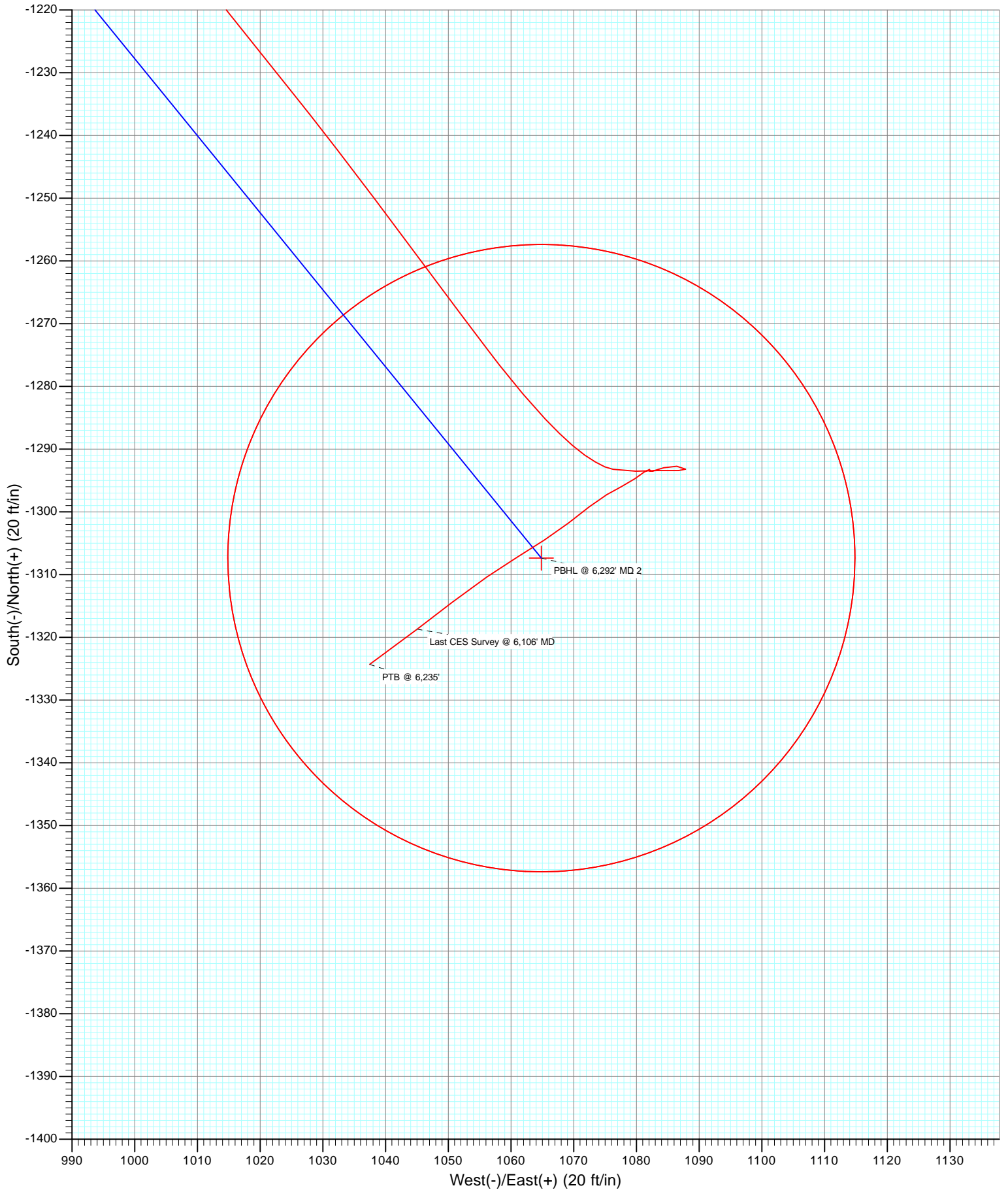




Project: Garfield County, CO
Site: S14-T7S-R96W
Well: Nolte 11B-24
Wellbore: DD
Design: FINAL



