

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	900.0	0.00	0.00	900.0	0.0	0.0	0.00	0.00	0.0	
3	1926.9	20.54	90.14	1905.1	-0.4	182.1	2.00	90.14	182.1	
4	5119.7	20.54	90.14	4894.9	-3.1	1302.2	0.00	0.00	1302.2	
5	6146.6	0.00	0.00	5900.0	-3.6	1484.3	2.00	180.00	1484.3	TARGET BHL 660'FNL, 660'FEL
6	7450.6	0.00	0.00	7204.0	-3.6	1484.3	0.00	0.00	1484.3	



Directional

NOBLE ENERGY INC WELD COUNTY CO

SEC.35-T7N-R64W

Pettinger USX AB35-01D Pad Sec.35-T7N-R64W

Pettinger USX AB35-01D

Wellbore #1

Plan: Noble Pettinger USX AB35-01D Plan #1 (1-05-11)

Standard Planning Report

11 January, 2011



Database:	Landmark	Local Co-ordinate Reference:	Well Pettinger USX AB35-01D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4844.0ft (Original Well Elev)
Project:	SEC.35-T7N-R64W	MD Reference:	WELL @ 4844.0ft (Original Well Elev)
Site:	Pettinger USX AB35-01D Pad Sec.35-T7N-R64W	North Reference:	True
Well:	Pettinger USX AB35-01D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Pettinger USX AB35-01D Plan #1 (1-05-		

Project	SEC.35-T7N-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	Pettinger USX AB35-01D Pad Sec.35-T7N-R64W				
Site Position:		Northing:	1,439,366.34 ft	Latitude:	40° 32' 7.044 N
From:	Lat/Long	Easting:	3,273,676.76 ft	Longitude:	104° 30' 55.332 W
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.64 °

Well	Pettinger USX AB35-01D					
Well Position	+N/-S	0.0 ft	Northing:	1,439,366.33 ft	Latitude:	40° 32' 7.044 N
	+E/-W	0.0 ft	Easting:	3,273,676.76 ft	Longitude:	104° 30' 55.332 W
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,831.0 ft	

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	1/11/2011	8.80	67.22	53,274

Design	Noble Pettinger USX AB35-01D Plan #1 (1-05-11)			
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	90.14

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	
900.0	0.00	0.00	900.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,926.9	20.54	90.14	1,905.1	-0.4	182.1	2.00	2.00	0.00	90.14	
5,119.7	20.54	90.14	4,894.9	-3.1	1,302.2	0.00	0.00	0.00	0.00	
6,146.6	0.00	0.00	5,900.0	-3.6	1,484.3	2.00	-2.00	0.00	180.00	TARGET BHL 660'
7,450.6	0.00	0.00	7,204.0	-3.6	1,484.3	0.00	0.00	0.00	0.00	

Database: Landmark
 Company: NOBLE ENERGY INC WELD COUNTY CO
 Project: SEC.35-T7N-R64W
 Site: Pettinger USX AB35-01D Pad
 Sec.35-T7N-R64W
 Well: Pettinger USX AB35-01D
 Wellbore: Wellbore #1
 Design: Noble Pettinger USX AB35-01D Plan #1 (1-05-

Local Co-ordinate Reference: Well Pettinger USX AB35-01D
 TVD Reference: WELL @ 4844.0ft (Original Well Elev)
 MD Reference: WELL @ 4844.0ft (Original Well Elev)
 North Reference: True
 Survey Calculation Method: Minimum Curvature

