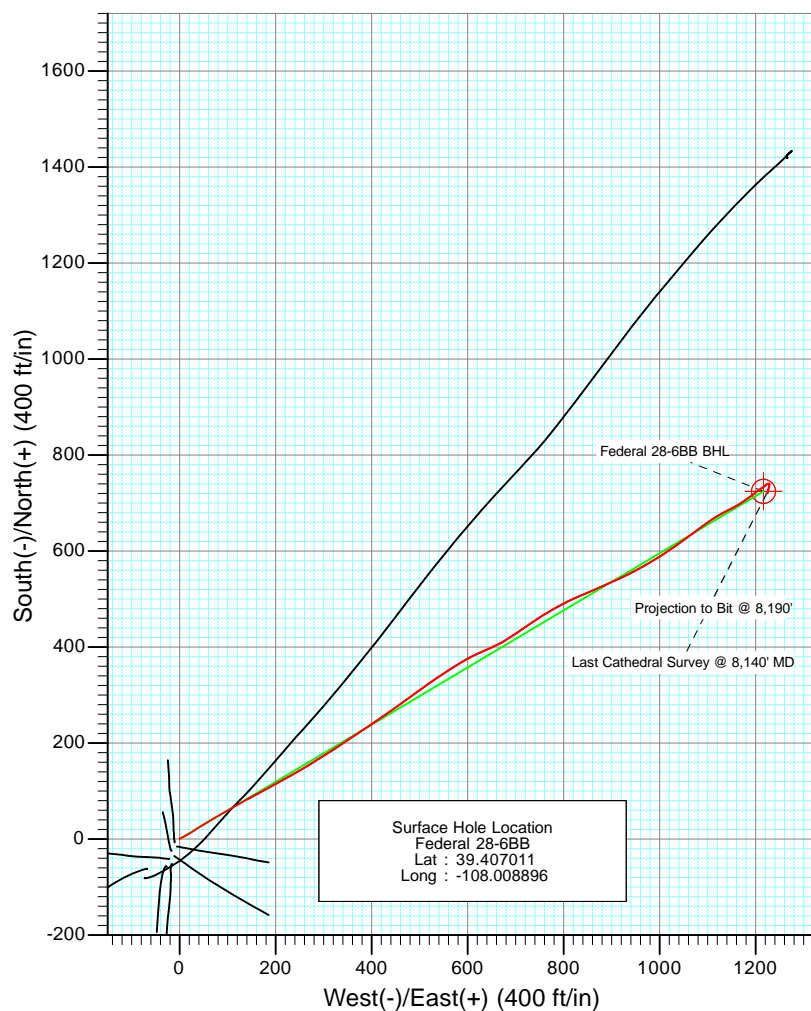
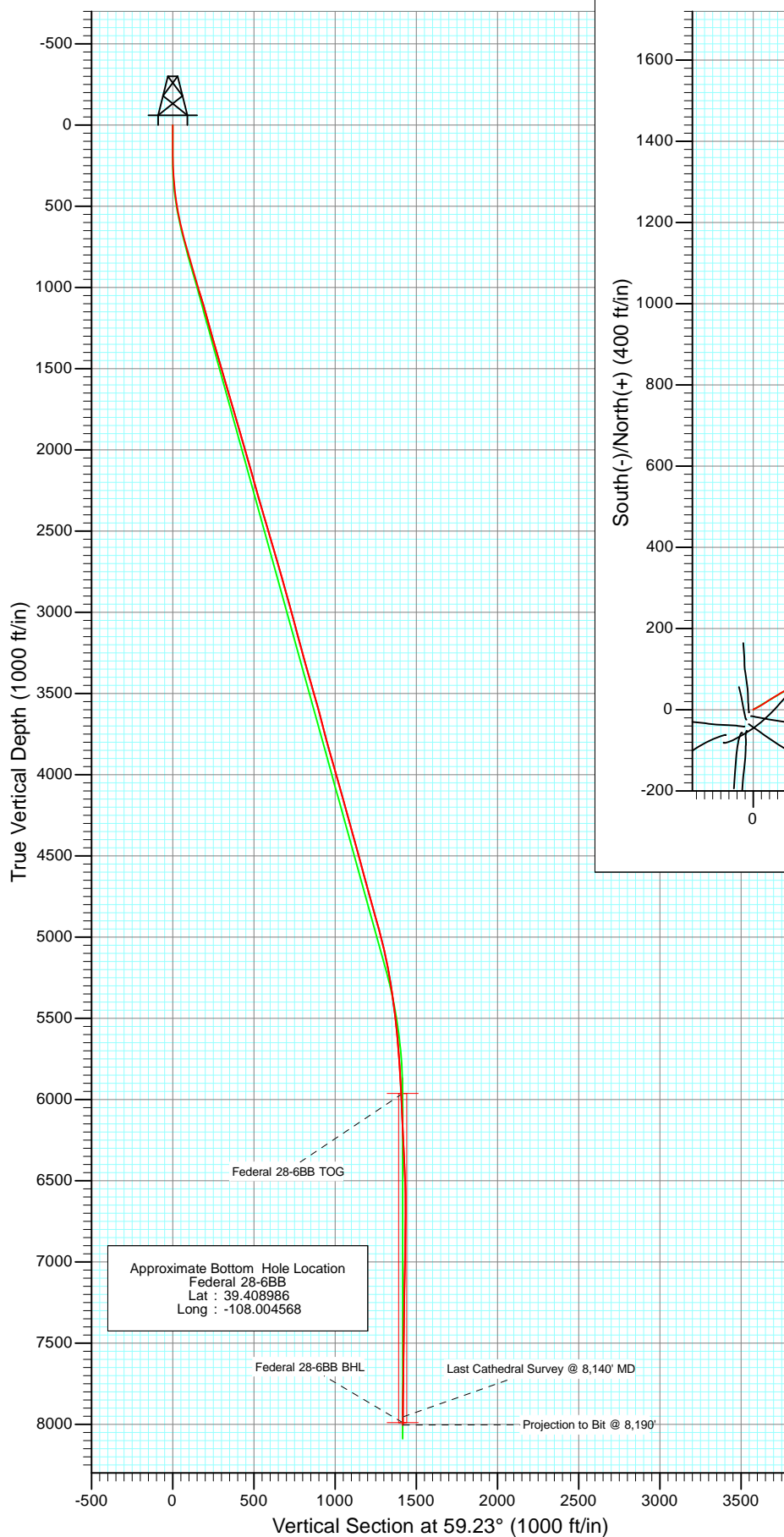




