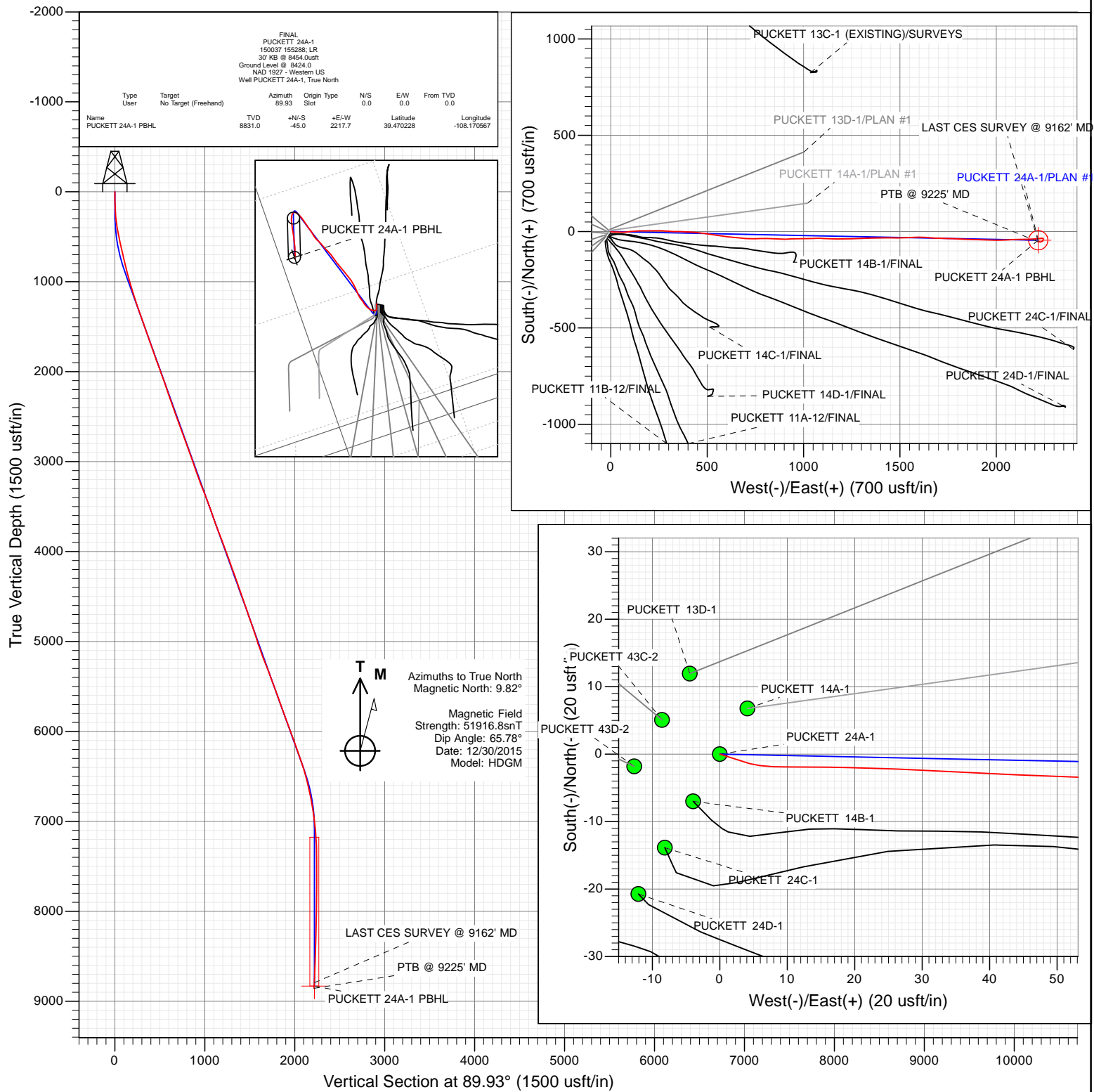




Project: Garfield County, CO (UTM 12N)
Site: S2-T7S-R97W (P2)
Well: PUCKETT 24A-1
Wellbore: OH
Design: FINAL



WELL DETAILS: PUCKETT 24A-1

+N/-S	+E/-W	Northing	Ground Level:	8424.0	Latitude	Longitude
0.0	0.0	14345660.50	Easting	2436757.00	39.470352	-108.178420



