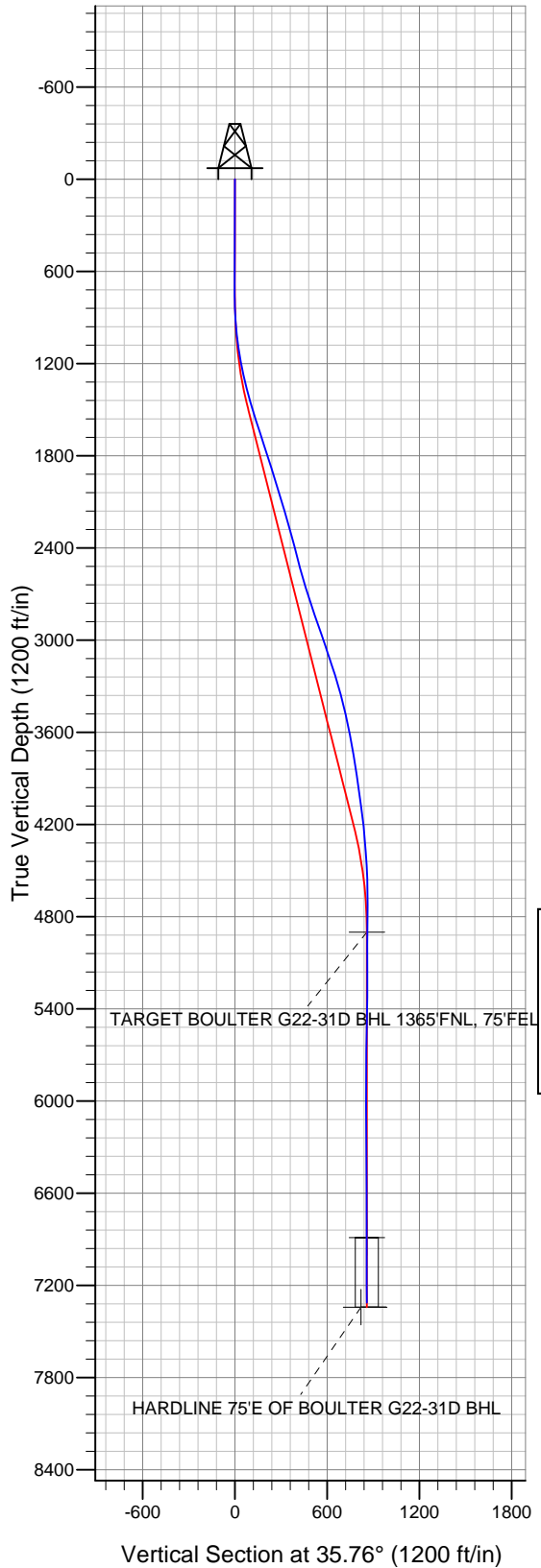
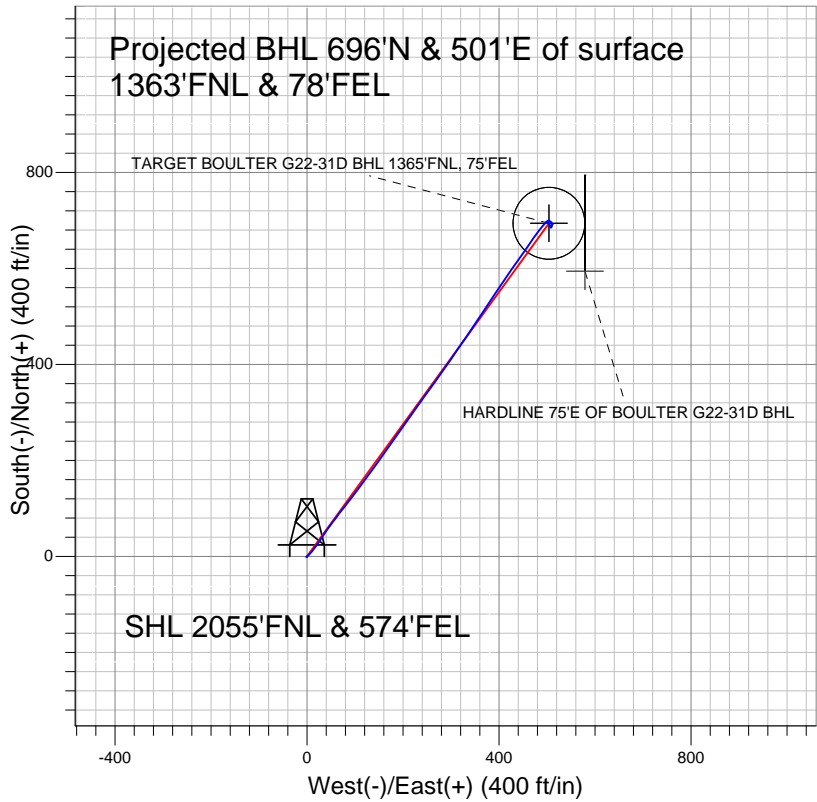


