



## **Caerus Oil & Gas**

**Garfield County, CO (UTM 12N)**

**S23-T6S-R97W (MESA N23)**

**PUCKETT 24D-23**

**OH**

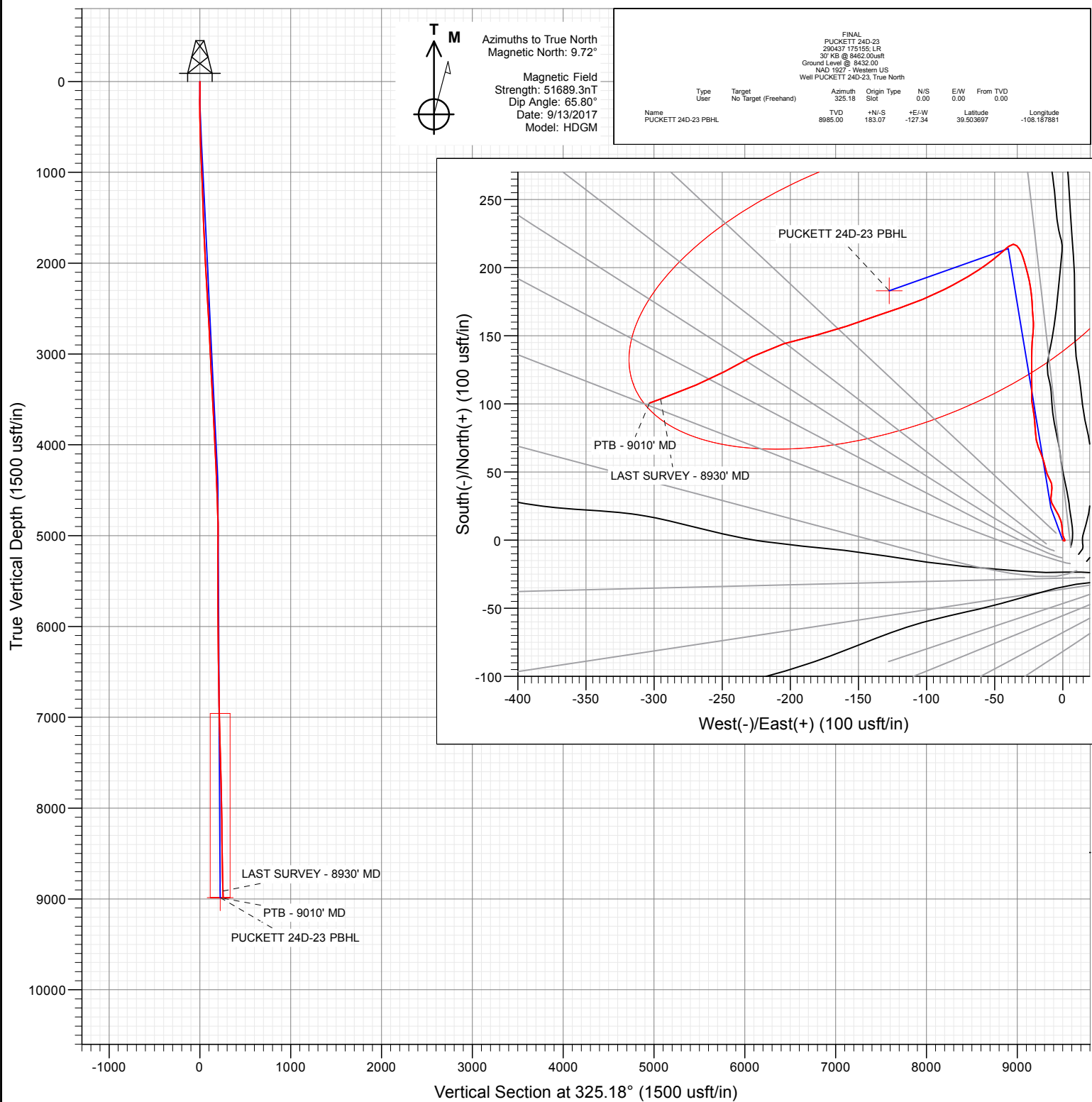
**Survey: Survey #3**

## **Standard Survey Report**

**08 April, 2020**



Project: Garfield County, CO (UTM 12N)  
Site: S23-T6S-R97W (MESA N23)  
Well: PUCKETT 24D-23  
Wellbore: OH  
Design: FINAL



