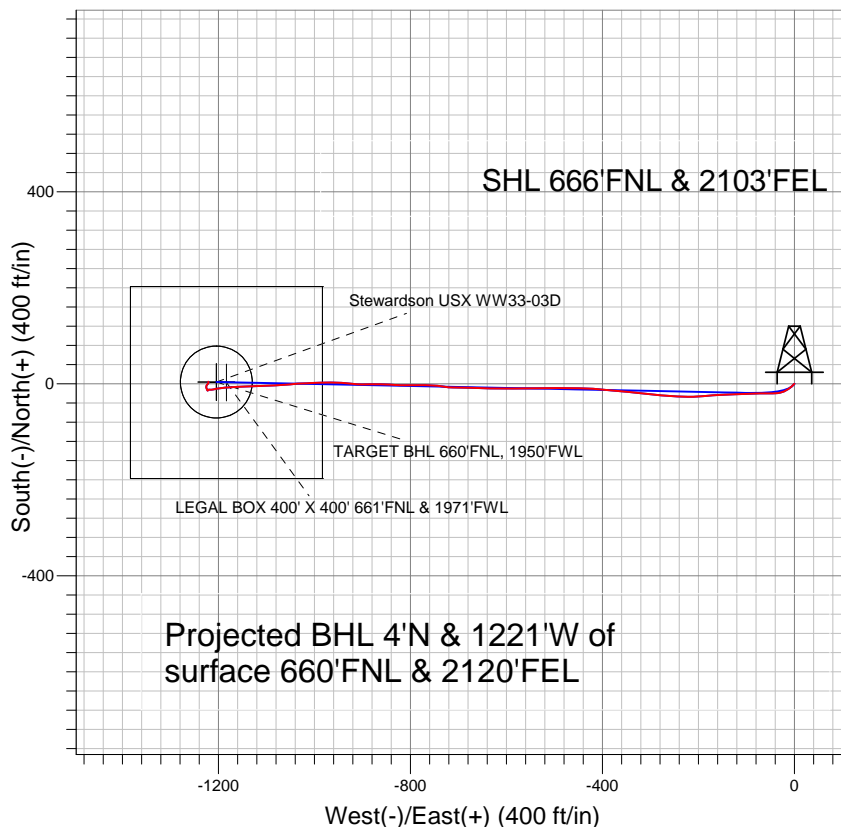


## NOBLE ENERGY INC WELD COUNTY CO



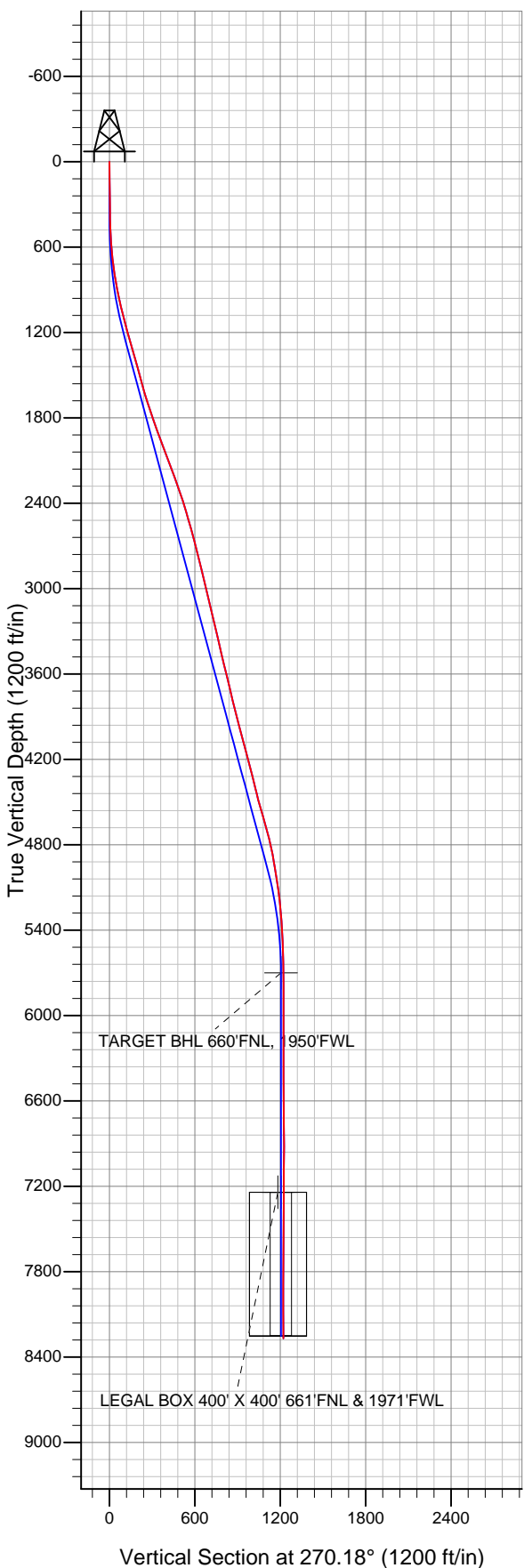
### LEGEND

- x Stewardson USX WW33-03D, Wellbore #1, Noble Stewardson USX WW33-03D Plan #1 (6-16-11)
- Wellbore #1
- Survey #1

