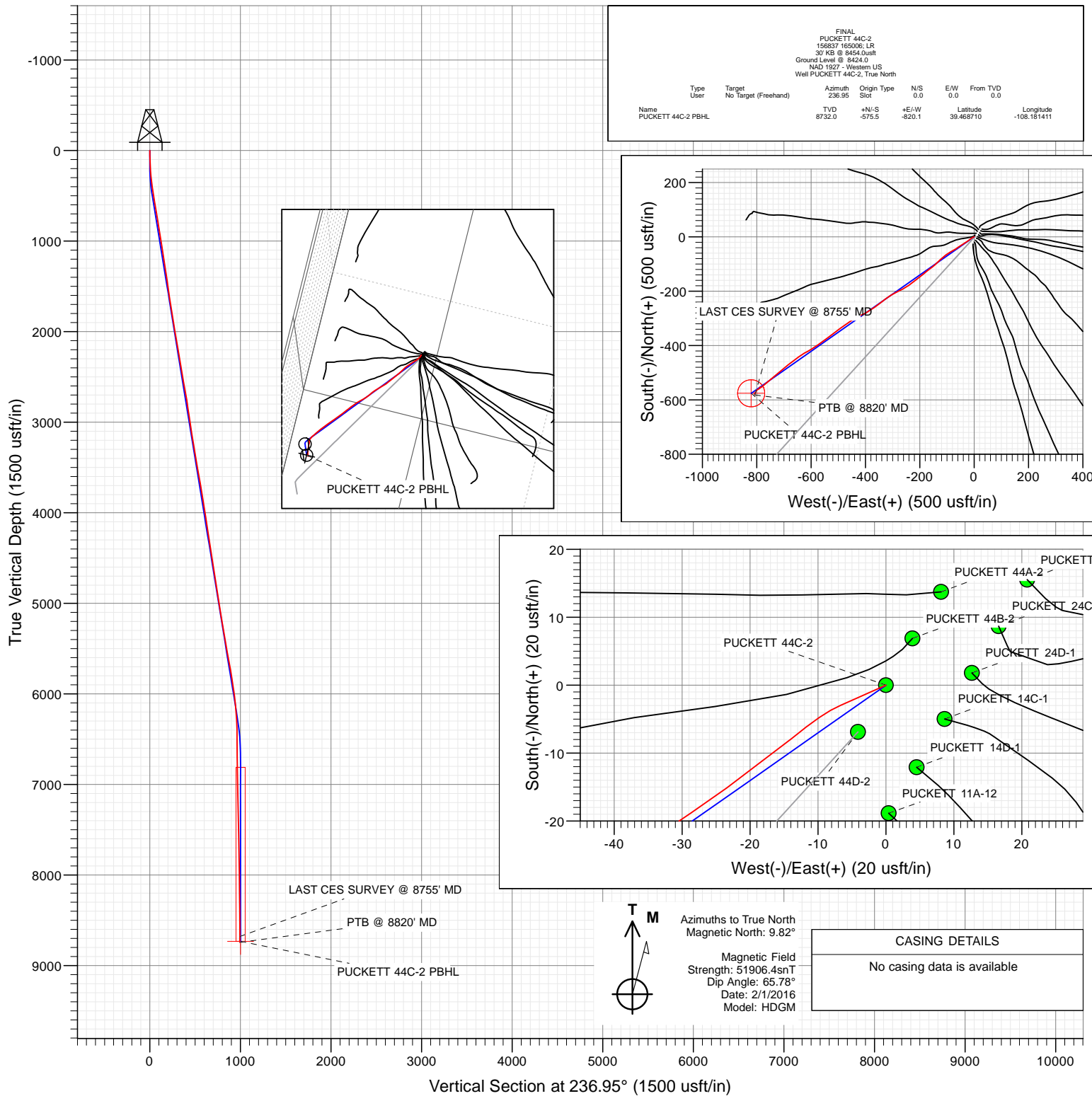




Project: Garfield County, CO (UTM 12N)
Site: S2-T7S-R97W (P2)
Well: PUCKETT 44C-2
Wellbore: OH
Design: FINAL



