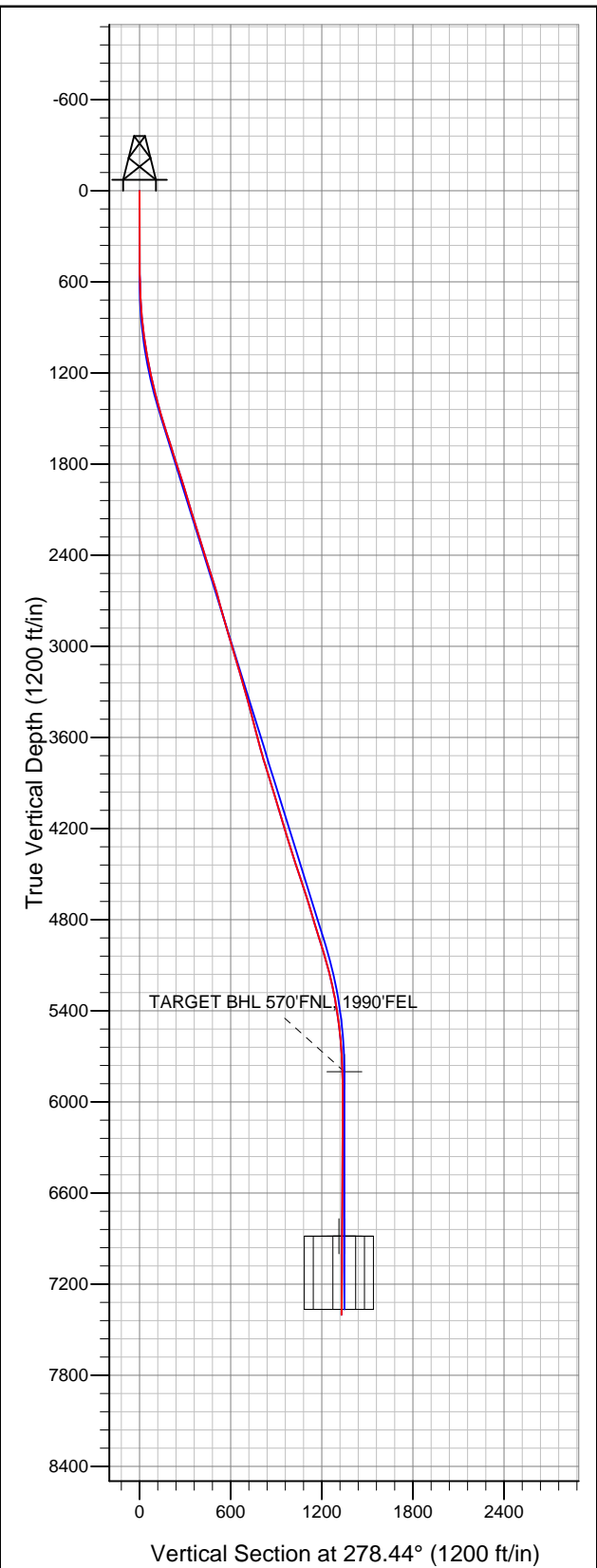
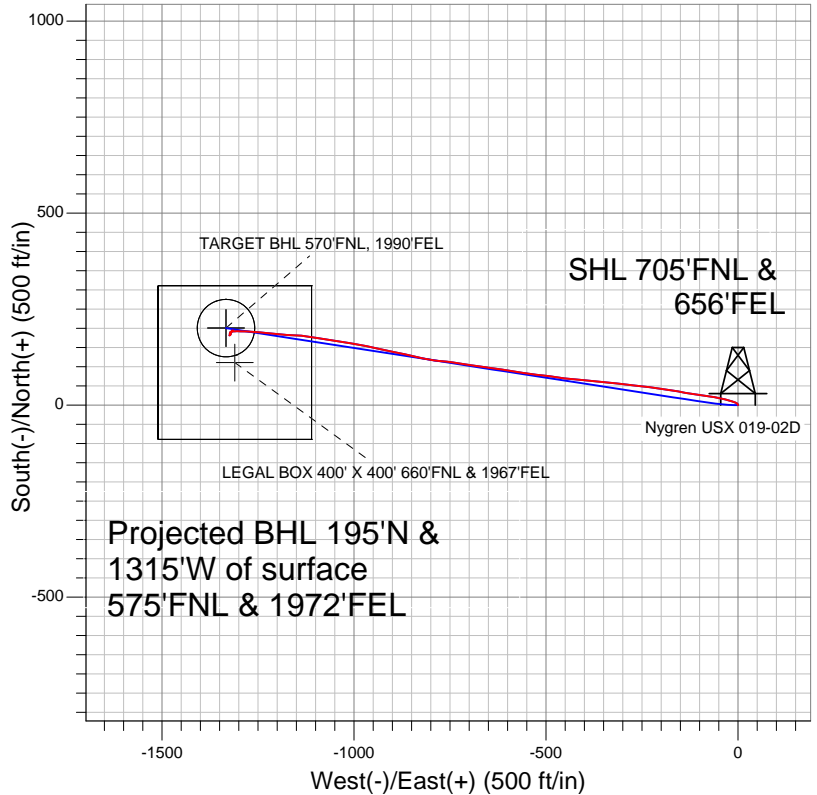