Cathedral Energy Services

Survey Report

Company: Caerus Oil & Gas (NAD 27)	Local Co-ordinate Reference: Well Nolte 11B-24
Project: Garfield County, CO	TVD Reference: WELL @ 5117.8ft (Patterson 303)
Site: S14-T7S-R96W	MD Reference: WELL @ 5117.8ft (Patterson 303)
Well: Nolte 11B-24	North Reference: True
Wellbore: DD	Survey Calculation Method: Minimum Curvature
Design: FINAL	Database: USA EDM 5000 Multi Users DB

Project Garfield County, CO		
Map System: US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum: NAD 1927 (NADCON CONUS)		
Map Zone: Colorado Central 502		

Site S14-T7S-R96W					
Site Position:		Northing:	592,603.28 ft	Latitude:	39.432320
From:	Lat/Long	Easting:	1,274,372.48 ft	Longitude:	-108.069280
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.62 °

Well Nolte 11B-24						
Well Position	+N/-S	0.0 ft	Northing:	592,602.42 ft	Latitude:	39.432332
	+E/-W	0.0 ft	Easting:	1,274,558.42 ft	Longitude:	-108.068622
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	5,091.0 ft

Wellbore DD					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/13/2014	10.02	65.60	51,936

Design FINAL					
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:		Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
		0.0	0.0	0.0	141.00

Survey Program		Date	3/14/2014		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
145.0	6,235.0	Survey #1 (DD)	MWD	Geolink MWD	

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
145.0	0.40	351.70	145.0	0.5	-0.1	-0.4	0.28	0.28	
176.0	0.10	101.70	176.0	0.6	-0.1	-0.5	1.43	-0.97	
206.0	0.40	178.70	206.0	0.5	0.0	-0.4	1.30	1.00	
237.0	0.90	173.20	237.0	0.1	0.0	-0.1	1.62	1.61	
267.0	1.70	152.10	267.0	-0.5	0.2	0.5	3.06	2.67	
298.0	2.40	144.20	298.0	-1.4	0.8	1.6	2.43	2.26	
329.0	3.20	143.10	328.9	-2.6	1.7	3.1	2.59	2.58	
360.0	4.60	145.40	359.9	-4.4	3.0	5.2	4.54	4.52	
391.0	5.60	143.90	390.7	-6.6	4.5	8.0	3.25	3.23	
421.0	6.40	146.30	420.6	-9.2	6.3	11.1	2.79	2.67	
451.0	7.60	142.70	450.3	-12.1	8.5	14.8	4.26	4.00	
512.0	9.20	139.80	510.7	-19.1	14.1	23.7	2.71	2.62	

