

Last Cathedral Survey @ 7902' MD

Projection to TD @ 8113' MD

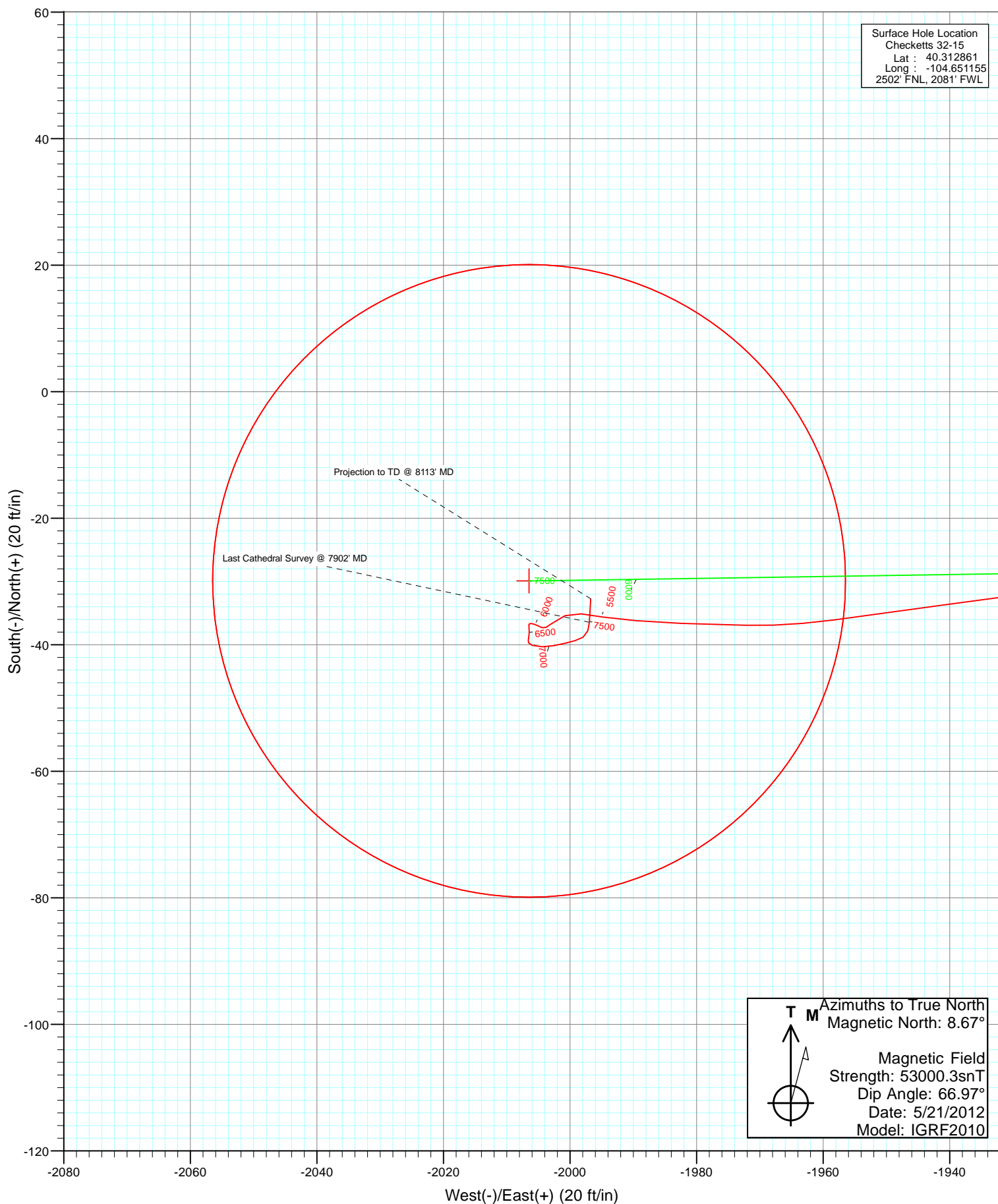
Checketts 32-15 BHL



Azimuths to True North
Magnetic North: 8.67°

Magnetic Field
Strength: 53000.3snT
Dip Angle: 66.97°
Date: 5/21/2012
Model: IGRF2010