Project: S. Piceance (Parachute)  
 Site: PL 28 Pad (S28-T7S-R95W)  
 Well: Federal 28-6BB  
 Wellbore: DD  
 Design: FINAL



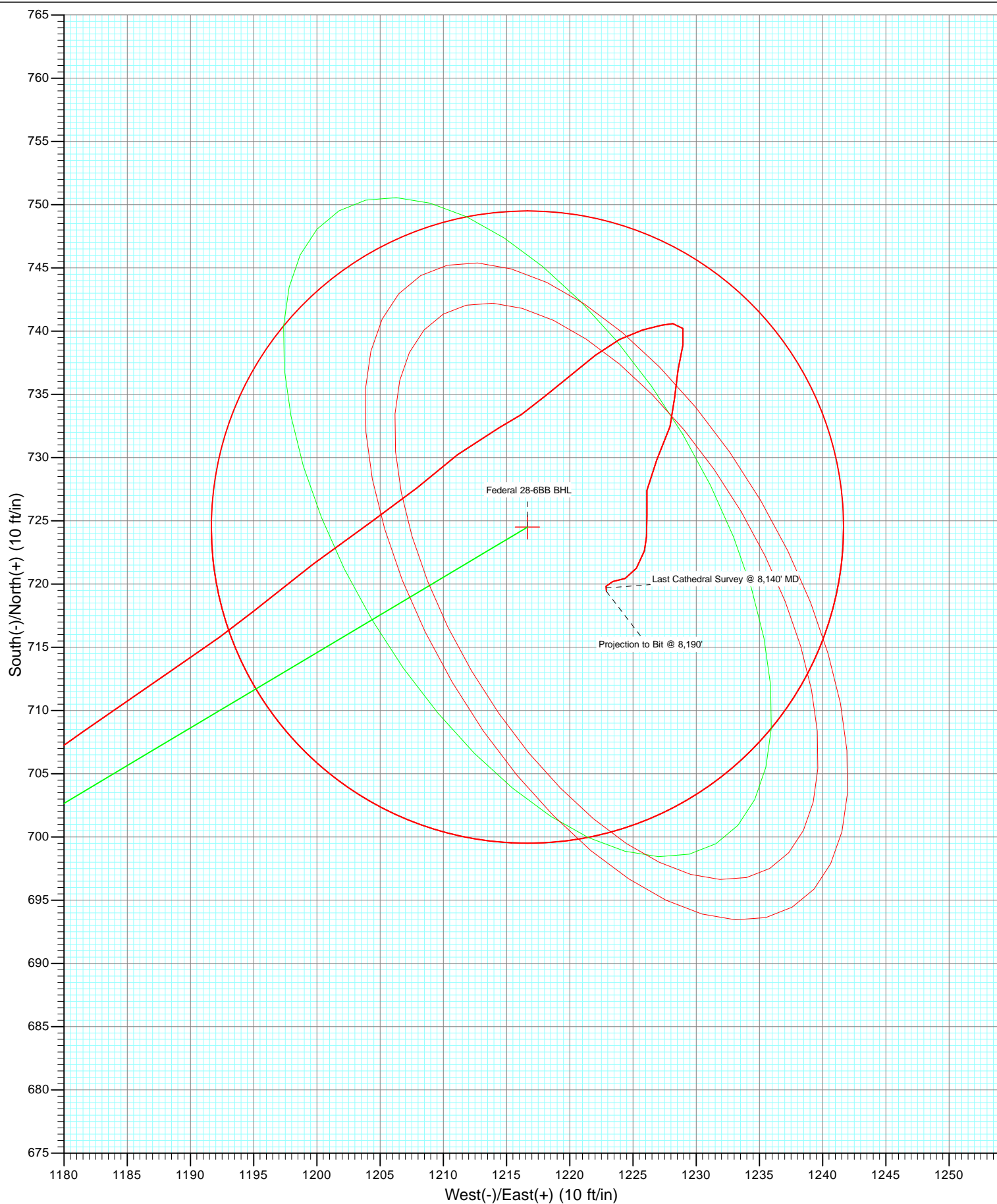
Azimuths to True North  
 Magnetic North: 10.30°

Magnetic Field  
 Strength: 52156.9snT  
 Dip Angle: 65.65°  
 Date: 10/14/2011  
 Model: IGRF2010

DD Federal 28-6BB 115435/115055 (SH), 115435, 115055: SC					
WELL @ 7186.0ft (Nabors M15) North American Datum 1983 Well Federal 28-6BB, True North					
Target Federal 28-6BB BHL	Azimuth 5963.0	Origin Type Slot	N/S 59.280	E/W 0.0	From TVD 0.0
Name Federal 28-6BB TOG	TVD 5963.0	+N/-S 724.5	+E/-W 1216.7	Latitude 39.409000	Longitude -108.004590
Federal 28-6BB BHL	7989.0	724.5	1216.7	39.409000	-108.004590

