

ENSIGN

Directional

Well Name: Hippo D27-25D

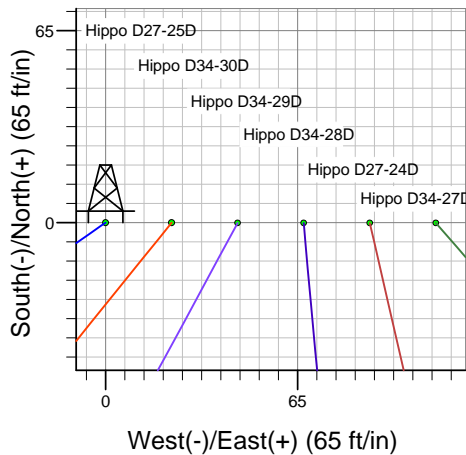
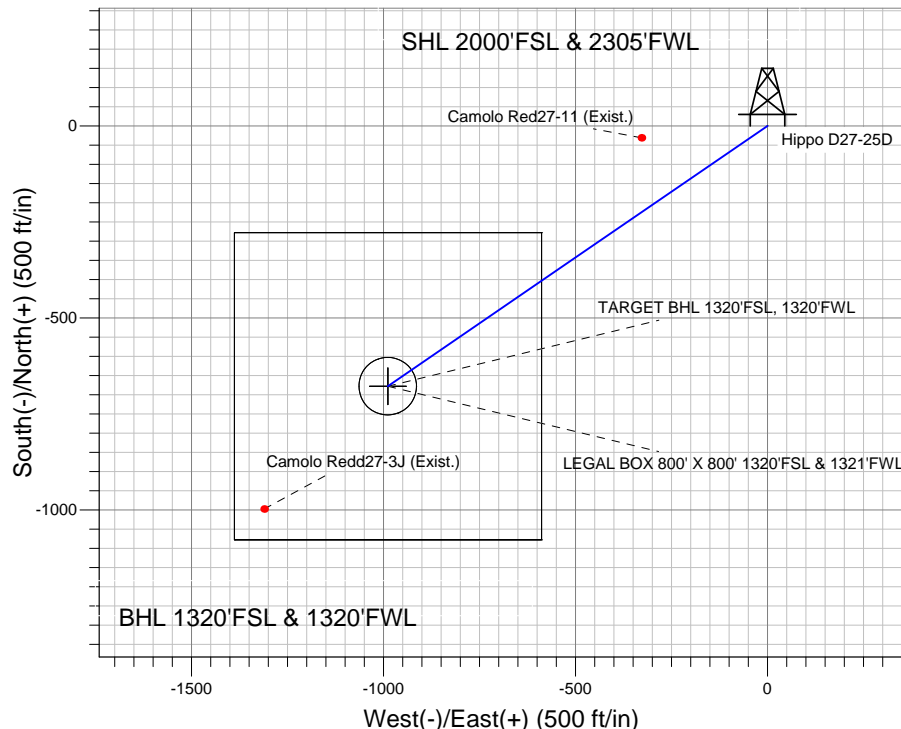
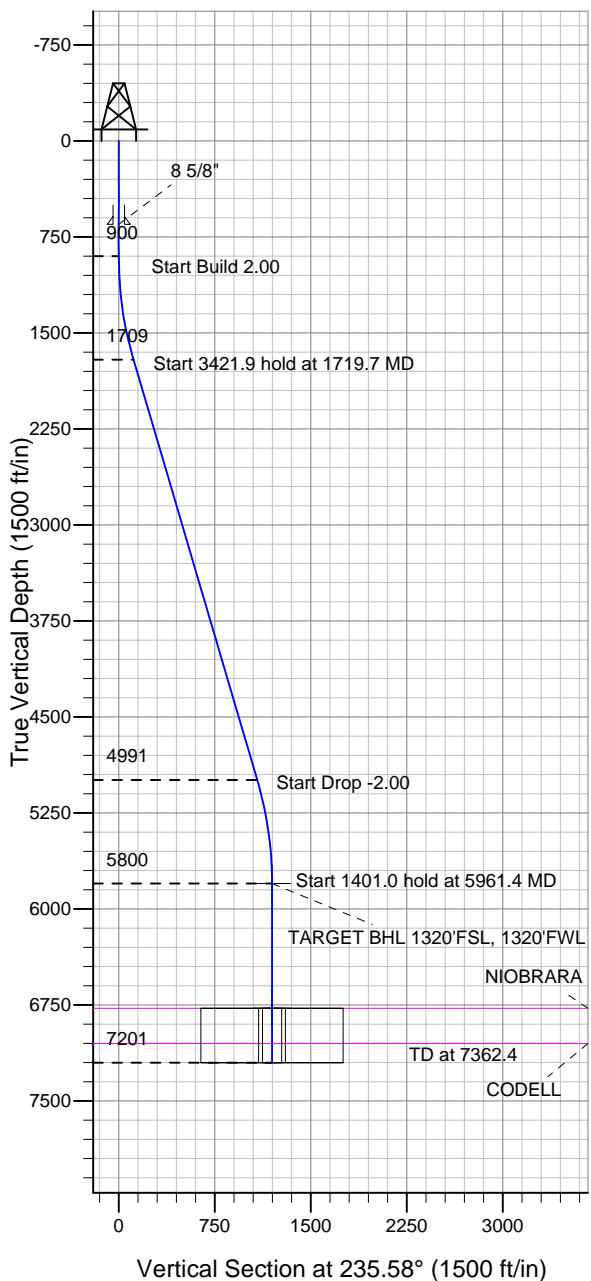
Surface Location: Hippo D27-25D Pad Sec.27-T3N-R64W
North American Datum 1983 US State Plane 1983 Colorado Northern Zone

