

Well Name: **Nichols 25-8**

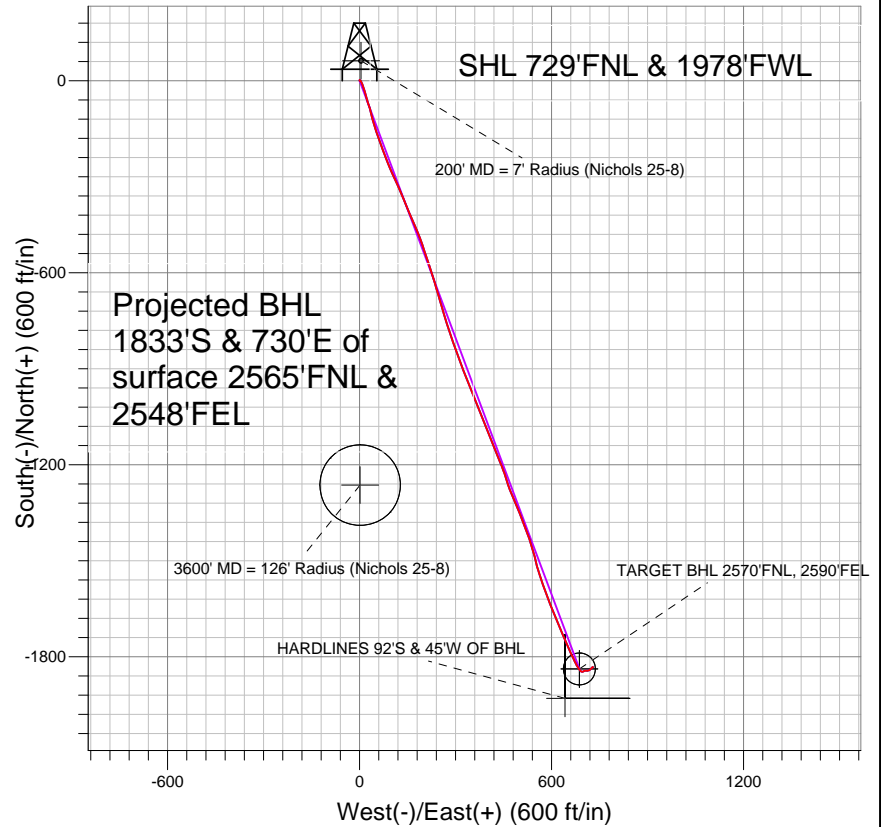
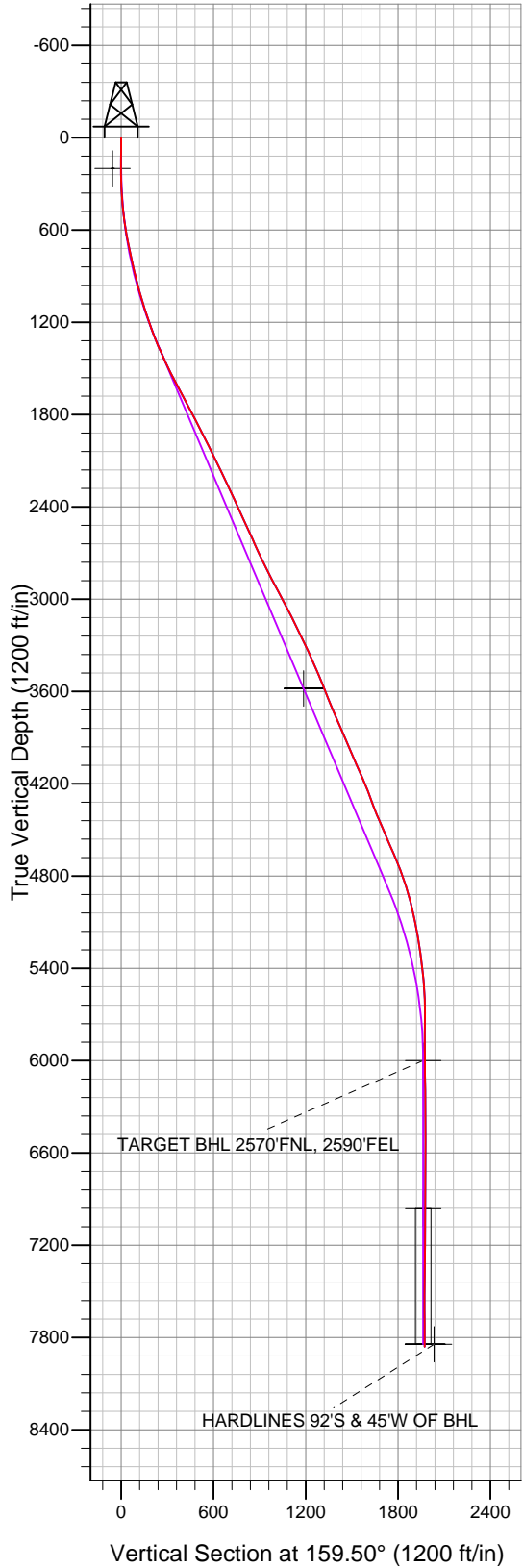
Surface Location: Nichols 3-8 Pad Sec.8-T2N-R65W  
 North American Datum 1983 US State Plane 1983 Colorado Northern Zone

