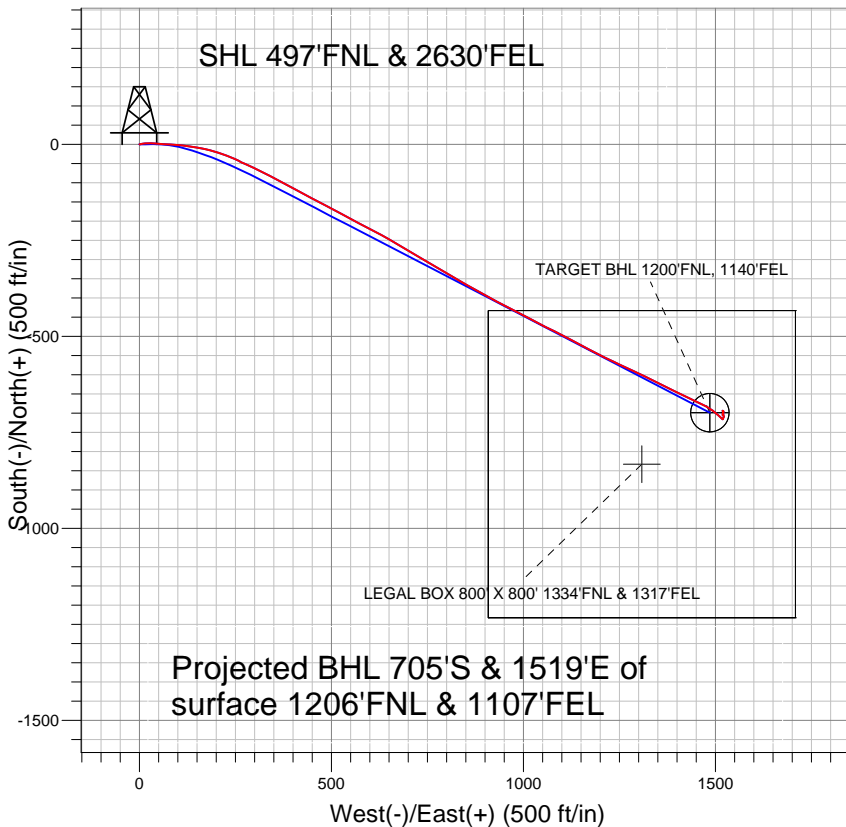


Anadarko, Weld County CO



LEGEND

- x Nichols 17-8, Wellbore #1, Plan #1 (5-09-11) V0
- Wellbore #1
- Survey #1

Final Survey Plot

Projected Final Survey -
8210'MD & 7845'TVD @ 1675'VS
1.1 deg Inc 181.3 deg AZ

Project: SEC.8-T2N-R65W
Site: Nichols 28-8 Pad Sec.8-T2N-R65W
Well: Nichols 17-8
Plan: Wellbore #1



Anadarko, Weld County CO

SEC.8-T2N-R65W

Nichols 28-8 Pad Sec.8-T2N-R65W

Nichols 17-8

Wellbore #1

Survey: Survey #1

Standard Survey Report

05 July, 2011



Company:	Anadarko, Weld County CO	Local Co-ordinate Reference:	Well Nichols 17-8
Project:	SEC.8-T2N-R65W	TVD Reference:	WELL @ 4837.0ft (Original Well Elev)
Site:	Nichols 28-8 Pad Sec.8-T2N-R65W	MD Reference:	WELL @ 4837.0ft (Original Well Elev)
Well:	Nichols 17-8	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	SEC.8-T2N-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	Nichols 28-8 Pad Sec.8-T2N-R65W		
Site Position:		Northing:	1,301,878.60ft
From:	Lat/Long	Easting:	3,227,041.06ft
Position Uncertainty:	0.0 ft	Slot Radius:	"
		Latitude:	40.159197
		Longitude:	-104.687676
		Grid Convergence:	0.52 °

