28	123.14	-84.64	140.08	3,641.85	749.45	503.31	246.14	3.045	
11,200.00	7,410.00	11,064.12	7,340.00	127.41	126.26	-84.66	143.86	3,741.74	752.21	499.82	252.38	2.980	
11,300.00	7,410.00	11,164.08	7,340.00	130.55	129.39	-84.68	147.64	3,841.63	754.96	496.33	258.63	2.919	
11,400.00	7,410.00	11,264.05	7,340.00	133.69	132.52	-84.70	151.42	3,941.52	757.71	492.83	264.88	2.861	
11,500.00	7,410.00	11,364.01	7,340.00	136.83	135.65	-84.72	155.19	4,041.41	760.46	489.32	271.14	2.805	
11,600.00	7,410.00	11,463.97	7,340.00	139.98	138.79	-84.74	158.97	4,141.30	763.21	485.81	277.41	2.751	
11,700.00	7,410.00	11,563.93	7,340.00	143.13	141.92	-84.75	162.75	4,241.19	765.97	482.29	283.68	2.700	
11,800.00	7,410.00	11,663.89	7,340.00	146.28	145.06	-84.77	166.53	4,341.08	768.72	478.76	289.96	2.651	
11,900.00	7,410.00	11,763.85	7,340.00	149.43	148.21	-84.79	170.31	4,440.97	771.47	475.23	296.24	2.604	
11,936.55	7,410.00	11,800.39	7,340.00	150.10	149.36	-84.80	171.69	4,477.48	772.48	474.43	298.04	2.592 SF	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3K-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3K-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3H-25H-M166 - 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		
0.00	0.00	0.00	0.00	0.00	0.00	0.04	29.87	0.02	29.87					
100.00	100.00	100.00	100.00	0.14	0.14	0.04	29.87	0.02	29.87	29.60	0.28	108.222		
200.00	200.00	200.00	200.00	0.50	0.50	0.04	29.87	0.02	29.87	28.88	0.99	30.083		
300.00	300.00	300.00	300.00	0.85	0.85	0.04	29.87	0.02	29.87	28.16	1.71	17.470		
400.00	400.00	400.00	400.00	1.21	1.21	0.04	29.87	0.02	29.87	27.44	2.43	12.309		
500.00	500.00	500.00	500.00	1.57	1.57	0.04	29.87	0.02	29.87	26.73	3.14	9.502		
600.00	600.00	600.00	600.00	1.93	1.93	0.04	29.87	0.02	29.87	26.01	3.86	7.737 CC, ES		
700.00	699.98	699.98	699.98	2.27	2.29	157.91	29.87	0.02	31.48	26.92	4.56	6.901		
800.00	799.84	799.84	799.84	2.61	2.65	160.97	29.87	0.02	36.38	31.13	5.25	6.924		
900.00	899.45	899.45	899.45	2.95	3.00	164.57	29.87	0.02	44.72	38.76	5.95	7.509		
1,000.53	999.22	1,000.28	1,000.26	3.31	3.35	166.34	29.21	-1.60	55.69	49.04	6.66	8.367		
1,100.00	1,097.73	1,100.02	1,099.86	3.68	3.69	165.40	27.27	-6.36	66.48	59.13	7.35	9.049		
1,200.00	1,196.75	1,199.47	1,199.12	4.06	4.04	164.05	24.94	-12.09	76.80	68.76	8.04	9.550		
1,300.00	1,295.77	1,298.92	1,298.38	4.44	4.38	163.02	22.60	-17.82	87.16	78.42	8.75	9.966		
1,400.00	1,394.80	1,398.37	1,397.64	4.83	4.73	162.20	20.27	-23.54	97.54	88.09	9.46	10.316		
1,500.00	1,493.82	1,497.82	1,496.89	5.23	5.09	161.55	17.93	-29.27	107.94	97.77	10.17	10.613		
1,600.00	1,592.85	1,597.27	1,596.15	5.63	5.44	161.00	15.60	-34.99	118.35	107.46	10.89	10.869		
1,700.00	1,691.87	1,696.72	1,695.41	6.03	5.80	160.55	13.27	-40.72	128.76	117.15	11.61	11.090		
1,800.00	1,790.90	1,796.18	1,794.67	6.43	6.16	160.16	10.93	-46.45	139.19	126.85	12.34	11.284		
1,900.00	1,889.92	1,895.63	1,893.93	6.83	6.52	159.83	8.60	-52.17	149.61	136.55	13.06	11.454		
2,000.00	1,988.94	1,995.08	1,993.19	7.24	6.88	159.54	6.27	-57.90	160.05	146.26	13.79	11.606		
2,100.00	2,087.97	2,094.53	2,092.45	7.65	7.24	159.29	3.93	-63.62	170.48	155.96	14.52	11.741		
2,200.00	2,186.99	2,193.98	2,191.71	8.05	7.60	159.07	1.60	-69.35	180.92	165.67	15.25	11.863		
2,300.00	2,286.02	2,293.43	2,290.97	8.46	7.97	158.87	-0.73	-75.08	191.37	175.38	15.98	11.972		
2,400.00	2,385.04	2,392.88	2,390.22	8.87	8.33	158.69	-3.07	-80.80	201.81	185.09	16.72	12.071		
2,500.00	2,484.07	2,492.33	2,489.48	9.28	8.69	158.53	-5.40	-86.53	212.26	194.80	17.45	12.162		
2,600.00	2,583.09	2,591.79	2,588.74	9.69	9.06	158.38	-7.73	-92.25	222.70	204.51	18.19	12.245		
2,700.00	2,682.11	2,691.24	2,688.00	10.10	9.42	158.25	-10.07	-97.98	233.15	214.23	18.92	12.320		
2,800.00	2,781.14	2,790.69	2,787.26	10.52	9.79	158.12	-12.40	-103.71	243.60	223.94	19.66	12.390		
2,900.00	2,880.16	2,890.14	2,886.52	10.93	10.15	158.01	-14.74	-109.43	254.05	233.65	20.40	12.455		
3,000.00	2,979.19	2,989.59	2,985.78	11.34	10.52	157.91	-17.07	-115.16	264.50	243.37	21.14	12.515		
3,100.00	3,078.21	3,089.04	3,085.04	11.75	10.88	157.81	-19.40	-120.88	274.96	253.08	21.87	12.570		
3,200.00	3,177.24	3,188.49	3,184.30	12.17	11.25	157.73	-21.74	-126.61	285.41	262.80	22.61	12.622		
3,300.00	3,276.26	3,287.94	3,283.55	12.58	11.62	157.64	-24.07	-132.34	295.86	272.51	23.35	12.670		
3,400.00	3,375.28	3,387.40	3,382.81	12.99	11.98	157.57	-26.40	-138.06	306.32	282.23	24.09	12.715		
3,500.00	3,474.31	3,486.85	3,482.07	13.41	12.35	157.50	-28.74	-143.79	316.77	291.94	24.83	12.757		
3,600.00	3,573.33	3,586.30	3,581.33	13.82	12.72	157.43	-31.07	-149.51	327.23	301.66	25.57	12.797		
3,700.00	3,672.36	3,685.75	3,680.59	14.23	13.08	157.37	-33.40	-155.24	337.68	311.37	26.31	12.835		
3,800.00	3,771.38	3,785.20	3,779.85	14.65	13.45	157.31	-35.74	-160.97	348.14	321.09	27.05	12.870		
3,900.00	3,870.40	3,884.65	3,879.11	15.06	13.82	157.25	-38.07	-166.69	358.60	330.80	27.79	12.903		
4,000.00	3,969.43	3,984.10	3,978.37	15.48	14.18	157.20	-40.41	-172.42	369.05	340.52	28.53	12.935		
4,100.00	4,068.45	4,083.55	4,077.62	15.89	14.55	157.15	-42.74	-178.14	379.51	350.24	29.27	12.964		
4,200.00	4,167.48	4,183.00	4,176.88	16.30	14.92	157.11	-45.07	-183.87	389.97	359.95	30.01	12.993		
4,300.00	4,266.50	4,282.46	4,276.14	16.72	15.29	157.06	-47.41	-189.60	400.42	369.67	30.76	13.020		
4,400.00	4,365.53	4,381.91	4,375.40	17.13	15.65	157.02	-49.74	-195.32	410.88	379.38	31.50	13.045		
4,500.00	4,464.55	4,481.36	4,474.66	17.55	16.02	156.98	-52.07	-201.05	421.34	389.10	32.24	13.069		
4,600.00	4,563.57	4,580.81	4,573.92	17.96	16.39	156.94	-54.41	-206.77	431.80	398.82	32.98	13.093		
4,700.00	4,662.60	4,680.26	4,673.18	18.38	16.76	156.90	-56.74	-212.50	442.26	408.53	33.72	13.115		
4,800.00	4,761.62	4,779.71	4,772.44	18.79	17.12	156.87	-59.07	-218.23	452.71	418.25	34.46	13.136		
4,900.00	4,860.65	4,879.16	4,871.70	19.21	17.49	156.84	-61.41	-223.95	463.17	427.97	35.21	13.156		
5,000.00	4,959.67	4,978.61	4,970.95	19.62	17.86	156.81	-63.74	-229.68	473.63	437.68	35.95	13.175		
5,100.00	5,058.70	5,078.07	5,070.21	20.04	18.23	156.78	-66.07	-235.40	484.09	447.40	36.69	13.194		

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 SAM 3K-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3K-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3H-25H-M166 - 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)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning	
5,200.00	5,157.72	5,177.52	5,169.47	20.45	18.60	156.75	-68.41	-241.13	494.55	457.12	37.43	13.212		
5,300.00	5,256.74	5,276.97	5,268.73	20.87	18.96	156.72	-70.74	-246.86	505.01	466.83	38.18	13.229		
5,400.00	5,355.77	5,376.42	5,367.99	21.29	19.33	156.69	-73.08	-252.58	515.47	476.55	38.92	13.245		
5,500.00	5,454.79	5,475.87	5,467.25	21.70	19.70	156.67	-75.41	-258.31	525.93	486.27	39.66	13.261		
5,600.00	5,553.82	5,575.32	5,566.51	22.12	20.07	156.64	-77.74	-264.03	536.39	495.98	40.40	13.276		
5,647.42	5,600.78	5,622.49	5,613.58	22.31	20.24	156.63	-78.85	-266.75	541.35	500.59	40.76	13.283		
5,700.00	5,652.91	5,674.82	5,665.81	22.53	20.44	156.64	-80.08	-269.76	546.41	505.26	41.15	13.280		
5,800.00	5,752.36	5,774.54	5,765.34	22.92	20.81	156.53	-82.42	-275.50	553.59	511.71	41.89	13.217		
5,900.00	5,852.12	5,871.49	5,862.12	23.29	21.16	156.29	-84.59	-280.82	557.71	515.11	42.60	13.092		
6,000.00	5,952.05	5,964.71	5,955.28	23.63	21.49	156.15	-85.71	-283.57	559.65	516.40	43.26	12.938		
6,047.95	6,000.00	6,009.43	6,000.00	23.78	21.65	-0.48	-85.84	-283.90	559.88	516.33	43.56	12.854		
6,100.00	6,052.05	6,061.48	6,052.05	23.93	21.82	-0.48	-85.84	-283.90	559.88	515.99	43.89	12.755		
6,200.00	6,152.05	6,161.48	6,152.05	24.22	22.15	-0.48	-85.84	-283.90	559.88	515.34	44.55	12.569		
6,300.00	6,252.05	6,261.48	6,252.05	24.52	22.49	-0.48	-85.84	-283.90	559.88	514.68	45.20	12.387		
6,400.00	6,352.05	6,361.48	6,352.05	24.81	22.82	-0.48	-85.84	-283.90	559.88	514.03	45.85	12.210		
6,500.00	6,452.05	6,461.48	6,452.05	25.11	23.16	-0.48	-85.84	-283.90	559.88	513.37	46.51	12.038		
6,600.00	6,552.05	6,561.48	6,552.05	25.40	23.49	-0.48	-85.84	-283.90	559.88	512.71	47.17	11.870		
6,700.00	6,652.05	6,661.48	6,652.05	25.70	23.83	-0.48	-85.84	-283.90	559.88	512.05	47.83	11.706		
6,741.75	6,693.80	6,703.23	6,693.80	25.83	23.97	-0.48	-85.84	-283.90	559.88	511.78	48.10	11.639		
6,750.00	6,702.05	6,711.48	6,702.05	25.85	24.00	-89.90	-85.84	-283.90	559.88	511.72	48.16	11.626		
6,779.26	6,731.29	6,740.72	6,731.29	25.94	24.10	-90.00	-85.84	-283.90	559.88	511.53	48.35	11.579		
6,800.00	6,751.99	6,761.41	6,751.99	26.00	24.17	-90.14	-85.84	-283.90	559.88	511.39	48.49	11.546		
6,850.00	6,801.64	6,811.06	6,801.64	26.14	24.34	-90.73	-85.84	-283.90	559.93	511.10	48.83	11.467		
6,900.00	6,850.77	6,860.19	6,850.77	26.28	24.50	-91.64	-85.84	-283.90	560.12	510.95	49.17	11.392		
6,950.00	6,899.13	6,910.02	6,900.58	26.41	24.67	-92.80	-85.83	-282.95	560.59	511.08	49.51	11.322		
7,000.00	6,946.49	6,961.03	6,951.38	26.53	24.83	-93.97	-85.78	-278.52	561.31	511.45	49.85	11.259		
7,050.00	6,992.62	7,012.96	7,002.65	26.65	24.98	-95.13	-85.70	-270.31	562.27	512.08	50.19	11.203		
7,100.00	7,037.30	7,065.85	7,054.12	26.76	25.14	-96.28	-85.58	-258.15	563.45	512.93	50.52	11.153		
7,150.00	7,080.30	7,119.74	7,105.48	26.85	25.29	-97.40	-85.41	-241.89	564.83	513.99	50.84	11.110		
7,200.00	7,121.42	7,174.66	7,156.41	26.95	25.45	-98.49	-85.20	-221.40	566.40	515.24	51.15	11.073		
7,250.00	7,160.45	7,230.62	7,206.55	27.03	25.60	-99.55	-84.95	-196.56	568.11	516.64	51.46	11.039		
7,300.00	7,197.22	7,287.65	7,255.48	27.11	25.77	-100.56	-84.65	-167.31	569.93	518.15	51.78	11.006		
7,350.00	7,231.52	7,345.74	7,302.77	27.18	25.95	-101.52	-84.31	-133.61	571.82	519.71	52.12	10.972		
7,400.00	7,263.21	7,404.88	7,347.96	27.24	26.16	-102.43	-83.92	-95.47	573.74	521.26	52.49	10.931		
7,450.00	7,292.13	7,465.05	7,390.54	27.32	26.43	-103.27	-83.49	-52.98	575.65	522.73	52.92	10.877		
7,500.00	7,318.13	7,526.22	7,430.01	27.42	26.75	-104.04	-83.02	-6.29	577.49	524.05	53.44	10.806		
7,550.00	7,341.09	7,588.31	7,465.86	27.65	27.16	-104.73	-82.50	44.38	579.22	525.14	54.08	10.710		
7,600.00	7,360.89	7,651.27	7,497.59	28.06	27.66	-105.33	-81.95	98.73	580.80	525.93	54.87	10.585		
7,650.00	7,377.45	7,714.98	7,524.72	28.61	28.29	-105.84	-81.36	156.35	582.18	526.33	55.85	10.425		
7,700.00	7,390.68	7,779.34	7,546.81	29.26	29.04	-106.26	-80.75	216.78	583.33	526.30	57.03	10.229		
7,750.00	7,400.50	7,844.23	7,563.51	29.99	29.91	-106.57	-80.11	279.45	584.21	525.80	58.41	10.001		
7,800.00	7,406.89	7,909.49	7,574.51	30.79	30.90	-106.78	-79.46	343.75	584.81	524.78	60.02	9.743		
7,850.00	7,409.80	7,974.98	7,579.62	31.64	31.98	-106.88	-78.80	409.02	585.09	523.26	61.83	9.462		
7,866.75	7,410.00	7,996.94	7,580.00	31.93	32.36	-106.89	-78.57	430.97	585.12	522.64	62.48	9.365		
7,900.00	7,410.00	8,030.49	7,580.00	32.54	32.99	-106.89	-78.23	464.53	585.12	521.47	63.66	9.192		
8,000.00	7,410.00	8,130.49	7,580.00	34.50	34.92	-106.89	-77.21	564.52	585.12	517.75	67.37	8.685		
8,100.00	7,410.00	8,230.49	7,580.00	36.63	37.03	-106.89	-76.20	664.52	585.12	513.69	71.43	8.192		
8,200.00	7,410.00	8,330.49	7,580.00	38.91	39.29	-106.89	-75.18	764.51	585.12	509.36	75.77	7.723		
8,300.00	7,410.00	8,430.49	7,580.00	41.31	41.67	-106.89	-74.17	864.51	585.12	504.78	80.34	7.283		
8,400.00	7,410.00	8,530.49	7,580.00	43.82	44.16	-106.89	-73.15	964.50	585.12	500.01	85.12	6.874		
8,500.00	7,410.00	8,630.49	7,580.00	46.41	46.73	-106.89	-72.13	1,064.50	585.12	495.06	90.06	6.497		
8,600.00	7,410.00	8,730.49	7,580.00	49.07	49.38	-106.89	-71.12	1,164.49	585.12	489.98	95.14	6.150		

