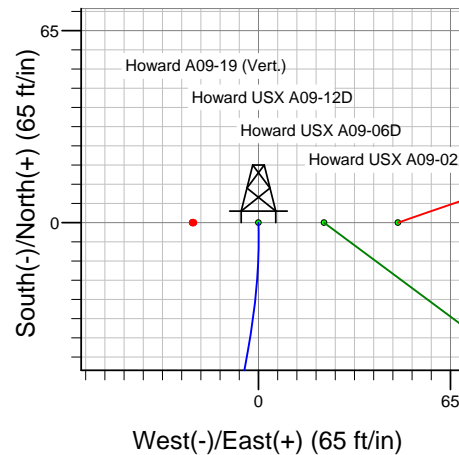
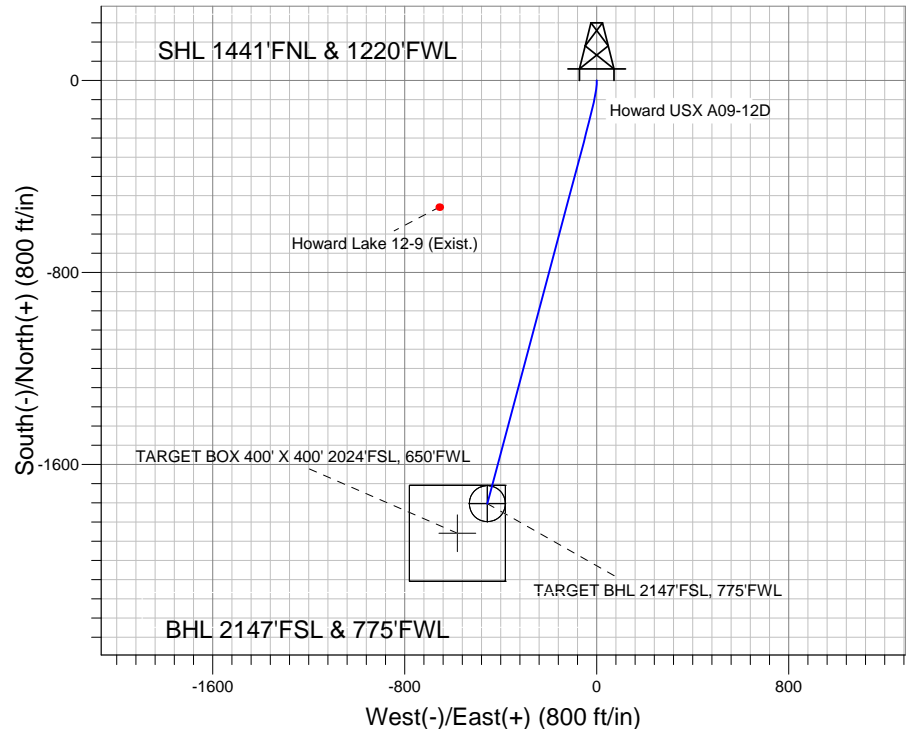
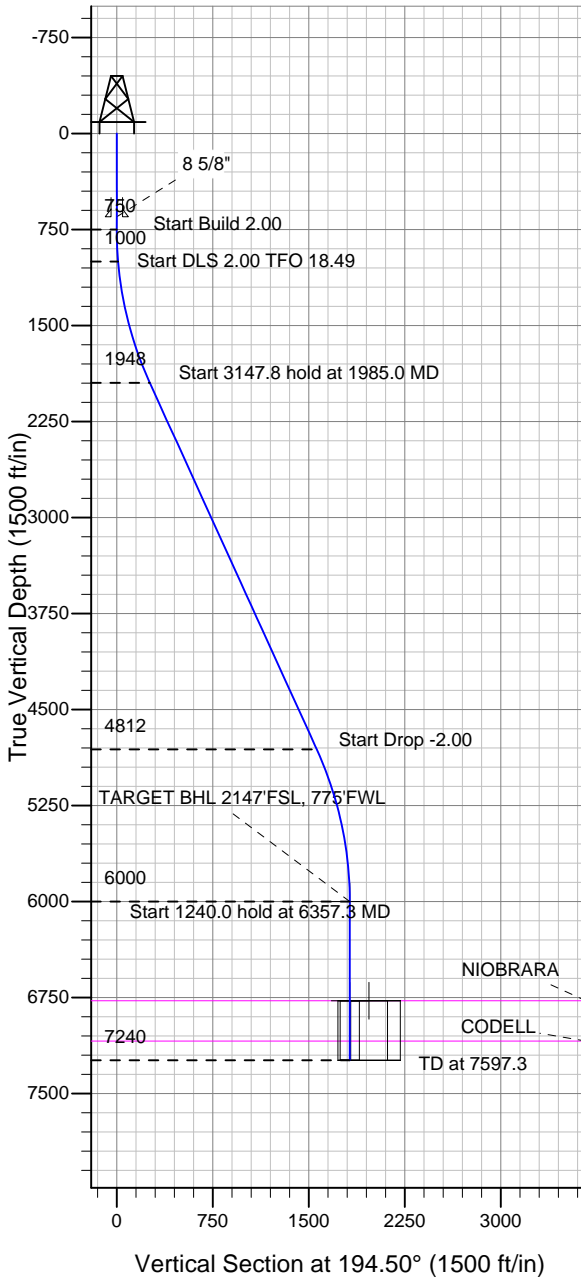


