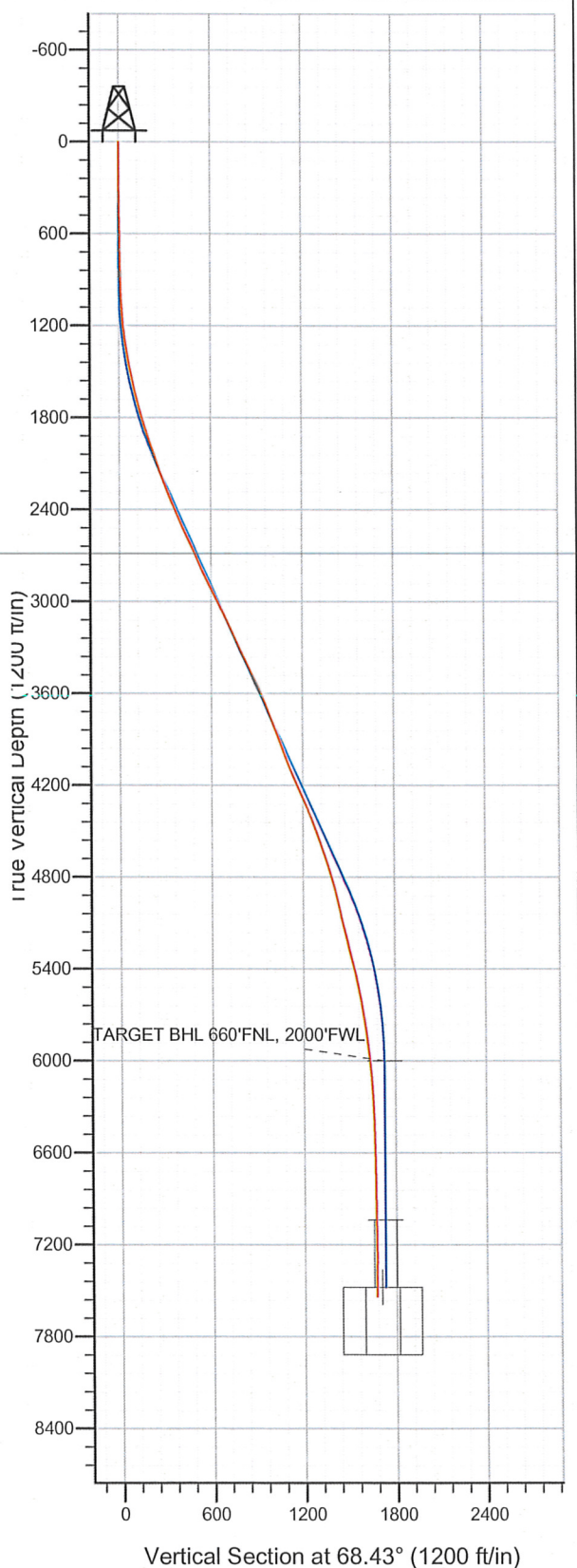
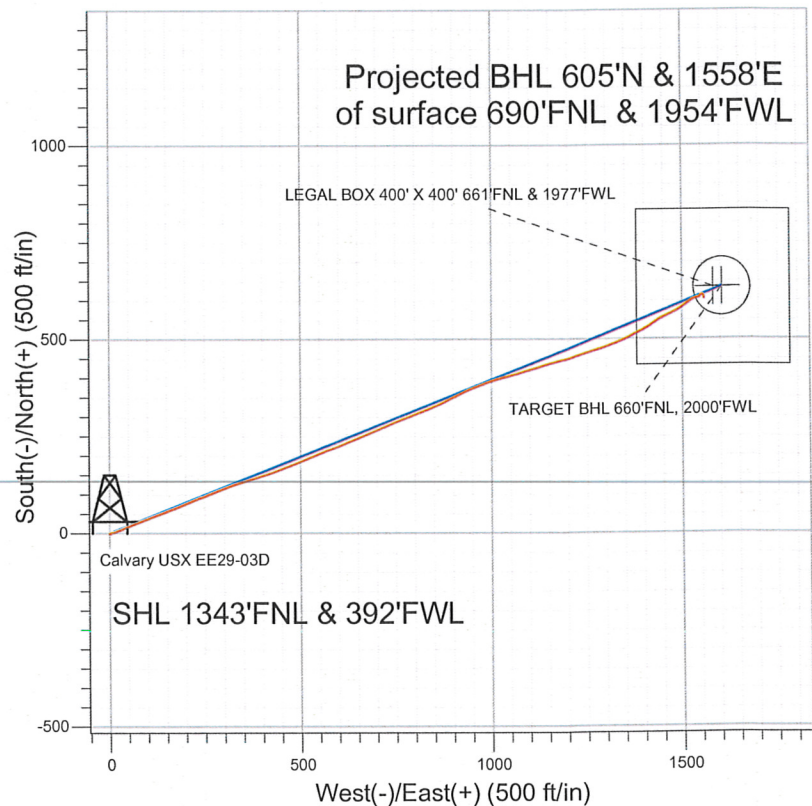