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 SAM 3K-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3K-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3H-25H-M166 - 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
8,700.00	7,410.00	8,830.49	7,580.00	51.80	52.10	-106.89	-70.10	1,264.48	585.12	484.78	100.34	5.831	
8,800.00	7,410.00	8,930.49	7,580.00	54.57	54.86	-106.89	-69.08	1,364.48	585.12	479.48	105.65	5.538	
8,900.00	7,410.00	9,030.49	7,580.00	57.39	57.67	-106.89	-68.07	1,464.47	585.12	474.08	111.04	5.270	
9,000.00	7,410.00	9,130.49	7,580.00	60.25	60.52	-106.89	-67.05	1,564.47	585.12	468.62	116.50	5.022	
9,100.00	7,410.00	9,230.49	7,580.00	63.15	63.41	-106.89	-66.03	1,664.46	585.12	463.09	122.04	4.795	
9,200.00	7,410.00	9,330.49	7,580.00	66.07	66.32	-106.89	-65.02	1,764.46	585.12	457.50	127.63	4.585	
9,300.00	7,410.00	9,430.49	7,580.00	69.02	69.26	-106.89	-64.00	1,864.45	585.12	451.86	133.26	4.391	
9,400.00	7,410.00	9,530.49	7,580.00	71.99	72.22	-106.89	-62.99	1,964.45	585.12	446.18	138.95	4.211	
9,500.00	7,410.00	9,630.49	7,580.00	74.98	75.21	-106.89	-61.97	2,064.44	585.12	440.46	144.67	4.045	
9,600.00	7,410.00	9,730.49	7,580.00	77.98	78.21	-106.89	-60.95	2,164.44	585.12	434.70	150.42	3.890	
9,700.00	7,410.00	9,830.49	7,580.00	81.00	81.22	-106.89	-59.94	2,264.43	585.12	428.92	156.20	3.746	
9,800.00	7,410.00	9,930.49	7,580.00	84.04	84.25	-106.89	-58.92	2,364.43	585.12	423.11	162.01	3.612	
9,900.00	7,410.00	10,030.49	7,580.00	87.09	87.30	-106.89	-57.90	2,464.42	585.12	417.27	167.85	3.486	
10,000.00	7,410.00	10,130.49	7,580.00	90.14	90.35	-106.89	-56.89	2,564.42	585.12	411.42	173.71	3.368	
10,100.00	7,410.00	10,230.49	7,580.00	93.21	93.42	-106.89	-55.87	2,664.41	585.12	405.54	179.58	3.258	
10,200.00	7,410.00	10,330.49	7,580.00	96.29	96.49	-106.89	-54.85	2,764.41	585.12	399.65	185.48	3.155	
10,300.00	7,410.00	10,430.49	7,580.00	99.37	99.57	-106.89	-53.84	2,864.40	585.12	393.74	191.39	3.057	
10,400.00	7,410.00	10,530.49	7,580.00	102.47	102.66	-106.89	-52.82	2,964.40	585.12	387.81	197.31	2.965	
10,500.00	7,410.00	10,630.49	7,580.00	105.57	105.76	-106.89	-51.81	3,064.39	585.12	381.87	203.25	2.879	
10,600.00	7,410.00	10,730.49	7,580.00	108.67	108.86	-106.89	-50.79	3,164.39	585.12	375.92	209.20	2.797	
10,700.00	7,410.00	10,830.49	7,580.00	111.78	111.97	-106.89	-49.77	3,264.38	585.12	369.96	215.17	2.719	
10,800.00	7,410.00	10,930.49	7,580.00	114.90	115.08	-106.89	-48.76	3,364.38	585.13	363.99	221.14	2.646	
10,900.00	7,410.00	11,030.49	7,580.00	118.02	118.20	-106.89	-47.74	3,464.37	585.13	358.01	227.12	2.576	
11,000.00	7,410.00	11,130.49	7,580.00	121.15	121.33	-106.89	-46.72	3,564.37	585.13	352.01	233.11	2.510	
11,100.00	7,410.00	11,230.49	7,580.00	124.28	124.45	-106.89	-45.71	3,664.36	585.13	346.02	239.11	2.447	
11,200.00	7,410.00	11,330.49	7,580.00	127.41	127.59	-106.89	-44.69	3,764.36	585.13	340.01	245.12	2.387	
11,300.00	7,410.00	11,430.49	7,580.00	130.55	130.72	-106.89	-43.67	3,864.35	585.13	334.00	251.13	2.330	
11,400.00	7,410.00	11,530.49	7,580.00	133.69	133.86	-106.89	-42.66	3,964.35	585.13	327.98	257.15	2.275	
11,500.00	7,410.00	11,630.49	7,580.00	136.83	137.00	-106.89	-41.64	4,064.34	585.13	321.95	263.17	2.223	
11,600.00	7,410.00	11,730.49	7,580.00	139.98	140.15	-106.89	-40.62	4,164.33	585.13	315.92	269.21	2.174	
11,700.00	7,410.00	11,830.49	7,580.00	143.13	143.30	-106.89	-39.61	4,264.33	585.13	309.88	275.24	2.126	
11,800.00	7,410.00	11,930.49	7,580.00	146.28	146.45	-106.89	-38.59	4,364.32	585.13	303.84	281.28	2.080	
11,900.00	7,410.00	12,030.49	7,580.00	149.43	149.60	-106.89	-37.58	4,464.32	585.13	297.80	287.33	2.036	
11,936.55	7,410.00	12,067.05	7,580.00	150.10	150.75	-106.89	-37.20	4,500.87	585.13	296.06	289.07	2.024 SF	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3K-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3K-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3I-25H-M166 - 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		
0.00	0.00	0.00	0.00	0.00	0.00	0.31	20.04	0.11	20.04					
100.00	100.00	100.00	100.00	0.14	0.14	0.31	20.04	0.11	20.04	19.76	0.28	72.592		
200.00	200.00	200.00	200.00	0.50	0.50	0.31	20.04	0.11	20.04	19.04	0.99	20.179		
300.00	300.00	300.00	300.00	0.85	0.85	0.31	20.04	0.11	20.04	18.33	1.71	11.718		
400.00	400.00	400.00	400.00	1.21	1.21	0.31	20.04	0.11	20.04	17.61	2.43	8.256		
500.00	500.00	500.00	500.00	1.57	1.57	0.31	20.04	0.11	20.04	16.89	3.14	6.374		
600.00	600.00	600.00	600.00	1.93	1.93	0.31	20.04	0.11	20.04	16.18	3.86	5.190 CC, ES		
700.00	699.98	699.98	699.98	2.27	2.29	158.72	20.04	0.11	21.65	17.09	4.56	4.747		
800.00	799.84	799.84	799.84	2.61	2.65	162.79	20.04	0.11	26.60	21.34	5.25	5.062		
900.00	899.45	900.31	900.29	2.95	2.99	164.97	18.99	-1.30	33.77	27.82	5.95	5.678		
1,000.53	999.22	1,001.44	1,001.28	3.31	3.34	164.16	15.81	-5.58	41.89	35.24	6.64	6.305		
1,100.00	1,097.73	1,101.18	1,100.66	3.68	3.68	161.58	10.81	-12.30	49.47	42.13	7.34	6.740		
1,200.00	1,196.75	1,200.89	1,199.97	4.06	4.03	159.30	5.51	-19.45	56.83	48.79	8.04	7.067		
1,300.00	1,295.77	1,300.60	1,299.28	4.44	4.39	157.54	0.20	-26.59	64.27	55.51	8.75	7.341		
1,400.00	1,394.80	1,400.30	1,398.59	4.83	4.75	156.15	-5.11	-33.73	71.75	62.27	9.47	7.572		
1,500.00	1,493.82	1,500.01	1,497.90	5.23	5.11	155.02	-10.42	-40.87	79.26	69.06	10.20	7.770		
1,600.00	1,592.85	1,599.72	1,597.21	5.63	5.48	154.08	-15.72	-48.01	86.80	75.87	10.93	7.940		
1,700.00	1,691.87	1,699.42	1,696.51	6.03	5.84	153.30	-21.03	-55.16	94.36	82.69	11.67	8.087		
1,800.00	1,790.90	1,799.13	1,795.82	6.43	6.21	152.63	-26.34	-62.30	101.94	89.53	12.41	8.216		
1,900.00	1,889.92	1,898.83	1,895.13	6.83	6.59	152.06	-31.65	-69.44	109.52	96.38	13.15	8.330		
2,000.00	1,988.94	1,998.54	1,994.44	7.24	6.96	151.55	-36.95	-76.58	117.12	103.23	13.89	8.430		
2,100.00	2,087.97	2,098.25	2,093.75	7.65	7.33	151.11	-42.26	-83.72	124.72	110.09	14.64	8.520		
2,200.00	2,186.99	2,197.95	2,193.06	8.05	7.71	150.73	-47.57	-90.87	132.34	116.95	15.39	8.601		
2,300.00	2,286.02	2,297.66	2,292.36	8.46	8.08	150.38	-52.88	-98.01	139.95	123.82	16.14	8.673		
2,400.00	2,385.04	2,397.36	2,391.67	8.87	8.46	150.07	-58.19	-105.15	147.57	130.69	16.89	8.739		
2,500.00	2,484.07	2,497.07	2,490.98	9.28	8.83	149.79	-63.49	-112.29	155.20	137.56	17.64	8.799		
2,600.00	2,583.09	2,596.78	2,590.29	9.69	9.21	149.53	-68.80	-119.43	162.82	144.43	18.39	8.853		
2,700.00	2,682.11	2,696.48	2,689.60	10.10	9.59	149.30	-74.11	-126.58	170.46	151.31	19.15	8.903		
2,800.00	2,781.14	2,796.19	2,788.91	10.52	9.97	149.09	-79.42	-133.72	178.09	158.19	19.90	8.949		
2,900.00	2,880.16	2,895.90	2,888.21	10.93	10.35	148.89	-84.72	-140.86	185.72	165.07	20.65	8.992		
3,000.00	2,979.19	2,995.60	2,987.52	11.34	10.72	148.72	-90.03	-148.00	193.36	171.95	21.41	9.031		
3,100.00	3,078.21	3,095.31	3,086.83	11.75	11.10	148.55	-95.34	-155.14	201.00	178.83	22.17	9.067		
3,200.00	3,177.24	3,195.01	3,186.14	12.17	11.48	148.40	-100.65	-162.29	208.64	185.72	22.92	9.101		
3,300.00	3,276.26	3,294.72	3,285.45	12.58	11.86	148.25	-105.95	-169.43	216.28	192.60	23.68	9.133		
3,400.00	3,375.28	3,394.43	3,384.76	12.99	12.24	148.12	-111.26	-176.57	223.93	199.49	24.44	9.163		
3,500.00	3,474.31	3,494.13	3,484.06	13.41	12.62	148.00	-116.57	-183.71	231.57	206.37	25.20	9.190		
3,600.00	3,573.33	3,593.84	3,583.37	13.82	13.00	147.88	-121.88	-190.85	239.22	213.26	25.96	9.216		
3,700.00	3,672.36	3,693.55	3,682.68	14.23	13.38	147.77	-127.18	-198.00	246.86	220.15	26.72	9.241		
3,800.00	3,771.38	3,793.25	3,781.99	14.65	13.76	147.67	-132.49	-205.14	254.51	227.04	27.47	9.264		
3,900.00	3,870.40	3,892.96	3,881.30	15.06	14.14	147.57	-137.80	-212.28	262.16	233.92	28.23	9.285		
4,000.00	3,969.43	3,992.66	3,980.60	15.48	14.52	147.48	-143.11	-219.42	269.81	240.81	28.99	9.306		
4,100.00	4,068.45	4,092.37	4,079.91	15.89	14.90	147.40	-148.41	-226.56	277.46	247.70	29.75	9.325		
4,200.00	4,167.48	4,192.08	4,179.22	16.30	15.28	147.32	-153.72	-233.71	285.11	254.59	30.51	9.344		
4,300.00	4,266.50	4,291.78	4,278.53	16.72	15.67	147.24	-159.03	-240.85	292.76	261.48	31.27	9.361		
4,400.00	4,365.53	4,391.49	4,377.84	17.13	16.05	147.17	-164.34	-247.99	300.41	268.37	32.03	9.378		
4,500.00	4,464.55	4,491.19	4,477.15	17.55	16.43	147.10	-169.64	-255.13	308.06	275.26	32.80	9.393		
4,600.00	4,563.57	4,590.90	4,576.45	17.96	16.81	147.03	-174.95	-262.27	315.71	282.15	33.56	9.408		
4,700.00	4,662.60	4,690.61	4,675.76	18.38	17.19	146.97	-180.26	-269.42	323.36	289.05	34.32	9.423		
4,800.00	4,761.62	4,788.77	4,773.55	18.79	17.56	146.93	-185.40	-276.33	331.09	296.02	35.07	9.442		
4,900.00	4,860.65	4,883.29	4,867.87	19.21	17.91	147.26	-188.92	-281.08	339.96	304.20	35.76	9.506		
5,000.00	4,959.67	4,977.34	4,961.88	19.62	18.25	148.02	-190.59	-283.32	350.38	313.96	36.42	9.621		
5,100.00	5,058.70	5,074.15	5,058.70	20.04	18.57	149.12	-190.74	-283.52	362.17	325.11	37.07	9.771		

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 SAM 3K-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3K-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3I-25H-M166 - 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
5,200.00	5,157.72	5,173.18	5,157.72	20.45	18.89	150.21	-190.74	-283.52	374.23	336.50	37.73	9.919	
5,300.00	5,256.74	5,272.20	5,256.74	20.87	19.21	151.24	-190.74	-283.52	386.42	348.02	38.39	10.065	
5,400.00	5,355.77	5,371.23	5,355.77	21.29	19.53	152.20	-190.74	-283.52	398.72	359.66	39.06	10.208	
5,500.00	5,454.79	5,470.25	5,454.79	21.70	19.86	153.10	-190.74	-283.52	411.12	371.39	39.73	10.348	
5,600.00	5,553.82	5,569.28	5,553.82	22.12	20.18	153.95	-190.74	-283.52	423.62	383.21	40.40	10.485	
5,647.42	5,600.78	5,616.24	5,600.78	22.31	20.33	154.34	-190.74	-283.52	429.58	388.85	40.72	10.549	
5,700.00	5,652.91	5,668.36	5,652.91	22.53	20.51	154.78	-190.74	-283.52	435.77	394.69	41.08	10.608	
5,800.00	5,752.36	5,767.82	5,752.36	22.92	20.83	155.43	-190.74	-283.52	445.20	403.44	41.76	10.662	
5,900.00	5,852.12	5,867.58	5,852.12	23.29	21.16	155.85	-190.74	-283.52	451.49	409.05	42.44	10.639	
6,000.00	5,952.05	5,967.51	5,952.05	23.63	21.50	156.05	-190.74	-283.52	454.61	411.50	43.12	10.544	
6,047.95	6,000.00	6,015.46	6,000.00	23.78	21.65	-0.55	-190.74	-283.52	454.98	411.54	43.43	10.475	
6,100.00	6,052.05	6,067.51	6,052.05	23.93	21.83	-0.55	-190.74	-283.52	454.98	411.20	43.77	10.394	
6,200.00	6,152.05	6,167.51	6,152.05	24.22	22.16	-0.55	-190.74	-283.52	454.98	410.55	44.43	10.241	
6,300.00	6,252.05	6,267.51	6,252.05	24.52	22.49	-0.55	-190.74	-283.52	454.98	409.90	45.08	10.092	
6,400.00	6,352.05	6,367.51	6,352.05	24.81	22.83	-0.55	-190.74	-283.52	454.98	409.24	45.74	9.947	
6,500.00	6,452.05	6,467.51	6,452.05	25.11	23.17	-0.55	-190.74	-283.52	454.98	408.58	46.40	9.806	
6,600.00	6,552.05	6,567.51	6,552.05	25.40	23.50	-0.55	-190.74	-283.52	454.98	407.92	47.06	9.669	
6,700.00	6,652.05	6,667.51	6,652.05	25.70	23.84	-0.55	-190.74	-283.52	454.98	407.26	47.72	9.534	
6,741.75	6,693.80	6,709.26	6,693.80	25.83	23.98	-0.55	-190.74	-283.52	454.98	406.98	48.00	9.479	
6,744.70	6,696.75	6,712.21	6,696.75	25.84	23.99	-89.96	-190.74	-283.52	454.98	406.96	48.02	9.476	
6,750.00	6,702.05	6,717.51	6,702.05	25.85	24.01	-89.96	-190.74	-283.48	454.98	406.93	48.05	9.469	
6,800.00	6,751.99	6,767.49	6,751.96	26.00	24.17	-89.96	-190.72	-281.16	454.98	406.61	48.37	9.406	
6,850.00	6,801.64	6,817.47	6,801.60	26.14	24.32	-89.96	-190.66	-275.37	454.98	406.30	48.68	9.347	
6,900.00	6,850.77	6,867.45	6,850.70	26.28	24.47	-89.96	-190.57	-266.13	454.98	406.01	48.97	9.291	
6,950.00	6,899.13	6,917.43	6,899.05	26.41	24.62	-89.96	-190.44	-253.49	454.98	405.72	49.25	9.237	
7,000.00	6,946.49	6,967.41	6,946.39	26.53	24.76	-89.97	-190.28	-237.50	454.98	405.45	49.53	9.186	
7,050.00	6,992.62	7,017.39	6,992.51	26.65	24.89	-89.97	-190.08	-218.26	454.98	405.17	49.81	9.135	
7,100.00	7,037.30	7,067.37	7,037.17	26.76	25.03	-89.97	-189.85	-195.85	454.98	404.90	50.08	9.085	
7,150.00	7,080.30	7,117.35	7,080.17	26.85	25.17	-89.97	-189.59	-170.37	454.98	404.61	50.37	9.033	
7,200.00	7,121.42	7,167.34	7,121.28	26.95	25.31	-89.97	-189.30	-141.97	454.98	404.29	50.68	8.977	
7,250.00	7,160.45	7,217.32	7,160.31	27.03	25.47	-89.97	-188.99	-110.76	454.98	403.95	51.03	8.916	
7,300.00	7,197.22	7,267.31	7,197.07	27.11	25.66	-89.97	-188.64	-76.91	454.98	403.54	51.43	8.846	
7,350.00	7,231.52	7,317.29	7,231.38	27.18	25.88	-89.98	-188.27	-40.57	454.98	403.07	51.90	8.766	
7,400.00	7,263.21	7,367.28	7,263.07	27.24	26.15	-89.98	-187.88	-1.93	454.98	402.52	52.46	8.673	
7,450.00	7,292.13	7,417.27	7,292.00	27.32	26.48	-89.98	-187.47	38.83	454.98	401.86	53.12	8.565	
7,500.00	7,318.13	7,467.26	7,318.01	27.42	26.87	-89.98	-187.03	81.50	454.98	401.08	53.90	8.441	
7,550.00	7,341.09	7,517.25	7,340.98	27.65	27.33	-89.98	-186.58	125.89	454.98	400.17	54.81	8.301	
7,600.00	7,360.89	7,567.24	7,360.80	28.06	27.86	-89.99	-186.12	171.77	454.98	399.11	55.86	8.144	
7,650.00	7,377.45	7,617.23	7,377.37	28.61	28.47	-89.99	-185.64	218.93	454.98	397.92	57.06	7.973	
7,700.00	7,390.68	7,667.23	7,390.61	29.26	29.15	-89.99	-185.15	267.12	454.98	396.57	58.40	7.790	
7,750.00	7,400.50	7,717.22	7,400.46	29.99	29.89	-89.99	-184.65	316.12	454.98	395.10	59.88	7.598	
7,800.00	7,406.89	7,767.22	7,406.86	30.79	30.70	-90.00	-184.15	365.70	454.98	393.49	61.48	7.400	
7,850.00	7,409.80	7,817.22	7,409.80	31.64	31.56	-90.00	-183.64	415.60	454.98	391.78	63.19	7.200	
7,866.75	7,410.00	7,833.97	7,410.00	31.93	31.86	-90.00	-183.47	432.35	454.98	391.19	63.79	7.133	
7,900.00	7,410.00	7,867.22	7,410.00	32.54	32.48	-90.00	-183.13	465.59	454.98	389.96	65.01	6.998	
8,000.00	7,410.00	7,967.22	7,410.00	34.50	34.46	-90.00	-182.11	565.59	454.98	386.03	68.94	6.599	
8,100.00	7,410.00	8,067.22	7,410.00	36.63	36.60	-90.00	-181.10	665.58	454.98	381.76	73.22	6.214	
8,200.00	7,410.00	8,167.22	7,410.00	38.91	38.90	-90.00	-180.08	765.58	454.98	377.19	77.78	5.849	
8,300.00	7,410.00	8,267.22	7,410.00	41.31	41.31	-90.00	-179.07	865.57	454.98	372.38	82.60	5.509	
8,400.00	7,410.00	8,367.22	7,410.00	43.82	43.82	-90.00	-178.05	965.57	454.98	367.36	87.61	5.193	
8,500.00	7,410.00	8,467.22	7,410.00	46.41	46.42	-90.00	-177.03	1,065.56	454.98	362.17	92.80	4.903	
8,600.00	7,410.00	8,567.22	7,410.00	49.07	49.10	-90.00	-176.02	1,165.56	454.98	356.84	98.14	4.636	