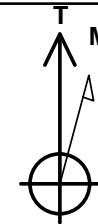
Well Name: Howard USX A09-12D

Surface Location: Howard USX A09-12D Pad Sec.9-T6N-R64W
 North American Datum 1983 US State Plane 1983 Colorado Northern Zone
 Ground Elevation: 4867.0
 +N/-S +E/-W Northing Easting Latitude Longitude Slot
 0.0 0.0 1427836.91 3261401.52 40.504010 -104.559970
 Original Well Elev WELL @ 4880.0ft (Original Well Elev)

NOBLE ENERGY INC WELD COUNTY CO



Howard USX A09-12D Pad Sec.9-T6N-R64W
 Howard USX A09-12D
 Noble Howard USX A09-12D Plan #1 (4-11-11)
 12:36, April 12 2011



Azimuths to True North
 Magnetic North: 8.79°

Magnetic Field
 Strength: 53226.4snT
 Dip Angle: 67.18°
 Date: 4/11/2011
 Model: IGRF2010

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
TARGET BHL 2147'FSL, 775'FWL	6000.0	-1763.3	-456.1	40.499170	-104.561610	Point
TARGET BOX 400' X 400' 2024'FSL, 650'FWL	6775.0	-1886.3	-581.1	40.498832	-104.562059	Rectangle (Sides: L400.0 W400.0)
TARGET CIRCLE 2147'FSL, 775'FWL	6775.0	-1763.3	-456.1	40.499170	-104.561610	Circle (Radius: 75.0)

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	750.0	0.00	0.00	750.0	0.0	0.0	0.00	0.00	0.0	
3	1000.0	5.00	180.00	999.7	-10.9	0.0	2.00	180.00	10.6	
4	1985.0	24.49	194.94	1947.8	-253.5	-53.2	2.00	18.49	258.7	
5	5132.8	24.49	194.94	4812.4	-1514.3	-389.6	0.00	0.00	1563.6	
6	6357.3	0.00	0.00	6000.0	-1763.3	-456.1	2.00	180.00	1821.3	TARGET BHL 2147'FSL, 775'FWL
7	7597.3	0.00	0.00	7240.0	-1763.3	-456.1	0.00	0.00	1821.3	



Directional

NOBLE ENERGY INC WELD COUNTY CO

SEC.9-T6N-R64W

Howard USX A09-12D Pad Sec.9-T6N-R64W

Howard USX A09-12D

Wellbore #1

Plan: Noble Howard USX A09-12D Plan #1 (4-11-11)

Standard Planning Report

12 April, 2011



Database:	Landmark	Local Co-ordinate Reference:	Well Howard USX A09-12D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4880.0ft (Original Well Elev)
Project:	SEC.9-T6N-R64W	MD Reference:	WELL @ 4880.0ft (Original Well Elev)
Site:	Howard USX A09-12D Pad Sec.9-T6N-R64W	North Reference:	True
Well:	Howard USX A09-12D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Howard USX A09-12D Plan #1 (4-11-11)		

Project	SEC.9-T6N-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						Howard USX A09-12D Pad Sec.9-T6N-R64W											
Site Position:						Northing:			1,427,836.92 ft			Latitude:			40.504010		
From:			Lat/Long			Easting:			3,261,401.52 ft			Longitude:			-104.559970		
Position Uncertainty:			0.0 ft			Slot Radius:			"			Grid Convergence:			0.61 °		

