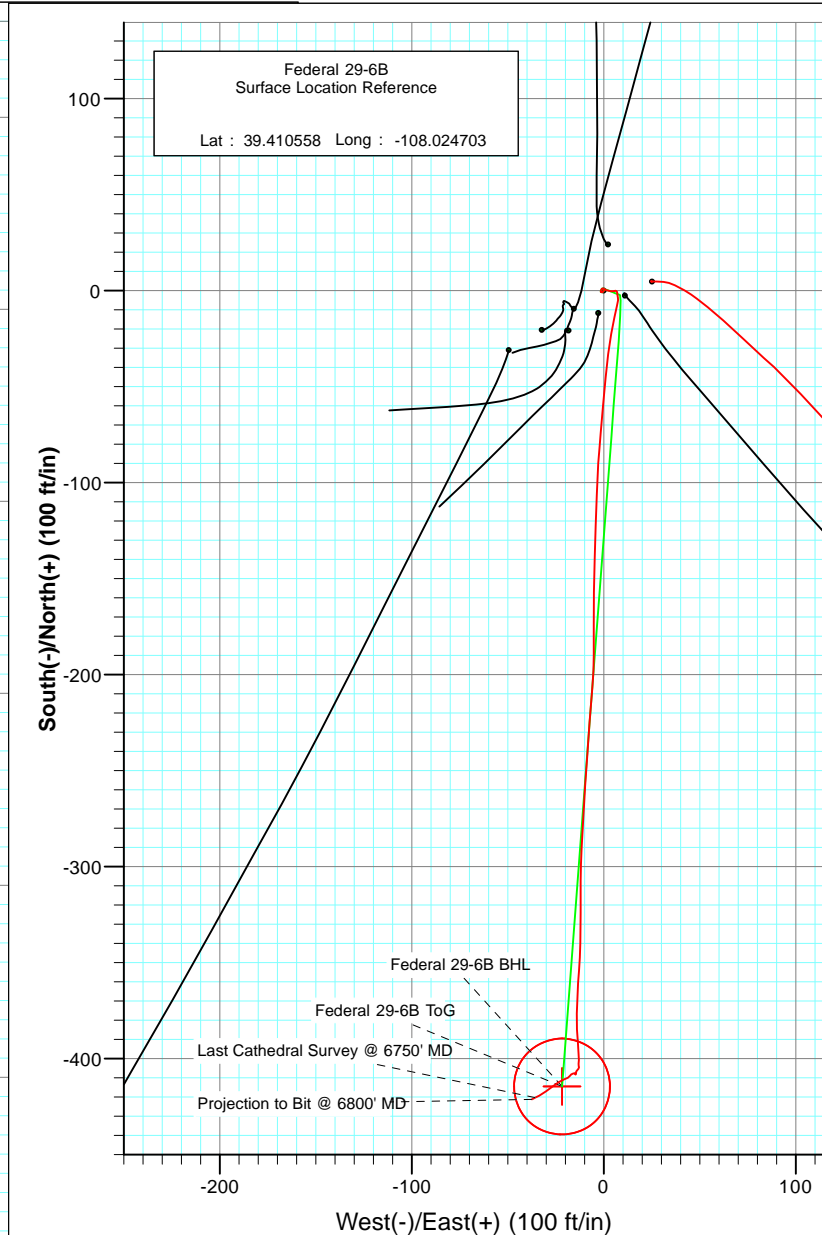