Surface Location: Donaldson USX EE29-12D Pad Sec.29-T7N-R65W  
North American Datum 1983 US State Plane 1983 Colorado Northern Zone  
Ground Elevation: 4924.0  
+N/-S +E/-W Northing Easting Latitude Longitude Slot  
0.0 0.0 1444053.29 3223658.75 40.549540 -104.695160  
Original Well EleWELL @ 4937.0ft (Original Well Elev)



## NOBLE ENERGY INC WELD COUNTY CO



### LEGEND

- Calvary USX EE29-03D, Wellbore #1, Noble Calvary USX EE29-03D Plan #1 (5-04-11) V0
- Wellbore #1
- Survey #1

## Final Survey Plot

Projected Final Survey -  
7826'MD & 7533'TVD @ 1671' VS  
1.5 deg Inc 182.7 deg AZ

Project: SEC.29-T7N-R65W  
Site: Donaldson USX EE29-12D Pad Sec.29-T7N-R65W  
Well: Calvary USX EE29-03D  
Plan: Wellbore #1



# **NOBLE ENERGY INC WELD COUNTY CO**

**SEC.29-T7N-R65W**

**Donaldson USX EE29-12D Pad Sec.29-T7N-R65W**

**Calvary USX EE29-03D**

**Wellbore #1**

**Survey: Survey #1**

## **Standard Survey Report**

**19 September, 2011**





**Company:** NOBLE ENERGY INC WELD COUNTY CO  
**Project:** SEC.29-T7N-R65W  
**Site:** Donaldson USX EE29-12D Pad  
 Sec.29-T7N-R65W  
**Well:** Calvary USX EE29-03D  
**Wellbore:** Wellbore #1  
**Design:** Wellbore #1

**Local Co-ordinate Reference:** Well Calvary USX EE29-03D  
**TVD Reference:** WELL @ 4937.0ft (Original Well Elev)  
**MD Reference:** WELL @ 4937.0ft (Original Well Elev)  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature  
**Database:** Landmark

**Project** SEC.29-T7N-R65W, 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** Donaldson USX EE29-12D Pad Sec.29-T7N-R65W

<b>Site Position:</b>	<b>Northing:</b> 1,444,056.55 ft	<b>Latitude:</b> 40.549550
<b>From:</b> Lat/Long	<b>Easting:</b> 3,223,614.25 ft	<b>Longitude:</b> -104.695320
<b>Position Uncertainty:</b> 0.0 ft	<b>Slot Radius:</b> "	<b>Grid Convergence:</b> 0.52 °

**Well** Calvary USX EE29-03D

<b>Well Position</b>	<b>+N/-S</b> 0.0 ft	<b>Northing:</b> 1,444,053.29 ft	<b>Latitude:</b> 40.549540
	<b>+E/-W</b> 0.0 ft	<b>Easting:</b> 3,223,658.75 ft	<b>Longitude:</b> -104.695160
<b>Position Uncertainty</b>	0.0 ft	<b>Wellhead Elevation:</b> ft	<b>Ground Level:</b> 4,924.0 ft

**Wellbore** Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/9/2011	8.85	67.19	53,227

**Design** Wellbore #1

**Audit Notes:**

<b>Version:</b> 1.0	<b>Phase:</b> ACTUAL	<b>Tie On Depth:</b> 0.0
---------------------	----------------------	--------------------------

