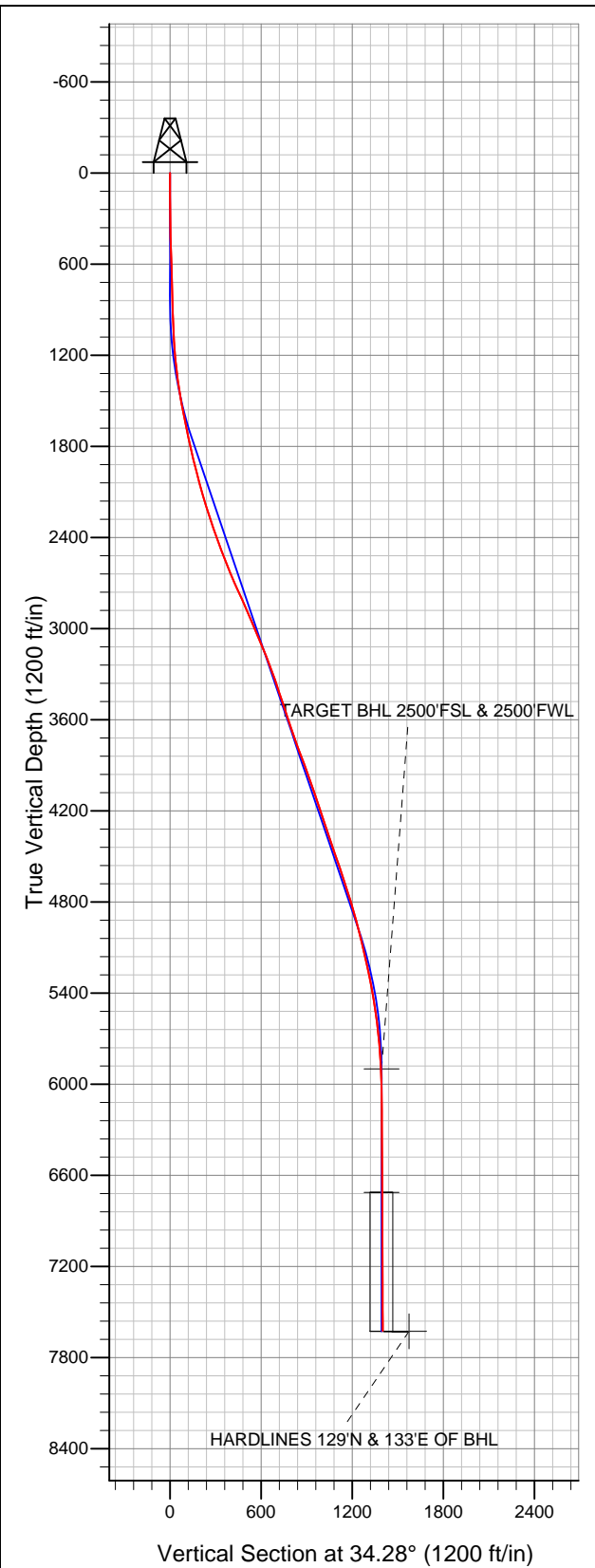




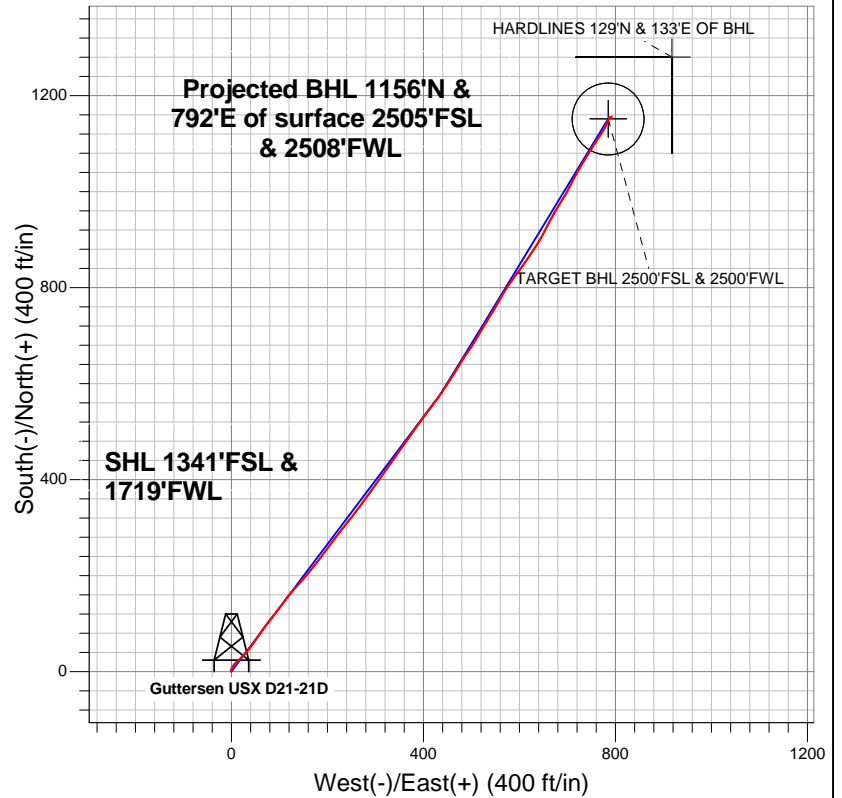
# Well Name: Guttersen USX D21-21D

Surface Location: Guttersen USX D21-32D Pad Sec.21-T3N-R64W  
North American Datum 1983 US State Plane 1983Colorado Northern Zone  
Ground Elevation: 4820.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1319787.37	3262664.29	40.207390	-104.559550	
Original Well Elev			WELL @ 4833.0ft (Original Well Elev)			



## NOBLE ENERGY INC WELD COUNTY CO



### LEGEND

- Wellbore #1
- Guttersen USX D21-21D, Wellbore #1, Noble Guttersen USX D21-21D Plan #2 (7-11-12) R V0
- Survey #1

## Final Survey Plot

Projected Final Survey -  
7840'MD & 7625'TVD @ 1402°VS  
0.50 deg Inc 48.30 deg AZ

Project: SEC.21-T3N-R64W  
Site: Guttersen USX D21-32D Pad Sec.21-T3N-R64W  
Well: Guttersen USX D21-21D  
Plan: Wellbore #1



# **NOBLE ENERGY INC WELD COUNTY CO**

**SEC.21-T3N-R64W**

**Guttersen USX D21-32D Pad Sec.21-T3N-R64W**

**Guttersen USX D21-21D**

**Wellbore #1**

**Survey: Survey #1**

## **Standard Survey Report**

**20 July, 2012**



<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>Local Co-ordinate Reference:</b>	Well Guttersten USX D21-21D
<b>Project:</b>	SEC.21-T3N-R64W	<b>TVD Reference:</b>	WELL @ 4833.0ft (Original Well Elev)
<b>Site:</b>	Guttersten USX D21-32D Pad Sec.21-T3N-R64W	<b>MD Reference:</b>	WELL @ 4833.0ft (Original Well Elev)
<b>Well:</b>	Guttersten USX D21-21D	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	Landmark

<b>Project</b>	SEC.21-T3N-R64W, Weld County, CO		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		Using Well Reference Point
<b>Map Zone:</b>	Colorado Northern Zone		Using geodetic scale factor

Site	Guttersen USX D21-32D Pad Sec.21-T3N-R64W				
Site Position:		Northing:	1,319,830.53ft	Latitude:	40.207510
From:	Lat/Long	Easting:	3,262,610.76ft	Longitude:	-104.559740
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.61 °

Well	Guttersen USX D21-21D					
Well Position	+N-S	0.0 ft	Northing:	1,319,787.37 ft	Latitude:	40.207390
	+E-W	0.0 ft	Easting:	3,262,664.29 ft	Longitude:	-104.559550
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,820.0 ft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	7/11/2012	8.59	66.89	52,939

<b>Design</b>	Wellbore #1				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>	
	0.0	0.0	0.0	34.28	

<b>Survey Program</b>	<b>Date</b>	7/18/2012			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
144.0	7,840.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard	

