

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Coachman Energy Federal 14/15-7-21
Company:	Coachman Energy Operating Company, LLC	TVD Reference:	KB=23' @ 6955.0usft (Frontier # 28)
Project:	Garfield County, CO	MD Reference:	KB=23' @ 6955.0usft (Frontier # 28)
Site:	S21 T6S R91W (21B Pad)	North Reference:	True
Well:	Coachman Energy Federal 14/15-7-21	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #7		

Project	Garfield County, CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		S21 T6S R91W (21B Pad)			
Site Position:		Northing:	1,072,631.30 usft	Latitude:	39.514322
From:	Lat/Long	Easting:	2,420,925.95 usft	Longitude:	-107.552555
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16"	Grid Convergence:	-1.33 °

Well	Coachman Energy Federal 14/15-7-21					
Well Position	+N/-S	0.0 usft	Northing:	1,072,660.09 usft	Latitude:	39.514404
	+E/-W	0.0 usft	Easting:	2,420,971.49 usft	Longitude:	-107.552396
Position Uncertainty		0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	6,932.0 usft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	12/4/2014	9.70	65.74	51,958

Design	Plan #7				
Audit Notes:					
Version:	Phase:	PLAN	Tie On Depth:	0.0	
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	6.46	

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
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
800.0	0.00	0.00	800.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,299.9	10.00	6.46	1,297.3	43.2	4.9	2.00	2.00	0.00	6.46	
2,729.6	10.00	6.46	2,705.3	289.8	32.8	0.00	0.00	0.00	0.00	
3,729.3	0.00	0.00	3,700.0	376.3	42.6	1.00	-1.00	0.00	180.00	
13,550.3	0.00	0.00	13,521.0	376.3	42.6	0.00	0.00	0.00	0.00	Coachman Federal 14

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Project:	Garfield County, CO	MD Reference:	KB=23' @ 6955.0usft (Frontier # 28)
Site:	S21 T6S R91W (21B Pad)	North Reference:	True
Well:	Coachman Energy Federal 14/15-7-21	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #7		

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
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	KOP @ 800'
900.0	2.00	6.46	900.0	1.7	0.2	1.7	2.00	2.00	
1,000.0	4.00	6.46	999.8	6.9	0.8	7.0	2.00	2.00	
1,100.0	6.00	6.46	1,099.5	15.6	1.8	15.7	2.00	2.00	
1,200.0	8.00	6.46	1,198.7	27.7	3.1	27.9	2.00	2.00	
1,299.9	10.00	6.46	1,297.4	43.2	4.9	43.5	2.00	2.00	EOB @ 10° INC
1,400.0	10.00	6.46	1,395.9	60.5	6.8	60.9	0.00	0.00	
1,500.0	10.00	6.46	1,494.4	77.7	8.8	78.2	0.00	0.00	
1,600.0	10.00	6.46	1,592.9	95.0	10.8	95.6	0.00	0.00	
1,700.0	10.00	6.46	1,691.4	112.2	12.7	113.0	0.00	0.00	
1,800.0	10.00	6.46	1,789.9	129.5	14.7	130.3	0.00	0.00	
1,900.0	10.00	6.46	1,888.4	146.7	16.6	147.7	0.00	0.00	
2,000.0	10.00	6.46	1,986.8	164.0	18.6	165.0	0.00	0.00	
2,100.0	10.00	6.46	2,085.3	181.2	20.5	182.4	0.00	0.00	
2,200.0	10.00	6.46	2,183.8	198.5	22.5	199.8	0.00	0.00	
2,300.0	10.00	6.46	2,282.3	215.8	24.4	217.1	0.00	0.00	
2,400.0	10.00	6.46	2,380.8	233.0	26.4	234.5	0.00	0.00	
2,500.0	10.00	6.46	2,479.2	250.3	28.3	251.8	0.00	0.00	
2,600.0	10.00	6.46	2,577.7	267.5	30.3	269.2	0.00	0.00	
2,700.0	10.00	6.46	2,676.2	284.8	32.2	286.6	0.00	0.00	
2,729.6	10.00	6.46	2,705.4	289.9	32.8	291.7	0.00	0.00	Start 1° Drop
2,800.0	9.29	6.46	2,774.8	301.6	34.1	303.5	1.00	-1.00	
2,900.0	8.29	6.46	2,873.6	316.8	35.9	318.8	1.00	-1.00	
3,000.0	7.29	6.46	2,972.7	330.2	37.4	332.4	1.00	-1.00	
3,100.0	6.29	6.46	3,072.0	342.0	38.7	344.2	1.00	-1.00	
3,200.0	5.29	6.46	3,171.4	352.0	39.9	354.3	1.00	-1.00	
3,300.0	4.29	6.46	3,271.1	360.3	40.8	362.6	1.00	-1.00	
3,400.0	3.29	6.46	3,370.9	366.9	41.5	369.2	1.00	-1.00	
3,500.0	2.29	6.46	3,470.8	371.7	42.1	374.1	1.00	-1.00	
3,600.0	1.29	6.46	3,570.7	374.9	42.4	377.2	1.00	-1.00	
3,700.0	0.29	6.46	3,670.7	376.2	42.6	378.6	1.00	-1.00	
3,729.3	0.00	6.46	3,700.0	376.3	42.6	378.7	1.00	-1.00	EOD @ 0° INC
3,800.0	0.00	0.00	3,770.7	376.3	42.6	378.7	0.00	0.00	
3,900.0	0.00	0.00	3,870.7	376.3	42.6	378.7	0.00	0.00	
4,000.0	0.00	0.00	3,970.7	376.3	42.6	378.7	0.00	0.00	
4,100.0	0.00	0.00	4,070.7	376.3	42.6	378.7	0.00	0.00	
4,200.0	0.00	0.00	4,170.7	376.3	42.6	378.7	0.00	0.00	
4,300.0	0.00	0.00	4,270.7	376.3	42.6	378.7	0.00	0.00	
4,400.0	0.00	0.00	4,370.7	376.3	42.6	378.7	0.00	0.00	
4,404.3	0.00	0.00	4,375.0	376.3	42.6	378.7	0.00	0.00	Williams Fork
4,479.3	0.00	0.00	4,450.0	376.3	42.6	378.7	0.00	0.00	Top of Gas
4,500.0	0.00	0.00	4,470.7	376.3	42.6	378.7	0.00	0.00	
4,600.0	0.00	0.00	4,570.7	376.3	42.6	378.7	0.00	0.00	
4,700.0	0.00	0.00	4,670.7	376.3	42.6	378.7	0.00	0.00	

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Wellbore:	DD		
Design:	Plan #7		

