

# ENSIGN

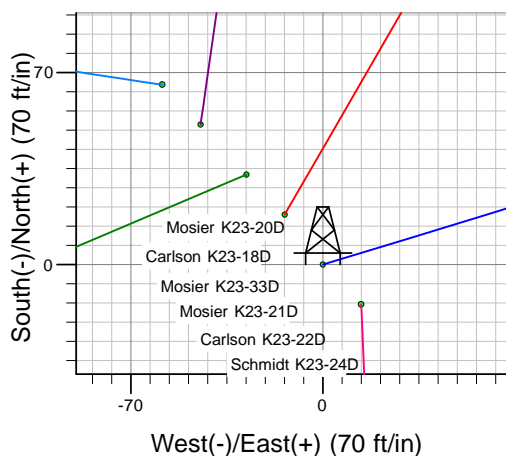
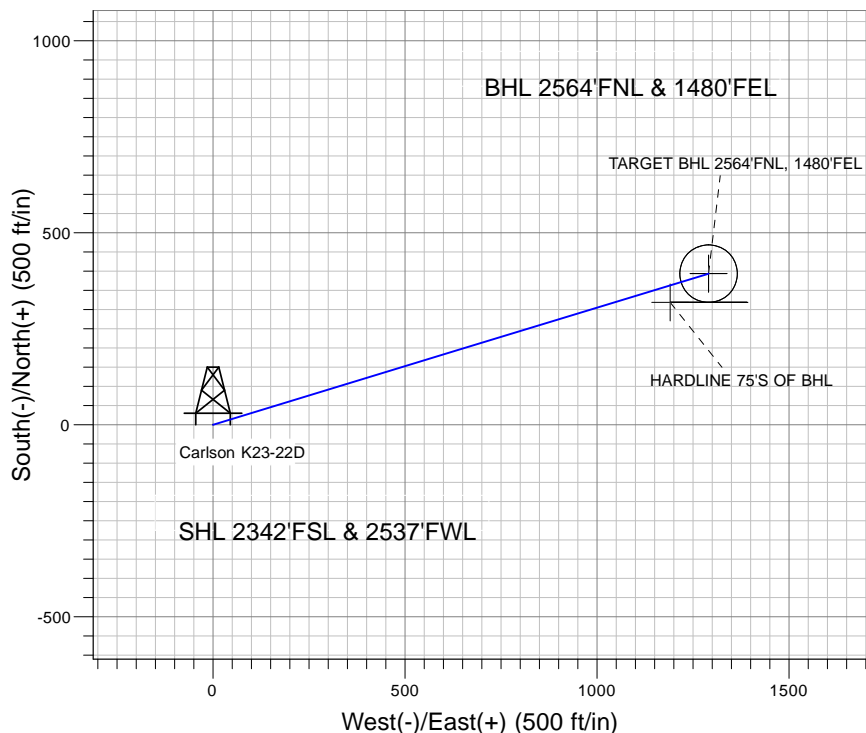
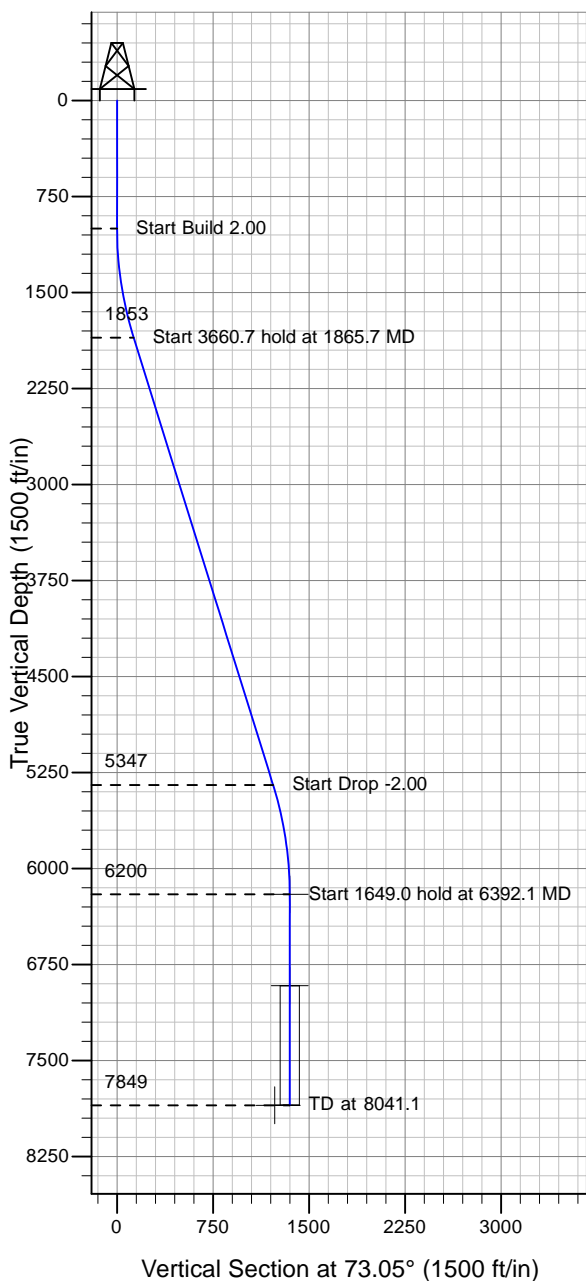
## Directional

