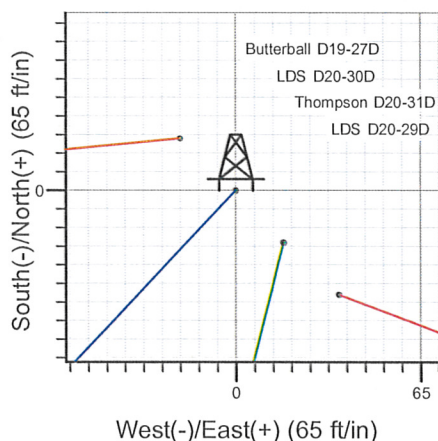
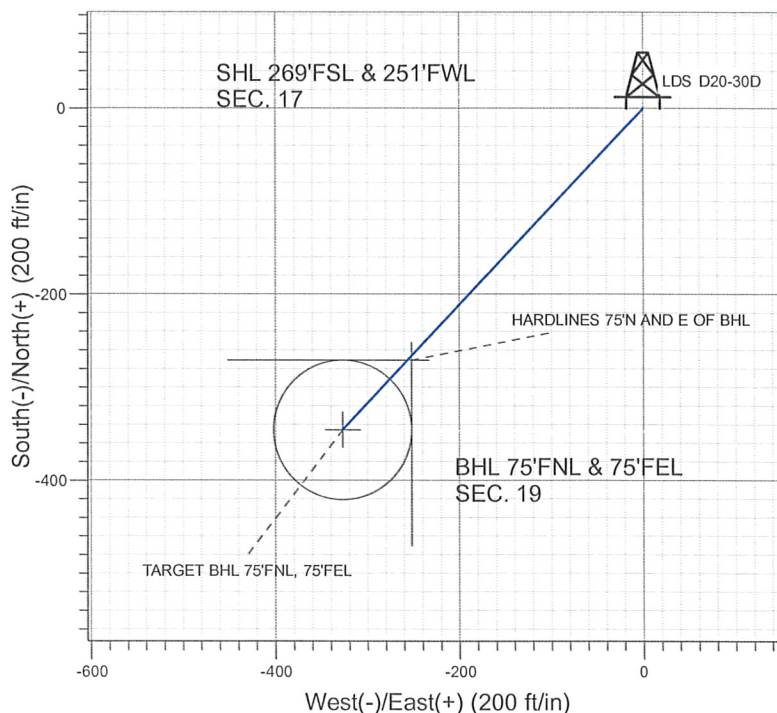
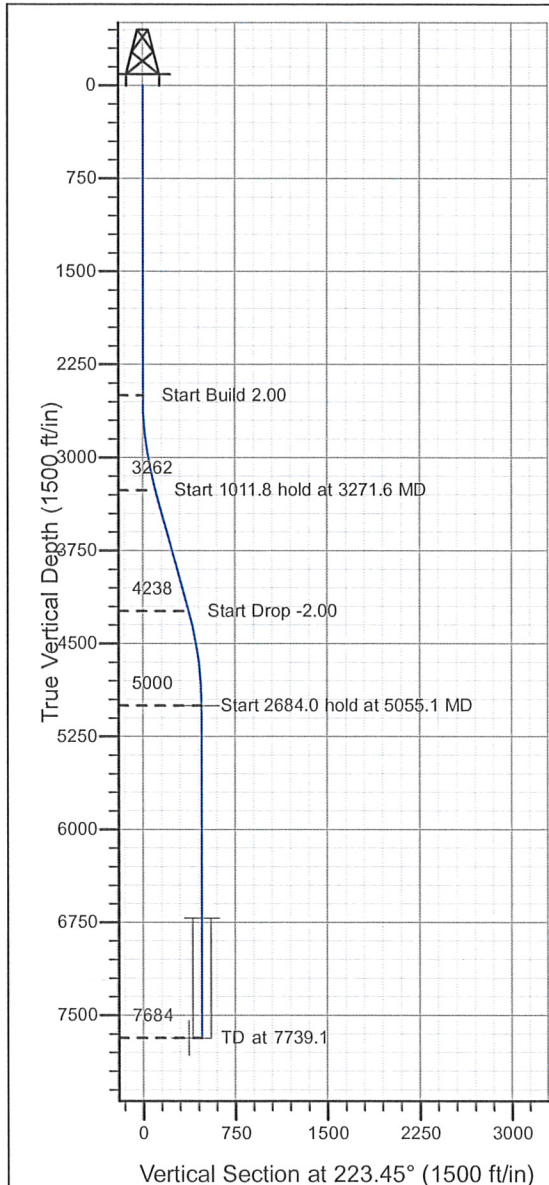