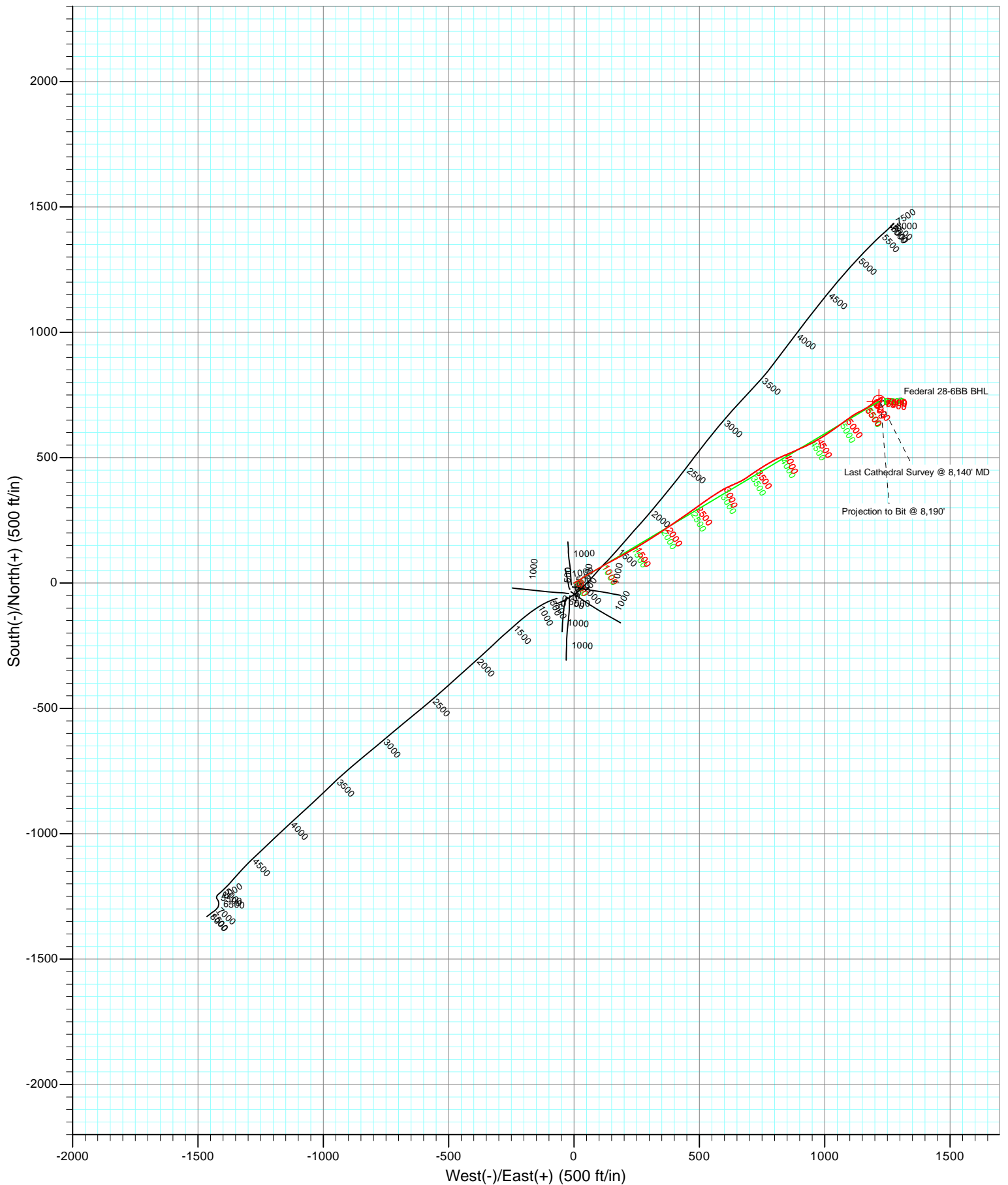


Project: S. Piceance (Parachute)  
Site: PL 28 Pad (S28-T7S-R95W)  
Well: Federal 28-6BB  
Wellbore: DD  
Design: FINAL





Project: S. Piceance (Parachute)  
Site: PL 28 Pad (S28-T7S-R95W)  
Well: Federal 28-6BB  
Wellbore: DD  
Design: DD



# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Federal 28-6BB
<b>Project:</b>	S. Piceance (Parachute)	<b>TVD Reference:</b>	WELL @ 7186.0ft (Nabors M15)
<b>Site:</b>	PL 28 Pad (S28-T7S-R95W)	<b>MD Reference:</b>	WELL @ 7186.0ft (Nabors M15)
<b>Well:</b>	Federal 28-6BB	<b>North Reference:</b>	True
<b>Wellbore:</b>	DD	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	DD	<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>	PL 28 Pad (S28-T7S-R95W)			
<b>Site Position:</b>		<b>Northing:</b>	1,582,914.36 ft	<b>Latitude:</b> 39.406980
<b>From:</b>	Lat/Long	<b>Easting:</b>	2,291,178.00 ft	<b>Longitude:</b> -108.008930
<b>Position Uncertainty:</b>	0.0 ft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b> -1.58 °

<b>Well</b>	Federal 28-6BB			
<b>Well Position</b>	<b>+N/-S</b>	0.0 ft	<b>Northing:</b>	1,582,925.36 ft
	<b>+E/-W</b>	0.0 ft	<b>Easting:</b>	2,291,187.91 ft
<b>Position Uncertainty</b>	0.0 ft	<b>Wellhead Elevation:</b>	ft	<b>Ground Level:</b> 7,164.0 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	10/14/2011	10.30	65.65	52,157

<b>Design</b>	DD			
<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)</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Direction</b>
	(ft)	(ft)	(ft)	(°)
	0.0	0.0	0.0	59.23

