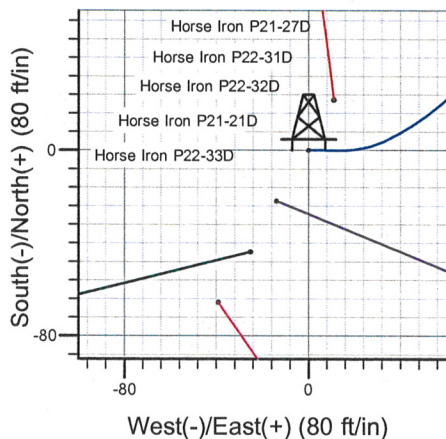
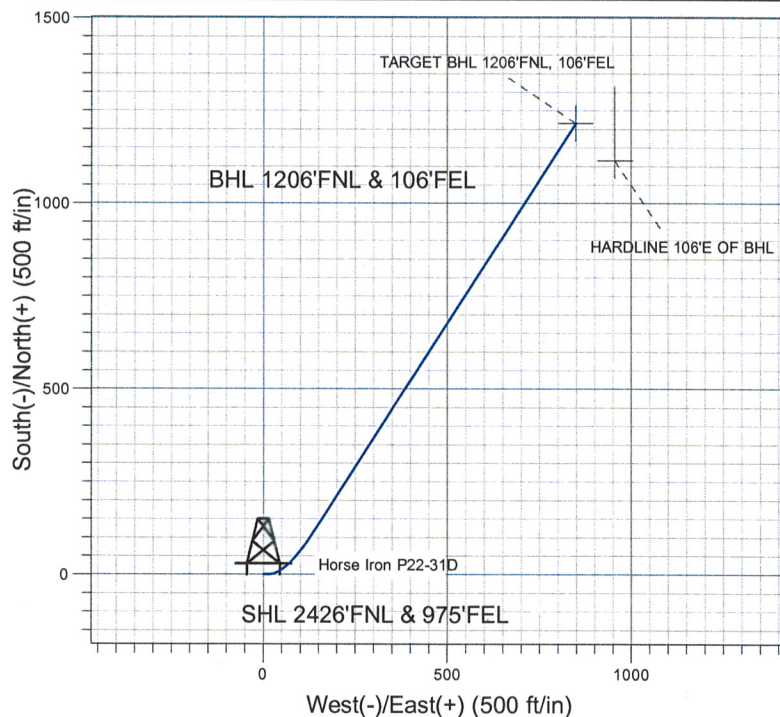
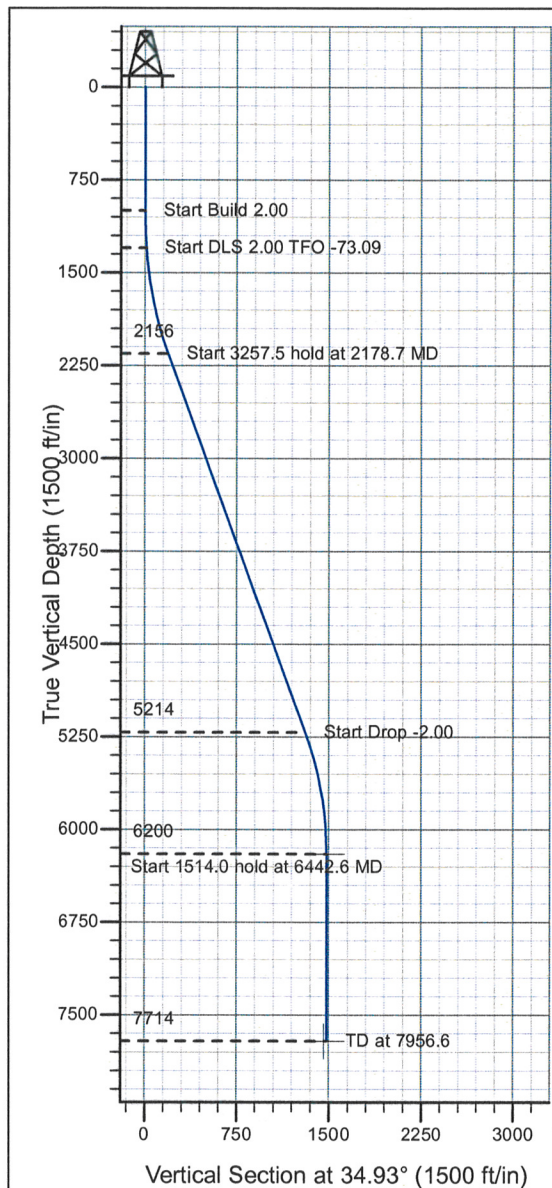


