

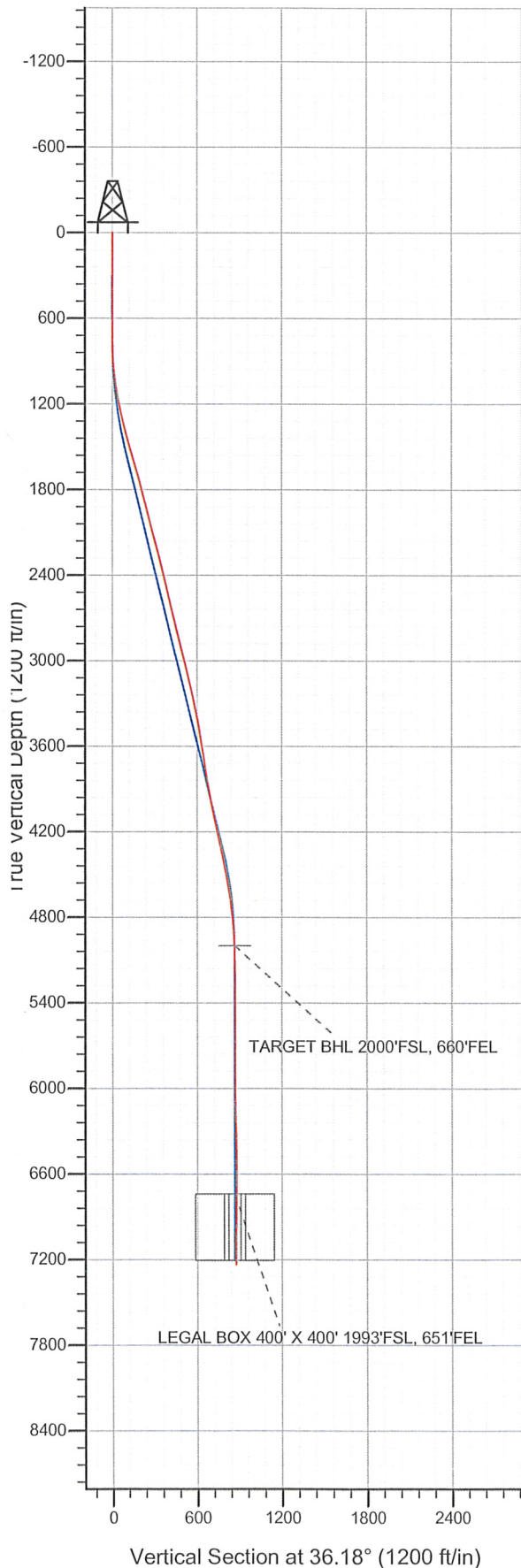
Well Name: **Howard USX A09-09D**

Surface Location: Howard USX A09-14D Pad Sec.9-T6N-R64W
 North American Datum 1983 US State Plane 1983 Colorado Northern Zone

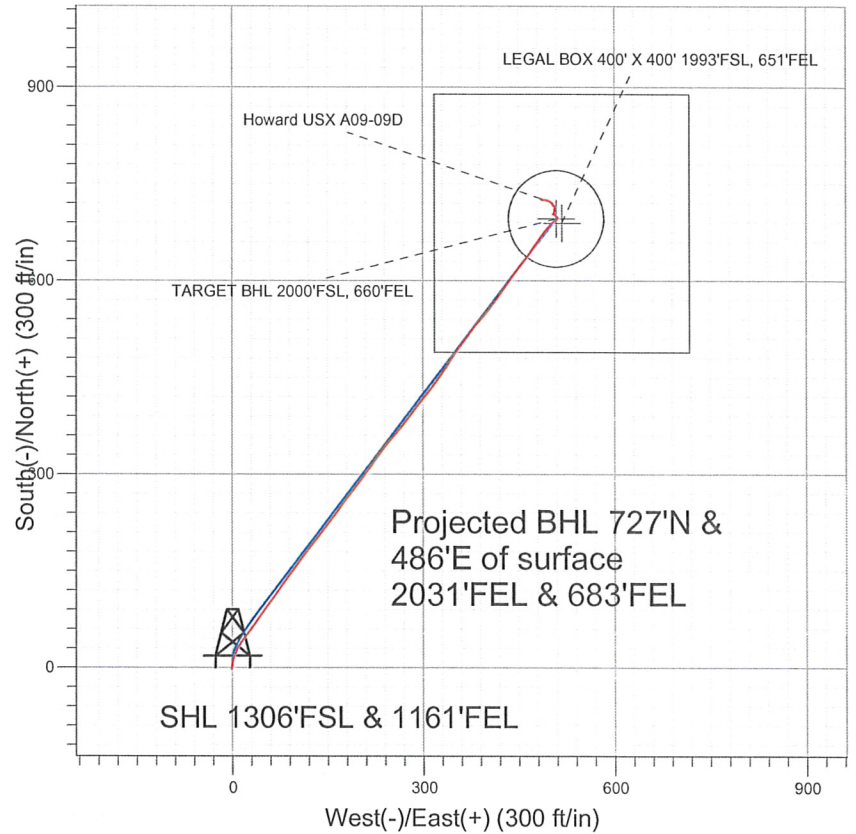
Ground Elevation: 4847.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1425294.93	3264231.99	40.496950	-104.549890	

