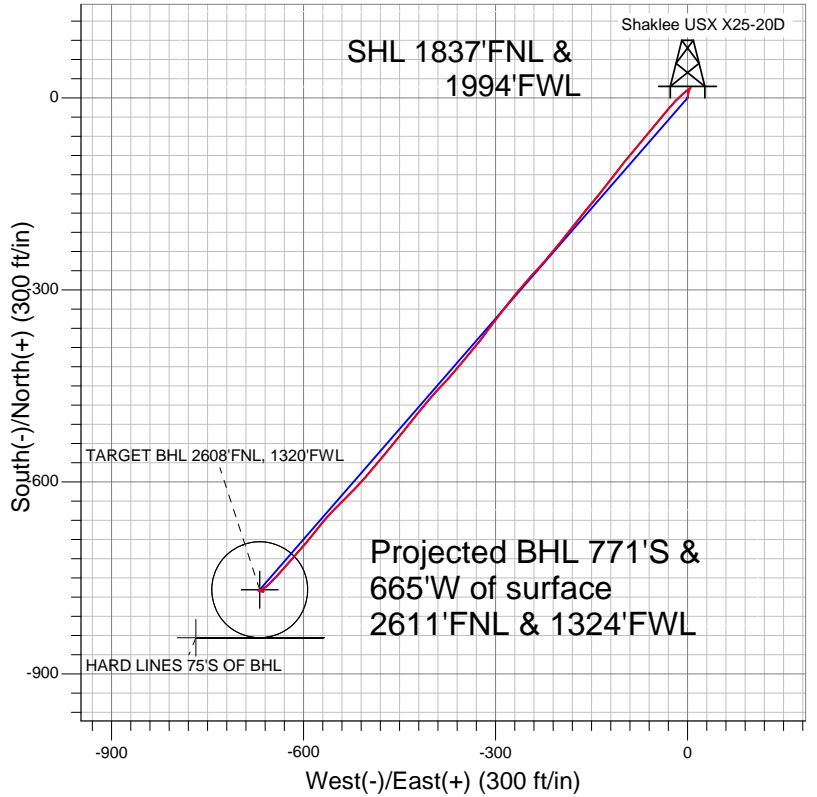


## NOBLE ENERGY INC WELD COUNTY CO



### LEGEND

- ◆ Shaklee USX X25-20D, Wellbore #1, Noble Shaklee USX X25-20D Plan #1 (4-19-11) V0
- Wellbore #1
- Survey #1

## Final Survey Plot

Projected Final Survey -  
7930'MD & 7789'TVD @ 1018'VS  
0.5 deg Inc 262.3 deg AZ

Project: SEC.25-T2N-R65W  
Site: Shaklee USX X25-02D Pad Sec.25-T2N-R65W  
Well: Shaklee USX X25-20D  
Plan: Wellbore #1



# **NOBLE ENERGY INC WELD COUNTY CO**

**SEC.25-T2N-R65W**

**Shaklee USX X25-02D Pad Sec.25-T2N-R65W**

**Shaklee USX X25-20D**

**Wellbore #1**

**Survey: Survey #1**

## **Standard Survey Report**

**20 October, 2011**



<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>Local Co-ordinate Reference:</b>	Well Shaklee USX X25-20D
<b>Project:</b>	SEC.25-T2N-R65W	<b>TVD Reference:</b>	WELL @ 4917.0ft (Original Well Elev)
<b>Site:</b>	Shaklee USX X25-02D Pad Sec.25-T2N-R65W	<b>MD Reference:</b>	WELL @ 4917.0ft (Original Well Elev)
<b>Well:</b>	Shaklee USX X25-20D	<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.25-T2N-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

<b>Site</b>	Shaklee USX X25-02D Pad Sec.25-T2N-R65W		
<b>Site Position:</b>		<b>Northing:</b>	1,284,773.06ft
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,247,665.57ft
<b>Position Uncertainty:</b>	0.0 ft	<b>Slot Radius:</b>	"
		<b>Latitude:</b>	40.111700
		<b>Longitude:</b>	-104.614500
		<b>Grid Convergence:</b>	0.57 °

