

ENSIGN

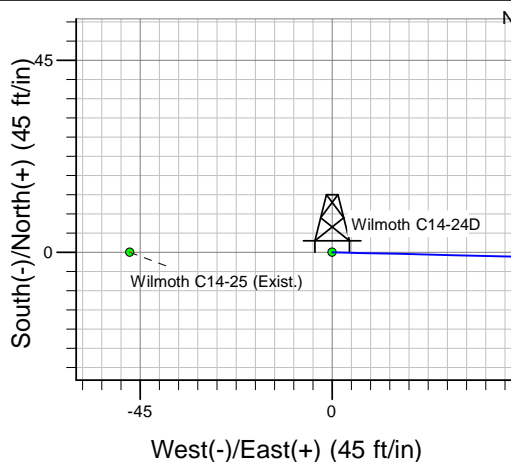
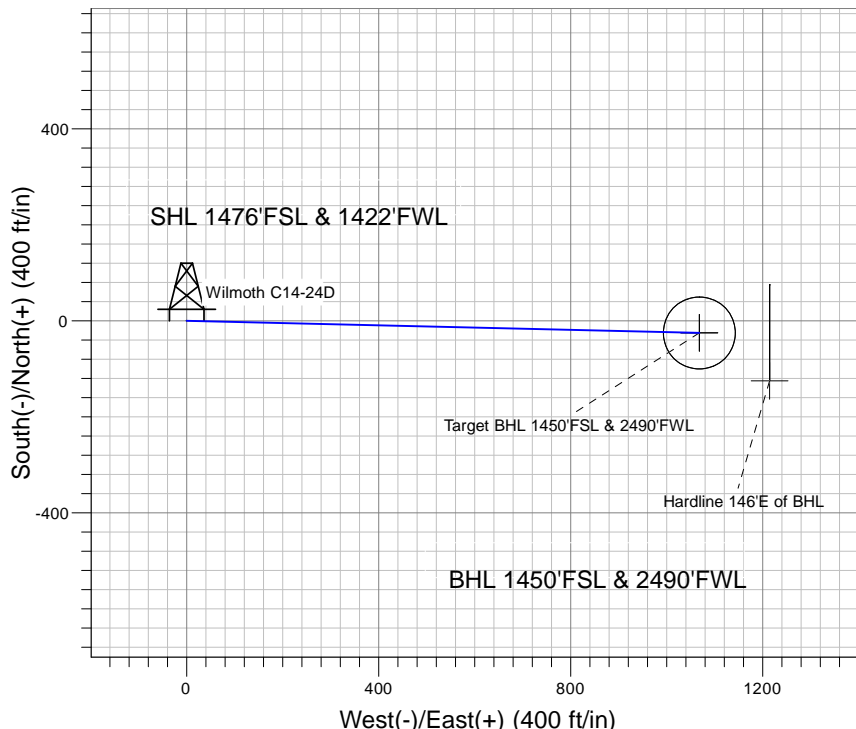
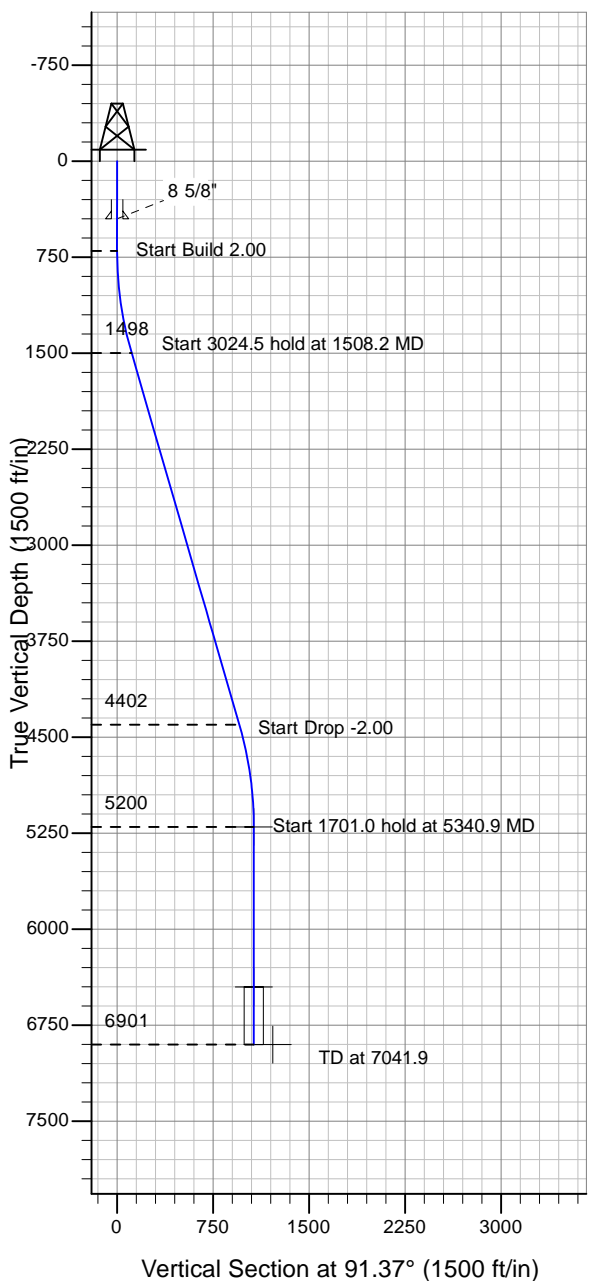
Directional