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
750.0	0.00	0.00	750.0	0.0	0.0	0.0	0.00	0.00	0.00
8 5/8"									
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
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
920.0	0.40	90.14	920.0	0.0	0.1	0.1	2.00	2.00	0.00
960.0	1.20	90.14	960.0	0.0	0.6	0.6	2.00	2.00	0.00
1,000.0	2.00	90.14	1,000.0	0.0	1.7	1.7	2.00	2.00	0.00
1,040.0	2.80	90.14	1,039.9	0.0	3.4	3.4	2.00	2.00	0.00
1,080.0	3.60	90.14	1,079.9	0.0	5.7	5.7	2.00	2.00	0.00
1,120.0	4.40	90.14	1,119.8	0.0	8.4	8.4	2.00	2.00	0.00
1,160.0	5.20	90.14	1,159.6	0.0	11.8	11.8	2.00	2.00	0.00
1,200.0	6.00	90.14	1,199.5	0.0	15.7	15.7	2.00	2.00	0.00
1,240.0	6.80	90.14	1,239.2	0.0	20.2	20.2	2.00	2.00	0.00
1,280.0	7.60	90.14	1,278.9	-0.1	25.2	25.2	2.00	2.00	0.00
1,320.0	8.40	90.14	1,318.5	-0.1	30.7	30.7	2.00	2.00	0.00
1,360.0	9.20	90.14	1,358.0	-0.1	36.9	36.9	2.00	2.00	0.00
1,400.0	10.00	90.14	1,397.5	-0.1	43.5	43.5	2.00	2.00	0.00
1,440.0	10.80	90.14	1,436.8	-0.1	50.7	50.7	2.00	2.00	0.00
1,480.0	11.60	90.14	1,476.0	-0.1	58.5	58.5	2.00	2.00	0.00
1,520.0	12.40	90.14	1,515.2	-0.2	66.8	66.8	2.00	2.00	0.00
1,560.0	13.20	90.14	1,554.2	-0.2	75.7	75.7	2.00	2.00	0.00
1,600.0	14.00	90.14	1,593.1	-0.2	85.1	85.1	2.00	2.00	0.00
1,640.0	14.80	90.14	1,631.8	-0.2	95.0	95.0	2.00	2.00	0.00
1,680.0	15.60	90.14	1,670.4	-0.3	105.5	105.5	2.00	2.00	0.00
1,720.0	16.40	90.14	1,708.8	-0.3	116.6	116.6	2.00	2.00	0.00
1,760.0	17.20	90.14	1,747.1	-0.3	128.1	128.1	2.00	2.00	0.00
1,800.0	18.00	90.14	1,785.3	-0.3	140.2	140.2	2.00	2.00	0.00
1,840.0	18.80	90.14	1,823.2	-0.4	152.8	152.8	2.00	2.00	0.00
1,880.0	19.60	90.14	1,861.0	-0.4	166.0	166.0	2.00	2.00	0.00
1,920.0	20.40	90.14	1,898.6	-0.4	179.7	179.7	2.00	2.00	0.00
1,926.9	20.54	90.14	1,905.1	-0.4	182.1	182.1	2.00	2.00	0.00

Database: Landmark
Company: NOBLE ENERGY INC WELD COUNTY CO
Project: SEC.35-T7N-R64W
Site: Pettinger USX AB35-01D Pad
 Sec.35-T7N-R64W
Well: Pettinger USX AB35-01D
Wellbore: Wellbore #1
Design: Noble Pettinger USX AB35-01D Plan #1 (1-05-

Local Co-ordinate Reference: Well Pettinger USX AB35-01D
TVD Reference: WELL @ 4844.0ft (Original Well Elev)
MD Reference: WELL @ 4844.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

