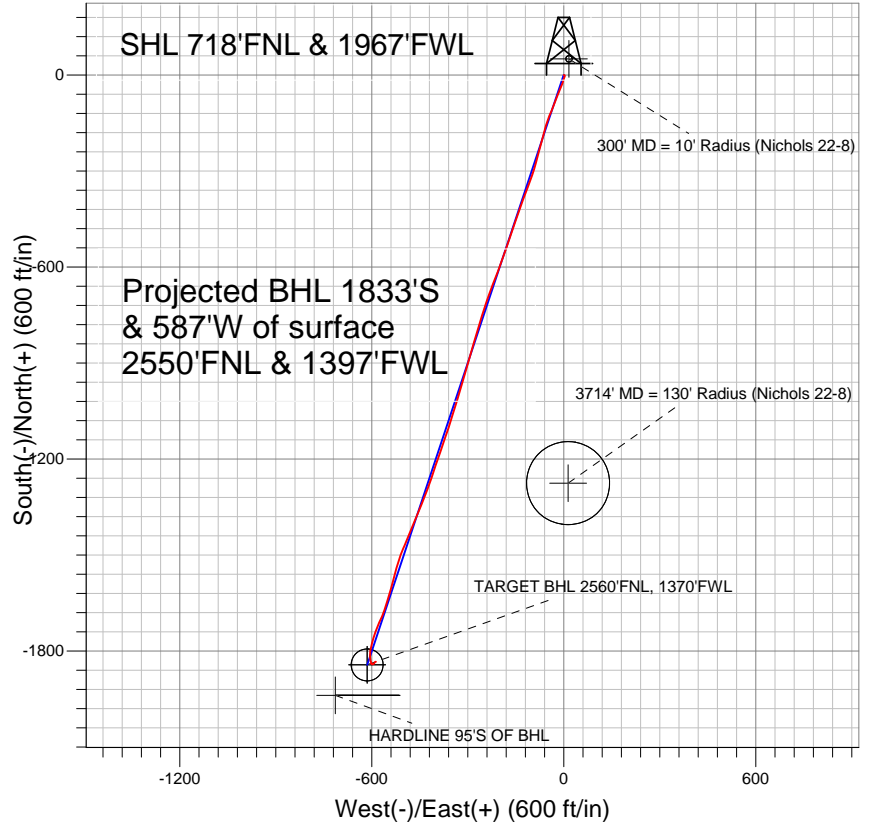
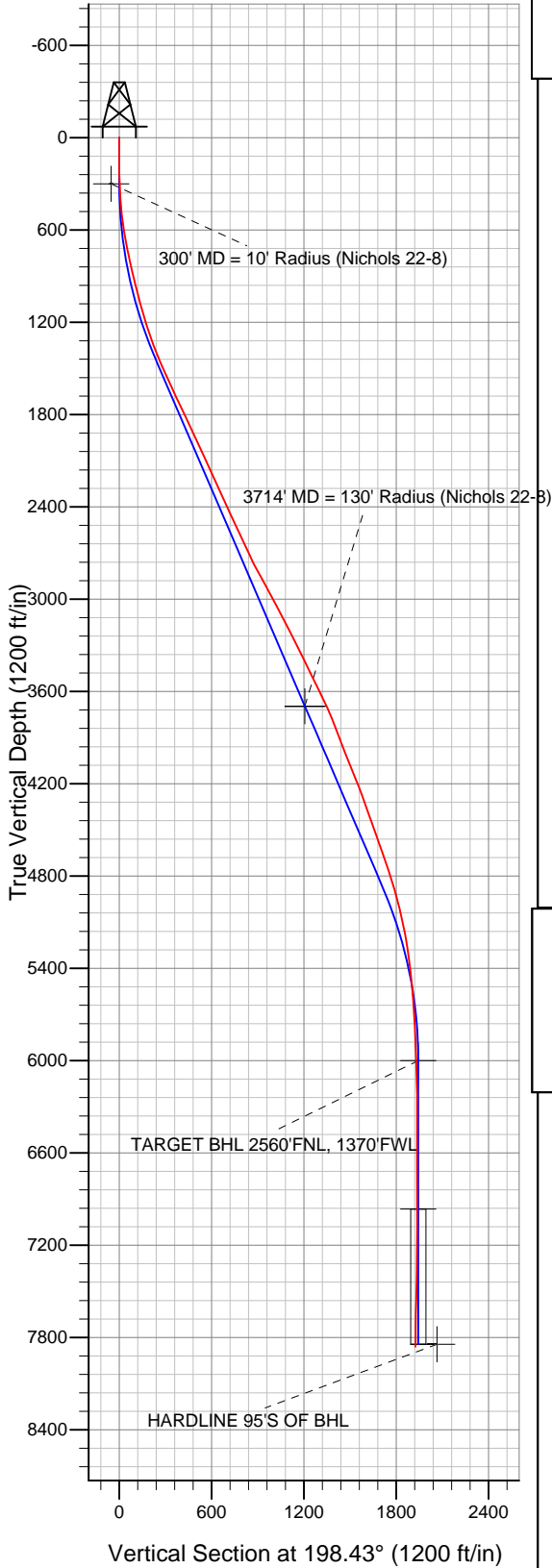


