

Well Name: **Guttersen D03-33D**

Surface Location: Guttersen Pad Sec.4-T3N-R64W
 North American Datum 1983 US State Plane 1983 Colorado Northern Zone

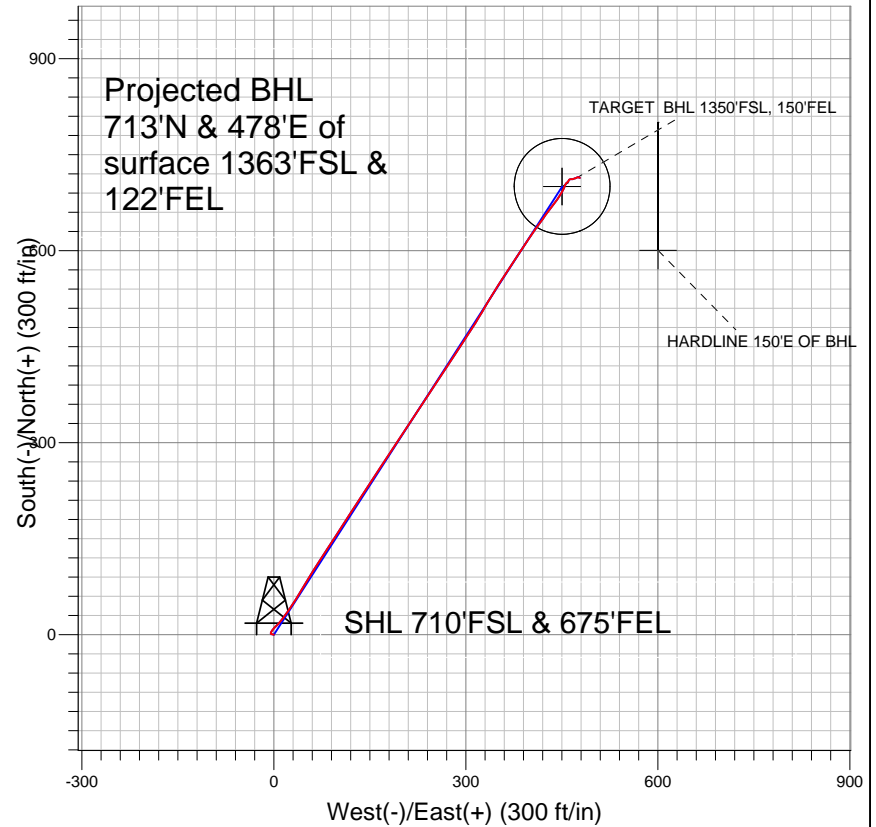
Ground Elevation: 4716.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	1335055.84	3265436.17	40.249220	-104.549040

Original Well Elev WELL @ 4729.0ft (Original Well Elev)

