



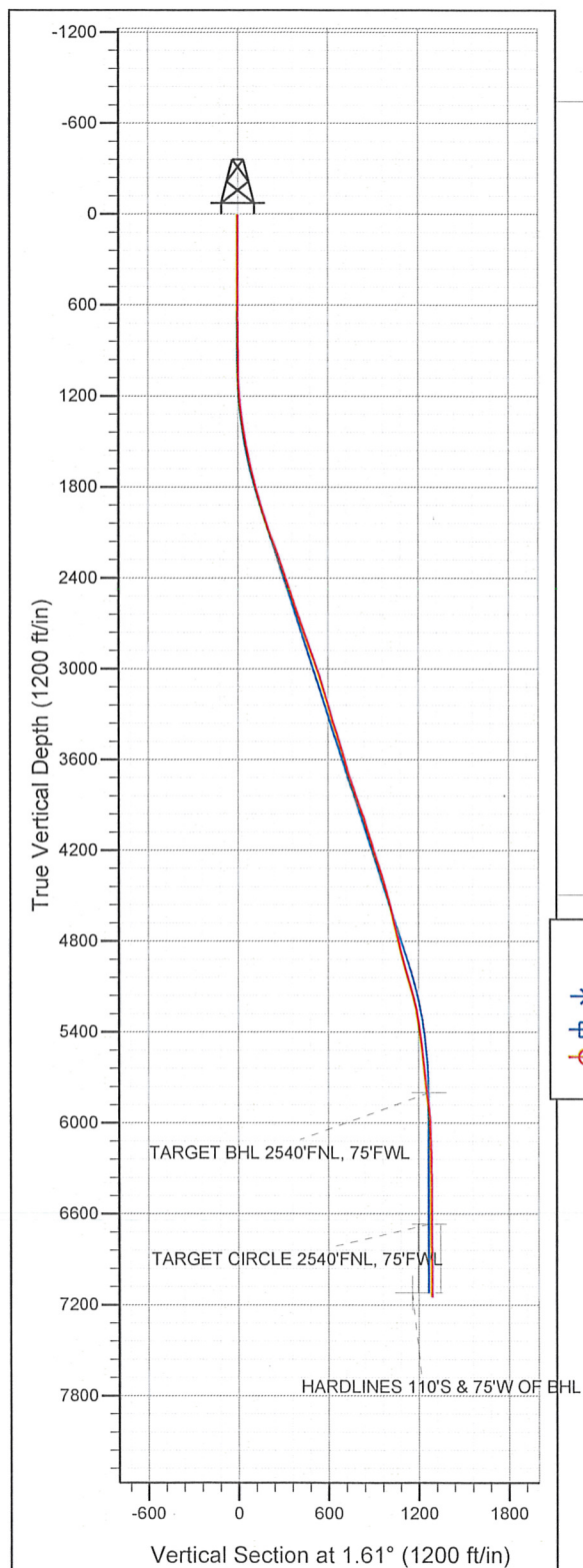
Well Name: **Guttersen State D16-32D**

Surface Location: Guttersen State D16-32D Sec.16-T3N-R64W
North American Datum 1983 , US State Plane 1983 Colorado Northern Zone

