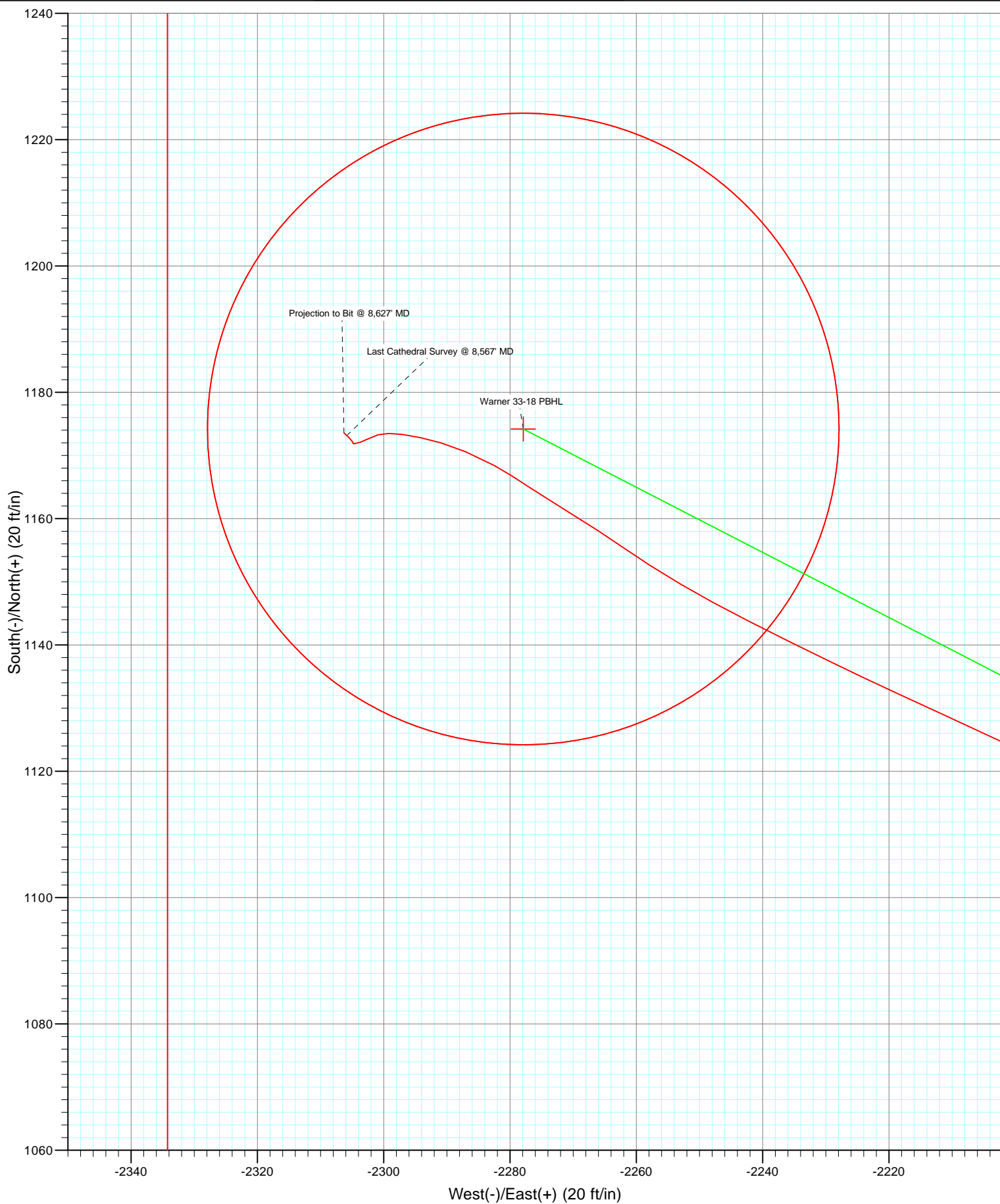


Azimuths to True North
Magnetic North: 8.74°

Magnetic Field
Strength: 52941.5snT
Dip Angle: 66.83°
Date: 12/18/2011
Model: IGRF2010

