

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	2500.0	0.00	0.00	2500.0	0.0	0.0	0.00	0.00	0.0	
3	3138.0	12.76	297.30	3132.7	32.4	-62.9	2.00	297.30	70.7	
4	4403.8	12.76	297.30	4367.3	160.6	-311.3	0.00	0.00	350.3	
5	5041.8	0.00	0.00	5000.0	193.1	-374.2	2.00	180.00	421.1	TARGET BHL 2510'FNL, 75'FEL
6	7720.8	0.00	0.00	7679.0	193.1	-374.2	0.00	0.00	421.1	



**Directional**

**NOBLE ENERGY INC WELD  
COUNTY CO**

**SEC.17-T3N-R64W**

**LDS D17-31D PAD Sec.17-T3N-R64W**

**LDS D17-32D**

**Wellbore #1**

**Plan: Noble LDS D17-32D Plan #1 (9-03-10)**

**Standard Planning Report**

**07 September, 2010**





Database: Landmark  
 Company: NOBLE ENERGY INC WELD COUNTY CO  
 Project: SEC.17-T3N-R64W  
 Site: LDS D17-31D PAD Sec.17-T3N-R64W  
 Well: LDS D17-32D  
 Wellbore: Wellbore #1  
 Design: Noble LDS D17-32D Plan #1 (9-03-10)

Local Co-ordinate Reference: Well LDS D17-32D  
 TVD Reference: WELL @ 4769.0ft (Original Well Elev)  
 MD Reference: WELL @ 4769.0ft (Original Well Elev)  
 North Reference: True  
 Survey Calculation Method: Minimum Curvature

Project	SEC.17-T3N-R64W, Weld County, Colorado		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site	LDS D17-31D PAD Sec.17-T3N-R64W				
Site Position:		Northing:	1,326,227.25 ft	Latitude:	40° 13' 30.936 N
From:	Lat/Long	Easting:	3,255,955.57 ft	Longitude:	104° 34' 59.988 W
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.59 °

Well	LDS D17-32D					
Well Position	+N/-S	-25.5 ft	Northing:	1,326,201.74 ft	Latitude:	40° 13' 30.684 N
	+E/-W	0.0 ft	Easting:	3,255,955.83 ft	Longitude:	104° 34' 59.988 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,756.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	9/3/2010	8.86	66.97	53,142

Design	Noble LDS D17-32D Plan #1 (9-03-10)				
Audit Notes:					
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0	
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.0	0.0	0.0	297.30	

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.00	0.00	0.00	0.00	
3,138.0	12.76	297.30	3,132.7	32.4	-62.9	2.00	2.00	0.00	297.30	
4,403.8	12.76	297.30	4,367.3	160.6	-311.3	0.00	0.00	0.00	0.00	
5,041.8	0.00	0.00	5,000.0	193.1	-374.2	2.00	-2.00	0.00	180.00	TARGET BHL 251C
7,720.8	0.00	0.00	7,679.0	193.1	-374.2	0.00	0.00	0.00	0.00	

Database: Landmark  
Company: NOBLE ENERGY INC WELD COUNTY CO  
Project: SEC.17-T3N-R64W  
Site: LDS D17-31D PAD Sec.17-T3N-R64W  
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Wellbore: Wellbore #1  
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Local Co-ordinate Reference: Well LDS D17-32D  
TVD Reference: WELL @ 4769.0ft (Original Well Elev)  
MD Reference: WELL @ 4769.0ft (Original Well Elev)  
North Reference: True  
Survey Calculation Method: Minimum Curvature

