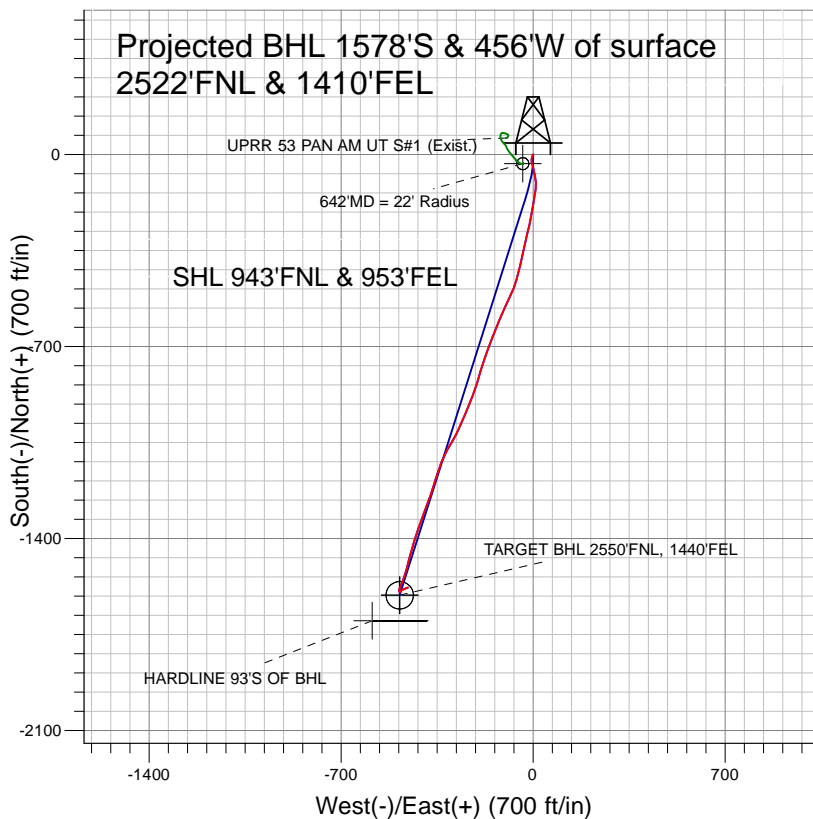


Anadarko, Weld County CO



LEGEND

- Cannon 24-33, Wellbore #1, Plan #2 (8-7-10) V0
- ▲ UPRR 53 PAN AM UT S#1 (Exist.), Wellbore #1, Wellbore #1 V0
- Wellbore #1
- Survey #1

Final Survey Plot

Projected Final Survey -
8055' MD & 7764' TVD @ 1643' VS
1.0 deg Inc 65.9 deg AZ

Project: SEC.33-T3N-R65W
Site: Cannon 17-33 Pad Sec.33-T3N-R65W
Well: Cannon 24-33
Plan: Wellbore #1



Anadarko, Weld County CO

SEC.33-T3N-R65W

Cannon 17-33 Pad Sec.33-T3N-R65W

Cannon 24-33

Wellbore #1

Survey: Survey #1

Standard Survey Report

27 September, 2010



Company:	Anadarko, Weld County CO	Local Co-ordinate Reference:	Well Cannon 24-33
Project:	SEC.33-T3N-R65W	TVD Reference:	WELL @ 4853.0ft (Original Well Elev)
Site:	Cannon 17-33 Pad Sec.33-T3N-R65W	MD Reference:	WELL @ 4853.0ft (Original Well Elev)
Well:	Cannon 24-33	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM den0-adp01 Server Data

Project	SEC.33-T3N-R65W, Weld County, Colorado		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site	Cannon 17-33 Pad Sec.33-T3N-R65W		
Site Position:		Northing:	1,311,936.53ft
From:	Lat/Long	Easting:	3,233,938.36ft
Position Uncertainty:	0.0 ft	Slot Radius:	"
		Latitude:	40° 11' 11.868 N
		Longitude:	104° 39' 45.576 W
		Grid Convergence:	0.54 °

Well	Cannon 24-33		
Well Position	+N/-S	0.0 ft	Northing:
	+E/-W	0.0 ft	Easting:
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft
		Latitude:	40° 11' 11.688 N
		Longitude:	104° 39' 45.288 W
		Ground Level:	4,840.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	8/3/2010	8.91	66.92	53,122

Design	Wellbore #1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.0	0.0	0.0	196.12	

Survey Program	Date	9/27/2010			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
153.0	8,055.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard	

