

ENSIGN

Directional

Well Name: NEI C18-33D

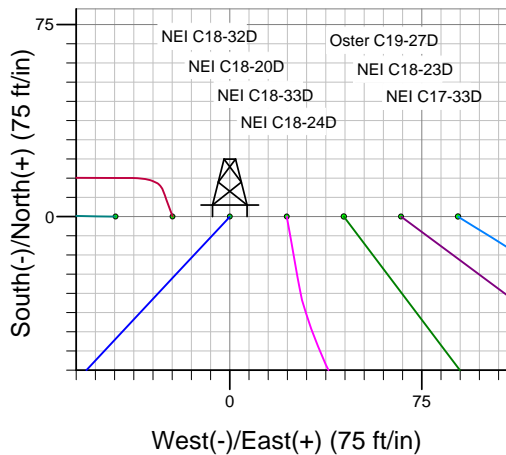
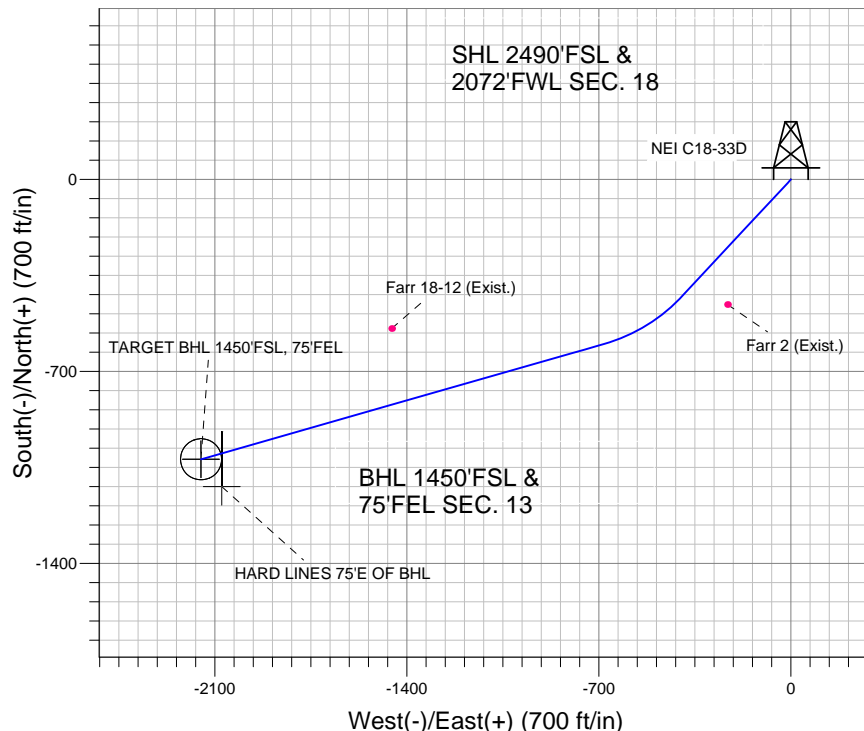
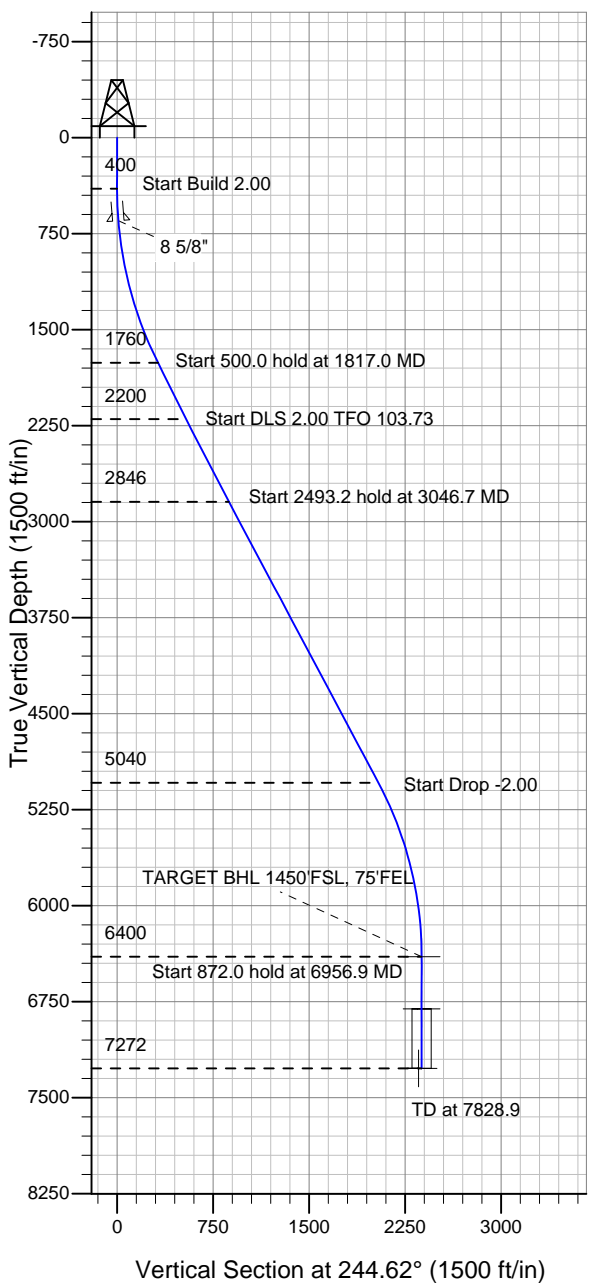
Surface Location: NEI C18-32 Pad Sec.18-T4N-R64W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