DD Checketts 32-15 125348; 167155; DN WELL @ 4742.0ft (Xtreme 11) North American Datum 1983 Well Checketts 32-15, True North		Type User	Target No Target (Freehand)	Azimuth 270.30	Origin Slot	Type N/S	0.0	E/W 0.0	From TVD 0.0
Name Checketts 32-15 BHL	TVD 7752.0	+N/-S -29.9	+E/-W -2006.5	Latitude 40.312779	Longitude -104.658350				



Cathedral Energy Services

Survey Report

Company:	Anadarko Petroleum Corporation	Local Co-ordinate Reference:	Well Checketts 32-15
Project:	DJ Wattenberg	TVD Reference:	WELL @ 4742.0ft (Xtreme 11)
Site:	SENW Sec15-T4N-R65W (Checketts)	MD Reference:	WELL @ 4742.0ft (Xtreme 11)
Well:	Checketts 32-15	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		SENW Sec15-T4N-R65W (Checketts)			
Site Position:		Northing:	1,357,952.22 ft	Latitude:	40.312861
From:	Lat/Long	Easting:	3,236,750.92 ft	Longitude:	-104.651040
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	0.55 °

Well		Checketts 32-15				
Well Position	+N/-S	0.0 ft	Northing:	1,357,952.02 ft	Latitude:	40.312861
	+E/-W	0.0 ft	Easting:	3,236,718.85 ft	Longitude:	-104.651155
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,727.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/21/2012	8.67	66.97	53,000

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	270.30	

Survey Program	Date	5/28/2012			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
62.0	8,113.0	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		
62.0	0.80	100.70	62.0	-0.1	0.4	-0.4	1.29	1.29		
149.0	0.40	182.20	149.0	-0.5	1.0	-1.0	0.97	-0.46		
238.0	1.10	251.90	238.0	-1.1	0.2	-0.2	1.16	0.79		
325.0	4.20	266.70	324.9	-1.5	-3.8	3.8	3.62	3.56		
402.0	6.80	266.90	401.5	-1.9	-11.2	11.1	3.38	3.38		
497.0	8.50	269.20	495.7	-2.3	-23.8	23.8	1.82	1.79		
546.0	9.30	269.30	544.1	-2.4	-31.4	31.4	1.63	1.63		
638.0	10.60	272.00	634.7	-2.2	-47.3	47.3	1.50	1.41		
730.0	12.60	274.40	724.8	-1.2	-65.7	65.7	2.24	2.17		
821.0	14.20	272.70	813.3	0.1	-86.8	86.8	1.81	1.76		
914.0	15.80	274.30	903.2	1.6	-110.8	110.8	1.78	1.72		
1,005.0	18.40	271.60	990.1	2.9	-137.5	137.5	2.99	2.86		

