

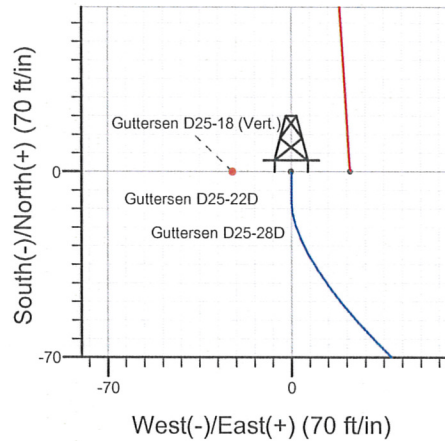
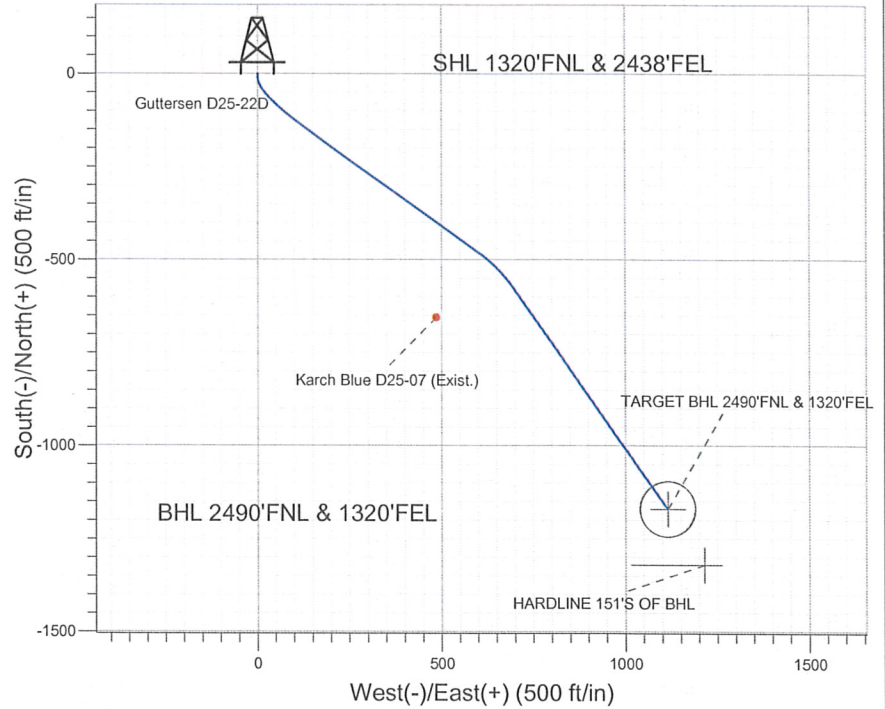
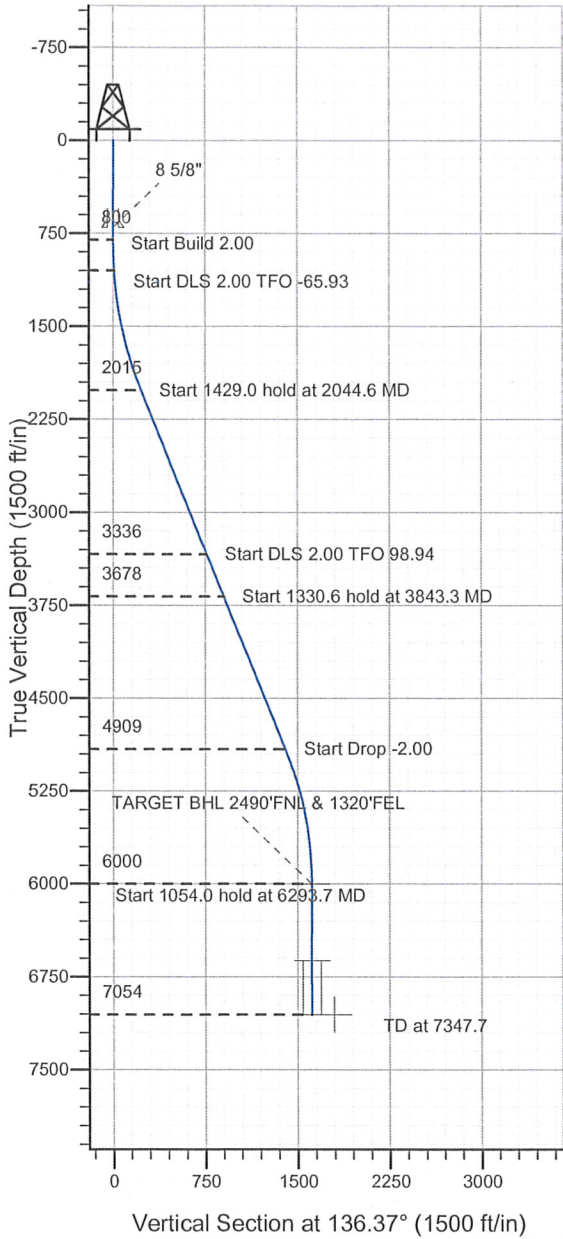
ENSIGN

