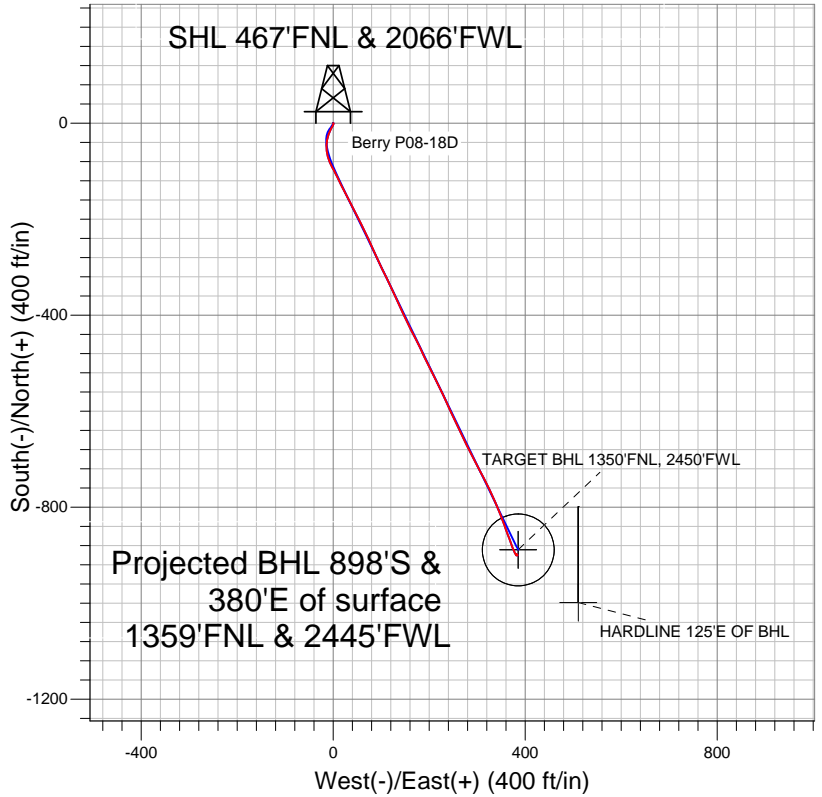


NOBLE ENERGY INC WELD COUNTY CO



LEGEND

- ◆ Berry P08-18D, Wellbore #1, Noble Berry P08-18D Plan #3 (9-6-11) V0
- Wellbore #1
- Survey #1

Final Survey Plot

Projected Final Survey -
 7447'MD & 7329'TVD @ 974' VS
 0.5 deg Inc 359.8 deg AZ

Project: SEC.8-T3N-R67W
 Site: Berry P08-18D Pad Sec.8-T3N-R67W
 Well: Berry P08-18D
 Plan: Wellbore #1



NOBLE ENERGY INC WELD COUNTY CO

SEC.8-T3N-R67W

Berry P08-18D Pad Sec.8-T3N-R67W

Berry P08-18D

Wellbore #1

Survey: Survey #1

Standard Survey Report

21 September, 2011



Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Berry P08-18D
Project:	SEC.8-T3N-R67W	TVD Reference:	WELL @ 4831.0ft (Original Well Elev)
Site:	Berry P08-18D Pad Sec.8-T3N-R67W	MD Reference:	WELL @ 4831.0ft (Original Well Elev)
Well:	Berry P08-18D	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	SEC.8-T3N-R67W, Weld County, Colorado		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site	Berry P08-18D Pad Sec.8-T3N-R67W				
Site Position:		Northing:	1,333,149.59ft	Latitude:	40.246420
From:	Lat/Long	Easting:	3,163,053.62ft	Longitude:	-104.915870
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.38 °

Well	Berry P08-18D					
Well Position	+N/-S	0.0 ft	Northing:	1,333,149.59 ft	Latitude:	40.246420
	+E/-W	0.0 ft	Easting:	3,163,053.62 ft	Longitude:	-104.915870
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,818.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	8/29/2011	8.86	66.90	53,036

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	157.05	

Survey Program	Date	9/21/2011			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
78.0	7,447.0	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	
78.0	0.50	135.50	78.0	-0.2	0.2	0.3	0.64	0.64	0.00	
198.0	0.30	185.30	198.0	-0.9	0.6	1.1	0.32	-0.17	41.50	
304.0	0.50	203.00	304.0	-1.6	0.4	1.6	0.22	0.19	16.70	
447.0	1.50	203.30	447.0	-3.9	-0.6	3.4	0.70	0.70	0.21	
519.0	2.00	204.30	518.9	-5.9	-1.5	4.9	0.70	0.69	1.39	
605.0	2.00	202.60	604.9	-8.7	-2.7	6.9	0.07	0.00	-1.98	
690.0	2.30	207.40	689.8	-11.6	-4.1	9.1	0.41	0.35	5.65	
776.0	2.40	218.40	775.8	-14.5	-6.0	11.0	0.54	0.12	12.79	
861.0	3.20	201.30	860.7	-18.1	-7.9	13.6	1.35	0.94	-20.12	
947.0	4.30	195.20	946.5	-23.5	-9.7	17.8	1.36	1.28	-7.09	
1,032.0	5.90	196.70	1,031.1	-30.7	-11.7	23.7	1.89	1.88	1.76	
1,118.0	7.00	188.40	1,116.6	-40.1	-13.8	31.6	1.67	1.28	-9.65	

Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Berry P08-18D
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Site:	Berry P08-18D Pad Sec.8-T3N-R67W	MD Reference:	WELL @ 4831.0ft (Original Well Elev)
Well:	Berry P08-18D	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)
1,203.0	7.30	177.50	1,200.9	-50.7	-14.3	41.1	1.63	0.35	-12.82
1,289.0	8.00	170.50	1,286.2	-62.0	-13.1	52.0	1.35	0.81	-8.14
1,374.0	8.30	160.40	1,370.3	-73.6	-10.0	63.9	1.72	0.35	-11.88
1,460.0	9.40	154.10	1,455.3	-85.8	-4.9	77.1	1.70	1.28	-7.33
1,545.0	9.80	152.50	1,539.1	-98.5	1.5	91.3	0.57	0.47	-1.88
1,631.0	11.10	154.20	1,623.7	-112.4	8.5	106.8	1.55	1.51	1.98
1,716.0	11.60	153.90	1,707.0	-127.5	15.8	123.5	0.59	0.59	-0.35
1,802.0	12.40	151.20	1,791.1	-143.3	24.0	141.3	1.14	0.93	-3.14
1,887.0	13.50	153.80	1,874.0	-160.2	32.8	160.3	1.46	1.29	3.06
1,973.0	14.20	153.40	1,957.5	-178.7	42.0	180.9	0.82	0.81	-0.47
2,058.0	15.30	152.60	2,039.7	-197.9	51.8	202.5	1.32	1.29	-0.94
2,144.0	15.40	152.80	2,122.6	-218.2	62.2	225.2	0.13	0.12	0.23
2,229.0	15.60	155.90	2,204.5	-238.6	72.1	247.8	1.00	0.24	3.65
2,315.0	15.70	154.90	2,287.3	-259.7	81.7	271.0	0.33	0.12	-1.16
2,400.0	16.90	155.80	2,368.9	-281.4	91.7	294.9	1.44	1.41	1.06
2,486.0	16.90	154.80	2,451.2	-304.1	102.1	319.9	0.34	0.00	-1.16
2,572.0	15.90	154.70	2,533.7	-326.1	112.5	344.1	1.16	-1.16	-0.12
2,657.0	15.30	154.00	2,615.5	-346.7	122.4	367.0	0.74	-0.71	-0.82
2,743.0	15.80	155.70	2,698.4	-367.6	132.2	390.0	0.79	0.58	1.98
2,828.0	15.70	154.50	2,780.2	-388.5	141.9	413.1	0.40	-0.12	-1.41
2,914.0	15.50	155.50	2,863.0	-409.4	151.6	436.2	0.39	-0.23	1.16
2,999.0	14.10	152.40	2,945.2	-429.0	161.2	457.8	1.89	-1.65	-3.65
3,085.0	15.10	152.60	3,028.4	-448.2	171.2	479.4	1.16	1.16	0.23
3,170.0	14.40	155.10	3,110.6	-467.6	180.7	501.1	1.11	-0.82	2.94
3,256.0	14.20	154.80	3,194.0	-486.8	189.7	522.3	0.25	-0.23	-0.35
3,341.0	15.00	153.60	3,276.2	-506.1	199.0	543.7	1.01	0.94	-1.41
3,427.0	15.00	152.90	3,359.3	-526.0	209.0	565.9	0.21	0.00	-0.81
3,512.0	14.90	153.90	3,441.4	-545.6	218.9	587.8	0.33	-0.12	1.18
3,598.0	15.50	154.90	3,524.4	-565.9	228.6	610.3	0.76	0.70	1.16
3,683.0	16.50	156.10	3,606.1	-587.3	238.3	633.7	1.24	1.18	1.41
3,769.0	15.80	154.00	3,688.7	-609.0	248.4	657.6	1.06	-0.81	-2.44
3,854.0	15.50	155.10	3,770.6	-629.7	258.3	680.5	0.50	-0.35	1.29
3,940.0	13.80	155.20	3,853.8	-649.4	267.4	702.3	1.98	-1.98	0.12
4,025.0	13.60	152.40	3,936.4	-667.5	276.3	722.4	0.81	-0.24	-3.29
4,111.0	14.60	152.70	4,019.8	-686.0	285.9	743.2	1.17	1.16	0.35
4,196.0	15.30	153.90	4,101.9	-705.6	295.8	765.1	0.90	0.82	1.41
4,282.0	16.10	151.10	4,184.7	-726.3	306.5	788.3	1.28	0.93	-3.26
4,367.0	17.20	153.90	4,266.1	-747.9	317.8	812.6	1.60	1.29	3.29
4,453.0	16.40	155.00	4,348.5	-770.3	328.5	837.4	1.00	-0.93	1.28
4,538.0	15.50	155.90	4,430.2	-791.5	338.2	860.8	1.10	-1.06	1.06
4,624.0	13.50	158.10	4,513.4	-811.3	346.6	882.3	2.41	-2.33	2.56
4,710.0	12.80	159.50	4,597.2	-829.6	353.7	901.8	0.89	-0.81	1.63
4,795.0	11.40	161.40	4,680.3	-846.4	359.7	919.6	1.71	-1.65	2.24
4,881.0	8.70	158.90	4,765.0	-860.5	364.7	934.6	3.18	-3.14	-2.91
4,966.0	6.80	159.60	4,849.2	-871.2	368.8	946.1	2.24	-2.24	0.82
5,052.0	5.50	161.40	4,934.7	-879.9	371.9	955.3	1.53	-1.51	2.09
5,137.0	3.80	153.90	5,019.4	-886.3	374.4	962.1	2.12	-2.00	-8.82
5,223.0	3.20	157.00	5,105.2	-891.0	376.6	967.4	0.73	-0.70	3.60
5,308.0	1.90	162.10	5,190.2	-894.6	378.0	971.1	1.55	-1.53	6.00
5,394.0	0.40	212.10	5,276.1	-896.2	378.3	972.7	1.94	-1.74	58.14
5,417.8	0.29	200.88	5,300.0	-896.3	378.2	972.8	0.55	-0.48	-47.06
TARGET BHL 1350'FNL, 2450'FWL									
5,479.0	0.20	114.10	5,361.1	-896.5	378.2	973.0	0.55	-0.14	-141.88
5,565.0	0.40	107.40	5,447.1	-896.6	378.7	973.3	0.24	0.23	-7.79

