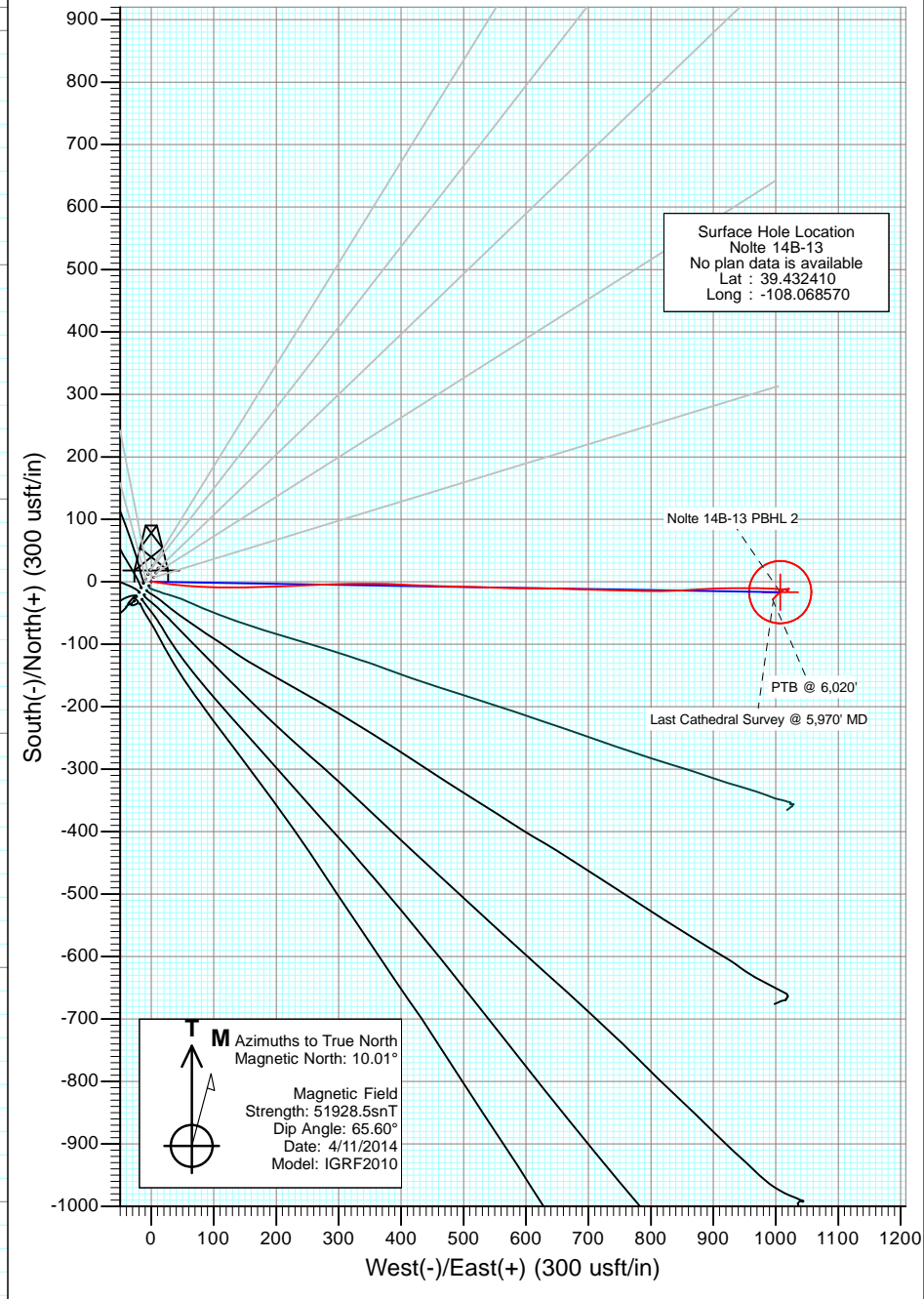
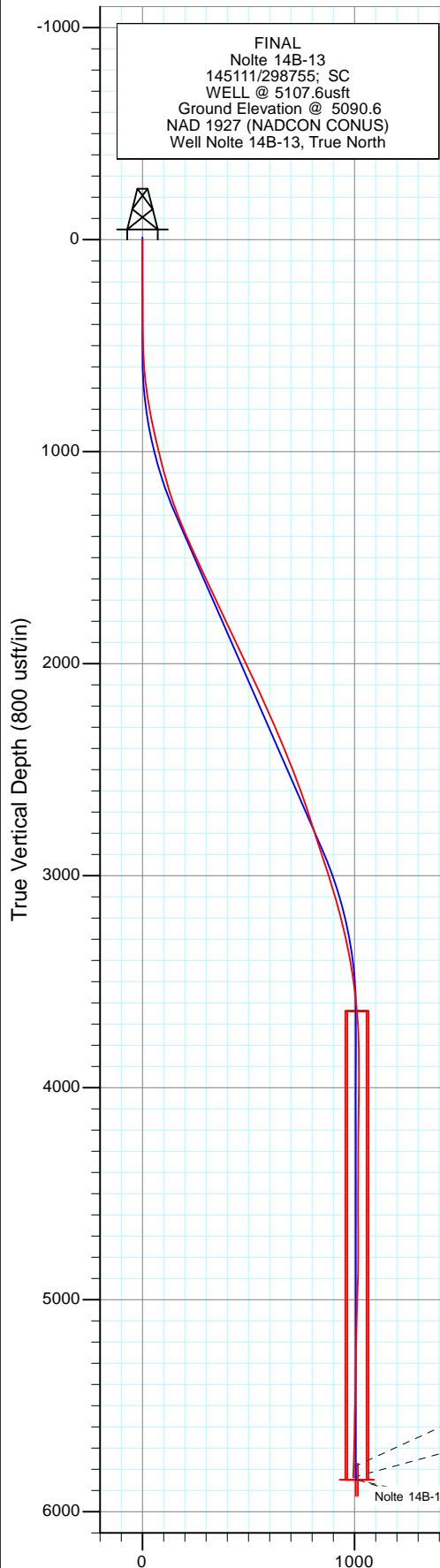
