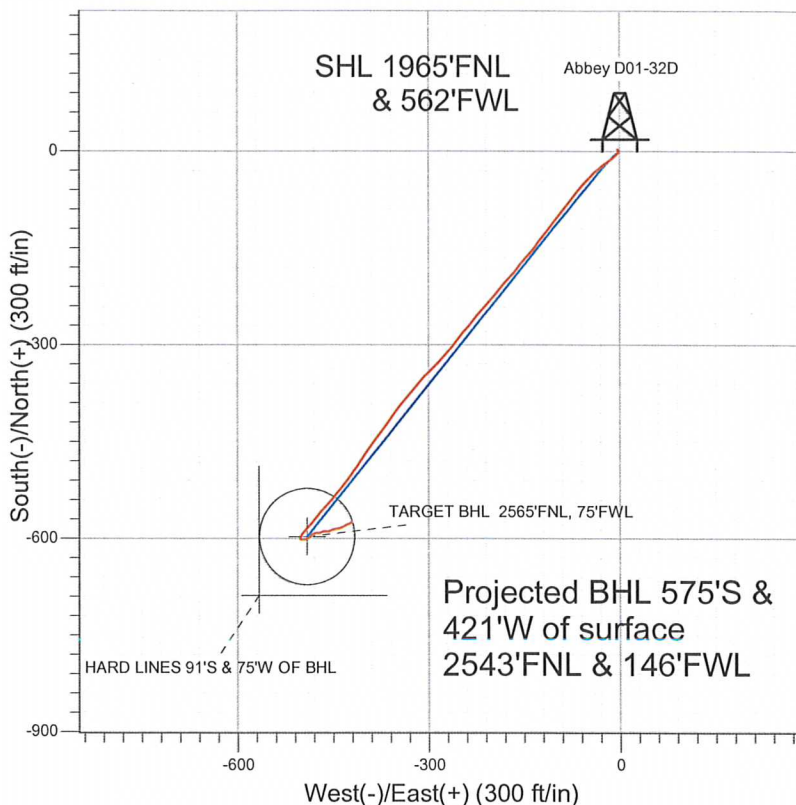


NOBLE ENERGY INC WELD COUNTY CO



LEGEND

- ◆ Abbey D01-32D, Wellbore #1, Noble Abbey D01-32D Plan #7 (10-06-11) V0
- Wellbore #1
- Survey #1

Final Survey Plot

Projected Final Survey -
7574'MD & 7488'TVD @ 711'VS
0.9 deg Inc 83.2 deg AZ

Project: SEC.1-T3N-R64W
Site: Gutteresen D01-31D Pad Sec.1-T3N-R64W
Well: Abbey D01-32D
Plan: Wellbore #1



Directional

**NOBLE ENERGY INC WELD
COUNTY CO**

SEC.1-T3N-R64W

Guttersen D01-31D Pad Sec.1-T3N-R64W

Abbey D01-32D

Wellbore #1

Survey: Survey #1

Standard Survey Report

19 October, 2011



Company: NOBLE ENERGY INC WELD COUNTY CO
Project: SEC.1-T3N-R64W
Site: Guttersten D01-31D Pad Sec.1-T3N-R64W
Well: Abbey D01-32D
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Abbey D01-32D
TVD Reference: WELL @ 4741.0ft (Original Well Elev)
MD Reference: WELL @ 4741.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: Landmark

Project SEC.1-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 D01-31D Pad Sec.1-T3N-R64W

Site Position:	Northing: 1,337,796.52 ft	Latitude: 40.256390
From: Lat/Long	Easting: 3,277,165.95 ft	Longitude: -104.506910
Position Uncertainty: 0.0 ft	Slot Radius: "	Grid Convergence: 0.64 °

Well Abbey D01-32D

Well Position	+N/-S 0.0 ft	Northing: 1,337,778.48 ft	Latitude: 40.256340
	+E/-W 0.0 ft	Easting: 3,277,182.90 ft	Longitude: -104.506850
Position Uncertainty	0.0 ft	Wellhead Elevation: ft	Ground Level: 4,728.0 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	10/6/2011	8.67	66.97	53,052