Directional

Well Name: Gutttersen D25-22D

Surface Location: Gutttersen D25-28D Pad Sec.25-T3N-R64W
 North American Datum 1983 US State Plane 1983 Colorado Northern Zone
 Ground Elevation: 4772.0
 +N/-S +E/-W Northing Easting Latitude Longitude Slot
 0.0 0.0 1317287.75 3279591.33 40.200020 -104.499050
 Original Well Elev WELL @ 4785.0ft (Original Well Elev)

NOBLE ENERGY INC WELD COUNTY CO



Gutttersen D25-28D Pad Sec.25-T3N-R64W
 Gutttersen D25-22D
 Noble Gutttersen D25-22D Plan #1 (10-11-11)
 11:30, October 12 2011



Azimuths to True North
 Magnetic North: 8.66°

Magnetic Field
 Strength: 53021.2snT
 Dip Angle: 66.92°
 Date: 10/11/2011
 Model: IGRF2010

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
TARGET BHL 2490'FNL & 1320'FEL	6000.0	-1169.4	1114.6	40.196810	-104.495060	Point
TARGET CIRCLE 2490'FNL & 1320'FEL	6617.0	-1169.4	1114.6	40.196810	-104.495060	Circle (Radius: 75.0)
HARDLINE 151'S OF BHL	7054.0	-1320.4	1214.6	40.196395	-104.494702	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	800.0	0.00	0.00	800.0	0.0	0.0	0.00	0.00	0.0	
3	1050.0	5.00	180.00	1049.7	-10.9	0.0	2.00	180.00	7.9	
4	2044.6	22.38	125.33	2014.6	-165.3	156.1	2.00	-65.93	227.3	
5	3473.6	22.38	125.33	3336.0	-480.0	600.0	0.00	0.00	761.4	
6	3843.3	22.39	144.82	3678.3	-578.4	698.1	2.00	98.94	900.4	
7	5173.9	22.39	144.82	4908.6	-992.8	990.2	0.00	0.00	1401.8	
8	6293.7	0.00	0.00	6000.0	-1169.4	1114.6	2.00	180.00	1615.5	TARGET BHL 2490'FNL & 1320'FEL
9	7347.7	0.00	0.00	7054.0	-1169.4	1114.6	0.00	0.00	1615.5	



Directional

NOBLE ENERGY INC WELD COUNTY CO

SEC.25-T3N-R64W

Guttersen D25-28D Pad Sec.25-T3N-R64W

Guttersen D25-22D

Wellbore #1

Plan: Noble Guttersen D25-22D Plan #1 (10-11-11)

Standard Planning Report

12 October, 2011



Database: Landmark
Company: NOBLE ENERGY INC WELD COUNTY CO
Project: SEC.25-T3N-R64W
Site: Gutttersen D25-28D Pad Sec.25-T3N-R64W
Well: Gutttersen D25-22D
Wellbore: Wellbore #1
Design: Noble Gutttersen D25-22D Plan #1 (10-11-11)

Local Co-ordinate Reference: Well Gutttersen D25-22D
TVD Reference: WELL @ 4785.0ft (Original Well Elev)
MD Reference: WELL @ 4785.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

Project	SEC.25-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	Gutttersen D25-28D Pad Sec.25-T3N-R64W				
Site Position:		Northing:	1,317,288.01 ft	Latitude:	40.200020
From:	Lat/Long	Easting:	3,279,613.68ft	Longitude:	-104.498970
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.65 °

