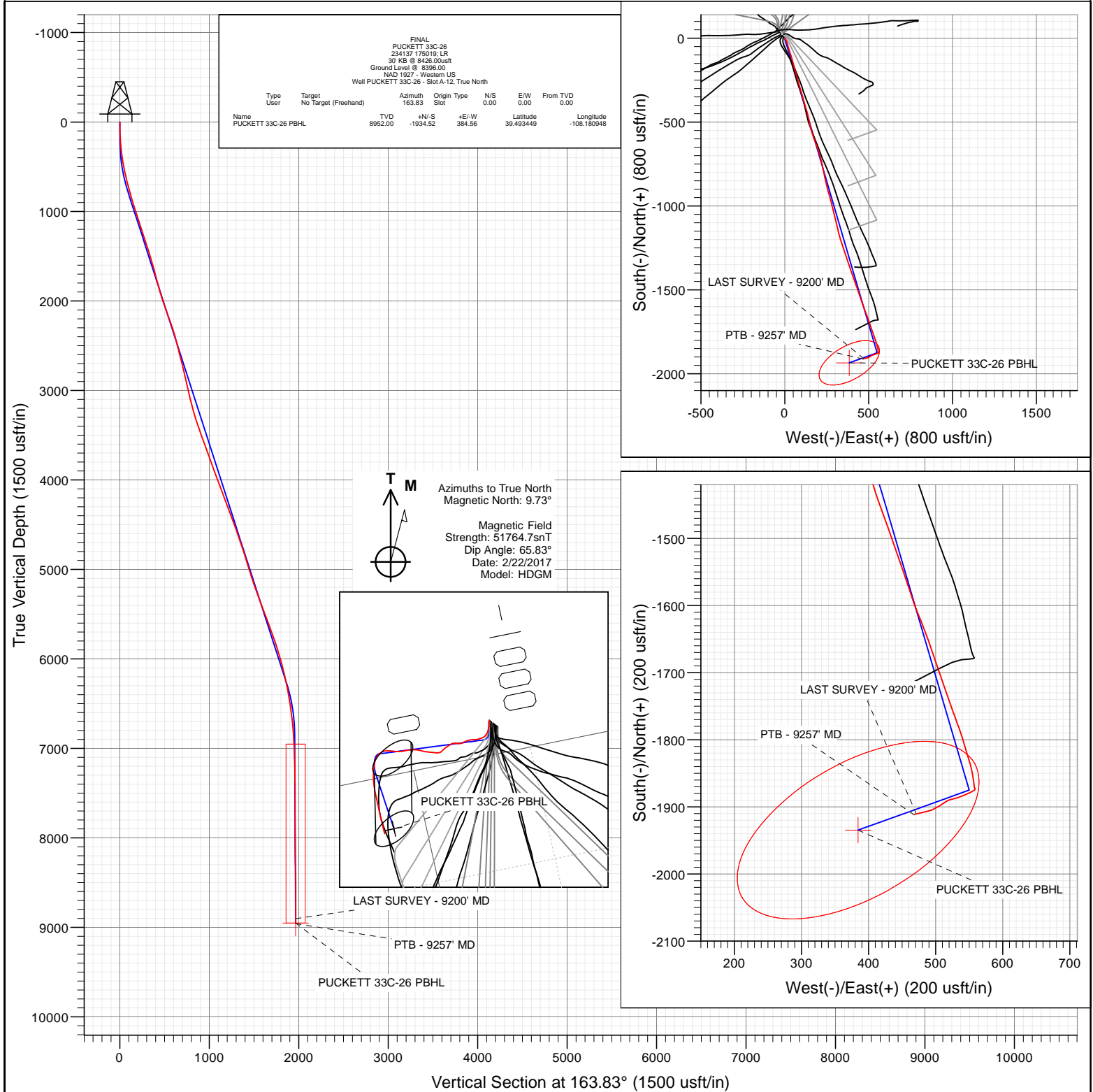




Project: Garfield County, CO (UTM 12N)  
Site: S26-T6S-R97W (697 26A)  
Well: PUCKETT 33C-26  
Wellbore: OH  
Design: FINAL