Well Name: Horse Iron P22-31D

Surface Location: Horse Iron Pad Sec.21-T3N-R67W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
Ground Elevation: 4789.0

+N/-S+E/-W		Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1320606.14	3170501.11	40° 12' 42.660 N	104° 53' 22.200 W	
Original Well Elev WELL @ 4802.0ft (Original Well Elev)						

NOBLE ENERGY INC WELD COUNTY CO



Horse Iron Pad Sec.21-T3N-R67W
Horse Iron P22-31D
Plan #2 (07-22-09)
15:56, July 22 2009



Azimuths to True North
Magnetic North: 9.14°

Magnetic Field
Strength: 53245.2snT
Dip Angle: 66.95°
Date: 6/26/2009
Model: IGRF200510

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
TARGET BHL 1206°FNL, 106°FEL	6200.0	1215.8	849.0	40° 12' 54.674 N	104° 53' 11.256 W	Point
HARDLINE 106°E OF BHL	7714.0	1115.8	955.0	40° 12' 53.686 N	104° 53' 9.890 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	1300.0	6.00	90.00	1299.5	0.0	15.7	2.00	90.00	9.0	
4	2178.7	20.13	32.92	2155.6	127.9	144.8	2.00	-73.09	187.8	
5	5436.2	20.13	32.92	5214.2	1068.9	753.9	0.00	0.00	1308.0	
6	6442.6	0.00	0.00	6200.0	1215.8	849.0	2.00	180.00	1482.9	TARGET BHL 1206'FNL, 106'FEL
7	7956.6	0.00	0.00	7714.0	1215.8	849.0	0.00	0.00	1482.9	

Database:	EDM den0-adp01 Server Data	Local Co-ordinate Reference:	Well Horse Iron P22-31D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4802.0ft (Original Well Elev)
Project:	SEC.21-T3N-R67W	MD Reference:	WELL @ 4802.0ft (Original Well Elev)
Site:	Horse Iron Pad Sec.21-T3N-R67W	North Reference:	True
Well:	Horse Iron P22-31D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (07-22-09)		

Project	SEC.21-T3N-R67W, Weld County, Colorado		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site	Horse Iron Pad Sec.21-T3N-R67W		
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Site Position:		Northing:	1,320,540.31 ft	Latitude:	40° 12' 42.012 N
From:	Lat/Long	Easting:	3,170,462.46 ft	Longitude:	104° 53' 22.704 W
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.39 °

Well	Horse Iron P22-31D				
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Well Position	+N/-S	65.6 ft	Northing:	1,320,606.14 ft	Latitude:	40° 12' 42.660 N
	+E/-W	39.1 ft	Easting:	3,170,501.11 ft	Longitude:	104° 53' 22.200 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,789.0 ft

Wellbore	Wellbore #1				
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	6/26/2009	9.14	66.95	53,245

Design	Plan #2 (07-22-09)				
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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	34.93

Plan Sections										
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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	
1,300.0	6.00	90.00	1,299.5	0.0	15.7	2.00	2.00	0.00	90.00	
2,178.7	20.13	32.92	2,155.6	127.9	144.8	2.00	1.61	-6.50	-73.09	
5,436.2	20.13	32.92	5,214.2	1,068.9	753.9	0.00	0.00	0.00	0.00	
6,442.6	0.00	0.00	6,200.0	1,215.8	849.0	2.00	-2.00	0.00	180.00	TARGET BHL 1206
7,956.6	0.00	0.00	7,714.0	1,215.8	849.0	0.00	0.00	0.00	0.00	