Well	Howard USX A09-12D					
Well Position	+N/-S	0.0 ft	Northing:	1,427,836.91 ft	Latitude:	40.504010
	+E/-W	0.0 ft	Easting:	3,261,401.52 ft	Longitude:	-104.559970
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,867.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	4/11/2011	8.79	67.18	53,226

Design	Noble Howard USX A09-12D Plan #1 (4-11-11)			
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	194.50

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	
750.0	0.00	0.00	750.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,000.0	5.00	180.00	999.7	-10.9	0.0	2.00	2.00	0.00	180.00	
1,985.0	24.49	194.94	1,947.8	-253.5	-53.2	2.00	1.98	1.52	18.49	
5,132.8	24.49	194.94	4,812.4	-1,514.3	-389.6	0.00	0.00	0.00	0.00	
6,357.3	0.00	0.00	6,000.0	-1,763.3	-456.1	2.00	-2.00	0.00	180.00	TARGET BHL 2147
7,597.3	0.00	0.00	7,240.0	-1,763.3	-456.1	0.00	0.00	0.00	0.00	

Database:	Landmark	Local Co-ordinate Reference:	Well Howard USX A09-12D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4880.0ft (Original Well Elev)
Project:	SEC.9-T6N-R64W	MD Reference:	WELL @ 4880.0ft (Original Well Elev)
Site:	Howard USX A09-12D Pad Sec.9-T6N-R64W	North Reference:	True
Well:	Howard USX A09-12D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Howard USX A09-12D Plan #1 (4-11-11)		

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	0.00	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
650.0	0.00	0.00	650.0	0.0	0.0	0.0	0.00	0.00	0.00
8 5/8"									
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
750.0	0.00	0.00	750.0	0.0	0.0	0.0	0.00	0.00	0.00
760.0	0.20	180.00	760.0	0.0	0.0	0.0	2.00	2.00	0.00
800.0	1.00	180.00	800.0	-0.4	0.0	0.4	2.00	2.00	0.00
840.0	1.80	180.00	840.0	-1.4	0.0	1.4	2.00	2.00	0.00
880.0	2.60	180.00	880.0	-2.9	0.0	2.9	2.00	2.00	0.00
920.0	3.40	180.00	919.9	-5.0	0.0	4.9	2.00	2.00	0.00
960.0	4.20	180.00	959.8	-7.7	0.0	7.4	2.00	2.00	0.00
1,000.0	5.00	180.00	999.7	-10.9	0.0	10.6	2.00	2.00	0.00
1,040.0	5.76	182.53	1,039.5	-14.7	-0.1	14.2	2.00	1.91	6.32
1,080.0	6.54	184.46	1,079.3	-18.9	-0.4	18.4	2.00	1.93	4.83
1,120.0	7.32	185.99	1,119.0	-23.7	-0.8	23.2	2.00	1.95	3.81
1,160.0	8.10	187.22	1,158.6	-29.1	-1.4	28.5	2.00	1.96	3.08
1,200.0	8.88	188.23	1,198.2	-34.9	-2.2	34.4	2.00	1.96	2.54
1,240.0	9.67	189.09	1,237.7	-41.3	-3.2	40.8	2.00	1.97	2.13
1,280.0	10.46	189.81	1,277.0	-48.2	-4.3	47.7	2.00	1.97	1.81
1,320.0	11.25	190.44	1,316.3	-55.6	-5.7	55.2	2.00	1.98	1.56
1,360.0	12.05	190.98	1,355.5	-63.5	-7.2	63.3	2.00	1.98	1.36
1,400.0	12.84	191.45	1,394.6	-72.0	-8.8	71.9	2.00	1.98	1.19
1,440.0	13.63	191.88	1,433.5	-81.0	-10.7	81.1	2.00	1.99	1.06
1,480.0	14.43	192.25	1,472.3	-90.4	-12.7	90.7	2.00	1.99	0.94
1,520.0	15.22	192.59	1,511.0	-100.4	-14.9	101.0	2.00	1.99	0.84
1,560.0	16.02	192.90	1,549.5	-110.9	-17.3	111.7	2.00	1.99	0.76
1,600.0	16.82	193.17	1,587.9	-122.0	-19.9	123.0	2.00	1.99	0.69
1,640.0	17.61	193.43	1,626.1	-133.5	-22.6	134.9	2.00	1.99	0.63
1,680.0	18.41	193.66	1,664.1	-145.5	-25.5	147.2	2.00	1.99	0.58
1,720.0	19.21	193.87	1,702.0	-158.0	-28.5	160.1	2.00	1.99	0.53
1,760.0	20.00	194.07	1,739.7	-171.1	-31.8	173.6	2.00	1.99	0.49
1,800.0	20.80	194.25	1,777.1	-184.6	-35.2	187.5	2.00	1.99	0.46
1,840.0	21.60	194.42	1,814.4	-198.6	-38.8	202.0	2.00	1.99	0.42
1,880.0	22.40	194.58	1,851.5	-213.1	-42.5	217.0	2.00	1.99	0.39
1,920.0	23.19	194.72	1,888.4	-228.1	-46.4	232.4	2.00	1.99	0.37
1,960.0	23.99	194.86	1,925.1	-243.6	-50.5	248.5	2.00	2.00	0.35
1,985.0	24.49	194.94	1,947.8	-253.5	-53.2	258.7	2.00	2.00	0.33

