



Survey Report

Company:	Caerus Oil & Gas (NAD 27)	Local Co-ordinate Reference:	Well PUCKETT 13C-1
Project:	Garfield County, CO	TVD Reference:	30' KB @ 8507.0usft (H&P 330)
Site:	S2-T7S-R97W (Mesa H2)	MD Reference:	30' KB @ 8507.0usft (H&P 330)
Well:	PUCKETT 13C-1	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

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

Site		S2-T7S-R97W (Mesa H2)			
Site Position:		Northing:	609,295.74 usft	Latitude:	39.475700
From:	Lat/Long	Easting:	1,243,680.53 usft	Longitude:	-108.179625
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-1.69 °

Well	PUCKETT 13C-1					
Well Position	+N/-S	0.0 usft	Northing:	609,288.70 usft	Latitude:	39.475681
	+E/-W	0.0 usft	Easting:	1,243,684.28 usft	Longitude:	-108.179611
Position Uncertainty		0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	8,477.0 usft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	3/17/2015	9.88	65.82	51,965

Design	FINAL				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	155.80	

Survey Program	Date	3/28/2015			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
145.0	9,138.0	Survey #1 (DD)	ISCWSA MWD	MWD - Standard	

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	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00		
145.0	0.80	205.40	145.0	-0.9	-0.4	0.7	0.55	0.55		
183.0	1.10	191.10	183.0	-1.5	-0.6	1.1	1.00	0.79		
213.0	1.70	174.20	213.0	-2.2	-0.6	1.8	2.41	2.00		
245.0	2.10	173.20	245.0	-3.3	-0.5	2.8	1.25	1.25		
276.0	2.50	151.00	275.9	-4.4	-0.1	4.0	3.12	1.29		
306.0	3.80	153.20	305.9	-5.9	0.6	5.7	4.35	4.33		
337.0	4.30	143.90	336.8	-7.8	1.8	7.8	2.66	1.61		
367.0	5.20	142.90	366.7	-9.8	3.3	10.2	3.01	3.00		
398.0	6.40	138.10	397.6	-12.2	5.3	13.3	4.17	3.87		
428.0	8.10	134.90	427.3	-14.9	7.9	16.8	5.82	5.67		
458.0	9.70	136.10	457.0	-18.2	11.1	21.2	5.37	5.33		
489.0	11.30	132.50	487.4	-22.1	15.2	26.4	5.58	5.16		