Ground Elevation: 4834.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1357747.60	3252467.14	40.311880	-104.594670	

Original Well Elev WELL @ 4847.0ft (Original Well Elev)

NOBLE ENERGY INC WELD COUNTY CO



NEI C18-32 Pad Sec.18-T4N-R64W
NEI C18-33D
Noble NEI C18-33D Plan #1 (6-21-11)
17:04, July 12 2011



Azimuths to True North
Magnetic North: 8.76°

Magnetic Field
Strength: 53101.7snT
Dip Angle: 67.01°
Date: 6/21/2011
Model: IGRF2010

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
TARGET BHL 1450'FSL, 75'FEL	6400.0	-1019.9	-2150.3	40.309080	-104.602380	Point
TARGET CIRCLE 1450'FSL & 75'FEL	6807.0	-1019.9	-2150.3	40.309080	-104.602380	Circle (Radius: 75.0)
HARD LINES 75'E OF BHL	7272.0	-1119.9	-2075.3	40.308806	-104.602111	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	400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.0	
3	1817.0	28.34	223.00	1759.9	-251.1	-234.2	2.00	223.00	319.2	
4	2317.0	28.34	223.00	2200.0	-424.7	-396.0	0.00	0.00	539.8	
5	3046.7	28.34	254.04	2845.7	-599.9	-682.2	2.00	103.73	873.5	
6	5539.8	28.34	254.04	5040.0	-925.5	-1820.1	0.00	0.00	2041.1	
7	6956.9	0.00	0.00	6400.0	-1019.9	-2150.3	2.00	180.00	2379.9	TARGET BHL 1450'FSL, 75'FEL
8	7828.9	0.00	0.00	7272.0	-1019.9	-2150.3	0.00	0.00	2379.9	



NOBLE ENERGY INC WELD COUNTY CO

SEC.18-T4N-R64W

NEI C18-32 Pad Sec.18-T4N-R64W

NEI C18-33D

Wellbore #1

Plan: Noble NEI C18-33D Plan #1 (6-21-11)

Standard Planning Report

12 July, 2011



Database:	Landmark	Local Co-ordinate Reference:	Well NEI C18-33D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4847.0ft (Original Well Elev)
Project:	SEC.18-T4N-R64W	MD Reference:	WELL @ 4847.0ft (Original Well Elev)
Site:	NEI C18-32 Pad Sec.18-T4N-R64W	North Reference:	True
Well:	NEI C18-33D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble NEI C18-33D Plan #1 (6-21-11)		

Project	SEC.18-T4N-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						NEI C18-32 Pad Sec.18-T4N-R64W											
Site Position:						Northing:			1,357,747.19 ft			Latitude:			40.311880		
From:			Lat/Long			Easting:			3,252,422.52 ft			Longitude:			-104.594830		
Position Uncertainty:			0.0 ft			Slot Radius:			"			Grid Convergence:			0.58 °		

Well	NEI C18-33D					
Well Position	+N/-S	0.0 ft	Northing:	1,357,747.60 ft	Latitude:	40.311880
	+E/-W	44.6 ft	Easting:	3,252,467.14 ft	Longitude:	-104.594670
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,834.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	6/21/2011	8.76	67.01	53,102

Design	Noble NEI C18-33D Plan #1 (6-21-11)			
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	244.62