Well	Gutttersen D25-22D					
Well Position	+N/-S	0.0 ft	Northing:	1,317,287.75 ft	Latitude:	40.200020
	+E/-W	-22.3 ft	Easting:	3,279,591.33 ft	Longitude:	-104.499050
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,772.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	10/11/2011	8.66	66.92	53,021

Design	Noble Gutttersen D25-22D Plan #1 (10-11-11)			
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	136.37

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	
800.0	0.00	0.00	800.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,050.0	5.00	180.00	1,049.7	-10.9	0.0	2.00	2.00	0.00	180.00	
2,044.6	22.38	125.33	2,014.6	-165.3	156.1	2.00	1.75	-5.50	-65.93	
3,473.6	22.38	125.33	3,336.0	-480.0	600.0	0.00	0.00	0.00	0.00	
3,843.3	22.39	144.82	3,678.3	-578.4	698.1	2.00	0.00	5.27	98.94	
5,173.9	22.39	144.82	4,908.6	-992.8	990.2	0.00	0.00	0.00	0.00	
6,293.7	0.00	0.00	6,000.0	-1,169.4	1,114.6	2.00	-2.00	0.00	180.00	TARGET BHL 249C
7,347.7	0.00	0.00	7,054.0	-1,169.4	1,114.6	0.00	0.00	0.00	0.00	

Database: Landmark
 Company: NOBLE ENERGY INC WELD COUNTY CO
 Project: SEC.25-T3N-R64W
 Site: Guttersen D25-28D Pad Sec.25-T3N-R64W
 Well: Guttersen D25-22D
 Wellbore: Wellbore #1
 Design: Noble Guttersen D25-22D Plan #1 (10-11-11)

Local Co-ordinate Reference: Well Guttersen D25-22D
 TVD Reference: WELL @ 4785.0ft (Original Well Elev)
 MD Reference: WELL @ 4785.0ft (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
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
8 5/8"									
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	0.80	180.00	840.0	-0.3	0.0	0.2	2.00	2.00	0.00
880.0	1.60	180.00	880.0	-1.1	0.0	0.8	2.00	2.00	0.00
920.0	2.40	180.00	920.0	-2.5	0.0	1.8	2.00	2.00	0.00
960.0	3.20	180.00	959.9	-4.5	0.0	3.2	2.00	2.00	0.00
1,000.0	4.00	180.00	999.8	-7.0	0.0	5.1	2.00	2.00	0.00
1,040.0	4.80	180.00	1,039.7	-10.0	0.0	7.3	2.00	2.00	0.00
1,050.0	5.00	180.00	1,049.7	-10.9	0.0	7.9	2.00	2.00	0.00
1,080.0	5.27	174.03	1,079.6	-13.6	0.1	9.9	2.00	0.91	-19.90
1,120.0	5.72	167.06	1,119.4	-17.3	0.8	13.1	2.00	1.11	-17.43
1,160.0	6.23	161.15	1,159.2	-21.3	1.9	16.8	2.00	1.28	-14.75
1,200.0	6.80	156.19	1,198.9	-25.6	3.6	21.0	2.00	1.42	-12.41
1,240.0	7.41	152.02	1,238.6	-30.0	5.8	25.7	2.00	1.53	-10.43
1,280.0	8.05	148.49	1,278.2	-34.7	8.4	30.9	2.00	1.61	-8.81
1,320.0	8.72	145.50	1,317.8	-39.6	11.6	36.6	2.00	1.68	-7.49
1,360.0	9.42	142.93	1,357.3	-44.7	15.3	42.9	2.00	1.73	-6.42
1,400.0	10.12	140.72	1,396.7	-50.0	19.5	49.6	2.00	1.77	-5.54
1,440.0	10.84	138.79	1,436.1	-55.6	24.2	56.9	2.00	1.80	-4.82
1,480.0	11.57	137.10	1,475.3	-61.3	29.4	64.7	2.00	1.82	-4.22
1,520.0	12.31	135.61	1,514.4	-67.3	35.1	73.0	2.00	1.85	-3.72
1,560.0	13.05	134.29	1,553.5	-73.5	41.3	81.7	2.00	1.86	-3.31
1,600.0	13.81	133.11	1,592.4	-79.9	48.1	91.0	2.00	1.88	-2.95
1,640.0	14.56	132.05	1,631.1	-86.6	55.3	100.8	2.00	1.89	-2.65
1,680.0	15.32	131.09	1,669.8	-93.4	63.0	111.1	2.00	1.90	-2.40
1,720.0	16.09	130.22	1,708.3	-100.5	71.2	121.8	2.00	1.91	-2.17
1,760.0	16.86	129.43	1,746.7	-107.7	79.9	133.1	2.00	1.92	-1.98
1,800.0	17.63	128.71	1,784.9	-115.2	89.1	144.9	2.00	1.93	-1.81
1,840.0	18.40	128.04	1,822.9	-122.9	98.8	157.1	2.00	1.93	-1.67
1,880.0	19.17	127.43	1,860.8	-130.7	109.0	169.9	2.00	1.94	-1.54
1,920.0	19.95	126.86	1,898.5	-138.8	119.7	183.1	2.00	1.94	-1.42
1,960.0	20.73	126.33	1,936.0	-147.1	130.9	196.8	2.00	1.95	-1.32
2,000.0	21.51	125.84	1,973.3	-155.6	142.5	211.0	2.00	1.95	-1.23