Cathedral Energy Services

Survey Report

Company:	Caerus Oil & Gas (NAD 27)	Local Co-ordinate Reference:	Well Nolte 11B-24
Project:	Garfield County, CO	TVD Reference:	WELL @ 5117.8ft (Patterson 303)
Site:	S14-T7S-R96W	MD Reference:	WELL @ 5117.8ft (Patterson 303)
Well:	Nolte 11B-24	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments
573.0	11.30	145.40	570.7	-27.7	20.6	34.5	3.81	3.44	
635.0	13.40	146.30	631.3	-38.7	28.0	47.7	3.40	3.39	
696.0	15.00	150.70	690.4	-51.5	35.8	62.5	3.16	2.62	
787.0	17.80	145.30	777.7	-73.2	49.5	88.0	3.50	3.08	
878.0	20.70	143.80	863.6	-97.6	66.9	118.0	3.23	3.19	
970.0	23.60	140.70	948.8	-125.0	88.2	152.6	3.40	3.15	
985.0	24.10	140.90	962.5	-129.7	92.0	158.7	3.38	3.33	
1,072.0	25.60	139.10	1,041.5	-157.7	115.5	195.2	1.93	1.72	
1,167.0	27.30	138.40	1,126.5	-189.5	143.5	237.5	1.82	1.79	
1,262.0	30.00	138.00	1,209.9	-223.4	173.8	283.0	2.85	2.84	
1,357.0	33.10	138.10	1,290.8	-260.4	207.0	332.7	3.26	3.26	
1,450.0	35.80	139.40	1,367.5	-299.9	241.7	385.2	3.01	2.90	
1,545.0	37.20	137.20	1,443.9	-342.1	279.3	441.6	2.02	1.47	
1,640.0	38.80	138.20	1,518.8	-385.4	318.7	500.0	1.80	1.68	
1,735.0	43.20	140.10	1,590.4	-432.5	359.4	562.3	4.81	4.63	
1,830.0	42.00	139.20	1,660.4	-481.5	401.0	626.6	1.42	-1.26	
1,925.0	42.50	140.50	1,730.7	-530.4	442.2	690.5	1.06	0.53	
2,020.0	42.80	141.40	1,800.6	-580.4	482.7	754.8	0.72	0.32	
2,115.0	43.50	142.30	1,869.9	-631.4	522.9	819.8	0.98	0.74	
2,210.0	44.00	141.70	1,938.5	-683.2	563.3	885.5	0.68	0.53	
2,305.0	43.90	140.90	2,006.9	-734.7	604.5	951.4	0.59	-0.11	
2,400.0	43.80	142.10	2,075.4	-786.2	645.5	1,017.2	0.88	-0.11	
2,495.0	42.50	140.70	2,144.7	-837.0	686.0	1,082.2	1.70	-1.37	
2,590.0	39.70	140.70	2,216.3	-885.3	725.6	1,144.6	2.95	-2.95	
2,685.0	37.40	140.40	2,290.6	-931.0	763.2	1,203.8	2.43	-2.42	
2,780.0	35.10	139.60	2,367.2	-974.0	799.3	1,260.0	2.47	-2.42	
2,875.0	32.30	138.40	2,446.2	-1,013.8	833.8	1,312.6	3.03	-2.95	
2,970.0	29.70	138.70	2,527.6	-1,050.5	866.2	1,361.5	2.74	-2.74	
3,065.0	27.00	138.40	2,611.2	-1,084.3	896.1	1,406.6	2.85	-2.84	
3,160.0	24.70	138.00	2,696.7	-1,115.2	923.7	1,448.0	2.43	-2.42	
3,256.0	22.40	138.60	2,784.7	-1,143.8	949.2	1,486.3	2.41	-2.40	
3,351.0	21.00	139.10	2,873.0	-1,170.3	972.3	1,521.4	1.49	-1.47	
3,446.0	18.60	139.10	2,962.4	-1,194.6	993.4	1,553.5	2.53	-2.53	
3,541.0	15.20	140.90	3,053.3	-1,215.7	1,011.2	1,581.1	3.62	-3.58	
3,636.0	14.00	141.80	3,145.2	-1,234.4	1,026.1	1,605.1	1.29	-1.26	
3,731.0	11.80	143.00	3,237.8	-1,251.2	1,039.1	1,626.3	2.33	-2.32	
3,825.0	9.60	143.60	3,330.1	-1,265.2	1,049.5	1,643.7	2.34	-2.34	
3,920.0	7.60	142.00	3,424.1	-1,276.5	1,058.1	1,657.9	2.12	-2.11	
4,015.0	6.20	136.90	3,518.4	-1,285.2	1,065.5	1,669.3	1.61	-1.47	
4,110.0	4.10	125.70	3,613.0	-1,290.9	1,071.7	1,677.7	2.44	-2.21	
4,205.0	2.20	100.00	3,707.8	-1,293.2	1,076.3	1,682.4	2.44	-2.00	
4,300.0	2.20	89.30	3,802.8	-1,293.5	1,079.9	1,684.9	0.43	0.00	
4,395.0	2.00	87.50	3,897.7	-1,293.4	1,083.4	1,687.0	0.22	-0.21	
4,490.0	2.00	92.40	3,992.7	-1,293.4	1,086.7	1,689.1	0.18	0.00	
4,585.0	0.70	300.60	4,087.6	-1,293.2	1,087.9	1,689.6	2.78	-1.37	
4,680.0	1.10	280.00	4,182.6	-1,292.7	1,086.5	1,688.4	0.54	0.42	
4,775.0	1.50	251.40	4,277.6	-1,293.0	1,084.4	1,687.3	0.79	0.42	
4,870.0	0.80	258.20	4,372.6	-1,293.5	1,082.6	1,686.5	0.75	-0.74	
4,965.0	0.30	45.60	4,467.6	-1,293.5	1,082.1	1,686.2	1.12	-0.53	
5,060.0	0.20	296.40	4,562.6	-1,293.2	1,082.1	1,686.0	0.43	-0.11	
5,155.0	1.00	235.00	4,657.6	-1,293.6	1,081.3	1,685.8	0.97	0.84	
5,250.0	1.30	234.70	4,752.6	-1,294.7	1,079.7	1,685.7	0.32	0.32	
5,345.0	1.60	242.70	4,847.5	-1,296.0	1,077.7	1,685.3	0.38	0.32	