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	
400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,817.0	28.34	223.00	1,759.9	-251.1	-234.2	2.00	2.00	0.00	223.00	
2,317.0	28.34	223.00	2,200.0	-424.7	-396.0	0.00	0.00	0.00	0.00	
3,046.7	28.34	254.04	2,845.7	-599.9	-682.2	2.00	0.00	4.25	103.73	
5,539.8	28.34	254.04	5,040.0	-925.5	-1,820.1	0.00	0.00	0.00	0.00	
6,956.9	0.00	0.00	6,400.0	-1,019.9	-2,150.3	2.00	-2.00	0.00	180.00	TARGET BHL 145C
7,828.9	0.00	0.00	7,272.0	-1,019.9	-2,150.3	0.00	0.00	0.00	0.00	

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Site:	NEI C18-32 Pad Sec.18-T4N-R64W	North Reference:	True
Well:	NEI C18-33D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble NEI C18-33D Plan #1 (6-21-11)		

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	0.80	223.00	440.0	-0.2	-0.2	0.3	2.00	2.00	0.00
480.0	1.60	223.00	480.0	-0.8	-0.8	1.0	2.00	2.00	0.00
520.0	2.40	223.00	520.0	-1.8	-1.7	2.3	2.00	2.00	0.00
560.0	3.20	223.00	559.9	-3.3	-3.0	4.2	2.00	2.00	0.00
600.0	4.00	223.00	599.8	-5.1	-4.8	6.5	2.00	2.00	0.00
640.0	4.80	223.00	639.7	-7.3	-6.9	9.3	2.00	2.00	0.00
650.3	5.01	223.00	650.0	-8.0	-7.5	10.2	2.00	2.00	0.00
8 5/8"									
680.0	5.60	223.00	679.6	-10.0	-9.3	12.7	2.00	2.00	0.00
720.0	6.40	223.00	719.3	-13.1	-12.2	16.6	2.00	2.00	0.00
760.0	7.20	223.00	759.1	-16.5	-15.4	21.0	2.00	2.00	0.00
800.0	8.00	223.00	798.7	-20.4	-19.0	25.9	2.00	2.00	0.00
840.0	8.80	223.00	838.3	-24.7	-23.0	31.3	2.00	2.00	0.00
880.0	9.60	223.00	877.8	-29.3	-27.4	37.3	2.00	2.00	0.00
920.0	10.40	223.00	917.1	-34.4	-32.1	43.8	2.00	2.00	0.00
960.0	11.20	223.00	956.4	-39.9	-37.2	50.7	2.00	2.00	0.00
1,000.0	12.00	223.00	995.6	-45.8	-42.7	58.2	2.00	2.00	0.00
1,040.0	12.80	223.00	1,034.7	-52.1	-48.6	66.2	2.00	2.00	0.00
1,080.0	13.60	223.00	1,073.6	-58.7	-54.8	74.7	2.00	2.00	0.00
1,120.0	14.40	223.00	1,112.4	-65.8	-61.4	83.7	2.00	2.00	0.00
1,160.0	15.20	223.00	1,151.1	-73.3	-68.3	93.2	2.00	2.00	0.00
1,200.0	16.00	223.00	1,189.6	-81.2	-75.7	103.2	2.00	2.00	0.00
1,240.0	16.80	223.00	1,228.0	-89.4	-83.4	113.7	2.00	2.00	0.00
1,280.0	17.60	223.00	1,266.2	-98.1	-91.5	124.7	2.00	2.00	0.00
1,320.0	18.40	223.00	1,304.3	-107.1	-99.9	136.2	2.00	2.00	0.00
1,360.0	19.20	223.00	1,342.1	-116.5	-108.7	148.1	2.00	2.00	0.00
1,400.0	20.00	223.00	1,379.8	-126.4	-117.8	160.6	2.00	2.00	0.00
1,440.0	20.80	223.00	1,417.3	-136.6	-127.3	173.6	2.00	2.00	0.00
1,480.0	21.60	223.00	1,454.6	-147.1	-137.2	187.0	2.00	2.00	0.00
1,520.0	22.40	223.00	1,491.7	-158.1	-147.4	200.9	2.00	2.00	0.00
1,560.0	23.20	223.00	1,528.6	-169.4	-158.0	215.4	2.00	2.00	0.00
1,600.0	24.00	223.00	1,565.2	-181.1	-168.9	230.2	2.00	2.00	0.00
1,640.0	24.80	223.00	1,601.6	-193.2	-180.2	245.6	2.00	2.00	0.00
1,680.0	25.60	223.00	1,637.8	-205.7	-191.8	261.4	2.00	2.00	0.00
1,720.0	26.40	223.00	1,673.8	-218.5	-203.8	277.7	2.00	2.00	0.00
1,760.0	27.20	223.00	1,709.5	-231.7	-216.1	294.5	2.00	2.00	0.00
1,800.0	28.00	223.00	1,744.9	-245.2	-228.7	311.7	2.00	2.00	0.00
1,817.0	28.34	223.00	1,759.9	-251.1	-234.2	319.2	2.00	2.00	0.00
1,840.0	28.34	223.00	1,780.2	-259.1	-241.6	329.3	0.00	0.00	0.00
1,880.0	28.34	223.00	1,815.4	-273.0	-254.6	347.0	0.00	0.00	0.00
1,920.0	28.34	223.00	1,850.6	-286.9	-267.5	364.6	0.00	0.00	0.00
1,960.0	28.34	223.00	1,885.8	-300.8	-280.5	382.3	0.00	0.00	0.00
2,000.0	28.34	223.00	1,921.0	-314.6	-293.4	399.9	0.00	0.00	0.00