Database: Landmark
Company: NOBLE ENERGY INC WELD COUNTY CO
Project: SEC.25-T3N-R64W
Site: Guttersten D25-28D Pad Sec.25-T3N-R64W
Well: Guttersten D25-22D
Wellbore: Wellbore #1
Design: Noble Guttersten D25-22D Plan #1 (10-11-11)

Local Co-ordinate Reference: Well Guttersten D25-22D
TVD Reference: WELL @ 4785.0ft (Original Well Elev)
MD Reference: WELL @ 4785.0ft (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)
2,040.0	22.29	125.38	2,010.4	-164.3	154.6	225.6	2.00	1.95	-1.14
2,044.6	22.38	125.33	2,014.6	-165.3	156.1	227.3	2.00	1.96	-1.10
2,080.0	22.38	125.33	2,047.4	-173.1	167.1	240.6	0.00	0.00	0.00
2,120.0	22.38	125.33	2,084.4	-181.9	179.5	255.5	0.00	0.00	0.00
2,160.0	22.38	125.33	2,121.3	-190.7	191.9	270.5	0.00	0.00	0.00
2,200.0	22.38	125.33	2,158.3	-199.5	204.3	285.4	0.00	0.00	0.00
2,240.0	22.38	125.33	2,195.3	-208.3	216.8	300.4	0.00	0.00	0.00
2,280.0	22.38	125.33	2,232.3	-217.1	229.2	315.3	0.00	0.00	0.00
2,320.0	22.38	125.33	2,269.3	-226.0	241.6	330.3	0.00	0.00	0.00
2,360.0	22.38	125.33	2,306.3	-234.8	254.0	345.2	0.00	0.00	0.00
2,400.0	22.38	125.33	2,343.3	-243.6	266.5	360.2	0.00	0.00	0.00
2,440.0	22.38	125.33	2,380.2	-252.4	278.9	375.1	0.00	0.00	0.00
2,480.0	22.38	125.33	2,417.2	-261.2	291.3	390.1	0.00	0.00	0.00
2,520.0	22.38	125.33	2,454.2	-270.0	303.7	405.0	0.00	0.00	0.00
2,560.0	22.38	125.33	2,491.2	-278.8	316.2	420.0	0.00	0.00	0.00
2,600.0	22.38	125.33	2,528.2	-287.6	328.6	434.9	0.00	0.00	0.00
2,640.0	22.38	125.33	2,565.2	-296.4	341.0	449.9	0.00	0.00	0.00
2,680.0	22.38	125.33	2,602.2	-305.2	353.5	464.8	0.00	0.00	0.00
2,720.0	22.38	125.33	2,639.2	-314.0	365.9	479.8	0.00	0.00	0.00
2,760.0	22.38	125.33	2,676.1	-322.9	378.3	494.7	0.00	0.00	0.00
2,800.0	22.38	125.33	2,713.1	-331.7	390.7	509.7	0.00	0.00	0.00
2,840.0	22.38	125.33	2,750.1	-340.5	403.2	524.6	0.00	0.00	0.00
2,880.0	22.38	125.33	2,787.1	-349.3	415.6	539.6	0.00	0.00	0.00
2,920.0	22.38	125.33	2,824.1	-358.1	428.0	554.5	0.00	0.00	0.00
2,960.0	22.38	125.33	2,861.1	-366.9	440.4	569.5	0.00	0.00	0.00
3,000.0	22.38	125.33	2,898.1	-375.7	452.9	584.4	0.00	0.00	0.00
