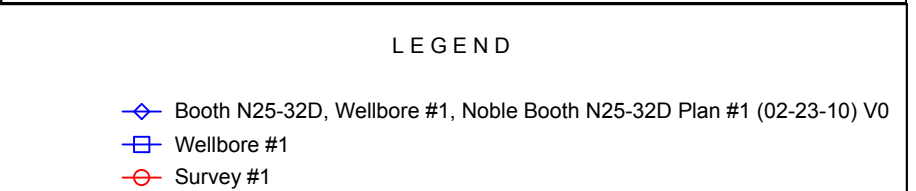
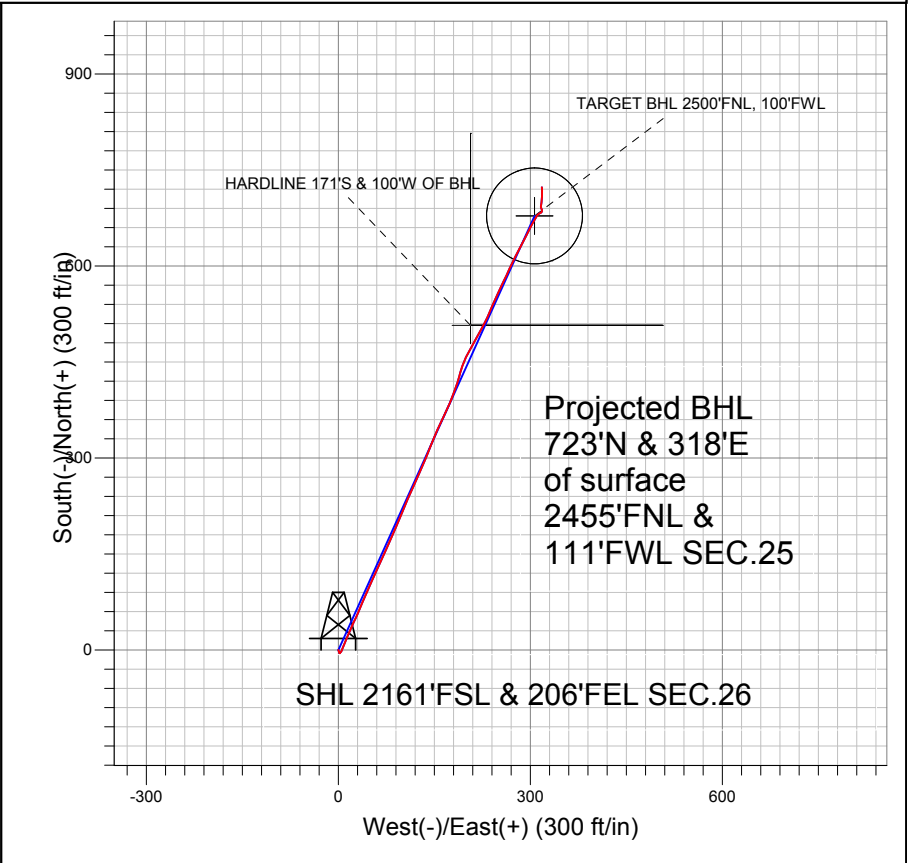


## NOBLE ENERGY INC WELD COUNTY CO



## Final Survey Plot

Projected Final Survey -  
 7722'MD & 7637'TVD @ 790' VS  
 1.2 deg Inc 355.4 deg AZ

Project: SEC.26-T5N-R67W  
 Site: Booth N25-33D Pad Sec.26-T5N-R67W  
 Well: Booth N25-32D  
 Plan: Wellbore #1



