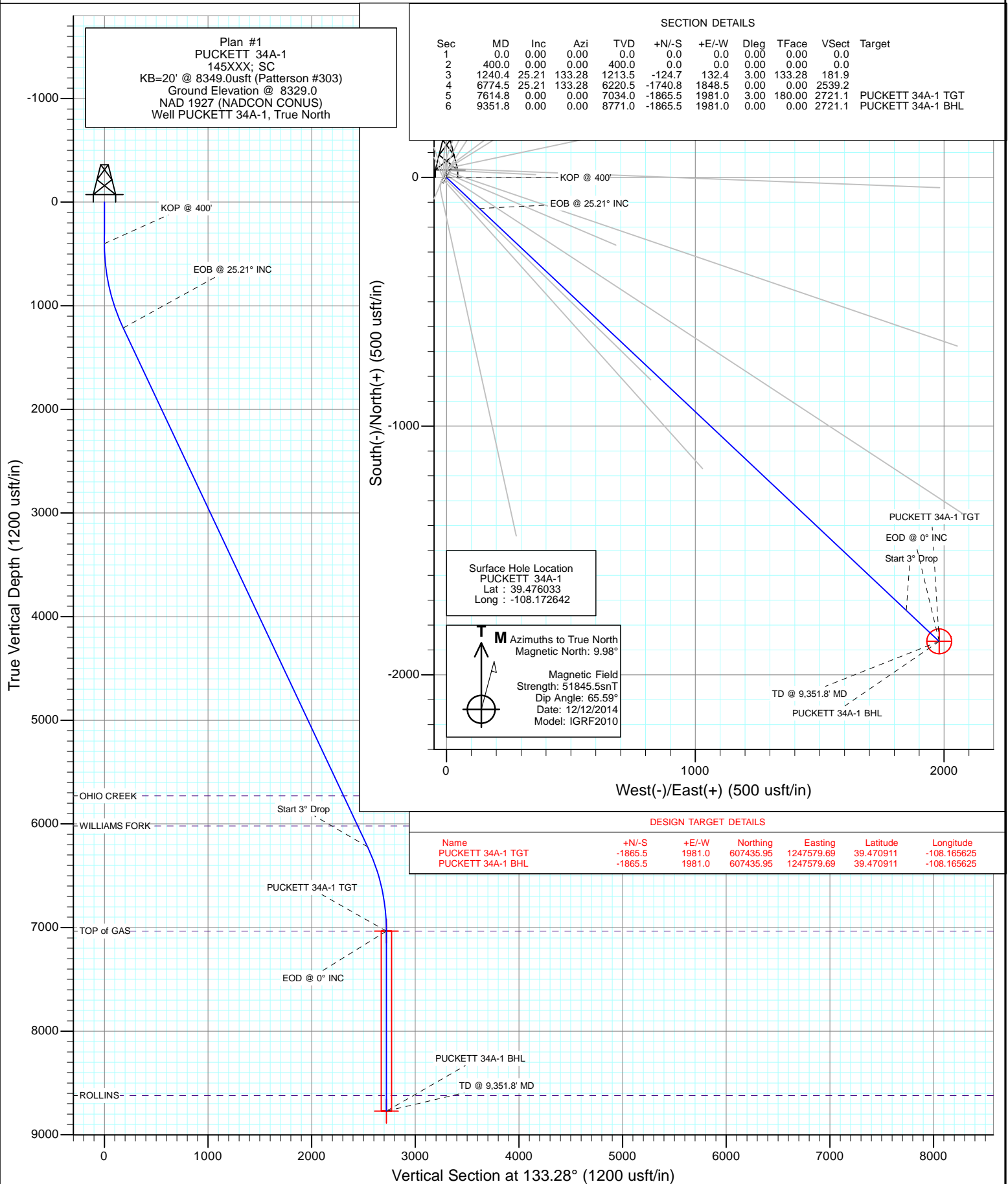
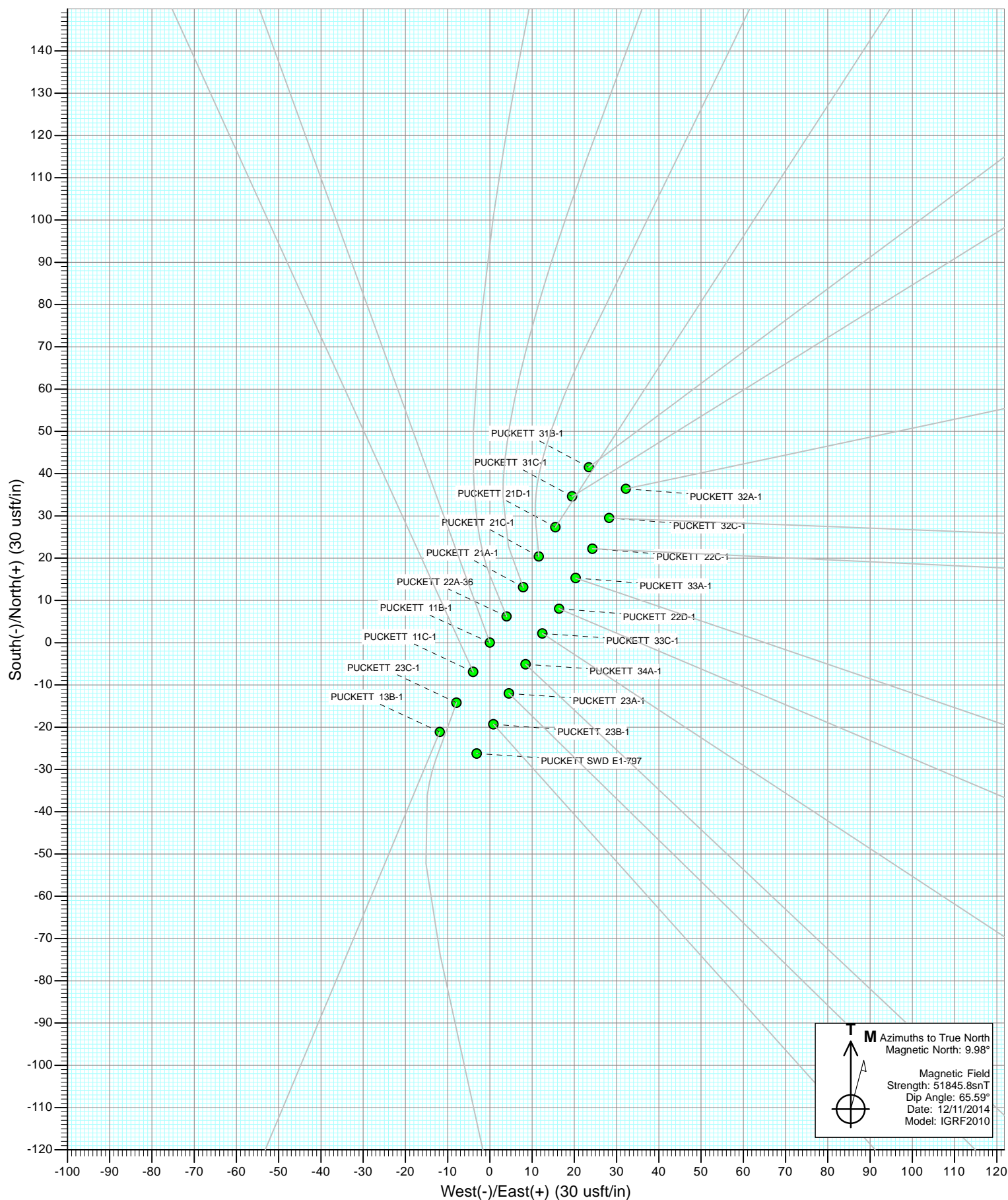
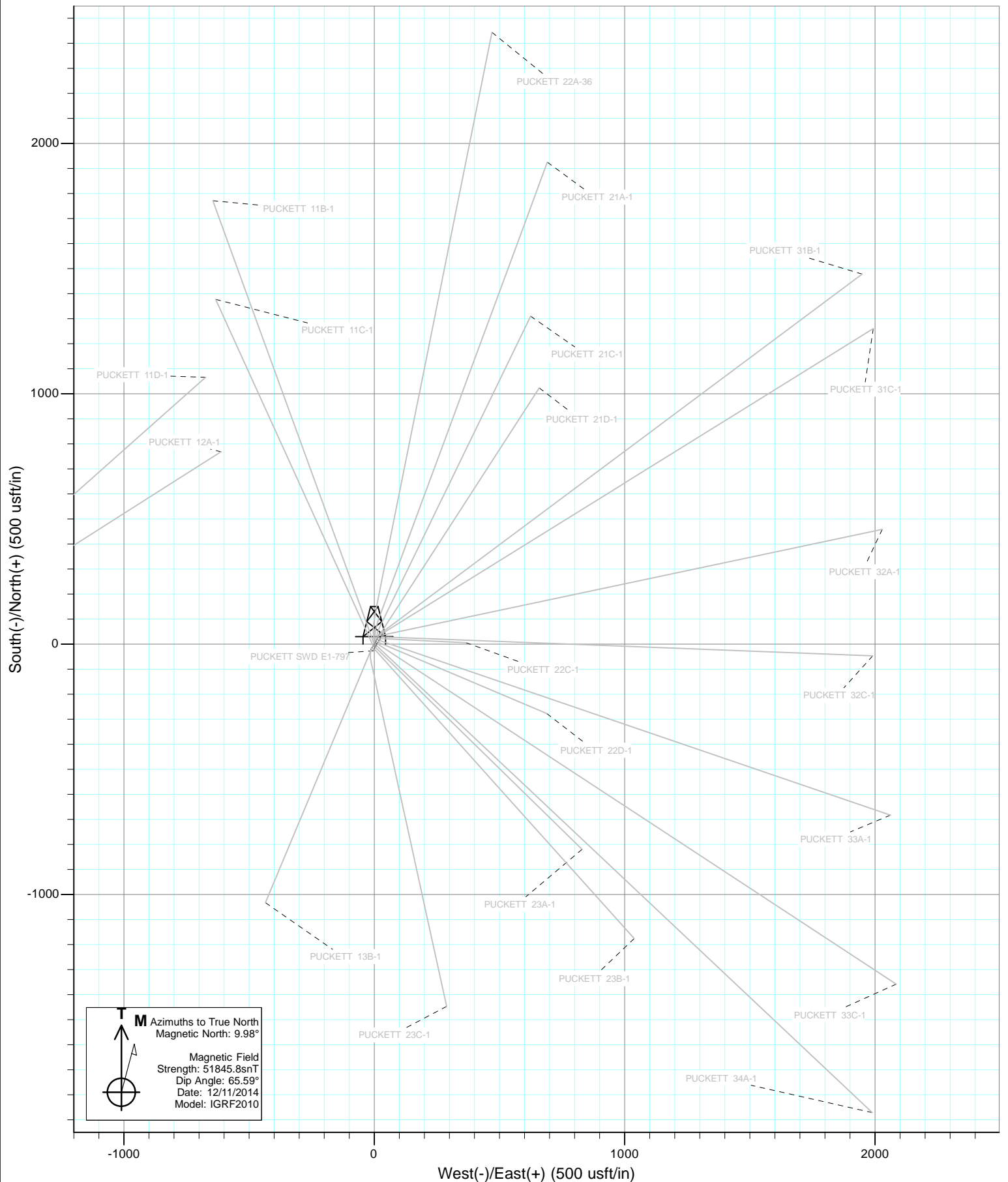