## Final Survey Plot

Projected Final Survey -  
8428'MD & 8268'TVD @ 1221'VS  
0.3 deg Inc 317.7 deg AZ

Project: SEC.33-T1N-R66W  
Site: Stewardson USX WW33-01D Pad Sec.33-T1N-R66W  
Well: Stewardson USX WW33-03D  
Plan: Wellbore #1





## **Directional**

# **NOBLE ENERGY INC WELD COUNTY CO**

**SEC.33-T1N-R66W**

**Stewardson USX WW33-01D Pad Sec.33-T1N-R66W**

**Stewardson USX WW33-03D**

**Wellbore #1**

**Survey: Survey #1**

## **Standard Survey Report**

**12 October, 2011**



<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>Local Co-ordinate Reference:</b>	Well Stewardson USX WW33-03D
<b>Project:</b>	SEC.33-T1N-R66W	<b>TVD Reference:</b>	WELL @ 5085.0ft (Original Well Elev)
<b>Site:</b>	Stewardson USX WW33-01D Pad Sec.33-T1N-R66W	<b>MD Reference:</b>	WELL @ 5085.0ft (Original Well Elev)
<b>Well:</b>	Stewardson USX WW33-03D	<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.33-T1N-R66W, 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		Stewardson USX WW33-01D Pad Sec.33-T1N-R66W			
Site Position:		Northing:	1,248,458.80 ft	Latitude:	40.013160
From:	Lat/Long	Easting:	3,201,593.82 ft	Longitude:	-104.780270
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.47 °

Well	Stewardson USX WW33-03D					
Well Position	+N-S	0.0 ft	Northing:	1,248,448.02 ft	Latitude:	40.013130
	+E-W	0.0 ft	Easting:	3,201,613.52 ft	Longitude:	-104.780200
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	5,072.0 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	6/22/2011	8.84	66.73	52,922

<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	270.18	

<b>Survey Program</b>	<b>Date</b>	10/12/2011			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
259.0	8,428.0	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	
259.0	1.10	226.40	259.0	-1.7	-1.8	1.8	0.42	0.42	0.00	
351.0	1.10	217.30	351.0	-3.0	-3.0	3.0	0.19	0.00	-9.89	
443.0	2.60	233.80	442.9	-5.0	-5.2	5.2	1.71	1.63	17.93	
535.0	4.10	230.00	534.8	-8.3	-9.4	9.4	1.65	1.63	-4.13	
627.0	5.60	238.00	626.4	-12.8	-15.7	15.7	1.78	1.63	8.70	
720.0	7.80	251.40	718.8	-17.2	-25.6	25.5	2.89	2.37	14.41	
811.0	9.40	266.70	808.8	-19.6	-38.8	38.8	3.05	1.76	16.81	
893.0	10.60	268.50	889.5	-20.2	-53.1	53.0	1.51	1.46	2.20	
975.0	12.20	270.90	969.9	-20.3	-69.3	69.2	2.03	1.95	2.93	
1,057.0	13.70	266.90	1,049.8	-20.7	-87.6	87.6	2.13	1.83	-4.88	
1,138.0	15.30	269.00	1,128.2	-21.4	-107.9	107.8	2.08	1.98	2.59	

