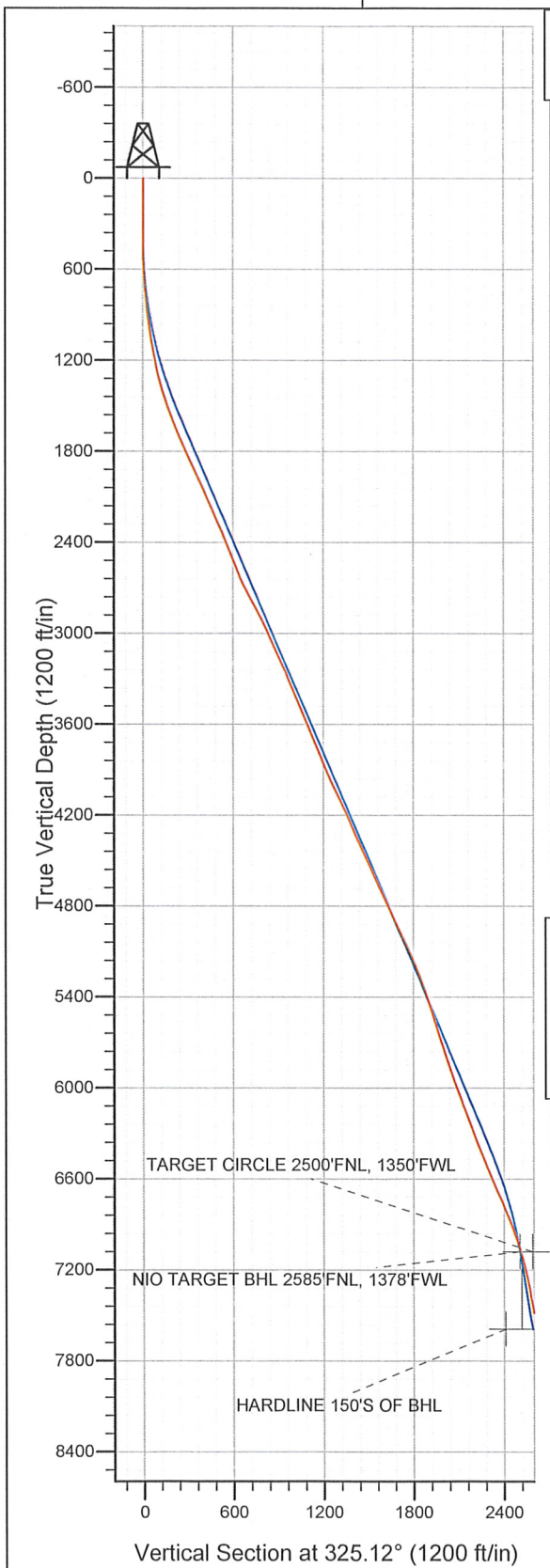
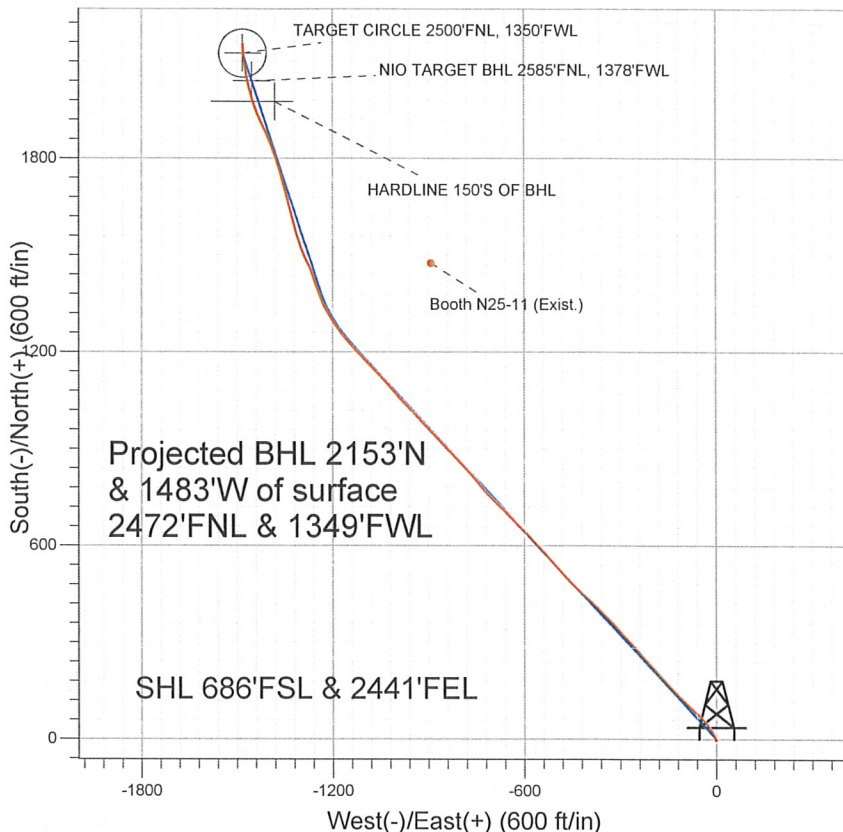