WELL DETAILS: PUCKETT 33C-26

+N/-S	+E/-W	Northing	Ground Level:	8396.00	Latitude	Longitude
0.00	0.00	14355971.54	Easting	2435335.09	39.498759	-108.182310

A-12



# Cathedral Energy Services

## Survey Report

<b>Company:</b>	Caerus Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well PUCKETT 33C-26 - Slot A-12
<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 33C-26	<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 33C-26 - Slot A-12					
Well Position	+N/-S	0.00 usft	Northing:	14,355,971.54 usft	Latitude:	39.498759
	+E/-W	0.00 usft	Easting:	2,435,335.09 usft	Longitude:	-108.182310
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	2/22/2017	9.73	65.83	51,765

<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) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>	
	0.00	0.00	0.00	163.83	

<b>Survey Program</b>	<b>Date</b>	2/23/2017			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
179.00	9,257.00	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	2.81	141.65	178.93	-3.44	2.72	4.06	1.57	1.57		
210.00	3.56	151.41	209.88	-4.88	3.65	5.71	2.98	2.42		
301.00	5.76	153.34	300.57	-11.45	7.06	12.96	2.42	2.42		
392.00	8.17	158.53	390.90	-21.55	11.47	23.89	2.73	2.65		
482.00	10.94	164.68	479.64	-35.74	16.07	38.80	3.28	3.08		
575.00	12.66	164.42	570.67	-54.07	21.14	57.81	1.85	1.85		
669.00	14.24	162.48	662.09	-75.01	27.39	79.67	1.75	1.68		
764.00	15.38	161.08	753.94	-98.07	34.99	103.94	1.26	1.20		
858.00	16.44	163.10	844.33	-122.59	42.90	129.69	1.27	1.13		
953.00	17.05	164.59	935.31	-148.88	50.51	157.06	0.79	0.64		
1,047.00	16.96	164.95	1,025.20	-175.41	57.73	184.55	0.15	-0.10		
1,142.00	18.24	167.41	1,115.75	-203.30	64.57	213.24	1.56	1.35		