Well Name: **Nygren USX 019-02D**  
Surface Location: Nygren USX 019-02D Pad Sec.19-T4N-R67W  
North American Datum 1983 US State Plane 1983Colorado Northern Zone  
Ground Elevation: 4865.0  
+N/-S +E/-W Northing Easting Latitude Longitude Slot  
0.0 0.0 1354125.73 3160265.79 40.304050 -104.925370  
Original Well EleWELL @ 4878.0ft (Original Well Elev)



## NOBLE ENERGY INC WELD COUNTY CO



### LEGEND

- Nygren USX 019-02D, Wellbore #1, Noble Nygren USX 019-02D Plan #2 (9-19-11) V0
- Wellbore #1
- Survey #1

## Final Survey Plot

Projected Final Survey -  
7586'MD & 7401'TVD @ 1330' VS  
1.0 deg Inc 50.4 deg AZ

Project: SEC.19-T4N-R67W  
Site: Nygren USX 019-02D Pad Sec.19-T4N-R67W  
Well: Nygren USX 019-02D  
Plan: Wellbore #1



# **NOBLE ENERGY INC WELD COUNTY CO**

**SEC.19-T4N-R67W**

**Nygren USX 019-02D Pad Sec.19-T4N-R67W**

**Nygren USX 019-02D**

**Wellbore #1**

**Survey: Survey #1**

## **Standard Survey Report**

**30 September, 2011**



<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>Local Co-ordinate Reference:</b>	Well Nygren USX 019-02D
<b>Project:</b>	SEC.19-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4878.0ft (Original Well Elev)
<b>Site:</b>	Nygren USX 019-02D Pad Sec.19-T4N-R67W	<b>MD Reference:</b>	WELL @ 4878.0ft (Original Well Elev)
<b>Well:</b>	Nygren USX 019-02D	<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.19-T4N-R67W, 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>	Nygren USX 019-02D Pad Sec.19-T4N-R67W		
<b>Site Position:</b>		<b>Northing:</b>	1,354,125.73 ft
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,160,265.79 ft
<b>Position Uncertainty:</b>	0.0 ft	<b>Slot Radius:</b>	"
		<b>Latitude:</b>	40.304050
		<b>Longitude:</b>	-104.925370
		<b>Grid Convergence:</b>	0.37 °

<b>Well</b>	Nygren USX 019-02D		
<b>Well Position</b>	<b>+N/-S</b>	0.0 ft	<b>Northing:</b> 1,354,125.73 ft
	<b>+E/-W</b>	0.0 ft	<b>Easting:</b> 3,160,265.79 ft
<b>Position Uncertainty</b>	0.0 ft	<b>Wellhead Elevation:</b>	ft
		<b>Latitude:</b>	40.304050
		<b>Longitude:</b>	-104.925370
		<b>Ground Level:</b>	4,865.0 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	9/19/2011	8.91	66.94	53,035