### Well Name: LDS D20-30D

Surface Location: LDS D20-29D Pad Sec.17-T3N-R64W  
 North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone  
 Ground Elevation: 4763.0  
 +N/-S+E/-W Northing Easting Latitude Longitude Slot  
 0.0 0.01323873.51 3255924.05 40° 13' 7.680 N 104° 35' 0.708 W  
 Original Well Elev WELL @ 4776.0ft (Original Well Elev)

### NOBLE ENERGY INC WELD COUNTY CO



LDS D20-29D Pad Sec.17-T3N-R64W  
 LDS D20-30D  
 Noble LDS D20-30D Plan #1 (12-16-09)  
 17:14, December 16 2009



Azimuths to True North  
 Magnetic North: 8.91°  
 Magnetic Field  
 Strength: 53233.1snT  
 Dip Angle: 66.99°  
 Date: 12/16/2009  
 Model: IGRF200510

#### WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
TARGET BHL 75'FNL, 75'FEL	5000.0	-345.5	-327.2	40° 13' 4.266 N	104° 35' 4.926 W	Point
TARGET CIRCLE 75'FNL, 75'FEL	6714.0	-345.5	-327.2	40° 13' 4.266 N	104° 35' 4.926 W	Circle (Radius: 75.0)
HARDLINES 75'N AND E OF BHL	7684.0	-270.5	-252.2	40° 13' 5.007 N	104° 35' 3.959 W	Polygon

#### SECTION DETAILS

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	3271.6	15.43	223.45	3262.3	-75.0	-71.0	2.00	223.45	103.3	
4	4283.5	15.43	223.45	4237.7	-270.5	-256.2	0.00	0.00	372.5	
5	5055.1	0.00	0.00	5000.0	-345.5	-327.2	2.00	180.00	475.8	TARGET BHL 75'FNL, 75'FEL
6	7739.1	0.00	0.00	7684.0	-345.5	-327.2	0.00	0.00	475.8	



## **Directional**

### **NOBLE ENERGY INC WELD COUNTY CO**

**SEC.17-T3N-R64W**

**LDS D20-29D Pad Sec.17-T3N-R64W**

**LDS D20-30D**

**Wellbore #1**

**Plan: Noble LDS D20-30D Plan #1 (12-16-09)**

### **Standard Planning Report**

**16 December, 2009**





Database:	EDM den0-adp01 Server Data	Local Co-ordinate Reference:	Well LDS D20-30D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4776.0ft (Original Well Elev)
Project:	SEC.17-T3N-R64W	MD Reference:	WELL @ 4776.0ft (Original Well Elev)
Site:	LDS D20-29D Pad Sec.17-T3N-R64W	North Reference:	True
Well:	LDS D20-30D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble LDS D20-30D Plan #1 (12-16-09)		

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		
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site	LDS D20-29D Pad Sec.17-T3N-R64W		
Site Position:		Northing:	1,323,837.46 ft
From:	Lat/Long	Easting:	3,255,960.73 ft
Position Uncertainty:	0.0 ft	Slot Radius:	"
		Latitude:	40° 13' 7.320 N
		Longitude:	104° 35' 0.240 W
		Grid Convergence:	0.59 °

Well	LDS D20-30D		
Well Position	+N/-S	36.4 ft	Northing:
	+E/-W	-36.3 ft	Easting:
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft
		Latitude:	40° 13' 7.680 N
		Longitude:	104° 35' 0.708 W
		Ground Level:	4,763.0 ft

Wellbore	Wellbore #1		
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	12/16/2009	8.92	66.99	53,233

