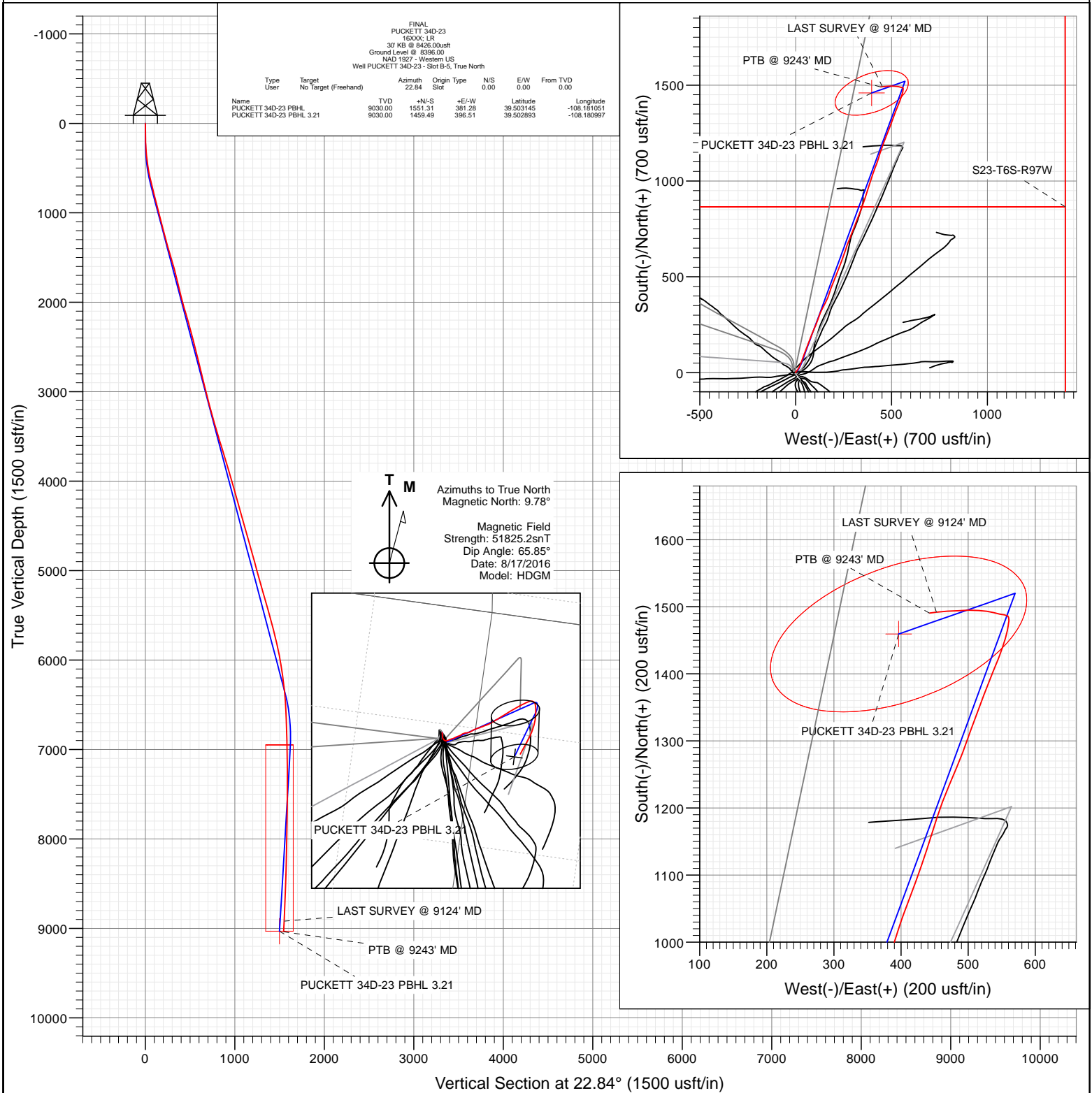




Project: Garfield County, CO (UTM 12N)  
Site: S26-T6S-R97W (697 26A)  
Well: PUCKETT 34D-23  
Wellbore: OH  
Design: FINAL



WELL DETAILS: PUCKETT 34D-23

+N/-S	+E/-W	Northing	Ground Level:	8396.00	Latitude	Longitude
0.00	0.00	14356017.52	Easting	2435307.85	39.498887	-108.182402