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
4,800.0	0.00	0.00	4,770.7	376.3	42.6	378.7	0.00	0.00	
4,900.0	0.00	0.00	4,870.7	376.3	42.6	378.7	0.00	0.00	
5,000.0	0.00	0.00	4,970.7	376.3	42.6	378.7	0.00	0.00	
5,100.0	0.00	0.00	5,070.7	376.3	42.6	378.7	0.00	0.00	
5,200.0	0.00	0.00	5,170.7	376.3	42.6	378.7	0.00	0.00	
5,300.0	0.00	0.00	5,270.7	376.3	42.6	378.7	0.00	0.00	
5,400.0	0.00	0.00	5,370.7	376.3	42.6	378.7	0.00	0.00	
5,500.0	0.00	0.00	5,470.7	376.3	42.6	378.7	0.00	0.00	
5,600.0	0.00	0.00	5,570.7	376.3	42.6	378.7	0.00	0.00	
5,700.0	0.00	0.00	5,670.7	376.3	42.6	378.7	0.00	0.00	
5,800.0	0.00	0.00	5,770.7	376.3	42.6	378.7	0.00	0.00	
5,900.0	0.00	0.00	5,870.7	376.3	42.6	378.7	0.00	0.00	
6,000.0	0.00	0.00	5,970.7	376.3	42.6	378.7	0.00	0.00	
6,100.0	0.00	0.00	6,070.7	376.3	42.6	378.7	0.00	0.00	
6,200.0	0.00	0.00	6,170.7	376.3	42.6	378.7	0.00	0.00	
6,300.0	0.00	0.00	6,270.7	376.3	42.6	378.7	0.00	0.00	
6,400.0	0.00	0.00	6,370.7	376.3	42.6	378.7	0.00	0.00	
6,500.0	0.00	0.00	6,470.7	376.3	42.6	378.7	0.00	0.00	
6,600.0	0.00	0.00	6,570.7	376.3	42.6	378.7	0.00	0.00	
6,700.0	0.00	0.00	6,670.7	376.3	42.6	378.7	0.00	0.00	
6,800.0	0.00	0.00	6,770.7	376.3	42.6	378.7	0.00	0.00	
6,900.0	0.00	0.00	6,870.7	376.3	42.6	378.7	0.00	0.00	
7,000.0	0.00	0.00	6,970.7	376.3	42.6	378.7	0.00	0.00	
7,100.0	0.00	0.00	7,070.7	376.3	42.6	378.7	0.00	0.00	
7,200.0	0.00	0.00	7,170.7	376.3	42.6	378.7	0.00	0.00	
7,300.0	0.00	0.00	7,270.7	376.3	42.6	378.7	0.00	0.00	
7,400.0	0.00	0.00	7,370.7	376.3	42.6	378.7	0.00	0.00	
7,500.0	0.00	0.00	7,470.7	376.3	42.6	378.7	0.00	0.00	
7,559.3	0.00	0.00	7,530.0	376.3	42.6	378.7	0.00	0.00	Cameo
7,600.0	0.00	0.00	7,570.7	376.3	42.6	378.7	0.00	0.00	
7,700.0	0.00	0.00	7,670.7	376.3	42.6	378.7	0.00	0.00	
7,770.3	0.00	0.00	7,741.0	376.3	42.6	378.7	0.00	0.00	Rollins
7,800.0	0.00	0.00	7,770.7	376.3	42.6	378.7	0.00	0.00	
7,900.0	0.00	0.00	7,870.7	376.3	42.6	378.7	0.00	0.00	
8,000.0	0.00	0.00	7,970.7	376.3	42.6	378.7	0.00	0.00	
8,100.0	0.00	0.00	8,070.7	376.3	42.6	378.7	0.00	0.00	
8,200.0	0.00	0.00	8,170.7	376.3	42.6	378.7	0.00	0.00	
8,300.0	0.00	0.00	8,270.7	376.3	42.6	378.7	0.00	0.00	
8,348.3	0.00	0.00	8,319.0	376.3	42.6	378.7	0.00	0.00	Cozzette
8,400.0	0.00	0.00	8,370.7	376.3	42.6	378.7	0.00	0.00	
8,500.0	0.00	0.00	8,470.7	376.3	42.6	378.7	0.00	0.00	
8,531.3	0.00	0.00	8,502.0	376.3	42.6	378.7	0.00	0.00	Corcoran
8,600.0	0.00	0.00	8,570.7	376.3	42.6	378.7	0.00	0.00	
8,700.0	0.00	0.00	8,670.7	376.3	42.6	378.7	0.00	0.00	
8,800.0	0.00	0.00	8,770.7	376.3	42.6	378.7	0.00	0.00	
8,900.0	0.00	0.00	8,870.7	376.3	42.6	378.7	0.00	0.00	
8,979.3	0.00	0.00	8,950.0	376.3	42.6	378.7	0.00	0.00	7" Int. Casing Point
9,000.0	0.00	0.00	8,970.7	376.3	42.6	378.7	0.00	0.00	
9,009.3	0.00	0.00	8,980.0	376.3	42.6	378.7	0.00	0.00	Mancos
9,100.0	0.00	0.00	9,070.7	376.3	42.6	378.7	0.00	0.00	
9,200.0	0.00	0.00	9,170.7	376.3	42.6	378.7	0.00	0.00	
9,300.0	0.00	0.00	9,270.7	376.3	42.6	378.7	0.00	0.00	

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Company:	Coachman Energy Operating Company, LLC	TVD Reference:	KB=23' @ 6955.0usft (Frontier # 28)
Project:	Garfield County, CO	MD Reference:	KB=23' @ 6955.0usft (Frontier # 28)
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Well:	Coachman Energy Federal 14/15-7-21	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #7		

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
9,400.0	0.00	0.00	9,370.7	376.3	42.6	378.7	0.00	0.00	
9,500.0	0.00	0.00	9,470.7	376.3	42.6	378.7	0.00	0.00	
9,600.0	0.00	0.00	9,570.7	376.3	42.6	378.7	0.00	0.00	
9,700.0	0.00	0.00	9,670.7	376.3	42.6	378.7	0.00	0.00	
9,800.0	0.00	0.00	9,770.7	376.3	42.6	378.7	0.00	0.00	
9,900.0	0.00	0.00	9,870.7	376.3	42.6	378.7	0.00	0.00	
10,000.0	0.00	0.00	9,970.7	376.3	42.6	378.7	0.00	0.00	
10,100.0	0.00	0.00	10,070.7	376.3	42.6	378.7	0.00	0.00	
10,200.0	0.00	0.00	10,170.7	376.3	42.6	378.7	0.00	0.00	
10,300.0	0.00	0.00	10,270.7	376.3	42.6	378.7	0.00	0.00	
10,400.0	0.00	0.00	10,370.7	376.3	42.6	378.7	0.00	0.00	
10,500.0	0.00	0.00	10,470.7	376.3	42.6	378.7	0.00	0.00	
10,600.0	0.00	0.00	10,570.7	376.3	42.6	378.7	0.00	0.00	
10,700.0	0.00	0.00	10,670.7	376.3	42.6	378.7	0.00	0.00	
10,800.0	0.00	0.00	10,770.7	376.3	42.6	378.7	0.00	0.00	
10,900.0	0.00	0.00	10,870.7	376.3	42.6	378.7	0.00	0.00	
11,000.0	0.00	0.00	10,970.7	376.3	42.6	378.7	0.00	0.00	
11,100.0	0.00	0.00	11,070.7	376.3	42.6	378.7	0.00	0.00	
11,200.0	0.00	0.00	11,170.7	376.3	42.6	378.7	0.00	0.00	
11,300.0	0.00	0.00	11,270.7	376.3	42.6	378.7	0.00	0.00	
11,400.0	0.00	0.00	11,370.7	376.3	42.6	378.7	0.00	0.00	
11,500.0	0.00	0.00	11,470.7	376.3	42.6	378.7	0.00	0.00	
11,600.0	0.00	0.00	11,570.7	376.3	42.6	378.7	0.00	0.00	
11,700.0	0.00	0.00	11,670.7	376.3	42.6	378.7	0.00	0.00	
11,800.0	0.00	0.00	11,770.7	376.3	42.6	378.7	0.00	0.00	
11,900.0	0.00	0.00	11,870.7	376.3	42.6	378.7	0.00	0.00	
12,000.0	0.00	0.00	11,970.7	376.3	42.6	378.7	0.00	0.00	
12,100.0	0.00	0.00	12,070.7	376.3	42.6	378.7	0.00	0.00	
12,159.3	0.00	0.00	12,130.0	376.3	42.6	378.7	0.00	0.00	Niobrara
12,200.0	0.00	0.00	12,170.7	376.3	42.6	378.7	0.00	0.00	
12,300.0	0.00	0.00	12,270.7	376.3	42.6	378.7	0.00	0.00	
12,400.0	0.00	0.00	12,370.7	376.3	42.6	378.7	0.00	0.00	
12,500.0	0.00	0.00	12,470.7	376.3	42.6	378.7	0.00	0.00	
12,600.0	0.00	0.00	12,570.7	376.3	42.6	378.7	0.00	0.00	
12,700.0	0.00	0.00	12,670.7	376.3	42.6	378.7	0.00	0.00	
12,800.0	0.00	0.00	12,770.7	376.3	42.6	378.7	0.00	0.00	
12,900.0	0.00	0.00	12,870.7	376.3	42.6	378.7	0.00	0.00	
13,000.0	0.00	0.00	12,970.7	376.3	42.6	378.7	0.00	0.00	
13,100.0	0.00	0.00	13,070.7	376.3	42.6	378.7	0.00	0.00	
13,200.0	0.00	0.00	13,170.7	376.3	42.6	378.7	0.00	0.00	
13,279.3	0.00	0.00	13,250.0	376.3	42.6	378.7	0.00	0.00	Frontier
13,300.0	0.00	0.00	13,270.7	376.3	42.6	378.7	0.00	0.00	
13,400.0	0.00	0.00	13,370.7	376.3	42.6	378.7	0.00	0.00	
13,500.0	0.00	0.00	13,470.7	376.3	42.6	378.7	0.00	0.00	
13,550.3	0.00	0.00	13,521.0	376.3	42.6	378.7	0.00	0.00	TD @ 13,550.3' MD