<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	278.44	

<b>Survey Program</b>	<b>Date</b>	9/30/2011			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
550.0	7,586.0	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	
550.0	0.70	340.50	550.0	3.2	-1.1	1.6	0.13	0.13	0.00	
675.0	2.50	295.30	674.9	5.1	-3.8	4.5	1.65	1.44	-36.16	
800.0	4.80	291.00	799.7	8.1	-11.2	12.3	1.85	1.84	-3.44	
925.0	7.00	287.30	924.0	12.2	-23.3	24.9	1.79	1.76	-2.96	
1,050.0	9.40	282.00	1,047.7	16.6	-40.6	42.6	2.01	1.92	-4.24	
1,174.0	11.60	278.20	1,169.6	20.5	-62.9	65.2	1.86	1.77	-3.06	
1,299.0	13.00	278.90	1,291.8	24.5	-89.2	91.8	1.13	1.12	0.56	
1,424.0	16.50	280.20	1,412.6	29.8	-120.6	123.6	2.81	2.80	1.04	
1,549.0	17.00	278.10	1,532.3	35.5	-156.1	159.6	0.63	0.40	-1.68	
1,674.0	17.50	279.50	1,651.7	41.2	-192.7	196.7	0.52	0.40	1.12	
1,798.0	17.80	276.60	1,769.9	46.4	-230.0	234.3	0.75	0.24	-2.34	
1,923.0	17.70	276.40	1,888.9	50.8	-267.8	272.4	0.09	-0.08	-0.16	