Well Name: Wilmoth C14-24D

Surface Location: Noble Wilmoth C14-24D Pad Sec. 14-T4N-R64W
 North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
 Ground Elevation: 4648.0

+N/-S+E/-W Northing Easting Latitude Longitude Slot
 0.0 0.0 1357015.06 3272680.74 40° 18' 33.408 N 104° 31' 19.992 W
 Original Well Elev WELL @ 4661.0ft (Original Well Elev)

NOBLE ENERGY INC WELD COUNTY CO



Noble Wilmoth C14-24D Pad Sec. 14-T4N-R64W
 Wilmoth C14-24D
 Noble Wilmoth C14-24D Plan #1 (7-15-10)
 17:14, July 19 2010



Azimuths to True North
 Magnetic North: 8.85°
 Magnetic Field
 Strength: 53208.5nT
 Dip Angle: 67.05°
 Date: 7/15/2010
 Model: IGRF2010

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Target BHL 1450'FSL & 2490'FWL	5200.0	-25.5	1068.2	40° 18' 33.156 N	104° 31' 6.204 W	Point
Target Circle 1450'FSL & 2490'FWL	6451.0	-25.5	1068.2	40° 18' 33.156 N	104° 31' 6.204 W	Circle (Radius: 75.0)
Hardline 146'E of BHL	6901.0	-125.5	1214.2	40° 18' 32.167 N	104° 31' 4.319 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	700.0	0.00	0.00	700.0	0.0	0.0	0.00	0.00	0.0	
3	1508.2	16.16	91.37	1497.5	-2.7	113.2	2.00	91.37	113.2	
4	4532.7	16.16	91.37	4402.5	-22.8	955.0	0.00	0.00	955.2	
5	5340.9	0.00	0.00	5200.0	-25.5	1068.2	2.00	180.00	1068.5	Target BHL 1450'FSL & 2490'FWL
6	7041.9	0.00	0.00	6901.0	-25.5	1068.2	0.00	0.00	1068.5	



NOBLE ENERGY INC WELD COUNTY CO

SEC.14-T4N-R64W

**Noble Wilmoth C14-24D Pad Sec. 14-T4N-R64W
Wilmoth C14-24D**

Wellbore #1

Plan: Noble Wilmoth C14-24D Plan #1 (7-15-10)

Standard Planning Report

19 July, 2010



Database:	EDM den0-adp01 Server Data	Local Co-ordinate Reference:	Well Wilmoth C14-24D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4661.0ft (Original Well Elev)
Project:	SEC.14-T4N-R64W	MD Reference:	WELL @ 4661.0ft (Original Well Elev)
Site:	Noble Wilmoth C14-24D Pad Sec. 14-T4N-R64W	North Reference:	True
Well:	Wilmoth C14-24D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Wilmoth C14-24D Plan #1 (7-15-10)		