WELL DETAILS: PUCKETT 44C-2

+N/-S 0.0 +E/-W 0.0 Northing 14345637.20 Easting 2436733.00 Ground Level: 8424.0 Latitude 39.470290 Longitude -108.178508



Cathedral Energy Services

Survey Report

Company:	Caerus Oil & Gas	Local Co-ordinate Reference:	Well PUCKETT 44C-2
Project:	Garfield County, CO (UTM 12N)	TVD Reference:	30' KB @ 8454.0usft
Site:	S2-T7S-R97W (P2)	MD Reference:	30' KB @ 8454.0usft
Well:	PUCKETT 44C-2	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

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

Site	S2-T7S-R97W (P2)		
Site Position:		Northing:	14,345,665.30 usft
From:	Map	Easting:	2,436,748.30 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16"
		Latitude:	39.470366
		Longitude:	-108.178450
		Grid Convergence:	1.79 °

Well	PUCKETT 44C-2					
Well Position	+N/-S	0.0 usft	Northing:	14,345,637.20 usft	Latitude:	39.470290
	+E/-W	0.0 usft	Easting:	2,436,733.00 usft	Longitude:	-108.178508
Position Uncertainty		0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	8,424.0 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	2/1/2016	9.82	65.78	51,906

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	236.95	

Survey Program	Date	2/7/2016			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
227.0	8,820.0	Survey #1 (OH)	MWD	Geolink MWD	

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		
227.0	3.70	246.10	226.8	-3.0	-6.7	7.2	1.63	1.63		
318.0	7.30	230.70	317.4	-7.8	-13.9	15.9	4.24	3.96		
410.0	7.70	234.50	408.6	-15.1	-23.4	27.9	0.69	0.43		
503.0	8.80	236.10	500.7	-22.7	-34.4	41.2	1.21	1.18		
595.0	9.40	239.80	591.5	-30.4	-46.7	55.7	0.91	0.65		
690.0	9.90	234.40	685.2	-39.0	-60.1	71.6	1.09	0.53		
785.0	9.40	240.30	778.8	-47.6	-73.4	87.5	1.17	-0.53		
879.0	9.10	238.40	871.6	-55.3	-86.4	102.6	0.46	-0.32		
974.0	8.70	237.70	965.5	-63.1	-98.9	117.3	0.44	-0.42		
1,068.0	9.10	232.40	1,058.3	-71.5	-110.8	131.8	0.97	0.43		
1,163.0	9.60	223.20	1,152.1	-81.8	-122.2	147.0	1.66	0.53		
1,258.0	8.80	223.50	1,245.8	-92.9	-132.6	161.8	0.84	-0.84		