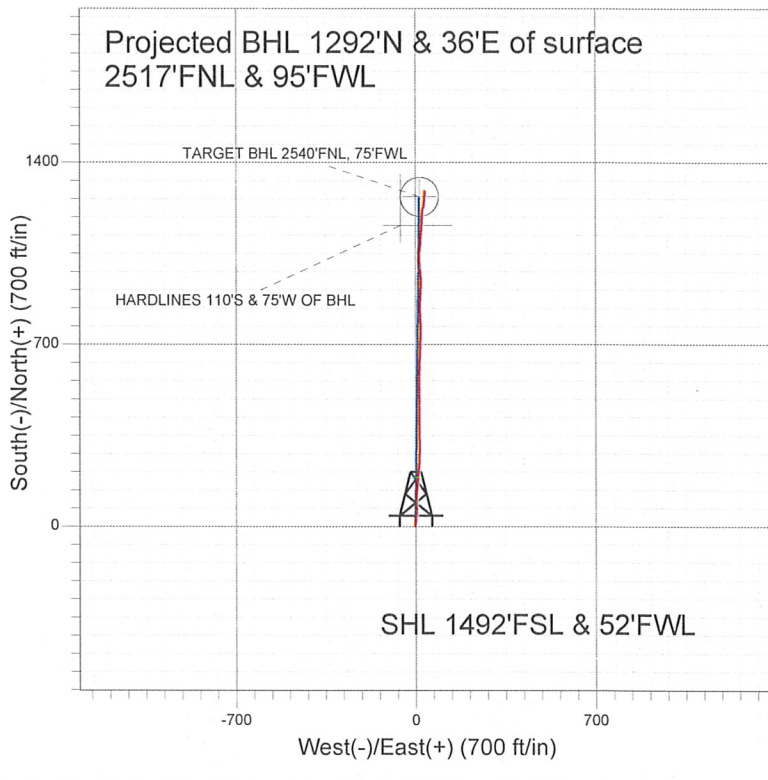
Ground Elevation: 4752.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1325175.66	3260962.32	40° 13' 20.028 N	104° 33' 55.584 W	

Original Well EleWELL @ 4765.0ft (Original Well Elev)



NOBLE ENERGY INC WELD COUNTY CO



LEGEND

- ✕ Guttersen State D16-32D, Wellbore #1, Noble Guttersen State D16-32D Plan #3 (10-14-09) V0
- Wellbore #1
- Survey #1

Final Survey Plot

Projected Final Survey -
7330'MD & 7148'TVD @ 1292' VS
0.2 deg Inc 114.2 deg AZ

Project: SEC.16-T3N-R64W
Site: Guttersen State D16-32D Sec.16-T3N-R64W
Well: Guttersen State D16-32D
Plan: Wellbore #1

Company: NOBLE ENERGY INC WELD COUNTY CO
Project: SEC.16-T3N-R64W
Site: Gutttersen State D16-32D Sec.16-T3N-R64W
Well: Gutttersen State D16-32D
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Gutttersen State D16-32D
TVD Reference: WELL @ 4765.0ft (Original Well Elev)
MD Reference: WELL @ 4765.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: Landmark

Project SEC.16-T3N-R64W, Weld County, Colorado

Map System: US State Plane 1983
Geo Datum: North American Datum 1983
Map Zone: Colorado Northern Zone

System Datum: Mean Sea Level
Using geodetic scale factor

Site Gutttersen State D16-32D Sec.16-T3N-R64W

Site Position: Northing: 1,325,175.67 ft Latitude: 40° 13' 20.028 N
From: Lat/Long Easting: 3,260,962.32 ft Longitude: 104° 33' 55.584 W
Position Uncertainty: 0.0 ft Slot Radius: " Grid Convergence: 0.60 °

Well Gutttersen State D16-32D

Well Position: +N/-S 0.0 ft Northing: 1,325,175.66 ft Latitude: 40° 13' 20.028 N
+E/-W 0.0 ft Easting: 3,260,962.32 ft Longitude: 104° 33' 55.584 W
Position Uncertainty 0.0 ft Wellhead Elevation: ft Ground Level: 4,752.0 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	6/17/2010	8.88	66.97	53,165

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 (°)
	0.0	0.0	0.0	1.61

Survey Program Date 9/30/2010

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
703.0	7,330.0	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
703.0	0.20	6.50	703.0	1.2	0.1	1.2	0.03	0.03	0.00
891.0	0.20	0.10	891.0	1.9	0.2	1.9	0.01	0.00	-3.40
985.0	0.30	336.60	985.0	2.3	0.1	2.3	0.15	0.11	-25.00
1,079.0	2.00	15.10	1,079.0	4.1	0.4	4.1	1.89	1.81	40.96
1,173.0	4.20	10.20	1,172.8	9.0	1.4	9.1	2.36	2.34	-5.21
1,267.0	5.80	1.50	1,266.5	17.2	2.2	17.2	1.88	1.70	-9.26
1,361.0	8.40	5.30	1,359.7	28.8	2.9	28.8	2.81	2.77	4.04
1,455.0	10.40	8.20	1,452.5	44.0	4.8	44.1	2.19	2.13	3.09
1,549.0	11.10	4.10	1,544.8	61.4	6.6	61.6	1.10	0.74	-4.36
1,643.0	12.70	355.20	1,636.8	80.8	6.4	80.9	2.59	1.70	-9.47
1,737.0	14.20	359.60	1,728.2	102.6	5.5	102.7	1.93	1.60	4.68
1,831.0	15.50	4.20	1,819.1	126.6	6.3	126.8	1.87	1.38	4.89