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	Caerus Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well PUCKETT 33C-26 - Slot A-12
<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 33C-26	<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
1,236.00	18.37	165.91	1,204.99	-232.02	71.38	242.72	0.52	0.14	
1,331.00	18.55	163.10	1,295.11	-261.00	79.42	272.80	0.96	0.19	
1,425.00	17.67	161.69	1,384.45	-288.85	88.25	302.00	1.05	-0.94	
1,520.00	16.52	161.61	1,475.25	-315.36	97.04	329.91	1.21	-1.21	
1,615.00	16.57	165.21	1,566.32	-341.28	104.76	356.95	1.08	0.05	
1,709.00	15.82	166.62	1,656.59	-366.70	111.14	383.15	0.90	-0.80	
1,804.00	14.99	162.84	1,748.18	-391.04	117.77	408.37	1.37	-0.87	
1,898.00	15.29	161.52	1,838.91	-414.41	125.28	432.90	0.49	0.32	
1,993.00	16.83	164.42	1,930.21	-439.54	132.95	459.17	1.83	1.62	
2,087.00	18.55	167.93	2,019.76	-467.27	139.73	487.70	2.15	1.83	
2,182.00	19.56	167.93	2,109.55	-497.60	146.21	518.63	1.06	1.06	
2,277.00	20.35	166.35	2,198.85	-529.20	153.44	551.00	1.01	0.83	
2,371.00	18.94	163.45	2,287.38	-559.71	161.64	582.58	1.82	-1.50	
2,466.00	15.43	161.25	2,378.12	-586.47	170.10	610.64	3.76	-3.69	
2,608.00	14.41	158.71	2,515.34	-620.82	182.59	647.11	0.85	-0.72	
2,702.00	14.11	160.64	2,606.44	-642.53	190.63	670.20	0.60	-0.32	
2,796.00	14.28	161.96	2,697.57	-664.36	198.02	693.22	0.39	0.18	
2,891.00	13.67	162.31	2,789.76	-686.20	205.06	716.16	0.65	-0.64	
2,985.00	12.96	162.04	2,881.23	-706.81	211.68	737.80	0.76	-0.76	
3,080.00	12.79	167.14	2,973.85	-727.19	217.31	758.94	1.21	-0.18	
3,174.00	13.05	170.39	3,065.47	-747.80	221.40	779.87	0.82	0.28	
3,268.00	14.41	166.79	3,156.78	-769.65	225.84	802.10	1.71	1.45	
3,363.00	16.74	168.20	3,248.29	-794.56	231.34	827.55	2.48	2.45	
3,457.00	17.93	168.29	3,338.01	-821.98	237.05	855.47	1.27	1.27	
3,552.00	19.25	166.26	3,428.06	-851.51	243.73	885.70	1.55	1.39	
3,646.00	19.69	167.58	3,516.68	-882.03	250.82	916.98	0.66	0.47	
3,741.00	19.60	164.77	3,606.15	-913.03	258.45	948.89	1.00	-0.09	
3,835.00	20.26	164.07	3,694.52	-943.89	267.06	980.92	0.75	0.70	
3,929.00	20.22	163.19	3,782.72	-975.09	276.22	1,013.44	0.33	-0.04	
4,024.00	19.86	167.93	3,871.97	-1,006.59	284.35	1,045.96	1.75	-0.38	
4,118.00	19.60	164.42	3,960.46	-1,037.39	291.92	1,077.65	1.29	-0.28	
4,213.00	20.79	167.67	4,049.62	-1,069.22	299.80	1,110.41	1.72	1.25	
4,307.00	21.09	166.62	4,137.41	-1,101.97	307.28	1,143.94	0.51	0.32	
4,402.00	20.92	167.23	4,226.10	-1,135.14	314.98	1,177.95	0.29	-0.18	
4,496.00	20.87	165.47	4,313.92	-1,167.71	322.89	1,211.44	0.67	-0.05	
4,591.00	20.13	162.13	4,402.90	-1,199.65	332.15	1,244.69	1.46	-0.78	
4,685.00	19.82	162.57	4,491.25	-1,230.25	341.89	1,276.79	0.37	-0.33	
4,779.00	19.07	159.50	4,579.89	-1,259.84	352.04	1,308.04	1.35	-0.80	
4,874.00	18.81	161.61	4,669.75	-1,288.91	362.31	1,338.82	0.77	-0.27	
4,969.00	18.15	163.98	4,759.85	-1,317.67	371.22	1,368.92	1.05	-0.69	
5,063.00	17.80	160.46	4,849.26	-1,345.28	380.07	1,397.90	1.21	-0.37	
5,158.00	17.36	159.76	4,939.83	-1,372.26	389.83	1,426.54	0.51	-0.46	
5,252.00	17.31	159.94	5,029.56	-1,398.56	399.48	1,454.48	0.08	-0.05	
5,347.00	19.07	162.66	5,119.81	-1,426.65	408.95	1,484.10	2.06	1.85	
5,442.00	19.34	159.67	5,209.52	-1,456.21	419.04	1,515.30	1.07	0.28	
5,536.00	19.60	160.20	5,298.15	-1,485.64	429.79	1,546.56	0.33	0.28	
5,631.00	19.95	161.43	5,387.55	-1,516.00	440.35	1,578.66	0.57	0.37	
5,725.00	20.39	160.29	5,475.78	-1,546.62	450.98	1,611.02	0.63	0.47	
5,820.00	21.18	162.31	5,564.60	-1,578.55	461.78	1,644.70	1.12	0.83	
5,914.00	21.23	158.62	5,652.24	-1,610.57	473.14	1,678.62	1.42	0.05	
6,009.00	19.69	158.53	5,741.24	-1,641.49	485.27	1,711.69	1.62	-1.62	
6,103.00	17.97	161.78	5,830.21	-1,670.00	495.60	1,741.95	2.14	-1.83	
6,198.00	16.66	161.17	5,920.90	-1,696.81	504.58	1,770.20	1.39	-1.38	

