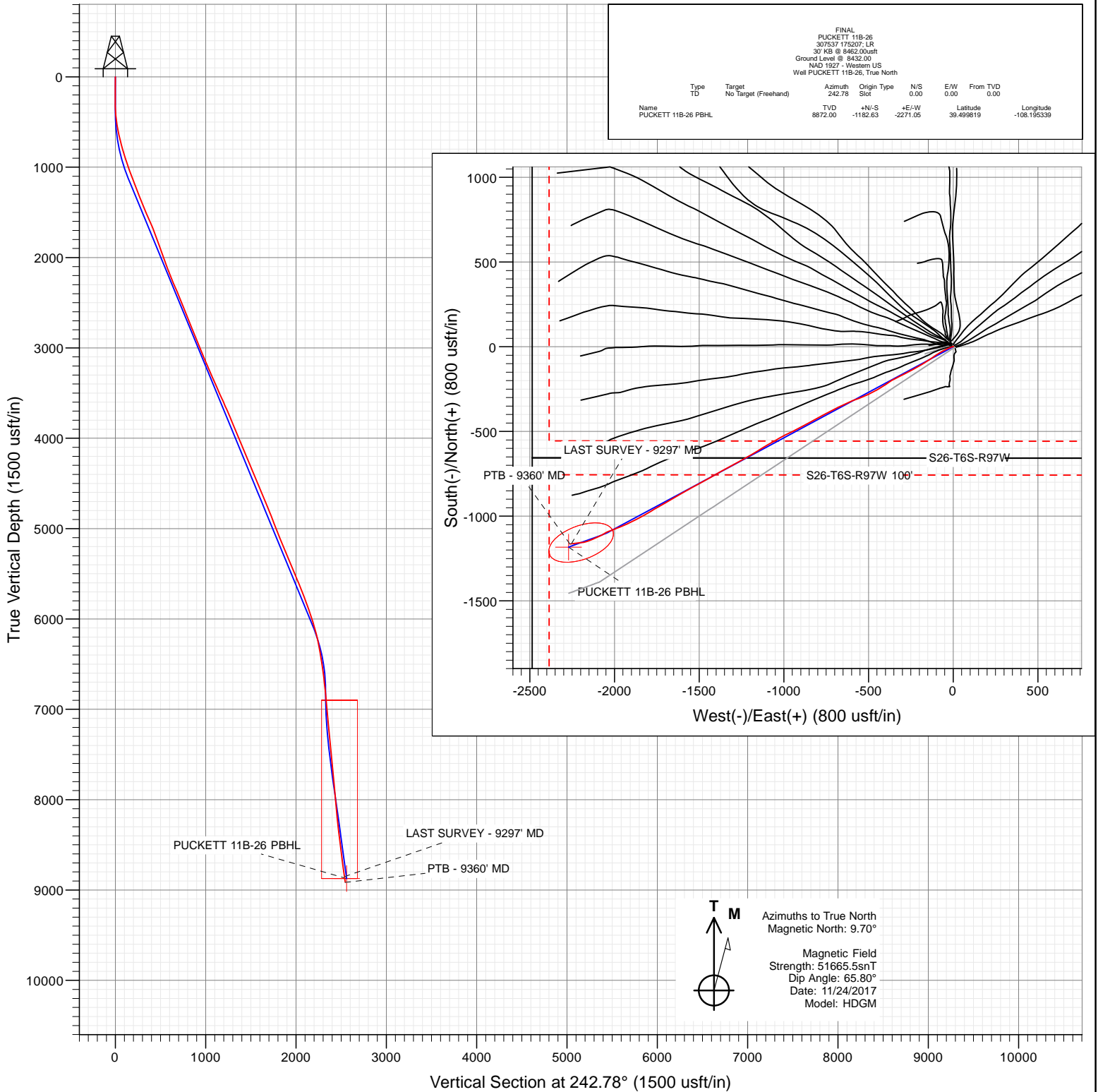




Project: Garfield County, CO (UTM 12N)  
 Site: S23-T6S-R97W (MESA N23)  
 Well: PUCKETT 11B-26  
 Wellbore: OH  
 Design: FINAL



