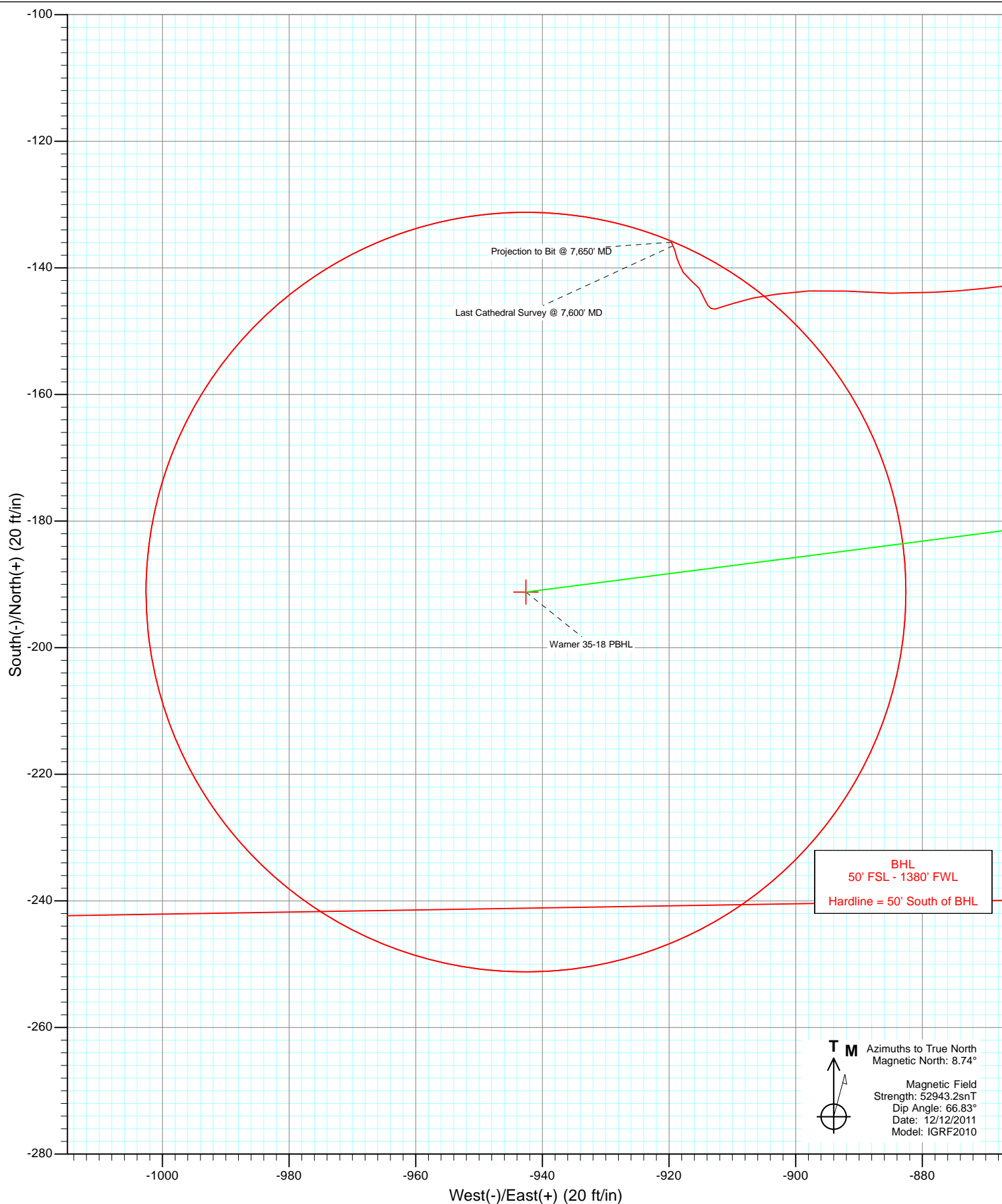


Azimuths to True North
Magnetic North: 8.74°

Magnetic Field
Strength: 52943.2snT
Dip Angle: 66.83°
Date: 12/12/2011
Model: IGRF2010

