

Well Name: **Booth N25-33D**

Surface Location: Booth N25-33D Pad Sec.26-T5N-R67W
North American Datum 1983 US State Plane 1983 Colorado Northern Zone

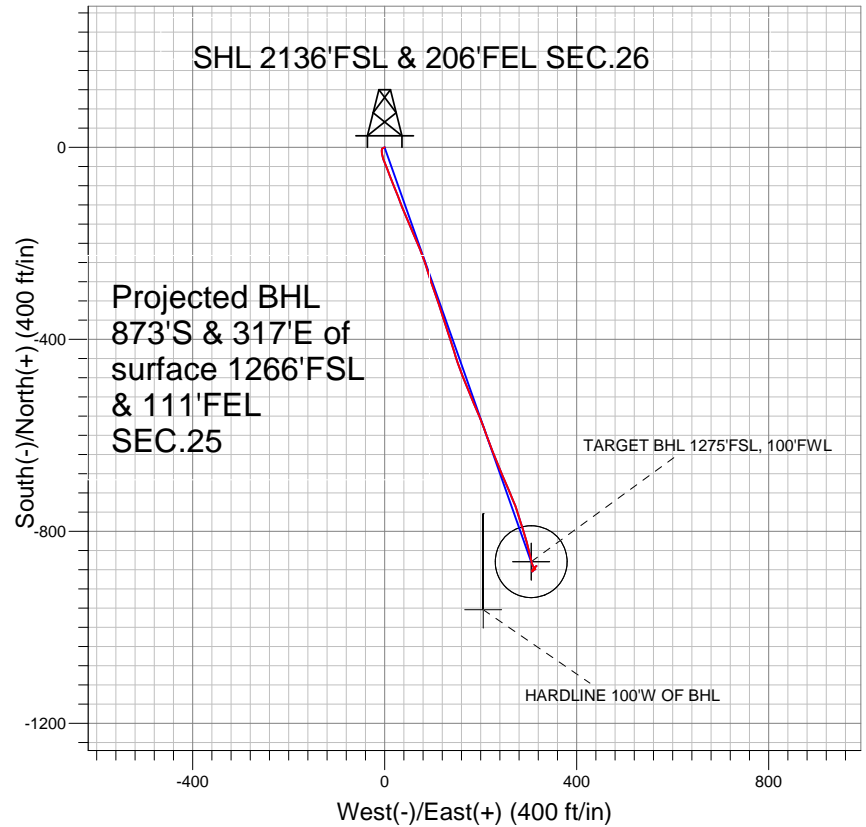
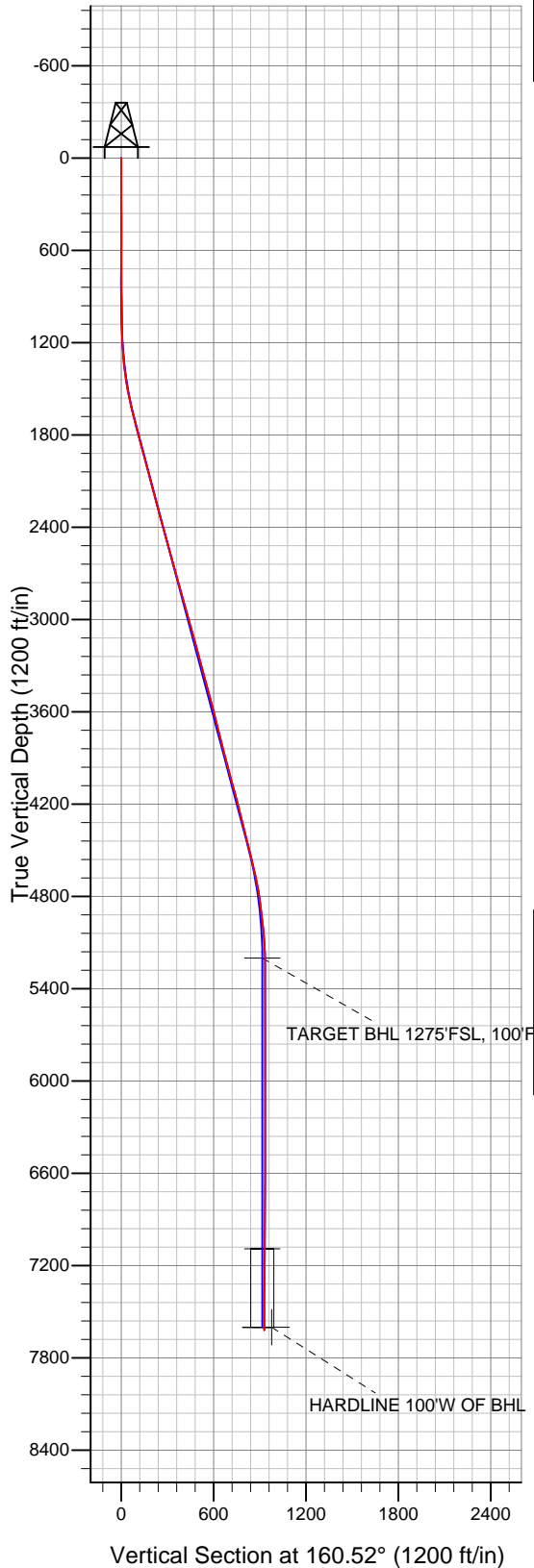
Ground Elevation: 4947.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	1377960.31	3180636.19	40° 22' 8.724 N	104° 51' 6.156 W

