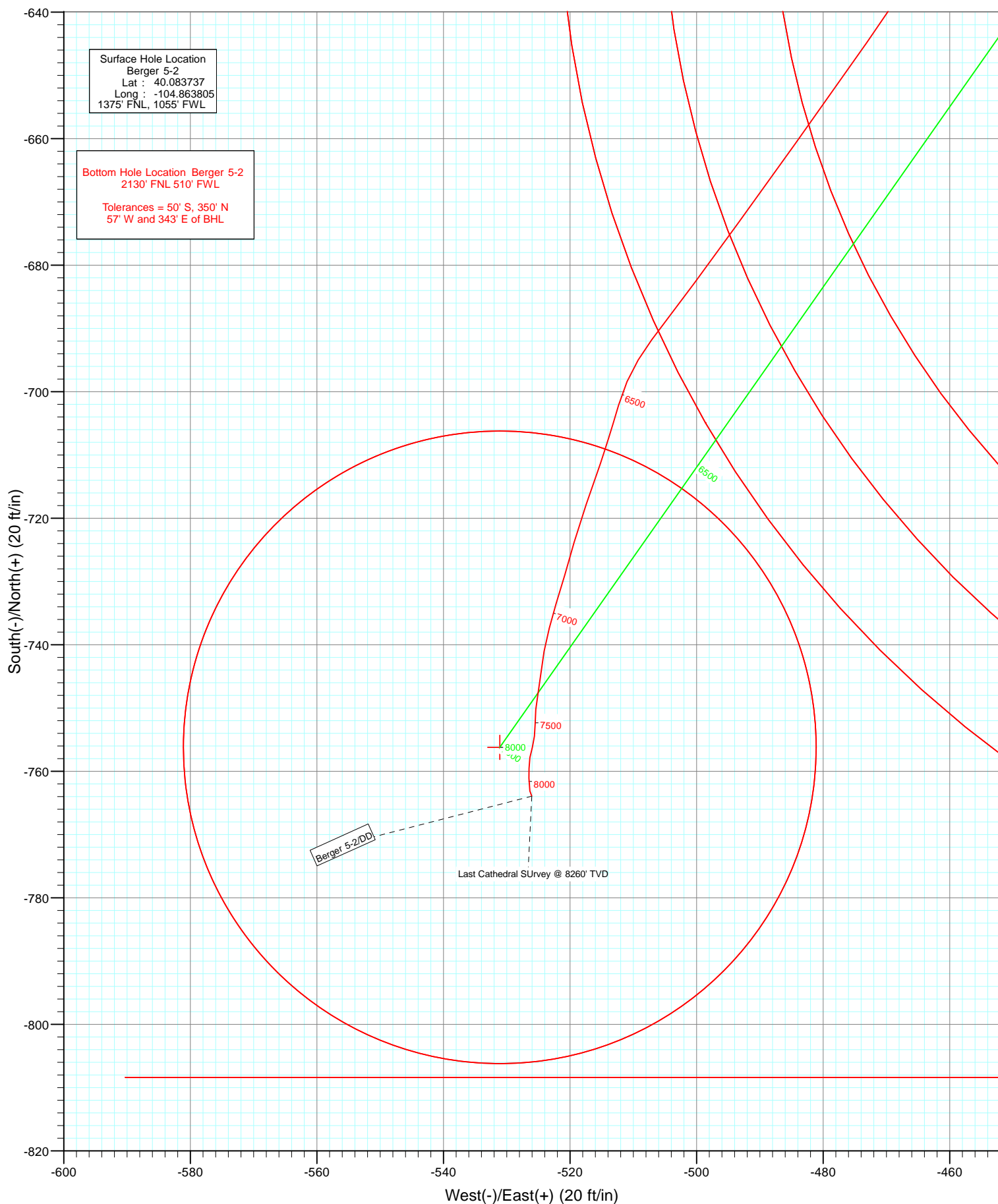


Azimuths to True North
Magnetic North: 8.76°

Magnetic Field
Strength: 52851.6snT
Dip Angle: 66.75°
Date: 6/1/2012
Model: IGRF2010

Type	Target	Azimuth	Origin	Type	N/S	E/W	From TVD
Target	Berger 5-2 BHL	215.08	Slot		0.0	0.0	0.0
Name		TV	+N/-S	+E/-W	Latitude	Longitude	
Berger 5-2 Legal Box 5	-8377.0	-608.4	-390.2	40.082067	-104.865200		
Berger 5-2 BHL	8147.0	-756.2	-531.1	40.081661	-104.865703		



