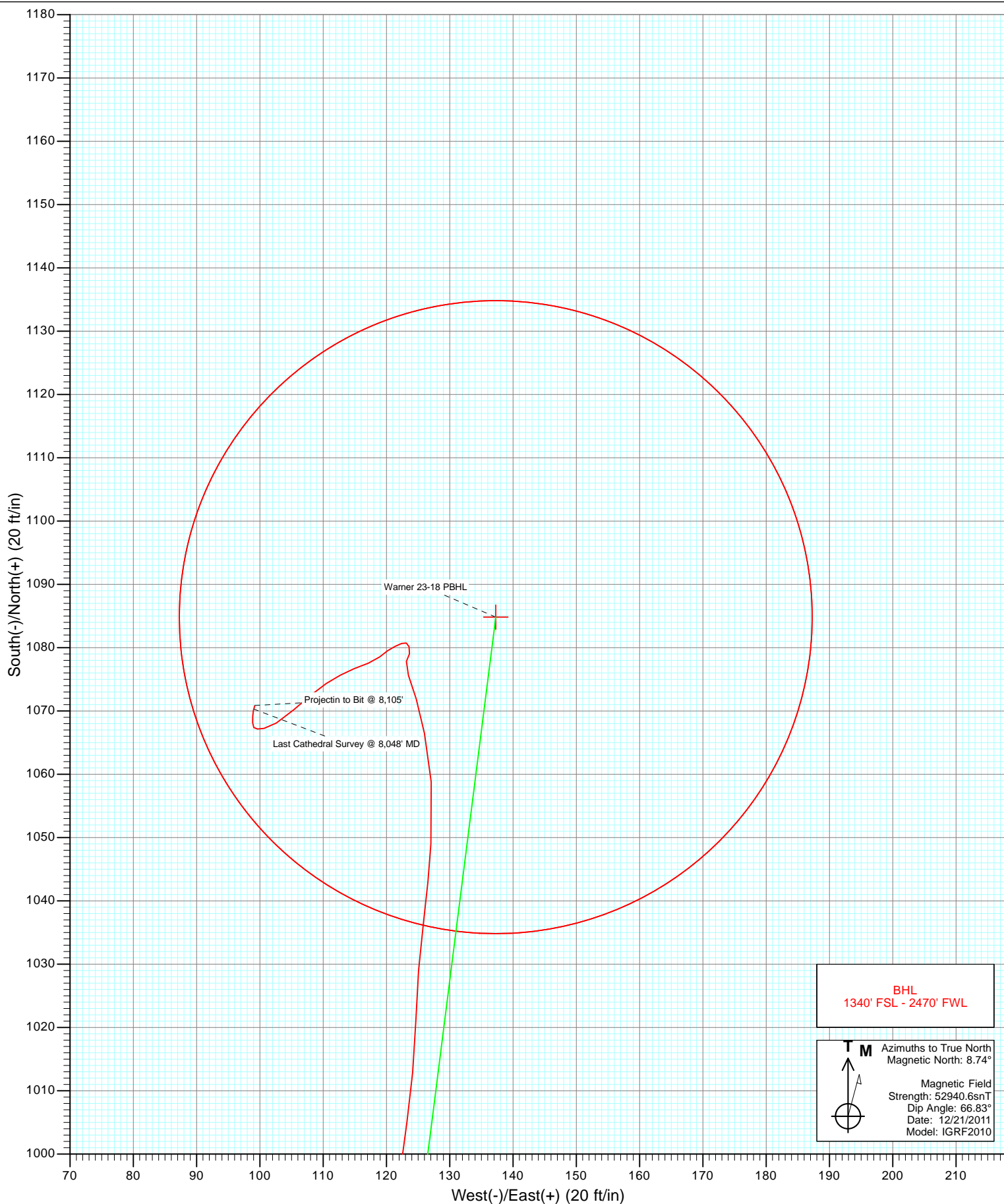


Azimuths to True North  
Magnetic North: 8.74°

Magnetic Field  
Strength: 52940.6snT  
Dip Angle: 66.83°  
Date: 12/21/2011  
Model: IGRF2010