## **Directional**

# **NOBLE ENERGY INC WELD COUNTY CO**

**SEC.26-T5N-R67W**

**Booth N25-33D Pad Sec.26-T5N-R67W**

**Booth N25-32D**

**Wellbore #1**

**Survey: Survey #1**

## **Standard Survey Report**

**03 February, 2011**



<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>Local Co-ordinate Reference:</b>	Well Booth N25-32D
<b>Project:</b>	SEC.26-T5N-R67W	<b>TVD Reference:</b>	WELL @ 4962.0ft (Original Well Elev)
<b>Site:</b>	Booth N25-33D Pad Sec.26-T5N-R67W	<b>MD Reference:</b>	WELL @ 4962.0ft (Original Well Elev)
<b>Well:</b>	Booth N25-32D	<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.26-T5N-R67W, 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		
<b>Map Zone:</b>	Colorado Northern Zone		Using geodetic scale factor

<b>Site</b>	Booth N25-33D Pad Sec.26-T5N-R67W		
<b>Site Position:</b>		<b>Northing:</b>	1,377,960.32 ft
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,180,636.19 ft
<b>Position Uncertainty:</b>	0.0 ft	<b>Slot Radius:</b>	"
		<b>Latitude:</b>	40° 22' 8.724 N
		<b>Longitude:</b>	104° 51' 6.156 W
		<b>Grid Convergence:</b>	0.42 °

<b>Well</b>	Booth N25-32D		
<b>Well Position</b>	<b>+N-S</b>	0.0 ft	<b>Northing:</b> 1,377,985.81 ft
	<b>+E-W</b>	0.0 ft	<b>Easting:</b> 3,180,636.01 ft
<b>Position Uncertainty</b>		0.0 ft	<b>Wellhead Elevation:</b> ft
			<b>Latitude:</b> 40° 22' 8.976 N
			<b>Longitude:</b> 104° 51' 6.156 W
			<b>Ground Level:</b> 4,949.0 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	1/24/2011	8.96	67.02	53,146

<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	23.73	

<b>Survey Program</b>	<b>Date</b>	2/3/2011			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
760.0	7,722.0	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	
760.0	0.70	162.30	760.0	-4.4	1.4	-3.5	0.09	0.09	0.00	
853.0	0.70	143.00	853.0	-5.4	1.9	-4.2	0.25	0.00	-20.75	
947.0	0.40	25.10	947.0	-5.6	2.4	-4.1	1.02	-0.32	-125.43	
1,040.0	0.50	8.20	1,040.0	-4.9	2.6	-3.4	0.18	0.11	-18.17	
1,134.0	0.70	32.20	1,134.0	-4.0	3.0	-2.5	0.34	0.21	25.53	
1,228.0	0.80	58.10	1,228.0	-3.2	3.8	-1.3	0.37	0.11	27.55	
1,321.0	2.30	21.90	1,320.9	-1.1	5.1	1.1	1.85	1.61	-38.92	
1,415.0	4.20	22.80	1,414.8	3.8	7.1	6.4	2.02	2.02	0.96	
1,508.0	6.10	22.50	1,507.4	11.5	10.3	14.7	2.04	2.04	-0.32	
1,602.0	7.60	22.80	1,600.7	21.9	14.7	25.9	1.60	1.60	0.32	
1,695.0	9.00	23.50	1,692.7	34.2	19.9	39.4	1.51	1.51	0.75	
1,789.0	11.40	24.80	1,785.2	49.4	26.8	56.0	2.56	2.55	1.38	