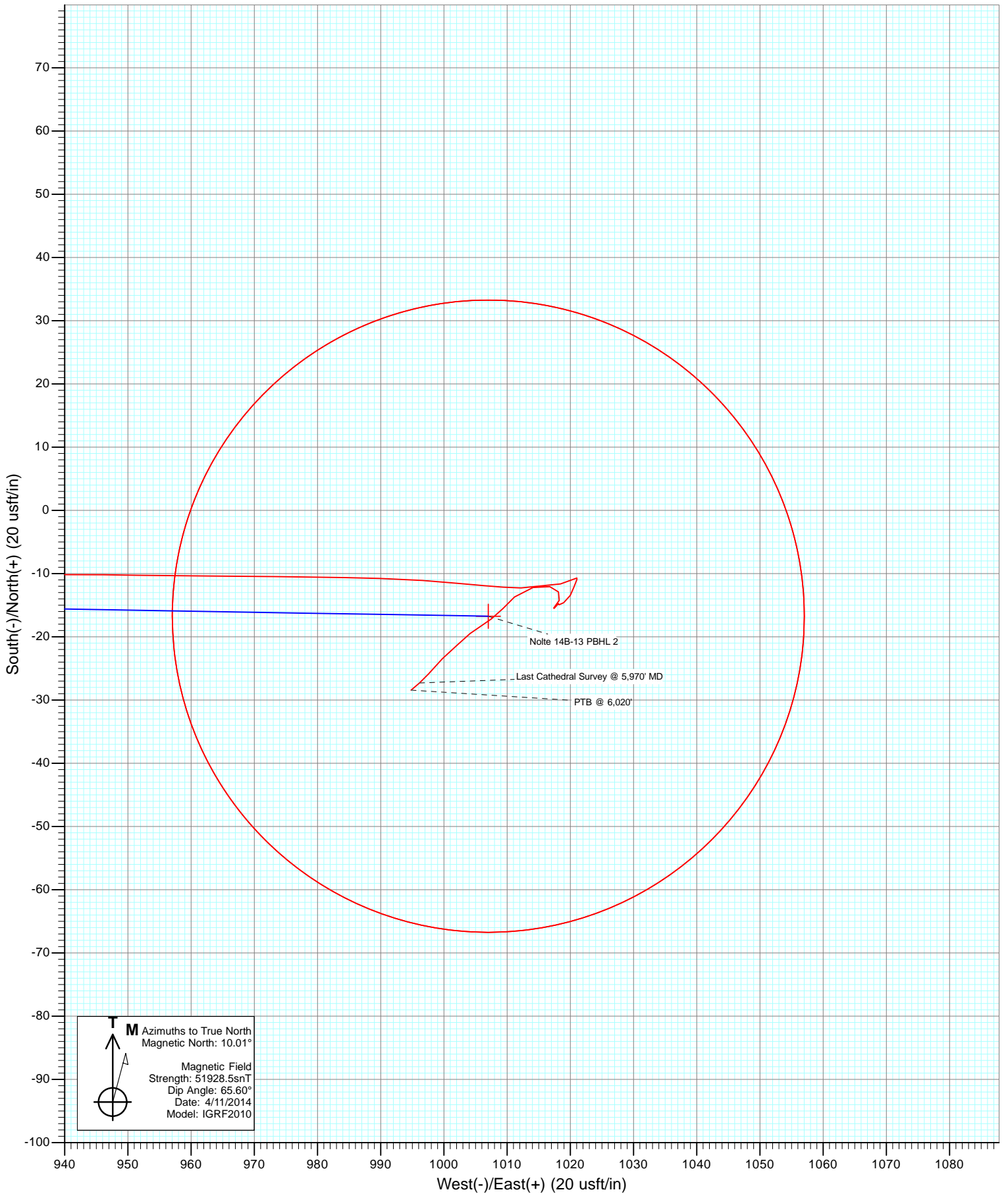