Well	Nichols 17-8		
Well Position	+N/-S	0.0 ft	Northing:
	+E/-W	0.0 ft	Easting:
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft
		Latitude:	40.159153
		Longitude:	-104.687676
		Ground Level:	4,822.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/25/2011	8.81	66.87	53,019

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	115.20	

Survey Program	Date	7/5/2011			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
144.0	8,210.0	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	
144.0	0.40	85.30	144.0	0.0	0.5	0.4	0.28	0.28	0.00	
233.0	1.60	78.50	233.0	0.3	2.0	1.7	1.35	1.35	-7.64	
324.0	3.00	80.40	323.9	1.0	5.6	4.7	1.54	1.54	2.09	
415.0	4.40	82.80	414.7	1.8	11.4	9.6	1.55	1.54	2.64	
507.0	5.70	86.30	506.4	2.5	19.5	16.6	1.45	1.41	3.80	
599.0	7.60	91.50	597.7	2.7	30.1	26.1	2.16	2.07	5.65	
691.0	9.50	95.70	688.7	1.8	43.8	38.9	2.17	2.07	4.57	
796.0	10.40	93.60	792.1	0.3	61.9	55.8	0.92	0.86	-2.00	
849.0	10.30	92.20	844.3	-0.2	71.4	64.6	0.51	-0.19	-2.64	
945.0	11.90	93.70	938.5	-1.1	89.8	81.8	1.69	1.67	1.56	
1,041.0	14.20	96.60	1,032.0	-3.1	111.4	102.1	2.49	2.40	3.02	
1,136.0	16.30	98.50	1,123.6	-6.4	136.2	125.9	2.27	2.21	2.00	

Company:	Anadarko, Weld County CO	Local Co-ordinate Reference:	Well Nichols 17-8
Project:	SEC.8-T2N-R65W	TVD Reference:	WELL @ 4837.0ft (Original Well Elev)
Site:	Nichols 28-8 Pad Sec.8-T2N-R65W	MD Reference:	WELL @ 4837.0ft (Original Well Elev)
Well:	Nichols 17-8	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