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Coachman Energy Federal 14/15-7-21
Company:	Coachman Energy Operating Company, LLC	TVD Reference:	KB=23' @ 6955.0usft (Frontier # 28)
Project:	Garfield County, CO	MD Reference:	KB=23' @ 6955.0usft (Frontier # 28)
Site:	S21 T6S R91W (21B Pad)	North Reference:	True
Well:	Coachman Energy Federal 14/15-7-21	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #7		

Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
Coachman Federal 14/1	0.00	0.00	13,521.0	376.3	42.6	1,073,035.31	2,421,022.79	39.515437	-107.552245
- plan hits target center									
- Rectangle (sides W115.0 H133.0 D0.0)									
Coachman Federal 14/1	0.00	0.00	13,000.0	376.3	42.6	1,073,035.31	2,421,022.79	39.515437	-107.552245
- plan hits target center									
- Rectangle (sides W115.0 H133.0 D0.0)									

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
4,404.3	4,375.0	Williams Fork		0.00		
4,479.3	4,450.0	Top of Gas		0.00		
7,559.3	7,530.0	Cameo		0.00		
7,770.3	7,741.0	Rollins		0.00		
8,348.3	8,319.0	Cozzette		0.00		
8,531.3	8,502.0	Corcoran		0.00		
8,979.3	8,950.0	7" Int. Casing Point		0.00		
9,009.3	8,980.0	Mancos		0.00		
12,159.3	12,130.0	Niobrara		0.00		
13,279.3	13,250.0	Frontier		0.00		
13,550.3	13,521.0	Dakota		0.00		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
800.0	800.0	0.0	0.0	KOP @ 800'
1,299.9	1,297.4	43.2	4.9	EOB @ 10° INC
2,729.6	2,705.4	289.9	32.8	Start 1° Drop
3,729.3	3,700.0	376.3	42.6	EOD @ 0° INC
13,550.3	13,521.0	376.3	42.6	TD @ 13,550.3' MD

Coachman Energy Operating Company, LLC

Garfield County, CO

S21 T6S R91W (21B Pad)

Coachman Energy Federal 14/15-7-21

DD

Plan #7

Anticollision Report

11 December, 2014

Cathedral Energy Services

Anticollision Report

Company:	Coachman Energy Operating Company, LLC	Local Co-ordinate Reference:	Well Coachman Energy Federal 14/15-7-21
Project:	Garfield County, CO	TVD Reference:	KB=23' @ 6955.0usft (Frontier # 28)
Reference Site:	S21 T6S R91W (21B Pad)	MD Reference:	KB=23' @ 6955.0usft (Frontier # 28)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Coachman Energy Federal 14/15-7-21	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #7	Offset TVD Reference:	Offset Datum

Reference	Plan #7		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0usft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 200.0usft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program		Date	12/11/2014		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.0	13,550.3	Plan #7 (DD)	Geolink MWD	Geolink MWD	

Summary						
		Reference	Offset	Distance		
Site Name		Measured	Measured	Between	Between	Separation
Offset Well - Wellbore - Design		Depth	Depth	Centres	Ellipses	Factor
		(usft)	(usft)	(usft)	(usft)	
Warning						
S21 T6S R91W (21B Pad)						
Coachman Energy Federal 14/15-1-21 - DD - FINAL		290.3	290.3	46.4	45.5	49.659 CC
Coachman Energy Federal 14/15-1-21 - DD - FINAL		300.0	300.0	46.4	45.5	47.942 ES
Coachman Energy Federal 14/15-1-21 - DD - FINAL		600.0	596.7	53.0	50.9	25.644 SF
Coachman Energy Federal 14/15-2-21 - DD - FINAL		543.7	543.9	37.5	35.7	20.238 CC, ES
Coachman Energy Federal 14/15-2-21 - DD - FINAL		700.0	696.3	45.1	42.5	17.797 SF
Coachman Energy Federal 14/15-3-21 - DD - FINAL		562.6	562.6	30.2	28.8	21.339 CC
Coachman Energy Federal 14/15-3-21 - DD - FINAL		600.0	599.9	30.3	28.8	19.999 ES
Coachman Energy Federal 14/15-3-21 - DD - FINAL		700.0	699.0	32.5	30.8	18.282 SF
Coachman Energy Federal 14/15-4-21 - DD - FINAL		0.0	0.0	24.1		
Coachman Energy Federal 14/15-4-21 - DD - FINAL		1,400.0	1,396.9	72.5	66.9	12.841 SF
Coachman Energy Federal 14/15-5-21 - DD - FINAL		347.4	347.5	14.3	13.2	12.669 CC, ES
Coachman Energy Federal 14/15-5-21 - DD - FINAL		500.0	499.3	19.6	17.8	10.982 SF
Coachman Energy Federal 14/15-6-21 - DD - FINAL		377.7	377.7	7.2	6.0	5.836 CC
Coachman Energy Federal 14/15-6-21 - DD - FINAL		600.0	600.0	7.4	5.3	3.521 ES, SF
Coachman Energy Federal 14/15-8-21 - DD - Plan #4		400.0	400.0	12.6	11.2	9.547 CC, ES
Coachman Energy Federal 14/15-8-21 - DD - Plan #4		500.0	499.7	13.6	11.9	8.148 SF

Cathedral Energy Services

Anticollision Report

Company:	Coachman Energy Operating Company, LLC	Local Co-ordinate Reference:	Well Coachman Energy Federal 14/15-7-21
Project:	Garfield County, CO	TVD Reference:	KB=23' @ 6955.0usft (Frontier # 28)
Reference Site:	S21 T6S R91W (21B Pad)	MD Reference:	KB=23' @ 6955.0usft (Frontier # 28)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Coachman Energy Federal 14/15-7-21	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #7	Offset TVD Reference:	Offset Datum

