

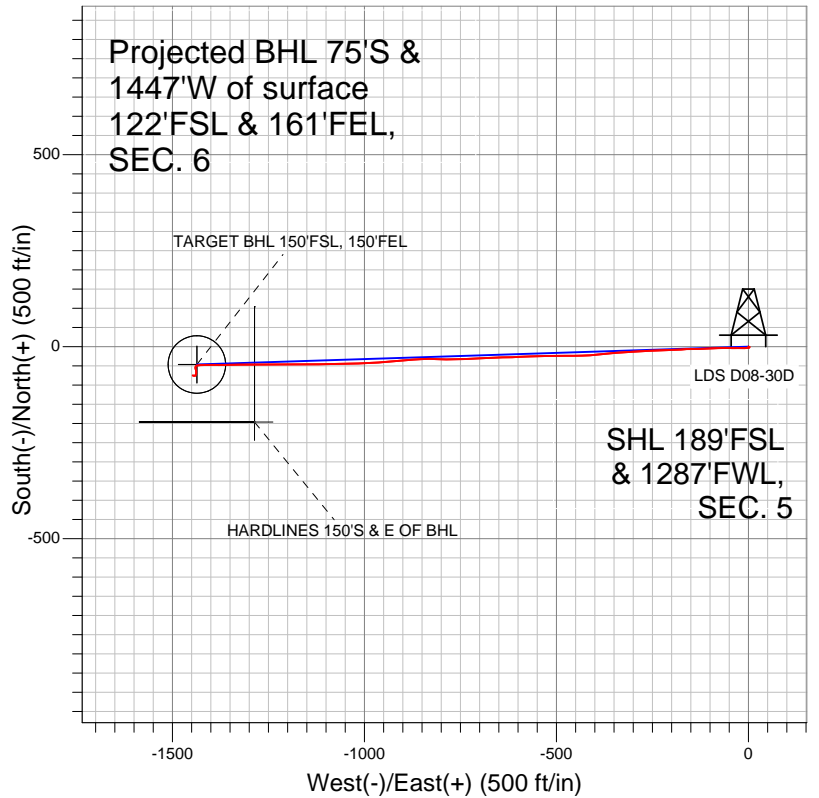


# Well Name: LDS D08-30D

Surface Location: LDS D08-30D Pad Sec.5-T3N-R64W  
North American Datum 1983 US State Plane 1983Colorado Northern Zone  
Ground Elevation: 4752.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1334405.06	3256931.80	40.247680	-104.579530	
		Original Well Elev	WELL @ 4765.0ft (Original Well Elev)			

