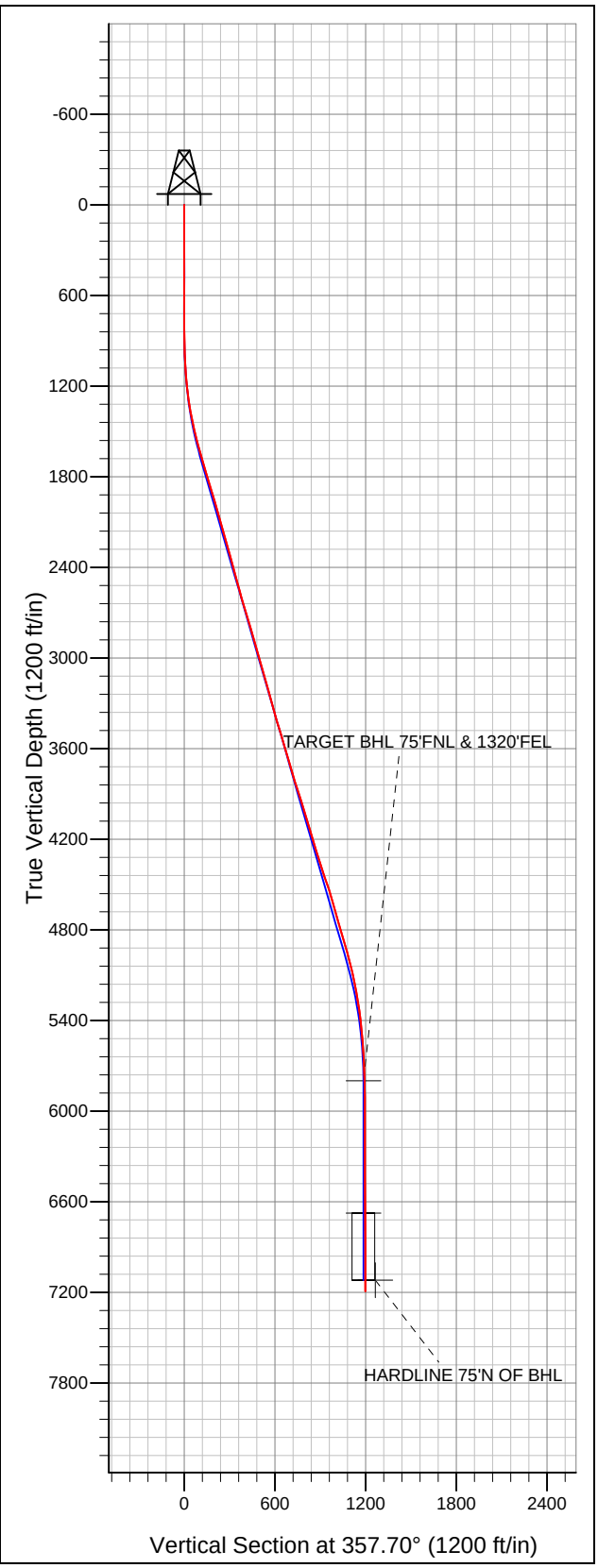
ENSIGN Directional

Well Name: Guttersen USX D21-27D

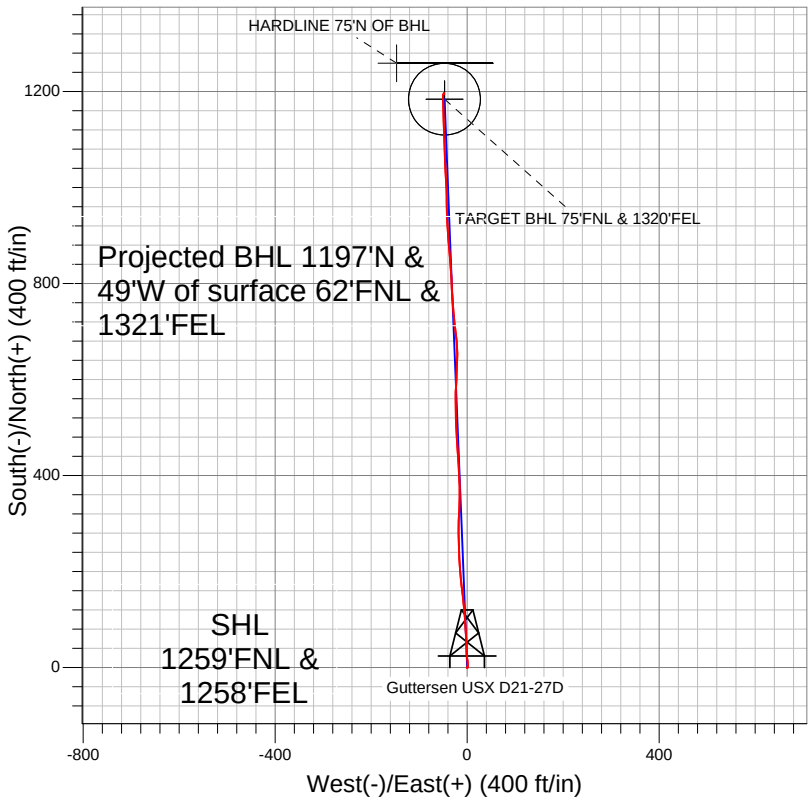
Surface Location: Guttersen USX D21-28D Pad Sec.21-T3N-R64W
North American Datum 1983 US State Plane 1983Colorado Northern Zone
Ground Elevation: 4801.0