Well Name: **Booth N25-20D**  
 Surface Location: Booth N25-20D Pad Sec.25-T5N-R67W  
 North American Datum 1983 US State Plane 1983 Colorado Northern Zone  
 Ground Elevation: 4926.0  
 +N/-S +E/-W Northing Easting Latitude Longitude Slot  
 0.0 0.0 1376551.06 3183683.90 40° 21' 54.576 N 104° 50' 26.916 W  
 Original Well Elev WELL @ 4939.0ft (Original Well Elev)



## NOBLE ENERGY INC WELD COUNTY CO



### LEGEND

- △ Booth N25-20D, Wellbore #1, Noble Booth N25-20D Plan #1 (03-16-10) V0
- × Booth N25-11 (Exist.), Wellbore #1, Design #1 V0
- Wellbore #1
- Survey #1

## Final Survey Plot

Projected Final Survey -  
 8100'MD & 7570'TVD @ 2614'VS  
 10.6 deg Inc 354.0 deg AZ

Project: SEC.25-T5N-R67W  
 Site: Booth N25-20D Pad Sec.25-T5N-R67W  
 Well: Booth N25-20D  
 Plan: Wellbore #1

Company: NOBLE ENERGY INC WELD COUNTY CO  
 Project: SEC.25-T5N-R67W  
 Site: Booth N25-20D Pad Sec.25-T5N-R67W  
 Well: Booth N25-20D  
 Wellbore: Wellbore #1  
 Design: Wellbore #1

Local Co-ordinate Reference: Well Booth N25-20D  
 TVD Reference: WELL @ 4939.0ft (Original Well Elev)  
 MD Reference: WELL @ 4939.0ft (Original Well Elev)  
 North Reference: True  
 Survey Calculation Method: Minimum Curvature  
 Database: Landmark

Project	SEC.25-T5N-R67W, Weld County, Colorado		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site Booth N25-20D Pad Sec.25-T5N-R67W

Site Position: Northing: 1,376,551.07 ft Latitude: 40° 21' 54.576 N  
 From: Lat/Long Easting: 3,183,683.90 ft Longitude: 104° 50' 26.916 W  
 Position Uncertainty: 0.0 ft Slot Radius: " Grid Convergence: 0.43 °

Well Booth N25-20D  
 Well Position +N/-S 0.0 ft Northing: 1,376,551.06 ft Latitude: 40° 21' 54.576 N  
 +E/-W 0.0 ft Easting: 3,183,683.90 ft Longitude: 104° 50' 26.916 W  
 Position Uncertainty 0.0 ft Wellhead Elevation: ft Ground Level: 4,926.0 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/20/2011	8.91	67.01	53,112

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	325.12

Survey Program Date 5/31/2011

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
355.0	8,100.0	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
355.0	0.70	200.30	355.0	-2.0	-0.8	-1.2	0.20	0.20	0.00
446.0	0.70	307.60	446.0	-2.2	-1.4	-1.0	1.24	0.00	117.91
538.0	1.80	343.90	538.0	-0.5	-2.2	0.9	1.42	1.20	39.46
620.0	3.60	337.90	619.9	3.1	-3.6	4.6	2.22	2.20	-7.32
701.0	4.90	340.80	700.6	8.8	-5.7	10.4	1.63	1.60	3.58
783.0	5.50	335.40	782.3	15.6	-8.4	17.7	0.94	0.73	-6.59
871.0	6.30	331.00	869.8	23.7	-12.5	26.6	1.04	0.91	-5.00
953.0	6.90	326.00	951.3	31.7	-17.5	36.0	1.01	0.73	-6.10
1,035.0	8.70	319.10	1,032.5	40.5	-24.3	47.1	2.47	2.20	-8.41
1,116.0	10.50	320.90	1,112.4	50.8	-33.0	60.6	2.25	2.22	2.22
1,198.0	11.90	316.20	1,192.8	62.8	-43.5	76.4	2.04	1.71	-5.73
1,280.0	14.30	313.70	1,272.7	75.9	-56.7	94.6	3.01	2.93	-3.05