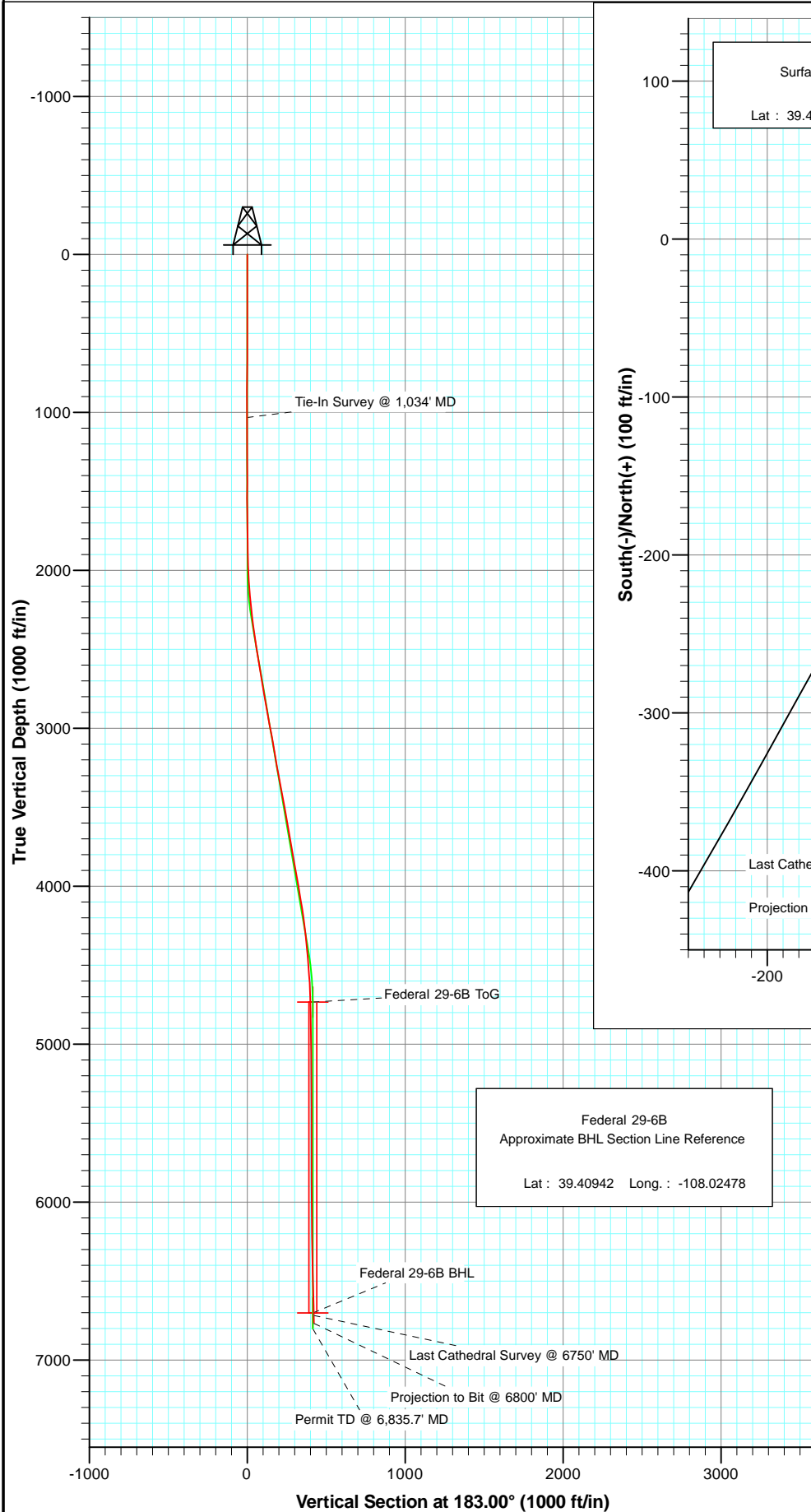