Original Well Elev WELL @ 4860.0ft (Original Well Elev)



NOBLE ENERGY INC WELD COUNTY CO



LEGEND

- Howard USX A09-09D, Wellbore #1, Noble Howard USX A09-09D Plan #1 (4-11-11) V0
- Wellbore #1
- Survey #1

Final Survey Plot

Projected Final Survey -
 7330'MD & 7233'TVD @ 874'VS
 0.5 deg Inc 300.4 deg AZ

Project: SEC.9-T6N-R64W
 Site: Howard USX A09-14D Pad Sec.9-T6N-R64W
 Well: Howard USX A09-09D
 Plan: Wellbore #1



Directional

**NOBLE ENERGY INC WELD
COUNTY CO**

SEC.9-T6N-R64W

Howard USX A09-14D Pad Sec.9-T6N-R64W

Howard USX A09-09D

Wellbore #1

Survey: Survey #1

Standard Survey Report

15 July, 2011



Company: NOBLE ENERGY INC WELD COUNTY CO
 Project: SEC.9-T6N-R64W
 Site: Howard USX A09-14D Pad Sec.9-T6N-R64W
 Well: Howard USX A09-09D
 Wellbore: Wellbore #1
 Design: Wellbore #1

Local Co-ordinate Reference: Well Howard USX A09-09D
 TVD Reference: WELL @ 4860.0ft (Original Well Elev)
 MD Reference: WELL @ 4860.0ft (Original Well Elev)
 North Reference: True
 Survey Calculation Method: Minimum Curvature
 Database: Landmark

Project	SEC.9-T6N-R64W, Weld County, Colorado		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site Howard USX A09-14D Pad Sec.9-T6N-R64W

Site Position:		Northing:	1,425,294.44 ft	Latitude:	40.496950
From:	Lat/Long	Easting:	3,264,184.72 ft	Longitude:	-104.550060
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.61 °

Well	Howard USX A09-09D					
Well Position	+N/-S	0.0 ft	Northing:	1,425,294.93 ft	Latitude:	40.496950
	+E/-W	0.0 ft	Easting:	3,264,231.99 ft	Longitude:	-104.549890
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,847.0 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	4/11/2011	8.78	67.17	53,224

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 (°)
	5,000.0	0.0	0.0	36.18

Survey Program Date 7/15/2011

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
707.0	7,330.0	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
707.0	0.30	211.00	707.0	-1.6	-1.0	-1.8	0.04	0.04	0.00
788.0	1.40	17.00	788.0	-0.8	-0.8	-1.1	2.09	1.36	204.94
870.0	3.80	6.80	869.9	2.8	-0.2	2.2	2.97	2.93	-12.44
952.0	5.70	12.40	951.6	9.5	1.0	8.3	2.38	2.32	6.83
1,033.0	7.60	20.50	1,032.1	18.5	3.8	17.1	2.61	2.35	10.00
1,115.0	10.10	26.60	1,113.1	30.0	8.9	29.4	3.25	3.05	7.44
1,197.0	11.30	35.90	1,193.7	42.9	16.8	44.6	2.56	1.46	11.34
1,278.0	13.70	38.00	1,272.7	56.9	27.4	62.1	3.02	2.96	2.59
1,360.0	15.00	35.50	1,352.2	73.2	39.5	82.4	1.76	1.59	-3.05
1,442.0	14.60	35.10	1,431.5	90.3	51.6	103.4	0.50	-0.49	-0.49
1,524.0	16.00	36.70	1,510.6	107.8	64.3	125.0	1.78	1.71	1.95
1,605.0	16.20	35.90	1,588.4	125.9	77.6	147.4	0.37	0.25	-0.99

