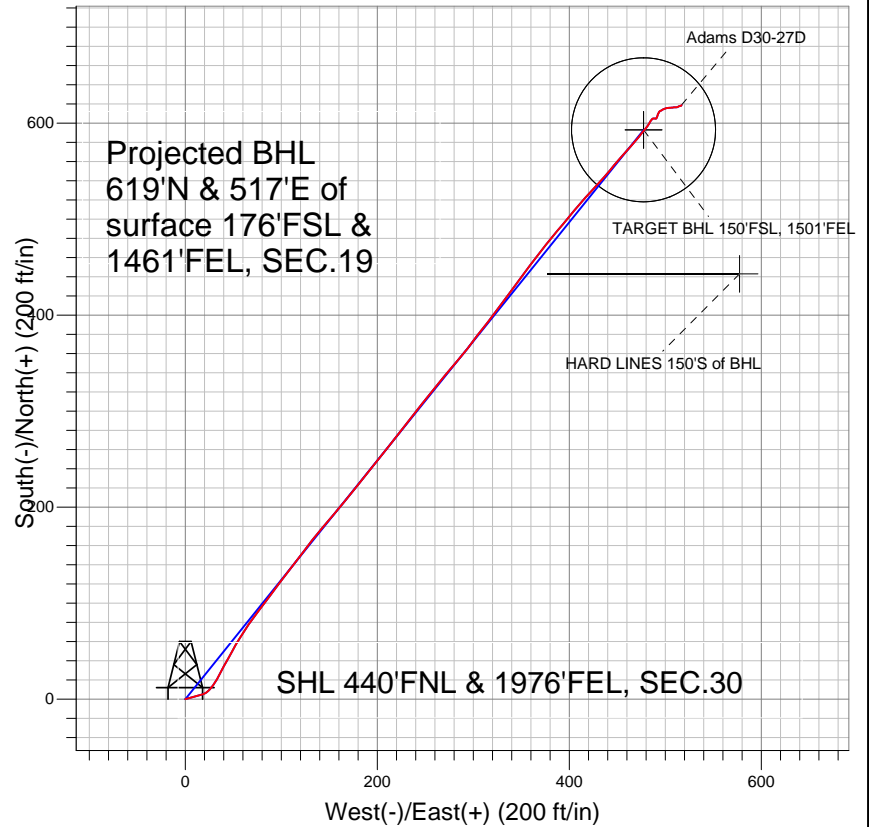


## NOBLE ENERGY INC WELD COUNTY CO



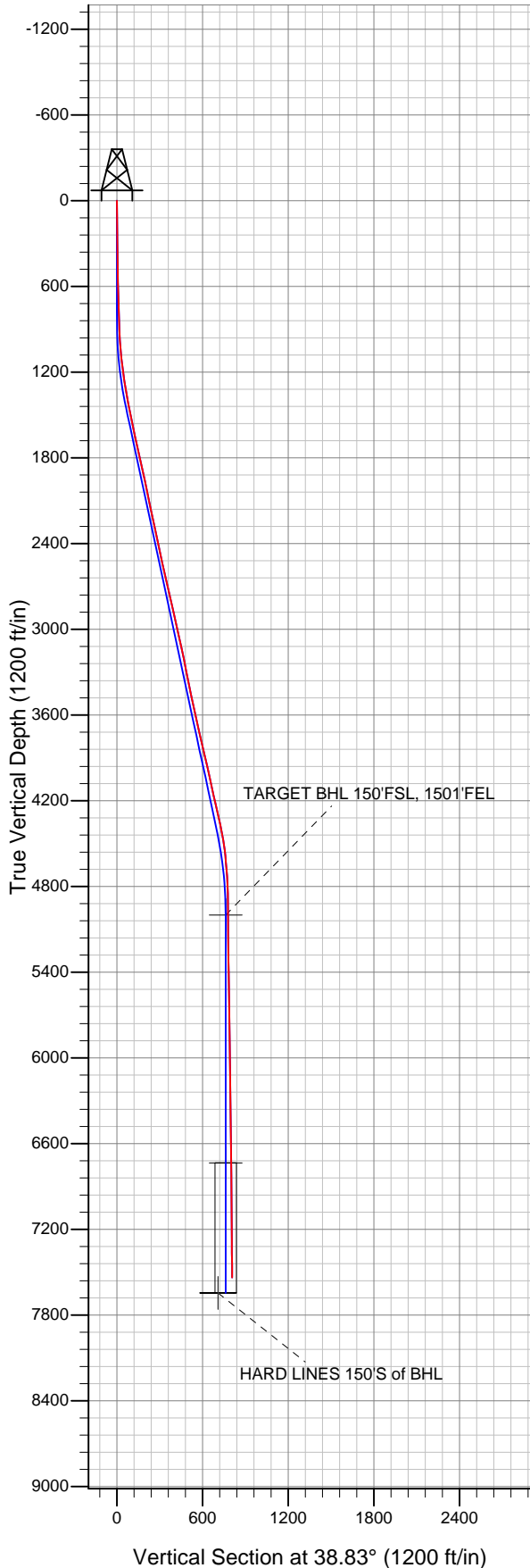
### LEGEND

- ◆ Adams D30-27D, Wellbore #1, Noble Adams D30-27D Plan #1 (12-01-10) V0
- Wellbore #1
- Survey #1

## Final Survey Plot

Projected Final Survey -  
7616'MD & 7538'TVD @ 806'VS  
0.3 deg Inc 34.1 deg AZ

Project: SEC.30-T3N-R64W  
Site: Adams D30-27D Pad Sec.30-T3N-R64W  
Well: Adams D30-27D  
Plan: Wellbore #1





## **Directional**

# **NOBLE ENERGY INC WELD COUNTY CO**

**SEC.30-T3N-R64W**

**Adams D30-27D Pad Sec.30-T3N-R64W**

**Adams D30-27D**

**Wellbore #1**

**Survey: Survey #1**

## **Standard Survey Report**

**06 July, 2011**



<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>Local Co-ordinate Reference:</b>	Site Adams D30-27D Pad Sec.30-T3N-R64W
<b>Project:</b>	SEC.30-T3N-R64W	<b>TVD Reference:</b>	WELL @ 4795.0ft (Original Well Elev)
<b>Site:</b>	Adams D30-27D Pad Sec.30-T3N-R64W	<b>MD Reference:</b>	WELL @ 4795.0ft (Original Well Elev)
<b>Well:</b>	Adams D30-27D	<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.30-T3N-R64W		
<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>	Adams D30-27D Pad Sec.30-T3N-R64W		
<b>Site Position:</b>		<b>Northing:</b>	1,317,819.17 ft
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,253,729.85 ft
<b>Position Uncertainty:</b>	0.0 ft	<b>Slot Radius:</b>	"
		<b>Latitude:</b>	40° 12' 8.075 N
