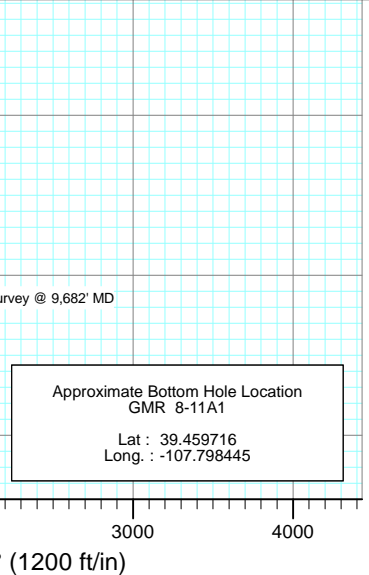
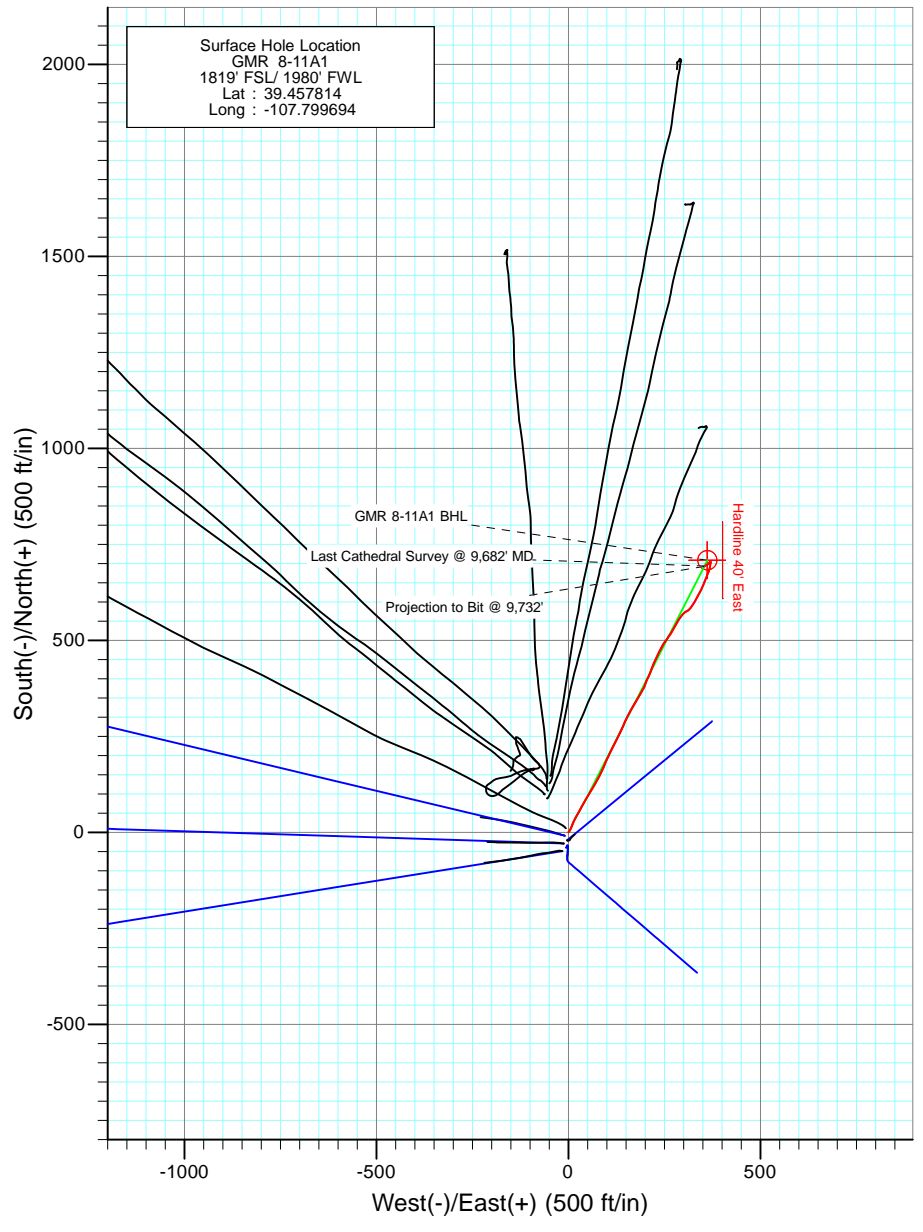