Database:	EDM den0-adp01 Server Data	Local Co-ordinate Reference:	Well Horse Iron P22-31D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4802.0ft (Original Well Elev)
Project:	SEC.21-T3N-R67W	MD Reference:	WELL @ 4802.0ft (Original Well Elev)
Site:	Horse Iron Pad Sec.21-T3N-R67W	North Reference:	True
Well:	Horse Iron P22-31D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (07-22-09)		

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	90.00	1,040.0	0.0	0.3	0.2	2.00	2.00	0.00
1,080.0	1.60	90.00	1,080.0	0.0	1.1	0.6	2.00	2.00	0.00
1,120.0	2.40	90.00	1,120.0	0.0	2.5	1.4	2.00	2.00	0.00
1,160.0	3.20	90.00	1,159.9	0.0	4.5	2.6	2.00	2.00	0.00
1,200.0	4.00	90.00	1,199.8	0.0	7.0	4.0	2.00	2.00	0.00
1,240.0	4.80	90.00	1,239.7	0.0	10.0	5.8	2.00	2.00	0.00
1,280.0	5.60	90.00	1,279.6	0.0	13.7	7.8	2.00	2.00	0.00
1,300.0	6.00	90.00	1,299.5	0.0	15.7	9.0	2.00	2.00	0.00
1,320.0	6.13	86.41	1,319.3	0.1	17.8	10.2	2.00	0.64	-17.94
1,360.0	6.45	79.73	1,359.1	0.6	22.1	13.2	2.00	0.81	-16.71
1,400.0	6.85	73.75	1,398.8	1.7	26.6	16.6	2.00	1.00	-14.94
1,440.0	7.32	68.48	1,438.5	3.3	31.3	20.6	2.00	1.17	-13.17
1,480.0	7.84	63.87	1,478.2	5.4	36.1	25.1	2.00	1.30	-11.52
1,520.0	8.41	59.86	1,517.8	8.1	41.1	30.2	2.00	1.41	-10.04
1,560.0	9.01	56.36	1,557.3	11.3	46.2	35.7	2.00	1.50	-8.75
1,600.0	9.63	53.30	1,596.8	15.0	51.5	41.8	2.00	1.57	-7.64
1,640.0	10.29	50.63	1,636.2	19.3	57.0	48.4	2.00	1.63	-6.69
1,680.0	10.96	48.27	1,675.5	24.1	62.6	55.6	2.00	1.68	-5.89
1,720.0	11.65	46.18	1,714.7	29.4	68.3	63.2	2.00	1.72	-5.21
1,760.0	12.35	44.33	1,753.8	35.3	74.2	71.4	2.00	1.75	-4.63
1,800.0	13.06	42.67	1,792.9	41.6	80.3	80.1	2.00	1.78	-4.14
1,840.0	13.78	41.19	1,831.8	48.5	86.5	89.3	2.00	1.80	-3.72
1,880.0	14.51	39.85	1,870.6	56.0	92.8	99.0	2.00	1.82	-3.35
1,920.0	15.25	38.63	1,909.2	63.9	99.3	109.3	2.00	1.84	-3.04
1,960.0	15.99	37.53	1,947.7	72.4	106.0	120.0	2.00	1.86	-2.76
2,000.0	16.74	36.52	1,986.1	81.4	112.8	131.3	2.00	1.87	-2.52
2,040.0	17.49	35.60	2,024.4	90.9	119.7	143.1	2.00	1.88	-2.31
2,080.0	18.25	34.75	2,062.4	101.0	126.7	155.3	2.00	1.89	-2.13

Database:	EDM den0-adp01 Server Data	Local Co-ordinate Reference:	Well Horse Iron P22-31D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4802.0ft (Original Well Elev)
Project:	SEC.21-T3N-R67W	MD Reference:	WELL @ 4802.0ft (Original Well Elev)
Site:	Horse Iron Pad Sec.21-T3N-R67W	North Reference:	True
Well:	Horse Iron P22-31D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (07-22-09)		