**Company:** NOBLE ENERGY INC WELD COUNTY CO  
**Project:** SEC.25-T5N-R67W  
**Site:** Booth N25-20D Pad Sec.25-T5N-R67W  
**Well:** Booth N25-20D  
**Wellbore:** Wellbore #1  
**Design:** Wellbore #1

**Local Co-ordinate Reference:** Well Booth N25-20D  
**TVD Reference:** WELL @ 4939.0ft (Original Well Elev)  
**MD Reference:** WELL @ 4939.0ft (Original Well Elev)  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature  
**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)
1,361.0	15.90	312.40	1,350.9	90.2	-72.1	115.3	2.02	1.98	-1.60
1,443.0	18.30	314.40	1,429.3	106.8	-89.6	138.9	3.01	2.93	2.44
1,525.0	19.90	314.80	1,506.8	125.7	-108.7	165.3	1.96	1.95	0.49
1,606.0	21.10	315.00	1,582.6	145.7	-128.8	193.2	1.48	1.48	0.25
1,688.0	22.70	317.20	1,658.7	167.7	-150.0	223.4	2.19	1.95	2.68
1,770.0	24.20	317.60	1,733.9	191.8	-172.1	255.7	1.84	1.83	0.49
1,851.0	25.20	317.80	1,807.5	216.8	-194.9	289.3	1.24	1.23	0.25
1,933.0	25.50	319.10	1,881.6	243.1	-218.1	324.2	0.77	0.37	1.59
2,015.0	24.80	317.00	1,955.9	269.0	-241.4	358.7	1.38	-0.85	-2.56
2,096.0	24.70	317.20	2,029.4	293.8	-264.5	392.3	0.16	-0.12	0.25
2,178.0	24.00	316.50	2,104.1	318.5	-287.6	425.8	0.92	-0.85	-0.85
2,260.0	23.60	318.10	2,179.1	342.8	-310.1	458.5	0.93	-0.49	1.95
2,341.0	24.20	317.50	2,253.2	367.1	-332.1	491.1	0.80	0.74	-0.74
2,423.0	23.60	316.20	2,328.2	391.4	-354.8	524.0	0.97	-0.73	-1.59
2,505.0	22.20	314.30	2,403.7	414.0	-377.3	555.4	1.93	-1.71	-2.32
2,587.0	21.60	311.20	2,479.8	434.8	-399.7	585.3	1.59	-0.73	-3.78
2,668.0	22.70	313.50	2,554.8	455.4	-422.3	615.1	1.73	1.36	2.84
2,750.0	23.90	314.80	2,630.1	478.0	-445.6	646.9	1.59	1.46	1.59
2,832.0	26.90	315.90	2,704.2	503.0	-470.3	681.6	3.70	3.66	1.34
2,913.0	28.50	318.60	2,775.9	530.7	-495.8	718.8	2.51	1.98	3.33
2,995.0	28.80	318.90	2,847.9	560.2	-521.7	757.9	0.41	0.37	0.37
3,077.0	27.20	319.10	2,920.3	589.3	-547.0	796.2	1.95	-1.95	0.24
3,158.0	24.80	316.10	2,993.1	615.5	-570.9	831.4	3.38	-2.96	-3.70
3,240.0	24.70	314.20	3,067.5	639.8	-595.1	865.2	0.98	-0.12	-2.32
3,322.0	26.00	316.00	3,141.6	664.7	-619.8	899.8	1.84	1.59	2.20
3,403.0	24.30	315.90	3,215.0	689.5	-643.8	933.8	2.10	-2.10	-0.12