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Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Guttersen State D16-32D
TVD Reference: WELL @ 4765.0ft (Original Well Elev)
MD Reference: WELL @ 4765.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature
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)
1,925.0	16.70	5.60	1,909.4	152.6	8.6	152.8	1.34	1.28	1.49
2,019.0	18.20	5.60	1,999.1	180.7	11.3	180.9	1.60	1.60	0.00
2,112.0	19.30	3.90	2,087.1	210.4	13.8	210.8	1.32	1.18	-1.83
2,206.0	20.10	3.00	2,175.6	242.1	15.7	242.4	0.91	0.85	-0.96
2,300.0	19.60	3.90	2,264.1	273.9	17.6	274.3	0.62	-0.53	0.96
2,394.0	19.20	357.20	2,352.7	305.1	17.9	305.5	2.40	-0.43	-7.13
2,488.0	18.80	357.40	2,441.6	335.7	16.5	336.0	0.43	-0.43	0.21
2,582.0	18.30	359.90	2,530.7	365.6	15.7	365.9	1.00	-0.53	2.66
2,676.0	19.30	2.10	2,619.7	395.8	16.3	396.2	1.30	1.06	2.34
2,771.0	19.60	0.10	2,709.3	427.5	16.9	427.8	0.77	0.32	-2.11
2,866.0	19.10	359.90	2,798.9	458.9	16.9	459.2	0.53	-0.53	-0.21
2,960.0	19.60	358.70	2,887.6	490.1	16.5	490.4	0.68	0.53	-1.28
3,055.0	19.50	359.20	2,977.1	521.9	15.9	522.1	0.21	-0.11	0.53
3,150.0	17.40	1.60	3,067.3	551.9	16.1	552.2	2.35	-2.21	2.53
3,244.0	17.10	2.50	3,157.0	579.8	17.1	580.0	0.43	-0.32	0.96
3,338.0	16.40	2.00	3,247.0	606.9	18.2	607.1	0.76	-0.74	-0.53
3,432.0	16.70	358.80	3,337.1	633.6	18.3	633.9	1.02	0.32	-3.40
3,526.0	18.20	0.80	3,426.8	661.8	18.3	662.1	1.72	1.60	2.13
3,620.0	17.40	1.40	3,516.3	690.5	18.8	690.8	0.87	-0.85	0.64
3,714.0	15.70	5.00	3,606.4	717.3	20.3	717.5	2.11	-1.81	3.83
3,809.0	16.40	1.00	3,697.7	743.5	21.6	743.8	1.38	0.74	-4.21
3,903.0	18.90	358.10	3,787.3	772.0	21.3	772.3	2.82	2.66	-3.09
3,997.0	20.10	356.90	3,875.9	803.3	20.0	803.6	1.35	1.28	-1.28
4,091.0	19.30	359.50	3,964.4	835.0	19.0	835.2	1.26	-0.85	2.77
4,185.0	16.40	2.10	4,053.9	863.8	19.3	864.0	3.20	-3.09	2.77
4,279.0	17.30	4.10	4,143.8	891.0	20.8	891.2	1.14	0.96	2.13
4,372.0	17.30	2.30	4,232.6	918.6	22.3	918.9	0.58	0.00	-1.94
4,465.0	17.10	359.60	4,321.5	946.1	22.8	946.3	0.88	-0.22	-2.90
4,560.0	17.00	355.60	4,412.3	973.9	21.6	974.1	1.24	-0.11	-4.21
4,654.0	15.40	354.00	4,502.6	1,000.0	19.3	1,000.2	1.77	-1.70	-1.70
4,748.0	13.80	353.20	4,593.5	1,023.6	16.6	1,023.6	1.72	-1.70	-0.85
