

ENSIGN

Directional

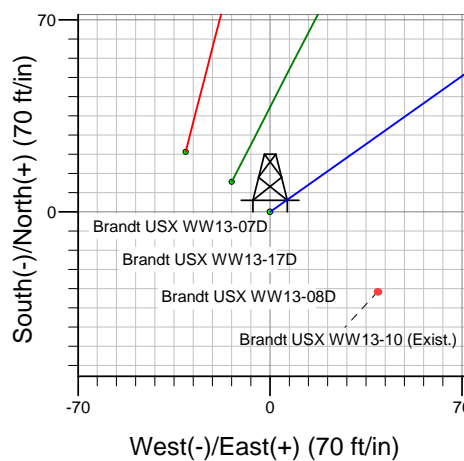
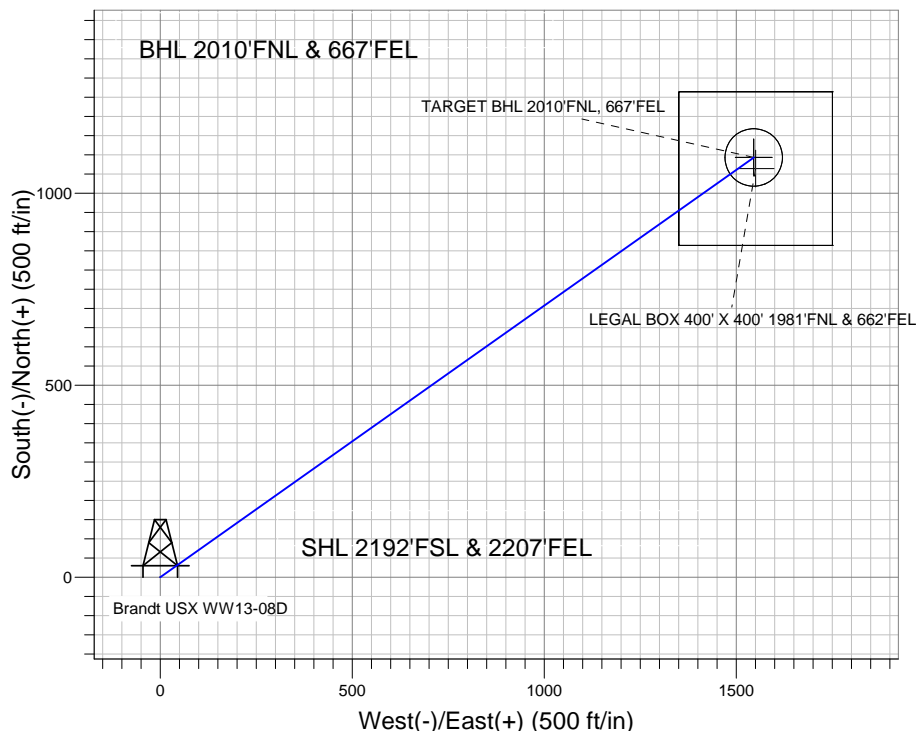
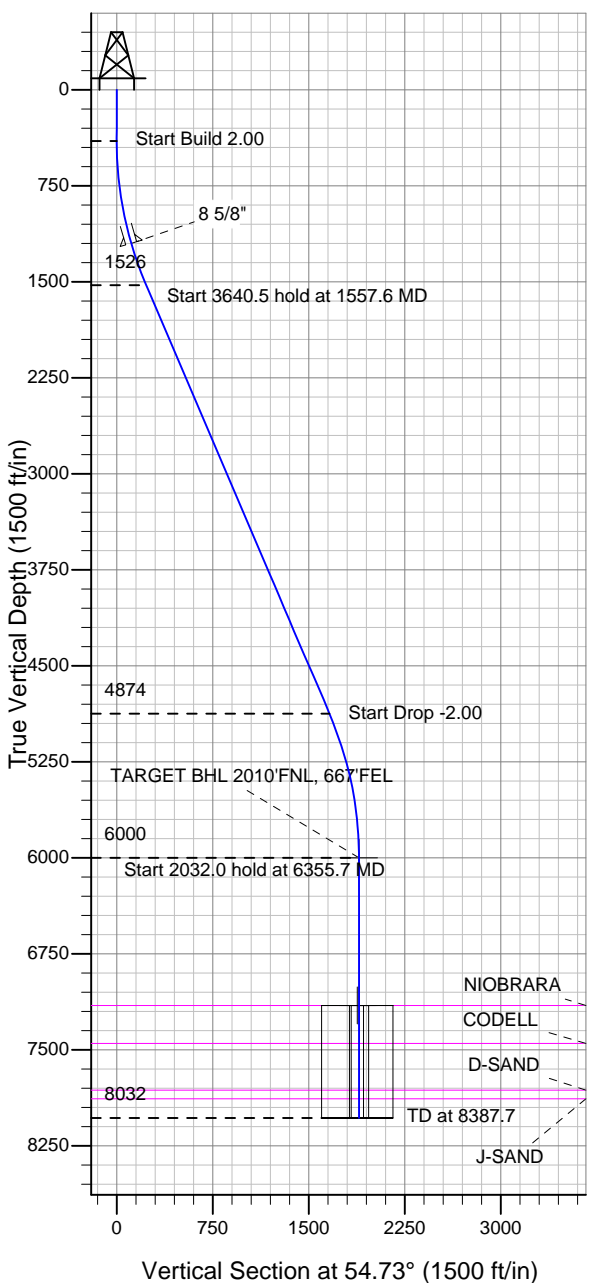
Well Name: Brandt USX WW13-08D