<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>Local Co-ordinate Reference:</b>	Well Booth N25-32D
<b>Project:</b>	SEC.26-T5N-R67W	<b>TVD Reference:</b>	WELL @ 4962.0ft (Original Well Elev)
<b>Site:</b>	Booth N25-33D Pad Sec.26-T5N-R67W	<b>MD Reference:</b>	WELL @ 4962.0ft (Original Well Elev)
<b>Well:</b>	Booth N25-32D	<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)
1,883.0	12.40	22.80	1,877.2	67.1	34.6	75.4	1.15	1.06	-2.13
1,976.0	13.60	24.70	1,967.8	86.3	43.0	96.3	1.37	1.29	2.04
2,070.0	14.30	22.10	2,059.1	107.1	52.0	119.0	1.00	0.74	-2.77
2,163.0	14.30	24.70	2,149.2	128.2	61.1	141.9	0.69	0.00	2.80
2,257.0	14.80	25.60	2,240.2	149.5	71.2	165.5	0.58	0.53	0.96
2,350.0	14.40	23.60	2,330.2	170.8	80.9	189.0	0.69	-0.43	-2.15
2,444.0	14.90	22.70	2,421.1	192.7	90.3	212.7	0.58	0.53	-0.96
2,538.0	14.30	22.90	2,512.1	214.5	99.4	236.4	0.64	-0.64	0.21
2,631.0	13.20	22.40	2,602.4	234.9	108.0	258.5	1.19	-1.18	-0.54
2,725.0	14.80	25.40	2,693.6	255.7	117.2	281.3	1.87	1.70	3.19
2,818.0	15.00	23.80	2,783.5	277.5	127.2	305.2	0.49	0.22	-1.72
2,912.0	15.20	22.00	2,874.2	300.0	136.7	329.6	0.54	0.21	-1.91
3,005.0	14.30	21.20	2,964.2	322.0	145.4	353.3	0.99	-0.97	-0.86
3,099.0	14.50	24.20	3,055.2	343.6	154.4	376.7	0.82	0.21	3.19
3,193.0	14.50	26.40	3,146.2	364.9	164.5	400.2	0.59	0.00	2.34
3,286.0	14.50	22.50	3,236.3	386.0	174.1	423.5	1.05	0.00	-4.19
3,380.0	13.50	20.40	3,327.5	407.2	182.4	446.2	1.19	-1.06	-2.23
3,474.0	13.10	14.90	3,419.0	427.8	189.0	467.7	1.41	-0.43	-5.85
3,567.0	11.70	19.70	3,509.8	446.8	194.9	487.5	1.87	-1.51	5.16
3,661.0	12.40	29.60	3,601.7	464.6	203.1	507.0	2.32	0.74	10.53
3,754.0	14.00	28.50	3,692.3	483.2	213.4	528.2	1.74	1.72	-1.18
3,848.0	12.30	29.10	3,783.8	501.9	223.7	549.5	1.81	-1.81	0.64
3,941.0	12.50	24.30	3,874.6	519.7	232.6	569.4	1.13	0.22	-5.16
4,035.0	12.40	23.50	3,966.4	538.3	240.9	589.7	0.21	-0.11	-0.85
4,129.0	13.10	23.90	4,058.1	557.3	249.2	610.4	0.75	0.74	0.43
4,222.0	12.90	26.50	4,148.7	576.2	258.1	631.3	0.66	-0.22	2.80
4,316.0	11.90	25.40	4,240.5	594.3	266.9	651.5	1.09	-1.06	-1.17
4,409.0	11.70	24.90	4,331.6	611.5	275.0	670.5	0.24	-0.22	-0.54
4,503.0	12.40	28.50	4,423.5	629.1	283.8	690.1	1.09	0.74	3.83
4,596.0	10.60	27.70	4,514.6	645.4	292.6	708.6	1.94	-1.94	-0.86
4,690.0	8.80	26.30	4,607.3	659.5	299.8	724.4	1.93	-1.91	-1.49
4,783.0	6.20	30.60	4,699.5	670.2	305.5	736.5	2.86	-2.80	4.62
4,877.0	3.90	29.10	4,793.1	677.4	309.6	744.7	2.45	-2.45	-1.60
4,971.0	1.40	54.60	4,887.0	680.8	312.1	748.9	2.88	-2.66	27.13
5,083.9	0.97	58.58	4,999.8	682.1	314.1	750.9	0.38	-0.38	3.52
TARGET BHL 2500'FNL, 100'FWL									
5,158.0	0.70	63.80	5,074.0	682.7	315.0	751.7	0.38	-0.37	7.05
5,252.0	0.70	66.00	5,168.0	683.1	316.1	752.6	0.03	0.00	2.34
5,345.0	0.40	56.10	5,261.0	683.6	316.8	753.3	0.34	-0.32	-10.65
5,439.0	0.30	31.50	5,355.0	684.0	317.2	753.8	0.19	-0.11	-26.17
5,532.0	0.40	41.60	5,447.9	684.4	317.6	754.3	0.13	0.11	10.86
5,627.0	0.40	7.40	5,542.9	685.0	317.9	755.0	0.25	0.00	-36.00
5,719.0	0.70	3.00	5,634.9	685.9	317.9	755.8	0.33	0.33	-4.78
5,813.0	0.70	2.90	5,728.9	687.0	318.0	756.9	0.00	0.00	-0.11
5,906.0	0.70	350.80	5,821.9	688.1	317.9	757.9	0.16	0.00	-13.01
6,000.0	0.50	342.20	5,915.9	689.1	317.7	758.7	0.23	-0.21	-9.15
6,094.0	0.40	333.30	6,009.9	689.8	317.4	759.2	0.13	-0.11	-9.47
6,187.0	0.40	320.80	6,102.9	690.3	317.1	759.6	0.09	0.00	-13.44
6,281.0	0.50	333.90	6,196.9	690.9	316.7	760.0	0.15	0.11	13.94
6,374.0	0.40	348.90	6,289.9	691.6	316.5	760.5	0.17	-0.11	16.13
6,468.0	0.50	352.30	6,383.9	692.4	316.3	761.1	0.11	0.11	3.62
6,562.0	0.70	0.30	6,477.9	693.3	316.3	762.0	0.23	0.21	8.51
6,655.0	1.00	4.80	6,570.9	694.7	316.4	763.3	0.33	0.32	4.84
6,749.0	1.10	16.90	6,664.9	696.4	316.7	765.0	0.26	0.11	12.87

