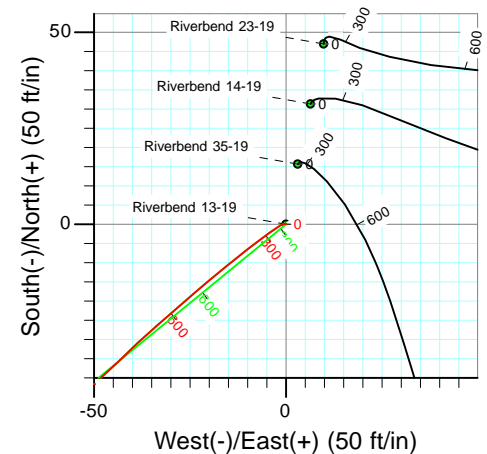


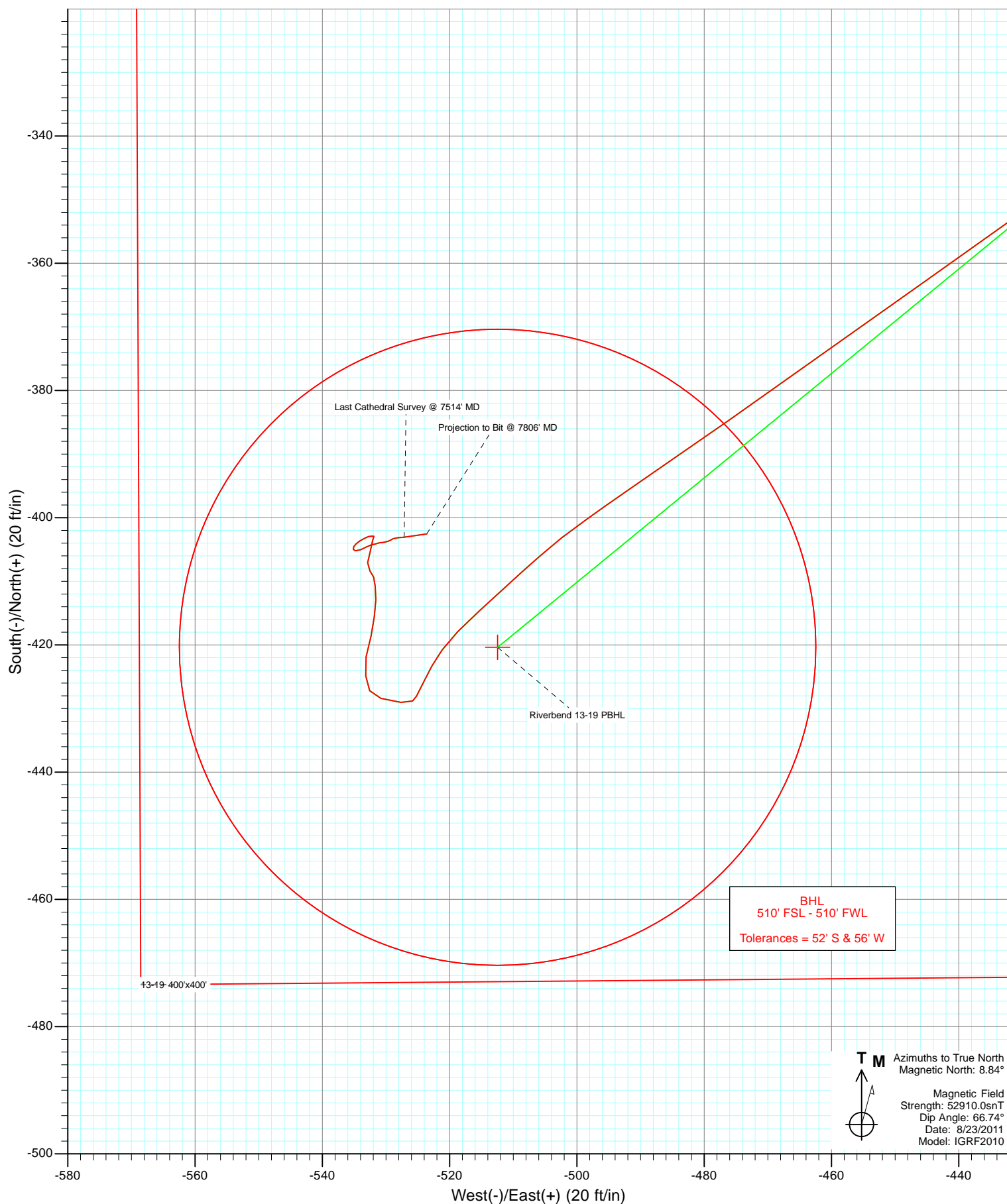
Azimuths to True North  
Magnetic North: 8.84°