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Site:	NEI C18-32 Pad Sec.18-T4N-R64W	North Reference:	True
Well:	NEI C18-33D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble NEI C18-33D Plan #1 (6-21-11)		

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)
2,040.0	28.34	223.00	1,956.2	-328.5	-306.4	417.6	0.00	0.00	0.00
2,080.0	28.34	223.00	1,991.4	-342.4	-319.3	435.3	0.00	0.00	0.00
2,120.0	28.34	223.00	2,026.6	-356.3	-332.3	452.9	0.00	0.00	0.00
2,160.0	28.34	223.00	2,061.8	-370.2	-345.2	470.6	0.00	0.00	0.00
2,200.0	28.34	223.00	2,097.0	-384.1	-358.2	488.2	0.00	0.00	0.00
2,240.0	28.34	223.00	2,132.2	-398.0	-371.1	505.9	0.00	0.00	0.00
2,280.0	28.34	223.00	2,167.4	-411.9	-384.1	523.5	0.00	0.00	0.00
2,317.0	28.34	223.00	2,200.0	-424.7	-396.0	539.8	0.00	0.00	0.00
2,320.0	28.33	223.12	2,202.6	-425.7	-397.0	541.2	2.00	-0.47	4.09
2,360.0	28.15	224.77	2,237.9	-439.4	-410.1	558.9	2.00	-0.45	4.12
2,400.0	27.99	226.44	2,273.2	-452.5	-423.6	576.7	2.00	-0.40	4.17
2,440.0	27.85	228.12	2,308.5	-465.2	-437.3	594.5	2.00	-0.35	4.21
2,480.0	27.73	229.82	2,343.9	-477.5	-451.4	612.5	2.00	-0.29	4.24
2,520.0	27.64	231.53	2,379.3	-489.3	-465.8	630.5	2.00	-0.24	4.27
2,560.0	27.56	233.25	2,414.8	-500.6	-480.5	648.6	2.00	-0.19	4.30
2,600.0	27.51	234.97	2,450.2	-511.4	-495.4	666.8	2.00	-0.14	4.32
2,640.0	27.47	236.70	2,485.7	-521.8	-510.7	685.1	2.00	-0.08	4.33
2,680.0	27.46	238.44	2,521.2	-531.7	-526.3	703.4	2.00	-0.03	4.34
2,720.0	27.47	240.17	2,556.7	-541.1	-542.2	721.7	2.00	0.02	4.34
2,760.0	27.50	241.91	2,592.2	-550.0	-558.3	740.2	2.00	0.08	4.33
2,800.0	27.55	243.63	2,627.7	-558.5	-574.7	758.6	2.00	0.13	4.32
2,840.0	27.63	245.35	2,663.1	-566.5	-591.5	777.2	2.00	0.18	4.30
2,880.0	27.72	247.06	2,698.5	-574.0	-608.5	795.7	2.00	0.24	4.28
2,920.0	27.84	248.76	2,733.9	-581.0	-625.7	814.3	2.00	0.29	4.25
2,960.0	27.98	250.45	2,769.3	-587.5	-643.3	833.0	2.00	0.34	4.21
3,000.0	28.13	252.11	2,804.6	-593.5	-661.1	851.7	2.00	0.39	4.17
3,040.0	28.31	253.76	2,839.8	-599.1	-679.2	870.4	2.00	0.44	4.12
3,046.7	28.34	254.04	2,845.7	-599.9	-682.2	873.5	2.00	0.47	4.10
3,080.0	28.34	254.04	2,875.0	-604.3	-697.4	889.1	0.00	0.00	0.00
3,120.0	28.34	254.04	2,910.2	-609.5	-715.7	907.9	0.00	0.00	0.00
3,160.0	28.34	254.04	2,945.4	-614.7	-733.9	926.6	0.00	0.00	0.00
3,200.0	28.34	254.04	2,980.7	-620.0	-752.2	945.3	0.00	0.00	0.00
3,240.0	28.34	254.04	3,015.9	-625.2	-770.5	964.1	0.00	0.00	0.00
3,280.0	28.34	254.04	3,051.1	-630.4	-788.7	982.8	0.00	0.00	0.00
3,320.0	28.34	254.04	3,086.3	-635.6	-807.0	1,001.5	0.00	0.00	0.00
3,360.0	28.34	254.04	3,121.5	-640.9	-825.2	1,020.3	0.00	0.00	0.00
3,400.0	28.34	254.04	3,156.7	-646.1	-843.5	1,039.0	0.00	0.00	0.00
3,440.0	28.34	254.04	3,191.9	-651.3	-861.7	1,057.7	0.00	0.00	0.00
3,480.0	28.34	254.04	3,227.1	-656.5	-880.0	1,076.5	0.00	0.00	0.00
3,520.0	28.34	254.04	3,262.3	-661.7	-898.3	1,095.2	0.00	0.00	0.00
3,560.0	28.34	254.04	3,297.5	-667.0	-916.5	1,113.9	0.00	0.00	0.00
3,600.0	28.34	254.04	3,332.7	-672.2	-934.8	1,132.7	0.00	0.00	0.00
3,640.0	28.34	254.04	3,367.9	-677.4	-953.0	1,151.4	0.00	0.00	0.00
3,680.0	28.34	254.04	3,403.1	-682.6	-971.3	1,170.1	0.00	0.00	0.00
3,720.0	28.34	254.04	3,438.3	-687.9	-989.5	1,188.9	0.00	0.00	0.00
3,760.0	28.34	254.04	3,473.5	-693.1	-1,007.8	1,207.6	0.00	0.00	0.00
3,800.0	28.34	254.04	3,508.7	-698.3	-1,026.1	1,226.3	0.00	0.00	0.00
3,840.0	28.34	254.04	3,543.9	-703.5	-1,044.3	1,245.1	0.00	0.00	0.00
3,880.0	28.34	254.04	3,579.1	-708.8	-1,062.6	1,263.8	0.00	0.00	0.00
3,920.0	28.34	254.04	3,614.3	-714.0	-1,080.8	1,282.5	0.00	0.00	0.00
3,960.0	28.34	254.04	3,649.6	-719.2	-1,099.1	1,301.3	0.00	0.00	0.00
4,000.0	28.34	254.04	3,684.8	-724.4	-1,117.3	1,320.0	0.00	0.00	0.00
4,040.0	28.34	254.04	3,720.0	-729.6	-1,135.6	1,338.7	0.00	0.00	0.00
4,080.0	28.34	254.04	3,755.2	-734.9	-1,153.9	1,357.5	0.00	0.00	0.00