Database:	Landmark	Local Co-ordinate Reference:	Well Howard USX A09-12D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4880.0ft (Original Well Elev)
Project:	SEC.9-T6N-R64W	MD Reference:	WELL @ 4880.0ft (Original Well Elev)
Site:	Howard USX A09-12D Pad Sec.9-T6N-R64W	North Reference:	True
Well:	Howard USX A09-12D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Howard USX A09-12D Plan #1 (4-11-11)		

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)
2,000.0	24.49	194.94	1,961.5	-259.5	-54.8	264.9	0.00	0.00	0.00
2,040.0	24.49	194.94	1,997.9	-275.5	-59.0	281.5	0.00	0.00	0.00
2,080.0	24.49	194.94	2,034.3	-291.5	-63.3	298.1	0.00	0.00	0.00
2,120.0	24.49	194.94	2,070.7	-307.6	-67.6	314.7	0.00	0.00	0.00
2,160.0	24.49	194.94	2,107.1	-323.6	-71.9	331.3	0.00	0.00	0.00
2,200.0	24.49	194.94	2,143.5	-339.6	-76.2	347.8	0.00	0.00	0.00
2,240.0	24.49	194.94	2,179.9	-355.6	-80.4	364.4	0.00	0.00	0.00
2,280.0	24.49	194.94	2,216.3	-371.6	-84.7	381.0	0.00	0.00	0.00
2,320.0	24.49	194.94	2,252.7	-387.7	-89.0	397.6	0.00	0.00	0.00
2,360.0	24.49	194.94	2,289.1	-403.7	-93.3	414.2	0.00	0.00	0.00
2,400.0	24.49	194.94	2,325.5	-419.7	-97.5	430.8	0.00	0.00	0.00
2,440.0	24.49	194.94	2,361.9	-435.7	-101.8	447.3	0.00	0.00	0.00
2,480.0	24.49	194.94	2,398.3	-451.7	-106.1	463.9	0.00	0.00	0.00
2,520.0	24.49	194.94	2,434.7	-467.8	-110.4	480.5	0.00	0.00	0.00
2,560.0	24.49	194.94	2,471.1	-483.8	-114.6	497.1	0.00	0.00	0.00
2,600.0	24.49	194.94	2,507.5	-499.8	-118.9	513.7	0.00	0.00	0.00
2,640.0	24.49	194.94	2,543.9	-515.8	-123.2	530.2	0.00	0.00	0.00
2,680.0	24.49	194.94	2,580.3	-531.9	-127.5	546.8	0.00	0.00	0.00
2,720.0	24.49	194.94	2,616.7	-547.9	-131.7	563.4	0.00	0.00	0.00
2,760.0	24.49	194.94	2,653.1	-563.9	-136.0	580.0	0.00	0.00	0.00
2,800.0	24.49	194.94	2,689.5	-579.9	-140.3	596.6	0.00	0.00	0.00
2,840.0	24.49	194.94	2,725.9	-595.9	-144.6	613.1	0.00	0.00	0.00
2,880.0	24.49	194.94	2,762.3	-612.0	-148.8	629.7	0.00	0.00	0.00
2,920.0	24.49	194.94	2,798.7	-628.0	-153.1	646.3	0.00	0.00	0.00
2,960.0	24.49	194.94	2,835.1	-644.0	-157.4	662.9	0.00	0.00	0.00
3,000.0	24.49	194.94	2,871.5	-660.0	-161.7	679.5	0.00	0.00	0.00
3,040.0	24.49	194.94	2,907.9	-676.0	-165.9	696.1	0.00	0.00	0.00