Project: S. Piceance (Parachute)  
 Site: S29-T7S-R95W (PFF29-15 Pad)  
 Well: Federal 29-6B  
 Wellbore: DD  
 Plan: Final

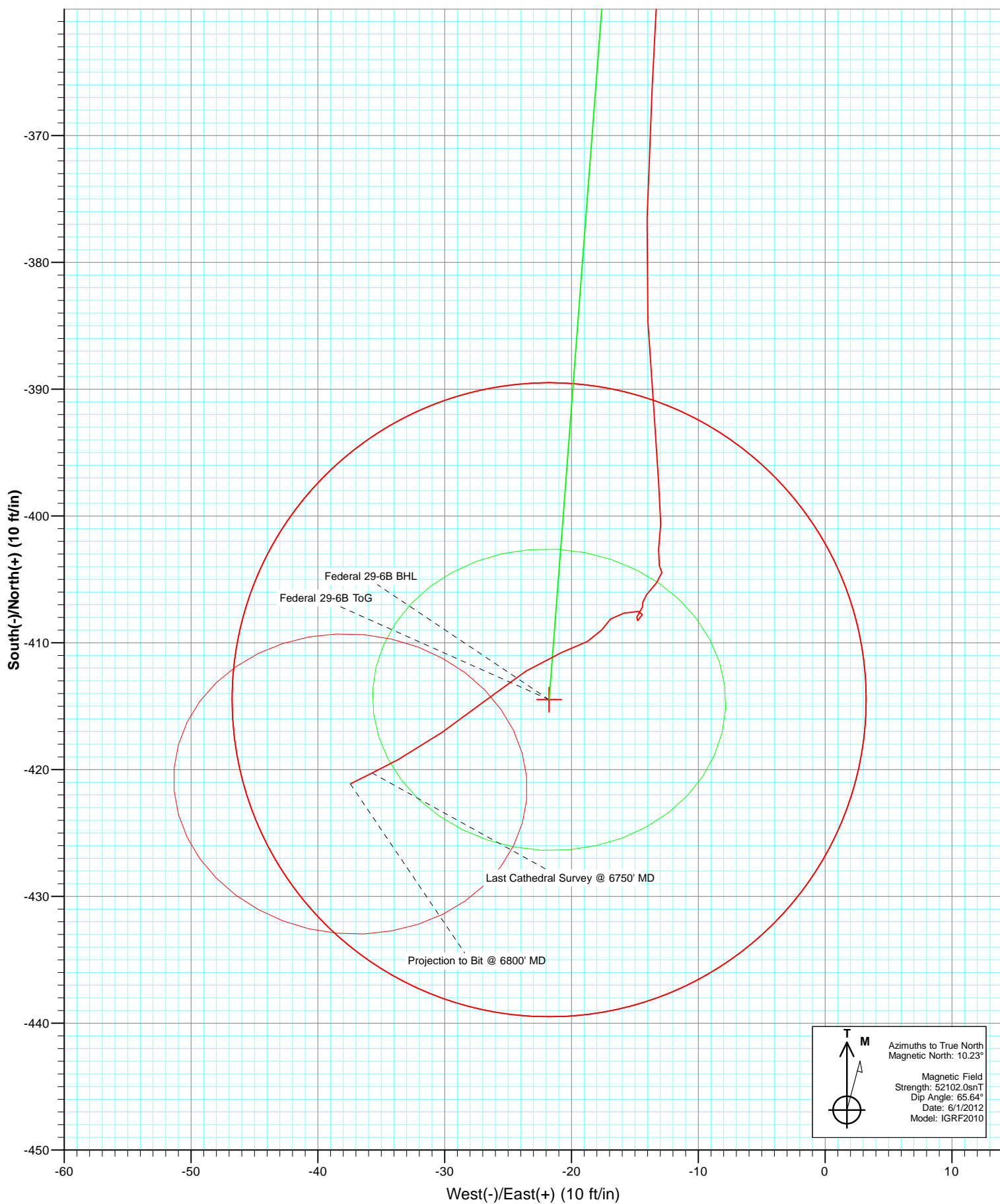


Azimuths to True North  
Magnetic North: 10.23°

Magnetic Field  
Strength: 52102.0snT  
Dip Angle: 65.64°  
Date: 6/1/2012  
Model: IGRF2010

DESIGN DETAILS: Final  
125343/169755 (SH) 125360/170555 (MH); SC

Target	WELL @ 6058.0ft (Original Well Elev)	Federal 29-6B BHL	Azimuth	Origin Type	N/S	E/W
			183.00	Slot	0.0	0.0



# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Federal 29-6B
<b>Project:</b>	S. Piceance (Parachute)	<b>TVD Reference:</b>	WELL @ 6058.0ft (Original Well Elev)
<b>Site:</b>	S29-T7S-R95W (PF-29 Pad)	<b>MD Reference:</b>	WELL @ 6058.0ft (Original Well Elev)
<b>Well:</b>	Federal 29-6B	<b>North Reference:</b>	True
<b>Wellbore:</b>	DD	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Final	<b>Database:</b>	USA EDM 5000 Multi Users DB