Design	Noble LDS D20-30D Plan #1 (12-16-09)		
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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	223.45

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	
3,271.6	15.43	223.45	3,262.3	-75.0	-71.0	2.00	2.00	0.00	223.45	
4,283.5	15.43	223.45	4,237.7	-270.5	-256.2	0.00	0.00	0.00	0.00	
5,055.1	0.00	0.00	5,000.0	-345.5	-327.2	2.00	-2.00	0.00	180.00	TARGET BHL 75'FI
7,739.1	0.00	0.00	7,684.0	-345.5	-327.2	0.00	0.00	0.00	0.00	

Database:	EDM den0-adp01 Server Data	Local Co-ordinate Reference:	Well LDS D20-30D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4776.0ft (Original Well Elev)
Project:	SEC.17-T3N-R64W	MD Reference:	WELL @ 4776.0ft (Original Well Elev)
Site:	LDS D20-29D Pad Sec.17-T3N-R64W	North Reference:	True
Well:	LDS D20-30D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble LDS D20-30D Plan #1 (12-16-09)		

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
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
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



Database:	EDM den0-adp01 Server Data	Local Co-ordinate Reference:	Well LDS D20-30D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4776.0ft (Original Well Elev)
Project:	SEC.17-T3N-R64W	MD Reference:	WELL @ 4776.0ft (Original Well Elev)
Site:	LDS D20-29D Pad Sec.17-T3N-R64W	North Reference:	True
Well:	LDS D20-30D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble LDS D20-30D Plan #1 (12-16-09)		

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)
2,160.0	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	223.45	2,520.0	-0.1	0.0	0.1	2.00	2.00	0.00
2,560.0	1.20	223.45	2,560.0	-0.5	-0.4	0.6	2.00	2.00	0.00
2,600.0	2.00	223.45	2,600.0	-1.3	-1.2	1.7	2.00	2.00	0.00
2,640.0	2.80	223.45	2,639.9	-2.5	-2.4	3.4	2.00	2.00	0.00
2,680.0	3.60	223.45	2,679.9	-4.1	-3.9	5.7	2.00	2.00	0.00
2,720.0	4.40	223.45	2,719.8	-6.1	-5.8	8.4	2.00	2.00	0.00
2,760.0	5.20	223.45	2,759.6	-8.6	-8.1	11.8	2.00	2.00	0.00
2,800.0	6.00	223.45	2,799.5	-11.4	-10.8	15.7	2.00	2.00	0.00
2,840.0	6.80	223.45	2,839.2	-14.6	-13.9	20.2	2.00	2.00	0.00
2,880.0	7.60	223.45	2,878.9	-18.3	-17.3	25.2	2.00	2.00	0.00