4,841.0	13.10	1.70	4,684.0	1,045.1	15.6	1,045.1	2.25	-0.75	9.14
4,935.0	13.40	8.20	4,775.5	1,066.5	17.5	1,066.6	1.62	0.32	6.91
5,029.0	13.00	6.60	4,867.0	1,087.8	20.3	1,088.0	0.58	-0.43	-1.70
5,123.0	15.70	5.40	4,958.1	1,111.0	22.7	1,111.2	2.89	2.87	-1.28
5,217.0	16.90	3.80	5,048.3	1,137.3	24.8	1,137.5	1.36	1.28	-1.70
5,311.0	15.70	3.30	5,138.5	1,163.6	26.4	1,163.9	1.29	-1.28	-0.53
5,405.0	12.00	0.00	5,229.7	1,186.1	27.2	1,186.4	4.02	-3.94	-3.51
5,499.0	8.40	1.00	5,322.2	1,202.7	27.3	1,203.0	3.83	-3.83	1.06
5,593.0	7.00	15.00	5,415.4	1,215.1	28.9	1,215.5	2.48	-1.49	14.89
5,687.0	7.40	13.90	5,508.7	1,226.5	31.8	1,226.9	0.45	0.43	-1.17
5,781.0	6.20	6.30	5,602.0	1,237.5	33.8	1,237.9	1.59	-1.28	-8.09
5,875.0	5.60	11.20	5,695.5	1,247.0	35.3	1,247.5	0.83	-0.64	5.21
5,969.0	8.00	1.80	5,788.8	1,258.0	36.4	1,258.6	2.81	2.55	-10.00
5,981.4	7.88	1.87	5,801.1	1,259.7	36.4	1,260.3	0.96	-0.96	0.58
TARGET BHL 2540'FNL, 75'FWL									
6,063.0	7.10	2.40	5,882.0	1,270.4	36.8	1,270.9	0.96	-0.96	0.65
6,157.0	4.30	1.90	5,975.5	1,279.7	37.2	1,280.3	2.98	-2.98	-0.53
6,251.0	1.80	9.80	6,069.4	1,284.7	37.6	1,285.2	2.69	-2.66	8.40
6,345.0	1.20	3.70	6,163.4	1,287.1	37.9	1,287.7	0.66	-0.64	-6.49
6,439.0	0.90	12.20	6,257.4	1,288.8	38.1	1,289.4	0.36	-0.32	9.04
6,533.0	0.60	308.00	6,351.4	1,289.9	37.9	1,290.4	0.89	-0.32	-68.30
6,627.0	0.40	315.20	6,445.3	1,290.4	37.2	1,290.9	0.22	-0.21	7.66
6,721.0	0.40	321.00	6,539.3	1,290.9	36.8	1,291.4	0.04	0.00	6.17

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6,814.0	0.20	317.90	6,632.3	1,291.3	36.5	1,291.8	0.22	-0.22	-3.33
6,848.6	0.20	325.67	6,667.0	1,291.3	36.4	1,291.9	0.08	-0.01	22.44
TARGET CIRCLE 2540'FNL, 75'FWL									
6,909.0	0.20	339.30	6,727.3	1,291.5	36.3	1,292.0	0.08	0.01	22.58
7,003.0	0.00	318.40	6,821.3	1,291.7	36.3	1,292.2	0.21	-0.21	0.00
7,096.0	0.20	318.00	6,914.3	1,291.8	36.2	1,292.3	0.22	0.22	0.00
7,190.0	0.10	307.00	7,008.3	1,292.0	36.0	1,292.5	0.11	-0.11	-11.70
7,284.0	0.20	114.20	7,102.3	1,292.0	36.1	1,292.5	0.32	0.11	177.87
HARDLINES 110'S & 75'W OF BHL									
7,330.0	0.20	114.20	7,148.3	1,291.9	36.2	1,292.4	0.00	0.00	0.00

Checked By: _____ Approved By: _____ Date: _____