DD Warner 33-18 115574 129455; LR KBE @ 5008.0ft (Xtreme 14) North American Datum 1983 Well Warner 33-18, True North					
Type	Target	Azimuth	Origin	Type	N/S
Target	Warner 33-18 PBHL	297.27	Slot		0.0
Name	Warner 33-18 PBHL	TVD	+N/-S	+E/-W	Latitude
		7978.0	1174.2	-2277.9	40.135126
					Longitude
					-104.715750



Survey Report

Company:	Anadarko Petroleum Corporation	Local Co-ordinate Reference:	Well Warner 33-18
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 33-18	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 33-18					
Well Position	+N/-S	0.0 ft	Northing:	1,291,888.51 ft	Latitude:	40.131903
	+E/-W	0.0 ft	Easting:	3,221,566.99 ft	Longitude:	-104.707603
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	12/18/2011	8.74	66.83	52,941

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	297.27	

Survey Program	Date	12/23/2011			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
121.0	8,627.0	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		
121.0	0.20	313.40	121.0	0.1	-0.2	0.2	0.17	0.17		
214.0	1.10	303.80	214.0	0.8	-1.0	1.2	0.97	0.97		
307.0	2.10	300.20	307.0	2.1	-3.2	3.8	1.08	1.08		
416.0	3.30	296.70	415.8	4.5	-7.8	9.0	1.11	1.10		
506.0	4.40	295.90	505.6	7.2	-13.2	15.0	1.22	1.22		
594.0	6.50	298.90	593.2	11.1	-20.6	23.4	2.41	2.39		
683.0	8.30	296.80	681.5	16.4	-30.7	34.8	2.04	2.02		
771.0	9.70	296.60	768.4	22.6	-43.0	48.6	1.59	1.59		
860.0	12.30	297.10	855.8	30.3	-58.2	65.6	2.92	2.92		
894.0	12.50	297.20	889.0	33.6	-64.7	72.9	0.59	0.59		
993.0	13.40	299.70	985.4	44.2	-84.2	95.0	1.07	0.91		
1,081.0	15.90	299.50	1,070.6	55.2	-103.5	117.3	2.84	2.84		