2,920.0	8.40	223.45	2,918.5	-22.3	-21.1	30.7	2.00	2.00	0.00
2,960.0	9.20	223.45	2,958.0	-26.8	-25.3	36.9	2.00	2.00	0.00
3,000.0	10.00	223.45	2,997.5	-31.6	-29.9	43.5	2.00	2.00	0.00
3,040.0	10.80	223.45	3,036.8	-36.8	-34.9	50.7	2.00	2.00	0.00
3,080.0	11.60	223.45	3,076.0	-42.5	-40.2	58.5	2.00	2.00	0.00
3,120.0	12.40	223.45	3,115.2	-48.5	-46.0	66.8	2.00	2.00	0.00
3,160.0	13.20	223.45	3,154.2	-55.0	-52.1	75.7	2.00	2.00	0.00
3,200.0	14.00	223.45	3,193.1	-61.8	-58.5	85.1	2.00	2.00	0.00
3,240.0	14.80	223.45	3,231.8	-69.0	-65.4	95.0	2.00	2.00	0.00
3,271.6	15.43	223.45	3,262.3	-75.0	-71.0	103.3	2.00	2.00	0.00
3,280.0	15.43	223.45	3,270.4	-76.6	-72.6	105.5	0.00	0.00	0.00
3,320.0	15.43	223.45	3,309.0	-84.3	-79.9	116.2	0.00	0.00	0.00
3,360.0	15.43	223.45	3,347.5	-92.1	-87.2	126.8	0.00	0.00	0.00
3,400.0	15.43	223.45	3,386.1	-99.8	-94.5	137.5	0.00	0.00	0.00
3,440.0	15.43	223.45	3,424.6	-107.5	-101.8	148.1	0.00	0.00	0.00
3,480.0	15.43	223.45	3,463.2	-115.2	-109.2	158.7	0.00	0.00	0.00
3,520.0	15.43	223.45	3,501.7	-123.0	-116.5	169.4	0.00	0.00	0.00
3,560.0	15.43	223.45	3,540.3	-130.7	-123.8	180.0	0.00	0.00	0.00
3,600.0	15.43	223.45	3,578.9	-138.4	-131.1	190.7	0.00	0.00	0.00
3,640.0	15.43	223.45	3,617.4	-146.2	-138.4	201.3	0.00	0.00	0.00
3,680.0	15.43	223.45	3,656.0	-153.9	-145.8	212.0	0.00	0.00	0.00
3,720.0	15.43	223.45	3,694.5	-161.6	-153.1	222.6	0.00	0.00	0.00
3,760.0	15.43	223.45	3,733.1	-169.3	-160.4	233.2	0.00	0.00	0.00
3,800.0	15.43	223.45	3,771.7	-177.1	-167.7	243.9	0.00	0.00	0.00
3,840.0	15.43	223.45	3,810.2	-184.8	-175.0	254.5	0.00	0.00	0.00
3,880.0	15.43	223.45	3,848.8	-192.5	-182.4	265.2	0.00	0.00	0.00
3,920.0	15.43	223.45	3,887.3	-200.3	-189.7	275.8	0.00	0.00	0.00
3,960.0	15.43	223.45	3,925.9	-208.0	-197.0	286.5	0.00	0.00	0.00
4,000.0	15.43	223.45	3,964.4	-215.7	-204.3	297.1	0.00	0.00	0.00
4,040.0	15.43	223.45	4,003.0	-223.4	-211.6	307.8	0.00	0.00	0.00
4,080.0	15.43	223.45	4,041.6	-231.2	-219.0	318.4	0.00	0.00	0.00
4,120.0	15.43	223.45	4,080.1	-238.9	-226.3	329.0	0.00	0.00	0.00
4,160.0	15.43	223.45	4,118.7	-246.6	-233.6	339.7	0.00	0.00	0.00
4,200.0	15.43	223.45	4,157.2	-254.4	-240.9	350.3	0.00	0.00	0.00