NOBLE ENERGY INC WELD COUNTY CO



Projected BHL 696'N & 501'E of surface
1363'FNL & 78'FEL



LEGEND

- △ Boulder G22-31D, Boulder G22-31D, Plan #4 (08-31-10) V0
- Boulder G22-31D

Final Survey Plot

Projected Final Survey -
7425'MD & 7311'TVD @ 858' VS
.4 deg Inc 356.3 deg AZ

Project: SEC.21-T4N-R65W
Site: Boulder Pad Sec.21-T4N-R65W
Well: Boulder G22-31D
Plan: Boulder G22-31D



Directional

NOBLE ENERGY INC WELD COUNTY CO

SEC.21-T4N-R65W

Boulter Pad Sec.21-T4N-R65W

Boulter G22-31D

Boulter G22-31D

Design: Boulter G22-31D

Standard Survey Report

17 September, 2010



Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Boulter G22-31D
Project:	SEC.21-T4N-R65W	TVD Reference:	WELL @ 4821.0ft (Original Well Elev)
Site:	Boulter Pad Sec.21-T4N-R65W	MD Reference:	WELL @ 4821.0ft (Original Well Elev)
Well:	Boulter G22-31D	North Reference:	True
Wellbore:	Boulter G22-31D	Survey Calculation Method:	Minimum Curvature
Design:	Boulter G22-31D	Database:	Landmark

Project	SEC.21-T4N-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	Boulter Pad Sec.21-T4N-R65W		
Site Position:		Northing:	1,353,041.86 ft
From:	Lat/Long	Easting:	3,234,057.86 ft
Position Uncertainty:	0.0 ft	Slot Radius:	"
		Latitude:	40° 17' 58.056 N
		Longitude:	104° 39' 39.024 W
		Grid Convergence:	0.54 °

Well	Boulter G22-31D		
Well Position	+N/-S	0.0 ft	Northing: 1,353,063.76 ft
	+E/-W	0.0 ft	Easting: 3,234,063.23 ft
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft
		Latitude:	40° 17' 58.272 N
		Longitude:	104° 39' 38.952 W
		Ground Level:	4,808.0 ft

Wellbore	Boulter G22-31D				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	9/1/2010	8.91	67.01	53,173

Design	Boulter G22-31D			
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	35.76