Ground Elevation: 4874.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1315194.43	3268526.69	40.194610	-104.538740	

Original Well Elev WELL @ 4887.0ft (Original Well Elev)

NOBLE ENERGY INC WELD COUNTY CO



Hippo D27-25D Pad Sec.27-T3N-R64W
Hippo D27-25D
Noble Hippo D27-25D Plan #1 (5-02-11)
13:10, May 02 2011



Azimuths to True North
Magnetic North: 8.74°

Magnetic Field
Strength: 53060.2snT
Dip Angle: 66.93°
Date: 5/2/2011
Model: IGRF2010

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
TARGET BHL 1320'FSL, 1320'FWL	5800.0	-677.6	-989.0	40.192750	-104.542280	Point
LEGAL BOX 800' X 800' 1320'FSL & 1321'FWL	6775.0	-677.6	-988.0	40.192750	-104.542276	Rectangle (Sides: L800.0 W800.0)
TARGET CIRCLE 1320'FSL & 1320'FWL	6775.0	-677.6	-989.0	40.192750	-104.542280	Circle (Radius: 75.0)

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	900.0	0.00	0.00	900.0	0.0	0.0	0.00	0.00	0.0	
3	1719.7	16.39	235.58	1708.6	-65.8	-96.1	2.00	235.58	116.5	
4	5141.7	16.39	235.58	4991.4	-611.7	-892.9	0.00	0.00	1082.3	
5	5961.4	0.00	0.00	5800.0	-677.6	-989.0	2.00	180.00	1198.8	TARGET BHL 1320'FSL, 1320'FWL
6	7362.4	0.00	0.00	7201.0	-677.6	-989.0	0.00	0.00	1198.8	



Directional

NOBLE ENERGY INC WELD COUNTY CO

SEC.27-T3N-R64W

Hippo D27-25D Pad Sec.27-T3N-R64W

Hippo D27-25D

Wellbore #1

Plan: Noble Hippo D27-25D Plan #1 (5-02-11)

Standard Planning Report

02 May, 2011



Database:	Landmark	Local Co-ordinate Reference:	Well Hippo D27-25D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4887.0ft (Original Well Elev)
Project:	SEC.27-T3N-R64W	MD Reference:	WELL @ 4887.0ft (Original Well Elev)
Site:	Hippo D27-25D Pad Sec.27-T3N-R64W	North Reference:	True
Well:	Hippo D27-25D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Hippo D27-25D Plan #1 (5-02-11)		

