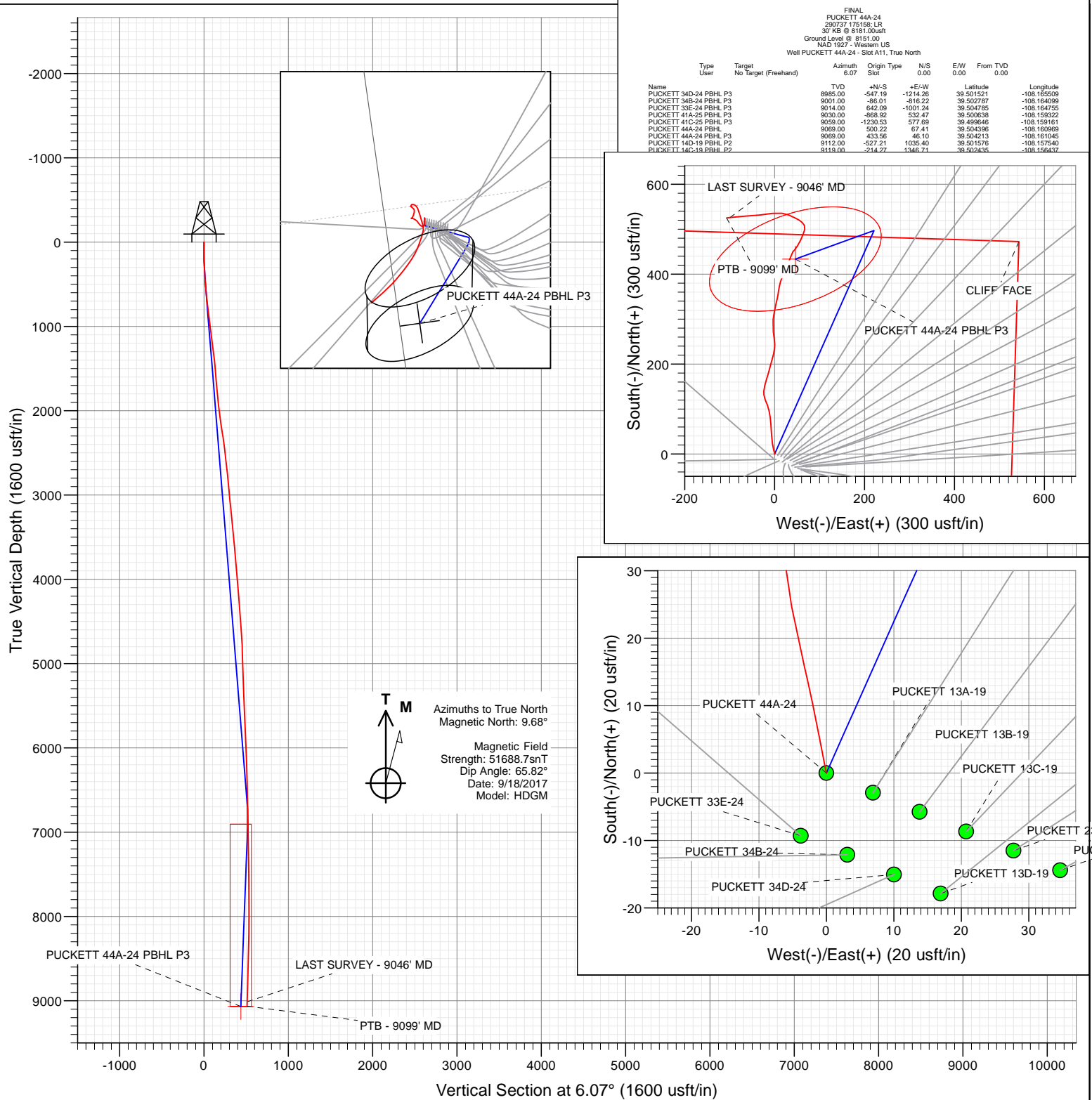


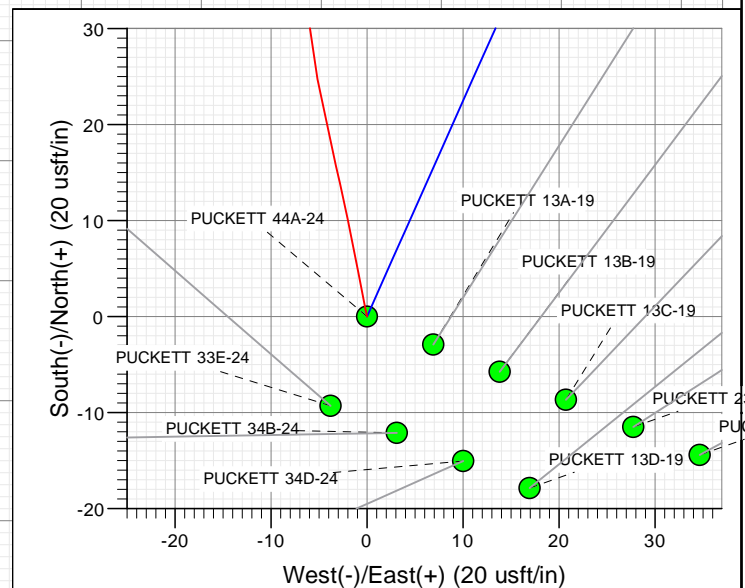
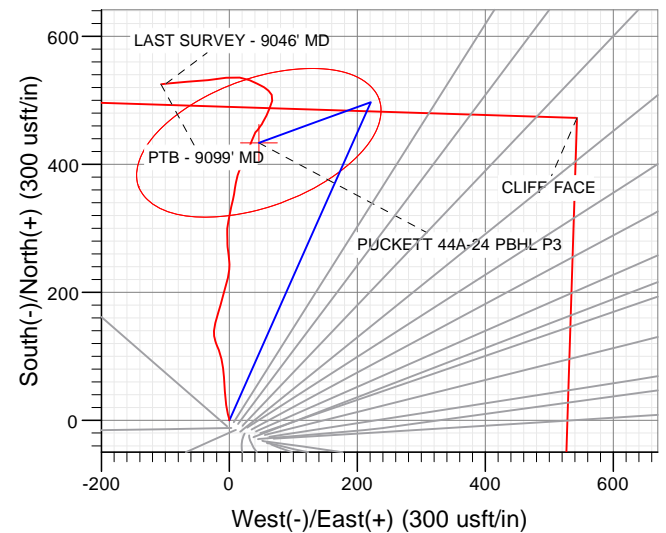


Project: Garfield County, CO (UTM 12N)
Site: S24-T6N-R97W (MESA P24)
Well: PUCKETT 44A-24
Wellbore: OH
Design: FINAL



FINAL
PUCKETT 44A-24
230737 175155 LRT
30' KB @ 8181.00usft
Ground Level @ 8151.00
NAD 1927 - Western US
Well PUCKETT 44A-24 - Slot A11, True North

Type	Target	No Target (Freehand)	Azimuth	Origin Type	N/S	E/W	From TVD
Name			TVD				
PUCKETT 34D-24 PBHL P3			8985.00	+N/-S	+E/-W	Latitude	Longitude
PUCKETT 34B-24 PBHL P3			9001.00	-86.01	-816.22	39.502787	-108.164099
PUCKETT 33E-24 PBHL P3			9014.00	642.09	-1001.24	39.504785	-108.164755
PUCKETT 41A-25 PBHL P3			9030.00	-868.92	532.47	39.500638	-108.159322
PUCKETT 41C-25 PBHL P3			9059.00	-1230.53	577.69	39.499646	-108.159161
PUCKETT 44A-24 PBHL			9069.00	500.22	67.41	39.504398	-108.160669
PUCKETT 44A-24 PBHL P3			9069.00	433.56	46.10	39.504213	-108.161045
PUCKETT 14D-19 PBHL P2			9112.00	-527.21	1035.40	39.501576	-108.157540
PUCKETT 14C-19 PBHL P2			9119.00	-214.77	1346.71	39.502436	-108.156437



WELL DETAILS: PUCKETT 44A-24

+N/-S 0.00 +E/-W 0.00 Northing 14357711.70 Ground Level: 8151.00 Easting 2441240.40 Latitude 39.503023 Longitude -108.161208

A11



Cathedral Energy Services

Survey Report

Company:	Caerus Oil & Gas	Local Co-ordinate Reference:	Well PUCKETT 44A-24 - Slot A11
Project:	Garfield County, CO (UTM 12N)	TVD Reference:	30' KB @ 8181.00usft
Site:	S24-T6N-R97W (MESA P24)	MD Reference:	30' KB @ 8181.00usft
Well:	PUCKETT 44A-24	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		S24-T6N-R97W (MESA P24)			
Site Position:		Northing:	14,357,707.60 usft	Latitude:	39.503013
From:	Map	Easting:	2,441,222.80 usft	Longitude:	-108.161271
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	1.81 °