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	6,000.0	0.0	0.0	68.43

**Survey Program** Date 9/19/2011

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
135.0	7,826.0	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
135.0	0.30	173.00	135.0	-0.4	0.0	-0.1	0.22	0.22	0.00
230.0	0.30	104.30	230.0	-0.7	0.3	0.1	0.36	0.00	-72.32
322.0	0.50	62.60	322.0	-0.5	0.9	0.6	0.37	0.22	-45.33
404.0	0.80	66.50	404.0	-0.1	1.7	1.6	0.37	0.37	4.76
486.0	0.90	65.80	486.0	0.4	2.9	2.8	0.12	0.12	-0.85
568.0	0.90	64.50	568.0	0.9	4.0	4.1	0.02	0.00	-1.59
659.0	0.70	65.90	659.0	1.4	5.2	5.3	0.22	-0.22	1.54
710.0	0.70	67.00	710.0	1.7	5.8	6.0	0.03	0.00	2.16
750.0	1.00	70.30	750.0	1.9	6.3	6.6	0.76	0.75	8.25
831.0	0.60	77.20	830.9	2.2	7.4	7.7	0.51	-0.49	8.52
913.0	1.80	78.90	912.9	2.6	9.1	9.4	1.46	1.46	2.07



Company: NOBLE ENERGY INC WELD COUNTY CO  
Project: SEC.29-T7N-R65W  
Site: Donaldson USX EE29-12D Pad  
Sec.29-T7N-R65W  
Well: Calvary USX EE29-03D  
Wellbore: Wellbore #1  
Design: Wellbore #1