WELL DETAILS: PUCKETT 24D-23

+N/-S	+E/-W	Northing	Ground Level:	8432.00	Latitude	Longitude
0.00	0.00	14357542.00	Easting	2433840.00	39.503195	-108.187430





## Survey Report

<b>Company:</b>	Caerus Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well PUCKETT 24D-23
<b>Project:</b>	Garfield County, CO (UTM 12N)	<b>TVD Reference:</b>	30' KB @ 8462.00usft
<b>Site:</b>	S23-T6S-R97W (MESA N23)	<b>MD Reference:</b>	30' KB @ 8462.00usft
<b>Well:</b>	PUCKETT 24D-23	<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 Fee	<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>	S23-T6S-R97W (MESA N23)		
<b>Site Position:</b>		<b>Northing:</b>	14,357,518.00 usft
<b>From:</b>	Map	<b>Easting:</b>	2,433,869.00 usft
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13-3/16 "
		<b>Latitude:</b>	39.503127
		<b>Longitude:</b>	-108.187330
		<b>Grid Convergence:</b>	1.79 °

Well	PUCKETT 24D-23					
Well Position	+N/-S	0.00 usft	Northing:	14,357,542.00 usft	Latitude:	39.503195
	+E/-W	0.00 usft	Easting:	2,433,840.00 usft	Longitude:	-108.187430
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	8,432.00 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	9/13/2017	9.72	65.80	51,689.30000000

<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	325.18	

<b>Survey Program</b>	<b>Date</b>	4/8/2020			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
143.00	9,010.00	Survey #3 (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 (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
143.00	0.57	119.82	143.00	-0.35	0.62	-0.64	0.40	0.40	0.00	
204.00	0.44	108.22	204.00	-0.58	1.10	-1.10	0.27	-0.21	-19.02	
235.00	0.44	53.81	234.99	-0.54	1.31	-1.20	1.30	0.00	-175.52	
295.00	0.40	10.13	294.99	-0.20	1.53	-1.04	0.52	-0.07	-72.80	
355.00	0.70	347.89	354.99	0.36	1.49	-0.56	0.60	0.50	-37.07	
386.00	1.27	325.31	385.99	0.83	1.26	-0.04	2.19	1.84	-72.84	
448.00	1.54	336.56	447.97	2.16	0.54	1.47	0.62	0.44	18.15	
509.00	1.58	349.83	508.94	3.74	0.06	3.03	0.59	0.07	21.75	
571.00	1.76	352.90	570.92	5.52	-0.21	4.65	0.32	0.29	4.95	