Ground Elevation: 4894.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1301622.30	3226383.20	40.158510	-104.690038	

Original Well Elev WELL @ 4909.0ft (Original Well Elev)

## Anadarko, Weld County CO



### LEGEND

- ◆ Nichols 25-8, Wellbore #1, Plan #1 (4-26-11) V0
- Wellbore #1
- Survey #1

## Final Survey Plot

Projected Final Survey -  
 8260'MD & 7860'TVD @ 1973°VS  
 0.3 deg Inc 163.9 deg AZ

Project: SEC.8-T2N-R65W  
 Site: Nichols 3-8 Pad Sec.8-T2N-R65W  
 Well: Nichols 25-8  
 Plan: Wellbore #1



## Directional

### **Anadarko, Weld County CO**

**SEC.8-T2N-R65W**

**Nichols 3-8 Pad Sec.8-T2N-R65W**

**Nichols 25-8**

**Wellbore #1**

**Survey: Survey #1**

### **Standard Survey Report**

**23 June, 2011**



<b>Company:</b>	Anadarko, Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Nichols 25-8
<b>Project:</b>	SEC.8-T2N-R65W	<b>TVD Reference:</b>	WELL @ 4909.0ft (Original Well Elev)
<b>Site:</b>	Nichols 3-8 Pad Sec.8-T2N-R65W	<b>MD Reference:</b>	WELL @ 4909.0ft (Original Well Elev)
<b>Well:</b>	Nichols 25-8	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	Landmark

<b>Project</b>	SEC.8-T2N-R65W, Weld County, Colorado		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		Using Well Reference Point
<b>Map Zone:</b>	Colorado Northern Zone		Using geodetic scale factor

<b>Site</b>	Nichols 3-8 Pad Sec.8-T2N-R65W				
<b>Site Position:</b>		<b>Northing:</b>	1,301,655.88ft	<b>Latitude:</b>	40.158603
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,226,349.07ft	<b>Longitude:</b>	-104.690159
<b>Position Uncertainty:</b>	0.0 ft	<b>Slot Radius:</b>	"	<b>Grid Convergence:</b>	0.52 °

<b>Well</b>	Nichols 25-8					
<b>Well Position</b>	<b>+N/-S</b>	0.0 ft	<b>Northing:</b>	1,301,622.30 ft	<b>Latitude:</b>	40.158510
	<b>+E/-W</b>	0.0 ft	<b>Easting:</b>	3,226,383.20 ft	<b>Longitude:</b>	-104.690038
<b>Position Uncertainty</b>		0.0 ft	<b>Wellhead Elevation:</b>	ft	<b>Ground Level:</b>	4,894.0 ft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	4/26/2011	8.82	66.87	53,026

<b>Design</b>	Wellbore #1				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>	
	0.0	0.0	0.0	159.50	

<b>Survey Program</b>	<b>Date</b>	6/23/2011			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
144.0	8,260.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard	

