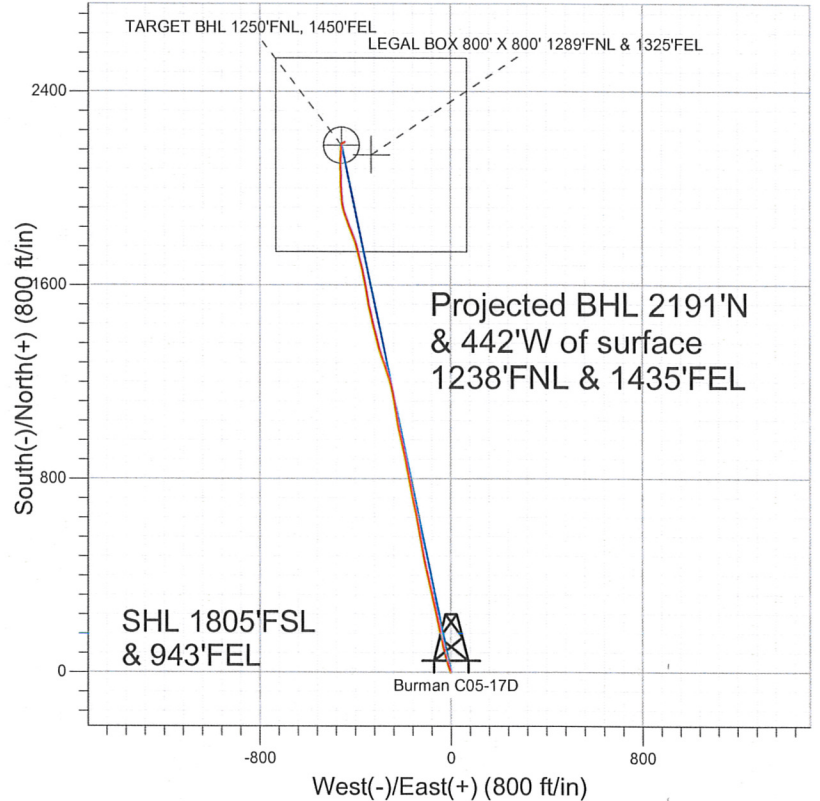


## NOBLE ENERGY INC WELD COUNTY CO



### LEGEND

- △ Burman C05-17D, Wellbore #1, Noble Burman C05-17D Plan #1 (6-15-11) V0
- Wellbore #1
- Survey #1

## Final Survey Plot

Projected Final Survey -  
8060'MD & 7584'TVD @ 2235'VS  
1.4 deg Inc 70.6 deg AZ

Project: SEC.5-T4N-R64W  
Site: Burman C04-33D Pad Sec.5-T4N-R64W  
Well: Burman C05-17D  
Plan: Wellbore #1



**Directional**

## **NOBLE ENERGY INC WELD COUNTY CO**

**SEC.5-T4N-R64W**

**Burman C04-33D Pad Sec.5-T4N-R64W**

**Burman C05-17D**

**Wellbore #1**

**Survey: Survey #1**

## **Standard Survey Report**

**17 October, 2011**





**Company:** NOBLE ENERGY INC WELD COUNTY CO  
**Project:** SEC.5-T4N-R64W  
**Site:** Burman C04-33D Pad Sec.5-T4N-R64W  
**Well:** Burman C05-17D  
**Wellbore:** Wellbore #1  
**Design:** Wellbore #1

**Local Co-ordinate Reference:** Well Burman C05-17D  
**TVD Reference:** WELL @ 4763.0ft (Original Well Elev)  
**MD Reference:** WELL @ 4763.0ft (Original Well Elev)  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature  
**Database:** Landmark

**Project** SEC.5-T4N-R64W, 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	Using Well Reference Point
<b>Map Zone:</b> Colorado Northern Zone	Using geodetic scale factor

**Site** Burman C04-33D Pad Sec.5-T4N-R64W

<b>Site Position:</b>	<b>Northing:</b> 1,367,739.92 ft	<b>Latitude:</b> 40.339100
<b>From:</b> Lat/Long	<b>Easting:</b> 3,259,777.75 ft	<b>Longitude:</b> -104.568080
<b>Position Uncertainty:</b> 0.0 ft	<b>Slot Radius:</b> "	<b>Grid Convergence:</b> 0.60 °