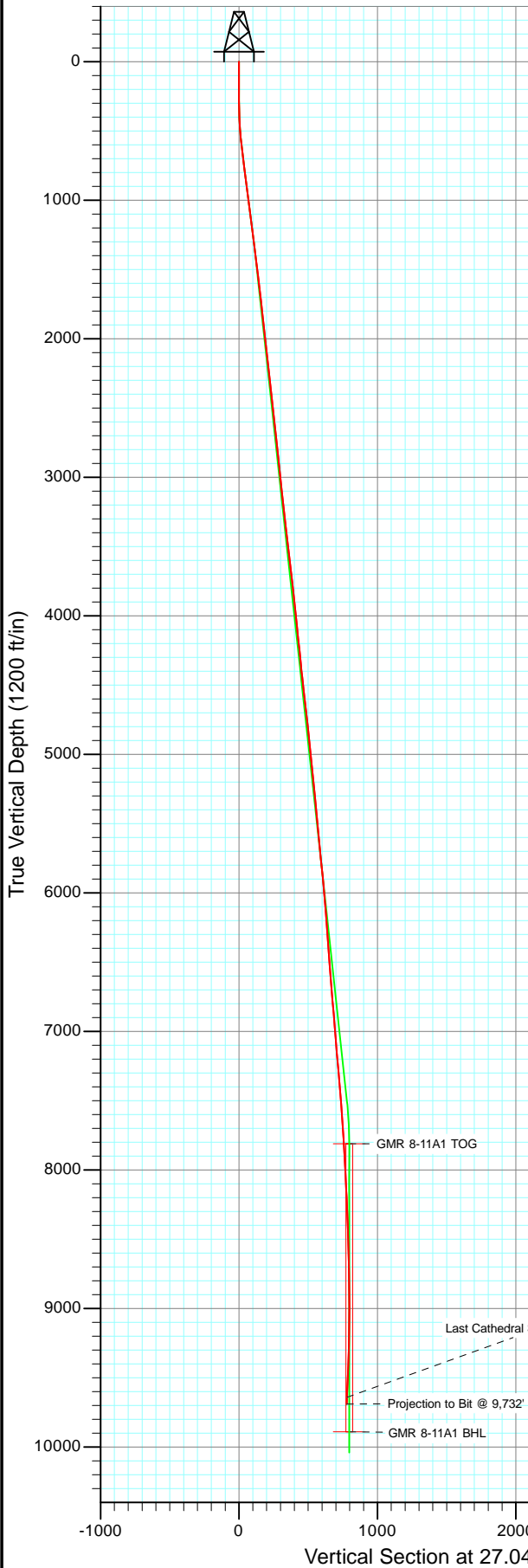