3,040.0	22.38	125.33	2,935.0	-384.5	465.3	599.4	0.00	0.00	0.00
3,080.0	22.38	125.33	2,972.0	-393.3	477.7	614.3	0.00	0.00	0.00
3,120.0	22.38	125.33	3,009.0	-402.1	490.1	629.3	0.00	0.00	0.00
3,160.0	22.38	125.33	3,046.0	-410.9	502.6	644.2	0.00	0.00	0.00
3,200.0	22.38	125.33	3,083.0	-419.7	515.0	659.2	0.00	0.00	0.00
3,240.0	22.38	125.33	3,120.0	-428.6	527.4	674.1	0.00	0.00	0.00
3,280.0	22.38	125.33	3,157.0	-437.4	539.8	689.1	0.00	0.00	0.00
3,320.0	22.38	125.33	3,193.9	-446.2	552.3	704.0	0.00	0.00	0.00
3,360.0	22.38	125.33	3,230.9	-455.0	564.7	719.0	0.00	0.00	0.00
3,400.0	22.38	125.33	3,267.9	-463.8	577.1	733.9	0.00	0.00	0.00
3,440.0	22.38	125.33	3,304.9	-472.6	589.6	748.9	0.00	0.00	0.00
3,473.6	22.38	125.33	3,336.0	-480.0	600.0	761.4	0.00	0.00	0.00
3,480.0	22.36	125.66	3,341.9	-481.4	602.0	763.8	2.00	-0.31	5.19
3,520.0	22.26	127.75	3,378.9	-490.5	614.1	778.8	2.00	-0.27	5.22
3,560.0	22.18	129.86	3,415.9	-500.0	625.9	793.8	2.00	-0.20	5.26
3,600.0	22.12	131.97	3,453.0	-509.8	637.3	808.8	2.00	-0.13	5.29
3,640.0	22.10	134.10	3,490.0	-520.1	648.3	823.8	2.00	-0.06	5.31
3,680.0	22.10	136.22	3,527.1	-530.8	658.9	838.8	2.00	0.01	5.32
3,720.0	22.13	138.35	3,564.2	-541.8	669.2	853.9	2.00	0.07	5.31
3,760.0	22.19	140.46	3,601.2	-553.3	679.0	869.0	2.00	0.14	5.29
3,800.0	22.27	142.57	3,638.2	-565.1	688.4	884.0	2.00	0.21	5.26
3,840.0	22.38	144.65	3,675.2	-577.4	697.4	899.1	2.00	0.28	5.21
3,843.3	22.39	144.82	3,678.3	-578.4	698.1	900.4	2.00	0.31	5.19
3,880.0	22.39	144.82	3,712.2	-589.8	706.2	914.2	0.00	0.00	0.00
3,920.0	22.39	144.82	3,749.2	-602.3	715.0	929.3	0.00	0.00	0.00
3,960.0	22.39	144.82	3,786.2	-614.7	723.7	944.3	0.00	0.00	0.00
4,000.0	22.39	144.82	3,823.2	-627.2	732.5	959.4	0.00	0.00	0.00
4,040.0	22.39	144.82	3,860.2	-639.7	741.3	974.5	0.00	0.00	0.00

Database: Landmark
 Company: NOBLE ENERGY INC WELD COUNTY CO
 Project: SEC.25-T3N-R64W
 Site: Gutttersen D25-28D Pad Sec.25-T3N-R64W
 Well: Gutttersen D25-22D
 Wellbore: Wellbore #1
 Design: Noble Gutttersen D25-22D Plan #1 (10-11-11)