<b>Company:</b>	Caerus Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well PUCKETT 24D-23
<b>Project:</b>	Garfield County, CO (UTM 12N)	<b>TVD Reference:</b>	30' KB @ 8462.00usft
<b>Site:</b>	S23-T6S-R97W (MESA N23)	<b>MD Reference:</b>	30' KB @ 8462.00usft
<b>Well:</b>	PUCKETT 24D-23	<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 (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
665.00	1.67	355.28	664.88	8.32	-0.50	7.12	0.12	-0.10	2.53	
759.00	1.63	358.88	758.84	11.02	-0.64	9.41	0.12	-0.04	3.83	
854.00	2.42	341.21	853.78	14.27	-1.31	12.47	1.05	0.83	-18.60	
948.00	3.21	333.83	947.66	18.51	-3.11	16.97	0.92	0.84	-7.85	
1,042.00	3.08	326.71	1,041.52	22.99	-5.66	22.10	0.44	-0.14	-7.57	
1,137.00	2.55	335.94	1,136.41	27.05	-7.92	26.73	0.73	-0.56	9.72	
1,231.00	2.15	4.86	1,230.33	30.72	-8.62	30.14	1.31	-0.43	30.77	
1,326.00	2.42	7.49	1,325.26	34.48	-8.21	32.99	0.30	0.28	2.77	
1,420.00	2.24	0.46	1,419.18	38.29	-7.94	35.96	0.36	-0.19	-7.48	
1,515.00	1.58	350.62	1,514.13	41.43	-8.13	38.66	0.77	-0.69	-10.36	
1,609.00	1.71	327.15	1,608.09	43.89	-9.11	41.23	0.72	0.14	-24.97	
1,704.00	2.64	335.15	1,703.02	47.07	-10.79	44.80	1.03	0.98	8.42	
1,798.00	3.65	345.78	1,796.88	51.93	-12.44	49.74	1.24	1.07	11.31	
1,893.00	3.74	345.08	1,891.68	57.86	-13.98	55.48	0.11	0.09	-0.74	
1,987.00	3.56	337.17	1,985.49	63.51	-15.90	61.22	0.57	-0.19	-8.41	
2,082.00	3.16	337.61	2,080.33	68.65	-18.04	66.66	0.42	-0.42	0.46	
2,176.00	3.38	351.32	2,174.17	73.78	-19.45	71.68	0.86	0.23	14.59	
2,271.00	3.38	356.77	2,269.01	79.35	-20.03	76.58	0.34	0.00	5.74	
2,365.00	3.47	354.40	2,362.84	84.95	-20.46	81.42	0.18	0.10	-2.52	
2,460.00	3.74	355.80	2,457.65	90.90	-20.97	86.60	0.30	0.28	1.47	
2,599.00	3.47	346.84	2,596.38	99.52	-22.26	94.41	0.45	-0.19	-6.45	
2,693.00	3.56	3.54	2,690.21	105.20	-22.73	99.34	1.09	0.10	17.77	
2,788.00	3.87	357.91	2,785.01	111.35	-22.66	104.35	0.50	0.33	-5.93	
2,882.00	3.82	0.02	2,878.79	117.65	-22.78	109.59	0.16	-0.05	2.24	
2,977.00	3.16	0.02	2,973.62	123.43	-22.77	114.33	0.69	-0.69	0.00	
3,071.00	2.64	359.50	3,067.50	128.19	-22.79	118.25	0.55	-0.55	-0.55	
3,166.00	3.82	0.99	3,162.34	133.54	-22.76	122.62	1.25	1.24	1.57	
3,260.00	3.65	0.64	3,256.14	139.66	-22.67	127.60	0.18	-0.18	-0.37	
3,355.00	3.69	3.71	3,350.95	145.74	-22.44	132.45	0.21	0.04	3.23	
3,449.00	3.38	7.32	3,444.77	151.50	-21.89	136.87	0.41	-0.33	3.84	
3,543.00	3.16	0.64	3,538.62	156.84	-21.51	141.04	0.47	-0.23	-7.11	
3,638.00	4.09	354.66	3,633.43	162.83	-21.79	146.12	1.06	0.98	-6.29	
3,732.00	3.65	357.65	3,727.21	169.16	-22.23	151.56	0.51	-0.47	3.18	
3,826.00	3.47	356.07	3,821.03	174.99	-22.55	156.53	0.22	-0.19	-1.68	
3,921.00	3.12	354.05	3,915.87	180.43	-23.01	161.26	0.39	-0.37	-2.13	
4,015.00	3.03	351.15	4,009.74	185.43	-23.66	165.73	0.19	-0.10	-3.09	
4,110.00	3.03	348.07	4,104.61	190.36	-24.56	170.30	0.17	0.00	-3.24	
4,204.00	3.08	346.14	4,198.47	195.25	-25.68	174.95	0.12	0.05	-2.05	
4,299.00	2.59	343.76	4,293.36	199.79	-26.89	179.37	0.53	-0.52	-2.51	
4,393.00	2.24	344.29	4,387.27	203.59	-27.98	183.12	0.37	-0.37	0.56	
4,487.00	2.29	343.85	4,481.20	207.16	-29.00	186.63	0.06	0.05	-0.47	
4,582.00	2.15	337.00	4,576.13	210.63	-30.23	190.18	0.32	-0.15	-7.21	
4,676.00	2.07	330.67	4,670.06	213.73	-31.75	193.59	0.26	-0.09	-6.73	
4,771.00	1.76	310.10	4,765.01	216.17	-33.71	196.71	0.79	-0.33	-21.65	