<b>Project</b>	S. Piceance (Parachute), Garfield County, CO		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Central Zone		

<b>Site</b>	S29-T7S-R95W (PF-29 Pad)			
<b>Site Position:</b>		<b>Northing:</b>	1,584,347.66 ft	<b>Latitude:</b> 39.410580
<b>From:</b>	Lat/Long	<b>Easting:</b>	2,286,791.27 ft	<b>Longitude:</b> -108.024590
<b>Position Uncertainty:</b>	0.0 ft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b> -1.59 °

<b>Well</b>	Federal 29-6B			
<b>Well Position</b>	<b>+N/-S</b>	0.0 ft	<b>Northing:</b>	1,584,340.53 ft
	<b>+E/-W</b>	0.0 ft	<b>Easting:</b>	2,286,759.14 ft
<b>Position Uncertainty</b>	0.0 ft	<b>Wellhead Elevation:</b>	ft	<b>Ground Level:</b> 6,036.0 ft

<b>Wellbore</b>	DD				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	6/1/2012	10.23	65.64	52,102

<b>Design</b>	Final			
<b>Audit Notes:</b>				
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b> 0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	183.00

<b>Survey Program</b>	<b>Date</b>	6/7/2012		
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
112.0	6,800.0	Survey #1 (DD)	MWD	Geolink MWD

<b>Survey</b>									
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Vertical Section (ft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Formations / Comments</b>
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
112.0	0.40	213.40	112.0	-0.3	-0.2	0.3	0.36	0.36	
143.0	0.20	218.60	143.0	-0.5	-0.3	0.5	0.65	-0.65	
173.0	0.40	260.50	173.0	-0.5	-0.4	0.5	0.95	0.67	
204.0	0.40	225.50	204.0	-0.6	-0.6	0.6	0.78	0.00	
235.0	0.20	252.60	235.0	-0.7	-0.8	0.7	0.77	-0.65	
266.0	0.30	258.60	266.0	-0.7	-0.9	0.8	0.33	0.32	
296.0	0.10	264.30	296.0	-0.8	-1.0	0.8	0.67	-0.67	
327.0	0.00	241.00	327.0	-0.8	-1.0	0.8	0.32	-0.32	
358.0	0.20	291.30	358.0	-0.7	-1.1	0.8	0.65	0.65	
388.0	0.10	280.20	388.0	-0.7	-1.1	0.8	0.35	-0.33	
480.0	0.20	280.20	480.0	-0.7	-1.4	0.7	0.11	0.11	
572.0	0.00	100.20	572.0	-0.6	-1.5	0.7	0.22	-0.22	