Project	SEC.27-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						Hippo D27-25D Pad Sec.27-T3N-R64W											
Site Position:						Northing:			1,315,194.44 ft			Latitude:			40.194610		
From:			Lat/Long			Easting:			3,268,526.69 ft			Longitude:			-104.538740		
Position Uncertainty:			0.0 ft			Slot Radius:			"			Grid Convergence:			0.62 °		

Well	Hippo D27-25D					
Well Position	+N-S	0.0 ft	Northing:	1,315,194.43 ft	Latitude:	40.194610
	+E-W	0.0 ft	Easting:	3,268,526.69 ft	Longitude:	-104.538740
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,874.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/2/2011	8.74	66.93	53,060

Design	Noble Hippo D27-25D Plan #1 (5-02-11)			
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	235.58

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	
1,719.7	16.39	235.58	1,708.6	-65.8	-96.1	2.00	2.00	0.00	235.58	
5,141.7	16.39	235.58	4,991.4	-611.7	-892.9	0.00	0.00	0.00	0.00	
5,961.4	0.00	0.00	5,800.0	-677.6	-989.0	2.00	-2.00	0.00	180.00	TARGET BHL 132C
7,362.4	0.00	0.00	7,201.0	-677.6	-989.0	0.00	0.00	0.00	0.00	

Database:	Landmark	Local Co-ordinate Reference:	Well Hippo D27-25D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4887.0ft (Original Well Elev)
Project:	SEC.27-T3N-R64W	MD Reference:	WELL @ 4887.0ft (Original Well Elev)
Site:	Hippo D27-25D Pad Sec.27-T3N-R64W	North Reference:	True
Well:	Hippo D27-25D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Hippo D27-25D Plan #1 (5-02-11)		

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
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	235.58	920.0	0.0	-0.1	0.1	2.00	2.00	0.00
960.0	1.20	235.58	960.0	-0.4	-0.5	0.6	2.00	2.00	0.00
1,000.0	2.00	235.58	1,000.0	-1.0	-1.4	1.7	2.00	2.00	0.00
1,040.0	2.80	235.58	1,039.9	-1.9	-2.8	3.4	2.00	2.00	0.00
1,080.0	3.60	235.58	1,079.9	-3.2	-4.7	5.7	2.00	2.00	0.00
1,120.0	4.40	235.58	1,119.8	-4.8	-7.0	8.4	2.00	2.00	0.00
1,160.0	5.20	235.58	1,159.6	-6.7	-9.7	11.8	2.00	2.00	0.00
1,200.0	6.00	235.58	1,199.5	-8.9	-12.9	15.7	2.00	2.00	0.00
1,240.0	6.80	235.58	1,239.2	-11.4	-16.6	20.2	2.00	2.00	0.00
1,280.0	7.60	235.58	1,278.9	-14.2	-20.8	25.2	2.00	2.00	0.00
1,320.0	8.40	235.58	1,318.5	-17.4	-25.4	30.7	2.00	2.00	0.00
1,360.0	9.20	235.58	1,358.0	-20.8	-30.4	36.9	2.00	2.00	0.00
1,400.0	10.00	235.58	1,397.5	-24.6	-35.9	43.5	2.00	2.00	0.00
1,440.0	10.80	235.58	1,436.8	-28.7	-41.9	50.7	2.00	2.00	0.00
1,480.0	11.60	235.58	1,476.0	-33.1	-48.3	58.5	2.00	2.00	0.00
1,520.0	12.40	235.58	1,515.2	-37.8	-55.1	66.8	2.00	2.00	0.00
1,560.0	13.20	235.58	1,554.2	-42.8	-62.4	75.7	2.00	2.00	0.00
1,600.0	14.00	235.58	1,593.1	-48.1	-70.2	85.1	2.00	2.00	0.00
1,640.0	14.80	235.58	1,631.8	-53.7	-78.4	95.0	2.00	2.00	0.00
1,680.0	15.60	235.58	1,670.4	-59.6	-87.1	105.5	2.00	2.00	0.00
1,719.7	16.39	235.58	1,708.6	-65.8	-96.1	116.5	2.00	2.00	0.00
1,720.0	16.39	235.58	1,708.8	-65.9	-96.2	116.6	0.00	0.00	0.00
1,760.0	16.39	235.58	1,747.2	-72.3	-105.5	127.8	0.00	0.00	0.00
1,800.0	16.39	235.58	1,785.6	-78.6	-114.8	139.1	0.00	0.00	0.00
1,840.0	16.39	235.58	1,824.0	-85.0	-124.1	150.4	0.00	0.00	0.00
1,880.0	16.39	235.58	1,862.3	-91.4	-133.4	161.7	0.00	0.00	0.00
1,920.0	16.39	235.58	1,900.7	-97.8	-142.7	173.0	0.00	0.00	0.00
1,960.0	16.39	235.58	1,939.1	-104.2	-152.0	184.3	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Hippo D27-25D
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Project:	SEC.27-T3N-R64W	MD Reference:	WELL @ 4887.0ft (Original Well Elev)
Site:	Hippo D27-25D Pad Sec.27-T3N-R64W	North Reference:	True
Well:	Hippo D27-25D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Hippo D27-25D Plan #1 (5-02-11)		