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 Wellbore: Wellbore #1
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 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)
1,687.0	16.10	36.60	1,667.1	144.3	91.1	170.3	0.27	-0.12	0.85
1,769.0	15.50	36.50	1,746.0	162.2	104.4	192.6	0.73	-0.73	-0.12
1,850.0	14.80	35.80	1,824.2	179.3	116.9	213.8	0.89	-0.86	-0.86
1,932.0	14.50	39.50	1,903.6	195.7	129.6	234.5	1.20	-0.37	4.51
2,014.0	15.70	38.00	1,982.7	212.4	142.9	255.8	1.54	1.46	-1.83
2,095.0	15.20	37.00	2,060.8	229.5	156.1	277.4	0.70	-0.62	-1.23
2,177.0	14.20	36.00	2,140.1	246.2	168.4	298.2	1.26	-1.22	-1.22
2,259.0	14.20	37.10	2,219.6	262.4	180.4	318.3	0.33	0.00	1.34
2,340.0	14.20	38.00	2,298.1	278.2	192.5	338.2	0.27	0.00	1.11
2,422.0	13.90	37.60	2,377.7	293.9	204.7	358.1	0.38	-0.37	-0.49
2,504.0	13.10	35.00	2,457.4	309.3	216.1	377.2	1.22	-0.98	-3.17
2,585.0	13.30	36.10	2,536.3	324.3	226.8	395.7	0.40	0.25	1.36
2,667.0	13.70	36.90	2,616.0	339.7	238.2	414.8	0.54	0.49	0.98
2,749.0	13.80	41.40	2,695.7	354.8	250.5	434.3	1.31	0.12	5.49
2,830.0	13.90	39.80	2,774.3	369.6	263.1	453.6	0.49	0.12	-1.98
2,912.0	13.50	38.20	2,854.0	384.6	275.3	473.0	0.67	-0.49	-1.95
2,994.0	13.40	37.00	2,933.7	399.8	287.0	492.1	0.36	-0.12	-1.46
3,075.0	14.20	39.10	3,012.4	415.0	298.9	511.4	1.17	0.99	2.59
3,157.0	12.90	37.70	3,092.1	430.0	310.8	530.6	1.63	-1.59	-1.71
3,239.0	12.90	37.00	3,172.0	444.6	321.9	548.9	0.19	0.00	-0.85
3,320.0	13.10	34.10	3,251.0	459.4	332.5	567.1	0.84	0.25	-3.58
3,402.0	12.20	30.80	3,331.0	474.5	342.2	585.0	1.41	-1.10	-4.02
3,484.0	10.40	35.60	3,411.4	488.0	350.9	601.0	2.47	-2.20	5.85
3,566.0	9.00	36.80	3,492.2	499.1	359.1	614.9	1.72	-1.71	1.46
3,647.0	8.90	37.00	3,572.2	509.2	366.6	627.5	0.13	-0.12	0.25
3,729.0	8.70	35.60	3,653.3	519.3	374.1	640.0	0.36	-0.24	-1.71
3,811.0	8.50	39.40	3,734.3	529.0	381.5	652.3	0.73	-0.24	4.63
3,892.0	9.30	42.50	3,814.4	538.5	389.7	664.7	1.15	0.99	3.83
3,974.0	11.00	38.40	3,895.1	549.5	399.1	679.1	2.25	2.07	-5.00
4,056.0	11.20	38.30	3,975.5	561.9	408.9	694.9	0.25	0.24	-0.12
4,137.0	12.00	35.70	4,054.9	574.9	418.7	711.2	1.18	0.99	-3.21
4,219.0	12.50	35.00	4,135.0	589.1	428.7	728.6	0.64	0.61	-0.85
4,301.0	11.10	34.50	4,215.3	602.9	438.3	745.4	1.71	-1.71	-0.61
4,382.0	11.60	36.50	4,294.7	615.8	447.6	761.3	0.79	0.62	2.47
4,464.0	12.00	38.30	4,375.0	629.2	457.7	778.1	0.66	0.49	2.20
4,546.0	12.00	35.80	4,455.2	642.8	468.0	795.1	0.63	0.00	-3.05
4,627.0	10.70	36.20	4,534.6	655.7	477.4	811.0	1.61	-1.60	0.49
4,709.0	9.80	33.70	4,615.3	667.6	485.7	825.6	1.22	-1.10	-3.05
4,791.0	7.90	38.00	4,696.3	677.9	493.1	838.2	2.45	-2.32	5.24
4,872.0	5.40	42.40	4,776.7	685.1	499.1	847.6	3.15	-3.09	5.43
4,954.0	4.20	48.30	4,858.5	689.9	503.9	854.4	1.58	-1.46	7.20
5,036.0	4.20	53.50	4,940.2	693.7	508.6	860.2	0.46	0.00	6.34
5,095.8	2.27	58.05	4,999.9	695.6	511.4	863.4	3.25	-3.22	7.62
TARGET BHL 2000'FSL, 660'FEL									
5,117.0	1.60	62.30	5,021.1	696.0	512.0	864.0	3.25	-3.18	19.99
5,199.0	1.30	328.50	5,103.1	697.3	512.5	865.4	2.59	-0.37	-114.39
5,281.0	1.30	309.40	5,185.1	698.7	511.3	865.8	0.53	0.00	-23.29
5,362.0	1.30	312.80	5,266.1	699.9	509.9	866.0	0.10	0.00	4.20
5,444.0	1.70	310.90	5,348.0	701.3	508.3	866.2	0.49	0.49	-2.32
5,526.0	0.40	300.80	5,430.0	702.3	507.1	866.2	1.60	-1.59	-12.32
5,608.0	1.10	299.90	5,512.0	702.8	506.2	866.1	0.85	0.85	-1.10
5,689.0	0.70	286.50	5,593.0	703.3	505.1	865.9	0.55	-0.49	-16.54
5,771.0	0.40	140.00	5,675.0	703.3	504.8	865.6	1.29	-0.37	-178.66
5,853.0	0.10	82.80	5,757.0	703.1	505.0	865.6	0.43	-0.37	-69.76