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 SAM 3K-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3K-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3I-25H-M166 - 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				Separation Factor	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)			
8,700.00	7,410.00	8,667.22	7,410.00	51.80	51.83	-90.00	-175.00	1,265.55	454.98	351.38	103.60	4.392	
8,800.00	7,410.00	8,767.22	7,410.00	54.57	54.61	-90.00	-173.98	1,365.55	454.98	345.82	109.16	4.168	
8,900.00	7,410.00	8,867.22	7,410.00	57.39	57.44	-90.00	-172.97	1,465.54	454.98	340.17	114.81	3.963	
9,000.00	7,410.00	8,967.22	7,410.00	60.25	60.31	-90.00	-171.95	1,565.54	454.98	334.44	120.53	3.775	
9,100.00	7,410.00	9,067.22	7,410.00	63.15	63.21	-90.00	-170.94	1,665.53	454.98	328.65	126.33	3.602	
9,200.00	7,410.00	9,167.22	7,410.00	66.07	66.14	-90.00	-169.92	1,765.53	454.98	322.80	132.18	3.442	
9,300.00	7,410.00	9,267.22	7,410.00	69.02	69.09	-90.00	-168.90	1,865.52	454.98	316.90	138.08	3.295	
9,400.00	7,410.00	9,367.22	7,410.00	71.99	72.06	-90.00	-167.89	1,965.52	454.98	310.96	144.02	3.159	
9,500.00	7,410.00	9,467.22	7,410.00	74.98	75.06	-90.00	-166.87	2,065.51	454.98	304.97	150.00	3.033	
9,600.00	7,410.00	9,567.22	7,410.00	77.98	78.07	-90.00	-165.85	2,165.51	454.98	298.96	156.02	2.916	
9,700.00	7,410.00	9,667.22	7,410.00	81.00	81.09	-90.00	-164.84	2,265.50	454.98	292.91	162.07	2.807	
9,800.00	7,410.00	9,767.22	7,410.00	84.04	84.13	-90.00	-163.82	2,365.49	454.98	286.84	168.14	2.706	
9,900.00	7,410.00	9,867.22	7,410.00	87.09	87.18	-90.00	-162.81	2,465.49	454.98	280.74	174.24	2.611	
10,000.00	7,410.00	9,967.22	7,410.00	90.14	90.24	-90.00	-161.79	2,565.48	454.98	274.62	180.36	2.523	
10,100.00	7,410.00	10,067.22	7,410.00	93.21	93.31	-90.00	-160.77	2,665.48	454.98	268.48	186.50	2.440	
10,200.00	7,410.00	10,167.22	7,410.00	96.29	96.39	-90.00	-159.76	2,765.47	454.98	262.32	192.66	2.362	
10,300.00	7,410.00	10,267.22	7,410.00	99.37	99.48	-90.00	-158.74	2,865.47	454.98	256.15	198.83	2.288	
10,400.00	7,410.00	10,367.22	7,410.00	102.47	102.58	-90.00	-157.72	2,965.46	454.98	249.96	205.02	2.219	
10,500.00	7,410.00	10,467.22	7,410.00	105.57	105.68	-90.00	-156.71	3,065.46	454.98	243.75	211.22	2.154	
10,600.00	7,410.00	10,567.22	7,410.00	108.67	108.79	-90.00	-155.69	3,165.45	454.98	237.54	217.44	2.092	
10,700.00	7,410.00	10,667.22	7,410.00	111.78	111.90	-90.00	-154.68	3,265.45	454.98	231.32	223.66	2.034	
10,800.00	7,410.00	10,767.22	7,410.00	114.90	115.02	-90.00	-153.66	3,365.44	454.98	225.08	229.90	1.979	
10,900.00	7,410.00	10,867.22	7,410.00	118.02	118.14	-90.00	-152.64	3,465.44	454.98	218.83	236.14	1.927	
11,000.00	7,410.00	10,967.22	7,410.00	121.15	121.27	-90.00	-151.63	3,565.43	454.98	212.58	242.40	1.877	
11,100.00	7,410.00	11,067.22	7,410.00	124.28	124.40	-90.00	-150.61	3,665.43	454.98	206.32	248.66	1.830	
11,200.00	7,410.00	11,167.22	7,410.00	127.41	127.54	-90.00	-149.59	3,765.42	454.98	200.05	254.93	1.785	
11,300.00	7,410.00	11,267.22	7,410.00	130.55	130.68	-90.00	-148.58	3,865.42	454.98	193.77	261.20	1.742	
11,400.00	7,410.00	11,367.22	7,410.00	133.69	133.82	-90.00	-147.56	3,965.41	454.98	187.49	267.49	1.701	
11,500.00	7,410.00	11,467.22	7,410.00	136.83	136.96	-90.00	-146.55	4,065.41	454.98	181.20	273.78	1.662	
11,600.00	7,410.00	11,567.22	7,410.00	139.98	140.11	-90.00	-145.53	4,165.40	454.98	174.91	280.07	1.625	
11,700.00	7,410.00	11,667.22	7,410.00	143.13	143.26	-90.00	-144.51	4,265.40	454.98	168.61	286.37	1.589	
11,800.00	7,410.00	11,767.22	7,410.00	146.28	146.42	-90.00	-143.50	4,365.39	454.98	162.30	292.68	1.555	
11,900.00	7,410.00	11,867.22	7,410.00	149.43	149.67	-90.00	-142.48	4,465.39	454.98	156.89	298.09	1.526	
11,936.55	7,410.00	11,903.77	7,410.00	150.10	149.34	-90.00	-142.11	4,501.94	454.98	155.56	299.42	1.520 SF	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3K-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3K-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3J-25H-M166 - 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	
0.00	0.00	0.00	0.00	0.00	0.00	-0.50	10.20	-0.09	10.20				
100.00	100.00	100.00	100.00	0.14	0.14	-0.50	10.20	-0.09	10.20	9.92	0.28	36.937	
200.00	200.00	200.00	200.00	0.50	0.50	-0.50	10.20	-0.09	10.20	9.20	0.99	10.268	
300.00	300.00	300.00	300.00	0.85	0.85	-0.50	10.20	-0.09	10.20	8.49	1.71	5.963	
400.00	400.00	400.00	400.00	1.21	1.21	-0.50	10.20	-0.09	10.20	7.77	2.43	4.201	
500.00	500.00	500.00	500.00	1.57	1.57	-0.50	10.20	-0.09	10.20	7.05	3.14	3.243	
600.00	600.00	600.00	600.00	1.93	1.93	-0.50	10.20	-0.09	10.20	6.33	3.86	2.641 CC	
700.00	699.98	699.98	699.98	2.27	2.29	159.54	10.20	-0.09	11.81	7.25	4.56	2.589	
800.00	799.84	800.33	800.31	2.61	2.63	163.07	8.73	-1.06	15.24	9.99	5.25	2.904	
900.00	899.45	900.80	900.64	2.95	2.97	163.53	4.32	-3.96	18.90	12.96	5.94	3.183	
1,000.53	999.22	1,001.83	1,001.27	3.31	3.32	162.39	-3.04	-8.83	22.82	16.17	6.65	3.433	
1,100.00	1,097.73	1,101.21	1,100.14	3.68	3.66	161.38	-11.45	-14.38	27.13	19.79	7.34	3.698	
1,200.00	1,196.75	1,201.11	1,199.53	4.06	4.02	160.63	-19.91	-19.96	31.46	23.42	8.04	3.914	
1,300.00	1,295.77	1,301.02	1,298.92	4.44	4.39	160.07	-28.36	-25.55	35.80	27.05	8.75	4.092	
1,400.00	1,394.80	1,400.92	1,398.31	4.83	4.76	159.63	-36.82	-31.13	40.14	30.68	9.47	4.241	
1,500.00	1,493.82	1,500.83	1,497.70	5.23	5.13	159.28	-45.27	-36.71	44.49	34.30	10.19	4.367	
1,600.00	1,592.85	1,600.73	1,597.09	5.63	5.50	158.99	-53.73	-42.29	48.83	37.92	10.91	4.475	
1,700.00	1,691.87	1,700.64	1,696.48	6.03	5.88	158.74	-62.18	-47.87	53.18	41.54	11.64	4.568	
1,800.00	1,790.90	1,800.55	1,795.87	6.43	6.26	158.54	-70.63	-53.45	57.53	45.16	12.37	4.650	
1,900.00	1,889.92	1,900.45	1,895.26	6.83	6.64	158.36	-79.09	-59.04	61.88	48.77	13.11	4.721	
2,000.00	1,988.94	2,000.36	1,994.65	7.24	7.02	158.20	-87.54	-64.62	66.23	52.39	13.84	4.784	
2,100.00	2,087.97	2,100.26	2,094.04	7.65	7.40	158.07	-96.00	-70.20	70.58	56.00	14.58	4.841	
2,200.00	2,186.99	2,200.17	2,193.43	8.05	7.78	157.95	-104.45	-75.78	74.93	59.61	15.32	4.891	
2,300.00	2,286.02	2,300.07	2,292.82	8.46	8.17	157.84	-112.91	-81.36	79.28	63.22	16.06	4.937	
2,400.00	2,385.04	2,399.98	2,392.21	8.87	8.55	157.75	-121.36	-86.94	83.63	66.83	16.80	4.978	
2,500.00	2,484.07	2,499.88	2,491.60	9.28	8.94	157.66	-129.81	-92.53	87.98	70.44	17.54	5.016	
2,600.00	2,583.09	2,599.79	2,590.99	9.69	9.32	157.58	-138.27	-98.11	92.33	74.05	18.28	5.050	
2,700.00	2,682.11	2,699.69	2,690.38	10.10	9.71	157.51	-146.72	-103.69	96.68	77.65	19.03	5.081	
2,800.00	2,781.14	2,799.60	2,789.78	10.52	10.09	157.45	-155.18	-109.27	101.03	81.26	19.77	5.110	
2,900.00	2,880.16	2,899.50	2,889.17	10.93	10.48	157.39	-163.63	-114.85	105.38	84.87	20.51	5.137	
3,000.00	2,979.19	2,999.41	2,988.56	11.34	10.87	157.33	-172.09	-120.43	109.73	88.47	21.26	5.162	
3,100.00	3,078.21	3,099.31	3,087.95	11.75	11.26	157.28	-180.54	-126.02	114.08	92.08	22.00	5.185	
3,200.00	3,177.24	3,199.22	3,187.34	12.17	11.64	157.24	-188.99	-131.60	118.44	95.69	22.75	5.206	
3,300.00	3,276.26	3,299.12	3,286.73	12.58	12.03	157.19	-197.45	-137.18	122.79	99.29	23.50	5.226	
3,400.00	3,375.28	3,399.03	3,386.12	12.99	12.42	157.15	-205.90	-142.76	127.14	102.90	24.24	5.245	
3,500.00	3,474.31	3,498.93	3,485.51	13.41	12.81	157.11	-214.36	-148.34	131.49	106.50	24.99	5.262	
3,600.00	3,573.33	3,598.84	3,584.90	13.82	13.19	157.08	-222.81	-153.92	135.84	110.11	25.74	5.278	
3,700.00	3,672.36	3,698.74	3,684.29	14.23	13.58	157.05	-231.26	-159.51	140.19	113.71	26.48	5.294	
3,800.00	3,771.38	3,798.65	3,783.68	14.65	13.97	157.01	-239.72	-165.09	144.55	117.32	27.23	5.308	
3,900.00	3,870.40	3,898.56	3,883.07	15.06	14.36	156.98	-248.17	-170.67	148.90	120.92	27.98	5.322	
4,000.00	3,969.43	3,998.46	3,982.46	15.48	14.75	156.96	-256.63	-176.25	153.25	124.52	28.73	5.335	
4,100.00	4,068.45	4,098.37	4,081.85	15.89	15.14	156.93	-265.08	-181.83	157.60	128.13	29.47	5.347	
4,200.00	4,167.48	4,198.27	4,181.24	16.30	15.53	156.91	-273.54	-187.42	161.95	131.73	30.22	5.359	
4,300.00	4,266.50	4,298.18	4,280.63	16.72	15.91	156.88	-281.99	-193.00	166.31	135.34	30.97	5.370	
4,400.00	4,365.53	4,398.08	4,380.02	17.13	16.30	156.86	-290.44	-198.58	170.66	138.94	31.72	5.380	
4,500.00	4,464.55	4,497.99	4,479.41	17.55	16.69	156.84	-298.90	-204.16	175.01	142.54	32.47	5.390	
4,600.00	4,563.57	4,597.89	4,578.80	17.96	17.08	156.82	-307.35	-209.74	179.36	146.15	33.22	5.400	
4,700.00	4,662.60	4,697.80	4,678.19	18.38	17.47	156.80	-315.81	-215.32	183.71	149.75	33.96	5.409	
4,800.00	4,761.62	4,797.70	4,777.58	18.79	17.86	156.78	-324.26	-220.91	188.07	153.35	34.71	5.418	
4,900.00	4,860.65	4,897.61	4,876.97	19.21	18.25	156.76	-332.72	-226.49	192.42	156.96	35.46	5.426	
5,000.00	4,959.67	4,997.51	4,976.36	19.62	18.64	156.75	-341.17	-232.07	196.77	160.56	36.21	5.434	
5,100.00	5,058.70	5,097.42	5,075.75	20.04	19.03	156.73	-349.62	-237.65	201.12	164.16	36.96	5.442	

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 SAM 3K-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3K-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3J-25H-M166 - 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
5,200.00	5,157.72	5,197.32	5,175.14	20.45	19.42	156.72	-358.08	-243.23	205.47	167.76	37.71	5.449	
5,300.00	5,256.74	5,297.23	5,274.53	20.87	19.81	156.70	-366.53	-248.81	209.83	171.37	38.46	5.456	
5,400.00	5,355.77	5,397.13	5,373.92	21.29	20.20	156.69	-374.99	-254.40	214.18	174.97	39.21	5.463	
5,500.00	5,454.79	5,497.04	5,473.31	21.70	20.59	156.67	-383.44	-259.98	218.53	178.57	39.96	5.469	
5,600.00	5,553.82	5,596.94	5,572.70	22.12	20.98	156.66	-391.90	-265.56	222.88	182.17	40.71	5.475	
5,647.42	5,600.78	5,644.32	5,619.84	22.31	21.16	156.65	-395.90	-268.21	224.95	183.88	41.06	5.478	
5,700.00	5,652.91	5,696.87	5,672.11	22.53	21.37	156.61	-400.35	-271.14	226.79	185.33	41.46	5.470	
5,800.00	5,752.36	5,792.97	5,767.77	22.92	21.74	156.36	-407.99	-276.18	228.39	186.21	42.18	5.414	
5,900.00	5,852.12	5,886.73	5,861.33	23.29	22.09	156.17	-413.05	-279.53	229.33	186.48	42.85	5.352	
6,000.00	5,952.05	5,980.49	5,955.04	23.63	22.42	156.08	-415.56	-281.18	229.80	186.34	43.46	5.287	
6,047.95	6,000.00	6,025.45	6,000.00	23.78	22.57	-0.55	-415.85	-281.38	229.86	186.12	43.73	5.256	
6,100.00	6,052.05	6,077.50	6,052.05	23.93	22.73	-0.55	-415.85	-281.38	229.86	185.79	44.06	5.217	
6,200.00	6,152.05	6,177.50	6,152.05	24.22	23.04	-0.55	-415.85	-281.38	229.86	185.15	44.70	5.142	
6,300.00	6,252.05	6,277.50	6,252.05	24.52	23.35	-0.55	-415.85	-281.38	229.86	184.51	45.34	5.069	
6,400.00	6,352.05	6,377.50	6,352.05	24.81	23.66	-0.55	-415.85	-281.38	229.86	183.87	45.99	4.998	
6,500.00	6,452.05	6,477.50	6,452.05	25.11	23.97	-0.55	-415.85	-281.38	229.86	183.22	46.63	4.929	
6,600.00	6,552.05	6,577.50	6,552.05	25.40	24.29	-0.55	-415.85	-281.38	229.86	182.58	47.28	4.862	
6,609.79	6,561.84	6,587.29	6,561.84	25.43	24.32	-0.55	-415.85	-281.38	229.86	182.51	47.34	4.855	
6,700.00	6,652.05	6,677.48	6,652.02	25.70	24.60	-0.41	-415.85	-280.82	229.86	181.94	47.92	4.797	
6,741.75	6,693.80	6,719.02	6,693.46	25.83	24.73	0.30	-415.82	-277.98	229.88	181.73	48.15	4.774	
6,750.00	6,702.05	6,727.18	6,701.58	25.85	24.75	-88.92	-415.81	-277.14	229.90	181.71	48.19	4.771	
6,800.00	6,751.99	6,776.48	6,750.36	26.00	24.90	-87.72	-415.74	-270.11	230.04	181.61	48.43	4.750	
6,850.00	6,801.64	6,825.46	6,798.24	26.14	25.04	-86.54	-415.64	-259.81	230.28	181.64	48.64	4.734	
6,900.00	6,850.77	6,874.13	6,845.00	26.28	25.17	-85.38	-415.50	-246.36	230.61	181.77	48.84	4.722	
6,950.00	6,899.13	6,922.50	6,890.47	26.41	25.29	-84.25	-415.33	-229.88	231.03	182.02	49.01	4.714	
7,000.00	6,946.49	6,970.59	6,934.47	26.53	25.41	-83.15	-415.13	-210.50	231.52	182.36	49.16	4.709	
7,050.00	6,992.62	7,018.41	6,976.83	26.65	25.52	-82.09	-414.91	-188.33	232.08	182.78	49.30	4.708	
7,100.00	7,037.30	7,065.97	7,017.40	26.76	25.62	-81.08	-414.66	-163.54	232.69	183.27	49.42	4.709	
7,150.00	7,080.30	7,113.28	7,056.04	26.85	25.72	-80.11	-414.38	-136.25	233.34	183.81	49.54	4.711	
7,200.00	7,121.42	7,160.37	7,092.63	26.95	25.82	-79.20	-414.08	-106.62	234.03	184.37	49.66	4.713	
7,250.00	7,160.45	7,207.25	7,127.03	27.03	25.92	-78.34	-413.76	-74.80	234.72	184.92	49.80	4.713	
7,300.00	7,197.22	7,253.92	7,159.15	27.11	26.03	-77.53	-413.41	-40.94	235.43	185.44	49.98	4.710	
7,350.00	7,231.52	7,300.00	7,188.63	27.18	26.17	-76.80	-413.05	-5.54	236.12	185.92	50.20	4.703	
7,400.00	7,263.21	7,346.75	7,216.15	27.24	26.37	-76.12	-412.67	32.23	236.79	186.26	50.53	4.686	
7,450.00	7,292.13	7,392.92	7,240.86	27.32	26.65	-75.50	-412.27	71.23	237.43	186.49	50.94	4.661	
7,500.00	7,318.13	7,438.97	7,262.94	27.42	27.01	-74.95	-411.86	111.63	238.03	186.57	51.46	4.625	
7,550.00	7,341.09	7,484.89	7,282.34	27.65	27.44	-74.48	-411.44	153.24	238.57	186.46	52.12	4.578	
7,600.00	7,360.89	7,530.71	7,298.99	28.06	27.95	-74.06	-411.00	195.92	239.05	186.14	52.91	4.518	
7,650.00	7,377.45	7,576.45	7,312.86	28.61	28.52	-73.72	-410.56	239.49	239.46	185.60	53.86	4.446	
7,700.00	7,390.68	7,622.12	7,323.90	29.26	29.15	-73.45	-410.11	283.79	239.79	184.83	54.96	4.363	
7,750.00	7,400.50	7,667.73	7,332.09	29.99	29.84	-73.25	-409.66	328.66	240.04	183.83	56.21	4.270	
7,800.00	7,406.89	7,713.30	7,337.41	30.79	30.58	-73.12	-409.20	373.91	240.20	182.59	57.61	4.169	
7,850.00	7,409.80	7,758.86	7,339.83	31.64	31.37	-73.07	-408.73	419.39	240.27	181.12	59.15	4.062	
7,866.75	7,410.00	7,774.25	7,340.00	31.93	31.64	-73.06	-408.58	434.78	240.28	180.58	59.70	4.025	
7,866.90	7,410.00	7,774.25	7,340.00	31.94	31.64	-73.06	-408.58	434.78	240.28	180.58	59.70	4.025	
7,900.00	7,410.00	7,807.35	7,340.00	32.54	32.25	-73.06	-408.24	467.88	240.28	179.41	60.87	3.947	
8,000.00	7,410.00	7,907.35	7,340.00	34.50	34.23	-73.06	-407.22	567.88	240.28	175.62	64.66	3.716	
8,100.00	7,410.00	8,007.35	7,340.00	36.63	36.38	-73.06	-406.21	667.87	240.28	171.49	68.79	3.493	
8,200.00	7,410.00	8,107.35	7,340.00	38.91	38.67	-73.06	-405.19	767.87	240.28	167.08	73.20	3.282	
8,300.00	7,410.00	8,207.35	7,340.00	41.31	41.09	-73.06	-404.17	867.86	240.28	162.43	77.85	3.086	
8,400.00	7,410.00	8,307.35	7,340.00	43.82	43.61	-73.06	-403.16	967.85	240.28	157.58	82.70	2.905	
8,500.00	7,410.00	8,407.35	7,340.00	46.41	46.21	-73.06	-402.14	1,067.85	240.28	152.57	87.71	2.739	