Project: Mamm Creek
 Site: NESW S8 T7S R93W (K8W Pad)
 Well: GMR 8-11A1
 Wellbore: DD
 Design: FINAL



Azimuths to True North
 Magnetic North: 10.30°
 Magnetic Field
 Strength: 52270.8snT
 Dip Angle: 65.75°
 Date: 2/24/2011
 Model: IGRF2010

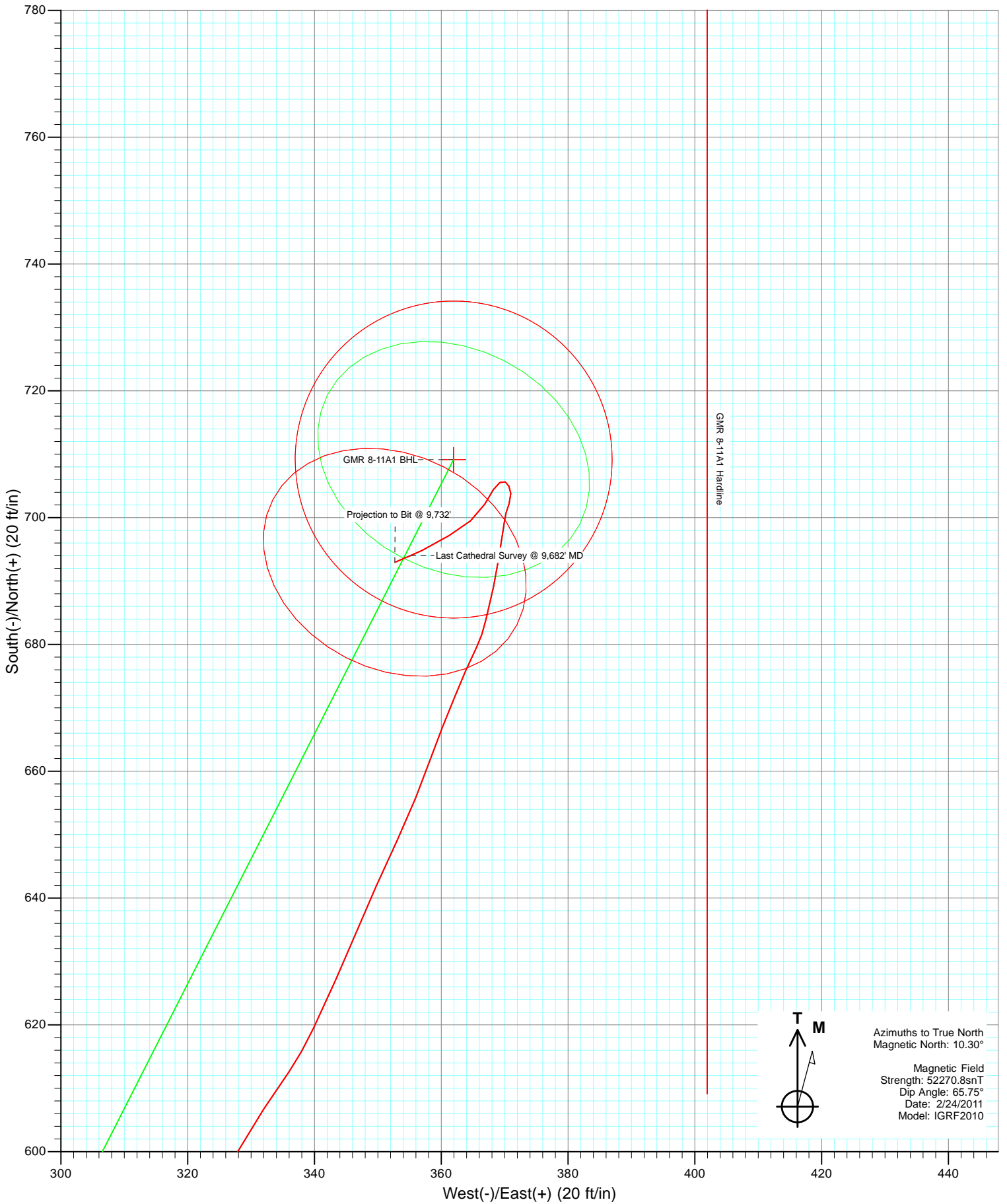
DESIGN DETAILS: DD

Job #115062 (SH), 115084 (MH): KR
 KBE2 @ 7859.0ft (Patterson 330)