<b>Survey</b>										
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Vertical Section (ft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Turn Rate (°/100ft)</b>	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
144.0	1.20	15.80	144.0	1.5	0.4	-1.2	0.83	0.83	0.00	
200.4	0.66	82.93	200.4	2.1	0.9	-1.6	1.99	-0.96	119.07	
<b>200' MD = 7' Radius (Nichols 25-8)</b>										
233.0	1.00	122.70	233.0	1.9	1.3	-1.3	1.99	1.05	121.92	
324.0	2.60	139.30	323.9	-0.1	3.3	1.2	1.83	1.76	18.24	
415.0	4.60	150.90	414.7	-4.8	6.5	6.8	2.33	2.20	12.75	
507.0	7.00	161.60	506.3	-13.4	10.0	16.0	2.85	2.61	11.63	
599.0	9.10	164.10	597.4	-25.7	13.8	28.9	2.31	2.28	2.72	
691.0	11.70	163.60	687.8	-41.6	18.4	45.4	2.83	2.83	-0.54	
783.0	12.70	162.70	777.8	-60.2	24.0	64.8	1.11	1.09	-0.98	
811.0	12.80	163.20	805.1	-66.1	25.9	71.0	0.53	0.36	1.79	
881.0	12.80	163.10	873.3	-81.0	30.4	86.5	0.03	0.00	-0.14	