DD Warner 35-18 115563 129355; LR KBE @ 5008.0ft (Xtreme 14) North American Datum 1983 Well Warner 35-18, True North						
Type Target	Target Warner 35-18 PBHL	Azimuth 258.53	Origin Type Slot	N/S 0.0	E/W 0.0	From TVD 0.0
Name Warner 35-18 PBHL	TVD 7533.0	+N/-S -191.2	+E/-W -942.6	Latitude 40.131336	Longitude -104.710992	



Cathedral Energy Services

Survey Report

Company:	Anadarko Petroleum Corporation	Local Co-ordinate Reference:	Well Warner 35-18
Project:	DJ Wattenberg	TVD Reference:	KBE @ 5008.0ft (Xtreme 14)
Site:	SESW Sec18-T2N-R65W (Warner)	MD Reference:	KBE @ 5008.0ft (Xtreme 14)
Well:	Warner 35-18	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		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 35-18					
Well Position	+N/-S	0.0 ft	Northing:	1,291,873.16 ft	Latitude:	40.131861
	+E/-W	0.0 ft	Easting:	3,221,562.10 ft	Longitude:	-104.707621
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,993.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	12/12/2011	8.74	66.83	52,943

Design	DD				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(ft)	(ft)	(ft)	(°)	
	0.0	0.0	0.0	258.53	

Survey Program	Date	12/19/2011			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
119.0	7,650.0	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		
119.0	0.40	127.70	119.0	-0.3	0.3	-0.3	0.34	0.34		
212.0	1.30	187.50	212.0	-1.5	0.4	-0.1	1.24	0.97		
306.0	2.10	182.20	305.9	-4.3	0.2	0.6	0.87	0.85		
413.0	3.50	199.10	412.8	-9.3	-0.9	2.7	1.51	1.31		
503.0	6.00	201.80	502.5	-16.3	-3.5	6.7	2.79	2.78		
591.0	7.60	192.10	589.9	-26.2	-6.5	11.6	2.23	1.82		
680.0	7.80	196.00	678.1	-37.8	-9.4	16.7	0.63	0.22		
770.0	9.00	199.70	767.1	-50.3	-13.4	23.2	1.46	1.33		
859.0	10.00	209.20	854.9	-63.6	-19.5	31.8	2.09	1.12		
903.0	10.00	208.60	898.2	-70.3	-23.2	36.8	0.24	0.00		
960.0	9.60	210.50	954.4	-78.7	-28.0	43.1	0.90	-0.70		
1,048.0	10.50	219.80	1,041.1	-91.2	-36.9	54.3	2.11	1.02		