Survey Report

Company:	Anadarko Petroleum Corporation	Local Co-ordinate Reference:	Well Warner 33-18
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 33-18	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
1,170.0	18.50	298.70	1,155.6	68.0	-126.5	143.6	2.93	2.92	
1,258.0	20.00	296.90	1,238.7	81.5	-152.2	172.6	1.83	1.70	
1,346.0	21.80	297.00	1,320.9	95.7	-180.2	204.0	2.05	2.05	
1,434.0	24.20	296.30	1,401.9	111.1	-210.9	238.4	2.74	2.73	
1,523.0	26.30	295.90	1,482.4	127.8	-245.0	276.3	2.37	2.36	
1,611.0	28.30	295.80	1,560.6	145.4	-281.3	316.7	2.27	2.27	
1,699.0	29.60	294.40	1,637.6	163.5	-319.9	359.2	1.67	1.48	
1,787.0	31.80	295.40	1,713.2	182.4	-360.6	404.1	2.57	2.50	
1,875.0	31.30	294.60	1,788.2	201.8	-402.4	450.1	0.74	-0.57	
1,963.0	30.90	296.00	1,863.6	221.3	-443.4	495.5	0.94	-0.45	
2,052.0	30.70	297.00	1,940.0	241.6	-484.2	541.1	0.62	-0.22	
2,140.0	31.00	297.70	2,015.6	262.3	-524.3	586.2	0.53	0.34	
2,229.0	30.80	298.60	2,091.9	283.9	-564.6	631.9	0.57	-0.22	
2,319.0	29.10	298.20	2,169.9	305.3	-604.1	676.9	1.90	-1.89	
2,407.0	28.50	297.60	2,247.0	325.1	-641.6	719.2	0.76	-0.68	
2,495.0	29.40	297.70	2,324.0	344.9	-679.3	761.8	1.02	1.02	
2,583.0	29.50	297.50	2,400.7	364.9	-717.7	805.1	0.16	0.11	
2,672.0	31.20	300.40	2,477.5	386.7	-757.0	850.0	2.52	1.91	
2,762.0	30.70	300.10	2,554.6	410.0	-797.0	896.3	0.58	-0.56	
2,849.0	29.70	298.60	2,629.8	431.5	-835.1	940.0	1.44	-1.15	
2,939.0	28.60	298.30	2,708.4	452.4	-873.7	983.8	1.23	-1.22	
3,027.0	29.40	298.10	2,785.4	472.5	-911.3	1,026.5	0.92	0.91	
3,117.0	31.10	297.70	2,863.1	493.7	-951.3	1,071.8	1.90	1.89	
3,206.0	32.60	296.80	2,938.7	515.2	-993.1	1,118.8	1.77	1.69	
3,296.0	31.70	296.80	3,014.9	536.8	-1,035.8	1,166.7	1.00	-1.00	
3,385.0	30.00	296.60	3,091.3	557.3	-1,076.6	1,212.3	1.91	-1.91	
3,474.0	30.30	297.50	3,168.3	577.7	-1,116.4	1,257.0	0.61	0.34	
3,563.0	30.40	297.80	3,245.1	598.5	-1,156.2	1,302.0	0.20	0.11	
3,650.0	29.40	299.50	3,320.5	619.3	-1,194.3	1,345.3	1.51	-1.15	
3,738.0	30.00	300.70	3,397.0	641.2	-1,232.0	1,388.9	0.96	0.68	
3,826.0	31.00	300.40	3,472.8	663.9	-1,270.5	1,433.5	1.15	1.14	
3,914.0	30.60	298.10	3,548.4	685.9	-1,309.8	1,478.5	1.41	-0.45	
4,003.0	29.80	297.10	3,625.3	706.6	-1,349.5	1,523.2	1.06	-0.90	
4,182.0	30.80	296.90	3,779.8	747.6	-1,429.9	1,613.6	0.56	0.56	
4,270.0	29.30	298.40	3,856.0	768.1	-1,469.0	1,657.6	1.91	-1.70	
4,359.0	27.50	298.50	3,934.3	788.2	-1,506.2	1,699.9	2.02	-2.02	
4,449.0	26.30	298.80	4,014.6	807.8	-1,541.9	1,740.6	1.34	-1.33	
4,535.0	29.40	298.00	4,090.6	826.9	-1,577.2	1,780.8	3.63	3.60	
4,623.0	31.10	296.10	4,166.6	847.0	-1,616.7	1,825.1	2.22	1.93	
4,713.0	31.60	295.90	4,243.5	867.5	-1,658.8	1,871.9	0.57	0.56	
4,802.0	31.60	296.10	4,319.3	888.0	-1,700.7	1,918.6	0.12	0.00	
4,889.0	29.90	296.90	4,394.0	907.8	-1,740.5	1,963.0	2.01	-1.95	
4,978.0	29.40	298.40	4,471.4	928.2	-1,779.5	2,007.1	1.01	-0.56	
5,066.0	30.90	296.60	4,547.5	948.6	-1,818.8	2,051.3	1.99	1.70	
5,156.0	30.40	293.20	4,624.9	967.9	-1,860.3	2,097.1	2.00	-0.56	
5,245.0	30.80	293.50	4,701.5	985.9	-1,901.9	2,142.3	0.48	0.45	
5,333.0	32.50	293.50	4,776.4	1,004.3	-1,944.3	2,188.4	1.93	1.93	
5,420.0	29.90	294.40	4,850.8	1,022.6	-1,985.5	2,233.3	3.04	-2.99	
5,510.0	26.20	295.00	4,930.3	1,040.3	-2,023.9	2,275.6	4.12	-4.11	
5,599.0	23.90	295.00	5,010.9	1,056.2	-2,058.1	2,313.3	2.58	-2.58	
5,689.0	21.10	295.80	5,094.0	1,070.9	-2,089.2	2,347.7	3.13	-3.11	
5,779.0	21.70	295.60	5,177.8	1,085.2	-2,118.8	2,380.5	0.67	0.67	
5,867.0	19.40	295.50	5,260.2	1,098.5	-2,146.6	2,411.4	2.61	-2.61	