3,485.0	22.70	314.50	3,290.2	712.7	-666.8	966.0	2.07	-1.95	-1.71
3,567.0	22.20	313.40	3,365.9	734.4	-689.3	996.7	0.80	-0.61	-1.34
3,648.0	22.60	315.40	3,440.8	756.0	-711.4	1,027.0	1.06	0.49	2.47
3,730.0	23.00	320.90	3,516.4	779.7	-732.6	1,058.5	2.64	0.49	6.71
3,812.0	22.90	320.40	3,591.9	804.4	-752.8	1,090.4	0.27	-0.12	-0.61
3,893.0	23.10	319.20	3,666.5	828.5	-773.3	1,121.9	0.63	0.25	-1.48
3,975.0	22.40	316.40	3,742.1	852.0	-794.6	1,153.3	1.57	-0.85	-3.41
4,057.0	21.70	316.10	3,818.1	874.3	-815.8	1,183.8	0.86	-0.85	-0.37
4,138.0	23.50	316.10	3,892.9	896.7	-837.4	1,214.5	2.22	2.22	0.00
4,220.0	25.90	316.10	3,967.4	921.4	-861.2	1,248.3	2.93	2.93	0.00
4,302.0	26.40	317.00	4,041.0	947.6	-886.0	1,284.1	0.78	0.61	1.10
4,383.0	25.40	316.30	4,113.9	973.4	-910.3	1,319.1	1.29	-1.23	-0.86
4,465.0	23.90	317.60	4,188.4	998.3	-933.7	1,352.9	1.95	-1.83	1.59
4,547.0	23.90	316.10	4,263.4	1,022.6	-956.4	1,385.8	0.74	0.00	-1.83
4,629.0	24.30	316.10	4,338.2	1,046.7	-979.6	1,418.9	0.49	0.49	0.00
4,710.0	25.80	318.30	4,411.6	1,071.9	-1,002.9	1,452.8	2.18	1.85	2.72
4,792.0	23.90	318.30	4,486.0	1,097.6	-1,025.8	1,487.0	2.32	-2.32	0.00
4,874.0	24.70	317.50	4,560.7	1,122.6	-1,048.4	1,520.5	1.05	0.98	-0.98
4,955.0	26.20	315.40	4,633.9	1,147.9	-1,072.4	1,554.9	2.16	1.85	-2.59
5,037.0	25.80	316.20	4,707.6	1,173.6	-1,097.5	1,590.4	0.65	-0.49	0.98
5,119.0	25.00	316.80	4,781.6	1,199.1	-1,121.7	1,625.2	1.02	-0.98	0.73
5,200.0	24.60	317.60	4,855.2	1,224.1	-1,144.8	1,658.8	0.64	-0.49	0.99
5,282.0	25.30	321.00	4,929.5	1,250.3	-1,167.3	1,693.2	1.95	0.85	4.15
5,364.0	25.80	324.40	5,003.5	1,278.4	-1,188.7	1,728.5	1.89	0.61	4.15
5,445.0	25.20	329.50	5,076.6	1,307.6	-1,207.8	1,763.4	2.81	-0.74	6.30
5,527.0	24.40	334.00	5,151.1	1,337.9	-1,224.0	1,797.5	2.50	-0.98	5.49
5,609.0	22.10	338.70	5,226.4	1,367.5	-1,237.1	1,829.2	3.60	-2.80	5.73
5,690.0	19.70	338.90	5,302.1	1,394.4	-1,247.5	1,857.3	2.96	-2.96	0.25

**Company:** NOBLE ENERGY INC WELD COUNTY CO  
**Project:** SEC.25-T5N-R67W  
**Site:** Booth N25-20D Pad Sec.25-T5N-R67W  
**Well:** Booth N25-20D  
**Wellbore:** Wellbore #1  
**Design:** Wellbore #1