<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>Local Co-ordinate Reference:</b>	Well Booth N25-32D
<b>Project:</b>	SEC.26-T5N-R67W	<b>TVD Reference:</b>	WELL @ 4962.0ft (Original Well Elev)
<b>Site:</b>	Booth N25-33D Pad Sec.26-T5N-R67W	<b>MD Reference:</b>	WELL @ 4962.0ft (Original Well Elev)
<b>Well:</b>	Booth N25-32D	<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)
6,842.0	1.10	20.80	6,757.9	698.1	317.3	766.7	0.08	0.00	4.19
6,936.0	1.40	2.10	6,851.8	700.1	317.6	768.7	0.53	0.32	-19.89
7,030.0	1.50	4.40	6,945.8	702.4	317.8	770.9	0.12	0.11	2.45
7,123.0	1.90	2.20	7,038.8	705.2	317.9	773.5	0.44	0.43	-2.37
7,205.2	2.25	1.75	7,120.9	708.2	318.0	776.3	0.43	0.43	-0.54
<b>TARGET CIRCLE 2500'FNL, 100'FWL</b>									
7,217.0	2.30	1.70	7,132.7	708.6	318.0	776.7	0.43	0.43	-0.45
7,404.0	1.70	2.60	7,319.6	715.2	318.3	782.8	0.32	-0.32	0.48
7,498.0	1.50	356.20	7,413.6	717.8	318.2	785.2	0.29	-0.21	-6.81
7,591.0	1.40	354.40	7,506.5	720.1	318.1	787.2	0.12	-0.11	-1.94
7,677.0	1.20	355.40	7,592.5	722.1	317.9	788.9	0.23	-0.23	1.16
<b>HARDLINE 171'S &amp; 100'W OF BHL</b>									
7,722.0	1.20	355.40	7,637.5	723.0	317.8	789.8	0.00	0.00	0.00

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