Survey Report

Company:	Caerus Oil & Gas	Local Co-ordinate Reference:	Well PUCKETT 24A-1
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 24A-1	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	Latitude:	39.470366
From:	Map	Easting:	2,436,748.30 usft	Longitude:	-108.178450
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16"	Grid Convergence:	1.79 °

Well	PUCKETT 24A-1					
Well Position	+N/-S	0.0 usft	Northing:	14,345,660.50 usft	Latitude:	39.470352
	+E/-W	0.0 usft	Easting:	2,436,757.00 usft	Longitude:	-108.178420
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	12/30/2015	9.82	65.78	51,917

Design	FINAL				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	89.93	

Survey Program	Date	1/4/2016			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
197.0	9,225.0	Survey #1 (OH)	MWD+HDGM	OWSG MWD + HDGM	

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		
197.0	2.70	107.30	196.9	-1.4	4.4	4.4	1.37	1.37		
227.0	3.30	97.20	226.9	-1.7	6.0	6.0	2.66	2.00		
258.0	4.20	91.90	257.8	-1.8	8.0	8.0	3.11	2.90		
289.0	5.20	90.20	288.7	-1.9	10.5	10.5	3.26	3.23		
319.0	6.30	90.20	318.6	-1.9	13.5	13.5	3.67	3.67		
411.0	9.80	92.20	409.6	-2.2	26.4	26.4	3.82	3.80		
504.0	12.00	93.10	501.0	-3.0	44.0	44.0	2.37	2.37		
596.0	12.70	89.30	590.8	-3.4	63.6	63.6	1.17	0.76		
691.0	12.80	82.70	683.5	-2.0	84.5	84.5	1.54	0.11		
785.0	13.40	82.90	775.0	0.7	105.6	105.6	0.64	0.64		
880.0	14.20	85.70	867.3	2.9	128.2	128.2	1.10	0.84		
975.0	15.30	90.20	959.2	3.8	152.3	152.4	1.67	1.16		