**Well** Burman C05-17D

<b>Well Position</b> +N/-S 0.0 ft	<b>Northing:</b> 1,367,739.42 ft	<b>Latitude:</b> 40.339100
+E/-W 0.0 ft	<b>Easting:</b> 3,259,733.15 ft	<b>Longitude:</b> -104.568240
<b>Position Uncertainty</b> 0.0 ft	<b>Wellhead Elevation:</b> ft	<b>Ground Level:</b> 4,750.0 ft

**Wellbore** Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	6/22/2011	8.75	67.03	53,119

**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	348.59

**Survey Program** Date 10/17/2011

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
104.0	8,060.0	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
104.0	0.40	124.90	104.0	-0.2	0.3	-0.3	0.38	0.38	0.00
229.0	0.50	19.30	229.0	0.1	0.8	-0.1	0.58	0.08	-84.48
321.0	1.00	332.50	321.0	1.1	0.6	1.0	0.82	0.54	-50.87
403.0	1.70	322.90	403.0	2.8	-0.5	2.8	0.89	0.85	-11.71
485.0	2.60	347.10	484.9	5.5	-1.6	5.7	1.54	1.10	29.51
567.0	3.60	344.00	566.8	9.8	-2.7	10.2	1.24	1.22	-3.78
648.0	4.70	340.00	647.6	15.4	-4.6	16.0	1.40	1.36	-4.94
664.0	5.00	339.70	663.5	16.7	-5.0	17.3	1.88	1.88	-1.88
746.0	5.70	341.70	745.2	23.9	-7.6	24.9	0.88	0.85	2.44
828.0	6.80	342.90	826.7	32.4	-10.3	33.8	1.35	1.34	1.46
910.0	7.90	341.50	908.0	42.4	-13.5	44.2	1.36	1.34	-1.71
992.0	9.60	344.10	989.0	54.3	-17.1	56.6	2.13	2.07	3.17



Company: NOBLE ENERGY INC WELD COUNTY CO  
Project: SEC.5-T4N-R64W  
Site: Burman C04-33D Pad Sec.5-T4N-R64W  
Well: Burman C05-17D  
Wellbore: Wellbore #1  
Design: Wellbore #1