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Well:	NEI C18-33D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble NEI C18-33D Plan #1 (6-21-11)		

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)
4,120.0	28.34	254.04	3,790.4	-740.1	-1,172.1	1,376.2	0.00	0.00	0.00
4,160.0	28.34	254.04	3,825.6	-745.3	-1,190.4	1,394.9	0.00	0.00	0.00
4,200.0	28.34	254.04	3,860.8	-750.5	-1,208.6	1,413.7	0.00	0.00	0.00
4,240.0	28.34	254.04	3,896.0	-755.8	-1,226.9	1,432.4	0.00	0.00	0.00
4,280.0	28.34	254.04	3,931.2	-761.0	-1,245.1	1,451.1	0.00	0.00	0.00
4,320.0	28.34	254.04	3,966.4	-766.2	-1,263.4	1,469.9	0.00	0.00	0.00
4,360.0	28.34	254.04	4,001.6	-771.4	-1,281.6	1,488.6	0.00	0.00	0.00
4,400.0	28.34	254.04	4,036.8	-776.7	-1,299.9	1,507.3	0.00	0.00	0.00
4,440.0	28.34	254.04	4,072.0	-781.9	-1,318.2	1,526.1	0.00	0.00	0.00
4,480.0	28.34	254.04	4,107.2	-787.1	-1,336.4	1,544.8	0.00	0.00	0.00
4,520.0	28.34	254.04	4,142.4	-792.3	-1,354.7	1,563.5	0.00	0.00	0.00
4,560.0	28.34	254.04	4,177.6	-797.5	-1,372.9	1,582.3	0.00	0.00	0.00
4,600.0	28.34	254.04	4,212.8	-802.8	-1,391.2	1,601.0	0.00	0.00	0.00
4,640.0	28.34	254.04	4,248.0	-808.0	-1,409.4	1,619.7	0.00	0.00	0.00
4,680.0	28.34	254.04	4,283.2	-813.2	-1,427.7	1,638.5	0.00	0.00	0.00
4,720.0	28.34	254.04	4,318.5	-818.4	-1,446.0	1,657.2	0.00	0.00	0.00
4,760.0	28.34	254.04	4,353.7	-823.7	-1,464.2	1,675.9	0.00	0.00	0.00
4,800.0	28.34	254.04	4,388.9	-828.9	-1,482.5	1,694.7	0.00	0.00	0.00
4,840.0	28.34	254.04	4,424.1	-834.1	-1,500.7	1,713.4	0.00	0.00	0.00
4,880.0	28.34	254.04	4,459.3	-839.3	-1,519.0	1,732.1	0.00	0.00	0.00
4,920.0	28.34	254.04	4,494.5	-844.5	-1,537.2	1,750.9	0.00	0.00	0.00
4,960.0	28.34	254.04	4,529.7	-849.8	-1,555.5	1,769.6	0.00	0.00	0.00
5,000.0	28.34	254.04	4,564.9	-855.0	-1,573.8	1,788.3	0.00	0.00	0.00
5,040.0	28.34	254.04	4,600.1	-860.2	-1,592.0	1,807.1	0.00	0.00	0.00
5,080.0	28.34	254.04	4,635.3	-865.4	-1,610.3	1,825.8	0.00	0.00	0.00
5,120.0	28.34	254.04	4,670.5	-870.7	-1,628.5	1,844.5	0.00	0.00	0.00
5,160.0	28.34	254.04	4,705.7	-875.9	-1,646.8	1,863.3	0.00	0.00	0.00
5,200.0	28.34	254.04	4,740.9	-881.1	-1,665.0	1,882.0	0.00	0.00	0.00
