

Well Name: **Strohauer F32-22D**

Surface Location: Strohauer F32-22D Pad Sec.32-T5N-R65W
 North American Datum 1983 US State Plane 1983 Colorado Northern Zone

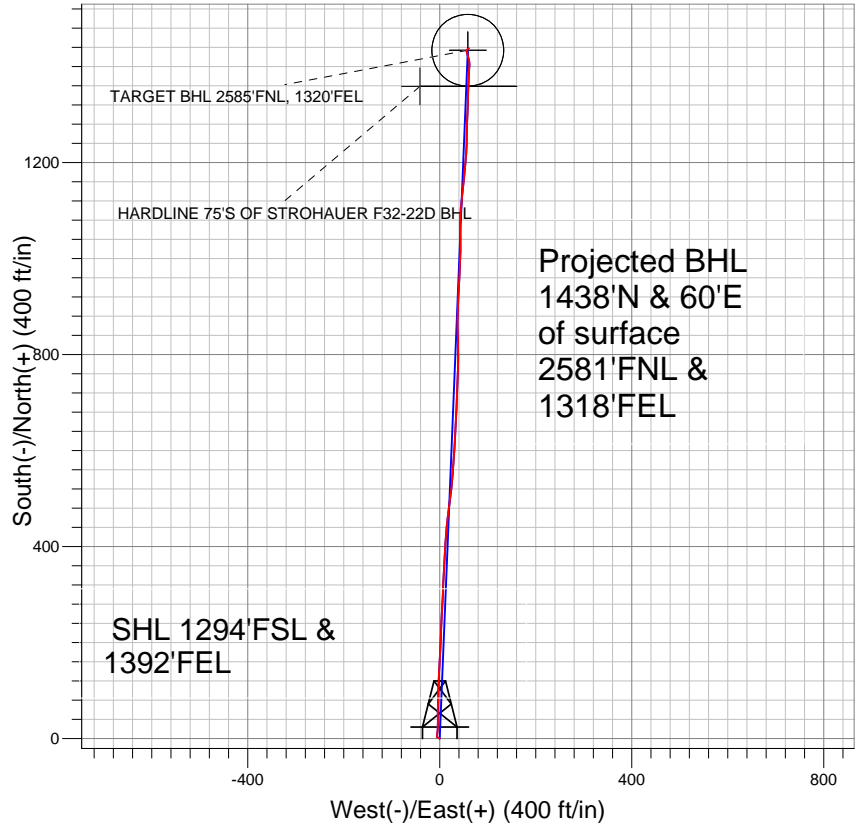
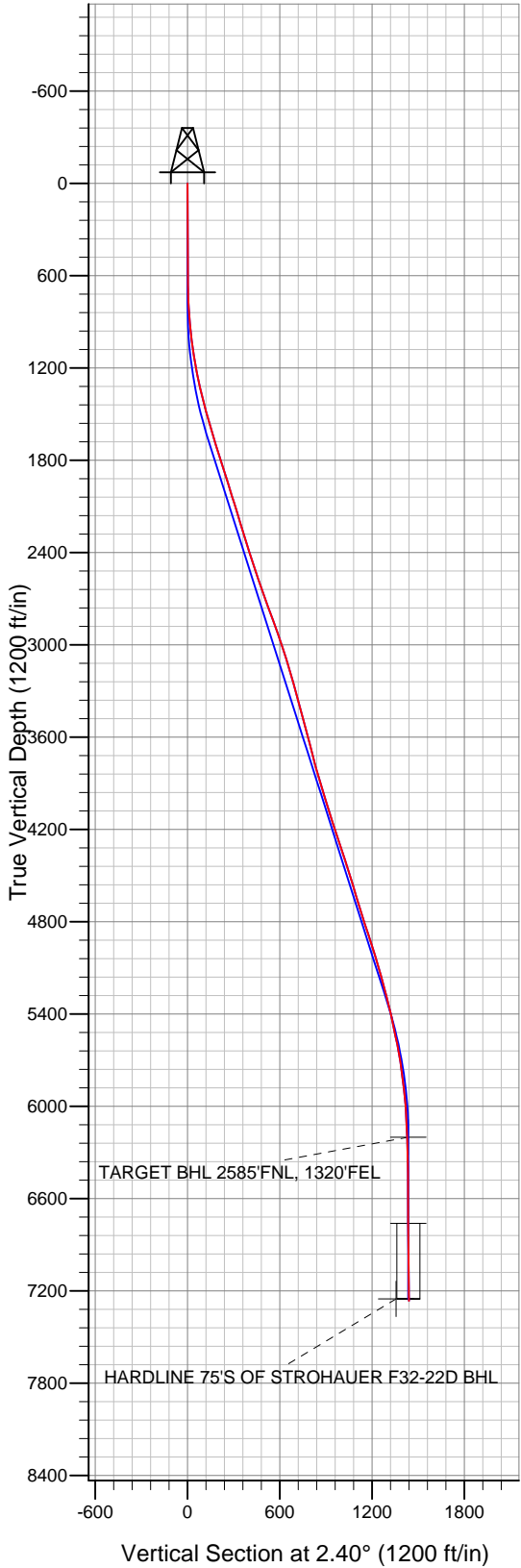
Ground Elevation: 4668.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	1372134.50	3227742.55	40° 21' 7.308 N	104° 40' 58.260 W