<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>Local Co-ordinate Reference:</b>	Well Stewardson USX WW33-03D
<b>Project:</b>	SEC.33-T1N-R66W	<b>TVD Reference:</b>	WELL @ 5085.0ft (Original Well Elev)
<b>Site:</b>	Stewardson USX WW33-01D Pad Sec.33-T1N-R66W	<b>MD Reference:</b>	WELL @ 5085.0ft (Original Well Elev)
<b>Well:</b>	Stewardson USX WW33-03D	<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)
1,220.0	15.80	267.90	1,207.2	-22.0	-129.9	129.8	0.71	0.61	-1.34
1,302.0	15.30	267.20	1,286.2	-22.9	-151.8	151.7	0.65	-0.61	-0.85
1,372.0	15.60	265.60	1,353.7	-24.1	-170.4	170.4	0.74	0.43	-2.29
1,440.0	15.70	264.40	1,419.2	-25.7	-188.7	188.6	0.50	0.15	-1.76
1,522.0	15.30	269.00	1,498.2	-26.9	-210.6	210.5	1.58	-0.49	5.61
1,604.0	15.80	271.60	1,577.2	-26.8	-232.5	232.5	1.05	0.61	3.17
1,686.0	17.20	273.60	1,655.8	-25.7	-255.8	255.7	1.84	1.71	2.44
1,767.0	18.60	276.40	1,732.9	-23.5	-280.6	280.5	2.03	1.73	3.46
1,849.0	18.80	275.00	1,810.6	-20.9	-306.7	306.7	0.60	0.24	-1.71
1,931.0	20.10	275.80	1,887.9	-18.4	-333.9	333.9	1.62	1.59	0.98
2,012.0	20.80	275.50	1,963.8	-15.6	-362.1	362.0	0.87	0.86	-0.37
2,094.0	20.40	275.70	2,040.6	-12.8	-390.8	390.8	0.50	-0.49	0.24
2,176.0	20.80	273.60	2,117.3	-10.4	-419.6	419.5	1.02	0.49	-2.56
2,258.0	20.70	271.40	2,194.0	-9.2	-448.6	448.5	0.96	-0.12	-2.68
2,339.0	19.30	269.90	2,270.1	-8.8	-476.3	476.2	1.84	-1.73	-1.85
2,421.0	18.10	269.70	2,347.8	-8.9	-502.6	502.5	1.47	-1.46	-0.24
2,503.0	17.40	268.80	2,425.9	-9.2	-527.6	527.5	0.92	-0.85	-1.10
2,584.0	16.00	268.80	2,503.5	-9.7	-550.8	550.8	1.73	-1.73	0.00
2,666.0	16.20	270.90	2,582.2	-9.8	-573.6	573.5	0.75	0.24	2.56
2,748.0	14.80	269.00	2,661.3	-9.8	-595.5	595.4	1.82	-1.71	-2.32
2,830.0	13.40	269.00	2,740.8	-10.1	-615.5	615.4	1.71	-1.71	0.00
2,911.0	13.70	272.70	2,819.5	-9.9	-634.4	634.4	1.13	0.37	4.57
2,993.0	13.70	272.20	2,899.2	-9.0	-653.8	653.8	0.14	0.00	-0.61
3,075.0	13.50	270.70	2,978.9	-8.5	-673.1	673.1	0.49	-0.24	-1.83
3,157.0	14.10	271.30	3,058.5	-8.2	-692.7	692.6	0.75	0.73	0.73
3,238.0	13.20	271.80	3,137.2	-7.7	-711.8	711.7	1.12	-1.11	0.62
3,320.0	12.80	278.00	3,217.1	-6.1	-730.1	730.1	1.77	-0.49	7.56
3,402.0	13.70	275.80	3,297.0	-3.9	-748.8	748.8	1.26	1.10	-2.68
3,483.0	12.70	270.90	3,375.8	-2.8	-767.2	767.2	1.85	-1.23	-6.05
3,565.0	13.70	269.30	3,455.7	-2.7	-785.9	785.9	1.30	1.22	-1.95
3,647.0	13.20	270.00	3,535.4	-2.9	-805.0	805.0	0.64	-0.61	0.85
3,729.0	14.10	270.60	3,615.1	-2.8	-824.4	824.3	1.11	1.10	0.73
3,810.0	13.30	274.80	3,693.8	-1.9	-843.5	843.5	1.58	-0.99	5.19
3,892.0	14.30	270.90	3,773.4	-0.9	-863.0	863.0	1.66	1.22	-4.76
3,974.0	13.50	269.00	3,853.0	-0.9	-882.7	882.7	1.12	-0.98	-2.32
4,055.0	13.60	270.00	3,931.8	-1.1	-901.7	901.7	0.31	0.12	1.23
4,137.0	14.60	276.40	4,011.3	0.1	-921.6	921.6	2.26	1.22	7.80
4,219.0	16.30	273.70	4,090.3	1.9	-943.4	943.4	2.25	2.07	-3.29
4,301.0	15.10	269.30	4,169.3	2.6	-965.5	965.5	2.06	-1.46	-5.37
4,382.0	14.50	268.30	4,247.6	2.1	-986.2	986.2	0.81	-0.74	-1.23
4,464.0	14.30	268.60	4,327.0	1.6	-1,006.6	1,006.6	0.26	-0.24	0.37
4,546.0	13.00	266.50	4,406.7	0.8	-1,025.9	1,025.9	1.70	-1.59	-2.56
4,627.0	14.40	264.60	4,485.4	-0.7	-1,045.1	1,045.1	1.82	1.73	-2.35
4,709.0	16.90	266.20	4,564.3	-2.5	-1,067.1	1,067.1	3.09	3.05	1.95
4,791.0	16.60	268.10	4,642.9	-3.7	-1,090.7	1,090.7	0.76	-0.37	2.32
4,873.0	14.20	267.40	4,721.9	-4.5	-1,112.5	1,112.5	2.94	-2.93	-0.85
4,954.0	11.90	267.10	4,800.8	-5.4	-1,130.7	1,130.7	2.84	-2.84	-0.37
5,036.0	11.00	267.60	4,881.2	-6.1	-1,147.0	1,147.0	1.10	-1.10	0.61
5,118.0	9.70	268.10	4,961.8	-6.7	-1,161.7	1,161.7	1.59	-1.59	0.61
5,200.0	9.10	266.70	5,042.7	-7.3	-1,175.1	1,175.1	0.78	-0.73	-1.71
5,281.0	7.30	264.20	5,122.9	-8.2	-1,186.6	1,186.6	2.26	-2.22	-3.09
5,363.0	6.70	264.20	5,204.3	-9.2	-1,196.6	1,196.5	0.73	-0.73	0.00
5,445.0	4.50	256.50	5,285.9	-10.4	-1,204.4	1,204.4	2.83	-2.68	-9.39