### Well Name: Carlson K23-22D

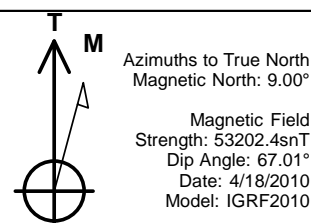
Surface Location: Schmidt K23-24D Pad Sec.23-T4N-R66W  
 North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone  
 Ground Elevation: 4726.0

+N/-S+E/-W Northing Easting Latitude Longitude Slot  
 0.0 0.0 1351785.66 3210626.99 40° 17' 47.724 N 104° 44' 41.568 W  
 Original Well Elev WELL @ 4739.0ft (Original Well Elev)

## NOBLE ENERGY INC WELD COUNTY CO



Schmidt K23-24D Pad Sec.23-T4N-R66W  
 Carlson K23-22D  
 Noble Carlson K23-22D Plan #2 (04-15-10)  
 12:45, April 18 2010



### WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
TARGET BHL 2564'FNL, 1480'FEL	6200.0	393.4	1290.5	40° 17' 51.611 N	104° 44' 24.913 W	Point
TARGET CIRCLE 2564'FNL, 1480'FEL	6914.0	393.4	1290.5	40° 17' 51.611 N	104° 44' 24.913 W	Circle (Radius: 75.0)
HARDLINE 75'S OF BHL	7849.0	318.4	1190.5	40° 17' 50.870 N	104° 44' 26.204 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	1000.0	0.00	0.00	1000.0	0.0	0.0	0.00	0.00	0.0	
3	1865.7	17.31	73.05	1852.6	37.9	124.2	2.00	73.05	129.8	
4	5526.4	17.31	73.05	5347.4	355.6	1166.3	0.00	0.00	1219.3	
5	6392.1	0.00	0.00	6200.0	393.4	1290.5	2.00	180.00	1349.1	TARGET BHL 2564'FNL, 1480'FEL
6	8041.1	0.00	0.00	7849.0	393.4	1290.5	0.00	0.00	1349.1	



# **NOBLE ENERGY INC WELD COUNTY CO**

**SEC.23-T4N-R66W**

**Schmidt K23-24D Pad Sec.23-T4N-R66W**

**Carlson K23-22D**

**Wellbore #1**

**Plan: Noble Carlson K23-22D Plan #2 (04-15-10)**

## **Standard Planning Report**

**18 April, 2010**



<b>Database:</b>	EDM den0-adp01 Server Data	<b>Local Co-ordinate Reference:</b>	Well Carlson K23-22D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 4739.0ft (Original Well Elev)
<b>Project:</b>	SEC.23-T4N-R66W	<b>MD Reference:</b>	WELL @ 4739.0ft (Original Well Elev)
<b>Site:</b>	Schmidt K23-24D Pad Sec.23-T4N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Carlson K23-22D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Carlson K23-22D Plan #2 (04-15-10)		

<b>Project</b>	SEC.23-T4N-R66W, Weld County, Colorado		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Northern Zone		Using geodetic scale factor

Site						Schmidt K23-24D Pad Sec.23-T4N-R66W											
Site Position:			Northing:			1,351,771.22 ft			Latitude:			40° 17' 47.580 N					
From:			Lat/Long			Easting:			3,210,641.06 ft			Longitude:			104° 44' 41.388 W		
Position Uncertainty:			0.0 ft			Slot Radius:			"			Grid Convergence:			0.49 °		