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	19.01	33.96	2,100.3	111.5	134.0	168.1	2.00	1.90	-1.96
2,160.0	19.77	33.24	2,138.1	122.6	141.3	181.4	2.00	1.91	-1.82
2,178.7	20.13	32.92	2,155.6	127.9	144.8	187.8	2.00	1.91	-1.72
2,200.0	20.13	32.92	2,175.6	134.1	148.8	195.1	0.00	0.00	0.00
2,240.0	20.13	32.92	2,213.2	145.6	156.2	208.9	0.00	0.00	0.00
2,280.0	20.13	32.92	2,250.7	157.2	163.7	222.6	0.00	0.00	0.00
2,320.0	20.13	32.92	2,288.3	168.7	171.2	236.4	0.00	0.00	0.00
2,360.0	20.13	32.92	2,325.9	180.3	178.7	250.1	0.00	0.00	0.00
2,400.0	20.13	32.92	2,363.4	191.9	186.2	263.9	0.00	0.00	0.00
2,440.0	20.13	32.92	2,401.0	203.4	193.6	277.6	0.00	0.00	0.00
2,480.0	20.13	32.92	2,438.5	215.0	201.1	291.4	0.00	0.00	0.00
2,520.0	20.13	32.92	2,476.1	226.5	208.6	305.2	0.00	0.00	0.00
2,560.0	20.13	32.92	2,513.6	238.1	216.1	318.9	0.00	0.00	0.00
2,600.0	20.13	32.92	2,551.2	249.6	223.6	332.7	0.00	0.00	0.00
2,640.0	20.13	32.92	2,588.8	261.2	231.0	346.4	0.00	0.00	0.00
2,680.0	20.13	32.92	2,626.3	272.7	238.5	360.2	0.00	0.00	0.00
2,720.0	20.13	32.92	2,663.9	284.3	246.0	373.9	0.00	0.00	0.00
2,760.0	20.13	32.92	2,701.4	295.8	253.5	387.7	0.00	0.00	0.00
2,800.0	20.13	32.92	2,739.0	307.4	261.0	401.4	0.00	0.00	0.00
2,840.0	20.13	32.92	2,776.5	319.0	268.4	415.2	0.00	0.00	0.00
2,880.0	20.13	32.92	2,814.1	330.5	275.9	429.0	0.00	0.00	0.00
2,920.0	20.13	32.92	2,851.7	342.1	283.4	442.7	0.00	0.00	0.00
2,960.0	20.13	32.92	2,889.2	353.6	290.9	456.5	0.00	0.00	0.00
3,000.0	20.13	32.92	2,926.8	365.2	298.4	470.2	0.00	0.00	0.00
3,040.0	20.13	32.92	2,964.3	376.7	305.8	484.0	0.00	0.00	0.00
3,080.0	20.13	32.92	3,001.9	388.3	313.3	497.7	0.00	0.00	0.00
3,120.0	20.13	32.92	3,039.4	399.8	320.8	511.5	0.00	0.00	0.00
3,160.0	20.13	32.92	3,077.0	411.4	328.3	525.2	0.00	0.00	0.00
3,200.0	20.13	32.92	3,114.6	423.0	335.8	539.0	0.00	0.00	0.00
3,240.0	20.13	32.92	3,152.1	434.5	343.2	552.8	0.00	0.00	0.00
3,280.0	20.13	32.92	3,189.7	446.1	350.7	566.5	0.00	0.00	0.00
3,320.0	20.13	32.92	3,227.2	457.6	358.2	580.3	0.00	0.00	0.00
3,360.0	20.13	32.92	3,264.8	469.2	365.7	594.0	0.00	0.00	0.00
3,400.0	20.13	32.92	3,302.3	480.7	373.2	607.8	0.00	0.00	0.00
3,440.0	20.13	32.92	3,339.9	492.3	380.6	621.5	0.00	0.00	0.00
3,480.0	20.13	32.92	3,377.5	503.8	388.1	635.3	0.00	0.00	0.00
3,520.0	20.13	32.92	3,415.0	515.4	395.6	649.1	0.00	0.00	0.00
3,560.0	20.13	32.92	3,452.6	526.9	403.1	662.8	0.00	0.00	0.00
3,600.0	20.13	32.92	3,490.1	538.5	410.6	676.6	0.00	0.00	0.00
3,640.0	20.13	32.92	3,527.7	550.1	418.0	690.3	0.00	0.00	0.00
3,680.0	20.13	32.92	3,565.2	561.6	425.5	704.1	0.00	0.00	0.00
3,720.0	20.13	32.92	3,602.8	573.2	433.0	717.8	0.00	0.00	0.00
3,760.0	20.13	32.92	3,640.4	584.7	440.5	731.6	0.00	0.00	0.00
3,800.0	20.13	32.92	3,677.9	596.3	448.0	745.3	0.00	0.00	0.00
3,840.0	20.13	32.92	3,715.5	607.8	455.4	759.1	0.00	0.00	0.00
3,880.0	20.13	32.92	3,753.0	619.4	462.9	772.9	0.00	0.00	0.00
3,920.0	20.13	32.92	3,790.6	630.9	470.4	786.6	0.00	0.00	0.00
3,960.0	20.13	32.92	3,828.1	642.5	477.9	800.4	0.00	0.00	0.00
4,000.0	20.13	32.92	3,865.7	654.1	485.4	814.1	0.00	0.00	0.00
4,040.0	20.13	32.92	3,903.3	665.6	492.8	827.9	0.00	0.00	0.00
4,080.0	20.13	32.92	3,940.8	677.2	500.3	841.6	0.00	0.00	0.00
4,120.0	20.13	32.92	3,978.4	688.7	507.8	855.4	0.00	0.00	0.00
4,160.0	20.13	32.92	4,015.9	700.3	515.3	869.2	0.00	0.00	0.00
4,200.0	20.13	32.92	4,053.5	711.8	522.8	882.9	0.00	0.00	0.00