Planned 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)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
40.0	0.00	0.00	40.0	0.0	0.0	0.0	0.00	0.00	0.00
80.0	0.00	0.00	80.0	0.0	0.0	0.0	0.00	0.00	0.00
120.0	0.00	0.00	120.0	0.0	0.0	0.0	0.00	0.00	0.00
160.0	0.00	0.00	160.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
240.0	0.00	0.00	240.0	0.0	0.0	0.0	0.00	0.00	0.00
280.0	0.00	0.00	280.0	0.0	0.0	0.0	0.00	0.00	0.00
320.0	0.00	0.00	320.0	0.0	0.0	0.0	0.00	0.00	0.00
360.0	0.00	0.00	360.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
440.0	0.00	0.00	440.0	0.0	0.0	0.0	0.00	0.00	0.00
480.0	0.00	0.00	480.0	0.0	0.0	0.0	0.00	0.00	0.00
520.0	0.00	0.00	520.0	0.0	0.0	0.0	0.00	0.00	0.00
560.0	0.00	0.00	560.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
640.0	0.00	0.00	640.0	0.0	0.0	0.0	0.00	0.00	0.00
680.0	0.00	0.00	680.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
8 5/8"									
720.0	0.00	0.00	720.0	0.0	0.0	0.0	0.00	0.00	0.00
760.0	0.00	0.00	760.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
840.0	0.00	0.00	840.0	0.0	0.0	0.0	0.00	0.00	0.00
880.0	0.00	0.00	880.0	0.0	0.0	0.0	0.00	0.00	0.00
920.0	0.00	0.00	920.0	0.0	0.0	0.0	0.00	0.00	0.00
960.0	0.00	0.00	960.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,040.0	0.00	0.00	1,040.0	0.0	0.0	0.0	0.00	0.00	0.00
1,080.0	0.00	0.00	1,080.0	0.0	0.0	0.0	0.00	0.00	0.00
1,120.0	0.00	0.00	1,120.0	0.0	0.0	0.0	0.00	0.00	0.00
1,160.0	0.00	0.00	1,160.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,240.0	0.00	0.00	1,240.0	0.0	0.0	0.0	0.00	0.00	0.00
1,280.0	0.00	0.00	1,280.0	0.0	0.0	0.0	0.00	0.00	0.00
1,320.0	0.00	0.00	1,320.0	0.0	0.0	0.0	0.00	0.00	0.00
1,360.0	0.00	0.00	1,360.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,440.0	0.00	0.00	1,440.0	0.0	0.0	0.0	0.00	0.00	0.00
1,480.0	0.00	0.00	1,480.0	0.0	0.0	0.0	0.00	0.00	0.00
1,520.0	0.00	0.00	1,520.0	0.0	0.0	0.0	0.00	0.00	0.00
1,560.0	0.00	0.00	1,560.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,640.0	0.00	0.00	1,640.0	0.0	0.0	0.0	0.00	0.00	0.00
1,680.0	0.00	0.00	1,680.0	0.0	0.0	0.0	0.00	0.00	0.00
1,720.0	0.00	0.00	1,720.0	0.0	0.0	0.0	0.00	0.00	0.00
1,760.0	0.00	0.00	1,760.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,840.0	0.00	0.00	1,840.0	0.0	0.0	0.0	0.00	0.00	0.00
1,880.0	0.00	0.00	1,880.0	0.0	0.0	0.0	0.00	0.00	0.00
1,920.0	0.00	0.00	1,920.0	0.0	0.0	0.0	0.00	0.00	0.00
1,960.0	0.00	0.00	1,960.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,040.0	0.00	0.00	2,040.0	0.0	0.0	0.0	0.00	0.00	0.00



Database: Landmark  
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Survey Calculation Method: Minimum Curvature