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 SAM 3K-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3K-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3J-25H-M166 - 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		
8,600.00	7,410.00	8,507.35	7,340.00	49.07	48.89	-73.06	-401.13	1,167.84	240.28	147.42	92.86	2.588		
8,700.00	7,410.00	8,607.35	7,340.00	51.80	51.63	-73.06	-400.11	1,267.84	240.28	142.15	98.12	2.449		
8,800.00	7,410.00	8,707.35	7,340.00	54.57	54.41	-73.06	-399.09	1,367.83	240.28	136.79	103.49	2.322		
8,900.00	7,410.00	8,807.35	7,340.00	57.39	57.25	-73.06	-398.08	1,467.83	240.28	131.34	108.93	2.206		
9,000.00	7,410.00	8,907.35	7,340.00	60.25	60.12	-73.06	-397.06	1,567.82	240.28	125.82	114.45	2.099		
9,100.00	7,410.00	9,007.35	7,340.00	63.15	63.02	-73.06	-396.04	1,667.82	240.28	120.24	120.03	2.002		
9,200.00	7,410.00	9,107.35	7,340.00	66.07	65.95	-73.06	-395.03	1,767.81	240.28	114.61	125.67	1.912		
9,300.00	7,410.00	9,207.35	7,340.00	69.02	68.90	-73.06	-394.01	1,867.81	240.28	108.93	131.35	1.829		
9,400.00	7,410.00	9,307.35	7,340.00	71.99	71.88	-73.06	-393.00	1,967.80	240.28	103.21	137.07	1.753		
9,500.00	7,410.00	9,407.35	7,340.00	74.98	74.87	-73.06	-391.98	2,067.80	240.28	97.45	142.83	1.682		
9,600.00	7,410.00	9,507.35	7,340.00	77.98	77.88	-73.06	-390.96	2,167.79	240.28	91.66	148.62	1.617		
9,700.00	7,410.00	9,607.35	7,340.00	81.00	80.91	-73.06	-389.95	2,267.79	240.28	85.84	154.44	1.556		
9,800.00	7,410.00	9,707.35	7,340.00	84.04	83.95	-73.06	-388.93	2,367.78	240.28	80.00	160.28	1.499 Level 3		
9,900.00	7,410.00	9,807.35	7,340.00	87.09	87.00	-73.06	-387.91	2,467.78	240.28	74.13	166.14	1.446 Level 3		
10,000.00	7,410.00	9,907.35	7,340.00	90.14	90.07	-73.06	-386.90	2,567.77	240.28	68.25	172.03	1.397 Level 3		
10,100.00	7,410.00	10,007.35	7,340.00	93.21	93.14	-73.06	-385.88	2,667.77	240.28	62.34	177.93	1.350 Level 3		
10,200.00	7,410.00	10,107.35	7,340.00	96.29	96.22	-73.06	-384.87	2,767.76	240.28	56.42	183.85	1.307 Level 3		
10,300.00	7,410.00	10,207.35	7,340.00	99.37	99.31	-73.06	-383.85	2,867.76	240.28	50.49	189.79	1.266 Level 3		
10,400.00	7,410.00	10,307.35	7,340.00	102.47	102.41	-73.06	-382.83	2,967.75	240.28	44.54	195.74	1.228 Level 2		
10,500.00	7,410.00	10,407.35	7,340.00	105.57	105.51	-73.06	-381.82	3,067.75	240.28	38.58	201.70	1.191 Level 2		
10,600.00	7,410.00	10,507.35	7,340.00	108.67	108.62	-73.06	-380.80	3,167.74	240.28	32.61	207.67	1.157 Level 2		
10,700.00	7,410.00	10,607.35	7,340.00	111.78	111.73	-73.06	-379.78	3,267.74	240.28	26.62	213.65	1.125 Level 2		
10,800.00	7,410.00	10,707.35	7,340.00	114.90	114.85	-73.06	-378.77	3,367.73	240.28	20.63	219.65	1.094 Level 2		
10,900.00	7,410.00	10,807.35	7,340.00	118.02	117.98	-73.06	-377.75	3,467.73	240.28	14.63	225.65	1.065 Level 2		
11,000.00	7,410.00	10,907.35	7,340.00	121.15	121.10	-73.06	-376.74	3,567.72	240.28	8.62	231.66	1.037 Level 2		
11,100.00	7,410.00	11,007.35	7,340.00	124.28	124.24	-73.06	-375.72	3,667.72	240.28	2.61	237.67	1.011 Level 2		
11,200.00	7,410.00	11,107.35	7,340.00	127.41	127.37	-73.06	-374.70	3,767.71	240.28	-3.42	243.70	0.986 Level 1		
11,300.00	7,410.00	11,207.35	7,340.00	130.55	130.51	-73.06	-373.69	3,867.71	240.28	-9.45	249.73	0.962 Level 1		
11,400.00	7,410.00	11,307.35	7,340.00	133.69	133.65	-73.06	-372.67	3,967.70	240.28	-15.48	255.76	0.939 Level 1		
11,500.00	7,410.00	11,407.35	7,340.00	136.83	136.80	-73.06	-371.65	4,067.69	240.28	-21.52	261.80	0.918 Level 1		
11,600.00	7,410.00	11,507.35	7,340.00	139.98	139.95	-73.06	-370.64	4,167.69	240.28	-27.57	267.85	0.897 Level 1		
11,700.00	7,410.00	11,607.35	7,340.00	143.13	143.10	-73.06	-369.62	4,267.68	240.28	-33.62	273.90	0.877 Level 1		
11,800.00	7,410.00	11,707.35	7,340.00	146.28	146.25	-73.06	-368.61	4,367.68	240.28	-39.68	279.95	0.858 Level 1		
11,900.00	7,410.00	11,807.35	7,340.00	149.43	149.31	-73.06	-367.59	4,467.67	240.28	-45.64	285.92	0.840 Level 1		
11,936.55	7,410.00	11,843.91	7,340.00	150.10	149.97	-73.06	-367.22	4,504.23	240.28	-46.92	287.19	0.837 Level 1, ES, SF		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3K-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3K-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3L-25H-M166 - 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		
0.00	0.00	0.00	0.00	0.00	0.00	-178.87	-9.85	-0.20	9.85					
100.00	100.00	100.00	100.00	0.14	0.14	-178.87	-9.85	-0.20	9.85	9.57	0.28	35.678		
200.00	200.00	200.00	200.00	0.50	0.50	-178.87	-9.85	-0.20	9.85	8.85	0.99	9.918		
300.00	300.00	300.00	300.00	0.85	0.85	-178.87	-9.85	-0.20	9.85	8.14	1.71	5.759		
400.00	400.00	400.00	400.00	1.21	1.21	-178.87	-9.85	-0.20	9.85	7.42	2.43	4.058		
500.00	500.00	500.00	500.00	1.57	1.57	-178.87	-9.85	-0.20	9.85	6.70	3.14	3.132 CC		
600.00	600.00	599.63	599.61	1.93	1.91	-176.31	-11.49	-0.74	11.52	7.66	3.86	2.986		
700.00	699.98	699.12	698.96	2.27	2.25	-16.88	-16.41	-2.37	14.94	10.38	4.56	3.273		
800.00	799.84	798.50	797.96	2.61	2.59	-16.05	-24.59	-5.09	18.43	13.16	5.27	3.496		
900.00	899.45	897.75	896.47	2.95	2.95	-16.26	-36.01	-8.87	21.97	15.98	5.99	3.668		
1,000.53	999.22	997.72	995.26	3.31	3.32	-17.20	-50.55	-13.69	25.34	18.64	6.70	3.781		
1,100.00	1,097.73	1,097.17	1,093.43	3.68	3.71	-18.73	-65.64	-18.70	27.68	20.29	7.39	3.745		
1,200.00	1,196.75	1,197.14	1,192.11	4.06	4.11	-20.03	-80.81	-23.73	30.05	21.95	8.10	3.711		
1,300.00	1,295.77	1,297.11	1,290.79	4.44	4.52	-21.14	-95.99	-28.76	32.43	23.61	8.81	3.679		
1,400.00	1,394.80	1,397.08	1,389.48	4.83	4.93	-22.10	-111.16	-33.80	34.82	25.28	9.54	3.651		
1,500.00	1,493.82	1,497.05	1,488.16	5.23	5.34	-22.93	-126.33	-38.83	37.22	26.95	10.27	3.625		
1,600.00	1,592.85	1,597.02	1,586.84	5.63	5.76	-23.66	-141.51	-43.86	39.63	28.62	11.01	3.601		
1,700.00	1,691.87	1,696.99	1,685.53	6.03	6.17	-24.31	-156.68	-48.89	42.04	30.30	11.75	3.579		
1,800.00	1,790.90	1,796.95	1,784.21	6.43	6.59	-24.89	-171.85	-53.93	44.46	31.97	12.49	3.559		
1,900.00	1,889.92	1,896.92	1,882.90	6.83	7.02	-25.41	-187.02	-58.96	46.88	33.64	13.24	3.541		
2,000.00	1,988.94	1,996.89	1,981.58	7.24	7.44	-25.87	-202.20	-63.99	49.31	35.32	13.99	3.524		
2,100.00	2,087.97	2,096.86	2,080.26	7.65	7.86	-26.30	-217.37	-69.02	51.74	36.99	14.74	3.509		
2,200.00	2,186.99	2,196.83	2,178.95	8.05	8.29	-26.68	-232.54	-74.05	54.17	38.67	15.50	3.495		
2,300.00	2,286.02	2,296.80	2,277.63	8.46	8.71	-27.04	-247.71	-79.09	56.60	40.34	16.26	3.482		
2,400.00	2,385.04	2,396.77	2,376.31	8.87	9.14	-27.36	-262.89	-84.12	59.03	42.02	17.01	3.470		
2,500.00	2,484.07	2,496.74	2,475.00	9.28	9.57	-27.66	-278.06	-89.15	61.47	43.70	17.78	3.458		
2,600.00	2,583.09	2,596.71	2,573.68	9.69	9.99	-27.93	-293.23	-94.18	63.91	45.37	18.54	3.448		
2,700.00	2,682.11	2,696.68	2,672.36	10.10	10.42	-28.19	-308.40	-99.22	66.35	47.05	19.30	3.438		
2,800.00	2,781.14	2,796.65	2,771.05	10.52	10.85	-28.42	-323.58	-104.25	68.79	48.73	20.06	3.429		
2,900.00	2,880.16	2,896.62	2,869.73	10.93	11.28	-28.64	-338.75	-109.28	71.23	50.41	20.83	3.420		
3,000.00	2,979.19	2,996.59	2,968.41	11.34	11.71	-28.85	-353.92	-114.31	73.68	52.08	21.59	3.412		
3,100.00	3,078.21	3,096.56	3,067.10	11.75	12.14	-29.04	-369.09	-119.34	76.12	53.76	22.36	3.405		
3,200.00	3,177.24	3,196.53	3,165.78	12.17	12.57	-29.22	-384.27	-124.38	78.57	55.44	23.12	3.397		
3,300.00	3,276.26	3,296.50	3,264.46	12.58	13.00	-29.39	-399.44	-129.41	81.01	57.12	23.89	3.391		
3,400.00	3,375.28	3,396.47	3,363.15	12.99	13.42	-29.55	-414.61	-134.44	83.46	58.80	24.66	3.384		
3,500.00	3,474.31	3,496.44	3,461.83	13.41	13.85	-29.70	-429.78	-139.47	85.90	60.48	25.43	3.378		
3,600.00	3,573.33	3,596.41	3,560.51	13.82	14.28	-29.84	-444.96	-144.51	88.35	62.15	26.20	3.373		
3,700.00	3,672.36	3,696.38	3,659.20	14.23	14.71	-29.98	-460.13	-149.54	90.80	63.83	26.97	3.367		
3,800.00	3,771.38	3,796.35	3,757.88	14.65	15.15	-30.11	-475.30	-154.57	93.25	65.51	27.74	3.362		
3,900.00	3,870.40	3,896.32	3,856.56	15.06	15.58	-30.23	-490.48	-159.60	95.70	67.19	28.51	3.357		
4,000.00	3,969.43	3,996.29	3,955.25	15.48	16.01	-30.34	-505.65	-164.63	98.15	68.87	29.28	3.352		
4,100.00	4,068.45	4,096.26	4,053.93	15.89	16.44	-30.45	-520.82	-169.67	100.60	70.55	30.05	3.348		
4,200.00	4,167.48	4,196.23	4,152.62	16.30	16.87	-30.56	-535.99	-174.70	103.05	72.23	30.82	3.344		
4,300.00	4,266.50	4,296.20	4,251.30	16.72	17.30	-30.66	-551.17	-179.73	105.50	73.91	31.59	3.340		
4,400.00	4,365.53	4,396.17	4,349.98	17.13	17.73	-30.75	-566.34	-184.76	107.95	75.59	32.36	3.336		
4,500.00	4,464.55	4,496.14	4,448.67	17.55	18.16	-30.84	-581.51	-189.80	110.40	77.27	33.13	3.332		
4,600.00	4,563.57	4,596.11	4,547.35	17.96	18.59	-30.93	-596.68	-194.83	112.85	78.95	33.90	3.329		
4,700.00	4,662.60	4,696.08	4,646.03	18.38	19.02	-31.01	-611.86	-199.86	115.30	80.63	34.67	3.325		
4,800.00	4,761.62	4,796.05	4,744.72	18.79	19.45	-31.09	-627.03	-204.89	117.75	82.30	35.45	3.322		
4,900.00	4,860.65	4,896.02	4,843.40	19.21	19.88	-31.17	-642.20	-209.92	120.20	83.98	36.22	3.319		
5,000.00	4,959.67	4,995.99	4,942.08	19.62	20.32	-31.24	-657.37	-214.96	122.66	85.66	36.99	3.316		
5,100.00	5,058.70	5,095.96	5,040.77	20.04	20.75	-31.31	-672.55	-219.99	125.11	87.34	37.76	3.313		

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 SAM 3K-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3K-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3L-25H-M166 - 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	
5,200.00	5,157.72	5,195.93	5,139.45	20.45	21.18	-31.38	-687.72	-225.02	127.56	89.02	38.54	3.310	
5,300.00	5,256.74	5,295.90	5,238.13	20.87	21.61	-31.44	-702.89	-230.05	130.01	90.70	39.31	3.307	
5,400.00	5,355.77	5,395.87	5,336.82	21.29	22.04	-31.51	-718.06	-235.09	132.47	92.38	40.08	3.305	
5,500.00	5,454.79	5,495.84	5,435.50	21.70	22.47	-31.57	-733.24	-240.12	134.92	94.06	40.86	3.302	
5,600.00	5,553.82	5,595.81	5,534.18	22.12	22.90	-31.62	-748.41	-245.15	137.37	95.74	41.63	3.300	
5,647.42	5,600.78	5,643.22	5,580.98	22.31	23.11	-31.65	-755.61	-247.54	138.53	96.54	42.00	3.299	
5,700.00	5,652.91	5,695.76	5,632.86	22.53	23.34	-31.59	-763.58	-250.18	140.23	97.84	42.39	3.308	
5,800.00	5,752.36	5,795.59	5,731.40	22.92	23.77	-30.97	-778.73	-255.21	145.75	102.64	43.10	3.381	
5,900.00	5,852.12	5,895.17	5,829.69	23.29	24.20	-29.77	-793.84	-260.22	154.29	110.53	43.76	3.526	
6,000.00	5,952.05	5,994.36	5,927.61	23.63	24.63	-28.15	-808.90	-265.21	165.96	121.58	44.38	3.739	
6,047.95	6,000.00	6,043.70	5,976.35	23.78	24.83	176.12	-816.19	-267.63	172.51	127.83	44.68	3.861	
6,100.00	6,052.05	6,098.37	6,030.49	23.93	25.06	177.04	-823.37	-270.01	179.21	134.21	45.00	3.982	
6,200.00	6,152.05	6,204.14	6,135.60	24.22	25.48	178.33	-834.48	-273.70	189.58	143.96	45.61	4.156	
6,300.00	6,252.05	6,310.63	6,241.80	24.52	25.87	179.12	-841.94	-276.17	196.53	150.34	46.19	4.255	
6,400.00	6,352.05	6,417.57	6,348.66	24.81	26.23	179.49	-845.65	-277.40	199.99	153.26	46.72	4.280	
6,500.00	6,452.05	6,520.96	6,452.05	25.11	26.53	179.53	-846.09	-277.55	200.39	153.11	47.29	4.238	
6,600.00	6,552.05	6,620.96	6,552.05	25.40	26.81	179.53	-846.09	-277.55	200.39	152.47	47.92	4.182	
6,695.94	6,647.99	6,716.91	6,647.99	25.69	27.07	179.41	-846.08	-277.14	200.39	151.86	48.53	4.129	
6,700.00	6,652.05	6,720.97	6,652.04	25.70	27.09	179.37	-846.08	-276.99	200.39	151.83	48.56	4.127	
6,741.75	6,693.80	6,762.53	6,693.51	25.83	27.20	178.56	-846.05	-274.14	200.41	151.54	48.88	4.100	
6,750.00	6,702.05	6,770.70	6,701.64	25.85	27.22	88.91	-846.04	-273.30	200.43	151.48	48.94	4.095	
6,800.00	6,751.99	6,820.04	6,750.46	26.00	27.36	87.54	-845.97	-266.26	200.58	151.23	49.35	4.064	
6,850.00	6,801.64	6,869.05	6,798.37	26.14	27.48	86.18	-845.86	-255.95	200.84	151.09	49.75	4.037	
6,900.00	6,850.77	6,917.76	6,845.16	26.28	27.60	84.85	-845.73	-242.48	201.21	151.07	50.14	4.013	
6,950.00	6,899.13	6,966.17	6,890.66	26.41	27.71	83.55	-845.56	-225.98	201.68	151.17	50.51	3.993	
7,000.00	6,946.49	7,014.29	6,934.68	26.53	27.81	82.29	-845.36	-206.56	202.23	151.37	50.86	3.977	
7,050.00	6,992.62	7,062.13	6,977.06	26.65	27.90	81.08	-845.13	-184.37	202.86	151.68	51.18	3.964	
7,100.00	7,037.30	7,109.72	7,017.64	26.76	27.99	79.92	-844.88	-159.54	203.55	152.07	51.47	3.954	
7,150.00	7,080.30	7,157.06	7,056.30	26.85	28.06	78.81	-844.60	-132.22	204.29	152.53	51.75	3.947	
7,200.00	7,121.42	7,204.18	7,092.89	26.95	28.13	77.76	-844.29	-102.56	205.06	153.04	52.02	3.942	
7,250.00	7,160.45	7,250.00	7,126.53	27.03	28.19	76.80	-843.97	-71.46	205.86	153.59	52.26	3.939	
7,300.00	7,197.22	7,297.77	7,159.41	27.11	28.25	75.87	-843.62	-36.82	206.65	154.08	52.58	3.931	
7,350.00	7,231.52	7,344.29	7,189.14	27.18	28.29	75.02	-843.25	-1.06	207.44	154.54	52.90	3.921	
7,400.00	7,263.21	7,390.63	7,216.39	27.24	28.33	74.25	-842.87	36.42	208.21	154.93	53.28	3.908	
7,450.00	7,292.13	7,436.83	7,241.08	27.32	28.37	73.55	-842.47	75.45	208.94	155.20	53.73	3.888	
7,500.00	7,318.13	7,482.89	7,263.15	27.42	28.40	72.93	-842.05	115.87	209.61	155.33	54.29	3.861	
7,550.00	7,341.09	7,528.82	7,282.52	27.65	28.43	72.38	-841.63	157.51	210.23	155.28	54.95	3.826	
7,600.00	7,360.89	7,574.66	7,299.15	28.06	28.51	71.91	-841.19	200.21	210.78	155.03	55.75	3.781	
7,650.00	7,377.45	7,620.40	7,312.99	28.61	28.92	71.52	-840.74	243.80	211.25	154.57	56.69	3.727	
7,700.00	7,390.68	7,666.07	7,324.01	29.26	29.53	71.21	-840.29	288.11	211.63	153.86	57.77	3.663	
7,750.00	7,400.50	7,711.69	7,332.17	29.99	30.21	70.97	-839.83	332.98	211.92	152.92	59.00	3.592	
7,800.00	7,406.89	7,757.27	7,337.45	30.79	30.94	70.82	-839.37	378.25	212.11	151.74	60.38	3.513	
7,850.00	7,409.80	7,802.83	7,339.85	31.64	31.72	70.75	-838.90	423.73	212.20	150.32	61.88	3.429	
7,866.75	7,410.00	7,818.12	7,340.00	31.93	31.99	70.74	-838.74	439.02	212.21	149.79	62.42	3.400	
7,900.00	7,410.00	7,851.37	7,340.00	32.54	32.61	70.74	-838.40	472.27	212.21	148.64	63.57	3.338	
8,000.00	7,410.00	7,951.37	7,340.00	34.50	34.57	70.74	-837.38	572.26	212.20	144.95	67.25	3.156	
8,100.00	7,410.00	8,051.37	7,340.00	36.63	36.70	70.74	-836.35	672.26	212.19	140.95	71.24	2.978	
8,200.00	7,410.00	8,151.37	7,340.00	38.91	38.97	70.74	-835.33	772.25	212.18	136.67	75.52	2.810	
8,300.00	7,410.00	8,251.37	7,340.00	41.31	41.37	70.74	-834.30	872.25	212.17	132.15	80.02	2.651	
8,400.00	7,410.00	8,351.37	7,340.00	43.82	43.87	70.74	-833.28	972.24	212.17	127.44	84.73	2.504	
8,500.00	7,410.00	8,451.37	7,340.00	46.41	46.45	70.73	-832.25	1,072.24	212.16	122.56	89.59	2.368	
8,600.00	7,410.00	8,551.37	7,340.00	49.07	49.11	70.73	-831.23	1,172.23	212.15	117.55	94.60	2.243	

