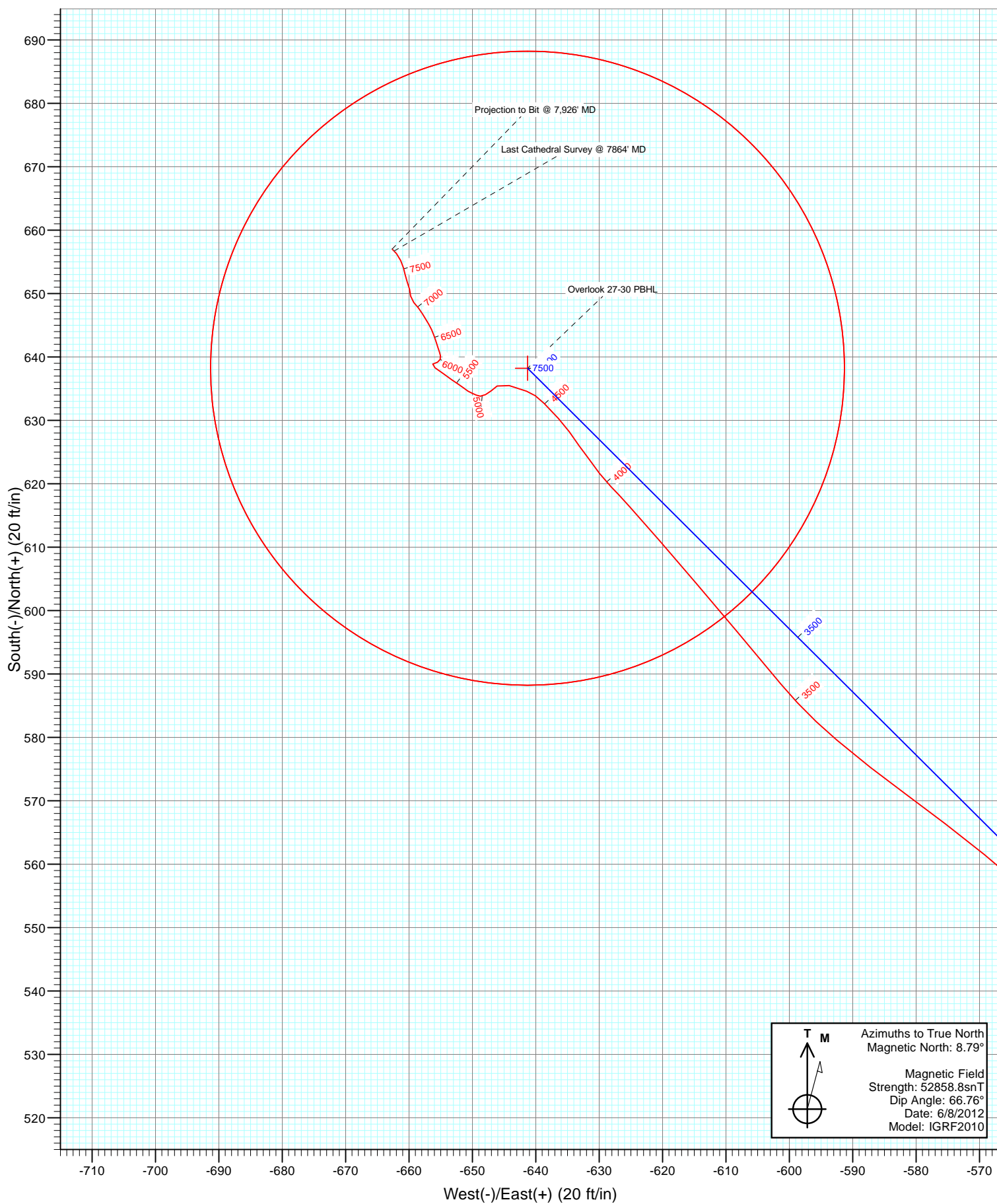


Azimuths to True North
Magnetic North: 8.79°

Magnetic Field
Strength: 52858.8nT
Dip Angle: 66.76°
Date: 6/8/2012
Model: IGRF2010