Database:	EDM den0-adp01 Server Data	Local Co-ordinate Reference:	Well LDS D20-30D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4776.0ft (Original Well Elev)
Project:	SEC.17-T3N-R64W	MD Reference:	WELL @ 4776.0ft (Original Well Elev)
Site:	LDS D20-29D Pad Sec.17-T3N-R64W	North Reference:	True
Well:	LDS D20-30D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble LDS D20-30D Plan #1 (12-16-09)		

## 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)
4,240.0	15.43	223.45	4,195.8	-262.1	-248.2	361.0	0.00	0.00	0.00
4,280.0	15.43	223.45	4,234.3	-269.8	-255.6	371.6	0.00	0.00	0.00
4,283.5	15.43	223.45	4,237.7	-270.5	-256.2	372.5	0.00	0.00	0.00
4,320.0	14.70	223.45	4,273.0	-277.4	-262.7	382.0	2.00	-2.00	0.00
4,360.0	13.90	223.45	4,311.7	-284.5	-269.5	391.9	2.00	-2.00	0.00
4,400.0	13.10	223.45	4,350.6	-291.3	-275.9	401.3	2.00	-2.00	0.00
4,440.0	12.30	223.45	4,389.6	-297.7	-282.0	410.1	2.00	-2.00	0.00
4,480.0	11.50	223.45	4,428.8	-303.7	-287.7	418.3	2.00	-2.00	0.00
4,520.0	10.70	223.45	4,468.0	-309.3	-293.0	426.0	2.00	-2.00	0.00
4,560.0	9.90	223.45	4,507.4	-314.5	-297.9	433.2	2.00	-2.00	0.00
4,600.0	9.10	223.45	4,546.8	-319.3	-302.4	439.8	2.00	-2.00	0.00
4,640.0	8.30	223.45	4,586.4	-323.7	-306.6	445.8	2.00	-2.00	0.00
4,680.0	7.50	223.45	4,626.0	-327.7	-310.4	451.3	2.00	-2.00	0.00
4,720.0	6.70	223.45	4,665.7	-331.3	-313.8	456.3	2.00	-2.00	0.00
4,760.0	5.90	223.45	4,705.4	-334.4	-316.8	460.6	2.00	-2.00	0.00
4,800.0	5.10	223.45	4,745.3	-337.2	-319.4	464.5	2.00	-2.00	0.00
4,840.0	4.30	223.45	4,785.1	-339.6	-321.7	467.8	2.00	-2.00	0.00
4,880.0	3.50	223.45	4,825.0	-341.6	-323.5	470.5	2.00	-2.00	0.00
4,920.0	2.70	223.45	4,865.0	-343.2	-325.0	472.6	2.00	-2.00	0.00
4,960.0	1.90	223.45	4,904.9	-344.3	-326.1	474.3	2.00	-2.00	0.00
5,000.0	1.10	223.45	4,944.9	-345.1	-326.8	475.3	2.00	-2.00	0.00
5,040.0	0.30	223.45	4,984.9	-345.4	-327.2	475.8	2.00	-2.00	0.00
5,055.1	0.00	0.00	5,000.0	-345.5	-327.2	475.8	2.00	-2.00	905.91
TARGET BHL 75'FNL, 75'FEL									
5,080.0	0.00	0.00	5,024.9	-345.5	-327.2	475.8	0.00	0.00	0.00
5,120.0	0.00	0.00	5,064.9	-345.5	-327.2	475.8	0.00	0.00	0.00
5,160.0	0.00	0.00	5,104.9	-345.5	-327.2	475.8	0.00	0.00	0.00
5,200.0	0.00	0.00	5,144.9	-345.5	-327.2	475.8	0.00	0.00	0.00
5,240.0	0.00	0.00	5,184.9	-345.5	-327.2	475.8	0.00	0.00	0.00
5,280.0	0.00	0.00	5,224.9	-345.5	-327.2	475.8	0.00	0.00	0.00
5,320.0	0.00	0.00	5,264.9	-345.5	-327.2	475.8	0.00	0.00	0.00
5,360.0	0.00	0.00	5,304.9	-345.5	-327.2	475.8	0.00	0.00	0.00
5,400.0	0.00	0.00	5,344.9	-345.5	-327.2	475.8	0.00	0.00	0.00
5,440.0	0.00	0.00	5,384.9	-345.5	-327.2	475.8	0.00	0.00	0.00
5,480.0	0.00	0.00	5,424.9	-345.5	-327.2	475.8	0.00	0.00	0.00
5,520.0	0.00	0.00	5,464.9	-345.5	-327.2	475.8	0.00	0.00	0.00
5,560.0	0.00	0.00	5,504.9	-345.5	-327.2	475.8	0.00	0.00	0.00
5,600.0	0.00	0.00	5,544.9	-345.5	-327.2	475.8	0.00	0.00	0.00
5,640.0	0.00	0.00	5,584.9	-345.5	-327.2	475.8	0.00	0.00	0.00
5,680.0	0.00	0.00	5,624.9	-345.5	-327.2	475.8	0.00	0.00	0.00
5,720.0	0.00	0.00	5,664.9	-345.5	-327.2	475.8	0.00	0.00	0.00
5,760.0	0.00	0.00	5,704.9	-345.5	-327.2	475.8	0.00	0.00	0.00
5,800.0	0.00	0.00	5,744.9	-345.5	-327.2	475.8	0.00	0.00	0.00
5,840.0	0.00	0.00	5,784.9	-345.5	-327.2	475.8	0.00	0.00	0.00
5,880.0	0.00	0.00	5,824.9	-345.5	-327.2	475.8	0.00	0.00	0.00
5,920.0	0.00	0.00	5,864.9	-345.5	-327.2	475.8	0.00	0.00	0.00
5,960.0	0.00	0.00	5,904.9	-345.5	-327.2	475.8	0.00	0.00	0.00
6,000.0	0.00	0.00	5,944.9	-345.5	-327.2	475.8	0.00	0.00	0.00
6,040.0	0.00	0.00	5,984.9	-345.5	-327.2	475.8	0.00	0.00	0.00
6,080.0	0.00	0.00	6,024.9	-345.5	-327.2	475.8	0.00	0.00	0.00
6,120.0	0.00	0.00	6,064.9	-345.5	-327.2	475.8	0.00	0.00	0.00
6,160.0	0.00	0.00	6,104.9	-345.5	-327.2	475.8	0.00	0.00	0.00
6,200.0	0.00	0.00	6,144.9	-345.5	-327.2	475.8	0.00	0.00	0.00