Cathedral Energy Services

Survey Report

Company:	Anadarko Petroleum Corporation	Local Co-ordinate Reference:	Well Berger 5-2
Project:	DJ Wattenberg	TVD Reference:	15' KB @ 4977.0ft (Xtreme 11)
Site:	S2 T1N R67W (Berger 8 Pad)	MD Reference:	15' KB @ 4977.0ft (Xtreme 11)
Well:	Berger 5-2	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		S2 T1N R67W (Berger 8 Pad)			
Site Position:		Northing:	1,274,043.57 ft	Latitude:	40.083880
From:	Lat/Long	Easting:	3,178,047.58 ft	Longitude:	-104.863699
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	0.41 °

Well	Berger 5-2					
Well Position	+N/-S	0.0 ft	Northing:	1,273,991.26 ft	Latitude:	40.083737
	+E/-W	0.0 ft	Easting:	3,178,018.30 ft	Longitude:	-104.863805
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,962.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	6/1/2012	8.76	66.75	52,852

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	215.08	

Survey Program	Date	6/4/2012			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
91.0	8,260.0	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		
91.0	0.60	241.90	91.0	-0.2	-0.4	0.4	0.66	0.66		
178.0	0.70	243.30	178.0	-0.7	-1.3	1.3	0.12	0.11		
267.0	0.70	236.70	267.0	-1.2	-2.2	2.3	0.09	0.00		
354.0	0.50	238.20	354.0	-1.7	-3.0	3.1	0.23	-0.23		
447.0	0.40	288.90	447.0	-1.8	-3.7	3.6	0.43	-0.11		
538.0	0.40	2.70	538.0	-1.4	-3.9	3.4	0.53	0.00		
629.0	0.60	46.50	629.0	-0.8	-3.6	2.7	0.46	0.22		
719.0	1.40	51.70	719.0	0.3	-2.4	1.2	0.89	0.89		
810.0	1.80	78.10	809.9	1.2	-0.1	-0.9	0.91	0.44		
891.0	1.80	69.40	890.9	1.9	2.3	-2.9	0.34	0.00		
987.0	2.00	79.20	986.8	2.8	5.4	-5.4	0.40	0.21		
1,078.0	0.60	54.00	1,077.8	3.4	7.3	-7.0	1.63	-1.54		