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Federal 29-6B
<b>Project:</b>	S. Piceance (Parachute)	<b>TVD Reference:</b>	WELL @ 6058.0ft (Original Well Elev)
<b>Site:</b>	S29-T7S-R95W (PF-29 Pad)	<b>MD Reference:</b>	WELL @ 6058.0ft (Original Well Elev)
<b>Well:</b>	Federal 29-6B	<b>North Reference:</b>	True
<b>Wellbore:</b>	DD	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Final	<b>Database:</b>	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
664.0	0.40	359.30	664.0	-0.3	-1.5	0.4	0.43	0.43	
757.0	0.50	30.70	757.0	0.4	-1.3	-0.3	0.28	0.11	
849.0	0.50	30.40	849.0	1.0	-0.9	-1.0	0.00	0.00	
940.0	0.50	120.50	940.0	1.2	-0.4	-1.2	0.78	0.00	
1,034.0	0.50	110.50	1,034.0	0.8	0.3	-0.9	0.09	0.00	
1,164.0	0.70	116.50	1,164.0	0.3	1.6	-0.4	0.16	0.15	
1,258.0	0.70	100.20	1,258.0	-0.1	2.7	-0.1	0.21	0.00	
1,354.0	0.60	100.20	1,354.0	-0.3	3.7	0.1	0.10	-0.10	
1,448.0	0.80	84.50	1,448.0	-0.3	4.9	0.0	0.29	0.21	
1,543.0	0.70	75.60	1,542.9	-0.1	6.1	-0.2	0.16	-0.11	
1,639.0	0.90	161.80	1,638.9	-0.7	6.9	0.3	1.15	0.21	
1,734.0	1.00	176.50	1,733.9	-2.2	7.2	1.8	0.28	0.11	
1,830.0	0.80	172.10	1,829.9	-3.7	7.3	3.3	0.22	-0.21	
1,925.0	0.70	177.80	1,924.9	-4.9	7.4	4.5	0.13	-0.11	
2,020.0	2.90	194.50	2,019.9	-7.8	6.9	7.5	2.36	2.32	
2,115.0	4.60	190.60	2,114.6	-13.9	5.6	13.6	1.81	1.79	
2,211.0	5.90	191.40	2,210.2	-22.5	3.9	22.3	1.36	1.35	
2,307.0	6.80	186.70	2,305.7	-33.0	2.2	32.8	1.08	0.94	
2,402.0	8.30	185.40	2,399.8	-45.4	0.9	45.3	1.59	1.58	
2,498.0	9.10	184.90	2,494.7	-59.9	-0.4	59.8	0.84	0.83	
2,593.0	8.60	185.40	2,588.6	-74.4	-1.7	74.4	0.53	-0.53	
2,688.0	10.10	183.40	2,682.3	-89.8	-2.8	89.9	1.62	1.58	
2,784.0	9.70	182.30	2,776.9	-106.3	-3.7	106.4	0.46	-0.42	
2,880.0	9.50	182.20	2,871.6	-122.3	-4.3	122.4	0.21	-0.21	
2,975.0	10.90	181.30	2,965.0	-139.1	-4.8	139.2	1.48	1.47	
3,071.0	10.50	181.00	3,059.4	-156.9	-5.1	157.0	0.42	-0.42	
3,166.0	9.90	179.90	3,152.9	-173.8	-5.3	173.8	0.66	-0.63	
3,262.0	9.50	179.70	3,247.5	-189.9	-5.2	190.0	0.42	-0.42	
3,357.0	11.00	184.90	3,341.0	-206.8	-6.0	206.8	1.85	1.58	
3,452.0	10.50	184.00	3,434.3	-224.5	-7.3	224.6	0.56	-0.53	
3,548.0	10.20	184.20	3,528.8	-241.7	-8.6	241.8	0.31	-0.31	
3,643.0	9.60	183.80	3,622.3	-258.0	-9.7	258.1	0.64	-0.63	
3,738.0	10.00	183.00	3,716.0	-274.1	-10.7	274.3	0.44	0.42	
3,834.0	9.70	183.10	3,810.5	-290.5	-11.5	290.7	0.31	-0.31	
3,929.0	10.60	180.30	3,904.1	-307.2	-12.0	307.5	1.08	0.95	
4,024.0	9.90	180.00	3,997.5	-324.2	-12.1	324.3	0.74	-0.74	
4,118.0	9.30	181.10	4,090.2	-339.8	-12.2	340.0	0.67	-0.64	
4,213.0	8.00	184.60	4,184.1	-354.1	-12.9	354.3	1.48	-1.37	
4,309.0	6.80	182.20	4,279.3	-366.4	-13.6	366.6	1.29	-1.25	
4,404.0	5.50	182.20	4,373.8	-376.6	-14.0	376.8	1.37	-1.37	
4,499.0	4.30	176.00	4,468.4	-384.7	-14.0	384.9	1.38	-1.26	
4,594.0	4.20	176.30	4,563.2	-391.7	-13.5	391.9	0.11	-0.11	
4,690.0	2.70	176.30	4,659.0	-397.5	-13.1	397.6	1.56	-1.56	
4,765.5	1.43	177.95	4,734.5	-400.2	-13.0	400.3	1.69	-1.68	Federal 29-6B To G
4,785.0	1.10	179.00	4,753.9	-400.6	-13.0	400.8	1.69	-1.68	
4,880.0	1.30	189.80	4,848.9	-402.6	-13.1	402.7	0.32	0.21	
4,976.0	0.40	132.80	4,944.9	-403.9	-13.1	404.0	1.18	-0.94	
5,071.0	0.40	187.30	5,039.9	-404.5	-12.9	404.6	0.39	0.00	
5,166.0	0.70	219.10	5,134.9	-405.2	-13.3	405.4	0.44	0.32	
5,262.0	0.80	220.60	5,230.9	-406.2	-14.1	406.4	0.11	0.10	
5,357.0	0.20	120.40	5,325.9	-406.8	-14.4	407.0	0.90	-0.63	
5,452.0	0.40	211.70	5,420.9	-407.2	-14.4	407.4	0.48	0.21	
5,548.0	0.70	207.90	5,516.9	-408.0	-14.8	408.2	0.31	0.31	