Cathedral Energy Services

Survey Report

Company: Caerus Oil & Gas (NAD 27)	Local Co-ordinate Reference: Well Nolte 11B-24
Project: Garfield County, CO	TVD Reference: WELL @ 5117.8ft (Patterson 303)
Site: S14-T7S-R96W	MD Reference: WELL @ 5117.8ft (Patterson 303)
Well: Nolte 11B-24	North Reference: True
Wellbore: DD	Survey Calculation Method: Minimum Curvature
Design: FINAL	Database: USA EDM 5000 Multi Users DB

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments
5,440.0	1.70	239.80	4,942.5	-1,297.3	1,075.3	1,684.9	0.14	0.11	
5,535.0	2.40	232.30	5,037.4	-1,299.2	1,072.5	1,684.6	0.79	0.74	
5,630.0	2.70	232.10	5,132.3	-1,301.8	1,069.1	1,684.5	0.32	0.32	
5,726.0	2.90	237.30	5,228.2	-1,304.5	1,065.3	1,684.2	0.34	0.21	
5,821.0	3.10	237.70	5,323.1	-1,307.2	1,061.1	1,683.6	0.21	0.21	
5,916.0	4.00	236.40	5,417.9	-1,310.4	1,056.2	1,683.0	0.95	0.95	
6,011.0	4.30	231.70	5,512.7	-1,314.4	1,050.6	1,682.7	0.48	0.32	
6,106.0	4.20	233.40	5,607.4	-1,318.7	1,045.0	1,682.5	0.17	-0.11	Last CES Survey @ 6,106' MD
6,235.0	4.20	233.40	5,736.0	-1,324.3	1,037.5	1,682.1	0.00	0.00	PTB @ 6,235'

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Nolte 11B-24 PBHL 2 - hit/miss target - Shape	0.00	0.00	5,790.0	-1,307.4	1,064.9	591,265.47	1,275,585.89	39.428743	-108.064852
- actual wellpath misses target center by 62.8ft at 6235.0ft MD (5736.0 TVD, -1324.3 N, 1037.5 E)									
- Circle (radius 50.0)									
Nolte 11B-24 PBHL - actual wellpath misses target center by 60.4ft at 6235.0ft MD (5736.0 TVD, -1324.3 N, 1037.5 E)	0.00	0.00	5,790.0	-1,307.8	1,059.0	591,265.24	1,275,579.98	39.428741	-108.064873
- Circle (radius 50.0)									

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment	
6,106.0	5,607.4	-1,318.7	1,045.0	Last CES Survey @ 6,106' MD	
6,235.0	5,736.0	-1,324.3	1,037.5	PTB @ 6,235'	

Checked By: _____ Approved By: _____ Date: _____

Caerus Oil & Gas (NAD 27)

Garfield County, CO

S14-T7S-R96W

Nolte 11B-24

DD

Design: FINAL

Survey Report - Geographic

14 March, 2014

Cathedral Energy Services

Survey Report - Geographic

Company: Caerus Oil & Gas (NAD 27)	Local Co-ordinate Reference: Well Nolte 11B-24
Project: Garfield County, CO	TVD Reference: WELL @ 5117.8ft (Patterson 303)
Site: S14-T7S-R96W	MD Reference: WELL @ 5117.8ft (Patterson 303)
Well: Nolte 11B-24	North Reference: True
Wellbore: DD	Survey Calculation Method: Minimum Curvature
Design: FINAL	Database: USA EDM 5000 Multi Users DB

Project Garfield County, CO		
Map System: US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum: NAD 1927 (NADCON CONUS)		
Map Zone: Colorado Central 502		

Site S14-T7S-R96W				
Site Position:	Northing:	592,603.28 ft	Latitude:	39.432320
From: Lat/Long	Easting:	1,274,372.48 ft	Longitude:	-108.069280
Position Uncertainty: 0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.62 °