Cathedral Energy Services

Survey Report

Company:	Anadarko Petroleum Corporation	Local Co-ordinate Reference:	Well Berger 5-2
Project:	DJ Wattenberg	TVD Reference:	15' KB @ 4977.0ft (Xtreme 11)
Site:	S2 T1N R67W (Berger 8 Pad)	MD Reference:	15' KB @ 4977.0ft (Xtreme 11)
Well:	Berger 5-2	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
1,168.0	1.10	263.00	1,167.8	3.5	6.9	-6.8	1.83	0.56	
1,259.0	1.90	269.40	1,258.8	3.4	4.5	-5.4	0.90	0.88	
1,350.0	2.50	281.10	1,349.7	3.8	1.0	-3.7	0.82	0.66	
1,441.0	3.10	238.20	1,440.6	2.9	-3.0	-0.6	2.33	0.66	
1,531.0	2.50	260.10	1,530.5	1.2	-7.0	3.0	1.35	-0.67	
1,622.0	0.70	156.30	1,621.5	0.4	-8.7	4.7	3.02	-1.98	
1,713.0	2.70	128.60	1,712.4	-1.4	-6.8	5.1	2.31	2.20	
1,804.0	3.30	98.80	1,803.3	-3.2	-2.6	4.1	1.81	0.66	
1,895.0	3.00	145.00	1,894.2	-5.5	1.4	3.7	2.73	-0.33	
1,985.0	1.30	43.80	1,984.1	-6.7	3.4	3.5	3.88	-1.89	
2,076.0	1.50	15.40	2,075.1	-4.8	4.5	1.4	0.78	0.22	
2,167.0	1.40	5.20	2,166.1	-2.6	4.9	-0.7	0.30	-0.11	
2,258.0	1.50	350.20	2,257.1	-0.3	4.8	-2.5	0.43	0.11	
2,348.0	1.40	354.30	2,347.0	2.0	4.5	-4.2	0.16	-0.11	
2,439.0	2.20	291.20	2,438.0	3.7	2.7	-4.6	2.20	0.88	
2,530.0	3.00	239.30	2,528.9	3.1	-1.0	-2.0	2.62	0.88	
2,620.0	6.40	233.00	2,618.6	-1.1	-7.0	4.9	3.82	3.78	
2,711.0	8.70	224.50	2,708.8	-9.1	-15.9	16.5	2.80	2.53	
2,802.0	11.30	213.40	2,798.4	-21.4	-25.6	32.3	3.54	2.86	
2,893.0	13.90	210.10	2,887.2	-38.3	-36.0	52.1	2.96	2.86	
2,983.0	14.50	207.00	2,974.5	-57.7	-46.5	74.0	1.08	0.67	
3,074.0	13.10	209.50	3,062.8	-76.9	-56.8	95.5	1.67	-1.54	
3,165.0	14.00	217.90	3,151.3	-94.5	-68.6	116.8	2.38	0.99	
3,255.0	14.50	220.40	3,238.5	-111.7	-82.6	138.9	0.88	0.56	
3,346.0	15.10	220.90	3,326.5	-129.3	-97.8	162.0	0.67	0.66	
3,437.0	15.20	220.40	3,414.4	-147.4	-113.2	185.7	0.18	0.11	
3,528.0	13.40	219.40	3,502.5	-164.6	-127.7	208.1	2.00	-1.98	
3,618.0	13.30	215.00	3,590.1	-181.1	-140.2	228.8	1.13	-0.11	
3,709.0	13.80	215.00	3,678.6	-198.6	-152.5	250.2	0.55	0.55	
3,800.0	13.10	216.20	3,767.1	-215.8	-164.8	271.3	0.83	-0.77	
3,891.0	10.20	223.10	3,856.2	-230.0	-176.4	289.6	3.53	-3.19	
3,982.0	9.80	219.20	3,945.8	-241.9	-186.8	305.3	0.86	-0.44	
4,072.0	11.50	210.80	4,034.3	-255.6	-196.2	321.9	2.55	1.89	
4,163.0	13.30	211.10	4,123.1	-272.3	-206.3	341.4	1.98	1.98	
4,254.0	14.80	210.40	4,211.4	-291.3	-217.5	363.4	1.66	1.65	
4,345.0	13.80	210.20	4,299.6	-310.7	-228.9	385.8	1.10	-1.10	
4,435.0	13.90	216.30	4,387.0	-328.7	-240.7	407.3	1.63	0.11	
4,526.0	13.80	219.20	4,475.3	-345.9	-254.0	429.1	0.77	-0.11	
4,617.0	13.50	228.00	4,563.8	-361.4	-268.8	450.3	2.30	-0.33	
4,708.0	14.30	229.50	4,652.1	-375.8	-285.2	471.5	0.96	0.88	
4,799.0	14.60	224.40	4,740.2	-391.3	-301.8	493.7	1.44	0.33	
4,890.0	14.80	219.00	4,828.3	-408.6	-317.1	516.6	1.52	0.22	
4,980.0	14.10	213.50	4,915.4	-426.6	-330.4	539.0	1.71	-0.78	
5,071.0	11.70	211.20	5,004.1	-443.8	-341.3	559.3	2.70	-2.64	
5,162.0	11.90	211.00	5,093.2	-459.7	-350.9	577.9	0.22	0.22	
5,252.0	13.60	210.60	5,181.0	-476.8	-361.1	597.7	1.89	1.89	
5,343.0	14.00	209.90	5,269.3	-495.5	-372.0	619.3	0.48	0.44	
5,434.0	12.70	210.50	5,357.9	-513.7	-382.6	640.3	1.44	-1.43	
5,524.0	11.30	215.90	5,445.9	-529.4	-392.8	658.9	1.99	-1.56	
5,615.0	12.20	216.80	5,535.0	-544.3	-403.8	677.5	1.01	0.99	
5,706.0	12.70	215.40	5,623.9	-560.1	-415.3	697.1	0.64	0.55	
5,796.0	13.10	214.60	5,711.6	-576.6	-426.8	717.2	0.49	0.44	
5,887.0	12.50	211.70	5,800.3	-593.5	-437.9	737.3	0.97	-0.66	

