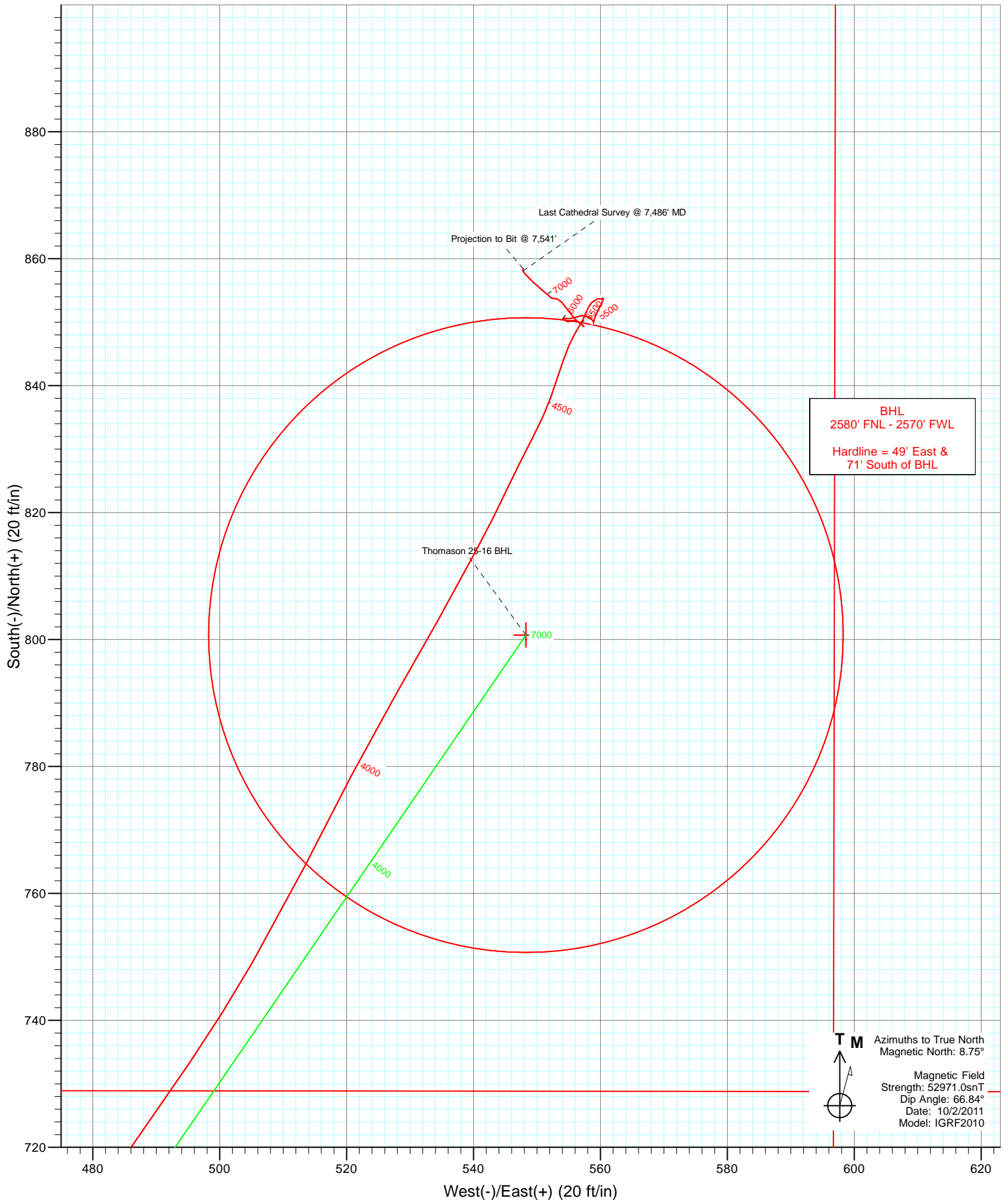


Azimuths to True North
Magnetic North: 8.75°

Magnetic Field
Strength: 52971.0snT
Dip Angle: 66.84°
Date: 10/2/2011
Model: IGRF2010