Project	SEC.14-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						Noble Wilmoth C14-24D Pad Sec. 14-T4N-R64W											
Site Position:						Northing:			1,357,015.08 ft			Latitude:			40° 18' 33.408 N		
From:			Lat/Long			Easting:			3,272,680.74 ft			Longitude:			104° 31' 19.992 W		
Position Uncertainty:			0.0 ft			Slot Radius:			"			Grid Convergence:			0.63 °		

Well	Wilmoth C14-24D					
Well Position	+N-S	0.0 ft	Northing:	1,357,015.06 ft	Latitude:	40° 18' 33.408 N
	+E-W	0.0 ft	Easting:	3,272,680.74 ft	Longitude:	104° 31' 19.992 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,648.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/15/2010	8.85	67.05	53,208

Design	Noble Wilmoth C14-24D Plan #1 (7-15-10)			
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	91.37

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	
700.0	0.00	0.00	700.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,508.2	16.16	91.37	1,497.5	-2.7	113.2	2.00	2.00	0.00	91.37	
4,532.7	16.16	91.37	4,402.5	-22.8	955.0	0.00	0.00	0.00	0.00	
5,340.9	0.00	0.00	5,200.0	-25.5	1,068.2	2.00	-2.00	0.00	180.00	Target BHL 1450'F
7,041.9	0.00	0.00	6,901.0	-25.5	1,068.2	0.00	0.00	0.00	0.00	

Database:	EDM den0-adp01 Server Data	Local Co-ordinate Reference:	Well Wilmoth C14-24D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4661.0ft (Original Well Elev)
Project:	SEC.14-T4N-R64W	MD Reference:	WELL @ 4661.0ft (Original Well Elev)
Site:	Noble Wilmoth C14-24D Pad Sec. 14-T4N-R64W	North Reference:	True
Well:	Wilmoth C14-24D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Wilmoth C14-24D Plan #1 (7-15-10)		

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
450.0	0.00	0.00	450.0	0.0	0.0	0.0	0.00	0.00	0.00
8 5/8"									
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
720.0	0.40	91.37	720.0	0.0	0.1	0.1	2.00	2.00	0.00
760.0	1.20	91.37	760.0	0.0	0.6	0.6	2.00	2.00	0.00
800.0	2.00	91.37	800.0	0.0	1.7	1.7	2.00	2.00	0.00
840.0	2.80	91.37	839.9	-0.1	3.4	3.4	2.00	2.00	0.00
880.0	3.60	91.37	879.9	-0.1	5.7	5.7	2.00	2.00	0.00
920.0	4.40	91.37	919.8	-0.2	8.4	8.4	2.00	2.00	0.00
960.0	5.20	91.37	959.6	-0.3	11.8	11.8	2.00	2.00	0.00
1,000.0	6.00	91.37	999.5	-0.4	15.7	15.7	2.00	2.00	0.00
1,040.0	6.80	91.37	1,039.2	-0.5	20.1	20.2	2.00	2.00	0.00
1,080.0	7.60	91.37	1,078.9	-0.6	25.2	25.2	2.00	2.00	0.00
1,120.0	8.40	91.37	1,118.5	-0.7	30.7	30.7	2.00	2.00	0.00
1,160.0	9.20	91.37	1,158.0	-0.9	36.8	36.9	2.00	2.00	0.00
1,200.0	10.00	91.37	1,197.5	-1.0	43.5	43.5	2.00	2.00	0.00
1,240.0	10.80	91.37	1,236.8	-1.2	50.7	50.7	2.00	2.00	0.00
1,280.0	11.60	91.37	1,276.0	-1.4	58.5	58.5	2.00	2.00	0.00
1,320.0	12.40	91.37	1,315.2	-1.6	66.8	66.8	2.00	2.00	0.00
1,360.0	13.20	91.37	1,354.2	-1.8	75.7	75.7	2.00	2.00	0.00
1,400.0	14.00	91.37	1,393.1	-2.0	85.1	85.1	2.00	2.00	0.00
1,440.0	14.80	91.37	1,431.8	-2.3	95.0	95.0	2.00	2.00	0.00
1,480.0	15.60	91.37	1,470.4	-2.5	105.5	105.5	2.00	2.00	0.00
1,508.2	16.16	91.37	1,497.5	-2.7	113.2	113.2	2.00	2.00	0.00
1,520.0	16.16	91.37	1,508.9	-2.8	116.5	116.5	0.00	0.00	0.00
1,560.0	16.16	91.37	1,547.3	-3.0	127.6	127.7	0.00	0.00	0.00
1,600.0	16.16	91.37	1,585.7	-3.3	138.8	138.8	0.00	0.00	0.00
1,640.0	16.16	91.37	1,624.1	-3.6	149.9	149.9	0.00	0.00	0.00
1,680.0	16.16	91.37	1,662.5	-3.8	161.0	161.1	0.00	0.00	0.00
1,720.0	16.16	91.37	1,700.9	-4.1	172.2	172.2	0.00	0.00	0.00
1,760.0	16.16	91.37	1,739.4	-4.4	183.3	183.3	0.00	0.00	0.00
1,800.0	16.16	91.37	1,777.8	-4.6	194.4	194.5	0.00	0.00	0.00
1,840.0	16.16	91.37	1,816.2	-4.9	205.6	205.6	0.00	0.00	0.00
1,880.0	16.16	91.37	1,854.6	-5.2	216.7	216.8	0.00	0.00	0.00
1,920.0	16.16	91.37	1,893.0	-5.4	227.8	227.9	0.00	0.00	0.00