Cathedral Energy Services

Survey Report

Company:	Caerus Oil & Gas	Local Co-ordinate Reference:	Well PUCKETT 44C-2
Project:	Garfield County, CO (UTM 12N)	TVD Reference:	30' KB @ 8454.0usft
Site:	S2-T7S-R97W (P2)	MD Reference:	30' KB @ 8454.0usft
Well:	PUCKETT 44C-2	North Reference:	True
Wellbore:	OH	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
1,352.0	8.60	231.60	1,338.8	-102.4	-143.1	175.8	1.32	-0.21	
1,446.0	8.00	234.10	1,431.8	-110.6	-153.9	189.3	0.74	-0.64	
1,541.0	8.20	231.20	1,525.8	-118.8	-164.5	202.7	0.48	0.21	
1,635.0	9.20	231.10	1,618.8	-127.7	-175.6	216.8	1.06	1.06	
1,730.0	9.10	229.20	1,712.5	-137.4	-187.2	231.8	0.33	-0.11	
1,825.0	9.10	233.60	1,806.3	-146.7	-198.9	246.7	0.73	0.00	
1,919.0	9.10	234.20	1,899.2	-155.5	-210.9	261.6	0.10	0.00	
2,014.0	9.40	228.40	1,992.9	-165.0	-222.8	276.8	1.03	0.32	
2,108.0	9.80	233.10	2,085.6	-174.9	-235.0	292.3	0.94	0.43	
2,203.0	9.60	242.30	2,179.3	-183.5	-248.4	308.3	1.64	-0.21	
2,297.0	9.50	241.60	2,272.0	-190.8	-262.2	323.8	0.16	-0.11	
2,392.0	9.30	241.10	2,365.7	-198.2	-275.8	339.3	0.23	-0.21	
2,475.0	9.80	242.50	2,447.5	-204.7	-288.0	353.0	0.66	0.60	
2,596.0	10.40	237.60	2,566.7	-215.4	-306.3	374.2	0.87	0.50	
2,690.0	9.90	235.60	2,659.2	-224.5	-320.1	390.8	0.65	-0.53	
2,785.0	8.90	234.00	2,752.9	-233.4	-332.8	406.3	1.09	-1.05	
2,879.0	8.80	229.40	2,845.8	-242.4	-344.2	420.7	0.76	-0.11	
2,974.0	8.30	232.40	2,939.7	-251.3	-355.1	434.7	0.71	-0.53	
3,069.0	9.50	237.70	3,033.6	-259.6	-367.2	449.4	1.53	1.26	
3,163.0	8.60	236.30	3,126.4	-267.7	-379.6	464.1	0.99	-0.96	
3,258.0	8.20	236.50	3,220.4	-275.4	-391.1	478.0	0.42	-0.42	
3,353.0	9.60	244.00	3,314.3	-282.6	-403.9	492.7	1.91	1.47	
3,447.0	9.80	249.20	3,406.9	-288.9	-418.4	508.3	0.96	0.21	
3,542.0	10.60	238.00	3,500.4	-296.4	-433.4	524.9	2.25	0.84	
3,636.0	9.90	235.70	3,592.9	-305.5	-447.4	541.6	0.86	-0.74	
3,731.0	9.90	234.00	3,686.5	-314.9	-460.8	557.9	0.31	0.00	
3,825.0	9.10	235.90	3,779.2	-323.8	-473.5	573.4	0.91	-0.85	
3,920.0	9.20	234.00	3,873.0	-332.5	-485.8	588.5	0.33	0.11	
4,014.0	8.80	234.50	3,965.9	-341.1	-497.8	603.2	0.43	-0.43	
4,109.0	8.60	235.20	4,059.8	-349.4	-509.5	617.6	0.24	-0.21	
4,204.0	8.20	234.30	4,153.7	-357.4	-520.8	631.5	0.44	-0.42	
4,298.0	9.10	231.60	4,246.7	-365.9	-532.1	645.6	1.05	0.96	
4,392.0	9.40	233.10	4,339.5	-375.1	-544.1	660.6	0.41	0.32	
4,487.0	9.20	232.90	4,433.2	-384.4	-556.3	675.9	0.21	-0.21	
4,581.0	8.30	233.80	4,526.1	-392.9	-567.8	690.2	0.97	-0.96	
4,676.0	9.50	236.60	4,620.0	-401.3	-579.9	704.9	1.34	1.26	
4,770.0	8.80	236.80	4,712.8	-409.5	-592.4	719.8	0.75	-0.74	
4,865.0	9.40	240.60	4,806.6	-417.3	-605.2	734.8	0.89	0.63	
4,960.0	7.90	242.80	4,900.5	-424.0	-617.8	749.1	1.62	-1.58	
5,054.0	9.30	235.70	4,993.4	-431.3	-629.8	763.1	1.87	1.49	
5,149.0	8.80	235.10	5,087.2	-439.8	-642.1	778.0	0.54	-0.53	
5,243.0	8.00	237.30	5,180.2	-447.4	-653.5	791.8	0.92	-0.85	
5,338.0	10.00	231.60	5,274.1	-456.1	-665.5	806.6	2.30	2.11	
5,432.0	11.20	229.80	5,366.5	-467.1	-678.9	823.8	1.32	1.28	
5,527.0	10.70	230.00	5,459.7	-478.7	-692.7	841.7	0.53	-0.53	
5,621.0	10.50	231.30	5,552.1	-489.7	-706.1	858.9	0.33	-0.21	
5,716.0	9.60	232.80	5,645.7	-499.9	-719.1	875.4	0.99	-0.95	
5,811.0	9.30	230.50	5,739.4	-509.5	-731.4	890.9	0.51	-0.32	
5,905.0	9.10	229.70	5,832.2	-519.2	-742.9	905.8	0.25	-0.21	
6,000.0	8.80	229.10	5,926.0	-528.8	-754.1	920.5	0.33	-0.32	
6,094.0	7.20	229.70	6,019.1	-537.3	-764.1	933.5	1.70	-1.70	
6,189.0	6.10	224.20	6,113.5	-544.8	-772.1	944.3	1.34	-1.16	
6,283.0	4.30	233.10	6,207.1	-550.5	-778.4	952.7	2.09	-1.91	