DD Thomason 25-16R 115426; BH KBE @ 4907.0ft (Xtreme 14) North American Datum 1983 Well Thomason 25-16R, True North						
Type	Target	Azimuth	Origin	Type	N/S	E/W
Target	Thomason 25-16 BHL	34.40	Slot		0.0	0.0
						From TVD
						0.0
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	
Thomason 25-16 TGT	4495.0	800.7	548.3	40.138890	-104.669214	
Thomason 25-16 BHL	7360.0	800.7	548.3	40.138890	-104.669214	



Cathedral Energy Services

Survey Report

Company:	Anadarko Petroleum Corporation	Local Co-ordinate Reference:	Well Thomason 25-16R
Project:	DJ Wattenberg	TVD Reference:	KBE @ 4907.0ft (Xtreme 14)
Site:	S16-T2N-R65W (Thomason 6 pad)	MD Reference:	KBE @ 4907.0ft (Xtreme 14)
Well:	Thomason 25-16R	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	Database:	USA EDM 5000 Multi Users DB

Project	DJ Wattenberg		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

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

Well	Thomason 25-16R					
Well Position	+N/-S	0.0 ft	Northing:	1,293,726.08 ft	Latitude:	40.136692
	+E/-W	0.0 ft	Easting:	3,231,735.98 ft	Longitude:	-104.671175
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,885.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	10/2/2011	8.75	66.84	52,971

Design	DD				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.0	0.0	0.0	34.40	

Survey Program	Date	10/8/2011			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
153.0	7,541.0	Survey #1 (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		
153.0	0.70	336.10	153.0	0.9	-0.4	0.5	0.46	0.46		
246.0	1.00	8.30	246.0	2.2	-0.5	1.5	0.59	0.32		
340.0	1.00	340.60	340.0	3.8	-0.6	2.7	0.51	0.00		
461.0	1.30	343.60	460.9	6.1	-1.4	4.2	0.25	0.25		
547.0	2.20	353.10	546.9	8.6	-1.9	6.1	1.10	1.05		
637.0	2.20	350.50	636.8	12.1	-2.4	8.6	0.11	0.00		
725.0	2.30	356.40	724.8	15.5	-2.7	11.2	0.29	0.11		
814.0	3.30	13.30	813.7	19.8	-2.3	15.0	1.45	1.12		
902.0	3.80	26.90	901.5	24.8	-0.4	20.3	1.11	0.57		
998.0	3.60	24.70	997.3	30.4	2.3	26.4	0.26	-0.21		
1,130.0	6.50	31.30	1,128.8	40.6	8.0	38.0	2.24	2.20		
1,218.0	8.90	30.00	1,216.0	50.7	13.9	49.7	2.73	2.73		

