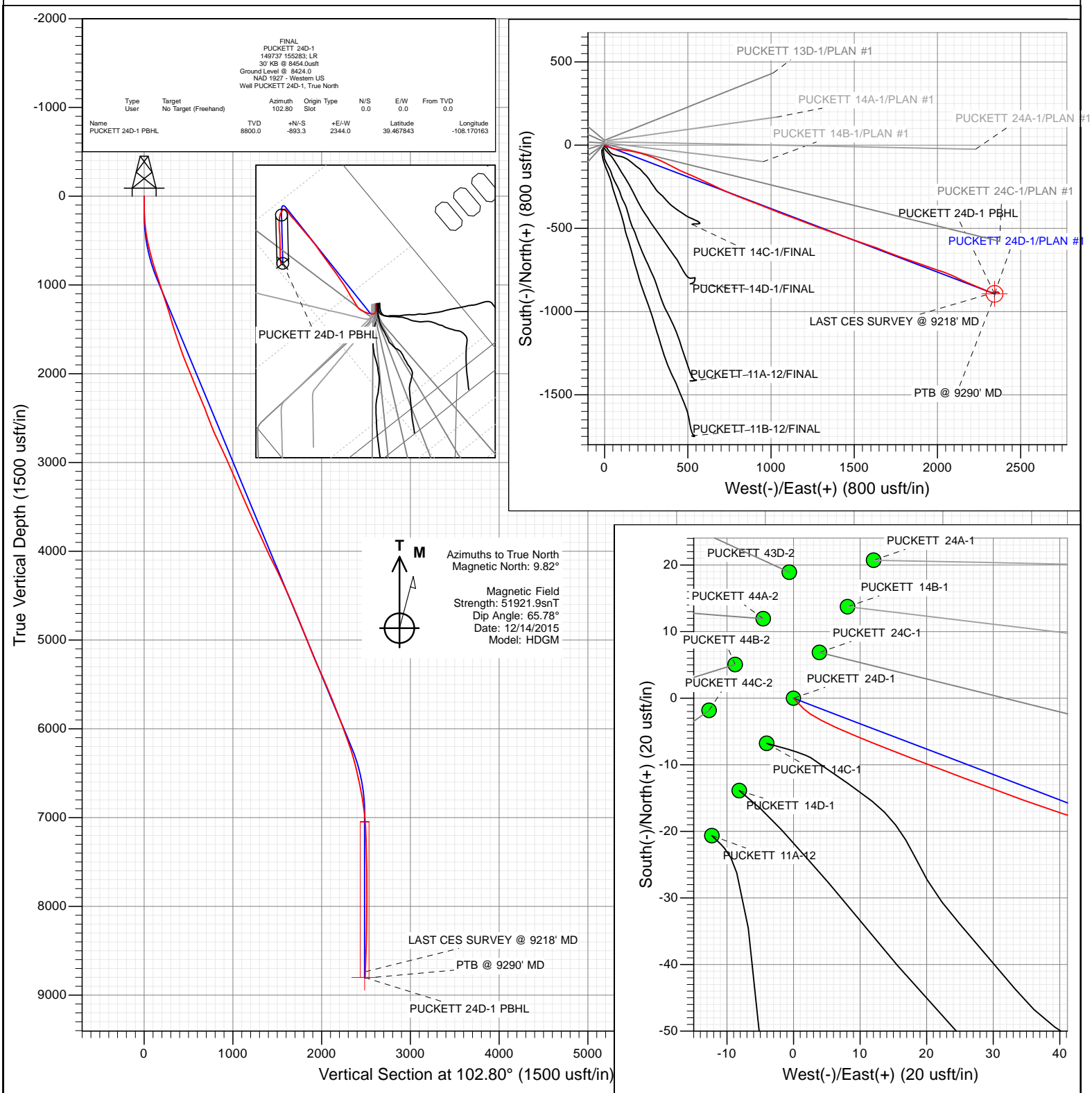




Project: Garfield County, CO (UTM 12N)
 Site: S2-T7S-R97W (P2)
 Well: PUCKETT 24D-1
 Wellbore: OH
 Design: FINAL