5,240.0	28.34	254.04	4,776.1	-886.3	-1,683.3	1,900.7	0.00	0.00	0.00
5,280.0	28.34	254.04	4,811.3	-891.6	-1,701.6	1,919.5	0.00	0.00	0.00
5,320.0	28.34	254.04	4,846.5	-896.8	-1,719.8	1,938.2	0.00	0.00	0.00
5,360.0	28.34	254.04	4,881.7	-902.0	-1,738.1	1,956.9	0.00	0.00	0.00
5,400.0	28.34	254.04	4,916.9	-907.2	-1,756.3	1,975.7	0.00	0.00	0.00
5,440.0	28.34	254.04	4,952.2	-912.4	-1,774.6	1,994.4	0.00	0.00	0.00
5,480.0	28.34	254.04	4,987.4	-917.7	-1,792.8	2,013.1	0.00	0.00	0.00
5,520.0	28.34	254.04	5,022.6	-922.9	-1,811.1	2,031.9	0.00	0.00	0.00
5,539.8	28.34	254.04	5,040.0	-925.5	-1,820.1	2,041.1	0.00	0.00	0.00
5,560.0	27.94	254.04	5,057.8	-928.1	-1,829.3	2,050.5	2.00	-2.00	0.00
5,600.0	27.14	254.04	5,093.3	-933.2	-1,847.1	2,068.8	2.00	-2.00	0.00
5,640.0	26.34	254.04	5,129.0	-938.1	-1,864.4	2,086.5	2.00	-2.00	0.00
5,680.0	25.54	254.04	5,165.0	-942.9	-1,881.2	2,103.8	2.00	-2.00	0.00
5,720.0	24.74	254.04	5,201.2	-947.6	-1,897.5	2,120.6	2.00	-2.00	0.00
5,760.0	23.94	254.04	5,237.6	-952.1	-1,913.4	2,136.8	2.00	-2.00	0.00
5,800.0	23.14	254.04	5,274.3	-956.5	-1,928.7	2,152.6	2.00	-2.00	0.00
5,840.0	22.34	254.04	5,311.2	-960.8	-1,943.6	2,167.8	2.00	-2.00	0.00
5,880.0	21.54	254.04	5,348.3	-964.9	-1,958.0	2,182.6	2.00	-2.00	0.00
5,920.0	20.74	254.04	5,385.6	-968.9	-1,971.8	2,196.8	2.00	-2.00	0.00
5,960.0	19.94	254.04	5,423.1	-972.7	-1,985.2	2,210.5	2.00	-2.00	0.00
6,000.0	19.14	254.04	5,460.8	-976.4	-1,998.1	2,223.7	2.00	-2.00	0.00
6,040.0	18.34	254.04	5,498.7	-979.9	-2,010.4	2,236.4	2.00	-2.00	0.00
6,080.0	17.54	254.04	5,536.7	-983.3	-2,022.3	2,248.5	2.00	-2.00	0.00
6,120.0	16.74	254.04	5,575.0	-986.5	-2,033.6	2,260.2	2.00	-2.00	0.00
6,160.0	15.94	254.04	5,613.3	-989.6	-2,044.4	2,271.3	2.00	-2.00	0.00
6,200.0	15.14	254.04	5,651.9	-992.6	-2,054.7	2,281.8	2.00	-2.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well NEI C18-33D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4847.0ft (Original Well Elev)
Project:	SEC.18-T4N-R64W	MD Reference:	WELL @ 4847.0ft (Original Well Elev)
Site:	NEI C18-32 Pad Sec.18-T4N-R64W	North Reference:	True
Well:	NEI C18-33D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble NEI C18-33D Plan #1 (6-21-11)		