<b>Survey Program</b>	<b>Date</b>	10/26/2011		
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
125.0	1,045.0	Survey #1 (DD)	MWD	Geolink MWD
1,136.0	8,190.0	Survey #2 (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	
125.0	0.30	2.50	125.0	0.3	0.0	0.2	0.24	0.24	
156.0	0.30	15.20	156.0	0.5	0.0	0.3	0.21	0.00	
187.0	0.70	57.40	187.0	0.7	0.2	0.5	1.67	1.29	
217.0	1.40	62.20	217.0	0.9	0.7	1.1	2.35	2.33	
248.0	2.20	66.40	248.0	1.4	1.6	2.0	2.61	2.58	
278.0	3.20	64.80	277.9	1.9	2.9	3.5	3.34	3.33	
309.0	3.80	59.40	308.9	2.8	4.5	5.3	2.21	1.94	
340.0	4.60	61.50	339.8	3.9	6.5	7.6	2.63	2.58	
371.0	5.30	64.60	370.7	5.2	8.9	10.3	2.42	2.26	
402.0	6.00	62.40	401.5	6.5	11.6	13.3	2.36	2.26	
433.0	7.10	61.50	432.3	8.2	14.7	16.9	3.56	3.55	

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Federal 28-6BB
<b>Project:</b>	S. Piceance (Parachute)	<b>TVD Reference:</b>	WELL @ 7186.0ft (Nabors M15)
<b>Site:</b>	PL 28 Pad (S28-T7S-R95W)	<b>MD Reference:</b>	WELL @ 7186.0ft (Nabors M15)
<b>Well:</b>	Federal 28-6BB	<b>North Reference:</b>	True
<b>Wellbore:</b>	DD	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	DD	<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
464.0	8.10	60.00	463.1	10.2	18.3	21.0	3.29	3.23	
495.0	9.10	57.70	493.7	12.6	22.3	25.6	3.41	3.23	
525.0	10.20	56.40	523.3	15.3	26.5	30.6	3.74	3.67	
555.0	11.20	56.60	552.8	18.4	31.1	36.2	3.34	3.33	
586.0	11.90	57.50	583.1	21.8	36.4	42.4	2.33	2.26	
678.0	14.50	59.30	672.7	32.8	54.3	63.4	2.86	2.83	
770.0	15.60	60.00	761.5	44.8	74.9	87.3	1.21	1.20	
862.0	16.50	59.40	850.0	57.7	96.8	112.7	0.99	0.98	
953.0	16.00	60.30	937.3	70.4	118.9	138.2	0.62	-0.55	
1,045.0	16.90	61.50	1,025.6	83.1	141.6	164.2	1.05	0.98	Last Cathedral Survey @ 1045' MD
1,136.0	16.30	62.20	1,112.8	95.4	164.5	190.2	0.69	-0.66	
1,220.0	15.80	61.00	1,193.5	106.4	185.0	213.4	0.71	-0.60	
1,349.0	15.03	61.28	1,317.8	123.0	215.0	247.6	0.60	-0.60	
1,444.0	16.66	60.92	1,409.2	135.5	237.7	273.6	1.72	1.72	
1,539.0	16.50	58.90	1,500.3	149.1	261.2	300.7	0.63	-0.17	
1,635.0	16.13	57.94	1,592.4	163.2	284.1	327.6	0.48	-0.39	
1,730.0	15.64	58.02	1,683.8	177.0	306.2	353.6	0.52	-0.52	
