

Well Name: **Guttersen State CC20-33D**

Surface Location: Guttersen State CC20-32D Pad Sec.20-T4N-R63W
North American Datum 1983 US State Plane 1983 Colorado Northern Zone

Ground Elevation: 4712.0

+N/-S +E/-W
0.0 0.0

Northing
1352396.08

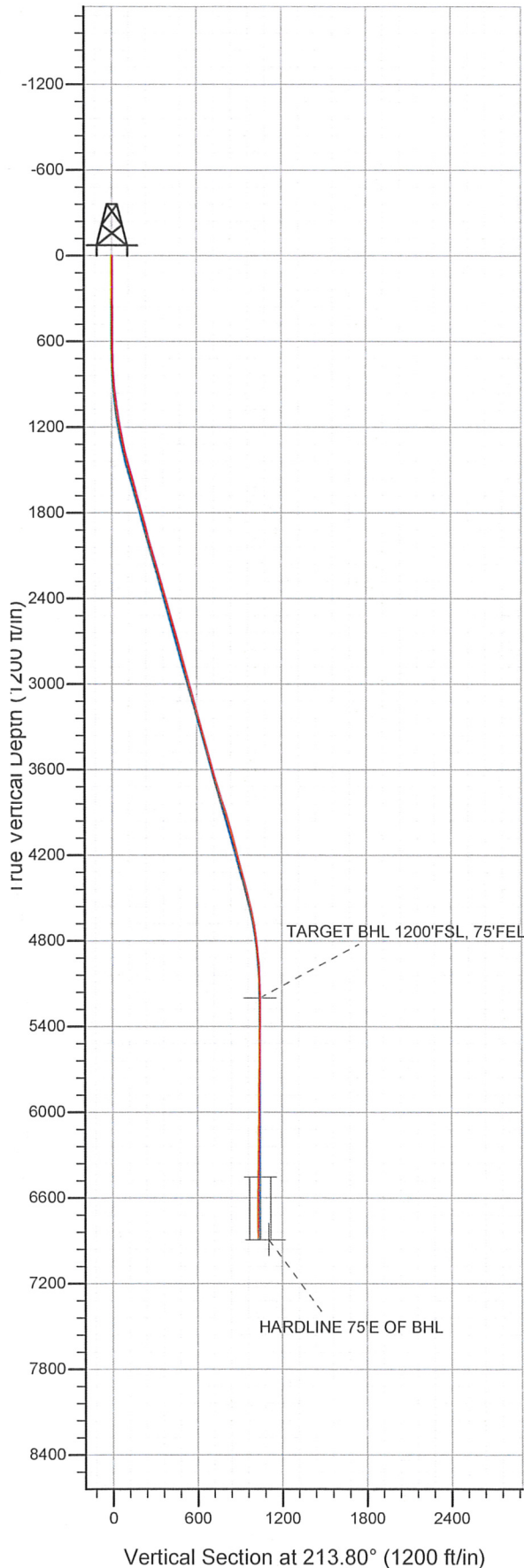
Easting
3287521.82

Latitude
40.296140

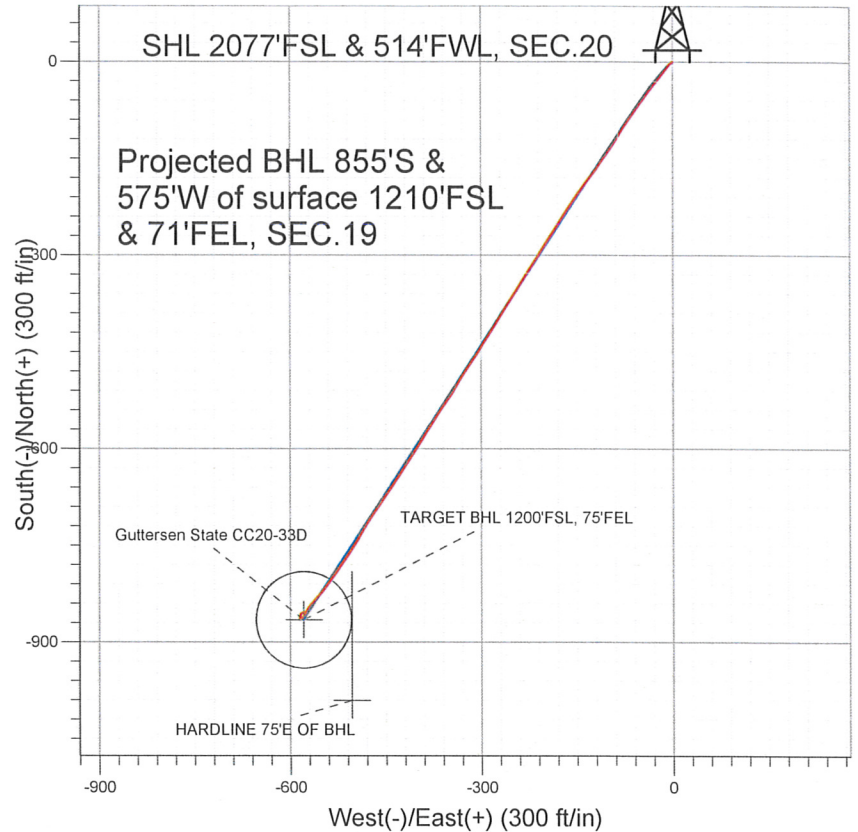
Longitude
-104.469200

Slot

Original Well Elev WELL @ 4725.0ft (Original Well Elev)



NOBLE ENERGY INC WELD COUNTY CO



LEGEND

- Guttersen State CC20-33D, Wellbore #1, Noble Guttersen State CC20-33D Plan #2 (7-1-11)
- Wellbore #1
- Survey #1

Final Survey Plot

Projected Final Survey -
7021'MD & 6888'TVD @ 1031'VS
0.4 deg Inc 190.8 deg AZ

Project: SEC.20-T4N-R63W
Site: Guttersen State CC20-32D Pad Sec.20-T4N-R63W
Well: Guttersen State CC20-33D
Plan: Wellbore #1

Company: NOBLE ENERGY INC WELD COUNTY CO
 Project: SEC.20-T4N-R63W
 Site: Guttersten State CC20-32D Pad
 Sec.20-T4N-R63W
 Well: Guttersten State CC20-33D
 Wellbore: Wellbore #1
 Design: Wellbore #1

Local Co-ordinate Reference: Well Guttersten State CC20-33D
 TVD Reference: WELL @ 4725.0ft (Original Well Elev)
 MD Reference: WELL @ 4725.0ft (Original Well Elev)
 North Reference: True
 Survey Calculation Method: Minimum Curvature
 Database: Landmark

Project	SEC.20-T4N-R63W, 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 State CC20-32D Pad Sec.20-T4N-R63W