+N/-S	+E/-W	Northing	Easting	Latittude	Longitude	Slot
0.0	0.0	1322456.51	3264945.77	40.214650	-104.551280	

Original Well Elev WELL @ 4814.0ft (Original Well Elev)



NOBLE ENERGY INC WELD COUNTY CO



LEGEND

- Survey #1
- Guttersen USX D21-27D, Wellbore #1, Noble Guttersen USX D21-27D Plan #1 (3-31-12) R V0
- Wellbore #1

Final Survey Plot

Projected Final Survey -
7354'MD & 7193'TVD @ 1198'VS
0.00 deg Inc 338.90 deg AZ

Project: SEC.21-T3N-R64W
Site: Guttersen USX D21-28D Pad Sec.21-T3N-R64W
Well: Guttersen USX D21-27D
Plan: Wellbore #1

NOBLE ENERGY INC WELD COUNTY CO

SEC.21-T3N-R64W
Guttersen USX D21-28D Pad Sec.21-T3N-R64W
Guttersen USX D21-27D

Wellbore #1

Survey: Survey #1

Standard Survey Report

05 April, 2012

Company:	NOBLE ENERGY INC WELD COUNTY CO	**Local Co-ordinate Reference:**	Well Guttersen USX D21-27D
Project:	SEC.21-T3N-R64W	**TVD Reference:**	WELL @ 4814.0ft (Original Well Elev)
Site:	Guttersen USX D21-28D Pad Sec.21-T3N-R64W	**MD Reference:**	WELL @ 4814.0ft (Original Well Elev)
Well:	Guttersen USX D21-27D	**North Reference:**	True
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Wellbore #1	**Database:**	Landmark

Project SEC.21-T3N-R64W, Weld County, CO

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 Guttersen USX D21-28D Pad Sec.21-T3N-R64W

Site Position:		**Northing:**	1,322,427.07 ft	**Latitude:**	40.214570
From:	Lat/Long	**Easting:**	3,264,915.28 ft	**Longitude:**	-104.551390
Position Uncertainty:	0.0 ft	**Slot Radius:**	"	**Grid Convergence:**	0.61 °

Well Guttersen USX D21-27D

Well Position	**+N/-S**	0.0 ft	**Northing:**	1,322,456.51 ft	**Latitude:**	40.214650
	+E/-W	0.0 ft	**Easting:**	3,264,945.77 ft	**Longitude:**	-104.551280
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	4,801.0 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/5/2012	8.64	66.91	52,981

Design Wellbore #1

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 (°)
	5,800.0	0.0	0.0	357.70

Survey Program **Date** 4/5/2012

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
137.0	7,354.0	Survey #1 (Wellbore #1)	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
137.0	0.20	230.80	137.0	-0.2	-0.2	-0.1	0.15	0.15	0.00
228.0	0.10	311.50	228.0	-0.2	-0.4	-0.2	0.23	-0.11	88.68
320.0	0.20	98.50	320.0	-0.2	-0.3	-0.2	0.31	0.11	159.78
656.0	0.00	223.90	656.0	-0.3	0.3	-0.3	0.06	-0.06	0.00
778.0	0.10	69.60	778.0	-0.2	0.4	-0.2	0.08	0.08	0.00
872.0	0.40	23.90	872.0	0.1	0.6	0.1	0.36	0.32	-48.62
966.0	2.00	2.00	966.0	2.0	0.8	2.0	1.74	1.70	-23.30
1,059.0	3.40	2.00	1,058.9	6.4	1.0	6.4	1.51	1.51	0.00
1,152.0	4.70	350.70	1,151.6	12.9	0.4	12.9	1.63	1.40	-12.15
1,246.0	7.00	353.70	1,245.1	22.4	-0.8	22.5	2.47	2.45	3.19
1,339.0	9.50	359.80	1,337.2	35.7	-1.5	35.8	2.84	2.69	6.56

