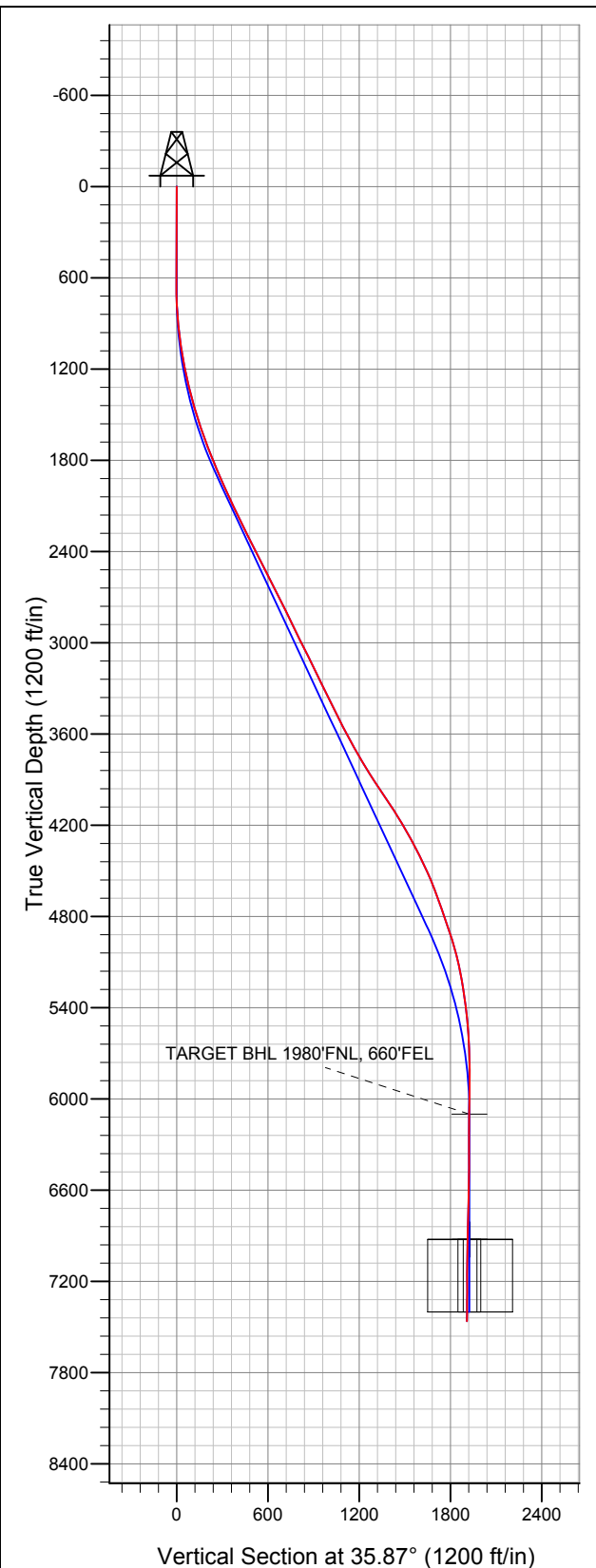


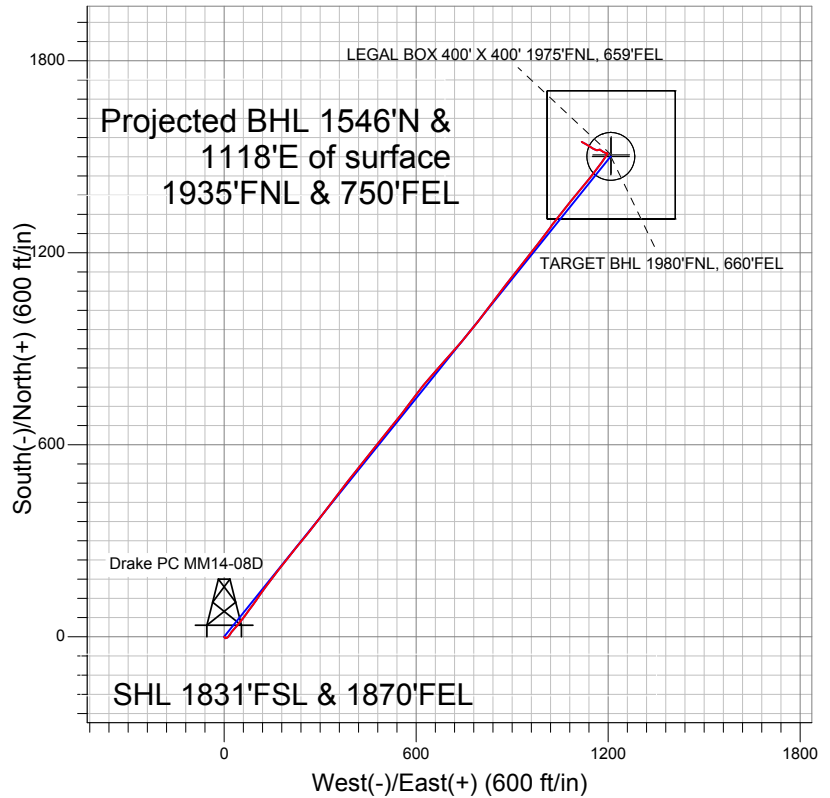
Well Name: **Drake PC MM14-08D**
 Surface Location: Drake PC MM14-08D Pad Sec.14-T7N-R67W
 North American Datum 1983 US State Plane 1983Colorado Northern Zone
 Ground Elevation: 5003.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1451834.36	3178459.79	40.571910	-104.857600	

 Original Well EleWELL @ 5016.0ft (Original Well Elev)



NOBLE ENERGY INC WELD COUNTY CO



LEGEND

- + Drake PC MM14-08D, Wellbore #1, Noble Drake PC MM14-08D Plan #1 (5-24-11) V0
- Wellbore #1
- Survey #1

Final Survey Plot

Projected Final Survey -
 7887'MD & 7463TVD @ 1905' VS
 7.2 deg Inc 300.4 deg AZ

Project: SEC.14-T7N-R67W
 Site: Drake PC MM14-08D Pad Sec.14-T7N-R67W
 Well: Drake PC MM14-08D
 Plan: Wellbore #1



NOBLE ENERGY INC WELD COUNTY CO

SEC.14-T7N-R67W

Drake PC MM14-08D Pad Sec.14-T7N-R67W

Drake PC MM14-08D

Wellbore #1

Survey: Survey #1

Standard Survey Report

14 September, 2011



Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Drake PC MM14-08D
Project:	SEC.14-T7N-R67W	TVD Reference:	WELL @ 5016.0ft (Original Well Elev)
Site:	Drake PC MM14-08D Pad Sec.14-T7N-R67W	MD Reference:	WELL @ 5016.0ft (Original Well Elev)
Well:	Drake PC MM14-08D	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	SEC.14-T7N-R67W, 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	Drake PC MM14-08D Pad Sec.14-T7N-R67W		
Site Position:		Northing:	1,451,834.37 ft
From:	Lat/Long	Easting:	3,178,459.79 ft
Position Uncertainty:	0.0 ft	Slot Radius:	"
		Latitude:	40.571910
		Longitude:	-104.857600
		Grid Convergence:	0.42 °

Well	Drake PC MM14-08D		
Well Position	+N/-S	0.0 ft	Northing: 1,451,834.36 ft
	+E/-W	0.0 ft	Easting: 3,178,459.79 ft
Position Uncertainty	0.0 ft		Wellhead Elevation: ft
			Latitude: 40.571910
			Longitude: -104.857600
			Ground Level: 5,003.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/24/2011	8.94	67.18	53,216

