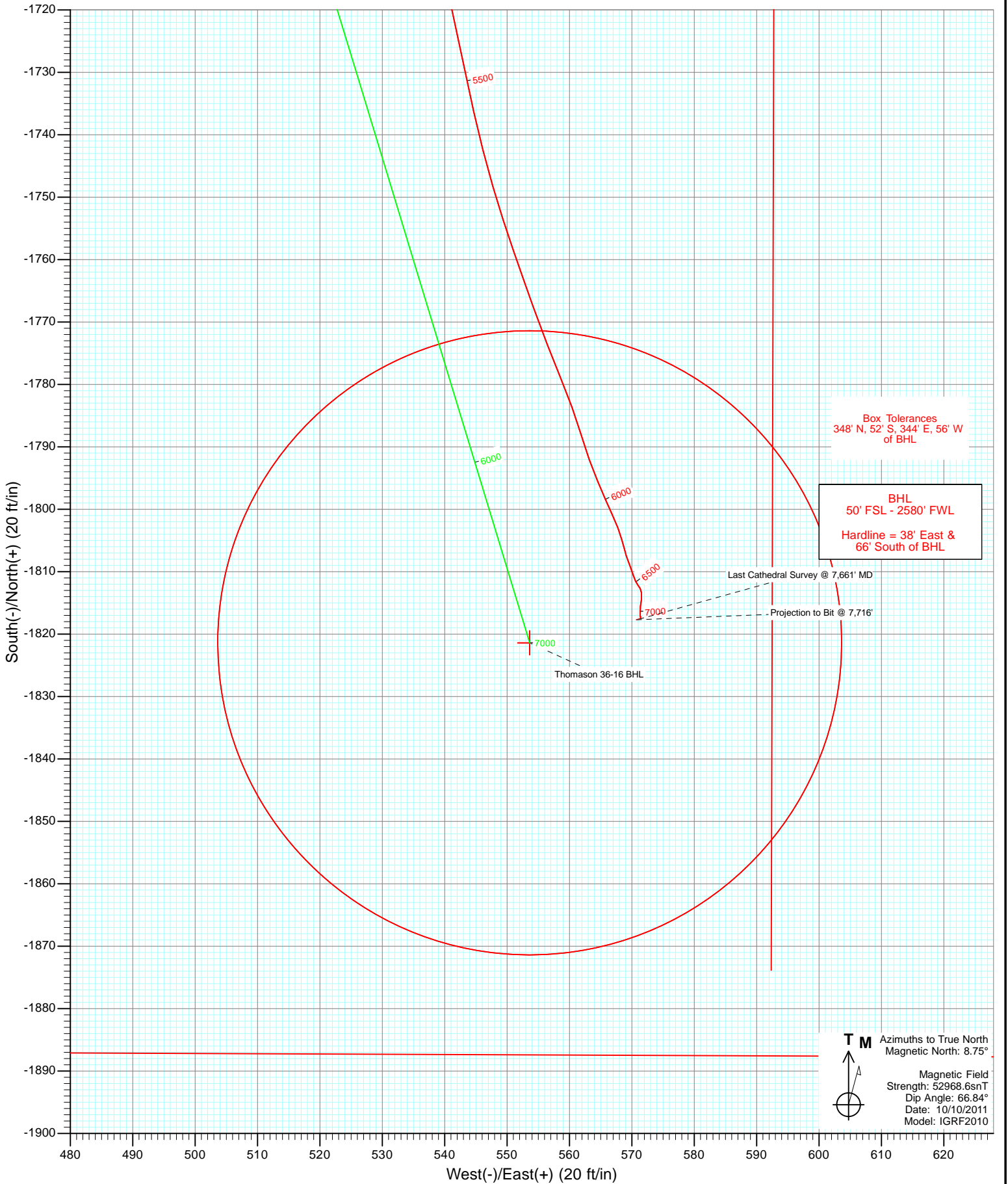


Azimuths to True North  
Magnetic North: 8.75°

Magnetic Field  
Strength: 52968.6snT  
Dip Angle: 66.84°  
Date: 10/10/2011  
Model: IGRF2010

DD Thomason 36-16 113655, 115454; BH KBE @ 4907.0ft (Xtreme 14) North American Datum 1983 Well Thomason 36-16, True North						
Type	Target	Azimuth	Origin Type	N/S	E/W	From TVD
User	No Target (Freehand)	162.57	Slot	0.0	0.0	0.0
Name		+N/-S	+E/-W	Latitude		Longitude
Thomason 36-16 TGT	6415.0	-1821.4	553.6	40.131604		-104.669196
Thomason 36-16 BHL	7360.0	-1821.4	553.6	40.131604		-104.669196