## NOBLE ENERGY INC WELD COUNTY CO



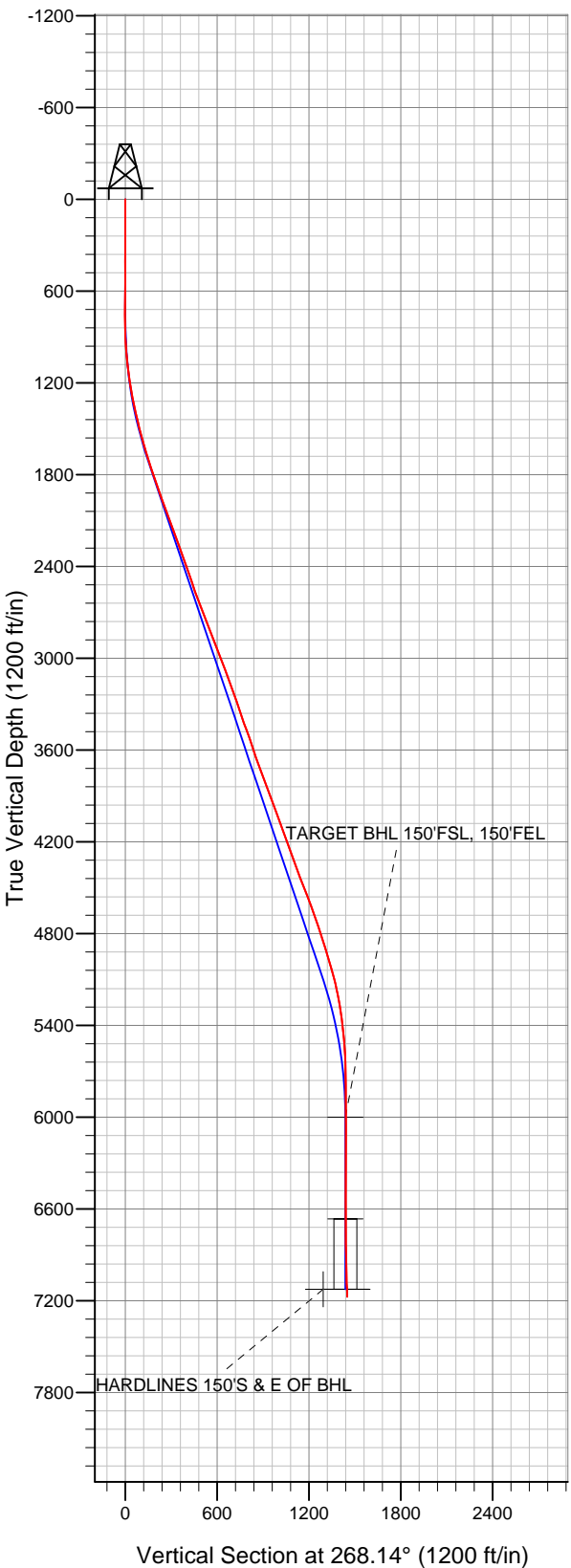
### LEGEND

- Survey #1
- LDS D08-30D, Wellbore #1, Noble LDS D08-30D Plan #1 (3-06-12) V0
- Wellbore #1

## Final Survey Plot

Projected Final Survey -  
7409'MD & 7175'TVD @ 1449'VS  
2.00 deg Inc 291.00 deg AZ

Project: SEC.5-T3N-R64W  
Site: LDS D08-30D Pad Sec.5-T3N-R64W  
Well: LDS D08-30D  
Plan: Wellbore #1





# **NOBLE ENERGY INC WELD COUNTY CO**

**SEC.5-T3N-R64W**

**LDS D08-30D Pad Sec.5-T3N-R64W**

**LDS D08-30D**

**Wellbore #1**

**Survey: Survey #1**

## **Standard Survey Report**

**13 March, 2012**



<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>Local Co-ordinate Reference:</b>	Well LDS D08-30D
<b>Project:</b>	SEC.5-T3N-R64W	<b>TVD Reference:</b>	WELL @ 4765.0ft (Original Well Elev)
<b>Site:</b>	LDS D08-30D Pad Sec.5-T3N-R64W	<b>MD Reference:</b>	WELL @ 4765.0ft (Original Well Elev)
<b>Well:</b>	LDS D08-30D	<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.5-T3N-R64W, 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>	LDS D08-30D Pad Sec.5-T3N-R64W		
<b>Site Position:</b>		<b>Northing:</b>	1,334,405.07 ft
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,256,931.80 ft
<b>Position Uncertainty:</b>	0.0 ft	<b>Slot Radius:</b>	"
		<b>Latitude:</b>	40.247680
		<b>Longitude:</b>	-104.579530
		<b>Grid Convergence:</b>	0.59 °

<b>Well</b>	LDS D08-30D		
<b>Well Position</b>	<b>+N/-S</b>	0.0 ft	<b>Northing:</b> 1,334,405.06 ft
	<b>+E/-W</b>	0.0 ft	<b>Easting:</b> 3,256,931.80 ft
<b>Position Uncertainty</b>	0.0 ft	<b>Wellhead Elevation:</b>	ft
		<b>Latitude:</b>	40.247680
		<b>Longitude:</b>	-104.579530
		<b>Ground Level:</b>	4,752.0 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	3/6/2012	8.65	66.93	52,995