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	14.34	254.04	5,690.6	-995.4	-2,064.5	2,291.9	2.00	-2.00	0.00
6,280.0	13.54	254.04	5,729.4	-998.0	-2,073.8	2,301.4	2.00	-2.00	0.00
6,320.0	12.74	254.04	5,768.3	-1,000.5	-2,082.5	2,310.4	2.00	-2.00	0.00
6,360.0	11.94	254.04	5,807.4	-1,002.9	-2,090.7	2,318.8	2.00	-2.00	0.00
6,400.0	11.14	254.04	5,846.6	-1,005.1	-2,098.4	2,326.7	2.00	-2.00	0.00
6,440.0	10.34	254.04	5,885.9	-1,007.1	-2,105.6	2,334.0	2.00	-2.00	0.00
6,480.0	9.54	254.04	5,925.3	-1,009.0	-2,112.2	2,340.8	2.00	-2.00	0.00
6,520.0	8.74	254.04	5,964.8	-1,010.8	-2,118.3	2,347.1	2.00	-2.00	0.00
6,560.0	7.94	254.04	6,004.4	-1,012.4	-2,123.9	2,352.8	2.00	-2.00	0.00
6,600.0	7.14	254.04	6,044.0	-1,013.8	-2,128.9	2,358.0	2.00	-2.00	0.00
6,640.0	6.34	254.04	6,083.7	-1,015.1	-2,133.5	2,362.6	2.00	-2.00	0.00
6,680.0	5.54	254.04	6,123.5	-1,016.2	-2,137.4	2,366.7	2.00	-2.00	0.00
6,720.0	4.74	254.04	6,163.4	-1,017.2	-2,140.9	2,370.3	2.00	-2.00	0.00
6,760.0	3.94	254.04	6,203.3	-1,018.1	-2,143.8	2,373.2	2.00	-2.00	0.00
6,800.0	3.14	254.04	6,243.2	-1,018.7	-2,146.2	2,375.7	2.00	-2.00	0.00
6,840.0	2.34	254.04	6,283.1	-1,019.3	-2,148.0	2,377.6	2.00	-2.00	0.00
6,880.0	1.54	254.04	6,323.1	-1,019.6	-2,149.3	2,378.9	2.00	-2.00	0.00
6,920.0	0.74	254.04	6,363.1	-1,019.9	-2,150.1	2,379.7	2.00	-2.00	0.00
6,956.9	0.00	0.00	6,400.0	-1,019.9	-2,150.3	2,379.9	2.00	-2.00	0.00
TARGET BHL 1450'FSL, 75'FEL									
6,960.0	0.00	0.00	6,403.1	-1,019.9	-2,150.3	2,379.9	0.00	0.00	0.00
7,000.0	0.00	0.00	6,443.1	-1,019.9	-2,150.3	2,379.9	0.00	0.00	0.00
7,040.0	0.00	0.00	6,483.1	-1,019.9	-2,150.3	2,379.9	0.00	0.00	0.00
7,080.0	0.00	0.00	6,523.1	-1,019.9	-2,150.3	2,379.9	0.00	0.00	0.00
7,120.0	0.00	0.00	6,563.1	-1,019.9	-2,150.3	2,379.9	0.00	0.00	0.00
7,160.0	0.00	0.00	6,603.1	-1,019.9	-2,150.3	2,379.9	0.00	0.00	0.00
7,200.0	0.00	0.00	6,643.1	-1,019.9	-2,150.3	2,379.9	0.00	0.00	0.00
7,240.0	0.00	0.00	6,683.1	-1,019.9	-2,150.3	2,379.9	0.00	0.00	0.00
7,280.0	0.00	0.00	6,723.1	-1,019.9	-2,150.3	2,379.9	0.00	0.00	0.00
7,320.0	0.00	0.00	6,763.1	-1,019.9	-2,150.3	2,379.9	0.00	0.00	0.00
7,360.0	0.00	0.00	6,803.1	-1,019.9	-2,150.3	2,379.9	0.00	0.00	0.00
7,363.9	0.00	0.00	6,807.0	-1,019.9	-2,150.3	2,379.9	0.00	0.00	0.00
NIOBRARA - TARGET CIRCLE 1450'FSL & 75'FEL									
7,400.0	0.00	0.00	6,843.1	-1,019.9	-2,150.3	2,379.9	0.00	0.00	0.00
7,440.0	0.00	0.00	6,883.1	-1,019.9	-2,150.3	2,379.9	0.00	0.00	0.00
7,480.0	0.00	0.00	6,923.1	-1,019.9	-2,150.3	2,379.9	0.00	0.00	0.00
7,520.0	0.00	0.00	6,963.1	-1,019.9	-2,150.3	2,379.9	0.00	0.00	0.00
7,560.0	0.00	0.00	7,003.1	-1,019.9	-2,150.3	2,379.9	0.00	0.00	0.00
7,600.0	0.00	0.00	7,043.1	-1,019.9	-2,150.3	2,379.9	0.00	0.00	0.00
7,640.0	0.00	0.00	7,083.1	-1,019.9	-2,150.3	2,379.9	0.00	0.00	0.00
7,678.9	0.00	0.00	7,122.0	-1,019.9	-2,150.3	2,379.9	0.00	0.00	0.00
CODELL									
7,680.0	0.00	0.00	7,123.1	-1,019.9	-2,150.3	2,379.9	0.00	0.00	0.00
7,720.0	0.00	0.00	7,163.1	-1,019.9	-2,150.3	2,379.9	0.00	0.00	0.00
7,760.0	0.00	0.00	7,203.1	-1,019.9	-2,150.3	2,379.9	0.00	0.00	0.00
7,800.0	0.00	0.00	7,243.1	-1,019.9	-2,150.3	2,379.9	0.00	0.00	0.00
7,828.9	0.00	0.00	7,272.0	-1,019.9	-2,150.3	2,379.9	0.00	0.00	0.00
HARD LINES 75'E OF BHL									