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
153.0	1.50	205.60	153.0	-1.8	-0.9	2.0	0.98	0.98	0.00	
242.0	2.50	198.70	241.9	-4.7	-2.0	5.1	1.15	1.12	-7.75	
332.0	3.40	193.50	331.8	-9.1	-3.2	9.7	1.04	1.00	-5.78	
425.0	4.00	195.50	424.6	-15.0	-4.8	15.7	0.66	0.65	2.15	
516.0	4.80	175.90	515.3	-21.8	-5.3	22.4	1.86	0.88	-21.54	
607.0	7.80	168.40	605.8	-31.7	-3.8	31.5	3.41	3.30	-8.24	
641.8	8.49	167.32	640.3	-36.5	-2.8	35.8	2.02	1.97	-3.10	
642' MD = 22' Radius										
698.0	9.60	165.90	695.7	-45.1	-0.7	43.5	2.02	1.98	-2.53	
789.0	11.60	166.40	785.2	-61.3	3.3	58.0	2.20	2.20	0.55	
878.0	12.10	168.40	872.3	-79.2	7.3	74.0	0.73	0.56	2.25	
973.0	12.30	177.40	965.1	-99.0	9.7	92.4	2.01	0.21	9.47	

Company:	Anadarko, Weld County CO	Local Co-ordinate Reference:	Well Cannon 24-33
Project:	SEC.33-T3N-R65W	TVD Reference:	WELL @ 4853.0ft (Original Well Elev)
Site:	Cannon 17-33 Pad Sec.33-T3N-R65W	MD Reference:	WELL @ 4853.0ft (Original Well Elev)
Well:	Cannon 24-33	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM den0-adp01 Server Data