Original Well Elev WELL @ 4681.0ft (Original Well Elev)

Slot

NOBLE ENERGY INC WELD COUNTY CO



LEGEND

- Strohauer F32-22D, Wellbore #1, Noble Strohauer F32-22D Plan #1 (01-29-10) V0
- Wellbore #1
- Survey #1

Final Survey Plot

Projected Final Survey -
 7466'MD & 7265'TVD @ 1439' VS
 1.1 deg Inc 44.7 deg AZ

Project: SEC.32-T5N-R65W
 Site: Strohauer F32-22D Pad Sec.32-T5N-R65W
 Well: Strohauer F32-22D
 Plan: Wellbore #1



Directional

NOBLE ENERGY INC WELD COUNTY CO

SEC.32-T5N-R65W

Strohauer F32-22D Pad Sec.32-T5N-R65W

Strohauer F32-22D

Wellbore #1

Survey: Survey #1

Standard Survey Report

06 December, 2010



Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Strohauer F32-22D
Project:	SEC.32-T5N-R65W	TVD Reference:	WELL @ 4681.0ft (Original Well Elev)
Site:	Strohauer F32-22D Pad Sec.32-T5N-R65W	MD Reference:	WELL @ 4681.0ft (Original Well Elev)
Well:	Strohauer F32-22D	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	SEC.32-T5N-R65W, 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	Strohauer F32-22D Pad Sec.32-T5N-R65W				
Site Position:		Northing:	1,372,134.51 ft	Latitude:	40° 21' 7.308 N
From:	Lat/Long	Easting:	3,227,742.55 ft	Longitude:	104° 40' 58.260 W
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.53 °

Well	Strohauer F32-22D					
Well Position	+N-S	0.0 ft	Northing:	1,372,134.50 ft	Latitude:	40° 21' 7.308 N
	+E-W	0.0 ft	Easting:	3,227,742.55 ft	Longitude:	104° 40' 58.260 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,668.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	12/31/2009	8.97	67.08	53,289

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	2.40	

Survey Program	Date	12/6/2010			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
661.0	7,466.0	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	
661.0	1.00	298.50	661.0	2.8	-5.1	2.5	0.15	0.15	0.00	
755.0	2.50	5.80	754.9	5.2	-5.6	4.9	2.45	1.60	71.60	
849.0	3.90	5.70	848.8	10.4	-5.1	10.2	1.49	1.49	-0.11	
943.0	5.70	6.60	942.4	18.2	-4.2	18.0	1.92	1.91	0.96	
1,037.0	7.80	359.60	1,035.8	29.2	-3.7	29.1	2.40	2.23	-7.45	
1,131.0	9.00	358.10	1,128.8	43.0	-4.0	42.8	1.30	1.28	-1.60	
1,225.0	10.60	1.80	1,221.4	59.0	-4.0	58.7	1.83	1.70	3.94	
1,319.0	13.50	2.60	1,313.3	78.6	-3.2	78.4	3.09	3.09	0.85	
1,413.0	13.80	0.40	1,404.7	100.7	-2.6	100.5	0.64	0.32	-2.34	
1,507.0	14.60	2.10	1,495.8	123.8	-2.1	123.6	0.96	0.85	1.81	
1,601.0	17.00	3.30	1,586.2	149.3	-0.9	149.2	2.58	2.55	1.28	
1,694.0	17.50	3.00	1,675.1	176.9	0.6	176.8	0.55	0.54	-0.32	

Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Strothauer F32-22D
Project:	SEC.32-T5N-R65W	TVD Reference:	WELL @ 4681.0ft (Original Well Elev)
Site:	Strothauer F32-22D Pad Sec.32-T5N-R65W	MD Reference:	WELL @ 4681.0ft (Original Well Elev)
Well:	Strothauer F32-22D	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)	
1,788.0	17.30	3.40	1,764.8	205.0	2.2	204.9	0.25	-0.21	0.43	
1,882.0	17.40	1.10	1,854.5	233.0	3.3	232.9	0.74	0.11	-2.45	
1,976.0	17.20	3.50	1,944.2	260.9	4.4	260.8	0.79	-0.21	2.55	
2,070.0	18.10	3.00	2,033.8	289.3	6.0	289.3	0.97	0.96	-0.53	
2,164.0	16.90	1.50	2,123.5	317.6	7.1	317.6	1.36	-1.28	-1.60	
2,258.0	17.00	3.60	2,213.4	344.9	8.4	345.0	0.66	0.11	2.23	
2,352.0	17.60	3.00	2,303.1	372.9	10.0	372.9	0.67	0.64	-0.64	
2,446.0	16.70	4.50	2,392.9	400.5	11.8	400.7	1.07	-0.96	1.60	
2,540.0	17.60	3.20	2,482.8	428.2	13.6	428.4	1.04	0.96	-1.38	
2,634.0	20.30	7.20	2,571.7	458.5	16.5	458.8	3.19	2.87	4.26	
2,728.0	20.20	7.00	2,659.8	490.8	20.5	491.3	0.13	-0.11	-0.21	
2,822.0	19.60	6.50	2,748.2	522.6	24.3	523.2	0.66	-0.64	-0.53	
2,916.0	19.60	4.60	2,836.8	554.0	27.3	554.6	0.68	0.00	-2.02	
3,010.0	19.60	4.20	2,925.3	585.4	29.7	586.2	0.14	0.00	-0.43	
3,104.0	18.80	3.00	3,014.1	616.3	31.7	617.1	0.95	-0.85	-1.28	
3,198.0	17.10	1.80	3,103.5	645.2	32.9	646.0	1.85	-1.81	-1.28	
3,292.0	15.20	2.40	3,193.8	671.3	33.8	672.2	2.03	-2.02	0.64	
3,386.0	15.10	3.80	3,284.6	695.9	35.2	696.7	0.40	-0.11	1.49	
3,480.0	15.50	1.60	3,375.2	720.6	36.3	721.5	0.75	0.43	-2.34	
3,574.0	15.90	2.40	3,465.7	746.1	37.2	747.0	0.48	0.43	0.85	
3,668.0	14.40	1.60	3,556.4	770.6	38.1	771.5	1.61	-1.60	-0.85	
3,762.0	14.30	359.50	3,647.5	793.9	38.3	794.8	0.56	-0.11	-2.23	
3,856.0	14.50	359.60	3,738.6	817.3	38.1	818.2	0.21	0.21	0.11	
3,950.0	16.70	358.50	3,829.1	842.6	37.7	843.4	2.36	2.34	-1.17	
4,044.0	16.80	0.20	3,919.1	869.6	37.4	870.4	0.53	0.11	1.81	
4,138.0	16.70	2.30	4,009.1	896.7	38.0	897.5	0.65	-0.11	2.23	
4,231.0	17.80	1.90	4,097.9	924.3	39.0	925.1	1.19	1.18	-0.43	
4,326.0	18.40	3.50	4,188.2	953.8	40.4	954.6	0.82	0.63	1.68	
4,420.0	17.50	2.20	4,277.7	982.7	41.8	983.6	1.05	-0.96	-1.38	
4,514.0	18.50	2.50	4,367.1	1,011.7	43.0	1,012.6	1.07	1.06	0.32	
4,608.0	18.20	357.80	4,456.3	1,041.3	43.1	1,042.2	1.61	-0.32	-5.00	
4,702.0	16.40	359.40	4,546.0	1,069.2	42.4	1,070.1	1.98	-1.91	1.70	
4,796.0	16.90	5.80	4,636.1	1,096.1	43.6	1,097.0	2.02	0.53	6.81	
4,890.0	17.30	5.20	4,725.9	1,123.6	46.3	1,124.5	0.47	0.43	-0.64	
4,984.0	17.50	5.60	4,815.6	1,151.6	48.9	1,152.6	0.25	0.21	0.43	
5,078.0	18.90	5.80	4,904.9	1,180.8	51.9	1,181.9	1.49	1.49	0.21	
5,172.0	17.70	4.60	4,994.2	1,210.2	54.5	1,211.4	1.34	-1.28	-1.28	
5,266.0	16.00	1.30	5,084.1	1,237.4	56.0	1,238.6	2.07	-1.81	-3.51	
5,360.0	14.90	0.90	5,174.7	1,262.4	56.5	1,263.7	1.18	-1.17	-0.43	
5,453.0	14.20	1.80	5,264.8	1,285.8	57.0	1,287.0	0.79	-0.75	0.97	
5,547.0	14.50	3.60	5,355.8	1,309.0	58.1	1,310.3	0.57	0.32	1.91	
5,641.0	12.00	0.70	5,447.3	1,330.6	59.0	1,331.9	2.75	-2.66	-3.09	
5,735.0	11.50	1.60	5,539.3	1,349.7	59.4	1,351.0	0.57	-0.53	0.96	
5,829.0	11.30	3.30	5,631.5	1,368.3	60.1	1,369.6	0.42	-0.21	1.81	
5,923.0	8.10	0.80	5,724.1	1,384.1	60.8	1,385.4	3.43	-3.40	-2.66	
6,017.0	7.60	5.70	5,817.3	1,396.9	61.5	1,398.2	0.89	-0.53	5.21	
6,111.0	6.00	355.60	5,910.6	1,408.0	61.7	1,409.3	2.12	-1.70	-10.74	
6,205.0	4.40	345.60	6,004.2	1,416.4	60.4	1,417.7	1.95	-1.70	-10.64	
6,299.0	3.00	343.40	6,098.0	1,422.2	58.8	1,423.4	1.50	-1.49	-2.34	
6,393.0	2.00	342.60	6,191.9	1,426.1	57.7	1,427.3	1.06	-1.06	-0.85	
6,401.3	1.96	342.85	6,200.2	1,426.4	57.6	1,427.6	0.44	-0.43	3.03	
TARGET BHL 2585'FNL, 1320'FEL										
6,487.0	1.60	346.10	6,285.9	1,429.0	56.8	1,430.1	0.44	-0.43	3.79	
6,581.0	0.70	341.30	6,379.8	1,430.8	56.3	1,431.9	0.96	-0.96	-5.11	