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 SAM 3K-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3K-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3L-25H-M166 - 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		
8,700.00	7,410.00	8,651.37	7,340.00	51.80	51.83	70.73	-830.20	1,272.23	212.14	112.42	99.73	2.127		
8,800.00	7,410.00	8,751.37	7,340.00	54.57	54.60	70.73	-829.18	1,372.22	212.13	107.18	104.95	2.021		
8,900.00	7,410.00	8,851.37	7,340.00	57.39	57.42	70.73	-828.15	1,472.22	212.13	101.86	110.27	1.924		
9,000.00	7,410.00	8,951.37	7,340.00	60.25	60.28	70.73	-827.13	1,572.21	212.12	96.46	115.65	1.834		
9,100.00	7,410.00	9,051.37	7,340.00	63.15	63.17	70.73	-826.10	1,672.21	212.11	91.00	121.11	1.751		
9,200.00	7,410.00	9,151.37	7,340.00	66.07	66.08	70.73	-825.08	1,772.20	212.10	85.48	126.62	1.675		
9,300.00	7,410.00	9,251.37	7,340.00	69.02	69.03	70.73	-824.05	1,872.20	212.09	79.92	132.18	1.605		
9,400.00	7,410.00	9,351.37	7,340.00	71.99	71.99	70.73	-823.03	1,972.19	212.09	74.31	137.78	1.539		
9,500.00	7,410.00	9,451.37	7,340.00	74.98	74.98	70.73	-822.01	2,072.19	212.08	68.66	143.42	1.479 Level 3		
9,600.00	7,410.00	9,551.37	7,340.00	77.98	77.98	70.73	-820.98	2,172.18	212.07	62.98	149.09	1.422 Level 3		
9,700.00	7,410.00	9,651.37	7,340.00	81.00	81.00	70.73	-819.96	2,272.17	212.06	57.27	154.80	1.370 Level 3		
9,800.00	7,410.00	9,751.37	7,340.00	84.04	84.04	70.72	-818.93	2,372.17	212.05	51.53	160.53	1.321 Level 3		
9,900.00	7,410.00	9,851.37	7,340.00	87.09	87.08	70.72	-817.91	2,472.16	212.05	45.76	166.28	1.275 Level 3		
10,000.00	7,410.00	9,951.37	7,340.00	90.14	90.14	70.72	-816.88	2,572.16	212.04	39.98	172.06	1.232 Level 2		
10,100.00	7,410.00	10,051.37	7,340.00	93.21	93.20	70.72	-815.86	2,672.15	212.03	34.17	177.86	1.192 Level 2		
10,200.00	7,410.00	10,151.37	7,340.00	96.29	96.28	70.72	-814.83	2,772.15	212.02	28.35	183.67	1.154 Level 2		
10,300.00	7,410.00	10,251.37	7,340.00	99.37	99.36	70.72	-813.81	2,872.14	212.01	22.51	189.50	1.119 Level 2		
10,400.00	7,410.00	10,351.37	7,340.00	102.47	102.46	70.72	-812.78	2,972.14	212.01	16.66	195.35	1.085 Level 2		
10,500.00	7,410.00	10,451.37	7,340.00	105.57	105.55	70.72	-811.76	3,072.13	212.00	10.79	201.20	1.054 Level 2		
10,600.00	7,410.00	10,551.37	7,340.00	108.67	108.66	70.72	-810.73	3,172.13	211.99	4.91	207.07	1.024 Level 2		
10,700.00	7,410.00	10,651.37	7,340.00	111.78	111.77	70.72	-809.71	3,272.12	211.98	-0.98	212.96	0.995 Level 1		
10,800.00	7,410.00	10,751.37	7,340.00	114.90	114.88	70.72	-808.68	3,372.12	211.97	-6.88	218.85	0.969 Level 1		
10,900.00	7,410.00	10,851.37	7,340.00	118.02	118.00	70.72	-807.66	3,472.11	211.97	-12.79	224.75	0.943 Level 1		
11,000.00	7,410.00	10,951.37	7,340.00	121.15	121.13	70.72	-806.63	3,572.11	211.96	-18.70	230.66	0.919 Level 1		
11,100.00	7,410.00	11,051.37	7,340.00	124.28	124.26	70.71	-805.61	3,672.10	211.95	-24.63	236.58	0.896 Level 1		
11,200.00	7,410.00	11,151.37	7,340.00	127.41	127.39	70.71	-804.58	3,772.10	211.94	-30.56	242.51	0.874 Level 1		
11,300.00	7,410.00	11,251.37	7,340.00	130.55	130.53	70.71	-803.56	3,872.09	211.93	-36.50	248.44	0.853 Level 1		
11,400.00	7,410.00	11,351.37	7,340.00	133.69	133.67	70.71	-802.53	3,972.09	211.93	-42.45	254.38	0.833 Level 1		
11,500.00	7,410.00	11,451.37	7,340.00	136.83	136.81	70.71	-801.51	4,072.08	211.92	-48.41	260.32	0.814 Level 1		
11,600.00	7,410.00	11,551.37	7,340.00	139.98	139.95	70.71	-800.49	4,172.08	211.91	-54.36	266.27	0.796 Level 1		
11,700.00	7,410.00	11,651.37	7,340.00	143.13	143.10	70.71	-799.46	4,272.07	211.90	-60.33	272.23	0.778 Level 1		
11,800.00	7,410.00	11,751.37	7,340.00	146.28	146.25	70.71	-798.44	4,372.06	211.89	-66.30	278.19	0.762 Level 1		
11,900.00	7,410.00	11,851.37	7,340.00	149.43	149.41	70.71	-797.41	4,472.06	211.88	-72.27	284.16	0.746 Level 1		
11,935.16	7,410.00	11,886.52	7,340.00	150.07	150.52	70.71	-797.05	4,507.20	211.88	-73.93	285.81	0.741 Level 1		
11,936.55	7,410.00	11,886.52	7,340.00	150.10	150.52	70.71	-797.05	4,507.20	211.89	-73.97	285.86	0.741 Level 1, ES, SF		

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3K-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3K-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3M-25H-M166 - 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		
0.00	0.00	0.00	0.00	0.00	0.00	-179.69	-20.04	-0.11	20.04					
100.00	100.00	100.00	100.00	0.14	0.14	-179.69	-20.04	-0.11	20.04	19.76	0.28	72.592		
200.00	200.00	200.00	200.00	0.50	0.50	-179.69	-20.04	-0.11	20.04	19.04	0.99	20.179		
300.00	300.00	300.00	300.00	0.85	0.85	-179.69	-20.04	-0.11	20.04	18.33	1.71	11.718		
400.00	400.00	400.00	400.00	1.21	1.21	-179.69	-20.04	-0.11	20.04	17.61	2.43	8.256 CC, ES		
500.00	500.00	499.29	499.27	1.57	1.55	-178.46	-21.69	-0.58	21.71	18.56	3.15	6.901		
600.00	600.00	598.35	598.19	1.93	1.89	-175.69	-26.63	-2.01	26.77	22.89	3.88	6.901		
700.00	699.98	697.08	696.55	2.27	2.23	-17.02	-34.83	-4.37	33.60	29.00	4.61	7.294		
800.00	799.84	795.59	794.33	2.61	2.59	-16.28	-46.24	-7.65	40.51	35.18	5.33	7.606		
900.00	899.45	894.29	891.86	2.95	2.97	-16.29	-60.79	-11.84	47.34	41.30	6.04	7.843		
1,000.53	999.22	994.71	990.95	3.31	3.37	-17.25	-76.45	-16.35	51.73	45.02	6.72	7.701		
1,100.00	1,097.73	1,094.14	1,089.06	3.68	3.77	-18.63	-91.96	-20.82	54.44	47.03	7.41	7.345		
1,200.00	1,196.75	1,194.10	1,187.69	4.06	4.18	-19.90	-107.55	-25.31	57.19	49.07	8.12	7.042		
1,300.00	1,295.77	1,294.05	1,286.32	4.44	4.60	-21.04	-123.15	-29.80	59.97	51.13	8.84	6.783		
1,400.00	1,394.80	1,394.01	1,384.95	4.83	5.02	-22.08	-138.74	-34.29	62.77	53.20	9.57	6.560		
1,500.00	1,493.82	1,493.96	1,483.58	5.23	5.44	-23.04	-154.33	-38.78	65.59	55.28	10.30	6.366		
1,600.00	1,592.85	1,593.91	1,582.21	5.63	5.86	-23.91	-169.92	-43.26	68.42	57.38	11.04	6.197		
1,700.00	1,691.87	1,693.87	1,680.84	6.03	6.29	-24.72	-185.51	-47.75	71.27	59.49	11.79	6.047		
1,800.00	1,790.90	1,793.82	1,779.47	6.43	6.71	-25.46	-201.10	-52.24	74.13	61.60	12.53	5.915		
1,900.00	1,889.92	1,893.78	1,878.10	6.83	7.14	-26.15	-216.69	-56.73	77.01	63.72	13.29	5.796		
2,000.00	1,988.94	1,993.73	1,976.72	7.24	7.57	-26.79	-232.28	-61.22	79.89	65.85	14.04	5.690		
2,100.00	2,087.97	2,093.69	2,075.35	7.65	8.00	-27.38	-247.87	-65.71	82.78	67.99	14.80	5.595		
2,200.00	2,186.99	2,193.64	2,173.98	8.05	8.42	-27.94	-263.47	-70.20	85.69	70.13	15.56	5.508		
2,300.00	2,286.02	2,293.60	2,272.61	8.46	8.85	-28.45	-279.06	-74.69	88.60	72.28	16.32	5.429		
2,400.00	2,385.04	2,393.55	2,371.24	8.87	9.28	-28.94	-294.65	-79.18	91.51	74.43	17.08	5.357		
2,500.00	2,484.07	2,493.51	2,469.87	9.28	9.71	-29.39	-310.24	-83.67	94.43	76.58	17.85	5.291		
2,600.00	2,583.09	2,593.46	2,568.50	9.69	10.15	-29.82	-325.83	-88.16	97.36	78.75	18.62	5.230		
2,700.00	2,682.11	2,693.41	2,667.13	10.10	10.58	-30.22	-341.42	-92.65	100.29	80.91	19.38	5.174		
2,800.00	2,781.14	2,793.37	2,765.76	10.52	11.01	-30.60	-357.01	-97.14	103.23	83.08	20.15	5.122		
2,900.00	2,880.16	2,893.32	2,864.39	10.93	11.44	-30.96	-372.60	-101.63	106.17	85.25	20.93	5.074		
3,000.00	2,979.19	2,993.28	2,963.01	11.34	11.87	-31.30	-388.20	-106.12	109.12	87.42	21.70	5.029		
3,100.00	3,078.21	3,093.23	3,061.64	11.75	12.30	-31.62	-403.79	-110.61	112.07	89.60	22.47	4.987		
3,200.00	3,177.24	3,193.19	3,160.27	12.17	12.74	-31.93	-419.38	-115.10	115.02	91.77	23.24	4.948		
3,300.00	3,276.26	3,293.14	3,258.90	12.58	13.17	-32.21	-434.97	-119.58	117.97	93.96	24.02	4.912		
3,400.00	3,375.28	3,393.10	3,357.53	12.99	13.60	-32.49	-450.56	-124.07	120.93	96.14	24.79	4.877		
3,500.00	3,474.31	3,493.05	3,456.16	13.41	14.03	-32.75	-466.15	-128.56	123.89	98.32	25.57	4.845		
3,600.00	3,573.33	3,593.01	3,554.79	13.82	14.46	-33.00	-481.74	-133.05	126.86	100.51	26.35	4.815		
3,700.00	3,672.36	3,692.96	3,653.42	14.23	14.90	-33.24	-497.33	-137.54	129.82	102.70	27.13	4.786		
3,800.00	3,771.38	3,792.92	3,752.05	14.65	15.33	-33.47	-512.92	-142.03	132.79	104.89	27.90	4.759		
3,900.00	3,870.40	3,892.87	3,850.68	15.06	15.76	-33.69	-528.52	-146.52	135.76	107.08	28.68	4.733		
4,000.00	3,969.43	3,992.82	3,949.30	15.48	16.20	-33.89	-544.11	-151.01	138.73	109.27	29.46	4.709		
4,100.00	4,068.45	4,092.78	4,047.93	15.89	16.63	-34.09	-559.70	-155.50	141.71	111.47	30.24	4.686		
4,200.00	4,167.48	4,192.73	4,146.56	16.30	17.06	-34.29	-575.29	-159.99	144.68	113.66	31.02	4.664		
4,300.00	4,266.50	4,292.69	4,245.19	16.72	17.50	-34.47	-590.88	-164.48	147.66	115.86	31.80	4.643		
4,400.00	4,365.53	4,392.64	4,343.82	17.13	17.93	-34.65	-606.47	-168.97	150.64	118.05	32.58	4.623		
4,500.00	4,464.55	4,492.60	4,442.45	17.55	18.36	-34.82	-622.06	-173.46	153.62	120.25	33.36	4.604		
4,600.00	4,563.57	4,592.55	4,541.08	17.96	18.80	-34.98	-637.65	-177.95	156.60	122.45	34.15	4.586		
4,700.00	4,662.60	4,692.51	4,639.71	18.38	19.23	-35.14	-653.24	-182.44	159.58	124.65	34.93	4.569		
4,800.00	4,761.62	4,792.46	4,738.34	18.79	19.66	-35.29	-668.84	-186.93	162.56	126.85	35.71	4.552		
4,900.00	4,860.65	4,892.42	4,836.97	19.21	20.10	-35.43	-684.43	-191.41	165.55	129.05	36.49	4.536		
5,000.00	4,959.67	4,992.37	4,935.59	19.62	20.53	-35.57	-700.02	-195.90	168.53	131.26	37.28	4.521		
5,100.00	5,058.70	5,092.32	5,034.22	20.04	20.96	-35.71	-715.61	-200.39	171.52	133.46	38.06	4.507		

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 SAM 3K-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3K-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3M-25H-M166 - 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	
5,200.00	5,157.72	5,192.28	5,132.85	20.45	21.40	-35.84	-731.20	-204.88	174.51	135.66	38.84	4.493		
5,300.00	5,256.74	5,292.23	5,231.48	20.87	21.83	-35.97	-746.79	-209.37	177.50	137.87	39.63	4.479		
5,400.00	5,355.77	5,392.19	5,330.11	21.29	22.26	-36.09	-762.38	-213.86	180.48	140.07	40.41	4.466		
5,500.00	5,454.79	5,492.14	5,428.74	21.70	22.70	-36.21	-777.97	-218.35	183.47	142.28	41.19	4.454		
5,600.00	5,553.82	5,592.10	5,527.37	22.12	23.13	-36.32	-793.57	-222.84	186.46	144.49	41.98	4.442		
5,647.42	5,600.78	5,639.50	5,574.14	22.31	23.34	-36.38	-800.96	-224.97	187.88	145.53	42.35	4.437		
5,700.00	5,652.91	5,692.04	5,625.98	22.53	23.56	-36.37	-809.15	-227.33	189.84	147.09	42.75	4.440		
5,800.00	5,752.36	5,791.85	5,724.47	22.92	24.00	-35.93	-824.72	-231.81	195.72	152.25	43.48	4.502		
5,900.00	5,852.12	5,891.39	5,822.69	23.29	24.43	-34.98	-840.25	-236.28	204.46	160.32	44.15	4.631		
6,000.00	5,952.05	5,990.55	5,920.54	23.63	24.86	-33.62	-855.72	-240.74	216.15	171.38	44.77	4.828		
6,047.95	6,000.00	6,037.93	5,967.29	23.78	25.07	170.51	-863.11	-242.86	222.83	177.78	45.05	4.946		
6,100.00	6,052.05	6,089.29	6,017.97	23.93	25.29	171.42	-871.12	-245.17	230.50	185.16	45.35	5.083		
6,200.00	6,152.05	6,187.96	6,115.33	24.22	25.72	173.00	-886.51	-249.60	245.38	199.46	45.93	5.343		
6,300.00	6,252.05	6,286.64	6,212.70	24.52	26.15	174.39	-901.90	-254.04	260.42	213.90	46.52	5.598		
6,400.00	6,352.05	6,385.31	6,310.06	24.81	26.57	175.64	-917.29	-258.47	275.60	228.46	47.14	5.847		
6,500.00	6,452.05	6,483.98	6,407.43	25.11	27.00	176.75	-932.68	-262.90	290.89	243.13	47.76	6.091		
6,600.00	6,552.05	6,582.66	6,504.79	25.40	27.43	177.75	-948.07	-267.33	306.28	257.88	48.39	6.329		
6,700.00	6,652.05	6,681.33	6,602.16	25.70	27.86	178.66	-963.47	-271.76	321.75	272.71	49.03	6.562		
6,741.75	6,693.80	6,722.53	6,642.81	25.83	28.04	179.01	-969.89	-273.61	328.23	278.92	49.30	6.657		
6,750.00	6,702.05	6,730.67	6,650.84	25.85	28.07	89.57	-971.16	-273.98	329.51	280.15	49.36	6.676		
6,800.00	6,751.99	6,779.93	6,699.47	26.00	28.28	89.63	-978.84	-275.55	337.28	287.62	49.66	6.792		
6,850.00	6,801.64	6,829.43	6,748.34	26.14	28.49	89.72	-986.53	-273.98	345.07	295.12	49.95	6.908		
6,900.00	6,850.77	6,879.25	6,797.29	26.28	28.68	89.79	-994.19	-268.95	352.82	302.59	50.23	7.023		
6,950.00	6,899.13	6,929.40	6,846.11	26.41	28.85	89.85	-1,001.80	-260.42	360.51	310.00	50.51	7.137		
7,000.00	6,946.49	6,979.88	6,894.54	26.53	29.02	89.90	-1,009.31	-248.37	368.08	317.30	50.78	7.248		
7,050.00	6,992.62	7,030.72	6,942.35	26.65	29.18	89.94	-1,016.69	-232.77	375.51	324.46	51.05	7.356		
7,100.00	7,037.30	7,081.92	6,989.28	26.76	29.32	89.97	-1,023.89	-213.64	382.76	331.44	51.32	7.459		
7,150.00	7,080.30	7,133.48	7,035.06	26.85	29.45	89.99	-1,030.88	-190.98	389.77	338.18	51.59	7.555		
7,200.00	7,121.42	7,185.43	7,079.44	26.95	29.58	90.01	-1,037.61	-164.86	396.52	344.64	51.89	7.642		
7,250.00	7,160.45	7,237.74	7,122.12	27.03	29.69	90.02	-1,044.03	-135.33	402.97	350.76	52.21	7.719		
7,300.00	7,197.22	7,290.43	7,162.85	27.11	29.79	90.02	-1,050.12	-102.49	409.08	356.51	52.57	7.782		
7,350.00	7,231.52	7,343.47	7,201.35	27.18	29.88	90.02	-1,055.82	-66.45	414.81	361.82	52.98	7.829		
7,400.00	7,263.21	7,396.87	7,237.33	27.24	29.97	90.02	-1,061.10	-27.37	420.13	366.65	53.48	7.856		
7,450.00	7,292.13	7,450.61	7,270.54	27.32	30.04	90.02	-1,065.90	14.58	425.01	370.93	54.07	7.860		
7,500.00	7,318.13	7,504.66	7,300.73	27.42	30.11	90.02	-1,070.21	59.20	429.41	374.62	54.79	7.837		
7,550.00	7,341.09	7,559.00	7,327.64	27.65	30.18	90.01	-1,073.97	106.24	433.32	377.68	55.64	7.788		
7,600.00	7,360.89	7,613.60	7,351.05	28.06	30.26	90.01	-1,077.16	155.44	436.70	380.07	56.64	7.711		
7,650.00	7,377.45	7,668.42	7,370.77	28.61	30.38	90.00	-1,079.75	206.52	439.54	381.75	57.79	7.606		
7,700.00	7,390.68	7,723.44	7,386.63	29.26	30.63	90.00	-1,081.72	259.15	441.81	382.70	59.11	7.475		
7,750.00	7,400.50	7,778.61	7,398.48	29.99	31.13	90.00	-1,083.04	313.00	443.50	382.93	60.58	7.321		
7,800.00	7,406.89	7,833.88	7,406.21	30.79	31.86	90.00	-1,083.70	367.72	444.61	382.42	62.19	7.149		
7,850.00	7,409.80	7,889.22	7,409.76	31.64	32.72	90.00	-1,083.70	422.93	445.11	381.18	63.93	6.963		
7,866.75	7,410.00	7,907.77	7,410.00	31.93	33.03	90.00	-1,083.55	441.47	445.15	380.62	64.53	6.898		
7,900.00	7,410.00	7,941.04	7,410.00	32.54	33.62	90.00	-1,083.21	474.74	445.15	379.40	65.75	6.770		
8,000.00	7,410.00	8,041.04	7,410.00	34.50	35.51	90.00	-1,082.19	574.74	445.15	375.53	69.62	6.394		
8,100.00	7,410.00	8,141.04	7,410.00	36.63	37.59	90.00	-1,081.17	674.73	445.15	371.31	73.84	6.028		
8,200.00	7,410.00	8,241.04	7,410.00	38.91	39.82	90.00	-1,080.16	774.73	445.15	366.79	78.36	5.681		
8,300.00	7,410.00	8,341.04	7,410.00	41.31	42.18	90.00	-1,079.14	874.72	445.15	362.02	83.13	5.355		
8,400.00	7,410.00	8,441.04	7,410.00	43.82	44.64	90.00	-1,078.13	974.72	445.15	357.04	88.11	5.052		
8,500.00	7,410.00	8,541.04	7,410.00	46.41	47.19	90.00	-1,077.11	1,074.71	445.15	351.88	93.26	4.773		
8,600.00	7,410.00	8,641.04	7,410.00	49.07	49.82	90.00	-1,076.09	1,174.70	445.15	346.58	98.56	4.516		
8,700.00	7,410.00	8,741.04	7,410.00	51.80	52.51	90.00	-1,075.08	1,274.70	445.15	341.16	103.99	4.281		