Database:	EDM den0-adp01 Server Data	Local Co-ordinate Reference:	Well LDS D20-30D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4776.0ft (Original Well Elev)
Project:	SEC.17-T3N-R64W	MD Reference:	WELL @ 4776.0ft (Original Well Elev)
Site:	LDS D20-29D Pad Sec.17-T3N-R64W	North Reference:	True
Well:	LDS D20-30D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble LDS D20-30D Plan #1 (12-16-09)		

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)
6,240.0	0.00	0.00	6,184.9	-345.5	-327.2	475.8	0.00	0.00	0.00
6,280.0	0.00	0.00	6,224.9	-345.5	-327.2	475.8	0.00	0.00	0.00
6,320.0	0.00	0.00	6,264.9	-345.5	-327.2	475.8	0.00	0.00	0.00
6,360.0	0.00	0.00	6,304.9	-345.5	-327.2	475.8	0.00	0.00	0.00
6,400.0	0.00	0.00	6,344.9	-345.5	-327.2	475.8	0.00	0.00	0.00
6,440.0	0.00	0.00	6,384.9	-345.5	-327.2	475.8	0.00	0.00	0.00
6,480.0	0.00	0.00	6,424.9	-345.5	-327.2	475.8	0.00	0.00	0.00
6,520.0	0.00	0.00	6,464.9	-345.5	-327.2	475.8	0.00	0.00	0.00
6,560.0	0.00	0.00	6,504.9	-345.5	-327.2	475.8	0.00	0.00	0.00
6,600.0	0.00	0.00	6,544.9	-345.5	-327.2	475.8	0.00	0.00	0.00
6,640.0	0.00	0.00	6,584.9	-345.5	-327.2	475.8	0.00	0.00	0.00
6,680.0	0.00	0.00	6,624.9	-345.5	-327.2	475.8	0.00	0.00	0.00
6,720.0	0.00	0.00	6,664.9	-345.5	-327.2	475.8	0.00	0.00	0.00
6,760.0	0.00	0.00	6,704.9	-345.5	-327.2	475.8	0.00	0.00	0.00
6,769.1	0.00	0.00	6,714.0	-345.5	-327.2	475.8	0.00	0.00	0.00
NIOBRARA - TARGET CIRCLE 75°FNL, 75°FEL									
6,800.0	0.00	0.00	6,744.9	-345.5	-327.2	475.8	0.00	0.00	0.00
6,840.0	0.00	0.00	6,784.9	-345.5	-327.2	475.8	0.00	0.00	0.00
6,880.0	0.00	0.00	6,824.9	-345.5	-327.2	475.8	0.00	0.00	0.00
6,920.0	0.00	0.00	6,864.9	-345.5	-327.2	475.8	0.00	0.00	0.00
6,960.0	0.00	0.00	6,904.9	-345.5	-327.2	475.8	0.00	0.00	0.00
7,000.0	0.00	0.00	6,944.9	-345.5	-327.2	475.8	0.00	0.00	0.00
7,040.0	0.00	0.00	6,984.9	-345.5	-327.2	475.8	0.00	0.00	0.00
7,071.1	0.00	0.00	7,016.0	-345.5	-327.2	475.8	0.00	0.00	0.00
CODELL									
7,080.0	0.00	0.00	7,024.9	-345.5	-327.2	475.8	0.00	0.00	0.00
7,120.0	0.00	0.00	7,064.9	-345.5	-327.2	475.8	0.00	0.00	0.00
7,160.0	0.00	0.00	7,104.9	-345.5	-327.2	475.8	0.00	0.00	0.00
7,200.0	0.00	0.00	7,144.9	-345.5	-327.2	475.8	0.00	0.00	0.00
7,240.0	0.00	0.00	7,184.9	-345.5	-327.2	475.8	0.00	0.00	0.00
7,280.0	0.00	0.00	7,224.9	-345.5	-327.2	475.8	0.00	0.00	0.00
7,320.0	0.00	0.00	7,264.9	-345.5	-327.2	475.8	0.00	0.00	0.00
7,360.0	0.00	0.00	7,304.9	-345.5	-327.2	475.8	0.00	0.00	0.00
7,400.0	0.00	0.00	7,344.9	-345.5	-327.2	475.8	0.00	0.00	0.00
7,440.0	0.00	0.00	7,384.9	-345.5	-327.2	475.8	0.00	0.00	0.00
7,480.0	0.00	0.00	7,424.9	-345.5	-327.2	475.8	0.00	0.00	0.00
7,520.0	0.00	0.00	7,464.9	-345.5	-327.2	475.8	0.00	0.00	0.00
7,539.1	0.00	0.00	7,484.0	-345.5	-327.2	475.8	0.00	0.00	0.00
J-SAND									
7,560.0	0.00	0.00	7,504.9	-345.5	-327.2	475.8	0.00	0.00	0.00
7,600.0	0.00	0.00	7,544.9	-345.5	-327.2	475.8	0.00	0.00	0.00
7,640.0	0.00	0.00	7,584.9	-345.5	-327.2	475.8	0.00	0.00	0.00
7,680.0	0.00	0.00	7,624.9	-345.5	-327.2	475.8	0.00	0.00	0.00
7,720.0	0.00	0.00	7,664.9	-345.5	-327.2	475.8	0.00	0.00	0.00
7,739.1	0.00	0.00	7,684.0	-345.5	-327.2	475.8	0.00	0.00	0.00
HARDLINES 75°N AND E OF BHL									