Well	PUCKETT 44A-24 - Slot A11					
Well Position	+N/-S	0.00 usft	Northing:	14,357,711.70 usft	Latitude:	39.503023
	+E/-W	0.00 usft	Easting:	2,441,240.40 usft	Longitude:	-108.161208
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	8,151.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	9/18/2017	9.68	65.82	51,688.70000000

Design	FINAL				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	6.07	

Survey Program	Date	10/3/2017			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
143.00	9,099.00	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	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
143.00	0.62	349.35	143.00	0.76	-0.14	0.74	0.43	0.43		
205.00	0.92	347.94	204.99	1.58	-0.31	1.54	0.48	0.48		
297.00	1.93	349.44	296.96	3.82	-0.75	3.72	1.10	1.10		
389.00	3.91	348.64	388.84	8.42	-1.65	8.20	2.15	2.15		
481.00	5.41	347.15	480.53	15.72	-3.23	15.29	1.64	1.63		
574.00	5.98	348.82	573.07	24.75	-5.15	24.07	0.64	0.61		
668.00	5.71	354.71	666.58	34.21	-6.53	33.33	0.70	-0.29		
762.00	5.71	358.49	760.12	43.54	-7.08	42.55	0.40	0.00		
857.00	6.50	357.26	854.58	53.64	-7.46	52.55	0.84	0.83		
951.00	7.30	354.97	947.90	64.90	-8.24	63.67	0.90	0.85		
1,046.00	8.17	354.09	1,042.03	77.63	-9.46	76.19	0.92	0.92		
1,140.00	8.53	350.23	1,135.04	91.14	-11.34	89.43	0.71	0.38		