FINAL PUCKETT 11B-26 307537 175207, LR 30' KB @ 8462.00usft Ground Level @ 8432.00 NAD 1927 - Western US Well PUCKETT 11B-26, True North							
Type	Target	Azimuth	Origin Type	N/S	E/W	From TVD	
TD	No Target (Freehand)	242.78	Slot	0.00	0.00	0.00	
Name		TVD	+N/-S	+E/-W	Latitude		Longitude
PUCKETT 11B-26 PBHL		8872.00	-1182.63	-2271.05	39.499819		-108.195339



WELL DETAILS: PUCKETT 11B-26

+N/-S 0.00 +E/-W 0.00 Northing 14357496.00 Ground Level: 8432.00 Easting 2433880.00 Latitude 39.503065 Longitude -108.187294



# Cathedral Energy Services

## Survey Report

<b>Company:</b>	Caerus Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well PUCKETT 11B-26
<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 11B-26	<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 Feet)	<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)		

Site		S23-T6S-R97W (MESA N23)			
Site Position:		Northing:	14,357,518.00 usft	Latitude:	39.503127
From:	Map	Easting:	2,433,869.00 usft	Longitude:	-108.187330
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16"	Grid Convergence:	1.79 °

Well	PUCKETT 11B-26					
Well Position	+N/-S	0.00 usft	Northing:	14,357,496.00 usft	Latitude:	39.503065
	+E/-W	0.00 usft	Easting:	2,433,880.00 usft	Longitude:	-108.187294
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	11/24/2017	9.70	65.80	51,665.50000000

<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	242.78	

<b>Survey Program</b>	<b>Date</b>	12/1/2017			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
143.00	234.00	Survey #1 (OH)	INC-ONLY_A027Ua	OWSG Inclination Only Surveys	
264.00	9,360.00	Survey #2 (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 (°/100usf)</b>	<b>Build Rate (°/100u)</b>	<b>Formations / Comments</b>
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
143.00	0.92	37.53	142.99	0.91	0.70	-1.04	0.64	0.64	
204.00	0.97	58.54	203.99	1.57	1.44	-2.00	0.57	0.08	
234.00	0.40	16.61	233.98	1.80	1.68	-2.32	2.41	-1.90	
264.00	0.44	266.93	263.98	1.90	1.60	-2.29	2.29	0.13	
295.00	0.88	254.27	294.98	1.82	1.25	-1.95	1.49	1.42	
386.00	3.74	252.95	385.90	0.76	-2.26	1.66	3.14	3.14	
478.00	7.08	247.06	477.48	-2.33	-10.35	10.27	3.68	3.63	
570.00	10.28	250.93	568.41	-7.22	-23.34	24.05	3.53	3.48	
664.00	12.88	244.51	660.49	-14.47	-40.72	42.83	3.08	2.77	
759.00	14.94	240.30	752.70	-25.10	-60.92	65.65	2.41	2.17	
853.00	16.83	239.59	843.11	-37.99	-83.18	91.35	2.02	2.01	