Company:	NOBLE ENERGY INC WELD COUNTY CO	**Local Co-ordinate Reference:**	Well Guttersen USX D21-27D
Project:	SEC.21-T3N-R64W	**TVD Reference:**	WELL @ 4814.0ft (Original Well Elev)
Site:	Guttersen USX D21-28D Pad Sec.21-T3N-R64W	**MD Reference:**	WELL @ 4814.0ft (Original Well Elev)
Well:	Guttersen USX D21-27D	**North Reference:**	True
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Wellbore #1	**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)
1,434.0	11.50	357.90	1,430.6	53.1	-1.8	53.1	2.14	2.11	-2.00
1,527.0	14.00	356.30	1,521.3	73.5	-2.9	73.6	2.71	2.69	-1.72
1,620.0	15.10	355.80	1,611.3	96.9	-4.5	97.0	1.19	1.18	-0.54
1,714.0	16.00	354.90	1,701.9	122.0	-6.6	122.1	0.99	0.96	-0.96
1,807.0	17.20	352.30	1,791.0	148.4	-9.5	148.6	1.52	1.29	-2.80
1,901.0	16.80	354.70	1,880.9	175.7	-12.7	176.0	0.86	-0.43	2.55
1,994.0	16.40	354.90	1,970.0	202.1	-15.1	202.6	0.43	-0.43	0.22
2,089.0	16.10	359.00	2,061.2	228.7	-16.5	229.1	1.25	-0.32	4.32
2,182.0	15.30	357.40	2,150.7	253.8	-17.3	254.3	0.98	-0.86	-1.72
2,275.0	16.30	358.80	2,240.2	279.1	-18.1	279.6	1.15	1.08	1.51
2,370.0	15.50	3.20	2,331.6	305.1	-17.7	305.6	1.52	-0.84	4.63
2,464.0	15.10	2.70	2,422.3	329.9	-16.4	330.3	0.45	-0.43	-0.53
2,557.0	14.90	0.90	2,512.1	353.9	-15.6	354.3	0.55	-0.22	-1.94
2,652.0	16.00	358.10	2,603.7	379.2	-15.9	379.6	1.40	1.16	-2.95
2,746.0	16.70	356.90	2,693.8	405.7	-17.0	406.0	0.83	0.74	-1.28
2,840.0	16.30	355.30	2,784.0	432.3	-18.8	432.7	0.64	-0.43	-1.70
2,934.0	16.40	356.10	2,874.2	458.7	-20.8	459.2	0.26	0.11	0.85
3,028.0	16.30	358.40	2,964.4	485.1	-22.1	485.6	0.70	-0.11	2.45
3,122.0	15.70	357.90	3,054.7	511.0	-22.9	511.5	0.65	-0.64	-0.53
3,217.0	15.50	359.00	3,146.2	536.6	-23.6	537.1	0.38	-0.21	1.16
3,311.0	15.60	358.80	3,236.8	561.7	-24.1	562.3	0.12	0.11	-0.21
3,405.0	14.90	4.10	3,327.5	586.4	-23.5	586.9	1.66	-0.74	5.64
3,498.0	16.80	2.30	3,416.9	611.8	-22.1	612.2	2.11	2.04	-1.94
3,591.0	17.00	1.40	3,505.9	638.8	-21.2	639.2	0.35	0.22	-0.97
3,685.0	16.00	357.90	3,596.1	665.5	-21.4	665.8	1.50	-1.06	-3.72
3,778.0	16.30	354.20	3,685.4	691.3	-23.2	691.7	1.15	0.32	-3.98
3,871.0	17.00	351.90	3,774.5	717.7	-26.4	718.2	1.03	0.75	-2.47
3,965.0	18.10	356.00	3,864.1	745.9	-29.4	746.5	1.76	1.17	4.36
4,058.0	17.50	356.00	3,952.7	774.3	-31.3	774.9	0.65	-0.65	0.00
4,152.0	16.40	358.60	4,042.6	801.6	-32.7	802.3	1.42	-1.17	2.77
4,245.0	16.50	355.80	4,131.8	827.9	-33.9	828.6	0.86	0.11	-3.01
4,338.0	17.30	353.90	4,220.8	854.9	-36.4	855.6	1.05	0.86	-2.04
4,431.0	17.30	356.10	4,309.6	882.4	-38.8	883.2	0.70	0.00	2.37
4,525.0	18.20	357.40	4,399.1	911.0	-40.4	911.9	1.05	0.96	1.38
4,618.0	18.50	356.50	4,487.4	940.2	-42.0	941.2	0.44	0.32	-0.97
4,711.0	17.20	0.00	4,575.9	968.7	-42.9	969.7	1.81	-1.40	3.76
4,804.0	15.70	358.40	4,665.1	995.1	-43.2	996.0	1.68	-1.61	-1.72
4,898.0	15.70	357.00	4,755.6	1,020.5	-44.2	1,021.4	0.40	0.00	-1.49
4,992.0	16.50	356.10	4,845.9	1,046.5	-45.8	1,047.5	0.89	0.85	-0.96
5,085.0	15.70	357.40	4,935.2	1,072.2	-47.3	1,073.3	0.94	-0.86	1.40
5,180.0	14.50	359.80	5,026.9	1,097.0	-47.9	1,098.0	1.42	-1.26	2.53
5,274.0	12.00	359.30	5,118.4	1,118.5	-48.1	1,119.5	2.66	-2.66	-0.53
5,367.0	10.00	354.60	5,209.7	1,136.2	-48.9	1,137.3	2.36	-2.15	-5.05
5,460.0	9.00	358.40	5,301.5	1,151.5	-49.9	1,152.6	1.27	-1.08	4.09
5,554.0	6.70	358.80	5,394.6	1,164.4	-50.2	1,165.4	2.45	-2.45	0.43
5,649.0	5.10	1.40	5,489.1	1,174.1	-50.2	1,175.2	1.71	-1.68	2.74
5,742.0	4.00	355.10	5,581.8	1,181.5	-50.4	1,182.6	1.30	-1.18	-6.77
5,836.0	2.60	359.80	5,675.6	1,186.9	-50.7	1,188.0	1.52	-1.49	5.00
5,930.0	1.70	0.40	5,769.5	1,190.4	-50.7	1,191.5	0.96	-0.96	0.64
5,960.3	1.57	0.24	5,799.8	1,191.3	-50.7	1,192.4	0.43	-0.43	-0.53
TARGET BHL 75'FNL & 1320'FEL									
6,024.0	1.30	359.80	5,863.5	1,192.9	-50.7	1,194.0	0.43	-0.43	-0.69
6,118.0	0.30	106.00	5,957.5	1,193.9	-50.5	1,194.9	1.50	-1.06	112.98