Surface Location: Brandt USX WW13-07D Pad Sec.13-T1N-R66W
 North American Datum 1983 US State Plane 1983 Colorado Northern Zone

Ground Elevation: 5047.0

+N/-S +E/-W Northing Easting Latitude Longitude Slot
 0.0 0.0 1262036.82 3217262.00 40.050070 -104.723910
 Original Well Elev WELL @ 5060.0ft (Original Well Elev)

NOBLE ENERGY INC WELD COUNTY CO



Brandt USX WW13-07D Pad Sec.13-T1N-R66W
 Brandt USX WW13-08D
 Noble Brandt USX WW13-08D Plan #2 (7-12-11)
 14:42, July 12 2011



Azimuths to True North
 Magnetic North: 8.80°

Magnetic Field
 Strength: 52941.9snT
 Dip Angle: 66.77°
 Date: 7/12/2011
 Model: IGRF2010

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
TARGET BHL 2010'FNL, 667'FEL	6000.0	1092.9	1545.3	40.053070	-104.718390	Point
LEGAL BOX 400' X 400' 1981'FNL & 662'FEL	7154.0	1063.9	1550.3	40.052990	-104.718372	Rectangle (Sides: L400.0 W400.0)
TARGET CIRCLE 2010'FNL & 667'FEL	7154.0	1092.9	1545.3	40.053070	-104.718390	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	400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.0	
3	1557.6	23.15	54.73	1526.3	133.2	188.4	2.00	54.73	230.7	
4	5198.1	23.15	54.73	4873.7	959.7	1356.9	0.00	0.00	1662.0	
5	6355.7	0.00	0.00	6000.0	1092.9	1545.3	2.00	180.00	1892.7	TARGET BHL 2010'FNL, 667'FEL
6	8387.7	0.00	0.00	8032.0	1092.9	1545.3	0.00	0.00	1892.7	



Directional

NOBLE ENERGY INC WELD COUNTY CO

SEC.13-T1N-R66W

Brandt USX WW13-07D Pad Sec.13-T1N-R66W

Brandt USX WW13-08D

Wellbore #1

Plan: Noble Brandt USX WW13-08D Plan #2 (7-12-11)

Standard Planning Report

12 July, 2011



Database:	Landmark	Local Co-ordinate Reference:	Well Brandt USX WW13-08D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 5060.0ft (Original Well Elev)
Project:	SEC.13-T1N-R66W	MD Reference:	WELL @ 5060.0ft (Original Well Elev)
Site:	Brandt USX WW13-07D Pad Sec.13-T1N-R66W	North Reference:	True
Well:	Brandt USX WW13-08D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Brandt USX WW13-08D Plan #2 (7-12-1		

Project	SEC.13-T1N-R66W, 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						Brandt USX WW13-07D Pad Sec.13-T1N-R66W											
Site Position:						Northing:			1,262,058.41 ft			Latitude:			40.050130		
From:			Lat/Long			Easting:			3,217,231.01 ft			Longitude:			-104.724020		
Position Uncertainty:			0.0 ft			Slot Radius:			"			Grid Convergence:			0.50 °		

Well	Brandt USX WW13-08D					
Well Position	+N/-S	-21.9 ft	Northing:	1,262,036.82 ft	Latitude:	40.050070
	+E/-W	30.8 ft	Easting:	3,217,262.00 ft	Longitude:	-104.723910
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	5,047.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/12/2011	8.80	66.77	52,942

Design	Noble Brandt USX WW13-08D Plan #2 (7-12-11)			
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	54.73

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	
1,557.6	23.15	54.73	1,526.3	133.2	188.4	2.00	2.00	0.00	54.73	
5,198.1	23.15	54.73	4,873.7	959.7	1,356.9	0.00	0.00	0.00	0.00	
6,355.7	0.00	0.00	6,000.0	1,092.9	1,545.3	2.00	-2.00	0.00	180.00	TARGET BHL 201C
8,387.7	0.00	0.00	8,032.0	1,092.9	1,545.3	0.00	0.00	0.00	0.00	