Target	Azimuth	Origin	N/S	E/W	From TVD
GMR 8-11A1 BHL	27.04	Slot	0.0	0.0	0.0

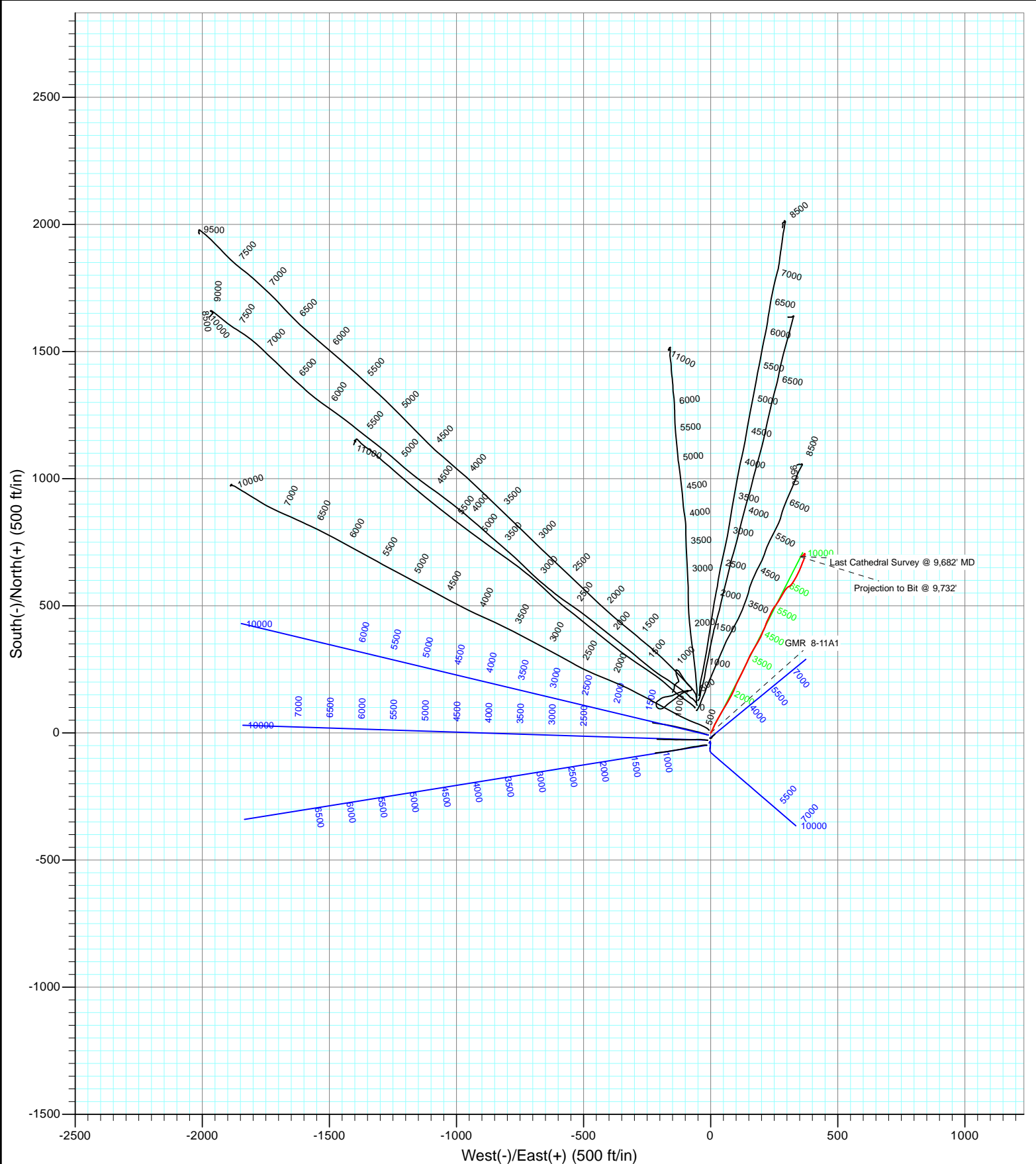


Project: Mamm Creek
Site: NESW S8 T7S R93W (K8W Pad)
Well: GMR 8-11A1
Wellbore: DD
Design: FINAL





Project: Mamm Creek
Site: NESW S8 T7S R93W (K8W Pad)
Well: GMR 8-11A1
Wellbore: DD
Design: FINAL