Database:	EDM den0-adp01 Server Data	Local Co-ordinate Reference:	Well Wilmoth C14-24D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4661.0ft (Original Well Elev)
Project:	SEC.14-T4N-R64W	MD Reference:	WELL @ 4661.0ft (Original Well Elev)
Site:	Noble Wilmoth C14-24D Pad Sec. 14-T4N-R64W	North Reference:	True
Well:	Wilmoth C14-24D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Wilmoth C14-24D Plan #1 (7-15-10)		

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)
1,960.0	16.16	91.37	1,931.5	-5.7	239.0	239.0	0.00	0.00	0.00
2,000.0	16.16	91.37	1,969.9	-6.0	250.1	250.2	0.00	0.00	0.00
2,040.0	16.16	91.37	2,008.3	-6.2	261.2	261.3	0.00	0.00	0.00
2,080.0	16.16	91.37	2,046.7	-6.5	272.4	272.4	0.00	0.00	0.00
2,120.0	16.16	91.37	2,085.1	-6.8	283.5	283.6	0.00	0.00	0.00
2,160.0	16.16	91.37	2,123.6	-7.0	294.6	294.7	0.00	0.00	0.00
2,200.0	16.16	91.37	2,162.0	-7.3	305.7	305.8	0.00	0.00	0.00
2,240.0	16.16	91.37	2,200.4	-7.6	316.9	317.0	0.00	0.00	0.00
2,280.0	16.16	91.37	2,238.8	-7.8	328.0	328.1	0.00	0.00	0.00
2,320.0	16.16	91.37	2,277.2	-8.1	339.1	339.2	0.00	0.00	0.00
2,360.0	16.16	91.37	2,315.7	-8.4	350.3	350.4	0.00	0.00	0.00
2,400.0	16.16	91.37	2,354.1	-8.6	361.4	361.5	0.00	0.00	0.00
2,440.0	16.16	91.37	2,392.5	-8.9	372.5	372.6	0.00	0.00	0.00
2,480.0	16.16	91.37	2,430.9	-9.1	383.7	383.8	0.00	0.00	0.00
2,520.0	16.16	91.37	2,469.3	-9.4	394.8	394.9	0.00	0.00	0.00
2,560.0	16.16	91.37	2,507.7	-9.7	405.9	406.1	0.00	0.00	0.00
2,600.0	16.16	91.37	2,546.2	-9.9	417.1	417.2	0.00	0.00	0.00
2,640.0	16.16	91.37	2,584.6	-10.2	428.2	428.3	0.00	0.00	0.00
2,680.0	16.16	91.37	2,623.0	-10.5	439.3	439.5	0.00	0.00	0.00
2,720.0	16.16	91.37	2,661.4	-10.7	450.5	450.6	0.00	0.00	0.00
2,760.0	16.16	91.37	2,699.8	-11.0	461.6	461.7	0.00	0.00	0.00
2,800.0	16.16	91.37	2,738.3	-11.3	472.7	472.9	0.00	0.00	0.00
2,840.0	16.16	91.37	2,776.7	-11.5	483.9	484.0	0.00	0.00	0.00
