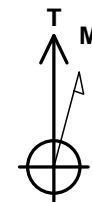
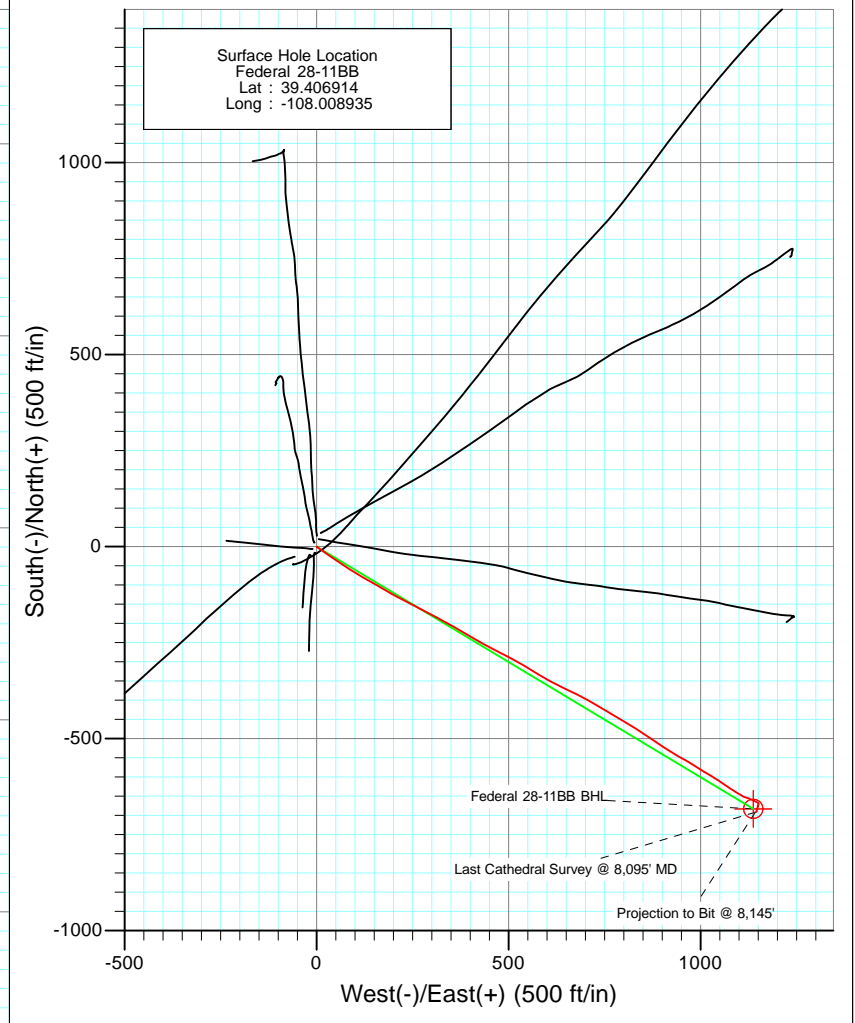
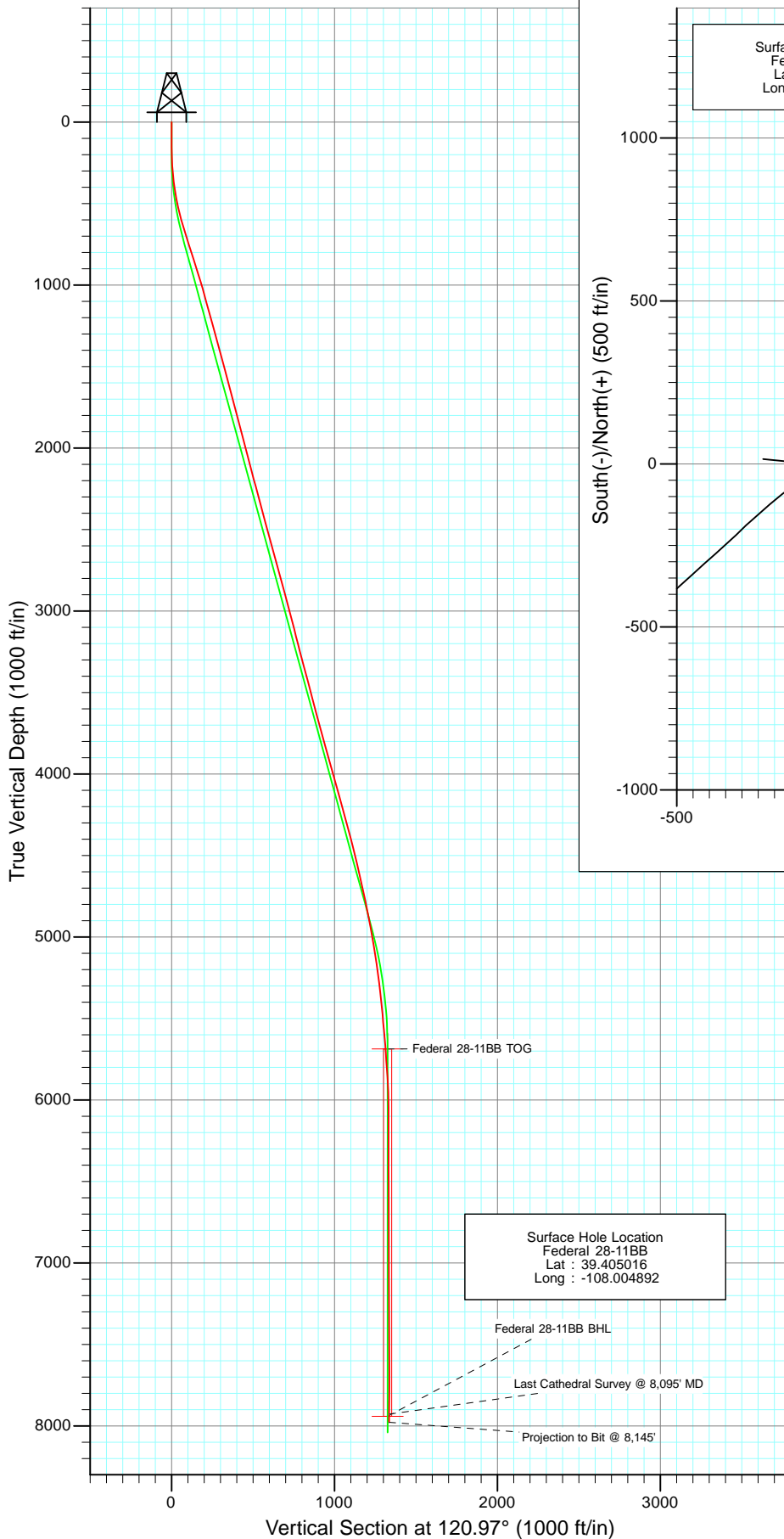