Offset Design S21 T6S R91W (21B Pad) - Coachman Energy Federal 14/15-1-21 - DD - FINAL													Offset Site Error:	0.0 usft
Survey Program: 176-Geolink MWD													Offset Well Error:	0.0 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		
0.0	0.0	0.0	0.0	0.0	0.0	-75.94	11.7	-46.6	48.0					
100.0	100.0	100.3	100.3	0.1	0.2	-76.33	11.3	-46.3	47.7	47.4	0.29	165.709		
200.0	200.0	200.4	200.4	0.3	0.3	-77.50	10.1	-45.7	46.8	46.2	0.62	75.389		
290.3	290.3	290.3	290.3	0.5	0.5	-78.20	9.5	-45.4	46.4	45.5	0.93	49.659 CC		
300.0	300.0	300.0	300.0	0.5	0.5	-78.11	9.6	-45.4	46.4	45.5	0.97	47.942 ES		
400.0	400.0	399.6	399.6	0.7	0.7	-75.75	11.6	-45.5	47.0	45.7	1.32	35.717		
500.0	500.0	499.1	498.9	0.8	0.8	-68.93	17.4	-45.2	48.4	46.8	1.68	28.892		
600.0	600.0	596.7	595.9	1.0	1.1	-57.66	28.3	-44.6	53.0	50.9	2.07	25.644 SF		
700.0	700.0	693.0	690.6	1.2	1.4	-44.57	45.4	-44.7	64.4	61.9	2.48	25.925		
800.0	800.0	784.0	778.9	1.4	1.8	-33.57	67.4	-44.7	83.6	80.7	2.89	28.935		
900.0	900.0	876.0	866.5	1.5	2.2	-31.62	95.3	-44.4	109.0	105.8	3.20	34.052		
1,000.0	999.8	968.0	952.2	1.7	2.8	-25.84	128.8	-43.5	138.1	134.6	3.56	38.855		
1,100.0	1,099.5	1,048.8	1,025.3	1.9	3.5	-22.04	163.1	-42.1	170.8	166.9	3.88	43.977		

Cathedral Energy Services

Anticollision Report

Company:	Coachman Energy Operating Company, LLC	Local Co-ordinate Reference:	Well Coachman Energy Federal 14/15-7-21
Project:	Garfield County, CO	TVD Reference:	KB=23' @ 6955.0usft (Frontier # 28)
Reference Site:	S21 T6S R91W (21B Pad)	MD Reference:	KB=23' @ 6955.0usft (Frontier # 28)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Coachman Energy Federal 14/15-7-21	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #7	Offset TVD Reference:	Offset Datum

Offset Design S21 T6S R91W (21B Pad) - Coachman Energy Federal 14/15-2-21 - DD - FINAL													Offset Site Error: 0.0 usft	
Survey Program: 176-ISCWSA MWD													Offset Well Error: 0.0 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		
0.0	0.0	0.0	0.0	0.0	0.0	-75.80	9.9	-38.9	40.2					
100.0	100.0	100.3	100.3	0.1	0.1	-76.38	9.4	-38.7	39.8	39.6	0.24	167.935		
200.0	200.0	200.4	200.4	0.3	0.2	-78.12	8.0	-37.9	38.7	38.2	0.54	72.088		
300.0	300.0	300.3	300.2	0.5	0.4	-79.91	6.6	-37.4	37.9	37.0	0.91	41.691		
354.8	354.8	354.8	354.8	0.6	0.5	-80.40	6.3	-37.2	37.8	36.6	1.12	33.758		
400.0	400.0	399.9	399.9	0.7	0.6	-80.31	6.4	-37.3	37.8	36.5	1.29	29.264		
500.0	500.0	500.3	500.2	0.8	0.9	-75.74	9.3	-36.5	37.7	36.0	1.68	22.405		
543.7	543.7	543.9	543.7	0.9	1.0	-71.11	12.1	-35.5	37.5	35.7	1.85	20.238	CC, ES	
600.0	600.0	599.5	599.1	1.0	1.1	-62.93	17.3	-34.0	38.1	36.1	2.08	18.310		
700.0	700.0	696.3	694.8	1.2	1.3	-45.89	31.1	-32.1	45.1	42.5	2.53	17.797	SF	
800.0	800.0	792.4	789.0	1.4	1.7	-32.13	50.0	-31.4	60.0	57.0	3.01	19.909		
900.0	900.0	885.8	879.5	1.5	2.1	-29.39	73.3	-30.4	80.5	77.1	3.45	23.365		
1,000.0	999.8	977.4	966.6	1.7	2.5	-23.88	101.4	-29.7	104.7	100.8	3.89	26.940		
1,100.0	1,099.5	1,067.7	1,051.0	1.9	3.1	-20.58	133.6	-29.5	131.4	127.0	4.34	30.295		
1,200.0	1,198.7	1,157.4	1,133.2	2.1	3.7	-18.40	169.5	-29.4	159.5	154.7	4.81	33.203		
1,300.0	1,297.5	1,247.0	1,213.6	2.4	4.4	-16.80	208.9	-28.9	188.7	183.4	5.29	35.688		

Cathedral Energy Services

Anticollision Report

Company:	Coachman Energy Operating Company, LLC	Local Co-ordinate Reference:	Well Coachman Energy Federal 14/15-7-21
Project:	Garfield County, CO	TVD Reference:	KB=23' @ 6955.0usft (Frontier # 28)
Reference Site:	S21 T6S R91W (21B Pad)	MD Reference:	KB=23' @ 6955.0usft (Frontier # 28)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Coachman Energy Federal 14/15-7-21	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #7	Offset TVD Reference:	Offset Datum

Offset Design S21 T6S R91W (21B Pad) - Coachman Energy Federal 14/15-3-21 - DD - FINAL													Offset Site Error:	0.0 usft
Survey Program: 75-Gyro, 1576-ISCWSA MWD													Offset Well Error:	0.0 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		
0.0	0.0	0.0	0.0	0.0	0.0	-75.51	8.0	-31.0	32.1					
100.0	100.0	100.1	100.1	0.1	0.1	-74.71	8.4	-30.9	32.0	31.8	0.20	158.656		
200.0	200.0	200.1	200.1	0.3	0.2	-74.06	8.7	-30.4	31.7	31.2	0.46	68.270		
300.0	300.0	300.1	300.0	0.5	0.2	-74.29	8.5	-30.4	31.6	30.8	0.73	43.517		
400.0	400.0	400.3	400.3	0.7	0.3	-74.84	8.2	-30.2	31.3	30.3	0.99	31.715		
500.0	500.0	500.3	500.3	0.8	0.4	-72.97	8.9	-29.2	30.5	29.3	1.25	24.417		
562.6	562.6	562.6	562.6	0.9	0.5	-68.52	11.1	-28.1	30.2	28.8	1.41	21.339 CC		
600.0	600.0	599.9	599.8	1.0	0.5	-64.97	12.8	-27.4	30.3	28.8	1.51	19.999 ES		
700.0	700.0	699.0	698.8	1.2	0.6	-56.19	18.1	-27.0	32.5	30.8	1.78	18.282 SF		
800.0	800.0	797.9	797.3	1.4	0.7	-46.32	25.9	-27.2	37.6	35.6	2.05	18.356		
900.0	900.0	895.0	893.4	1.5	0.8	-42.03	39.4	-26.9	46.8	44.5	2.32	20.176		
1,000.0	999.8	992.1	988.7	1.7	1.0	-33.68	58.6	-26.2	59.3	56.7	2.59	22.860		
1,100.0	1,099.5	1,088.7	1,082.6	1.9	1.2	-28.28	81.2	-25.2	72.9	70.0	2.87	25.444		
1,200.0	1,198.7	1,183.7	1,173.9	2.1	1.4	-24.91	107.3	-24.6	87.9	84.8	3.14	28.011		
1,300.0	1,297.5	1,277.6	1,262.7	2.4	1.7	-22.45	137.7	-24.0	104.7	101.3	3.42	30.657		
1,400.0	1,395.9	1,370.1	1,348.6	2.7	1.9	-20.44	171.9	-23.3	124.8	121.1	3.69	33.777		
1,500.0	1,494.4	1,460.2	1,430.6	3.0	2.3	-18.73	209.3	-22.8	149.6	145.6	3.97	37.716		
1,600.0	1,592.9	1,551.0	1,511.6	3.3	2.6	-17.10	250.4	-22.0	178.4	173.7	4.69	38.043		