<b>Well</b>	Shaklee USX X25-20D		
<b>Well Position</b>	<b>+N/-S</b>	0.0 ft	<b>Northing:</b> 1,284,772.82 ft
	<b>+E/-W</b>	0.0 ft	<b>Easting:</b> 3,247,643.19 ft
<b>Position Uncertainty</b>	0.0 ft	<b>Wellhead Elevation:</b>	ft
		<b>Latitude:</b>	40.111700
		<b>Longitude:</b>	-104.614580
		<b>Ground Level:</b>	4,904.0 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	4/26/2011	8.78	66.85	53,010

<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	220.76	

<b>Survey Program</b>	<b>Date</b>	10/20/2011			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
105.0	7,930.0	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	
105.0	0.80	11.00	105.0	0.7	0.1	-0.6	0.76	0.76	0.00	
321.0	0.90	3.10	321.0	3.9	0.5	-3.3	0.07	0.05	-3.66	
444.0	0.90	8.40	444.0	5.8	0.7	-4.9	0.07	0.00	4.31	
567.0	0.90	20.10	566.9	7.7	1.2	-6.6	0.15	0.00	9.51	
690.0	1.00	16.60	689.9	9.6	1.8	-8.5	0.09	0.08	-2.85	
923.0	1.20	18.90	922.9	13.9	3.2	-12.6	0.09	0.09	0.99	
962.0	1.10	37.90	961.9	14.6	3.6	-13.3	1.01	-0.26	48.72	
1,029.0	0.70	40.10	1,028.9	15.4	4.2	-14.4	0.60	-0.60	3.28	
1,110.0	0.40	60.50	1,109.9	15.9	4.8	-15.2	0.44	-0.37	25.19	
1,192.0	1.00	231.70	1,191.9	15.6	4.5	-14.7	1.70	0.73	208.78	
1,274.0	2.70	232.20	1,273.8	14.0	2.4	-12.1	2.07	2.07	0.61	
1,355.0	4.00	234.30	1,354.7	11.1	-1.4	-7.5	1.61	1.60	2.59	