Project: Garfield County, CO
Site: S14-T7S-R96W
Well: Nolte 14B-13
Wellbore: DD
Design: FINAL





Cathedral Energy Services

Survey Report

Company: Caerus Oil & Gas (NAD 27)	Local Co-ordinate Reference: Well Nolte 14B-13
Project: Garfield County, CO	TVD Reference: WELL @ 5107.6usft
Site: S14-T7S-R96W	MD Reference: WELL @ 5107.6usft
Well: Nolte 14B-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 14B-13						
Well Position	+N/-S	0.0 usft	Northing:	592,629.20 usft	Latitude:	39.432410
	+E/-W	0.0 usft	Easting:	1,274,571.44 usft	Longitude:	-108.068570
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	5,090.6 usft

Wellbore DD					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	4/11/2014	10.01	65.60	51,929

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	90.96	

Survey Program Date 4/15/2014					
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
144.0	6,020.0	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	
144.0	0.40	22.60	144.0	0.5	0.2	0.2	0.28	0.28	
205.0	0.60	103.50	205.0	0.6	0.6	0.6	1.09	0.33	
267.0	0.30	105.70	267.0	0.5	1.1	1.0	0.48	-0.48	
328.0	0.60	83.20	328.0	0.5	1.5	1.5	0.56	0.49	
390.0	0.50	121.80	390.0	0.4	2.1	2.1	0.61	-0.16	
451.0	0.70	81.20	451.0	0.3	2.7	2.7	0.75	0.33	
512.0	1.70	100.00	512.0	0.2	3.9	3.9	1.74	1.64	
604.0	4.20	101.10	603.8	-0.7	8.6	8.6	2.72	2.72	
695.0	7.60	99.50	694.3	-2.3	17.8	17.8	3.74	3.74	
788.0	9.70	95.30	786.3	-4.1	31.7	31.7	2.36	2.26	
878.0	11.60	95.30	874.7	-5.6	48.2	48.3	2.11	2.11	
970.0	13.90	93.20	964.5	-7.1	68.5	68.6	2.55	2.50	

