

ENSIGN**Directional****APPROVED**

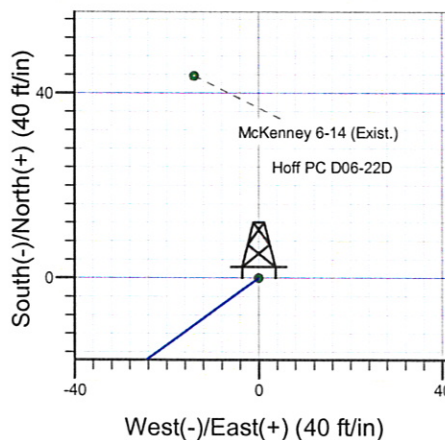
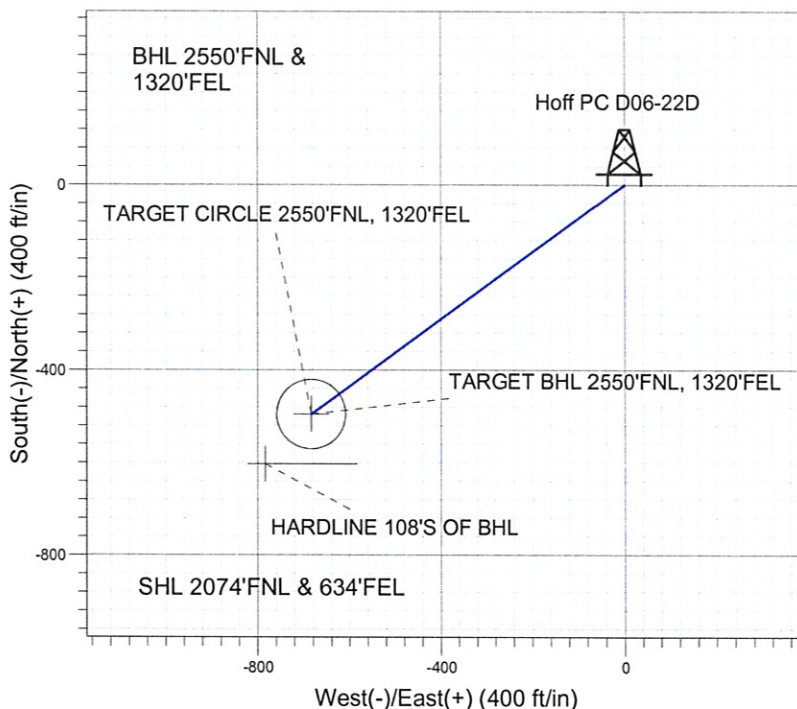
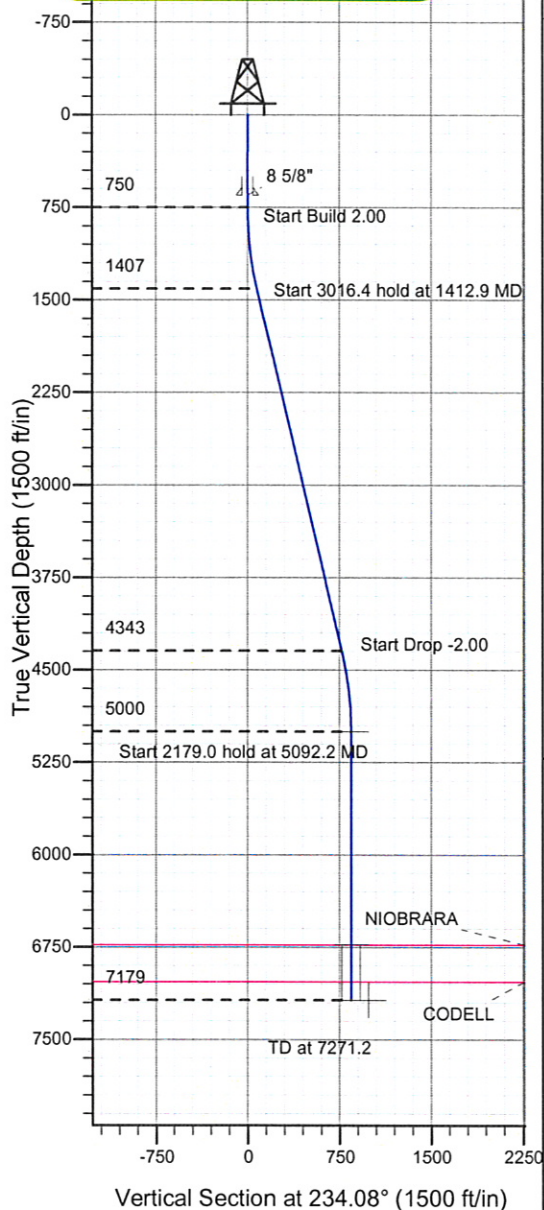
By DanBurch at 8:21 am, 6/25/10