Cathedral Energy Services

Survey Report

Company:	Anadarko Petroleum Corporation	Local Co-ordinate Reference:	Well Thomason 25-16R
Project:	DJ Wattenberg	TVD Reference:	KBE @ 4907.0ft (Xtreme 14)
Site:	S16-T2N-R65W (Thomason 6 pad)	MD Reference:	KBE @ 4907.0ft (Xtreme 14)
Well:	Thomason 25-16R	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
1,304.0	10.30	31.30	1,300.8	63.0	21.3	64.0	1.65	1.63	
1,391.0	11.30	38.00	1,386.2	76.4	30.6	80.3	1.84	1.15	
1,481.0	12.90	39.90	1,474.2	91.1	42.4	99.1	1.83	1.78	
1,567.0	14.70	39.60	1,557.7	106.8	55.5	119.5	2.09	2.09	
1,656.0	16.30	40.50	1,643.5	125.0	70.9	143.2	1.82	1.80	
1,744.0	17.00	42.40	1,727.8	143.9	87.5	168.2	1.01	0.80	
1,832.0	18.10	39.20	1,811.7	164.0	104.9	194.6	1.66	1.25	
1,920.0	18.70	37.80	1,895.2	185.8	122.1	222.3	0.85	0.68	
2,009.0	19.20	40.00	1,979.4	208.2	140.3	251.1	0.98	0.56	
2,098.0	20.40	38.50	2,063.1	231.6	159.4	281.1	1.46	1.35	
2,188.0	21.10	38.30	2,147.3	256.6	179.2	312.9	0.78	0.78	
2,277.0	21.90	34.30	2,230.1	282.9	198.5	345.5	1.88	0.90	
2,366.0	22.00	31.90	2,312.7	310.7	216.6	378.8	1.01	0.11	
2,454.0	22.80	27.60	2,394.0	339.8	233.2	412.2	2.07	0.91	
2,544.0	22.00	27.60	2,477.2	370.2	249.1	446.2	0.89	-0.89	
2,632.0	21.40	29.20	2,559.0	398.9	264.6	478.6	0.96	-0.68	
2,721.0	21.50	33.10	2,641.8	426.7	281.4	511.1	1.61	0.11	
2,809.0	20.70	37.40	2,723.9	452.6	299.7	542.7	1.98	-0.91	
2,898.0	21.00	33.10	2,807.1	478.4	317.9	574.4	1.75	0.34	
2,986.0	22.30	34.20	2,888.9	505.4	335.9	606.8	1.55	1.48	
3,074.0	23.30	36.30	2,970.0	533.3	355.6	640.9	1.46	1.14	
3,163.0	21.00	36.30	3,052.4	560.3	375.5	674.5	2.58	-2.58	
3,253.0	20.70	32.90	3,136.6	586.7	393.7	706.5	1.39	-0.33	
3,341.0	20.20	36.30	3,219.0	612.0	411.1	737.2	1.46	-0.57	
3,429.0	19.10	33.80	3,301.9	636.2	428.1	766.8	1.57	-1.25	
3,516.0	16.80	32.00	3,384.7	658.7	442.7	793.6	2.72	-2.64	
3,605.0	15.40	35.00	3,470.2	679.3	456.3	818.3	1.83	-1.57	
3,693.0	15.20	37.60	3,555.0	698.0	470.0	841.5	0.81	-0.23	
3,781.0	14.90	35.00	3,640.0	716.4	483.6	864.3	0.84	-0.34	
3,869.0	12.40	34.20	3,725.5	733.5	495.4	885.1	2.85	-2.84	
3,957.0	11.70	29.80	3,811.6	749.0	505.1	903.4	1.31	-0.80	
4,045.0	11.00	27.20	3,897.9	764.2	513.4	920.6	0.99	-0.80	
4,135.0	9.80	27.40	3,986.4	778.7	520.8	936.8	1.33	-1.33	
4,225.0	9.00	30.10	4,075.2	791.6	527.9	951.4	1.01	-0.89	
4,401.0	7.60	28.10	4,249.3	813.7	540.3	976.7	0.81	-0.80	
4,491.0	6.50	25.30	4,338.7	823.6	545.3	987.6	1.28	-1.22	
4,579.0	5.40	27.80	4,426.2	831.8	549.3	996.7	1.28	-1.25	
4,645.2	4.31	21.59	4,492.2	836.8	551.7	1,002.2	1.82	-1.64	Thomason 25-16 TGT
4,665.0	4.00	19.10	4,511.9	838.2	552.2	1,003.6	1.82	-1.58	
4,755.0	3.70	18.50	4,601.7	843.9	554.1	1,009.4	0.34	-0.33	
4,844.0	2.10	31.20	4,690.6	848.0	555.9	1,013.8	1.93	-1.80	
5,021.0	1.10	20.00	4,867.5	852.4	558.2	1,018.7	0.59	-0.56	
5,111.0	1.50	66.70	4,957.5	853.7	559.5	1,020.5	1.22	0.44	
5,200.0	0.60	189.60	5,046.5	853.7	560.5	1,021.1	2.13	-1.01	
5,289.0	1.60	211.00	5,135.4	852.1	559.8	1,019.4	1.20	1.12	
5,379.0	0.40	186.40	5,225.4	850.8	559.1	1,017.9	1.39	-1.33	
5,467.0	0.50	198.20	5,313.4	850.1	559.0	1,017.2	0.15	0.11	
5,556.0	0.20	26.30	5,402.4	849.9	558.9	1,017.0	0.78	-0.34	
5,644.0	0.30	328.20	5,490.4	850.2	558.9	1,017.2	0.29	0.11	
5,734.0	0.70	313.10	5,580.4	850.8	558.3	1,017.4	0.46	0.44	
5,823.0	1.10	263.60	5,669.4	851.0	557.1	1,016.9	0.94	0.45	
5,912.0	0.70	239.50	5,758.4	850.7	555.8	1,015.9	0.61	-0.45	
6,002.0	0.40	299.10	5,848.4	850.5	555.0	1,015.4	0.67	-0.33	