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	20.54	90.14	1,936.0	-0.5	193.7	193.7	0.00	0.00	0.00
2,000.0	20.54	90.14	1,973.5	-0.5	207.7	207.7	0.00	0.00	0.00
2,040.0	20.54	90.14	2,011.0	-0.5	221.8	221.8	0.00	0.00	0.00
2,080.0	20.54	90.14	2,048.4	-0.6	235.8	235.8	0.00	0.00	0.00
2,120.0	20.54	90.14	2,085.9	-0.6	249.8	249.8	0.00	0.00	0.00
2,160.0	20.54	90.14	2,123.3	-0.6	263.9	263.9	0.00	0.00	0.00
2,200.0	20.54	90.14	2,160.8	-0.7	277.9	277.9	0.00	0.00	0.00
2,240.0	20.54	90.14	2,198.2	-0.7	291.9	291.9	0.00	0.00	0.00
2,280.0	20.54	90.14	2,235.7	-0.7	306.0	306.0	0.00	0.00	0.00
2,320.0	20.54	90.14	2,273.2	-0.8	320.0	320.0	0.00	0.00	0.00
2,360.0	20.54	90.14	2,310.6	-0.8	334.0	334.0	0.00	0.00	0.00
2,400.0	20.54	90.14	2,348.1	-0.8	348.1	348.1	0.00	0.00	0.00
2,440.0	20.54	90.14	2,385.5	-0.9	362.1	362.1	0.00	0.00	0.00
2,480.0	20.54	90.14	2,423.0	-0.9	376.1	376.1	0.00	0.00	0.00
2,520.0	20.54	90.14	2,460.5	-0.9	390.2	390.2	0.00	0.00	0.00
2,560.0	20.54	90.14	2,497.9	-1.0	404.2	404.2	0.00	0.00	0.00
2,600.0	20.54	90.14	2,535.4	-1.0	418.2	418.2	0.00	0.00	0.00
2,640.0	20.54	90.14	2,572.8	-1.0	432.3	432.3	0.00	0.00	0.00
2,680.0	20.54	90.14	2,610.3	-1.1	446.3	446.3	0.00	0.00	0.00
2,720.0	20.54	90.14	2,647.7	-1.1	460.3	460.3	0.00	0.00	0.00
2,760.0	20.54	90.14	2,685.2	-1.1	474.4	474.4	0.00	0.00	0.00
2,800.0	20.54	90.14	2,722.7	-1.2	488.4	488.4	0.00	0.00	0.00
2,840.0	20.54	90.14	2,760.1	-1.2	502.4	502.4	0.00	0.00	0.00
2,880.0	20.54	90.14	2,797.6	-1.2	516.5	516.5	0.00	0.00	0.00
2,920.0	20.54	90.14	2,835.0	-1.3	530.5	530.5	0.00	0.00	0.00
2,960.0	20.54	90.14	2,872.5	-1.3	544.5	544.5	0.00	0.00	0.00
3,000.0	20.54	90.14	2,909.9	-1.4	558.6	558.6	0.00	0.00	0.00
3,040.0	20.54	90.14	2,947.4	-1.4	572.6	572.6	0.00	0.00	0.00
3,080.0	20.54	90.14	2,984.9	-1.4	586.6	586.6	0.00	0.00	0.00
3,120.0	20.54	90.14	3,022.3	-1.5	600.7	600.7	0.00	0.00	0.00
3,160.0	20.54	90.14	3,059.8	-1.5	614.7	614.7	0.00	0.00	0.00
3,200.0	20.54	90.14	3,097.2	-1.5	628.7	628.7	0.00	0.00	0.00
3,240.0	20.54	90.14	3,134.7	-1.6	642.8	642.8	0.00	0.00	0.00
3,280.0	20.54	90.14	3,172.1	-1.6	656.8	656.8	0.00	0.00	0.00
3,320.0	20.54	90.14	3,209.6	-1.6	670.8	670.8	0.00	0.00	0.00
3,360.0	20.54	90.14	3,247.1	-1.7	684.9	684.9	0.00	0.00	0.00
3,400.0	20.54	90.14	3,284.5	-1.7	698.9	698.9	0.00	0.00	0.00
3,440.0	20.54	90.14	3,322.0	-1.7	712.9	712.9	0.00	0.00	0.00
3,480.0	20.54	90.14	3,359.4	-1.8	727.0	727.0	0.00	0.00	0.00
3,520.0	20.54	90.14	3,396.9	-1.8	741.0	741.0	0.00	0.00	0.00
3,560.0	20.54	90.14	3,434.3	-1.8	755.0	755.0	0.00	0.00	0.00
3,600.0	20.54	90.14	3,471.8	-1.9	769.1	769.1	0.00	0.00	0.00
3,640.0	20.54	90.14	3,509.3	-1.9	783.1	783.1	0.00	0.00	0.00
3,680.0	20.54	90.14	3,546.7	-1.9	797.1	797.1	0.00	0.00	0.00
3,720.0	20.54	90.14	3,584.2	-2.0	811.2	811.2	0.00	0.00	0.00
3,760.0	20.54	90.14	3,621.6	-2.0	825.2	825.2	0.00	0.00	0.00
3,800.0	20.54	90.14	3,659.1	-2.0	839.2	839.2	0.00	0.00	0.00
3,840.0	20.54	90.14	3,696.5	-2.1	853.3	853.3	0.00	0.00	0.00
3,880.0	20.54	90.14	3,734.0	-2.1	867.3	867.3	0.00	0.00	0.00
3,920.0	20.54	90.14	3,771.5	-2.1	881.3	881.3	0.00	0.00	0.00
3,960.0	20.54	90.14	3,808.9	-2.2	895.4	895.4	0.00	0.00	0.00
4,000.0	20.54	90.14	3,846.4	-2.2	909.4	909.4	0.00	0.00	0.00
4,040.0	20.54	90.14	3,883.8	-2.2	923.4	923.4	0.00	0.00	0.00

Database: Landmark
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TVD Reference: WELL @ 4844.0ft (Original Well Elev)
MD Reference: WELL @ 4844.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