3,080.0	24.49	194.94	2,944.3	-692.1	-170.2	712.6	0.00	0.00	0.00
3,120.0	24.49	194.94	2,980.7	-708.1	-174.5	729.2	0.00	0.00	0.00
3,160.0	24.49	194.94	3,017.1	-724.1	-178.8	745.8	0.00	0.00	0.00
3,200.0	24.49	194.94	3,053.5	-740.1	-183.0	762.4	0.00	0.00	0.00
3,240.0	24.49	194.94	3,089.9	-756.1	-187.3	779.0	0.00	0.00	0.00
3,280.0	24.49	194.94	3,126.3	-772.2	-191.6	795.5	0.00	0.00	0.00
3,320.0	24.49	194.94	3,162.7	-788.2	-195.9	812.1	0.00	0.00	0.00
3,360.0	24.49	194.94	3,199.1	-804.2	-200.1	828.7	0.00	0.00	0.00
3,400.0	24.49	194.94	3,235.5	-820.2	-204.4	845.3	0.00	0.00	0.00
3,440.0	24.49	194.94	3,271.9	-836.3	-208.7	861.9	0.00	0.00	0.00
3,480.0	24.49	194.94	3,308.3	-852.3	-213.0	878.5	0.00	0.00	0.00
3,520.0	24.49	194.94	3,344.7	-868.3	-217.3	895.0	0.00	0.00	0.00
3,560.0	24.49	194.94	3,381.1	-884.3	-221.5	911.6	0.00	0.00	0.00
3,600.0	24.49	194.94	3,417.6	-900.3	-225.8	928.2	0.00	0.00	0.00
3,640.0	24.49	194.94	3,454.0	-916.4	-230.1	944.8	0.00	0.00	0.00
3,680.0	24.49	194.94	3,490.4	-932.4	-234.4	961.4	0.00	0.00	0.00
3,720.0	24.49	194.94	3,526.8	-948.4	-238.6	977.9	0.00	0.00	0.00
3,760.0	24.49	194.94	3,563.2	-964.4	-242.9	994.5	0.00	0.00	0.00
3,800.0	24.49	194.94	3,599.6	-980.4	-247.2	1,011.1	0.00	0.00	0.00
3,840.0	24.49	194.94	3,636.0	-996.5	-251.5	1,027.7	0.00	0.00	0.00
3,880.0	24.49	194.94	3,672.4	-1,012.5	-255.7	1,044.3	0.00	0.00	0.00
3,920.0	24.49	194.94	3,708.8	-1,028.5	-260.0	1,060.8	0.00	0.00	0.00
3,960.0	24.49	194.94	3,745.2	-1,044.5	-264.3	1,077.4	0.00	0.00	0.00
4,000.0	24.49	194.94	3,781.6	-1,060.5	-268.6	1,094.0	0.00	0.00	0.00
4,040.0	24.49	194.94	3,818.0	-1,076.6	-272.8	1,110.6	0.00	0.00	0.00
4,080.0	24.49	194.94	3,854.4	-1,092.6	-277.1	1,127.2	0.00	0.00	0.00
4,120.0	24.49	194.94	3,890.8	-1,108.6	-281.4	1,143.8	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Howard USX A09-12D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4880.0ft (Original Well Elev)
Project:	SEC.9-T6N-R64W	MD Reference:	WELL @ 4880.0ft (Original Well Elev)
Site:	Howard USX A09-12D Pad Sec.9-T6N-R64W	North Reference:	True
Well:	Howard USX A09-12D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Howard USX A09-12D Plan #1 (4-11-11)		