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	Caerus Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well PUCKETT 11B-26
<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 11B-26	<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 (°/100usf)	Build Rate (°/100u)	Formations / Comments
947.00	18.63	236.69	932.64	-53.12	-107.47	119.87	2.13	1.91	
1,042.00	20.13	233.79	1,022.26	-71.11	-133.34	151.10	1.88	1.58	
1,136.00	21.09	236.96	1,110.25	-89.89	-160.57	183.91	1.57	1.02	
1,230.00	20.92	241.26	1,198.01	-107.18	-189.47	217.51	1.65	-0.18	
1,325.00	21.09	242.05	1,286.69	-123.35	-219.44	251.56	0.35	0.18	
1,419.00	21.71	239.68	1,374.21	-140.05	-249.38	285.83	1.13	0.66	
1,513.00	22.76	243.20	1,461.23	-157.03	-280.62	321.37	1.80	1.12	
1,607.00	23.82	244.51	1,547.57	-173.40	-313.99	358.53	1.26	1.13	
1,702.00	23.34	241.97	1,634.64	-190.50	-347.92	396.52	1.18	-0.51	
1,796.00	21.40	236.96	1,721.57	-208.60	-378.74	432.21	2.89	-2.06	
1,891.00	19.38	236.08	1,810.61	-226.85	-406.35	465.11	2.15	-2.13	
1,985.00	19.16	238.27	1,899.34	-243.67	-432.41	495.98	0.80	-0.23	
2,080.00	20.04	239.50	1,988.84	-260.13	-459.70	527.77	1.02	0.93	
2,174.00	20.22	244.25	2,077.10	-275.36	-488.21	560.09	1.75	0.19	
2,269.00	22.19	248.21	2,165.67	-289.15	-519.66	594.37	2.56	2.07	
2,363.00	23.20	249.61	2,252.39	-302.19	-553.49	630.43	1.22	1.07	
2,458.00	22.59	247.50	2,339.91	-315.70	-587.89	667.19	1.08	-0.64	
2,489.00	22.41	246.36	2,368.55	-320.34	-598.81	679.02	1.52	-0.58	
2,597.00	22.28	245.48	2,468.44	-337.10	-636.29	720.02	0.33	-0.12	
2,692.00	22.63	244.16	2,556.24	-352.54	-669.13	756.28	0.65	0.37	
2,786.00	21.31	242.93	2,643.41	-368.19	-700.61	791.44	1.49	-1.40	
2,880.00	22.06	241.61	2,730.76	-384.36	-731.35	826.17	0.95	0.80	
2,975.00	21.71	241.17	2,818.91	-401.31	-762.44	861.57	0.41	-0.37	
3,069.00	21.58	243.20	2,906.28	-417.49	-793.10	896.24	0.81	-0.14	
3,164.00	22.63	241.53	2,994.30	-434.08	-824.76	931.98	1.29	1.11	
3,258.00	22.50	239.86	3,081.11	-451.73	-856.22	968.02	0.70	-0.14	
3,352.00	23.73	243.64	3,167.56	-469.16	-888.72	1,004.90	2.05	1.31	
3,447.00	24.57	242.76	3,254.25	-486.69	-923.41	1,043.77	0.96	0.88	
3,541.00	22.98	243.37	3,340.27	-503.86	-957.19	1,081.66	1.71	-1.69	
3,636.00	24.08	243.81	3,427.37	-520.73	-991.16	1,119.58	1.17	1.16	
3,731.00	23.73	240.47	3,514.22	-538.71	-1,025.18	1,158.06	1.47	-0.37	
3,825.00	24.21	239.68	3,600.11	-557.76	-1,058.28	1,196.21	0.61	0.51	
3,919.00	23.16	240.47	3,686.20	-576.60	-1,091.00	1,233.92	1.17	-1.12	
4,014.00	23.29	238.19	3,773.50	-595.71	-1,123.22	1,271.31	0.96	0.14	
4,108.00	21.93	238.80	3,860.27	-614.60	-1,154.02	1,307.35	1.47	-1.45	
4,203.00	23.64	240.21	3,947.86	-633.25	-1,185.73	1,344.08	1.89	1.80	
4,297.00	22.63	239.50	4,034.30	-651.79	-1,217.67	1,380.96	1.11	-1.07	
4,392.00	23.12	240.56	4,121.82	-670.24	-1,249.66	1,417.84	0.67	0.52	
4,486.00	22.37	241.97	4,208.52	-687.71	-1,281.52	1,454.17	0.99	-0.80	
4,581.00	23.25	242.05	4,296.08	-705.00	-1,314.04	1,491.00	0.93	0.93	
4,676.00	21.75	239.94	4,383.85	-722.60	-1,345.84	1,527.33	1.79	-1.58	
4,770.00	22.41	243.37	4,470.96	-739.36	-1,376.94	1,562.64	1.54	0.70	
4,864.00	22.72	239.86	4,557.77	-756.51	-1,408.65	1,598.69	1.47	0.33	
4,959.00	23.38	239.59	4,645.18	-775.26	-1,440.78	1,635.83	0.70	0.69	
5,053.00	22.81	241.26	4,731.65	-793.46	-1,472.84	1,672.67	0.92	-0.61	
5,148.00	22.15	240.82	4,819.43	-811.05	-1,504.62	1,708.98	0.72	-0.69	
5,242.00	20.39	241.26	4,907.03	-827.56	-1,534.45	1,743.06	1.88	-1.87	
5,337.00	20.79	241.17	4,995.96	-843.65	-1,563.73	1,776.46	0.42	0.42	
5,431.00	22.46	240.65	5,083.34	-860.50	-1,594.00	1,811.08	1.79	1.78	
5,525.00	23.69	240.65	5,169.82	-878.56	-1,626.11	1,847.89	1.31	1.31	
5,620.00	21.67	239.15	5,257.47	-896.91	-1,657.81	1,884.47	2.21	-2.13	
5,714.00	22.37	239.59	5,344.61	-914.86	-1,688.14	1,919.66	0.77	0.74	
5,809.00	23.60	240.65	5,432.06	-933.33	-1,720.31	1,956.71	1.37	1.29	