WELL DETAILS: PUCKETT 24D-1

Ground Level: 8424.0
 Northing: 14345639.40
 Easting: 2436745.60
 Latitude: 39.470295
 Longitude: -108.178463



Survey Report

Company:	Caerus Oil & Gas	Local Co-ordinate Reference:	Well PUCKETT 24D-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 24D-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 24D-1				
Well Position	+N/-S	0.0 usft	Northing:	14,345,639.40 usft	Latitude:	39.470295
	+E/-W	0.0 usft	Easting:	2,436,745.60 usft	Longitude:	-108.178463
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	12/14/2015	9.82	65.78	51,922

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	102.80	

Survey Program	Date	12/16/2015			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
166.0	9,290.0	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		
166.0	1.50	136.00	166.0	-1.6	1.5	1.8	0.90	0.90		
319.0	5.10	112.40	318.7	-5.6	9.2	10.2	2.47	2.35		
504.0	11.70	110.30	501.6	-15.2	34.4	36.9	3.57	3.57		
596.0	13.30	103.20	591.4	-20.9	53.5	56.8	2.41	1.74		
691.0	15.30	97.40	683.5	-25.0	76.5	80.2	2.59	2.11		
785.0	17.20	95.40	773.7	-27.9	102.7	106.3	2.11	2.02		
880.0	18.30	97.60	864.2	-31.2	131.4	135.1	1.36	1.16		
975.0	18.00	100.60	954.5	-35.9	160.7	164.6	1.03	-0.32		
1,069.0	18.10	103.50	1,043.9	-42.0	189.1	193.7	0.96	0.11		
1,164.0	18.50	105.80	1,134.1	-49.5	218.0	223.5	0.87	0.42		
1,258.0	17.80	107.00	1,223.4	-57.8	246.1	252.8	0.84	-0.74		
1,353.0	17.10	109.90	1,314.0	-66.8	273.1	281.1	1.17	-0.74		