Local Co-ordinate Reference: Well Gutttersen D25-22D
 TVD Reference: WELL @ 4785.0ft (Original Well Elev)
 MD Reference: WELL @ 4785.0ft (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	22.39	144.82	3,897.1	-652.1	750.1	989.6	0.00	0.00	0.00
4,120.0	22.39	144.82	3,934.1	-664.6	758.9	1,004.6	0.00	0.00	0.00
4,160.0	22.39	144.82	3,971.1	-677.0	767.6	1,019.7	0.00	0.00	0.00
4,200.0	22.39	144.82	4,008.1	-689.5	776.4	1,034.8	0.00	0.00	0.00
4,240.0	22.39	144.82	4,045.1	-701.9	785.2	1,049.8	0.00	0.00	0.00
4,280.0	22.39	144.82	4,082.1	-714.4	794.0	1,064.9	0.00	0.00	0.00
4,320.0	22.39	144.82	4,119.0	-726.8	802.8	1,080.0	0.00	0.00	0.00
4,360.0	22.39	144.82	4,156.0	-739.3	811.5	1,095.1	0.00	0.00	0.00
4,400.0	22.39	144.82	4,193.0	-751.8	820.3	1,110.1	0.00	0.00	0.00
4,440.0	22.39	144.82	4,230.0	-764.2	829.1	1,125.2	0.00	0.00	0.00
4,480.0	22.39	144.82	4,267.0	-776.7	837.9	1,140.3	0.00	0.00	0.00
4,520.0	22.39	144.82	4,304.0	-789.1	846.6	1,155.4	0.00	0.00	0.00
4,560.0	22.39	144.82	4,340.9	-801.6	855.4	1,170.4	0.00	0.00	0.00
4,600.0	22.39	144.82	4,377.9	-814.0	864.2	1,185.5	0.00	0.00	0.00
4,640.0	22.39	144.82	4,414.9	-826.5	873.0	1,200.6	0.00	0.00	0.00
4,680.0	22.39	144.82	4,451.9	-839.0	881.8	1,215.7	0.00	0.00	0.00
4,720.0	22.39	144.82	4,488.9	-851.4	890.5	1,230.7	0.00	0.00	0.00
4,760.0	22.39	144.82	4,525.9	-863.9	899.3	1,245.8	0.00	0.00	0.00
4,800.0	22.39	144.82	4,562.8	-876.3	908.1	1,260.9	0.00	0.00	0.00
4,840.0	22.39	144.82	4,599.8	-888.8	916.9	1,275.9	0.00	0.00	0.00
4,880.0	22.39	144.82	4,636.8	-901.2	925.7	1,291.0	0.00	0.00	0.00
4,920.0	22.39	144.82	4,673.8	-913.7	934.4	1,306.1	0.00	0.00	0.00
4,960.0	22.39	144.82	4,710.8	-926.1	943.2	1,321.2	0.00	0.00	0.00
5,000.0	22.39	144.82	4,747.8	-938.6	952.0	1,336.2	0.00	0.00	0.00
5,040.0	22.39	144.82	4,784.7	-951.1	960.8	1,351.3	0.00	0.00	0.00
5,080.0	22.39	144.82	4,821.7	-963.5	969.6	1,366.4	0.00	0.00	0.00