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Survey Report

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Site:	SENW Sec15-T4N-R65W (Checketts)	MD Reference:	WELL @ 4742.0ft (Xtreme 11)
Well:	Checketts 32-15	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
1,096.0	19.80	268.10	1,076.1	2.8	-167.3	167.3	1.99	1.54	
1,187.0	21.20	265.50	1,161.4	1.0	-199.1	199.1	1.83	1.54	
1,278.0	23.30	267.30	1,245.6	-1.1	-233.5	233.5	2.43	2.31	
1,368.0	25.20	267.50	1,327.6	-2.8	-270.4	270.4	2.11	2.11	
1,459.0	27.20	267.90	1,409.3	-4.4	-310.5	310.5	2.21	2.20	
1,550.0	26.50	267.50	1,490.5	-6.0	-351.6	351.6	0.79	-0.77	
1,640.0	26.10	269.00	1,571.2	-7.3	-391.5	391.4	0.86	-0.44	
1,731.0	26.90	269.80	1,652.6	-7.7	-432.1	432.0	0.96	0.88	
1,822.0	24.10	267.90	1,734.7	-8.4	-471.2	471.2	3.21	-3.08	
1,913.0	23.70	272.10	1,817.9	-8.4	-508.1	508.0	1.92	-0.44	
2,003.0	23.60	274.50	1,900.4	-6.4	-544.1	544.1	1.08	-0.11	
2,094.0	24.00	273.10	1,983.6	-3.9	-580.7	580.7	0.76	0.44	
2,185.0	25.60	270.10	2,066.2	-2.9	-618.9	618.9	2.24	1.76	
2,276.0	25.90	270.30	2,148.2	-2.8	-658.4	658.4	0.34	0.33	
2,366.0	25.20	268.70	2,229.4	-3.1	-697.2	697.2	1.09	-0.78	
2,457.0	24.20	268.30	2,312.1	-4.1	-735.2	735.2	1.11	-1.10	
2,548.0	24.60	268.50	2,395.0	-5.1	-772.8	772.8	0.45	0.44	
2,638.0	24.90	267.70	2,476.7	-6.4	-810.5	810.4	0.50	0.33	
2,729.0	26.40	268.70	2,558.7	-7.6	-849.8	849.8	1.72	1.65	
2,820.0	28.40	268.90	2,639.5	-8.5	-891.7	891.7	2.20	2.20	
2,911.0	27.40	267.40	2,719.9	-9.9	-934.3	934.2	1.34	-1.10	
3,001.0	27.40	267.50	2,799.8	-11.7	-975.6	975.6	0.05	0.00	
3,092.0	24.20	266.90	2,881.7	-13.6	-1,015.2	1,015.1	3.53	-3.52	
3,183.0	25.30	271.20	2,964.4	-14.2	-1,053.3	1,053.2	2.32	1.21	
3,274.0	25.50	270.20	3,046.6	-13.7	-1,092.3	1,092.2	0.52	0.22	
3,364.0	24.40	270.30	3,128.2	-13.6	-1,130.3	1,130.2	1.22	-1.22	
3,455.0	23.60	268.30	3,211.3	-14.0	-1,167.3	1,167.2	1.25	-0.88	
3,546.0	22.70	269.60	3,295.0	-14.7	-1,203.0	1,202.9	1.14	-0.99	
3,636.0	22.90	273.30	3,378.0	-13.8	-1,237.9	1,237.8	1.61	0.22	
3,727.0	23.20	273.40	3,461.7	-11.7	-1,273.5	1,273.4	0.33	0.33	
3,818.0	21.70	271.20	3,545.8	-10.3	-1,308.2	1,308.1	1.89	-1.65	
3,909.0	25.30	271.20	3,629.2	-9.5	-1,344.4	1,344.4	3.96	3.96	
3,999.0	29.80	266.50	3,709.0	-10.5	-1,386.0	1,385.9	5.55	5.00	
4,090.0	29.80	266.10	3,788.0	-13.4	-1,431.1	1,431.1	0.22	0.00	
4,181.0	29.50	266.60	3,867.1	-16.3	-1,476.1	1,476.0	0.43	-0.33	
4,272.0	27.20	266.20	3,947.2	-19.0	-1,519.2	1,519.1	2.54	-2.53	
4,362.0	23.70	265.10	4,028.4	-21.9	-1,557.8	1,557.6	3.92	-3.89	
4,453.0	21.50	271.70	4,112.4	-23.0	-1,592.7	1,592.5	3.69	-2.42	
4,544.0	22.30	269.50	4,196.9	-22.6	-1,626.6	1,626.4	1.26	0.88	
4,634.0	22.40	269.60	4,280.1	-22.9	-1,660.8	1,660.7	0.12	0.11	
4,725.0	23.10	273.80	4,364.0	-21.8	-1,696.0	1,695.8	1.94	0.77	
4,816.0	22.80	273.30	4,447.8	-19.6	-1,731.4	1,731.3	0.39	-0.33	
4,907.0	23.40	271.20	4,531.5	-18.2	-1,767.0	1,766.9	1.12	0.66	
4,997.0	22.40	266.30	4,614.5	-19.0	-1,802.0	1,801.9	2.39	-1.11	
5,088.0	21.60	265.30	4,698.8	-21.5	-1,836.0	1,835.9	0.97	-0.88	
5,179.0	19.00	265.10	4,784.2	-24.1	-1,867.5	1,867.3	2.86	-2.86	
5,270.0	15.70	260.50	4,871.0	-27.4	-1,894.4	1,894.2	3.92	-3.63	
5,360.0	15.10	263.30	4,957.8	-30.8	-1,918.1	1,917.9	1.06	-0.67	
5,451.0	13.40	262.10	5,046.0	-33.6	-1,940.3	1,940.1	1.90	-1.87	
5,542.0	9.70	262.50	5,135.1	-36.1	-1,958.3	1,958.1	4.07	-4.07	
5,633.0	8.00	271.30	5,225.0	-36.9	-1,972.3	1,972.0	2.38	-1.87	
5,723.0	5.10	272.50	5,314.4	-36.6	-1,982.5	1,982.3	3.23	-3.22	
5,814.0	3.90	274.60	5,405.2	-36.2	-1,989.6	1,989.4	1.33	-1.32	