Well	Carlson K23-22D					
Well Position	+N/-S	14.6 ft	Northing:	1,351,785.66 ft	Latitude:	40° 17' 47.724 N
	+E/-W	-13.9 ft	Easting:	3,210,626.99 ft	Longitude:	104° 44' 41.568 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,726.0 ft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	4/18/2010	9.00	67.01	53,202

<b>Design</b>	Noble Carlson K23-22D Plan #2 (04-15-10)			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	73.05

<b>Plan Sections</b>										
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	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,865.7	17.31	73.05	1,852.6	37.9	124.2	2.00	2.00	0.00	73.05	
5,526.4	17.31	73.05	5,347.4	355.6	1,166.3	0.00	0.00	0.00	0.00	
6,392.1	0.00	0.00	6,200.0	393.4	1,290.5	2.00	-2.00	0.00	180.00	TARGET BHL 2564
8,041.1	0.00	0.00	7,849.0	393.4	1,290.5	0.00	0.00	0.00	0.00	

<b>Database:</b>	EDM den0-adp01 Server Data	<b>Local Co-ordinate Reference:</b>	Well Carlson K23-22D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 4739.0ft (Original Well Elev)
<b>Project:</b>	SEC.23-T4N-R66W	<b>MD Reference:</b>	WELL @ 4739.0ft (Original Well Elev)
<b>Site:</b>	Schmidt K23-24D Pad Sec.23-T4N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Carlson K23-22D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Carlson K23-22D Plan #2 (04-15-10)		

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
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	0.80	73.05	1,040.0	0.1	0.3	0.3	2.00	2.00	0.00
1,080.0	1.60	73.05	1,080.0	0.3	1.1	1.1	2.00	2.00	0.00
1,120.0	2.40	73.05	1,120.0	0.7	2.4	2.5	2.00	2.00	0.00
1,160.0	3.20	73.05	1,159.9	1.3	4.3	4.5	2.00	2.00	0.00
1,200.0	4.00	73.05	1,199.8	2.0	6.7	7.0	2.00	2.00	0.00
1,240.0	4.80	73.05	1,239.7	2.9	9.6	10.0	2.00	2.00	0.00
1,280.0	5.60	73.05	1,279.6	4.0	13.1	13.7	2.00	2.00	0.00
1,320.0	6.40	73.05	1,319.3	5.2	17.1	17.9	2.00	2.00	0.00
1,360.0	7.20	73.05	1,359.1	6.6	21.6	22.6	2.00	2.00	0.00
1,400.0	8.00	73.05	1,398.7	8.1	26.7	27.9	2.00	2.00	0.00
1,440.0	8.80	73.05	1,438.3	9.8	32.3	33.7	2.00	2.00	0.00
1,480.0	9.60	73.05	1,477.8	11.7	38.4	40.1	2.00	2.00	0.00
1,520.0	10.40	73.05	1,517.1	13.7	45.0	47.1	2.00	2.00	0.00
1,560.0	11.20	73.05	1,556.4	15.9	52.2	54.6	2.00	2.00	0.00
1,600.0	12.00	73.05	1,595.6	18.3	59.9	62.6	2.00	2.00	0.00
1,640.0	12.80	73.05	1,634.7	20.8	68.1	71.2	2.00	2.00	0.00
1,680.0	13.60	73.05	1,673.6	23.4	76.8	80.3	2.00	2.00	0.00
1,720.0	14.40	73.05	1,712.4	26.2	86.1	90.0	2.00	2.00	0.00
1,760.0	15.20	73.05	1,751.1	29.2	95.9	100.2	2.00	2.00	0.00
1,800.0	16.00	73.05	1,789.6	32.4	106.2	111.0	2.00	2.00	0.00
1,840.0	16.80	73.05	1,828.0	35.7	117.0	122.3	2.00	2.00	0.00
1,865.7	17.31	73.05	1,852.6	37.9	124.2	129.8	2.00	2.00	0.00
1,880.0	17.31	73.05	1,866.2	39.1	128.2	134.1	0.00	0.00	0.00
1,920.0	17.31	73.05	1,904.4	42.6	139.6	146.0	0.00	0.00	0.00
1,960.0	17.31	73.05	1,942.6	46.0	151.0	157.9	0.00	0.00	0.00
2,000.0	17.31	73.05	1,980.8	49.5	162.4	169.8	0.00	0.00	0.00
2,040.0	17.31	73.05	2,019.0	53.0	173.8	181.7	0.00	0.00	0.00
2,080.0	17.31	73.05	2,057.2	56.5	185.2	193.6	0.00	0.00	0.00