5,120.0	22.39	144.82	4,858.7	-976.0	978.3	1,381.5	0.00	0.00	0.00
5,160.0	22.39	144.82	4,895.7	-988.4	987.1	1,396.5	0.00	0.00	0.00
5,173.9	22.39	144.82	4,908.6	-992.8	990.2	1,401.8	0.00	0.00	0.00
5,200.0	21.87	144.82	4,932.7	-1,000.8	995.8	1,411.5	2.00	-2.00	0.00
5,240.0	21.07	144.82	4,969.9	-1,012.8	1,004.3	1,426.0	2.00	-2.00	0.00
5,280.0	20.27	144.82	5,007.4	-1,024.3	1,012.4	1,440.0	2.00	-2.00	0.00
5,320.0	19.47	144.82	5,045.0	-1,035.4	1,020.2	1,453.4	2.00	-2.00	0.00
5,360.0	18.67	144.82	5,082.8	-1,046.1	1,027.8	1,466.3	2.00	-2.00	0.00
5,400.0	17.87	144.82	5,120.8	-1,056.4	1,035.0	1,478.7	2.00	-2.00	0.00
5,440.0	17.07	144.82	5,158.9	-1,066.2	1,041.9	1,490.6	2.00	-2.00	0.00
5,480.0	16.27	144.82	5,197.2	-1,075.6	1,048.5	1,502.0	2.00	-2.00	0.00
5,520.0	15.47	144.82	5,235.7	-1,084.5	1,054.8	1,512.8	2.00	-2.00	0.00
5,560.0	14.67	144.82	5,274.3	-1,093.0	1,060.8	1,523.1	2.00	-2.00	0.00
5,600.0	13.87	144.82	5,313.1	-1,101.1	1,066.5	1,532.8	2.00	-2.00	0.00
5,640.0	13.07	144.82	5,352.0	-1,108.7	1,071.9	1,542.1	2.00	-2.00	0.00
5,680.0	12.27	144.82	5,391.0	-1,115.8	1,076.9	1,550.7	2.00	-2.00	0.00
5,720.0	11.47	144.82	5,430.2	-1,122.6	1,081.7	1,558.9	2.00	-2.00	0.00
5,760.0	10.67	144.82	5,469.4	-1,128.9	1,086.1	1,566.5	2.00	-2.00	0.00
5,800.0	9.87	144.82	5,508.8	-1,134.7	1,090.2	1,573.5	2.00	-2.00	0.00
5,840.0	9.07	144.82	5,548.2	-1,140.1	1,094.0	1,580.0	2.00	-2.00	0.00
5,880.0	8.27	144.82	5,587.8	-1,145.0	1,097.5	1,586.0	2.00	-2.00	0.00
5,920.0	7.47	144.82	5,627.4	-1,149.5	1,100.6	1,591.4	2.00	-2.00	0.00
5,960.0	6.67	144.82	5,667.1	-1,153.5	1,103.5	1,596.3	2.00	-2.00	0.00
6,000.0	5.87	144.82	5,706.9	-1,157.1	1,106.0	1,600.6	2.00	-2.00	0.00
6,040.0	5.07	144.82	5,746.7	-1,160.2	1,108.2	1,604.4	2.00	-2.00	0.00
6,080.0	4.27	144.82	5,786.5	-1,162.9	1,110.0	1,607.6	2.00	-2.00	0.00
6,120.0	3.47	144.82	5,826.4	-1,165.1	1,111.6	1,610.3	2.00	-2.00	0.00
6,160.0	2.67	144.82	5,866.4	-1,166.8	1,112.8	1,612.4	2.00	-2.00	0.00