FINAL Overlook 27-30 125357; 166555; DN KB=15' @ 5025.0ft (Xtreme 14) North American Datum 1983 Well Overlook 27-30, True North					
Type Target	Target Overlook 27-30 PBHL	Azimuth 314.86	Origin Type Slot	N/S 0.0	E/W 0.0
Name Overlook 27-30 PBHL	TVD 7784.0	+N/-S 638.2	+E/-W -641.3	Latitude 40.116539	Longitude -104.928487
		From TVD 0.0			



Cathedral Energy Services

Survey Report

Company:	Anadarko Petroleum Corporation	Local Co-ordinate Reference:	Well Overlook 27-30
Project:	DJ Wattenberg	TVD Reference:	KB=15' @ 5025.0ft (Xtreme 14)
Site:	NENE Sec30-T2N-R67W (Overlook 1-30 pad)	MD Reference:	KB=15' @ 5025.0ft (Xtreme 14)
Well:	Overlook 27-30	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	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		NENE Sec30-T2N-R67W (Overlook 1-30 pad)			
Site Position:		Northing:	1,285,208.05 ft	Latitude:	40.114856
From:	Lat/Long	Easting:	3,160,505.89 ft	Longitude:	-104.926131
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	0.37 °

Well	Overlook 27-30					
Well Position	+N/-S	0.0 ft	Northing:	1,285,182.79 ft	Latitude:	40.114787
	+E/-W	0.0 ft	Easting:	3,160,488.44 ft	Longitude:	-104.926194
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	5,010.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	6/8/2012	8.79	66.76	52,859

Design	FINAL				
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	314.86	

Survey Program	Date	7/10/2012			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
143.0	7,926.0	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		
143.0	0.50	63.00	143.0	0.3	0.6	-0.2	0.35	0.35		
267.0	1.10	323.00	267.0	1.5	0.3	0.8	1.04	0.48		
360.0	2.20	317.20	359.9	3.5	-1.4	3.5	1.19	1.18		
452.0	3.60	316.50	451.8	6.9	-4.6	8.1	1.52	1.52		
540.0	5.50	309.60	539.5	11.6	-9.8	15.1	2.24	2.16		
626.0	7.30	307.30	625.0	17.5	-17.3	24.6	2.11	2.09		
714.0	8.70	310.50	712.2	25.2	-26.8	36.8	1.67	1.59		
801.0	10.70	311.20	797.9	34.8	-37.9	51.4	2.30	2.30		
854.0	11.80	311.30	849.9	41.6	-45.7	61.7	2.08	2.08		
919.0	13.40	314.00	913.3	51.3	-56.1	75.9	2.62	2.46		
994.0	15.70	316.20	985.9	64.6	-69.3	94.7	3.15	3.07		
1,082.0	17.70	320.50	1,070.2	83.5	-86.1	120.0	2.67	2.27		