Well Name: Hoff PC D06-22D

Surface Location: Hoff PC D06-22D Pad Sec.6-T3N-R64W
North American Datum 1983, US State Plane 1983, Colorado Northern Zone

Ground Elevation: 4796.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1337433.95	3254963.29	40° 15' 21.780 N	104° 35' 11.292 W	
Original Well Elev WELL @ 4809.0ft (Original Well Elev)						

NOBLE ENERGY INC WELD COUNTY CO

Hoff PC D06-22D
Noble Hoff PC D06-22D Plan #1 (06-16-10)
12:38, June 18 2010



Azimuths to True North
Magnetic North: 8.89°
Magnetic Field
Strength: 53180.7snT
Dip Angle: 67.00°
Date: 6/16/2010
Model: IGRF2010

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
TARGET BHL 2550'FNL, 1320'FEL	5000.0	-495.4	-683.8	40° 15' 16.884 N	104° 35' 20.112 W	Point
TARGET CIRCLE 2550'FNL, 1320'FEL	6729.0	-495.4	-683.8	40° 15' 16.884 N	104° 35' 20.111 W	Circle (Radius: 75.0)
HARDLINE 108'S OF BHL	7179.0	-603.4	-783.8	40° 15' 15.817 N	104° 35' 21.401 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	750.0	0.00	0.00	750.0	0.0	0.0	0.00	0.00	0.0	
3	1412.9	13.26	234.08	1407.0	-44.8	-61.8	2.00	234.08	76.3	
4	4429.3	13.26	234.08	4343.0	-450.6	-622.0	0.00	0.00	768.1	
5	5092.2	0.00	0.00	5000.0	-495.4	-683.8	2.00	180.00	844.5	TARGET BHL 2550'FNL, 1320'FEL
6	7271.2	0.00	0.00	7179.0	-495.4	-683.8	0.00	0.00	844.5	



Directional

NOBLE ENERGY INC WELD COUNTY CO

SEC.6-T3N-R64W

Hoff PC D06-22D Pad Sec.6-T3N-R64W

Hoff PC D06-22D

Wellbore #1

Plan: Noble Hoff PC D06-22D Plan #1 (06-16-10)

Standard Planning Report

18 June, 2010

Database: Landmark
Company: NOBLE ENERGY INC WELD COUNTY CO
Project: SEC.6-T3N-R64W
Site: Hoff PC D06-22D Pad Sec.6-T3N-R64W
Well: Hoff PC D06-22D
Wellbore: Wellbore #1
Design: Noble Hoff PC D06-22D Plan #1 (06-16-10)

Local Co-ordinate Reference: Well Hoff PC D06-22D
TVD Reference: WELL @ 4809.0ft (Original Well Elev)
MD Reference: WELL @ 4809.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

Project	SEC.6-T3N-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	Hoff PC D06-22D Pad Sec.6-T3N-R64W				
Site Position:		Northing:	1,337,433.96ft	Latitude:	40° 15' 21.780 N
From:	Lat/Long	Easting:	3,254,963.29ft	Longitude:	104° 35' 11.292 W
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.59 °