Database:	Landmark	Local Co-ordinate Reference:	Well NEI C18-33D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4847.0ft (Original Well Elev)
Project:	SEC.18-T4N-R64W	MD Reference:	WELL @ 4847.0ft (Original Well Elev)
Site:	NEI C18-32 Pad Sec.18-T4N-R64W	North Reference:	True
Well:	NEI C18-33D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble NEI C18-33D Plan #1 (6-21-11)		

Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
HARD LINES 75'E OF	0.00	0.00	7,272.0	-1,119.9	-2,075.3	1,356,606.64	3,250,403.47	40.308806	-104.602111
- plan misses target center by 125.0ft at 7828.9ft MD (7272.0 TVD, -1019.9 N, -2150.3 E)									
- Polygon									
Point 1			7,272.0	0.0	0.0	1,356,606.64	3,250,403.47		
Point 2			7,272.0	200.0	0.0	1,356,806.62	3,250,401.43		
TARGET BHL 1450'F:	0.00	0.00	6,400.0	-1,019.9	-2,150.3	1,356,705.83	3,250,327.47	40.309080	-104.602380
- plan hits target center									
- Point									
TARGET CIRCLE 145'	0.00	0.00	6,807.0	-1,019.9	-2,150.3	1,356,705.83	3,250,327.47	40.309080	-104.602380
- plan hits target center									
- Circle (radius 75.0)									

Casing Points					
	Measured Depth	Vertical Depth		Casing Diameter	Hole Diameter
	(ft)	(ft)	Name	(")	(")
	650.3	650.0	8 5/8"	8-5/8	12-1/4

Formations					
	Measured Depth	Vertical Depth		Dip	Dip Direction
	(ft)	(ft)	Name	(°)	(°)
	7,363.9	6,807.0	NIOBRARA	0.00	
	7,678.9	7,122.0	CODELL	0.00	