Project: Garfield County, CO  
Site: S1-T7S-R97W (Mesa E1 797)  
Well: PUCKETT 34A-1  
Wellbore: DD  
Design: Plan #1

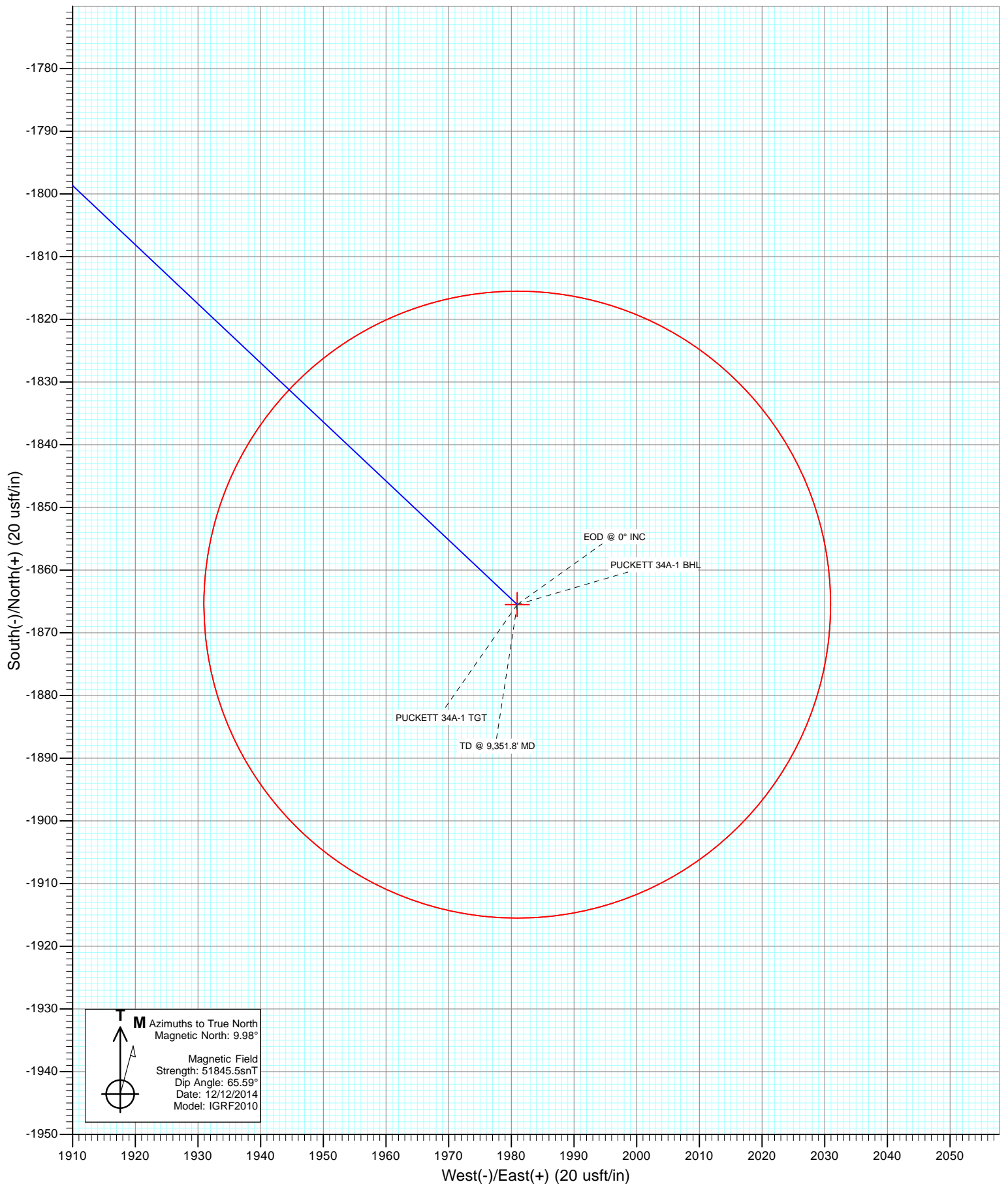








Project: Garfield County, CO  
Site: S1-T7S-R97W (Mesa E1 797)  
Well: PUCKETT 34A-1  
Wellbore: DD  
Design: Plan #1



# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well PUCKETT 34A-1
<b>Company:</b>	Caerus Oil & Gas (NAD 27)	<b>TVD Reference:</b>	KB=20' @ 8349.0usft (Patterson #303)
<b>Project:</b>	Garfield County, CO	<b>MD Reference:</b>	KB=20' @ 8349.0usft (Patterson #303)
<b>Site:</b>	S1-T7S-R97W (Mesa E1 797)	<b>North Reference:</b>	True
<b>Well:</b>	PUCKETT 34A-1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	DD		
<b>Design:</b>	Plan #1		

<b>Project</b>	Garfield County, CO		
<b>Map System:</b>	US State Plane 1927 (Exact solution)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD 1927 (NADCON CONUS)		
<b>Map Zone:</b>	Colorado Central 502		

Site		S1-T7S-R97W (Mesa E1 797)			
Site Position:		Northing:	609,370.34 usft	Latitude:	39.476064
From:	Lat/Long	Easting:	1,245,650.28 usft	Longitude:	-108.172658
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-1.69 °

Well	PUCKETT 34A-1					
Well Position	+N/-S	0.0 usft	Northing:	609,358.90 usft	Latitude:	39.476033
	+E/-W	0.0 usft	Easting:	1,245,654.47 usft	Longitude:	-108.172642
Position Uncertainty		0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	8,329.0 usft

<b>Wellbore</b>	DD				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination</b>	<b>Dip Angle</b>	<b>Field Strength</b>
			(°)	(°)	(nT)
	IGRF2010	12/12/2014	9.98	65.59	51,846

<b>Design</b>	Plan #1			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD)</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Direction</b>
	(usft)	(usft)	(usft)	(°)
	0.0	0.0	0.0	133.28

<b>Plan Sections</b>										
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	
400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,240.4	25.21	133.28	1,213.5	-124.7	132.4	3.00	3.00	0.00	133.28	
6,774.5	25.21	133.28	6,220.5	-1,740.8	1,848.5	0.00	0.00	0.00	0.00	
7,614.8	0.00	0.00	7,034.0	-1,865.5	1,981.0	3.00	-3.00	0.00	180.00	PUCKETT 34A-1 TG1
9,351.8	0.00	0.00	8,771.0	-1,865.5	1,981.0	0.00	0.00	0.00	0.00	PUCKETT 34A-1 BHL

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well PUCKETT 34A-1
<b>Company:</b>	Caerus Oil & Gas (NAD 27)	<b>TVD Reference:</b>	KB=20' @ 8349.0usft (Patterson #303)
<b>Project:</b>	Garfield County, CO	<b>MD Reference:</b>	KB=20' @ 8349.0usft (Patterson #303)
<b>Site:</b>	S1-T7S-R97W (Mesa E1 797)	<b>North Reference:</b>	True
<b>Well:</b>	PUCKETT 34A-1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	DD		
<b>Design:</b>	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
0.0	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	KOP @ 400'
500.0	3.00	133.28	500.0	-1.8	1.9	2.6	3.00	3.00	
600.0	6.00	133.28	599.6	-7.2	7.6	10.5	3.00	3.00	
700.0	9.00	133.28	698.8	-16.1	17.1	23.5	3.00	3.00	
800.0	12.00	133.28	797.1	-28.6	30.4	41.7	3.00	3.00	
900.0	15.00	133.28	894.3	-44.6	47.4	65.1	3.00	3.00	
1,000.0	18.00	133.28	990.2	-64.1	68.1	93.5	3.00	3.00	
1,100.0	21.00	133.28	1,084.4	-87.0	92.3	126.9	3.00	3.00	
1,200.0	24.00	133.28	1,176.8	-113.2	120.2	165.1	3.00	3.00	
1,240.4	25.21	133.28	1,213.5	-124.7	132.4	181.9	3.00	3.00	EOB @ 25.21° INC
1,300.0	25.21	133.28	1,267.5	-142.1	150.9	207.3	0.00	0.00	
1,400.0	25.21	133.28	1,357.9	-171.3	181.9	249.9	0.00	0.00	
1,500.0	25.21	133.28	1,448.4	-200.5	213.0	292.5	0.00	0.00	
1,600.0	25.21	133.28	1,538.9	-229.7	244.0	335.1	0.00	0.00	
1,700.0	25.21	133.28	1,629.4	-258.9	275.0	377.7	0.00	0.00	
1,800.0	25.21	133.28	1,719.8	-288.1	306.0	420.3	0.00	0.00	
1,900.0	25.21	133.28	1,810.3	-317.3	337.0	462.9	0.00	0.00	
2,000.0	25.21	133.28	1,900.8	-346.5	368.0	505.5	0.00	0.00	
2,100.0	25.21	133.28	1,991.3	-375.7	399.0	548.1	0.00	0.00	
2,200.0	25.21	133.28	2,081.7	-404.9	430.0	590.7	0.00	0.00	
2,300.0	25.21	133.28	2,172.2	-434.2	461.0	633.3	0.00	0.00	
2,400.0	25.21	133.28	2,262.7	-463.4	492.0	675.9	0.00	0.00	
2,500.0	25.21	133.28	2,353.2	-492.6	523.0	718.5	0.00	0.00	
2,600.0	25.21	133.28	2,443.6	-521.8	554.1	761.1	0.00	0.00	
2,700.0	25.21	133.28	2,534.1	-551.0	585.1	803.6	0.00	0.00	
2,800.0	25.21	133.28	2,624.6	-580.2	616.1	846.2	0.00	0.00	
2,900.0	25.21	133.28	2,715.1	-609.4	647.1	888.8	0.00	0.00	
3,000.0	25.21	133.28	2,805.5	-638.6	678.1	931.4	0.00	0.00	
3,100.0	25.21	133.28	2,896.0	-667.8	709.1	974.0	0.00	0.00	
3,200.0	25.21	133.28	2,986.5	-697.0	740.1	1,016.6	0.00	0.00	
3,300.0	25.21	133.28	3,077.0	-726.2	771.1	1,059.2	0.00	0.00	
3,400.0	25.21	133.28	3,167.4	-755.4	802.1	1,101.8	0.00	0.00	
3,500.0	25.21	133.28	3,257.9	-784.6	833.1	1,144.4	0.00	0.00	
3,600.0	25.21	133.28	3,348.4	-813.8	864.1	1,187.0	0.00	0.00	
3,700.0	25.21	133.28	3,438.9	-843.0	895.2	1,229.6	0.00	0.00	
3,800.0	25.21	133.28	3,529.3	-872.2	926.2	1,272.2	0.00	0.00	
3,900.0	25.21	133.28	3,619.8	-901.4	957.2	1,314.8	0.00	0.00	
4,000.0	25.21	133.28	3,710.3	-930.6	988.2	1,357.4	0.00	0.00	
4,100.0	25.21	133.28	3,800.8	-959.8	1,019.2	1,400.0	0.00	0.00	
4,200.0	25.21	133.28	3,891.2	-989.0	1,050.2	1,442.6	0.00	0.00	
4,300.0	25.21	133.28	3,981.7	-1,018.2	1,081.2	1,485.2	0.00	0.00	
4,400.0	25.21	133.28	4,072.2	-1,047.4	1,112.2	1,527.8	0.00	0.00	
4,500.0	25.21	133.28	4,162.7	-1,076.6	1,143.2	1,570.3	0.00	0.00	
4,600.0	25.21	133.28	4,253.1	-1,105.8	1,174.2	1,612.9	0.00	0.00	
4,700.0	25.21	133.28	4,343.6	-1,135.0	1,205.2	1,655.5	0.00	0.00	
4,800.0	25.21	133.28	4,434.1	-1,164.2	1,236.3	1,698.1	0.00	0.00	
4,900.0	25.21	133.28	4,524.6	-1,193.4	1,267.3	1,740.7	0.00	0.00	
5,000.0	25.21	133.28	4,615.0	-1,222.6	1,298.3	1,783.3	0.00	0.00	