## Survey Report

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<b>Site:</b>	S23-T6S-R97W (MESA N23)	<b>MD Reference:</b>	30' KB @ 8462.00usft
<b>Well:</b>	PUCKETT 24D-23	<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 (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,866.00	1.71	277.67	4,859.97	217.30	-36.23	199.07	1.02	-0.05	-34.14
4,960.00	3.30	228.45	4,953.89	215.69	-39.64	199.70	2.70	1.69	-52.36
5,055.00	3.08	231.44	5,048.74	212.28	-43.68	199.22	0.29	-0.23	3.15
5,149.00	2.77	228.27	5,142.62	209.20	-47.35	198.78	0.37	-0.33	-3.37
5,244.00	2.51	229.24	5,237.52	206.31	-50.64	198.29	0.28	-0.27	1.02
5,528.00	2.68	239.09	5,521.23	198.84	-61.05	198.10	0.17	0.06	3.47
5,811.00	2.86	237.94	5,803.90	191.69	-72.71	198.89	0.07	0.06	-0.41
6,094.00	3.65	244.27	6,086.44	184.04	-86.81	200.65	0.31	0.28	2.24
6,378.00	3.38	247.26	6,369.90	176.88	-102.67	203.83	0.11	-0.10	1.05
6,661.00	3.96	250.77	6,652.32	170.43	-119.59	208.20	0.22	0.20	1.24
6,945.00	4.09	251.65	6,935.62	164.01	-138.47	213.71	0.05	0.05	0.31
7,229.00	4.40	250.16	7,218.84	157.13	-158.33	219.40	0.12	0.11	-0.52
7,512.00	5.01	256.31	7,500.89	150.52	-180.54	226.66	0.28	0.22	2.17
7,796.00	5.14	254.38	7,783.78	144.16	-204.84	235.31	0.08	0.05	-0.68
8,079.00	5.10	240.93	8,065.66	134.63	-228.05	240.74	0.42	-0.01	-4.75
8,363.00	4.18	242.42	8,348.72	123.71	-248.26	243.31	0.33	-0.32	0.52
8,646.00	5.10	246.91	8,630.79	114.00	-268.97	247.17	0.35	0.33	1.59
8,930.00	6.28	249.81	8,913.39	103.69	-295.16	253.66	0.43	0.42	1.02
<b>LAST SURVEY - 8930' MD</b>									
8,980.95	6.28	249.81	8,964.04	101.76	-300.39	255.07	0.00	0.00	0.00
<b>PUCKETT 24D-23 PBHL</b>									
9,010.00	6.28	249.81	8,992.91	100.67	-303.37	255.87	0.00	0.00	0.00
<b>PTB - 9010' MD</b>									

### Design Targets

#### Target Name

- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- Shape									
PUCKETT 24D-23 PE	0.00	0.00	8,985.00	183.07	-127.34	14,357,721.00	2,433,707.00	39.503698	-108.187881
- survey misses target center by 192.34usft at 8980.95usft MD (8964.04 TVD, 101.76 N, -300.39 E)									
- Ellipse (radii L200.00 W100.00 on 250.00 azi)									

### Survey Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
8,930.00	8,913.39	103.69	-295.16	LAST SURVEY - 8930' MD
9,010.00	8,992.91	100.67	-303.37	PTB - 9010' MD

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_