<b>Survey</b>										
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Vertical Section (ft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Turn Rate (°/100ft)</b>	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
144.0	0.50	312.20	144.0	0.4	-0.5	0.1	0.35	0.35	0.00	
236.0	1.00	0.90	236.0	1.5	-0.8	0.8	0.83	0.54	52.93	
328.0	1.10	10.40	328.0	3.2	-0.6	2.3	0.22	0.11	10.33	
420.0	1.30	18.50	420.0	5.0	-0.1	4.1	0.28	0.22	8.80	
511.0	1.90	29.20	510.9	7.3	1.0	6.6	0.73	0.66	11.76	
613.0	1.90	31.00	612.9	10.2	2.7	10.0	0.06	0.00	1.76	
695.0	1.50	31.30	694.8	12.3	3.9	12.4	0.49	-0.49	0.37	
750.0	1.70	34.00	749.8	13.6	4.8	13.9	0.39	0.36	4.91	
795.0	1.70	34.00	794.8	14.7	5.5	15.3	0.00	0.00	0.00	
918.0	1.60	54.20	917.7	17.2	7.9	18.7	0.48	-0.08	16.42	
1,000.0	2.10	48.40	999.7	18.9	10.0	21.2	0.65	0.61	-7.07	

<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>Local Co-ordinate Reference:</b>	Well Guttersen USX D21-21D
<b>Project:</b>	SEC.21-T3N-R64W	<b>TVD Reference:</b>	WELL @ 4833.0ft (Original Well Elev)
<b>Site:</b>	Guttersen USX D21-32D Pad Sec.21-T3N-R64W	<b>MD Reference:</b>	WELL @ 4833.0ft (Original Well Elev)
<b>Well:</b>	Guttersen USX D21-21D	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	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)
1,081.0	3.40	45.90	1,080.6	21.6	12.8	25.0	1.61	1.60	-3.09
1,163.0	4.40	46.10	1,162.4	25.4	16.8	30.5	1.22	1.22	0.24
1,245.0	6.00	45.00	1,244.1	30.7	22.1	37.8	1.95	1.95	-1.34
1,327.0	7.20	42.40	1,325.5	37.5	28.6	47.1	1.51	1.46	-3.17
1,408.0	8.50	39.40	1,405.8	45.9	35.8	58.1	1.68	1.60	-3.70
1,490.0	9.70	35.70	1,486.7	56.1	43.7	71.0	1.63	1.46	-4.51
1,572.0	10.90	33.30	1,567.4	68.2	52.0	85.7	1.55	1.46	-2.93
1,653.0	11.70	35.50	1,646.8	81.3	61.0	101.5	1.12	0.99	2.72
1,735.0	12.10	37.50	1,727.1	94.9	71.0	118.4	0.70	0.49	2.44
1,817.0	12.40	36.80	1,807.2	108.8	81.5	135.8	0.41	0.37	-0.85
1,898.0	13.70	39.10	1,886.1	123.2	92.8	154.1	1.73	1.60	2.84
1,980.0	14.30	35.90	1,965.7	138.9	104.9	173.9	1.19	0.73	-3.90
2,062.0	14.90	37.30	2,045.0	155.5	117.2	194.5	0.85	0.73	1.71
2,143.0	15.90	41.70	2,123.1	172.1	130.9	215.9	1.90	1.23	5.43
2,225.0	18.00	42.20	2,201.6	189.9	146.9	239.6	2.57	2.56	0.61
2,307.0	18.60	39.90	2,279.4	209.3	163.8	265.2	1.14	0.73	-2.80
2,388.0	19.30	36.80	2,356.0	229.9	180.1	291.4	1.51	0.86	-3.83