Planned 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)
2,080.0	0.00	0.00	2,080.0	0.0	0.0	0.0	0.00	0.00	0.00
2,120.0	0.00	0.00	2,120.0	0.0	0.0	0.0	0.00	0.00	0.00
2,160.0	0.00	0.00	2,160.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,240.0	0.00	0.00	2,240.0	0.0	0.0	0.0	0.00	0.00	0.00
2,280.0	0.00	0.00	2,280.0	0.0	0.0	0.0	0.00	0.00	0.00
2,320.0	0.00	0.00	2,320.0	0.0	0.0	0.0	0.00	0.00	0.00
2,360.0	0.00	0.00	2,360.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,440.0	0.00	0.00	2,440.0	0.0	0.0	0.0	0.00	0.00	0.00
2,480.0	0.00	0.00	2,480.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
2,520.0	0.40	297.30	2,520.0	0.0	-0.1	0.1	2.00	2.00	0.00
2,560.0	1.20	297.30	2,560.0	0.3	-0.6	0.6	2.00	2.00	0.00
2,600.0	2.00	297.30	2,600.0	0.8	-1.6	1.7	2.00	2.00	0.00
2,640.0	2.80	297.30	2,639.9	1.6	-3.0	3.4	2.00	2.00	0.00
2,680.0	3.60	297.30	2,679.9	2.6	-5.0	5.7	2.00	2.00	0.00
2,720.0	4.40	297.30	2,719.8	3.9	-7.5	8.4	2.00	2.00	0.00
2,760.0	5.20	297.30	2,759.6	5.4	-10.5	11.8	2.00	2.00	0.00
2,800.0	6.00	297.30	2,799.5	7.2	-13.9	15.7	2.00	2.00	0.00
2,840.0	6.80	297.30	2,839.2	9.2	-17.9	20.2	2.00	2.00	0.00
2,880.0	7.60	297.30	2,878.9	11.5	-22.4	25.2	2.00	2.00	0.00
2,920.0	8.40	297.30	2,918.5	14.1	-27.3	30.7	2.00	2.00	0.00
2,960.0	9.20	297.30	2,958.0	16.9	-32.7	36.9	2.00	2.00	0.00
3,000.0	10.00	297.30	2,997.5	20.0	-38.7	43.5	2.00	2.00	0.00
3,040.0	10.80	297.30	3,036.8	23.3	-45.1	50.7	2.00	2.00	0.00
3,080.0	11.60	297.30	3,076.0	26.8	-52.0	58.5	2.00	2.00	0.00
3,120.0	12.40	297.30	3,115.2	30.6	-59.4	66.8	2.00	2.00	0.00
3,138.0	12.76	297.30	3,132.7	32.4	-62.9	70.7	2.00	2.00	0.00
3,160.0	12.76	297.30	3,154.2	34.7	-67.2	75.6	0.00	0.00	0.00
3,200.0	12.76	297.30	3,193.2	38.7	-75.0	84.4	0.00	0.00	0.00
3,240.0	12.76	297.30	3,232.2	42.8	-82.9	93.3	0.00	0.00	0.00
3,280.0	12.76	297.30	3,271.2	46.8	-90.7	102.1	0.00	0.00	0.00
3,320.0	12.76	297.30	3,310.2	50.9	-98.6	110.9	0.00	0.00	0.00
3,360.0	12.76	297.30	3,349.3	54.9	-106.4	119.8	0.00	0.00	0.00
3,400.0	12.76	297.30	3,388.3	59.0	-114.3	128.6	0.00	0.00	0.00
3,440.0	12.76	297.30	3,427.3	63.0	-122.1	137.5	0.00	0.00	0.00
3,480.0	12.76	297.30	3,466.3	67.1	-130.0	146.3	0.00	0.00	0.00
3,520.0	12.76	297.30	3,505.3	71.1	-137.8	155.1	0.00	0.00	0.00
3,560.0	12.76	297.30	3,544.3	75.2	-145.7	164.0	0.00	0.00	0.00
3,600.0	12.76	297.30	3,583.3	79.2	-153.5	172.8	0.00	0.00	0.00
3,640.0	12.76	297.30	3,622.3	83.3	-161.4	181.6	0.00	0.00	0.00
3,680.0	12.76	297.30	3,661.4	87.3	-169.3	190.5	0.00	0.00	0.00
3,720.0	12.76	297.30	3,700.4	91.4	-177.1	199.3	0.00	0.00	0.00
3,760.0	12.76	297.30	3,739.4	95.4	-185.0	208.1	0.00	0.00	0.00
3,800.0	12.76	297.30	3,778.4	99.5	-192.8	217.0	0.00	0.00	0.00
3,840.0	12.76	297.30	3,817.4	103.5	-200.7	225.8	0.00	0.00	0.00
3,880.0	12.76	297.30	3,856.4	107.6	-208.5	234.6	0.00	0.00	0.00
3,920.0	12.76	297.30	3,895.4	111.6	-216.4	243.5	0.00	0.00	0.00
3,960.0	12.76	297.30	3,934.4	115.7	-224.2	252.3	0.00	0.00	0.00
4,000.0	12.76	297.30	3,973.5	119.8	-232.1	261.1	0.00	0.00	0.00
4,040.0	12.76	297.30	4,012.5	123.8	-239.9	270.0	0.00	0.00	0.00
4,080.0	12.76	297.30	4,051.5	127.9	-247.8	278.8	0.00	0.00	0.00
4,120.0	12.76	297.30	4,090.5	131.9	-255.6	287.6	0.00	0.00	0.00