2,880.0	16.16	91.37	2,815.1	-11.8	495.0	495.1	0.00	0.00	0.00
2,920.0	16.16	91.37	2,853.5	-12.1	506.1	506.3	0.00	0.00	0.00
2,960.0	16.16	91.37	2,891.9	-12.3	517.3	517.4	0.00	0.00	0.00
3,000.0	16.16	91.37	2,930.4	-12.6	528.4	528.5	0.00	0.00	0.00
3,040.0	16.16	91.37	2,968.8	-12.9	539.5	539.7	0.00	0.00	0.00
3,080.0	16.16	91.37	3,007.2	-13.1	550.7	550.8	0.00	0.00	0.00
3,120.0	16.16	91.37	3,045.6	-13.4	561.8	561.9	0.00	0.00	0.00
3,160.0	16.16	91.37	3,084.0	-13.7	572.9	573.1	0.00	0.00	0.00
3,200.0	16.16	91.37	3,122.4	-13.9	584.1	584.2	0.00	0.00	0.00
3,240.0	16.16	91.37	3,160.9	-14.2	595.2	595.4	0.00	0.00	0.00
3,280.0	16.16	91.37	3,199.3	-14.5	606.3	606.5	0.00	0.00	0.00
3,320.0	16.16	91.37	3,237.7	-14.7	617.4	617.6	0.00	0.00	0.00
3,360.0	16.16	91.37	3,276.1	-15.0	628.6	628.8	0.00	0.00	0.00
3,400.0	16.16	91.37	3,314.5	-15.3	639.7	639.9	0.00	0.00	0.00
3,440.0	16.16	91.37	3,353.0	-15.5	650.8	651.0	0.00	0.00	0.00
3,480.0	16.16	91.37	3,391.4	-15.8	662.0	662.2	0.00	0.00	0.00
3,520.0	16.16	91.37	3,429.8	-16.0	673.1	673.3	0.00	0.00	0.00
3,560.0	16.16	91.37	3,468.2	-16.3	684.2	684.4	0.00	0.00	0.00
3,600.0	16.16	91.37	3,506.6	-16.6	695.4	695.6	0.00	0.00	0.00
3,640.0	16.16	91.37	3,545.1	-16.8	706.5	706.7	0.00	0.00	0.00
3,680.0	16.16	91.37	3,583.5	-17.1	717.6	717.8	0.00	0.00	0.00
3,720.0	16.16	91.37	3,621.9	-17.4	728.8	729.0	0.00	0.00	0.00
3,760.0	16.16	91.37	3,660.3	-17.6	739.9	740.1	0.00	0.00	0.00
3,800.0	16.16	91.37	3,698.7	-17.9	751.0	751.2	0.00	0.00	0.00
3,840.0	16.16	91.37	3,737.1	-18.2	762.2	762.4	0.00	0.00	0.00
3,880.0	16.16	91.37	3,775.6	-18.4	773.3	773.5	0.00	0.00	0.00
3,920.0	16.16	91.37	3,814.0	-18.7	784.4	784.7	0.00	0.00	0.00
3,960.0	16.16	91.37	3,852.4	-19.0	795.6	795.8	0.00	0.00	0.00
4,000.0	16.16	91.37	3,890.8	-19.2	806.7	806.9	0.00	0.00	0.00
4,040.0	16.16	91.37	3,929.2	-19.5	817.8	818.1	0.00	0.00	0.00