Cathedral Energy Services

Anticollision Report

Company:	Coachman Energy Operating Company, LLC	Local Co-ordinate Reference:	Well Coachman Energy Federal 14/15-7-21
Project:	Garfield County, CO	TVD Reference:	KB=23' @ 6955.0usft (Frontier # 28)
Reference Site:	S21 T6S R91W (21B Pad)	MD Reference:	KB=23' @ 6955.0usft (Frontier # 28)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Coachman Energy Federal 14/15-7-21	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #7	Offset TVD Reference:	Offset Datum

Offset Design S21 T6S R91W (21B Pad) - Coachman Energy Federal 14/15-4-21 - DD - FINAL													Offset Site Error:	0.0 usft
Survey Program: 149-ISCWSA MWD													Offset Well Error:	0.0 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		
0.0	0.0	0.0	0.0	0.0	0.0	-76.00	5.8	-23.4	24.1					
100.0	100.0	99.7	99.7	0.1	0.1	-76.06	6.0	-24.0	24.8	24.5	0.24	101.704		
200.0	200.0	199.4	199.3	0.3	0.3	-77.84	5.6	-26.1	26.7	26.1	0.58	46.219		
300.0	300.0	299.8	299.8	0.5	0.5	-84.78	2.5	-27.5	27.7	26.7	0.96	28.863		
400.0	400.0	399.1	398.9	0.7	0.7	-91.83	-1.0	-30.5	30.5	29.1	1.36	22.482		
500.0	500.0	499.0	498.6	0.8	0.9	-97.56	-4.5	-34.0	34.4	32.6	1.75	19.607		
600.0	600.0	599.2	598.8	1.0	1.1	-102.28	-8.1	-37.2	38.1	35.9	2.13	17.840		
700.0	700.0	698.3	697.8	1.2	1.4	-104.71	-10.7	-40.6	42.0	39.5	2.51	16.723		
800.0	800.0	797.1	796.3	1.4	1.6	-101.94	-10.0	-47.3	48.5	45.6	2.90	16.718		
900.0	900.0	898.0	896.6	1.5	1.8	-100.96	-2.8	-55.3	55.8	52.5	3.30	16.913		
1,000.0	999.8	1,000.1	997.5	1.7	2.1	-91.75	11.8	-60.0	61.1	57.4	3.69	16.556		
1,100.0	1,099.5	1,101.6	1,097.3	1.9	2.3	-82.93	30.4	-60.7	64.2	60.1	4.11	15.610		
1,200.0	1,198.7	1,202.8	1,196.0	2.1	2.6	-73.87	52.5	-57.0	65.1	60.5	4.59	14.172		
1,300.0	1,297.5	1,301.2	1,290.6	2.4	2.9	-63.54	78.5	-50.8	66.2	61.1	5.13	12.900		
1,400.0	1,395.9	1,396.9	1,381.0	2.7	3.4	-51.49	109.6	-44.4	72.5	66.9	5.65	12.841 SF		
1,500.0	1,494.4	1,492.5	1,469.5	3.0	3.9	-40.22	144.9	-38.7	85.9	79.8	6.11	14.076		
1,600.0	1,592.9	1,588.0	1,557.5	3.3	4.5	-32.16	182.0	-34.0	104.1	97.5	6.53	15.933		
1,700.0	1,691.4	1,682.7	1,643.9	3.6	5.1	-26.71	220.3	-30.4	125.6	118.6	6.97	18.031		
1,800.0	1,789.9	1,779.0	1,731.4	3.9	5.8	-22.60	260.5	-26.5	149.2	141.8	7.41	20.141		
1,900.0	1,888.4	1,873.7	1,817.1	4.3	6.5	-19.39	300.6	-22.2	174.0	166.1	7.85	22.159		
2,000.0	1,986.8	1,974.0	1,908.0	4.6	7.2	-16.92	342.9	-17.7	198.8	190.5	8.31	23.929		

Cathedral Energy Services

Anticollision Report

Company:	Coachman Energy Operating Company, LLC	Local Co-ordinate Reference:	Well Coachman Energy Federal 14/15-7-21
Project:	Garfield County, CO	TVD Reference:	KB=23' @ 6955.0usft (Frontier # 28)
Reference Site:	S21 T6S R91W (21B Pad)	MD Reference:	KB=23' @ 6955.0usft (Frontier # 28)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Coachman Energy Federal 14/15-7-21	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #7	Offset TVD Reference:	Offset Datum

Offset Design S21 T6S R91W (21B Pad) - Coachman Energy Federal 14/15-5-21 - DD - FINAL													Offset Site Error:	0.0 usft
Survey Program: 149-ISCWSA MWD													Offset Well Error:	0.0 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		
0.0	0.0	0.0	0.0	0.0	0.0	-75.51	4.0	-15.5	16.0					
100.0	100.0	100.0	100.0	0.1	0.1	-76.55	3.7	-15.6	16.0	15.8	0.23	69.687		
200.0	200.0	200.1	200.1	0.3	0.2	-78.56	3.1	-15.4	15.8	15.2	0.55	28.394		
300.0	300.0	300.2	300.1	0.5	0.5	-68.93	5.2	-13.6	14.6	13.7	0.94	15.584		
347.4	347.4	347.5	347.4	0.6	0.6	-57.97	7.6	-12.1	14.3	13.2	1.13	12.669 CC, ES		
400.0	400.0	400.0	399.7	0.7	0.7	-42.40	11.0	-10.0	14.9	13.5	1.35	11.054		
500.0	500.0	499.3	498.6	0.8	0.9	-13.77	19.0	-4.7	19.6	17.8	1.79	10.982 SF		
600.0	600.0	598.0	596.5	1.0	1.2	2.34	29.2	1.2	29.4	27.2	2.22	13.250		
700.0	700.0	696.5	694.2	1.2	1.5	8.15	41.4	5.9	42.2	39.6	2.64	16.019		
800.0	800.0	794.7	791.2	1.4	1.8	10.27	55.2	10.0	56.8	53.7	3.05	18.596		
900.0	900.0	892.0	887.3	1.5	2.2	3.61	71.0	12.5	71.5	68.1	3.43	20.868		
1,000.0	999.8	988.2	981.6	1.7	2.5	2.31	89.9	13.6	85.9	82.1	3.83	22.443		
1,100.0	1,099.5	1,084.7	1,075.5	1.9	3.0	0.48	112.0	13.5	100.0	95.8	4.24	23.576		
1,200.0	1,198.7	1,182.1	1,169.8	2.1	3.4	-0.77	136.4	13.9	113.0	108.3	4.68	24.150		
1,300.0	1,297.5	1,280.4	1,264.7	2.4	3.9	-1.63	161.9	14.8	123.4	118.3	5.11	24.145		
1,400.0	1,395.9	1,378.5	1,359.1	2.7	4.4	-2.79	188.7	14.8	133.6	128.1	5.55	24.059		
1,500.0	1,494.4	1,477.9	1,454.6	3.0	4.8	-3.95	216.2	14.5	144.1	138.1	5.99	24.058		
1,600.0	1,592.9	1,574.8	1,547.5	3.3	5.3	-4.93	243.8	14.3	155.6	149.1	6.44	24.171		
1,700.0	1,691.4	1,677.7	1,646.3	3.6	5.8	-5.44	272.6	15.1	166.6	159.7	6.89	24.178		
1,800.0	1,789.9	1,778.0	1,742.9	3.9	6.3	-5.87	299.4	15.8	176.3	169.0	7.33	24.054		
1,900.0	1,888.4	1,877.2	1,838.5	4.3	6.8	-6.28	326.0	16.5	186.0	178.3	7.78	23.914		
2,000.0	1,986.8	1,976.8	1,934.5	4.6	7.3	-6.67	352.6	17.2	195.7	187.4	8.23	23.765		