Magnetic Field  
Strength: 52910.0snT  
Dip Angle: 66.74°  
Date: 8/23/2011  
Model: IGRF2010



DD  
Riverbend 13-19  
115395/107155; LR  
KBE @ 4951.0ft (Xtreme 14)  
North American Datum 1983  
Well Riverbend 13-19, True North

Type	Target	Azimuth	Origin Type	N/S	E/W	From TVD
Target	Riverbend 13-19 PBHL	230.64	Slot	0.0	0.0	0.0
Name	Riverbend 13-19 PBHL	TVD	+N/-S	Latitude	Longitude	
		7714.0	-420.4	40.030873	-104.827792	



# Cathedral Energy Services

## Survey Report

<b>Company:</b>	Anadarko Petroleum Corporation	<b>Local Co-ordinate Reference:</b>	Well Riverbend 13-19
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KBE @ 4951.0ft (Xtreme 14)
<b>Site:</b>	SWSW Sec19-T1N-R66W (Riverbend 5)	<b>MD Reference:</b>	KBE @ 4951.0ft (Xtreme 14)
<b>Well:</b>	Riverbend 13-19	<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		SWSW Sec19-T1N-R66W (Riverbend 5)			
Site Position:		Northing:	1,255,233.31 ft	Latitude:	40.032027
From:	Lat/Long	Easting:	3,188,750.05 ft	Longitude:	-104.825962
Position Uncertainty:	0.0 ft	Slot Radius:	0.000 in	Grid Convergence:	0.44 °

Well	Riverbend 13-19					
Well Position	+N/-S	0.0 ft	Northing:	1,255,233.30 ft	Latitude:	40.032027
	+E/-W	0.0 ft	Easting:	3,188,750.05 ft	Longitude:	-104.825962
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,929.0 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	8/23/2011	8.84	66.74	52,910

<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	230.64	

<b>Survey Program</b>	<b>Date</b>	9/24/2011			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
91.0	7,806.0	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		
91.0	0.30	349.70	91.0	0.2	0.0	-0.1	0.33	0.33		
184.0	1.80	241.20	184.0	-0.2	-1.4	1.2	2.06	1.61		
277.0	2.60	233.00	276.9	-2.2	-4.3	4.7	0.92	0.86		
371.0	4.30	232.50	370.7	-5.6	-8.8	10.4	1.81	1.81		
459.0	6.50	231.00	458.3	-10.8	-15.3	18.7	2.50	2.50		
545.0	8.10	229.40	543.6	-17.8	-23.7	29.6	1.88	1.86		
633.0	8.70	228.60	630.7	-26.2	-33.4	42.5	0.69	0.68		
723.0	9.80	225.80	719.5	-36.1	-44.0	56.9	1.32	1.22		
817.0	11.00	229.90	812.0	-47.4	-56.6	73.8	1.50	1.28		
902.0	11.60	229.80	895.3	-58.2	-69.3	90.5	0.71	0.71		
971.0	11.50	230.40	962.9	-67.0	-79.9	104.3	0.23	-0.14		
1,055.0	10.90	234.40	1,045.3	-77.0	-92.8	120.6	1.17	-0.71		