<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	268.14	

<b>Survey Program</b>	<b>Date</b>	3/13/2012			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
109.0	7,409.0	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	
109.0	0.40	169.30	109.0	-0.4	0.1	-0.1	0.37	0.37	0.00	
197.0	0.40	157.50	197.0	-1.0	0.2	-0.2	0.09	0.00	-13.41	
287.0	0.30	115.00	287.0	-1.3	0.6	-0.5	0.30	-0.11	-47.22	
404.0	0.40	47.10	404.0	-1.2	1.2	-1.1	0.34	0.09	-58.03	
532.0	0.30	48.40	532.0	-0.7	1.7	-1.7	0.08	-0.08	1.02	
660.0	0.30	133.10	660.0	-0.7	2.2	-2.2	0.32	0.00	66.17	
700.0	0.40	90.00	700.0	-0.8	2.4	-2.4	0.68	0.25	-107.75	
771.0	0.80	178.30	771.0	-1.2	2.7	-2.7	1.24	0.56	124.37	
899.0	2.40	255.40	898.9	-2.8	0.1	0.0	1.84	1.25	60.23	
1,027.0	5.40	267.40	1,026.6	-3.8	-8.5	8.6	2.42	2.34	9.38	
1,156.0	7.80	269.50	1,154.8	-4.1	-23.3	23.4	1.87	1.86	1.63	
1,284.0	10.50	272.00	1,281.1	-3.8	-43.6	43.7	2.13	2.11	1.95	