Project: S. Piceance (Parachute)
 Site: PL 28 Pad (S28-T7S-R95W)
 Well: Federal 28-11BB
 Wellbore: DD
 Design: FINAL



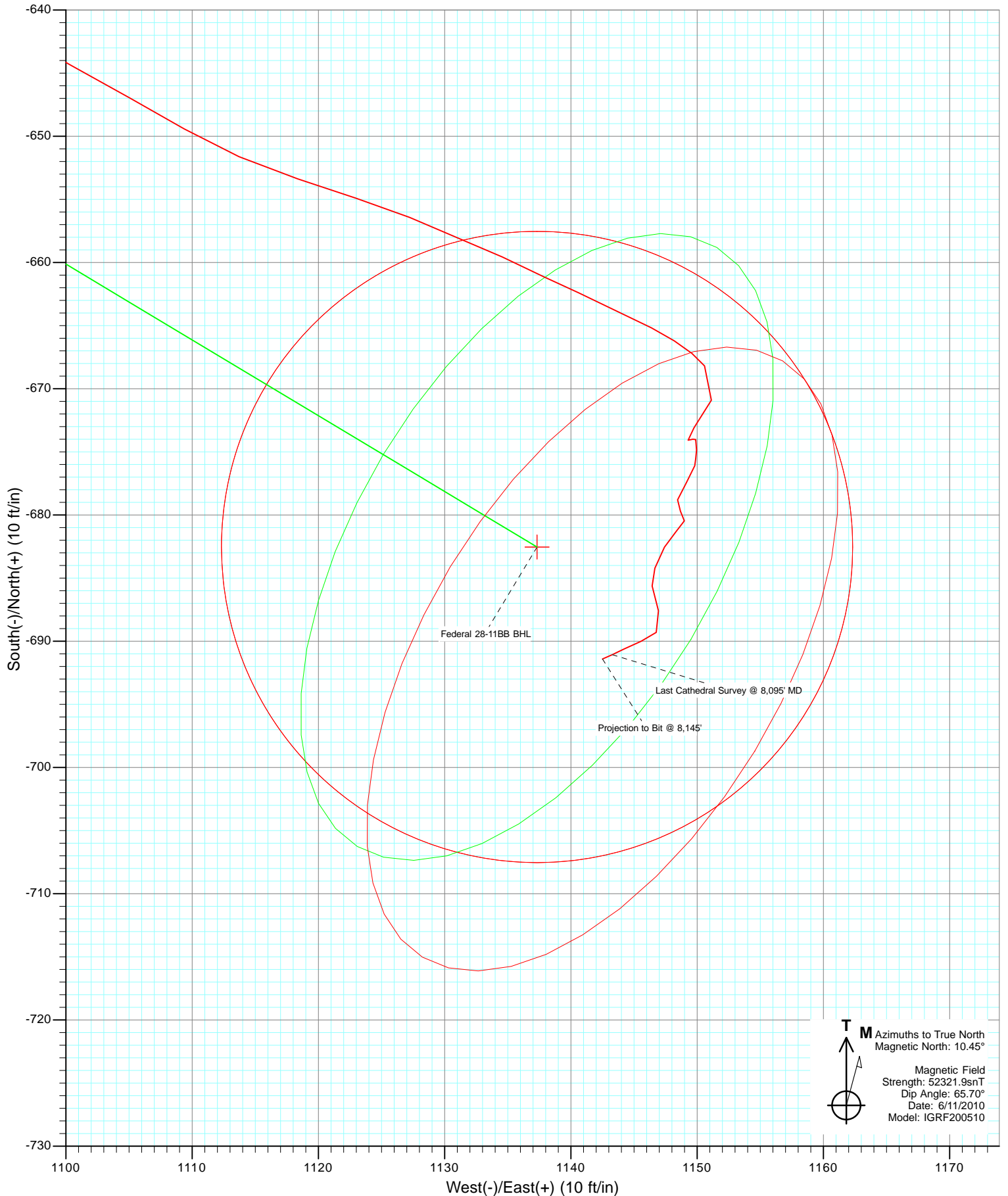
Azimuths to True North
 Magnetic North: 10.45°

Magnetic Field
 Strength: 52321.9snT
 Dip Angle: 65.70°
 Date: 6/11/2010
 Model: IGRF200510

DD Federal 28-11BB 115431/114655 (SH); 115538/107755 (MH) SC					
WELL @ 7186.0ft (Original Well Elev) North American Datum 1983 Well Federal 28-11BB, True North					
Target Federal 28-11BB BHL	Azimuth 120.970	Origin Type Slot	N/S 120.970	E/W 0.0	From TVD 0.0
Name Federal 28-11BB TOG	TVD 5687.0	+N/-S -682.5	+E/-W 1137.3	Latitude 39.405040	Longitude -108.004910
Federal 28-11BB BHL	7941.0	-682.5	1137.3	39.405040	-108.004910