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Survey Report

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Project:	DJ Wattenberg	TVD Reference:	WELL @ 4742.0ft (Xtreme 11)
Site:	SENW Sec15-T4N-R65W (Checketts)	MD Reference:	WELL @ 4742.0ft (Xtreme 11)
Well:	Checketts 32-15	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
5,905.0	2.70	278.80	5,496.0	-35.6	-1,994.8	1,994.6	1.34	-1.32	
5,996.0	1.60	277.00	5,586.9	-35.1	-1,998.2	1,998.0	1.21	-1.21	
6,087.0	1.70	251.40	5,677.9	-35.4	-2,000.8	2,000.6	0.81	0.11	
6,177.0	1.60	227.80	5,767.9	-36.7	-2,003.0	2,002.7	0.76	-0.11	
6,268.0	0.70	293.40	5,858.9	-37.3	-2,004.4	2,004.2	1.60	-0.99	
6,359.0	0.40	297.20	5,949.9	-36.9	-2,005.2	2,005.0	0.33	-0.33	
6,449.0	0.40	282.80	6,039.9	-36.7	-2,005.8	2,005.6	0.11	0.00	
6,540.0	0.20	278.80	6,130.9	-36.6	-2,006.3	2,006.0	0.22	-0.22	
6,631.0	0.20	198.60	6,221.9	-36.7	-2,006.5	2,006.2	0.28	0.00	
6,722.0	0.10	155.20	6,312.8	-37.0	-2,006.5	2,006.3	0.16	-0.11	
6,812.0	0.40	185.40	6,402.8	-37.4	-2,006.5	2,006.3	0.35	0.33	
6,903.0	0.40	171.10	6,493.8	-38.0	-2,006.5	2,006.2	0.11	0.00	
6,994.0	0.50	196.00	6,584.8	-38.7	-2,006.5	2,006.3	0.24	0.11	
7,085.0	0.30	170.90	6,675.8	-39.3	-2,006.6	2,006.4	0.29	-0.22	
7,176.0	0.20	179.70	6,766.8	-39.7	-2,006.6	2,006.3	0.12	-0.11	
7,266.0	0.80	110.20	6,856.8	-40.1	-2,006.0	2,005.7	0.84	0.67	
7,357.0	1.20	90.90	6,947.8	-40.3	-2,004.4	2,004.2	0.57	0.44	
7,448.0	1.20	79.30	7,038.8	-40.1	-2,002.5	2,002.3	0.27	0.00	
7,539.0	1.10	76.30	7,129.8	-39.8	-2,000.7	2,000.5	0.13	-0.11	
7,630.0	0.90	74.50	7,220.8	-39.4	-1,999.2	1,999.0	0.22	-0.22	
7,720.0	0.90	57.50	7,310.8	-38.8	-1,997.9	1,997.7	0.30	0.00	
7,811.0	0.80	12.50	7,401.8	-37.8	-1,997.2	1,997.0	0.72	-0.11	
7,902.0	0.90	8.50	7,492.7	-36.5	-1,996.9	1,996.7	0.13	0.11	Last Cathedral Survey @ 7902' MD
8,113.0	1.13	359.23	7,703.7	-32.7	-1,996.7	1,996.5	0.13	0.11	Projection to TD @ 8113' MD - Checketts 32-15 I

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									
Checketts 32-15 BHL	0.00	0.00	7,752.0	-29.9	-2,006.5	1,357,902.92	3,234,712.77	40.312779	-104.658350
- actual wellpath misses target center by 49.3ft at 8113.0ft MD (7703.7 TVD, -32.7 N, -1996.7 E)									
- Circle (radius 50.0)									

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
7,902.0	7,492.7	-36.5	-1,996.9	Last Cathedral Survey @ 7902' MD	
8,113.0	7,703.7	-32.7	-1,996.7	Projection to TD @ 8113' MD	

Checked By: _____ Approved By: _____ Date: _____