DD Warner 23-18 115583 129655; LR KBE @ 5008.0ft (Xtreme 14) North American Datum 1983 Well Warner 23-18, True North					
Type Target	Target Warner 23-18 PBHL	Azimuth 7.21	Origin Type Slot	N/S 0.0	E/W 0.0
Name Warner 23-18 PBHL	TVD 7978.0	+N/-S 1084.8	+E/-W 137.3	Latitude 40.134922	Longitude -104.707094
				From TVD 0.0	



# Cathedral Energy Services

## Survey Report

<b>Company:</b>	Anadarko Petroleum Corporation	<b>Local Co-ordinate Reference:</b>	Well Warner 23-18
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KBE @ 5008.0ft (Xtreme 14)
<b>Site:</b>	SESW Sec18-T2N-R65W (Warner)	<b>MD Reference:</b>	KBE @ 5008.0ft (Xtreme 14)
<b>Well:</b>	Warner 23-18	<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>	DJ Wattenberg		
<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 Northern Zone		

Site		SESW Sec18-T2N-R65W (Warner)			
Site Position:		Northing:	1,291,903.50 ft	Latitude:	40.131944
From:	Lat/Long	Easting:	3,221,571.89 ft	Longitude:	-104.707585
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	0.51 °

Well		Warner 23-18				
Well Position	+N/-S	0.0 ft	Northing:	1,291,903.49 ft	Latitude:	40.131944
	+E/-W	0.0 ft	Easting:	3,221,571.89 ft	Longitude:	-104.707585
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,993.0 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	12/21/2011	8.74	66.83	52,941

<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	7.21	

<b>Survey Program</b>	<b>Date</b>	12/29/2011			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
119.0	8,105.0	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		
119.0	0.40	2.00	119.0	0.4	0.0	0.4	0.34	0.34		
212.0	1.30	6.80	212.0	1.8	0.2	1.8	0.97	0.97		
305.0	3.00	23.20	304.9	5.1	1.2	5.2	1.93	1.83		
414.0	4.40	26.80	413.7	11.4	4.2	11.9	1.30	1.28		
504.0	6.20	23.60	503.3	19.0	7.7	19.8	2.03	2.00		
592.0	8.50	17.90	590.6	29.5	11.6	30.7	2.74	2.61		
681.0	10.30	13.20	678.4	43.5	15.5	45.1	2.20	2.02		
770.0	10.90	10.80	765.9	59.5	18.9	61.4	0.84	0.67		
860.0	12.40	6.10	854.0	77.5	21.5	79.6	1.97	1.67		
880.0	12.30	5.90	873.5	81.7	21.9	83.9	0.54	-0.50		
945.0	12.20	7.50	937.1	95.4	23.6	97.6	0.54	-0.15		
1,033.0	11.00	5.10	1,023.3	113.0	25.5	115.3	1.47	-1.36		