Well	Hoff PC D06-22D					
Well Position	+N/-S	0.0 ft	Northing:	1,337,433.95 ft	Latitude:	40° 15' 21.780 N
	+E/-W	0.0 ft	Easting:	3,254,963.29 ft	Longitude:	104° 35' 11.292 W
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,796.0 ft	

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	6/16/2010	8.89	67.00	53,181

Design	Noble Hoff PC D06-22D Plan #1 (06-16-10)			
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	234.08

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	
750.0	0.00	0.00	750.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,412.9	13.26	234.08	1,407.0	-44.8	-61.8	2.00	2.00	0.00	234.08	
4,429.3	13.26	234.08	4,343.0	-450.6	-622.0	0.00	0.00	0.00	0.00	
5,092.2	0.00	0.00	5,000.0	-495.4	-683.8	2.00	-2.00	0.00	180.00	TARGET BHL 255C
7,271.2	0.00	0.00	7,179.0	-495.4	-683.8	0.00	0.00	0.00	0.00	

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MD Reference: WELL @ 4809.0ft (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
650.0	0.00	0.00	650.0	0.0	0.0	0.0	0.00	0.00	0.00
8 5/8"									
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
760.0	0.20	234.08	760.0	0.0	0.0	0.0	2.00	2.00	0.00
800.0	1.00	234.08	800.0	-0.3	-0.4	0.4	2.00	2.00	0.00
840.0	1.80	234.08	840.0	-0.8	-1.1	1.4	2.00	2.00	0.00
880.0	2.60	234.08	880.0	-1.7	-2.4	2.9	2.00	2.00	0.00
920.0	3.40	234.08	919.9	-3.0	-4.1	5.0	2.00	2.00	0.00
960.0	4.20	234.08	959.8	-4.5	-6.2	7.7	2.00	2.00	0.00
1,000.0	5.00	234.08	999.7	-6.4	-8.8	10.9	2.00	2.00	0.00
1,040.0	5.80	234.08	1,039.5	-8.6	-11.9	14.7	2.00	2.00	0.00
1,080.0	6.60	234.08	1,079.3	-11.1	-15.4	19.0	2.00	2.00	0.00
1,120.0	7.40	234.08	1,119.0	-14.0	-19.3	23.9	2.00	2.00	0.00
1,160.0	8.20	234.08	1,158.6	-17.2	-23.7	29.3	2.00	2.00	0.00
1,200.0	9.00	234.08	1,198.2	-20.7	-28.6	35.3	2.00	2.00	0.00
1,240.0	9.80	234.08	1,237.6	-24.5	-33.9	41.8	2.00	2.00	0.00
1,280.0	10.60	234.08	1,277.0	-28.7	-39.6	48.9	2.00	2.00	0.00
1,320.0	11.40	234.08	1,316.2	-33.2	-45.8	56.5	2.00	2.00	0.00
1,360.0	12.20	234.08	1,355.4	-38.0	-52.4	64.7	2.00	2.00	0.00
1,400.0	13.00	234.08	1,394.4	-43.1	-59.5	73.4	2.00	2.00	0.00
1,412.9	13.26	234.08	1,407.0	-44.8	-61.8	76.3	2.00	2.00	0.00
1,440.0	13.26	234.08	1,433.4	-48.4	-66.9	82.6	0.00	0.00	0.00
1,480.0	13.26	234.08	1,472.3	-53.8	-74.3	91.7	0.00	0.00	0.00
1,520.0	13.26	234.08	1,511.2	-59.2	-81.7	100.9	0.00	0.00	0.00
1,560.0	13.26	234.08	1,550.2	-64.6	-89.2	110.1	0.00	0.00	0.00
1,600.0	13.26	234.08	1,589.1	-70.0	-96.6	119.3	0.00	0.00	0.00
1,640.0	13.26	234.08	1,628.0	-75.4	-104.0	128.4	0.00	0.00	0.00
1,680.0	13.26	234.08	1,667.0	-80.7	-111.4	137.6	0.00	0.00	0.00
1,720.0	13.26	234.08	1,705.9	-86.1	-118.9	146.8	0.00	0.00	0.00
1,760.0	13.26	234.08	1,744.8	-91.5	-126.3	156.0	0.00	0.00	0.00
1,800.0	13.26	234.08	1,783.8	-96.9	-133.7	165.1	0.00	0.00	0.00
1,840.0	13.26	234.08	1,822.7	-102.3	-141.1	174.3	0.00	0.00	0.00
1,880.0	13.26	234.08	1,861.7	-107.6	-148.6	183.5	0.00	0.00	0.00
1,920.0	13.26	234.08	1,900.6	-113.0	-156.0	192.6	0.00	0.00	0.00
1,960.0	13.26	234.08	1,939.5	-118.4	-163.4	201.8	0.00	0.00	0.00