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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)	
6,674.0	0.60	339.80	6,472.8	1,431.8	56.0	1,432.9	0.11	-0.11	-1.61	
6,768.0	0.40	356.90	6,566.8	1,432.6	55.8	1,433.7	0.26	-0.21	18.19	
6,862.0	0.20	5.20	6,660.8	1,433.1	55.8	1,434.2	0.22	-0.21	8.83	
6,956.0	0.40	358.10	6,754.8	1,433.6	55.8	1,434.6	0.22	0.21	-7.55	
6,962.2	0.39	0.12	6,761.0	1,433.6	55.8	1,434.7	0.25	-0.11	32.80	
TARGET CIRCLE 2585'FNL, 1320'FEL										
7,100.0	0.40	52.20	6,898.8	1,434.4	56.2	1,435.5	0.25	0.00	37.78	
7,194.0	0.70	49.10	6,992.8	1,435.0	56.9	1,436.1	0.32	0.32	-3.30	
7,288.0	0.90	51.00	7,086.8	1,435.8	57.9	1,437.0	0.21	0.21	2.02	
7,383.0	1.10	45.40	7,181.8	1,436.9	59.1	1,438.1	0.23	0.21	-5.89	
7,415.0	1.10	44.70	7,213.8	1,437.3	59.6	1,438.6	0.04	0.00	-2.19	
7,449.8	1.10	44.70	7,248.6	1,437.8	60.0	1,439.1	0.00	0.00	0.00	
HARDLINE 75'S OF STROHAUSER F32-22D BHL										
7,466.0	1.10	44.70	7,264.8	1,438.0	60.2	1,439.3	0.00	0.00	0.00	

Checked By: _____	Approved By: _____	Date: _____
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