Local Co-ordinate Reference: Well Burman C05-17D  
TVD Reference: WELL @ 4763.0ft (Original Well Elev)  
MD Reference: WELL @ 4763.0ft (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)
1,073.0	11.20	344.50	1,068.7	68.4	-21.1	71.2	1.98	1.98	0.49
1,155.0	13.00	346.60	1,148.9	85.0	-25.4	88.3	2.26	2.20	2.56
1,237.0	14.60	345.20	1,228.5	104.0	-30.1	107.9	1.99	1.95	-1.71
1,318.0	16.80	347.80	1,306.5	125.3	-35.2	129.8	2.85	2.72	3.21
1,400.0	19.20	348.70	1,384.5	150.1	-40.4	155.1	2.95	2.93	1.10
1,482.0	21.50	349.20	1,461.3	178.1	-45.8	183.6	2.81	2.80	0.61
1,564.0	22.30	349.20	1,537.4	208.1	-51.6	214.2	0.98	0.98	0.00
1,645.0	23.00	346.80	1,612.2	238.6	-58.1	245.4	1.43	0.86	-2.96
1,727.0	24.50	347.10	1,687.2	270.8	-65.5	278.4	1.84	1.83	0.37
1,809.0	26.10	348.00	1,761.4	305.0	-73.1	313.4	2.01	1.95	1.10
1,891.0	27.50	346.10	1,834.6	341.0	-81.4	350.4	2.00	1.71	-2.32
1,972.0	28.40	347.10	1,906.1	378.0	-90.1	388.3	1.25	1.11	1.23
2,054.0	29.00	347.30	1,978.0	416.4	-98.9	427.7	0.74	0.73	0.24
2,136.0	28.90	348.90	2,049.8	455.2	-107.1	467.4	0.95	-0.12	1.95
2,218.0	29.60	350.10	2,121.3	494.6	-114.4	507.5	1.11	0.85	1.46
2,299.0	30.00	349.10	2,191.6	534.2	-121.6	547.7	0.79	0.49	-1.23
2,381.0	28.70	350.10	2,263.1	573.7	-128.9	587.9	1.69	-1.59	1.22
2,463.0	27.60	350.50	2,335.4	611.9	-135.4	626.6	1.36	-1.34	0.49
2,545.0	27.20	348.70	2,408.2	649.0	-142.2	664.3	1.12	-0.49	-2.20
2,626.0	24.10	346.80	2,481.2	683.2	-149.6	699.3	3.96	-3.83	-2.35
2,708.0	25.00	347.80	2,555.8	716.5	-157.1	733.4	1.21	1.10	1.22
2,790.0	27.50	349.10	2,629.3	752.0	-164.3	769.7	3.13	3.05	1.59
2,872.0	30.40	350.50	2,701.1	791.1	-171.3	809.3	3.63	3.54	1.71
2,953.0	32.40	350.30	2,770.2	832.7	-178.4	851.5	2.47	2.47	-0.25
3,035.0	33.30	347.10	2,839.1	876.3	-187.1	896.0	2.38	1.10	-3.90
3,117.0	31.70	348.00	2,908.3	919.3	-196.6	940.0	2.04	-1.95	1.10
3,198.0	31.10	345.90	2,977.4	960.4	-206.1	982.2	1.54	-0.74	-2.59
3,280.0	32.70	348.40	3,047.0	1,002.6	-215.8	1,025.5	2.53	1.95	3.05
3,362.0	32.00	350.60	3,116.3	1,045.8	-223.8	1,069.4	1.67	-0.85	2.68
3,444.0	28.30	351.90	3,187.2	1,086.5	-230.0	1,110.5	4.58	-4.51	1.59
3,525.0	28.10	350.80	3,258.6	1,124.3	-235.8	1,148.7	0.69	-0.25	-1.36
3,607.0	27.00	348.70	3,331.3	1,161.6	-242.5	1,186.6	1.79	-1.34	-2.56
3,689.0	26.60	343.40	3,404.5	1,197.5	-251.4	1,223.6	2.95	-0.49	-6.46
3,771.0	25.00	341.50	3,478.3	1,231.5	-262.2	1,259.0	2.20	-1.95	-2.32
3,852.0	23.20	339.60	3,552.2	1,262.7	-273.2	1,291.8	2.42	-2.22	-2.35
3,934.0	23.00	339.00	3,627.7	1,292.8	-284.5	1,323.5	0.38	-0.24	-0.73
4,016.0	24.30	343.30	3,702.8	1,323.9	-295.1	1,356.1	2.63	1.59	5.24
4,098.0	25.50	346.40	3,777.2	1,357.2	-304.1	1,390.6	2.16	1.46	3.78
4,179.0	26.50	347.70	3,850.0	1,391.8	-312.1	1,426.1	1.42	1.23	1.60
4,261.0	27.00	344.70	3,923.2	1,427.7	-320.9	1,462.9	1.76	0.61	-3.66
4,343.0	27.50	348.20	3,996.1	1,464.1	-329.7	1,500.4	2.05	0.61	4.27
4,425.0	24.60	347.10	4,069.8	1,499.3	-337.4	1,536.4	3.59	-3.54	-1.34
4,506.0	24.60	350.80	4,143.4	1,532.4	-343.8	1,570.1	1.90	0.00	4.57
4,588.0	24.30	351.00	4,218.1	1,565.9	-349.2	1,604.0	0.38	-0.37	0.24
4,670.0	25.10	349.90	4,292.6	1,599.7	-354.9	1,638.3	1.13	0.98	-1.34
4,752.0	25.10	347.10	4,366.8	1,633.8	-361.8	1,673.1	1.45	0.00	-3.41
4,833.0	25.20	346.80	4,440.1	1,667.3	-369.6	1,707.5	0.20	0.12	-0.37
4,915.0	24.80	345.90	4,514.5	1,701.0	-377.8	1,742.1	0.67	-0.49	-1.10
4,997.0	23.80	347.00	4,589.2	1,733.8	-385.7	1,775.8	1.34	-1.22	1.34
5,079.0	23.70	341.70	4,664.3	1,765.6	-394.6	1,808.7	2.61	-0.12	-6.46
5,160.0	20.80	339.90	4,739.2	1,794.5	-404.6	1,839.1	3.68	-3.58	-2.22
5,242.0	20.00	338.50	4,816.1	1,821.3	-414.8	1,867.3	1.14	-0.98	-1.71
5,324.0	20.40	337.80	4,893.0	1,847.5	-425.3	1,895.2	0.57	0.49	-0.85
5,405.0	18.40	338.20	4,969.4	1,872.5	-435.4	1,921.6	2.47	-2.47	0.49