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
1,068.0	14.30	182.40	1,057.6	-120.9	9.7	113.4	2.43	2.11	5.26	
1,164.0	16.00	191.20	1,150.3	-145.7	6.6	138.1	2.97	1.77	9.17	
1,259.0	18.50	188.80	1,241.0	-173.4	1.8	166.1	2.74	2.63	-2.53	
1,354.0	20.70	190.50	1,330.5	-204.8	-3.6	197.8	2.39	2.32	1.79	
1,449.0	23.30	190.10	1,418.6	-239.8	-10.0	233.2	2.74	2.74	-0.42	
1,544.0	24.00	193.30	1,505.6	-277.2	-17.7	271.2	1.54	0.74	3.37	
1,639.0	25.20	193.80	1,592.0	-315.6	-27.0	310.7	1.28	1.26	0.53	
1,735.0	24.90	193.10	1,678.9	-355.1	-36.4	351.3	0.44	-0.31	-0.73	
1,830.0	23.70	191.60	1,765.5	-393.3	-44.8	390.3	1.42	-1.26	-1.58	
1,925.0	22.10	194.80	1,853.0	-429.3	-53.2	427.2	2.13	-1.68	3.37	
2,020.0	21.80	196.80	1,941.1	-463.5	-62.9	462.7	0.85	-0.32	2.11	
2,116.0	22.60	203.80	2,030.0	-497.4	-75.5	498.8	2.88	0.83	7.29	
2,210.0	21.80	205.10	2,117.1	-529.7	-90.2	533.9	1.00	-0.85	1.38	
2,306.0	21.80	203.00	2,206.2	-562.3	-104.7	569.3	0.81	0.00	-2.19	
2,401.0	20.10	205.40	2,294.9	-593.3	-118.6	602.9	2.00	-1.79	2.53	
2,496.0	19.20	201.70	2,384.4	-622.5	-131.4	634.5	1.62	-0.95	-3.89	
2,591.0	20.40	200.50	2,473.8	-652.6	-142.9	666.6	1.33	1.26	-1.26	
2,686.0	20.10	199.80	2,562.9	-683.4	-154.3	699.4	0.41	-0.32	-0.74	
2,781.0	19.00	201.00	2,652.4	-713.2	-165.3	731.1	1.23	-1.16	1.26	
2,876.0	21.80	199.30	2,741.5	-744.3	-176.7	764.1	3.01	2.95	-1.79	
2,972.0	20.30	197.70	2,831.1	-777.0	-187.7	798.6	1.67	-1.56	-1.67	
3,067.0	21.50	196.00	2,919.8	-809.4	-197.5	832.4	1.42	1.26	-1.79	
3,162.0	21.80	197.70	3,008.1	-843.0	-207.6	867.5	0.73	0.32	1.79	
3,257.0	20.10	199.80	3,096.8	-875.2	-218.5	901.4	1.96	-1.79	2.21	
3,352.0	20.90	203.10	3,185.8	-906.1	-230.7	934.5	1.48	0.84	3.47	
3,448.0	19.30	203.30	3,276.0	-936.4	-243.7	967.3	1.67	-1.67	0.21	
3,543.0	18.30	201.90	3,365.9	-964.7	-255.5	997.7	1.15	-1.05	-1.47	
3,638.0	19.60	204.40	3,455.7	-993.0	-267.6	1,028.3	1.61	1.37	2.63	
3,733.0	20.30	207.90	3,545.0	-1,022.1	-281.9	1,060.2	1.46	0.74	3.68	
3,828.0	19.20	210.70	3,634.5	-1,050.1	-297.6	1,091.4	1.53	-1.16	2.95	
3,923.0	19.70	208.20	3,724.0	-1,077.6	-313.1	1,122.2	1.02	0.53	-2.63	
4,018.0	20.40	204.40	3,813.3	-1,106.8	-327.5	1,154.3	1.56	0.74	-4.00	
4,114.0	20.70	199.00	3,903.2	-1,138.1	-340.0	1,187.8	2.00	0.31	-5.63	
4,209.0	22.50	197.40	3,991.5	-1,171.3	-350.9	1,222.7	1.99	1.89	-1.68	
4,304.0	23.30	198.10	4,079.0	-1,206.6	-362.2	1,259.7	0.89	0.84	0.74	
4,399.0	22.10	198.90	4,166.7	-1,241.3	-373.8	1,296.3	1.30	-1.26	0.84	
4,494.0	23.30	200.20	4,254.3	-1,275.9	-386.1	1,332.9	1.37	1.26	1.37	
4,589.0	23.30	200.70	4,341.5	-1,311.1	-399.2	1,370.4	0.21	0.00	0.53	
4,685.0	20.30	199.80	4,430.7	-1,344.5	-411.5	1,405.9	3.14	-3.13	-0.94	
4,780.0	22.30	198.80	4,519.2	-1,377.1	-422.9	1,440.4	2.14	2.11	-1.05	
4,875.0	22.40	196.60	4,607.0	-1,411.5	-433.9	1,476.5	0.89	0.11	-2.32	
4,970.0	19.80	196.10	4,695.7	-1,444.3	-443.6	1,510.7	2.74	-2.74	-0.53	
5,065.0	17.20	194.00	4,785.7	-1,473.4	-451.4	1,540.8	2.82	-2.74	-2.21	
5,160.0	14.40	194.60	4,877.2	-1,498.5	-457.8	1,566.6	2.95	-2.95	0.63	
5,256.0	11.80	196.50	4,970.6	-1,519.4	-463.6	1,588.4	2.74	-2.71	1.98	
5,351.0	9.60	198.50	5,064.0	-1,536.3	-468.9	1,606.0	2.35	-2.32	2.11	
5,446.0	9.10	199.50	5,157.7	-1,550.8	-473.9	1,621.4	0.55	-0.53	1.05	
5,541.0	7.20	202.30	5,251.8	-1,563.4	-478.6	1,634.9	2.04	-2.00	2.95	
5,636.0	5.90	206.00	5,346.1	-1,573.3	-483.0	1,645.6	1.44	-1.37	3.89	
5,731.0	3.60	199.20	5,440.8	-1,580.5	-486.2	1,653.4	2.49	-2.42	-7.16	
5,826.0	2.30	193.10	5,535.7	-1,585.2	-487.6	1,658.3	1.41	-1.37	-6.42	
5,922.0	1.50	176.30	5,631.6	-1,588.3	-487.9	1,661.4	1.01	-0.83	-17.50	
6,017.0	1.40	175.10	5,726.6	-1,590.7	-487.8	1,663.6	0.11	-0.11	-1.26	
6,090.7	1.08	164.76	5,800.3	-1,592.3	-487.5	1,665.1	0.53	-0.43	-14.03	

Company:	Anadarko, Weld County CO	Local Co-ordinate Reference:	Well Cannon 24-33
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Site:	Cannon 17-33 Pad Sec.33-T3N-R65W	MD Reference:	WELL @ 4853.0ft (Original Well Elev)
Well:	Cannon 24-33	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM den0-adp01 Server Data