Cathedral Energy Services

Anticollision Report

Company:	Coachman Energy Operating Company, LLC	Local Co-ordinate Reference:	Well Coachman Energy Federal 14/15-7-21
Project:	Garfield County, CO	TVD Reference:	KB=23' @ 6955.0usft (Frontier # 28)
Reference Site:	S21 T6S R91W (21B Pad)	MD Reference:	KB=23' @ 6955.0usft (Frontier # 28)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Coachman Energy Federal 14/15-7-21	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #7	Offset TVD Reference:	Offset Datum

Offset Design S21 T6S R91W (21B Pad) - Coachman Energy Federal 14/15-6-21 - DD - FINAL													Offset Site Error: 0.0 usft	
Survey Program: 149-ISCWSA MWD													Offset Well Error: 0.0 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		
0.0	0.0	0.0	0.0	0.0	0.0	-74.48	2.2	-7.9	8.2					
100.0	100.0	100.0	100.0	0.1	0.1	-77.39	1.7	-7.8	8.0	7.7	0.23	34.468		
200.0	200.0	200.1	200.0	0.3	0.3	-86.06	0.5	-7.4	7.4	6.9	0.56	13.235		
276.8	276.8	276.9	276.8	0.4	0.4	-92.14	-0.3	-7.2	7.2	6.4	0.85	8.514		
300.0	300.0	300.0	300.0	0.5	0.5	-93.16	-0.4	-7.2	7.3	6.3	0.94	7.734		
377.7	377.7	377.7	377.7	0.6	0.6	-93.81	-0.5	-7.2	7.2	6.0	1.23	5.836 CC		
400.0	400.0	400.0	400.0	0.7	0.7	-93.25	-0.4	-7.2	7.2	5.9	1.32	5.463		
500.0	500.0	500.0	500.0	0.8	0.9	-87.97	0.3	-7.4	7.4	5.6	1.71	4.304		
564.4	564.4	564.4	564.4	0.9	1.0	-81.86	1.0	-7.3	7.4	5.4	1.96	3.753		
600.0	600.0	600.0	600.0	1.0	1.1	-74.56	2.0	-7.1	7.4	5.3	2.10	3.521 ES, SF		
700.0	700.0	699.7	699.6	1.2	1.3	-45.18	6.7	-6.7	9.5	7.0	2.50	3.797		
800.0	800.0	799.1	798.6	1.4	1.6	-21.58	14.9	-5.9	16.1	13.2	2.91	5.538		
900.0	900.0	897.2	895.8	1.5	1.8	-15.41	27.8	-4.0	26.8	23.4	3.32	8.065		
1,000.0	999.8	995.4	992.4	1.7	2.1	-11.36	45.1	-2.6	39.0	35.3	3.73	10.463		
1,100.0	1,099.5	1,094.0	1,089.1	1.9	2.4	-10.38	64.8	-1.8	50.4	46.2	4.15	12.152		
1,200.0	1,198.7	1,193.1	1,186.0	2.1	2.8	-10.80	85.7	-1.5	59.5	55.0	4.57	13.037		
1,300.0	1,297.5	1,293.2	1,283.7	2.4	3.2	-11.60	107.0	-1.1	65.5	60.6	4.99	13.144		
1,400.0	1,395.9	1,393.9	1,382.3	2.7	3.6	-12.10	127.8	-0.1	69.1	63.7	5.39	12.805		
1,500.0	1,494.4	1,494.6	1,481.0	3.0	3.9	-11.43	147.4	2.5	71.2	65.4	5.81	12.253		
1,600.0	1,592.9	1,593.6	1,578.0	3.3	4.3	-10.52	167.0	5.4	73.7	67.5	6.23	11.833		
1,700.0	1,691.4	1,693.2	1,675.4	3.6	4.7	-9.68	187.9	8.2	77.4	70.8	6.66	11.626		
1,800.0	1,789.9	1,794.3	1,774.4	3.9	5.1	-9.52	208.2	10.2	80.3	73.3	7.08	11.345		
1,900.0	1,888.4	1,894.7	1,872.9	4.3	5.5	-9.73	227.1	11.8	82.0	74.5	7.50	10.928		
2,000.0	1,986.8	1,995.0	1,971.4	4.6	5.9	-9.87	246.3	13.4	83.9	76.0	7.93	10.583		
2,100.0	2,085.3	2,095.9	2,070.7	4.9	6.2	-10.30	264.2	14.7	84.4	76.1	8.36	10.101		
2,200.0	2,183.8	2,195.8	2,169.0	5.3	6.6	-11.13	281.6	15.4	84.7	75.9	8.80	9.628		
2,300.0	2,282.3	2,294.5	2,266.1	5.6	7.0	-11.55	299.7	16.6	85.9	76.6	9.24	9.295		
2,400.0	2,380.8	2,394.3	2,364.0	5.9	7.4	-11.54	318.9	18.4	87.9	78.2	9.67	9.081		
2,500.0	2,479.2	2,494.2	2,462.0	6.3	7.8	-11.85	338.3	19.7	90.1	80.0	10.12	8.906		
2,600.0	2,577.7	2,594.7	2,560.6	6.6	8.1	-12.55	357.5	20.3	92.1	81.5	10.58	8.707		
2,700.0	2,676.2	2,695.0	2,659.1	7.0	8.5	-12.61	376.2	22.0	93.6	82.5	11.01	8.494		
2,800.0	2,774.8	2,795.6	2,758.1	7.3	8.9	-12.74	394.6	23.6	95.1	83.6	11.45	8.302		
2,900.0	2,873.6	2,895.5	2,856.3	7.6	9.3	-13.03	412.4	24.5	97.9	86.0	11.89	8.227		
3,000.0	2,972.7	2,995.8	2,955.0	7.9	9.6	-12.91	430.2	25.8	102.1	89.8	12.31	8.293		
3,100.0	3,072.0	3,095.8	3,053.5	8.1	10.0	-11.90	447.7	28.4	107.8	95.1	12.70	8.488		
3,200.0	3,171.4	3,195.1	3,151.1	8.4	10.4	-10.76	465.2	31.1	115.3	102.2	13.10	8.801		
3,300.0	3,271.1	3,293.8	3,248.2	8.6	10.8	-9.53	483.1	34.0	125.1	111.6	13.49	9.272		
3,400.0	3,370.9	3,395.7	3,348.4	8.8	11.1	-8.59	501.4	36.4	136.5	122.6	13.90	9.819		
3,500.0	3,470.8	3,498.1	3,449.6	8.9	11.5	-8.34	517.2	37.2	147.1	132.8	14.31	10.279		
3,600.0	3,570.7	3,605.7	3,556.4	9.1	11.8	-7.80	530.1	38.8	156.0	141.3	14.70	10.608		
3,700.0	3,670.7	3,711.4	3,661.8	9.2	12.0	-7.20	537.5	40.5	161.5	146.5	15.07	10.715		
3,800.0	3,770.7	3,816.5	3,766.8	9.3	12.2	-0.48	541.7	41.2	165.5	150.0	15.44	10.715		
3,900.0	3,870.7	3,918.0	3,868.3	9.5	12.4	-0.73	543.5	40.5	167.2	151.4	15.82	10.570		
4,000.0	3,970.7	4,019.5	3,969.8	9.6	12.5	-0.94	544.5	39.8	168.2	152.0	16.19	10.391		
4,100.0	4,070.7	4,120.1	4,070.3	9.7	12.7	-0.89	544.8	40.0	168.6	152.0	16.55	10.188		
4,200.0	4,170.7	4,221.1	4,171.3	9.8	12.8	-0.91	544.7	39.9	168.4	151.5	16.91	9.961		
4,275.6	4,246.3	4,296.1	4,246.3	9.9	12.9	-1.02	544.6	39.6	168.3	151.1	17.18	9.793		
4,300.0	4,270.7	4,320.3	4,270.6	10.0	12.9	-1.06	544.6	39.5	168.3	151.0	17.27	9.743		
4,400.0	4,370.7	4,419.9	4,370.1	10.1	13.1	-1.14	544.7	39.2	168.4	150.8	17.64	9.549		
4,500.0	4,470.7	4,518.2	4,468.4	10.2	13.2	-1.09	545.5	39.4	169.3	151.3	18.00	9.405		
4,600.0	4,570.7	4,617.0	4,567.3	10.4	13.4	-1.02	547.3	39.6	171.0	152.6	18.37	9.310		
4,700.0	4,670.7	4,718.0	4,668.2	10.5	13.6	-1.00	549.3	39.6	173.1	154.3	18.74	9.235		