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	Anadarko Petroleum Corporation	<b>Local Co-ordinate Reference:</b>	Well Warner 23-18
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KBE @ 5008.0ft (Xtreme 14)
<b>Site:</b>	SESW Sec18-T2N-R65W (Warner)	<b>MD Reference:</b>	KBE @ 5008.0ft (Xtreme 14)
<b>Well:</b>	Warner 23-18	<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
1,123.0	12.60	2.10	1,111.4	131.4	26.6	133.7	1.90	1.78	
1,212.0	12.30	3.10	1,198.3	150.6	27.5	152.8	0.42	-0.34	
1,300.0	11.40	1.30	1,284.4	168.6	28.2	170.8	1.11	-1.02	
1,389.0	13.20	0.30	1,371.3	187.6	28.5	189.7	2.04	2.02	
1,478.0	14.00	1.20	1,457.8	208.5	28.7	210.5	0.93	0.90	
1,568.0	14.30	7.70	1,545.1	230.4	30.5	232.4	1.80	0.33	
1,655.0	14.00	7.30	1,629.5	251.5	33.2	253.7	0.36	-0.34	
1,745.0	13.80	5.90	1,716.8	273.0	35.7	275.3	0.43	-0.22	
1,833.0	12.70	5.00	1,802.5	293.0	37.6	295.4	1.27	-1.25	
1,922.0	12.00	3.60	1,889.4	312.0	39.1	314.4	0.86	-0.79	
2,010.0	10.60	7.80	1,975.7	329.2	40.8	331.7	1.84	-1.59	
2,100.0	10.10	6.40	2,064.3	345.2	42.8	347.8	0.62	-0.56	
2,188.0	8.70	3.20	2,151.1	359.5	44.0	362.2	1.70	-1.59	
2,276.0	9.90	4.80	2,237.9	373.7	45.0	376.4	1.39	1.36	
2,364.0	11.30	5.60	2,324.4	389.8	46.5	392.6	1.60	1.59	
2,452.0	11.80	12.00	2,410.6	407.2	49.2	410.2	1.56	0.57	
2,540.0	10.50	11.70	2,497.0	423.9	52.7	427.1	1.48	-1.48	
2,627.0	10.80	9.40	2,582.5	439.7	55.6	443.2	0.60	0.34	
2,714.0	12.00	6.50	2,667.8	456.7	58.0	460.4	1.53	1.38	
2,802.0	11.30	12.40	2,754.0	474.2	60.9	478.1	1.57	-0.80	
2,891.0	11.80	8.10	2,841.2	491.7	64.0	495.9	1.12	0.56	
2,981.0	13.80	10.70	2,928.9	511.4	67.3	515.8	2.31	2.22	
3,070.0	12.40	9.10	3,015.6	531.3	70.8	535.9	1.62	-1.57	
3,160.0	11.20	7.00	3,103.7	549.5	73.4	554.3	1.42	-1.33	
3,247.0	12.50	1.60	3,188.8	567.3	74.7	572.2	1.96	1.49	
3,337.0	12.30	5.70	3,276.7	586.5	75.9	591.4	1.00	-0.22	
3,426.0	11.50	10.40	3,363.8	604.7	78.4	609.8	1.41	-0.90	
3,515.0	10.60	10.20	3,451.2	621.5	81.5	626.8	1.01	-1.01	
3,603.0	9.90	3.30	3,537.8	637.0	83.4	642.4	1.60	-0.80	
3,691.0	10.60	4.70	3,624.4	652.6	84.5	658.1	0.84	0.80	
3,780.0	10.20	2.30	3,711.9	668.7	85.4	674.1	0.66	-0.45	
3,867.0	10.20	358.40	3,797.5	684.1	85.5	689.4	0.79	0.00	
3,955.0	11.00	5.00	3,884.0	700.2	86.1	705.5	1.65	0.91	
4,043.0	11.40	7.10	3,970.4	717.2	87.9	722.6	0.65	0.45	
4,132.0	11.70	11.20	4,057.6	734.8	90.7	740.4	0.98	0.34	
4,221.0	12.00	11.20	4,144.7	752.7	94.2	758.6	0.34	0.34	
4,309.0	13.80	12.80	4,230.4	771.9	98.4	778.2	2.09	2.05	
4,399.0	12.50	11.80	4,318.1	791.9	102.7	798.6	1.47	-1.44	
4,575.0	9.30	6.60	4,490.9	824.7	108.3	831.8	1.90	-1.82	
4,664.0	10.60	3.60	4,578.5	840.0	109.6	847.1	1.57	1.46	
4,753.0	11.00	5.50	4,666.0	856.6	110.9	863.8	0.60	0.45	
4,841.0	10.00	2.60	4,752.5	872.6	112.1	879.8	1.28	-1.14	
4,929.0	11.00	5.10	4,839.0	888.6	113.2	895.8	1.25	1.14	
5,019.0	9.90	10.20	4,927.5	904.8	115.3	912.1	1.60	-1.22	
5,108.0	10.30	3.30	5,015.2	920.3	117.1	927.7	1.43	0.45	
5,197.0	12.50	1.40	5,102.4	937.8	117.8	945.2	2.51	2.47	
5,284.0	11.10	3.50	5,187.6	955.6	118.5	962.9	1.68	-1.61	
5,374.0	11.40	4.00	5,275.8	973.1	119.7	980.5	0.35	0.33	
5,460.0	10.10	6.70	5,360.3	989.1	121.2	996.5	1.62	-1.51	
5,550.0	10.50	8.10	5,448.9	1,005.1	123.2	1,012.6	0.52	0.44	
5,636.0	10.90	2.10	5,533.4	1,020.9	124.6	1,028.5	1.38	0.47	
5,724.0	9.30	7.10	5,620.0	1,036.3	125.8	1,043.9	2.07	-1.82	
5,812.0	7.40	3.30	5,707.1	1,049.0	127.0	1,056.7	2.25	-2.16	