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	16.39	235.58	1,977.5	-110.5	-161.4	195.6	0.00	0.00	0.00	
2,040.0	16.39	235.58	2,015.8	-116.9	-170.7	206.9	0.00	0.00	0.00	
2,080.0	16.39	235.58	2,054.2	-123.3	-180.0	218.2	0.00	0.00	0.00	
2,120.0	16.39	235.58	2,092.6	-129.7	-189.3	229.5	0.00	0.00	0.00	
2,160.0	16.39	235.58	2,131.0	-136.1	-198.6	240.7	0.00	0.00	0.00	
2,200.0	16.39	235.58	2,169.3	-142.5	-207.9	252.0	0.00	0.00	0.00	
2,240.0	16.39	235.58	2,207.7	-148.8	-217.2	263.3	0.00	0.00	0.00	
2,280.0	16.39	235.58	2,246.1	-155.2	-226.6	274.6	0.00	0.00	0.00	
2,320.0	16.39	235.58	2,284.5	-161.6	-235.9	285.9	0.00	0.00	0.00	
2,360.0	16.39	235.58	2,322.8	-168.0	-245.2	297.2	0.00	0.00	0.00	
2,400.0	16.39	235.58	2,361.2	-174.4	-254.5	308.5	0.00	0.00	0.00	
2,440.0	16.39	235.58	2,399.6	-180.7	-263.8	319.8	0.00	0.00	0.00	
2,480.0	16.39	235.58	2,437.9	-187.1	-273.1	331.1	0.00	0.00	0.00	
2,520.0	16.39	235.58	2,476.3	-193.5	-282.4	342.4	0.00	0.00	0.00	
2,560.0	16.39	235.58	2,514.7	-199.9	-291.7	353.7	0.00	0.00	0.00	
2,600.0	16.39	235.58	2,553.1	-206.3	-301.1	364.9	0.00	0.00	0.00	
2,640.0	16.39	235.58	2,591.4	-212.6	-310.4	376.2	0.00	0.00	0.00	
2,680.0	16.39	235.58	2,629.8	-219.0	-319.7	387.5	0.00	0.00	0.00	
2,720.0	16.39	235.58	2,668.2	-225.4	-329.0	398.8	0.00	0.00	0.00	
2,760.0	16.39	235.58	2,706.6	-231.8	-338.3	410.1	0.00	0.00	0.00	
2,800.0	16.39	235.58	2,744.9	-238.2	-347.6	421.4	0.00	0.00	0.00	
2,840.0	16.39	235.58	2,783.3	-244.5	-356.9	432.7	0.00	0.00	0.00	
2,880.0	16.39	235.58	2,821.7	-250.9	-366.3	444.0	0.00	0.00	0.00	
2,920.0	16.39	235.58	2,860.1	-257.3	-375.6	455.3	0.00	0.00	0.00	
2,960.0	16.39	235.58	2,898.4	-263.7	-384.9	466.6	0.00	0.00	0.00	
3,000.0	16.39	235.58	2,936.8	-270.1	-394.2	477.8	0.00	0.00	0.00	
3,040.0	16.39	235.58	2,975.2	-276.5	-403.5	489.1	0.00	0.00	0.00	
3,080.0	16.39	235.58	3,013.6	-282.8	-412.8	500.4	0.00	0.00	0.00	
3,120.0	16.39	235.58	3,051.9	-289.2	-422.1	511.7	0.00	0.00	0.00	
3,160.0	16.39	235.58	3,090.3	-295.6	-431.5	523.0	0.00	0.00	0.00	
3,200.0	16.39	235.58	3,128.7	-302.0	-440.8	534.3	0.00	0.00	0.00	
3,240.0	16.39	235.58	3,167.0	-308.4	-450.1	545.6	0.00	0.00	0.00	
3,280.0	16.39	235.58	3,205.4	-314.7	-459.4	556.9	0.00	0.00	0.00	
3,320.0	16.39	235.58	3,243.8	-321.1	-468.7	568.2	0.00	0.00	0.00	
3,360.0	16.39	235.58	3,282.2	-327.5	-478.0	579.5	0.00	0.00	0.00	
3,400.0	16.39	235.58	3,320.5	-333.9	-487.3	590.7	0.00	0.00	0.00	
3,440.0	16.39	235.58	3,358.9	-340.3	-496.7	602.0	0.00	0.00	0.00	
3,480.0	16.39	235.58	3,397.3	-346.6	-506.0	613.3	0.00	0.00	0.00	
3,520.0	16.39	235.58	3,435.7	-353.0	-515.3	624.6	0.00	0.00	0.00	
3,560.0	16.39	235.58	3,474.0	-359.4	-524.6	635.9	0.00	0.00	0.00	
3,600.0	16.39	235.58	3,512.4	-365.8	-533.9	647.2	0.00	0.00	0.00	
3,640.0	16.39	235.58	3,550.8	-372.2	-543.2	658.5	0.00	0.00	0.00	
3,680.0	16.39	235.58	3,589.2	-378.6	-552.5	669.8	0.00	0.00	0.00	
3,720.0	16.39	235.58	3,627.5	-384.9	-561.9	681.1	0.00	0.00	0.00	
3,760.0	16.39	235.58	3,665.9	-391.3	-571.2	692.4	0.00	0.00	0.00	
3,800.0	16.39	235.58	3,704.3	-397.7	-580.5	703.6	0.00	0.00	0.00	
3,840.0	16.39	235.58	3,742.6	-404.1	-589.8	714.9	0.00	0.00	0.00	
3,880.0	16.39	235.58	3,781.0	-410.5	-599.1	726.2	0.00	0.00	0.00	
3,920.0	16.39	235.58	3,819.4	-416.8	-608.4	737.5	0.00	0.00	0.00	
3,960.0	16.39	235.58	3,857.8	-423.2	-617.7	748.8	0.00	0.00	0.00	
4,000.0	16.39	235.58	3,896.1	-429.6	-627.1	760.1	0.00	0.00	0.00	
4,040.0	16.39	235.58	3,934.5	-436.0	-636.4	771.4	0.00	0.00	0.00	
4,080.0	16.39	235.58	3,972.9	-442.4	-645.7	782.7	0.00	0.00	0.00	
4,120.0	16.39	235.58	4,011.3	-448.7	-655.0	794.0	0.00	0.00	0.00	