Original Well Elev WELL @ 4960.0ft (Original Well Elev)

Slot

NOBLE ENERGY INC WELD COUNTY CO



LEGEND

- Booth N25-33D, Wellbore #1, Noble Booth N25-33D Plan #1 (02-23-10) V0
- Wellbore #1
- Survey #1

Final Survey Plot

Projected Final Survey -
7734'MD & 7620'TVD @ 928' VS
0.5 deg Inc 75.2 deg AZ

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



Directional

NOBLE ENERGY INC WELD COUNTY CO

SEC.26-T5N-R67W

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

Booth N25-33D

Wellbore #1

Survey: Survey #1

Standard Survey Report

10 February, 2011



Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Booth N25-33D
Project:	SEC.26-T5N-R67W	TVD Reference:	WELL @ 4960.0ft (Original Well Elev)
Site:	Booth N25-33D Pad Sec.26-T5N-R67W	MD Reference:	WELL @ 4960.0ft (Original Well Elev)
Well:	Booth N25-33D	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

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

Well	Booth N25-33D		
Well Position	+N-S	0.0 ft	Northing: 1,377,960.31 ft
	+E-W	0.0 ft	Easting: 3,180,636.19 ft
Position Uncertainty		0.0 ft	Wellhead Elevation: ft
			Latitude: 40° 22' 8.724 N
			Longitude: 104° 51' 6.156 W
			Ground Level: 4,947.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	1/24/2011	8.92	67.03	53,168

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 (°)	
	5,200.0	0.0	0.0	160.52	

Survey Program	Date	2/10/2011			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
853.0	7,734.0	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	
853.0	0.70	241.10	853.0	-2.5	-4.6	0.9	0.08	0.08	0.00	
946.0	1.40	189.10	946.0	-3.9	-5.2	1.9	1.20	0.75	-55.91	
1,040.0	0.90	212.90	1,039.9	-5.7	-5.8	3.4	0.72	-0.53	25.32	
1,134.0	1.40	171.70	1,133.9	-7.4	-6.1	5.0	0.99	0.53	-43.83	
1,227.0	2.90	177.10	1,226.9	-10.9	-5.8	8.3	1.63	1.61	5.81	
1,321.0	5.80	167.70	1,320.6	-17.9	-4.6	15.3	3.17	3.09	-10.00	
1,414.0	7.80	159.70	1,412.9	-28.4	-1.5	26.3	2.37	2.15	-8.60	
1,508.0	10.50	157.40	1,505.7	-42.3	4.1	41.2	2.90	2.87	-2.45	
1,601.0	12.40	158.50	1,596.9	-59.4	11.0	59.7	2.06	2.04	1.18	
1,695.0	14.40	158.30	1,688.3	-79.7	19.0	81.5	2.13	2.13	-0.21	
1,789.0	14.90	159.00	1,779.2	-101.8	27.6	105.2	0.56	0.53	0.74	
1,882.0	14.80	158.10	1,869.1	-124.0	36.4	129.0	0.27	-0.11	-0.97	

Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Booth N25-33D
Project:	SEC.26-T5N-R67W	TVD Reference:	WELL @ 4960.0ft (Original Well Elev)
Site:	Booth N25-33D Pad Sec.26-T5N-R67W	MD Reference:	WELL @ 4960.0ft (Original Well Elev)
Well:	Booth N25-33D	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	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)
1,976.0	15.30	157.50	1,959.9	-146.6	45.6	153.4	0.56	0.53	-0.64
2,069.0	14.70	157.10	2,049.7	-168.8	54.9	177.5	0.65	-0.65	-0.43
2,163.0	14.40	155.30	2,140.7	-190.4	64.4	201.0	0.58	-0.32	-1.91
2,256.0	15.70	159.00	2,230.5	-212.7	73.7	225.1	1.74	1.40	3.98
2,350.0	15.20	159.80	2,321.1	-236.1	82.6	250.1	0.58	-0.53	0.85
2,444.0	14.90	164.10	2,411.9	-259.3	90.1	274.5	1.23	-0.32	4.57
2,537.0	15.30	161.90	2,501.7	-282.5	97.2	298.7	0.75	0.43	-2.37
2,631.0	14.90	159.30	2,592.5	-305.6	105.3	323.2	0.84	-0.43	-2.77
2,724.0	15.80	162.20	2,682.1	-328.8	113.4	347.8	1.27	0.97	3.12
2,818.0	16.10	162.30	2,772.5	-353.4	121.3	373.6	0.32	0.32	0.11
2,911.0	16.40	161.90	2,861.8	-378.2	129.3	399.6	0.34	0.32	-0.43
3,005.0	15.20	160.60	2,952.3	-402.4	137.5	425.2	1.33	-1.28	-1.38
3,098.0	14.80	164.10	3,042.1	-425.3	144.8	449.3	1.06	-0.43	3.76
3,192.0	15.50	160.50	3,132.8	-448.7	152.3	473.8	1.25	0.74	-3.83
3,286.0	15.60	159.00	3,223.4	-472.4	161.0	499.0	0.44	0.11	-1.60
3,379.0	15.50	158.90	3,313.0	-495.6	170.0	523.9	0.11	-0.11	-0.11
3,473.0	15.10	157.10	3,403.7	-518.6	179.3	548.7	0.66	-0.43	-1.91
3,566.0	14.00	156.50	3,493.7	-540.1	188.5	572.0	1.19	-1.18	-0.65
3,660.0	14.10	156.80	3,584.9	-561.0	197.5	594.8	0.13	0.11	0.32
3,754.0	14.70	160.40	3,675.9	-582.8	206.0	618.2	1.15	0.64	3.83
3,847.0	14.40	159.70	3,765.9	-604.8	214.0	641.5	0.37	-0.32	-0.75
3,941.0	14.30	159.30	3,857.0	-626.6	222.2	664.8	0.15	-0.11	-0.43
4,034.0	15.00	157.60	3,947.0	-648.5	230.8	688.3	0.88	0.75	-1.83
4,128.0	15.40	156.80	4,037.7	-671.2	240.4	712.9	0.48	0.43	-0.85
4,222.0	15.50	157.00	4,128.3	-694.2	250.2	737.9	0.12	0.11	0.21
4,315.0	14.00	157.70	4,218.2	-716.1	259.3	761.5	1.62	-1.61	0.75
4,409.0	13.30	156.40	4,309.6	-736.5	267.9	783.7	0.81	-0.74	-1.38
4,502.0	14.30	162.00	4,399.9	-757.2	275.8	805.8	1.79	1.08	6.02
4,596.0	14.50	162.30	4,490.9	-779.5	282.9	829.2	0.23	0.21	0.32
4,690.0	13.40	162.60	4,582.2	-801.1	289.8	851.9	1.17	-1.17	0.32
4,783.0	11.80	165.10	4,672.9	-820.5	295.4	872.1	1.82	-1.72	2.69
4,877.0	9.90	166.20	4,765.2	-837.7	299.8	889.7	2.03	-2.02	1.17
4,970.0	7.30	165.90	4,857.2	-851.2	303.2	903.6	2.80	-2.80	-0.32
5,064.0	6.60	169.60	4,950.5	-862.3	305.6	914.8	0.88	-0.74	3.94
5,157.0	5.40	152.60	5,043.0	-871.4	308.6	924.5	2.29	-1.29	-18.28
5,251.0	2.80	137.70	5,136.7	-877.1	312.2	931.0	2.97	-2.77	-15.85
5,313.9	1.02	142.41	5,199.6	-878.6	313.6	932.9	2.84	-2.84	7.49
TARGET BHL 1275'FSL, 100'FWL									
5,344.0	0.20	175.80	5,229.7	-878.9	313.7	933.2	2.84	-2.71	110.83
5,438.0	0.20	263.60	5,323.7	-879.1	313.6	933.3	0.30	0.00	93.40
5,532.0	0.20	262.10	5,417.7	-879.1	313.2	933.3	0.01	0.00	-1.60
5,625.0	0.20	262.20	5,510.7	-879.2	312.9	933.2	0.00	0.00	0.11
5,719.0	0.30	268.90	5,604.7	-879.2	312.5	933.1	0.11	0.11	7.13
5,813.0	0.50	248.60	5,698.7	-879.3	311.9	933.0	0.26	0.21	-21.60
5,906.0	0.50	230.80	5,791.7	-879.8	311.2	933.2	0.17	0.00	-19.14
6,000.0	0.70	214.00	5,885.7	-880.5	310.6	933.7	0.28	0.21	-17.87
6,093.0	0.60	206.70	5,978.7	-881.4	310.0	934.3	0.14	-0.11	-7.85
6,187.0	0.60	215.60	6,072.7	-882.2	309.5	934.9	0.10	0.00	9.47
6,281.0	0.50	216.40	6,166.7	-883.0	309.0	935.5	0.11	-0.11	0.85
6,406.0	0.50	254.60	6,291.7	-883.5	308.1	935.7	0.26	0.00	30.56
6,530.0	0.30	295.20	6,415.7	-883.6	307.3	935.5	0.27	-0.16	32.74
6,655.0	0.40	2.60	6,540.7	-883.0	307.0	934.8	0.32	0.08	53.92
6,780.0	0.70	24.90	6,665.6	-881.8	307.4	933.9	0.29	0.24	17.84
6,905.0	0.70	32.00	6,790.6	-880.5	308.1	932.9	0.07	0.00	5.68