Database:	EDM den0-adp01 Server Data	Local Co-ordinate Reference:	Well Horse Iron P22-31D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4802.0ft (Original Well Elev)
Project:	SEC.21-T3N-R67W	MD Reference:	WELL @ 4802.0ft (Original Well Elev)
Site:	Horse Iron Pad Sec.21-T3N-R67W	North Reference:	True
Well:	Horse Iron P22-31D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (07-22-09)		

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)
4,240.0	20.13	32.92	4,091.0	723.4	530.2	896.7	0.00	0.00	0.00
4,280.0	20.13	32.92	4,128.6	734.9	537.7	910.4	0.00	0.00	0.00
4,320.0	20.13	32.92	4,166.2	746.5	545.2	924.2	0.00	0.00	0.00
4,360.0	20.13	32.92	4,203.7	758.0	552.7	937.9	0.00	0.00	0.00
4,400.0	20.13	32.92	4,241.3	769.6	560.2	951.7	0.00	0.00	0.00
4,440.0	20.13	32.92	4,278.8	781.2	567.6	965.4	0.00	0.00	0.00
4,480.0	20.13	32.92	4,316.4	792.7	575.1	979.2	0.00	0.00	0.00
4,520.0	20.13	32.92	4,353.9	804.3	582.6	993.0	0.00	0.00	0.00
4,560.0	20.13	32.92	4,391.5	815.8	590.1	1,006.7	0.00	0.00	0.00
4,600.0	20.13	32.92	4,429.1	827.4	597.5	1,020.5	0.00	0.00	0.00
4,640.0	20.13	32.92	4,466.6	838.9	605.0	1,034.2	0.00	0.00	0.00
4,680.0	20.13	32.92	4,504.2	850.5	612.5	1,048.0	0.00	0.00	0.00
4,720.0	20.13	32.92	4,541.7	862.0	620.0	1,061.7	0.00	0.00	0.00
4,760.0	20.13	32.92	4,579.3	873.6	627.5	1,075.5	0.00	0.00	0.00
4,800.0	20.13	32.92	4,616.8	885.2	634.9	1,089.3	0.00	0.00	0.00
4,840.0	20.13	32.92	4,654.4	896.7	642.4	1,103.0	0.00	0.00	0.00
4,880.0	20.13	32.92	4,692.0	908.3	649.9	1,116.8	0.00	0.00	0.00
4,920.0	20.13	32.92	4,729.5	919.8	657.4	1,130.5	0.00	0.00	0.00
4,960.0	20.13	32.92	4,767.1	931.4	664.9	1,144.3	0.00	0.00	0.00
5,000.0	20.13	32.92	4,804.6	942.9	672.3	1,158.0	0.00	0.00	0.00
5,040.0	20.13	32.92	4,842.2	954.5	679.8	1,171.8	0.00	0.00	0.00
5,080.0	20.13	32.92	4,879.7	966.0	687.3	1,185.5	0.00	0.00	0.00
5,120.0	20.13	32.92	4,917.3	977.6	694.8	1,199.3	0.00	0.00	0.00
5,160.0	20.13	32.92	4,954.9	989.2	702.3	1,213.1	0.00	0.00	0.00