Site Position:	Lat/Long	Northing:	1,352,421.59 ft	Latitude:	40.296210
From:		Easting:	3,287,521.52 ft	Longitude:	-104.469200
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.67 °

Well Guttersten State CC20-33D

Well Position	+N/-S	0.0 ft	Northing:	1,352,396.08 ft	Latitude:	40.296140
	+E/-W	0.0 ft	Easting:	3,287,521.82 ft	Longitude:	-104.469200
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,712.0 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/13/2011	8.69	67.01	53,102

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	213.80

Survey Program Date 7/20/2011

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
690.0	7,021.0	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
690.0	0.40	229.60	690.0	-1.6	-1.8	2.3	0.06	0.06	0.00
783.0	2.60	230.40	783.0	-3.1	-3.7	4.7	2.37	2.37	0.86
877.0	4.90	221.80	876.7	-7.5	-8.0	10.7	2.51	2.45	-9.15
970.0	7.20	218.10	969.2	-15.0	-14.3	20.4	2.51	2.47	-3.98
1,063.0	8.70	216.90	1,061.3	-25.2	-22.1	33.3	1.62	1.61	-1.29
1,156.0	9.50	216.50	1,153.2	-37.0	-30.9	47.9	0.86	0.86	-0.43
1,249.0	10.50	216.10	1,244.7	-50.0	-40.4	64.1	1.08	1.08	-0.43
1,342.0	12.90	216.70	1,335.8	-65.2	-51.6	82.9	2.58	2.58	0.65
1,436.0	15.20	215.10	1,427.0	-83.7	-65.0	105.7	2.48	2.45	-1.70
1,529.0	15.70	212.90	1,516.6	-104.2	-78.8	130.5	0.83	0.54	-2.37
1,622.0	15.30	210.80	1,606.2	-125.4	-92.0	155.3	0.74	-0.43	-2.26

