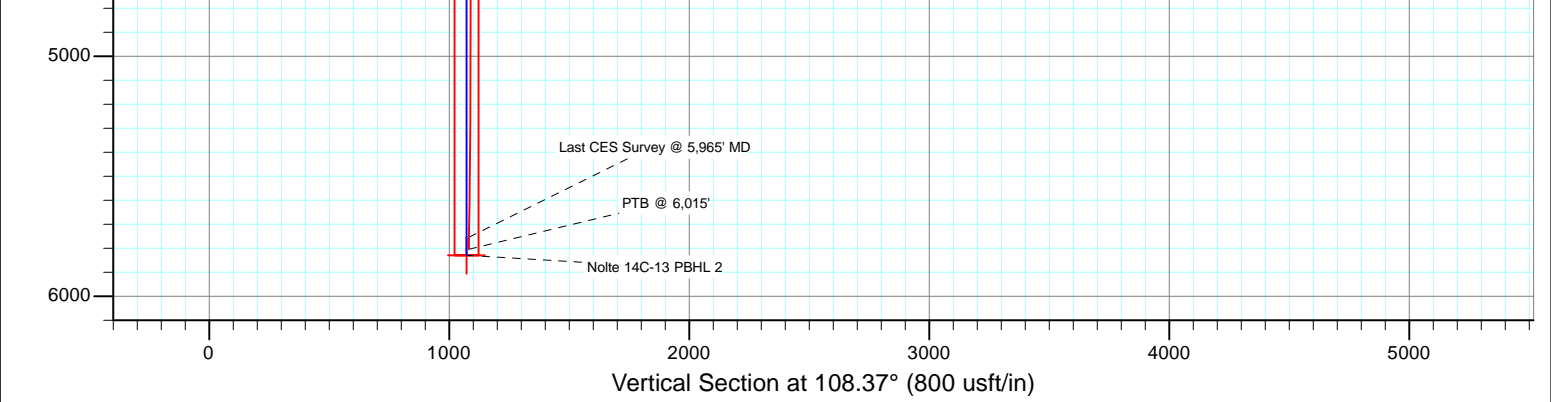
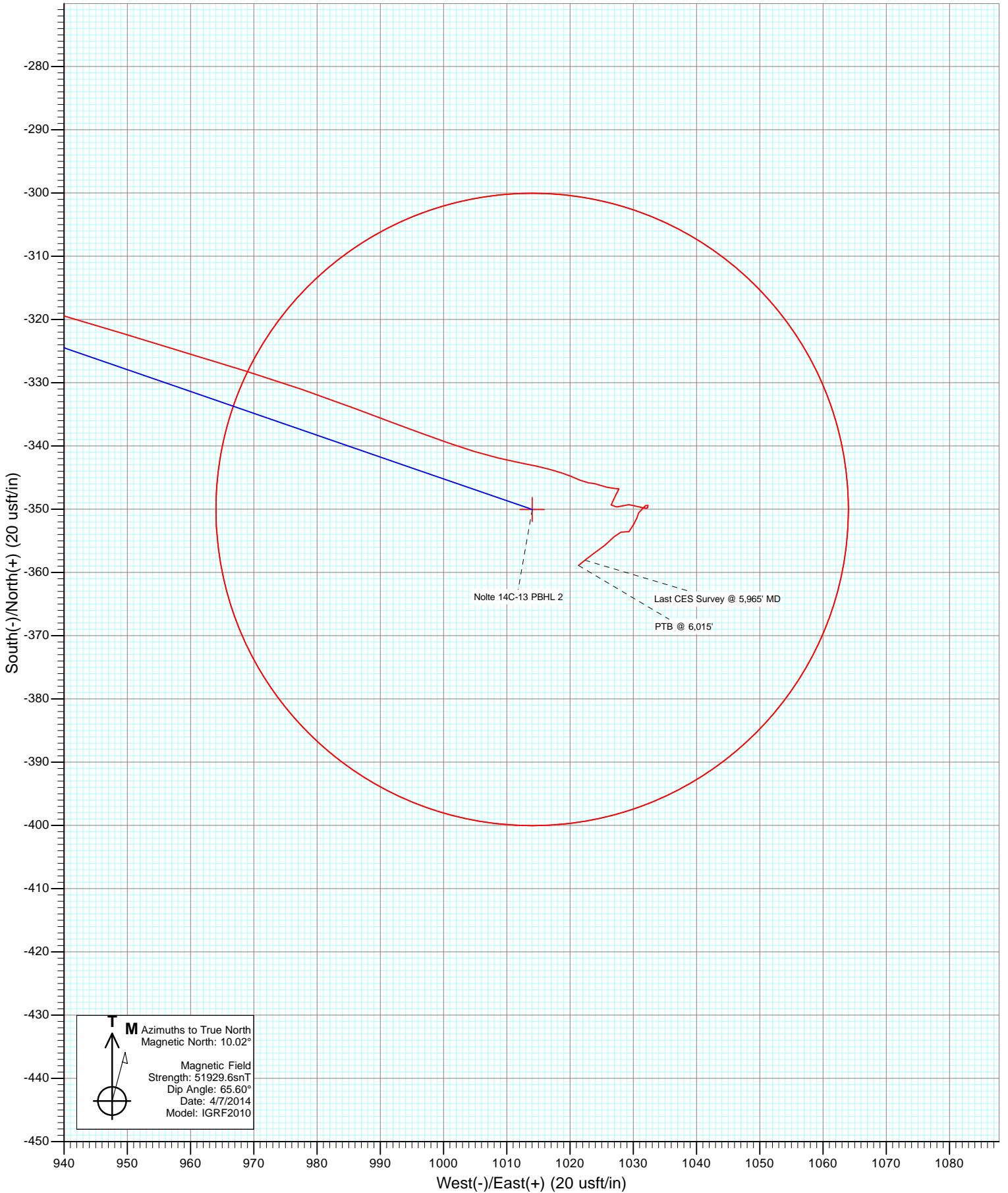