B-5



# Cathedral Energy Services

## Survey Report

<b>Company:</b>	Caerus Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well PUCKETT 34D-23 - Slot B-5
<b>Project:</b>	Garfield County, CO (UTM 12N)	<b>TVD Reference:</b>	30' KB @ 8426.00usft
<b>Site:</b>	S26-T6S-R97W (697 26A)	<b>MD Reference:</b>	30' KB @ 8426.00usft
<b>Well:</b>	PUCKETT 34D-23	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	FINAL	<b>Database:</b>	USA EDM 5000 Multi Users DB

<b>Project</b>	Garfield County, CO (UTM 12N)		
<b>Map System:</b>	Universal Transverse Mercator (US Survey Feet)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD 1927 - Western US		
<b>Map Zone:</b>	Zone 12N (114 W to 108 W)		

<b>Site</b>	S26-T6S-R97W (697 26A)		
<b>Site Position:</b>		<b>Northing:</b>	14,356,905.20 usft
<b>From:</b>	Map	<b>Easting:</b>	2,433,730.50 usft
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13-3/16"
		<b>Latitude:</b>	39.501458
		<b>Longitude:</b>	-108.187888
		<b>Grid Convergence:</b>	1.79 °

Well	PUCKETT 34D-23 - Slot B-5					
Well Position	+N/-S	0.00 usft	Northing:	14,356,017.52 usft	Latitude:	39.498887
	+E/-W	0.00 usft	Easting:	2,435,307.85 usft	Longitude:	-108.182402
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	8,396.00 usft

<b>Wellbore</b>	OH				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	HDGM	8/17/2016	9.78	65.85	51,825

<b>Design</b>	FINAL				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD)</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Direction</b>	
	(usft)	(usft)	(usft)	(°)	
	0.00	0.00	0.00	22.84	

<b>Survey Program</b>	<b>Date</b>	4/7/2017			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
179.00	9,243.00	Survey #1 (OH)	MWD+HDGM	OWSG MWD + HDGM	

<b>Survey</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Vertical Section (usft)</b>	<b>Dogleg Rate (°/100usf)</b>	<b>Build Rate (°/100u)</b>	<b>Formations / Comments</b>	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
179.00	1.45	7.26	178.98	2.25	0.29	2.18	0.81	0.81		
210.00	2.02	29.41	209.97	3.11	0.60	3.10	2.81	1.84		
240.00	2.99	28.18	239.94	4.26	1.23	4.41	3.24	3.23		
301.00	4.22	42.94	300.82	7.31	3.51	8.10	2.51	2.02		
393.00	6.94	39.69	392.37	14.06	9.37	16.60	2.98	2.96		
485.00	8.66	28.27	483.52	24.44	16.20	28.81	2.51	1.87		
576.00	11.29	23.26	573.14	38.66	22.97	44.55	3.04	2.89		
670.00	13.93	18.60	664.87	57.84	30.21	65.03	3.01	2.81		
765.00	14.24	19.21	757.01	79.72	37.70	88.10	0.36	0.33		
859.00	14.37	23.52	848.10	101.33	46.16	111.30	1.14	0.14		
954.00	13.89	22.99	940.23	122.64	55.32	134.49	0.52	-0.51		
1,048.00	14.37	20.00	1,031.38	143.98	63.71	157.43	0.93	0.51		

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	Caerus Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well PUCKETT 34D-23 - Slot B-5
<b>Project:</b>	Garfield County, CO (UTM 12N)	<b>TVD Reference:</b>	30' KB @ 8426.00usft
<b>Site:</b>	S26-T6S-R97W (697 26A)	<b>MD Reference:</b>	30' KB @ 8426.00usft
<b>Well:</b>	PUCKETT 34D-23	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	FINAL	<b>Database:</b>	USA EDM 5000 Multi Users DB