Cathedral Energy Services

Survey Report

Company:	Anadarko Petroleum Corporation	Local Co-ordinate Reference:	Well Berger 5-2
Project:	DJ Wattenberg	TVD Reference:	15' KB @ 4977.0ft (Xtreme 11)
Site:	S2 T1N R67W (Berger 8 Pad)	MD Reference:	15' KB @ 4977.0ft (Xtreme 11)
Well:	Berger 5-2	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
5,978.0	13.00	216.60	5,889.1	-610.1	-449.2	757.4	1.31	0.55	
6,068.0	13.60	213.40	5,976.7	-627.0	-461.0	778.1	1.05	0.67	
6,159.0	13.80	215.00	6,065.1	-644.8	-473.1	799.6	0.47	0.22	
6,250.0	11.10	215.60	6,154.0	-660.9	-484.5	819.2	2.97	-2.97	
6,341.0	8.10	215.90	6,243.7	-673.2	-493.3	834.4	3.30	-3.30	
6,431.0	7.00	216.30	6,332.9	-682.7	-500.3	846.2	1.22	-1.22	
6,522.0	7.30	217.60	6,423.2	-691.8	-507.1	857.6	0.37	0.33	
6,613.0	7.60	196.50	6,513.4	-702.1	-512.3	869.0	3.01	0.33	
6,704.0	4.50	198.40	6,603.9	-711.3	-515.2	878.2	3.41	-3.41	
6,794.0	4.30	200.20	6,693.6	-717.8	-517.4	884.8	0.27	-0.22	
6,885.0	3.60	194.60	6,784.4	-723.8	-519.3	890.8	0.88	-0.77	
6,976.0	3.30	197.50	6,875.3	-729.0	-520.8	896.0	0.38	-0.33	
7,067.0	2.60	196.10	6,966.1	-733.5	-522.2	900.4	0.77	-0.77	
7,157.0	2.50	194.80	7,056.1	-737.4	-523.3	904.2	0.13	-0.11	
7,248.0	2.20	189.80	7,147.0	-741.0	-524.1	907.6	0.40	-0.33	
7,339.0	2.20	186.70	7,237.9	-744.5	-524.6	910.7	0.13	0.00	
7,430.0	1.80	190.60	7,328.9	-747.6	-525.0	913.6	0.46	-0.44	
7,520.0	1.60	184.20	7,418.8	-750.3	-525.4	915.9	0.31	-0.22	
7,611.0	1.30	180.80	7,509.8	-752.6	-525.5	917.9	0.34	-0.33	
7,702.0	1.10	187.60	7,600.8	-754.5	-525.6	919.5	0.27	-0.22	
7,793.0	1.10	192.70	7,691.7	-756.2	-525.9	921.1	0.11	0.00	
7,883.0	1.10	193.80	7,781.7	-757.9	-526.3	922.7	0.02	0.00	
7,974.0	1.10	175.20	7,872.7	-759.6	-526.5	924.2	0.39	0.00	
8,065.0	0.80	188.00	7,963.7	-761.1	-526.5	925.4	0.40	-0.33	
8,205.0	0.90	164.80	8,103.7	-763.1	-526.3	927.0	0.25	0.07	
8,248.2	0.93	157.58	8,146.9	-763.8	-526.1	927.4	0.28	0.07	Berger 5-2 BHL
8,260.0	0.94	155.69	8,158.7	-763.9	-526.0	927.5	0.28	0.09	Last Cathedral Survey @ 8260' TVD

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									
Berger 5-2 Legal Box 5	0.00	0.00	-8,377.0	-608.4	-390.2	1,273,380.11	3,177,632.43	40.082067	-104.865200
- actual wellpath misses target center by 8408.1ft at 0.0ft MD (0.0 TVD, 0.0 N, 0.0 E)									
- Rectangle (sides W400.0 H400.0 D0.0)									
Berger 5-2 BHL	0.00	0.41	8,147.0	-756.2	-531.1	1,273,231.26	3,177,492.64	40.081661	-104.865703
- actual wellpath misses target center by 9.0ft at 8248.2ft MD (8146.9 TVD, -763.8 N, -526.1 E)									
- Circle (radius 50.0)									

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
8,260.0	8,158.7	-763.9	-526.0	Last Cathedral Survey @ 8260' TVD

Checked By: _____ Approved By: _____ Date: _____