Database: Landmark
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MD Reference: WELL @ 4809.0ft (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)
2,000.0	13.26	234.08	1,978.5	-123.8	-170.9	211.0	0.00	0.00	0.00
2,040.0	13.26	234.08	2,017.4	-129.2	-178.3	220.2	0.00	0.00	0.00
2,080.0	13.26	234.08	2,056.3	-134.6	-185.7	229.3	0.00	0.00	0.00
2,120.0	13.26	234.08	2,095.3	-139.9	-193.1	238.5	0.00	0.00	0.00
2,160.0	13.26	234.08	2,134.2	-145.3	-200.6	247.7	0.00	0.00	0.00
2,200.0	13.26	234.08	2,173.1	-150.7	-208.0	256.9	0.00	0.00	0.00
2,240.0	13.26	234.08	2,212.1	-156.1	-215.4	266.0	0.00	0.00	0.00
2,280.0	13.26	234.08	2,251.0	-161.5	-222.9	275.2	0.00	0.00	0.00
2,320.0	13.26	234.08	2,289.9	-166.8	-230.3	284.4	0.00	0.00	0.00
2,360.0	13.26	234.08	2,328.9	-172.2	-237.7	293.6	0.00	0.00	0.00
2,400.0	13.26	234.08	2,367.8	-177.6	-245.1	302.7	0.00	0.00	0.00
2,440.0	13.26	234.08	2,406.7	-183.0	-252.6	311.9	0.00	0.00	0.00
2,480.0	13.26	234.08	2,445.7	-188.4	-260.0	321.1	0.00	0.00	0.00
2,520.0	13.26	234.08	2,484.6	-193.8	-267.4	330.2	0.00	0.00	0.00
2,560.0	13.26	234.08	2,523.5	-199.1	-274.9	339.4	0.00	0.00	0.00
2,600.0	13.26	234.08	2,562.5	-204.5	-282.3	348.6	0.00	0.00	0.00
2,640.0	13.26	234.08	2,601.4	-209.9	-289.7	357.8	0.00	0.00	0.00
2,680.0	13.26	234.08	2,640.3	-215.3	-297.1	366.9	0.00	0.00	0.00
2,720.0	13.26	234.08	2,679.3	-220.7	-304.6	376.1	0.00	0.00	0.00
2,760.0	13.26	234.08	2,718.2	-226.0	-312.0	385.3	0.00	0.00	0.00
2,800.0	13.26	234.08	2,757.1	-231.4	-319.4	394.5	0.00	0.00	0.00
2,840.0	13.26	234.08	2,796.1	-236.8	-326.9	403.6	0.00	0.00	0.00
2,880.0	13.26	234.08	2,835.0	-242.2	-334.3	412.8	0.00	0.00	0.00
2,920.0	13.26	234.08	2,873.9	-247.6	-341.7	422.0	0.00	0.00	0.00
2,960.0	13.26	234.08	2,912.9	-253.0	-349.1	431.1	0.00	0.00	0.00
3,000.0	13.26	234.08	2,951.8	-258.3	-356.6	440.3	0.00	0.00	0.00