2,470.0	20.00	36.60	2,433.2	252.0	196.5	318.9	0.86	0.85	-0.24
2,552.0	21.00	37.00	2,510.1	275.0	213.8	347.6	1.23	1.22	0.49
2,633.0	21.80	38.70	2,585.5	298.3	231.9	377.1	1.25	0.99	2.10
2,715.0	23.30	37.50	2,661.2	323.1	251.3	408.5	1.91	1.83	-1.46
2,797.0	24.40	37.10	2,736.2	349.5	271.4	441.6	1.36	1.34	-0.49
2,878.0	24.10	35.50	2,810.0	376.3	291.1	474.9	0.89	-0.37	-1.98
2,960.0	23.20	34.80	2,885.2	403.2	310.0	507.7	1.15	-1.10	-0.85
3,042.0	23.40	35.40	2,960.5	429.7	328.7	540.2	0.38	0.24	0.73
3,123.0	23.70	35.70	3,034.7	456.0	347.5	572.5	0.40	0.37	0.37
3,205.0	22.40	36.10	3,110.2	482.0	366.3	604.6	1.60	-1.59	0.49
3,287.0	21.80	34.50	3,186.2	507.2	384.1	635.5	1.04	-0.73	-1.95
3,369.0	19.80	35.90	3,262.8	531.0	400.9	664.6	2.51	-2.44	1.71
3,450.0	18.60	37.70	3,339.3	552.3	416.8	691.2	1.65	-1.48	2.22
3,532.0	19.10	35.90	3,416.9	573.6	432.7	717.7	0.94	0.61	-2.20
3,614.0	18.60	32.60	3,494.5	595.4	447.6	744.1	1.44	-0.61	-4.02
3,695.0	18.20	32.70	3,571.4	617.0	461.4	769.7	0.50	-0.49	0.12
3,777.0	18.60	31.50	3,649.2	638.9	475.2	795.6	0.67	0.49	-1.46
3,859.0	19.20	34.10	3,726.8	661.2	489.6	822.1	1.26	0.73	3.17
3,940.0	20.40	31.50	3,803.0	684.3	504.4	849.5	1.84	1.48	-3.21
4,022.0	20.90	31.70	3,879.7	708.9	519.6	878.4	0.62	0.61	0.24
4,104.0	20.50	30.80	3,956.4	733.7	534.6	907.4	0.62	-0.49	-1.10
4,185.0	18.80	30.30	4,032.7	757.1	548.4	934.5	2.11	-2.10	-0.62
4,267.0	18.40	30.30	4,110.4	779.7	561.6	960.6	0.49	-0.49	0.00
4,349.0	18.40	32.90	4,188.2	801.8	575.2	986.5	1.00	0.00	3.17
4,430.0	18.90	37.50	4,265.0	822.9	590.1	1,012.4	1.92	0.62	5.68
4,512.0	18.10	35.50	4,342.7	843.8	605.6	1,038.3	1.25	-0.98	-2.44
4,594.0	19.60	34.30	4,420.3	865.6	620.8	1,064.8	1.89	1.83	-1.46
4,675.0	19.10	32.40	4,496.7	888.0	635.5	1,091.7	0.99	-0.62	-2.35
4,757.0	18.90	28.20	4,574.3	911.0	649.0	1,118.3	1.68	-0.24	-5.12
4,839.0	18.20	27.50	4,652.0	934.1	661.2	1,144.2	0.90	-0.85	-0.85
4,920.0	18.00	29.40	4,729.0	956.2	673.2	1,169.2	0.77	-0.25	2.35
5,002.0	16.70	33.10	4,807.3	977.1	685.8	1,193.6	2.08	-1.59	4.51
5,084.0	15.10	28.70	4,886.1	996.3	697.4	1,216.1	2.44	-1.95	-5.37
5,165.0	14.40	25.70	4,964.5	1,014.7	706.8	1,236.5	1.28	-0.86	-3.70
5,247.0	14.80	29.60	5,043.8	1,033.0	716.4	1,257.0	1.29	0.49	4.76
5,329.0	13.30	29.50	5,123.4	1,050.3	726.2	1,276.9	1.83	-1.83	-0.12