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usf)	Build Rate (°/100u)	Formations / Comments
1,143.00	15.47	19.04	1,123.18	167.04	71.88	181.84	1.19	1.16	
1,237.00	14.90	20.09	1,213.90	190.24	80.12	206.42	0.67	-0.61	
1,332.00	14.59	22.64	1,305.77	212.75	88.92	230.59	0.76	-0.33	
1,426.00	15.78	26.16	1,396.49	235.15	99.12	255.19	1.60	1.27	
1,521.00	16.57	20.27	1,487.73	259.46	109.50	281.62	1.92	0.83	
1,616.00	16.61	19.21	1,578.78	284.99	118.67	308.70	0.32	0.04	
1,710.00	14.72	21.50	1,669.28	308.79	127.46	334.05	2.12	-2.01	
1,805.00	13.05	25.45	1,761.51	329.71	136.50	356.84	2.02	-1.76	
1,899.00	13.10	29.32	1,853.07	348.58	146.27	378.02	0.93	0.05	
1,994.00	15.25	26.95	1,945.17	369.10	157.21	401.18	2.34	2.26	
2,089.00	16.26	21.85	2,036.61	392.59	167.82	426.95	1.80	1.06	
2,183.00	15.78	16.84	2,126.96	417.04	176.42	452.82	1.56	-0.51	
2,278.00	15.82	19.74	2,218.37	441.59	184.54	478.59	0.83	0.04	
2,373.00	14.85	22.38	2,309.99	465.03	193.55	503.70	1.26	-1.02	
2,467.00	14.06	21.67	2,401.02	486.78	202.35	527.16	0.86	-0.84	
2,604.00	14.63	22.46	2,533.74	518.24	215.11	561.10	0.44	0.42	
2,699.00	14.41	21.59	2,625.71	540.32	224.04	584.91	0.33	-0.23	
2,793.00	14.28	21.06	2,716.78	562.01	232.51	608.20	0.20	-0.14	
2,887.00	13.67	19.21	2,808.00	583.32	240.33	630.87	0.80	-0.65	
2,982.00	13.67	17.54	2,900.31	604.62	247.41	653.25	0.42	0.00	
3,076.00	13.54	18.86	2,991.67	625.63	254.31	675.29	0.36	-0.14	
3,171.00	14.11	19.39	3,083.92	647.07	261.75	697.94	0.61	0.60	
3,265.00	14.85	21.06	3,174.93	669.12	269.88	721.42	0.90	0.79	
3,359.00	16.26	22.03	3,265.48	692.57	279.15	746.62	1.53	1.50	
3,454.00	15.69	21.76	3,356.82	716.82	288.90	772.76	0.61	-0.60	
3,548.00	16.66	21.41	3,447.09	741.17	298.53	798.94	1.04	1.03	
3,643.00	17.36	20.88	3,537.94	767.09	308.55	826.72	0.75	0.74	
3,737.00	16.48	20.79	3,627.87	792.66	318.28	854.06	0.94	-0.94	
3,832.00	17.58	20.88	3,718.70	818.67	328.18	881.86	1.16	1.16	
3,926.00	16.88	20.88	3,808.48	844.68	338.10	909.69	0.74	-0.74	
4,020.00	16.39	20.71	3,898.55	869.84	347.66	936.58	0.52	-0.52	
4,115.00	16.04	18.95	3,989.77	894.79	356.66	963.07	0.64	-0.37	
4,209.00	16.00	18.25	4,080.12	919.37	364.93	988.94	0.21	-0.04	
4,304.00	15.73	17.54	4,171.50	944.09	372.92	1,014.81	0.35	-0.28	
4,398.00	15.60	17.19	4,262.01	968.31	380.49	1,040.08	0.17	-0.14	
4,587.00	15.65	17.19	4,444.02	1,016.94	395.54	1,090.74	0.03	0.03	
4,682.00	16.52	19.92	4,535.30	1,041.88	403.93	1,116.98	1.21	0.92	
4,776.00	15.95	20.79	4,625.56	1,066.52	413.06	1,143.23	0.66	-0.61	
4,871.00	15.47	20.00	4,717.01	1,090.63	422.03	1,168.93	0.55	-0.51	
4,965.00	15.34	19.30	4,807.63	1,114.15	430.43	1,193.86	0.24	-0.14	
5,060.00	15.16	17.98	4,899.28	1,137.82	438.41	1,218.78	0.41	-0.19	
5,155.00	15.12	17.54	4,990.99	1,161.45	445.98	1,243.50	0.13	-0.04	
5,249.00	15.56	17.72	5,081.64	1,185.15	453.51	1,268.26	0.47	0.47	
5,344.00	16.00	20.53	5,173.06	1,209.55	461.98	1,294.04	0.93	0.46	
5,438.00	16.48	22.99	5,263.31	1,233.96	471.74	1,320.31	0.89	0.51	
5,533.00	16.08	22.64	5,354.50	1,258.50	482.06	1,346.94	0.43	-0.42	
5,627.00	15.60	21.06	5,444.93	1,282.31	491.62	1,372.60	0.69	-0.51	
5,722.00	15.29	20.53	5,536.50	1,305.96	500.60	1,397.88	0.36	-0.33	
5,816.00	14.99	18.86	5,627.24	1,329.08	508.88	1,422.39	0.56	-0.32	
5,911.00	13.84	20.27	5,719.25	1,351.36	516.78	1,446.00	1.27	-1.21	
6,005.00	12.44	21.76	5,810.78	1,371.31	524.43	1,467.36	1.53	-1.49	
6,100.00	11.51	22.55	5,903.71	1,389.57	531.86	1,487.06	0.99	-0.98	
6,194.00	10.28	21.85	5,996.02	1,406.02	538.58	1,504.83	1.32	-1.31	