Cathedral Energy Services

Survey Report

Company:	Caerus Oil & Gas (NAD 27)	Local Co-ordinate Reference:	Well Nolte 14B-13
Project:	Garfield County, CO	TD Reference:	WELL @ 5107.6usft
Site:	S14-T75-R96W	MD Reference:	WELL @ 5107.6usft
Well:	Nolte 14B-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	14.00	94.00	1,062.5	-8.6	92.8	92.9	0.22	0.10	
1,166.0	16.30	91.10	1,154.2	-9.7	117.6	117.7	2.55	2.42	
1,261.0	19.30	86.70	1,244.6	-9.0	146.6	146.7	3.46	3.16	
1,356.0	21.90	90.00	1,333.5	-8.1	180.0	180.1	3.00	2.74	
1,451.0	24.30	87.30	1,420.9	-7.2	217.2	217.3	2.76	2.53	
1,546.0	24.40	86.50	1,507.5	-5.1	256.3	256.4	0.36	0.11	
1,641.0	25.60	89.70	1,593.6	-3.8	296.4	296.5	1.90	1.26	
1,737.0	24.70	88.70	1,680.5	-3.2	337.2	337.2	1.04	-0.94	
1,832.0	25.70	92.50	1,766.4	-3.7	377.7	377.7	2.00	1.05	
1,926.0	25.60	92.30	1,851.2	-5.4	418.3	418.3	0.14	-0.11	
2,021.0	25.40	91.70	1,936.9	-6.8	459.2	459.2	0.34	-0.21	
2,116.0	25.30	91.70	2,022.8	-8.0	499.8	499.9	0.11	-0.11	
2,211.0	25.00	91.70	2,108.8	-9.2	540.2	540.3	0.32	-0.32	
2,306.0	24.30	90.70	2,195.1	-10.0	579.8	579.9	0.86	-0.74	
2,401.0	23.40	90.50	2,282.0	-10.4	618.2	618.3	0.95	-0.95	
2,496.0	22.60	91.70	2,369.4	-11.1	655.3	655.4	0.98	-0.84	
2,591.0	22.10	91.70	2,457.3	-12.2	691.4	691.6	0.53	-0.53	
2,686.0	20.70	91.70	2,545.7	-13.2	726.1	726.2	1.47	-1.47	
2,781.0	19.50	91.00	2,635.0	-14.0	758.7	758.9	1.29	-1.26	
2,876.0	17.30	91.60	2,725.1	-14.7	788.7	788.8	2.32	-2.32	
2,972.0	18.10	88.90	2,816.6	-14.8	817.9	818.0	1.19	0.83	
3,067.0	18.80	87.70	2,906.7	-13.9	847.9	848.0	0.84	0.74	
3,162.0	17.60	86.10	2,996.9	-12.3	877.6	877.6	1.37	-1.26	
3,257.0	16.30	87.60	3,087.8	-10.8	905.2	905.3	1.44	-1.37	
3,352.0	14.90	89.70	3,179.3	-10.2	930.7	930.8	1.59	-1.47	
3,447.0	12.60	90.90	3,271.6	-10.3	953.3	953.4	2.44	-2.42	
3,542.0	11.50	90.30	3,364.5	-10.5	973.2	973.2	1.17	-1.16	
3,637.0	8.70	91.80	3,458.0	-10.7	989.8	989.9	2.96	-2.95	
3,732.0	6.90	95.90	3,552.1	-11.6	1,002.7	1,002.7	1.98	-1.89	
3,826.0	4.80	91.50	3,645.6	-12.2	1,012.2	1,012.3	2.28	-2.23	
3,921.0	2.90	72.10	3,740.4	-11.6	1,018.5	1,018.5	2.40	-2.00	
4,016.0	0.40	58.90	3,835.3	-10.7	1,021.0	1,021.1	2.64	-2.63	
4,111.0	0.60	215.20	3,930.3	-10.9	1,021.0	1,021.1	1.03	0.21	
4,206.0	1.00	193.40	4,025.3	-12.1	1,020.6	1,020.6	0.52	0.42	
4,301.0	0.70	218.30	4,120.3	-13.4	1,020.0	1,020.1	0.49	-0.32	
4,396.0	1.20	223.30	4,215.3	-14.6	1,019.0	1,019.1	0.53	0.53	
4,491.0	0.50	351.50	4,310.3	-14.9	1,018.2	1,018.3	1.64	-0.74	
4,586.0	0.30	186.70	4,405.3	-14.7	1,018.1	1,018.2	0.84	-0.21	
4,681.0	1.00	232.00	4,500.3	-15.5	1,017.5	1,017.6	0.86	0.74	
4,776.0	1.00	45.90	4,595.3	-15.4	1,017.4	1,017.5	2.10	0.00	
4,871.0	0.80	22.30	4,690.3	-14.2	1,018.2	1,018.3	0.44	-0.21	
4,966.0	1.00	333.40	4,785.3	-12.9	1,018.1	1,018.2	0.81	0.21	
5,061.0	1.20	275.90	4,880.2	-12.0	1,016.8	1,016.8	1.13	0.21	
5,157.0	2.00	261.40	4,976.2	-12.2	1,014.1	1,014.2	0.93	0.83	
5,251.0	2.20	225.80	5,070.2	-13.7	1,011.2	1,011.3	1.38	0.21	
5,346.0	1.00	224.00	5,165.1	-15.6	1,009.3	1,009.4	1.26	-1.26	
5,441.0	1.90	230.70	5,260.1	-17.2	1,007.5	1,007.7	0.96	0.95	
5,536.0	0.80	247.30	5,355.1	-18.4	1,005.7	1,005.9	1.22	-1.16	
5,630.0	1.50	228.70	5,449.0	-19.5	1,004.2	1,004.3	0.83	0.74	
5,725.0	1.90	228.20	5,544.0	-21.3	1,002.0	1,002.3	0.42	0.42	
5,820.0	1.80	226.30	5,639.0	-23.4	999.8	1,000.0	0.12	-0.11	
5,915.0	2.20	219.20	5,733.9	-25.9	997.6	997.9	0.49	0.42	
5,970.0	2.00	230.40	5,788.9	-27.3	996.2	996.5	0.83	-0.36	Last Cathedral Survey @ 5,970' MD