Database:	Landmark	Local Co-ordinate Reference:	Well Brandt USX WW13-08D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 5060.0ft (Original Well Elev)
Project:	SEC.13-T1N-R66W	MD Reference:	WELL @ 5060.0ft (Original Well Elev)
Site:	Brandt USX WW13-07D Pad Sec.13-T1N-R66W	North Reference:	True
Well:	Brandt USX WW13-08D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Brandt USX WW13-08D Plan #2 (7-12-1		

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	54.73	440.0	0.2	0.2	0.3	2.00	2.00	0.00
480.0	1.60	54.73	480.0	0.6	0.9	1.1	2.00	2.00	0.00
520.0	2.40	54.73	520.0	1.5	2.1	2.5	2.00	2.00	0.00
560.0	3.20	54.73	559.9	2.6	3.6	4.5	2.00	2.00	0.00
600.0	4.00	54.73	599.8	4.0	5.7	7.0	2.00	2.00	0.00
640.0	4.80	54.73	639.7	5.8	8.2	10.0	2.00	2.00	0.00
680.0	5.60	54.73	679.6	7.9	11.2	13.7	2.00	2.00	0.00
720.0	6.40	54.73	719.3	10.3	14.6	17.9	2.00	2.00	0.00
760.0	7.20	54.73	759.1	13.0	18.4	22.6	2.00	2.00	0.00
800.0	8.00	54.73	798.7	16.1	22.8	27.9	2.00	2.00	0.00
840.0	8.80	54.73	838.3	19.5	27.5	33.7	2.00	2.00	0.00
880.0	9.60	54.73	877.8	23.2	32.8	40.1	2.00	2.00	0.00
920.0	10.40	54.73	917.1	27.2	38.4	47.1	2.00	2.00	0.00
960.0	11.20	54.73	956.4	31.5	44.5	54.6	2.00	2.00	0.00
1,000.0	12.00	54.73	995.6	36.1	51.1	62.6	2.00	2.00	0.00
1,040.0	12.80	54.73	1,034.7	41.1	58.1	71.2	2.00	2.00	0.00
1,080.0	13.60	54.73	1,073.6	46.4	65.6	80.3	2.00	2.00	0.00
1,120.0	14.40	54.73	1,112.4	52.0	73.5	90.0	2.00	2.00	0.00
1,160.0	15.20	54.73	1,151.1	57.9	81.8	100.2	2.00	2.00	0.00
1,200.0	16.00	54.73	1,189.6	64.1	90.6	111.0	2.00	2.00	0.00
1,210.8	16.22	54.73	1,200.0	65.8	93.0	114.0	2.00	2.00	0.00
8 5/8"									
1,240.0	16.80	54.73	1,228.0	70.6	99.8	122.3	2.00	2.00	0.00
1,280.0	17.60	54.73	1,266.2	77.4	109.5	134.1	2.00	2.00	0.00
1,320.0	18.40	54.73	1,304.3	84.6	119.6	146.5	2.00	2.00	0.00
1,360.0	19.20	54.73	1,342.1	92.0	130.1	159.3	2.00	2.00	0.00
1,400.0	20.00	54.73	1,379.8	99.8	141.1	172.8	2.00	2.00	0.00
1,440.0	20.80	54.73	1,417.3	107.8	152.4	186.7	2.00	2.00	0.00
1,480.0	21.60	54.73	1,454.6	116.2	164.2	201.2	2.00	2.00	0.00
1,520.0	22.40	54.73	1,491.7	124.8	176.5	216.2	2.00	2.00	0.00
1,557.6	23.15	54.73	1,526.3	133.2	188.4	230.7	2.00	2.00	0.00
1,560.0	23.15	54.73	1,528.6	133.8	189.1	231.7	0.00	0.00	0.00
1,600.0	23.15	54.73	1,565.3	142.8	202.0	247.4	0.00	0.00	0.00
1,640.0	23.15	54.73	1,602.1	151.9	214.8	263.1	0.00	0.00	0.00
1,680.0	23.15	54.73	1,638.9	161.0	227.7	278.8	0.00	0.00	0.00
1,720.0	23.15	54.73	1,675.7	170.1	240.5	294.6	0.00	0.00	0.00
1,760.0	23.15	54.73	1,712.5	179.2	253.3	310.3	0.00	0.00	0.00
1,800.0	23.15	54.73	1,749.2	188.3	266.2	326.0	0.00	0.00	0.00
1,840.0	23.15	54.73	1,786.0	197.3	279.0	341.7	0.00	0.00	0.00
1,880.0	23.15	54.73	1,822.8	206.4	291.9	357.5	0.00	0.00	0.00
1,920.0	23.15	54.73	1,859.6	215.5	304.7	373.2	0.00	0.00	0.00
1,960.0	23.15	54.73	1,896.3	224.6	317.5	388.9	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Brandt USX WW13-08D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 5060.0ft (Original Well Elev)
Project:	SEC.13-T1N-R66W	MD Reference:	WELL @ 5060.0ft (Original Well Elev)
Site:	Brandt USX WW13-07D Pad Sec.13-T1N-R66W	North Reference:	True
Well:	Brandt USX WW13-08D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Brandt USX WW13-08D Plan #2 (7-12-1		