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MD Reference: WELL @ 4769.0ft (Original Well Elev)  
North Reference: True  
Survey Calculation Method: Minimum Curvature

Planned 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)
4,160.0	12.76	297.30	4,129.5	136.0	-263.5	296.5	0.00	0.00	0.00
4,200.0	12.76	297.30	4,168.5	140.0	-271.3	305.3	0.00	0.00	0.00
4,240.0	12.76	297.30	4,207.5	144.1	-279.2	314.1	0.00	0.00	0.00
4,280.0	12.76	297.30	4,246.5	148.1	-287.0	323.0	0.00	0.00	0.00
4,320.0	12.76	297.30	4,285.5	152.2	-294.9	331.8	0.00	0.00	0.00
4,360.0	12.76	297.30	4,324.6	156.2	-302.7	340.6	0.00	0.00	0.00
4,400.0	12.76	297.30	4,363.6	160.3	-310.6	349.5	0.00	0.00	0.00
4,403.8	12.76	297.30	4,367.3	160.6	-311.3	350.3	0.00	0.00	0.00
4,440.0	12.04	297.30	4,402.6	164.2	-318.2	358.1	2.00	-2.00	0.00
4,480.0	11.24	297.30	4,441.8	167.9	-325.4	366.2	2.00	-2.00	0.00
4,520.0	10.44	297.30	4,481.1	171.4	-332.1	373.7	2.00	-2.00	0.00
4,560.0	9.64	297.30	4,520.5	174.6	-338.3	380.6	2.00	-2.00	0.00
4,600.0	8.84	297.30	4,560.0	177.5	-344.0	387.1	2.00	-2.00	0.00
4,640.0	8.04	297.30	4,599.5	180.2	-349.2	392.9	2.00	-2.00	0.00
4,680.0	7.24	297.30	4,639.2	182.6	-353.9	398.3	2.00	-2.00	0.00
4,720.0	6.44	297.30	4,678.9	184.8	-358.1	403.0	2.00	-2.00	0.00
4,760.0	5.64	297.30	4,718.7	186.7	-361.9	407.2	2.00	-2.00	0.00
4,800.0	4.84	297.30	4,758.5	188.4	-365.1	410.9	2.00	-2.00	0.00
4,840.0	4.04	297.30	4,798.4	189.8	-367.9	414.0	2.00	-2.00	0.00
4,880.0	3.24	297.30	4,838.3	191.0	-370.1	416.5	2.00	-2.00	0.00
4,920.0	2.44	297.30	4,878.3	191.9	-371.9	418.5	2.00	-2.00	0.00
4,960.0	1.64	297.30	4,918.2	192.6	-373.1	419.9	2.00	-2.00	0.00
5,000.0	0.84	297.30	4,958.2	193.0	-373.9	420.8	2.00	-2.00	0.00
5,040.0	0.04	297.30	4,998.2	193.1	-374.2	421.1	2.00	-2.00	0.00
5,041.8	0.00	0.00	5,000.0	193.1	-374.2	421.1	2.00	-2.00	0.00
TARGET BHL 2510'FNL, 75'FEL									