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well PUCKETT 34A-1
<b>Company:</b>	Caerus Oil & Gas (NAD 27)	<b>TVD Reference:</b>	KB=20' @ 8349.0usft (Patterson #303)
<b>Project:</b>	Garfield County, CO	<b>MD Reference:</b>	KB=20' @ 8349.0usft (Patterson #303)
<b>Site:</b>	S1-T7S-R97W (Mesa E1 797)	<b>North Reference:</b>	True
<b>Well:</b>	PUCKETT 34A-1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	DD		
<b>Design:</b>	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
5,100.0	25.21	133.28	4,705.5	-1,251.8	1,329.3	1,825.9	0.00	0.00	
5,200.0	25.21	133.28	4,796.0	-1,281.0	1,360.3	1,868.5	0.00	0.00	
5,300.0	25.21	133.28	4,886.5	-1,310.2	1,391.3	1,911.1	0.00	0.00	
5,400.0	25.21	133.28	4,976.9	-1,339.4	1,422.3	1,953.7	0.00	0.00	
5,500.0	25.21	133.28	5,067.4	-1,368.6	1,453.3	1,996.3	0.00	0.00	
5,600.0	25.21	133.28	5,157.9	-1,397.8	1,484.3	2,038.9	0.00	0.00	
5,700.0	25.21	133.28	5,248.4	-1,427.0	1,515.3	2,081.5	0.00	0.00	
5,800.0	25.21	133.28	5,338.8	-1,456.2	1,546.3	2,124.1	0.00	0.00	
5,900.0	25.21	133.28	5,429.3	-1,485.4	1,577.3	2,166.7	0.00	0.00	
6,000.0	25.21	133.28	5,519.8	-1,514.6	1,608.4	2,209.3	0.00	0.00	
6,100.0	25.21	133.28	5,610.3	-1,543.8	1,639.4	2,251.9	0.00	0.00	
6,200.0	25.21	133.28	5,700.7	-1,573.0	1,670.4	2,294.5	0.00	0.00	
6,231.2	25.21	133.28	5,729.0	-1,582.1	1,680.1	2,307.8	0.00	0.00	OHIO CREEK
6,300.0	25.21	133.28	5,791.2	-1,602.2	1,701.4	2,337.1	0.00	0.00	
6,400.0	25.21	133.28	5,881.7	-1,631.4	1,732.4	2,379.6	0.00	0.00	
6,500.0	25.21	133.28	5,972.2	-1,660.6	1,763.4	2,422.2	0.00	0.00	
6,551.8	25.21	133.28	6,019.0	-1,675.7	1,779.5	2,444.3	0.00	0.00	WILLIAMS FORK
6,600.0	25.21	133.28	6,062.6	-1,689.8	1,794.4	2,464.8	0.00	0.00	
6,700.0	25.21	133.28	6,153.1	-1,719.0	1,825.4	2,507.4	0.00	0.00	
6,774.5	25.21	133.28	6,220.5	-1,740.8	1,848.5	2,539.2	0.00	0.00	Start 3° Drop
6,800.0	24.45	133.28	6,243.7	-1,748.1	1,856.3	2,549.9	3.00	-3.00	
6,900.0	21.45	133.28	6,335.7	-1,774.8	1,884.7	2,588.8	3.00	-3.00	
7,000.0	18.45	133.28	6,429.7	-1,798.2	1,909.5	2,623.0	3.00	-3.00	
7,100.0	15.45	133.28	6,525.4	-1,818.2	1,930.7	2,652.1	3.00	-3.00	
7,200.0	12.45	133.28	6,622.4	-1,834.7	1,948.3	2,676.2	3.00	-3.00	
7,300.0	9.45	133.28	6,720.6	-1,847.7	1,962.1	2,695.2	3.00	-3.00	
7,400.0	6.45	133.28	6,819.6	-1,857.2	1,972.2	2,709.0	3.00	-3.00	
7,500.0	3.45	133.28	6,919.2	-1,863.1	1,978.4	2,717.6	3.00	-3.00	
7,600.0	0.45	133.28	7,019.2	-1,865.4	1,980.9	2,721.0	3.00	-3.00	
7,614.8	0.00	0.00	7,034.0	-1,865.5	1,981.0	2,721.1	3.00	-3.00	EOD @ 0° INC - TOP of GAS
7,700.0	0.00	0.00	7,119.2	-1,865.5	1,981.0	2,721.1	0.00	0.00	
7,800.0	0.00	0.00	7,219.2	-1,865.5	1,981.0	2,721.1	0.00	0.00	
7,900.0	0.00	0.00	7,319.2	-1,865.5	1,981.0	2,721.1	0.00	0.00	
8,000.0	0.00	0.00	7,419.2	-1,865.5	1,981.0	2,721.1	0.00	0.00	
8,100.0	0.00	0.00	7,519.2	-1,865.5	1,981.0	2,721.1	0.00	0.00	
8,200.0	0.00	0.00	7,619.2	-1,865.5	1,981.0	2,721.1	0.00	0.00	
8,300.0	0.00	0.00	7,719.2	-1,865.5	1,981.0	2,721.1	0.00	0.00	
8,400.0	0.00	0.00	7,819.2	-1,865.5	1,981.0	2,721.1	0.00	0.00	
8,500.0	0.00	0.00	7,919.2	-1,865.5	1,981.0	2,721.1	0.00	0.00	
8,600.0	0.00	0.00	8,019.2	-1,865.5	1,981.0	2,721.1	0.00	0.00	
8,700.0	0.00	0.00	8,119.2	-1,865.5	1,981.0	2,721.1	0.00	0.00	
8,800.0	0.00	0.00	8,219.2	-1,865.5	1,981.0	2,721.1	0.00	0.00	
8,900.0	0.00	0.00	8,319.2	-1,865.5	1,981.0	2,721.1	0.00	0.00	
9,000.0	0.00	0.00	8,419.2	-1,865.5	1,981.0	2,721.1	0.00	0.00	
9,100.0	0.00	0.00	8,519.2	-1,865.5	1,981.0	2,721.1	0.00	0.00	
9,200.0	0.00	0.00	8,619.2	-1,865.5	1,981.0	2,721.1	0.00	0.00	
9,201.8	0.00	0.00	8,621.0	-1,865.5	1,981.0	2,721.1	0.00	0.00	ROLLINS
9,300.0	0.00	0.00	8,719.2	-1,865.5	1,981.0	2,721.1	0.00	0.00	
9,351.8	0.00	0.00	8,771.0	-1,865.5	1,981.0	2,721.1	0.00	0.00	TD @ 9,351.8' MD

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well PUCKETT 34A-1
<b>Company:</b>	Caerus Oil & Gas (NAD 27)	<b>TVD Reference:</b>	KB=20' @ 8349.0usft (Patterson #303)
<b>Project:</b>	Garfield County, CO	<b>MD Reference:</b>	KB=20' @ 8349.0usft (Patterson #303)
<b>Site:</b>	S1-T7S-R97W (Mesa E1 797)	<b>North Reference:</b>	True
<b>Well:</b>	PUCKETT 34A-1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	DD		
<b>Design:</b>	Plan #1		

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)		
PUCKETT 34A-1 BHL	0.00	0.00	8,771.0	-1,865.5	1,981.0	607,435.95	1,247,579.69	39.470911	-108.165625
- plan hits target center									
- Circle (radius 50.0)									
PUCKETT 34A-1 TGT	0.00	0.00	7,034.0	-1,865.5	1,981.0	607,435.95	1,247,579.69	39.470911	-108.165625
- plan hits target center									
- Point									

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(usft)	(usft)			(°)	(°)	
6,231.2	5,729.0	OHIO CREEK				
6,551.8	6,019.0	WILLIAMS FORK				
7,614.8	7,034.0	TOP of GAS				
9,201.8	8,621.0	ROLLINS				

Plan Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(usft)	(usft)	+N/-S (usft)	+E/-W (usft)	
400.0	400.0	0.0	0.0	KOP @ 400'
1,240.4	1,213.5	-124.7	132.4	EOB @ 25.21° INC
6,774.5	6,220.5	-1,740.8	1,848.5	Start 3° Drop
7,614.8	7,034.0	-1,865.5	1,981.0	EOD @ 0° INC
9,351.8	8,771.0	-1,865.5	1,981.0	TD @ 9,351.8' MD



# **Caerus Oil & Gas (NAD 27)**

**Garfield County, CO**

**S1-T7S-R97W (Mesa E1 797)**

**PUCKETT 34A-1**

**DD**

**Plan #1**

## **Anticollision Report**

**16 December, 2014**

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Caerus Oil & Gas (NAD 27)	<b>Local Co-ordinate Reference:</b>	Well PUCKETT 34A-1
<b>Project:</b>	Garfield County, CO	<b>TVD Reference:</b>	KB=20' @ 8349.0usft (Patterson #303)
<b>Reference Site:</b>	S1-T7S-R97W (Mesa E1 797)	<b>MD Reference:</b>	KB=20' @ 8349.0usft (Patterson #303)
<b>Site Error:</b>	0.0usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	PUCKETT 34A-1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Reference	Plan #1		
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	12/12/2014		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.0	9,351.8	Plan #1 (DD)	ISCWSA MWD	MWD - Standard	