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	23.15	54.73	1,933.1	233.7	330.4	404.7	0.00	0.00	0.00
2,040.0	23.15	54.73	1,969.9	242.7	343.2	420.4	0.00	0.00	0.00
2,080.0	23.15	54.73	2,006.7	251.8	356.1	436.1	0.00	0.00	0.00
2,120.0	23.15	54.73	2,043.5	260.9	368.9	451.8	0.00	0.00	0.00
2,160.0	23.15	54.73	2,080.2	270.0	381.7	467.6	0.00	0.00	0.00
2,200.0	23.15	54.73	2,117.0	279.1	394.6	483.3	0.00	0.00	0.00
2,240.0	23.15	54.73	2,153.8	288.1	407.4	499.0	0.00	0.00	0.00
2,280.0	23.15	54.73	2,190.6	297.2	420.3	514.7	0.00	0.00	0.00
2,320.0	23.15	54.73	2,227.4	306.3	433.1	530.5	0.00	0.00	0.00
2,360.0	23.15	54.73	2,264.1	315.4	445.9	546.2	0.00	0.00	0.00
2,400.0	23.15	54.73	2,300.9	324.5	458.8	561.9	0.00	0.00	0.00
2,440.0	23.15	54.73	2,337.7	333.6	471.6	577.6	0.00	0.00	0.00
2,480.0	23.15	54.73	2,374.5	342.6	484.5	593.4	0.00	0.00	0.00
2,520.0	23.15	54.73	2,411.2	351.7	497.3	609.1	0.00	0.00	0.00
2,560.0	23.15	54.73	2,448.0	360.8	510.1	624.8	0.00	0.00	0.00
2,600.0	23.15	54.73	2,484.8	369.9	523.0	640.6	0.00	0.00	0.00
2,640.0	23.15	54.73	2,521.6	379.0	535.8	656.3	0.00	0.00	0.00
2,680.0	23.15	54.73	2,558.4	388.0	548.7	672.0	0.00	0.00	0.00
2,720.0	23.15	54.73	2,595.1	397.1	561.5	687.7	0.00	0.00	0.00
2,760.0	23.15	54.73	2,631.9	406.2	574.3	703.5	0.00	0.00	0.00
2,800.0	23.15	54.73	2,668.7	415.3	587.2	719.2	0.00	0.00	0.00
2,840.0	23.15	54.73	2,705.5	424.4	600.0	734.9	0.00	0.00	0.00
2,880.0	23.15	54.73	2,742.3	433.4	612.8	750.6	0.00	0.00	0.00
2,920.0	23.15	54.73	2,779.0	442.5	625.7	766.4	0.00	0.00	0.00
2,960.0	23.15	54.73	2,815.8	451.6	638.5	782.1	0.00	0.00	0.00
3,000.0	23.15	54.73	2,852.6	460.7	651.4	797.8	0.00	0.00	0.00
3,040.0	23.15	54.73	2,889.4	469.8	664.2	813.5	0.00	0.00	0.00
3,080.0	23.15	54.73	2,926.2	478.8	677.0	829.3	0.00	0.00	0.00
3,120.0	23.15	54.73	2,962.9	487.9	689.9	845.0	0.00	0.00	0.00
3,160.0	23.15	54.73	2,999.7	497.0	702.7	860.7	0.00	0.00	0.00
3,200.0	23.15	54.73	3,036.5	506.1	715.6	876.5	0.00	0.00	0.00
3,240.0	23.15	54.73	3,073.3	515.2	728.4	892.2	0.00	0.00	0.00
3,280.0	23.15	54.73	3,110.0	524.3	741.2	907.9	0.00	0.00	0.00
3,320.0	23.15	54.73	3,146.8	533.3	754.1	923.6	0.00	0.00	0.00
3,360.0	23.15	54.73	3,183.6	542.4	766.9	939.4	0.00	0.00	0.00
3,400.0	23.15	54.73	3,220.4	551.5	779.8	955.1	0.00	0.00	0.00
3,440.0	23.15	54.73	3,257.2	560.6	792.6	970.8	0.00	0.00	0.00
3,480.0	23.15	54.73	3,293.9	569.7	805.4	986.5	0.00	0.00	0.00
3,520.0	23.15	54.73	3,330.7	578.7	818.3	1,002.3	0.00	0.00	0.00
3,560.0	23.15	54.73	3,367.5	587.8	831.1	1,018.0	0.00	0.00	0.00
3,600.0	23.15	54.73	3,404.3	596.9	844.0	1,033.7	0.00	0.00	0.00
3,640.0	23.15	54.73	3,441.1	606.0	856.8	1,049.4	0.00	0.00	0.00
3,680.0	23.15	54.73	3,477.8	615.1	869.6	1,065.2	0.00	0.00	0.00
3,720.0	23.15	54.73	3,514.6	624.1	882.5	1,080.9	0.00	0.00	0.00
3,760.0	23.15	54.73	3,551.4	633.2	895.3	1,096.6	0.00	0.00	0.00
3,800.0	23.15	54.73	3,588.2	642.3	908.2	1,112.4	0.00	0.00	0.00
3,840.0	23.15	54.73	3,624.9	651.4	921.0	1,128.1	0.00	0.00	0.00
3,880.0	23.15	54.73	3,661.7	660.5	933.8	1,143.8	0.00	0.00	0.00
3,920.0	23.15	54.73	3,698.5	669.5	946.7	1,159.5	0.00	0.00	0.00
3,960.0	23.15	54.73	3,735.3	678.6	959.5	1,175.3	0.00	0.00	0.00
4,000.0	23.15	54.73	3,772.1	687.7	972.4	1,191.0	0.00	0.00	0.00
4,040.0	23.15	54.73	3,808.8	696.8	985.2	1,206.7	0.00	0.00	0.00
4,080.0	23.15	54.73	3,845.6	705.9	998.0	1,222.4	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Brandt USX WW13-08D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 5060.0ft (Original Well Elev)
Project:	SEC.13-T1N-R66W	MD Reference:	WELL @ 5060.0ft (Original Well Elev)
Site:	Brandt USX WW13-07D Pad Sec.13-T1N-R66W	North Reference:	True
Well:	Brandt USX WW13-08D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Brandt USX WW13-08D Plan #2 (7-12-1)		