DESIGN TARGET DETAILS

Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Nolte 14C-13 PBHL 2	-350.0	1014.0	592244.18	1275571.34	39.431431	-108.064993





Cathedral Energy Services

Survey Report

Company: Caerus Oil & Gas (NAD 27)	Local Co-ordinate Reference: Well Nolte 14C-13
Project: Garfield County, CO	TVD Reference: WELL @ 5107.7usft
Site: S14-T7S-R96W	MD Reference: WELL @ 5107.7usft
Well: Nolte 14C-13	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:	592,602.09 usft	Latitude:	39.432320
From:	Lat/Long	Easting:	1,274,369.93 usft	Longitude:	-108.069280
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16"	Grid Convergence:	-1.62 °

Well Nolte 14C-13						
Well Position	+N/-S	0.0 usft	Northing:	592,622.73 usft	Latitude:	39.432392
	+E/-W	0.0 usft	Easting:	1,274,567.61 usft	Longitude:	-108.068583
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	5,090.7 usft

Wellbore DD					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	4/7/2014	10.02	65.60	51,930

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	108.37	

Survey Program Date 4/14/2014					
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
145.0	6,015.0	Survey #1 (DD)	MWD	Geolink MWD	

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	
145.0	0.40	205.80	145.0	-0.5	-0.2	-0.1	0.28	0.28	
206.0	1.00	174.00	206.0	-1.2	-0.3	0.1	1.14	0.98	
268.0	1.70	149.70	268.0	-2.5	0.3	1.0	1.43	1.13	
329.0	1.90	125.70	328.9	-3.9	1.5	2.7	1.27	0.33	
390.0	2.40	109.80	389.9	-4.9	3.6	4.9	1.27	0.82	
481.0	2.60	108.40	480.8	-6.2	7.3	8.9	0.23	0.22	
573.0	4.20	109.40	572.7	-8.0	12.5	14.4	1.74	1.74	
665.0	4.90	112.00	664.4	-10.6	19.3	21.6	0.79	0.76	
760.0	7.00	104.50	758.8	-13.5	28.7	31.5	2.35	2.21	
855.0	10.20	108.10	852.8	-17.6	42.3	45.7	3.41	3.37	
950.0	12.70	113.60	945.9	-24.4	59.8	64.5	2.87	2.63	
975.0	13.40	113.20	970.2	-26.6	65.0	70.1	2.82	2.80	