<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>Local Co-ordinate Reference:</b>	Well Shaklee USX X25-20D
<b>Project:</b>	SEC.25-T2N-R65W	<b>TVD Reference:</b>	WELL @ 4917.0ft (Original Well Elev)
<b>Site:</b>	Shaklee USX X25-02D Pad Sec.25-T2N-R65W	<b>MD Reference:</b>	WELL @ 4917.0ft (Original Well Elev)
<b>Well:</b>	Shaklee USX X25-20D	<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)
1,437.0	5.10	227.60	1,436.4	7.0	-6.4	-1.1	1.49	1.34	-8.17
1,519.0	6.80	224.80	1,518.0	1.1	-12.5	7.4	2.10	2.07	-3.41
1,601.0	8.10	225.30	1,599.3	-6.4	-20.1	18.0	1.59	1.59	0.61
1,682.0	9.70	220.40	1,679.3	-15.6	-28.6	30.5	2.18	1.98	-6.05
1,764.0	10.70	218.30	1,760.0	-26.8	-37.7	45.0	1.30	1.22	-2.56
1,846.0	12.30	221.10	1,840.4	-39.4	-48.2	61.3	2.07	1.95	3.41
1,927.0	12.80	219.00	1,919.4	-52.9	-59.5	78.9	0.84	0.62	-2.59
2,009.0	14.10	219.50	1,999.2	-67.6	-71.6	98.0	1.59	1.59	0.61
2,091.0	14.90	220.90	2,078.6	-83.3	-84.9	118.5	1.07	0.98	1.71
2,173.0	15.60	218.10	2,157.7	-100.0	-98.6	140.1	1.24	0.85	-3.41
2,254.0	15.40	216.90	2,235.7	-117.1	-111.7	161.7	0.47	-0.25	-1.48
2,336.0	15.70	218.70	2,314.7	-134.5	-125.2	183.6	0.69	0.37	2.20
2,418.0	15.80	218.70	2,393.6	-151.9	-139.1	205.9	0.12	0.12	0.00
2,500.0	17.10	218.70	2,472.3	-170.0	-153.6	229.1	1.59	1.59	0.00
2,581.0	16.70	220.40	2,549.8	-188.1	-168.6	252.6	0.78	-0.49	2.10
2,663.0	16.00	217.80	2,628.5	-206.1	-183.2	275.7	1.23	-0.85	-3.17
2,745.0	16.90	218.80	2,707.1	-224.3	-197.6	298.9	1.15	1.10	1.22
2,826.0	17.70	219.40	2,784.5	-243.0	-212.8	323.0	1.01	0.99	0.74
2,908.0	19.70	221.40	2,862.1	-263.0	-229.8	349.2	2.56	2.44	2.44
2,990.0	19.40	222.50	2,939.4	-283.4	-248.2	376.7	0.58	-0.37	1.34
3,072.0	19.20	220.10	3,016.8	-303.7	-266.1	403.8	1.00	-0.24	-2.93
3,153.0	20.10	217.80	3,093.1	-324.9	-283.2	431.0	1.46	1.11	-2.84
3,235.0	19.80	216.90	3,170.1	-347.2	-300.2	458.9	0.52	-0.37	-1.10
3,317.0	19.90	216.40	3,247.3	-369.5	-316.8	486.7	0.24	0.12	-0.61
3,398.0	19.30	220.10	3,323.6	-390.8	-333.6	513.8	1.70	-0.74	4.57
3,480.0	18.10	219.80	3,401.3	-411.0	-350.5	540.1	1.47	-1.46	-0.37
3,562.0	18.30	220.60	3,479.2	-430.5	-367.0	565.7	0.39	0.24	0.98
3,644.0	17.60	223.60	3,557.2	-449.3	-383.9	591.0	1.41	-0.85	3.66
3,725.0	16.10	220.80	3,634.7	-466.7	-399.7	614.4	2.11	-1.85	-3.46
3,807.0	15.70	219.40	3,713.5	-483.8	-414.2	636.9	0.68	-0.49	-1.71
3,889.0	15.00	218.80	3,792.6	-500.7	-427.9	658.6	0.88	-0.85	-0.73
3,970.0	16.70	218.50	3,870.5	-518.0	-441.7	680.7	2.10	2.10	-0.37
4,052.0	16.10	219.40	3,949.2	-536.0	-456.2	703.8	0.79	-0.73	1.10
4,134.0	18.30	218.80	4,027.5	-554.8	-471.5	728.1	2.69	2.68	-0.73
4,216.0	18.80	220.20	4,105.3	-574.9	-488.1	754.2	0.82	0.61	1.71
4,297.0	17.90	221.80	4,182.2	-594.2	-504.8	779.7	1.27	-1.11	1.98
4,379.0	16.80	222.90	4,260.4	-612.2	-521.3	804.1	1.40	-1.34	1.34
4,461.0	17.30	226.70	4,338.8	-629.3	-538.2	828.1	1.49	0.61	4.63
4,543.0	16.10	222.90	4,417.4	-646.0	-554.9	851.6	1.98	-1.46	-4.63
4,624.0	15.00	219.90	4,495.4	-662.2	-569.2	873.3	1.68	-1.36	-3.70
4,706.0	13.50	218.10	4,574.9	-677.9	-581.9	893.4	1.91	-1.83	-2.20
4,788.0	14.00	220.90	4,654.5	-693.0	-594.3	912.9	1.01	0.61	3.41
4,869.0	12.60	220.60	4,733.3	-707.1	-606.5	931.6	1.73	-1.73	-0.37
4,951.0	10.90	221.10	4,813.6	-719.7	-617.4	948.2	2.08	-2.07	0.61
5,033.0	9.10	221.70	4,894.4	-730.4	-626.8	962.5	2.20	-2.20	0.73
5,115.0	7.50	221.80	4,975.5	-739.2	-634.7	974.3	1.95	-1.95	0.12
5,196.0	5.80	222.00	5,056.0	-746.2	-641.0	983.7	2.10	-2.10	0.25
5,278.0	4.50	224.80	5,137.6	-751.6	-646.0	991.1	1.61	-1.59	3.41
5,360.0	3.60	225.70	5,219.4	-755.6	-650.1	996.8	1.10	-1.10	1.10
5,441.0	2.30	220.60	5,300.3	-758.7	-653.0	1,001.0	1.64	-1.60	-6.30
5,523.0	2.00	220.20	5,382.3	-761.0	-655.0	1,004.1	0.37	-0.37	-0.49
5,605.0	1.80	236.10	5,464.2	-762.8	-657.0	1,006.7	0.68	-0.24	19.39
5,687.0	1.90	233.80	5,546.2	-764.3	-659.2	1,009.3	0.15	0.12	-2.80
5,768.0	1.60	242.60	5,627.1	-765.6	-661.2	1,011.7	0.50	-0.37	10.86