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 SAM 3K-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3K-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3M-25H-M166 - 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	7,410.00	8,841.04	7,410.00	54.57	55.26	90.00	-1,074.06	1,374.69	445.15	335.62	109.52	4.064	
8,900.00	7,410.00	8,941.04	7,410.00	57.39	58.05	90.00	-1,073.04	1,474.69	445.15	330.00	115.15	3.866	
9,000.00	7,410.00	9,041.04	7,410.00	60.25	60.89	90.00	-1,072.03	1,574.68	445.14	324.29	120.85	3.683	
9,100.00	7,410.00	9,141.04	7,410.00	63.15	63.75	90.00	-1,071.01	1,674.68	445.14	318.52	126.62	3.515	
9,200.00	7,410.00	9,241.04	7,410.00	66.07	66.65	90.00	-1,069.99	1,774.67	445.14	312.69	132.45	3.361	
9,300.00	7,410.00	9,341.04	7,410.00	69.02	69.58	90.00	-1,068.98	1,874.67	445.14	306.81	138.34	3.218	
9,400.00	7,410.00	9,441.04	7,410.00	71.99	72.53	90.00	-1,067.96	1,974.66	445.14	300.88	144.26	3.086	
9,500.00	7,410.00	9,541.04	7,410.00	74.98	75.50	90.00	-1,066.94	2,074.66	445.14	294.91	150.23	2.963	
9,600.00	7,410.00	9,641.04	7,410.00	77.98	78.49	90.00	-1,065.93	2,174.65	445.14	288.91	156.23	2.849	
9,700.00	7,410.00	9,741.04	7,410.00	81.00	81.50	90.00	-1,064.91	2,274.65	445.14	282.88	162.27	2.743	
9,800.00	7,410.00	9,841.04	7,410.00	84.04	84.52	90.00	-1,063.90	2,374.64	445.14	276.81	168.33	2.644	
9,900.00	7,410.00	9,941.04	7,410.00	87.09	87.55	90.00	-1,062.88	2,474.64	445.14	270.73	174.42	2.552	
10,000.00	7,410.00	10,041.04	7,410.00	90.14	90.59	90.00	-1,061.86	2,574.63	445.14	264.62	180.53	2.466	
10,100.00	7,410.00	10,141.04	7,410.00	93.21	93.65	90.00	-1,060.85	2,674.63	445.14	258.49	186.66	2.385	
10,200.00	7,410.00	10,241.04	7,410.00	96.29	96.72	90.00	-1,059.83	2,774.62	445.14	252.34	192.80	2.309	
10,300.00	7,410.00	10,341.04	7,410.00	99.37	99.79	90.00	-1,058.81	2,874.62	445.14	246.17	198.97	2.237	
10,400.00	7,410.00	10,441.04	7,410.00	102.47	102.87	90.00	-1,057.80	2,974.61	445.14	239.99	205.15	2.170	
10,500.00	7,410.00	10,541.04	7,410.00	105.57	105.96	90.00	-1,056.78	3,074.61	445.14	233.80	211.34	2.106	
10,600.00	7,410.00	10,641.04	7,410.00	108.67	109.06	90.00	-1,055.76	3,174.60	445.14	227.59	217.55	2.046	
10,700.00	7,410.00	10,741.04	7,410.00	111.78	112.16	90.00	-1,054.75	3,274.60	445.14	221.37	223.77	1.989	
10,800.00	7,410.00	10,841.04	7,410.00	114.90	115.27	90.00	-1,053.73	3,374.59	445.14	215.14	230.00	1.935	
10,900.00	7,410.00	10,941.04	7,410.00	118.02	118.39	90.00	-1,052.71	3,474.59	445.14	208.90	236.24	1.884	
11,000.00	7,410.00	11,041.04	7,410.00	121.15	121.50	90.00	-1,051.70	3,574.58	445.14	202.66	242.49	1.836	
11,100.00	7,410.00	11,141.04	7,410.00	124.28	124.63	90.00	-1,050.68	3,674.58	445.14	196.40	248.74	1.790	
11,200.00	7,410.00	11,241.04	7,410.00	127.41	127.75	90.00	-1,049.67	3,774.57	445.14	190.14	255.01	1.746	
11,300.00	7,410.00	11,341.04	7,410.00	130.55	130.88	90.00	-1,048.65	3,874.57	445.14	183.86	261.28	1.704	
11,400.00	7,410.00	11,441.04	7,410.00	133.69	134.02	90.00	-1,047.63	3,974.56	445.14	177.59	267.56	1.664	
11,500.00	7,410.00	11,541.04	7,410.00	136.83	137.16	90.00	-1,046.62	4,074.56	445.14	171.30	273.84	1.626	
11,600.00	7,410.00	11,641.04	7,410.00	139.98	140.30	90.00	-1,045.60	4,174.55	445.14	165.01	280.13	1.589	
11,700.00	7,410.00	11,741.04	7,410.00	143.13	143.44	90.00	-1,044.58	4,274.54	445.14	158.72	286.43	1.554	
11,800.00	7,410.00	11,841.04	7,410.00	146.28	146.59	90.00	-1,043.57	4,374.54	445.14	152.41	292.73	1.521	
11,900.00	7,410.00	11,941.04	7,410.00	149.43	149.74	90.00	-1,042.55	4,474.53	445.14	146.11	299.03	1.489 Level 3	
11,932.61	7,410.00	11,973.65	7,410.00	150.03	150.76	90.00	-1,042.22	4,507.15	445.14	144.49	300.65	1.481 Level 3	
11,936.55	7,410.00	11,975.04	7,410.00	150.10	150.81	90.00	-1,042.21	4,508.53	445.15	144.34	300.81	1.480 Level 3, SF	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3K-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3K-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3N-25H-M166 - 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	-179.96	-29.87	-0.02	29.87					
100.00	100.00	100.00	100.00	0.14	0.14	-179.96	-29.87	-0.02	29.87	29.60	0.28	108.222		
200.00	200.00	200.00	200.00	0.50	0.50	-179.96	-29.87	-0.02	29.87	28.88	0.99	30.083		
300.00	300.00	300.00	300.00	0.85	0.85	-179.96	-29.87	-0.02	29.87	28.16	1.71	17.470	CC, ES	
400.00	400.00	398.96	398.94	1.21	1.19	-179.17	-31.52	-0.46	31.55	29.11	2.44	12.948		
500.00	500.00	497.69	497.53	1.57	1.53	-177.23	-36.46	-1.76	36.59	33.41	3.18	11.493		
600.00	600.00	595.95	595.42	1.93	1.88	-174.98	-44.64	-3.92	45.04	41.10	3.94	11.423		
700.00	699.98	693.73	692.49	2.27	2.24	-16.78	-55.99	-6.92	55.25	50.57	4.68	11.796		
800.00	799.84	791.31	788.91	2.61	2.62	-16.13	-70.50	-10.75	65.51	60.10	5.40	12.122		
900.00	899.45	890.96	887.13	2.95	3.03	-16.24	-86.71	-15.03	73.87	67.81	6.07	12.178		
1,000.53	999.22	991.35	986.09	3.31	3.44	-17.06	-103.04	-19.35	78.92	72.17	6.75	11.688		
1,100.00	1,097.73	1,090.75	1,084.08	3.68	3.86	-18.16	-119.22	-23.62	82.28	74.83	7.45	11.044		
1,200.00	1,196.75	1,190.68	1,182.58	4.06	4.29	-19.19	-135.47	-27.91	85.68	77.52	8.16	10.497		
1,300.00	1,295.77	1,290.61	1,281.09	4.44	4.71	-20.13	-151.73	-32.21	89.11	80.22	8.88	10.030		
1,400.00	1,394.80	1,390.54	1,379.60	4.83	5.14	-21.01	-167.99	-36.50	92.55	82.94	9.61	9.629		
1,500.00	1,493.82	1,490.47	1,478.10	5.23	5.57	-21.82	-184.25	-40.80	96.02	85.68	10.35	9.281		
1,600.00	1,592.85	1,590.41	1,576.61	5.63	6.00	-22.58	-200.51	-45.09	99.51	88.42	11.09	8.976		
1,700.00	1,691.87	1,690.34	1,675.11	6.03	6.44	-23.29	-216.77	-49.39	103.01	91.18	11.83	8.708		
1,800.00	1,790.90	1,790.27	1,773.62	6.43	6.87	-23.94	-233.02	-53.68	106.53	93.95	12.58	8.470		
1,900.00	1,889.92	1,890.20	1,872.12	6.83	7.30	-24.56	-249.28	-57.98	110.06	96.73	13.33	8.258		
2,000.00	1,988.94	1,990.13	1,970.63	7.24	7.74	-25.14	-265.54	-62.27	113.60	99.52	14.08	8.068		
2,100.00	2,087.97	2,090.06	2,069.14	7.65	8.17	-25.68	-281.80	-66.56	117.16	102.32	14.84	7.896		
2,200.00	2,186.99	2,189.99	2,167.64	8.05	8.61	-26.19	-298.06	-70.86	120.72	105.12	15.60	7.740		
2,300.00	2,286.02	2,289.92	2,266.15	8.46	9.04	-26.68	-314.32	-75.15	124.29	107.93	16.36	7.599		
2,400.00	2,385.04	2,389.85	2,364.65	8.87	9.48	-27.13	-330.58	-79.45	127.87	110.75	17.12	7.470		
2,500.00	2,484.07	2,489.78	2,463.16	9.28	9.92	-27.56	-346.83	-83.74	131.46	113.58	17.88	7.351		
2,600.00	2,583.09	2,589.71	2,561.67	9.69	10.35	-27.97	-363.09	-88.04	135.05	116.41	18.65	7.242		
2,700.00	2,682.11	2,689.65	2,660.17	10.10	10.79	-28.35	-379.35	-92.33	138.66	119.24	19.42	7.142		
2,800.00	2,781.14	2,789.58	2,758.68	10.52	11.23	-28.72	-395.61	-96.63	142.26	122.08	20.18	7.049		
2,900.00	2,880.16	2,889.51	2,857.18	10.93	11.67	-29.07	-411.87	-100.92	145.88	124.92	20.95	6.962		
3,000.00	2,979.19	2,989.44	2,955.69	11.34	12.10	-29.40	-428.13	-105.21	149.49	127.77	21.72	6.882		
3,100.00	3,078.21	3,089.37	3,054.19	11.75	12.54	-29.72	-444.38	-109.51	153.12	130.62	22.49	6.807		
3,200.00	3,177.24	3,189.30	3,152.70	12.17	12.98	-30.02	-460.64	-113.80	156.75	133.48	23.27	6.737		
3,300.00	3,276.26	3,289.23	3,251.21	12.58	13.42	-30.30	-476.90	-118.10	160.38	136.34	24.04	6.671		
3,400.00	3,375.28	3,389.16	3,349.71	12.99	13.85	-30.58	-493.16	-122.39	164.01	139.20	24.81	6.610		
3,500.00	3,474.31	3,489.09	3,448.22	13.41	14.29	-30.84	-509.42	-126.69	167.65	142.06	25.59	6.552		
3,600.00	3,573.33	3,589.02	3,546.72	13.82	14.73	-31.09	-525.68	-130.98	171.29	144.93	26.36	6.497		
3,700.00	3,672.36	3,688.95	3,645.23	14.23	15.17	-31.33	-541.94	-135.28	174.94	147.80	27.14	6.446		
3,800.00	3,771.38	3,788.89	3,743.74	14.65	15.61	-31.57	-558.19	-139.57	178.59	150.67	27.92	6.397		
3,900.00	3,870.40	3,888.82	3,842.24	15.06	16.04	-31.79	-574.45	-143.86	182.24	153.55	28.69	6.351		
4,000.00	3,969.43	3,988.75	3,940.75	15.48	16.48	-32.00	-590.71	-148.16	185.89	156.42	29.47	6.308		
4,100.00	4,068.45	4,088.68	4,039.25	15.89	16.92	-32.21	-606.97	-152.45	189.55	159.30	30.25	6.266		
4,200.00	4,167.48	4,188.61	4,137.76	16.30	17.36	-32.40	-623.23	-156.75	193.21	162.18	31.03	6.227		
4,300.00	4,266.50	4,288.54	4,236.26	16.72	17.80	-32.59	-639.49	-161.04	196.87	165.06	31.81	6.190		
4,400.00	4,365.53	4,388.47	4,334.77	17.13	18.24	-32.78	-655.75	-165.34	200.53	167.95	32.59	6.154		
4,500.00	4,464.55	4,488.40	4,433.28	17.55	18.68	-32.95	-672.00	-169.63	204.20	170.83	33.37	6.120		
4,600.00	4,563.57	4,588.33	4,531.78	17.96	19.11	-33.12	-688.26	-173.93	207.86	173.72	34.15	6.088		
4,700.00	4,662.60	4,688.26	4,630.29	18.38	19.55	-33.29	-704.52	-178.22	211.53	176.61	34.93	6.057		
4,800.00	4,761.62	4,788.19	4,728.79	18.79	19.99	-33.45	-720.78	-182.51	215.20	179.50	35.71	6.027		
4,900.00	4,860.65	4,888.12	4,827.30	19.21	20.43	-33.60	-737.04	-186.81	218.87	182.39	36.49	5.999		
5,000.00	4,959.67	4,988.06	4,925.81	19.62	20.87	-33.75	-753.30	-191.10	222.55	185.28	37.27	5.971		
5,100.00	5,058.70	5,087.99	5,024.31	20.04	21.31	-33.89	-769.55	-195.40	226.22	188.17	38.05	5.945		