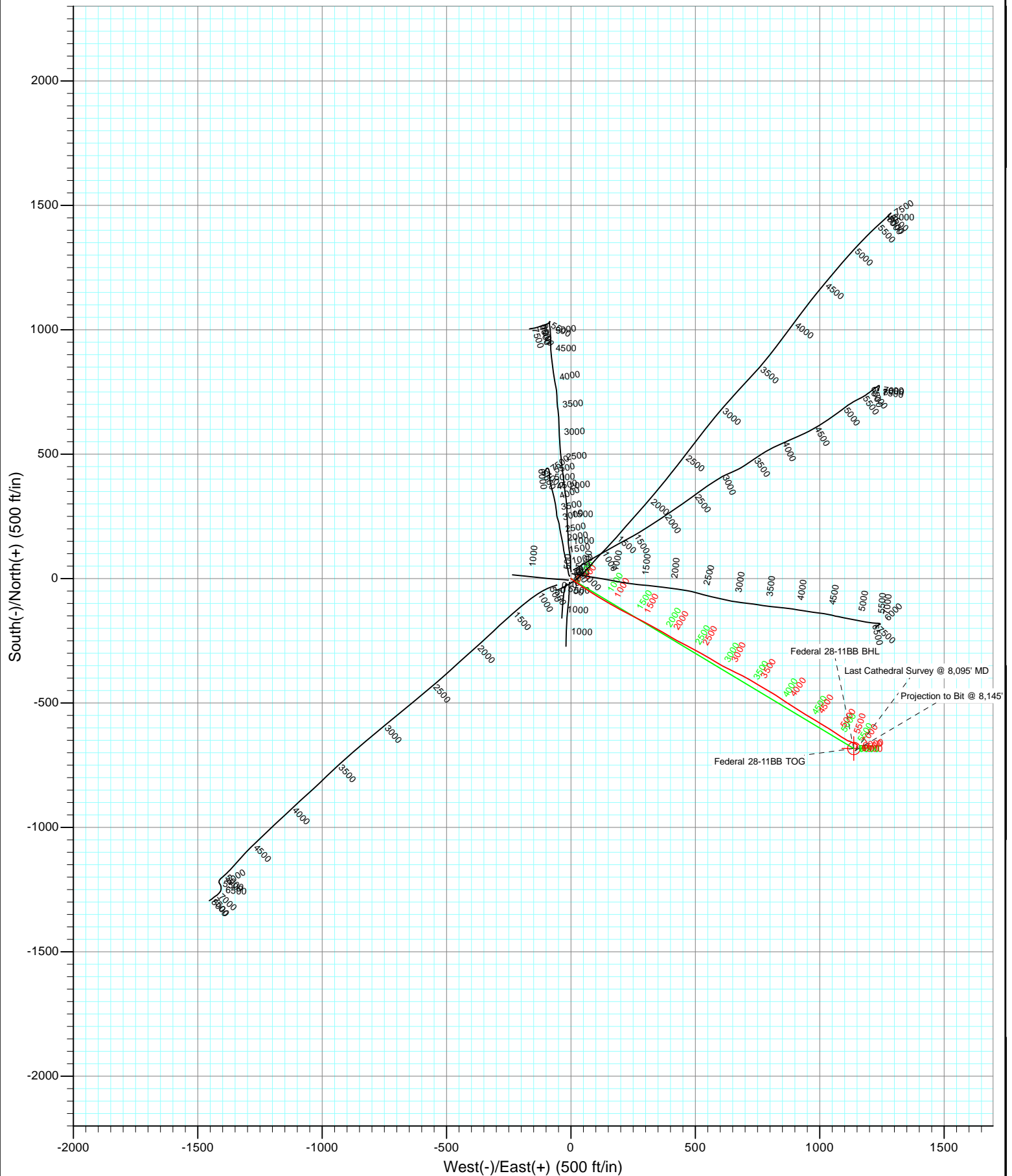


Project: S. Piceance (Parachute)
Site: PL 28 Pad (S28-T7S-R95W)
Well: Federal 28-11BB
Design: FINAL





Project: S. Piceance (Parachute)
Site: PL 28 Pad (S28-T7S-R95W)
Well: Federal 28-11BB
Wellbore: DD
Design: FINAL



Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Federal 28-11BB
Project:	S. Piceance (Parachute)	TVD Reference:	WELL @ 7186.0ft (Original Well Elev)
Site:	PL 28 Pad (S28-T7S-R95W)	MD Reference:	WELL @ 7186.0ft (Original Well Elev)
Well:	Federal 28-11BB	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	Database:	USA EDM 5000 Multi Users DB

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

Site		PL 28 Pad (S28-T7S-R95W)			
Site Position:		Northing:	1,582,914.36 ft	Latitude:	39.406980
From:	Lat/Long	Easting:	2,291,178.00 ft	Longitude:	-108.008930
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.58 °

Well	Federal 28-11BB					
Well Position	+N/-S	0.0 ft	Northing:	1,582,890.36 ft	Latitude:	39.406914
	+E/-W	0.0 ft	Easting:	2,291,175.92 ft	Longitude:	-108.008935
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	7,164.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	6/11/2010	10.45	65.70	52,322

Design	DD				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(ft)	(ft)	(ft)	(°)	
	0.0	0.0	0.0	120.97	