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	Caerus Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well PUCKETT 33C-26 - Slot A-12
<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 33C-26	<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
6,292.00	15.43	160.20	6,011.24	-1,721.33	513.16	1,796.15	1.34	-1.31	
6,387.00	14.77	161.52	6,102.96	-1,744.71	521.28	1,820.86	0.78	-0.69	
6,481.00	13.23	159.32	6,194.17	-1,766.14	528.88	1,843.56	1.73	-1.64	
6,576.00	11.69	160.81	6,286.93	-1,785.40	535.88	1,864.00	1.66	-1.62	
6,670.00	10.15	163.19	6,379.22	-1,802.32	541.41	1,881.80	1.71	-1.64	
6,765.00	9.01	163.54	6,472.89	-1,817.47	545.94	1,897.61	1.20	-1.20	
6,859.00	8.04	163.45	6,565.85	-1,830.83	549.90	1,911.54	1.03	-1.03	
6,954.00	6.37	166.09	6,660.10	-1,842.31	553.06	1,923.45	1.79	-1.76	
7,048.00	4.97	169.60	6,753.64	-1,851.38	555.04	1,932.71	1.53	-1.49	
7,143.00	4.61	172.24	6,848.31	-1,859.21	556.30	1,940.58	0.44	-0.38	
7,237.00	3.25	173.38	6,942.08	-1,865.60	557.12	1,946.95	1.45	-1.45	
7,332.00	2.59	170.13	7,036.96	-1,870.39	557.80	1,951.74	0.72	-0.69	
7,427.00	0.79	99.29	7,131.92	-1,872.61	558.81	1,954.15	2.58	-1.89	
7,615.00	1.76	222.95	7,319.89	-1,874.93	558.12	1,956.19	1.22	0.52	
7,804.00	2.77	253.45	7,508.75	-1,878.36	551.77	1,957.71	0.81	0.53	
7,993.00	3.16	239.13	7,697.50	-1,882.33	542.92	1,959.06	0.44	0.21	
8,182.00	3.74	258.81	7,886.16	-1,886.20	532.40	1,959.85	0.69	0.31	
8,371.00	3.52	250.38	8,074.78	-1,889.35	520.89	1,959.66	0.31	-0.12	
8,466.00	3.25	238.07	8,169.62	-1,891.75	515.86	1,960.57	0.81	-0.28	
8,655.00	4.13	235.79	8,358.23	-1,898.41	505.68	1,964.13	0.47	0.47	
8,844.00	3.91	247.56	8,546.76	-1,904.70	494.10	1,966.94	0.45	-0.12	
9,033.00	3.69	263.12	8,735.35	-1,907.88	482.10	1,966.66	0.56	-0.12	
9,200.00	3.91	251.87	8,901.99	-1,910.30	471.36	1,965.99	0.46	0.13	LAST SURVEY - 9200' MD
9,257.00	3.91	251.87	8,958.86	-1,911.51	467.66	1,966.12	0.00	0.00	PTB - 9257' MD

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
PUCKETT 33C-26 PBHI	0.00	0.00	8,952.00	-1,934.52	384.56	14,354,050.00	2,435,780.00	39.493449	-108.180948
- actual wellpath misses target center by 86.49usft at 9256.03usft MD (8957.89 TVD, -1911.49 N, 467.72 E)									
- Ellipse (radii L200.00 W100.00 on 240.00 azi)									

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Comment	
9,200.00	8,901.99	-1,910.30	471.36	LAST SURVEY - 9200' MD	
9,257.00	8,958.86	-1,911.51	467.66	PTB - 9257' MD	

Checked By: _____	Approved By: _____	Date: _____
-------------------	--------------------	-------------