Cathedral Energy Services

Survey Report

Company:	Caerus Oil & Gas	Local Co-ordinate Reference:	Well PUCKETT 44A-24 - Slot A11
Project:	Garfield County, CO (UTM 12N)	TVD Reference:	30' KB @ 8181.00usft
Site:	S24-T6N-R97W (MESA P24)	MD Reference:	30' KB @ 8181.00usft
Well:	PUCKETT 44A-24	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
1,234.00	7.91	340.03	1,228.07	104.09	-14.73	101.95	1.68	-0.66	
1,328.00	8.26	339.42	1,321.14	116.49	-19.31	113.80	0.38	0.37	
1,422.00	6.11	346.71	1,414.40	127.69	-22.83	124.55	2.48	-2.29	
1,516.00	4.57	0.07	1,507.99	136.30	-23.98	133.00	2.10	-1.64	
1,610.00	4.35	9.30	1,601.71	143.56	-23.40	140.28	0.80	-0.23	
1,704.00	5.05	11.94	1,695.39	151.13	-21.97	147.96	0.78	0.74	
1,798.00	5.63	15.01	1,788.98	159.63	-19.92	156.63	0.69	0.62	
1,893.00	6.50	16.33	1,883.45	169.29	-17.20	166.52	0.93	0.92	
1,987.00	7.03	17.38	1,976.80	179.89	-13.98	177.40	0.58	0.56	
2,081.00	7.60	15.63	2,070.03	191.36	-10.59	189.17	0.65	0.61	
2,175.00	8.31	14.66	2,163.13	203.92	-7.20	202.02	0.77	0.76	
2,269.00	9.05	14.57	2,256.05	217.65	-3.62	216.04	0.79	0.79	
2,363.00	8.39	8.24	2,348.96	231.59	-0.78	230.21	1.24	-0.70	
2,483.00	6.59	355.32	2,467.94	247.12	-0.08	245.73	2.05	-1.50	
2,594.00	6.68	353.83	2,578.20	259.89	-1.30	258.29	0.18	0.08	
2,689.00	6.59	352.34	2,672.56	270.78	-2.62	268.99	0.20	-0.09	
2,784.00	6.02	1.92	2,766.99	281.16	-3.18	279.25	1.26	-0.60	
2,878.00	5.63	357.52	2,860.51	290.70	-3.21	288.73	0.63	-0.41	
2,973.00	4.79	1.48	2,955.11	299.32	-3.31	297.29	0.96	-0.88	
3,068.00	5.67	12.55	3,049.72	307.86	-2.19	305.91	1.41	0.93	
3,162.00	6.02	11.06	3,143.23	317.23	-0.23	315.43	0.41	0.37	
3,257.00	5.85	11.41	3,237.72	326.87	1.68	325.21	0.18	-0.18	
3,351.00	5.67	12.46	3,331.25	336.10	3.63	334.60	0.22	-0.19	
3,446.00	5.41	12.73	3,425.80	345.05	5.63	343.71	0.28	-0.27	
3,541.00	5.36	9.91	3,520.38	353.79	7.38	352.59	0.28	-0.05	
3,635.00	5.27	8.16	3,613.98	362.39	8.75	361.28	0.20	-0.10	
3,730.00	5.01	11.50	3,708.60	370.77	10.19	369.77	0.42	-0.27	
3,825.00	5.41	11.94	3,803.20	379.22	11.95	378.35	0.42	0.42	
3,919.00	4.88	23.27	3,896.83	387.23	14.44	386.58	1.22	-0.56	
4,013.00	4.88	24.86	3,990.49	394.53	17.71	394.19	0.14	0.00	
4,108.00	4.79	23.19	4,085.15	401.84	20.97	401.80	0.18	-0.09	
4,202.00	4.57	23.01	4,178.84	408.89	23.98	409.14	0.23	-0.23	
4,295.00	4.75	22.75	4,271.53	415.86	26.91	416.37	0.19	0.19	
4,389.00	4.57	20.55	4,365.22	422.95	29.73	423.72	0.27	-0.19	
4,483.00	4.48	21.96	4,458.92	429.86	32.42	430.88	0.15	-0.10	
4,577.00	4.18	21.43	4,552.66	436.46	35.04	437.71	0.32	-0.32	
4,671.00	3.65	23.01	4,646.44	442.40	37.47	443.88	0.58	-0.56	
4,764.00	3.47	23.19	4,739.26	447.71	39.73	449.40	0.19	-0.19	
4,858.00	1.45	53.24	4,833.17	451.04	41.80	452.93	2.48	-2.15	
4,952.00	2.33	34.52	4,927.12	453.32	43.84	455.42	1.13	0.94	
5,046.00	2.42	38.92	5,021.04	456.44	46.17	458.77	0.22	0.10	
5,139.00	2.29	35.14	5,113.96	459.49	48.47	462.04	0.22	-0.14	
5,233.00	2.29	35.05	5,207.88	462.56	50.63	465.32	0.00	0.00	
5,327.00	2.24	26.35	5,301.81	465.75	52.53	468.69	0.37	-0.05	
5,608.00	2.51	26.79	5,582.57	476.16	57.74	479.60	0.10	0.10	
5,889.00	2.64	22.83	5,863.28	487.62	63.02	491.55	0.08	0.05	
6,170.00	2.33	14.66	6,144.02	499.11	66.98	503.39	0.17	-0.11	
6,454.00	1.71	328.52	6,427.86	508.31	66.23	512.46	0.59	-0.22	
6,736.00	1.71	317.18	6,709.74	514.98	61.17	518.56	0.12	0.00	
7,018.00	1.71	299.60	6,991.61	520.15	54.65	523.01	0.19	0.00	
7,112.00	1.71	292.13	7,085.57	521.37	52.13	523.96	0.24	0.00	
7,394.00	2.33	300.83	7,367.39	525.89	43.31	527.52	0.24	0.22	
7,676.00	2.99	291.78	7,649.09	531.56	31.56	531.91	0.28	0.23	

Cathedral Energy Services

Survey Report

Company:	Caerus Oil & Gas	Local Co-ordinate Reference:	Well PUCKETT 44A-24 - Slot A11
Project:	Garfield County, CO (UTM 12N)	TVD Reference:	30' KB @ 8181.00usft
Site:	S24-T6N-R97W (MESA P24)	MD Reference:	30' KB @ 8181.00usft
Well:	PUCKETT 44A-24	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
7,959.00	3.52	276.75	7,931.64	535.32	16.08	534.02	0.35	0.19	
8,242.00	5.14	264.09	8,213.83	535.03	-5.16	531.49	0.66	0.57	
8,524.00	6.37	262.51	8,494.40	531.69	-33.24	525.20	0.44	0.44	
8,806.00	7.16	267.26	8,774.44	528.81	-66.30	518.84	0.34	0.28	
9,046.00	8.57	262.86	9,012.18	525.88	-98.99	512.46	0.64	0.59	LAST SURVEY - 9046' MD
9,099.00	8.57	262.86	9,064.58	524.89	-106.83	510.65	0.00	0.00	PTB - 9099' MD