Database:	EDM den0-adp01 Server Data	Local Co-ordinate Reference:	Well LDS D20-30D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4776.0ft (Original Well Elev)
Project:	SEC.17-T3N-R64W	MD Reference:	WELL @ 4776.0ft (Original Well Elev)
Site:	LDS D20-29D Pad Sec.17-T3N-R64W	North Reference:	True
Well:	LDS D20-30D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble LDS D20-30D Plan #1 (12-16-09)		

**Targets**

Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
- Shape									
HARDLINES 75'N AN	0.00	0.00	7,684.0	-270.5	-252.2	1,323,600.43	3,255,674.67	40° 13' 5.007 N	104° 35' 3.959 W
- plan misses target center by 106.1ft at 7739.1ft MD (7684.0 TVD, -345.5 N, -327.2 E)									
- Polygon									
Point 1			7,684.0	0.0	0.0	1,323,600.43	3,255,674.67		
Point 2			7,684.0	0.0	-200.0	1,323,598.36	3,255,474.69		
Point 3			7,684.0	0.0	0.0	1,323,600.43	3,255,674.67		
Point 4			7,684.0	-200.0	0.0	1,323,400.45	3,255,676.74		
TARGET CIRCLE 75'	0.00	0.00	6,714.0	-345.5	-327.2	1,323,524.66	3,255,600.45	40° 13' 4.266 N	104° 35' 4.926 W
- plan hits target center									
- Circle (radius 75.0)									
TARGET BHL 75'FNL	0.00	0.00	5,000.0	-345.5	-327.2	1,323,524.70	3,255,600.44	40° 13' 4.266 N	104° 35' 4.926 W
- plan hits target center									
- Point									

**Formations**

Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction
(ft)	(ft)			(°)	(°)
6,769.1	6,714.0	NIOBRARA		0.00	
7,071.1	7,016.0	CODELL		0.00	
7,539.1	7,484.0	J-SAND		0.00	