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	23.15	54.73	3,882.4	715.0	1,010.9	1,238.2	0.00	0.00	0.00
4,160.0	23.15	54.73	3,919.2	724.0	1,023.7	1,253.9	0.00	0.00	0.00
4,200.0	23.15	54.73	3,956.0	733.1	1,036.6	1,269.6	0.00	0.00	0.00
4,240.0	23.15	54.73	3,992.7	742.2	1,049.4	1,285.3	0.00	0.00	0.00
4,280.0	23.15	54.73	4,029.5	751.3	1,062.2	1,301.1	0.00	0.00	0.00
4,320.0	23.15	54.73	4,066.3	760.4	1,075.1	1,316.8	0.00	0.00	0.00
4,360.0	23.15	54.73	4,103.1	769.4	1,087.9	1,332.5	0.00	0.00	0.00
4,400.0	23.15	54.73	4,139.8	778.5	1,100.8	1,348.2	0.00	0.00	0.00
4,440.0	23.15	54.73	4,176.6	787.6	1,113.6	1,364.0	0.00	0.00	0.00
4,480.0	23.15	54.73	4,213.4	796.7	1,126.4	1,379.7	0.00	0.00	0.00
4,520.0	23.15	54.73	4,250.2	805.8	1,139.3	1,395.4	0.00	0.00	0.00
4,560.0	23.15	54.73	4,287.0	814.8	1,152.1	1,411.2	0.00	0.00	0.00
4,600.0	23.15	54.73	4,323.7	823.9	1,165.0	1,426.9	0.00	0.00	0.00
4,640.0	23.15	54.73	4,360.5	833.0	1,177.8	1,442.6	0.00	0.00	0.00
4,680.0	23.15	54.73	4,397.3	842.1	1,190.6	1,458.3	0.00	0.00	0.00
4,720.0	23.15	54.73	4,434.1	851.2	1,203.5	1,474.1	0.00	0.00	0.00
4,760.0	23.15	54.73	4,470.9	860.3	1,216.3	1,489.8	0.00	0.00	0.00
4,800.0	23.15	54.73	4,507.6	869.3	1,229.2	1,505.5	0.00	0.00	0.00
4,840.0	23.15	54.73	4,544.4	878.4	1,242.0	1,521.2	0.00	0.00	0.00
4,880.0	23.15	54.73	4,581.2	887.5	1,254.8	1,537.0	0.00	0.00	0.00
4,920.0	23.15	54.73	4,618.0	896.6	1,267.7	1,552.7	0.00	0.00	0.00
4,960.0	23.15	54.73	4,654.8	905.7	1,280.5	1,568.4	0.00	0.00	0.00
5,000.0	23.15	54.73	4,691.5	914.7	1,293.4	1,584.1	0.00	0.00	0.00
5,040.0	23.15	54.73	4,728.3	923.8	1,306.2	1,599.9	0.00	0.00	0.00
5,080.0	23.15	54.73	4,765.1	932.9	1,319.0	1,615.6	0.00	0.00	0.00
5,120.0	23.15	54.73	4,801.9	942.0	1,331.9	1,631.3	0.00	0.00	0.00
5,160.0	23.15	54.73	4,838.6	951.1	1,344.7	1,647.1	0.00	0.00	0.00
5,198.1	23.15	54.73	4,873.7	959.7	1,356.9	1,662.0	0.00	0.00	0.00
5,200.0	23.11	54.73	4,875.4	960.1	1,357.6	1,662.8	2.00	-2.00	0.00
5,240.0	22.31	54.73	4,912.3	969.1	1,370.2	1,678.2	2.00	-2.00	0.00