5,080.0	0.00	0.00	5,038.2	193.1	-374.2	421.1	0.00	0.00	0.00
5,120.0	0.00	0.00	5,078.2	193.1	-374.2	421.1	0.00	0.00	0.00
5,160.0	0.00	0.00	5,118.2	193.1	-374.2	421.1	0.00	0.00	0.00
5,200.0	0.00	0.00	5,158.2	193.1	-374.2	421.1	0.00	0.00	0.00
5,240.0	0.00	0.00	5,198.2	193.1	-374.2	421.1	0.00	0.00	0.00
5,280.0	0.00	0.00	5,238.2	193.1	-374.2	421.1	0.00	0.00	0.00
5,320.0	0.00	0.00	5,278.2	193.1	-374.2	421.1	0.00	0.00	0.00
5,360.0	0.00	0.00	5,318.2	193.1	-374.2	421.1	0.00	0.00	0.00
5,400.0	0.00	0.00	5,358.2	193.1	-374.2	421.1	0.00	0.00	0.00
5,440.0	0.00	0.00	5,398.2	193.1	-374.2	421.1	0.00	0.00	0.00
5,480.0	0.00	0.00	5,438.2	193.1	-374.2	421.1	0.00	0.00	0.00
5,520.0	0.00	0.00	5,478.2	193.1	-374.2	421.1	0.00	0.00	0.00
5,560.0	0.00	0.00	5,518.2	193.1	-374.2	421.1	0.00	0.00	0.00
5,600.0	0.00	0.00	5,558.2	193.1	-374.2	421.1	0.00	0.00	0.00
5,640.0	0.00	0.00	5,598.2	193.1	-374.2	421.1	0.00	0.00	0.00
5,680.0	0.00	0.00	5,638.2	193.1	-374.2	421.1	0.00	0.00	0.00
5,720.0	0.00	0.00	5,678.2	193.1	-374.2	421.1	0.00	0.00	0.00
5,760.0	0.00	0.00	5,718.2	193.1	-374.2	421.1	0.00	0.00	0.00
5,800.0	0.00	0.00	5,758.2	193.1	-374.2	421.1	0.00	0.00	0.00
5,840.0	0.00	0.00	5,798.2	193.1	-374.2	421.1	0.00	0.00	0.00
5,880.0	0.00	0.00	5,838.2	193.1	-374.2	421.1	0.00	0.00	0.00
5,920.0	0.00	0.00	5,878.2	193.1	-374.2	421.1	0.00	0.00	0.00
5,960.0	0.00	0.00	5,918.2	193.1	-374.2	421.1	0.00	0.00	0.00
6,000.0	0.00	0.00	5,958.2	193.1	-374.2	421.1	0.00	0.00	0.00
6,040.0	0.00	0.00	5,998.2	193.1	-374.2	421.1	0.00	0.00	0.00
6,080.0	0.00	0.00	6,038.2	193.1	-374.2	421.1	0.00	0.00	0.00
6,120.0	0.00	0.00	6,078.2	193.1	-374.2	421.1	0.00	0.00	0.00
6,160.0	0.00	0.00	6,118.2	193.1	-374.2	421.1	0.00	0.00	0.00



Database: Landmark  
Company: NOBLE ENERGY INC WELD COUNTY CO  
Project: SEC.17-T3N-R64W  
Site: LDS D17-31D PAD Sec.17-T3N-R64W  
Well: LDS D17-32D  
Wellbore: Wellbore #1  
Design: Noble LDS D17-32D Plan #1 (9-03-10)