<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>Local Co-ordinate Reference:</b>	Well Guttersen USX D21-21D
<b>Project:</b>	SEC.21-T3N-R64W	<b>TVD Reference:</b>	WELL @ 4833.0ft (Original Well Elev)
<b>Site:</b>	Guttersen USX D21-32D Pad Sec.21-T3N-R64W	<b>MD Reference:</b>	WELL @ 4833.0ft (Original Well Elev)
<b>Well:</b>	Guttersen USX D21-21D	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	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)
5,411.0	12.40	32.90	5,203.3	1,065.9	735.7	1,295.1	1.43	-1.10	4.15
5,492.0	11.20	29.70	5,282.6	1,080.0	744.3	1,311.6	1.69	-1.48	-3.95
5,574.0	10.70	34.00	5,363.1	1,093.2	752.5	1,327.2	1.17	-0.61	5.24
5,656.0	9.30	32.60	5,443.9	1,105.1	760.3	1,341.4	1.73	-1.71	-1.71
5,737.0	8.70	33.80	5,523.9	1,115.7	767.2	1,354.1	0.78	-0.74	1.48
5,819.0	6.90	31.20	5,605.1	1,125.1	773.2	1,365.2	2.24	-2.20	-3.17
5,901.0	5.60	27.30	5,686.6	1,132.9	777.6	1,374.1	1.67	-1.59	-4.76
5,982.0	4.40	27.50	5,767.3	1,139.1	780.9	1,381.1	1.48	-1.48	0.25
6,064.0	3.30	25.30	5,849.1	1,144.1	783.3	1,386.5	1.35	-1.34	-2.68
6,115.2	2.74	24.37	5,900.2	1,146.5	784.5	1,389.2	1.10	-1.10	-1.82
<b>TARGET BHL 2500'FSL &amp; 2500'FWL</b>									
6,146.0	2.40	23.60	5,931.0	1,147.8	785.0	1,390.6	1.10	-1.10	-2.50
6,227.0	1.60	26.10	6,012.0	1,150.3	786.2	1,393.3	0.99	-0.99	3.09
6,309.0	0.50	20.10	6,094.0	1,151.7	786.8	1,394.8	1.35	-1.34	-7.32
6,391.0	0.40	13.40	6,176.0	1,152.3	787.0	1,395.4	0.14	-0.12	-8.17
6,472.0	0.40	15.00	6,257.0	1,152.9	787.2	1,396.0	0.01	0.00	1.98
6,554.0	0.40	11.10	6,339.0	1,153.4	787.3	1,396.5	0.03	0.00	-4.76
6,636.0	0.20	31.50	6,421.0	1,153.8	787.4	1,396.9	0.27	-0.24	24.88
6,717.0	0.20	45.40	6,502.0	1,154.1	787.6	1,397.2	0.06	0.00	17.16
6,799.0	0.30	83.00	6,584.0	1,154.2	787.9	1,397.5	0.23	0.12	45.85
6,881.0	0.30	100.80	6,666.0	1,154.2	788.3	1,397.7	0.11	0.00	21.71
6,928.0	0.53	89.64	6,713.0	1,154.1	788.7	1,397.9	0.51	0.49	-23.74
<b>TARGET CIRCLE 2500'FSL &amp; 2500'FWL</b>									
6,962.0	0.70	86.20	6,746.9	1,154.2	789.0	1,398.1	0.51	0.50	-10.12
7,044.0	0.40	74.70	6,828.9	1,154.3	789.8	1,398.6	0.39	-0.37	-14.02
7,126.0	0.40	72.50	6,910.9	1,154.4	790.4	1,399.1	0.02	0.00	-2.68
7,207.0	0.40	87.60	6,991.9	1,154.5	790.9	1,399.5	0.13	0.00	18.64
7,289.0	0.40	68.60	7,073.9	1,154.6	791.5	1,399.9	0.16	0.00	-23.17
7,371.0	0.20	274.60	7,155.9	1,154.8	791.6	1,400.0	0.72	-0.24	-187.81
7,453.0	0.40	322.20	7,237.9	1,155.0	791.3	1,400.0	0.37	0.24	58.05
7,534.0	0.10	353.90	7,318.9	1,155.3	791.1	1,400.2	0.39	-0.37	39.14
7,616.0	0.10	3.60	7,400.9	1,155.4	791.1	1,400.3	0.02	0.00	11.83
7,698.0	0.40	74.90	7,482.9	1,155.6	791.4	1,400.6	0.46	0.37	86.95
7,795.0	0.50	55.80	7,579.9	1,155.9	792.0	1,401.2	0.18	0.10	-19.69
7,840.0	0.50	48.30	7,624.9	1,156.1	792.4	1,401.6	0.15	0.00	-16.67
<b>HARDLINES 129'N &amp; 133'E OF BHL</b>									

Checked By: _____	Approved By: _____	Date: _____
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