Well Nolte 11B-24				
Well Position	+N/-S	0.0 ft	Northing:	592,602.42 ft
	+E/-W	0.0 ft	Easting:	1,274,558.42 ft
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft
			Latitude:	39.432332
			Longitude:	-108.068622
			Ground Level:	5,091.0 ft

Wellbore DD					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/13/2014	10.02	65.60	51,936

Design FINAL				
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth: 0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	141.00

Survey Program		Date 3/14/2014
From (ft)	To (ft)	Survey (Wellbore)
145.0	6,235.0	Survey #1 (DD)
		Tool Name
		MWD
		Description
		Geolink MWD

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude	
0.0	0.00	0.00	0.0	0.0	0.0	592,602.42	1,274,558.42	39.432332	-108.068622	
145.0	0.40	351.70	145.0	0.5	-0.1	592,602.93	1,274,558.36	39.432334	-108.068622	
176.0	0.10	101.70	176.0	0.6	-0.1	592,603.03	1,274,558.37	39.432334	-108.068622	
206.0	0.40	178.70	206.0	0.5	0.0	592,602.92	1,274,558.40	39.432334	-108.068622	
237.0	0.90	173.20	237.0	0.1	0.0	592,602.57	1,274,558.42	39.432333	-108.068622	
267.0	1.70	152.10	267.0	-0.5	0.2	592,601.93	1,274,558.64	39.432331	-108.068621	
298.0	2.40	144.20	298.0	-1.4	0.8	592,600.98	1,274,559.21	39.432328	-108.068619	
329.0	3.20	143.10	328.9	-2.6	1.7	592,599.74	1,274,560.07	39.432325	-108.068616	
360.0	4.60	145.40	359.9	-4.4	3.0	592,597.99	1,274,561.25	39.432320	-108.068612	
391.0	5.60	143.90	390.7	-6.6	4.5	592,595.70	1,274,562.78	39.432314	-108.068606	
421.0	6.40	146.30	420.6	-9.2	6.3	592,593.08	1,274,564.50	39.432307	-108.068600	
451.0	7.60	142.70	450.3	-12.1	8.5	592,590.05	1,274,566.54	39.432299	-108.068592	