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 SAM 3K-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3K-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3N-25H-M166 - 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
5,200.00	5,157.72	5,187.92	5,122.82	20.45	21.75	-34.03	-785.81	-199.69	229.90	191.07	38.83	5.920	
5,300.00	5,256.74	5,287.85	5,221.32	20.87	22.18	-34.17	-802.07	-203.99	233.58	193.96	39.62	5.896	
5,400.00	5,355.77	5,387.78	5,319.83	21.29	22.62	-34.30	-818.33	-208.28	237.26	196.86	40.40	5.873	
5,500.00	5,454.79	5,487.71	5,418.33	21.70	23.06	-34.42	-834.59	-212.57	240.94	199.75	41.18	5.851	
5,600.00	5,553.82	5,587.64	5,516.84	22.12	23.50	-34.55	-850.85	-216.87	244.62	202.65	41.96	5.829	
5,647.42	5,600.78	5,635.03	5,563.56	22.31	23.71	-34.60	-858.56	-218.91	246.36	204.03	42.33	5.819	
5,700.00	5,652.91	5,687.56	5,615.33	22.53	23.94	-34.63	-867.10	-221.16	248.70	205.96	42.74	5.819	
5,800.00	5,752.36	5,787.32	5,713.67	22.92	24.38	-34.36	-883.33	-225.45	255.32	211.85	43.48	5.873	
5,900.00	5,852.12	5,886.80	5,811.74	23.29	24.81	-33.72	-899.52	-229.73	264.85	220.68	44.17	5.997	
6,000.00	5,952.05	5,985.88	5,909.40	23.63	25.25	-32.77	-915.64	-233.98	277.33	232.52	44.82	6.188	
6,047.95	6,000.00	6,033.21	5,956.06	23.78	25.46	171.16	-923.34	-236.02	284.39	239.28	45.11	6.304	
6,100.00	6,052.05	6,084.52	6,006.63	23.93	25.68	171.85	-931.69	-238.22	292.46	247.03	45.42	6.439	
6,200.00	6,152.05	6,183.09	6,103.80	24.22	26.12	173.07	-947.73	-242.46	308.05	262.03	46.03	6.693	
6,300.00	6,252.05	6,281.67	6,200.97	24.52	26.55	174.17	-963.76	-246.69	323.77	277.13	46.64	6.942	
6,400.00	6,352.05	6,380.24	6,298.14	24.81	26.98	175.17	-979.80	-250.93	339.60	292.33	47.27	7.185	
6,500.00	6,452.05	6,478.82	6,395.31	25.11	27.41	176.07	-995.84	-255.17	355.52	307.62	47.90	7.422	
6,600.00	6,552.05	6,577.39	6,492.48	25.40	27.85	176.91	-1,011.88	-259.40	371.52	322.98	48.54	7.654	
6,700.00	6,652.05	6,675.96	6,589.64	25.70	28.28	177.67	-1,027.91	-263.64	387.59	338.40	49.19	7.880	
6,741.75	6,693.80	6,717.12	6,630.21	25.83	28.46	177.97	-1,034.61	-265.41	394.32	344.85	49.46	7.972	
6,750.00	6,702.05	6,725.25	6,638.23	25.85	28.50	88.51	-1,035.93	-265.76	395.64	346.13	49.51	7.991	
6,800.00	6,751.99	6,774.37	6,686.65	26.00	28.71	88.53	-1,043.92	-267.87	403.67	353.85	49.82	8.103	
6,850.00	6,801.64	6,823.05	6,734.64	26.14	28.93	89.00	-1,051.85	-269.96	411.72	361.63	50.09	8.220	
6,900.00	6,850.77	6,871.07	6,781.97	26.28	29.14	89.86	-1,059.66	-272.02	419.93	369.60	50.33	8.343	
6,950.00	6,899.13	6,918.18	6,828.40	26.41	29.34	91.05	-1,067.32	-274.05	428.54	377.98	50.56	8.476	
7,000.00	6,946.49	6,966.42	6,875.98	26.53	29.55	92.49	-1,075.17	-275.28	437.71	386.91	50.80	8.617	
7,050.00	6,992.62	7,016.53	6,925.38	26.65	29.76	93.92	-1,083.28	-273.26	447.33	396.27	51.06	8.761	
7,100.00	7,037.30	7,068.04	6,975.89	26.76	29.96	95.29	-1,091.53	-267.53	457.30	405.96	51.34	8.907	
7,150.00	7,080.30	7,121.09	7,027.35	26.85	30.15	96.61	-1,099.90	-257.81	467.53	415.90	51.63	9.055	
7,200.00	7,121.42	7,175.80	7,079.53	26.95	30.33	97.87	-1,108.35	-243.77	477.93	426.02	51.92	9.206	
7,250.00	7,160.45	7,232.28	7,132.14	27.03	30.50	99.07	-1,116.82	-225.09	488.39	436.20	52.18	9.359	
7,300.00	7,197.22	7,290.65	7,184.82	27.11	30.66	100.21	-1,125.24	-201.43	498.78	446.35	52.43	9.514	
7,350.00	7,231.52	7,351.03	7,237.12	27.18	30.81	101.29	-1,133.56	-172.48	508.98	456.34	52.64	9.669	
7,400.00	7,263.21	7,413.49	7,288.52	27.24	30.95	102.30	-1,141.66	-137.95	518.86	466.03	52.83	9.821	
7,450.00	7,292.13	7,478.12	7,338.36	27.32	31.08	103.24	-1,149.45	-97.59	528.29	475.27	53.01	9.965	
7,500.00	7,318.13	7,544.92	7,385.90	27.42	31.20	104.10	-1,156.80	-51.27	537.11	483.90	53.21	10.094	
7,550.00	7,341.09	7,613.89	7,430.29	27.65	31.30	104.87	-1,163.58	1.03	545.19	491.71	53.48	10.195	
7,600.00	7,360.89	7,684.93	7,470.63	28.06	31.40	105.56	-1,169.62	59.16	552.39	498.53	53.86	10.255	
7,650.00	7,377.45	7,757.89	7,505.94	28.61	31.49	106.14	-1,174.78	122.77	558.59	504.16	54.42	10.264	
7,700.00	7,390.68	7,832.56	7,535.28	29.26	31.62	106.62	-1,178.91	191.27	563.65	508.40	55.24	10.203	
7,750.00	7,400.50	7,908.62	7,557.77	29.99	31.86	106.97	-1,181.87	263.83	567.47	511.11	56.36	10.069	
7,800.00	7,406.89	7,985.71	7,572.70	30.79	32.44	107.21	-1,183.55	339.40	569.98	512.17	57.81	9.860	
7,850.00	7,409.80	8,063.40	7,579.56	31.64	33.45	107.31	-1,183.88	416.76	571.12	511.54	59.57	9.587	
7,866.75	7,410.00	8,089.21	7,580.00	31.93	33.84	107.32	-1,183.69	442.56	571.18	510.96	60.23	9.484	
7,900.00	7,410.00	8,122.46	7,580.00	32.54	34.40	107.32	-1,183.35	475.81	571.18	509.79	61.39	9.304	
8,000.00	7,410.00	8,222.46	7,580.00	34.50	36.22	107.32	-1,182.33	575.80	571.17	506.08	65.10	8.774	
8,100.00	7,410.00	8,322.46	7,580.00	36.63	38.25	107.32	-1,181.30	675.79	571.17	502.01	69.15	8.260	
8,200.00	7,410.00	8,422.46	7,580.00	38.91	40.44	107.32	-1,180.28	775.79	571.16	497.66	73.50	7.771	
8,300.00	7,410.00	8,522.46	7,580.00	41.31	42.76	107.32	-1,179.25	875.78	571.15	493.07	78.08	7.315	
8,400.00	7,410.00	8,622.46	7,580.00	43.82	45.19	107.32	-1,178.23	975.78	571.14	488.27	82.87	6.892	
8,500.00	7,410.00	8,722.46	7,580.00	46.41	47.71	107.32	-1,177.20	1,075.77	571.13	483.31	87.83	6.503	
8,600.00	7,410.00	8,822.46	7,580.00	49.07	50.31	107.32	-1,176.18	1,175.77	571.12	478.20	92.93	6.146	
8,700.00	7,410.00	8,922.46	7,580.00	51.80	52.98	107.32	-1,175.15	1,275.76	571.12	472.97	98.15	5.819	

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 SAM 3K-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3K-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3N-25H-M166 - 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				Total Uncertainty Axis	Separation Factor	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)			
8,800.00	7,410.00	9,022.46	7,580.00	54.57	55.70	107.32	-1,174.13	1,375.76	571.11	467.64	103.47	5.520	
8,900.00	7,410.00	9,122.46	7,580.00	57.39	58.47	107.32	-1,173.10	1,475.75	571.10	462.23	108.87	5.246	
9,000.00	7,410.00	9,222.46	7,580.00	60.25	61.29	107.32	-1,172.08	1,575.75	571.09	456.74	114.35	4.994	
9,100.00	7,410.00	9,322.46	7,580.00	63.15	64.14	107.32	-1,171.05	1,675.74	571.08	451.19	119.90	4.763	
9,200.00	7,410.00	9,422.46	7,580.00	66.07	67.02	107.32	-1,170.03	1,775.74	571.08	445.58	125.50	4.550	
9,300.00	7,410.00	9,522.46	7,580.00	69.02	69.93	107.32	-1,169.00	1,875.73	571.07	439.92	131.15	4.354	
9,400.00	7,410.00	9,622.46	7,580.00	71.99	72.87	107.32	-1,167.98	1,975.73	571.06	434.22	136.84	4.173	
9,500.00	7,410.00	9,722.46	7,580.00	74.98	75.83	107.32	-1,166.95	2,075.72	571.05	428.48	142.57	4.005	
9,600.00	7,410.00	9,822.46	7,580.00	77.98	78.80	107.32	-1,165.93	2,175.72	571.04	422.71	148.33	3.850	
9,700.00	7,410.00	9,922.46	7,580.00	81.00	81.80	107.32	-1,164.90	2,275.71	571.03	416.91	154.12	3.705	
9,800.00	7,410.00	10,022.46	7,580.00	84.04	84.81	107.32	-1,163.88	2,375.71	571.03	411.09	159.94	3.570	
9,900.00	7,410.00	10,122.46	7,580.00	87.09	87.83	107.32	-1,162.86	2,475.70	571.02	405.24	165.78	3.444	
10,000.00	7,410.00	10,222.46	7,580.00	90.14	90.87	107.32	-1,161.83	2,575.69	571.01	399.37	171.64	3.327	
10,100.00	7,410.00	10,322.46	7,580.00	93.21	93.92	107.32	-1,160.81	2,675.69	571.00	393.48	177.53	3.216	
10,200.00	7,410.00	10,422.46	7,580.00	96.29	96.97	107.32	-1,159.78	2,775.68	570.99	387.57	183.42	3.113	
10,300.00	7,410.00	10,522.46	7,580.00	99.37	100.04	107.32	-1,158.76	2,875.68	570.99	381.65	189.34	3.016	
10,400.00	7,410.00	10,622.46	7,580.00	102.47	103.11	107.32	-1,157.73	2,975.67	570.98	375.71	195.27	2.924	
10,500.00	7,410.00	10,722.46	7,580.00	105.57	106.20	107.32	-1,156.71	3,075.67	570.97	369.76	201.21	2.838	
10,600.00	7,410.00	10,822.46	7,580.00	108.67	109.29	107.32	-1,155.68	3,175.66	570.96	363.80	207.16	2.756	
10,700.00	7,410.00	10,922.46	7,580.00	111.78	112.38	107.32	-1,154.66	3,275.66	570.95	357.83	213.12	2.679	
10,800.00	7,410.00	11,022.46	7,580.00	114.90	115.49	107.32	-1,153.63	3,375.65	570.94	351.85	219.10	2.606	
10,900.00	7,410.00	11,122.46	7,580.00	118.02	118.59	107.32	-1,152.61	3,475.65	570.94	345.86	225.08	2.537	
11,000.00	7,410.00	11,222.46	7,580.00	121.15	121.71	107.32	-1,151.58	3,575.64	570.93	339.86	231.07	2.471	
11,100.00	7,410.00	11,322.46	7,580.00	124.28	124.83	107.32	-1,150.56	3,675.64	570.92	333.85	237.07	2.408	
11,200.00	7,410.00	11,422.46	7,580.00	127.41	127.95	107.32	-1,149.53	3,775.63	570.91	327.84	243.07	2.349	
11,300.00	7,410.00	11,522.46	7,580.00	130.55	131.07	107.32	-1,148.51	3,875.63	570.90	321.82	249.08	2.292	
11,400.00	7,410.00	11,622.46	7,580.00	133.69	134.20	107.32	-1,147.48	3,975.62	570.90	315.79	255.10	2.238	
11,500.00	7,410.00	11,722.46	7,580.00	136.83	137.34	107.32	-1,146.46	4,075.62	570.89	309.76	261.13	2.186	
11,600.00	7,410.00	11,822.46	7,580.00	139.98	140.47	107.32	-1,145.43	4,175.61	570.88	303.72	267.16	2.137	
11,700.00	7,410.00	11,922.46	7,580.00	143.13	143.61	107.32	-1,144.41	4,275.61	570.87	297.68	273.19	2.090	
11,800.00	7,410.00	12,022.46	7,580.00	146.28	146.76	107.33	-1,143.38	4,375.60	570.86	291.63	279.23	2.044	
11,900.00	7,410.00	12,122.46	7,580.00	149.43	149.90	107.33	-1,142.36	4,475.59	570.85	285.58	285.27	2.001	
11,932.61	7,410.00	12,155.07	7,580.00	150.03	150.93	107.33	-1,142.02	4,508.21	570.85	284.03	286.83	1.990	
11,936.55	7,410.00	12,155.71	7,580.00	150.10	150.95	107.33	-1,142.02	4,508.85	570.86	283.90	286.96	1.989 SF	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3K-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3K-25H-M166	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 S25-T1N-R66W (SAM) - SAM 30-25H-M166 - 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	-179.69	-40.08	-0.21	40.08					
100.00	100.00	100.00	100.00	0.14	0.14	-179.69	-40.08	-0.21	40.08	39.80	0.28	145.199		
200.00	200.00	200.00	200.00	0.50	0.50	-179.69	-40.08	-0.21	40.08	39.09	0.99	40.362 CC, ES		
300.00	300.00	298.62	298.60	0.85	0.84	-179.15	-41.73	-0.62	41.75	40.02	1.73	24.085		
400.00	400.00	397.00	396.85	1.21	1.18	-177.76	-46.66	-1.82	46.80	44.30	2.50	18.708		
500.00	500.00	494.93	494.41	1.57	1.53	-176.02	-54.81	-3.81	55.23	51.95	3.28	16.851		
600.00	600.00	592.16	590.94	1.93	1.90	-174.32	-66.11	-6.57	67.05	63.00	4.05	16.554		
700.00	699.98	688.76	686.39	2.27	2.29	-16.50	-80.48	-10.09	80.59	75.79	4.80	16.803		
800.00	799.84	786.70	782.71	2.61	2.70	-16.02	-97.71	-14.29	93.61	88.14	5.47	17.103		
900.00	899.45	886.19	880.50	2.95	3.12	-16.16	-115.51	-18.64	103.61	97.48	6.13	16.905		
1,000.53	999.22	986.48	979.07	3.31	3.56	-16.79	-133.45	-23.03	110.31	103.49	6.82	16.177		
1,100.00	1,097.73	1,085.81	1,076.71	3.68	4.00	-17.64	-151.22	-27.37	115.28	107.77	7.52	15.338		
1,200.00	1,196.75	1,185.67	1,174.86	4.06	4.44	-18.43	-169.08	-31.73	120.31	112.08	8.23	14.619		
1,300.00	1,295.77	1,285.53	1,273.02	4.44	4.88	-19.15	-186.95	-36.10	125.36	116.40	8.95	14.003		
1,400.00	1,394.80	1,385.40	1,371.17	4.83	5.33	-19.81	-204.81	-40.46	130.42	120.74	9.68	13.472		
1,500.00	1,493.82	1,485.26	1,469.32	5.23	5.78	-20.43	-222.67	-44.83	135.50	125.09	10.42	13.010		
1,600.00	1,592.85	1,585.12	1,567.47	5.63	6.22	-21.00	-240.54	-49.19	140.60	129.44	11.15	12.604		
1,700.00	1,691.87	1,684.98	1,665.63	6.03	6.67	-21.53	-258.40	-53.56	145.71	133.81	11.90	12.246		
1,800.00	1,790.90	1,784.84	1,763.78	6.43	7.12	-22.02	-276.27	-57.92	150.83	138.18	12.65	11.928		
1,900.00	1,889.92	1,884.70	1,861.93	6.83	7.57	-22.48	-294.13	-62.28	155.96	142.56	13.40	11.643		
2,000.00	1,988.94	1,984.56	1,960.09	7.24	8.02	-22.92	-311.99	-66.65	161.10	146.95	14.15	11.387		
2,100.00	2,087.97	2,084.42	2,058.24	7.65	8.47	-23.32	-329.86	-71.01	166.25	151.35	14.90	11.156		
2,200.00	2,186.99	2,184.28	2,156.39	8.05	8.92	-23.70	-347.72	-75.38	171.40	155.75	15.66	10.946		
2,300.00	2,286.02	2,284.14	2,254.54	8.46	9.37	-24.06	-365.58	-79.74	176.57	160.15	16.42	10.755		
2,400.00	2,385.04	2,384.00	2,352.70	8.87	9.82	-24.40	-383.45	-84.11	181.74	164.56	17.18	10.580		
2,500.00	2,484.07	2,483.86	2,450.85	9.28	10.27	-24.72	-401.31	-88.47	186.92	168.98	17.94	10.419		
2,600.00	2,583.09	2,583.72	2,549.00	9.69	10.72	-25.02	-419.18	-92.84	192.10	173.40	18.70	10.271		
2,700.00	2,682.11	2,683.58	2,647.16	10.10	11.17	-25.31	-437.04	-97.20	197.28	177.82	19.47	10.135		
2,800.00	2,781.14	2,783.44	2,745.31	10.52	11.62	-25.58	-454.90	-101.57	202.48	182.25	20.23	10.008		
2,900.00	2,880.16	2,883.31	2,843.46	10.93	12.07	-25.84	-472.77	-105.93	207.67	186.68	21.00	9.890		
3,000.00	2,979.19	2,983.17	2,941.61	11.34	12.53	-26.09	-490.63	-110.29	212.87	191.11	21.76	9.781		
3,100.00	3,078.21	3,083.03	3,039.77	11.75	12.98	-26.32	-508.50	-114.66	218.08	195.54	22.53	9.679		
3,200.00	3,177.24	3,182.89	3,137.92	12.17	13.43	-26.54	-526.36	-119.02	223.28	199.98	23.30	9.583		
3,300.00	3,276.26	3,282.75	3,236.07	12.58	13.88	-26.76	-544.22	-123.39	228.49	204.42	24.07	9.493		
3,400.00	3,375.28	3,382.61	3,334.23	12.99	14.33	-26.96	-562.09	-127.75	233.71	208.87	24.84	9.409		
3,500.00	3,474.31	3,482.47	3,432.38	13.41	14.78	-27.16	-579.95	-132.12	238.92	213.31	25.61	9.329		
3,600.00	3,573.33	3,582.33	3,530.53	13.82	15.24	-27.34	-597.81	-136.48	244.14	217.76	26.38	9.255		
3,700.00	3,672.36	3,682.19	3,628.68	14.23	15.69	-27.52	-615.68	-140.85	249.36	222.21	27.15	9.184		
3,800.00	3,771.38	3,782.05	3,726.84	14.65	16.14	-27.69	-633.54	-145.21	254.59	226.66	27.92	9.117		
3,900.00	3,870.40	3,881.91	3,824.99	15.06	16.59	-27.86	-651.41	-149.58	259.81	231.12	28.70	9.054		
4,000.00	3,969.43	3,981.77	3,923.14	15.48	17.04	-28.01	-669.27	-153.94	265.04	235.57	29.47	8.994		
4,100.00	4,068.45	4,081.63	4,021.30	15.89	17.50	-28.17	-687.13	-158.30	270.27	240.03	30.24	8.937		
4,200.00	4,167.48	4,181.49	4,119.45	16.30	17.95	-28.31	-705.00	-162.67	275.50	244.49	31.02	8.882		
4,300.00	4,266.50	4,281.35	4,217.60	16.72	18.40	-28.45	-722.86	-167.03	280.74	248.95	31.79	8.831		
4,400.00	4,365.53	4,381.21	4,315.75	17.13	18.85	-28.59	-740.73	-171.40	285.97	253.41	32.56	8.782		
4,500.00	4,464.55	4,481.08	4,413.91	17.55	19.30	-28.72	-758.59	-175.76	291.21	257.87	33.34	8.735		
4,600.00	4,563.57	4,580.94	4,512.06	17.96	19.76	-28.84	-776.45	-180.13	296.45	262.33	34.11	8.690		
4,700.00	4,662.60	4,680.80	4,610.21	18.38	20.21	-28.97	-794.32	-184.49	301.69	266.80	34.89	8.647		
4,800.00	4,761.62	4,780.66	4,708.37	18.79	20.66	-29.08	-812.18	-188.86	306.93	271.26	35.66	8.606		
4,900.00	4,860.65	4,880.52	4,806.52	19.21	21.11	-29.20	-830.04	-193.22	312.17	275.73	36.44	8.567		
5,000.00	4,959.67	4,980.38	4,904.67	19.62	21.57	-29.31	-847.91	-197.59	317.41	280.20	37.22	8.529		
5,100.00	5,058.70	5,080.24	5,002.82	20.04	22.02	-29.41	-865.77	-201.95	322.66	284.66	37.99	8.493		