1,826.0	17.14	55.65	1,775.9	191.8	328.8	380.7	1.71	1.56	
1,921.0	16.44	57.15	1,866.8	207.0	351.7	408.1	0.87	-0.74	
2,016.0	16.04	55.92	1,958.0	221.7	373.8	434.6	0.56	-0.42	
2,111.0	15.78	55.92	2,049.4	236.3	395.4	460.6	0.27	-0.27	
2,207.0	15.47	56.18	2,141.9	250.7	416.9	486.4	0.33	-0.32	
2,302.0	15.07	54.07	2,233.5	265.0	437.4	511.4	0.72	-0.42	
2,397.0	16.70	54.51	2,324.9	280.2	458.5	537.3	1.72	1.72	
2,492.0	16.70	54.07	2,415.9	296.1	480.7	564.5	0.13	0.00	
2,587.0	16.48	54.51	2,506.9	312.0	502.7	591.5	0.27	-0.23	
2,683.0	16.08	53.81	2,599.1	327.7	524.5	618.3	0.46	-0.42	
2,778.0	16.39	57.76	2,690.3	342.6	546.5	644.8	1.21	0.33	
2,873.0	15.69	57.41	2,781.6	356.7	568.6	671.1	0.74	-0.74	
2,968.0	15.42	57.76	2,873.1	370.4	590.1	696.5	0.30	-0.28	
3,064.0	15.95	66.20	2,965.5	382.5	613.0	722.4	2.44	0.55	
3,159.0	15.47	65.67	3,057.0	393.0	636.5	747.9	0.53	-0.51	
3,254.0	14.94	65.14	3,148.7	403.3	659.1	772.7	0.58	-0.56	
3,350.0	14.24	57.32	3,241.6	414.9	680.3	796.8	2.18	-0.73	
3,444.0	16.13	55.48	3,332.3	428.6	700.8	821.4	2.07	2.01	
3,540.0	16.13	56.79	3,424.5	443.4	723.0	848.0	0.38	0.00	
3,635.0	16.13	55.39	3,515.8	458.1	744.9	874.4	0.41	0.00	
3,730.0	15.21	59.96	3,607.2	471.9	766.5	900.0	1.62	-0.97	
3,825.0	14.29	60.84	3,699.1	483.8	787.5	924.2	1.00	-0.97	
3,921.0	14.90	63.83	3,792.0	495.1	809.0	948.3	1.01	0.64	
4,016.0	16.52	66.29	3,883.5	505.9	832.3	973.9	1.84	1.71	
4,111.0	15.78	66.81	3,974.7	516.4	856.5	1,000.1	0.79	-0.78	
4,206.0	15.69	65.67	4,066.2	526.8	880.1	1,025.7	0.34	-0.09	
4,302.0	15.51	67.08	4,158.6	537.1	903.8	1,051.3	0.44	-0.19	
4,397.0	15.86	63.30	4,250.1	547.9	927.1	1,076.8	1.14	0.37	
4,493.0	15.42	63.47	4,342.5	559.5	950.2	1,102.7	0.46	-0.46	
4,589.0	15.69	58.38	4,435.0	572.0	972.7	1,128.4	1.45	0.28	
4,684.0	14.59	60.05	4,526.7	584.7	994.0	1,153.2	1.25	-1.16	
4,779.0	15.34	55.12	4,618.5	597.9	1,014.7	1,177.7	1.55	0.79	
4,875.0	15.64	54.77	4,711.0	612.6	1,035.6	1,203.2	0.33	0.31	
4,970.0	15.42	53.89	4,802.6	627.4	1,056.3	1,228.6	0.34	-0.23	
5,066.0	15.69	53.89	4,895.0	642.6	1,077.1	1,254.2	0.28	0.28	
5,161.0	14.94	53.28	4,986.7	657.5	1,097.3	1,279.2	0.81	-0.79	