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Caerus Oil & Gas (NAD 27)	<b>Local Co-ordinate Reference:</b>	Well PUCKETT 34A-1
<b>Project:</b>	Garfield County, CO	<b>TVD Reference:</b>	KB=20' @ 8349.0usft (Patterson #303)
<b>Reference Site:</b>	S1-T7S-R97W (Mesa E1 797)	<b>MD Reference:</b>	KB=20' @ 8349.0usft (Patterson #303)
<b>Site Error:</b>	0.0usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	PUCKETT 34A-1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	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)		
S1-T7S-R97W (Mesa E1 797)						
PUCKETT 11B-1 - DD - Plan #1	200.0	200.0	9.9	9.3	15.715	CC, ES
PUCKETT 11B-1 - DD - Plan #1	300.0	299.5	12.0	10.9	11.101	SF
PUCKETT 11C-1 - DD - Plan #1	304.4	304.4	12.6	11.5	11.423	CC, ES
PUCKETT 11C-1 - DD - Plan #1	400.0	399.8	13.0	11.5	8.526	SF
PUCKETT 13B-1 - DD - Plan #1	200.0	200.0	25.9	25.2	41.118	CC, ES
PUCKETT 13B-1 - DD - Plan #1	400.0	397.0	35.3	33.8	23.522	SF
PUCKETT 21A-1 - HZ - Plan #1	300.0	300.0	18.2	17.2	16.897	CC, ES
PUCKETT 21A-1 - HZ - Plan #1	400.0	399.0	20.7	19.2	13.560	SF
PUCKETT 21C-1 - DD - Plan #1	333.4	333.4	25.7	24.5	20.909	CC, ES
PUCKETT 21C-1 - DD - Plan #1	500.0	497.6	33.1	31.1	16.540	SF
PUCKETT 21D-1 - DD - Plan #1	400.0	400.0	33.2	31.7	21.712	CC, ES
PUCKETT 21D-1 - DD - Plan #1	500.0	498.2	37.0	35.0	18.710	SF
PUCKETT 22A-36 - DD - Plan #1	255.6	255.6	12.2	11.3	13.848	CC
PUCKETT 22A-36 - DD - Plan #1	300.0	299.8	12.3	11.3	11.439	ES
PUCKETT 22A-36 - DD - Plan #1	400.0	399.0	16.2	14.7	10.605	SF
PUCKETT 22C-1 - DD - Plan #1	400.0	400.0	31.6	30.0	20.655	CC, ES
PUCKETT 22C-1 - DD - Plan #1	600.0	599.6	35.5	33.0	14.621	SF
PUCKETT 22D-1 - DD - Plan #1	400.0	400.0	15.3	13.8	10.022	CC, ES
PUCKETT 22D-1 - DD - Plan #1	600.0	599.9	19.5	17.0	8.040	SF
PUCKETT 23A-1 - DD - Plan #1	484.3	484.3	7.7	5.9	4.094	CC
PUCKETT 23A-1 - DD - Plan #1	500.0	500.0	7.8	5.8	3.972	ES, SF
PUCKETT 23B-1 - DD - Plan #1	400.0	400.0	16.1	14.6	10.545	CC
PUCKETT 23B-1 - DD - Plan #1	500.0	499.7	16.3	14.4	8.421	ES
PUCKETT 23B-1 - DD - Plan #1	1,100.0	1,098.0	27.0	20.6	4.243	SF
PUCKETT 23C-1 - DD - Plan #1	300.0	300.0	18.7	17.7	17.363	CC, ES
PUCKETT 23C-1 - DD - Plan #1	400.0	399.2	20.8	19.3	13.822	SF
PUCKETT 31B-1 - DD - Plan #1	200.0	200.0	49.0	48.3	77.807	CC, ES
PUCKETT 31B-1 - DD - Plan #1	500.0	491.6	69.6	67.6	34.199	SF
PUCKETT 31C-1 - DD - Plan #1	233.6	233.6	41.2	40.4	52.787	CC, ES
PUCKETT 31C-1 - DD - Plan #1	500.0	494.8	54.9	52.9	27.372	SF
PUCKETT 32A-1 - DD - Plan #1	200.0	200.0	47.8	47.2	75.971	CC, ES
PUCKETT 32A-1 - DD - Plan #1	1,100.0	1,063.8	194.5	187.8	29.088	SF
PUCKETT 32C-1 - DD - Plan #1	300.0	300.0	39.9	38.8	36.937	CC, ES
PUCKETT 32C-1 - DD - Plan #1	1,300.0	1,272.8	186.5	177.1	19.958	SF
PUCKETT 33A-1 - DD - Plan #1	300.7	300.7	23.6	22.5	21.809	CC
PUCKETT 33A-1 - DD - Plan #1	400.0	399.8	23.9	22.4	15.773	ES
PUCKETT 33A-1 - DD - Plan #1	1,500.0	1,483.8	145.4	132.7	11.445	SF
PUCKETT 33C-1 - DD - Plan #1	301.5	301.5	8.3	7.2	7.679	CC, ES
PUCKETT 33C-1 - DD - Plan #1	2,300.0	2,284.0	118.7	91.6	4.392	SF
PUCKETT SWD E1-797 - VH - Plan #1	552.1	551.9	23.3	21.1	10.661	CC, ES
PUCKETT SWD E1-797 - VH - Plan #1	700.0	698.8	29.1	26.2	9.835	SF

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Caerus Oil & Gas (NAD 27)	<b>Local Co-ordinate Reference:</b>	Well PUCKETT 34A-1
<b>Project:</b>	Garfield County, CO	<b>TVD Reference:</b>	KB=20' @ 8349.0usft (Patterson #303)
<b>Reference Site:</b>	S1-T7S-R97W (Mesa E1 797)	<b>MD Reference:</b>	KB=20' @ 8349.0usft (Patterson #303)
<b>Site Error:</b>	0.0usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	PUCKETT 34A-1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> S1-T7S-R97W (Mesa E1 797) - PUCKETT 11B-1 - DD - Plan #1												<b>Offset Site Error:</b>	0.0 usft
Survey Program: 0-ISCSWA MWD												<b>Offset Well Error:</b>	0.0 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
0.0	0.0	0.0	0.0	0.0	0.0	-58.90	5.1	-8.5	9.9				
100.0	100.0	100.0	100.0	0.1	0.1	-58.90	5.1	-8.5	9.9	9.7	0.18	55.002	
200.0	200.0	200.0	200.0	0.3	0.3	-58.90	5.1	-8.5	9.9	9.3	0.63	15.715 CC, ES	
300.0	300.0	299.5	299.5	0.5	0.5	-51.12	7.5	-9.4	12.0	10.9	1.08	11.101 SF	
400.0	400.0	398.5	398.1	0.8	0.8	-39.03	14.8	-12.0	19.1	17.6	1.56	12.297	
500.0	500.0	496.0	494.8	1.0	1.1	-165.79	26.6	-16.3	34.1	32.0	2.10	16.216	
600.0	599.6	590.6	587.8	1.2	1.4	-163.72	42.5	-22.1	59.1	56.4	2.69	21.996	
700.0	698.8	681.0	675.9	1.4	1.8	-163.11	61.7	-29.1	93.4	90.1	3.29	28.395	
800.0	797.1	766.2	757.9	1.8	2.2	-162.89	83.4	-37.0	136.4	132.5	3.90	34.983	
900.0	894.3	852.8	840.8	2.2	2.7	-162.90	107.3	-45.6	186.0	181.5	4.49	41.423	

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Caerus Oil & Gas (NAD 27)	<b>Local Co-ordinate Reference:</b>	Well PUCKETT 34A-1
<b>Project:</b>	Garfield County, CO	<b>TVD Reference:</b>	KB=20' @ 8349.0usft (Patterson #303)
<b>Reference Site:</b>	S1-T7S-R97W (Mesa E1 797)	<b>MD Reference:</b>	KB=20' @ 8349.0usft (Patterson #303)
<b>Site Error:</b>	0.0usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	PUCKETT 34A-1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S1-T7S-R97W (Mesa E1 797) - PUCKETT 11C-1 - DD - Plan #1												Offset Site Error: 0.0 usft	
Survey Program: 0-ISCSWA MWD												Offset Well Error: 0.0 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
0.0	0.0	0.0	0.0	0.0	0.0	-98.30	-1.8	-12.4	12.6				
100.0	100.0	100.0	100.0	0.1	0.1	-98.30	-1.8	-12.4	12.6	12.4	0.18	69.807	
200.0	200.0	200.0	200.0	0.3	0.3	-98.30	-1.8	-12.4	12.6	11.9	0.63	19.945	
300.0	300.0	300.0	300.0	0.5	0.5	-98.30	-1.8	-12.4	12.6	11.5	1.08	11.634	
304.4	304.4	304.4	304.4	0.5	0.5	-98.30	-1.8	-12.4	12.6	11.5	1.10	11.423 CC, ES	
400.0	400.0	399.8	399.8	0.8	0.8	-92.10	-0.5	-13.0	13.0	11.5	1.53	8.526 SF	
500.0	500.0	498.9	498.7	1.0	1.0	158.84	5.4	-15.7	19.1	17.0	2.02	9.427	
600.0	599.6	595.9	595.0	1.2	1.2	175.86	15.7	-20.4	36.4	33.8	2.60	13.974	
700.0	698.8	689.4	687.2	1.4	1.5	-176.89	29.7	-26.8	64.5	61.3	3.21	20.080	
800.0	797.1	778.2	774.0	1.8	1.9	-173.52	46.9	-34.6	102.3	98.4	3.82	26.745	
900.0	894.3	866.8	860.0	2.2	2.3	-171.79	66.3	-43.4	147.3	142.9	4.42	33.333	
1,000.0	990.2	953.6	944.2	2.7	2.7	-170.97	85.3	-52.0	197.1	192.1	4.98	39.535	