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	Anadarko Petroleum Corporation	<b>Local Co-ordinate Reference:</b>	Well Riverbend 13-19
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KBE @ 4951.0ft (Xtreme 14)
<b>Site:</b>	SWSW Sec19-T1N-R66W (Riverbend 5)	<b>MD Reference:</b>	KBE @ 4951.0ft (Xtreme 14)
<b>Well:</b>	Riverbend 13-19	<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
1,145.0	12.70	230.00	1,133.4	-88.3	-107.3	139.0	2.23	2.00	
1,233.0	11.10	227.20	1,219.5	-100.3	-121.0	157.1	1.93	-1.82	
1,320.0	12.40	218.40	1,304.7	-113.3	-132.9	174.6	2.54	1.49	
1,406.0	12.20	219.20	1,388.8	-127.6	-144.4	192.5	0.31	-0.23	
1,491.0	13.40	225.40	1,471.6	-141.4	-157.1	211.1	2.14	1.41	
1,583.0	13.60	229.90	1,561.1	-155.9	-172.9	232.6	1.16	0.22	
1,671.0	14.30	234.90	1,646.5	-168.8	-189.7	253.8	1.58	0.80	
1,759.0	14.20	233.80	1,731.8	-181.4	-207.3	275.4	0.33	-0.11	
1,849.0	13.30	236.00	1,819.2	-193.7	-224.8	296.7	1.16	-1.00	
1,938.0	12.70	234.10	1,905.9	-205.2	-241.3	316.7	0.83	-0.67	
2,028.0	11.70	233.00	1,993.9	-216.5	-256.6	335.7	1.14	-1.11	
2,115.0	11.50	229.70	2,079.1	-227.4	-270.2	353.1	0.80	-0.23	
2,203.0	12.10	231.60	2,165.3	-238.8	-284.1	371.1	0.81	0.68	
2,291.0	12.50	232.50	2,251.3	-250.3	-298.9	389.9	0.50	0.45	
2,378.0	12.00	234.80	2,336.3	-261.3	-313.8	408.3	0.80	-0.57	
2,466.0	11.30	229.90	2,422.5	-272.1	-327.8	426.1	1.38	-0.80	
2,554.0	11.00	230.10	2,508.8	-283.0	-340.9	443.1	0.34	-0.34	
2,643.0	10.80	240.50	2,596.2	-292.6	-354.7	459.8	2.22	-0.22	
2,733.0	9.60	237.30	2,684.8	-300.8	-368.3	475.5	1.47	-1.33	
2,823.0	10.20	226.90	2,773.4	-310.3	-380.4	490.9	2.09	0.67	
2,911.0	9.30	226.80	2,860.2	-320.5	-391.3	505.8	1.02	-1.02	
2,999.0	9.70	228.20	2,947.0	-330.3	-402.0	520.3	0.52	0.45	
3,089.0	10.70	232.60	3,035.5	-340.4	-414.3	536.2	1.41	1.11	
3,177.0	13.40	234.40	3,121.6	-351.3	-429.1	554.6	3.10	3.07	
3,265.0	12.90	234.80	3,207.3	-362.9	-445.4	574.6	0.58	-0.57	
3,352.0	12.90	234.50	3,292.1	-374.2	-461.3	593.9	0.08	0.00	
3,442.0	10.50	235.00	3,380.2	-384.7	-476.2	612.1	2.67	-2.67	
3,531.0	8.90	235.50	3,467.9	-393.3	-488.5	627.1	1.80	-1.80	
3,619.0	6.90	234.50	3,555.1	-400.2	-498.4	639.1	2.28	-2.27	
3,707.0	5.20	228.40	3,642.6	-405.9	-505.7	648.4	2.06	-1.93	
3,795.0	4.20	227.40	3,730.3	-410.7	-511.0	655.6	1.14	-1.14	
3,884.0	3.30	227.50	3,819.1	-414.7	-515.3	661.4	1.01	-1.01	
3,972.0	2.80	224.80	3,907.0	-417.9	-518.7	666.1	0.59	-0.57	
4,060.0	2.20	215.00	3,994.9	-420.8	-521.2	669.8	0.83	-0.68	
4,148.0	1.70	209.40	4,082.9	-423.3	-522.8	672.7	0.61	-0.57	
4,236.0	1.60	204.80	4,170.8	-425.6	-524.0	675.0	0.19	-0.11	
4,325.0	2.00	208.40	4,259.8	-428.1	-525.2	677.6	0.47	0.45	
4,415.0	2.20	284.50	4,349.7	-429.0	-527.6	680.0	2.88	0.22	
4,503.0	2.00	278.00	4,437.7	-428.4	-530.8	682.1	0.35	-0.23	
4,592.0	1.30	346.90	4,526.6	-427.2	-532.6	682.7	2.20	-0.79	
4,681.0	1.80	343.70	4,615.6	-424.9	-533.2	681.7	0.57	0.56	
4,770.0	2.20	15.80	4,704.6	-421.9	-533.1	679.7	1.32	0.45	
4,858.0	2.20	10.80	4,792.5	-418.6	-532.3	677.1	0.22	0.00	
4,948.0	1.80	7.50	4,882.4	-415.5	-531.8	674.7	0.46	-0.44	
5,036.0	1.60	2.60	4,970.4	-412.9	-531.6	672.9	0.28	-0.23	
5,124.0	1.20	349.40	5,058.4	-410.8	-531.7	671.6	0.58	-0.45	
5,212.0	0.70	353.60	5,146.4	-409.3	-531.9	670.9	0.57	-0.57	
5,300.0	0.90	309.40	5,234.4	-408.4	-532.5	670.7	0.72	0.23	
5,389.0	1.10	12.20	5,323.3	-407.1	-532.9	670.2	1.19	0.22	
5,479.0	1.30	13.80	5,413.3	-405.2	-532.5	668.7	0.23	0.22	
5,568.0	0.90	10.80	5,502.3	-403.6	-532.1	667.3	0.45	-0.45	
5,658.0	0.10	132.80	5,592.3	-402.9	-531.9	666.8	1.06	-0.89	
5,745.0	0.40	288.80	5,679.3	-402.9	-532.1	666.9	0.57	0.34	