Cathedral Energy Services

Survey Report

Company:	Anadarko Petroleum Corporation	Local Co-ordinate Reference:	Well Warner 35-18
Project:	DJ Wattenberg	TVD Reference:	KBE @ 5008.0ft (Xtreme 14)
Site:	SESW Sec18-T2N-R65W (Warner)	MD Reference:	KBE @ 5008.0ft (Xtreme 14)
Well:	Warner 35-18	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
1,138.0	10.60	229.60	1,129.5	-102.9	-48.4	67.9	1.99	0.11	
1,227.0	10.90	240.70	1,217.0	-112.3	-62.0	83.1	2.35	0.34	
1,316.0	9.90	256.50	1,304.5	-118.2	-76.8	98.8	3.38	-1.12	
1,405.0	9.90	262.80	1,392.2	-121.0	-91.8	114.0	1.22	0.00	
1,494.0	11.10	272.20	1,479.7	-121.6	-108.0	130.0	2.35	1.35	
1,583.0	13.40	273.90	1,566.7	-120.6	-126.8	148.3	2.62	2.58	
1,672.0	13.10	272.50	1,653.3	-119.4	-147.2	168.0	0.49	-0.34	
1,760.0	12.50	273.90	1,739.1	-118.3	-166.7	186.9	0.77	-0.68	
1,848.0	11.50	272.60	1,825.2	-117.3	-184.9	204.5	1.18	-1.14	
1,937.0	12.20	274.40	1,912.3	-116.2	-203.2	222.2	0.89	0.79	
2,027.0	10.40	274.40	2,000.6	-114.8	-220.7	239.2	2.00	-2.00	
2,117.0	11.00	273.70	2,089.0	-113.6	-237.4	255.3	0.68	0.67	
2,206.0	9.30	274.00	2,176.6	-112.6	-253.1	270.4	1.91	-1.91	
2,294.0	9.60	267.50	2,263.4	-112.4	-267.5	284.5	1.26	0.34	
2,380.0	10.40	265.50	2,348.1	-113.3	-282.4	299.3	1.01	0.93	
2,470.0	11.10	270.80	2,436.5	-113.9	-299.1	315.8	1.35	0.78	
2,558.0	12.60	262.20	2,522.7	-115.0	-317.1	333.7	2.63	1.70	
2,647.0	10.50	263.00	2,609.9	-117.3	-334.8	351.4	2.37	-2.36	
2,737.0	10.30	266.40	2,698.4	-118.8	-351.0	367.6	0.72	-0.22	
2,824.0	8.70	266.50	2,784.2	-119.7	-365.3	381.8	1.84	-1.84	
2,914.0	9.50	267.60	2,873.1	-120.5	-379.5	395.9	0.91	0.89	
3,002.0	13.10	270.70	2,959.3	-120.6	-396.7	412.8	4.15	4.09	
3,092.0	12.80	272.20	3,047.0	-120.1	-416.9	432.5	0.50	-0.33	
3,181.0	12.90	267.90	3,133.8	-120.1	-436.7	451.9	1.08	0.11	
3,271.0	12.20	268.20	3,221.7	-120.8	-456.2	471.1	0.78	-0.78	
3,359.0	10.70	267.80	3,307.9	-121.4	-473.7	488.4	1.71	-1.70	
3,447.0	10.00	270.40	3,394.5	-121.7	-489.5	503.9	0.96	-0.80	
3,535.0	8.90	270.30	3,481.3	-121.6	-503.9	518.1	1.25	-1.25	
3,624.0	8.20	263.00	3,569.3	-122.3	-517.1	531.1	1.45	-0.79	
3,714.0	7.30	258.40	3,658.5	-124.2	-529.1	543.2	1.21	-1.00	
3,802.0	6.60	252.10	3,745.8	-126.9	-539.4	553.9	1.17	-0.80	
3,890.0	6.90	252.50	3,833.2	-130.1	-549.2	564.1	0.35	0.34	
3,979.0	7.00	265.00	3,921.6	-132.1	-559.7	574.8	1.70	0.11	
4,068.0	10.00	270.00	4,009.6	-132.6	-572.9	587.8	3.47	3.37	
4,157.0	12.10	268.80	4,096.9	-132.8	-589.9	604.6	2.37	2.36	
4,246.0	13.50	273.50	4,183.7	-132.4	-609.6	623.8	1.96	1.57	
4,335.0	12.70	273.40	4,270.4	-131.2	-629.8	643.3	0.90	-0.90	
4,424.0	10.70	271.00	4,357.5	-130.4	-647.8	660.8	2.31	-2.25	
4,513.0	10.50	268.00	4,445.0	-130.6	-664.2	676.9	0.66	-0.22	
4,601.0	9.80	266.40	4,531.7	-131.3	-679.6	692.2	0.86	-0.80	
4,689.0	10.50	257.10	4,618.3	-133.6	-694.9	707.6	2.02	0.80	
4,777.0	8.30	264.50	4,705.1	-136.0	-709.1	722.0	2.85	-2.50	
4,867.0	8.00	269.50	4,794.2	-136.7	-721.8	734.6	0.85	-0.33	
4,955.0	8.80	262.80	4,881.2	-137.6	-734.6	747.3	1.44	0.91	
5,045.0	8.60	266.20	4,970.2	-138.9	-748.2	760.8	0.61	-0.22	
5,134.0	8.00	270.10	5,058.3	-139.3	-761.0	773.5	0.92	-0.67	
5,221.0	7.40	273.00	5,144.5	-139.0	-772.6	784.8	0.82	-0.69	
5,309.0	7.60	273.70	5,231.7	-138.3	-784.1	795.9	0.25	0.23	
5,397.0	8.50	277.70	5,318.9	-137.1	-796.4	807.7	1.20	1.02	
5,487.0	8.90	271.40	5,407.8	-136.0	-809.9	820.8	1.15	0.44	
5,575.0	9.30	263.70	5,494.7	-136.6	-823.8	834.5	1.46	0.45	
5,663.0	8.10	259.20	5,581.7	-138.6	-836.9	847.8	1.57	-1.36	
5,752.0	7.70	262.10	5,669.9	-140.6	-849.0	860.0	0.63	-0.45	