5,280.0	21.51	54.73	4,949.4	977.7	1,382.4	1,693.2	2.00	-2.00	0.00
5,320.0	20.71	54.73	4,986.7	986.0	1,394.1	1,707.6	2.00	-2.00	0.00
5,360.0	19.91	54.73	5,024.3	994.0	1,405.5	1,721.4	2.00	-2.00	0.00
5,400.0	19.11	54.73	5,062.0	1,001.7	1,416.4	1,734.8	2.00	-2.00	0.00
5,440.0	18.31	54.73	5,099.8	1,009.1	1,426.8	1,747.6	2.00	-2.00	0.00
5,480.0	17.51	54.73	5,137.9	1,016.2	1,436.9	1,759.9	2.00	-2.00	0.00
5,520.0	16.71	54.73	5,176.1	1,023.0	1,446.5	1,771.7	2.00	-2.00	0.00
5,560.0	15.91	54.73	5,214.5	1,029.5	1,455.7	1,783.0	2.00	-2.00	0.00
5,600.0	15.11	54.73	5,253.1	1,035.7	1,464.4	1,793.7	2.00	-2.00	0.00
5,640.0	14.31	54.73	5,291.8	1,041.6	1,472.7	1,803.8	2.00	-2.00	0.00
5,680.0	13.51	54.73	5,330.6	1,047.1	1,480.6	1,813.4	2.00	-2.00	0.00
5,720.0	12.71	54.73	5,369.5	1,052.4	1,488.0	1,822.5	2.00	-2.00	0.00
5,760.0	11.91	54.73	5,408.6	1,057.3	1,494.9	1,831.0	2.00	-2.00	0.00
5,800.0	11.11	54.73	5,447.8	1,061.9	1,501.4	1,839.0	2.00	-2.00	0.00
5,840.0	10.31	54.73	5,487.1	1,066.2	1,507.5	1,846.5	2.00	-2.00	0.00
5,880.0	9.51	54.73	5,526.5	1,070.2	1,513.1	1,853.3	2.00	-2.00	0.00
5,920.0	8.71	54.73	5,566.0	1,073.8	1,518.3	1,859.7	2.00	-2.00	0.00
5,960.0	7.91	54.73	5,605.6	1,077.2	1,523.0	1,865.5	2.00	-2.00	0.00
6,000.0	7.11	54.73	5,645.2	1,080.2	1,527.3	1,870.7	2.00	-2.00	0.00
6,040.0	6.31	54.73	5,685.0	1,082.9	1,531.1	1,875.4	2.00	-2.00	0.00
6,080.0	5.51	54.73	5,724.8	1,085.3	1,534.5	1,879.5	2.00	-2.00	0.00
6,120.0	4.71	54.73	5,764.6	1,087.3	1,537.4	1,883.0	2.00	-2.00	0.00
6,160.0	3.91	54.73	5,804.5	1,089.1	1,539.9	1,886.1	2.00	-2.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Brandt USX WW13-08D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 5060.0ft (Original Well Elev)
Project:	SEC.13-T1N-R66W	MD Reference:	WELL @ 5060.0ft (Original Well Elev)
Site:	Brandt USX WW13-07D Pad Sec.13-T1N-R66W	North Reference:	True
Well:	Brandt USX WW13-08D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Brandt USX WW13-08D Plan #2 (7-12-1		