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)
4,160.0	24.49	194.94	3,927.2	-1,124.6	-285.7	1,160.3	0.00	0.00	0.00
4,200.0	24.49	194.94	3,963.6	-1,140.7	-289.9	1,176.9	0.00	0.00	0.00
4,240.0	24.49	194.94	4,000.0	-1,156.7	-294.2	1,193.5	0.00	0.00	0.00
4,280.0	24.49	194.94	4,036.4	-1,172.7	-298.5	1,210.1	0.00	0.00	0.00
4,320.0	24.49	194.94	4,072.8	-1,188.7	-302.8	1,226.7	0.00	0.00	0.00
4,360.0	24.49	194.94	4,109.2	-1,204.7	-307.0	1,243.2	0.00	0.00	0.00
4,400.0	24.49	194.94	4,145.6	-1,220.8	-311.3	1,259.8	0.00	0.00	0.00
4,440.0	24.49	194.94	4,182.0	-1,236.8	-315.6	1,276.4	0.00	0.00	0.00
4,480.0	24.49	194.94	4,218.4	-1,252.8	-319.9	1,293.0	0.00	0.00	0.00
4,520.0	24.49	194.94	4,254.8	-1,268.8	-324.1	1,309.6	0.00	0.00	0.00
4,560.0	24.49	194.94	4,291.2	-1,284.8	-328.4	1,326.1	0.00	0.00	0.00
4,600.0	24.49	194.94	4,327.6	-1,300.9	-332.7	1,342.7	0.00	0.00	0.00
4,640.0	24.49	194.94	4,364.0	-1,316.9	-337.0	1,359.3	0.00	0.00	0.00
4,680.0	24.49	194.94	4,400.4	-1,332.9	-341.2	1,375.9	0.00	0.00	0.00
4,720.0	24.49	194.94	4,436.8	-1,348.9	-345.5	1,392.5	0.00	0.00	0.00
4,760.0	24.49	194.94	4,473.2	-1,365.0	-349.8	1,409.1	0.00	0.00	0.00
4,800.0	24.49	194.94	4,509.6	-1,381.0	-354.1	1,425.6	0.00	0.00	0.00
4,840.0	24.49	194.94	4,546.0	-1,397.0	-358.3	1,442.2	0.00	0.00	0.00
4,880.0	24.49	194.94	4,582.4	-1,413.0	-362.6	1,458.8	0.00	0.00	0.00
4,920.0	24.49	194.94	4,618.8	-1,429.0	-366.9	1,475.4	0.00	0.00	0.00
4,960.0	24.49	194.94	4,655.2	-1,445.1	-371.2	1,492.0	0.00	0.00	0.00
5,000.0	24.49	194.94	4,691.6	-1,461.1	-375.5	1,508.5	0.00	0.00	0.00
5,040.0	24.49	194.94	4,728.0	-1,477.1	-379.7	1,525.1	0.00	0.00	0.00
5,080.0	24.49	194.94	4,764.4	-1,493.1	-384.0	1,541.7	0.00	0.00	0.00
5,120.0	24.49	194.94	4,800.8	-1,509.1	-388.3	1,558.3	0.00	0.00	0.00
5,132.8	24.49	194.94	4,812.4	-1,514.3	-389.6	1,563.6	0.00	0.00	0.00
5,160.0	23.95	194.94	4,837.2	-1,525.0	-392.5	1,574.8	2.00	-2.00	0.00
5,200.0	23.15	194.94	4,873.9	-1,540.5	-396.6	1,590.7	2.00	-2.00	0.00
5,240.0	22.35	194.94	4,910.8	-1,555.4	-400.6	1,606.2	2.00	-2.00	0.00
5,280.0	21.55	194.94	4,947.9	-1,569.9	-404.5	1,621.1	2.00	-2.00	0.00