Survey Program	Date	12/6/2011			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
125.0	1,200.0	Survey #1 (DD)	MWD	Geolink MWD	
1,352.0	8,145.0	Survey #2 (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		
125.0	0.40	100.30	125.0	-0.1	0.4	0.4	0.32	0.32		
156.0	0.70	114.50	156.0	-0.2	0.7	0.7	1.06	0.97		
187.0	1.30	126.70	187.0	-0.5	1.2	1.2	2.04	1.94		
217.0	2.00	126.50	217.0	-1.0	1.9	2.1	2.33	2.33		
248.0	3.00	122.20	247.9	-1.7	3.0	3.4	3.28	3.23		
278.0	4.00	124.70	277.9	-2.7	4.5	5.3	3.37	3.33		
309.0	5.10	124.70	308.8	-4.1	6.5	7.7	3.55	3.55		
340.0	6.20	126.30	339.6	-5.9	9.0	10.8	3.58	3.55		
371.0	7.20	125.20	370.4	-8.0	11.9	14.4	3.25	3.23		
402.0	8.20	125.10	401.2	-10.4	15.3	18.5	3.23	3.23		
433.0	9.30	124.70	431.8	-13.1	19.2	23.2	3.55	3.55		

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Federal 28-11BB
Project:	S. Piceance (Parachute)	TVD Reference:	WELL @ 7186.0ft (Original Well Elev)
Site:	PL 28 Pad (S28-T7S-R95W)	MD Reference:	WELL @ 7186.0ft (Original Well Elev)
Well:	Federal 28-11BB	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	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
464.0	10.30	126.00	462.3	-16.2	23.5	28.5	3.30	3.23	
495.0	11.30	125.70	492.8	-19.6	28.2	34.3	3.23	3.23	
525.0	12.60	126.10	522.1	-23.2	33.2	40.5	4.34	4.33	
555.0	13.50	125.20	551.4	-27.2	38.8	47.2	3.08	3.00	
586.0	14.40	124.20	581.4	-31.4	44.9	54.7	3.01	2.90	
678.0	17.80	123.80	669.8	-45.7	66.1	80.1	3.70	3.70	
770.0	17.80	121.80	757.4	-60.9	89.7	108.2	0.66	0.00	
862.0	17.70	120.70	845.0	-75.5	113.7	136.3	0.38	-0.11	
953.0	17.40	120.00	931.8	-89.3	137.3	163.7	0.40	-0.33	
1,045.0	16.00	119.50	1,019.9	-102.4	160.3	190.2	1.53	-1.52	
1,136.0	15.60	119.30	1,107.5	-114.6	181.9	214.9	0.44	-0.44	
1,200.0	15.60	119.10	1,169.1	-123.0	196.9	232.1	0.08	0.00	Last Cathedral Survey @ 1,200' MD
1,352.0	15.34	117.87	1,315.6	-142.3	232.5	272.6	0.28	-0.17	
1,447.0	15.07	117.87	1,407.3	-154.0	254.6	297.5	0.28	-0.28	
1,543.0	14.59	116.73	1,500.1	-165.3	276.4	322.0	0.59	-0.50	
1,638.0	14.99	117.43	1,592.0	-176.3	298.0	346.2	0.46	0.42	
1,734.0	14.63	117.34	1,684.8	-187.6	319.8	370.7	0.38	-0.37	
1,829.0	15.56	120.59	1,776.5	-199.6	341.4	395.4	1.32	0.98	
1,924.0	14.81	120.15	1,868.2	-212.2	362.9	420.3	0.80	-0.79	