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	20.54	90.14	3,921.3	-2.3	937.5	937.5	0.00	0.00	0.00
4,120.0	20.54	90.14	3,958.8	-2.3	951.5	951.5	0.00	0.00	0.00
4,160.0	20.54	90.14	3,996.2	-2.3	965.5	965.5	0.00	0.00	0.00
4,200.0	20.54	90.14	4,033.7	-2.4	979.6	979.6	0.00	0.00	0.00
4,240.0	20.54	90.14	4,071.1	-2.4	993.6	993.6	0.00	0.00	0.00
4,280.0	20.54	90.14	4,108.6	-2.4	1,007.6	1,007.6	0.00	0.00	0.00
4,320.0	20.54	90.14	4,146.0	-2.5	1,021.7	1,021.7	0.00	0.00	0.00
4,360.0	20.54	90.14	4,183.5	-2.5	1,035.7	1,035.7	0.00	0.00	0.00
4,400.0	20.54	90.14	4,221.0	-2.5	1,049.7	1,049.7	0.00	0.00	0.00
4,440.0	20.54	90.14	4,258.4	-2.6	1,063.8	1,063.8	0.00	0.00	0.00
4,480.0	20.54	90.14	4,295.9	-2.6	1,077.8	1,077.8	0.00	0.00	0.00
4,520.0	20.54	90.14	4,333.3	-2.6	1,091.8	1,091.8	0.00	0.00	0.00
4,560.0	20.54	90.14	4,370.8	-2.7	1,105.9	1,105.9	0.00	0.00	0.00
4,600.0	20.54	90.14	4,408.2	-2.7	1,119.9	1,119.9	0.00	0.00	0.00
4,640.0	20.54	90.14	4,445.7	-2.7	1,133.9	1,133.9	0.00	0.00	0.00
4,680.0	20.54	90.14	4,483.2	-2.8	1,148.0	1,148.0	0.00	0.00	0.00
4,720.0	20.54	90.14	4,520.6	-2.8	1,162.0	1,162.0	0.00	0.00	0.00
4,760.0	20.54	90.14	4,558.1	-2.8	1,176.0	1,176.0	0.00	0.00	0.00
4,800.0	20.54	90.14	4,595.5	-2.9	1,190.1	1,190.1	0.00	0.00	0.00
4,840.0	20.54	90.14	4,633.0	-2.9	1,204.1	1,204.1	0.00	0.00	0.00
4,880.0	20.54	90.14	4,670.4	-2.9	1,218.1	1,218.1	0.00	0.00	0.00
4,920.0	20.54	90.14	4,707.9	-3.0	1,232.2	1,232.2	0.00	0.00	0.00
4,960.0	20.54	90.14	4,745.4	-3.0	1,246.2	1,246.2	0.00	0.00	0.00
5,000.0	20.54	90.14	4,782.8	-3.0	1,260.2	1,260.2	0.00	0.00	0.00
5,040.0	20.54	90.14	4,820.3	-3.1	1,274.3	1,274.3	0.00	0.00	0.00
5,080.0	20.54	90.14	4,857.7	-3.1	1,288.3	1,288.3	0.00	0.00	0.00
5,119.7	20.54	90.14	4,894.9	-3.1	1,302.2	1,302.2	0.00	0.00	0.00
5,120.0	20.53	90.14	4,895.2	-3.2	1,302.3	1,302.3	2.00	-2.00	0.00
5,160.0	19.73	90.14	4,932.7	-3.2	1,316.1	1,316.1	2.00	-2.00	0.00
5,200.0	18.93	90.14	4,970.5	-3.2	1,329.3	1,329.3	2.00	-2.00	0.00
5,240.0	18.13	90.14	5,008.4	-3.2	1,342.1	1,342.1	2.00	-2.00	0.00
5,280.0	17.33	90.14	5,046.5	-3.3	1,354.2	1,354.2	2.00	-2.00	0.00
5,320.0	16.53	90.14	5,084.8	-3.3	1,365.9	1,365.9	2.00	-2.00	0.00
5,360.0	15.73	90.14	5,123.2	-3.3	1,377.0	1,377.0	2.00	-2.00	0.00
5,400.0	14.93	90.14	5,161.8	-3.4	1,387.6	1,387.6	2.00	-2.00	0.00
5,440.0	14.13	90.14	5,200.5	-3.4	1,397.6	1,397.6	2.00	-2.00	0.00
5,480.0	13.33	90.14	5,239.4	-3.4	1,407.1	1,407.1	2.00	-2.00	0.00
5,520.0	12.53	90.14	5,278.3	-3.4	1,416.1	1,416.1	2.00	-2.00	0.00
5,560.0	11.73	90.14	5,317.4	-3.4	1,424.5	1,424.5	2.00	-2.00	0.00
5,600.0	10.93	90.14	5,356.7	-3.5	1,432.3	1,432.3	2.00	-2.00	0.00
5,640.0	10.13	90.14	5,396.0	-3.5	1,439.6	1,439.6	2.00	-2.00	0.00
5,680.0	9.33	90.14	5,435.4	-3.5	1,446.4	1,446.4	2.00	-2.00	0.00
5,720.0	8.53	90.14	5,474.9	-3.5	1,452.6	1,452.6	2.00	-2.00	0.00
5,760.0	7.73	90.14	5,514.5	-3.5	1,458.3	1,458.3	2.00	-2.00	0.00
5,800.0	6.93	90.14	5,554.2	-3.5	1,463.4	1,463.4	2.00	-2.00	0.00
5,840.0	6.13	90.14	5,593.9	-3.6	1,467.9	1,467.9	2.00	-2.00	0.00
5,880.0	5.33	90.14	5,633.7	-3.6	1,471.9	1,471.9	2.00	-2.00	0.00
5,920.0	4.53	90.14	5,673.6	-3.6	1,475.4	1,475.4	2.00	-2.00	0.00
5,960.0	3.73	90.14	5,713.5	-3.6	1,478.2	1,478.3	2.00	-2.00	0.00
6,000.0	2.93	90.14	5,753.4	-3.6	1,480.6	1,480.6	2.00	-2.00	0.00
6,040.0	2.13	90.14	5,793.4	-3.6	1,482.3	1,482.3	2.00	-2.00	0.00
6,080.0	1.33	90.14	5,833.4	-3.6	1,483.6	1,483.6	2.00	-2.00	0.00
6,120.0	0.53	90.14	5,873.4	-3.6	1,484.2	1,484.2	2.00	-2.00	0.00