Survey Report

Company:	Anadarko Petroleum Corporation	Local Co-ordinate Reference:	Well Warner 33-18
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 33-18	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
5,956.0	17.00	295.30	5,344.7	1,110.4	-2,171.8	2,439.2	2.70	-2.70	
6,046.0	14.10	295.10	5,431.4	1,120.7	-2,193.6	2,463.3	3.22	-3.22	
6,135.0	12.70	294.60	5,518.0	1,129.4	-2,212.3	2,483.9	1.58	-1.57	
6,225.0	10.40	295.80	5,606.2	1,137.0	-2,228.6	2,501.9	2.57	-2.56	
6,314.0	8.90	296.90	5,693.9	1,143.7	-2,242.0	2,516.8	1.70	-1.69	
6,401.0	7.70	300.50	5,780.0	1,149.7	-2,253.0	2,529.3	1.50	-1.38	
6,489.0	6.50	304.80	5,867.3	1,155.5	-2,262.2	2,540.2	1.49	-1.36	
6,579.0	5.40	300.80	5,956.9	1,160.6	-2,270.0	2,549.5	1.31	-1.22	
6,666.0	5.00	304.00	6,043.5	1,164.8	-2,276.7	2,557.3	0.57	-0.46	
6,756.0	3.70	299.30	6,133.2	1,168.4	-2,282.4	2,564.1	1.50	-1.44	
6,844.0	3.00	291.20	6,221.1	1,170.6	-2,287.1	2,569.2	0.96	-0.80	
6,932.0	2.30	287.60	6,309.0	1,172.0	-2,290.9	2,573.3	0.82	-0.80	
7,020.0	2.20	280.80	6,396.9	1,172.8	-2,294.2	2,576.6	0.32	-0.11	
7,109.0	1.50	278.70	6,485.9	1,173.3	-2,297.1	2,579.4	0.79	-0.79	
7,198.0	1.20	269.20	6,574.8	1,173.5	-2,299.1	2,581.3	0.42	-0.34	
7,287.0	1.00	255.40	6,663.8	1,173.3	-2,300.8	2,582.7	0.37	-0.22	
7,377.0	0.70	238.70	6,753.8	1,172.8	-2,302.1	2,583.6	0.43	-0.33	
7,552.0	0.50	257.70	6,928.8	1,172.1	-2,303.7	2,584.7	0.16	-0.11	
7,731.0	0.10	252.50	7,107.8	1,171.9	-2,304.6	2,585.4	0.22	-0.22	
7,821.0	0.00	278.70	7,197.8	1,171.8	-2,304.7	2,585.5	0.11	-0.11	
7,910.0	0.10	297.40	7,286.8	1,171.9	-2,304.8	2,585.6	0.11	0.11	
7,998.0	0.00	259.10	7,374.8	1,171.9	-2,304.8	2,585.6	0.11	-0.11	
8,087.0	0.00	241.80	7,463.8	1,171.9	-2,304.8	2,585.6	0.00	0.00	
8,173.0	0.00	303.10	7,549.8	1,171.9	-2,304.8	2,585.6	0.00	0.00	
8,261.0	0.10	9.40	7,637.8	1,172.0	-2,304.8	2,585.7	0.11	0.11	
8,349.0	0.20	310.50	7,725.8	1,172.2	-2,304.9	2,585.8	0.19	0.11	
8,437.0	0.20	334.70	7,813.8	1,172.4	-2,305.1	2,586.1	0.10	0.00	
8,526.0	0.60	312.80	7,902.8	1,172.9	-2,305.5	2,586.7	0.47	0.45	
8,567.0	0.60	312.80	7,943.8	1,173.2	-2,305.8	2,587.1	0.00	0.00	Last Cathedral Survey @ 8,567' MD
8,627.0	0.60	312.80	8,003.8	1,173.6	-2,306.3	2,587.7	0.00	0.00	Projection to Bit @ 8,627' MD

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Warner 33-18 PBHL	0.00	0.00	7,978.0	1,174.2	-2,277.9	1,293,042.30	3,219,278.70	40.135126	-104.715750
- hit/miss target									
- Shape									
- actual wellpath misses target center by 28.2ft at 8601.0ft MD (7977.8 TVD, 1173.4 N, -2306.1 E)									
- Circle (radius 50.0)									

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
8,567.0	7,943.8	1,173.2	-2,305.8	Last Cathedral Survey @ 8,567' MD	
8,627.0	8,003.8	1,173.6	-2,306.3	Projection to Bit @ 8,627' MD	

Checked By: _____	Approved By: _____	Date: _____
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