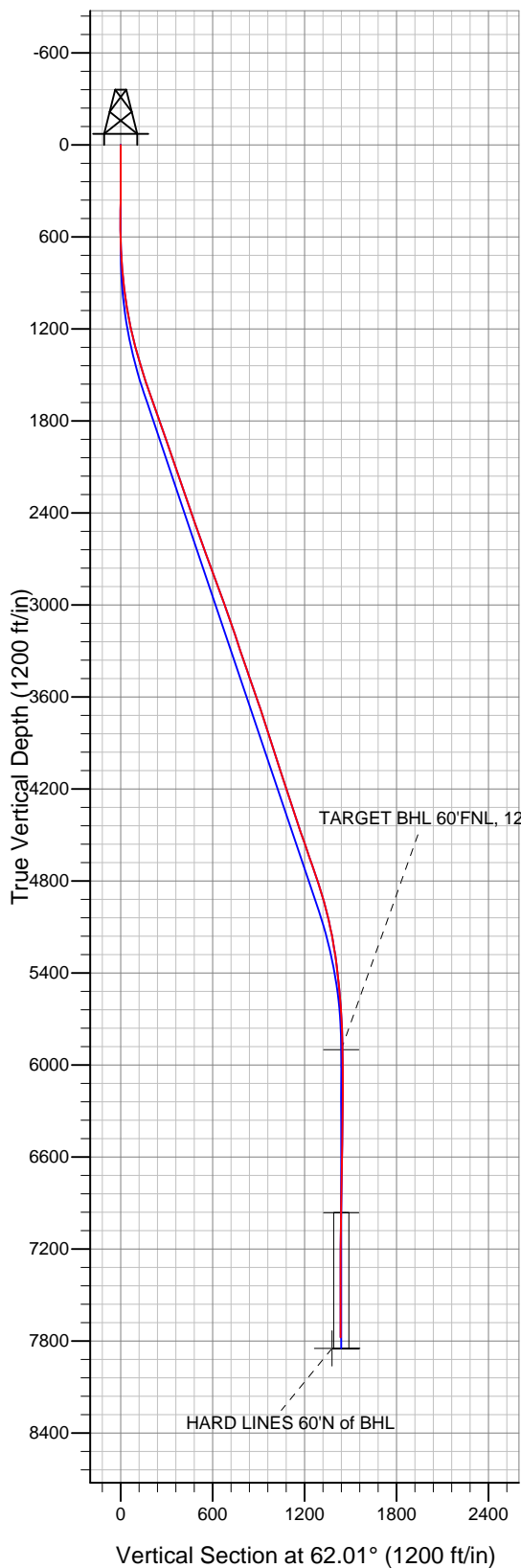


Well Name: **Pierson 27-34**

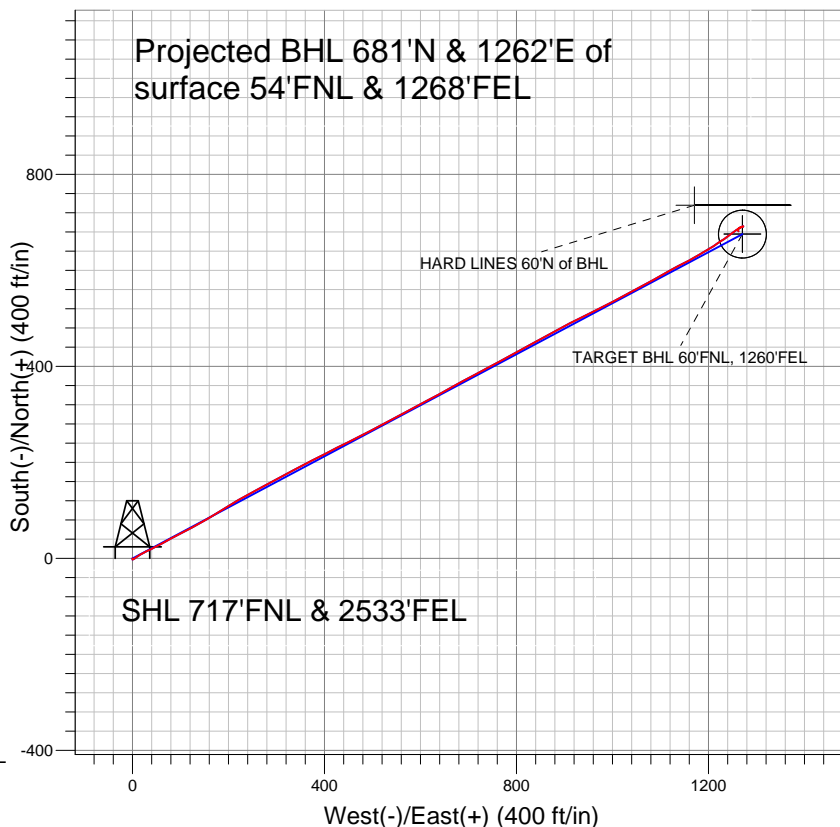
Surface Location: Pierson 21-34 Pad Sec.34-T4N-R66W  
North American Datum 1983 US State Plane 1983 Colorado Northern Zone