**Local Co-ordinate Reference:** Well Booth N25-20D  
**TVD Reference:** WELL @ 4939.0ft (Original Well Elev)  
**MD Reference:** WELL @ 4939.0ft (Original Well Elev)  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature  
**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)
5,772.0	20.70	341.50	5,379.0	1,421.0	-1,257.1	1,884.6	1.64	1.22	3.17
5,854.0	19.30	339.40	5,456.1	1,447.5	-1,266.5	1,911.7	1.92	-1.71	-2.56
5,935.0	17.40	334.40	5,533.0	1,470.9	-1,276.4	1,936.6	3.04	-2.35	-6.17
6,017.0	16.20	335.40	5,611.5	1,492.4	-1,286.5	1,960.0	1.51	-1.46	1.22
6,099.0	18.20	339.00	5,689.8	1,514.8	-1,295.8	1,983.7	2.76	2.44	4.39
6,180.0	19.20	340.80	5,766.5	1,539.1	-1,304.7	2,008.8	1.43	1.23	2.22
6,262.0	19.10	343.50	5,844.0	1,564.7	-1,313.0	2,034.5	1.09	-0.12	3.29
6,344.0	20.40	345.50	5,921.2	1,591.4	-1,320.4	2,060.6	1.79	1.59	2.44
6,425.0	22.00	344.10	5,996.7	1,619.7	-1,328.1	2,088.2	2.07	1.98	-1.73
6,507.0	20.90	346.40	6,073.0	1,648.7	-1,335.7	2,116.3	1.69	-1.34	2.80
6,589.0	22.00	345.90	6,149.3	1,677.8	-1,342.9	2,144.3	1.36	1.34	-0.61
6,671.0	21.20	345.70	6,225.6	1,707.1	-1,350.3	2,172.6	0.98	-0.98	-0.24
6,752.0	21.00	344.50	6,301.1	1,735.2	-1,357.8	2,200.0	0.59	-0.25	-1.48
6,834.0	22.50	343.00	6,377.3	1,764.4	-1,366.3	2,228.8	1.95	1.83	-1.83
6,916.0	23.50	341.80	6,452.8	1,794.9	-1,376.0	2,259.4	1.35	1.22	-1.46
6,997.0	23.20	338.10	6,527.1	1,825.1	-1,387.0	2,290.4	1.85	-0.37	-4.57
7,079.0	24.10	338.00	6,602.3	1,855.6	-1,399.3	2,322.4	1.10	1.10	-0.12
7,161.0	24.70	335.40	6,676.9	1,886.7	-1,412.7	2,355.6	1.50	0.73	-3.17
7,242.0	24.50	334.70	6,750.6	1,917.3	-1,426.9	2,388.8	0.44	-0.25	-0.86
7,324.0	22.90	337.80	6,825.7	1,947.4	-1,440.2	2,421.2	2.47	-1.95	3.78
7,406.0	21.80	343.10	6,901.5	1,976.8	-1,450.7	2,451.2	2.80	-1.34	6.46
7,487.0	20.00	346.50	6,977.2	2,004.6	-1,458.3	2,478.4	2.68	-2.22	4.20
7,569.0	19.50	347.20	7,054.4	2,031.6	-1,464.6	2,504.2	0.67	-0.61	0.85
7,594.2	18.64	347.64	7,078.2	2,039.6	-1,466.4	2,511.8	3.47	-3.42	1.75
<b>NIO TARGET BHL 2585'FNL, 1378'FWL</b>									
7,621.4	17.71	348.17	7,104.0	2,047.9	-1,468.1	2,519.6	3.47	-3.42	1.93
<b>TARGET CIRCLE 2500'FNL, 1350'FWL</b>									
7,651.0	16.70	348.80	7,132.3	2,056.5	-1,469.9	2,527.6	3.47	-3.41	2.14
7,732.0	14.20	350.30	7,210.4	2,077.7	-1,473.8	2,547.3	3.13	-3.09	1.85
7,814.0	13.00	352.50	7,290.1	2,096.8	-1,476.7	2,564.6	1.59	-1.46	2.68
7,896.0	11.60	353.90	7,370.2	2,114.1	-1,478.8	2,580.0	1.75	-1.71	1.71
7,977.0	11.10	354.50	7,449.6	2,130.0	-1,480.4	2,593.9	0.63	-0.62	0.74
8,049.0	10.70	354.00	7,520.3	2,143.5	-1,481.8	2,605.8	0.57	-0.56	-0.69
8,083.7	10.63	354.00	7,554.4	2,149.9	-1,482.5	2,611.4	0.20	-0.20	0.00
<b>HARDLINE 150'S OF BHL</b>									
8,100.0	10.60	354.00	7,570.4	2,152.9	-1,482.8	2,614.1	0.20	-0.20	0.00

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