		<b>Longitude:</b>	104° 35' 29.792 W
		<b>Grid Convergence:</b>	0.59 °

<b>Well</b>	Adams D30-27D		
<b>Well Position</b>	<b>+N/-S</b>	0.0 ft	<b>Northing:</b> 1,317,819.16 ft
	<b>+E/-W</b>	0.0 ft	<b>Easting:</b> 3,253,729.85 ft
<b>Position Uncertainty</b>	0.0 ft	<b>Wellhead Elevation:</b>	ft
		<b>Latitude:</b>	40° 12' 8.075 N
		<b>Longitude:</b>	104° 35' 29.792 W
		<b>Ground Level:</b>	4,782.0 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	5/20/2011	8.76	66.92	53,054

<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>
	5,000.0	0.0	0.0	38.83

<b>Survey Program</b>	<b>Date</b> 7/6/2011			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
860.0	7,616.0	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	
860.0	2.50	74.40	859.7	5.0	18.1	15.3	0.29	0.29	0.00	
945.0	3.30	55.90	944.6	6.9	21.9	19.1	1.44	0.94	-21.76	
1,031.0	4.70	40.70	1,030.4	11.0	26.2	25.0	2.03	1.63	-17.67	
1,116.0	6.20	32.90	1,115.0	17.5	31.0	33.0	1.96	1.76	-9.18	
1,202.0	7.40	26.80	1,200.4	26.3	36.0	43.1	1.63	1.40	-7.09	
1,287.0	9.10	29.70	1,284.5	37.0	41.8	55.1	2.06	2.00	3.41	
1,373.0	10.40	28.40	1,369.3	49.8	48.9	69.4	1.53	1.51	-1.51	
1,458.0	11.40	31.00	1,452.8	63.7	56.8	85.3	1.31	1.18	3.06	
1,544.0	11.90	34.80	1,537.0	78.3	66.3	102.6	1.06	0.58	4.42	
1,629.0	12.30	37.60	1,620.1	92.6	76.8	120.3	0.84	0.47	3.29	
1,715.0	12.20	36.70	1,704.1	107.2	87.8	138.6	0.25	-0.12	-1.05	
1,800.0	12.90	36.40	1,787.1	122.0	98.8	157.0	0.83	0.82	-0.35	