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Caerus Oil & Gas (NAD 27)	<b>Local Co-ordinate Reference:</b>	Well PUCKETT 34A-1
<b>Project:</b>	Garfield County, CO	<b>TVD Reference:</b>	KB=20' @ 8349.0usft (Patterson #303)
<b>Reference Site:</b>	S1-T7S-R97W (Mesa E1 797)	<b>MD Reference:</b>	KB=20' @ 8349.0usft (Patterson #303)
<b>Site Error:</b>	0.0usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	PUCKETT 34A-1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S1-T7S-R97W (Mesa E1 797) - PUCKETT 13B-1 - DD - Plan #1													Offset Site Error:	0.0 usft
Survey Program: 0-ISWWSA 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	-128.24	-16.0	-20.3	25.9					
100.0	100.0	100.0	100.0	0.1	0.1	-128.24	-16.0	-20.3	25.9	25.7	0.18	143.913		
200.0	200.0	200.0	200.0	0.3	0.3	-128.24	-16.0	-20.3	25.9	25.2	0.63	41.118 CC, ES		
300.0	300.0	298.7	298.7	0.5	0.5	-130.77	-18.4	-21.3	28.2	27.1	1.05	26.697		
400.0	400.0	397.0	396.6	0.8	0.7	-136.32	-25.4	-24.2	35.3	33.8	1.50	23.522 SF		
500.0	500.0	494.2	493.1	1.0	1.0	87.69	-36.9	-29.0	47.3	45.3	1.98	23.906		
600.0	599.6	590.2	587.5	1.2	1.4	89.11	-52.7	-35.6	63.9	61.5	2.47	25.901		
700.0	698.8	685.3	680.1	1.4	1.8	91.93	-72.5	-43.9	85.1	82.1	3.05	27.903		
800.0	797.1	782.2	774.2	1.8	2.2	95.85	-94.0	-52.9	108.3	104.6	3.73	29.051		
900.0	894.3	878.6	867.8	2.2	2.7	100.36	-115.3	-61.8	132.7	128.2	4.54	29.261		
1,000.0	990.2	974.1	960.5	2.7	3.2	105.02	-136.4	-70.6	159.2	153.7	5.48	29.043		
1,100.0	1,084.4	1,068.4	1,052.0	3.3	3.6	109.56	-157.3	-79.3	188.4	181.8	6.55	28.774		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Caerus Oil & Gas (NAD 27)	<b>Local Co-ordinate Reference:</b>	Well PUCKETT 34A-1
<b>Project:</b>	Garfield County, CO	<b>TVD Reference:</b>	KB=20' @ 8349.0usft (Patterson #303)
<b>Reference Site:</b>	S1-T7S-R97W (Mesa E1 797)	<b>MD Reference:</b>	KB=20' @ 8349.0usft (Patterson #303)
<b>Site Error:</b>	0.0usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	PUCKETT 34A-1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S1-T7S-R97W (Mesa E1 797) - PUCKETT 21A-1 - HZ - Plan #1													Offset Site Error:	0.0 usft
Survey Program: 0-ISCSWA 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	-1.77	18.2	-0.6	18.2					
100.0	100.0	100.0	100.0	0.1	0.1	-1.77	18.2	-0.6	18.2	18.0	0.18	101.380		
200.0	200.0	200.0	200.0	0.3	0.3	-1.77	18.2	-0.6	18.2	17.6	0.63	28.966		
300.0	300.0	300.0	300.0	0.5	0.5	-1.77	18.2	-0.6	18.2	17.2	1.08	16.897 CC, ES		
400.0	400.0	399.0	399.0	0.8	0.8	-4.00	20.6	-1.4	20.7	19.2	1.53	13.560 SF		
500.0	500.0	497.3	496.9	1.0	1.0	-144.36	27.8	-4.0	30.3	28.3	2.04	14.825		
600.0	599.6	594.2	593.2	1.2	1.2	-148.44	39.1	-5.4	48.5	46.0	2.57	18.873		
700.0	698.8	688.9	686.6	1.4	1.5	-149.05	54.1	-4.1	74.4	71.2	3.14	23.682		
800.0	797.1	780.4	776.3	1.8	1.9	-148.48	72.3	-0.4	107.5	103.8	3.74	28.759		
900.0	894.3	868.3	861.5	2.2	2.2	-147.51	93.0	5.4	147.5	143.2	4.36	33.843		
1,000.0	990.2	952.0	941.6	2.7	2.7	-146.41	115.7	13.1	194.2	189.1	5.02	38.696		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Caerus Oil & Gas (NAD 27)	<b>Local Co-ordinate Reference:</b>	Well PUCKETT 34A-1
<b>Project:</b>	Garfield County, CO	<b>TVD Reference:</b>	KB=20' @ 8349.0usft (Patterson #303)
<b>Reference Site:</b>	S1-T7S-R97W (Mesa E1 797)	<b>MD Reference:</b>	KB=20' @ 8349.0usft (Patterson #303)
<b>Site Error:</b>	0.0usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	PUCKETT 34A-1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> S1-T7S-R97W (Mesa E1 797) - PUCKETT 21C-1 - DD - Plan #1													<b>Offset Site Error:</b>	0.0 usft
Survey Program: 0-ISCSWA MWD													<b>Offset Well Error:</b>	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	Factor		
0.0	0.0	0.0	0.0	0.0	0.0	6.94	25.5	3.1	25.7					
100.0	100.0	100.0	100.0	0.1	0.1	6.94	25.5	3.1	25.7	25.5	0.18	142.891		
200.0	200.0	200.0	200.0	0.3	0.3	6.94	25.5	3.1	25.7	25.1	0.63	40.826		
300.0	300.0	300.0	300.0	0.5	0.5	6.94	25.5	3.1	25.7	24.6	1.08	23.815		
333.4	333.4	333.4	333.4	0.6	0.6	6.94	25.5	3.1	25.7	24.5	1.23	20.909 CC, ES		
400.0	400.0	399.3	399.3	0.8	0.8	6.65	26.1	3.0	26.3	24.8	1.53	17.240		
500.0	500.0	497.6	497.4	1.0	1.0	-131.85	31.2	2.6	33.1	31.1	2.00	16.540 SF		
600.0	599.6	594.6	594.0	1.2	1.2	-138.73	40.8	2.5	48.6	46.1	2.53	19.179		
700.0	698.8	690.1	688.5	1.4	1.5	-141.53	53.8	5.5	71.6	68.5	3.09	23.169		
800.0	797.1	783.0	779.9	1.8	1.8	-142.18	69.6	11.7	101.5	97.8	3.69	27.519		
900.0	894.3	875.0	869.6	2.2	2.1	-142.14	87.9	20.4	137.5	133.1	4.33	31.767		
1,000.0	990.2	966.5	958.7	2.7	2.5	-142.72	106.4	29.4	177.6	172.6	4.99	35.590		



# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Caerus Oil & Gas (NAD 27)	<b>Local Co-ordinate Reference:</b>	Well PUCKETT 34A-1
<b>Project:</b>	Garfield County, CO	<b>TVD Reference:</b>	KB=20' @ 8349.0usft (Patterson #303)
<b>Reference Site:</b>	S1-T7S-R97W (Mesa E1 797)	<b>MD Reference:</b>	KB=20' @ 8349.0usft (Patterson #303)
<b>Site Error:</b>	0.0usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	PUCKETT 34A-1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S1-T7S-R97W (Mesa E1 797) - PUCKETT 21D-1 - DD - Plan #1													Offset Site Error:	0.0 usft
Survey Program: 0-ISCSWA 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	12.28	32.4	7.1	33.2					
100.0	100.0	100.0	100.0	0.1	0.1	12.28	32.4	7.1	33.2	33.0	0.18	184.552		
200.0	200.0	200.0	200.0	0.3	0.3	12.28	32.4	7.1	33.2	32.6	0.63	52.729		
300.0	300.0	300.0	300.0	0.5	0.5	12.28	32.4	7.1	33.2	32.1	1.08	30.759		
400.0	400.0	400.0	400.0	0.8	0.8	12.28	32.4	7.1	33.2	31.7	1.53	21.712 CC, ES		
500.0	500.0	498.2	498.2	1.0	1.0	-122.95	34.5	8.4	37.0	35.0	1.98	18.710 SF		
600.0	599.6	595.6	595.2	1.2	1.2	-126.90	40.8	12.5	48.4	46.0	2.47	19.594		
700.0	698.8	691.1	689.9	1.4	1.5	-130.36	51.0	19.1	67.7	64.7	3.03	22.327		
800.0	797.1	785.0	782.4	1.8	1.8	-132.75	64.8	27.9	94.6	90.9	3.66	25.848		
900.0	894.3	879.7	875.5	2.2	2.1	-135.20	79.6	37.6	126.1	121.7	4.31	29.268		
1,000.0	990.2	972.9	967.0	2.7	2.4	-137.65	94.3	47.0	161.4	156.4	4.99	32.325		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Caerus Oil & Gas (NAD 27)	<b>Local Co-ordinate Reference:</b>	Well PUCKETT 34A-1
<b>Project:</b>	Garfield County, CO	<b>TVD Reference:</b>	KB=20' @ 8349.0usft (Patterson #303)
<b>Reference Site:</b>	S1-T7S-R97W (Mesa E1 797)	<b>MD Reference:</b>	KB=20' @ 8349.0usft (Patterson #303)
<b>Site Error:</b>	0.0usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	PUCKETT 34A-1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S1-T7S-R97W (Mesa E1 797) - PUCKETT 22A-36 - DD - Plan #1													Offset Site Error:	0.0 usft
Survey Program: 0-ISCSWA 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	-21.78	11.3	-4.5	12.2					
100.0	100.0	100.0	100.0	0.1	0.1	-21.78	11.3	-4.5	12.2	12.0	0.18	67.703		
200.0	200.0	200.0	200.0	0.3	0.3	-21.78	11.3	-4.5	12.2	11.5	0.63	19.344		
255.6	255.6	255.6	255.6	0.4	0.4	-21.78	11.3	-4.5	12.2	11.3	0.88	13.848 CC		
300.0	300.0	299.8	299.8	0.5	0.5	-21.78	11.5	-4.6	12.3	11.3	1.08	11.439 ES		
400.0	400.0	399.0	398.9	0.8	0.8	-21.83	15.0	-6.0	16.2	14.7	1.53	10.605 SF		
500.0	500.0	497.3	496.8	1.0	1.0	-157.12	23.3	-9.3	27.6	25.6	2.07	13.368		
600.0	599.6	593.9	592.6	1.2	1.3	-156.98	36.0	-11.7	47.8	45.2	2.61	18.327		
700.0	698.8	687.7	684.9	1.4	1.6	-155.59	52.6	-12.4	76.0	72.8	3.19	23.858		
800.0	797.1	777.8	772.7	1.8	1.9	-154.12	72.4	-11.5	112.1	108.3	3.79	29.593		
900.0	894.3	863.5	855.3	2.2	2.3	-152.75	94.9	-9.1	155.5	151.1	4.40	35.324		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Caerus Oil & Gas (NAD 27)	<b>Local Co-ordinate Reference:</b>	Well PUCKETT 34A-1
<b>Project:</b>	Garfield County, CO	<b>TVD Reference:</b>	KB=20' @ 8349.0usft (Patterson #303)
<b>Reference Site:</b>	S1-T7S-R97W (Mesa E1 797)	<b>MD Reference:</b>	KB=20' @ 8349.0usft (Patterson #303)
<b>Site Error:</b>	0.0usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	PUCKETT 34A-1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S1-T7S-R97W (Mesa E1 797) - PUCKETT 22C-1 - DD - Plan #1													Offset Site Error:	0.0 usft
Survey Program: 0-ISCSWA 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	30.05	27.3	15.8	31.6					
100.0	100.0	100.0	100.0	0.1	0.1	30.05	27.3	15.8	31.6	31.4	0.18	175.569		
200.0	200.0	200.0	200.0	0.3	0.3	30.05	27.3	15.8	31.6	30.9	0.63	50.162		
300.0	300.0	300.0	300.0	0.5	0.5	30.05	27.3	15.8	31.6	30.5	1.08	29.261		
400.0	400.0	400.0	400.0	0.8	0.8	30.05	27.3	15.8	31.6	30.0	1.53	20.655 CC, ES		
500.0	500.0	500.0	500.0	1.0	1.0	-107.74	27.3	15.8	32.3	30.3	1.96	16.447		
600.0	599.6	599.6	599.6	1.2	1.2	-119.79	27.3	15.8	35.5	33.0	2.43	14.621 SF		
700.0	698.8	698.9	698.8	1.4	1.4	-131.29	27.2	18.4	43.3	40.4	2.95	14.682		
800.0	797.1	797.8	797.6	1.8	1.6	-139.51	27.0	23.8	56.0	52.4	3.52	15.888		
900.0	894.3	895.8	895.5	2.2	1.8	-146.85	26.7	29.1	73.6	69.5	4.13	17.846		
1,000.0	990.2	992.7	992.3	2.7	2.1	-152.66	26.5	34.4	96.6	91.9	4.74	20.396		
1,100.0	1,084.4	1,088.2	1,087.6	3.3	2.3	-157.06	26.2	39.7	124.9	119.5	5.34	23.373		
1,200.0	1,176.8	1,182.1	1,181.3	4.0	2.5	-160.37	26.0	44.8	158.3	152.4	5.94	26.648		
1,300.0	1,267.5	1,274.3	1,273.4	4.8	2.7	-163.01	25.7	49.9	196.0	189.6	6.47	30.294		