Local Co-ordinate Reference: Well Calvary USX EE29-03D  
TVD Reference: WELL @ 4937.0ft (Original Well Elev)  
MD Reference: WELL @ 4937.0ft (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)
995.0	2.80	74.70	994.9	3.3	12.3	12.6	1.24	1.22	-5.12
1,077.0	4.00	68.40	1,076.7	4.9	16.9	17.5	1.53	1.46	-7.68
1,158.0	5.00	71.20	1,157.5	7.1	22.8	23.8	1.26	1.23	3.46
1,240.0	6.40	69.10	1,239.1	9.9	30.5	32.0	1.73	1.71	-2.56
1,322.0	8.20	68.80	1,320.4	13.6	40.2	42.4	2.20	2.20	-0.37
1,404.0	9.70	68.40	1,401.4	18.3	52.1	55.1	1.83	1.83	-0.49
1,485.0	11.10	68.80	1,481.1	23.6	65.7	69.8	1.73	1.73	0.49
1,567.0	12.60	67.50	1,561.3	29.9	81.3	86.6	1.86	1.83	-1.59
1,649.0	14.00	67.50	1,641.1	37.1	98.7	105.5	1.71	1.71	0.00
1,730.0	15.70	71.20	1,719.4	44.4	118.2	126.2	2.40	2.10	4.57
1,812.0	16.40	70.30	1,798.2	51.9	139.6	148.9	0.91	0.85	-1.10
1,894.0	17.90	68.00	1,876.6	60.5	162.2	173.0	2.01	1.83	-2.80
1,976.0	18.10	69.60	1,954.5	69.7	185.8	198.4	0.65	0.24	1.95
2,057.0	18.50	65.40	2,031.4	79.4	209.3	223.8	1.70	0.49	-5.19
2,139.0	19.20	69.50	2,109.1	89.5	233.7	250.3	1.83	0.85	5.00
2,221.0	20.80	68.40	2,186.1	99.6	259.9	278.3	2.00	1.95	-1.34
2,303.0	21.60	68.40	2,262.6	110.5	287.5	308.0	0.98	0.98	0.00
2,384.0	21.70	69.10	2,337.8	121.4	315.3	337.8	0.34	0.12	0.86
2,466.0	22.80	74.70	2,413.7	131.0	344.8	368.8	2.91	1.34	6.83
2,548.0	24.90	71.90	2,488.7	140.5	376.5	401.8	2.91	2.56	-3.41
2,630.0	25.20	72.60	2,563.0	151.1	409.6	436.5	0.51	0.37	0.85
2,711.0	25.00	69.50	2,636.4	162.3	442.1	470.8	1.64	-0.25	-3.83
2,793.0	23.80	68.90	2,711.1	174.3	473.8	504.6	1.49	-1.46	-0.73
2,875.0	25.10	68.00	2,785.7	186.8	505.3	538.6	1.65	1.59	-1.10
2,957.0	25.90	66.80	2,859.7	200.3	537.9	573.9	1.16	0.98	-1.46
3,038.0	26.10	68.60	2,932.5	213.8	570.8	609.4	1.00	0.25	2.22
3,120.0	27.50	70.00	3,005.7	226.8	605.3	646.3	1.87	1.71	1.71
3,202.0	26.50	66.80	3,078.8	240.5	639.9	683.6	2.15	-1.22	-3.90
3,284.0	26.10	68.80	3,152.3	254.3	673.6	719.9	1.19	-0.49	2.44
3,365.0	24.30	65.60	3,225.6	267.6	705.4	754.4	2.79	-2.22	-3.95
3,447.0	23.80	68.20	3,300.5	280.7	736.1	787.8	1.43	-0.61	3.17
3,529.0	25.10	68.40	3,375.1	293.3	767.6	821.7	1.59	1.59	0.24
3,610.0	27.20	69.30	3,447.8	306.1	800.9	857.4	2.64	2.59	1.11
3,692.0	25.50	68.00	3,521.3	319.4	834.8	893.8	2.19	-2.07	-1.59
3,774.0	23.10	65.20	3,596.0	332.7	865.8	927.5	3.25	-2.93	-3.41
3,856.0	22.60	64.40	3,671.6	346.3	894.6	959.3	0.72	-0.61	-0.98
3,937.0	21.30	62.20	3,746.7	359.9	921.7	989.4	1.90	-1.60	-2.72
4,019.0	20.90	67.50	3,823.2	372.4	948.4	1,018.9	2.38	-0.49	6.46
4,101.0	19.30	69.10	3,900.2	382.8	974.5	1,047.0	2.06	-1.95	1.95
4,183.0	20.70	72.60	3,977.3	392.0	1,001.0	1,075.0	2.25	1.71	4.27
4,264.0	21.20	75.30	4,052.9	400.0	1,028.9	1,103.9	1.34	0.62	3.33
4,346.0	22.80	74.70	4,129.0	408.0	1,058.5	1,134.4	1.97	1.95	-0.73
4,428.0	23.80	72.60	4,204.3	417.1	1,089.6	1,166.7	1.59	1.22	-2.56
4,510.0	24.00	72.80	4,279.2	427.0	1,121.4	1,199.8	0.26	0.24	0.24
4,591.0	22.80	73.80	4,353.6	436.2	1,152.2	1,231.9	1.56	-1.48	1.23
4,673.0	20.80	76.10	4,429.7	444.2	1,181.6	1,262.1	2.65	-2.44	2.80
4,755.0	20.60	73.00	4,506.4	451.9	1,209.5	1,290.9	1.36	-0.24	-3.78
4,837.0	19.00	72.00	4,583.6	460.2	1,236.0	1,318.6	1.99	-1.95	-1.22
4,918.0	18.90	74.40	4,660.2	467.8	1,261.2	1,344.8	0.97	-0.12	2.96
5,000.0	17.90	72.60	4,738.0	475.2	1,286.0	1,370.6	1.40	-1.22	-2.20
5,082.0	16.00	68.60	4,816.4	483.1	1,308.5	1,394.5	2.72	-2.32	-4.88
5,164.0	13.80	71.70	4,895.7	490.3	1,328.3	1,415.5	2.85	-2.68	3.78
5,245.0	12.10	66.10	4,974.6	496.7	1,345.3	1,433.7	2.61	-2.10	-6.91

Company: NOBLE ENERGY INC WELD COUNTY CO  
Project: SEC.29-T7N-R65W  
Site: Donaldson USX EE29-12D Pad  
Sec.29-T7N-R65W  
Well: Calvary USX EE29-03D  
Wellbore: Wellbore #1  
Design: Wellbore #1