Survey Report

Company:	Caerus Oil & Gas	Local Co-ordinate Reference:	Well PUCKETT 24A-1
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 24A-1	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
1,069.0	17.20	89.80	1,049.4	3.8	178.6	178.7	2.02	2.02	
1,164.0	18.00	88.50	1,140.0	4.2	207.4	207.4	0.94	0.84	
1,259.0	17.80	89.10	1,230.4	4.8	236.6	236.6	0.29	-0.21	
1,353.0	18.40	93.40	1,319.7	4.2	265.7	265.7	1.56	0.64	
1,447.0	19.70	94.40	1,408.6	2.1	296.3	296.3	1.43	1.38	
1,542.0	19.80	91.60	1,498.0	0.4	328.4	328.4	1.00	0.11	
1,636.0	19.90	90.60	1,586.4	-0.2	360.3	360.3	0.38	0.11	
1,731.0	19.50	92.60	1,675.8	-1.1	392.3	392.3	0.83	-0.42	
1,826.0	19.10	94.20	1,765.5	-3.0	423.7	423.7	0.70	-0.42	
1,920.0	19.60	95.80	1,854.2	-5.7	454.7	454.7	0.78	0.53	
2,015.0	20.60	98.10	1,943.4	-9.7	487.1	487.1	1.34	1.05	
2,109.0	20.10	99.00	2,031.5	-14.5	519.4	519.4	0.63	-0.53	
2,204.0	19.60	98.80	2,120.9	-19.5	551.3	551.2	0.53	-0.53	
2,298.0	19.40	97.50	2,209.5	-24.0	582.3	582.3	0.51	-0.21	
2,393.0	19.60	95.30	2,299.1	-27.5	613.8	613.8	0.80	0.21	
2,474.0	19.10	95.90	2,375.5	-30.1	640.6	640.5	0.66	-0.62	
2,598.0	19.30	95.60	2,492.6	-34.2	681.1	681.1	0.18	0.16	
2,693.0	20.40	92.70	2,581.9	-36.5	713.3	713.2	1.55	1.16	
2,787.0	21.00	88.70	2,669.9	-36.9	746.5	746.5	1.63	0.64	
2,882.0	20.60	87.90	2,758.7	-35.9	780.2	780.2	0.52	-0.42	
2,976.0	19.20	91.90	2,847.1	-35.8	812.2	812.1	2.08	-1.49	
3,071.0	19.10	93.10	2,936.8	-37.2	843.3	843.3	0.43	-0.11	
3,166.0	19.60	92.60	3,026.5	-38.7	874.8	874.7	0.55	0.53	
3,261.0	19.30	87.90	3,116.0	-38.9	906.4	906.3	1.68	-0.32	
3,355.0	20.30	87.30	3,204.5	-37.5	938.2	938.1	1.09	1.06	
3,450.0	21.60	90.50	3,293.2	-36.9	972.1	972.1	1.82	1.37	
3,544.0	21.30	88.60	3,380.7	-36.6	1,006.5	1,006.5	0.81	-0.32	
3,639.0	20.40	88.70	3,469.5	-35.8	1,040.3	1,040.3	0.95	-0.95	
3,733.0	19.30	88.50	3,557.9	-35.1	1,072.2	1,072.2	1.17	-1.17	
3,828.0	19.30	93.00	3,647.5	-35.5	1,103.6	1,103.5	1.57	0.00	
3,922.0	20.80	92.30	3,735.8	-37.0	1,135.8	1,135.7	1.62	1.60	
4,017.0	21.00	90.70	3,824.6	-37.8	1,169.7	1,169.6	0.64	0.21	
4,112.0	20.70	90.10	3,913.4	-38.1	1,203.5	1,203.4	0.39	-0.32	
4,206.0	20.70	89.80	4,001.3	-38.1	1,236.7	1,236.6	0.11	0.00	
4,300.0	20.00	87.50	4,089.4	-37.3	1,269.4	1,269.3	1.13	-0.74	
4,395.0	19.00	86.40	4,179.0	-35.6	1,301.0	1,301.0	1.12	-1.05	
4,489.0	19.60	88.30	4,267.7	-34.2	1,332.1	1,332.0	0.92	0.64	
4,583.0	18.80	88.00	4,356.5	-33.2	1,363.0	1,362.9	0.86	-0.85	
4,678.0	20.00	89.50	4,446.1	-32.5	1,394.5	1,394.5	1.37	1.26	
4,773.0	19.30	89.80	4,535.6	-32.3	1,426.4	1,426.4	0.74	-0.74	
4,867.0	19.10	90.70	4,624.3	-32.5	1,457.4	1,457.3	0.38	-0.21	
4,962.0	18.70	90.20	4,714.2	-32.7	1,488.1	1,488.1	0.45	-0.42	
5,057.0	18.80	88.50	4,804.2	-32.3	1,518.7	1,518.6	0.58	0.11	
5,151.0	18.60	84.90	4,893.2	-30.6	1,548.7	1,548.7	1.25	-0.21	
5,246.0	18.10	88.70	4,983.4	-28.9	1,578.6	1,578.5	1.36	-0.53	
5,340.0	19.20	91.80	5,072.4	-29.1	1,608.6	1,608.6	1.57	1.17	
5,435.0	20.90	94.90	5,161.7	-31.0	1,641.1	1,641.1	2.11	1.79	
5,529.0	21.90	92.90	5,249.2	-33.3	1,675.3	1,675.3	1.32	1.06	
5,624.0	21.20	91.40	5,337.6	-34.7	1,710.2	1,710.2	0.94	-0.74	
5,718.0	19.80	91.00	5,425.6	-35.4	1,743.1	1,743.1	1.50	-1.49	
5,813.0	20.30	92.30	5,514.8	-36.3	1,775.7	1,775.6	0.71	0.53	
5,908.0	20.10	93.90	5,604.0	-38.1	1,808.4	1,808.4	0.62	-0.21	
6,002.0	18.70	92.20	5,692.7	-39.7	1,839.6	1,839.6	1.61	-1.49	