# Cathedral Energy Services

## Survey Report

<b>Company:</b> Anadarko Petroleum Corporation	<b>Local Co-ordinate Reference:</b> Well Thomason 36-16
<b>Project:</b> DJ Wattenberg	<b>TVD Reference:</b> KBE @ 4907.0ft (Xtreme 14)
<b>Site:</b> S16-T2N-R65W (Thomason 6 pad)	<b>MD Reference:</b> KBE @ 4907.0ft (Xtreme 14)
<b>Well:</b> Thomason 36-16	<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		

<b>Site</b> S16-T2N-R65W (Thomason 6 pad)				
<b>Site Position:</b>	<b>Northing:</b>	1,293,758.15 ft	<b>Latitude:</b>	40.136780
<b>From:</b> Lat/Long	<b>Easting:</b>	3,231,735.68 ft	<b>Longitude:</b>	-104.671175
<b>Position Uncertainty:</b> 0.0 ft	<b>Slot Radius:</b> 13.200 in		<b>Grid Convergence:</b>	0.54 °

<b>Well</b> Thomason 36-16				
<b>Well Position</b>	<b>+N/-S</b>	0.0 ft	<b>Northing:</b>	1,293,694.03 ft
	<b>+E/-W</b>	0.0 ft	<b>Easting:</b>	3,231,736.00 ft
<b>Position Uncertainty</b>		0.0 ft	<b>Wellhead Elevation:</b>	ft
			<b>Latitude:</b>	40.136604
			<b>Longitude:</b>	-104.671176
			<b>Ground Level:</b>	4,885.0 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	10/10/2011	8.75	66.84	52,969

<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) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	162.57

<b>Survey Program</b>		<b>Date</b> 10/19/2011
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>
107.0	7,716.0	Survey #1 (DD)
		<b>Tool Name</b>
		MWD
		<b>Description</b>
		Geolink MWD

<b>Survey</b>									
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	
107.0	0.70	100.40	107.0	-0.1	0.6	0.3	0.65	0.65	
200.0	1.00	149.50	200.0	-0.9	1.6	1.4	0.81	0.32	
294.0	2.40	163.20	293.9	-3.5	2.6	4.1	1.54	1.49	
401.0	4.10	164.00	400.8	-9.3	4.3	10.2	1.59	1.59	
492.0	5.80	163.40	491.4	-16.9	6.5	18.0	1.87	1.87	
582.0	7.70	161.30	580.8	-26.9	9.7	28.6	2.13	2.11	
672.0	9.50	164.10	669.8	-39.8	13.7	42.1	2.05	2.00	
760.0	11.10	156.70	756.4	-54.6	19.1	57.8	2.36	1.82	
850.0	12.10	160.00	844.5	-71.4	25.7	75.8	1.33	1.11	
890.0	12.00	159.10	883.6	-79.2	28.6	84.1	0.53	-0.25	
981.0	12.10	159.10	972.6	-97.0	35.4	103.1	0.11	0.11	
1,070.0	13.10	160.20	1,059.5	-115.2	42.1	122.5	1.16	1.12	