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	3.11	54.73	5,844.4	1,090.5	1,541.9	1,888.5	2.00	-2.00	0.00	
6,240.0	2.31	54.73	5,884.4	1,091.6	1,543.4	1,890.4	2.00	-2.00	0.00	
6,280.0	1.51	54.73	5,924.3	1,092.3	1,544.5	1,891.7	2.00	-2.00	0.00	
6,320.0	0.71	54.73	5,964.3	1,092.8	1,545.1	1,892.5	2.00	-2.00	0.00	
6,355.7	0.00	0.00	6,000.0	1,092.9	1,545.3	1,892.7	2.00	-2.00	-153.45	
TARGET BHL 2010'FNL, 667'FEL										
6,360.0	0.00	0.00	6,004.3	1,092.9	1,545.3	1,892.7	0.00	0.00	0.00	
6,400.0	0.00	0.00	6,044.3	1,092.9	1,545.3	1,892.7	0.00	0.00	0.00	
6,440.0	0.00	0.00	6,084.3	1,092.9	1,545.3	1,892.7	0.00	0.00	0.00	
6,480.0	0.00	0.00	6,124.3	1,092.9	1,545.3	1,892.7	0.00	0.00	0.00	
6,520.0	0.00	0.00	6,164.3	1,092.9	1,545.3	1,892.7	0.00	0.00	0.00	
6,560.0	0.00	0.00	6,204.3	1,092.9	1,545.3	1,892.7	0.00	0.00	0.00	
6,600.0	0.00	0.00	6,244.3	1,092.9	1,545.3	1,892.7	0.00	0.00	0.00	
6,640.0	0.00	0.00	6,284.3	1,092.9	1,545.3	1,892.7	0.00	0.00	0.00	
6,680.0	0.00	0.00	6,324.3	1,092.9	1,545.3	1,892.7	0.00	0.00	0.00	
6,720.0	0.00	0.00	6,364.3	1,092.9	1,545.3	1,892.7	0.00	0.00	0.00	
6,760.0	0.00	0.00	6,404.3	1,092.9	1,545.3	1,892.7	0.00	0.00	0.00	
6,800.0	0.00	0.00	6,444.3	1,092.9	1,545.3	1,892.7	0.00	0.00	0.00	
6,840.0	0.00	0.00	6,484.3	1,092.9	1,545.3	1,892.7	0.00	0.00	0.00	
6,880.0	0.00	0.00	6,524.3	1,092.9	1,545.3	1,892.7	0.00	0.00	0.00	
6,920.0	0.00	0.00	6,564.3	1,092.9	1,545.3	1,892.7	0.00	0.00	0.00	
6,960.0	0.00	0.00	6,604.3	1,092.9	1,545.3	1,892.7	0.00	0.00	0.00	
7,000.0	0.00	0.00	6,644.3	1,092.9	1,545.3	1,892.7	0.00	0.00	0.00	
7,040.0	0.00	0.00	6,684.3	1,092.9	1,545.3	1,892.7	0.00	0.00	0.00	
7,080.0	0.00	0.00	6,724.3	1,092.9	1,545.3	1,892.7	0.00	0.00	0.00	
7,120.0	0.00	0.00	6,764.3	1,092.9	1,545.3	1,892.7	0.00	0.00	0.00	
7,160.0	0.00	0.00	6,804.3	1,092.9	1,545.3	1,892.7	0.00	0.00	0.00	
7,200.0	0.00	0.00	6,844.3	1,092.9	1,545.3	1,892.7	0.00	0.00	0.00	
7,240.0	0.00	0.00	6,884.3	1,092.9	1,545.3	1,892.7	0.00	0.00	0.00	
7,280.0	0.00	0.00	6,924.3	1,092.9	1,545.3	1,892.7	0.00	0.00	0.00	
7,320.0	0.00	0.00	6,964.3	1,092.9	1,545.3	1,892.7	0.00	0.00	0.00	
7,360.0	0.00	0.00	7,004.3	1,092.9	1,545.3	1,892.7	0.00	0.00	0.00	
7,400.0	0.00	0.00	7,044.3	1,092.9	1,545.3	1,892.7	0.00	0.00	0.00	
7,440.0	0.00	0.00	7,084.3	1,092.9	1,545.3	1,892.7	0.00	0.00	0.00	
7,480.0	0.00	0.00	7,124.3	1,092.9	1,545.3	1,892.7	0.00	0.00	0.00	
7,509.7	0.00	0.00	7,154.0	1,092.9	1,545.3	1,892.7	0.00	0.00	0.00	
NIOBRARA - TARGET CIRCLE 2010'FNL & 667'FEL - LEGAL BOX 400' X 400' 1981'FNL & 662'FEL										
7,520.0	0.00	0.00	7,164.3	1,092.9	1,545.3	1,892.7	0.00	0.00	0.00	
7,560.0	0.00	0.00	7,204.3	1,092.9	1,545.3	1,892.7	0.00	0.00	0.00	
7,600.0	0.00	0.00	7,244.3	1,092.9	1,545.3	1,892.7	0.00	0.00	0.00	
7,640.0	0.00	0.00	7,284.3	1,092.9	1,545.3	1,892.7	0.00	0.00	0.00	
7,680.0	0.00	0.00	7,324.3	1,092.9	1,545.3	1,892.7	0.00	0.00	0.00	
7,720.0	0.00	0.00	7,364.3	1,092.9	1,545.3	1,892.7	0.00	0.00	0.00	
7,760.0	0.00	0.00	7,404.3	1,092.9	1,545.3	1,892.7	0.00	0.00	0.00	
7,800.0	0.00	0.00	7,444.3	1,092.9	1,545.3	1,892.7	0.00	0.00	0.00	
7,805.7	0.00	0.00	7,450.0	1,092.9	1,545.3	1,892.7	0.00	0.00	0.00	
CODELL										
7,840.0	0.00	0.00	7,484.3	1,092.9	1,545.3	1,892.7	0.00	0.00	0.00	
7,880.0	0.00	0.00	7,524.3	1,092.9	1,545.3	1,892.7	0.00	0.00	0.00	
7,920.0	0.00	0.00	7,564.3	1,092.9	1,545.3	1,892.7	0.00	0.00	0.00	
7,960.0	0.00	0.00	7,604.3	1,092.9	1,545.3	1,892.7	0.00	0.00	0.00	
8,000.0	0.00	0.00	7,644.3	1,092.9	1,545.3	1,892.7	0.00	0.00	0.00	
8,040.0	0.00	0.00	7,684.3	1,092.9	1,545.3	1,892.7	0.00	0.00	0.00	