Cathedral Energy Services

Survey Report

Company:	Anadarko Petroleum Corporation	Local Co-ordinate Reference:	Well Overlook 27-30
Project:	DJ Wattenberg	TVD Reference:	KB=15' @ 5025.0ft (Xtreme 14)
Site:	NENE Sec30-T2N-R67W (Overlook 1-30 pad)	MD Reference:	KB=15' @ 5025.0ft (Xtreme 14)
Well:	Overlook 27-30	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	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
1,170.0	19.20	321.30	1,153.7	105.2	-103.7	147.7	1.73	1.70	
1,258.0	20.10	320.10	1,236.5	128.1	-122.4	177.1	1.12	1.02	
1,344.0	21.20	317.20	1,317.0	150.8	-142.4	207.3	1.75	1.28	
1,431.0	21.20	313.10	1,398.1	173.1	-164.6	238.8	1.70	0.00	
1,520.0	21.10	311.80	1,481.1	194.8	-188.3	270.9	0.54	-0.11	
1,608.0	20.90	310.70	1,563.3	215.6	-212.0	302.3	0.50	-0.23	
1,696.0	20.60	310.70	1,645.6	235.9	-235.7	333.4	0.34	-0.34	
1,786.0	19.20	310.50	1,730.2	255.8	-258.9	364.0	1.56	-1.56	
1,874.0	18.90	313.70	1,813.4	275.1	-280.2	392.7	1.23	-0.34	
1,963.0	18.50	312.70	1,897.7	294.6	-301.0	421.2	0.58	-0.45	
2,052.0	18.20	313.80	1,982.2	313.8	-321.4	449.2	0.51	-0.34	
2,140.0	17.70	316.00	2,065.9	332.9	-340.6	476.3	0.96	-0.57	
2,229.0	16.90	314.40	2,150.9	351.7	-359.3	502.8	1.05	-0.90	
2,317.0	16.50	314.00	2,235.2	369.4	-377.4	528.1	0.47	-0.45	
2,405.0	16.20	313.30	2,319.6	386.5	-395.3	552.8	0.41	-0.34	
2,494.0	15.70	312.10	2,405.2	403.0	-413.3	577.3	0.67	-0.56	
2,582.0	15.30	313.10	2,490.0	419.0	-430.6	600.8	0.55	-0.45	
2,671.0	15.60	317.80	2,575.8	435.8	-447.2	624.4	1.45	0.34	
2,760.0	16.60	319.80	2,661.3	454.4	-463.5	649.1	1.28	1.12	
2,846.0	16.30	318.70	2,743.7	472.9	-479.4	673.3	0.50	-0.35	
2,936.0	15.80	318.20	2,830.2	491.5	-495.9	698.2	0.58	-0.56	
3,026.0	14.80	314.40	2,917.0	508.7	-512.3	721.9	1.57	-1.11	
3,113.0	14.20	314.00	3,001.3	523.9	-527.9	743.7	0.70	-0.69	
3,203.0	12.80	313.70	3,088.8	538.4	-543.0	764.7	1.56	-1.56	
3,291.0	11.30	311.20	3,174.8	550.8	-556.6	783.0	1.80	-1.70	
3,379.0	10.40	309.00	3,261.3	561.5	-569.2	799.6	1.13	-1.02	
3,469.0	9.50	306.00	3,349.9	571.0	-581.5	815.0	1.15	-1.00	
3,557.0	8.70	310.30	3,436.8	579.6	-592.5	828.8	1.19	-0.91	
3,647.0	7.30	320.70	3,525.9	588.4	-601.3	841.3	2.23	-1.56	
3,736.0	6.70	319.50	3,614.3	596.7	-608.3	852.1	0.69	-0.67	
3,826.0	6.00	320.00	3,703.7	604.3	-614.7	862.0	0.78	-0.78	
3,914.0	5.60	318.60	3,791.3	611.1	-620.5	870.8	0.48	-0.45	
4,003.0	3.60	318.40	3,880.0	616.4	-625.2	878.0	2.25	-2.25	
4,093.0	1.90	314.80	3,969.9	619.6	-628.1	882.3	1.90	-1.89	
4,181.0	1.70	323.60	4,057.8	621.6	-630.0	885.0	0.39	-0.23	
4,270.0	1.70	323.80	4,146.8	623.8	-631.5	887.6	0.01	0.00	
4,360.0	1.80	323.40	4,236.7	626.0	-633.1	890.4	0.11	0.11	
4,449.0	1.70	326.30	4,325.7	628.2	-634.7	893.0	0.15	-0.11	
4,539.0	1.80	316.40	4,415.7	630.3	-636.4	895.7	0.35	0.11	
4,627.0	2.50	315.90	4,503.6	632.7	-638.7	899.0	0.80	0.80	
4,716.0	1.90	290.00	4,592.5	634.6	-641.5	902.3	1.29	-0.67	
4,805.0	1.80	285.00	4,681.5	635.5	-644.2	904.9	0.21	-0.11	
4,893.0	0.90	233.00	4,769.5	635.4	-646.1	906.2	1.63	-1.02	
4,981.0	0.70	229.20	4,857.5	634.7	-647.0	906.3	0.24	-0.23	
5,070.0	0.70	243.50	4,946.5	634.1	-647.9	906.5	0.20	0.00	
5,159.0	0.40	272.40	5,035.4	633.8	-648.7	906.9	0.45	-0.34	
5,247.0	0.50	293.70	5,123.4	634.0	-649.4	907.5	0.22	0.11	
5,335.0	0.50	292.90	5,211.4	634.3	-650.1	908.2	0.01	0.00	
5,424.0	0.40	306.00	5,300.4	634.6	-650.7	908.9	0.16	-0.11	
5,513.0	0.60	306.00	5,389.4	635.1	-651.3	909.7	0.22	0.22	
5,599.0	0.80	303.80	5,475.4	635.7	-652.2	910.7	0.23	0.23	
5,687.0	0.90	305.50	5,563.4	636.4	-653.3	912.0	0.12	0.11	
5,777.0	1.10	306.50	5,653.4	637.4	-654.5	913.5	0.22	0.22	