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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)
1,715.0	15.90	214.40	1,695.8	-146.4	-105.4	180.3	1.22	0.65	3.87
1,809.0	15.30	216.60	1,786.4	-167.0	-120.1	205.6	0.90	-0.64	2.34
1,902.0	14.90	217.70	1,876.1	-186.3	-134.7	229.8	0.53	-0.43	1.18
1,995.0	14.60	214.40	1,966.1	-205.4	-148.7	253.4	0.96	-0.32	-3.55
2,091.0	16.50	213.00	2,058.6	-226.8	-162.9	279.1	2.02	1.98	-1.46
2,186.0	16.50	213.40	2,149.7	-249.4	-177.7	306.1	0.12	0.00	0.42
2,279.0	15.30	212.90	2,239.1	-270.8	-191.6	331.6	1.30	-1.29	-0.54
2,372.0	15.70	210.90	2,328.7	-291.9	-204.8	356.4	0.72	0.43	-2.15
2,466.0	16.60	213.20	2,419.0	-314.0	-218.7	382.6	1.17	0.96	2.45
2,559.0	16.20	212.90	2,508.2	-336.0	-233.0	408.8	0.44	-0.43	-0.32
2,651.0	15.60	210.90	2,596.7	-357.4	-246.3	434.0	0.88	-0.65	-2.17
2,745.0	16.00	213.00	2,687.1	-379.1	-259.8	459.6	0.74	0.43	2.23
2,838.0	15.40	212.20	2,776.7	-400.3	-273.4	484.7	0.69	-0.65	-0.86
2,931.0	14.80	212.90	2,866.5	-420.7	-286.4	509.0	0.67	-0.65	0.75
3,025.0	15.20	211.50	2,957.3	-441.3	-299.4	533.3	0.57	0.43	-1.49
3,119.0	16.30	214.50	3,047.7	-462.7	-313.3	558.8	1.46	1.17	3.19
3,213.0	15.50	213.10	3,138.1	-484.1	-327.6	584.5	0.94	-0.85	-1.49
3,307.0	14.30	210.60	3,229.0	-504.6	-340.4	608.7	1.45	-1.28	-2.66
3,401.0	15.60	214.30	3,319.8	-525.0	-353.4	632.9	1.72	1.38	3.94
3,494.0	15.40	215.20	3,409.4	-545.5	-367.6	657.8	0.34	-0.22	0.97
3,589.0	15.30	209.70	3,501.0	-566.7	-381.1	682.9	1.54	-0.11	-5.79
3,683.0	15.20	213.30	3,591.7	-587.7	-394.0	707.6	1.01	-0.11	3.83
3,776.0	17.10	212.30	3,681.0	-609.5	-408.0	733.4	2.06	2.04	-1.08
3,870.0	17.80	213.20	3,770.7	-633.2	-423.2	761.6	0.80	0.74	0.96
3,963.0	17.50	214.30	3,859.3	-656.6	-438.9	789.8	0.48	-0.32	1.18
4,057.0	16.00	215.50	3,949.4	-678.9	-454.4	816.9	1.64	-1.60	1.28
4,150.0	15.70	212.60	4,038.8	-699.9	-468.6	842.3	0.91	-0.32	-3.12
4,244.0	14.20	212.80	4,129.6	-720.3	-481.7	866.5	1.60	-1.60	0.21
4,337.0	14.90	208.90	4,219.7	-740.4	-493.7	889.9	1.29	0.75	-4.19
4,432.0	14.40	214.90	4,311.6	-760.7	-506.3	913.8	1.68	-0.53	6.32
4,526.0	14.90	214.00	4,402.5	-780.3	-519.8	937.6	0.58	0.53	-0.96