Survey Report

Company:	Caerus Oil & Gas	Local Co-ordinate Reference:	Well PUCKETT 24A-1
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 24A-1	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
6,097.0	20.10	91.90	5,782.3	-40.9	1,871.1	1,871.1	1.48	1.47	
6,191.0	21.50	91.40	5,870.1	-41.8	1,904.5	1,904.5	1.50	1.49	
6,286.0	20.40	91.90	5,958.9	-42.8	1,938.5	1,938.4	1.17	-1.16	
6,380.0	20.00	92.00	6,047.1	-43.9	1,970.9	1,970.8	0.43	-0.43	
6,475.0	19.20	90.20	6,136.6	-44.5	2,002.8	2,002.7	1.05	-0.84	
6,570.0	19.70	87.80	6,226.2	-44.0	2,034.4	2,034.3	0.99	0.53	
6,664.0	18.90	86.90	6,314.9	-42.5	2,065.4	2,065.4	0.91	-0.85	
6,759.0	17.70	86.90	6,405.1	-40.9	2,095.2	2,095.1	1.26	-1.26	
6,853.0	14.60	89.50	6,495.3	-40.0	2,121.3	2,121.3	3.39	-3.30	
6,948.0	13.80	91.20	6,587.4	-40.2	2,144.6	2,144.6	0.95	-0.84	
7,042.0	12.20	89.00	6,679.0	-40.2	2,165.8	2,165.7	1.78	-1.70	
7,137.0	10.80	85.10	6,772.1	-39.3	2,184.7	2,184.6	1.68	-1.47	
7,231.0	9.10	84.00	6,864.7	-37.8	2,200.8	2,200.8	1.82	-1.81	
7,326.0	7.10	85.50	6,958.8	-36.5	2,214.2	2,214.1	2.12	-2.11	
7,421.0	5.20	85.10	7,053.2	-35.7	2,224.3	2,224.3	2.00	-2.00	
7,515.0	4.70	86.70	7,146.9	-35.1	2,232.4	2,232.4	0.55	-0.53	
7,609.0	3.40	85.50	7,240.6	-34.7	2,239.0	2,239.0	1.39	-1.38	
7,704.0	1.10	109.40	7,335.5	-34.8	2,242.7	2,242.6	2.56	-2.42	
7,799.0	0.90	188.60	7,430.5	-35.8	2,243.4	2,243.4	1.35	-0.21	
7,893.0	0.90	164.90	7,524.5	-37.2	2,243.5	2,243.5	0.39	0.00	
7,988.0	1.10	170.30	7,619.5	-38.9	2,243.9	2,243.8	0.23	0.21	
8,082.0	1.40	193.30	7,713.5	-40.9	2,243.8	2,243.7	0.62	0.32	
8,177.0	1.50	211.50	7,808.4	-43.1	2,242.8	2,242.8	0.49	0.11	
8,272.0	1.80	191.60	7,903.4	-45.6	2,241.9	2,241.8	0.68	0.32	
8,366.0	1.50	216.20	7,997.4	-48.0	2,240.9	2,240.8	0.81	-0.32	
8,461.0	1.90	231.50	8,092.3	-50.0	2,238.9	2,238.8	0.63	0.42	
8,555.0	1.30	253.50	8,186.3	-51.3	2,236.7	2,236.6	0.90	-0.64	
8,650.0	1.80	253.90	8,281.3	-52.0	2,234.2	2,234.1	0.53	0.53	
8,744.0	1.60	248.10	8,375.2	-52.9	2,231.6	2,231.5	0.28	-0.21	
8,838.0	1.90	260.20	8,469.2	-53.7	2,228.8	2,228.7	0.50	0.32	
8,933.0	1.80	291.60	8,564.1	-53.4	2,225.9	2,225.8	1.06	-0.11	
9,028.0	2.20	279.90	8,659.1	-52.5	2,222.7	2,222.6	0.60	0.42	
9,162.0	2.50	275.40	8,793.0	-51.8	2,217.2	2,217.2	0.26	0.22	LAST CES SURVEY @ 9162' MD
9,225.0	2.50	275.40	8,855.9	-51.5	2,214.5	2,214.4	0.00	0.00	PTB @ 9225' MD

Survey Report

Company:	Caerus Oil & Gas	Local Co-ordinate Reference:	Well PUCKETT 24A-1
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 24A-1	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

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 24A-1 PBHL	0.00	0.00	8,831.0	-45.0	2,217.7	14,345,685.00	2,438,975.00	39.470228	-108.170567
- actual wellpath misses target center by 7.0usft at 9200.0usft MD (8830.9 TVD, -51.6 N, 2215.6 E)									
- Circle (radius 50.0)									

Design Annotations					
Measured Depth	Vertical Depth	Local Coordinates			
(usft)	(usft)	+N/-S (usft)	+E/-W (usft)	Comment	
9,162.0	8,793.0	-51.8	2,217.2	LAST CES SURVEY @ 9162' MD	
9,225.0	8,855.9	-51.5	2,214.5	PTB @ 9225' MD	

Checked By: _____	Approved By: _____	Date: _____
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