<b>Database:</b>	EDM den0-adp01 Server Data	<b>Local Co-ordinate Reference:</b>	Well Carlson K23-22D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 4739.0ft (Original Well Elev)
<b>Project:</b>	SEC.23-T4N-R66W	<b>MD Reference:</b>	WELL @ 4739.0ft (Original Well Elev)
<b>Site:</b>	Schmidt K23-24D Pad Sec.23-T4N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Carlson K23-22D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Carlson K23-22D Plan #2 (04-15-10)		

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)
2,120.0	17.31	73.05	2,095.4	59.9	196.6	205.5	0.00	0.00	0.00
2,160.0	17.31	73.05	2,133.5	63.4	207.9	217.4	0.00	0.00	0.00
2,200.0	17.31	73.05	2,171.7	66.9	219.3	229.3	0.00	0.00	0.00
2,240.0	17.31	73.05	2,209.9	70.3	230.7	241.2	0.00	0.00	0.00
2,280.0	17.31	73.05	2,248.1	73.8	242.1	253.1	0.00	0.00	0.00
2,320.0	17.31	73.05	2,286.3	77.3	253.5	265.0	0.00	0.00	0.00
2,360.0	17.31	73.05	2,324.5	80.8	264.9	276.9	0.00	0.00	0.00
2,400.0	17.31	73.05	2,362.7	84.2	276.3	288.8	0.00	0.00	0.00
2,440.0	17.31	73.05	2,400.9	87.7	287.7	300.7	0.00	0.00	0.00
2,480.0	17.31	73.05	2,439.0	91.2	299.0	312.6	0.00	0.00	0.00
2,520.0	17.31	73.05	2,477.2	94.6	310.4	324.5	0.00	0.00	0.00
2,560.0	17.31	73.05	2,515.4	98.1	321.8	336.4	0.00	0.00	0.00
2,600.0	17.31	73.05	2,553.6	101.6	333.2	348.3	0.00	0.00	0.00
2,640.0	17.31	73.05	2,591.8	105.1	344.6	360.3	0.00	0.00	0.00
2,680.0	17.31	73.05	2,630.0	108.5	356.0	372.2	0.00	0.00	0.00
2,720.0	17.31	73.05	2,668.2	112.0	367.4	384.1	0.00	0.00	0.00
2,760.0	17.31	73.05	2,706.4	115.5	378.8	396.0	0.00	0.00	0.00
2,800.0	17.31	73.05	2,744.5	118.9	390.1	407.9	0.00	0.00	0.00
2,840.0	17.31	73.05	2,782.7	122.4	401.5	419.8	0.00	0.00	0.00
2,880.0	17.31	73.05	2,820.9	125.9	412.9	431.7	0.00	0.00	0.00
2,920.0	17.31	73.05	2,859.1	129.4	424.3	443.6	0.00	0.00	0.00
2,960.0	17.31	73.05	2,897.3	132.8	435.7	455.5	0.00	0.00	0.00
3,000.0	17.31	73.05	2,935.5	136.3	447.1	467.4	0.00	0.00	0.00
3,040.0	17.31	73.05	2,973.7	139.8	458.5	479.3	0.00	0.00	0.00
3,080.0	17.31	73.05	3,011.9	143.2	469.9	491.2	0.00	0.00	0.00
3,120.0	17.31	73.05	3,050.0	146.7	481.2	503.1	0.00	0.00	0.00
3,160.0	17.31	73.05	3,088.2	150.2	492.6	515.0	0.00	0.00	0.00
3,200.0	17.31	73.05	3,126.4	153.7	504.0	526.9	0.00	0.00	0.00
3,240.0	17.31	73.05	3,164.6	157.1	515.4	538.8	0.00	0.00	0.00
3,280.0	17.31	73.05	3,202.8	160.6	526.8	550.7	0.00	0.00	0.00
3,320.0	17.31	73.05	3,241.0	164.1	538.2	562.6	0.00	0.00	0.00
3,360.0	17.31	73.05	3,279.2	167.5	549.6	574.5	0.00	0.00	0.00
3,400.0	17.31	73.05	3,317.4	171.0	561.0	586.4	0.00	0.00	0.00
3,440.0	17.31	73.05	3,355.5	174.5	572.3	598.3	0.00	0.00	0.00
3,480.0	17.31	73.05	3,393.7	178.0	583.7	610.3	0.00	0.00	0.00
3,520.0	17.31	73.05	3,431.9	181.4	595.1	622.2	0.00	0.00	0.00
3,560.0	17.31	73.05	3,470.1	184.9	606.5	634.1	0.00	0.00	0.00
3,600.0	17.31	73.05	3,508.3	188.4	617.9	646.0	0.00	0.00	0.00
3,640.0	17.31	73.05	3,546.5	191.8	629.3	657.9	0.00	0.00	0.00
3,680.0	17.31	73.05	3,584.7	195.3	640.7	669.8	0.00	0.00	0.00
3,720.0	17.31	73.05	3,622.9	198.8	652.1	681.7	0.00	0.00	0.00
3,760.0	17.31	73.05	3,661.0	202.3	663.4	693.6	0.00	0.00	0.00
3,800.0	17.31	73.05	3,699.2	205.7	674.8	705.5	0.00	0.00	0.00
3,840.0	17.31	73.05	3,737.4	209.2	686.2	717.4	0.00	0.00	0.00
3,880.0	17.31	73.05	3,775.6	212.7	697.6	729.3	0.00	0.00	0.00
3,920.0	17.31	73.05	3,813.8	216.1	709.0	741.2	0.00	0.00	0.00
3,960.0	17.31	73.05	3,852.0	219.6	720.4	753.1	0.00	0.00	0.00
4,000.0	17.31	73.05	3,890.2	223.1	731.8	765.0	0.00	0.00	0.00
4,040.0	17.31	73.05	3,928.4	226.6	743.2	776.9	0.00	0.00	0.00
4,080.0	17.31	73.05	3,966.5	230.0	754.5	788.8	0.00	0.00	0.00
4,120.0	17.31	73.05	4,004.7	233.5	765.9	800.7	0.00	0.00	0.00
4,160.0	17.31	73.05	4,042.9	237.0	777.3	812.6	0.00	0.00	0.00
4,200.0	17.31	73.05	4,081.1	240.4	788.7	824.5	0.00	0.00	0.00
4,240.0	17.31	73.05	4,119.3	243.9	800.1	836.4	0.00	0.00	0.00