Slot

NOBLE ENERGY INC WELD COUNTY CO

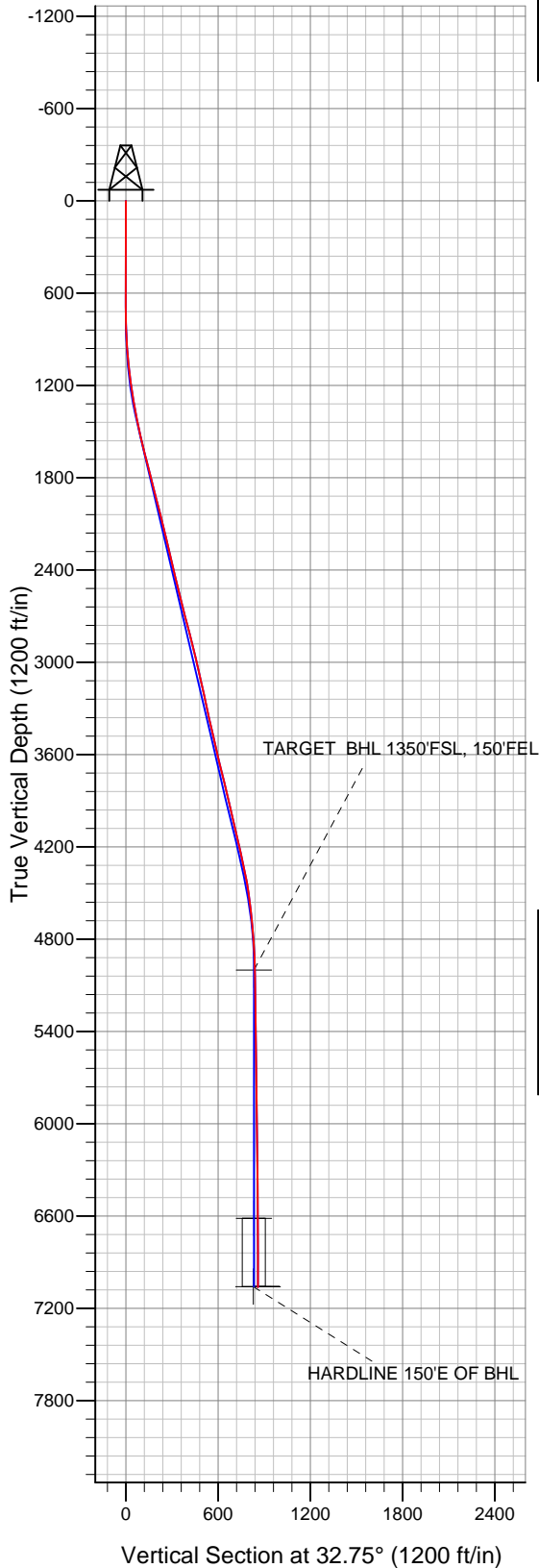


LEGEND

- ◆ Guttersen D03-33D, Guttersen D03-33D, Noble Guttersen D03-33D Plan #2 (06-01-10) V0
- Guttersen D03-33D
- Survey #1

Final Survey Plot

Projected Final Survey -
 7155'MD & 7063'TVD @ 859'VS
 0.3 deg Inc 120.0 deg AZ



Project: SEC.4-T3N-R64W
 Site: Guttersen Pad Sec.4-T3N-R64W
 Well: Guttersen D03-33D
 Plan: Guttersen D03-33D



Directional

NOBLE ENERGY INC WELD COUNTY CO

SEC.4-T3N-R64W

Guttersen Pad Sec.4-T3N-R64W

Guttersen D03-33D

Guttersen D03-33D

Survey: Survey #1

Standard Survey Report

06 June, 2011



Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Guttersten D03-33D
Project:	SEC.4-T3N-R64W	TVD Reference:	WELL @ 4729.0ft (Original Well Elev)
Site:	Guttersten Pad Sec.4-T3N-R64W	MD Reference:	WELL @ 4729.0ft (Original Well Elev)
Well:	Guttersten D03-33D	North Reference:	True
Wellbore:	Guttersten D03-33D	Survey Calculation Method:	Minimum Curvature
Design:	Guttersten D03-33D	Database:	Landmark

Project	SEC.4-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	Guttersten Pad Sec.4-T3N-R64W		
Site Position:		Northing:	1,335,050.13ft
From:	Lat/Long	Easting:	3,265,446.56ft
Position Uncertainty:	0.0 ft	Slot Radius:	"
		Latitude:	40.249204
		Longitude:	-104.549003
		Grid Convergence:	0.61 °

Well	Guttersten D03-33D		
Well Position	+N/-S	0.0 ft	Northing: 1,335,055.84 ft
	+E/-W	0.0 ft	Easting: 3,265,436.17 ft
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft
		Latitude:	40.249220
		Longitude:	-104.549040
		Ground Level:	4,716.0 ft

Wellbore	Guttersten D03-33D				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/20/2011	8.74	66.97	53,084

Design	Guttersten D03-33D			
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth: 0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	32.75

Survey Program	Date	6/6/2011		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
603.0	7,155.0	Survey #1 (Guttersten D03-33D)	MWD	MWD - Standard

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
603.0	0.80	279.00	603.0	0.7	-4.2	-1.7	0.13	0.13	0.00
688.0	0.70	335.60	688.0	1.2	-5.0	-1.7	0.84	-0.12	66.59
774.0	1.30	22.10	774.0	2.6	-4.8	-0.4	1.12	0.70	54.07
860.0	2.30	29.30	859.9	5.0	-3.6	2.3	1.19	1.16	8.37
945.0	3.90	40.60	944.8	8.7	-0.9	6.8	2.01	1.88	13.29
1,031.0	5.40	45.60	1,030.5	13.8	3.9	13.7	1.81	1.74	5.81
1,116.0	6.40	40.20	1,115.1	20.2	9.8	22.3	1.34	1.18	-6.35
1,202.0	8.00	36.30	1,200.4	28.7	16.5	33.0	1.94	1.86	-4.53
1,287.0	9.50	33.40	1,284.4	39.3	23.8	45.9	1.84	1.76	-3.41
1,373.0	11.20	33.20	1,369.0	52.2	32.3	61.4	1.98	1.98	-0.23
1,458.0	12.20	31.20	1,452.2	66.8	41.5	78.6	1.27	1.18	-2.35
1,544.0	12.70	30.80	1,536.2	82.7	51.0	97.1	0.59	0.58	-0.47

Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Gutteresen D03-33D
Project:	SEC.4-T3N-R64W	TVD Reference:	WELL @ 4729.0ft (Original Well Elev)
Site:	Gutteresen Pad Sec.4-T3N-R64W	MD Reference:	WELL @ 4729.0ft (Original Well Elev)
Well:	Gutteresen D03-33D	North Reference:	True
Wellbore:	Gutteresen D03-33D	Survey Calculation Method:	Minimum Curvature
Design:	Gutteresen D03-33D	Database:	Landmark

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)	
1,629.0	13.80	32.20	1,618.9	99.3	61.2	116.6	1.35	1.29	1.65	
1,715.0	14.30	32.80	1,702.4	116.9	72.4	137.5	0.61	0.58	0.70	
1,800.0	14.20	33.00	1,784.7	134.5	83.8	158.4	0.13	-0.12	0.24	
1,886.0	14.20	33.50	1,868.1	152.1	95.4	179.5	0.14	0.00	0.58	
1,971.0	14.20	32.10	1,950.5	169.6	106.7	200.4	0.40	0.00	-1.65	
2,057.0	14.30	33.20	2,033.9	187.4	118.1	221.5	0.34	0.12	1.28	
2,142.0	14.50	33.40	2,116.2	205.1	129.7	242.7	0.24	0.24	0.24	
2,228.0	13.50	32.50	2,199.6	222.6	141.0	263.5	1.19	-1.16	-1.05	
2,313.0	13.20	33.00	2,282.3	239.1	151.6	283.1	0.38	-0.35	0.59	
2,399.0	13.10	34.20	2,366.1	255.4	162.5	302.7	0.34	-0.12	1.40	
2,484.0	12.90	34.70	2,448.9	271.1	173.3	321.8	0.27	-0.24	0.59	
2,570.0	13.80	32.60	2,532.6	287.7	184.3	341.6	1.19	1.05	-2.44	
2,655.0	14.60	32.30	2,615.0	305.3	195.4	362.5	0.95	0.94	-0.35	
2,741.0	14.20	33.10	2,698.3	323.3	207.0	383.9	0.52	-0.47	0.93	
2,826.0	15.30	34.30	2,780.5	341.3	219.0	405.5	1.34	1.29	1.41	
2,912.0	14.30	34.40	2,863.6	359.4	231.4	427.5	1.16	-1.16	0.12	
2,998.0	13.20	32.10	2,947.2	376.5	242.6	447.9	1.43	-1.28	-2.67	
3,083.0	13.40	34.60	3,029.9	392.8	253.4	467.4	0.72	0.24	2.94	
3,169.0	12.40	34.30	3,113.7	408.6	264.2	486.6	1.17	-1.16	-0.35	
3,254.0	12.00	31.90	3,196.8	423.7	274.1	504.6	0.76	-0.47	-2.82	
3,340.0	12.00	32.90	3,280.9	438.8	283.6	522.5	0.24	0.00	1.16	
3,425.0	12.80	33.50	3,363.9	454.1	293.6	540.7	0.95	0.94	0.71	
3,511.0	13.30	32.80	3,447.7	470.3	304.2	560.1	0.61	0.58	-0.81	
3,596.0	13.30	33.00	3,530.4	486.7	314.9	579.7	0.05	0.00	0.24	
3,682.0	12.70	29.30	3,614.2	503.3	324.9	599.0	1.19	-0.70	-4.30	
3,767.0	14.20	30.90	3,696.9	520.4	334.8	618.8	1.82	1.76	1.88	
3,853.0	14.00	31.80	3,780.3	538.3	345.7	639.7	0.35	-0.23	1.05	
3,938.0	13.10	33.10	3,862.9	555.1	356.4	659.6	1.12	-1.06	1.53	
4,024.0	12.70	33.50	3,946.8	571.1	366.9	678.8	0.48	-0.47	0.47	
4,109.0	13.40	33.50	4,029.6	587.1	377.5	698.0	0.82	0.82	0.00	
4,195.0	13.20	32.80	4,113.3	603.7	388.3	717.8	0.30	-0.23	-0.81	
4,280.0	12.90	35.30	4,196.1	619.6	399.1	737.0	0.75	-0.35	2.94	
4,366.0	12.40	34.40	4,280.0	635.0	409.8	755.8	0.62	-0.58	-1.05	
4,451.0	11.70	37.00	4,363.1	649.4	420.2	773.5	1.04	-0.82	3.06	
4,537.0	9.30	36.30	4,447.7	662.0	429.5	789.2	2.79	-2.79	-0.81	
4,622.0	7.90	36.20	4,531.7	672.3	437.1	801.8	1.65	-1.65	-0.12	
4,708.0	6.30	34.10	4,617.0	680.9	443.2	812.5	1.88	-1.86	-2.44	
4,793.0	5.40	32.80	4,701.6	688.2	448.0	821.1	1.07	-1.06	-1.53	
4,879.0	4.00	29.20	4,787.3	694.2	451.6	828.2	1.66	-1.63	-4.19	
4,964.0	3.30	18.10	4,872.1	699.1	453.8	833.5	1.17	-0.82	-13.06	
5,050.0	1.80	25.10	4,958.1	702.7	455.2	837.2	1.78	-1.74	8.14	
5,091.8	1.41	28.37	4,999.9	703.7	455.7	838.4	0.97	-0.94	7.82	
TARGET BHL 1350'FSL, 150'FEL										
5,136.0	1.00	34.60	5,044.0	704.5	456.2	839.3	0.97	-0.92	14.10	
5,221.0	0.80	50.80	5,129.0	705.5	457.1	840.6	0.38	-0.24	19.06	
5,307.0	1.00	46.70	5,215.0	706.4	458.1	841.9	0.24	0.23	-4.77	
5,392.0	1.00	48.90	5,300.0	707.4	459.2	843.3	0.05	0.00	2.59	
5,478.0	0.80	41.30	5,386.0	708.3	460.1	844.7	0.27	-0.23	-8.84	
5,563.0	0.70	19.60	5,471.0	709.3	460.7	845.8	0.35	-0.12	-25.53	
5,649.0	0.60	27.20	5,557.0	710.2	461.1	846.7	0.15	-0.12	8.84	
5,734.0	0.50	57.20	5,642.0	710.8	461.6	847.5	0.35	-0.12	35.29	
5,820.0	0.80	69.30	5,728.0	711.2	462.5	848.3	0.38	0.35	14.07	
5,905.0	1.10	86.00	5,812.9	711.4	463.8	849.3	0.48	0.35	19.65	
5,991.0	1.00	93.70	5,898.9	711.5	465.4	850.1	0.20	-0.12	8.95	