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	Caerus Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well PUCKETT 11B-26
<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 11B-26	<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 (°/100usf)	Build Rate (°/100u)	Formations / Comments
5,903.00	21.93	238.98	5,518.74	-951.60	-1,751.75	1,993.03	1.90	-1.78	
5,998.00	23.12	240.30	5,606.49	-969.99	-1,783.16	2,029.37	1.36	1.25	
6,092.00	21.97	239.50	5,693.31	-988.06	-1,814.34	2,065.36	1.27	-1.22	
6,186.00	20.04	241.79	5,781.06	-1,004.60	-1,843.69	2,099.02	2.23	-2.05	
6,281.00	20.26	242.76	5,870.24	-1,019.82	-1,872.65	2,131.75	0.42	0.23	
6,375.00	18.15	242.40	5,959.01	-1,034.05	-1,900.10	2,162.67	2.25	-2.24	
6,470.00	17.27	247.24	6,049.51	-1,046.36	-1,926.22	2,191.52	1.80	-0.93	
6,564.00	14.41	245.74	6,139.93	-1,056.57	-1,949.76	2,217.12	3.07	-3.04	
6,659.00	12.31	249.88	6,232.36	-1,064.91	-1,970.04	2,238.98	2.43	-2.21	
6,753.00	10.64	246.10	6,324.48	-1,071.87	-1,987.39	2,257.59	1.95	-1.78	
6,848.00	9.54	248.56	6,418.01	-1,078.31	-2,002.74	2,274.17	1.24	-1.16	
6,943.00	8.48	250.05	6,511.83	-1,083.57	-2,016.65	2,288.96	1.14	-1.12	
7,037.00	7.52	251.63	6,604.92	-1,087.88	-2,029.00	2,301.91	1.05	-1.02	
7,132.00	6.24	248.38	6,699.23	-1,091.74	-2,039.70	2,313.19	1.41	-1.35	
7,226.00	5.41	239.50	6,792.75	-1,095.87	-2,048.27	2,322.70	1.30	-0.88	
7,510.00	5.23	240.82	7,075.52	-1,108.98	-2,071.10	2,349.00	0.08	-0.06	
7,793.00	5.80	245.31	7,357.21	-1,121.24	-2,095.36	2,376.18	0.25	0.20	
8,077.00	5.32	248.73	7,639.88	-1,132.01	-2,120.67	2,403.61	0.21	-0.17	
8,360.00	4.88	244.07	7,921.76	-1,142.03	-2,143.72	2,428.69	0.21	-0.16	
8,634.00	6.11	254.45	8,194.50	-1,151.04	-2,168.25	2,454.63	0.58	0.45	
8,917.00	7.56	264.90	8,475.49	-1,156.73	-2,201.30	2,486.62	0.67	0.51	
9,201.00	8.31	262.36	8,756.77	-1,161.12	-2,240.25	2,523.27	0.29	0.26	
9,297.00	8.31	262.27	8,851.76	-1,162.97	-2,254.00	2,536.34	0.01	0.00	LAST SURVEY - 9297' MD
9,360.00	8.31	262.27	8,914.10	-1,164.20	-2,263.03	2,544.93	0.00	0.00	PTB - 9360' 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 11B-26 PBHL	0.00	0.00	8,872.00	-1,182.63	-2,271.05	14,356,243.00	2,431,647.00	39.499819	-108.195339
- actual wellpath misses target center by 32.96usft at 9297.00usft MD (8851.76 TVD, -1162.97 N, -2254.00 E)									
- Ellipse (radii L200.00 W100.00 on 250.00 azi)									

### Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Comment
9,297.00	8,851.76	-1,162.97	-2,254.00	LAST SURVEY - 9297' MD
9,360.00	8,914.10	-1,164.20	-2,263.03	PTB - 9360' MD

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