Cathedral Energy Services

Survey Report

Company:	Anadarko Petroleum Corporation	Local Co-ordinate Reference:	Well Overlook 27-30
Project:	DJ Wattenberg	TVD Reference:	KB=15' @ 5025.0ft (Xtreme 14)
Site:	NENE Sec30-T2N-R67W (Overlook 1-30 pad)	MD Reference:	KB=15' @ 5025.0ft (Xtreme 14)
Well:	Overlook 27-30	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	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
5,864.0	1.10	303.80	5,740.4	638.3	-655.9	915.2	0.06	0.00	
5,951.0	0.50	74.50	5,827.4	638.9	-656.2	915.8	1.70	-0.69	
6,041.0	0.50	62.50	5,917.4	639.2	-655.5	915.5	0.12	0.00	
6,127.0	0.40	19.00	6,003.4	639.6	-655.1	915.5	0.40	-0.12	
6,216.0	0.40	349.90	6,092.4	640.2	-655.0	915.9	0.23	0.00	
6,305.0	0.40	338.00	6,181.4	640.8	-655.2	916.4	0.09	0.00	
6,395.0	0.40	342.90	6,271.4	641.4	-655.4	917.0	0.04	0.00	
6,483.0	0.40	342.60	6,359.4	642.0	-655.6	917.6	0.00	0.00	
6,570.0	0.50	340.80	6,446.4	642.6	-655.8	918.2	0.12	0.11	
6,659.0	0.60	341.50	6,535.4	643.5	-656.1	918.9	0.11	0.11	
6,749.0	0.60	335.10	6,625.4	644.3	-656.4	919.8	0.07	0.00	
6,837.0	0.60	329.60	6,713.4	645.1	-656.9	920.7	0.07	0.00	
6,927.0	0.60	327.90	6,803.3	646.0	-657.3	921.6	0.02	0.00	
7,016.0	0.70	329.70	6,892.3	646.8	-657.9	922.6	0.11	0.11	
7,105.5	0.70	320.50	6,981.8	647.7	-658.5	923.6	0.13	0.00	
7,193.0	0.80	319.30	7,069.3	648.6	-659.2	924.8	0.12	0.11	
7,283.0	0.70	351.60	7,159.3	649.6	-659.7	925.8	0.48	-0.11	
7,371.0	0.70	348.00	7,247.3	650.7	-659.9	926.7	0.05	0.00	
7,458.0	0.80	338.60	7,334.3	651.7	-660.2	927.7	0.18	0.11	
7,547.0	0.80	348.20	7,423.3	652.9	-660.6	928.8	0.15	0.00	
7,634.0	0.70	343.80	7,510.3	654.0	-660.9	929.8	0.13	-0.11	
7,724.0	0.90	336.70	7,600.3	655.2	-661.3	930.9	0.25	0.22	
7,811.0	0.80	319.50	7,687.3	656.3	-662.0	932.2	0.31	-0.11	
7,864.0	0.40	314.90	7,740.3	656.7	-662.3	932.7	0.76	-0.75	Last Cathedral Survey @ 7864' MD
7,907.5	0.40	314.90	7,783.8	656.9	-662.6	933.0	0.00	0.00	Overlook 27-30 PBHL
7,926.0	0.40	314.90	7,802.3	657.0	-662.6	933.2	0.00	0.00	Projection to Bit @ 7,926' MD

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Overlook 27-30 PBHL	0.00	0.00	7,784.0	638.2	-641.3	1,285,816.86	3,159,843.03	40.116539	-104.928487
- hit/miss target									
- Shape									
- actual wellpath misses target center by 28.3ft at 7907.5ft MD (7783.8 TVD, 656.9 N, -662.6 E)									
- Circle (radius 50.0)									

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
7,864.0	7,740.3	656.7	-662.3	Last Cathedral Survey @ 7864' MD	
7,926.0	7,802.3	657.0	-662.6	Projection to Bit @ 7,926' MD	

Checked By: _____	Approved By: _____	Date: _____
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