Survey Report

Company:	Caerus Oil & Gas	Local Co-ordinate Reference:	Well PUCKETT 24D-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 24D-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
1,447.0	16.80	113.10	1,403.9	-76.8	298.6	308.2	1.04	-0.32	
1,542.0	17.80	115.00	1,494.6	-88.3	324.4	335.9	1.21	1.05	
1,636.0	19.20	116.00	1,583.8	-101.2	351.3	365.0	1.53	1.49	
1,731.0	19.30	115.90	1,673.5	-114.9	379.5	395.5	0.11	0.11	
1,826.0	20.30	116.80	1,762.8	-129.2	408.3	426.8	1.10	1.05	
1,920.0	22.30	117.20	1,850.4	-144.7	438.7	459.9	2.13	2.13	
2,015.0	23.10	115.00	1,938.1	-160.8	471.6	495.5	1.23	0.84	
2,109.0	22.80	112.30	2,024.6	-175.5	505.2	531.5	1.16	-0.32	
2,204.0	22.10	111.70	2,112.4	-189.1	538.8	567.3	0.78	-0.74	
2,298.0	23.00	114.80	2,199.2	-203.3	571.9	602.8	1.59	0.96	
2,393.0	24.10	116.30	2,286.3	-219.7	606.2	639.8	1.32	1.16	
2,473.0	22.70	115.70	2,359.7	-233.6	634.7	670.7	1.78	-1.75	
2,597.0	20.50	114.30	2,475.0	-253.0	676.1	715.3	1.82	-1.77	
2,692.0	21.50	116.50	2,563.7	-267.6	706.8	748.5	1.34	1.05	
2,786.0	23.90	113.30	2,650.4	-282.8	739.7	784.0	2.87	2.55	
2,881.0	25.50	113.20	2,736.7	-298.5	776.2	823.0	1.68	1.68	
2,976.0	26.50	110.60	2,822.1	-314.0	814.8	864.1	1.60	1.05	
3,070.0	24.40	107.80	2,907.0	-327.3	853.0	904.3	2.57	-2.23	
3,165.0	24.00	112.00	2,993.7	-340.5	889.6	942.9	1.86	-0.42	
3,260.0	24.30	112.80	3,080.4	-355.3	925.5	981.2	0.47	0.32	
3,354.0	23.00	113.20	3,166.5	-370.1	960.2	1,018.3	1.39	-1.38	
3,449.0	22.90	109.50	3,253.9	-383.6	994.7	1,054.9	1.52	-0.11	
3,543.0	23.00	112.70	3,340.5	-396.7	1,028.9	1,091.2	1.33	0.11	
3,638.0	24.30	109.90	3,427.5	-410.6	1,064.4	1,128.9	1.81	1.37	
3,732.0	25.00	110.40	3,513.0	-424.1	1,101.2	1,167.8	0.78	0.74	
3,827.0	24.00	110.60	3,599.4	-437.9	1,138.1	1,206.8	1.06	-1.05	
3,921.0	24.90	110.00	3,685.0	-451.4	1,174.6	1,245.4	0.99	0.96	
4,016.0	25.40	111.40	3,771.0	-465.6	1,212.3	1,285.4	0.82	0.53	
4,110.0	24.30	111.10	3,856.3	-480.0	1,249.1	1,324.4	1.18	-1.17	
4,205.0	25.20	110.60	3,942.5	-494.1	1,286.3	1,363.8	0.97	0.95	
4,300.0	24.40	110.70	4,028.8	-508.2	1,323.6	1,403.3	0.84	-0.84	
4,394.0	26.70	109.20	4,113.6	-522.0	1,361.7	1,443.5	2.54	2.45	
4,488.0	26.50	109.20	4,197.6	-535.8	1,401.5	1,485.3	0.21	-0.21	
4,583.0	26.00	109.80	4,282.8	-549.8	1,441.1	1,527.1	0.60	-0.53	
4,677.0	25.30	109.10	4,367.6	-563.4	1,479.4	1,567.5	0.81	-0.74	
4,772.0	24.30	108.60	4,453.8	-576.3	1,517.1	1,607.1	1.08	-1.05	
4,866.0	23.60	109.70	4,539.7	-588.8	1,553.2	1,645.0	0.88	-0.74	
4,961.0	24.40	109.20	4,626.5	-601.6	1,589.6	1,683.4	0.87	0.84	
5,056.0	22.50	109.00	4,713.6	-614.0	1,625.3	1,721.0	2.00	-2.00	
5,150.0	21.80	110.90	4,800.7	-626.1	1,658.7	1,756.1	1.07	-0.74	
5,245.0	21.10	112.30	4,889.1	-638.9	1,691.0	1,790.5	0.91	-0.74	
5,340.0	21.50	112.30	4,977.6	-652.0	1,722.9	1,824.5	0.42	0.42	
5,434.0	22.00	110.30	5,065.0	-664.6	1,755.3	1,859.0	0.95	0.53	
5,528.0	23.10	109.50	5,151.8	-676.9	1,789.2	1,894.7	1.21	1.17	
5,623.0	22.90	108.70	5,239.2	-689.0	1,824.3	1,931.6	0.39	-0.21	
5,717.0	23.60	108.50	5,325.6	-700.9	1,859.5	1,968.5	0.75	0.74	
5,812.0	24.50	110.10	5,412.3	-713.7	1,896.0	2,007.0	1.17	0.95	
5,907.0	24.80	109.20	5,498.7	-727.0	1,933.3	2,046.3	0.51	0.32	
6,001.0	23.60	109.90	5,584.4	-739.9	1,969.6	2,084.6	1.31	-1.28	
6,096.0	21.10	107.60	5,672.3	-751.5	2,003.8	2,120.5	2.79	-2.63	
6,190.0	20.90	109.90	5,760.0	-762.3	2,035.7	2,154.0	0.90	-0.21	
6,285.0	21.60	111.10	5,848.6	-774.4	2,068.0	2,188.1	0.87	0.74	
6,379.0	20.70	114.70	5,936.2	-787.6	2,099.2	2,221.5	1.68	-0.96	