Cathedral Energy Services

Survey Report

Company:	Caerus Oil & Gas	Local Co-ordinate Reference:	Well PUCKETT 44A-24 - Slot A11
Project:	Garfield County, CO (UTM 12N)	TVD Reference:	30' KB @ 8181.00usft
Site:	S24-T6N-R97W (MESA P24)	MD Reference:	30' KB @ 8181.00usft
Well:	PUCKETT 44A-24	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 24C-19 PBHL	0.00	0.00	9,211.00	158.17	3,006.99	14,357,964.60	2,444,240.91	39.503457	-108.150556
- actual wellpath misses target center by 3125.96usft at 8824.44usft MD (8792.73 TVD, 528.69 N, -68.62 E)									
- Point									
PUCKETT 14C-19 PBHL	0.00	0.00	9,119.00	-214.27	1,346.71	14,357,540.00	2,442,593.20	39.502435	-108.156437
- actual wellpath misses target center by 1625.18usft at 8963.98usft MD (8931.03 TVD, 527.22 N, -87.19 E)									
- Ellipse (radii L200.00 W100.00 on 250.00 azi)									
PUCKETT 34B-24 PBHL	0.00	0.00	9,001.00	-86.01	-816.22	14,357,600.00	2,440,427.30	39.502787	-108.164099
- actual wellpath misses target center by 938.34usft at 9099.00usft MD (9064.58 TVD, 524.89 N, -106.83 E)									
- Ellipse (radii L200.00 W100.00 on 250.00 azi)									
PUCKETT 41C-25 PBHL	0.00	0.00	9,059.00	-1,230.53	577.69	14,356,500.00	2,441,856.60	39.499646	-108.159161
- actual wellpath misses target center by 1882.70usft at 9021.73usft MD (8988.17 TVD, 526.31 N, -95.43 E)									
- Point									
PUCKETT 41A-25 PBHL	0.00	0.00	9,030.00	-868.92	532.47	14,356,860.00	2,441,800.00	39.500638	-108.159322
- actual wellpath misses target center by 1530.36usft at 8994.73usft MD (8961.46 TVD, 526.76 N, -91.54 E)									
- Point									
PUCKETT 34D-24 PBHL	0.00	0.00	8,985.00	-547.19	-1,214.26	14,357,126.50	2,440,044.00	39.501521	-108.165509
- actual wellpath misses target center by 1543.40usft at 9099.00usft MD (9064.58 TVD, 524.89 N, -106.83 E)									
- Ellipse (radii L200.00 W100.00 on 250.00 azi)									
PUCKETT 24D-19 PBHL	0.00	0.00	9,202.00	-507.56	3,032.21	14,357,300.00	2,444,287.11	39.501630	-108.150466
- actual wellpath misses target center by 3294.95usft at 8820.24usft MD (8788.56 TVD, 528.72 N, -68.09 E)									
- Point									
PUCKETT 44A-24 PBHL	0.00	0.00	9,069.00	433.56	46.10	14,358,146.50	2,441,272.81	39.504213	-108.161045
- actual wellpath misses target center by 177.41usft at 9082.45usft MD (9048.21 TVD, 525.20 N, -104.38 E)									
- Ellipse (radii L200.00 W100.00 on 250.00 azi)									
PUCKETT 14D-19 PBHL	0.00	0.00	9,112.00	-527.21	1,035.40	14,357,217.40	2,442,291.91	39.501576	-108.157540
- actual wellpath misses target center by 1550.32usft at 9003.28usft MD (8969.92 TVD, 526.62 N, -92.76 E)									
- Point									
PUCKETT 13C-19 PBHL	0.00	0.00	9,150.00	1,059.73	922.97	14,358,800.00	2,442,129.50	39.505931	-108.157938
- actual wellpath misses target center by 1161.05usft at 9036.81usft MD (9003.09 TVD, 526.04 N, -97.63 E)									
- Point									
PUCKETT 23D-19 PBHL	0.00	0.00	9,234.00	974.93	2,976.82	14,358,780.00	2,444,185.00	39.505698	-108.150662
- actual wellpath misses target center by 3109.21usft at 8841.34usft MD (8809.49 TVD, 528.57 N, -70.76 E)									
- Ellipse (radii L200.00 W100.00 on 250.00 azi)									
PUCKETT 13D-19 PBHL	0.00	0.00	9,138.00	783.16	914.26	14,358,523.30	2,442,129.51	39.505172	-108.157969
- actual wellpath misses target center by 1052.62usft at 9029.50usft MD (8995.85 TVD, 526.17 N, -96.56 E)									
- Point									
PUCKETT 13A-19 PBHL	0.00	0.00	9,143.00	1,688.96	941.33	14,359,429.50	2,442,128.01	39.507658	-108.157873
- actual wellpath misses target center by 1565.42usft at 9019.67usft MD (8986.14 TVD, 526.34 N, -95.13 E)									
- Point									
PUCKETT 23B-19 PBHL	0.00	0.00	9,247.00	1,515.63	2,978.87	14,359,320.50	2,444,170.00	39.507182	-108.150655
- actual wellpath misses target center by 3235.05usft at 8847.32usft MD (8815.42 TVD, 528.52 N, -71.53 E)									
- Ellipse (radii L200.00 W100.00 on 250.00 azi)									
PUCKETT 44A-24 PBHL	0.00	0.00	9,069.00	500.22	67.41	14,358,213.80	2,441,292.00	39.504396	-108.160969
- actual wellpath misses target center by 174.77usft at 9078.06usft MD (9043.88 TVD, 525.28 N, -103.73 E)									
- Point									
PUCKETT 23A-19 PBHL	0.00	0.00	9,247.00	1,793.01	2,977.61	14,359,597.70	2,444,160.00	39.507944	-108.150659
- actual wellpath misses target center by 3329.06usft at 8844.09usft MD (8812.22 TVD, 528.55 N, -71.12 E)									
- Ellipse (radii L200.00 W100.00 on 250.00 azi)									
PUCKETT 24B-19 PBHL	0.00	0.00	9,218.00	434.09	2,994.78	14,358,240.00	2,444,220.00	39.504214	-108.150599
- actual wellpath misses target center by 3094.16usft at 8829.66usft MD (8797.91 TVD, 528.66 N, -69.28 E)									
- Point									