3,040.0	13.26	234.08	2,990.7	-263.7	-364.0	449.5	0.00	0.00	0.00
3,080.0	13.26	234.08	3,029.7	-269.1	-371.4	458.7	0.00	0.00	0.00
3,120.0	13.26	234.08	3,068.6	-274.5	-378.9	467.8	0.00	0.00	0.00
3,160.0	13.26	234.08	3,107.5	-279.9	-386.3	477.0	0.00	0.00	0.00
3,200.0	13.26	234.08	3,146.5	-285.2	-393.7	486.2	0.00	0.00	0.00
3,240.0	13.26	234.08	3,185.4	-290.6	-401.1	495.4	0.00	0.00	0.00
3,280.0	13.26	234.08	3,224.3	-296.0	-408.6	504.5	0.00	0.00	0.00
3,320.0	13.26	234.08	3,263.3	-301.4	-416.0	513.7	0.00	0.00	0.00
3,360.0	13.26	234.08	3,302.2	-306.8	-423.4	522.9	0.00	0.00	0.00
3,400.0	13.26	234.08	3,341.1	-312.2	-430.9	532.1	0.00	0.00	0.00
3,440.0	13.26	234.08	3,380.1	-317.5	-438.3	541.2	0.00	0.00	0.00
3,480.0	13.26	234.08	3,419.0	-322.9	-445.7	550.4	0.00	0.00	0.00
3,520.0	13.26	234.08	3,457.9	-328.3	-453.1	559.6	0.00	0.00	0.00
3,560.0	13.26	234.08	3,496.9	-333.7	-460.6	568.7	0.00	0.00	0.00
3,600.0	13.26	234.08	3,535.8	-339.1	-468.0	577.9	0.00	0.00	0.00
3,640.0	13.26	234.08	3,574.7	-344.4	-475.4	587.1	0.00	0.00	0.00
3,680.0	13.26	234.08	3,613.7	-349.8	-482.9	596.3	0.00	0.00	0.00
3,720.0	13.26	234.08	3,652.6	-355.2	-490.3	605.4	0.00	0.00	0.00
3,760.0	13.26	234.08	3,691.5	-360.6	-497.7	614.6	0.00	0.00	0.00
3,800.0	13.26	234.08	3,730.5	-366.0	-505.1	623.8	0.00	0.00	0.00
3,840.0	13.26	234.08	3,769.4	-371.4	-512.6	633.0	0.00	0.00	0.00
3,880.0	13.26	234.08	3,808.3	-376.7	-520.0	642.1	0.00	0.00	0.00
3,920.0	13.26	234.08	3,847.3	-382.1	-527.4	651.3	0.00	0.00	0.00
3,960.0	13.26	234.08	3,886.2	-387.5	-534.9	660.5	0.00	0.00	0.00
4,000.0	13.26	234.08	3,925.2	-392.9	-542.3	669.6	0.00	0.00	0.00
4,040.0	13.26	234.08	3,964.1	-398.3	-549.7	678.8	0.00	0.00	0.00
4,080.0	13.26	234.08	4,003.0	-403.6	-557.1	688.0	0.00	0.00	0.00
4,120.0	13.26	234.08	4,042.0	-409.0	-564.6	697.2	0.00	0.00	0.00