Survey Report

Company: EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference: Well GMR 8-11A1
Project: Mamm Creek	TVD Reference: KBE2 @ 7859.0ft (Patterson 330)
Site: NESW S8 T7S R93W (K8W Pad)	MD Reference: KBE2 @ 7859.0ft (Patterson 330)
Well: GMR 8-11A1	North Reference: True
Wellbore: DD	Survey Calculation Method: Minimum Curvature
Design: DD	Database: EDM 5000.1 US Multi Users DB

Project Mamm Creek		
Map System: US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum: North American Datum 1983		
Map Zone: Colorado Central Zone		

Site NESW S8 T7S R93W (K8W Pad)				
Site Position:	Northing:	1,599,999.23 ft	Latitude:	39.458194
From: Lat/Long	Easting:	2,350,698.86 ft	Longitude:	-107.799878
Position Uncertainty: 0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.45 °

Well GMR 8-11A1				
Well Position	+N/-S	0.0 ft	Northing:	1,599,859.38 ft
	+E/-W	0.0 ft	Easting:	2,350,747.23 ft
			Longitude:	-107.799694
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft
			Ground Level:	7,826.0 ft

Wellbore DD					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2/24/2011	10.30	65.75	52,271

Design DD				
Audit Notes:				
Version: 1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	27.04

Survey Program		Date 3/10/2011
From (ft)	To (ft)	Survey (Wellbore)
121.0	9,732.0	Survey #1 (DD)
		Tool Name
		MWD
		Description
		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	
121.0	0.20	39.00	121.0	0.2	0.1	0.2	0.17	0.17	
151.0	0.20	53.00	151.0	0.2	0.2	0.3	0.16	0.00	
181.0	0.30	56.50	181.0	0.3	0.3	0.4	0.34	0.33	
211.0	0.40	36.70	211.0	0.4	0.4	0.6	0.52	0.33	
242.0	0.20	298.20	242.0	0.6	0.5	0.7	1.53	-0.65	
271.0	0.10	333.80	271.0	0.6	0.4	0.7	0.46	-0.34	
301.0	0.40	79.20	301.0	0.6	0.5	0.8	1.46	1.00	
332.0	1.30	34.70	332.0	0.9	0.8	1.2	3.40	2.90	
363.0	1.30	43.40	363.0	1.5	1.2	1.9	0.64	0.00	
393.0	1.60	32.60	393.0	2.1	1.7	2.6	1.35	1.00	
424.0	2.30	34.70	424.0	3.0	2.3	3.7	2.27	2.26	
455.0	3.30	25.50	454.9	4.3	3.0	5.2	3.53	3.23	