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Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Wellbore #1	**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)
6,211.0	0.40	65.10	6,050.5	1,193.9	-49.9	1,195.0	0.28	0.11	-43.98
6,304.0	0.30	70.70	6,143.5	1,194.2	-49.4	1,195.2	0.11	-0.11	6.02
6,398.0	0.40	110.90	6,237.5	1,194.1	-48.9	1,195.1	0.27	0.11	42.77
6,492.0	0.30	96.50	6,331.5	1,194.0	-48.3	1,195.0	0.14	-0.11	-15.32
6,585.0	0.40	351.10	6,424.5	1,194.3	-48.1	1,195.2	0.60	0.11	-113.33
6,679.0	0.10	297.10	6,518.5	1,194.6	-48.3	1,195.6	0.37	-0.32	-57.45
6,772.0	0.40	351.60	6,611.5	1,195.0	-48.4	1,196.0	0.38	0.32	58.60
6,836.5	0.26	356.35	6,675.9	1,195.4	-48.4	1,196.3	0.22	-0.21	7.37
TARGET CIRCLE 75'FNL & 1320'FEL									
6,866.0	0.20	0.70	6,705.5	1,195.5	-48.4	1,196.5	0.22	-0.21	14.73
6,959.0	0.40	348.80	6,798.5	1,196.0	-48.5	1,196.9	0.22	0.22	-12.80
7,053.0	0.20	3.50	6,892.5	1,196.5	-48.5	1,197.4	0.23	-0.21	15.64
7,146.0	0.10	299.40	6,985.5	1,196.7	-48.6	1,197.6	0.19	-0.11	-68.92
7,240.0	0.10	286.50	7,079.5	1,196.7	-48.7	1,197.7	0.02	0.00	-13.72
7,280.6	0.03	286.50	7,120.1	1,196.7	-48.8	1,197.7	0.16	-0.16	0.00
HARDLINE 75'N OF BHL									
7,302.0	0.00	338.90	7,141.5	1,196.7	-48.8	1,197.7	0.16	-0.16	0.00
7,354.0	0.00	338.90	7,193.5	1,196.7	-48.8	1,197.7	0.00	0.00	0.00

Checked By: _____ Approved By: _____ Date: _____