## Anadarko, Weld County CO



### LEGEND

- ▲ Nichols 22-8, Wellbore #1, Plan #1 (4-26-11) V0
- Wellbore #1

# Final Survey Plot

Projected Final Survey -  
 8235'MD & 7859'TVD @ 1925'VS  
 1.0 deg Inc 71.4 deg AZ

Project: SEC.8-T2N-R65W  
 Site: Nichols 3-8 Pad Sec.8-T2N-R65W  
 Well: Nichols 22-8  
 Plan: Wellbore #1



## Directional

# Anadarko, Weld County CO

SEC.8-T2N-R65W

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

Nichols 22-8

Wellbore #1

Design: Wellbore #1

## Standard Survey Report

13 June, 2011



<b>Company:</b>	Anadarko, Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Nichols 22-8
<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 22-8	<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 22-8					
<b>Well Position</b>	<b>+N/-S</b>	0.0 ft	<b>Northing:</b>	1,301,633.49ft	<b>Latitude:</b>	40.158541
	<b>+E/-W</b>	0.0 ft	<b>Easting:</b>	3,226,371.64ft	<b>Longitude:</b>	-104.690079
<b>Position Uncertainty</b>		0.0 ft	<b>Wellhead Elevation:</b>	ft	<b>Ground Level:</b>	4,894.0ft

<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	198.43	

<b>Survey Program</b>	<b>Date</b>	6/13/2011			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
144.0	8,235.0	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	1.30	88.60	144.0	0.0	1.6	-0.6	0.90	0.90	0.00	
233.0	1.50	159.20	233.0	-1.0	3.1	0.0	1.83	0.22	79.33	
298.3	2.09	186.77	298.2	-3.0	3.2	1.8	1.57	0.90	42.21	
<b>300' MD = 10' Radius (Nichols 22-8)</b>										
324.0	2.40	193.30	323.9	-4.0	3.0	2.8	1.57	1.22	25.43	
415.0	4.30	198.30	414.8	-9.1	1.5	8.1	2.11	2.09	5.49	
507.0	6.50	199.40	506.3	-17.3	-1.3	16.8	2.39	2.39	1.20	
599.0	8.60	200.00	597.5	-28.7	-5.4	28.9	2.28	2.28	0.65	
691.0	11.10	202.20	688.2	-43.3	-11.1	44.6	2.75	2.72	2.39	
783.0	12.60	201.40	778.2	-60.9	-18.1	63.5	1.64	1.63	-0.87	
800.0	12.90	201.00	794.8	-64.4	-19.4	67.2	1.84	1.76	-2.35	
882.0	12.90	201.60	874.7	-81.4	-26.1	85.5	0.16	0.00	0.73	