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well GMR 8-11A1
Project:	Mamm Creek	MD Reference:	KBE2 @ 7859.0ft (Patterson 330)
Site:	NESW S8 T7S R93W (K8W Pad)	TVD Reference:	KBE2 @ 7859.0ft (Patterson 330)
Well:	GMR 8-11A1	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	Database:	EDM 5000.1 US 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
485.0	4.40	31.70	484.9	6.0	4.0	7.2	3.92	3.67	
516.0	5.00	24.00	515.7	8.3	5.2	9.7	2.80	1.94	
578.0	6.40	24.20	577.4	13.9	7.7	15.9	2.26	2.26	
670.0	6.50	20.60	668.9	23.5	11.6	26.2	0.45	0.11	
762.0	7.20	27.60	760.2	33.4	16.1	37.1	1.18	0.76	
854.0	7.50	28.42	851.4	43.8	21.7	48.9	0.35	0.33	
947.0	7.50	29.60	943.7	54.5	27.5	61.0	0.17	0.00	
1,041.0	7.90	30.90	1,036.8	65.3	33.9	73.6	0.46	0.43	
1,135.0	6.90	29.20	1,130.0	75.8	40.0	85.7	1.09	-1.06	
1,220.0	7.20	27.90	1,214.4	85.0	45.0	96.1	0.40	0.35	
1,361.0	7.40	33.10	1,354.2	100.4	54.0	114.0	0.49	0.14	
1,454.0	6.90	29.00	1,446.5	110.3	60.0	125.5	0.77	-0.54	
1,548.0	6.80	30.70	1,539.8	120.0	65.6	136.7	0.24	-0.11	
1,642.0	6.80	30.40	1,633.2	129.6	71.3	147.8	0.04	0.00	
1,735.0	6.40	31.30	1,725.6	138.8	76.7	158.5	0.44	-0.43	
1,830.0	6.60	23.80	1,820.0	148.3	81.7	169.2	0.92	0.21	
1,924.0	6.30	26.50	1,913.4	157.8	86.2	179.8	0.45	-0.32	
2,018.0	6.30	25.00	2,006.8	167.1	90.7	190.1	0.18	0.00	
2,112.0	6.30	21.20	2,100.2	176.6	94.7	200.4	0.44	0.00	
2,206.0	5.70	21.90	2,193.7	185.8	98.3	210.1	0.64	-0.64	
2,300.0	6.90	25.80	2,287.1	195.2	102.5	220.4	1.35	1.28	
2,394.0	6.80	28.10	2,380.5	205.2	107.6	231.7	0.31	-0.11	
2,488.0	6.20	25.70	2,473.9	214.7	112.4	242.3	0.70	-0.64	
2,583.0	6.20	26.00	2,568.3	223.9	116.9	252.5	0.03	0.00	
2,678.0	6.40	25.10	2,662.7	233.3	121.4	263.0	0.23	0.21	
2,772.0	6.00	28.30	2,756.2	242.4	125.9	273.1	0.56	-0.43	
2,867.0	6.20	27.80	2,850.6	251.3	130.7	283.2	0.22	0.21	
2,961.0	6.40	23.80	2,944.1	260.6	135.2	293.5	0.51	0.21	
3,056.0	6.30	24.50	3,038.5	270.1	139.5	304.0	0.13	-0.11	
3,150.0	5.80	24.90	3,132.0	279.1	143.6	313.9	0.53	-0.53	
3,244.0	5.70	23.90	3,225.5	287.7	147.5	323.3	0.15	-0.11	
3,337.0	6.30	21.10	3,318.0	296.7	151.2	333.0	0.72	0.65	
3,432.0	6.90	30.30	3,412.4	306.5	155.9	343.9	1.28	0.63	
3,526.0	6.70	30.90	3,505.7	316.1	161.6	355.0	0.23	-0.21	
3,621.0	7.00	30.10	3,600.0	325.8	167.4	366.3	0.33	0.32	
3,715.0	6.80	28.50	3,693.3	335.7	172.9	377.6	0.30	-0.21	
3,809.0	6.10	29.20	3,786.7	344.9	178.0	388.1	0.75	-0.74	
3,904.0	6.10	32.70	3,881.2	353.6	183.2	398.2	0.39	0.00	
3,998.0	6.10	30.30	3,974.7	362.1	188.4	408.2	0.27	0.00	
4,092.0	5.70	30.30	4,068.2	370.4	193.3	417.8	0.43	-0.43	
4,187.0	6.10	21.70	4,162.7	379.2	197.5	427.5	1.02	0.42	
4,282.0	6.10	22.10	4,257.1	388.6	201.3	437.6	0.04	0.00	
4,376.0	5.50	23.40	4,350.7	397.3	204.9	447.1	0.65	-0.64	
4,470.0	6.60	25.90	4,444.1	406.3	209.1	457.0	1.20	1.17	
4,564.0	6.30	20.80	4,537.5	416.0	213.3	467.5	0.69	-0.32	
4,658.0	6.40	20.30	4,631.0	425.7	216.9	477.8	0.12	0.11	
4,753.0	6.00	18.90	4,725.4	435.4	220.4	488.0	0.45	-0.42	
4,847.0	6.60	27.30	4,818.8	444.9	224.4	498.3	1.17	0.64	
4,941.0	6.40	26.60	4,912.2	454.3	229.3	508.9	0.23	-0.21	
5,036.0	5.70	27.40	5,006.7	463.3	233.8	518.9	0.74	-0.74	
5,130.0	5.80	24.80	5,100.2	471.7	238.0	528.3	0.30	0.11	
5,225.0	5.30	20.20	5,194.8	480.2	241.5	537.5	0.70	-0.53	
5,318.0	5.50	32.70	5,287.4	488.0	245.4	546.2	1.28	0.22	