Cathedral Energy Services

Survey Report

Company:	Anadarko Petroleum Corporation	Local Co-ordinate Reference:	Well Thomason 25-16R
Project:	DJ Wattenberg	TVD Reference:	KBE @ 4907.0ft (Xtreme 14)
Site:	S16-T2N-R65W (Thomason 6 pad)	MD Reference:	KBE @ 4907.0ft (Xtreme 14)
Well:	Thomason 25-16R	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
6,090.0	0.70	263.80	5,936.4	850.6	554.2	1,015.0	0.50	0.34	
6,176.0	0.70	110.50	6,022.4	850.4	554.2	1,014.8	1.58	0.00	
6,265.0	0.30	125.80	6,111.4	850.1	554.9	1,014.9	0.47	-0.45	
6,353.0	0.70	56.80	6,199.4	850.2	555.5	1,015.4	0.74	0.45	
6,441.0	0.50	134.50	6,287.4	850.3	556.2	1,015.8	0.87	-0.23	
6,531.0	1.20	124.60	6,377.4	849.4	557.3	1,015.7	0.79	0.78	
6,620.0	1.00	300.80	6,466.4	849.3	557.4	1,015.7	2.47	-0.22	
6,708.0	1.40	315.50	6,554.3	850.5	556.0	1,015.9	0.57	0.45	
6,888.0	0.80	333.70	6,734.3	853.2	553.9	1,016.9	0.38	-0.33	
6,977.0	0.60	265.80	6,823.3	853.7	553.2	1,016.9	0.90	-0.22	
7,065.0	0.50	286.30	6,911.3	853.8	552.3	1,016.5	0.25	-0.11	
7,153.0	0.80	325.50	6,999.3	854.4	551.6	1,016.6	0.59	0.34	
7,241.0	1.00	298.00	7,087.3	855.2	550.6	1,016.7	0.53	0.23	
7,329.0	1.50	322.10	7,175.3	856.5	549.2	1,017.0	0.81	0.57	
7,417.0	0.60	298.00	7,263.3	857.6	548.1	1,017.3	1.12	-1.02	
7,486.0	0.40	6.50	7,332.3	858.1	547.8	1,017.5	0.85	-0.29	Last Cathedral Survey @ 7,486' MD - Thomason Projection to Bit @ 7,541'
7,541.0	0.40	6.50	7,387.2	858.4	547.8	1,017.8	0.00	0.00	

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									
Thomason 25-16 BHL	0.00	0.00	7,360.0	800.7	548.3	1,294,531.88	3,232,276.73	40.138890	-104.669214
- survey misses target center by 63.7ft at 7486.0ft MD (7332.3 TVD, 858.1 N, 547.8 E)									
- Circle (radius 50.0)									
Thomason 25-16 TGT	0.00	0.00	4,495.0	800.7	548.3	1,294,531.88	3,232,276.73	40.138890	-104.669214
- survey misses target center by 36.4ft at 4645.5ft MD (4492.5 TVD, 836.9 N, 551.7 E)									
- Point									

Survey Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
7,486.0	7,332.3	858.1	547.8	Last Cathedral Survey @ 7,486' MD	
7,541.0	7,387.2	858.4	547.8	Projection to Bit @ 7,541'	

Checked By: _____ Approved By: _____ Date: _____