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	Anadarko Petroleum Corporation	<b>Local Co-ordinate Reference:</b>	Well Thomason 36-16
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KBE @ 4907.0ft (Xtreme 14)
<b>Site:</b>	S16-T2N-R65W (Thomason 6 pad)	<b>MD Reference:</b>	KBE @ 4907.0ft (Xtreme 14)
<b>Well:</b>	Thomason 36-16	<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
1,158.0	14.50	163.80	1,145.0	-135.1	48.6	143.5	1.87	1.59	
1,248.0	16.30	165.10	1,231.7	-158.1	55.0	167.4	2.04	2.00	
1,337.0	18.00	166.50	1,316.8	-183.6	61.4	193.6	1.97	1.91	
1,427.0	20.20	161.10	1,401.8	-211.8	69.7	223.0	3.13	2.44	
1,517.0	21.90	162.60	1,485.8	-242.5	79.7	255.3	1.98	1.89	
1,607.0	21.80	159.70	1,569.3	-274.2	90.6	288.8	1.20	-0.11	
1,695.0	21.90	158.50	1,651.0	-304.8	102.2	321.5	0.52	0.11	
1,783.0	21.10	158.40	1,732.9	-334.8	114.1	353.6	0.91	-0.91	
1,861.0	21.60	159.60	1,805.5	-361.3	124.3	382.0	0.85	0.64	
1,949.0	21.50	158.10	1,887.4	-391.5	135.9	414.2	0.64	-0.11	
2,037.0	21.90	162.70	1,969.2	-422.1	146.8	446.7	1.98	0.45	
2,125.0	21.20	163.80	2,051.0	-453.1	156.1	479.0	0.92	-0.80	
2,215.0	20.60	162.30	2,135.1	-483.8	165.5	511.1	0.89	-0.67	
2,304.0	19.90	159.30	2,218.6	-512.9	175.6	541.9	1.41	-0.79	
2,394.0	19.10	162.70	2,303.4	-541.2	185.4	571.9	1.54	-0.89	
2,482.0	19.30	162.50	2,386.5	-568.9	194.1	600.9	0.24	0.23	
2,570.0	19.30	164.70	2,469.6	-596.8	202.3	629.9	0.83	0.00	
2,658.0	19.00	167.40	2,552.7	-624.8	209.2	658.8	1.06	-0.34	
2,747.0	19.10	164.30	2,636.8	-652.9	216.3	687.7	1.14	0.11	
2,835.0	20.10	162.10	2,719.7	-681.2	224.9	717.3	1.41	1.14	
2,925.0	23.30	164.80	2,803.4	-713.1	234.3	750.5	3.72	3.56	
3,012.0	25.00	166.20	2,882.7	-747.5	243.2	786.1	2.06	1.95	
3,100.0	25.30	162.90	2,962.4	-783.6	253.2	823.4	1.63	0.34	
3,190.0	23.40	161.70	3,044.4	-818.9	264.4	860.5	2.18	-2.11	
3,280.0	24.40	164.50	3,126.7	-853.8	275.0	897.0	1.68	1.11	
3,369.0	24.70	162.80	3,207.6	-889.3	285.4	933.9	0.86	0.34	
3,457.0	24.30	162.20	3,287.7	-924.1	296.4	970.4	0.54	-0.45	
3,547.0	23.40	161.80	3,370.0	-958.7	307.6	1,006.8	1.02	-1.00	
3,637.0	22.70	164.50	3,452.8	-992.4	317.9	1,042.1	1.41	-0.78	
3,723.0	21.60	167.10	3,532.5	-1,023.8	325.8	1,074.4	1.71	-1.28	
3,811.0	21.90	162.10	3,614.2	-1,055.2	334.5	1,107.0	2.13	0.34	
3,899.0	22.00	163.80	3,695.9	-1,086.7	344.1	1,139.9	0.73	0.11	
3,989.0	22.90	165.60	3,779.0	-1,119.8	353.2	1,174.2	1.26	1.00	
4,075.0	22.60	164.50	3,858.3	-1,152.0	361.8	1,207.4	0.61	-0.35	
4,163.0	22.40	162.30	3,939.7	-1,184.2	371.4	1,241.1	0.98	-0.23	
4,252.0	25.00	157.00	4,021.1	-1,217.7	383.9	1,276.8	3.77	2.92	
4,341.0	23.90	160.30	4,102.2	-1,252.0	397.3	1,313.5	1.97	-1.24	
4,431.0	22.00	156.20	4,185.0	-1,284.6	410.3	1,348.5	2.76	-2.11	
4,519.0	21.80	156.20	4,266.7	-1,314.6	423.5	1,381.1	0.23	-0.23	
4,609.0	20.90	160.90	4,350.5	-1,345.1	435.5	1,413.8	2.15	-1.00	
4,697.0	21.70	157.30	4,432.5	-1,374.9	446.9	1,445.7	1.74	0.91	
4,787.0	22.00	160.30	4,516.1	-1,406.1	459.0	1,479.1	1.28	0.33	
4,876.0	21.10	164.80	4,598.8	-1,437.3	468.9	1,511.8	2.11	-1.01	
4,962.0	22.80	165.80	4,678.6	-1,468.4	477.0	1,543.9	2.02	1.98	
5,052.0	20.50	167.00	4,762.2	-1,500.7	484.8	1,577.0	2.60	-2.56	
5,138.0	18.40	167.90	4,843.3	-1,528.6	491.1	1,605.5	2.47	-2.44	
5,227.0	17.90	164.30	4,927.9	-1,555.5	497.7	1,633.2	1.38	-0.56	
5,316.0	18.50	162.90	5,012.5	-1,582.2	505.6	1,661.0	0.83	0.67	
5,405.0	21.10	165.60	5,096.2	-1,611.2	513.7	1,691.1	3.10	2.92	
5,495.0	18.70	165.50	5,180.8	-1,640.9	521.3	1,721.7	2.67	-2.67	
5,583.0	17.10	164.90	5,264.5	-1,667.0	528.2	1,748.7	1.83	-1.82	
5,671.0	16.00	165.60	5,348.9	-1,691.2	534.6	1,773.7	1.27	-1.25	
5,761.0	15.40	168.40	5,435.5	-1,715.0	540.1	1,798.0	1.07	-0.67	