2,020.0	14.81	119.27	1,961.0	-224.3	384.2	444.9	0.23	0.00	
2,115.0	14.06	121.91	2,053.0	-236.4	404.6	468.5	1.05	-0.79	
2,210.0	14.81	118.31	2,145.0	-248.2	425.1	492.2	1.23	0.79	
2,305.0	15.86	118.40	2,236.6	-260.2	447.2	517.3	1.11	1.11	
2,400.0	14.99	116.81	2,328.2	-271.9	469.5	542.5	1.02	-0.92	
2,496.0	14.55	115.67	2,421.0	-282.7	491.5	566.9	0.55	-0.46	
2,591.0	15.56	119.63	2,512.7	-294.2	513.3	591.5	1.52	1.06	
2,686.0	14.81	121.65	2,604.4	-306.8	534.7	616.4	0.97	-0.79	
2,782.0	16.00	119.98	2,697.0	-319.9	556.6	641.9	1.32	1.24	
2,876.0	15.16	120.33	2,787.5	-332.6	578.5	667.1	0.90	-0.89	
2,972.0	14.59	121.12	2,880.3	-345.2	599.7	691.8	0.63	-0.59	
3,067.0	15.21	116.58	2,972.1	-356.9	621.1	716.2	1.39	0.65	
3,163.0	14.94	115.93	3,064.8	-368.0	643.4	741.1	0.33	-0.28	
3,258.0	13.71	116.20	3,156.9	-378.3	664.6	764.5	1.30	-1.29	
3,354.0	14.90	115.06	3,249.9	-388.5	685.9	788.1	1.27	1.24	
3,448.0	15.47	120.86	3,340.6	-400.1	707.7	812.7	1.73	0.61	
3,543.0	14.99	120.50	3,432.3	-412.8	729.1	837.6	0.51	-0.51	
3,639.0	14.06	119.89	3,525.2	-424.9	749.9	861.7	0.98	-0.97	
3,734.0	14.68	121.65	3,617.2	-437.0	770.2	885.3	0.80	0.65	
3,829.0	16.00	120.15	3,708.8	-449.9	791.7	910.4	1.45	1.39	
3,924.0	15.12	119.45	3,800.4	-462.6	813.9	935.9	0.95	-0.93	
4,020.0	16.30	123.58	3,892.8	-476.2	836.0	961.8	1.69	1.23	
4,115.0	15.64	124.99	3,984.1	-490.9	857.6	987.9	0.81	-0.69	
4,210.0	14.99	125.25	4,075.7	-505.3	878.1	1,013.0	0.69	-0.68	
4,305.0	15.69	120.77	4,167.3	-519.0	899.2	1,038.1	1.45	0.74	
4,401.0	14.99	123.32	4,259.9	-532.5	920.7	1,063.4	1.01	-0.73	
4,496.0	15.12	119.54	4,351.7	-545.3	941.8	1,088.1	1.04	0.14	
4,591.0	14.11	120.42	4,443.6	-557.3	962.5	1,112.1	1.09	-1.06	
4,687.0	13.62	121.74	4,536.8	-569.2	982.2	1,135.1	0.61	-0.51	
4,782.0	12.92	121.12	4,629.3	-580.5	1,000.8	1,156.9	0.75	-0.74	
4,877.0	12.44	122.61	4,721.9	-591.5	1,018.5	1,177.7	0.61	-0.51	
4,973.0	11.38	120.77	4,815.9	-601.9	1,035.4	1,197.5	1.17	-1.10	
5,068.0	10.55	125.69	4,909.1	-611.8	1,050.5	1,215.6	1.32	-0.87	
5,164.0	10.06	121.30	5,003.6	-621.3	1,064.8	1,232.7	0.96	-0.51	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Federal 28-11BB
Project:	S. Piceance (Parachute)	TVD Reference:	WELL @ 7186.0ft (Original Well Elev)