Database:	EDM den0-adp01 Server Data	Local Co-ordinate Reference:	Well Wilmoth C14-24D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4661.0ft (Original Well Elev)
Project:	SEC.14-T4N-R64W	MD Reference:	WELL @ 4661.0ft (Original Well Elev)
Site:	Noble Wilmoth C14-24D Pad Sec. 14-T4N-R64W	North Reference:	True
Well:	Wilmoth C14-24D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Wilmoth C14-24D Plan #1 (7-15-10)		

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)
4,080.0	16.16	91.37	3,967.7	-19.8	829.0	829.2	0.00	0.00	0.00
4,120.0	16.16	91.37	4,006.1	-20.0	840.1	840.3	0.00	0.00	0.00
4,160.0	16.16	91.37	4,044.5	-20.3	851.2	851.5	0.00	0.00	0.00
4,200.0	16.16	91.37	4,082.9	-20.6	862.4	862.6	0.00	0.00	0.00
4,240.0	16.16	91.37	4,121.3	-20.8	873.5	873.7	0.00	0.00	0.00
4,280.0	16.16	91.37	4,159.8	-21.1	884.6	884.9	0.00	0.00	0.00
4,320.0	16.16	91.37	4,198.2	-21.4	895.8	896.0	0.00	0.00	0.00
4,360.0	16.16	91.37	4,236.6	-21.6	906.9	907.1	0.00	0.00	0.00
4,400.0	16.16	91.37	4,275.0	-21.9	918.0	918.3	0.00	0.00	0.00
4,440.0	16.16	91.37	4,313.4	-22.2	929.2	929.4	0.00	0.00	0.00
4,480.0	16.16	91.37	4,351.8	-22.4	940.3	940.6	0.00	0.00	0.00
4,520.0	16.16	91.37	4,390.3	-22.7	951.4	951.7	0.00	0.00	0.00
4,532.7	16.16	91.37	4,402.5	-22.8	955.0	955.2	0.00	0.00	0.00
4,560.0	15.62	91.37	4,428.7	-22.9	962.4	962.7	2.00	-2.00	0.00
4,600.0	14.82	91.37	4,467.3	-23.2	972.9	973.2	2.00	-2.00	0.00
4,640.0	14.02	91.37	4,506.1	-23.4	982.9	983.2	2.00	-2.00	0.00
4,680.0	13.22	91.37	4,544.9	-23.7	992.3	992.6	2.00	-2.00	0.00
4,720.0	12.42	91.37	4,583.9	-23.9	1,001.2	1,001.4	2.00	-2.00	0.00
4,760.0	11.62	91.37	4,623.1	-24.1	1,009.5	1,009.8	2.00	-2.00	0.00
4,800.0	10.82	91.37	4,662.3	-24.3	1,017.3	1,017.6	2.00	-2.00	0.00
4,840.0	10.02	91.37	4,701.6	-24.4	1,024.5	1,024.8	2.00	-2.00	0.00
4,880.0	9.22	91.37	4,741.1	-24.6	1,031.2	1,031.5	2.00	-2.00	0.00
4,920.0	8.42	91.37	4,780.6	-24.7	1,037.3	1,037.6	2.00	-2.00	0.00