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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)
4,160.0	13.26	234.08	4,080.9	-414.4	-572.0	706.3	0.00	0.00	0.00
4,200.0	13.26	234.08	4,119.8	-419.8	-579.4	715.5	0.00	0.00	0.00
4,240.0	13.26	234.08	4,158.8	-425.2	-586.9	724.7	0.00	0.00	0.00
4,280.0	13.26	234.08	4,197.7	-430.6	-594.3	733.9	0.00	0.00	0.00
4,320.0	13.26	234.08	4,236.6	-435.9	-601.7	743.0	0.00	0.00	0.00
4,360.0	13.26	234.08	4,275.6	-441.3	-609.1	752.2	0.00	0.00	0.00
4,400.0	13.26	234.08	4,314.5	-446.7	-616.6	761.4	0.00	0.00	0.00
4,429.3	13.26	234.08	4,343.0	-450.6	-622.0	768.1	0.00	0.00	0.00
4,440.0	13.04	234.08	4,353.4	-452.1	-624.0	770.5	2.00	-2.00	0.00
4,480.0	12.24	234.08	4,392.5	-457.2	-631.1	779.3	2.00	-2.00	0.00
4,520.0	11.44	234.08	4,431.6	-462.0	-637.7	787.5	2.00	-2.00	0.00
4,560.0	10.64	234.08	4,470.9	-466.5	-643.9	795.2	2.00	-2.00	0.00
4,600.0	9.84	234.08	4,510.2	-470.7	-649.7	802.3	2.00	-2.00	0.00
4,640.0	9.04	234.08	4,549.7	-474.5	-655.0	808.8	2.00	-2.00	0.00
4,680.0	8.24	234.08	4,589.2	-478.1	-659.9	814.8	2.00	-2.00	0.00
4,720.0	7.44	234.08	4,628.9	-481.3	-664.3	820.3	2.00	-2.00	0.00
4,760.0	6.64	234.08	4,668.6	-484.1	-668.3	825.2	2.00	-2.00	0.00
4,800.0	5.84	234.08	4,708.3	-486.7	-671.8	829.6	2.00	-2.00	0.00
4,840.0	5.04	234.08	4,748.1	-488.9	-674.9	833.4	2.00	-2.00	0.00
4,880.0	4.24	234.08	4,788.0	-490.8	-677.5	836.6	2.00	-2.00	0.00
4,920.0	3.44	234.08	4,827.9	-492.4	-679.7	839.3	2.00	-2.00	0.00
4,960.0	2.64	234.08	4,867.9	-493.6	-681.4	841.4	2.00	-2.00	0.00
5,000.0	1.84	234.08	4,907.8	-494.6	-682.6	843.0	2.00	-2.00	0.00
5,040.0	1.04	234.08	4,947.8	-495.2	-683.5	844.0	2.00	-2.00	0.00
5,080.0	0.24	234.08	4,987.8	-495.4	-683.8	844.4	2.00	-2.00	0.00
5,092.2	0.00	0.00	5,000.0	-495.4	-683.8	844.5	2.00	-2.00	1,033.10
TARGET BHL 2550'FNL, 1320'FEL									
5,120.0	0.00	0.00	5,027.8	-495.4	-683.8	844.5	0.00	0.00	0.00
5,160.0	0.00	0.00	5,067.8	-495.4	-683.8	844.5	0.00	0.00	0.00
5,200.0	0.00	0.00	5,107.8	-495.4	-683.8	844.5	0.00	0.00	0.00
5,240.0	0.00	0.00	5,147.8	-495.4	-683.8	844.5	0.00	0.00	0.00
5,280.0	0.00	0.00	5,187.8	-495.4	-683.8	844.5	0.00	0.00	0.00
5,320.0	0.00	0.00	5,227.8	-495.4	-683.8	844.5	0.00	0.00	0.00
5,360.0	0.00	0.00	5,267.8	-495.4	-683.8	844.5	0.00	0.00	0.00
5,400.0	0.00	0.00	5,307.8	-495.4	-683.8	844.5	0.00	0.00	0.00
5,440.0	0.00	0.00	5,347.8	-495.4	-683.8	844.5	0.00	0.00	0.00
5,480.0	0.00	0.00	5,387.8	-495.4	-683.8	844.5	0.00	0.00	0.00
5,520.0	0.00	0.00	5,427.8	-495.4	-683.8	844.5	0.00	0.00	0.00
5,560.0	0.00	0.00	5,467.8	-495.4	-683.8	844.5	0.00	0.00	0.00
5,600.0	0.00	0.00	5,507.8	-495.4	-683.8	844.5	0.00	0.00	0.00
5,640.0	0.00	0.00	5,547.8	-495.4	-683.8	844.5	0.00	0.00	0.00
5,680.0	0.00	0.00	5,587.8	-495.4	-683.8	844.5	0.00	0.00	0.00
5,720.0	0.00	0.00	5,627.8	-495.4	-683.8	844.5	0.00	0.00	0.00
5,760.0	0.00	0.00	5,667.8	-495.4	-683.8	844.5	0.00	0.00	0.00
5,800.0	0.00	0.00	5,707.8	-495.4	-683.8	844.5	0.00	0.00	0.00
5,840.0	0.00	0.00	5,747.8	-495.4	-683.8	844.5	0.00	0.00	0.00
5,880.0	0.00	0.00	5,787.8	-495.4	-683.8	844.5	0.00	0.00	0.00
5,920.0	0.00	0.00	5,827.8	-495.4	-683.8	844.5	0.00	0.00	0.00
5,960.0	0.00	0.00	5,867.8	-495.4	-683.8	844.5	0.00	0.00	0.00
6,000.0	0.00	0.00	5,907.8	-495.4	-683.8	844.5	0.00	0.00	0.00
6,040.0	0.00	0.00	5,947.8	-495.4	-683.8	844.5	0.00	0.00	0.00
6,080.0	0.00	0.00	5,987.8	-495.4	-683.8	844.5	0.00	0.00	0.00
6,120.0	0.00	0.00	6,027.8	-495.4	-683.8	844.5	0.00	0.00	0.00
6,160.0	0.00	0.00	6,067.8	-495.4	-683.8	844.5	0.00	0.00	0.00