<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>Local Co-ordinate Reference:</b>	Well Stewardson USX WW33-03D
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<b>Well:</b>	Stewardson USX WW33-03D	<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)
5,526.0	3.50	256.90	5,366.7	-11.7	-1,209.9	1,209.9	1.24	-1.23	0.49
5,608.0	2.80	267.60	5,448.6	-12.4	-1,214.4	1,214.3	1.11	-0.85	13.05
5,690.0	2.80	274.30	5,530.5	-12.3	-1,218.4	1,218.3	0.40	0.00	8.17
5,772.0	0.90	237.70	5,612.4	-12.5	-1,220.9	1,220.9	2.62	-2.32	-44.63
5,853.0	0.70	225.90	5,693.4	-13.2	-1,221.8	1,221.8	0.32	-0.25	-14.57
5,859.4	0.67	224.37	5,699.8	-13.2	-1,221.9	1,221.8	0.54	-0.45	-24.06
<b>TARGET BHL 660'FNL, 1950'FWL</b>									
5,935.0	0.40	190.60	5,775.4	-13.8	-1,222.2	1,222.2	0.54	-0.36	-44.64
6,017.0	0.40	189.00	5,857.4	-14.4	-1,222.3	1,222.3	0.01	0.00	-1.95
6,098.0	0.00	0.00	5,938.4	-14.7	-1,222.4	1,222.3	0.49	-0.49	0.00
6,262.0	0.50	315.20	6,102.4	-14.2	-1,222.9	1,222.8	0.30	0.30	0.00
6,425.0	0.30	33.30	6,265.4	-13.3	-1,223.1	1,223.1	0.32	-0.12	47.91
6,589.0	0.40	339.30	6,429.4	-12.4	-1,223.1	1,223.1	0.20	0.06	-32.93
6,752.0	0.50	313.60	6,592.4	-11.4	-1,223.8	1,223.8	0.14	0.06	-15.77
6,916.0	0.80	333.50	6,756.4	-9.9	-1,224.9	1,224.8	0.23	0.18	12.13
7,079.0	0.60	341.10	6,919.4	-8.0	-1,225.6	1,225.6	0.14	-0.12	4.66
7,243.0	0.60	20.30	7,083.4	-6.4	-1,225.6	1,225.6	0.25	0.00	23.90
7,400.8	0.79	11.81	7,241.2	-4.6	-1,225.1	1,225.1	0.14	0.12	-5.38
<b>TARGET CIRCLE 660'FNL &amp; 1950'FWL</b>									
7,400.8	0.79	11.81	7,241.2	-4.6	-1,225.1	1,225.1	0.14	0.13	-4.05
<b>LEGAL BOX 400' X 400' 661'FNL &amp; 1971'FWL</b>									
7,406.0	0.80	11.60	7,246.4	-4.5	-1,225.1	1,225.1	0.14	0.13	-4.02
7,569.0	0.80	40.80	7,409.4	-2.5	-1,224.1	1,224.1	0.25	0.00	17.91
7,733.0	0.80	33.60	7,573.3	-0.7	-1,222.7	1,222.7	0.06	0.00	-4.39
7,896.0	0.80	23.60	7,736.3	1.3	-1,221.7	1,221.6	0.09	0.00	-6.13
8,059.0	0.40	48.70	7,899.3	2.7	-1,220.8	1,220.8	0.29	-0.25	15.40
8,222.0	0.30	317.70	8,062.3	3.4	-1,220.6	1,220.6	0.31	-0.06	-55.83
8,378.0	0.30	317.70	8,218.3	4.0	-1,221.2	1,221.2	0.00	0.00	0.00
8,428.0	0.30	317.70	8,268.3	4.2	-1,221.4	1,221.4	0.00	0.00	0.00

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