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Project:	SEC.27-T3N-R64W	MD Reference:	WELL @ 4887.0ft (Original Well Elev)
Site:	Hippo D27-25D Pad Sec.27-T3N-R64W	North Reference:	True
Well:	Hippo D27-25D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Hippo D27-25D Plan #1 (5-02-11)		

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	16.39	235.58	4,049.6	-455.1	-664.3	805.3	0.00	0.00	0.00
4,200.0	16.39	235.58	4,088.0	-461.5	-673.6	816.6	0.00	0.00	0.00
4,240.0	16.39	235.58	4,126.4	-467.9	-682.9	827.8	0.00	0.00	0.00
4,280.0	16.39	235.58	4,164.8	-474.3	-692.2	839.1	0.00	0.00	0.00
4,320.0	16.39	235.58	4,203.1	-480.7	-701.6	850.4	0.00	0.00	0.00
4,360.0	16.39	235.58	4,241.5	-487.0	-710.9	861.7	0.00	0.00	0.00
4,400.0	16.39	235.58	4,279.9	-493.4	-720.2	873.0	0.00	0.00	0.00
4,440.0	16.39	235.58	4,318.3	-499.8	-729.5	884.3	0.00	0.00	0.00
4,480.0	16.39	235.58	4,356.6	-506.2	-738.8	895.6	0.00	0.00	0.00
4,520.0	16.39	235.58	4,395.0	-512.6	-748.1	906.9	0.00	0.00	0.00
4,560.0	16.39	235.58	4,433.4	-518.9	-757.4	918.2	0.00	0.00	0.00
4,600.0	16.39	235.58	4,471.7	-525.3	-766.8	929.5	0.00	0.00	0.00
4,640.0	16.39	235.58	4,510.1	-531.7	-776.1	940.7	0.00	0.00	0.00
4,680.0	16.39	235.58	4,548.5	-538.1	-785.4	952.0	0.00	0.00	0.00
4,720.0	16.39	235.58	4,586.9	-544.5	-794.7	963.3	0.00	0.00	0.00
4,760.0	16.39	235.58	4,625.2	-550.8	-804.0	974.6	0.00	0.00	0.00
4,800.0	16.39	235.58	4,663.6	-557.2	-813.3	985.9	0.00	0.00	0.00
4,840.0	16.39	235.58	4,702.0	-563.6	-822.6	997.2	0.00	0.00	0.00
4,880.0	16.39	235.58	4,740.4	-570.0	-832.0	1,008.5	0.00	0.00	0.00
4,920.0	16.39	235.58	4,778.7	-576.4	-841.3	1,019.8	0.00	0.00	0.00
4,960.0	16.39	235.58	4,817.1	-582.7	-850.6	1,031.1	0.00	0.00	0.00
5,000.0	16.39	235.58	4,855.5	-589.1	-859.9	1,042.4	0.00	0.00	0.00
5,040.0	16.39	235.58	4,893.9	-595.5	-869.2	1,053.6	0.00	0.00	0.00
5,080.0	16.39	235.58	4,932.2	-601.9	-878.5	1,064.9	0.00	0.00	0.00
5,120.0	16.39	235.58	4,970.6	-608.3	-887.8	1,076.2	0.00	0.00	0.00
5,141.7	16.39	235.58	4,991.4	-611.7	-892.9	1,082.3	0.00	0.00	0.00
5,160.0	16.03	235.58	5,009.0	-614.6	-897.1	1,087.5	2.00	-2.00	0.00