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well GMR 8-11A1
Project:	Mamm Creek	TVD Reference:	KBE2 @ 7859.0ft (Patterson 330)
Site:	NESW S8 T7S R93W (K8W Pad)	MD Reference:	KBE2 @ 7859.0ft (Patterson 330)
Well:	GMR 8-11A1	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	Database:	EDM 5000.1 US 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
5,412.0	5.70	36.80	5,380.9	495.5	250.6	555.3	0.48	0.21	
5,505.0	5.60	37.00	5,473.5	502.8	256.1	564.3	0.11	-0.11	
5,599.0	5.40	35.30	5,567.0	510.1	261.4	573.2	0.27	-0.21	
5,693.0	5.50	33.00	5,660.6	517.5	266.4	582.0	0.26	0.11	
5,788.0	5.40	29.10	5,755.2	525.2	271.1	591.0	0.40	-0.11	
5,882.0	5.30	29.50	5,848.8	532.9	275.4	599.8	0.11	-0.11	
5,976.0	4.80	28.70	5,942.4	540.1	279.4	608.1	0.54	-0.53	
6,071.0	5.70	32.90	6,037.0	547.5	283.9	616.7	1.03	0.95	
6,165.0	5.80	32.60	6,130.5	555.5	289.0	626.1	0.11	0.11	
6,259.0	4.70	32.10	6,224.2	562.7	293.6	634.7	1.17	-1.17	
6,493.0	4.20	59.90	6,457.5	575.1	306.1	651.4	0.94	-0.21	
6,532.0	3.50	69.10	6,496.4	576.3	308.4	653.5	2.39	-1.79	
6,626.0	4.50	46.90	6,590.2	579.8	313.8	659.1	1.94	1.06	
6,720.0	5.00	38.20	6,683.8	585.6	319.0	666.6	0.93	0.53	
6,815.0	5.50	29.40	6,778.4	592.8	323.8	675.2	1.00	0.53	
6,909.0	4.90	29.60	6,872.1	600.2	328.0	683.7	0.64	-0.64	
7,003.0	4.40	33.60	6,965.7	606.7	332.0	691.3	0.63	-0.53	
7,098.0	4.30	34.50	7,060.5	612.7	336.0	698.5	0.13	-0.11	
7,192.0	5.20	25.20	7,154.1	619.4	339.8	706.2	1.26	0.96	
7,287.0	5.10	24.20	7,248.8	627.2	343.4	714.7	0.14	-0.11	
7,381.0	4.50	22.30	7,342.4	634.4	346.5	722.6	0.66	-0.64	
7,475.0	5.20	24.40	7,436.1	641.7	349.7	730.5	0.77	0.74	
7,570.0	4.70	24.70	7,530.7	649.1	353.1	738.7	0.53	-0.53	
7,664.0	4.10	22.20	7,624.5	655.7	356.0	745.9	0.67	-0.64	
7,759.0	3.60	19.00	7,719.3	661.7	358.2	752.2	0.57	-0.53	
7,853.0	3.20	22.90	7,813.1	666.9	360.2	757.8	0.49	-0.43	
7,948.0	2.80	21.20	7,908.0	671.5	362.1	762.7	0.43	-0.42	
8,042.0	2.90	24.00	8,001.8	675.8	363.9	767.4	0.18	0.11	
8,137.0	2.30	26.20	8,096.7	679.7	365.7	771.7	0.64	-0.63	
8,230.0	3.30	12.60	8,189.6	684.0	367.1	776.1	1.28	1.08	
8,324.0	3.00	13.40	8,283.5	689.1	368.2	781.1	0.32	-0.32	
8,418.0	2.60	6.80	8,377.4	693.6	369.1	785.5	0.55	-0.43	
8,513.0	1.80	11.80	8,472.3	697.2	369.6	789.0	0.87	-0.84	
8,607.0	1.00	5.00	8,566.3	699.4	370.0	791.2	0.87	-0.85	
8,702.0	0.70	17.80	8,661.3	700.8	370.2	792.5	0.37	-0.32	
8,796.0	1.10	18.70	8,755.3	702.2	370.7	794.0	0.43	0.43	
8,891.0	0.90	358.50	8,850.2	703.8	371.0	795.5	0.42	-0.21	
8,985.0	0.60	326.30	8,944.2	705.0	370.7	796.4	0.54	-0.32	
9,079.0	0.50	310.50	9,038.2	705.6	370.1	796.8	0.19	-0.11	
9,173.0	0.80	235.40	9,132.2	705.5	369.3	796.3	0.88	0.32	
9,266.0	1.10	213.20	9,225.2	704.4	368.2	794.8	0.50	0.32	
9,361.0	2.10	209.20	9,320.2	702.1	366.9	792.2	1.06	1.05	
9,456.0	2.20	231.30	9,415.1	699.5	364.6	788.8	0.87	0.11	
9,551.0	2.70	238.90	9,510.0	697.2	361.3	785.2	0.63	0.53	
9,645.0	3.20	243.40	9,603.9	694.9	357.0	781.2	0.59	0.53	
9,682.0	3.10	247.20	9,640.8	694.0	355.2	779.6	0.63	-0.27	Last Cathedral Survey @ 9,682' MD
9,732.0	3.10	247.20	9,690.8	693.0	352.7	777.6	0.00	0.00	Projection to Bit @ 9,732'