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)
1,231.0	18.00	100.90	1,214.4	-11.2	163.8	152.9	1.94	1.79	2.53
1,326.0	19.50	106.00	1,304.4	-18.3	193.4	182.8	2.34	1.58	5.37
1,421.0	21.70	110.20	1,393.3	-28.8	225.1	216.0	2.79	2.32	4.42
1,516.0	22.40	116.20	1,481.4	-42.8	257.9	251.6	2.48	0.74	6.32
1,612.0	25.30	114.20	1,569.2	-59.3	293.0	290.4	3.14	3.02	-2.08
1,707.0	26.20	116.90	1,654.7	-77.1	330.2	331.6	1.56	0.95	2.84
1,802.0	27.50	118.80	1,739.5	-97.2	368.2	374.5	1.64	1.37	2.00
1,897.0	27.90	118.30	1,823.6	-118.3	406.9	418.6	0.49	0.42	-0.53
1,992.0	29.20	118.20	1,907.0	-139.8	446.9	463.9	1.37	1.37	-0.11
2,087.0	29.00	117.00	1,990.0	-161.2	487.9	510.1	0.65	-0.21	-1.26
2,183.0	29.00	118.30	2,074.0	-182.8	529.1	556.6	0.66	0.00	1.35
2,278.0	29.10	118.00	2,157.1	-204.6	569.8	602.6	0.19	0.11	-0.32
2,375.0	28.00	117.60	2,242.3	-226.2	610.8	649.0	1.15	-1.13	-0.41
2,470.0	28.60	119.50	2,325.9	-247.7	650.3	693.9	1.14	0.63	2.00
2,565.0	28.70	121.10	2,409.3	-270.7	689.7	739.3	0.81	0.11	1.68
2,661.0	28.30	120.30	2,493.6	-294.1	729.0	784.9	0.58	-0.42	-0.83
2,756.0	28.50	120.70	2,577.2	-317.0	768.0	829.9	0.29	0.21	0.42
2,851.0	28.40	120.90	2,660.7	-340.2	806.8	874.9	0.15	-0.11	0.21
2,946.0	28.40	119.30	2,744.3	-362.8	845.9	919.9	0.80	0.00	-1.68
3,042.0	30.10	118.80	2,828.1	-385.6	886.9	966.7	1.79	1.77	-0.52
3,137.0	30.60	118.00	2,910.0	-408.4	929.2	1,014.6	0.68	0.53	-0.84
3,232.0	30.90	117.20	2,991.7	-430.9	972.2	1,063.2	0.53	0.32	-0.84
3,327.0	30.90	118.10	3,073.2	-453.6	1,015.4	1,111.9	0.49	0.00	0.95
3,422.0	30.30	117.40	3,155.0	-476.1	1,058.2	1,160.2	0.73	-0.63	-0.74
3,518.0	29.60	116.00	3,238.2	-497.6	1,101.0	1,208.1	1.03	-0.73	-1.46
3,613.0	28.50	118.20	3,321.2	-518.6	1,142.1	1,254.2	1.61	-1.16	2.32
3,708.0	26.90	118.10	3,405.3	-539.5	1,181.0	1,298.3	1.68	-1.68	-0.11
3,803.0	24.60	116.10	3,490.9	-558.3	1,217.8	1,339.6	2.59	-2.42	-2.11
3,898.0	23.50	114.30	3,577.6	-574.8	1,252.8	1,378.3	1.39	-1.16	-1.89
3,993.0	22.20	115.50	3,665.2	-590.3	1,286.2	1,415.2	1.45	-1.37	1.26
4,088.0	20.70	115.80	3,753.6	-605.3	1,317.6	1,449.9	1.58	-1.58	0.32
4,183.0	19.50	116.50	3,842.8	-619.7	1,346.9	1,482.5	1.29	-1.26	0.74
4,278.0	17.50	116.40	3,932.9	-633.1	1,373.8	1,512.7	2.11	-2.11	-0.11
4,374.0	17.80	116.10	4,024.4	-646.0	1,400.0	1,541.8	0.33	0.31	-0.31
4,469.0	17.20	115.70	4,115.0	-658.5	1,425.7	1,570.3	0.64	-0.63	-0.42
4,564.0	14.40	115.20	4,206.4	-669.6	1,449.0	1,596.2	2.95	-2.95	-0.53
4,659.0	12.20	116.30	4,298.8	-679.1	1,468.7	1,618.1	2.33	-2.32	1.16
4,754.0	11.00	123.50	4,391.9	-688.6	1,485.3	1,637.1	1.98	-1.26	7.58
4,849.0	8.90	128.40	4,485.5	-698.1	1,498.6	1,653.2	2.38	-2.21	5.16
4,945.0	7.00	134.60	4,580.5	-706.8	1,508.6	1,665.9	2.17	-1.98	6.46
5,040.0	4.20	130.50	4,675.1	-713.2	1,515.3	1,674.8	2.98	-2.95	-4.32
5,135.0	1.30	126.20	4,769.9	-716.1	1,518.8	1,679.2	3.06	-3.05	-4.53
5,164.8	0.76	103.46	4,799.7	-716.3	1,519.3	1,679.7	2.24	-1.82	-76.35
TARGET BHL 1200'FNL, 1140'FEL									
5,229.0	1.10	3.50	4,863.9	-715.8	1,519.8	1,679.9	2.24	0.53	-155.66
5,324.0	1.50	21.10	4,958.9	-713.7	1,520.3	1,679.5	0.59	0.42	18.53
5,420.0	2.10	30.00	5,054.9	-711.0	1,521.6	1,679.5	0.69	0.63	9.27
5,515.0	1.30	335.20	5,149.8	-708.5	1,522.0	1,678.8	1.81	-0.84	-57.68
5,610.0	1.20	344.50	5,244.8	-706.6	1,521.3	1,677.4	0.24	-0.11	9.79
5,705.0	1.10	352.30	5,339.8	-704.7	1,520.9	1,676.2	0.20	-0.11	8.21
5,800.0	1.00	350.20	5,434.8	-703.0	1,520.6	1,675.2	0.11	-0.11	-2.21
5,896.0	1.10	348.20	5,530.8	-701.3	1,520.3	1,674.2	0.11	0.10	-2.08
5,991.0	0.80	352.40	5,625.7	-699.7	1,520.0	1,673.3	0.32	-0.32	4.42
6,086.0	0.60	355.80	5,720.7	-698.6	1,519.9	1,672.7	0.21	-0.21	3.58