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
TARGET BHL 2550'FNL, 1440'FEL									
6,112.0	1.00	160.60	5,821.6	-1,592.7	-487.4	1,665.4	0.53	-0.39	-19.55
6,207.0	1.10	138.10	5,916.6	-1,594.1	-486.5	1,666.5	0.44	0.11	-23.68
6,302.0	1.10	117.50	6,011.5	-1,595.2	-485.1	1,667.2	0.41	0.00	-21.68
6,398.0	0.40	36.40	6,107.5	-1,595.4	-484.1	1,667.1	1.16	-0.73	-84.48
6,493.0	0.10	273.10	6,202.5	-1,595.1	-484.0	1,666.8	0.49	-0.32	-129.79
6,588.0	0.30	301.60	6,297.5	-1,595.0	-484.2	1,666.7	0.23	0.21	30.00
6,683.0	0.40	292.00	6,392.5	-1,594.7	-484.8	1,666.6	0.12	0.11	-10.11
6,778.0	0.40	342.20	6,487.5	-1,594.3	-485.2	1,666.3	0.36	0.00	52.84
6,873.0	0.70	29.50	6,582.5	-1,593.5	-485.0	1,665.5	0.55	0.32	49.79
6,968.0	1.00	41.00	6,677.5	-1,592.3	-484.2	1,664.2	0.36	0.32	12.11
7,064.0	1.50	52.90	6,773.5	-1,591.0	-482.6	1,662.4	0.58	0.52	12.40
7,146.1	1.67	58.26	6,855.6	-1,589.7	-480.7	1,660.6	0.28	0.21	6.53
TARGET CIRCLE 2550'FNL, 1440'FEL									
7,159.0	1.70	59.00	6,868.5	-1,589.5	-480.4	1,660.4	0.28	0.22	5.75
7,254.0	2.20	58.60	6,963.4	-1,587.8	-477.6	1,658.0	0.53	0.53	-0.42
7,349.0	2.40	59.40	7,058.3	-1,585.8	-474.4	1,655.2	0.21	0.21	0.84
7,444.0	2.20	66.70	7,153.2	-1,584.1	-471.0	1,652.6	0.37	-0.21	7.68
7,540.0	1.90	69.60	7,249.2	-1,582.8	-467.8	1,650.5	0.33	-0.31	3.02
7,635.0	1.50	72.50	7,344.1	-1,581.9	-465.1	1,648.8	0.43	-0.42	3.05
7,730.0	1.60	70.10	7,439.1	-1,581.1	-462.7	1,647.4	0.13	0.11	-2.53
8,010.0	1.00	65.90	7,719.0	-1,578.7	-456.8	1,643.5	0.22	-0.21	-1.50
8,036.0	1.00	65.90	7,745.1	-1,578.6	-456.4	1,643.2	0.00	0.00	0.00
HARDLINE 93'S OF BHL									
8,055.0	1.00	65.90	7,764.0	-1,578.4	-456.1	1,643.0	0.00	0.00	0.00

Wellbore Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
642'MD = 22' Radius	0.00	0.00	642.0	-32.8	-37.4	1,311,885.39	3,233,923.84	40° 11' 11.364 N	104° 39' 45.769 W
- hit/miss target									
- Shape									
- survey misses target center by 34.8ft at 641.8ft MD (640.3 TVD, -36.5 N, -2.8 E)									
- Circle (radius 22.0)									
TARGET BHL 2550'F	0.00	0.00	5,800.0	-1,606.5	-486.2	1,310,307.52	3,233,489.91	40° 10' 55.812 N	104° 39' 51.552 W
- survey misses target center by 14.3ft at 6090.7ft MD (5800.3 TVD, -1592.3 N, -487.5 E)									
- Point									
TARGET CIRCLE 2550'F	0.00	0.00	6,856.0	-1,606.5	-486.2	1,310,307.57	3,233,489.90	40° 10' 55.812 N	104° 39' 51.552 W
- survey misses target center by 17.7ft at 7146.1ft MD (6855.6 TVD, -1589.7 N, -480.7 E)									
- Circle (radius 50.0)									
HARDLINE 93'S OF E	0.00	0.00	7,748.0	-1,699.5	-586.2	1,310,213.63	3,233,390.78	40° 10' 54.893 N	104° 39' 52.841 W
- survey misses target center by 177.4ft at 8036.0ft MD (7745.1 TVD, -1578.6 N, -456.4 E)									
- Polygon									
Point 1			7,748.0	0.0	0.0	1,310,213.63	3,233,390.78		
Point 2			7,748.0	0.0	200.0	1,310,215.52	3,233,590.77		

Checked By: _____	Approved By: _____	Date: _____
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