Cathedral Energy Services

Survey Report

Company:	Anadarko Petroleum Corporation	Local Co-ordinate Reference:	Well Warner 35-18
Project:	DJ Wattenberg	TVD Reference:	KBE @ 5008.0ft (Xtreme 14)
Site:	SESW Sec18-T2N-R65W (Warner)	MD Reference:	KBE @ 5008.0ft (Xtreme 14)
Well:	Warner 35-18	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
5,842.0	6.90	262.70	5,759.1	-142.1	-860.3	871.4	0.89	-0.89	
5,931.0	5.80	263.90	5,847.6	-143.2	-870.1	881.2	1.24	-1.24	
6,021.0	4.50	267.70	5,937.2	-143.9	-878.2	889.2	1.49	-1.44	
6,107.0	4.60	270.10	6,023.0	-144.0	-885.0	895.9	0.25	0.12	
6,196.0	4.50	275.10	6,111.7	-143.7	-892.0	902.8	0.46	-0.11	
6,283.0	3.40	263.60	6,198.5	-143.7	-898.0	908.6	1.55	-1.26	
6,373.0	2.90	265.20	6,288.3	-144.1	-902.9	913.5	0.56	-0.56	
6,460.0	2.20	254.80	6,375.3	-144.8	-906.7	917.4	0.96	-0.80	
6,548.0	1.70	254.80	6,463.2	-145.5	-909.6	920.4	0.57	-0.57	
6,638.0	1.00	249.60	6,553.2	-146.2	-911.6	922.5	0.79	-0.78	
6,728.0	0.50	259.20	6,643.2	-146.5	-912.8	923.7	0.57	-0.56	
6,818.0	0.40	310.70	6,733.2	-146.4	-913.4	924.2	0.45	-0.11	
6,906.0	0.50	315.40	6,821.2	-145.9	-913.9	924.6	0.12	0.11	
6,995.0	1.10	340.40	6,910.2	-144.8	-914.4	925.0	0.76	0.67	
7,083.0	1.20	328.10	6,998.1	-143.3	-915.2	925.4	0.30	0.11	
7,172.0	1.30	301.00	7,087.1	-141.9	-916.6	926.5	0.67	0.11	
7,262.0	1.00	337.50	7,177.1	-140.7	-917.7	927.4	0.86	-0.33	
7,350.0	0.80	329.80	7,265.1	-139.5	-918.3	927.7	0.27	-0.23	
7,439.0	0.70	349.20	7,354.1	-138.4	-918.8	927.9	0.30	-0.11	
7,537.0	0.70	340.00	7,452.1	-137.2	-919.1	928.0	0.11	0.00	
7,600.0	0.70	336.30	7,515.1	-136.5	-919.4	928.2	0.07	0.00	Last Cathedral Survey @ 7,600' MD
7,650.0	0.70	336.30	7,565.1	-136.0	-919.6	928.3	0.00	0.00	Projection to Bit @ 7,650' 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									
Warner 35-18 PBHL	0.00	0.00	7,533.0	-191.2	-942.6	1,291,673.53	3,220,621.26	40.131336	-104.710992
- actual wellpath misses target center by 62.1ft at 7600.0ft MD (7515.1 TVD, -136.5 N, -919.4 E)									
- Circle (radius 60.0)									

Design Annotations

	Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
			+N/-S (ft)	+E/-W (ft)	
	7,600.0	7,515.1	-136.5	-919.4	Last Cathedral Survey @ 7,600' MD
	7,650.0	7,565.1	-136.0	-919.6	Projection to Bit @ 7,650' MD

Checked By: _____ Approved By: _____ Date: _____