<b>Database:</b>	EDM den0-adp01 Server Data	<b>Local Co-ordinate Reference:</b>	Well Carlson K23-22D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 4739.0ft (Original Well Elev)
<b>Project:</b>	SEC.23-T4N-R66W	<b>MD Reference:</b>	WELL @ 4739.0ft (Original Well Elev)
<b>Site:</b>	Schmidt K23-24D Pad Sec.23-T4N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Carlson K23-22D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Carlson K23-22D Plan #2 (04-15-10)		

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)
4,280.0	17.31	73.05	4,157.5	247.4	811.5	848.3	0.00	0.00	0.00
4,320.0	17.31	73.05	4,195.7	250.9	822.9	860.3	0.00	0.00	0.00
4,360.0	17.31	73.05	4,233.9	254.3	834.3	872.2	0.00	0.00	0.00
4,400.0	17.31	73.05	4,272.0	257.8	845.6	884.1	0.00	0.00	0.00
4,440.0	17.31	73.05	4,310.2	261.3	857.0	896.0	0.00	0.00	0.00
4,480.0	17.31	73.05	4,348.4	264.7	868.4	907.9	0.00	0.00	0.00
4,520.0	17.31	73.05	4,386.6	268.2	879.8	919.8	0.00	0.00	0.00
4,560.0	17.31	73.05	4,424.8	271.7	891.2	931.7	0.00	0.00	0.00
4,600.0	17.31	73.05	4,463.0	275.2	902.6	943.6	0.00	0.00	0.00
4,640.0	17.31	73.05	4,501.2	278.6	914.0	955.5	0.00	0.00	0.00
4,680.0	17.31	73.05	4,539.4	282.1	925.3	967.4	0.00	0.00	0.00
4,720.0	17.31	73.05	4,577.5	285.6	936.7	979.3	0.00	0.00	0.00
4,760.0	17.31	73.05	4,615.7	289.0	948.1	991.2	0.00	0.00	0.00
4,800.0	17.31	73.05	4,653.9	292.5	959.5	1,003.1	0.00	0.00	0.00
4,840.0	17.31	73.05	4,692.1	296.0	970.9	1,015.0	0.00	0.00	0.00
4,880.0	17.31	73.05	4,730.3	299.5	982.3	1,026.9	0.00	0.00	0.00
4,920.0	17.31	73.05	4,768.5	302.9	993.7	1,038.8	0.00	0.00	0.00
4,960.0	17.31	73.05	4,806.7	306.4	1,005.1	1,050.7	0.00	0.00	0.00
5,000.0	17.31	73.05	4,844.9	309.9	1,016.4	1,062.6	0.00	0.00	0.00
5,040.0	17.31	73.05	4,883.0	313.3	1,027.8	1,074.5	0.00	0.00	0.00
5,080.0	17.31	73.05	4,921.2	316.8	1,039.2	1,086.4	0.00	0.00	0.00
5,120.0	17.31	73.05	4,959.4	320.3	1,050.6	1,098.3	0.00	0.00	0.00
5,160.0	17.31	73.05	4,997.6	323.8	1,062.0	1,110.2	0.00	0.00	0.00