Database: Landmark
 Company: NOBLE ENERGY INC WELD COUNTY CO
 Project: SEC.25-T3N-R64W
 Site: Guttersen D25-28D Pad Sec.25-T3N-R64W
 Well: Guttersen D25-22D
 Wellbore: Wellbore #1
 Design: Noble Guttersen D25-22D Plan #1 (10-11-11)

Local Co-ordinate Reference: Well Guttersen D25-22D
 TVD Reference: WELL @ 4785.0ft (Original Well Elev)
 MD Reference: WELL @ 4785.0ft (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	1.87	144.82	5,906.4	-1,168.1	1,113.8	1,614.0	2.00	-2.00	0.00
6,240.0	1.07	144.82	5,946.3	-1,169.0	1,114.3	1,615.0	2.00	-2.00	0.00
6,280.0	0.27	144.82	5,986.3	-1,169.3	1,114.6	1,615.5	2.00	-2.00	0.00
6,293.7	0.00	0.00	6,000.0	-1,169.4	1,114.6	1,615.5	2.00	-2.00	0.00
TARGET BHL 2490'FNL & 1320'FEL									
6,320.0	0.00	0.00	6,026.3	-1,169.4	1,114.6	1,615.5	0.00	0.00	0.00
6,360.0	0.00	0.00	6,066.3	-1,169.4	1,114.6	1,615.5	0.00	0.00	0.00
6,400.0	0.00	0.00	6,106.3	-1,169.4	1,114.6	1,615.5	0.00	0.00	0.00
6,440.0	0.00	0.00	6,146.3	-1,169.4	1,114.6	1,615.5	0.00	0.00	0.00
6,480.0	0.00	0.00	6,186.3	-1,169.4	1,114.6	1,615.5	0.00	0.00	0.00
6,520.0	0.00	0.00	6,226.3	-1,169.4	1,114.6	1,615.5	0.00	0.00	0.00
6,560.0	0.00	0.00	6,266.3	-1,169.4	1,114.6	1,615.5	0.00	0.00	0.00
6,600.0	0.00	0.00	6,306.3	-1,169.4	1,114.6	1,615.5	0.00	0.00	0.00
6,640.0	0.00	0.00	6,346.3	-1,169.4	1,114.6	1,615.5	0.00	0.00	0.00
6,680.0	0.00	0.00	6,386.3	-1,169.4	1,114.6	1,615.5	0.00	0.00	0.00
6,720.0	0.00	0.00	6,426.3	-1,169.4	1,114.6	1,615.5	0.00	0.00	0.00
6,760.0	0.00	0.00	6,466.3	-1,169.4	1,114.6	1,615.5	0.00	0.00	0.00
6,800.0	0.00	0.00	6,506.3	-1,169.4	1,114.6	1,615.5	0.00	0.00	0.00
6,840.0	0.00	0.00	6,546.3	-1,169.4	1,114.6	1,615.5	0.00	0.00	0.00
6,880.0	0.00	0.00	6,586.3	-1,169.4	1,114.6	1,615.5	0.00	0.00	0.00
6,910.7	0.00	0.00	6,617.0	-1,169.4	1,114.6	1,615.5	0.00	0.00	0.00
NIORARA - TARGET CIRCLE 2490'FNL & 1320'FEL									
6,920.0	0.00	0.00	6,626.3	-1,169.4	1,114.6	1,615.5	0.00	0.00	0.00
6,960.0	0.00	0.00	6,666.3	-1,169.4	1,114.6	1,615.5	0.00	0.00	0.00
7,000.0	0.00	0.00	6,706.3	-1,169.4	1,114.6	1,615.5	0.00	0.00	0.00
7,040.0	0.00	0.00	6,746.3	-1,169.4	1,114.6	1,615.5	0.00	0.00	0.00
7,080.0	0.00	0.00	6,786.3	-1,169.4	1,114.6	1,615.5	0.00	0.00	0.00
7,120.0	0.00	0.00	6,826.3	-1,169.4	1,114.6	1,615.5	0.00	0.00	0.00
7,160.0	0.00	0.00	6,866.3	-1,169.4	1,114.6	1,615.5	0.00	0.00	0.00
7,197.7	0.00	0.00	6,904.0	-1,169.4	1,114.6	1,615.5	0.00	0.00	0.00
CODELL									
7,200.0	0.00	0.00	6,906.3	-1,169.4	1,114.6	1,615.5	0.00	0.00	0.00
7,240.0	0.00	0.00	6,946.3	-1,169.4	1,114.6	1,615.5	0.00	0.00	0.00
7,280.0	0.00	0.00	6,986.3	-1,169.4	1,114.6	1,615.5	0.00	0.00	0.00
7,320.0	0.00	0.00	7,026.3	-1,169.4	1,114.6	1,615.5	0.00	0.00	0.00
7,347.7	0.00	0.00	7,054.0	-1,169.4	1,114.6	1,615.5	0.00	0.00	0.00
HARDLINE 151'S OF BHL									

Database: Landmark
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Project: SEC.25-T3N-R64W
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Wellbore: Wellbore #1
Design: Noble Gutttersen D25-22D Plan #1 (10-11-11)

Local Co-ordinate Reference: Well Gutttersen D25-22D
TVD Reference: WELL @ 4785.0ft (Original Well Elev)
MD Reference: WELL @ 4785.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

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 CIRCLE 24'	0.00	0.00	6,617.0	-1,169.4	1,114.6	1,316,131.09	3,280,719.05	40.196810	-104.495060
- plan hits target center									
- Circle (radius 75.0)									
HARDLINE 151'S OF	0.00	0.00	7,054.0	-1,320.4	1,214.6	1,315,981.20	3,280,820.70	40.196395	-104.494702
- plan misses target center by 181.1ft at 7347.7ft MD (7054.0 TVD, -1169.4 N, 1114.6 E)									
- Polygon									
Point 1			7,054.0	0.0	0.0	1,315,981.20	3,280,820.70		
Point 2			7,054.0	0.0	-200.0	1,315,978.95	3,280,620.73		
Point 3			7,054.0	0.0	0.0	1,315,981.20	3,280,820.70		
TARGET BHL 2490'F	0.00	0.00	6,000.0	-1,169.4	1,114.6	1,316,131.09	3,280,719.05	40.196810	-104.495060
- plan hits target center									
- Point									

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
700.0	700.0	8 5/8"	8-5/8	12-1/4

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
6,910.7	6,617.0	NIOBRARA		0.00	
7,197.7	6,904.0	CODELL		0.00	