<b>Company:</b>	Anadarko, Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Nichols 25-8
<b>Project:</b>	SEC.8-T2N-R65W	<b>TVD Reference:</b>	WELL @ 4909.0ft (Original Well Elev)
<b>Site:</b>	Nichols 3-8 Pad Sec.8-T2N-R65W	<b>MD Reference:</b>	WELL @ 4909.0ft (Original Well Elev)
<b>Well:</b>	Nichols 25-8	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	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)	
976.0	14.90	167.20	965.6	-103.0	36.1	109.1	2.44	2.21	4.32	
1,071.0	16.80	164.00	1,057.0	-128.1	42.6	134.9	2.20	2.00	-3.37	
1,166.0	18.60	160.40	1,147.5	-155.6	51.5	163.7	2.22	1.89	-3.79	
1,261.0	19.80	161.50	1,237.2	-185.1	61.7	195.0	1.32	1.26	1.16	
1,356.0	22.00	159.50	1,325.9	-217.0	73.0	228.8	2.43	2.32	-2.11	
1,452.0	24.70	158.60	1,414.0	-252.5	86.6	266.9	2.84	2.81	-0.94	
1,547.0	26.00	155.70	1,499.9	-290.0	102.4	307.5	1.89	1.37	-3.05	
1,642.0	27.70	156.00	1,584.7	-329.1	120.0	350.3	1.80	1.79	0.32	
1,737.0	28.00	157.30	1,668.7	-369.9	137.6	394.6	0.71	0.32	1.37	
1,832.0	28.00	156.80	1,752.5	-411.0	155.0	439.2	0.25	0.00	-0.53	
1,927.0	27.10	156.30	1,836.8	-451.3	172.4	483.1	0.98	-0.95	-0.53	
2,023.0	27.20	159.60	1,922.2	-491.9	188.9	526.9	1.57	0.10	3.44	
2,118.0	26.30	161.70	2,007.0	-532.2	203.1	569.6	1.37	-0.95	2.21	
2,213.0	26.10	161.90	2,092.3	-572.0	216.2	611.5	0.23	-0.21	0.21	
2,309.0	25.80	162.00	2,178.6	-612.0	229.2	653.5	0.32	-0.31	0.10	
2,405.0	24.80	164.60	2,265.4	-651.3	241.0	694.4	1.56	-1.04	2.71	
2,501.0	25.50	162.80	2,352.3	-690.4	252.4	735.1	1.08	0.73	-1.88	
2,596.0	24.60	164.20	2,438.3	-729.0	263.9	775.2	1.13	-0.95	1.47	
2,691.0	24.40	162.90	2,524.8	-766.8	275.0	814.5	0.61	-0.21	-1.37	
2,786.0	24.70	160.30	2,611.2	-804.2	287.5	854.0	1.18	0.32	-2.74	
2,882.0	24.60	158.80	2,698.5	-841.7	301.5	894.0	0.66	-0.10	-1.56	
2,977.0	26.40	159.80	2,784.2	-880.0	315.9	934.9	1.95	1.89	1.05	
3,072.0	27.60	159.60	2,868.8	-920.4	330.9	978.0	1.27	1.26	-0.21	
3,167.0	28.00	158.80	2,952.9	-961.8	346.6	1,022.3	0.58	0.42	-0.84	
3,262.0	27.70	158.00	3,036.9	-1,003.1	363.0	1,066.7	0.50	-0.32	-0.84	
3,358.0	26.90	157.70	3,122.2	-1,043.9	379.6	1,110.7	0.85	-0.83	-0.31	
3,453.0	25.80	158.30	3,207.3	-1,083.0	395.4	1,152.9	1.19	-1.16	0.63	
3,548.0	25.50	158.30	3,292.9	-1,121.2	410.6	1,194.0	0.32	-0.32	0.00	
3,643.0	24.10	158.20	3,379.2	-1,158.2	425.3	1,233.8	1.47	-1.47	-0.11	
3,738.0	23.50	156.90	3,466.1	-1,193.6	440.0	1,272.1	0.84	-0.63	-1.37	
3,809.1	22.36	160.43	3,531.6	-1,219.4	450.0	1,299.8	2.51	-1.60	4.97	
<b>3600' MD = 126' Radius (Nichols 25-8)</b>										
3,833.0	22.00	161.70	3,553.7	-1,228.0	453.0	1,308.8	2.51	-1.52	5.29	
3,928.0	21.60	161.00	3,641.9	-1,261.4	464.3	1,344.1	0.50	-0.42	-0.74	
4,023.0	22.70	158.60	3,729.9	-1,295.0	476.6	1,379.9	1.50	1.16	-2.53	
4,119.0	23.80	156.70	3,818.1	-1,330.0	491.1	1,417.8	1.39	1.15	-1.98	
4,214.0	23.70	158.10	3,905.1	-1,365.3	505.8	1,456.0	0.60	-0.11	1.47	
4,309.0	23.30	158.40	3,992.2	-1,400.5	519.8	1,493.9	0.44	-0.42	0.32	
4,404.0	23.50	163.20	4,079.4	-1,436.1	532.2	1,531.6	2.02	0.21	5.05	
4,499.0	23.80	164.30	4,166.4	-1,472.7	542.9	1,569.6	0.56	0.32	1.16	
4,594.0	20.70	166.50	4,254.3	-1,507.5	552.0	1,605.3	3.38	-3.26	2.32	
4,689.0	21.60	159.60	4,342.9	-1,540.2	562.0	1,639.5	2.78	0.95	-7.26	
4,785.0	22.30	161.10	4,432.0	-1,574.0	574.0	1,675.4	0.93	0.73	1.56	
4,880.0	22.60	161.60	4,519.8	-1,608.4	585.6	1,711.6	0.37	0.32	0.53	
4,975.0	24.20	158.60	4,607.0	-1,643.8	598.5	1,749.3	2.10	1.68	-3.16	
5,070.0	22.90	157.60	4,694.1	-1,679.1	612.7	1,787.3	1.43	-1.37	-1.05	
5,165.0	20.30	155.30	4,782.4	-1,711.1	626.6	1,822.2	2.88	-2.74	-2.42	
5,260.0	17.10	156.10	4,872.4	-1,738.9	639.1	1,852.6	3.38	-3.37	0.84	
5,355.0	14.70	156.70	4,963.7	-1,762.7	649.6	1,878.6	2.53	-2.53	0.63	
5,450.0	12.40	157.20	5,056.1	-1,783.2	658.3	1,900.8	2.42	-2.42	0.53	
5,545.0	10.70	154.60	5,149.1	-1,800.6	666.0	1,919.8	1.87	-1.79	-2.74	
5,640.0	9.00	154.40	5,242.7	-1,815.2	673.0	1,936.0	1.79	-1.79	-0.21	
5,735.0	7.20	151.60	5,336.8	-1,827.2	679.1	1,949.3	1.94	-1.89	-2.95	
5,831.0	6.10	148.50	5,432.1	-1,836.8	684.6	1,960.2	1.20	-1.15	-3.23	