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Federal 28-6BB
<b>Project:</b>	S. Piceance (Parachute)	<b>TVD Reference:</b>	WELL @ 7186.0ft (Nabors M15)
<b>Site:</b>	PL 28 Pad (S28-T7S-R95W)	<b>MD Reference:</b>	WELL @ 7186.0ft (Nabors M15)
<b>Well:</b>	Federal 28-6BB	<b>North Reference:</b>	True
<b>Wellbore:</b>	DD	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	DD	<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
5,257.0	13.14	58.29	5,079.8	670.6	1,116.5	1,302.4	2.26	-1.87	
5,352.0	11.07	62.07	5,172.7	680.6	1,133.7	1,322.3	2.33	-2.18	
5,447.0	9.18	65.23	5,266.2	688.0	1,148.7	1,339.0	2.07	-1.99	
5,542.0	7.87	59.34	5,360.1	694.5	1,161.2	1,353.0	1.66	-1.38	
5,637.0	7.87	54.51	5,454.2	701.6	1,172.1	1,366.0	0.70	0.00	
5,733.0	6.02	54.60	5,549.5	708.3	1,181.5	1,377.6	1.93	-1.93	
5,826.0	5.23	56.18	5,642.1	713.5	1,189.0	1,386.7	0.87	-0.85	
5,922.0	3.52	51.08	5,737.8	717.8	1,194.9	1,393.9	1.83	-1.78	
6,017.0	3.78	52.31	5,832.6	721.6	1,199.7	1,399.9	0.29	0.27	
6,113.0	3.08	55.83	5,928.4	724.9	1,204.3	1,405.7	0.76	-0.73	
6,208.0	2.33	50.20	6,023.3	727.6	1,207.9	1,410.1	0.84	-0.79	
6,303.0	2.68	51.26	6,118.2	730.2	1,211.1	1,414.2	0.37	0.37	
6,398.0	2.15	64.26	6,213.2	732.4	1,214.5	1,418.2	0.80	-0.56	
6,493.0	3.21	49.59	6,308.1	734.9	1,218.1	1,422.6	1.32	1.12	
6,588.0	2.94	52.31	6,402.9	738.1	1,222.0	1,427.6	0.32	-0.28	
6,683.0	2.24	74.46	6,497.8	740.1	1,225.8	1,431.8	1.27	-0.74	
6,779.0	0.70	90.10	6,593.8	740.6	1,228.2	1,434.2	1.64	-1.60	
6,874.0	0.53	150.31	6,688.8	740.2	1,229.0	1,434.6	0.67	-0.18	
6,970.0	1.10	194.17	6,784.8	738.9	1,229.0	1,434.0	0.84	0.59	
7,065.0	1.32	187.84	6,879.7	737.0	1,228.6	1,432.7	0.27	0.23	
7,161.0	1.41	186.61	6,975.7	734.7	1,228.3	1,431.2	0.10	0.09	
7,256.0	1.32	191.62	7,070.7	732.5	1,227.9	1,429.8	0.16	-0.09	
7,351.0	2.15	207.97	7,165.7	729.8	1,226.9	1,427.5	1.01	0.87	
7,446.0	1.00	175.70	7,260.6	727.4	1,226.1	1,425.6	1.48	-1.21	
7,542.0	1.41	183.18	7,356.6	725.4	1,226.1	1,424.6	0.46	0.43	
7,637.0	0.57	176.33	7,451.6	723.8	1,226.1	1,423.7	0.89	-0.88	
7,732.0	0.83	196.45	7,546.6	722.6	1,225.9	1,423.0	0.37	0.27	
7,827.0	1.01	211.22	7,641.6	721.3	1,225.3	1,421.8	0.31	0.19	
7,922.0	0.57	257.98	7,736.6	720.4	1,224.4	1,420.6	0.79	-0.46	
8,016.0	0.66	254.55	7,830.5	720.2	1,223.4	1,419.6	0.10	0.10	
8,112.0	0.26	178.61	7,926.5	719.8	1,222.9	1,419.0	0.67	-0.42	
8,140.0	0.31	175.18	7,954.5	719.7	1,222.9	1,418.9	0.19	0.18	Last Cathedral Survey @ 8,140' MD
8,190.0	0.31	175.18	8,004.5	719.4	1,222.9	1,418.8	0.00	0.00	Prjection to Bit @ 8,190'