Database: Landmark
Company: NOBLE ENERGY INC WELD COUNTY CO
Project: SEC.35-T7N-R64W
Site: Pettinger USX AB35-01D Pad
 Sec.35-T7N-R64W
Well: Pettinger USX AB35-01D
Wellbore: Wellbore #1
Design: Noble Pettinger USX AB35-01D Plan #1 (1-05-

Local Co-ordinate Reference: Well Pettinger USX AB35-01D
TVD Reference: WELL @ 4844.0ft (Original Well Elev)
MD Reference: WELL @ 4844.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

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)
6,146.6	0.00	0.00	5,900.0	-3.6	1,484.3	1,484.3	2.00	-2.00	0.00
TARGET BHL 660'FNL, 660'FEL									
6,160.0	0.00	0.00	5,913.4	-3.6	1,484.3	1,484.3	0.00	0.00	0.00
6,200.0	0.00	0.00	5,953.4	-3.6	1,484.3	1,484.3	0.00	0.00	0.00
6,240.0	0.00	0.00	5,993.4	-3.6	1,484.3	1,484.3	0.00	0.00	0.00
6,280.0	0.00	0.00	6,033.4	-3.6	1,484.3	1,484.3	0.00	0.00	0.00
6,320.0	0.00	0.00	6,073.4	-3.6	1,484.3	1,484.3	0.00	0.00	0.00
6,360.0	0.00	0.00	6,113.4	-3.6	1,484.3	1,484.3	0.00	0.00	0.00
6,400.0	0.00	0.00	6,153.4	-3.6	1,484.3	1,484.3	0.00	0.00	0.00
6,440.0	0.00	0.00	6,193.4	-3.6	1,484.3	1,484.3	0.00	0.00	0.00
6,480.0	0.00	0.00	6,233.4	-3.6	1,484.3	1,484.3	0.00	0.00	0.00
6,520.0	0.00	0.00	6,273.4	-3.6	1,484.3	1,484.3	0.00	0.00	0.00
6,560.0	0.00	0.00	6,313.4	-3.6	1,484.3	1,484.3	0.00	0.00	0.00
6,600.0	0.00	0.00	6,353.4	-3.6	1,484.3	1,484.3	0.00	0.00	0.00
6,640.0	0.00	0.00	6,393.4	-3.6	1,484.3	1,484.3	0.00	0.00	0.00
6,680.0	0.00	0.00	6,433.4	-3.6	1,484.3	1,484.3	0.00	0.00	0.00
6,720.0	0.00	0.00	6,473.4	-3.6	1,484.3	1,484.3	0.00	0.00	0.00
6,760.0	0.00	0.00	6,513.4	-3.6	1,484.3	1,484.3	0.00	0.00	0.00
6,800.0	0.00	0.00	6,553.4	-3.6	1,484.3	1,484.3	0.00	0.00	0.00
6,840.0	0.00	0.00	6,593.4	-3.6	1,484.3	1,484.3	0.00	0.00	0.00
6,880.0	0.00	0.00	6,633.4	-3.6	1,484.3	1,484.3	0.00	0.00	0.00
6,920.0	0.00	0.00	6,673.4	-3.6	1,484.3	1,484.3	0.00	0.00	0.00
6,960.0	0.00	0.00	6,713.4	-3.6	1,484.3	1,484.3	0.00	0.00	0.00
6,988.6	0.00	0.00	6,742.0	-3.6	1,484.3	1,484.3	0.00	0.00	0.00
NIOBRARA - LEGAL BOX 400' X 400' 660'FNL & 663'FEL - TARGET CIRCLE 660'FNL & 660'FEL									