5,200.0	20.13	32.92	4,992.4	1,000.7	709.7	1,226.8	0.00	0.00	0.00
5,240.0	20.13	32.92	5,030.0	1,012.3	717.2	1,240.6	0.00	0.00	0.00
5,280.0	20.13	32.92	5,067.5	1,023.8	724.7	1,254.3	0.00	0.00	0.00
5,320.0	20.13	32.92	5,105.1	1,035.4	732.2	1,268.1	0.00	0.00	0.00
5,360.0	20.13	32.92	5,142.6	1,046.9	739.7	1,281.8	0.00	0.00	0.00
5,400.0	20.13	32.92	5,180.2	1,058.5	747.1	1,295.6	0.00	0.00	0.00
5,436.2	20.13	32.92	5,214.2	1,068.9	753.9	1,308.0	0.00	0.00	0.00
5,440.0	20.05	32.92	5,217.8	1,070.0	754.6	1,309.3	2.00	-2.00	0.00
5,480.0	19.25	32.92	5,255.4	1,081.3	761.9	1,322.8	2.00	-2.00	0.00
5,520.0	18.45	32.92	5,293.3	1,092.2	769.0	1,335.7	2.00	-2.00	0.00
5,560.0	17.65	32.92	5,331.3	1,102.6	775.7	1,348.1	2.00	-2.00	0.00
5,600.0	16.85	32.92	5,369.5	1,112.5	782.1	1,359.9	2.00	-2.00	0.00
5,640.0	16.05	32.92	5,407.9	1,122.0	788.3	1,371.3	2.00	-2.00	0.00
5,680.0	15.25	32.92	5,446.4	1,131.1	794.2	1,382.1	2.00	-2.00	0.00
5,720.0	14.45	32.92	5,485.1	1,139.7	799.7	1,392.3	2.00	-2.00	0.00
5,760.0	13.65	32.92	5,523.9	1,147.9	805.0	1,402.0	2.00	-2.00	0.00
5,800.0	12.85	32.92	5,562.8	1,155.6	810.0	1,411.2	2.00	-2.00	0.00
5,840.0	12.05	32.92	5,601.9	1,162.8	814.7	1,419.8	2.00	-2.00	0.00
5,880.0	11.25	32.92	5,641.0	1,169.6	819.1	1,427.9	2.00	-2.00	0.00
5,920.0	10.45	32.92	5,680.3	1,175.9	823.2	1,435.4	2.00	-2.00	0.00
5,960.0	9.65	32.92	5,719.7	1,181.8	826.9	1,442.4	2.00	-2.00	0.00
6,000.0	8.85	32.92	5,759.2	1,187.2	830.4	1,448.8	2.00	-2.00	0.00
6,040.0	8.05	32.92	5,798.7	1,192.1	833.6	1,454.7	2.00	-2.00	0.00
6,080.0	7.25	32.92	5,838.4	1,196.6	836.5	1,460.0	2.00	-2.00	0.00
6,120.0	6.45	32.92	5,878.1	1,200.6	839.1	1,464.8	2.00	-2.00	0.00
6,160.0	5.65	32.92	5,917.9	1,204.1	841.4	1,469.0	2.00	-2.00	0.00
6,200.0	4.85	32.92	5,957.7	1,207.2	843.4	1,472.6	2.00	-2.00	0.00
6,240.0	4.05	32.92	5,997.6	1,209.8	845.1	1,475.7	2.00	-2.00	0.00
6,280.0	3.25	32.92	6,037.5	1,211.9	846.5	1,478.3	2.00	-2.00	0.00
6,320.0	2.45	32.92	6,077.5	1,213.6	847.6	1,480.3	2.00	-2.00	0.00