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Caerus Oil & Gas (NAD 27)	<b>Local Co-ordinate Reference:</b>	Well PUCKETT 34A-1
<b>Project:</b>	Garfield County, CO	<b>TVD Reference:</b>	KB=20' @ 8349.0usft (Patterson #303)
<b>Reference Site:</b>	S1-T7S-R97W (Mesa E1 797)	<b>MD Reference:</b>	KB=20' @ 8349.0usft (Patterson #303)
<b>Site Error:</b>	0.0usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	PUCKETT 34A-1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S1-T7S-R97W (Mesa E1 797) - PUCKETT 22D-1 - DD - Plan #1													Offset Site Error:	0.0 usft
Survey Program: 0-ISWWSA 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	31.06	13.1	7.9	15.3					
100.0	100.0	100.0	100.0	0.1	0.1	31.06	13.1	7.9	15.3	15.1	0.18	85.190		
200.0	200.0	200.0	200.0	0.3	0.3	31.06	13.1	7.9	15.3	14.7	0.63	24.340		
300.0	300.0	300.0	300.0	0.5	0.5	31.06	13.1	7.9	15.3	14.2	1.08	14.198		
400.0	400.0	400.0	400.0	0.8	0.8	31.06	13.1	7.9	15.3	13.8	1.53	10.022 CC, ES		
500.0	500.0	500.0	500.0	1.0	1.0	-111.35	13.1	7.9	16.1	14.1	1.96	8.186		
600.0	599.6	599.9	599.9	1.2	1.2	-125.24	12.1	10.3	19.5	17.0	2.42	8.040 SF		
700.0	698.8	700.1	699.8	1.4	1.4	-132.21	9.0	17.6	25.2	22.2	2.93	8.589		
800.0	797.1	799.9	798.8	1.8	1.7	-136.95	4.6	28.1	33.3	29.8	3.51	9.482		
900.0	894.3	899.0	897.3	2.2	1.9	-143.80	0.0	38.8	45.6	41.4	4.14	11.010		
1,000.0	990.2	997.3	994.9	2.7	2.2	-150.13	-4.4	49.4	62.7	57.9	4.78	13.127		
1,100.0	1,084.4	1,094.6	1,091.5	3.3	2.5	-155.16	-8.9	59.8	84.9	79.5	5.41	15.711		
1,200.0	1,176.8	1,190.5	1,186.8	4.0	2.8	-158.97	-13.2	70.1	112.3	106.2	6.02	18.639		
1,300.0	1,267.5	1,285.2	1,280.8	4.8	3.0	-161.92	-17.5	80.3	143.9	137.3	6.57	21.885		
1,400.0	1,357.9	1,379.7	1,374.7	5.7	3.3	-163.93	-21.8	90.4	176.1	169.0	7.09	24.830		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Caerus Oil & Gas (NAD 27)	<b>Local Co-ordinate Reference:</b>	Well PUCKETT 34A-1
<b>Project:</b>	Garfield County, CO	<b>TVD Reference:</b>	KB=20' @ 8349.0usft (Patterson #303)
<b>Reference Site:</b>	S1-T7S-R97W (Mesa E1 797)	<b>MD Reference:</b>	KB=20' @ 8349.0usft (Patterson #303)
<b>Site Error:</b>	0.0usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	PUCKETT 34A-1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S1-T7S-R97W (Mesa E1 797) - PUCKETT 23A-1 - DD - Plan #1													Offset Site Error: 0.0 usft	
Survey Program: 0-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	-150.24	-6.9	-4.0	8.0					
100.0	100.0	100.0	100.0	0.1	0.1	-150.24	-6.9	-4.0	8.0	7.8	0.18	44.276		
200.0	200.0	200.0	200.0	0.3	0.3	-150.24	-6.9	-4.0	8.0	7.3	0.63	12.650		
300.0	300.0	300.0	300.0	0.5	0.5	-150.24	-6.9	-4.0	8.0	6.9	1.08	7.379		
400.0	400.0	400.0	400.0	0.8	0.8	-150.24	-6.9	-4.0	8.0	6.4	1.53	5.209		
484.3	484.3	484.3	484.3	0.9	1.0	90.00	-6.9	-4.0	7.7	5.9	1.89	4.094 CC		
500.0	500.0	500.0	500.0	1.0	1.0	95.57	-6.9	-4.0	7.8	5.8	1.96	3.972 ES, SF		
600.0	599.6	600.0	599.9	1.2	1.2	127.53	-8.7	-2.1	9.8	7.4	2.42	4.061		
700.0	698.8	700.3	699.9	1.4	1.4	144.68	-14.2	3.6	13.7	10.8	2.95	4.658		
800.0	797.1	800.9	799.6	1.8	1.6	153.48	-23.4	13.0	18.4	14.8	3.52	5.215		
900.0	894.3	901.2	898.4	2.2	2.0	158.87	-35.9	25.7	23.7	19.6	4.11	5.768		
1,000.0	990.2	1,000.7	996.1	2.7	2.3	164.49	-48.8	38.9	33.4	28.7	4.71	7.091		
1,100.0	1,084.4	1,099.5	1,093.2	3.3	2.7	168.85	-61.7	52.0	48.4	43.1	5.32	9.105		
1,200.0	1,176.8	1,197.4	1,189.4	4.0	3.0	171.78	-74.4	65.0	68.6	62.7	5.92	11.591		
1,300.0	1,267.5	1,294.3	1,284.6	4.8	3.4	173.70	-86.9	77.9	93.1	86.7	6.46	14.408		
1,400.0	1,357.9	1,391.1	1,379.7	5.7	3.8	174.86	-99.5	90.7	118.1	111.1	6.98	16.925		
1,500.0	1,448.4	1,487.9	1,474.9	6.5	4.2	175.62	-112.1	103.6	143.1	135.6	7.52	19.044		
1,600.0	1,538.9	1,584.7	1,570.0	7.4	4.6	176.16	-124.7	116.5	168.1	160.1	8.06	20.848		
1,700.0	1,629.4	1,681.5	1,665.1	8.3	5.0	176.55	-137.2	129.3	193.2	184.5	8.63	22.392		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Caerus Oil & Gas (NAD 27)	<b>Local Co-ordinate Reference:</b>	Well PUCKETT 34A-1
<b>Project:</b>	Garfield County, CO	<b>TVD Reference:</b>	KB=20' @ 8349.0usft (Patterson #303)
<b>Reference Site:</b>	S1-T7S-R97W (Mesa E1 797)	<b>MD Reference:</b>	KB=20' @ 8349.0usft (Patterson #303)
<b>Site Error:</b>	0.0usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	PUCKETT 34A-1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S1-T7S-R97W (Mesa E1 797) - PUCKETT 23B-1 - DD - Plan #1													Offset Site Error:	0.0 usft
Survey Program: 0-ISCSWA 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	-151.78	-14.2	-7.6	16.1					
100.0	100.0	100.0	100.0	0.1	0.1	-151.78	-14.2	-7.6	16.1	15.9	0.18	89.629		
200.0	200.0	200.0	200.0	0.3	0.3	-151.78	-14.2	-7.6	16.1	15.5	0.63	25.608		
300.0	300.0	300.0	300.0	0.5	0.5	-151.78	-14.2	-7.6	16.1	15.0	1.08	14.938		
400.0	400.0	400.0	400.0	0.8	0.8	-151.78	-14.2	-7.6	16.1	14.6	1.53	10.545 CC		
500.0	500.0	499.7	499.7	1.0	1.0	75.19	-16.1	-5.9	16.3	14.4	1.94	8.421 ES		
600.0	599.6	599.4	599.1	1.2	1.2	75.91	-21.9	-0.7	16.9	14.6	2.36	7.186		
700.0	698.8	699.1	697.9	1.4	1.4	76.98	-31.6	8.0	18.0	15.1	2.87	6.266		
800.0	797.1	798.8	795.9	1.8	1.8	78.28	-45.1	20.1	19.5	15.9	3.52	5.531		
900.0	894.3	898.6	893.0	2.2	2.2	80.17	-62.2	35.5	21.3	17.0	4.33	4.915		
1,000.0	990.2	998.5	989.9	2.7	2.6	91.27	-80.4	51.8	23.1	17.7	5.33	4.321		
1,100.0	1,084.4	1,098.0	1,086.4	3.3	3.1	111.35	-98.5	68.0	27.0	20.6	6.36	4.243 SF		
1,200.0	1,176.8	1,196.9	1,182.2	4.0	3.6	131.59	-116.5	84.2	36.6	29.5	7.09	5.161		
1,300.0	1,267.5	1,295.1	1,277.5	4.8	4.1	145.53	-134.4	100.2	52.3	44.7	7.56	6.908		
1,400.0	1,357.9	1,393.2	1,372.6	5.7	4.6	153.07	-152.3	116.2	70.0	61.9	8.04	8.704		
1,500.0	1,448.4	1,491.3	1,467.7	6.5	5.1	157.53	-170.1	132.3	88.4	79.8	8.56	10.327		
1,600.0	1,538.9	1,589.4	1,562.8	7.4	5.6	160.45	-188.0	148.3	107.1	98.0	9.11	11.757		
1,700.0	1,629.4	1,687.5	1,658.0	8.3	6.1	162.50	-205.8	164.3	126.0	116.3	9.69	13.009		
1,800.0	1,719.8	1,785.6	1,753.1	9.1	6.6	164.01	-223.7	180.3	145.1	134.8	10.29	14.104		
1,900.0	1,810.3	1,883.7	1,848.2	10.0	7.1	165.17	-241.6	196.4	164.2	153.3	10.90	15.068		
2,000.0	1,900.8	1,981.8	1,943.4	10.9	7.6	166.09	-259.4	212.4	183.4	171.8	11.52	15.918		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Caerus Oil & Gas (NAD 27)	<b>Local Co-ordinate Reference:</b>	Well PUCKETT 34A-1
<b>Project:</b>	Garfield County, CO	<b>TVD Reference:</b>	KB=20' @ 8349.0usft (Patterson #303)
<b>Reference Site:</b>	S1-T7S-R97W (Mesa E1 797)	<b>MD Reference:</b>	KB=20' @ 8349.0usft (Patterson #303)
<b>Site Error:</b>	0.0usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	PUCKETT 34A-1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S1-T7S-R97W (Mesa E1 797) - PUCKETT 23C-1 - DD - Plan #1													Offset Site Error:	0.0 usft
Survey Program: 0-ISWWSA 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	-119.07	-9.1	-16.4	18.7					
100.0	100.0	100.0	100.0	0.1	0.1	-119.07	-9.1	-16.4	18.7	18.6	0.18	104.176		
200.0	200.0	200.0	200.0	0.3	0.3	-119.07	-9.1	-16.4	18.7	18.1	0.63	29.765		
300.0	300.0	300.0	300.0	0.5	0.5	-119.07	-9.1	-16.4	18.7	17.7	1.08	17.363 CC, ES		
400.0	400.0	399.2	399.1	0.8	0.7	-123.73	-11.5	-17.3	20.8	19.3	1.50	13.822 SF		
500.0	500.0	497.9	497.5	1.0	1.0	98.59	-18.7	-19.9	27.7	25.8	1.93	14.331		
600.0	599.6	596.8	595.7	1.2	1.2	98.88	-30.6	-23.2	38.9	36.5	2.40	16.237		
700.0	698.8	696.2	693.7	1.4	1.5	99.05	-46.5	-23.6	51.1	48.1	2.93	17.405		
800.0	797.1	795.5	791.0	1.8	1.9	99.01	-66.3	-20.8	63.8	60.2	3.61	17.689		
900.0	894.3	894.5	887.4	2.2	2.3	100.35	-88.4	-15.9	77.3	72.9	4.43	17.434		
1,000.0	990.2	993.2	983.5	2.7	2.7	104.33	-110.5	-11.1	92.0	86.6	5.41	17.007		
1,100.0	1,084.4	1,091.3	1,079.0	3.3	3.2	109.67	-132.4	-6.3	108.7	102.2	6.51	16.703		
1,200.0	1,176.8	1,188.4	1,173.5	4.0	3.6	115.49	-154.1	-1.5	128.5	120.8	7.68	16.724		
1,300.0	1,267.5	1,284.7	1,267.2	4.8	4.1	121.30	-175.7	3.2	151.5	142.6	8.85	17.109		
1,400.0	1,357.9	1,380.8	1,360.8	5.7	4.6	125.86	-197.2	7.9	176.0	166.0	9.97	17.653		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Caerus Oil & Gas (NAD 27)	<b>Local Co-ordinate Reference:</b>	Well PUCKETT 34A-1
<b>Project:</b>	Garfield County, CO	<b>TVD Reference:</b>	KB=20' @ 8349.0usft (Patterson #303)
<b>Reference Site:</b>	S1-T7S-R97W (Mesa E1 797)	<b>MD Reference:</b>	KB=20' @ 8349.0usft (Patterson #303)
<b>Site Error:</b>	0.0usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	PUCKETT 34A-1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													S1-T7S-R97W (Mesa E1 797) - PUCKETT 31B-1 - DD - Plan #1		Offset Site Error:		0.0 usft
Survey Program:													0-ISCSWA 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	17.79	46.6	15.0	49.0								
100.0	100.0	100.0	100.0	0.1	0.1	17.79	46.6	15.0	49.0	48.8	0.18	272.326					
200.0	200.0	200.0	200.0	0.3	0.3	17.79	46.6	15.0	49.0	48.3	0.63	77.807 CC, ES					
300.0	300.0	297.9	297.8	0.5	0.5	19.42	48.1	17.0	51.1	50.0	1.08	47.491					
400.0	400.0	395.2	394.9	0.8	0.8	23.58	52.6	23.0	57.6	56.1	1.54	37.433					
500.0	500.0	491.6	490.5	1.0	1.0	-106.29	59.9	32.8	69.6	67.6	2.04	34.199 SF					
600.0	599.6	586.5	583.8	1.2	1.4	-105.56	69.9	46.2	87.7	85.1	2.55	34.425					
700.0	698.8	679.3	674.3	1.4	1.8	-106.20	82.4	62.9	111.4	108.2	3.12	35.645					
800.0	797.1	769.5	761.1	1.8	2.2	-107.32	97.0	82.5	140.7	136.9	3.79	37.133					
900.0	894.3	856.9	844.0	2.2	2.7	-108.44	113.5	104.6	175.5	171.0	4.55	38.594					



# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Caerus Oil & Gas (NAD 27)	<b>Local Co-ordinate Reference:</b>	Well PUCKETT 34A-1
<b>Project:</b>	Garfield County, CO	<b>TVD Reference:</b>	KB=20' @ 8349.0usft (Patterson #303)
<b>Reference Site:</b>	S1-T7S-R97W (Mesa E1 797)	<b>MD Reference:</b>	KB=20' @ 8349.0usft (Patterson #303)
<b>Site Error:</b>	0.0usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	PUCKETT 34A-1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S1-T7S-R97W (Mesa E1 797) - PUCKETT 31C-1 - DD - Plan #1													Offset Site Error:	0.0 usft
Survey Program: 0-ISCSWA 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	15.50	39.7	11.0	41.2					
100.0	100.0	100.0	100.0	0.1	0.1	15.50	39.7	11.0	41.2	41.0	0.18	229.148		
200.0	200.0	200.0	200.0	0.3	0.3	15.50	39.7	11.0	41.2	40.6	0.63	65.471		
233.6	233.6	233.6	233.6	0.4	0.4	15.50	39.7	11.0	41.2	40.4	0.78	52.787 CC, ES		
300.0	300.0	299.2	299.2	0.5	0.5	16.09	40.0	11.5	41.7	40.6	1.08	38.750		
400.0	400.0	397.4	397.2	0.8	0.8	20.35	42.7	15.8	45.6	44.1	1.53	29.895		
500.0	500.0	494.8	494.1	1.0	1.0	-108.71	48.0	24.3	54.9	52.9	2.01	27.372 SF		
600.0	599.6	591.0	589.2	1.2	1.3	-107.44	55.7	36.8	70.1	67.6	2.51	27.920		
700.0	698.8	685.4	681.7	1.4	1.7	-107.77	65.8	53.0	91.0	87.9	3.09	29.473		
800.0	797.1	777.7	771.0	1.8	2.1	-108.68	77.9	72.5	117.5	113.8	3.76	31.259		
900.0	894.3	867.3	856.6	2.2	2.6	-109.65	91.9	95.0	149.4	144.9	4.53	32.972		
1,000.0	990.2	954.0	938.2	2.7	3.1	-110.44	107.4	120.0	186.6	181.2	5.41	34.518		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Caerus Oil & Gas (NAD 27)	<b>Local Co-ordinate Reference:</b>	Well PUCKETT 34A-1
<b>Project:</b>	Garfield County, CO	<b>TVD Reference:</b>	KB=20' @ 8349.0usft (Patterson #303)
<b>Reference Site:</b>	S1-T7S-R97W (Mesa E1 797)	<b>MD Reference:</b>	KB=20' @ 8349.0usft (Patterson #303)
<b>Site Error:</b>	0.0usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	PUCKETT 34A-1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> S1-T7S-R97W (Mesa E1 797) - PUCKETT 32A-1 - DD - Plan #1													Offset Site Error:	0.0 usft
Survey Program: 0-ISCSWA 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	29.73	41.5	23.7	47.8					
100.0	100.0	100.0	100.0	0.1	0.1	29.73	41.5	23.7	47.8	47.6	0.18	265.898		
200.0	200.0	200.0	200.0	0.3	0.3	29.73	41.5	23.7	47.8	47.2	0.63	75.971	CC, ES	
300.0	300.0	298.7	298.7	0.5	0.5	30.98	41.8	25.1	48.8	47.7	1.07	45.492		
400.0	400.0	396.7	396.4	0.8	0.8	35.94	43.1	31.3	53.4	51.8	1.53	34.984		
500.0	500.0	493.9	493.0	1.0	1.0	-92.47	45.4	42.2	62.5	60.5	2.00	31.179		
600.0	599.6	590.1	587.9	1.2	1.3	-90.44	48.7	57.8	76.0	73.5	2.51	30.306		
700.0	698.8	685.1	680.7	1.4	1.7	-90.24	52.9	77.7	93.6	90.5	3.09	30.264		
800.0	797.1	778.7	770.9	1.8	2.2	-90.96	58.0	101.7	115.2	111.4	3.79	30.386		
900.0	894.3	872.3	860.0	2.2	2.7	-92.16	63.9	129.7	140.5	135.9	4.62	30.380		
1,000.0	990.2	968.3	951.2	2.7	3.3	-94.37	70.2	159.4	167.0	161.4	5.59	29.870		
1,100.0	1,084.4	1,063.8	1,041.8	3.3	3.9	-97.29	76.4	188.9	194.5	187.8	6.69	29.088	SF	