Ground Elevation: 4783.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1343327.76	3205658.71	40° 16' 24.557 N	104° 45' 46.595 W	
Original Well Elev WELL @ 4797.0ft (Original Well Elev)						



## Anadarko, Weld County CO



### LEGEND

- ◆ Pierson 27-34, Wellbore #1, Plan #1 (1-11-11) V0
- Wellbore #1
- Survey #1

## Final Survey Plot

Projected Final Survey -  
7999'MD & 7776'TVD @ 1434' VS  
0.8 deg Inc 152.0 deg AZ

Project: SEC.34-T4N-R66W  
Site: Pierson 21-34 Pad Sec.34-T4N-R66W  
Well: Pierson 27-34  
Plan: Wellbore #1



## **Anadarko, Weld County CO**

**SEC.34-T4N-R66W**

**Pierson 21-34 Pad Sec.34-T4N-R66W**

**Pierson 27-34**

**Wellbore #1**

**Survey: Survey #1**

## **Standard Survey Report**

**28 February, 2011**



<b>Company:</b>	Anadarko, Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Pierson 27-34
<b>Project:</b>	SEC.34-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4797.0ft (Original Well Elev)
<b>Site:</b>	Pierson 21-34 Pad Sec.34-T4N-R66W	<b>MD Reference:</b>	WELL @ 4797.0ft (Original Well Elev)
<b>Well:</b>	Pierson 27-34	<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.34-T4N-R66W		
<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>	Pierson 21-34 Pad Sec.34-T4N-R66W		
<b>Site Position:</b>		<b>Northing:</b>	1,343,327.65 ft
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,205,642.81 ft
<b>Position Uncertainty:</b>	0.0 ft	<b>Slot Radius:</b>	"
		<b>Latitude:</b>	40° 16' 24.557 N
		<b>Longitude:</b>	104° 45' 46.800 W
		<b>Grid Convergence:</b>	0.48 °

<b>Well</b>	Pierson 27-34		
<b>Well Position</b>	<b>+N/-S</b>	0.0 ft	<b>Northing:</b> 1,343,327.76 ft
	<b>+E/-W</b>	0.0 ft	<b>Easting:</b> 3,205,658.71 ft
<b>Position Uncertainty</b>	0.0 ft	<b>Wellhead Elevation:</b>	ft
		<b>Latitude:</b>	40° 16' 24.557 N
		<b>Longitude:</b>	104° 45' 46.595 W
		<b>Ground Level:</b>	4,783.0 ft

<b>Wellbore</b>	Wellbore #1		
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>
	IGRF2010	1/21/2011	8.91
			<b>Dip Angle (°)</b> 66.96
			<b>Field Strength (nT)</b> 53,107

<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>
	5,900.0	0.0	0.0
			<b>Direction (°)</b> 62.01

<b>Survey Program</b>	<b>Date</b> 2/28/2011		
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>
113.0	7,999.0	Survey #1 (Wellbore #1)	MWD
			<b>Description</b> 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
113.0	0.10	261.90	113.0	0.0	-0.1	-0.1	0.09	0.09	0.00
237.0	0.30	117.90	237.0	-0.2	0.1	0.0	0.31	0.16	-116.13
363.0	0.60	158.80	363.0	-1.0	0.6	0.1	0.33	0.24	32.46
496.0	0.80	239.00	496.0	-2.1	0.1	-0.9	0.69	0.15	60.30
568.0	0.40	162.20	568.0	-2.6	-0.3	-1.5	1.12	-0.56	-106.67
659.0	2.00	61.40	659.0	-2.1	1.2	0.1	2.32	1.76	-110.77
750.0	4.20	54.60	749.8	0.6	5.3	5.0	2.45	2.42	-7.47
854.0	5.60	55.00	853.4	5.7	12.6	13.8	1.35	1.35	0.38
943.0	7.00	63.70	941.9	10.6	21.0	23.5	1.90	1.57	9.78
1,031.0	8.50	63.80	1,029.1	15.8	31.6	35.4	1.70	1.70	0.11
1,120.0	10.30	62.30	1,116.9	22.4	44.6	49.9	2.04	2.02	-1.69
1,209.0	12.40	62.40	1,204.2	30.6	60.1	67.4	2.36	2.36	0.11