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	Anadarko Petroleum Corporation	<b>Local Co-ordinate Reference:</b>	Well Riverbend 13-19
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KBE @ 4951.0ft (Xtreme 14)
<b>Site:</b>	SWSW Sec19-T1N-R66W (Riverbend 5)	<b>MD Reference:</b>	KBE @ 4951.0ft (Xtreme 14)
<b>Well:</b>	Riverbend 13-19	<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
5,832.0	0.50	243.00	5,766.3	-403.0	-532.7	667.5	0.42	0.11	
5,922.0	0.50	248.00	5,856.3	-403.3	-533.5	668.2	0.05	0.00	
6,010.0	0.50	231.50	5,944.3	-403.7	-534.1	669.0	0.16	0.00	
6,098.0	0.40	235.60	6,032.3	-404.1	-534.7	669.7	0.12	-0.11	
6,188.0	0.40	200.30	6,122.3	-404.6	-535.0	670.2	0.27	0.00	
6,276.0	0.20	164.70	6,210.3	-405.0	-535.1	670.6	0.30	-0.23	
6,362.0	0.40	98.80	6,296.3	-405.2	-534.8	670.4	0.43	0.23	
6,450.0	0.70	68.60	6,384.3	-405.0	-534.0	669.7	0.46	0.34	
6,538.0	0.70	60.00	6,472.3	-404.6	-533.0	668.7	0.12	0.00	
6,626.0	0.40	80.40	6,560.3	-404.2	-532.2	667.9	0.40	-0.34	
6,716.0	0.30	76.80	6,650.3	-404.1	-531.7	667.4	0.11	-0.11	
6,805.0	0.20	67.20	6,739.3	-404.0	-531.3	667.0	0.12	-0.11	
6,895.0	0.30	80.30	6,829.3	-403.9	-530.9	666.7	0.13	0.11	
6,981.0	0.30	88.50	6,915.3	-403.9	-530.5	666.3	0.05	0.00	
7,071.0	0.20	67.60	7,005.3	-403.8	-530.1	666.0	0.15	-0.11	
7,160.0	0.30	82.40	7,094.3	-403.7	-529.7	665.6	0.13	0.11	
7,248.0	0.30	57.40	7,182.3	-403.6	-529.3	665.2	0.15	0.00	
7,336.0	0.40	59.00	7,270.3	-403.3	-528.9	664.7	0.11	0.11	
7,425.0	0.60	91.50	7,359.3	-403.1	-528.1	664.0	0.38	0.22	
7,514.0	0.70	81.60	7,448.3	-403.1	-527.1	663.2	0.17	0.11	Last Cathedral Survey @ 7514' MD
7,806.0	0.70	81.60	7,740.2	-402.6	-523.6	660.1	0.00	0.00	Projection to Bit @ 7806' MD

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									
Riverbend 13-19 PBHL	0.00	0.00	7,714.0	-420.4	-512.5	1,254,809.05	3,188,240.81	40.030873	-104.827792
- survey misses target center by 21.1ft at 7779.9ft MD (7714.1 TVD, -402.6 N, -523.9 E)									
- Circle (radius 50.0)									

Survey Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
7,514.0	7,448.3	-403.1	-527.1	Last Cathedral Survey @ 7514' MD	
7,806.0	7,740.2	-402.6	-523.6	Projection to Bit @ 7806' MD	

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