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 SAM 3K-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3K-25H-M166	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 S25-T1N-R66W (SAM) - SAM 30-25H-M166 - 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	
5,200.00	5,157.72	5,180.10	5,100.98	20.45	22.47	-29.52	-883.64	-206.32	327.90	289.13	38.77	8.458		
5,300.00	5,256.74	5,279.96	5,199.13	20.87	22.92	-29.61	-901.50	-210.68	333.15	293.60	39.55	8.424		
5,400.00	5,355.77	5,379.82	5,297.28	21.29	23.38	-29.71	-919.36	-215.04	338.39	298.07	40.32	8.392		
5,500.00	5,454.79	5,479.68	5,395.44	21.70	23.83	-29.80	-937.23	-219.41	343.64	302.54	41.10	8.361		
5,600.00	5,553.82	5,579.54	5,493.59	22.12	24.28	-29.90	-955.09	-223.77	348.89	307.02	41.88	8.332		
5,647.42	5,600.78	5,626.90	5,540.14	22.31	24.49	-29.94	-963.56	-225.84	351.38	309.14	42.24	8.318		
5,700.00	5,652.91	5,679.38	5,591.72	22.53	24.73	-29.98	-972.95	-228.14	354.56	311.91	42.65	8.313		
5,800.00	5,752.36	5,779.02	5,689.65	22.92	25.18	-29.86	-990.78	-232.49	362.91	319.51	43.39	8.363		
5,900.00	5,852.12	5,878.32	5,787.26	23.29	25.63	-29.52	-1,008.54	-236.83	374.28	330.17	44.11	8.486		
6,000.00	5,952.05	5,977.17	5,884.42	23.63	26.08	-28.98	-1,026.22	-241.15	388.70	343.91	44.79	8.678		
6,047.95	6,000.00	6,024.37	5,930.81	23.78	26.30	174.72	-1,034.67	-243.22	396.71	351.60	45.10	8.796		
6,100.00	6,052.05	6,075.53	5,981.09	23.93	26.53	175.16	-1,043.82	-245.45	405.80	360.37	45.43	8.932		
6,200.00	6,152.05	6,173.82	6,077.70	24.22	26.97	175.95	-1,061.40	-249.75	423.32	377.26	46.07	9.189		
6,300.00	6,252.05	6,272.11	6,174.31	24.52	27.42	176.68	-1,078.98	-254.04	440.92	394.21	46.71	9.440		
6,400.00	6,352.05	6,370.40	6,270.92	24.81	27.86	177.35	-1,096.57	-258.34	458.58	411.22	47.36	9.683		
6,500.00	6,452.05	6,468.69	6,367.53	25.11	28.31	177.98	-1,114.15	-262.63	476.30	428.29	48.01	9.921		
6,600.00	6,552.05	6,566.98	6,464.14	25.40	28.75	178.56	-1,131.73	-266.93	494.07	445.40	48.67	10.152		
6,700.00	6,652.05	6,665.27	6,560.75	25.70	29.20	179.09	-1,149.31	-271.23	511.89	462.55	49.33	10.376		
6,741.75	6,693.80	6,706.31	6,601.08	25.83	29.39	179.31	-1,156.66	-273.02	519.34	469.73	49.61	10.469		
6,750.00	6,702.05	6,714.41	6,609.05	25.85	29.42	89.81	-1,158.10	-273.35	520.81	471.15	49.66	10.487		
6,800.00	6,751.99	6,763.59	6,657.42	26.00	29.64	89.36	-1,166.89	-273.41	529.73	479.75	49.99	10.598		
6,850.00	6,801.64	6,812.94	6,705.87	26.14	29.84	88.92	-1,175.65	-270.07	538.62	488.32	50.30	10.709		
6,900.00	6,850.77	6,862.50	6,754.18	26.28	30.04	88.48	-1,184.35	-263.32	547.42	496.83	50.59	10.820		
6,950.00	6,899.13	6,912.26	6,802.11	26.41	30.22	88.05	-1,192.95	-253.14	556.10	505.22	50.88	10.930		
7,000.00	6,946.49	6,962.24	6,849.45	26.53	30.38	87.64	-1,201.41	-239.54	564.61	513.46	51.16	11.037		
7,050.00	6,992.62	7,012.46	6,895.96	26.65	30.54	87.24	-1,209.68	-222.53	572.92	521.49	51.43	11.140		
7,100.00	7,037.30	7,062.93	6,941.41	26.76	30.68	86.85	-1,217.72	-202.14	580.98	529.28	51.70	11.237		
7,150.00	7,080.30	7,113.66	6,985.56	26.85	30.82	86.49	-1,225.50	-178.43	588.75	536.76	51.99	11.325		
7,200.00	7,121.42	7,164.64	7,028.17	26.95	30.94	86.14	-1,232.96	-151.46	596.20	543.91	52.29	11.401		
7,250.00	7,160.45	7,215.89	7,068.99	27.03	31.06	85.81	-1,240.06	-121.32	603.28	550.65	52.63	11.463		
7,300.00	7,197.22	7,267.41	7,107.79	27.11	31.16	85.51	-1,246.77	-88.11	609.96	556.95	53.01	11.506		
7,350.00	7,231.52	7,319.18	7,144.32	27.18	31.25	85.23	-1,253.03	-51.98	616.21	562.76	53.46	11.527		
7,400.00	7,263.21	7,371.21	7,178.35	27.24	31.34	84.97	-1,258.81	-13.06	621.99	568.01	53.99	11.521		
7,450.00	7,292.13	7,423.49	7,209.65	27.32	31.42	84.74	-1,264.08	28.46	627.28	572.66	54.61	11.486		
7,500.00	7,318.13	7,475.99	7,238.01	27.42	31.49	84.53	-1,268.78	72.37	632.04	576.68	55.36	11.417		
7,550.00	7,341.09	7,528.71	7,263.23	27.65	31.57	84.35	-1,272.89	118.47	636.25	580.01	56.24	11.314		
7,600.00	7,360.89	7,581.61	7,285.13	28.06	31.66	84.19	-1,276.38	166.49	639.88	582.62	57.26	11.175		
7,650.00	7,377.45	7,634.68	7,303.53	28.61	31.77	84.06	-1,279.21	216.18	642.93	584.50	58.43	11.004		
7,700.00	7,390.68	7,687.89	7,318.29	29.26	31.94	83.96	-1,281.37	267.24	645.36	585.61	59.75	10.801		
7,750.00	7,400.50	7,741.22	7,329.31	29.99	32.23	83.88	-1,282.84	319.38	647.17	585.96	61.21	10.573		
7,800.00	7,406.89	7,794.62	7,336.49	30.79	32.70	83.83	-1,283.61	372.28	648.35	585.54	62.81	10.323		
7,850.00	7,409.80	7,848.06	7,339.78	31.64	33.36	83.81	-1,283.66	425.61	648.88	584.37	64.52	10.058		
7,866.75	7,410.00	7,865.97	7,340.00	31.93	33.61	83.81	-1,283.52	443.52	648.92	583.81	65.11	9.966		
7,900.00	7,410.00	7,899.23	7,340.00	32.54	34.13	83.81	-1,283.18	476.77	648.92	582.62	66.30	9.788		
8,000.00	7,410.00	7,999.23	7,340.00	34.50	35.91	83.81	-1,282.17	576.77	648.92	578.79	70.13	9.253		
8,100.00	7,410.00	8,099.23	7,340.00	36.63	37.93	83.81	-1,281.15	676.76	648.92	574.61	74.31	8.733		
8,200.00	7,410.00	8,199.23	7,340.00	38.91	40.12	83.81	-1,280.13	776.76	648.92	570.13	78.79	8.236		
8,300.00	7,410.00	8,299.23	7,340.00	41.31	42.45	83.81	-1,279.12	876.75	648.92	565.41	83.51	7.771		
8,400.00	7,410.00	8,399.23	7,340.00	43.82	44.89	83.81	-1,278.10	976.75	648.92	560.48	88.44	7.337		
8,500.00	7,410.00	8,499.23	7,340.00	46.41	47.43	83.81	-1,277.08	1,076.74	648.92	555.37	93.55	6.937		
8,600.00	7,410.00	8,599.23	7,340.00	49.07	50.04	83.81	-1,276.07	1,176.74	648.92	550.12	98.80	6.568		
8,700.00	7,410.00	8,699.23	7,340.00	51.80	52.72	83.81	-1,275.05	1,276.73	648.92	544.74	104.18	6.229		

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 SAM 3K-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3K-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3O-25H-M166 - 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	7,410.00	8,799.23	7,340.00	54.57	55.46	83.81	-1,274.04	1,376.73	648.92	539.25	109.67	5.917		
8,900.00	7,410.00	8,899.23	7,340.00	57.39	58.24	83.81	-1,273.02	1,476.72	648.92	533.67	115.24	5.631		
9,000.00	7,410.00	8,999.23	7,340.00	60.25	61.06	83.81	-1,272.00	1,576.72	648.92	528.02	120.90	5.367		
9,100.00	7,410.00	9,099.23	7,340.00	63.15	63.92	83.81	-1,270.99	1,676.71	648.92	522.29	126.63	5.125		
9,200.00	7,410.00	9,199.23	7,340.00	66.07	66.82	83.81	-1,269.97	1,776.71	648.92	516.51	132.41	4.901		
9,300.00	7,410.00	9,299.23	7,340.00	69.02	69.74	83.81	-1,268.95	1,876.70	648.92	510.67	138.25	4.694		
9,400.00	7,410.00	9,399.23	7,340.00	71.99	72.68	83.81	-1,267.94	1,976.70	648.92	504.79	144.13	4.502		
9,500.00	7,410.00	9,499.23	7,340.00	74.98	75.64	83.81	-1,266.92	2,076.69	648.92	498.86	150.05	4.325		
9,600.00	7,410.00	9,599.23	7,340.00	77.98	78.63	83.81	-1,265.90	2,176.69	648.92	492.91	156.01	4.159		
9,700.00	7,410.00	9,699.23	7,340.00	81.00	81.63	83.81	-1,264.89	2,276.68	648.92	486.91	162.00	4.006		
9,800.00	7,410.00	9,799.23	7,340.00	84.04	84.64	83.81	-1,263.87	2,376.68	648.92	480.90	168.02	3.862		
9,900.00	7,410.00	9,899.23	7,340.00	87.09	87.67	83.81	-1,262.85	2,476.67	648.92	474.85	174.07	3.728		
10,000.00	7,410.00	9,999.23	7,340.00	90.14	90.71	83.81	-1,261.84	2,576.67	648.92	468.78	180.13	3.602		
10,100.00	7,410.00	10,099.23	7,340.00	93.21	93.77	83.81	-1,260.82	2,676.66	648.92	462.70	186.22	3.485		
10,200.00	7,410.00	10,199.23	7,340.00	96.29	96.83	83.81	-1,259.81	2,776.66	648.92	456.59	192.33	3.374		
10,300.00	7,410.00	10,299.23	7,340.00	99.37	99.90	83.81	-1,258.79	2,876.65	648.92	450.46	198.45	3.270		
10,400.00	7,410.00	10,399.23	7,340.00	102.47	102.98	83.81	-1,257.77	2,976.64	648.92	444.33	204.59	3.172		
10,500.00	7,410.00	10,499.23	7,340.00	105.57	106.06	83.81	-1,256.76	3,076.64	648.91	438.17	210.74	3.079		
10,600.00	7,410.00	10,599.23	7,340.00	108.67	109.16	83.81	-1,255.74	3,176.63	648.91	432.01	216.91	2.992		
10,700.00	7,410.00	10,699.23	7,340.00	111.78	112.26	83.81	-1,254.72	3,276.63	648.91	425.83	223.09	2.909		
10,800.00	7,410.00	10,799.23	7,340.00	114.90	115.36	83.81	-1,253.71	3,376.62	648.91	419.64	229.28	2.830		
10,900.00	7,410.00	10,899.23	7,340.00	118.02	118.47	83.81	-1,252.69	3,476.62	648.91	413.44	235.47	2.756		
11,000.00	7,410.00	10,999.23	7,340.00	121.15	121.59	83.81	-1,251.67	3,576.61	648.91	407.23	241.68	2.685		
11,100.00	7,410.00	11,099.23	7,340.00	124.28	124.71	83.81	-1,250.66	3,676.61	648.91	401.01	247.90	2.618		
11,200.00	7,410.00	11,199.23	7,340.00	127.41	127.84	83.81	-1,249.64	3,776.60	648.91	394.79	254.12	2.554		
11,300.00	7,410.00	11,299.23	7,340.00	130.55	130.96	83.81	-1,248.62	3,876.60	648.91	388.56	260.36	2.492		
11,400.00	7,410.00	11,399.23	7,340.00	133.69	134.10	83.81	-1,247.61	3,976.59	648.91	382.32	266.59	2.434		
11,500.00	7,410.00	11,499.23	7,340.00	136.83	137.23	83.81	-1,246.59	4,076.59	648.91	376.07	272.84	2.378		
11,600.00	7,410.00	11,599.23	7,340.00	139.98	140.37	83.81	-1,245.58	4,176.58	648.91	369.82	279.09	2.325		
11,700.00	7,410.00	11,699.23	7,340.00	143.13	143.51	83.81	-1,244.56	4,276.58	648.91	363.57	285.35	2.274		
11,800.00	7,410.00	11,799.23	7,340.00	146.28	146.66	83.81	-1,243.54	4,376.57	648.91	357.30	291.61	2.225		
11,900.00	7,410.00	11,899.23	7,340.00	149.43	149.81	83.81	-1,242.53	4,476.57	648.91	351.04	297.88	2.178		
11,932.17	7,410.00	11,931.41	7,340.00	150.02	150.82	83.81	-1,242.20	4,508.74	648.91	349.45	299.46	2.167		
11,936.55	7,410.00	11,932.12	7,340.00	150.10	150.84	83.81	-1,242.19	4,509.45	648.92	349.31	299.61	2.166 SF		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3K-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3K-25H-M166	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 S25-T1N-R66W (SAM) - Wenzel 1 (EXISTING) - CPR WELL - NO SURVEYS													Offset Site Error:	0.00 usft
Survey Program: 8120-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		
10,200.00	7,410.00	7,331.00	7,331.00	96.29	8.23	-90.00	76.23	4,046.96	1,451.82	1,390.82	61.00	23.802		
10,300.00	7,410.00	7,331.00	7,331.00	99.37	8.23	-90.00	76.23	4,046.96	1,364.19	1,299.44	64.75	21.069		
10,400.00	7,410.00	7,331.00	7,331.00	102.47	8.23	-90.00	76.23	4,046.96	1,278.38	1,209.34	69.04	18.516		
10,500.00	7,410.00	7,331.00	7,331.00	105.57	8.23	-90.00	76.23	4,046.96	1,194.78	1,120.83	73.94	16.159		
10,600.00	7,410.00	7,331.00	7,331.00	108.67	8.23	-90.00	76.23	4,046.96	1,113.88	1,034.35	79.52	14.007		
10,700.00	7,410.00	7,331.00	7,331.00	111.78	8.23	-90.00	76.23	4,046.96	1,036.32	950.47	85.85	12.071		
10,800.00	7,410.00	7,331.00	7,331.00	114.90	8.23	-90.00	76.23	4,046.96	962.91	869.94	92.97	10.357		
10,900.00	7,410.00	7,331.00	7,331.00	118.02	8.23	-90.00	76.23	4,046.96	894.67	793.81	100.85	8.871		
11,000.00	7,410.00	7,331.00	7,331.00	121.15	8.23	-90.00	76.23	4,046.96	832.87	723.48	109.39	7.614		
11,100.00	7,410.00	7,331.00	7,331.00	124.28	8.23	-90.00	76.23	4,046.96	779.04	660.74	118.30	6.585		
11,200.00	7,410.00	7,331.00	7,331.00	127.41	8.23	-90.00	76.23	4,046.96	734.94	607.86	127.08	5.783		
11,300.00	7,410.00	7,331.00	7,331.00	130.55	8.23	-90.00	76.23	4,046.96	702.40	567.41	135.00	5.203		
11,400.00	7,410.00	7,331.00	7,331.00	133.69	8.23	-90.00	76.23	4,046.96	683.09	541.88	141.20	4.838		
11,483.82	7,410.00	7,331.00	7,331.00	136.32	8.23	-90.00	76.23	4,046.96	677.92	533.39	144.53	4.690 CC		
11,500.00	7,410.00	7,331.00	7,331.00	136.83	8.23	-90.00	76.23	4,046.96	678.12	533.17	144.95	4.678 ES, SF		
11,600.00	7,410.00	7,331.00	7,331.00	139.98	8.23	-90.00	76.23	4,046.96	687.81	541.93	145.88	4.715		
11,700.00	7,410.00	7,331.00	7,331.00	143.13	8.23	-90.00	76.23	4,046.96	711.56	567.40	144.16	4.936		
11,800.00	7,410.00	7,331.00	7,331.00	146.28	8.23	-90.00	76.23	4,046.96	748.03	607.67	140.37	5.329		
11,900.00	7,410.00	7,331.00	7,331.00	149.43	8.23	-90.00	76.23	4,046.96	795.48	660.24	135.24	5.882		
11,936.55	7,410.00	7,331.00	7,331.00	150.10	8.23	-90.00	76.23	4,046.96	815.20	682.41	132.79	6.139		

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

Cathedral Energy Services

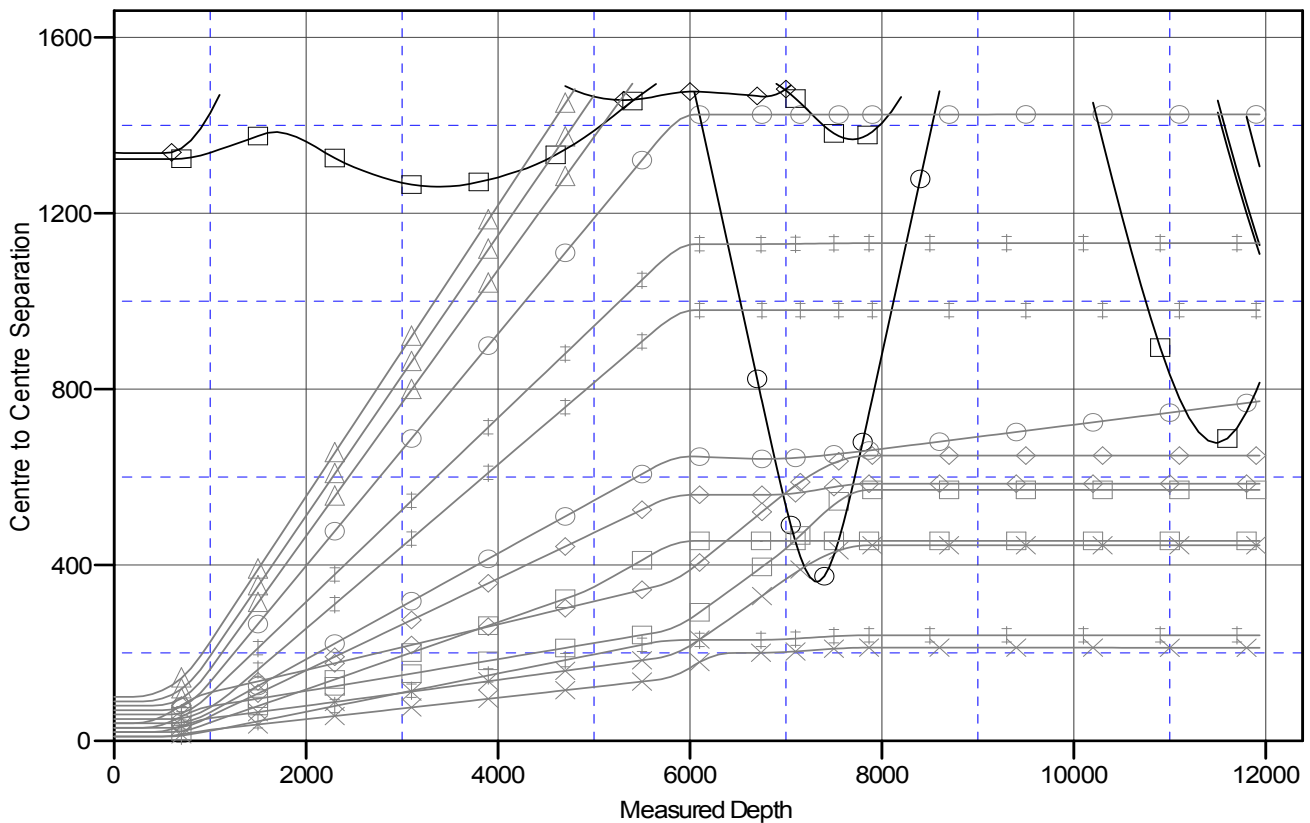
Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3K-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3K-25H-M166	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 @ 5109.00usft
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: SAM 3K-25H-M166
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.50°

Ladder Plot



LEGEND

NG), CPRWELL, SURVEYS V0	▲ SAM3B-25H-M166, OH, PLAN#1 V0	◆ SAM3J-25H-M166, OH, PLAN#1 V0
HN, GWOG WELL, GWOG WELL V0	▲ SAM3C-25H-M166, OH, PLAN#1 V0	✕ SAM3L-25H-M166, OH, PLAN#1 V0
D165 (EXISTING), CPRWELL, SURVEYS V0	○ SAM3D-25H-M166, OH, PLAN#1 V0	✕ SAM3M-25H-M166, OH, PLAN#1 V0
D165 (EXISTING), CPRWELL, SURVEYS V0	◆ SAM3E-25H-M166, OH, PLAN#1 V0	■ SAM3N-25H-M166, OH, PLAN#1 V0
D165 (EXISTING), CPRWELL, SURVEYS V0	◆ SAM3F-25H-M166, OH, PLAN#1 V0	◆ SAM3O-25H-M166, OH, PLAN#1 V0
3), CPRWELL, NO SURVEYS V0	○ SAM3G-25H-M166, OH, PLAN#1 V0	■ Wenzel 1 (EXISTING), CPRWELL, NO S
TING), CPRWELL, SURVEYS V0	◆ SAM3H-25H-M166, OH, PLAN#1 V0	
36 OH, PLAN#1 V0	■ SAM3I-25H-M166, OH, PLAN#1 V0	

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