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	216.18

Survey Program Date 10/19/2011

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
123.0	7,574.0	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
123.0	1.00	327.20	123.0	0.9	-0.6	-0.4	0.81	0.81	0.00
303.0	0.70	317.50	303.0	3.0	-2.2	-1.2	0.18	-0.17	-5.39
487.0	0.70	156.00	487.0	2.8	-2.5	-0.8	0.75	0.00	-87.77
716.0	0.80	132.60	715.9	0.5	-0.7	0.0	0.14	0.04	-10.22
771.0	0.60	147.40	770.9	0.0	-0.3	0.2	0.49	-0.36	26.91
865.0	1.30	230.20	864.9	-1.1	-0.8	1.4	1.45	0.74	88.09
959.0	3.50	223.50	958.8	-3.9	-3.6	5.3	2.36	2.34	-7.13
1,053.0	4.60	228.10	1,052.6	-8.5	-8.4	11.8	1.22	1.17	4.89
1,147.0	7.10	234.20	1,146.1	-14.4	-15.9	21.0	2.74	2.66	6.49
1,241.0	8.30	233.00	1,239.3	-21.9	-26.1	33.1	1.29	1.28	-1.28
1,335.0	10.20	227.50	1,332.0	-31.6	-37.6	47.7	2.23	2.02	-5.85
1,429.0	12.30	222.80	1,424.2	-44.6	-50.6	65.8	2.44	2.23	-5.00

Company: NOBLE ENERGY INC WELD COUNTY CO
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Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Abbey D01-32D
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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)
1,523.0	14.00	218.90	1,515.8	-60.8	-64.5	87.1	2.04	1.81	-4.15
1,616.0	13.40	216.40	1,606.1	-78.2	-78.0	109.1	0.91	-0.65	-2.69
1,710.0	12.80	217.80	1,697.7	-95.2	-90.8	130.4	0.72	-0.64	1.49
1,804.0	12.80	216.80	1,789.3	-111.8	-103.4	151.3	0.24	0.00	-1.06
1,898.0	11.40	220.00	1,881.2	-127.2	-115.6	170.9	1.65	-1.49	3.40
1,992.0	11.30	216.60	1,973.4	-141.7	-127.1	189.4	0.72	-0.11	-3.62
2,086.0	10.60	220.70	2,065.7	-155.7	-138.2	207.3	1.11	-0.74	4.36
2,180.0	10.90	221.50	2,158.1	-168.9	-149.8	224.7	0.36	0.32	0.85
2,274.0	11.20	216.10	2,250.3	-182.9	-161.0	242.7	1.15	0.32	-5.74
2,368.0	12.50	225.80	2,342.3	-197.4	-173.7	261.9	2.53	1.38	10.32
2,462.0	13.00	217.10	2,434.0	-212.9	-187.4	282.5	2.11	0.53	-9.26
2,556.0	13.60	222.40	2,525.5	-229.5	-201.2	304.0	1.44	0.64	5.64
2,650.0	14.40	221.40	2,616.7	-246.4	-216.4	326.7	0.89	0.85	-1.06
2,744.0	13.40	218.70	2,707.9	-263.7	-230.9	349.2	1.27	-1.06	-2.87
2,837.0	12.50	221.20	2,798.6	-279.7	-244.3	370.0	1.14	-0.97	2.69
2,931.0	12.30	216.10	2,890.4	-295.4	-256.9	390.1	1.18	-0.21	-5.43
3,025.0	12.80	221.90	2,982.1	-311.3	-269.8	410.5	1.44	0.53	6.17
3,119.0	12.90	222.90	3,073.8	-326.7	-283.9	431.3	0.26	0.11	1.06
3,213.0	12.60	225.90	3,165.5	-341.5	-298.4	451.8	0.77	-0.32	3.19
3,307.0	12.00	221.70	3,257.3	-356.0	-312.2	471.6	1.15	-0.64	-4.47
3,401.0	13.70	219.60	3,349.0	-371.8	-325.8	492.5	1.88	1.81	-2.23
3,495.0	13.70	220.10	3,440.3	-388.9	-340.1	514.7	0.13	0.00	0.53
3,589.0	14.50	215.90	3,531.5	-407.0	-354.2	537.6	1.38	0.85	-4.47