Cathedral Energy Services

Survey Report

Company: Caerus Oil & Gas (NAD 27)	Local Co-ordinate Reference: Well Nolte 14B-13
Project: Garfield County, CO	TVD Reference: WELL @ 5107.6usft
Site: S14-T7S-R96W	MD Reference: WELL @ 5107.6usft
Well: Nolte 14B-13	North Reference: True
Wellbore: DD	Survey Calculation Method: Minimum Curvature
Design: FINAL	Database: USA EDM 5000 Multi Users DB

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
6,020.0	2.00	230.40	5,838.8	-28.4	994.8	995.1	0.00	0.00	PTB @ 6,020'

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Nolte 14B-13 PBHL 2 - hit/miss target - Shape	0.00	0.00	5,849.8	-16.7	1,007.0	592,584.01	1,275,577.60	39.432364	-108.065004
- actual wellpath misses target center by 20.2usft at 6020.0usft MD (5838.8 TVD, -28.4 N, 994.8 E)									
- Circle (radius 50.0)									
Nolte 14B-13 - hit/miss target - Shape	0.00	0.00	5,849.8	-17.0	1,016.3	592,583.47	1,275,586.83	39.432363	-108.064972
- actual wellpath misses target center by 26.7usft at 6020.0usft MD (5838.8 TVD, -28.4 N, 994.8 E)									
- Circle (radius 50.0)									

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
5,970.0	5,788.9	-27.3	996.2	Last Cathedral Survey @ 5,970' MD
6,020.0	5,838.8	-28.4	994.8	PTB @ 6,020'

Checked By: _____ Approved By: _____ Date: _____