Cathedral Energy Services

Survey Report

Company:	Caerus Oil & Gas	Local Co-ordinate Reference:	Well PUCKETT 44A-24 - Slot A11
Project:	Garfield County, CO (UTM 12N)	TVD Reference:	30' KB @ 8181.00usft
Site:	S24-T6N-R97W (MESA P24)	MD Reference:	30' KB @ 8181.00usft
Well:	PUCKETT 44A-24	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

PUCKETT 24A-19 PBHL	0.00	0.00	9,224.00	709.59	2,983.46	14,358,515.00	2,444,200.00	39.504970	-108.150639
- actual wellpath misses target center by 3087.59usft at 8833.77usft MD (8801.99 TVD, 528.63 N, -69.80 E)									
- Point									
PUCKETT 13B-19 PBHL	0.00	0.00	9,149.00	1,387.06	933.30	14,359,127.50	2,442,129.50	39.506830	-108.157901
- actual wellpath misses target center by 1351.01usft at 9030.41usft MD (8996.76 TVD, 526.16 N, -96.69 E)									
- Point									
PUCKETT 33E-24 PBHL	0.00	0.00	9,014.00	642.09	-1,001.24	14,358,321.90	2,440,219.41	39.504785	-108.164755
- actual wellpath misses target center by 903.48usft at 9099.00usft MD (9064.58 TVD, 524.89 N, -106.83 E)									
- Ellipse (radii L200.00 W100.00 on 250.00 azi)									
PUCKETT 23C-19 PBHL	0.00	0.00	9,240.00	1,244.95	2,980.33	14,359,050.00	2,444,180.00	39.506439	-108.150649
- actual wellpath misses target center by 3163.48usft at 8843.50usft MD (8811.63 TVD, 528.55 N, -71.04 E)									
- Ellipse (radii L200.00 W100.00 on 250.00 azi)									
PUCKETT 14A-19 PBHL	0.00	0.00	9,129.00	326.95	951.79	14,358,068.50	2,442,181.41	39.503920	-108.157836
- actual wellpath misses target center by 1075.28usft at 9021.05usft MD (8987.50 TVD, 526.32 N, -95.33 E)									
- Point									

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
9,046.00	9,012.18	525.88	-98.99	LAST SURVEY - 9046' MD
9,099.00	9,064.58	524.89	-106.83	PTB - 9099' MD

Checked By: _____ Approved By: _____ Date: _____