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

Cathedral Energy Services

Anticollision Report

Company:	Coachman Energy Operating Company, LLC	Local Co-ordinate Reference:	Well Coachman Energy Federal 14/15-7-21
Project:	Garfield County, CO	TVD Reference:	KB=23' @ 6955.0usft (Frontier # 28)
Reference Site:	S21 T6S R91W (21B Pad)	MD Reference:	KB=23' @ 6955.0usft (Frontier # 28)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Coachman Energy Federal 14/15-7-21	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #7	Offset TVD Reference:	Offset Datum

Offset Design S21 T6S R91W (21B Pad) - Coachman Energy Federal 14/15-6-21 - DD - FINAL													Offset Site Error:	0.0 usft
Survey Program: 149-ISCWSA MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		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)						
4,800.0	4,770.7	4,821.5	4,771.7	10.6	13.7	-1.12	549.6	39.2	173.3	154.2	19.12	9.066		
4,900.0	4,870.7	4,922.8	4,873.0	10.8	13.9	-1.29	548.5	38.7	172.3	152.8	19.49	8.841		
5,000.0	4,970.7	5,021.6	4,971.8	10.9	14.0	-1.59	547.4	37.9	171.2	151.4	19.86	8.623		
5,100.0	5,070.7	5,121.0	5,071.2	11.1	14.2	-2.01	547.0	36.6	170.8	150.5	20.23	8.441		
5,160.1	5,130.8	5,180.6	5,130.8	11.1	14.3	-2.23	546.9	36.0	170.7	150.2	20.46	8.343		
5,200.0	5,170.7	5,220.1	5,170.3	11.2	14.3	-2.35	546.9	35.6	170.7	150.1	20.61	8.285		
5,300.0	5,270.7	5,320.4	5,270.5	11.3	14.5	-2.61	547.0	34.8	170.9	149.9	20.98	8.146		
5,400.0	5,370.7	5,421.2	5,371.4	11.5	14.6	-2.73	546.8	34.5	170.7	149.4	21.35	7.996		
5,500.0	5,470.7	5,521.7	5,471.9	11.6	14.8	-2.65	546.2	34.7	170.1	148.4	21.72	7.834		
5,600.0	5,570.7	5,621.9	5,572.1	11.8	14.9	-2.30	545.5	35.8	169.4	147.3	22.08	7.671		
5,700.0	5,670.7	5,723.2	5,673.4	11.9	15.1	-1.94	544.4	36.9	168.2	145.8	22.44	7.496		
5,800.0	5,770.7	5,822.5	5,772.6	12.1	15.2	-1.70	542.9	37.6	166.7	143.9	22.81	7.311		
5,900.0	5,870.7	5,921.4	5,871.6	12.2	15.4	-1.55	542.3	38.1	166.1	142.9	23.17	7.166		
6,000.0	5,970.7	6,021.6	5,971.7	12.4	15.6	-1.11	541.7	39.4	165.4	141.9	23.54	7.029		
6,100.0	6,070.7	6,121.7	6,071.8	12.5	15.7	-0.53	541.1	41.1	164.8	140.9	23.90	6.895		
6,200.0	6,170.7	6,221.1	6,171.2	12.6	15.9	-0.24	540.6	41.9	164.3	140.0	24.27	6.769		
6,249.4	6,220.1	6,270.0	6,220.1	12.7	16.0	-0.18	540.5	42.1	164.2	139.7	24.45	6.715		
6,300.0	6,270.7	6,320.1	6,270.2	12.8	16.0	-0.17	540.6	42.1	164.3	139.6	24.64	6.666		
6,400.0	6,370.7	6,419.6	6,369.7	12.9	16.2	-0.13	541.1	42.2	164.8	139.8	25.02	6.587		
6,500.0	6,470.7	6,520.0	6,470.1	13.1	16.4	-0.37	541.6	41.5	165.3	139.9	25.40	6.508		
6,600.0	6,570.7	6,619.5	6,569.6	13.2	16.6	-0.92	542.0	39.9	165.7	139.9	25.78	6.428		
6,700.0	6,670.7	6,718.1	6,668.1	13.4	16.7	-1.96	543.0	36.9	166.8	140.6	26.17	6.373		
6,800.0	6,770.7	6,817.1	6,767.1	13.6	16.9	-3.16	544.7	33.3	168.7	142.1	26.56	6.349		
6,900.0	6,870.7	6,915.3	6,865.2	13.7	17.1	-3.96	547.1	30.8	171.3	144.3	26.95	6.355		
7,000.0	6,970.7	7,013.1	6,962.9	13.9	17.3	-4.63	550.7	28.5	175.1	147.8	27.34	6.404		
7,100.0	7,070.7	7,112.1	7,061.8	14.0	17.5	-5.02	555.3	26.9	179.9	152.2	27.73	6.488		
7,200.0	7,170.7	7,211.6	7,161.1	14.2	17.8	-4.97	560.3	26.6	185.0	156.9	28.10	6.582		
7,300.0	7,270.7	7,311.3	7,260.7	14.3	18.0	-4.90	565.5	26.4	190.2	161.7	28.48	6.678		
7,400.0	7,370.7	7,411.6	7,360.9	14.5	18.2	-4.98	570.7	25.7	195.4	166.5	28.86	6.768		

Cathedral Energy Services

Anticollision Report

Company:	Coachman Energy Operating Company, LLC	Local Co-ordinate Reference:	Well Coachman Energy Federal 14/15-7-21
Project:	Garfield County, CO	TVD Reference:	KB=23' @ 6955.0usft (Frontier # 28)
Reference Site:	S21 T6S R91W (21B Pad)	MD Reference:	KB=23' @ 6955.0usft (Frontier # 28)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Coachman Energy Federal 14/15-7-21	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #7	Offset TVD Reference:	Offset Datum