4,619.0	13.90	216.50	4,492.6	-799.2	-533.1	960.7	1.27	-1.08	2.69
4,713.0	12.50	215.60	4,584.1	-816.6	-545.8	982.2	1.51	-1.49	-0.96
4,807.0	9.90	222.80	4,676.3	-830.8	-557.2	1,000.3	3.14	-2.77	7.66
4,901.0	7.00	219.70	4,769.3	-841.1	-566.3	1,014.0	3.12	-3.09	-3.30
4,993.0	6.50	215.20	4,860.6	-849.7	-572.9	1,024.8	0.79	-0.54	-4.89
5,086.0	5.10	206.90	4,953.2	-857.7	-577.8	1,034.2	1.75	-1.51	-8.92
5,180.0	2.50	234.10	5,047.0	-862.6	-581.4	1,040.2	3.29	-2.77	28.94
5,273.0	1.40	226.10	5,139.9	-864.6	-583.8	1,043.2	1.22	-1.18	-8.60
5,333.0	0.54	261.64	5,199.9	-865.1	-584.6	1,044.1	1.69	-1.44	59.19
TARGET BHL 1200'FSL, 75'FEL									
5,367.0	0.50	328.60	5,233.9	-865.0	-584.9	1,044.2	1.69	-0.11	197.22
5,461.0	0.50	4.20	5,327.9	-864.3	-585.0	1,043.7	0.33	0.00	37.87
5,554.0	0.40	1.50	5,420.9	-863.5	-585.0	1,043.0	0.11	-0.11	-2.90
5,648.0	0.90	17.60	5,514.9	-862.5	-584.8	1,042.0	0.56	0.53	17.13
5,741.0	0.80	30.20	5,607.9	-861.3	-584.2	1,040.7	0.23	-0.11	13.55
5,834.0	0.50	6.50	5,700.9	-860.3	-583.9	1,039.7	0.43	-0.32	-25.48
5,927.0	0.40	345.80	5,793.9	-859.6	-583.9	1,039.1	0.20	-0.11	-22.26
6,020.0	0.30	329.90	5,886.9	-859.1	-584.1	1,038.8	0.15	-0.11	-17.10
6,113.0	0.50	7.30	5,979.9	-858.4	-584.2	1,038.3	0.34	0.22	40.22
6,206.0	0.50	17.10	6,072.9	-857.6	-584.0	1,037.6	0.09	0.00	10.54
6,301.0	0.50	17.30	6,167.9	-856.9	-583.7	1,036.8	0.00	0.00	0.21
6,396.0	0.60	36.20	6,262.8	-856.1	-583.3	1,035.9	0.22	0.11	19.89

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6,489.0	1.00	56.90	6,355.8	-855.2	-582.4	1,034.6	0.52	0.43	22.26
6,583.0	2.00	72.00	6,449.8	-854.3	-580.1	1,032.6	1.13	1.06	16.06
6,587.1	1.96	72.18	6,453.9	-854.2	-580.0	1,032.5	0.98	-0.97	4.35
TARGET CIRCLE 1200'FSL, 75'FEL									
6,677.0	1.10	79.30	6,543.8	-853.6	-577.7	1,030.7	0.98	-0.96	7.92
6,770.0	0.80	117.50	6,636.8	-853.7	-576.2	1,030.0	0.73	-0.32	41.08
6,863.0	0.50	133.40	6,729.8	-854.3	-575.3	1,030.0	0.37	-0.32	17.10
6,976.0	0.40	190.80	6,842.8	-855.0	-575.1	1,030.4	0.39	-0.09	50.80
7,021.0	0.40	190.80	6,887.7	-855.3	-575.1	1,030.7	0.00	0.00	0.00
HARDLINE 75'E OF BHL									

Checked By: _____ Approved By: _____ Date: _____