Database: Landmark
Company: NOBLE ENERGY INC WELD COUNTY CO
Project: SEC.6-T3N-R64W
Site: Hoff PC D06-22D Pad Sec.6-T3N-R64W
Well: Hoff PC D06-22D
Wellbore: Wellbore #1
Design: Noble Hoff PC D06-22D Plan #1 (06-16-10)

Local Co-ordinate Reference: Well Hoff PC D06-22D
TVD Reference: WELL @ 4809.0ft (Original Well Elev)
MD Reference: WELL @ 4809.0ft (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)
6,200.0	0.00	0.00	6,107.8	-495.4	-683.8	844.5	0.00	0.00	0.00
6,240.0	0.00	0.00	6,147.8	-495.4	-683.8	844.5	0.00	0.00	0.00
6,280.0	0.00	0.00	6,187.8	-495.4	-683.8	844.5	0.00	0.00	0.00
6,320.0	0.00	0.00	6,227.8	-495.4	-683.8	844.5	0.00	0.00	0.00
6,360.0	0.00	0.00	6,267.8	-495.4	-683.8	844.5	0.00	0.00	0.00
6,400.0	0.00	0.00	6,307.8	-495.4	-683.8	844.5	0.00	0.00	0.00
6,440.0	0.00	0.00	6,347.8	-495.4	-683.8	844.5	0.00	0.00	0.00
6,480.0	0.00	0.00	6,387.8	-495.4	-683.8	844.5	0.00	0.00	0.00
6,520.0	0.00	0.00	6,427.8	-495.4	-683.8	844.5	0.00	0.00	0.00
6,560.0	0.00	0.00	6,467.8	-495.4	-683.8	844.5	0.00	0.00	0.00
6,600.0	0.00	0.00	6,507.8	-495.4	-683.8	844.5	0.00	0.00	0.00
6,640.0	0.00	0.00	6,547.8	-495.4	-683.8	844.5	0.00	0.00	0.00
6,680.0	0.00	0.00	6,587.8	-495.4	-683.8	844.5	0.00	0.00	0.00
6,720.0	0.00	0.00	6,627.8	-495.4	-683.8	844.5	0.00	0.00	0.00
6,760.0	0.00	0.00	6,667.8	-495.4	-683.8	844.5	0.00	0.00	0.00
6,800.0	0.00	0.00	6,707.8	-495.4	-683.8	844.5	0.00	0.00	0.00
6,821.2	0.00	0.00	6,729.0	-495.4	-683.8	844.5	0.00	0.00	0.00
NIOBRARA - TARGET CIRCLE 2550'FNL, 1320'FEL									
6,840.0	0.00	0.00	6,747.8	-495.4	-683.8	844.5	0.00	0.00	0.00
6,880.0	0.00	0.00	6,787.8	-495.4	-683.8	844.5	0.00	0.00	0.00
6,920.0	0.00	0.00	6,827.8	-495.4	-683.8	844.5	0.00	0.00	0.00
6,960.0	0.00	0.00	6,867.8	-495.4	-683.8	844.5	0.00	0.00	0.00
7,000.0	0.00	0.00	6,907.8	-495.4	-683.8	844.5	0.00	0.00	0.00
7,040.0	0.00	0.00	6,947.8	-495.4	-683.8	844.5	0.00	0.00	0.00
7,080.0	0.00	0.00	6,987.8	-495.4	-683.8	844.5	0.00	0.00	0.00
7,120.0	0.00	0.00	7,027.8	-495.4	-683.8	844.5	0.00	0.00	0.00
7,121.2	0.00	0.00	7,029.0	-495.4	-683.8	844.5	0.00	0.00	0.00
CODELL									
7,160.0	0.00	0.00	7,067.8	-495.4	-683.8	844.5	0.00	0.00	0.00
7,200.0	0.00	0.00	7,107.8	-495.4	-683.8	844.5	0.00	0.00	0.00
7,240.0	0.00	0.00	7,147.8	-495.4	-683.8	844.5	0.00	0.00	0.00
7,271.2	0.00	0.00	7,179.0	-495.4	-683.8	844.5	0.00	0.00	0.00
HARDLINE 108'S OF BHL									