7,000.0	0.00	0.00	6,753.4	-3.6	1,484.3	1,484.3	0.00	0.00	0.00
7,040.0	0.00	0.00	6,793.4	-3.6	1,484.3	1,484.3	0.00	0.00	0.00
7,080.0	0.00	0.00	6,833.4	-3.6	1,484.3	1,484.3	0.00	0.00	0.00
7,120.0	0.00	0.00	6,873.4	-3.6	1,484.3	1,484.3	0.00	0.00	0.00
7,160.0	0.00	0.00	6,913.4	-3.6	1,484.3	1,484.3	0.00	0.00	0.00
7,200.0	0.00	0.00	6,953.4	-3.6	1,484.3	1,484.3	0.00	0.00	0.00
7,240.0	0.00	0.00	6,993.4	-3.6	1,484.3	1,484.3	0.00	0.00	0.00
7,280.0	0.00	0.00	7,033.4	-3.6	1,484.3	1,484.3	0.00	0.00	0.00
7,300.6	0.00	0.00	7,054.0	-3.6	1,484.3	1,484.3	0.00	0.00	0.00
CODELL									
7,320.0	0.00	0.00	7,073.4	-3.6	1,484.3	1,484.3	0.00	0.00	0.00
7,360.0	0.00	0.00	7,113.4	-3.6	1,484.3	1,484.3	0.00	0.00	0.00
7,400.0	0.00	0.00	7,153.4	-3.6	1,484.3	1,484.3	0.00	0.00	0.00
7,440.0	0.00	0.00	7,193.4	-3.6	1,484.3	1,484.3	0.00	0.00	0.00
7,450.6	0.00	0.00	7,204.0	-3.6	1,484.3	1,484.3	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Pettinger USX AB35-01D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4844.0ft (Original Well Elev)
Project:	SEC.35-T7N-R64W	MD Reference:	WELL @ 4844.0ft (Original Well Elev)
Site:	Pettinger USX AB35-01D Pad Sec.35-T7N-R64W	North Reference:	True
Well:	Pettinger USX AB35-01D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Pettinger USX AB35-01D Plan #1 (1-05-		

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
LEGAL BOX 400' X 40' - plan misses target center by 3.0ft at 6988.6ft MD (6742.0 TVD, -3.6 N, 1484.3 E) - Rectangle (sides W400.0 H400.0 D462.0)	0.00	0.00	6,742.0	-3.6	1,481.3	1,439,379.18	3,275,158.01	40° 32' 7.008 N	104° 30' 36.147 W
TARGET BHL 660'FN - plan hits target center - Point	0.00	0.00	5,900.0	-3.6	1,484.3	1,439,379.22	3,275,160.99	40° 32' 7.008 N	104° 30' 36.108 W
TARGET CIRCLE 660' - plan hits target center - Circle (radius 75.0)	0.00	0.00	6,742.0	-3.6	1,484.3	1,439,379.22	3,275,160.99	40° 32' 7.008 N	104° 30' 36.108 W

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
750.0	750.0	8 5/8"	8-5/8	12-1/4

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
6,988.6	6,742.0	NIOBRARA		0.00	
7,300.6	7,054.0	CODELL		0.00	