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Federal 28-6BB
<b>Project:</b>	S. Piceance (Parachute)	<b>TVD Reference:</b>	WELL @ 7186.0ft (Nabors M15)
<b>Site:</b>	PL 28 Pad (S28-T7S-R95W)	<b>MD Reference:</b>	WELL @ 7186.0ft (Nabors M15)
<b>Well:</b>	Federal 28-6BB	<b>North Reference:</b>	True
<b>Wellbore:</b>	DD	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	DD	<b>Database:</b>	USA EDM 5000 Multi Users DB

Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
- Shape									
Federal 28-6BB BHL	0.00	0.00	7,989.0	724.5	1,216.7	1,583,616.00	2,292,424.11	39.409000	-108.004590
- actual wellpath misses target center by 8.0ft at 8174.4ft MD (7989.0 TVD, 719.5 N, 1222.9 E)									
- Circle (radius 25.0)									
Federal 28-6BB TOG	0.00	0.00	5,963.0	724.5	1,216.7	1,583,616.00	2,292,424.11	39.409000	-108.004590
- actual wellpath misses target center by 11.0ft at 6148.0ft MD (5963.4 TVD, 726.0 N, 1205.8 E)									
- Point									

Design Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)	
1,045.0	1,025.6	83.1	141.6	Last Cathedral Survey @ 1045' MD
8,140.0	7,954.5	719.7	1,222.9	Last Cathedral Survey @ 8,140' MD
8,190.0	8,004.5	719.4	1,222.9	Prjection to Bit @ 8,190'

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