Survey Program	Date	9/14/2010		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
731.0	7,425.0	Survey #1 (Boulter G22-31D)	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
731.0	0.30	237.60	731.0	-1.0	-1.6	-1.8	0.04	0.04	0.00
817.0	1.80	69.00	817.0	-0.7	-0.5	-0.9	2.44	1.74	-196.05
902.0	3.70	46.50	901.9	1.7	2.7	3.0	2.53	2.24	-26.47
988.0	5.50	39.90	987.6	6.8	7.3	9.8	2.18	2.09	-7.67
1,073.0	7.70	35.30	1,072.0	14.6	13.3	19.6	2.66	2.59	-5.41
1,159.0	9.80	36.00	1,157.0	25.2	20.9	32.6	2.44	2.44	0.81
1,244.0	11.70	34.30	1,240.5	38.1	30.0	48.5	2.27	2.24	-2.00
1,330.0	13.70	35.10	1,324.4	53.7	40.8	67.4	2.33	2.33	0.93
1,415.0	15.30	36.10	1,406.7	71.0	53.2	88.7	1.91	1.88	1.18
1,501.0	16.80	37.80	1,489.4	90.0	67.5	112.4	1.83	1.74	1.98
1,586.0	17.50	37.60	1,570.6	109.8	82.8	137.5	0.83	0.82	-0.24
1,672.0	17.80	37.70	1,652.5	130.4	98.7	163.5	0.35	0.35	0.12