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
TARGET BHL 2550'F - plan hits target - Point	0.00	0.00	5,000.0	-495.4	-683.8	1,336,931.52	3,254,284.62	40° 15' 16.884 N	104° 35' 20.112 W
TARGET CIRCLE 2550'F - plan misses by 0.1ft at 6821.2ft MD (6729.0 TVD, -495.4 N, -683.8 E) - Circle (radius 75.0)	0.00	0.00	6,729.0	-495.4	-683.8	1,336,931.55	3,254,284.66	40° 15' 16.884 N	104° 35' 20.111 W
HARDLINE 108'S OF BHL - plan misses by 147.1ft at 7271.2ft MD (7179.0 TVD, -495.4 N, -683.8 E) - Polygon	0.00	0.00	7,179.0	-603.4	-783.8	1,336,822.53	3,254,185.78	40° 15' 15.817 N	104° 35' 21.401 W
Point 1			7,179.0	0.0	0.0	1,336,822.53	3,254,185.78		
Point 2			7,179.0	0.0	200.0	1,336,824.59	3,254,385.76		

Database: Landmark
Company: NOBLE ENERGY INC WELD COUNTY CO
Project: SEC.6-T3N-R64W
Site: Hoff PC D06-22D Pad Sec.6-T3N-R64W
Well: Hoff PC D06-22D
Wellbore: Wellbore #1
Design: Noble Hoff PC D06-22D Plan #1 (06-16-10)

Local Co-ordinate Reference: Well Hoff PC D06-22D
TVD Reference: WELL @ 4809.0ft (Original Well Elev)
MD Reference: WELL @ 4809.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
650.0	650.0	8 5/8"	8-5/8	12-1/4

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
6,821.2	6,729.0	NIOBRARA		0.00	
7,121.2	7,029.0	CODELL		0.00	