Local Co-ordinate Reference: Well Calvary USX EE29-03D  
TVD Reference: WELL @ 4937.0ft (Original Well Elev)  
MD Reference: WELL @ 4937.0ft (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)
5,327.0	13.40	61.50	5,054.6	504.7	1,361.5	1,451.7	2.01	1.59	-5.61
5,409.0	13.50	63.30	5,134.3	513.6	1,378.4	1,470.7	0.52	0.12	2.20
5,491.0	13.80	61.90	5,214.0	522.5	1,395.6	1,489.9	0.54	0.37	-1.71
5,572.0	15.00	58.00	5,292.5	532.6	1,413.0	1,509.8	1.90	1.48	-4.81
5,654.0	13.50	55.40	5,371.9	543.7	1,429.8	1,529.6	1.99	-1.83	-3.17
5,736.0	12.30	60.80	5,451.9	553.3	1,445.3	1,547.6	2.07	-1.46	6.59
5,817.0	12.00	65.10	5,531.1	561.1	1,460.5	1,564.5	1.18	-0.37	5.31
5,899.0	9.90	69.50	5,611.6	567.2	1,474.9	1,580.1	2.75	-2.56	5.37
5,981.0	8.70	61.90	5,692.5	572.6	1,486.9	1,593.3	2.09	-1.46	-9.27
6,063.0	8.30	53.30	5,773.6	579.0	1,497.1	1,605.2	1.62	-0.49	-10.49
6,144.0	8.10	52.40	5,853.8	586.0	1,506.4	1,616.3	0.29	-0.25	-1.11
6,226.0	7.30	54.20	5,935.0	592.6	1,515.2	1,626.9	1.02	-0.98	2.20
6,301.2	5.56	55.45	6,009.8	597.4	1,522.0	1,635.1	2.32	-2.32	1.66
TARGET BHL 660'FNL, 2000'FWL									
6,308.0	5.40	55.60	6,016.5	597.8	1,522.6	1,635.7	2.32	-2.31	2.24
6,390.0	4.90	69.80	6,098.2	601.2	1,529.0	1,643.0	1.66	-0.61	17.32
6,471.0	4.00	71.90	6,178.9	603.2	1,535.0	1,649.2	1.13	-1.11	2.59
6,553.0	3.00	71.90	6,260.8	604.8	1,539.7	1,654.2	1.22	-1.22	0.00
6,635.0	2.00	71.60	6,342.7	605.9	1,543.1	1,657.8	1.22	-1.22	-0.37
6,717.0	1.40	55.20	6,424.7	606.9	1,545.3	1,660.2	0.93	-0.73	-20.00
6,798.0	1.00	47.30	6,505.7	608.0	1,546.6	1,661.8	0.53	-0.49	-9.75
6,880.0	0.90	36.80	6,587.6	609.0	1,547.5	1,663.1	0.24	-0.12	-12.80
6,962.0	1.10	46.60	6,669.6	610.0	1,548.5	1,664.3	0.32	0.24	11.95
7,044.0	1.20	54.20	6,751.6	611.1	1,549.8	1,665.9	0.22	0.12	9.27
7,125.0	1.00	71.00	6,832.6	611.8	1,551.1	1,667.4	0.47	-0.25	20.74
7,207.0	1.10	82.60	6,914.6	612.1	1,552.6	1,668.9	0.29	0.12	14.15
7,289.0	0.90	103.20	6,996.6	612.1	1,554.0	1,670.2	0.50	-0.24	25.12
7,330.0	0.84	110.63	7,037.6	611.9	1,554.6	1,670.7	0.31	-0.14	18.13
TARGET CIRCLE 660'FNL & 2000'FWL									
7,371.0	0.80	119.00	7,078.6	611.7	1,555.1	1,671.1	0.31	-0.10	20.41
7,452.0	0.80	128.20	7,159.6	611.1	1,556.1	1,671.7	0.16	0.00	11.36
7,534.0	0.90	141.50	7,241.6	610.2	1,556.9	1,672.2	0.27	0.12	16.22
7,616.0	1.10	170.50	7,323.5	608.9	1,557.4	1,672.2	0.65	0.24	35.37
7,697.0	1.10	180.70	7,404.5	607.4	1,557.6	1,671.8	0.24	0.00	12.59
7,768.9	1.28	173.98	7,476.5	605.9	1,557.6	1,671.3	0.32	0.26	-9.34
LEGAL BOX 400' X 400' 661'FNL & 1977'FWL									
7,775.0	1.30	173.50	7,482.5	605.7	1,557.7	1,671.3	0.32	0.27	-7.89
7,826.0	1.50	182.70	7,533.5	604.5	1,557.7	1,670.8	0.59	0.39	18.04

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