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	Caerus Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well PUCKETT 34D-23 - Slot B-5
<b>Project:</b>	Garfield County, CO (UTM 12N)	<b>TVD Reference:</b>	30' KB @ 8426.00usft
<b>Site:</b>	S26-T6S-R97W (697 26A)	<b>MD Reference:</b>	30' KB @ 8426.00usft
<b>Well:</b>	PUCKETT 34D-23	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	FINAL	<b>Database:</b>	USA EDM 5000 Multi Users DB

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usf)	Build Rate (°/100u)	Formations / Comments
6,289.00	9.05	21.15	6,089.67	1,420.85	544.43	1,520.77	1.30	-1.29	
6,383.00	7.87	19.65	6,182.64	1,433.81	549.26	1,534.59	1.28	-1.26	
6,478.00	6.86	17.81	6,276.86	1,445.34	553.18	1,546.74	1.09	-1.06	
6,572.00	5.54	15.43	6,370.31	1,455.06	556.11	1,556.83	1.43	-1.40	
6,667.00	4.00	12.09	6,464.97	1,462.72	558.02	1,564.63	1.65	-1.62	
6,761.00	2.94	7.44	6,558.80	1,468.31	559.02	1,570.18	1.17	-1.13	
6,856.00	2.29	10.69	6,653.70	1,472.59	559.69	1,574.38	0.70	-0.68	
6,951.00	1.85	11.21	6,748.64	1,475.96	560.34	1,577.74	0.46	-0.46	
7,139.00	0.92	353.81	6,936.58	1,480.44	560.77	1,582.03	0.54	-0.49	
7,328.00	1.45	350.65	7,125.54	1,484.31	560.21	1,585.38	0.28	0.28	
7,423.00	1.23	313.21	7,220.52	1,486.19	559.28	1,586.75	0.93	-0.23	
7,612.00	2.11	276.38	7,409.44	1,487.97	554.34	1,586.47	0.71	0.47	
7,801.00	2.55	281.21	7,598.28	1,489.17	546.76	1,584.64	0.25	0.23	
7,989.00	2.81	287.45	7,786.08	1,491.37	538.26	1,583.36	0.21	0.14	
8,179.00	3.47	274.36	7,975.80	1,493.20	528.08	1,581.10	0.51	0.35	
8,368.00	4.13	276.82	8,164.38	1,494.44	515.62	1,577.41	0.36	0.35	
8,557.00	4.83	266.80	8,352.80	1,494.81	500.92	1,572.04	0.55	0.37	
8,746.00	4.79	268.73	8,541.14	1,494.19	485.09	1,565.33	0.09	-0.02	
8,935.00	4.97	266.36	8,729.45	1,493.49	469.03	1,558.45	0.14	0.10	
9,124.00	5.05	262.93	8,917.73	1,491.95	452.60	1,550.65	0.16	0.04	LAST SURVEY @ 9124' MD
9,243.00	5.05	262.93	9,036.27	1,490.66	442.21	1,545.43	0.00	0.00	PTB @ 9243' MD

Targets									
Target Name	- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	
- Shape									Latitude Longitude
PUCKETT 34D-23 PBHI		0.00	0.00	9,030.00	1,459.49	396.51	14,357,488.70	2,435,658.50	39.502893 -108.180997
- actual wellpath misses target center by 55.63usft at 9241.08usft MD (9034.36 TVD, 1490.68 N, 442.37 E)									
- Ellipse (radii L200.00 W100.00 on 250.00 azi)									
PUCKETT 34D-23 PBHI		0.00	0.00	9,030.00	1,551.31	381.28	14,357,580.00	2,435,640.40	39.503145 -108.181051
- actual wellpath misses target center by 86.18usft at 9241.42usft MD (9034.70 TVD, 1490.68 N, 442.34 E)									
- Circle (radius 100.00)									

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
9,124.00	8,917.73	1,491.95	452.60	LAST SURVEY @ 9124' MD	
9,243.00	9,036.27	1,490.66	442.21	PTB @ 9243' MD	

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_