Cathedral Energy Services

Survey Report

Company:	Caerus Oil & Gas (NAD 27)	Local Co-ordinate Reference:	Well Nolte 14C-13
Project:	Garfield County, CO	TVD Reference:	WELL @ 5107.7usft
Site:	S14-T75-R96W	MD Reference:	WELL @ 5107.7usft
Well:	Nolte 14C-13	North Reference:	True
Wellbore:	DD	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
1,071.0	16.00	113.20	1,063.1	-36.2	87.4	94.4	2.71	2.71	
1,166.0	18.00	111.40	1,153.9	-46.7	113.1	122.1	2.18	2.11	
1,261.0	20.80	108.50	1,243.5	-57.5	142.8	153.6	3.12	2.95	
1,356.0	24.10	107.10	1,331.3	-68.5	177.3	189.9	3.52	3.47	
1,451.0	25.00	107.70	1,417.7	-80.3	215.0	229.3	0.98	0.95	
1,546.0	25.70	105.70	1,503.6	-92.0	253.9	270.0	1.16	0.74	
1,641.0	27.60	108.60	1,588.5	-104.6	294.6	312.6	2.42	2.00	
1,737.0	26.70	107.10	1,673.9	-118.0	336.3	356.4	1.18	-0.94	
1,832.0	27.90	110.80	1,758.3	-132.2	377.5	399.9	2.19	1.26	
1,926.0	28.20	109.10	1,841.3	-147.3	419.1	444.1	0.91	0.32	
2,021.0	28.50	107.80	1,924.9	-161.6	461.8	489.2	0.72	0.32	
2,116.0	28.30	108.20	2,008.5	-175.5	504.8	534.4	0.29	-0.21	
2,211.0	28.30	107.20	2,092.1	-189.2	547.7	579.4	0.50	0.00	
2,306.0	26.70	109.30	2,176.4	-202.9	589.4	623.3	1.97	-1.68	
2,401.0	25.70	108.10	2,261.6	-216.4	629.1	665.2	1.19	-1.05	
2,496.0	25.30	108.90	2,347.4	-229.4	667.9	706.1	0.56	-0.42	
2,591.0	25.60	109.70	2,433.1	-242.8	706.4	746.9	0.48	0.32	
2,686.0	24.10	108.40	2,519.3	-255.9	744.1	786.9	1.68	-1.58	
2,782.0	22.60	108.90	2,607.5	-268.0	780.2	824.9	1.58	-1.56	
2,877.0	20.70	107.90	2,695.8	-279.1	813.4	860.0	2.04	-2.00	
2,972.0	19.90	106.50	2,784.9	-288.9	844.9	892.9	0.99	-0.84	
3,067.0	18.60	108.50	2,874.6	-298.3	874.8	924.2	1.53	-1.37	
3,162.0	16.60	109.20	2,965.1	-307.5	902.0	952.9	2.12	-2.11	
3,257.0	15.10	106.30	3,056.5	-315.5	926.7	978.9	1.79	-1.58	
3,352.0	13.40	106.70	3,148.6	-322.1	949.1	1,002.3	1.79	-1.79	
3,447.0	11.60	107.40	3,241.3	-328.1	968.8	1,022.8	1.90	-1.89	
3,542.0	10.60	110.70	3,334.5	-334.1	986.0	1,041.1	1.25	-1.05	
3,637.0	8.20	109.60	3,428.2	-339.4	1,000.6	1,056.6	2.53	-2.53	
3,732.0	6.50	100.40	3,522.5	-342.7	1,012.3	1,068.7	2.17	-1.79	
3,827.0	3.40	113.80	3,617.1	-344.8	1,020.1	1,076.8	3.46	-3.26	
3,921.0	1.40	90.50	3,711.0	-345.9	1,023.8	1,080.7	2.32	-2.13	
4,016.0	1.30	122.40	3,806.0	-346.5	1,025.9	1,082.8	0.79	-0.11	
4,111.0	0.80	59.10	3,901.0	-346.8	1,027.4	1,084.3	1.24	-0.53	
4,206.0	0.50	211.10	3,996.0	-346.8	1,027.7	1,084.7	1.33	-0.32	
4,301.0	1.00	204.30	4,091.0	-347.9	1,027.2	1,084.5	0.53	0.53	
4,396.0	0.90	206.50	4,185.9	-349.3	1,026.5	1,084.3	0.11	-0.11	
4,491.0	1.50	74.40	4,280.9	-349.6	1,027.4	1,085.2	2.32	0.63	
4,586.0	0.90	87.50	4,375.9	-349.3	1,029.3	1,086.9	0.69	-0.63	
4,681.0	1.20	113.40	4,470.9	-349.6	1,031.0	1,088.6	0.58	0.32	
4,776.0	0.30	52.50	4,565.9	-349.9	1,032.1	1,089.8	1.14	-0.95	
4,871.0	0.00	40.40	4,660.9	-349.7	1,032.3	1,089.9	0.32	-0.32	
4,967.0	0.40	10.90	4,756.9	-349.4	1,032.4	1,089.9	0.42	0.42	
5,062.0	0.70	234.00	4,851.9	-349.4	1,031.9	1,089.5	1.08	0.32	
5,157.0	1.20	217.80	4,946.9	-350.5	1,030.9	1,088.8	0.59	0.53	
5,252.0	0.40	100.00	5,041.9	-351.4	1,030.6	1,088.8	1.51	-0.84	
5,346.0	1.60	220.90	5,135.9	-352.4	1,030.1	1,088.6	1.96	1.28	
5,441.0	0.20	128.80	5,230.9	-353.5	1,029.3	1,088.3	1.70	-1.47	
5,536.0	0.50	283.70	5,325.9	-353.5	1,029.0	1,088.0	0.72	0.32	
5,631.0	0.70	254.80	5,420.9	-353.6	1,028.1	1,087.1	0.38	0.21	
5,725.0	1.00	222.50	5,514.8	-354.4	1,027.0	1,086.3	0.59	0.32	
5,820.0	1.30	231.20	5,609.8	-355.6	1,025.6	1,085.4	0.36	0.32	
5,915.0	1.80	234.80	5,704.8	-357.2	1,023.5	1,083.9	0.54	0.53	
5,965.0	1.50	230.30	5,754.8	-358.0	1,022.4	1,083.1	0.65	-0.60	Last CES Survey @ 5,965' MD