5,200.0	15.23	235.58	5,047.5	-620.7	-906.0	1,098.2	2.00	-2.00	0.00
5,240.0	14.43	235.58	5,086.2	-626.5	-914.4	1,108.5	2.00	-2.00	0.00
5,280.0	13.63	235.58	5,125.0	-632.0	-922.4	1,118.2	2.00	-2.00	0.00
5,320.0	12.83	235.58	5,163.9	-637.2	-930.0	1,127.3	2.00	-2.00	0.00
5,360.0	12.03	235.58	5,203.0	-642.0	-937.1	1,135.9	2.00	-2.00	0.00
5,400.0	11.23	235.58	5,242.2	-646.6	-943.7	1,144.0	2.00	-2.00	0.00
5,440.0	10.43	235.58	5,281.5	-650.8	-949.9	1,151.5	2.00	-2.00	0.00
5,480.0	9.63	235.58	5,320.8	-654.8	-955.7	1,158.5	2.00	-2.00	0.00
5,520.0	8.83	235.58	5,360.3	-658.4	-961.0	1,164.9	2.00	-2.00	0.00
5,560.0	8.03	235.58	5,399.9	-661.7	-965.8	1,170.8	2.00	-2.00	0.00
5,600.0	7.23	235.58	5,439.5	-664.7	-970.2	1,176.1	2.00	-2.00	0.00
5,640.0	6.43	235.58	5,479.3	-667.4	-974.1	1,180.8	2.00	-2.00	0.00
5,680.0	5.63	235.58	5,519.0	-669.8	-977.6	1,185.0	2.00	-2.00	0.00
5,720.0	4.83	235.58	5,558.9	-671.8	-980.6	1,188.7	2.00	-2.00	0.00
5,760.0	4.03	235.58	5,598.7	-673.6	-983.1	1,191.8	2.00	-2.00	0.00
5,800.0	3.23	235.58	5,638.7	-675.0	-985.2	1,194.3	2.00	-2.00	0.00
5,840.0	2.43	235.58	5,678.6	-676.1	-986.9	1,196.3	2.00	-2.00	0.00
5,880.0	1.63	235.58	5,718.6	-676.9	-988.0	1,197.7	2.00	-2.00	0.00
5,920.0	0.83	235.58	5,758.6	-677.4	-988.7	1,198.5	2.00	-2.00	0.00
5,960.0	0.03	235.58	5,798.6	-677.6	-989.0	1,198.8	2.00	-2.00	0.00
5,961.4	0.00	0.00	5,800.0	-677.6	-989.0	1,198.8	2.00	-2.00	8,760.88
TARGET BHL 1320'FSL, 1320'FWL									
6,000.0	0.00	0.00	5,838.6	-677.6	-989.0	1,198.8	0.00	0.00	0.00
6,040.0	0.00	0.00	5,878.6	-677.6	-989.0	1,198.8	0.00	0.00	0.00
6,080.0	0.00	0.00	5,918.6	-677.6	-989.0	1,198.8	0.00	0.00	0.00
6,120.0	0.00	0.00	5,958.6	-677.6	-989.0	1,198.8	0.00	0.00	0.00
6,160.0	0.00	0.00	5,998.6	-677.6	-989.0	1,198.8	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Hippo D27-25D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4887.0ft (Original Well Elev)
Project:	SEC.27-T3N-R64W	MD Reference:	WELL @ 4887.0ft (Original Well Elev)
Site:	Hippo D27-25D Pad Sec.27-T3N-R64W	North Reference:	True
Well:	Hippo D27-25D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Hippo D27-25D Plan #1 (5-02-11)		