Cathedral Energy Services

Survey Report - Geographic

Company:	Caerus Oil & Gas (NAD 27)	Local Co-ordinate Reference:	Well Nolte 11B-24
Project:	Garfield County, CO	TVD Reference:	WELL @ 5117.8ft (Patterson 303)
Site:	S14-T7S-R96W	MD Reference:	WELL @ 5117.8ft (Patterson 303)
Well:	Nolte 11B-24	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude	
512.0	9.20	139.80	510.7	-19.1	14.1	592,582.96	1,274,571.94	39.432280	-108.068572	
573.0	11.30	145.40	570.7	-27.7	20.6	592,574.13	1,274,578.23	39.432256	-108.068549	
635.0	13.40	146.30	631.3	-38.7	28.0	592,562.95	1,274,585.36	39.432226	-108.068523	
696.0	15.00	150.70	690.4	-51.5	35.8	592,549.97	1,274,592.78	39.432191	-108.068495	
787.0	17.80	145.30	777.7	-73.2	49.5	592,527.88	1,274,605.84	39.432131	-108.068447	
878.0	20.70	143.80	863.6	-97.6	66.9	592,502.98	1,274,622.57	39.432064	-108.068385	
970.0	23.60	140.70	948.8	-125.0	88.2	592,475.01	1,274,643.06	39.431989	-108.068310	
985.0	24.10	140.90	962.5	-129.7	92.0	592,470.20	1,274,646.76	39.431976	-108.068296	
1,072.0	25.60	139.10	1,041.5	-157.7	115.5	592,441.56	1,274,669.46	39.431899	-108.068213	
1,167.0	27.30	138.40	1,126.5	-189.5	143.5	592,408.97	1,274,696.46	39.431812	-108.068114	
1,262.0	30.00	138.00	1,209.9	-223.4	173.8	592,374.18	1,274,725.85	39.431719	-108.068007	
1,357.0	33.10	138.10	1,290.8	-260.4	207.0	592,336.29	1,274,758.01	39.431617	-108.067889	
1,450.0	35.80	139.40	1,367.5	-299.9	241.7	592,295.77	1,274,791.55	39.431509	-108.067766	
1,545.0	37.20	137.20	1,443.9	-342.1	279.3	592,252.55	1,274,827.94	39.431393	-108.067633	
1,640.0	38.80	138.20	1,518.8	-385.4	318.7	592,208.19	1,274,866.05	39.431274	-108.067494	
1,735.0	43.20	140.10	1,590.4	-432.5	359.4	592,159.90	1,274,905.42	39.431145	-108.067350	
1,830.0	42.00	139.20	1,660.4	-481.5	401.0	592,109.73	1,274,945.65	39.431010	-108.067203	
1,925.0	42.50	140.50	1,730.7	-530.4	442.2	592,059.77	1,274,985.43	39.430876	-108.067057	
2,020.0	42.80	141.40	1,800.6	-580.4	482.7	592,008.65	1,275,024.55	39.430739	-108.066913	
2,115.0	43.50	142.30	1,869.9	-631.4	522.9	591,956.45	1,275,063.22	39.430598	-108.066771	
2,210.0	44.00	141.70	1,938.5	-683.2	563.3	591,903.56	1,275,102.19	39.430456	-108.066628	
2,305.0	43.90	140.90	2,006.9	-734.7	604.5	591,850.96	1,275,141.94	39.430315	-108.066482	
2,400.0	43.80	142.10	2,075.4	-786.2	645.5	591,798.32	1,275,181.43	39.430174	-108.066337	
2,495.0	42.50	140.70	2,144.7	-837.0	686.0	591,746.41	1,275,220.51	39.430034	-108.066194	
2,590.0	39.70	140.70	2,216.3	-885.3	725.6	591,696.99	1,275,258.68	39.429902	-108.066054	
2,685.0	37.40	140.40	2,290.6	-931.0	763.2	591,650.23	1,275,294.98	39.429776	-108.065920	
2,780.0	35.10	139.60	2,367.2	-974.0	799.3	591,606.19	1,275,329.85	39.429658	-108.065793	
2,875.0	32.30	138.40	2,446.2	-1,013.8	833.8	591,565.44	1,275,363.27	39.429549	-108.065670	
2,970.0	29.70	138.70	2,527.6	-1,050.5	866.2	591,527.87	1,275,394.61	39.429448	-108.065556	
3,065.0	27.00	138.40	2,611.2	-1,084.3	896.1	591,493.23	1,275,423.50	39.429355	-108.065450	
3,160.0	24.70	138.00	2,696.7	-1,115.2	923.7	591,461.58	1,275,450.22	39.429270	-108.065352	
3,256.0	22.40	138.60	2,784.7	-1,143.8	949.2	591,432.24	1,275,474.92	39.429192	-108.065262	
3,351.0	21.00	139.10	2,873.0	-1,170.3	972.3	591,405.15	1,275,497.28	39.429119	-108.065180	
3,446.0	18.60	139.10	2,962.4	-1,194.6	993.4	591,380.25	1,275,517.65	39.429052	-108.065105	
3,541.0	15.20	140.90	3,053.3	-1,215.7	1,011.2	591,358.63	1,275,534.82	39.428994	-108.065042	
3,636.0	14.00	141.80	3,145.2	-1,234.4	1,026.1	591,339.52	1,275,549.25	39.428943	-108.064990	
3,731.0	11.80	143.00	3,237.8	-1,251.2	1,039.1	591,322.37	1,275,561.72	39.428897	-108.064944	
3,825.0	9.60	143.60	3,330.1	-1,265.2	1,049.5	591,308.09	1,275,571.76	39.428859	-108.064907	
3,920.0	7.60	142.00	3,424.1	-1,276.5	1,058.1	591,296.53	1,275,580.01	39.428827	-108.064876	
4,015.0	6.20	136.90	3,518.4	-1,285.2	1,065.5	591,287.63	1,275,587.13	39.428804	-108.064850	
4,110.0	4.10	125.70	3,613.0	-1,290.9	1,071.7	591,281.72	1,275,593.23	39.428788	-108.064828	
4,205.0	2.20	100.00	3,707.8	-1,293.2	1,076.3	591,279.30	1,275,597.72	39.428782	-108.064812	
4,300.0	2.20	89.30	3,802.8	-1,293.5	1,079.9	591,278.90	1,275,601.33	39.428781	-108.064799	
4,395.0	2.00	87.50	3,897.7	-1,293.4	1,083.4	591,278.90	1,275,604.81	39.428781	-108.064787	
4,490.0	2.00	92.40	3,992.7	-1,293.4	1,086.7	591,278.80	1,275,608.12	39.428781	-108.064775	
4,585.0	0.70	300.60	4,087.6	-1,293.2	1,087.9	591,279.00	1,275,609.28	39.428782	-108.064771	
4,680.0	1.10	280.00	4,182.6	-1,292.7	1,086.5	591,279.49	1,275,607.90	39.428783	-108.064776	
4,775.0	1.50	251.40	4,277.6	-1,293.0	1,084.4	591,279.31	1,275,605.82	39.428782	-108.064783	
4,870.0	0.80	258.20	4,372.6	-1,293.5	1,082.6	591,278.83	1,275,603.97	39.428781	-108.064790	
4,965.0	0.30	45.60	4,467.6	-1,293.5	1,082.1	591,278.88	1,275,603.50	39.428781	-108.064791	
5,060.0	0.20	296.40	4,562.6	-1,293.2	1,082.1	591,279.13	1,275,603.54	39.428782	-108.064791	
5,155.0	1.00	235.00	4,657.6	-1,293.6	1,081.3	591,278.75	1,275,602.70	39.428780	-108.064794	
5,250.0	1.30	234.70	4,752.6	-1,294.7	1,079.7	591,277.70	1,275,601.11	39.428777	-108.064800	
5,345.0	1.60	242.70	4,847.5	-1,296.0	1,077.7	591,276.53	1,275,599.02	39.428774	-108.064807	
5,440.0	1.70	239.80	4,942.5	-1,297.3	1,075.3	591,275.28	1,275,596.59	39.428770	-108.064816	