<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>Local Co-ordinate Reference:</b>	Well Shaklee USX X25-20D
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<b>Well:</b>	Shaklee USX X25-20D	<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)
5,850.0	1.40	225.90	5,709.1	-766.9	-663.0	1,013.7	0.58	-0.24	-20.37
5,932.0	1.70	245.40	5,791.1	-768.1	-664.8	1,015.8	0.73	0.37	23.78
5,941.0	1.64	246.19	5,800.1	-768.2	-665.0	1,016.1	0.67	-0.62	8.73
<b>TARGET BHL 2608'FNL, 1320'FWL</b>									
6,095.0	0.80	276.10	5,954.0	-769.0	-668.1	1,018.7	0.67	-0.55	19.42
6,259.0	0.50	256.80	6,118.0	-769.0	-670.0	1,019.9	0.22	-0.18	-11.77
6,422.0	0.40	179.10	6,281.0	-769.7	-670.7	1,020.9	0.35	-0.06	-47.67
6,586.0	0.30	122.70	6,445.0	-770.5	-670.3	1,021.3	0.21	-0.06	-34.39
6,749.0	0.20	101.20	6,608.0	-770.8	-669.6	1,021.1	0.08	-0.06	-13.19
6,912.0	0.40	84.20	6,771.0	-770.8	-668.8	1,020.5	0.13	0.12	-10.43
6,983.0	0.57	87.58	6,842.0	-770.8	-668.2	1,020.1	0.25	0.24	4.77
<b>TARGET CIRCLE 2608'FNL &amp; 1320'FWL</b>									
7,076.0	0.80	89.80	6,935.0	-770.8	-667.1	1,019.3	0.25	0.24	2.38
7,239.0	0.80	102.50	7,098.0	-771.0	-664.8	1,018.1	0.11	0.00	7.79
7,403.0	0.50	93.70	7,262.0	-771.3	-663.0	1,017.1	0.19	-0.18	-5.37
7,566.0	0.20	298.80	7,425.0	-771.2	-662.5	1,016.7	0.42	-0.18	-95.03
7,730.0	0.40	259.30	7,589.0	-771.2	-663.4	1,017.2	0.17	0.12	-24.09
7,880.0	0.50	262.30	7,739.0	-771.4	-664.5	1,018.1	0.07	0.07	2.00
<b>HARD LINES 75'S OF BHL</b>									
7,930.0	0.50	262.30	7,789.0	-771.4	-665.0	1,018.4	0.00	0.00	0.00

Checked By: _____	Approved By: _____	Date: _____
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