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	6,038.6	-677.6	-989.0	1,198.8	0.00	0.00	0.00
6,240.0	0.00	0.00	6,078.6	-677.6	-989.0	1,198.8	0.00	0.00	0.00
6,280.0	0.00	0.00	6,118.6	-677.6	-989.0	1,198.8	0.00	0.00	0.00
6,320.0	0.00	0.00	6,158.6	-677.6	-989.0	1,198.8	0.00	0.00	0.00
6,360.0	0.00	0.00	6,198.6	-677.6	-989.0	1,198.8	0.00	0.00	0.00
6,400.0	0.00	0.00	6,238.6	-677.6	-989.0	1,198.8	0.00	0.00	0.00
6,440.0	0.00	0.00	6,278.6	-677.6	-989.0	1,198.8	0.00	0.00	0.00
6,480.0	0.00	0.00	6,318.6	-677.6	-989.0	1,198.8	0.00	0.00	0.00
6,520.0	0.00	0.00	6,358.6	-677.6	-989.0	1,198.8	0.00	0.00	0.00
6,560.0	0.00	0.00	6,398.6	-677.6	-989.0	1,198.8	0.00	0.00	0.00
6,600.0	0.00	0.00	6,438.6	-677.6	-989.0	1,198.8	0.00	0.00	0.00
6,640.0	0.00	0.00	6,478.6	-677.6	-989.0	1,198.8	0.00	0.00	0.00
6,680.0	0.00	0.00	6,518.6	-677.6	-989.0	1,198.8	0.00	0.00	0.00
6,720.0	0.00	0.00	6,558.6	-677.6	-989.0	1,198.8	0.00	0.00	0.00
6,760.0	0.00	0.00	6,598.6	-677.6	-989.0	1,198.8	0.00	0.00	0.00
6,800.0	0.00	0.00	6,638.6	-677.6	-989.0	1,198.8	0.00	0.00	0.00
6,840.0	0.00	0.00	6,678.6	-677.6	-989.0	1,198.8	0.00	0.00	0.00
6,880.0	0.00	0.00	6,718.6	-677.6	-989.0	1,198.8	0.00	0.00	0.00
6,920.0	0.00	0.00	6,758.6	-677.6	-989.0	1,198.8	0.00	0.00	0.00
6,936.4	0.00	0.00	6,775.0	-677.6	-989.0	1,198.8	0.00	0.00	0.00
NIOBRARA - LEGAL BOX 800' X 800' 1320'FSL & 1321'FWL - TARGET CIRCLE 1320'FSL & 1320'FWL									
6,960.0	0.00	0.00	6,798.6	-677.6	-989.0	1,198.8	0.00	0.00	0.00
7,000.0	0.00	0.00	6,838.6	-677.6	-989.0	1,198.8	0.00	0.00	0.00
7,040.0	0.00	0.00	6,878.6	-677.6	-989.0	1,198.8	0.00	0.00	0.00
7,080.0	0.00	0.00	6,918.6	-677.6	-989.0	1,198.8	0.00	0.00	0.00
7,120.0	0.00	0.00	6,958.6	-677.6	-989.0	1,198.8	0.00	0.00	0.00
7,160.0	0.00	0.00	6,998.6	-677.6	-989.0	1,198.8	0.00	0.00	0.00
7,200.0	0.00	0.00	7,038.6	-677.6	-989.0	1,198.8	0.00	0.00	0.00
7,212.4	0.00	0.00	7,051.0	-677.6	-989.0	1,198.8	0.00	0.00	0.00
CODELL									
7,240.0	0.00	0.00	7,078.6	-677.6	-989.0	1,198.8	0.00	0.00	0.00
7,280.0	0.00	0.00	7,118.6	-677.6	-989.0	1,198.8	0.00	0.00	0.00
7,320.0	0.00	0.00	7,158.6	-677.6	-989.0	1,198.8	0.00	0.00	0.00
7,360.0	0.00	0.00	7,198.6	-677.6	-989.0	1,198.8	0.00	0.00	0.00
7,362.4	0.00	0.00	7,201.0	-677.6	-989.0	1,198.8	0.00	0.00	0.00