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Well:	PUCKETT 13C-1	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	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
520.0	12.00	133.30	517.8	-26.4	19.8	32.2	2.32	2.26	
549.0	13.10	129.00	546.1	-30.5	24.5	37.9	4.97	3.79	
610.0	14.00	120.60	605.4	-38.7	36.3	50.1	3.54	1.48	
705.0	15.20	114.90	697.3	-49.7	57.4	68.9	1.97	1.26	
799.0	16.10	110.00	787.9	-59.4	80.9	87.3	1.70	0.96	
894.0	14.40	111.60	879.5	-68.2	104.2	105.0	1.84	-1.79	
988.0	12.90	113.80	970.9	-76.8	124.7	121.2	1.69	-1.60	
1,083.0	13.10	121.60	1,063.4	-86.7	143.6	137.9	1.86	0.21	
1,177.0	12.30	123.40	1,155.1	-97.8	161.0	155.2	0.95	-0.85	
1,271.0	12.30	131.50	1,247.0	-109.9	176.9	172.8	1.83	0.00	
1,366.0	12.00	134.30	1,339.8	-123.5	191.5	191.2	0.70	-0.32	
1,454.0	11.90	138.20	1,425.9	-136.7	204.1	208.4	0.92	-0.11	
1,548.0	12.40	137.40	1,517.8	-151.4	217.4	227.2	0.56	0.53	
1,643.0	12.50	134.40	1,610.6	-166.1	231.6	246.4	0.69	0.11	
1,737.0	13.00	137.00	1,702.3	-180.9	246.1	265.9	0.81	0.53	
1,800.0	12.00	143.00	1,763.8	-191.3	254.9	279.0	2.60	-1.59	
1,832.0	12.40	142.20	1,795.1	-196.7	259.0	285.6	1.36	1.25	
1,926.0	13.00	147.50	1,886.8	-213.6	270.9	305.9	1.39	0.64	
1,989.0	14.10	147.10	1,948.0	-226.0	278.9	320.5	1.75	1.75	
2,021.0	14.30	145.60	1,979.0	-232.5	283.2	328.2	1.31	0.62	
2,060.0	15.30	143.80	2,016.7	-240.7	289.0	338.0	2.82	2.56	
2,115.0	15.90	143.60	2,069.7	-252.6	297.7	352.4	1.10	1.09	
2,155.0	16.40	142.30	2,108.1	-261.5	304.4	363.3	1.54	1.25	
2,210.0	17.00	138.80	2,160.8	-273.7	314.5	378.5	2.13	1.09	
2,304.0	18.90	134.30	2,250.3	-294.6	334.4	405.8	2.50	2.02	
2,399.0	19.00	134.40	2,340.1	-316.2	356.5	434.5	0.11	0.11	
2,465.0	19.20	133.80	2,402.5	-331.2	372.0	454.6	0.42	0.30	
2,499.0	19.50	134.80	2,434.5	-339.1	380.1	465.1	1.31	0.88	
2,593.0	18.60	136.60	2,523.4	-361.0	401.5	493.9	1.14	-0.96	
2,688.0	19.50	130.40	2,613.2	-382.3	424.0	522.5	2.33	0.95	
2,782.0	20.10	126.40	2,701.7	-402.1	448.9	550.8	1.58	0.64	
2,876.0	19.70	126.60	2,790.0	-421.1	474.6	578.7	0.43	-0.43	
2,971.0	19.40	126.00	2,879.6	-439.9	500.3	606.3	0.38	-0.32	
3,065.0	18.80	124.50	2,968.4	-457.7	525.4	632.8	0.82	-0.64	
3,160.0	17.90	121.90	3,058.6	-474.1	550.4	658.0	1.28	-0.95	
3,254.0	16.90	121.00	3,148.3	-488.7	574.4	681.2	1.10	-1.06	
3,350.0	15.00	127.50	3,240.6	-503.5	596.2	703.6	2.71	-1.98	
3,443.0	15.10	124.60	3,330.4	-517.7	615.7	724.6	0.82	0.11	
3,538.0	14.60	124.10	3,422.2	-531.4	635.8	745.4	0.54	-0.53	
3,632.0	14.90	133.80	3,513.1	-546.5	654.3	766.7	2.64	0.32	
3,726.0	14.40	131.30	3,604.1	-562.5	671.8	788.5	0.86	-0.53	
3,821.0	16.00	139.50	3,695.7	-580.3	689.2	811.8	2.82	1.68	
3,916.0	15.40	138.30	3,787.2	-599.7	706.1	836.4	0.72	-0.63	
4,010.0	16.60	133.20	3,877.6	-618.2	724.2	860.7	1.97	1.28	
4,104.0	16.10	133.20	3,967.8	-636.3	743.5	885.2	0.53	-0.53	
4,199.0	17.80	127.80	4,058.6	-654.2	764.6	910.1	2.44	1.79	
4,293.0	17.40	127.00	4,148.2	-671.5	787.2	935.1	0.50	-0.43	
4,388.0	16.50	126.90	4,239.1	-688.1	809.3	959.4	0.95	-0.95	
4,482.0	16.20	125.50	4,329.3	-703.8	830.6	982.4	0.53	-0.32	
4,576.0	15.60	124.70	4,419.7	-718.6	851.7	1,004.6	0.68	-0.64	
4,671.0	14.90	122.90	4,511.4	-732.5	872.5	1,025.7	0.89	-0.74	
4,765.0	14.40	124.80	4,602.3	-745.7	892.2	1,045.9	0.74	-0.53	
4,860.0	13.78	124.10	4,694.5	-758.8	911.3	1,065.7	0.68	-0.65	