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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)
5,487.0	19.00	343.10	5,047.1	1,897.3	-444.1	1,947.6	2.05	0.73	5.98
5,569.0	18.40	347.90	5,124.8	1,922.7	-450.7	1,973.8	2.01	-0.73	5.85
5,651.0	16.60	352.60	5,203.0	1,947.0	-454.9	1,998.5	2.79	-2.20	5.73
5,732.0	16.50	359.10	5,280.6	1,969.9	-456.6	2,021.3	2.29	-0.12	8.02
5,814.0	17.10	355.70	5,359.1	1,993.6	-457.6	2,044.7	1.40	0.73	-4.15
5,896.0	18.30	358.90	5,437.3	2,018.5	-458.8	2,069.4	1.88	1.46	3.90
5,978.0	16.20	0.30	5,515.6	2,042.8	-459.0	2,093.2	2.61	-2.56	1.71
6,059.0	14.90	356.80	5,593.6	2,064.5	-459.5	2,114.6	1.98	-1.60	-4.32
6,141.0	13.00	0.70	5,673.2	2,084.3	-460.0	2,134.1	2.58	-2.32	4.76
6,223.0	12.80	357.50	5,753.1	2,102.6	-460.3	2,152.1	0.90	-0.24	-3.90
6,305.0	12.80	359.40	5,833.1	2,120.7	-460.8	2,170.0	0.51	0.00	2.32
6,386.0	10.60	5.80	5,912.4	2,137.1	-460.1	2,185.9	3.15	-2.72	7.90
6,468.0	8.70	4.00	5,993.2	2,150.8	-458.9	2,199.1	2.35	-2.32	-2.20
6,550.0	6.00	1.00	6,074.5	2,161.3	-458.4	2,209.2	3.32	-3.29	-3.66
6,576.9	5.41	0.24	6,101.3	2,163.9	-458.4	2,211.9	2.22	-2.20	-2.84
TARGET BHL 1250'FNL, 1450'FEL									
6,632.0	4.20	358.00	6,156.2	2,168.6	-458.4	2,216.4	2.22	-2.19	-4.06
6,713.0	3.10	357.00	6,237.0	2,173.7	-458.6	2,221.5	1.36	-1.36	-1.23
6,795.0	1.50	5.10	6,319.0	2,177.0	-458.7	2,224.7	1.99	-1.95	9.88
6,877.0	1.20	356.80	6,401.0	2,178.9	-458.6	2,226.6	0.44	-0.37	-10.12
6,959.0	0.90	358.70	6,482.9	2,180.4	-458.7	2,228.1	0.37	-0.37	2.32
7,040.0	1.10	38.10	6,563.9	2,181.7	-458.2	2,229.2	0.86	0.25	48.64
7,122.0	0.80	83.30	6,645.9	2,182.4	-457.2	2,229.7	0.95	-0.37	55.12
7,129.1	0.80	79.81	6,653.0	2,182.4	-457.1	2,229.7	0.69	0.05	-49.41
TARGET CIRCLE 1250'FNL & 1450'FEL									
7,130.5	0.80	79.11	6,654.4	2,182.4	-457.0	2,229.7	0.69	0.07	-49.10
LEGAL BOX 800' X 800' 1289'FNL & 1325'FEL									
7,204.0	1.00	48.70	6,727.9	2,182.9	-456.1	2,230.0	0.69	0.27	-41.37
7,285.0	1.00	39.50	6,808.9	2,183.9	-455.1	2,230.8	0.20	0.00	-11.36
7,367.0	1.10	52.30	6,890.9	2,184.9	-454.0	2,231.6	0.31	0.12	15.61
7,449.0	0.80	61.30	6,972.9	2,185.7	-452.9	2,232.1	0.41	-0.37	10.98
7,531.0	1.00	51.80	7,054.9	2,186.4	-451.8	2,232.6	0.30	0.24	-11.59
7,612.0	1.10	77.80	7,135.9	2,187.0	-450.5	2,232.9	0.60	0.12	32.10
7,694.0	0.90	91.40	7,217.8	2,187.2	-449.1	2,232.8	0.38	-0.24	16.59
7,776.0	0.80	62.10	7,299.8	2,187.4	-447.9	2,232.8	0.54	-0.12	-35.73
7,858.0	1.50	57.80	7,381.8	2,188.3	-446.5	2,233.3	0.86	0.85	-5.24
7,939.0	1.20	72.00	7,462.8	2,189.1	-444.8	2,233.8	0.55	-0.37	17.53
8,009.0	1.70	56.40	7,532.8	2,189.9	-443.2	2,234.3	0.90	0.71	-22.29
8,060.0	1.40	70.60	7,583.7	2,190.5	-442.0	2,234.7	0.95	-0.59	27.84

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