Site:	PL 28 Pad (S28-T7S-R95W)	MD Reference:	WELL @ 7186.0ft (Original Well Elev)
Well:	Federal 28-11BB	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	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
5,260.0	9.45	124.02	5,098.2	-630.1	1,078.5	1,249.0	0.80	-0.64	
5,355.0	7.56	124.72	5,192.2	-638.0	1,090.1	1,263.0	1.99	-1.99	
5,451.0	6.81	118.66	5,287.4	-644.3	1,100.3	1,275.0	1.11	-0.78	
5,546.0	5.80	120.07	5,381.8	-649.4	1,109.4	1,285.4	1.08	-1.06	
5,641.0	6.11	107.76	5,476.3	-653.4	1,118.4	1,295.1	1.38	0.33	
5,737.0	5.10	110.57	5,571.9	-656.4	1,127.2	1,304.3	1.09	-1.05	
5,832.0	4.57	115.85	5,666.5	-659.6	1,134.6	1,312.2	0.73	-0.56	
5,926.0	3.56	114.18	5,760.3	-662.4	1,140.6	1,318.9	1.08	-1.07	
6,022.0	4.09	117.08	5,856.1	-665.2	1,146.4	1,325.2	0.59	0.55	
6,117.0	2.29	140.98	5,950.9	-668.2	1,150.6	1,330.4	2.32	-1.89	
6,213.0	1.67	208.57	6,046.9	-670.9	1,151.1	1,332.3	2.36	-0.65	
6,308.0	1.45	216.39	6,141.8	-673.1	1,149.8	1,332.2	0.32	-0.23	
6,404.0	0.31	92.38	6,237.8	-674.1	1,149.3	1,332.3	1.71	-1.19	
6,499.0	0.18	48.96	6,332.8	-674.0	1,149.7	1,332.6	0.23	-0.14	
6,595.0	0.22	138.43	6,428.8	-674.0	1,149.9	1,332.8	0.29	0.04	
6,690.0	0.83	185.10	6,523.8	-674.9	1,150.0	1,333.3	0.73	0.64	
6,786.0	0.00	100.29	6,619.8	-675.5	1,149.9	1,333.6	0.86	-0.86	
6,882.0	0.66	188.71	6,715.8	-676.1	1,149.8	1,333.8	0.69	0.69	
6,977.0	1.14	216.22	6,810.8	-677.4	1,149.2	1,333.9	0.67	0.51	
7,072.0	0.79	193.89	6,905.8	-678.8	1,148.5	1,334.0	0.53	-0.37	
7,167.0	0.57	124.46	7,000.8	-679.7	1,148.7	1,334.7	0.84	-0.23	
7,262.0	0.62	189.50	7,095.8	-680.5	1,149.0	1,335.4	0.67	0.05	
7,358.0	0.83	239.25	7,191.8	-681.3	1,148.3	1,335.2	0.67	0.22	
7,453.0	1.10	199.61	7,286.8	-682.5	1,147.4	1,335.1	0.74	0.28	
7,549.0	1.10	209.36	7,382.7	-684.2	1,146.7	1,335.3	0.19	0.00	
7,644.0	0.79	158.39	7,477.7	-685.6	1,146.4	1,335.8	0.91	-0.33	
7,740.0	1.63	169.37	7,573.7	-687.6	1,146.9	1,337.3	0.90	0.87	
7,835.0	0.70	228.00	7,668.7	-689.3	1,146.8	1,338.0	1.47	-0.98	
7,930.0	1.01	247.77	7,763.7	-690.0	1,145.6	1,337.3	0.45	0.33	
8,026.0	0.75	242.23	7,859.7	-690.6	1,144.2	1,336.5	0.28	-0.27	
8,095.0	0.97	246.01	7,928.7	-691.1	1,143.3	1,335.9	0.33	0.32	Last Cathedral Survey @ 8,095' MD
8,145.0	0.97	246.01	7,978.7	-691.4	1,142.5	1,335.4	0.00	0.00	Projection to Bit @ 8,145'