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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
4,955.0	13.00	123.80	4,786.9	-771.1	929.5	1,084.4	0.82	-0.82	
5,049.0	12.20	123.00	4,878.6	-782.4	946.6	1,101.7	0.87	-0.85	
5,143.0	12.60	129.40	4,970.4	-794.3	962.9	1,119.2	1.52	0.43	
5,238.0	13.50	131.30	5,063.0	-808.2	979.2	1,138.6	1.05	0.95	
5,333.0	13.00	130.90	5,155.4	-822.5	995.6	1,158.4	0.54	-0.53	
5,427.0	12.60	130.60	5,247.1	-836.1	1,011.4	1,177.2	0.43	-0.43	
5,521.0	14.20	129.90	5,338.5	-850.2	1,028.0	1,196.9	1.71	1.70	
5,616.0	13.70	130.10	5,430.7	-864.9	1,045.6	1,217.5	0.53	-0.53	
5,710.0	13.50	132.00	5,522.1	-879.4	1,062.3	1,237.6	0.52	-0.21	
5,805.0	14.90	129.40	5,614.2	-894.6	1,079.9	1,258.6	1.62	1.47	
5,899.0	14.30	129.20	5,705.2	-909.6	1,098.3	1,279.9	0.64	-0.64	
5,994.0	13.70	127.70	5,797.3	-923.9	1,116.3	1,300.3	0.74	-0.63	
6,089.0	15.20	128.20	5,889.3	-938.4	1,135.0	1,321.2	1.58	1.58	
6,183.0	14.40	128.10	5,980.2	-953.3	1,153.8	1,342.5	0.85	-0.85	
6,277.0	15.50	128.20	6,071.0	-968.3	1,172.9	1,364.0	1.17	1.17	
6,372.0	14.70	127.70	6,162.7	-983.5	1,192.4	1,385.9	0.85	-0.84	
6,467.0	16.10	126.30	6,254.3	-998.7	1,212.6	1,408.0	1.52	1.47	
6,561.0	15.20	125.70	6,344.8	-1,013.6	1,233.1	1,430.0	0.97	-0.96	
6,656.0	14.90	126.00	6,436.6	-1,028.0	1,253.1	1,451.3	0.33	-0.32	
6,750.0	14.00	125.50	6,527.6	-1,041.7	1,272.1	1,471.6	0.97	-0.96	
6,845.0	13.30	125.50	6,619.9	-1,054.7	1,290.4	1,491.0	0.74	-0.74	
6,940.0	13.10	124.70	6,712.4	-1,067.2	1,308.1	1,509.7	0.29	-0.21	
7,034.0	11.30	121.60	6,804.3	-1,078.1	1,324.7	1,526.4	2.04	-1.91	
7,129.0	11.20	123.00	6,897.5	-1,088.0	1,340.4	1,541.8	0.31	-0.11	
7,223.0	9.50	122.70	6,989.9	-1,097.2	1,354.6	1,556.0	1.81	-1.81	
7,318.0	8.40	121.80	7,083.8	-1,105.1	1,367.1	1,568.3	1.17	-1.16	
7,412.0	7.30	114.50	7,176.9	-1,111.1	1,378.3	1,578.5	1.58	-1.17	
7,507.0	6.40	97.80	7,271.2	-1,114.4	1,389.1	1,585.9	2.29	-0.95	
7,601.0	4.40	87.40	7,364.8	-1,114.9	1,397.9	1,590.0	2.36	-2.13	
7,696.0	2.80	50.50	7,459.6	-1,113.3	1,403.3	1,590.7	2.88	-1.68	
7,791.0	1.40	17.10	7,554.6	-1,110.7	1,405.4	1,589.2	1.90	-1.47	
7,885.0	1.30	354.30	7,648.5	-1,108.5	1,405.7	1,587.3	0.58	-0.11	
7,980.0	1.90	345.90	7,743.5	-1,105.9	1,405.2	1,584.8	0.68	0.63	
8,074.0	1.10	236.90	7,837.5	-1,104.9	1,404.0	1,583.4	2.64	-0.85	
8,169.0	1.30	225.80	7,932.5	-1,106.2	1,402.5	1,583.9	0.32	0.21	
8,263.0	1.20	224.30	8,026.4	-1,107.6	1,401.0	1,584.6	0.11	-0.11	
8,358.0	1.30	226.70	8,121.4	-1,109.1	1,399.6	1,585.3	0.12	0.11	
8,453.0	1.50	234.30	8,216.4	-1,110.5	1,397.8	1,585.9	0.29	0.21	
8,547.0	1.40	251.30	8,310.4	-1,111.6	1,395.7	1,586.1	0.47	-0.11	
8,639.0	1.40	246.80	8,402.3	-1,112.4	1,393.6	1,585.9	0.12	0.00	
8,736.0	2.00	259.20	8,499.3	-1,113.2	1,390.8	1,585.5	0.72	0.62	
8,831.0	2.40	259.60	8,594.2	-1,113.9	1,387.3	1,584.7	0.42	0.42	
8,925.0	2.60	255.10	8,688.1	-1,114.8	1,383.3	1,583.8	0.30	0.21	
9,020.0	2.80	255.60	8,783.0	-1,115.9	1,378.9	1,583.1	0.21	0.21	
9,083.0	2.80	255.70	8,845.9	-1,116.7	1,375.9	1,582.6	0.01	0.00	LAST CES SURVEY @ 9083' MD
9,138.0	2.80	255.70	8,900.9	-1,117.3	1,373.3	1,582.1	0.00	0.00	PTB @ 9138' MD

Survey Report

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Site:	S2-T7S-R97W (Mesa H2)	MD Reference:	30' KB @ 8507.0usft (H&P 330)
Well:	PUCKETT 13C-1	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
- Shape									
PUCKETT 13C-1 TGT	0.00	0.00	7,369.0	-1,130.2	1,384.1	608,118.22	1,245,034.47	39.472578	-108.174708
- actual wellpath misses target center by 20.7usft at 7604.1usft MD (7367.9 TVD, -1114.9 N, 1398.1 E)									
- Point									
PUCKETT 13C-1 BHL	0.00	0.00	8,874.0	-1,130.2	1,384.1	608,118.22	1,245,034.47	39.472578	-108.174708
- actual wellpath misses target center by 16.2usft at 9110.8usft MD (8873.7 TVD, -1117.0 N, 1374.6 E)									
- Circle (radius 50.0)									

Design Annotations					
Measured Depth	Vertical Depth	Local Coordinates			
(usft)	(usft)	+N/-S	+E/-W		
		(usft)	(usft)	Comment	
9,083.0	8,845.9	-1,116.7	1,375.9	LAST CES SURVEY @ 9083' MD	
9,138.0	8,900.9	-1,117.3	1,373.3	PTB @ 9138' MD	

Checked By: _____ Approved By: _____ Date: _____