3,683.0	14.90	216.40	3,622.4	-426.2	-368.2	561.4	0.45	0.43	0.53
3,777.0	15.80	216.30	3,713.0	-446.3	-383.0	586.3	0.96	0.96	-0.11
3,871.0	15.80	214.30	3,803.5	-467.2	-397.8	611.9	0.58	0.00	-2.13
3,965.0	14.40	214.20	3,894.2	-487.4	-411.5	636.4	1.49	-1.49	-0.11
4,059.0	12.80	216.80	3,985.6	-505.4	-424.4	658.5	1.82	-1.70	2.77
4,153.0	13.50	218.40	4,077.1	-522.3	-437.4	679.8	0.84	0.74	1.70
4,247.0	11.80	221.40	4,168.8	-538.1	-450.6	700.4	1.94	-1.81	3.19
4,341.0	11.10	221.50	4,261.0	-552.1	-462.9	718.9	0.74	-0.74	0.11
4,435.0	9.60	218.90	4,353.4	-565.0	-473.8	735.8	1.67	-1.60	-2.77
4,529.0	8.60	222.20	4,446.3	-576.3	-483.5	750.6	1.20	-1.06	3.51
4,622.0	6.90	221.00	4,538.4	-585.7	-491.8	763.1	1.84	-1.83	-1.29
4,716.0	4.60	210.60	4,631.9	-593.2	-497.5	772.5	2.68	-2.45	-11.06
4,810.0	2.60	210.60	4,725.7	-598.3	-500.5	778.3	2.13	-2.13	0.00
4,904.0	2.10	113.10	4,819.7	-600.8	-500.0	780.1	3.78	-0.53	-103.72
4,998.0	3.80	87.10	4,913.6	-601.3	-495.3	777.7	2.26	1.81	-27.66
5,084.6	3.41	66.53	5,000.0	-600.1	-490.0	773.7	1.55	-0.45	-23.76
TARGET BHL 2565'FNL, 75'FWL									
5,092.0	3.40	64.60	5,007.4	-600.0	-489.6	773.3	1.55	-0.14	-25.99
5,186.0	1.20	42.20	5,101.3	-598.0	-486.5	769.9	2.48	-2.34	-23.83
5,311.0	1.40	42.60	5,226.3	-595.9	-484.5	767.1	0.16	0.16	0.32
5,437.0	0.70	30.60	5,352.2	-594.1	-483.1	764.8	0.58	-0.56	-9.52
5,562.0	1.00	70.40	5,477.2	-593.1	-481.7	763.1	0.51	0.24	31.84
5,687.0	1.10	72.30	5,602.2	-592.4	-479.5	761.2	0.08	0.08	1.52
5,812.0	1.10	79.10	5,727.2	-591.8	-477.2	759.4	0.10	0.00	5.44
5,938.0	1.80	87.90	5,853.1	-591.5	-474.0	757.3	0.58	0.56	6.98
6,062.0	2.10	78.50	5,977.1	-591.0	-469.9	754.4	0.35	0.24	-7.58
6,188.0	1.60	59.60	6,103.0	-589.6	-466.1	751.1	0.62	-0.40	-15.00
6,313.0	1.10	86.50	6,228.0	-588.7	-463.4	748.7	0.64	-0.40	21.52
6,438.0	1.80	99.70	6,352.9	-588.9	-460.2	747.0	0.62	0.56	10.56
6,564.0	2.20	69.01	6,478.9	-588.4	-456.0	744.1	0.89	0.32	-24.36
6,632.6	2.42	70.42	6,547.4	-587.4	-453.4	741.8	0.33	0.32	2.05

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TARGET CIRCLE 2565'FNL & 75'FWL									
6,689.0	2.60	71.40	6,603.7	-586.6	-451.1	739.8	0.33	0.32	1.74
6,814.0	2.80	79.90	6,728.6	-585.2	-445.4	735.3	0.36	0.16	6.80
6,939.0	3.80	69.80	6,853.4	-583.2	-438.5	729.6	0.92	0.80	-8.08
7,065.0	2.90	59.10	6,979.2	-580.1	-431.9	723.2	0.87	-0.71	-8.49
7,190.0	1.80	75.50	7,104.1	-578.0	-427.3	718.8	1.02	-0.88	13.12
7,315.0	1.20	59.30	7,229.0	-576.9	-424.2	716.1	0.58	-0.48	-12.96
7,441.0	0.80	48.70	7,355.0	-575.6	-422.4	714.0	0.35	-0.32	-8.41
7,528.0	0.90	83.20	7,442.0	-575.1	-421.3	712.9	0.59	0.11	39.66
HARD LINES 91'S & 75'W OF BHL									
7,574.0	0.90	83.20	7,488.0	-575.0	-420.6	712.4	0.00	0.00	0.00

Checked By: _____ Approved By: _____ Date: _____