Local Co-ordinate Reference: Well LDS D17-32D  
TVD Reference: WELL @ 4769.0ft (Original Well Elev)  
MD Reference: WELL @ 4769.0ft (Original Well Elev)  
North Reference: True  
Survey Calculation Method: Minimum Curvature

Planned 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)
6,200.0	0.00	0.00	6,158.2	193.1	-374.2	421.1	0.00	0.00	0.00
6,240.0	0.00	0.00	6,198.2	193.1	-374.2	421.1	0.00	0.00	0.00
6,280.0	0.00	0.00	6,238.2	193.1	-374.2	421.1	0.00	0.00	0.00
6,320.0	0.00	0.00	6,278.2	193.1	-374.2	421.1	0.00	0.00	0.00
6,360.0	0.00	0.00	6,318.2	193.1	-374.2	421.1	0.00	0.00	0.00
6,400.0	0.00	0.00	6,358.2	193.1	-374.2	421.1	0.00	0.00	0.00
6,440.0	0.00	0.00	6,398.2	193.1	-374.2	421.1	0.00	0.00	0.00
6,480.0	0.00	0.00	6,438.2	193.1	-374.2	421.1	0.00	0.00	0.00
6,520.0	0.00	0.00	6,478.2	193.1	-374.2	421.1	0.00	0.00	0.00
6,560.0	0.00	0.00	6,518.2	193.1	-374.2	421.1	0.00	0.00	0.00
6,600.0	0.00	0.00	6,558.2	193.1	-374.2	421.1	0.00	0.00	0.00
6,640.0	0.00	0.00	6,598.2	193.1	-374.2	421.1	0.00	0.00	0.00
6,680.0	0.00	0.00	6,638.2	193.1	-374.2	421.1	0.00	0.00	0.00
6,720.0	0.00	0.00	6,678.2	193.1	-374.2	421.1	0.00	0.00	0.00
6,736.8	0.00	0.00	6,695.0	193.1	-374.2	421.1	0.00	0.00	0.00
<b>Niobrara - TARGET CIRCLE 2510'FNL, 75'FEL</b>									
6,760.0	0.00	0.00	6,718.2	193.1	-374.2	421.1	0.00	0.00	0.00
6,800.0	0.00	0.00	6,758.2	193.1	-374.2	421.1	0.00	0.00	0.00
6,840.0	0.00	0.00	6,798.2	193.1	-374.2	421.1	0.00	0.00	0.00
6,880.0	0.00	0.00	6,838.2	193.1	-374.2	421.1	0.00	0.00	0.00
6,920.0	0.00	0.00	6,878.2	193.1	-374.2	421.1	0.00	0.00	0.00
6,960.0	0.00	0.00	6,918.2	193.1	-374.2	421.1	0.00	0.00	0.00
7,000.0	0.00	0.00	6,958.2	193.1	-374.2	421.1	0.00	0.00	0.00
7,040.0	0.00	0.00	6,998.2	193.1	-374.2	421.1	0.00	0.00	0.00
7,040.8	0.00	0.00	6,999.0	193.1	-374.2	421.1	0.00	0.00	0.00
<b>Codell</b>									
7,080.0	0.00	0.00	7,038.2	193.1	-374.2	421.1	0.00	0.00	0.00
7,120.0	0.00	0.00	7,078.2	193.1	-374.2	421.1	0.00	0.00	0.00
7,160.0	0.00	0.00	7,118.2	193.1	-374.2	421.1	0.00	0.00	0.00
7,200.0	0.00	0.00	7,158.2	193.1	-374.2	421.1	0.00	0.00	0.00
7,240.0	0.00	0.00	7,198.2	193.1	-374.2	421.1	0.00	0.00	0.00
7,280.0	0.00	0.00	7,238.2	193.1	-374.2	421.1	0.00	0.00	0.00
7,320.0	0.00	0.00	7,278.2	193.1	-374.2	421.1	0.00	0.00	0.00
7,360.0	0.00	0.00	7,318.2	193.1	-374.2	421.1	0.00	0.00	0.00
7,400.0	0.00	0.00	7,358.2	193.1	-374.2	421.1	0.00	0.00	0.00
7,440.0	0.00	0.00	7,398.2	193.1	-374.2	421.1	0.00	0.00	0.00
7,450.8	0.00	0.00	7,409.0	193.1	-374.2	421.1	0.00	0.00	0.00
<b>D-Sand</b>									
7,480.0	0.00	0.00	7,438.2	193.1	-374.2	421.1	0.00	0.00	0.00
7,520.0	0.00	0.00	7,478.2	193.1	-374.2	421.1	0.00	0.00	0.00
7,520.8	0.00	0.00	7,479.0	193.1	-374.2	421.1	0.00	0.00	0.00
<b>J-Sand</b>									
7,560.0	0.00	0.00	7,518.2	193.1	-374.2	421.1	0.00	0.00	0.00
7,600.0	0.00	0.00	7,558.2	193.1	-374.2	421.1	0.00	0.00	0.00
7,640.0	0.00	0.00	7,598.2	193.1	-374.2	421.1	0.00	0.00	0.00
7,680.0	0.00	0.00	7,638.2	193.1	-374.2	421.1	0.00	0.00	0.00
7,720.0	0.00	0.00	7,678.2	193.1	-374.2	421.1	0.00	0.00	0.00
7,720.8	0.00	0.00	7,679.0	193.1	-374.2	421.1	0.00	0.00	0.00
<b>HARDLINES 141'S , 75'E OF BHL</b>									