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Federal 29-6B
<b>Project:</b>	S. Piceance (Parachute)	<b>TVD Reference:</b>	WELL @ 6058.0ft (Original Well Elev)
<b>Site:</b>	S29-T7S-R95W (PF-29 Pad)	<b>MD Reference:</b>	WELL @ 6058.0ft (Original Well Elev)
<b>Well:</b>	Federal 29-6B	<b>North Reference:</b>	True
<b>Wellbore:</b>	DD	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Final	<b>Database:</b>	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
5,643.0	0.50	56.60	5,611.9	-408.2	-14.8	408.5	1.22	-0.21	
5,738.0	0.30	5.40	5,706.9	-407.8	-14.4	408.0	0.41	-0.21	
5,834.0	0.40	270.40	5,802.9	-407.5	-14.7	407.7	0.54	0.10	
5,928.0	1.00	260.20	5,896.9	-407.7	-15.9	407.9	0.65	0.64	
6,024.0	0.50	216.30	5,992.9	-408.1	-16.9	408.5	0.76	-0.52	
6,120.0	0.80	220.70	6,088.9	-409.0	-17.6	409.3	0.32	0.31	
6,215.0	1.00	239.50	6,183.9	-409.9	-18.8	410.3	0.37	0.21	
6,311.0	1.60	251.80	6,279.8	-410.8	-20.8	411.3	0.69	0.62	
6,406.0	2.30	235.70	6,374.8	-412.2	-23.6	412.9	0.93	0.74	
6,502.0	2.40	232.80	6,470.7	-414.5	-26.8	415.4	0.16	0.10	
6,597.0	2.70	234.50	6,565.6	-417.0	-30.2	418.1	0.33	0.32	
6,691.0	2.30	242.40	6,659.5	-419.2	-33.7	420.4	0.56	-0.43	
6,733.0	2.23	242.96	6,701.4	-420.0	-35.1	421.2	0.18	-0.17	Federal 29-6B BHL
6,750.0	2.20	243.20	6,718.5	-420.3	-35.7	421.6	0.18	-0.17	Last Cathedral Survey @ 6750' MD
6,800.0	2.20	243.20	6,768.4	-421.1	-37.4	422.5	0.00	0.00	Projection to Bit @ 6800' MD

Targets									
Target Name	- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	
- Shape									Latitude Longitude
Federal 29-6B ToG		0.00	0.00	4,734.0	-414.5	-21.8	1,583,926.80	2,286,725.87	39.409420 -108.024780
- actual wellpath misses target center by 16.8ft at 4765.5ft MD (4734.5 TVD, -400.2 N, -13.0 E)									
- Point									
Federal 29-6B BHL		0.00	0.00	6,702.0	-414.5	-21.8	1,583,926.80	2,286,725.87	39.409420 -108.024780
- actual wellpath misses target center by 14.5ft at 6733.0ft MD (6701.4 TVD, -420.0 N, -35.1 E)									
- Circle (radius 25.0)									

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
6,750.0	6,718.5	-420.3	-35.7	Last Cathedral Survey @ 6750' MD	
6,800.0	6,768.4	-421.1	-37.4	Projection to Bit @ 6800' MD	

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