<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>Local Co-ordinate Reference:</b>	Site Adams D30-27D Pad Sec.30-T3N-R64W
<b>Project:</b>	SEC.30-T3N-R64W	<b>TVD Reference:</b>	WELL @ 4795.0ft (Original Well Elev)
<b>Site:</b>	Adams D30-27D Pad Sec.30-T3N-R64W	<b>MD Reference:</b>	WELL @ 4795.0ft (Original Well Elev)
<b>Well:</b>	Adams D30-27D	<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)	
1,886.0	12.60	38.50	1,871.0	137.1	110.4	176.0	0.64	-0.35	2.44	
1,971.0	12.20	37.20	1,954.0	151.5	121.6	194.3	0.57	-0.47	-1.53	
2,057.0	11.90	37.70	2,038.1	165.8	132.5	212.2	0.37	-0.35	0.58	
2,142.0	11.70	39.80	2,121.3	179.3	143.4	229.6	0.56	-0.24	2.47	
2,228.0	12.30	41.40	2,205.4	192.9	155.0	247.5	0.80	0.70	1.86	
2,313.0	12.10	38.40	2,288.5	206.7	166.5	265.4	0.78	-0.24	-3.53	
2,399.0	12.10	39.10	2,372.6	220.7	177.8	283.4	0.17	0.00	0.81	
2,484.0	12.20	38.20	2,455.7	234.7	189.0	301.3	0.25	0.12	-1.06	
2,570.0	11.90	40.00	2,539.8	248.6	200.3	319.3	0.56	-0.35	2.09	
2,655.0	12.40	37.30	2,622.9	262.6	211.5	337.2	0.89	0.59	-3.18	
2,741.0	13.50	38.10	2,706.7	277.8	223.2	356.4	1.30	1.28	0.93	
2,826.0	12.50	37.90	2,789.5	292.9	235.0	375.5	1.18	-1.18	-0.24	
2,912.0	12.60	39.20	2,873.5	307.5	246.7	394.2	0.35	0.12	1.51	
2,998.0	13.00	38.40	2,957.3	322.4	258.6	413.3	0.51	0.47	-0.93	
3,083.0	12.50	39.40	3,040.2	337.0	270.4	432.0	0.64	-0.59	1.18	
3,169.0	12.50	40.90	3,124.2	351.2	282.4	450.7	0.38	0.00	1.74	
3,254.0	11.80	37.60	3,207.3	365.0	293.7	468.5	1.16	-0.82	-3.88	
3,340.0	11.10	36.40	3,291.6	378.7	304.0	485.6	0.86	-0.81	-1.40	
3,425.0	10.80	39.20	3,375.0	391.4	313.9	501.7	0.72	-0.35	3.29	
3,511.0	11.80	38.20	3,459.4	404.6	324.4	518.6	1.18	1.16	-1.16	
3,596.0	12.30	34.10	3,542.5	418.9	334.9	536.3	1.17	0.59	-4.82	
3,682.0	12.80	37.00	3,626.5	434.1	345.7	555.0	0.94	0.58	3.37	
3,767.0	13.00	36.10	3,709.3	449.3	357.0	573.9	0.33	0.24	-1.06	
3,853.0	13.50	39.30	3,793.0	464.9	369.1	593.6	1.03	0.58	3.72	
3,938.0	13.00	39.20	3,875.8	480.0	381.4	613.1	0.59	-0.59	-0.12	
4,024.0	12.70	39.80	3,959.6	494.8	393.6	632.2	0.38	-0.35	0.70	
4,109.0	11.90	39.10	4,042.7	508.8	405.1	650.3	0.96	-0.94	-0.82	
4,195.0	12.00	41.80	4,126.8	522.3	416.6	668.1	0.66	0.12	3.14	
4,280.0	13.80	43.00	4,209.6	536.3	429.4	687.1	2.14	2.12	1.41	
4,366.0	12.80	40.70	4,293.3	551.0	442.6	706.8	1.32	-1.16	-2.67	
4,451.0	12.30	40.30	4,376.3	565.1	454.6	725.3	0.60	-0.59	-0.47	
4,537.0	9.80	42.10	4,460.7	577.5	465.5	741.7	2.93	-2.91	2.09	
4,622.0	6.90	37.80	4,544.8	586.9	473.5	754.1	3.49	-3.41	-5.06	
4,708.0	5.40	40.70	4,630.3	594.0	479.3	763.3	1.78	-1.74	3.37	
4,793.0	4.10	28.50	4,715.0	599.7	483.3	770.3	1.93	-1.53	-14.35	
4,879.0	2.00	39.60	4,800.9	603.6	485.7	774.8	2.53	-2.44	12.91	
4,964.0	1.00	82.70	4,885.8	604.8	487.4	776.8	1.70	-1.18	50.71	
5,050.0	1.00	91.50	4,971.8	604.9	488.9	777.8	0.18	0.00	10.23	
5,078.1	0.83	101.00	4,999.9	604.9	489.4	778.0	0.82	-0.62	33.85	
TARGET BHL 150'FSL, 1501'FEL										
5,136.0	0.60	135.60	5,057.8	604.6	490.0	778.2	0.82	-0.39	59.72	
5,221.0	0.60	24.90	5,142.8	604.7	490.5	778.6	1.16	0.00	-130.24	
5,307.0	0.70	39.20	5,228.8	605.5	491.0	779.5	0.22	0.12	16.63	
5,392.0	1.30	17.60	5,313.8	606.8	491.6	781.0	0.82	0.71	-25.41	
5,478.0	0.80	15.30	5,399.8	608.3	492.1	782.4	0.58	-0.58	-2.67	
5,563.0	0.70	20.50	5,484.8	609.4	492.4	783.5	0.14	-0.12	6.12	
5,649.0	1.00	31.40	5,570.8	610.5	493.0	784.7	0.39	0.35	12.67	
5,734.0	0.80	31.80	5,655.8	611.6	493.7	786.0	0.24	-0.24	0.47	
5,820.0	1.00	54.30	5,741.8	612.6	494.6	787.3	0.47	0.23	26.16	
5,905.0	0.90	61.80	5,826.7	613.3	495.8	788.7	0.19	-0.12	8.82	
5,991.0	0.90	60.70	5,912.7	614.0	497.0	789.9	0.02	0.00	-1.28	
6,076.0	1.10	72.30	5,997.7	614.6	498.4	791.2	0.33	0.24	13.65	
6,162.0	1.00	60.10	6,083.7	615.2	499.8	792.6	0.28	-0.12	-14.19	
6,247.0	1.10	78.40	6,168.7	615.7	501.2	793.9	0.41	0.12	21.53	