Database:	EDM den0-adp01 Server Data	Local Co-ordinate Reference:	Well Horse Iron P22-31D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4802.0ft (Original Well Elev)
Project:	SEC.21-T3N-R67W	MD Reference:	WELL @ 4802.0ft (Original Well Elev)
Site:	Horse Iron Pad Sec.21-T3N-R67W	North Reference:	True
Well:	Horse Iron P22-31D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (07-22-09)		

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)	
6,360.0	1.65	32.92	6,117.4	1,214.8	848.3	1,481.7	2.00	-2.00	0.00	
6,400.0	0.85	32.92	6,157.4	1,215.5	848.8	1,482.6	2.00	-2.00	0.00	
6,440.0	0.05	32.92	6,197.4	1,215.8	849.0	1,482.9	2.00	-2.00	0.00	
6,442.6	0.00	0.00	6,200.0	1,215.8	849.0	1,482.9	2.00	-2.00	0.00	
TARGET BHL 1206°FNL, 106°FEL										
6,480.0	0.00	0.00	6,237.4	1,215.8	849.0	1,482.9	0.00	0.00	0.00	
6,520.0	0.00	0.00	6,277.4	1,215.8	849.0	1,482.9	0.00	0.00	0.00	
6,560.0	0.00	0.00	6,317.4	1,215.8	849.0	1,482.9	0.00	0.00	0.00	
6,600.0	0.00	0.00	6,357.4	1,215.8	849.0	1,482.9	0.00	0.00	0.00	
6,640.0	0.00	0.00	6,397.4	1,215.8	849.0	1,482.9	0.00	0.00	0.00	
6,680.0	0.00	0.00	6,437.4	1,215.8	849.0	1,482.9	0.00	0.00	0.00	
6,720.0	0.00	0.00	6,477.4	1,215.8	849.0	1,482.9	0.00	0.00	0.00	
6,760.0	0.00	0.00	6,517.4	1,215.8	849.0	1,482.9	0.00	0.00	0.00	
6,800.0	0.00	0.00	6,557.4	1,215.8	849.0	1,482.9	0.00	0.00	0.00	
6,840.0	0.00	0.00	6,597.4	1,215.8	849.0	1,482.9	0.00	0.00	0.00	
6,880.0	0.00	0.00	6,637.4	1,215.8	849.0	1,482.9	0.00	0.00	0.00	
6,920.0	0.00	0.00	6,677.4	1,215.8	849.0	1,482.9	0.00	0.00	0.00	
6,960.0	0.00	0.00	6,717.4	1,215.8	849.0	1,482.9	0.00	0.00	0.00	
7,000.0	0.00	0.00	6,757.4	1,215.8	849.0	1,482.9	0.00	0.00	0.00	
7,037.6	0.00	0.00	6,795.0	1,215.8	849.0	1,482.9	0.00	0.00	0.00	
NIOBRARA										
7,040.0	0.00	0.00	6,797.4	1,215.8	849.0	1,482.9	0.00	0.00	0.00	
7,080.0	0.00	0.00	6,837.4	1,215.8	849.0	1,482.9	0.00	0.00	0.00	
7,120.0	0.00	0.00	6,877.4	1,215.8	849.0	1,482.9	0.00	0.00	0.00	
7,160.0	0.00	0.00	6,917.4	1,215.8	849.0	1,482.9	0.00	0.00	0.00	
7,200.0	0.00	0.00	6,957.4	1,215.8	849.0	1,482.9	0.00	0.00	0.00	
7,240.0	0.00	0.00	6,997.4	1,215.8	849.0	1,482.9	0.00	0.00	0.00	
7,280.0	0.00	0.00	7,037.4	1,215.8	849.0	1,482.9	0.00	0.00	0.00	
7,320.0	0.00	0.00	7,077.4	1,215.8	849.0	1,482.9	0.00	0.00	0.00	
7,329.6	0.00	0.00	7,087.0	1,215.8	849.0	1,482.9	0.00	0.00	0.00	
CODELL										
7,360.0	0.00	0.00	7,117.4	1,215.8	849.0	1,482.9	0.00	0.00	0.00	
7,400.0	0.00	0.00	7,157.4	1,215.8	849.0	1,482.9	0.00	0.00	0.00	
7,440.0	0.00	0.00	7,197.4	1,215.8	849.0	1,482.9	0.00	0.00	0.00	
7,480.0	0.00	0.00	7,237.4	1,215.8	849.0	1,482.9	0.00	0.00	0.00	
7,520.0	0.00	0.00	7,277.4	1,215.8	849.0	1,482.9	0.00	0.00	0.00	
7,560.0	0.00	0.00	7,317.4	1,215.8	849.0	1,482.9	0.00	0.00	0.00	
7,600.0	0.00	0.00	7,357.4	1,215.8	849.0	1,482.9	0.00	0.00	0.00	
7,640.0	0.00	0.00	7,397.4	1,215.8	849.0	1,482.9	0.00	0.00	0.00	
7,680.0	0.00	0.00	7,437.4	1,215.8	849.0	1,482.9	0.00	0.00	0.00	
7,720.0	0.00	0.00	7,477.4	1,215.8	849.0	1,482.9	0.00	0.00	0.00	
7,756.6	0.00	0.00	7,514.0	1,215.8	849.0	1,482.9	0.00	0.00	0.00	
J-SAND										
7,760.0	0.00	0.00	7,517.4	1,215.8	849.0	1,482.9	0.00	0.00	0.00	
7,800.0	0.00	0.00	7,557.4	1,215.8	849.0	1,482.9	0.00	0.00	0.00	
7,840.0	0.00	0.00	7,597.4	1,215.8	849.0	1,482.9	0.00	0.00	0.00	
7,880.0	0.00	0.00	7,637.4	1,215.8	849.0	1,482.9	0.00	0.00	0.00	
7,920.0	0.00	0.00	7,677.4	1,215.8	849.0	1,482.9	0.00	0.00	0.00	
7,956.6	0.00	0.00	7,714.0	1,215.8	849.0	1,482.9	0.00	0.00	0.00	
HARDLINE 106°E OF BHL										