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Well:	Booth N25-33D	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	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)
7,030.0	0.80	48.70	6,915.6	-879.3	309.2	932.1	0.19	0.08	13.36
7,154.0	0.90	50.70	7,039.6	-878.1	310.6	931.4	0.08	0.08	1.61
7,204.5	0.94	46.11	7,090.1	-877.6	311.2	931.1	0.16	0.07	-9.10
TARGET CIRCLE 1275'FSL, 100'FWL									
7,279.0	1.00	40.00	7,164.6	-876.6	312.0	930.5	0.16	0.09	-8.20
7,404.0	0.90	43.80	7,289.6	-875.1	313.4	929.5	0.09	-0.08	3.04
7,529.0	0.80	47.00	7,414.6	-873.8	314.7	928.7	0.09	-0.08	2.56
7,653.0	0.60	57.50	7,538.6	-872.9	315.9	928.2	0.19	-0.16	8.47
7,689.0	0.60	65.40	7,574.6	-872.7	316.2	928.2	0.23	0.00	21.94
7,713.2	0.54	70.21	7,598.7	-872.6	316.5	928.2	0.30	-0.23	19.93
HARDLINE 100'W OF BHL									
7,734.0	0.50	75.20	7,619.6	-872.5	316.6	928.2	0.30	-0.21	23.92

Checked By: _____ Approved By: _____ Date: _____