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	Anadarko Petroleum Corporation	<b>Local Co-ordinate Reference:</b>	Well Warner 23-18
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KBE @ 5008.0ft (Xtreme 14)
<b>Site:</b>	SESW Sec18-T2N-R65W (Warner)	<b>MD Reference:</b>	KBE @ 5008.0ft (Xtreme 14)
<b>Well:</b>	Warner 23-18	<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
5,899.0	5.50	356.30	5,793.5	1,058.8	127.1	1,066.4	2.36	-2.18	
5,989.0	4.40	346.50	5,883.2	1,066.4	126.0	1,073.8	1.54	-1.22	
6,077.0	2.90	346.90	5,971.0	1,071.9	124.7	1,079.1	1.70	-1.70	
6,164.0	2.30	335.70	6,057.9	1,075.6	123.5	1,082.6	0.90	-0.69	
6,253.0	0.90	35.40	6,146.9	1,077.8	123.2	1,084.8	2.25	-1.57	
6,342.0	0.80	6.50	6,235.9	1,079.0	123.6	1,086.0	0.49	-0.11	
6,430.0	0.70	347.00	6,323.9	1,080.2	123.6	1,087.1	0.31	-0.11	
6,519.0	0.40	278.70	6,412.9	1,080.7	123.2	1,087.6	0.75	-0.34	
6,607.0	0.60	256.90	6,500.9	1,080.7	122.4	1,087.5	0.31	0.23	
6,695.0	0.90	239.40	6,588.8	1,080.2	121.4	1,086.9	0.43	0.34	
6,784.0	0.90	239.00	6,677.8	1,079.5	120.2	1,086.0	0.01	0.00	
6,874.0	1.10	225.80	6,767.8	1,078.5	118.9	1,084.9	0.34	0.22	
6,963.0	1.60	251.80	6,856.8	1,077.6	117.1	1,083.7	0.87	0.56	
7,053.0	1.50	245.60	6,946.8	1,076.7	114.9	1,082.6	0.22	-0.11	
7,142.0	1.60	243.70	7,035.7	1,075.6	112.7	1,081.3	0.13	0.11	
7,228.0	1.80	235.80	7,121.7	1,074.3	110.5	1,079.7	0.36	0.23	
7,318.0	2.10	230.90	7,211.6	1,072.5	108.1	1,077.6	0.38	0.33	
7,408.0	2.50	228.10	7,301.6	1,070.2	105.3	1,074.9	0.46	0.44	
7,497.0	1.90	239.00	7,390.5	1,068.1	102.6	1,072.5	0.82	-0.67	
7,585.0	0.90	261.20	7,478.5	1,067.3	100.7	1,071.4	1.27	-1.14	
7,672.0	0.50	270.00	7,565.5	1,067.1	99.6	1,071.2	0.47	-0.46	
7,761.0	0.40	321.30	7,654.5	1,067.4	99.0	1,071.4	0.45	-0.11	
7,849.0	0.70	3.30	7,742.5	1,068.2	98.9	1,072.1	0.55	0.34	
7,937.0	0.60	358.20	7,830.5	1,069.2	98.9	1,073.1	0.13	-0.11	
8,026.0	0.60	14.30	7,919.5	1,070.1	99.0	1,074.0	0.19	0.00	
8,048.0	0.60	14.60	7,941.5	1,070.3	99.1	1,074.3	0.01	0.00	Last Cathedral Survey @ 8,048' MD
8,105.0	0.60	14.60	7,998.5	1,070.9	99.2	1,074.9	0.00	0.00	Projectin to Bit @ 8,105'

### Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
Warner 23-18 PBHL	0.00	0.00	7,978.0	1,084.8	137.3	1,292,989.51	3,221,699.48	40.134922	-104.707094
- actual wellpath misses target center by 40.7ft at 8084.8ft MD (7978.2 TVD, 1070.7 N, 99.2 E)									
- Circle (radius 50.0)									

### Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates	Comment
		+N/-S (ft)	+E/-W (ft)
8,048.0	7,941.5	1,070.3	99.1
8,105.0	7,998.5	1,070.9	99.2
Last Cathedral Survey @ 8,048' MD			
Projectin to Bit @ 8,105'			

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