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5,934.0	0.60	50.80	5,838.0	703.3	505.4	866.1	0.64	0.62	-39.51
6,016.0	0.70	38.50	5,920.0	704.0	506.1	867.0	0.21	0.12	-15.00
6,098.0	0.80	9.70	6,002.0	705.0	506.5	868.0	0.47	0.12	-35.12
6,179.0	1.10	12.40	6,083.0	706.3	506.7	869.2	0.37	0.37	3.33
6,261.0	2.20	1.50	6,164.9	708.6	507.0	871.2	1.39	1.34	-13.29
6,343.0	1.30	22.20	6,246.9	711.0	507.3	873.4	1.32	-1.10	25.24
6,424.0	1.60	359.20	6,327.9	713.0	507.7	875.2	0.80	0.37	-28.40
6,506.0	1.70	326.20	6,409.9	715.2	507.0	876.6	1.15	0.12	-40.24
6,588.0	2.10	308.70	6,491.8	717.1	505.1	877.0	0.85	0.49	-21.34
6,669.0	1.60	350.10	6,572.8	719.2	503.8	877.9	1.71	-0.62	51.11
6,751.0	2.20	303.90	6,654.7	721.2	502.3	878.6	1.94	0.73	-56.34
6,833.0	2.90	299.90	6,736.6	723.1	499.2	878.3	0.88	0.85	-4.88
6,835.0	2.88	299.54	6,738.7	723.1	499.1	878.3	1.35	-1.01	-17.69
LEGAL BOX 400' X 400' 1993'FSL, 651'FEL									
6,835.5	2.87	299.45	6,739.2	723.2	499.1	878.3	1.35	-1.01	-17.84
TARGET CIRCLE 2000'FSL, 660'FEL									
6,914.0	2.20	280.80	6,817.6	724.4	495.9	877.4	1.35	-0.86	-23.77
6,996.0	1.80	278.50	6,899.5	724.9	493.1	876.2	0.50	-0.49	-2.80
7,078.0	1.70	263.70	6,981.5	724.9	490.6	874.7	0.56	-0.12	-18.05
7,159.0	1.60	296.50	7,062.4	725.3	488.4	873.7	1.16	-0.12	40.49
7,241.0	1.30	308.50	7,144.4	726.4	486.6	873.6	0.52	-0.37	14.63
7,279.0	0.50	300.40	7,182.4	726.8	486.1	873.6	2.13	-2.11	-21.32
7,330.0	0.50	300.40	7,233.4	727.0	485.7	873.5	0.00	0.00	0.00

Checked By: _____ Approved By: _____ Date: _____