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	35.87

Survey Program	Date	9/14/2011		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
644.0	7,887.0	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
644.0	1.00	141.20	644.0	-4.4	3.5	-1.5	0.16	0.16	0.00
768.0	3.60	66.70	767.9	-3.7	7.8	1.6	2.80	2.10	-60.08
893.0	5.30	36.10	892.5	2.5	14.8	10.7	2.29	1.36	-24.48
1,018.0	7.00	35.00	1,016.8	13.4	22.6	24.1	1.36	1.36	-0.88
1,143.0	9.90	41.80	1,140.4	27.7	34.1	42.4	2.45	2.32	5.44
1,268.0	12.70	40.00	1,263.0	46.2	50.1	66.8	2.26	2.24	-1.44
1,393.0	15.80	35.20	1,384.1	70.7	68.7	97.5	2.65	2.48	-3.84
1,517.0	17.50	36.40	1,502.9	99.5	89.5	133.1	1.40	1.37	0.97
1,642.0	19.10	35.30	1,621.6	131.3	112.5	172.3	1.31	1.28	-0.88
1,767.0	21.10	36.10	1,739.0	166.2	137.6	215.3	1.62	1.60	0.64
1,892.0	22.90	38.60	1,854.9	203.4	166.0	262.1	1.62	1.44	2.00
2,017.0	24.60	37.90	1,969.3	242.9	197.2	312.4	1.38	1.36	-0.56

Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Drake PC MM14-08D
Project:	SEC.14-T7N-R67W	TVD Reference:	WELL @ 5016.0ft (Original Well Elev)
Site:	Drake PC MM14-08D Pad Sec.14-T7N-R67W	MD Reference:	WELL @ 5016.0ft (Original Well Elev)
Well:	Drake PC MM14-08D	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)
2,142.0	25.00	39.40	2,082.8	283.8	229.9	364.7	0.60	0.32	1.20
2,266.0	25.90	38.40	2,194.7	325.3	263.4	417.9	0.80	0.73	-0.81
2,391.0	26.40	37.10	2,306.9	368.9	297.1	473.0	0.61	0.40	-1.04
2,516.0	27.00	38.60	2,418.6	413.2	331.6	529.1	0.72	0.48	1.20
2,641.0	26.90	37.30	2,530.0	457.9	366.4	585.7	0.48	-0.08	-1.04
2,765.0	26.80	37.00	2,640.7	502.5	400.2	641.7	0.14	-0.08	-0.24
2,890.0	27.20	38.30	2,752.0	547.4	434.9	698.4	0.57	0.32	1.04
3,015.0	25.30	39.50	2,864.1	590.5	469.6	753.6	1.58	-1.52	0.96
3,140.0	26.50	39.50	2,976.6	632.6	504.3	808.1	0.96	0.96	0.00
3,265.0	26.50	38.10	3,088.5	676.1	539.3	863.8	0.50	0.00	-1.12
3,390.0	25.80	36.40	3,200.7	719.9	572.6	918.9	0.82	-0.56	-1.36
3,514.0	26.10	37.60	3,312.2	763.2	605.3	973.2	0.49	0.24	0.97
3,639.0	26.20	40.60	3,424.4	806.0	640.0	1,028.1	1.06	0.08	2.40
3,764.0	28.30	41.50	3,535.5	849.1	677.6	1,085.1	1.71	1.68	0.72
3,889.0	28.00	41.70	3,645.7	893.2	716.7	1,143.8	0.25	-0.24	0.16
4,013.0	30.20	40.10	3,754.0	938.8	756.2	1,203.9	1.88	1.77	-1.29
4,138.0	32.40	37.70	3,860.9	989.4	796.9	1,268.7	2.02	1.76	-1.92
4,263.0	34.10	36.70	3,965.4	1,044.0	838.4	1,337.2	1.43	1.36	-0.80
4,388.0	33.30	37.50	4,069.4	1,099.3	880.2	1,406.6	0.73	-0.64	0.64
4,513.0	31.10	38.60	4,175.1	1,151.8	921.2	1,473.1	1.82	-1.76	0.88
4,637.0	28.70	38.10	4,282.6	1,200.2	959.6	1,534.9	1.95	-1.94	-0.40
4,762.0	27.00	36.50	4,393.2	1,246.7	995.0	1,593.2	1.49	-1.36	-1.28
4,887.0	24.40	37.50	4,505.8	1,290.0	1,027.6	1,647.4	2.11	-2.08	0.80
5,012.0	20.80	38.80	4,621.2	1,327.7	1,057.2	1,695.4	2.91	-2.88	1.04
5,136.0	19.50	39.30	4,737.6	1,360.9	1,084.1	1,738.1	1.06	-1.05	0.40
5,261.0	18.60	38.60	4,855.7	1,392.6	1,109.8	1,778.8	0.74	-0.72	-0.56
5,386.0	17.00	38.10	4,974.7	1,422.6	1,133.5	1,817.0	1.29	-1.28	-0.40
5,511.0	13.20	41.10	5,095.4	1,447.8	1,154.2	1,849.5	3.10	-3.04	2.40
5,636.0	9.80	35.10	5,217.9	1,467.2	1,169.7	1,874.3	2.88	-2.72	-4.80
5,761.0	8.00	33.40	5,341.4	1,483.2	1,180.6	1,893.6	1.46	-1.44	-1.36
5,885.0	5.90	32.80	5,464.4	1,495.7	1,188.8	1,908.6	1.69	-1.69	-0.48
6,010.0	3.50	36.70	5,589.0	1,504.2	1,194.5	1,918.9	1.94	-1.92	3.12
6,135.0	1.80	36.00	5,713.9	1,508.9	1,198.0	1,924.6	1.36	-1.36	-0.56
6,260.0	0.90	288.20	5,838.9	1,510.8	1,198.2	1,926.3	1.80	-0.72	-86.24
6,384.0	1.50	284.50	5,962.8	1,511.5	1,195.7	1,925.4	0.49	0.48	-2.98
6,509.0	2.30	282.60	6,087.8	1,512.4	1,191.7	1,923.8	0.64	0.64	-1.52
6,520.6	2.23	283.38	6,099.3	1,512.5	1,191.2	1,923.7	0.64	-0.59	6.78
TARGET BHL 1980'FNL, 660'FEL									
6,634.0	1.60	294.50	6,212.7	1,513.7	1,187.6	1,922.5	0.64	-0.56	9.80
6,759.0	1.50	310.00	6,337.6	1,515.5	1,184.8	1,922.3	0.34	-0.08	12.40
6,883.0	1.90	300.70	6,461.6	1,517.6	1,181.8	1,922.2	0.39	0.32	-7.50
7,008.0	3.50	305.70	6,586.4	1,520.8	1,176.9	1,922.0	1.29	1.28	4.00
7,133.0	4.10	249.90	6,711.2	1,521.5	1,169.6	1,918.3	2.87	0.48	-44.64
7,258.0	2.90	287.70	6,836.0	1,521.0	1,162.4	1,913.6	2.03	-0.96	30.24
7,343.4	2.88	296.45	6,921.3	1,522.6	1,158.4	1,912.6	0.52	-0.02	10.25
TARGET CIRCLE 1980'FNL & 660'FEL									
7,343.5	2.88	296.45	6,921.3	1,522.6	1,158.4	1,912.6	0.00	0.00	0.00
LEGAL BOX 400' X 400' 1975'FNL, 659'FEL									
7,382.0	2.90	300.40	6,959.8	1,523.5	1,156.7	1,912.3	0.52	0.04	10.24
7,507.0	4.10	300.80	7,084.6	1,527.4	1,150.1	1,911.6	0.96	0.96	0.32
7,632.0	4.90	302.10	7,209.2	1,532.5	1,141.8	1,910.9	0.65	0.64	1.04
7,757.0	6.10	298.50	7,333.6	1,538.5	1,131.4	1,909.7	1.00	0.96	-2.88
7,841.0	7.20	300.40	7,417.1	1,543.3	1,122.9	1,908.6	1.34	1.31	2.26
7,887.0	7.20	300.40	7,462.7	1,546.2	1,118.0	1,908.1	0.00	0.00	0.00

Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Drake PC MM14-08D
Project:	SEC.14-T7N-R67W	TVD Reference:	WELL @ 5016.0ft (Original Well Elev)
Site:	Drake PC MM14-08D Pad Sec.14-T7N-R67W	MD Reference:	WELL @ 5016.0ft (Original Well Elev)
Well:	Drake PC MM14-08D	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)

Checked By: _____	Approved By: _____	Date: _____
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