# Cathedral Energy Services

## Survey Report

<b>Company:</b> Anadarko Petroleum Corporation	<b>Local Co-ordinate Reference:</b> Well Thomason 36-16
<b>Project:</b> DJ Wattenberg	<b>TVD Reference:</b> KBE @ 4907.0ft (Xtreme 14)
<b>Site:</b> S16-T2N-R65W (Thomason 6 pad)	<b>MD Reference:</b> KBE @ 4907.0ft (Xtreme 14)
<b>Well:</b> Thomason 36-16	<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
5,849.0	13.20	167.40	5,520.8	-1,736.2	544.7	1,819.6	2.52	-2.50	
5,935.0	11.00	161.70	5,604.9	-1,753.6	549.4	1,837.6	2.91	-2.56	
6,023.0	8.60	159.90	5,691.6	-1,767.8	554.3	1,852.6	2.75	-2.73	
6,111.0	7.00	157.60	5,778.8	-1,778.9	558.6	1,864.5	1.85	-1.82	
6,200.0	5.60	163.30	5,867.3	-1,788.1	561.9	1,874.3	1.72	-1.57	
6,288.0	4.50	157.20	5,954.9	-1,795.4	564.5	1,882.0	1.39	-1.25	
6,378.0	3.20	155.10	6,044.7	-1,800.9	566.9	1,888.0	1.45	-1.44	
6,466.0	2.30	164.50	6,132.6	-1,804.8	568.4	1,892.2	1.14	-1.02	
6,556.0	1.20	165.90	6,222.6	-1,807.5	569.1	1,895.0	1.22	-1.22	
6,645.0	1.10	152.80	6,311.5	-1,809.1	569.7	1,896.7	0.32	-0.11	
6,732.0	0.90	169.90	6,398.5	-1,810.6	570.2	1,898.2	0.41	-0.23	
6,822.0	0.50	138.70	6,488.5	-1,811.5	570.6	1,899.3	0.60	-0.44	
6,910.0	0.50	155.80	6,576.5	-1,812.2	571.0	1,900.0	0.17	0.00	
6,998.0	0.30	130.90	6,664.5	-1,812.7	571.3	1,900.6	0.30	-0.23	
7,087.0	0.70	177.00	6,753.5	-1,813.4	571.6	1,901.3	0.60	0.45	
7,176.0	0.70	184.20	6,842.5	-1,814.5	571.5	1,902.4	0.10	0.00	
7,266.0	0.70	192.80	6,932.5	-1,815.5	571.4	1,903.3	0.12	0.00	
7,354.0	0.70	171.60	7,020.5	-1,816.6	571.3	1,904.3	0.29	0.00	
7,443.0	0.10	243.50	7,109.5	-1,817.2	571.3	1,904.9	0.76	-0.67	
7,533.0	0.20	98.20	7,199.5	-1,817.2	571.4	1,905.0	0.32	0.11	
7,620.0	0.40	221.90	7,286.5	-1,817.5	571.4	1,905.2	0.62	0.23	
7,661.0	0.40	259.40	7,327.5	-1,817.6	571.1	1,905.2	0.63	0.00	Last Cathedral Survey @ 7,661' MD
7,716.0	0.40	259.40	7,382.5	-1,817.7	570.8	1,905.2	0.00	0.00	Projection to Bit @ 7,716'

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Thomason 36-16 TGT - hit/miss target - Shape	0.00	0.00	6,415.0	-1,821.4	553.6	1,291,877.89	3,232,306.63	40.131604	-104.669196
- survey misses target center by 19.7ft at 6748.5ft MD (6415.0 TVD, -1810.8 N, 570.3 E)									
- Point									
Thomason 36-16 BHL - survey misses target center by 17.7ft at 7693.6ft MD (7360.1 TVD, -1817.7 N, 570.9 E)	0.00	0.00	7,360.0	-1,821.4	553.6	1,291,877.89	3,232,306.63	40.131604	-104.669196
- Circle (radius 50.0)									

Survey Annotations				
Measured Depth (ft)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment
7,661.0	7,327.5	-1,817.6	571.1	Last Cathedral Survey @ 7,661' MD
7,716.0	7,382.5	-1,817.7	570.8	Projection to Bit @ 7,716'

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