5,200.0	17.31	73.05	5,035.8	327.2	1,073.4	1,122.2	0.00	0.00	0.00
5,240.0	17.31	73.05	5,074.0	330.7	1,084.8	1,134.1	0.00	0.00	0.00
5,280.0	17.31	73.05	5,112.2	334.2	1,096.2	1,146.0	0.00	0.00	0.00
5,320.0	17.31	73.05	5,150.4	337.6	1,107.5	1,157.9	0.00	0.00	0.00
5,360.0	17.31	73.05	5,188.5	341.1	1,118.9	1,169.8	0.00	0.00	0.00
5,400.0	17.31	73.05	5,226.7	344.6	1,130.3	1,181.7	0.00	0.00	0.00
5,440.0	17.31	73.05	5,264.9	348.1	1,141.7	1,193.6	0.00	0.00	0.00
5,480.0	17.31	73.05	5,303.1	351.5	1,153.1	1,205.5	0.00	0.00	0.00
5,520.0	17.31	73.05	5,341.3	355.0	1,164.5	1,217.4	0.00	0.00	0.00
5,526.4	17.31	73.05	5,347.4	355.6	1,166.3	1,219.3	0.00	0.00	0.00
5,560.0	16.64	73.05	5,379.5	358.4	1,175.7	1,229.1	2.00	-2.00	0.00
5,600.0	15.84	73.05	5,417.9	361.7	1,186.4	1,240.3	2.00	-2.00	0.00
5,640.0	15.04	73.05	5,456.5	364.8	1,196.6	1,250.9	2.00	-2.00	0.00
5,680.0	14.24	73.05	5,495.2	367.7	1,206.3	1,261.1	2.00	-2.00	0.00
5,720.0	13.44	73.05	5,534.0	370.5	1,215.4	1,270.6	2.00	-2.00	0.00
5,760.0	12.64	73.05	5,573.0	373.2	1,224.0	1,279.7	2.00	-2.00	0.00
5,800.0	11.84	73.05	5,612.1	375.6	1,232.2	1,288.1	2.00	-2.00	0.00
5,840.0	11.04	73.05	5,651.3	377.9	1,239.7	1,296.1	2.00	-2.00	0.00
5,880.0	10.24	73.05	5,690.6	380.1	1,246.8	1,303.5	2.00	-2.00	0.00
5,920.0	9.44	73.05	5,730.0	382.1	1,253.3	1,310.3	2.00	-2.00	0.00
5,960.0	8.64	73.05	5,769.5	383.9	1,259.4	1,316.6	2.00	-2.00	0.00
6,000.0	7.84	73.05	5,809.1	385.6	1,264.8	1,322.3	2.00	-2.00	0.00
6,040.0	7.04	73.05	5,848.8	387.1	1,269.8	1,327.5	2.00	-2.00	0.00
6,080.0	6.24	73.05	5,888.5	388.5	1,274.2	1,332.1	2.00	-2.00	0.00
6,120.0	5.44	73.05	5,928.3	389.6	1,278.1	1,336.2	2.00	-2.00	0.00
6,160.0	4.64	73.05	5,968.1	390.7	1,281.5	1,339.7	2.00	-2.00	0.00
6,200.0	3.84	73.05	6,008.0	391.5	1,284.3	1,342.7	2.00	-2.00	0.00
6,240.0	3.04	73.05	6,048.0	392.2	1,286.6	1,345.1	2.00	-2.00	0.00
6,280.0	2.24	73.05	6,087.9	392.8	1,288.4	1,346.9	2.00	-2.00	0.00
6,320.0	1.44	73.05	6,127.9	393.1	1,289.6	1,348.2	2.00	-2.00	0.00
6,360.0	0.64	73.05	6,167.9	393.4	1,290.3	1,348.9	2.00	-2.00	0.00