<b>Company:</b>	Anadarko, Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Pierson 27-34
<b>Project:</b>	SEC.34-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4797.0ft (Original Well Elev)
<b>Site:</b>	Pierson 21-34 Pad Sec.34-T4N-R66W	<b>MD Reference:</b>	WELL @ 4797.0ft (Original Well Elev)
<b>Well:</b>	Pierson 27-34	<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)
1,297.0	14.50	61.60	1,289.7	40.2	78.2	87.9	2.40	2.39	-0.91
1,386.0	16.40	63.00	1,375.5	51.2	99.2	111.6	2.18	2.13	1.57
1,474.0	16.80	61.60	1,459.9	62.9	121.4	136.7	0.64	0.45	-1.59
1,563.0	18.00	60.60	1,544.8	75.7	144.7	163.3	1.39	1.35	-1.12
1,652.0	19.50	58.60	1,629.1	90.2	169.4	191.9	1.83	1.69	-2.25
1,740.0	19.70	58.40	1,712.0	105.7	194.5	221.4	0.24	0.23	-0.23
1,829.0	19.60	59.50	1,795.8	121.1	220.2	251.3	0.43	-0.11	1.24
1,918.0	19.30	61.50	1,879.7	135.7	246.0	280.9	0.82	-0.34	2.25
2,006.0	18.60	62.70	1,962.9	149.1	271.2	309.5	0.91	-0.80	1.36
2,095.0	19.20	61.10	2,047.1	162.6	296.7	338.3	0.89	0.67	-1.80
2,184.0	19.40	60.90	2,131.1	176.9	322.4	367.7	0.24	0.22	-0.22
2,272.0	18.90	63.00	2,214.3	190.5	347.8	396.6	0.97	-0.57	2.39
2,361.0	18.90	62.80	2,298.5	203.6	373.5	425.4	0.07	0.00	-0.22
2,450.0	19.20	62.30	2,382.6	217.0	399.3	454.4	0.38	0.34	-0.56
2,538.0	18.90	63.40	2,465.8	230.1	424.8	483.2	0.53	-0.34	1.25
2,627.0	19.60	63.50	2,549.8	243.2	451.1	512.5	0.79	0.79	0.11
2,715.0	20.30	63.60	2,632.5	256.6	478.0	542.5	0.80	0.80	0.11
2,804.0	20.30	62.60	2,716.0	270.6	505.5	573.4	0.39	0.00	-1.12
2,893.0	20.80	61.50	2,799.3	285.2	533.1	604.6	0.71	0.56	-1.24
2,981.0	20.00	61.60	2,881.8	299.8	560.1	635.3	0.91	-0.91	0.11
3,070.0	19.30	61.50	2,965.6	314.1	586.4	665.2	0.79	-0.79	-0.11
3,159.0	19.70	62.90	3,049.5	327.9	612.7	694.9	0.69	0.45	1.57
3,247.0	19.00	61.20	3,132.5	341.6	638.4	724.1	1.02	-0.80	-1.93
3,336.0	18.50	60.50	3,216.8	355.5	663.4	752.7	0.62	-0.56	-0.79
3,425.0	18.90	61.50	3,301.1	369.4	688.4	781.2	0.58	0.45	1.12
3,513.0	18.50	62.10	3,384.5	382.7	713.2	809.4	0.50	-0.45	0.68
3,602.0	19.50	62.20	3,468.6	396.2	738.9	838.4	1.12	1.12	0.11
3,690.0	19.00	61.60	3,551.7	409.9	764.4	867.4	0.61	-0.57	-0.68
3,779.0	19.40	61.50	3,635.7	423.8	790.2	896.7	0.45	0.45	-0.11
3,868.0	18.20	61.10	3,720.0	437.6	815.3	925.3	1.36	-1.35	-0.45
3,956.0	17.60	61.30	3,803.7	450.6	839.0	952.4	0.69	-0.68	0.23
4,045.0	17.50	61.60	3,888.6	463.5	862.6	979.2	0.15	-0.11	0.34
4,134.0	18.30	61.60	3,973.3	476.5	886.7	1,006.6	0.90	0.90	0.00
4,222.0	18.50	62.10	4,056.8	489.6	911.2	1,034.4	0.29	0.23	0.57
4,311.0	17.90	64.10	4,141.3	502.2	936.0	1,062.1	0.97	-0.67	2.25
4,400.0	17.90	63.10	4,226.0	514.3	960.5	1,089.5	0.35	0.00	-1.12
4,488.0	18.10	63.80	4,309.7	526.5	984.8	1,116.7	0.33	0.23	0.80
4,577.0	18.10	61.30	4,394.3	539.2	1,009.3	1,144.3	0.87	0.00	-2.81
4,666.0	19.10	61.70	4,478.7	552.8	1,034.3	1,172.7	1.13	1.12	0.45
4,754.0	19.50	61.80	4,561.7	566.5	1,059.9	1,201.8	0.46	0.45	0.11
4,843.0	19.50	60.90	4,645.6	580.8	1,085.9	1,231.5	0.34	0.00	-1.01
4,931.0	19.00	60.30	4,728.7	595.0	1,111.2	1,260.5	0.61	-0.57	-0.68
5,020.0	18.20	62.40	4,813.0	608.6	1,136.1	1,288.9	1.17	-0.90	2.36
5,109.0	16.50	62.00	4,898.0	621.0	1,159.6	1,315.4	1.91	-1.91	-0.45
5,197.0	14.70	60.20	4,982.8	632.4	1,180.3	1,339.1	2.12	-2.05	-2.05
5,286.0	12.60	59.00	5,069.2	643.0	1,198.5	1,360.1	2.38	-2.36	-1.35
5,375.0	10.80	56.50	5,156.4	652.6	1,213.7	1,378.1	2.10	-2.02	-2.81
5,463.0	9.00	55.50	5,243.1	661.1	1,226.3	1,393.1	2.05	-2.05	-1.14
5,552.0	7.80	53.70	5,331.1	668.6	1,236.9	1,406.0	1.38	-1.35	-2.02
5,641.0	6.60	53.50	5,419.4	675.2	1,245.9	1,417.0	1.35	-1.35	-0.22
5,729.0	5.00	55.20	5,507.0	680.4	1,253.1	1,425.8	1.83	-1.82	1.93
5,818.0	4.50	53.80	5,595.6	684.7	1,259.1	1,433.1	0.58	-0.56	-1.57
5,906.0	3.80	61.20	5,683.4	688.1	1,264.4	1,439.5	1.00	-0.80	8.41
5,995.0	2.40	69.90	5,772.3	690.2	1,268.8	1,444.3	1.66	-1.57	9.78