<b>Company:</b>	Anadarko, Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Nichols 22-8
<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 22-8	<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)	
977.0	13.70	202.40	967.2	-101.7	-34.3	107.3	0.86	0.84	0.84	
1,072.0	15.10	200.70	1,059.2	-123.7	-42.9	130.9	1.54	1.47	-1.79	
1,167.0	16.70	200.00	1,150.6	-148.1	-52.0	156.9	1.70	1.68	-0.74	
1,262.0	17.70	195.60	1,241.3	-174.8	-60.5	185.0	1.73	1.05	-4.63	
1,357.0	20.00	193.60	1,331.2	-204.5	-68.2	215.6	2.51	2.42	-2.11	
1,453.0	22.40	195.70	1,420.7	-238.1	-77.0	250.2	2.62	2.50	2.19	
1,548.0	24.10	195.10	1,508.0	-274.2	-87.0	287.7	1.81	1.79	-0.63	
1,643.0	25.10	198.70	1,594.4	-312.0	-98.5	327.2	1.90	1.05	3.79	
1,738.0	25.20	200.10	1,680.4	-350.1	-111.9	367.5	0.64	0.11	1.47	
1,833.0	25.20	201.60	1,766.3	-387.9	-126.3	408.0	0.67	0.00	1.58	
1,929.0	24.50	199.10	1,853.4	-425.7	-140.4	448.3	1.31	-0.73	-2.60	
2,024.0	25.20	197.80	1,939.6	-463.6	-153.0	488.2	0.93	0.74	-1.37	
2,119.0	25.30	198.50	2,025.6	-502.1	-165.6	528.7	0.33	0.11	0.74	
2,215.0	24.80	200.10	2,112.5	-540.5	-179.0	569.3	0.88	-0.52	1.67	
2,311.0	25.00	200.10	2,199.6	-578.4	-192.9	609.7	0.21	0.21	0.00	
2,407.0	23.80	201.30	2,287.0	-615.5	-206.9	649.4	1.35	-1.25	1.25	
2,502.0	24.60	200.50	2,373.7	-651.9	-220.8	688.3	0.91	0.84	-0.84	
2,597.0	25.30	199.30	2,459.8	-689.6	-234.5	728.3	0.91	0.74	-1.26	
2,692.0	24.50	197.30	2,546.0	-727.5	-247.0	768.3	1.22	-0.84	-2.11	
2,788.0	25.10	197.10	2,633.1	-766.0	-258.9	808.6	0.63	0.63	-0.21	
2,883.0	25.50	197.30	2,719.0	-804.8	-270.9	849.2	0.43	0.42	0.21	
2,978.0	27.70	197.10	2,804.0	-845.4	-283.5	891.7	2.32	2.32	-0.21	
3,073.0	29.00	195.70	2,887.6	-888.7	-296.2	936.8	1.54	1.37	-1.47	
3,168.0	28.90	195.50	2,970.7	-933.0	-308.6	982.7	0.15	-0.11	-0.21	
3,263.0	28.10	196.50	3,054.2	-976.6	-321.1	1,028.0	0.98	-0.84	1.05	
3,359.0	27.20	197.40	3,139.2	-1,019.2	-334.1	1,072.5	1.03	-0.94	0.94	
3,454.0	26.10	197.20	3,224.1	-1,059.9	-346.7	1,115.1	1.16	-1.16	-0.21	
3,549.0	27.10	197.80	3,309.1	-1,100.4	-359.5	1,157.7	1.09	1.05	0.63	
3,644.0	26.10	198.60	3,394.0	-1,140.8	-372.8	1,200.2	1.12	-1.05	0.84	
3,739.0	25.50	199.60	3,479.5	-1,179.9	-386.3	1,241.5	0.78	-0.63	1.05	
3,834.0	26.80	198.70	3,564.8	-1,219.5	-400.1	1,283.4	1.43	1.37	-0.95	
3,916.3	25.59	198.44	3,638.7	-1,253.9	-411.6	1,319.7	1.48	-1.47	-0.31	
<b>3714' MD = 130' Radius (Nichols 22-8)</b>										
3,929.0	25.40	198.40	3,650.1	-1,259.1	-413.4	1,325.2	1.48	-1.47	-0.33	
4,024.0	23.30	200.20	3,736.7	-1,296.1	-426.3	1,364.4	2.34	-2.21	1.89	
4,119.0	21.60	202.20	3,824.5	-1,329.9	-439.4	1,400.6	1.96	-1.79	2.11	
4,215.0	20.60	202.60	3,914.0	-1,361.8	-452.6	1,435.1	1.05	-1.04	0.42	
4,310.0	21.50	203.10	4,002.7	-1,393.3	-465.8	1,469.1	0.97	0.95	0.53	
4,405.0	22.30	200.50	4,090.8	-1,426.2	-478.9	1,504.4	1.32	0.84	-2.74	
4,500.0	21.80	204.70	4,178.9	-1,459.1	-492.6	1,540.0	1.74	-0.53	4.42	
4,595.0	20.30	200.80	4,267.6	-1,490.5	-505.9	1,574.0	2.16	-1.58	-4.11	
4,691.0	19.90	198.10	4,357.7	-1,521.6	-516.8	1,607.0	1.05	-0.42	-2.81	
4,786.0	19.90	194.10	4,447.0	-1,552.7	-525.8	1,639.3	1.43	0.00	-4.21	
4,881.0	18.70	195.30	4,536.7	-1,583.0	-533.8	1,670.6	1.33	-1.26	1.26	
4,974.0	20.20	196.50	4,624.4	-1,612.8	-542.3	1,701.5	1.67	1.61	1.29	
5,071.0	18.20	195.90	4,716.0	-1,643.4	-551.2	1,733.4	2.07	-2.06	-0.62	
5,166.0	18.30	198.70	4,806.2	-1,671.8	-560.0	1,763.1	0.93	0.11	2.95	
5,261.0	15.60	205.60	4,897.1	-1,697.5	-570.3	1,790.7	3.54	-2.84	7.26	
5,356.0	14.10	202.30	4,988.9	-1,719.7	-580.2	1,815.0	1.81	-1.58	-3.47	
5,451.0	12.80	200.10	5,081.3	-1,740.3	-588.2	1,837.0	1.47	-1.37	-2.32	
5,546.0	11.10	195.10	5,174.3	-1,759.0	-594.2	1,856.7	2.09	-1.79	-5.26	
5,641.0	8.10	196.50	5,267.9	-1,774.3	-598.5	1,872.5	3.17	-3.16	1.47	
5,737.0	7.60	191.30	5,363.0	-1,787.0	-601.7	1,885.6	0.90	-0.52	-5.42	
5,832.0	5.70	193.00	5,457.4	-1,797.7	-604.0	1,896.5	2.01	-2.00	1.79	