<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>Local Co-ordinate Reference:</b>	Site Adams D30-27D Pad Sec.30-T3N-R64W
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<b>Well:</b>	Adams D30-27D	<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)
6,333.0	0.90	88.50	6,254.7	615.9	502.7	795.0	0.31	-0.23	11.74
6,418.0	0.90	84.30	6,339.7	616.0	504.0	795.9	0.08	0.00	-4.94
6,504.0	0.70	90.60	6,425.7	616.0	505.2	796.7	0.25	-0.23	7.33
6,589.0	0.80	79.90	6,510.7	616.1	506.3	797.5	0.20	0.12	-12.59
6,675.0	0.90	88.20	6,596.6	616.3	507.6	798.4	0.18	0.12	9.65
6,760.0	0.80	84.40	6,681.6	616.3	508.9	799.2	0.13	-0.12	-4.47
6,812.9	0.86	90.89	6,734.5	616.4	509.6	799.7	0.21	0.11	12.28
<b>TARGET CIRCLE 150'FSL &amp; 1501'FEL</b>									
6,846.0	0.90	94.50	6,767.6	616.4	510.1	800.0	0.21	0.13	10.90
6,931.0	0.90	84.60	6,852.6	616.4	511.5	800.9	0.18	0.00	-11.65
7,017.0	0.70	66.70	6,938.6	616.6	512.6	801.8	0.37	-0.23	-20.81
7,102.0	0.70	53.20	7,023.6	617.2	513.5	802.8	0.19	0.00	-15.88
7,188.0	0.60	70.90	7,109.6	617.6	514.4	803.7	0.26	-0.12	20.58
7,274.0	0.70	73.80	7,195.6	617.9	515.3	804.5	0.12	0.12	3.37
7,359.0	0.40	96.10	7,280.6	618.0	516.1	805.0	0.43	-0.35	26.24
7,445.0	0.40	30.70	7,366.6	618.2	516.5	805.5	0.50	0.00	-76.05
7,530.0	0.10	32.40	7,451.6	618.6	516.7	805.9	0.35	-0.35	2.00
7,616.0	0.30	34.10	7,537.6	618.8	516.9	806.2	0.23	0.23	1.98
<b>HARD LINES 150'S of BHL</b>									

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