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Caerus Oil & Gas (NAD 27)	<b>Local Co-ordinate Reference:</b>	Well PUCKETT 34A-1
<b>Project:</b>	Garfield County, CO	<b>TVD Reference:</b>	KB=20' @ 8349.0usft (Patterson #303)
<b>Reference Site:</b>	S1-T7S-R97W (Mesa E1 797)	<b>MD Reference:</b>	KB=20' @ 8349.0usft (Patterson #303)
<b>Site Error:</b>	0.0usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	PUCKETT 34A-1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S1-T7S-R97W (Mesa E1 797) - PUCKETT 32C-1 - DD - Plan #1													Offset Site Error:	0.0 usft
Survey Program: 0-ISWWSA 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	29.73	34.6	19.8	39.9					
100.0	100.0	100.0	100.0	0.1	0.1	29.73	34.6	19.8	39.9	39.7	0.18	221.623		
200.0	200.0	200.0	200.0	0.3	0.3	29.73	34.6	19.8	39.9	39.2	0.63	63.321		
300.0	300.0	300.0	300.0	0.5	0.5	29.73	34.6	19.8	39.9	38.8	1.08	36.937 CC, ES		
400.0	400.0	399.0	398.9	0.8	0.8	32.90	34.5	22.3	41.1	39.6	1.52	27.088		
500.0	500.0	497.5	497.2	1.0	1.0	-95.17	34.2	30.0	45.7	43.8	1.96	23.361		
600.0	599.6	595.6	594.4	1.2	1.2	-92.16	33.7	42.6	54.1	51.6	2.44	22.169		
700.0	698.8	693.0	690.2	1.4	1.6	-90.97	33.0	60.0	65.8	62.8	3.01	21.839		
800.0	797.1	789.5	784.2	1.8	2.0	-90.91	32.2	82.1	80.9	77.1	3.71	21.771		
900.0	894.3	885.0	875.9	2.2	2.5	-91.40	31.2	108.6	99.1	94.6	4.56	21.720		
1,000.0	990.2	982.5	968.8	2.7	3.0	-92.95	30.0	138.4	119.4	113.8	5.58	21.416		
1,100.0	1,084.4	1,080.0	1,061.5	3.3	3.6	-96.02	28.9	168.2	140.3	133.6	6.72	20.869		
1,200.0	1,176.8	1,176.7	1,153.6	4.0	4.2	-99.92	27.7	197.8	162.5	154.5	7.99	20.332		
1,300.0	1,267.5	1,272.8	1,245.1	4.8	4.8	-104.38	26.6	227.2	186.5	177.1	9.34	19.958 SF		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Caerus Oil & Gas (NAD 27)	<b>Local Co-ordinate Reference:</b>	Well PUCKETT 34A-1
<b>Project:</b>	Garfield County, CO	<b>TVD Reference:</b>	KB=20' @ 8349.0usft (Patterson #303)
<b>Reference Site:</b>	S1-T7S-R97W (Mesa E1 797)	<b>MD Reference:</b>	KB=20' @ 8349.0usft (Patterson #303)
<b>Site Error:</b>	0.0usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	PUCKETT 34A-1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S1-T7S-R97W (Mesa E1 797) - PUCKETT 33A-1 - DD - Plan #1													Offset Site Error:	0.0 usft
Survey Program: 0-ISCSWA 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	30.16	20.4	11.9	23.6					
100.0	100.0	100.0	100.0	0.1	0.1	30.16	20.4	11.9	23.6	23.4	0.18	131.227		
200.0	200.0	200.0	200.0	0.3	0.3	30.16	20.4	11.9	23.6	23.0	0.63	37.494		
300.0	300.0	300.0	300.0	0.5	0.5	30.16	20.4	11.9	23.6	22.5	1.08	21.871		
300.7	300.7	300.7	300.7	0.5	0.5	30.16	20.4	11.9	23.6	22.5	1.08	21.809 CC		
400.0	400.0	399.8	399.8	0.8	0.8	33.60	19.9	13.2	23.9	22.4	1.52	15.773 ES		
500.0	500.0	499.3	499.0	1.0	1.0	-91.50	17.8	19.4	26.3	24.4	1.94	13.559		
600.0	599.6	598.5	597.5	1.2	1.2	-85.97	14.1	30.3	31.2	28.8	2.41	12.957		
700.0	698.8	697.3	694.9	1.4	1.5	-83.06	8.7	46.1	38.3	35.4	2.98	12.876		
800.0	797.1	795.7	791.0	1.8	1.9	-81.95	1.7	66.5	47.5	43.9	3.68	12.917		
900.0	894.3	893.7	885.3	2.2	2.4	-81.89	-6.8	91.4	58.7	54.2	4.55	12.919		
1,000.0	990.2	991.3	977.8	2.7	3.0	-82.38	-16.8	120.7	71.8	66.2	5.59	12.843		
1,100.0	1,084.4	1,090.3	1,071.1	3.3	3.6	-84.93	-27.6	152.2	85.4	78.5	6.83	12.506		
1,200.0	1,176.8	1,189.0	1,164.0	4.0	4.3	-89.70	-38.3	183.7	99.0	90.7	8.23	12.031		
1,300.0	1,267.5	1,287.3	1,256.6	4.8	5.0	-95.59	-49.0	215.0	113.5	103.8	9.73	11.663		
1,400.0	1,357.9	1,385.5	1,349.1	5.7	5.6	-100.44	-59.7	246.3	129.1	117.9	11.23	11.495		
1,500.0	1,448.4	1,483.8	1,441.6	6.5	6.3	-104.23	-70.4	277.5	145.4	132.7	12.70	11.445 SF		
1,600.0	1,538.9	1,582.0	1,534.1	7.4	7.0	-107.25	-81.1	308.8	162.2	148.1	14.15	11.460		
1,700.0	1,629.4	1,680.3	1,626.6	8.3	7.7	-109.71	-91.8	340.1	179.4	163.8	15.59	11.509		
1,800.0	1,719.8	1,778.5	1,719.2	9.1	8.4	-111.73	-102.5	371.4	196.8	179.8	17.00	11.576		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Caerus Oil & Gas (NAD 27)	<b>Local Co-ordinate Reference:</b>	Well PUCKETT 34A-1
<b>Project:</b>	Garfield County, CO	<b>TVD Reference:</b>	KB=20' @ 8349.0usft (Patterson #303)
<b>Reference Site:</b>	S1-T7S-R97W (Mesa E1 797)	<b>MD Reference:</b>	KB=20' @ 8349.0usft (Patterson #303)
<b>Site Error:</b>	0.0usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	PUCKETT 34A-1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S1-T7S-R97W (Mesa E1 797) - PUCKETT 33C-1 - DD - Plan #1												Offset Site Error: 0.0 usft	
Survey Program: 0-ISCSWA 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	28.47	7.3	4.0	8.3				
100.0	100.0	100.0	100.0	0.1	0.1	28.47	7.3	4.0	8.3	8.1	0.18	46.113	
200.0	200.0	200.0	200.0	0.3	0.3	28.47	7.3	4.0	8.3	7.7	0.63	13.175	
300.0	300.0	300.0	300.0	0.5	0.5	32.99	6.9	4.5	8.3	7.2	1.07	7.726	
301.5	301.5	301.5	301.5	0.5	0.5	33.27	6.9	4.5	8.3	7.2	1.08	7.679	CC, ES
400.0	400.0	399.7	399.6	0.8	0.7	65.32	4.1	8.9	9.8	8.2	1.51	6.475	
500.0	500.0	499.0	498.3	1.0	1.0	-43.81	-1.6	17.5	15.7	13.7	1.98	7.939	
600.0	599.6	597.8	595.8	1.2	1.3	-35.68	-10.0	30.4	23.2	20.7	2.49	9.311	
700.0	698.8	696.1	692.1	1.4	1.7	-33.05	-21.2	47.3	31.3	28.3	3.07	10.206	
800.0	797.1	794.1	786.8	1.8	2.2	-32.65	-34.9	68.3	39.8	36.1	3.71	10.741	
900.0	894.3	891.6	879.6	2.2	2.7	-33.30	-51.3	93.2	48.6	44.2	4.42	11.001	
1,000.0	990.2	988.8	970.5	2.7	3.4	-34.51	-70.1	121.9	57.7	52.5	5.22	11.043	
1,100.0	1,084.4	1,088.3	1,062.6	3.3	4.1	-37.02	-90.8	153.5	65.1	58.9	6.18	10.528	
1,200.0	1,176.8	1,188.1	1,154.9	4.0	4.9	-41.80	-111.6	185.1	68.6	61.2	7.36	9.311	
1,300.0	1,267.5	1,287.7	1,247.1	4.8	5.7	-48.68	-132.3	216.8	69.6	60.7	8.87	7.842	
1,400.0	1,357.9	1,387.4	1,339.3	5.7	6.5	-55.55	-153.1	248.4	71.4	60.8	10.60	6.731	
1,500.0	1,448.4	1,487.0	1,431.5	6.5	7.2	-62.00	-173.8	280.0	74.1	61.6	12.47	5.942	
1,600.0	1,538.9	1,586.6	1,523.6	7.4	8.0	-67.93	-194.5	311.5	77.7	63.3	14.40	5.397	
1,700.0	1,629.4	1,686.2	1,615.8	8.3	8.8	-73.28	-215.3	343.1	82.1	65.8	16.33	5.026	
1,800.0	1,719.8	1,785.9	1,708.0	9.1	9.6	-78.06	-236.0	374.7	87.1	68.9	18.24	4.777	
1,900.0	1,810.3	1,885.5	1,800.2	10.0	10.4	-82.29	-256.7	406.3	92.7	72.6	20.09	4.612	
2,000.0	1,900.8	1,985.1	1,892.3	10.9	11.1	-86.03	-277.5	437.9	98.7	76.8	21.90	4.506	
2,100.0	1,991.3	2,084.7	1,984.5	11.8	11.9	-89.33	-298.2	469.5	105.0	81.4	23.65	4.442	
2,200.0	2,081.7	2,184.4	2,076.7	12.7	12.7	-92.24	-318.9	501.1	111.7	86.4	25.35	4.407	
2,300.0	2,172.2	2,284.0	2,168.9	13.5	13.5	-94.82	-339.7	532.7	118.7	91.6	27.02	4.392	SF
2,400.0	2,262.7	2,383.6	2,261.1	14.4	14.3	-97.12	-360.4	564.3	125.8	97.2	28.65	4.392	
2,500.0	2,353.2	2,483.2	2,353.2	15.3	15.1	-99.16	-381.1	595.9	133.1	102.9	30.24	4.402	
2,600.0	2,443.6	2,582.9	2,445.4	16.2	15.9	-100.99	-401.9	627.5	140.6	108.8	31.82	4.420	
2,700.0	2,534.1	2,682.5	2,537.6	17.1	16.7	-102.63	-422.6	659.1	148.2	114.9	33.36	4.443	
2,800.0	2,624.6	2,782.1	2,629.8	18.0	17.5	-104.11	-443.3	690.7	156.0	121.1	34.89	4.469	
2,900.0	2,715.1	2,881.7	2,721.9	18.8	18.2	-105.45	-464.1	722.3	163.8	127.4	36.41	4.498	
3,000.0	2,805.5	2,981.4	2,814.1	19.7	19.0	-106.67	-484.8	753.9	171.7	133.8	37.91	4.528	
3,100.0	2,896.0	3,081.0	2,906.3	20.6	19.8	-107.78	-505.5	785.5	179.6	140.2	39.40	4.559	
3,200.0	2,986.5	3,180.6	2,998.5	21.5	20.6	-108.80	-526.3	817.1	187.7	146.8	40.88	4.590	
3,300.0	3,077.0	3,280.2	3,090.7	22.4	21.4	-109.73	-547.0	848.7	195.7	153.4	42.35	4.622	

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Caerus Oil & Gas (NAD 27)	<b>Local Co-ordinate Reference:</b>	Well PUCKETT 34A-1
<b>Project:</b>	Garfield County, CO	<b>TVD Reference:</b>	KB=20' @ 8349.0usft (Patterson #303)
<b>Reference Site:</b>	S1-T7S-R97W (Mesa E1 797)	<b>MD Reference:</b>	KB=20' @ 8349.0usft (Patterson #303)
<b>Site Error:</b>	0.0usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	PUCKETT 34A-1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S1-T7S-R97W (Mesa E1 797) - PUCKETT SWD E1-797 - VH - Plan #1													Offset Site Error:	0.0 usft
Survey Program: 0-ISCSWA 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	-151.28	-21.1	-11.6	24.1					
100.0	100.0	100.0	100.0	0.1	0.1	-151.28	-21.1	-11.6	24.1	23.9	0.18	133.939		
200.0	200.0	200.0	200.0	0.3	0.3	-151.28	-21.1	-11.6	24.1	23.5	0.63	38.268		
300.0	300.0	300.0	300.0	0.5	0.5	-151.28	-21.1	-11.6	24.1	23.0	1.08	22.323		
400.0	400.0	400.0	400.0	0.8	0.8	-151.28	-21.1	-11.6	24.1	22.6	1.53	15.758		
500.0	500.0	500.0	500.0	1.0	1.0	81.62	-21.1	-11.6	23.6	21.6	1.96	12.031		
552.1	551.9	551.9	551.9	1.1	1.1	90.00	-21.1	-11.6	23.3	21.1	2.19	10.661	CC, ES	
600.0	599.6	599.6	599.6	1.2	1.2	100.65	-21.1	-11.6	23.7	21.3	2.40	9.888		
700.0	698.8	698.8	698.8	1.4	1.4	126.49	-21.1	-11.6	29.1	26.2	2.96	9.835	SF	
800.0	797.1	797.1	797.1	1.8	1.7	146.26	-21.1	-11.6	42.6	39.0	3.60	11.825		
900.0	894.3	894.3	894.3	2.2	1.9	157.76	-21.1	-11.6	63.5	59.2	4.23	14.993		
1,000.0	990.2	990.2	990.2	2.7	2.1	164.34	-21.1	-11.6	90.5	85.6	4.84	18.693		
1,100.0	1,084.4	1,084.4	1,084.4	3.3	2.3	168.32	-21.1	-11.6	123.0	117.6	5.44	22.634		
1,200.0	1,176.8	1,176.8	1,176.8	4.0	2.5	170.89	-21.1	-11.6	160.8	154.7	6.02	26.692		

# Cathedral Energy Services

## Anticollision Report

**Company:** Caerus Oil & Gas (NAD 27)  
**Project:** Garfield County, CO  
**Reference Site:** S1-T7S-R97W (Mesa E1 797)  
**Site Error:** 0.0usft  
**Reference Well:** PUCKETT 34A-1  
**Well Error:** 0.0usft  
**Reference Wellbore:** DD  
**Reference Design:** Plan #1

**Local Co-ordinate Reference:** Well PUCKETT 34A-1  
**TVD Reference:** KB=20' @ 8349.0usft (Patterson #303)  
**MD Reference:** KB=20' @ 8349.0usft (Patterson #303)  
**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=20' @ 8349.0usft (Patterson #303)  
 Offset Depths are relative to Offset Datum  
 Central Meridian is -105.500000 °

Coordinates are relative to: PUCKETT 34A-1  
 Coordinate System is US State Plane 1927 (Exact solution), Colorado Central 502  
 Grid Convergence at Surface is: -1.69°