Offset Design S21 T6S R91W (21B Pad) - Coachman Energy Federal 14/15-8-21 - DD - Plan #4													Offset Site Error:	0.0 usft
Survey Program: 0-Geolink MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Uncertainty Axis			
0.0	0.0	0.0	0.0	0.0	0.0	105.06	-3.3	12.1	12.6					
100.0	100.0	100.0	100.0	0.1	0.1	105.06	-3.3	12.1	12.6	12.3	0.27	46.745		
200.0	200.0	200.0	200.0	0.3	0.3	105.06	-3.3	12.1	12.6	11.9	0.62	20.335		
300.0	300.0	300.0	300.0	0.5	0.5	105.06	-3.3	12.1	12.6	11.6	0.97	12.994		
400.0	400.0	400.0	400.0	0.7	0.7	105.06	-3.3	12.1	12.6	11.2	1.32	9.547 CC, ES		
500.0	500.0	499.7	499.7	0.8	0.8	111.26	-4.9	12.6	13.6	11.9	1.67	8.148 SF		
600.0	600.0	599.2	599.0	1.0	1.0	124.83	-9.9	14.2	17.3	15.3	2.02	8.570		
700.0	700.0	698.2	697.7	1.2	1.2	137.17	-18.1	16.7	24.7	22.4	2.38	10.417		
800.0	800.0	796.9	795.6	1.4	1.5	145.35	-29.3	20.3	35.9	33.2	2.73	13.159		
900.0	900.0	895.9	893.8	1.5	1.7	144.44	-41.3	24.0	49.6	46.5	3.06	16.190		
1,000.0	999.8	994.3	991.5	1.7	2.0	149.11	-53.2	27.7	66.4	63.0	3.40	19.544		
1,100.0	1,099.5	1,092.1	1,088.5	1.9	2.2	152.89	-65.1	31.4	86.7	82.9	3.74	23.188		
1,200.0	1,198.7	1,189.1	1,184.7	2.1	2.5	155.93	-76.9	35.1	110.2	106.1	4.07	27.059		
1,300.0	1,297.5	1,285.3	1,280.1	2.4	2.8	158.38	-88.5	38.7	137.1	132.7	4.41	31.113		
1,400.0	1,395.9	1,383.5	1,377.5	2.7	3.0	160.43	-100.1	42.3	165.5	160.7	4.76	34.760		
1,500.0	1,494.4	1,486.4	1,480.0	3.0	3.2	162.04	-109.3	45.2	191.1	186.0	5.12	37.306		

Cathedral Energy Services

Anticollision Report

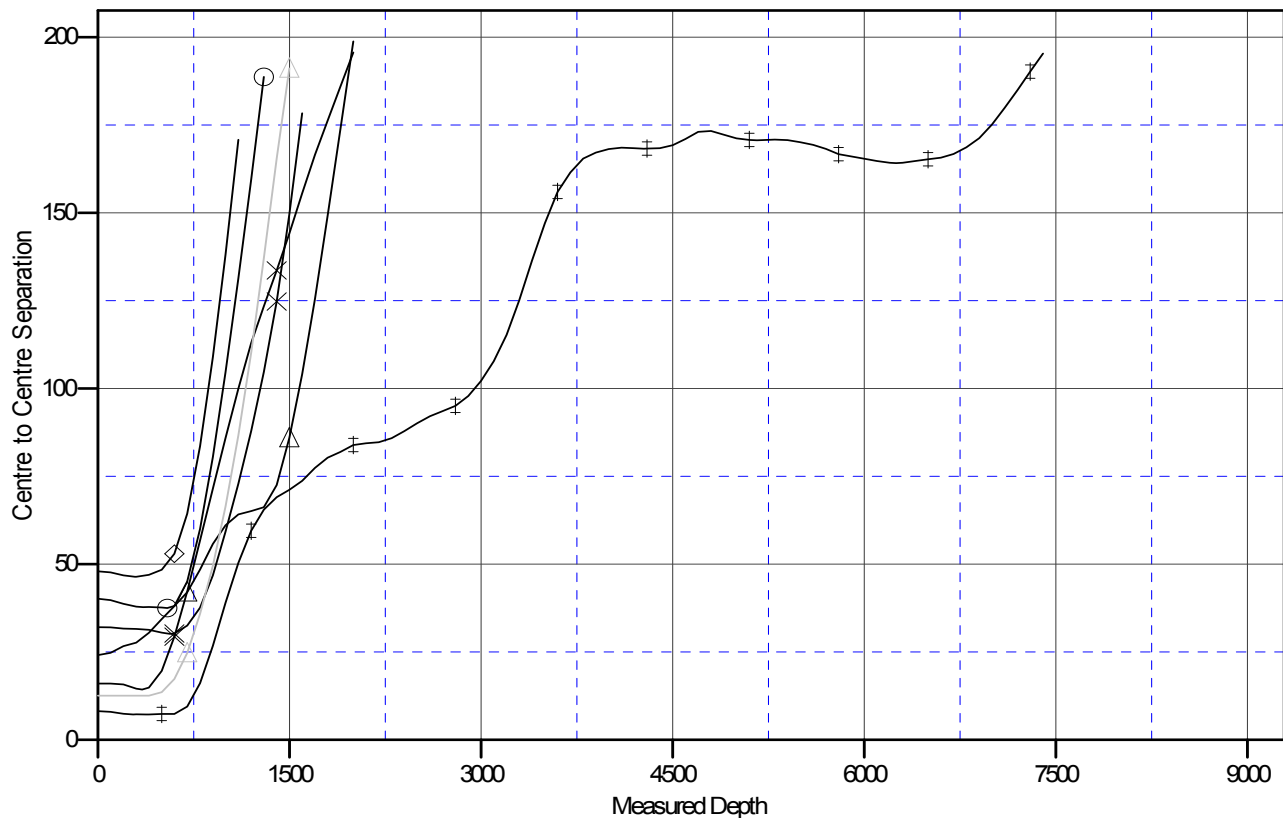
Company: Coachman Energy Operating Company, LLC
Project: Garfield County, CO
Reference Site: S21 T6S R91W (21B Pad)
Site Error: 0.0usft
Reference Well: Coachman Energy Federal 14/15-7-21
Well Error: 0.0usft
Reference Wellbore: DD
Reference Design: Plan #7

Local Co-ordinate Reference: Well Coachman Energy Federal 14/15-7-21
TVD Reference: KB=23' @ 6955.0usft (Frontier # 28)
MD Reference: KB=23' @ 6955.0usft (Frontier # 28)
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: USA EDM 5000 Multi Users DB
Offset TVD Reference: Offset Datum

Reference Depths are relative to KB=23' @ 6955.0usft (Frontier # 28)
 Offset Depths are relative to Offset Datum
 Central Meridian is -105.500000 °

Coordinates are relative to: Coachman Energy Federal 14/15-7-21
 Coordinate System is US State Plane 1983, Colorado Northern Zone
 Grid Convergence at Surface is: -1.33°

Ladder Plot



LEGEND

Coachman Energy Federal 14/15-1-21, DD, FINAL V0 Coachman Energy Federal 14/15-4-21, DD, FINAL V0 Coachman Energy Federal 14/15-8-21, DD, P
 Coachman Energy Federal 14/15-2-21, DD, FINAL V0 Coachman Energy Federal 14/15-5-21, DD, FINAL V0
 Coachman Energy Federal 14/15-3-21, DD, FINAL V0 Coachman Energy Federal 14/15-6-21, DD, FINAL V0