<b>Company:</b>	Anadarko, Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Pierson 27-34
<b>Project:</b>	SEC.34-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4797.0ft (Original Well Elev)
<b>Site:</b>	Pierson 21-34 Pad Sec.34-T4N-R66W	<b>MD Reference:</b>	WELL @ 4797.0ft (Original Well Elev)
<b>Well:</b>	Pierson 27-34	<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)	
6,111.0	0.80	67.70	5,888.2	691.3	1,271.8	1,447.5	1.38	-1.38	-1.90	
6,122.7	0.74	67.53	5,899.9	691.4	1,271.9	1,447.6	0.53	-0.52	-1.45	
TARGET BHL 60°FNL, 1260°FEL										
6,245.0	0.10	53.20	6,022.2	691.8	1,272.7	1,448.5	0.53	-0.52	-11.72	
6,377.0	0.04	297.20	6,154.2	691.9	1,272.8	1,448.6	0.09	-0.05	-87.88	
6,510.0	0.40	239.70	6,287.2	691.6	1,272.4	1,448.1	0.29	0.27	-43.23	
6,642.0	0.80	247.80	6,419.2	691.1	1,271.1	1,446.8	0.31	0.30	6.14	
6,775.0	1.00	253.80	6,552.2	690.4	1,269.1	1,444.7	0.17	0.15	4.51	
6,908.0	1.10	260.40	6,685.2	689.9	1,266.8	1,442.3	0.12	0.08	4.96	
7,041.0	1.30	239.80	6,818.2	688.9	1,264.2	1,439.6	0.35	0.15	-15.49	
7,174.0	0.70	191.30	6,951.1	687.3	1,262.7	1,437.6	0.74	-0.45	-36.47	
7,186.9	0.68	193.67	6,964.1	687.2	1,262.7	1,437.5	0.25	-0.13	18.28	
TARGET CIRCLE 60°FNL & 1260°FEL										
7,307.0	0.60	220.20	7,084.1	686.0	1,262.1	1,436.4	0.25	-0.07	22.10	
7,440.0	0.40	211.70	7,217.1	685.1	1,261.4	1,435.4	0.16	-0.15	-6.39	
7,573.0	0.40	167.20	7,350.1	684.2	1,261.3	1,434.9	0.23	0.00	-33.46	
7,706.0	0.30	162.50	7,483.1	683.4	1,261.5	1,434.7	0.08	-0.08	-3.53	
7,839.0	0.30	165.00	7,616.1	682.8	1,261.7	1,434.5	0.01	0.00	1.88	
7,953.0	0.80	152.00	7,730.1	681.8	1,262.1	1,434.5	0.45	0.44	-11.40	
7,999.0	0.80	152.00	7,776.1	681.2	1,262.4	1,434.5	0.00	0.00	0.00	
HARD LINES 60°N of BHL										

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