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Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
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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)
6,181.0	0.70	3.90	5,815.7	-697.5	1,519.9	1,672.2	0.14	0.11	8.53
6,276.0	0.70	2.70	5,910.7	-696.4	1,520.0	1,671.8	0.02	0.00	-1.26
6,371.0	0.50	345.10	6,005.7	-695.4	1,519.9	1,671.3	0.28	-0.21	-18.53
6,466.0	0.30	330.90	6,100.7	-694.8	1,519.7	1,670.9	0.23	-0.21	-14.95
6,562.0	0.20	288.50	6,196.7	-694.5	1,519.4	1,670.5	0.21	-0.10	-44.17
6,657.0	0.10	265.70	6,291.7	-694.4	1,519.2	1,670.2	0.12	-0.11	-24.00
6,752.0	0.30	266.30	6,386.7	-694.5	1,518.8	1,670.0	0.21	0.21	0.63
6,847.0	0.30	303.30	6,481.7	-694.3	1,518.4	1,669.5	0.20	0.00	38.95
6,942.0	0.40	96.30	6,576.7	-694.2	1,518.5	1,669.6	0.72	0.11	161.05
7,037.0	0.60	93.40	6,671.7	-694.3	1,519.3	1,670.3	0.21	0.21	-3.05
7,132.0	0.50	125.60	6,766.7	-694.6	1,520.1	1,671.2	0.34	-0.11	33.89
7,228.0	0.50	135.30	6,862.7	-695.1	1,520.8	1,672.0	0.09	0.00	10.10
7,257.1	0.47	137.88	6,891.7	-695.3	1,521.0	1,672.2	0.13	-0.11	8.86
LEGAL BOX 800' X 800' 1334'FNL & 1317'FEL									
7,257.2	0.47	137.88	6,891.9	-695.3	1,521.0	1,672.2	0.00	0.00	0.00
TARGET CIRCLE 1200'FNL & 1140'FEL									
7,323.0	0.40	145.20	6,957.7	-695.7	1,521.3	1,672.7	0.13	-0.10	11.13
7,418.0	0.40	187.80	7,052.7	-696.3	1,521.4	1,673.1	0.31	0.00	44.84
7,513.0	0.40	202.70	7,147.7	-696.9	1,521.2	1,673.2	0.11	0.00	15.68
7,608.0	0.50	200.20	7,242.7	-697.6	1,521.0	1,673.2	0.11	0.11	-2.63
7,704.0	0.60	200.70	7,338.7	-698.5	1,520.6	1,673.3	0.10	0.10	0.52
7,799.0	0.60	208.90	7,433.7	-699.4	1,520.2	1,673.3	0.09	0.00	8.63
7,894.0	0.70	211.80	7,528.7	-700.3	1,519.7	1,673.2	0.11	0.11	3.05
7,989.0	0.90	194.50	7,623.7	-701.5	1,519.2	1,673.3	0.33	0.21	-18.21
8,084.0	1.00	184.40	7,718.6	-703.1	1,518.9	1,673.7	0.20	0.11	-10.63
8,160.0	1.10	181.30	7,794.6	-704.5	1,518.9	1,674.3	0.15	0.13	-4.08
8,210.0	1.10	181.30	7,844.6	-705.4	1,518.8	1,674.6	0.00	0.00	0.00

Checked By: _____ Approved By: _____ Date: _____