5,320.0	20.75	194.94	4,985.2	-1,583.8	-408.2	1,635.6	2.00	-2.00	0.00
5,360.0	19.95	194.94	5,022.7	-1,597.3	-411.8	1,649.5	2.00	-2.00	0.00
5,400.0	19.15	194.94	5,060.4	-1,610.2	-415.2	1,662.9	2.00	-2.00	0.00
5,440.0	18.35	194.94	5,098.3	-1,622.6	-418.6	1,675.7	2.00	-2.00	0.00
5,480.0	17.55	194.94	5,136.3	-1,634.5	-421.7	1,688.0	2.00	-2.00	0.00
5,520.0	16.75	194.94	5,174.6	-1,645.9	-424.8	1,699.8	2.00	-2.00	0.00
5,560.0	15.95	194.94	5,212.9	-1,656.8	-427.7	1,711.1	2.00	-2.00	0.00
5,600.0	15.15	194.94	5,251.5	-1,667.1	-430.4	1,721.8	2.00	-2.00	0.00
5,640.0	14.35	194.94	5,290.2	-1,677.0	-433.1	1,732.0	2.00	-2.00	0.00
5,680.0	13.55	194.94	5,329.0	-1,686.3	-435.6	1,741.6	2.00	-2.00	0.00
5,720.0	12.75	194.94	5,367.9	-1,695.1	-437.9	1,750.7	2.00	-2.00	0.00
5,760.0	11.95	194.94	5,407.0	-1,703.3	-440.1	1,759.3	2.00	-2.00	0.00
5,800.0	11.15	194.94	5,446.2	-1,711.1	-442.2	1,767.3	2.00	-2.00	0.00
5,840.0	10.35	194.94	5,485.5	-1,718.3	-444.1	1,774.7	2.00	-2.00	0.00
5,880.0	9.55	194.94	5,524.9	-1,725.0	-445.9	1,781.7	2.00	-2.00	0.00
5,920.0	8.75	194.94	5,564.4	-1,731.1	-447.5	1,788.0	2.00	-2.00	0.00
5,960.0	7.95	194.94	5,604.0	-1,736.7	-449.0	1,793.8	2.00	-2.00	0.00
6,000.0	7.15	194.94	5,643.6	-1,741.8	-450.4	1,799.1	2.00	-2.00	0.00
6,040.0	6.35	194.94	5,683.3	-1,746.3	-451.6	1,803.8	2.00	-2.00	0.00
6,080.0	5.55	194.94	5,723.1	-1,750.3	-452.6	1,807.9	2.00	-2.00	0.00
6,120.0	4.75	194.94	5,763.0	-1,753.8	-453.6	1,811.5	2.00	-2.00	0.00
6,160.0	3.95	194.94	5,802.9	-1,756.7	-454.4	1,814.5	2.00	-2.00	0.00
6,200.0	3.15	194.94	5,842.8	-1,759.1	-455.0	1,817.0	2.00	-2.00	0.00
6,240.0	2.35	194.94	5,882.7	-1,761.0	-455.5	1,818.9	2.00	-2.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Howard USX A09-12D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4880.0ft (Original Well Elev)
Project:	SEC.9-T6N-R64W	MD Reference:	WELL @ 4880.0ft (Original Well Elev)
Site:	Howard USX A09-12D Pad Sec.9-T6N-R64W	North Reference:	True
Well:	Howard USX A09-12D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Howard USX A09-12D Plan #1 (4-11-11)		