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
LEGAL BOX 800' X 800' 1320'FSL & 1321'FWL - hit/miss target - Shape	0.00	0.00	6,775.0	-677.6	-988.0	1,314,506.20	3,267,546.14	40.192750	-104.542276
- plan misses target center by 1.0ft at 6936.4ft MD (6775.0 TVD, -677.6 N, -989.0 E) - Rectangle (sides W800.0 H800.0 D426.0)									
TARGET CIRCLE 1320'FSL & 1320'FWL - plan hits target center - Circle (radius 75.0)	0.00	0.00	6,775.0	-677.6	-989.0	1,314,506.22	3,267,545.15	40.192750	-104.542280
TARGET BHL 1320'FWL - plan hits target center - Point	0.00	0.00	5,800.0	-677.6	-989.0	1,314,506.22	3,267,545.15	40.192750	-104.542280

Database:	Landmark	Local Co-ordinate Reference:	Well Hippo D27-25D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4887.0ft (Original Well Elev)
Project:	SEC.27-T3N-R64W	MD Reference:	WELL @ 4887.0ft (Original Well Elev)
Site:	Hippo D27-25D Pad Sec.27-T3N-R64W	North Reference:	True
Well:	Hippo D27-25D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Hippo D27-25D Plan #1 (5-02-11)		

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 (°)
6,936.4	6,775.0	NIOBRARA		0.00	
7,212.4	7,051.0	CODELL		0.00	