Database: Landmark  
 Company: NOBLE ENERGY INC WELD COUNTY CO  
 Project: SEC.17-T3N-R64W  
 Site: LDS D17-31D PAD Sec.17-T3N-R64W  
 Well: LDS D17-32D  
 Wellbore: Wellbore #1  
 Design: Noble LDS D17-32D Plan #1 (9-03-10)

Local Co-ordinate Reference: Well LDS D17-32D  
 TVD Reference: WELL @ 4769.0ft (Original Well Elev)  
 MD Reference: WELL @ 4769.0ft (Original Well Elev)  
 North Reference: True  
 Survey Calculation Method: Minimum Curvature

**Targets**

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
TARGET CIRCLE 251 - plan hits target - Circle (radius 75.0)	0.00	0.00	6,695.0	193.1	-374.2	1,326,390.94	3,255,579.70	40° 13' 32.592 N	104° 35' 4.812 W
TARGET BHL 2510'F - plan hits target - Point	0.00	0.00	5,000.0	193.1	-374.2	1,326,390.94	3,255,579.70	40° 13' 32.592 N	104° 35' 4.812 W
HARDLINES 141'S , 7 - plan misses by 159.7ft at 7720.8ft MD (7679.0 TVD, 193.1 N, -374.2 E) - Polygon	0.00	0.00	7,679.0	52.1	-299.2	1,326,250.74	3,255,656.13	40° 13' 31.199 N	104° 35' 3.845 W
Point 1			7,679.0	0.0	0.0	1,326,250.74	3,255,656.13		
Point 2			7,679.0	0.0	-300.0	1,326,247.64	3,255,356.15		
Point 3			7,679.0	0.0	0.0	1,326,250.74	3,255,656.13		
Point 4			7,679.0	300.0	0.0	1,326,550.71	3,255,653.02		

**Casing Points**

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
700.0	700.0	8 5/8"	8-5/8	12-1/4

**Formations**

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
6,736.8	6,695.0	Niobrara		0.00	
7,040.8	6,999.0	Codell		0.00	
7,450.8	7,409.0	D-Sand		0.00	
7,520.8	7,479.0	J-Sand		0.00	