Database:	Landmark	Local Co-ordinate Reference:	Well Brandt USX WW13-08D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 5060.0ft (Original Well Elev)
Project:	SEC.13-T1N-R66W	MD Reference:	WELL @ 5060.0ft (Original Well Elev)
Site:	Brandt USX WW13-07D Pad Sec.13-T1N-R66W	North Reference:	True
Well:	Brandt USX WW13-08D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Brandt USX WW13-08D Plan #2 (7-12-1		

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)	
8,080.0	0.00	0.00	7,724.3	1,092.9	1,545.3	1,892.7	0.00	0.00	0.00	
8,120.0	0.00	0.00	7,764.3	1,092.9	1,545.3	1,892.7	0.00	0.00	0.00	
8,160.0	0.00	0.00	7,804.3	1,092.9	1,545.3	1,892.7	0.00	0.00	0.00	
8,170.7	0.00	0.00	7,815.0	1,092.9	1,545.3	1,892.7	0.00	0.00	0.00	
D-SAND										
8,200.0	0.00	0.00	7,844.3	1,092.9	1,545.3	1,892.7	0.00	0.00	0.00	
8,237.7	0.00	0.00	7,882.0	1,092.9	1,545.3	1,892.7	0.00	0.00	0.00	
J-SAND										
8,240.0	0.00	0.00	7,884.3	1,092.9	1,545.3	1,892.7	0.00	0.00	0.00	
8,280.0	0.00	0.00	7,924.3	1,092.9	1,545.3	1,892.7	0.00	0.00	0.00	
8,320.0	0.00	0.00	7,964.3	1,092.9	1,545.3	1,892.7	0.00	0.00	0.00	
8,360.0	0.00	0.00	8,004.3	1,092.9	1,545.3	1,892.7	0.00	0.00	0.00	
8,387.7	0.00	0.00	8,032.0	1,092.9	1,545.3	1,892.7	0.00	0.00	0.00	

Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude	
- hit/miss target										
- Shape										
TARGET CIRCLE 201	0.00	0.00	7,154.0	1,092.9	1,545.3	1,263,143.18	3,218,797.62	40.053070	-104.718390	
- plan hits target center										
- Circle (radius 75.0)										
TARGET BHL 2010'F	0.00	0.00	6,000.0	1,092.9	1,545.3	1,263,143.18	3,218,797.62	40.053070	-104.718390	
- plan hits target center										
- Point										
LEGAL BOX 400' X 400'	0.00	0.00	7,154.0	1,063.9	1,550.3	1,263,114.20	3,218,802.86	40.052990	-104.718372	
- plan misses target center by 29.5ft at 7509.7ft MD (7154.0 TVD, 1092.9 N, 1545.3 E)										
- Rectangle (sides W400.0 H400.0 D878.0)										

Casing Points						
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")		
1,210.8	1,200.0	8 5/8"	8-5/8	12-1/4		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
7,509.7	7,154.0	NIOBRARA		0.00		
7,805.7	7,450.0	CODELL		0.00		
8,170.7	7,815.0	D-SAND		0.00		
8,237.7	7,882.0	J-SAND		0.00		