4,960.0	7.62	91.37	4,820.2	-24.9	1,042.9	1,043.2	2.00	-2.00	0.00
5,000.0	6.82	91.37	4,859.9	-25.0	1,047.9	1,048.2	2.00	-2.00	0.00
5,040.0	6.02	91.37	4,899.6	-25.1	1,052.4	1,052.7	2.00	-2.00	0.00
5,080.0	5.22	91.37	4,939.4	-25.2	1,056.3	1,056.6	2.00	-2.00	0.00
5,120.0	4.42	91.37	4,979.3	-25.3	1,059.7	1,060.0	2.00	-2.00	0.00
5,160.0	3.62	91.37	5,019.2	-25.3	1,062.5	1,062.8	2.00	-2.00	0.00
5,200.0	2.82	91.37	5,059.1	-25.4	1,064.7	1,065.0	2.00	-2.00	0.00
5,240.0	2.02	91.37	5,099.1	-25.4	1,066.4	1,066.7	2.00	-2.00	0.00
5,280.0	1.22	91.37	5,139.1	-25.5	1,067.5	1,067.8	2.00	-2.00	0.00
5,320.0	0.42	91.37	5,179.1	-25.5	1,068.1	1,068.4	2.00	-2.00	0.00
5,340.9	0.00	0.00	5,200.0	-25.5	1,068.2	1,068.5	2.00	-2.00	0.00
Target BHL 1450°FSL & 2490°FWL									
5,360.0	0.00	0.00	5,219.1	-25.5	1,068.2	1,068.5	0.00	0.00	0.00
5,400.0	0.00	0.00	5,259.1	-25.5	1,068.2	1,068.5	0.00	0.00	0.00
5,440.0	0.00	0.00	5,299.1	-25.5	1,068.2	1,068.5	0.00	0.00	0.00
5,480.0	0.00	0.00	5,339.1	-25.5	1,068.2	1,068.5	0.00	0.00	0.00
5,520.0	0.00	0.00	5,379.1	-25.5	1,068.2	1,068.5	0.00	0.00	0.00
5,560.0	0.00	0.00	5,419.1	-25.5	1,068.2	1,068.5	0.00	0.00	0.00
5,600.0	0.00	0.00	5,459.1	-25.5	1,068.2	1,068.5	0.00	0.00	0.00
5,640.0	0.00	0.00	5,499.1	-25.5	1,068.2	1,068.5	0.00	0.00	0.00
5,680.0	0.00	0.00	5,539.1	-25.5	1,068.2	1,068.5	0.00	0.00	0.00
5,720.0	0.00	0.00	5,579.1	-25.5	1,068.2	1,068.5	0.00	0.00	0.00
5,760.0	0.00	0.00	5,619.1	-25.5	1,068.2	1,068.5	0.00	0.00	0.00
5,800.0	0.00	0.00	5,659.1	-25.5	1,068.2	1,068.5	0.00	0.00	0.00
5,840.0	0.00	0.00	5,699.1	-25.5	1,068.2	1,068.5	0.00	0.00	0.00
5,880.0	0.00	0.00	5,739.1	-25.5	1,068.2	1,068.5	0.00	0.00	0.00
5,920.0	0.00	0.00	5,779.1	-25.5	1,068.2	1,068.5	0.00	0.00	0.00
5,960.0	0.00	0.00	5,819.1	-25.5	1,068.2	1,068.5	0.00	0.00	0.00
6,000.0	0.00	0.00	5,859.1	-25.5	1,068.2	1,068.5	0.00	0.00	0.00
6,040.0	0.00	0.00	5,899.1	-25.5	1,068.2	1,068.5	0.00	0.00	0.00