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Site:	Boulter Pad Sec.21-T4N-R65W	MD Reference:	WELL @ 4821.0ft (Original Well Elev)
Well:	Boulter G22-31D	North Reference:	True
Wellbore:	Boulter G22-31D	Survey Calculation Method:	Minimum Curvature
Design:	Boulter G22-31D	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)
1,757.0	18.00	37.40	1,733.4	151.2	114.6	189.7	0.26	0.24	-0.35
1,843.0	18.20	35.70	1,815.2	172.6	130.5	216.4	0.66	0.23	-1.98
1,928.0	17.50	35.00	1,896.1	193.9	145.6	242.4	0.86	-0.82	-0.82
2,014.0	17.20	35.50	1,978.2	214.8	160.4	268.1	0.39	-0.35	0.58
2,099.0	16.40	35.50	2,059.5	234.8	174.7	292.6	0.94	-0.94	0.00
2,185.0	16.50	35.10	2,142.0	254.7	188.8	317.0	0.18	0.12	-0.47
2,270.0	16.20	35.50	2,223.6	274.2	202.6	340.9	0.38	-0.35	0.47
2,355.0	15.00	34.70	2,305.4	292.9	215.7	363.8	1.43	-1.41	-0.94
2,441.0	15.10	34.90	2,388.5	311.3	228.5	386.1	0.13	0.12	0.23
2,526.0	14.70	36.40	2,470.6	329.0	241.2	408.0	0.65	-0.47	1.76
2,612.0	15.10	36.10	2,553.7	346.9	254.3	430.1	0.47	0.47	-0.35
2,698.0	16.70	36.20	2,636.4	365.9	268.2	453.6	1.86	1.86	0.12
2,784.0	18.50	34.60	2,718.4	387.1	283.2	479.6	2.17	2.09	-1.86
2,869.0	18.40	34.40	2,799.1	409.2	298.5	506.5	0.14	-0.12	-0.24
2,955.0	19.50	34.70	2,880.4	432.2	314.3	534.4	1.28	1.28	0.35
3,040.0	19.00	34.80	2,960.6	455.3	330.3	562.5	0.59	-0.59	0.12
3,126.0	18.00	34.40	3,042.2	477.7	345.8	589.7	1.17	-1.16	-0.47
3,211.0	19.00	32.90	3,122.8	500.2	360.7	616.7	1.30	1.18	-1.76
3,297.0	17.80	32.40	3,204.4	523.0	375.4	643.8	1.41	-1.40	-0.58
3,382.0	16.20	33.90	3,285.7	543.9	388.9	668.6	1.95	-1.88	1.76
3,468.0	14.50	34.60	3,368.6	562.7	401.8	691.4	1.99	-1.98	0.81
3,553.0	13.40	35.70	3,451.1	579.4	413.5	711.9	1.33	-1.29	1.29
3,639.0	12.10	34.30	3,535.0	595.0	424.4	730.8	1.55	-1.51	-1.63
3,724.0	11.00	34.70	3,618.3	609.0	434.1	747.9	1.30	-1.29	0.47
3,810.0	9.90	35.50	3,702.8	621.8	443.0	763.5	1.29	-1.28	0.93
3,895.0	9.00	34.70	3,786.7	633.2	451.1	777.4	1.07	-1.06	-0.94
3,981.0	8.80	34.90	3,871.6	644.1	458.7	790.7	0.24	-0.23	0.23
4,066.0	8.40	33.70	3,955.7	654.6	465.8	803.4	0.52	-0.47	-1.41
4,152.0	8.00	35.40	4,040.8	664.7	472.8	815.7	0.54	-0.47	1.98
4,238.0	6.90	37.00	4,126.1	673.7	479.4	826.8	1.30	-1.28	1.86
4,323.0	5.80	37.60	4,210.6	681.2	485.0	836.2	1.30	-1.29	0.71
4,409.0	5.10	39.70	4,296.2	687.6	490.1	844.4	0.85	-0.81	2.44
4,494.0	4.20	37.90	4,380.9	692.9	494.5	851.3	1.07	-1.06	-2.12
4,580.0	3.30	50.50	4,466.7	697.0	498.3	856.8	1.41	-1.05	14.65
4,665.0	2.10	66.70	4,551.6	699.2	501.6	860.5	1.66	-1.41	19.06
4,751.0	1.80	108.10	4,637.6	699.4	504.4	862.3	1.64	-0.35	48.14
4,838.0	1.90	127.60	4,724.5	698.1	506.8	862.6	0.73	0.11	22.41
4,923.0	1.50	139.70	4,809.5	696.4	508.6	862.3	0.63	-0.47	14.24
5,013.5	1.29	141.82	4,899.9	694.7	510.0	861.8	0.24	-0.24	2.35
TARGET BOULTER G22-31D BHL 1365'FNL, 75'FEL									
5,094.0	1.10	144.40	4,980.4	693.3	511.0	861.3	0.24	-0.23	3.20
5,265.0	0.01	273.00	5,151.4	692.0	512.0	860.7	0.65	-0.64	75.20
5,436.0	0.40	233.90	5,322.4	691.6	511.5	860.1	0.23	0.23	-22.87
5,607.0	0.50	204.70	5,493.4	690.6	510.7	858.9	0.14	0.06	-17.08
5,778.0	1.40	194.00	5,664.4	687.9	509.9	856.2	0.53	0.53	-6.26
5,949.0	0.70	239.10	5,835.4	685.3	508.5	853.3	0.60	-0.41	26.37
6,120.0	0.60	345.00	6,006.4	685.7	507.3	852.9	0.61	-0.06	61.93
6,291.0	0.50	337.60	6,177.4	687.2	506.8	853.8	0.07	-0.06	-4.33
6,462.0	0.90	345.10	6,348.3	689.2	506.2	855.1	0.24	0.23	4.39
6,633.0	0.50	322.80	6,519.3	691.1	505.4	856.2	0.28	-0.23	-13.04
6,804.0	0.40	39.10	6,690.3	692.2	505.3	857.0	0.33	-0.06	44.62
6,975.0	0.20	264.50	6,861.3	692.6	505.4	857.4	0.33	-0.12	-78.71
7,002.7	0.37	286.05	6,889.0	692.6	505.3	857.3	0.73	0.63	77.79
TARGET CIRCLE 1365'FNL, 75'FEL									

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Design:	Boulter G22-31D	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)	
7,146.0	1.40	301.80	7,032.3	693.7	503.3	857.0	0.73	0.72	10.99	
7,317.0	0.40	350.70	7,203.3	695.4	501.5	857.3	0.69	-0.58	28.60	
7,425.0	0.40	356.30	7,311.3	696.1	501.4	857.9	0.04	0.00	5.19	
HARDLINE 75'E OF BOULTER G22-31D BHL										

Checked By: _____ Approved By: _____ Date: _____