<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>Local Co-ordinate Reference:</b>	Well Nygren USX 019-02D
<b>Project:</b>	SEC.19-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4878.0ft (Original Well Elev)
<b>Site:</b>	Nygren USX 019-02D Pad Sec.19-T4N-R67W	<b>MD Reference:</b>	WELL @ 4878.0ft (Original Well Elev)
<b>Well:</b>	Nygren USX 019-02D	<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)
2,048.0	16.70	276.10	2,008.3	54.8	-304.6	309.3	0.80	-0.80	-0.24
2,173.0	17.10	277.30	2,127.9	59.0	-340.7	345.6	0.42	0.32	0.96
2,298.0	17.40	275.10	2,247.3	63.0	-377.5	382.7	0.57	0.24	-1.76
2,423.0	16.90	273.40	2,366.7	65.8	-414.3	419.4	0.57	-0.40	-1.36
2,547.0	18.40	278.50	2,484.9	69.7	-451.6	456.9	1.74	1.21	4.11
2,672.0	16.70	278.00	2,604.1	75.1	-488.9	494.6	1.37	-1.36	-0.40
2,797.0	15.00	275.00	2,724.3	79.1	-522.8	528.7	1.51	-1.36	-2.40
2,922.0	16.20	279.60	2,844.7	83.4	-556.1	562.3	1.38	0.96	3.68
3,047.0	16.60	278.30	2,964.6	88.9	-591.0	597.6	0.43	0.32	-1.04
3,171.0	17.20	279.30	3,083.3	94.4	-626.6	633.7	0.54	0.48	0.81
3,296.0	15.30	275.90	3,203.3	99.1	-661.2	668.6	1.70	-1.52	-2.72
3,421.0	15.60	279.30	3,323.8	103.5	-694.2	701.9	0.76	0.24	2.72
3,546.0	15.20	279.30	3,444.3	108.8	-727.0	735.1	0.32	-0.32	0.00
3,671.0	14.50	275.40	3,565.1	113.0	-758.7	767.1	0.98	-0.56	-3.12
3,795.0	15.40	277.30	3,684.9	116.5	-790.5	799.1	0.83	0.73	1.53
3,920.0	18.00	282.80	3,804.6	122.9	-825.8	834.9	2.43	2.08	4.40
4,045.0	16.70	282.00	3,924.0	130.9	-862.2	872.1	1.06	-1.04	-0.64
4,170.0	16.30	281.70	4,043.8	138.2	-897.0	907.6	0.33	-0.32	-0.24
4,295.0	16.90	282.90	4,163.6	145.8	-931.9	943.2	0.55	0.48	0.96
4,419.0	18.20	281.90	4,281.8	153.8	-968.4	980.5	1.08	1.05	-0.81
4,544.0	17.70	278.10	4,400.7	160.5	-1,006.3	1,019.0	1.02	-0.40	-3.04
4,669.0	17.80	278.20	4,519.8	165.9	-1,044.0	1,057.1	0.08	0.08	0.08
4,794.0	18.10	281.10	4,638.7	172.4	-1,082.0	1,095.6	0.75	0.24	2.32
4,919.0	16.90	277.60	4,757.9	178.5	-1,119.1	1,133.1	1.28	-0.96	-2.80
5,044.0	16.50	272.40	4,877.7	181.7	-1,154.8	1,169.0	1.24	-0.32	-4.16
5,168.0	17.50	275.20	4,996.2	184.1	-1,191.0	1,205.1	1.04	0.81	2.26
5,293.0	15.10	275.80	5,116.2	187.5	-1,225.9	1,240.1	1.92	-1.92	0.48
5,418.0	12.10	275.20	5,237.7	190.3	-1,255.1	1,269.5	2.40	-2.40	-0.48
5,543.0	9.50	270.80	5,360.5	191.6	-1,278.5	1,292.8	2.18	-2.08	-3.52
5,668.0	7.40	273.70	5,484.1	192.3	-1,296.9	1,311.0	1.71	-1.68	2.32
5,793.0	5.00	265.50	5,608.4	192.4	-1,310.3	1,324.4	2.04	-1.92	-6.56
5,917.0	2.80	256.90	5,732.1	191.3	-1,318.7	1,332.5	1.83	-1.77	-6.94
5,985.2	1.88	243.59	5,800.2	190.4	-1,321.3	1,334.9	1.55	-1.34	-19.52
<b>TARGET BHL 570°FNL, 1990°FEL</b>									
6,042.0	1.30	219.20	5,857.0	189.5	-1,322.5	1,336.0	1.55	-1.03	-42.94
6,167.0	1.00	187.10	5,982.0	187.3	-1,323.6	1,336.7	0.56	-0.24	-25.68
6,292.0	1.20	165.60	6,107.0	185.0	-1,323.4	1,336.2	0.36	0.16	-17.20
6,417.0	1.30	216.50	6,231.9	182.5	-1,323.9	1,336.3	0.86	0.08	40.72
6,542.0	0.50	85.20	6,356.9	181.5	-1,324.2	1,336.5	1.34	-0.64	-105.04
6,666.0	1.10	49.00	6,480.9	182.3	-1,322.8	1,335.2	0.61	0.48	-29.19
6,791.0	1.10	31.30	6,605.9	184.1	-1,321.2	1,333.9	0.27	0.00	-14.16
6,916.0	1.00	1.20	6,730.9	186.2	-1,320.6	1,333.6	0.44	-0.08	-24.08
7,041.0	1.10	16.40	6,855.8	188.4	-1,320.2	1,333.6	0.24	0.08	12.16
7,067.8	1.01	17.09	6,882.7	188.9	-1,320.1	1,333.5	0.33	-0.32	2.56
<b>LEGAL BOX 400' X 400' 660°FNL &amp; 1967°FEL</b>									
7,069.3	1.01	17.13	6,884.1	188.9	-1,320.1	1,333.5	0.33	-0.32	2.79
<b>TARGET CIRCLE 570°FNL &amp; 1990°FEL</b>									
7,165.0	0.70	21.00	6,979.8	190.3	-1,319.6	1,333.2	0.33	-0.32	4.05
7,290.0	0.80	40.20	7,104.8	191.7	-1,318.8	1,332.6	0.22	0.08	15.36
7,415.0	1.00	41.30	7,229.8	193.2	-1,317.5	1,331.6	0.16	0.16	0.88
7,540.0	1.00	50.40	7,354.8	194.7	-1,315.9	1,330.3	0.13	0.00	7.28
7,586.0	1.00	50.40	7,400.8	195.2	-1,315.3	1,329.7	0.00	0.00	0.00

<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>Local Co-ordinate Reference:</b>	Well Nygren USX 019-02D
<b>Project:</b>	SEC.19-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4878.0ft (Original Well Elev)
<b>Site:</b>	Nygren USX 019-02D Pad Sec.19-T4N-R67W	<b>MD Reference:</b>	WELL @ 4878.0ft (Original Well Elev)
<b>Well:</b>	Nygren USX 019-02D	<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

Checked By: _____	Approved By: _____	Date: _____
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