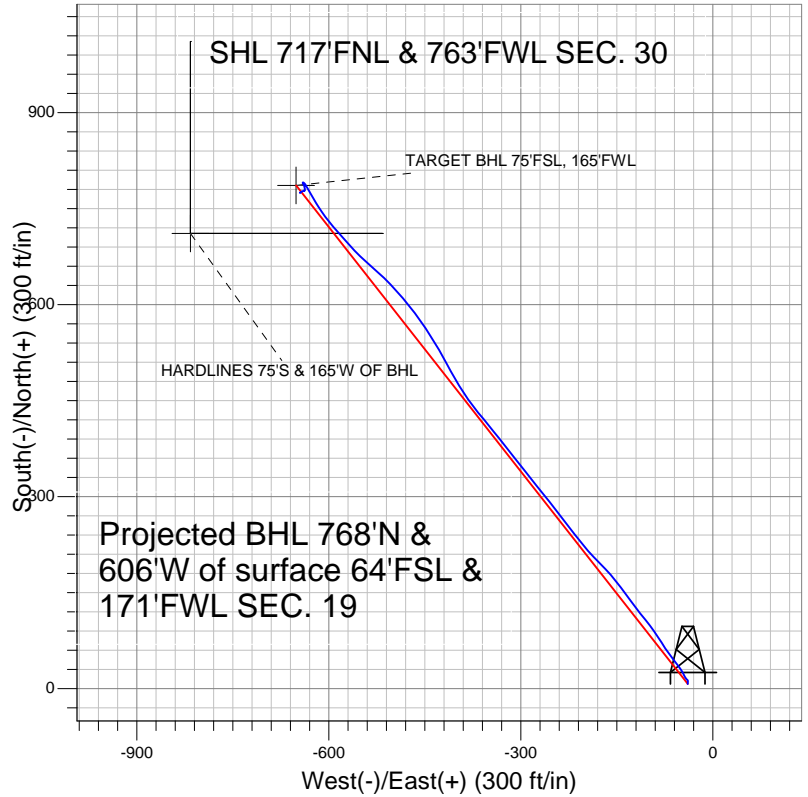


NOBLE ENERGY INC WELD COUNTY CO



LEGEND

- △ Sherwood L30-30D, Wellbore #1, Plan #3 (08-03-09) V0
- Wellbore #1

Final Survey Plot

Projected Final Survey -
 8113'MD & 7984'TVD @ 978' VS
 0.2 deg Inc 19.7 deg AZ

Project: SEC.30-T3N-R66W
 Site: Sherwood Pad Sec.30-T3N-R66W
 Well: Sherwood L30-30D
 Plan: Wellbore #1



Directional

NOBLE ENERGY INC WELD COUNTY CO

SEC.30-T3N-R66W

Sherwood Pad Sec.30-T3N-R66W

Sherwood L30-30D

Wellbore #1

Design: Wellbore #1

Standard Survey Report

03 December, 2010



Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Site Sherwood Pad Sec.30-T3N-R66W
Project:	SEC.30-T3N-R66W	TVD Reference:	WELL @ 4833.0ft (Original Well Elev)
Site:	Sherwood Pad Sec.30-T3N-R66W	MD Reference:	WELL @ 4833.0ft (Original Well Elev)
Well:	Sherwood L30-30D	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	SEC.30-T3N-R66W, 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	Sherwood Pad Sec.30-T3N-R66W		
Site Position:		Northing:	1,316,714.12 ft
From:	Lat/Long	Easting:	3,187,930.49 ft
Position Uncertainty:	0.0 ft	Slot Radius:	"
		Latitude:	40° 12' 2.952 N
		Longitude:	104° 49' 37.920 W
		Grid Convergence:	0.43 °

Well	Sherwood L30-30D		
Well Position	+N-S	7.3 ft	Northing:
	+E-W	-39.1 ft	Easting:
Position Uncertainty		0.0 ft	Wellhead Elevation:
			ft
			Latitude:
			40° 12' 3.024 N
			Longitude:
			104° 49' 38.424 W
			Ground Level:
			4,820.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	11/19/2010	8.96	66.90	53,080

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	7.3	-39.1	321.73	

Survey Program	Date	12/3/2010			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
726.0	8,113.0	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	7.3	-39.1	0.0	0.00	0.00	0.00	
726.0	0.60	5.10	726.0	11.1	-38.8	2.8	0.08	0.08	0.00	
820.0	0.60	350.80	820.0	12.0	-38.8	3.6	0.16	0.00	-15.21	
914.0	0.80	317.40	914.0	13.0	-39.3	4.6	0.47	0.21	-35.53	
1,008.0	0.60	324.80	1,008.0	13.9	-40.1	5.8	0.23	-0.21	7.87	
1,102.0	0.70	302.20	1,102.0	14.6	-40.8	6.8	0.29	0.11	-24.04	
1,196.0	2.90	328.20	1,195.9	16.9	-42.6	9.7	2.44	2.34	27.66	
1,290.0	3.60	334.00	1,289.8	21.6	-45.1	15.0	0.82	0.74	6.17	
1,384.0	5.00	328.90	1,383.5	27.8	-48.5	21.9	1.54	1.49	-5.43	
1,478.0	6.70	322.20	1,477.0	35.6	-54.0	31.5	1.95	1.81	-7.13	
1,572.0	8.00	323.10	1,570.2	45.2	-61.3	43.5	1.39	1.38	0.96	
1,665.0	10.20	324.30	1,662.1	57.0	-70.0	58.2	2.37	2.37	1.29	
1,759.0	12.10	327.70	1,754.3	72.1	-80.1	76.3	2.14	2.02	3.62	

Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Site Sherwood Pad Sec.30-T3N-R66W
Project:	SEC.30-T3N-R66W	TVD Reference:	WELL @ 4833.0ft (Original Well Elev)
Site:	Sherwood Pad Sec.30-T3N-R66W	MD Reference:	WELL @ 4833.0ft (Original Well Elev)
Well:	Sherwood L30-30D	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)	
1,853.0	13.60	324.40	1,845.9	89.4	-91.8	97.1	1.78	1.60	-3.51	
1,947.0	14.70	323.10	1,937.1	108.0	-105.4	120.1	1.22	1.17	-1.38	
2,041.0	14.40	320.70	2,028.1	126.5	-120.0	143.7	0.72	-0.32	-2.55	
2,135.0	16.30	324.60	2,118.7	146.3	-135.0	168.6	2.30	2.02	4.15	
2,229.0	16.00	321.80	2,209.0	167.3	-150.7	194.7	0.89	-0.32	-2.98	
2,323.0	16.40	316.20	2,299.3	187.0	-167.9	220.9	1.71	0.43	-5.96	
2,417.0	16.20	315.10	2,389.5	205.9	-186.3	247.1	0.39	-0.21	-1.17	
2,511.0	16.20	321.70	2,479.8	225.5	-203.7	273.2	1.96	0.00	7.02	
2,605.0	18.20	323.10	2,569.5	247.5	-220.6	301.0	2.17	2.13	1.49	
2,699.0	18.80	321.90	2,658.7	271.2	-238.8	330.9	0.76	0.64	-1.28	
2,793.0	17.70	320.90	2,748.0	294.2	-257.1	360.3	1.22	-1.17	-1.06	
2,887.0	18.20	322.00	2,837.4	316.8	-275.2	389.3	0.64	0.53	1.17	
2,981.0	16.70	321.90	2,927.1	339.0	-292.6	417.4	1.60	-1.60	-0.11	
3,075.0	16.30	320.90	3,017.2	359.9	-309.2	444.1	0.52	-0.43	-1.06	
3,169.0	16.70	322.30	3,107.3	380.8	-325.8	470.8	0.60	0.43	1.49	
3,263.0	15.50	321.10	3,197.6	401.3	-341.9	496.9	1.32	-1.28	-1.28	
3,357.0	16.00	320.90	3,288.1	421.1	-358.0	522.4	0.54	0.53	-0.21	
3,451.0	15.80	321.50	3,378.5	441.2	-374.1	548.2	0.28	-0.21	0.64	
3,545.0	16.20	327.00	3,468.9	462.2	-389.2	574.0	1.67	0.43	5.85	
3,639.0	16.60	330.60	3,559.0	484.9	-403.0	600.3	1.16	0.43	3.83	
3,733.0	15.60	331.80	3,649.4	507.7	-415.5	626.1	1.12	-1.06	1.28	
3,827.0	15.10	329.00	3,740.0	529.4	-427.8	650.7	0.95	-0.53	-2.98	
3,921.0	16.50	328.70	3,830.5	551.3	-441.1	676.0	1.49	1.49	-0.32	
4,015.0	16.70	323.90	3,920.5	573.6	-456.0	702.8	1.47	0.21	-5.11	
4,109.0	16.10	322.20	4,010.7	594.8	-471.9	729.3	0.82	-0.64	-1.81	
4,202.0	15.90	318.80	4,100.1	614.6	-488.2	754.9	1.03	-0.22	-3.66	
4,296.0	15.00	316.40	4,190.7	633.1	-505.1	779.9	1.17	-0.96	-2.55	
4,391.0	16.00	311.50	4,282.3	650.7	-523.4	805.0	1.73	1.05	-5.16	
4,485.0	15.00	312.00	4,372.8	667.4	-542.1	829.8	1.07	-1.06	0.53	
4,579.0	15.20	316.80	4,463.6	684.5	-559.6	854.0	1.35	0.21	5.11	
4,673.0	16.00	318.00	4,554.1	703.1	-576.7	879.3	0.92	0.85	1.28	
4,767.0	13.50	319.90	4,645.0	721.1	-592.4	903.2	2.71	-2.66	2.02	
4,861.0	12.00	322.30	4,736.7	737.3	-605.5	923.9	1.69	-1.60	2.55	
4,955.0	10.70	328.00	4,828.9	752.4	-616.1	942.3	1.83	-1.38	6.06	
5,049.0	8.80	330.10	4,921.5	766.0	-624.3	958.1	2.06	-2.02	2.23	
5,142.0	6.40	331.00	5,013.7	776.7	-630.3	970.3	2.58	-2.58	0.97	
5,236.0	4.40	329.20	5,107.3	784.4	-634.7	979.0	2.14	-2.13	-1.91	
5,330.0	2.40	322.10	5,201.1	789.1	-637.8	984.6	2.17	-2.13	-7.55	
5,424.0	1.10	298.10	5,295.1	791.0	-639.8	987.4	1.56	-1.38	-25.53	
5,518.0	0.60	191.60	5,389.0	791.0	-640.7	987.9	1.48	-0.53	-113.30	
5,612.0	0.40	179.30	5,483.0	790.2	-640.8	987.3	0.24	-0.21	-13.09	
5,628.9	0.44	165.80	5,500.0	790.0	-640.8	987.2	0.63	0.24	-79.74	
TARGET BHL 75'FSL, 165'FWL										
5,706.0	0.80	133.70	5,577.0	789.4	-640.3	986.4	0.63	0.47	-41.65	
5,800.0	0.40	148.20	5,671.0	788.7	-639.6	985.4	0.45	-0.43	15.43	
5,894.0	0.60	164.30	5,765.0	787.9	-639.3	984.6	0.26	0.21	17.13	
5,988.0	0.60	177.50	5,859.0	786.9	-639.2	983.8	0.15	0.00	14.04	
6,082.0	0.40	131.80	5,953.0	786.2	-638.9	983.1	0.46	-0.21	-48.62	
6,176.0	0.20	215.30	6,047.0	785.9	-638.8	982.7	0.45	-0.21	88.83	
6,270.0	0.40	125.10	6,141.0	785.6	-638.6	982.3	0.48	0.21	-95.96	
6,364.0	0.70	159.80	6,235.0	784.8	-638.1	981.5	0.46	0.32	36.91	
6,458.0	0.50	185.90	6,329.0	783.9	-638.0	980.6	0.36	-0.21	27.77	
6,551.0	0.80	169.00	6,422.0	782.8	-637.9	979.8	0.38	0.32	-18.17	
6,645.0	1.00	161.10	6,516.0	781.4	-637.5	978.4	0.25	0.21	-8.40	

Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Site Sherwood Pad Sec.30-T3N-R66W
Project:	SEC.30-T3N-R66W	TVD Reference:	WELL @ 4833.0ft (Original Well Elev)
Site:	Sherwood Pad Sec.30-T3N-R66W	MD Reference:	WELL @ 4833.0ft (Original Well Elev)
Well:	Sherwood L30-30D	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)	
6,739.0	0.80	194.30	6,610.0	780.0	-637.4	977.2	0.58	-0.21	35.32	
6,833.0	0.80	212.60	6,704.0	778.8	-637.9	976.6	0.27	0.00	19.47	
6,927.0	0.60	192.50	6,798.0	777.8	-638.4	976.1	0.33	-0.21	-21.38	
7,021.0	1.00	22.60	6,892.0	778.1	-638.2	976.2	1.70	0.43	-180.75	
7,115.0	0.80	221.00	6,986.0	778.3	-638.3	976.5	1.89	-0.21	-171.92	
7,209.0	1.00	254.00	7,079.9	777.6	-639.5	976.6	0.58	0.21	35.11	
7,303.0	1.10	264.30	7,173.9	777.3	-641.2	977.4	0.23	0.11	10.96	
7,397.0	0.60	218.10	7,267.9	776.8	-642.4	977.8	0.86	-0.53	-49.15	
7,491.0	0.40	213.10	7,361.9	776.1	-642.9	977.6	0.22	-0.21	-5.32	
7,585.0	0.40	222.20	7,455.9	775.6	-643.3	977.4	0.07	0.00	9.68	
7,679.0	0.40	229.50	7,549.9	775.2	-643.7	977.4	0.05	0.00	7.77	
7,773.0	0.50	259.50	7,643.9	774.9	-644.4	977.5	0.27	0.11	31.91	
7,867.0	0.10	281.20	7,737.9	774.8	-644.9	977.8	0.43	-0.43	23.09	
7,961.0	0.10	290.50	7,831.9	774.9	-645.0	977.9	0.02	0.00	9.89	
8,037.0	0.17	13.70	7,907.9	775.0	-645.1	978.1	0.24	0.09	109.47	
HARDLINES 75'S & 165'W OF BHL										
8,053.0	0.20	19.70	7,923.9	775.0	-645.1	978.1	0.24	0.21	37.50	
8,113.0	0.20	19.70	7,983.9	775.2	-645.0	978.2	0.00	0.00	0.00	

Checked By: _____ Approved By: _____ Date: _____