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Survey									
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5,650.0	1.20	118.20	5,532.1	-897.2	379.7	974.2	0.95	0.94	12.71
5,736.0	0.70	117.20	5,618.1	-897.8	381.0	975.3	0.58	-0.58	-1.16
5,821.0	0.40	116.60	5,703.1	-898.2	381.7	975.9	0.35	-0.35	-0.71
5,907.0	0.40	101.50	5,789.1	-898.4	382.3	976.3	0.12	0.00	-17.56
5,992.0	0.20	42.20	5,874.1	-898.3	382.7	976.4	0.40	-0.24	-69.76
6,078.0	0.20	131.90	5,960.1	-898.3	382.9	976.5	0.33	0.00	104.30
6,163.0	0.20	119.30	6,045.1	-898.5	383.1	976.8	0.05	0.00	-14.82
6,249.0	0.20	148.20	6,131.1	-898.7	383.3	977.0	0.12	0.00	33.60
6,334.0	0.10	119.50	6,216.1	-898.9	383.5	977.2	0.14	-0.12	-33.76
6,420.0	0.30	205.40	6,302.1	-899.1	383.5	977.4	0.36	0.23	99.88
6,505.0	0.40	148.70	6,387.1	-899.6	383.5	977.9	0.40	0.12	-66.71
6,591.0	0.20	119.20	6,473.1	-899.9	383.8	978.3	0.29	-0.23	-34.30
6,676.0	0.30	143.30	6,558.1	-900.1	384.1	978.6	0.17	0.12	28.35
6,762.0	0.40	199.10	6,644.1	-900.6	384.1	979.1	0.39	0.12	64.88
6,848.0	0.40	265.60	6,730.1	-900.9	383.7	979.2	0.51	0.00	77.33
6,933.0	0.50	274.50	6,815.1	-900.9	383.0	978.9	0.14	0.12	10.47
6,978.9	0.60	287.96	6,861.0	-900.8	382.6	978.7	0.35	0.21	29.32
TARGET CIRCLE 1350'FNL, 2450'FWL									
7,018.0	0.70	296.10	6,900.1	-900.6	382.2	978.4	0.35	0.26	20.82
7,104.0	0.50	294.90	6,986.1	-900.2	381.4	977.7	0.23	-0.23	-1.40
7,189.0	0.40	314.70	7,071.1	-899.9	380.8	977.2	0.22	-0.12	23.29
7,275.0	0.30	315.80	7,157.1	-899.5	380.5	976.7	0.12	-0.12	1.28
7,360.0	0.40	15.60	7,242.1	-899.1	380.4	976.2	0.42	0.12	70.35
7,403.0	0.50	359.80	7,285.1	-898.7	380.4	975.9	0.37	0.23	-36.74
HARDLINE 125'E OF BHL									
7,447.0	0.50	359.80	7,329.1	-898.4	380.4	975.6	0.00	0.00	0.00

Checked By: _____	Approved By: _____	Date: _____
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