Survey Report

Company:	Caerus Oil & Gas	Local Co-ordinate Reference:	Well PUCKETT 24D-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 24D-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
6,474.0	21.40	116.00	6,024.9	-802.2	2,130.0	2,254.8	0.89	0.74	
6,569.0	20.20	114.70	6,113.7	-816.6	2,160.5	2,287.7	1.35	-1.26	
6,663.0	19.20	115.40	6,202.2	-830.1	2,189.2	2,318.7	1.09	-1.06	
6,758.0	16.30	112.00	6,292.7	-841.8	2,215.7	2,347.1	3.24	-3.05	
6,852.0	15.20	109.20	6,383.1	-850.7	2,239.6	2,372.4	1.42	-1.17	
6,947.0	13.30	113.10	6,475.2	-859.1	2,261.4	2,395.5	2.24	-2.00	
7,041.0	11.80	113.80	6,567.0	-867.3	2,280.1	2,415.6	1.60	-1.60	
7,136.0	12.00	114.20	6,659.9	-875.2	2,298.0	2,434.8	0.23	0.21	
7,231.0	9.60	109.90	6,753.2	-882.0	2,314.5	2,452.3	2.66	-2.53	
7,325.0	8.80	97.40	6,846.0	-885.6	2,329.0	2,467.3	2.28	-0.85	
7,420.0	7.30	88.90	6,940.1	-886.4	2,342.2	2,480.4	2.01	-1.58	
7,514.0	4.70	79.20	7,033.6	-885.5	2,352.0	2,489.7	2.96	-2.77	
7,609.0	2.70	77.00	7,128.4	-884.3	2,358.0	2,495.3	2.11	-2.11	
7,703.0	2.50	83.90	7,222.3	-883.6	2,362.2	2,499.2	0.39	-0.21	
7,798.0	1.40	84.00	7,317.2	-883.3	2,365.4	2,502.3	1.16	-1.16	
7,892.0	1.20	126.00	7,411.2	-883.7	2,367.3	2,504.3	1.01	-0.21	
7,987.0	1.30	127.90	7,506.2	-885.0	2,369.0	2,506.2	0.11	0.11	
8,081.0	1.00	155.70	7,600.2	-886.4	2,370.2	2,507.6	0.66	-0.32	
8,176.0	0.90	158.60	7,695.2	-887.8	2,370.8	2,508.5	0.12	-0.11	
8,271.0	0.70	203.90	7,790.1	-889.0	2,370.8	2,508.9	0.68	-0.21	
8,365.0	0.70	203.40	7,884.1	-890.1	2,370.4	2,508.6	0.01	0.00	
8,460.0	0.20	292.10	7,979.1	-890.6	2,370.0	2,508.4	0.76	-0.53	
8,554.0	0.30	242.80	8,073.1	-890.6	2,369.6	2,508.0	0.24	0.11	
8,649.0	0.80	326.00	8,168.1	-890.2	2,369.0	2,507.3	0.86	0.53	
8,745.0	1.40	327.80	8,264.1	-888.6	2,368.0	2,506.0	0.63	0.62	
8,839.0	1.70	321.20	8,358.1	-886.6	2,366.5	2,504.1	0.37	0.32	
8,934.0	1.90	307.00	8,453.0	-884.5	2,364.4	2,501.6	0.51	0.21	
9,028.0	2.00	298.80	8,547.0	-882.8	2,361.7	2,498.6	0.31	0.11	
9,123.0	1.90	287.30	8,641.9	-881.5	2,358.7	2,495.4	0.42	-0.11	
9,218.0	1.90	274.90	8,736.9	-880.9	2,355.7	2,492.3	0.43	0.00	LAST CES SURVEY @ 9218' MD
9,290.0	1.90	274.90	8,808.8	-880.7	2,353.3	2,489.9	0.00	0.00	PTB @ 9290' 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 24D-1 PBHL	0.00	0.00	8,800.0	-893.3	2,344.0	14,344,819.90	2,439,116.40	39.467843	-108.170163
- actual wellpath misses target center by 15.8usft at 9281.4usft MD (8800.3 TVD, -880.7 N, 2353.6 E)									
- Circle (radius 50.0)									

Design Annotations

	Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
			+N/-S (usft)	+E/-W (usft)	
	9,218.0	8,736.9	-880.9	2,355.7	LAST CES SURVEY @ 9218' MD
	9,290.0	8,808.8	-880.7	2,353.3	PTB @ 9290' MD

Checked By: _____ Approved By: _____ Date: _____