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Site:	Guttersen Pad Sec.4-T3N-R64W	MD Reference:	WELL @ 4729.0ft (Original Well Elev)
Well:	Guttersen D03-33D	North Reference:	True
Wellbore:	Guttersen D03-33D	Survey Calculation Method:	Minimum Curvature
Design:	Guttersen D03-33D	Database:	Landmark

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)
6,076.0	1.00	77.40	5,983.9	711.6	466.9	851.0	0.33	0.00	-19.18
6,162.0	1.20	68.80	6,069.9	712.1	468.5	852.3	0.30	0.23	-10.00
6,247.0	1.10	73.80	6,154.9	712.6	470.1	853.6	0.17	-0.12	5.88
6,333.0	1.00	73.10	6,240.9	713.1	471.6	854.8	0.12	-0.12	-0.81
6,418.0	0.80	64.03	6,325.9	713.5	472.8	855.9	0.29	-0.24	-10.67
6,504.0	0.60	49.40	6,411.9	714.1	473.7	856.8	0.31	-0.23	-17.01
6,589.0	0.80	92.10	6,496.9	714.4	474.6	857.6	0.64	0.24	50.24
6,675.0	0.40	93.90	6,582.8	714.3	475.5	858.0	0.47	-0.47	2.09
6,706.0	0.40	99.61	6,613.8	714.3	475.7	858.1	0.13	-0.01	18.43
TARGET CIRCLE 1350'FSL, 150'FEL									
6,760.0	0.40	109.60	6,667.8	714.2	476.1	858.2	0.13	0.01	18.49
6,846.0	0.40	101.20	6,753.8	714.0	476.7	858.4	0.07	0.00	-9.77
6,931.0	0.30	111.70	6,838.8	713.9	477.2	858.6	0.14	-0.12	12.35
7,017.0	0.30	106.60	6,924.8	713.7	477.6	858.7	0.03	0.00	-5.93
7,110.0	0.30	117.20	7,017.8	713.6	478.1	858.8	0.06	0.00	11.40
7,151.0	0.30	119.75	7,058.8	713.5	478.2	858.8	0.03	0.00	6.22
HARDLINE 150'E OF BHL									
7,155.0	0.30	120.00	7,062.8	713.5	478.3	858.8	0.03	0.00	6.22

Checked By: _____	Approved By: _____	Date: _____
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