Cathedral Energy Services

Survey Report

Company:	Caerus Oil & Gas (NAD 27)	Local Co-ordinate Reference:	Well Nolte 14C-13
Project:	Garfield County, CO	TVD Reference:	WELL @ 5107.7usft
Site:	S14-T7S-R96W	MD Reference:	WELL @ 5107.7usft
Well:	Nolte 14C-13	North Reference:	True
Wellbore:	DD	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
6,015.0	1.50	230.30	5,804.7	-358.9	1,021.4	1,082.4	0.00	0.00	PTB @ 6,015'

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Nolte 14C-13 PBHL	0.00	0.00	5,829.9	-340.3	1,023.2	592,253.67	1,275,580.79	39.431458	-108.064960
- actual wellpath misses target center by 31.3usft at 6015.0usft MD (5804.7 TVD, -358.9 N, 1021.4 E)									
- Circle (radius 50.0)									
Nolte 14C-13 PBHL 2	0.00	0.00	5,829.9	-350.0	1,014.0	592,244.18	1,275,571.34	39.431431	-108.064993
- actual wellpath misses target center by 27.6usft at 6015.0usft MD (5804.7 TVD, -358.9 N, 1021.4 E)									
- Circle (radius 50.0)									

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
5,965.0	5,754.8	-358.0	1,022.4	Last CES Survey @ 5,965' MD	
6,015.0	5,804.7	-358.9	1,021.4	PTB @ 6,015'	

Checked By: _____ Approved By: _____ Date: _____