<b>Database:</b>	EDM den0-adp01 Server Data	<b>Local Co-ordinate Reference:</b>	Well Carlson K23-22D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 4739.0ft (Original Well Elev)
<b>Project:</b>	SEC.23-T4N-R66W	<b>MD Reference:</b>	WELL @ 4739.0ft (Original Well Elev)
<b>Site:</b>	Schmidt K23-24D Pad Sec.23-T4N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Carlson K23-22D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Carlson K23-22D Plan #2 (04-15-10)		

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)
6,392.1	0.00	0.00	6,200.0	393.4	1,290.5	1,349.1	2.00	-2.00	0.00
<b>TARGET BHL 2564'FNL, 1480'FEL</b>									
6,400.0	0.00	0.00	6,207.9	393.4	1,290.5	1,349.1	0.00	0.00	0.00
6,440.0	0.00	0.00	6,247.9	393.4	1,290.5	1,349.1	0.00	0.00	0.00
6,480.0	0.00	0.00	6,287.9	393.4	1,290.5	1,349.1	0.00	0.00	0.00
6,520.0	0.00	0.00	6,327.9	393.4	1,290.5	1,349.1	0.00	0.00	0.00
6,560.0	0.00	0.00	6,367.9	393.4	1,290.5	1,349.1	0.00	0.00	0.00
6,600.0	0.00	0.00	6,407.9	393.4	1,290.5	1,349.1	0.00	0.00	0.00
6,640.0	0.00	0.00	6,447.9	393.4	1,290.5	1,349.1	0.00	0.00	0.00
6,680.0	0.00	0.00	6,487.9	393.4	1,290.5	1,349.1	0.00	0.00	0.00
6,720.0	0.00	0.00	6,527.9	393.4	1,290.5	1,349.1	0.00	0.00	0.00
6,760.0	0.00	0.00	6,567.9	393.4	1,290.5	1,349.1	0.00	0.00	0.00
6,800.0	0.00	0.00	6,607.9	393.4	1,290.5	1,349.1	0.00	0.00	0.00
6,840.0	0.00	0.00	6,647.9	393.4	1,290.5	1,349.1	0.00	0.00	0.00
6,880.0	0.00	0.00	6,687.9	393.4	1,290.5	1,349.1	0.00	0.00	0.00
6,920.0	0.00	0.00	6,727.9	393.4	1,290.5	1,349.1	0.00	0.00	0.00
6,960.0	0.00	0.00	6,767.9	393.4	1,290.5	1,349.1	0.00	0.00	0.00
7,000.0	0.00	0.00	6,807.9	393.4	1,290.5	1,349.1	0.00	0.00	0.00
7,040.0	0.00	0.00	6,847.9	393.4	1,290.5	1,349.1	0.00	0.00	0.00
7,080.0	0.00	0.00	6,887.9	393.4	1,290.5	1,349.1	0.00	0.00	0.00
7,106.1	0.00	0.00	6,914.0	393.4	1,290.5	1,349.1	0.00	0.00	0.00
<b>NIOBRARA - TARGET CIRCLE 2564'FNL, 1480'FEL</b>									
7,120.0	0.00	0.00	6,927.9	393.4	1,290.5	1,349.1	0.00	0.00	0.00
7,160.0	0.00	0.00	6,967.9	393.4	1,290.5	1,349.1	0.00	0.00	0.00
7,200.0	0.00	0.00	7,007.9	393.4	1,290.5	1,349.1	0.00	0.00	0.00
7,240.0	0.00	0.00	7,047.9	393.4	1,290.5	1,349.1	0.00	0.00	0.00
7,280.0	0.00	0.00	7,087.9	393.4	1,290.5	1,349.1	0.00	0.00	0.00
7,320.0	0.00	0.00	7,127.9	393.4	1,290.5	1,349.1	0.00	0.00	0.00
7,360.0	0.00	0.00	7,167.9	393.4	1,290.5	1,349.1	0.00	0.00	0.00
7,400.0	0.00	0.00	7,207.9	393.4	1,290.5	1,349.1	0.00	0.00	0.00
7,431.1	0.00	0.00	7,239.0	393.4	1,290.5	1,349.1	0.00	0.00	0.00
<b>CODELL</b>									
7,440.0	0.00	0.00	7,247.9	393.4	1,290.5	1,349.1	0.00	0.00	0.00
7,480.0	0.00	0.00	7,287.9	393.4	1,290.5	1,349.1	0.00	0.00	0.00
7,520.0	0.00	0.00	7,327.9	393.4	1,290.5	1,349.1	0.00	0.00	0.00
7,560.0	0.00	0.00	7,367.9	393.4	1,290.5	1,349.1	0.00	0.00	0.00
7,600.0	0.00	0.00	7,407.9	393.4	1,290.5	1,349.1	0.00	0.00	0.00
7,640.0	0.00	0.00	7,447.9	393.4	1,290.5	1,349.1	0.00	0.00	0.00
7,680.0	0.00	0.00	7,487.9	393.4	1,290.5	1,349.1	0.00	0.00	0.00
7,720.0	0.00	0.00	7,527.9	393.4	1,290.5	1,349.1	0.00	0.00	0.00
7,760.0	0.00	0.00	7,567.9	393.4	1,290.5	1,349.1	0.00	0.00	0.00
7,800.0	0.00	0.00	7,607.9	393.4	1,290.5	1,349.1	0.00	0.00	0.00
7,831.1	0.00	0.00	7,639.0	393.4	1,290.5	1,349.1	0.00	0.00	0.00
<b>D-SAND</b>									
7,840.0	0.00	0.00	7,647.9	393.4	1,290.5	1,349.1	0.00	0.00	0.00
7,880.0	0.00	0.00	7,687.9	393.4	1,290.5	1,349.1	0.00	0.00	0.00
7,891.1	0.00	0.00	7,699.0	393.4	1,290.5	1,349.1	0.00	0.00	0.00
<b>J-SAND</b>									
7,920.0	0.00	0.00	7,727.9	393.4	1,290.5	1,349.1	0.00	0.00	0.00
7,960.0	0.00	0.00	7,767.9	393.4	1,290.5	1,349.1	0.00	0.00	0.00
8,000.0	0.00	0.00	7,807.9	393.4	1,290.5	1,349.1	0.00	0.00	0.00
8,040.0	0.00	0.00	7,847.9	393.4	1,290.5	1,349.1	0.00	0.00	0.00
8,041.1	0.00	0.00	7,849.0	393.4	1,290.5	1,349.1	0.00	0.00	0.00