Database:	EDM den0-adp01 Server Data	Local Co-ordinate Reference:	Well Horse Iron P22-31D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4802.0ft (Original Well Elev)
Project:	SEC.21-T3N-R67W	MD Reference:	WELL @ 4802.0ft (Original Well Elev)
Site:	Horse Iron Pad Sec.21-T3N-R67W	North Reference:	True
Well:	Horse Iron P22-31D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (07-22-09)		

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 1206'F	0.00	0.00	6,200.0	1,215.8	849.0	1,321,827.71	3,171,341.66	40° 12' 54.674 N	104° 53' 11.256 W
- plan hits target center									
- Point									
HARDLINE 106'E OF	0.00	0.00	7,714.0	1,115.8	955.0	1,321,728.44	3,171,448.36	40° 12' 53.686 N	104° 53' 9.890 W
- plan misses target center by 145.7ft at 7956.6ft MD (7714.0 TVD, 1215.8 N, 849.0 E)									
- Polygon									
Point 1			7,714.0	0.0	0.0	1,321,728.44	3,171,448.36		
Point 2			7,714.0	200.0	0.0	1,321,928.42	3,171,446.99		

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(ft)	(ft)			(°)	(°)	
7,037.6	6,795.0	NIOBRARA		0.00		
7,329.6	7,087.0	CODELL		0.00		
7,756.6	7,514.0	J-SAND		0.00		