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Federal 28-11BB
Project:	S. Piceance (Parachute)	TVD Reference:	WELL @ 7186.0ft (Original Well Elev)
Site:	PL 28 Pad (S28-T7S-R95W)	MD Reference:	WELL @ 7186.0ft (Original Well Elev)
Well:	Federal 28-11BB	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	Database:	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 28-11BB TOG	0.00	0.00	5,687.0	-682.5	1,137.3	1,582,176.68	2,292,293.97	39.405040	-108.004910
- actual wellpath misses target center by 22.3ft at 5853.3ft MD (5687.8 TVD, -660.3 N, 1136.1 E)									
- Point									
Federal 28-11BB BHL	0.00	0.00	7,941.0	-682.5	1,137.3	1,582,176.68	2,292,293.97	39.405040	-108.004910
- actual wellpath misses target center by 16.1ft at 8095.0ft MD (7928.7 TVD, -691.1 N, 1143.3 E)									
- Circle (radius 25.0)									

Design Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)	
1,200.0	1,169.1	-123.0	196.9	Last Cathedral Survey @ 1,200' MD
8,095.0	7,928.7	-691.1	1,143.3	Last Cathedral Survey @ 8,095' MD
8,145.0	7,978.7	-691.4	1,142.5	Projection to Bit @ 8,145'

Checked By: _____ Approved By: _____ Date: _____