<b>Database:</b>	EDM den0-adp01 Server Data	<b>Local Co-ordinate Reference:</b>	Well Carlson K23-22D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 4739.0ft (Original Well Elev)
<b>Project:</b>	SEC.23-T4N-R66W	<b>MD Reference:</b>	WELL @ 4739.0ft (Original Well Elev)
<b>Site:</b>	Schmidt K23-24D Pad Sec.23-T4N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Carlson K23-22D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Carlson K23-22D Plan #2 (04-15-10)		

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)	
HARDLINE 75'S 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 256'	0.00	0.00	6,914.0	393.4	1,290.5	1,352,190.02	3,211,914.04	40° 17' 51.611 N	104° 44' 24.913 W	
- plan hits target center										
- Circle (radius 75.0)										
HARDLINE 75'S OF E	0.00	0.00	7,849.0	318.4	1,190.5	1,352,114.17	3,211,814.68	40° 17' 50.870 N	104° 44' 26.204 W	
- plan misses target center by 125.0ft at 8041.1ft MD (7849.0 TVD, 393.4 N, 1290.5 E)										
- Polygon										
Point 1			7,849.0	0.0	0.0	1,352,114.17	3,211,814.68			
Point 2			7,849.0	0.0	200.0	1,352,115.88	3,212,014.67			
TARGET BHL 2564'F	0.00	0.00	6,200.0	393.4	1,290.5	1,352,190.03	3,211,914.01	40° 17' 51.611 N	104° 44' 24.913 W	
- plan hits target center										
- Point										

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
7,106.1	6,914.0	NIOBRARA		0.00		
7,431.1	7,239.0	CODELL		0.00		
7,831.1	7,639.0	D-SAND		0.00		
7,891.1	7,699.0	J-SAND		0.00		