Survey Report

Company: EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference: Well GMR 8-11A1
Project: Mamm Creek	TVD Reference: KBE2 @ 7859.0ft (Patterson 330)
Site: NESW S8 T7S R93W (K8W Pad)	MD Reference: KBE2 @ 7859.0ft (Patterson 330)
Well: GMR 8-11A1	North Reference: True
Wellbore: DD	Survey Calculation Method: Minimum Curvature
Design: DD	Database: EDM 5000.1 US 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									
GMR 8-11A1 TOG	0.00	0.00	7,811.0	709.2	362.0	1,600,559.17	2,351,127.03	39.459761	-107.798412
- survey misses target center by 42.3ft at 7853.0ft MD (7813.1 TVD, 666.9 N, 360.2 E)									
- Point									
GMR 8-11A1 BHL	0.00	0.00	9,889.0	709.2	362.0	1,600,559.17	2,351,127.03	39.459761	-107.798412
- survey misses target center by 199.1ft at 9732.0ft MD (9690.8 TVD, 693.0 N, 352.7 E)									
- Circle (radius 25.0)									
GMR 8-11A1 Hardline	0.00	0.00	-9,889.0	709.2	362.0	1,600,559.17	2,351,127.03	39.459761	-107.798412
- survey misses target center by 9921.0ft at 0.0ft MD (0.0 TVD, 0.0 N, 0.0 E)									
- Polygon									
Point 1			-9,889.0	100.0	40.0	1,600,658.13	2,351,169.55		
Point 2			-9,889.0	-100.0	40.0	1,600,458.19	2,351,164.49		

Survey Annotations					
Measured Depth	Vertical Depth	Local Coordinates		Comment	
(ft)	(ft)	+N/-S	+E/-W		
		(ft)	(ft)		
9,682.0	9,640.8	694.0	355.2	Last Cathedral Survey @ 9,682' MD	
9,732.0	9,690.8	693.0	352.7	Projection to Bit @ 9,732'	

Checked By: _____ Approved By: _____ Date: _____