<b>Company:</b>	Anadarko, Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Nichols 25-8
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<b>Site:</b>	Nichols 3-8 Pad Sec.8-T2N-R65W	<b>MD Reference:</b>	WELL @ 4909.0ft (Original Well Elev)
<b>Well:</b>	Nichols 25-8	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	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)	
5,926.0	4.60	134.70	5,526.7	-1,843.8	689.9	1,968.7	2.07	-1.58	-14.53	
6,021.0	2.20	117.90	5,621.5	-1,847.3	694.3	1,973.5	2.71	-2.53	-17.68	
6,116.0	2.20	63.00	5,716.5	-1,847.4	697.5	1,974.6	2.13	0.00	-57.79	
6,211.0	2.10	62.90	5,811.4	-1,845.7	700.7	1,974.2	0.11	-0.11	-0.11	
6,307.0	1.60	77.20	5,907.4	-1,844.6	703.5	1,974.2	0.71	-0.52	14.90	
6,399.3	1.11	80.94	5,999.6	-1,844.2	705.7	1,974.6	0.53	-0.53	4.05	
<b>TARGET BHL 2570'FNL, 2590'FEL</b>										
6,402.0	1.10	81.10	6,002.3	-1,844.2	705.7	1,974.6	0.53	-0.52	5.89	
6,497.0	1.20	92.10	6,097.3	-1,844.1	707.6	1,975.1	0.25	0.11	11.58	
6,592.0	1.10	87.00	6,192.3	-1,844.1	709.5	1,975.8	0.15	-0.11	-5.37	
6,687.0	0.70	125.90	6,287.3	-1,844.4	710.9	1,976.5	0.75	-0.42	40.95	
6,782.0	0.40	79.50	6,382.3	-1,844.7	711.7	1,977.1	0.54	-0.32	-48.84	
6,878.0	0.50	72.70	6,478.3	-1,844.5	712.4	1,977.2	0.12	0.10	-7.08	
6,973.0	0.80	65.50	6,573.3	-1,844.1	713.4	1,977.1	0.33	0.32	-7.58	
7,068.0	0.90	73.30	6,668.3	-1,843.6	714.8	1,977.1	0.16	0.11	8.21	
7,163.0	1.30	67.80	6,763.3	-1,843.0	716.5	1,977.2	0.43	0.42	-5.79	
7,258.0	1.30	57.80	6,858.2	-1,842.0	718.4	1,976.9	0.24	0.00	-10.53	
7,353.0	1.10	59.50	6,953.2	-1,840.9	720.1	1,976.5	0.21	-0.21	1.79	
7,363.3	1.11	57.57	6,963.5	-1,840.8	720.2	1,976.5	0.36	0.06	-18.72	
<b>TARGET CIRCLE 2570'FNL, 2590'FEL</b>										
7,449.0	1.20	42.70	7,049.2	-1,839.7	721.5	1,975.9	0.36	0.11	-17.35	
7,544.0	1.30	52.10	7,144.2	-1,838.3	723.1	1,975.2	0.24	0.11	9.89	
7,639.0	1.20	46.50	7,239.1	-1,837.0	724.6	1,974.4	0.17	-0.11	-5.89	
7,734.0	1.10	39.70	7,334.1	-1,835.6	725.9	1,973.6	0.18	-0.11	-7.16	
7,829.0	1.00	34.70	7,429.1	-1,834.2	727.0	1,972.7	0.14	-0.11	-5.26	
7,924.0	0.70	47.90	7,524.1	-1,833.2	727.9	1,972.0	0.38	-0.32	13.89	
8,020.0	0.50	72.60	7,620.1	-1,832.6	728.7	1,971.8	0.34	-0.21	25.73	
8,115.0	0.30	139.80	7,715.1	-1,832.7	729.3	1,972.1	0.50	-0.21	70.74	
8,210.0	0.30	163.90	7,810.1	-1,833.1	729.5	1,972.5	0.13	0.00	25.37	
8,244.3	0.30	163.90	7,844.4	-1,833.3	729.6	1,972.7	0.00	0.00	0.00	
<b>HARDLINES 92'S &amp; 45'W OF BHL</b>										
8,260.0	0.30	163.90	7,860.1	-1,833.4	729.6	1,972.8	0.00	0.00	0.00	

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_