Database:	EDM den0-adp01 Server Data	Local Co-ordinate Reference:	Well Wilmoth C14-24D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4661.0ft (Original Well Elev)
Project:	SEC.14-T4N-R64W	MD Reference:	WELL @ 4661.0ft (Original Well Elev)
Site:	Noble Wilmoth C14-24D Pad Sec. 14-T4N-R64W	North Reference:	True
Well:	Wilmoth C14-24D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Wilmoth C14-24D Plan #1 (7-15-10)		

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)
6,080.0	0.00	0.00	5,939.1	-25.5	1,068.2	1,068.5	0.00	0.00	0.00
6,120.0	0.00	0.00	5,979.1	-25.5	1,068.2	1,068.5	0.00	0.00	0.00
6,160.0	0.00	0.00	6,019.1	-25.5	1,068.2	1,068.5	0.00	0.00	0.00
6,200.0	0.00	0.00	6,059.1	-25.5	1,068.2	1,068.5	0.00	0.00	0.00
6,240.0	0.00	0.00	6,099.1	-25.5	1,068.2	1,068.5	0.00	0.00	0.00
6,280.0	0.00	0.00	6,139.1	-25.5	1,068.2	1,068.5	0.00	0.00	0.00
6,320.0	0.00	0.00	6,179.1	-25.5	1,068.2	1,068.5	0.00	0.00	0.00
6,360.0	0.00	0.00	6,219.1	-25.5	1,068.2	1,068.5	0.00	0.00	0.00
6,400.0	0.00	0.00	6,259.1	-25.5	1,068.2	1,068.5	0.00	0.00	0.00
6,440.0	0.00	0.00	6,299.1	-25.5	1,068.2	1,068.5	0.00	0.00	0.00
6,480.0	0.00	0.00	6,339.1	-25.5	1,068.2	1,068.5	0.00	0.00	0.00
6,520.0	0.00	0.00	6,379.1	-25.5	1,068.2	1,068.5	0.00	0.00	0.00
6,560.0	0.00	0.00	6,419.1	-25.5	1,068.2	1,068.5	0.00	0.00	0.00
6,591.9	0.00	0.00	6,451.0	-25.5	1,068.2	1,068.5	0.00	0.00	0.00
Niobrara - Target Circle 1450'FSL & 2490'FWL									
6,600.0	0.00	0.00	6,459.1	-25.5	1,068.2	1,068.5	0.00	0.00	0.00
6,640.0	0.00	0.00	6,499.1	-25.5	1,068.2	1,068.5	0.00	0.00	0.00
6,680.0	0.00	0.00	6,539.1	-25.5	1,068.2	1,068.5	0.00	0.00	0.00
6,720.0	0.00	0.00	6,579.1	-25.5	1,068.2	1,068.5	0.00	0.00	0.00
6,760.0	0.00	0.00	6,619.1	-25.5	1,068.2	1,068.5	0.00	0.00	0.00
6,800.0	0.00	0.00	6,659.1	-25.5	1,068.2	1,068.5	0.00	0.00	0.00
6,840.0	0.00	0.00	6,699.1	-25.5	1,068.2	1,068.5	0.00	0.00	0.00
6,880.0	0.00	0.00	6,739.1	-25.5	1,068.2	1,068.5	0.00	0.00	0.00
6,891.9	0.00	0.00	6,751.0	-25.5	1,068.2	1,068.5	0.00	0.00	0.00
Codell									
6,920.0	0.00	0.00	6,779.1	-25.5	1,068.2	1,068.5	0.00	0.00	0.00
6,960.0	0.00	0.00	6,819.1	-25.5	1,068.2	1,068.5	0.00	0.00	0.00
7,000.0	0.00	0.00	6,859.1	-25.5	1,068.2	1,068.5	0.00	0.00	0.00
7,040.0	0.00	0.00	6,899.1	-25.5	1,068.2	1,068.5	0.00	0.00	0.00
7,041.9	0.00	0.00	6,901.0	-25.5	1,068.2	1,068.5	0.00	0.00	0.00
Hardline 146'E of BHL									

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 1450'FS	0.00	0.00	6,451.0	-25.5	1,068.2	1,357,001.38	3,273,749.08	40° 18' 33.156 N	104° 31' 6.204 W
- plan hits target center									
- Circle (radius 75.0)									
Hardline 146'E of BHL	0.00	0.00	6,901.0	-125.5	1,214.2	1,356,902.96	3,273,896.20	40° 18' 32.167 N	104° 31' 4.319 W
- plan misses target center by 177.0ft at 7041.9ft MD (6901.0 TVD, -25.5 N, 1068.2 E)									
- Polygon									
Point 1			6,901.0	0.0	0.0	1,356,902.96	3,273,896.20		
Point 2			6,901.0	200.0	0.0	1,357,102.94	3,273,894.00		
Target BHL 1450'FSL	0.00	0.63	5,200.0	-25.5	1,068.2	1,357,001.38	3,273,749.08	40° 18' 33.156 N	104° 31' 6.204 W
- plan hits target center									
- Point									

Database:	EDM den0-adp01 Server Data	Local Co-ordinate Reference:	Well Wilmoth C14-24D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4661.0ft (Original Well Elev)
Project:	SEC.14-T4N-R64W	MD Reference:	WELL @ 4661.0ft (Original Well Elev)
Site:	Noble Wilmoth C14-24D Pad Sec. 14-T4N-R64W	North Reference:	True
Well:	Wilmoth C14-24D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Wilmoth C14-24D Plan #1 (7-15-10)		

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
450.0	450.0	8 5/8"	8-5/8	12-1/4

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
6,591.9	6,451.0	Niobrara		0.00	
6,891.9	6,751.0	Codell		0.00	