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)
6,280.0	1.55	194.94	5,922.7	-1,762.3	-455.8	1,820.3	2.00	-2.00	0.00
6,320.0	0.75	194.94	5,962.7	-1,763.1	-456.0	1,821.1	2.00	-2.00	0.00
6,357.3	0.00	0.00	6,000.0	-1,763.3	-456.1	1,821.3	2.00	-2.00	0.00
TARGET BHL 2147'FSL, 775'FWL									
6,360.0	0.00	0.00	6,002.7	-1,763.3	-456.1	1,821.3	0.00	0.00	0.00
6,400.0	0.00	0.00	6,042.7	-1,763.3	-456.1	1,821.3	0.00	0.00	0.00
6,440.0	0.00	0.00	6,082.7	-1,763.3	-456.1	1,821.3	0.00	0.00	0.00
6,480.0	0.00	0.00	6,122.7	-1,763.3	-456.1	1,821.3	0.00	0.00	0.00
6,520.0	0.00	0.00	6,162.7	-1,763.3	-456.1	1,821.3	0.00	0.00	0.00
6,560.0	0.00	0.00	6,202.7	-1,763.3	-456.1	1,821.3	0.00	0.00	0.00
6,600.0	0.00	0.00	6,242.7	-1,763.3	-456.1	1,821.3	0.00	0.00	0.00
6,640.0	0.00	0.00	6,282.7	-1,763.3	-456.1	1,821.3	0.00	0.00	0.00
6,680.0	0.00	0.00	6,322.7	-1,763.3	-456.1	1,821.3	0.00	0.00	0.00
6,720.0	0.00	0.00	6,362.7	-1,763.3	-456.1	1,821.3	0.00	0.00	0.00
6,760.0	0.00	0.00	6,402.7	-1,763.3	-456.1	1,821.3	0.00	0.00	0.00
6,800.0	0.00	0.00	6,442.7	-1,763.3	-456.1	1,821.3	0.00	0.00	0.00
6,840.0	0.00	0.00	6,482.7	-1,763.3	-456.1	1,821.3	0.00	0.00	0.00
6,880.0	0.00	0.00	6,522.7	-1,763.3	-456.1	1,821.3	0.00	0.00	0.00
6,920.0	0.00	0.00	6,562.7	-1,763.3	-456.1	1,821.3	0.00	0.00	0.00
6,960.0	0.00	0.00	6,602.7	-1,763.3	-456.1	1,821.3	0.00	0.00	0.00
7,000.0	0.00	0.00	6,642.7	-1,763.3	-456.1	1,821.3	0.00	0.00	0.00
7,040.0	0.00	0.00	6,682.7	-1,763.3	-456.1	1,821.3	0.00	0.00	0.00
7,080.0	0.00	0.00	6,722.7	-1,763.3	-456.1	1,821.3	0.00	0.00	0.00
7,120.0	0.00	0.00	6,762.7	-1,763.3	-456.1	1,821.3	0.00	0.00	0.00
7,132.3	0.00	0.00	6,775.0	-1,763.3	-456.1	1,821.3	0.00	0.00	0.00
NIOBRARA - TARGET CIRCLE 2147'FSL, 775'FWL - TARGET BOX 400' X 400' 2024'FSL, 650'FWL									
7,160.0	0.00	0.00	6,802.7	-1,763.3	-456.1	1,821.3	0.00	0.00	0.00
7,200.0	0.00	0.00	6,842.7	-1,763.3	-456.1	1,821.3	0.00	0.00	0.00
7,240.0	0.00	0.00	6,882.7	-1,763.3	-456.1	1,821.3	0.00	0.00	0.00
7,280.0	0.00	0.00	6,922.7	-1,763.3	-456.1	1,821.3	0.00	0.00	0.00
7,320.0	0.00	0.00	6,962.7	-1,763.3	-456.1	1,821.3	0.00	0.00	0.00
7,360.0	0.00	0.00	7,002.7	-1,763.3	-456.1	1,821.3	0.00	0.00	0.00
7,400.0	0.00	0.00	7,042.7	-1,763.3	-456.1	1,821.3	0.00	0.00	0.00
7,440.0	0.00	0.00	7,082.7	-1,763.3	-456.1	1,821.3	0.00	0.00	0.00
7,447.3	0.00	0.00	7,090.0	-1,763.3	-456.1	1,821.3	0.00	0.00	0.00
CODELL									
7,480.0	0.00	0.00	7,122.7	-1,763.3	-456.1	1,821.3	0.00	0.00	0.00
7,520.0	0.00	0.00	7,162.7	-1,763.3	-456.1	1,821.3	0.00	0.00	0.00
7,560.0	0.00	0.00	7,202.7	-1,763.3	-456.1	1,821.3	0.00	0.00	0.00
7,597.3	0.00	0.00	7,240.0	-1,763.3	-456.1	1,821.3	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Howard USX A09-12D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4880.0ft (Original Well Elev)
Project:	SEC.9-T6N-R64W	MD Reference:	WELL @ 4880.0ft (Original Well Elev)
Site:	Howard USX A09-12D Pad Sec.9-T6N-R64W	North Reference:	True
Well:	Howard USX A09-12D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Howard USX A09-12D Plan #1 (4-11-11)		

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)		
TARGET BHL 2147'F:	0.00	0.00	6,000.0	-1,763.3	-456.1	1,426,068.95	3,260,964.15	40.499170	-104.561610
- plan hits target center									
- Point									
TARGET CIRCLE 214	0.00	0.00	6,775.0	-1,763.3	-456.1	1,426,068.95	3,260,964.15	40.499170	-104.561610
- plan hits target center									
- Circle (radius 75.0)									
TARGET BOX 400' X	0.00	0.00	6,775.0	-1,886.3	-581.1	1,425,944.62	3,260,840.47	40.498832	-104.562059
- plan misses target center by 175.4ft at 7132.3ft MD (6775.0 TVD, -1763.3 N, -456.1 E)									
- Rectangle (sides W400.0 H400.0 D465.0)									

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

Formations						
	Measured Depth	Vertical Depth			Dip	Dip Direction
	(ft)	(ft)	Name	Lithology	(°)	(°)
	7,132.3	6,775.0	NIOBRARA		0.00	
	7,447.3	7,090.0	CODELL		0.00	