Cathedral Energy Services

Survey Report

Company:	Caerus Oil & Gas	Local Co-ordinate Reference:	Well PUCKETT 44C-2
Project:	Garfield County, CO (UTM 12N)	TVD Reference:	30' KB @ 8454.0usft
Site:	S2-T7S-R97W (P2)	MD Reference:	30' KB @ 8454.0usft
Well:	PUCKETT 44C-2	North Reference:	True
Wellbore:	OH	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
6,378.0	2.80	252.10	6,301.9	-553.3	-783.5	958.5	1.99	-1.58	
6,473.0	1.50	282.90	6,396.8	-553.8	-786.9	961.6	1.78	-1.37	
6,567.0	0.10	191.00	6,490.8	-553.6	-788.1	962.5	1.60	-1.49	
6,662.0	0.40	130.10	6,585.8	-553.9	-787.9	962.4	0.38	0.32	
6,756.0	1.10	189.70	6,679.8	-555.0	-787.8	963.0	1.02	0.74	
6,945.0	1.40	236.70	6,868.8	-558.0	-790.0	966.5	0.55	0.16	
7,135.0	1.10	239.90	7,058.7	-560.2	-793.5	970.6	0.16	-0.16	
7,324.0	1.10	235.40	7,247.7	-562.1	-796.6	974.3	0.05	0.00	
7,513.0	1.10	238.90	7,436.6	-564.1	-799.6	977.9	0.04	0.00	
7,701.0	1.30	202.00	7,624.6	-567.0	-802.0	981.4	0.42	0.11	
7,891.0	1.00	217.30	7,814.6	-570.3	-803.8	984.8	0.22	-0.16	
8,080.0	1.10	220.80	8,003.5	-573.0	-806.0	988.1	0.06	0.05	
8,269.0	0.70	198.70	8,192.5	-575.5	-807.5	990.7	0.28	-0.21	
8,458.0	0.70	188.50	8,381.5	-577.7	-808.1	992.4	0.07	0.00	
8,647.0	0.90	138.80	8,570.5	-580.0	-807.3	993.0	0.37	0.11	
8,755.0	0.70	135.30	8,678.5	-581.1	-806.2	992.7	0.19	-0.19	LAST CES SURVEY @ 8755' MD
8,820.0	0.70	135.30	8,743.5	-581.7	-805.7	992.5	0.00	0.00	PTB @ 8820' MD

Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
PUCKETT 44C-2 PBHL	0.00	0.00	8,732.0	-575.5	-820.1	14,345,036.30	2,435,931.30	39.468710	-108.181411
- actual wellpath misses target center by 15.6usft at 8808.4usft MD (8731.8 TVD, -581.6 N, -805.8 E)									
- Circle (radius 50.0)									

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Comment
8,755.0	8,678.5	-581.1	-806.2	LAST CES SURVEY @ 8755' MD
8,820.0	8,743.5	-581.7	-805.7	PTB @ 8820' MD

Checked By: _____ Approved By: _____ Date: _____