<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>Local Co-ordinate Reference:</b>	Well LDS D08-30D
<b>Project:</b>	SEC.5-T3N-R64W	<b>TVD Reference:</b>	WELL @ 4765.0ft (Original Well Elev)
<b>Site:</b>	LDS D08-30D Pad Sec.5-T3N-R64W	<b>MD Reference:</b>	WELL @ 4765.0ft (Original Well Elev)
<b>Well:</b>	LDS D08-30D	<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)
1,413.0	12.90	268.80	1,407.4	-3.7	-69.8	69.9	1.93	1.86	-2.48
1,541.0	15.00	266.50	1,531.7	-5.0	-100.6	100.7	1.70	1.64	-1.80
1,669.0	16.60	270.00	1,654.8	-6.0	-135.4	135.6	1.45	1.25	2.73
1,798.0	19.10	266.30	1,777.6	-7.4	-174.9	175.1	2.13	1.94	-2.87
1,926.0	19.40	268.50	1,898.5	-9.3	-217.1	217.3	0.61	0.23	1.72
2,055.0	19.50	266.70	2,020.1	-11.1	-260.0	260.2	0.47	0.08	-1.40
2,183.0	20.50	267.20	2,140.4	-13.4	-303.7	304.0	0.79	0.78	0.39
2,311.0	20.20	264.60	2,260.4	-16.6	-348.1	348.4	0.74	-0.23	-2.03
2,440.0	19.60	264.80	2,381.7	-20.6	-391.8	392.3	0.47	-0.47	0.16
2,568.0	18.60	267.90	2,502.6	-23.3	-433.6	434.1	1.11	-0.78	2.42
2,697.0	20.50	269.70	2,624.2	-24.2	-476.7	477.3	1.54	1.47	1.40
2,825.0	21.40	269.20	2,743.7	-24.6	-522.5	523.0	0.72	0.70	-0.39
2,953.0	21.90	268.50	2,862.7	-25.6	-569.7	570.3	0.44	0.39	-0.55
3,082.0	20.50	266.70	2,983.0	-27.5	-616.3	616.9	1.20	-1.09	-1.40
3,210.0	20.40	269.70	3,102.9	-28.9	-661.0	661.6	0.82	-0.08	2.34
3,339.0	19.30	266.50	3,224.2	-30.3	-704.8	705.4	1.20	-0.85	-2.48
3,467.0	18.90	267.20	3,345.2	-32.6	-746.6	747.3	0.36	-0.31	0.55
3,595.0	20.20	271.80	3,465.8	-33.0	-789.4	790.0	1.57	1.02	3.59
3,724.0	18.60	270.20	3,587.5	-32.2	-832.2	832.8	1.31	-1.24	-1.24
3,852.0	19.60	265.60	3,708.5	-33.8	-874.1	874.7	1.41	0.78	-3.59
3,981.0	21.00	264.80	3,829.4	-37.5	-918.6	919.4	1.11	1.09	-0.62
4,109.0	21.00	265.50	3,948.9	-41.4	-964.4	965.2	0.20	0.00	0.55
4,237.0	18.80	268.50	4,069.3	-43.7	-1,007.8	1,008.7	1.89	-1.72	2.34
4,366.0	20.40	268.50	4,190.8	-44.9	-1,051.1	1,052.0	1.24	1.24	0.00
4,494.0	20.10	270.40	4,310.9	-45.3	-1,095.4	1,096.3	0.56	-0.23	1.48
4,623.0	21.00	267.80	4,431.7	-46.0	-1,140.7	1,141.6	0.99	0.70	-2.02
4,751.0	21.10	271.80	4,551.2	-46.2	-1,186.6	1,187.5	1.12	0.08	3.13
4,879.0	19.30	267.60	4,671.3	-46.4	-1,230.8	1,231.6	1.81	-1.41	-3.28
5,008.0	18.40	270.90	4,793.4	-46.9	-1,272.4	1,273.3	1.08	-0.70	2.56
5,136.0	17.10	268.50	4,915.3	-47.1	-1,311.4	1,312.3	1.17	-1.02	-1.88
5,265.0	16.00	269.20	5,038.9	-47.9	-1,348.2	1,349.0	0.87	-0.85	0.54
5,393.0	12.40	271.30	5,163.0	-47.8	-1,379.6	1,380.4	2.84	-2.81	1.64
5,521.0	9.00	269.30	5,288.8	-47.6	-1,403.3	1,404.1	2.67	-2.66	-1.56
5,650.0	6.20	268.30	5,416.6	-47.9	-1,420.4	1,421.2	2.17	-2.17	-0.78
5,778.0	4.10	263.50	5,544.1	-48.6	-1,431.8	1,432.7	1.67	-1.64	-3.75
5,907.0	0.80	237.20	5,673.0	-49.7	-1,437.2	1,438.0	2.64	-2.56	-20.39
6,035.0	0.70	238.20	5,800.9	-50.6	-1,438.6	1,439.5	0.08	-0.08	0.78
6,163.0	0.80	198.70	5,928.9	-51.8	-1,439.6	1,440.5	0.40	0.08	-30.86
6,234.0	0.96	203.22	5,999.9	-52.8	-1,439.9	1,440.9	0.25	0.23	6.36
<b>TARGET BHL 150°FSL, 150°FEL</b>									
6,292.0	1.10	205.90	6,057.9	-53.8	-1,440.4	1,441.4	0.25	0.24	4.63
6,420.0	1.10	163.90	6,185.9	-56.1	-1,440.6	1,441.6	0.62	0.00	-32.81
6,549.0	1.10	161.40	6,314.9	-58.4	-1,439.8	1,441.0	0.04	0.00	-1.94
6,677.0	1.80	160.90	6,442.8	-61.5	-1,438.8	1,440.0	0.55	0.55	-0.39
6,805.0	1.80	180.70	6,570.8	-65.4	-1,438.2	1,439.5	0.48	0.00	15.47
6,898.6	1.93	194.68	6,664.3	-68.4	-1,438.6	1,440.0	0.50	0.13	14.94
<b>TARGET CIRCLE 150°FSL, 150°FEL</b>									
6,934.0	2.00	199.40	6,699.7	-69.6	-1,438.9	1,440.4	0.50	0.21	13.33
7,062.0	1.60	183.20	6,827.6	-73.4	-1,439.8	1,441.4	0.50	-0.31	-12.66
7,191.0	1.30	248.20	6,956.6	-75.8	-1,441.2	1,442.9	1.22	-0.23	50.39
7,319.0	1.80	280.20	7,084.6	-76.0	-1,444.6	1,446.3	0.77	0.39	25.00
7,353.3	1.95	289.65	7,118.8	-75.7	-1,445.6	1,447.3	1.01	0.45	27.56
<b>HARDLINES 150'S &amp; E OF BHL</b>									
7,362.0	2.00	291.80	7,127.5	-75.6	-1,445.9	1,447.6	1.01	0.53	24.69

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<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	Landmark

Survey										
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7,409.0	2.00	291.00	7,174.5	-75.0	-1,447.4	1,449.1	0.06	0.00	-1.70	

Checked By: _____	Approved By: _____	Date: _____
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