Cathedral Energy Services

Survey Report - Geographic

Company: Caerus Oil & Gas (NAD 27)	Local Co-ordinate Reference: Well Nolte 11B-24
Project: Garfield County, CO	TVD Reference: WELL @ 5117.8ft (Patterson 303)
Site: S14-T7S-R96W	MD Reference: WELL @ 5117.8ft (Patterson 303)
Well: Nolte 11B-24	North Reference: True
Wellbore: DD	Survey Calculation Method: Minimum Curvature
Design: FINAL	Database: USA EDM 5000 Multi Users DB

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude	
5,535.0	2.40	232.30	5,037.4	-1,299.2	1,072.5	591,273.43	1,275,593.74	39.428765	-108.064825	
5,630.0	2.70	232.10	5,132.3	-1,301.8	1,069.1	591,270.94	1,275,590.33	39.428758	-108.064837	
5,726.0	2.90	237.30	5,228.2	-1,304.5	1,065.3	591,268.34	1,275,586.43	39.428751	-108.064851	
5,821.0	3.10	237.70	5,323.1	-1,307.2	1,061.1	591,265.79	1,275,582.16	39.428743	-108.064866	
5,916.0	4.00	236.40	5,417.9	-1,310.4	1,056.2	591,262.73	1,275,577.14	39.428734	-108.064883	
6,011.0	4.30	231.70	5,512.7	-1,314.4	1,050.6	591,258.84	1,275,571.48	39.428723	-108.064903	
6,106.0	4.20	233.40	5,607.4	-1,318.7	1,045.0	591,254.72	1,275,565.77	39.428712	-108.064923	
Last CES Survey @ 6,106' MD										
6,235.0	4.20	233.40	5,736.0	-1,324.3	1,037.5	591,249.31	1,275,558.03	39.428696	-108.064949	
PTB @ 6,235'										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude	
Nolte 11B-24 PBHL 2	0.00	0.00	5,790.0	-1,307.4	1,064.9	591,265.47	1,275,585.89	39.428743	-108.064852	
- hit/miss target										
- Shape										
- actual wellpath misses target center by 62.8ft at 6235.0ft MD (5736.0 TVD, -1324.3 N, 1037.5 E)										
- Circle (radius 50.0)										

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
6,106.0	5,607.4	-1,318.7	1,045.0	Last CES Survey @ 6,106' MD	
6,235.0	5,736.0	-1,324.3	1,037.5	PTB @ 6,235'	

Checked By: _____ Approved By: _____ Date: _____