<b>Company:</b>	Anadarko, Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Nichols 22-8
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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 22-8	<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)
5,927.0	4.80	185.80	5,552.0	-1,806.3	-605.4	1,905.1	1.17	-0.95	-7.58
6,022.0	4.30	172.10	5,646.7	-1,813.8	-605.4	1,912.1	1.26	-0.53	-14.42
6,117.0	4.10	176.80	5,741.4	-1,820.7	-604.7	1,918.5	0.42	-0.21	4.95
6,212.0	2.80	171.50	5,836.2	-1,826.4	-604.1	1,923.7	1.41	-1.37	-5.58
6,308.0	2.20	166.10	5,932.2	-1,830.5	-603.4	1,927.4	0.67	-0.63	-5.63
6,376.2	2.13	165.46	6,000.3	-1,833.0	-602.7	1,929.5	0.11	-0.11	-0.93
<b>TARGET BHL 2560'FNL, 1370'FWL</b>									
6,403.0	2.10	165.20	6,027.1	-1,833.9	-602.5	1,930.4	0.11	-0.11	-0.98
6,498.0	1.70	162.30	6,122.0	-1,837.0	-601.6	1,932.9	0.43	-0.42	-3.05
6,593.0	1.50	163.40	6,217.0	-1,839.5	-600.8	1,935.1	0.21	-0.21	1.16
6,688.0	0.80	12.50	6,312.0	-1,840.1	-600.3	1,935.5	2.35	-0.74	-158.84
6,783.0	0.40	20.60	6,407.0	-1,839.1	-600.1	1,934.5	0.43	-0.42	8.53
6,879.0	0.10	273.20	6,503.0	-1,838.8	-600.0	1,934.2	0.46	-0.31	-111.88
6,974.0	0.50	203.60	6,598.0	-1,839.2	-600.3	1,934.6	0.50	0.42	-73.26
7,069.0	0.50	167.10	6,693.0	-1,839.9	-600.3	1,935.4	0.33	0.00	-38.42
7,164.0	0.40	136.30	6,788.0	-1,840.6	-600.0	1,935.9	0.27	-0.11	-32.42
7,259.0	0.50	119.20	6,883.0	-1,841.0	-599.4	1,936.1	0.18	0.11	-18.00
7,339.9	0.58	101.26	6,963.9	-1,841.3	-598.7	1,936.1	0.23	0.10	-22.17
<b>TARGET CIRCLE 2560'FNL, 1370'FWL</b>									
7,354.0	0.60	98.70	6,978.0	-1,841.3	-598.6	1,936.1	0.23	0.13	-18.18
7,449.0	0.80	99.40	7,073.0	-1,841.5	-597.4	1,935.9	0.21	0.21	0.74
7,545.0	0.60	71.50	7,169.0	-1,841.4	-596.3	1,935.5	0.41	-0.21	-29.06
7,640.0	1.00	64.70	7,263.9	-1,840.9	-595.1	1,934.6	0.43	0.42	-7.16
7,735.0	1.00	53.60	7,358.9	-1,840.1	-593.7	1,933.4	0.20	0.00	-11.68
7,830.0	1.30	35.00	7,453.9	-1,838.7	-592.4	1,931.7	0.50	0.32	-19.58
7,925.0	1.50	24.10	7,548.9	-1,836.7	-591.2	1,929.4	0.35	0.21	-11.47
8,021.0	1.20	47.40	7,644.9	-1,834.9	-590.0	1,927.3	0.65	-0.31	24.27
8,116.0	0.80	62.70	7,739.8	-1,833.9	-588.7	1,925.9	0.50	-0.42	16.11
8,185.0	1.00	71.40	7,808.8	-1,833.5	-587.7	1,925.2	0.35	0.29	12.61
8,217.5	1.00	71.40	7,841.3	-1,833.3	-587.1	1,924.9	0.00	0.00	0.00
<b>HARDLINE 95'S OF BHL</b>									
8,235.0	1.00	71.40	7,858.8	-1,833.2	-586.8	1,924.7	0.00	0.00	0.00

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