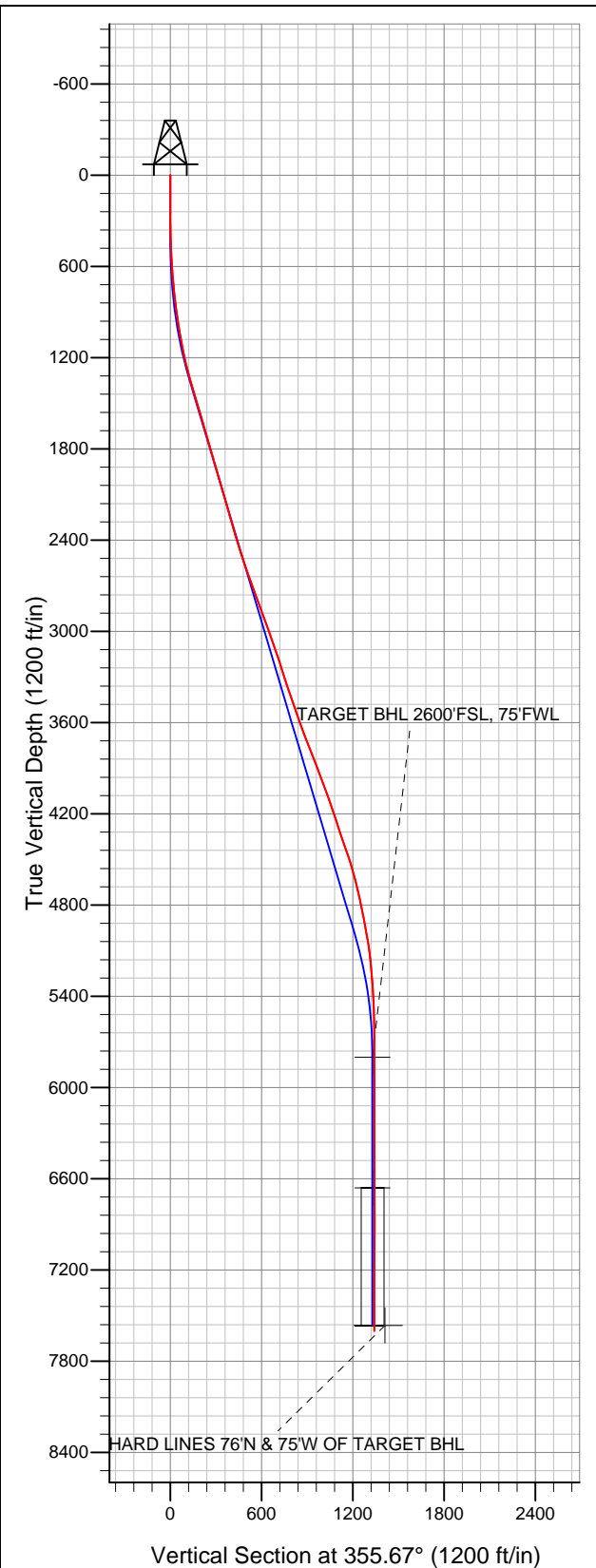




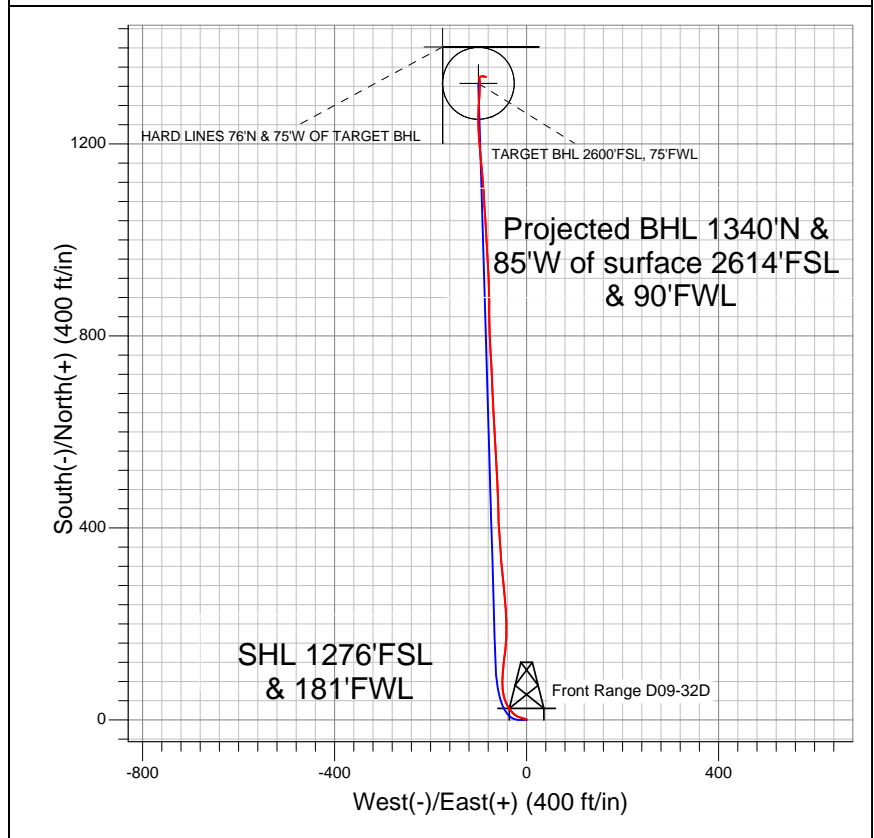
Well Name: Front Range D09-32D

Surface Location: Front Range D09-25D Pad Sec.9-T3N-R64W
North American Datum 1983 US State Plane 1983Colorado Northern Zone
Ground Elevation: 4737.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1330258.80	3261065.10	40.236180	-104.564880	
Original Well Elev		WELL @ 4750.0ft (Original Well Elev)				



NOBLE ENERGY INC WELD COUNTY CO



LEGEND

- Wellbore #1
- Front Range D09-32D, Wellbore #1, Noble Front Range D09-32D Plan #1 (2-06-12) V0
- Survey #1

Final Survey Plot

Projected Final Survey -
7800'MD & 7600'TVD @ 1342°VS
0.40 deg Inc 83.00 deg AZ

Project: SEC.9-T3N-R64W
Site: Front Range D09-25D Pad Sec.9-T3N-R64W
Well: Front Range D09-32D
Plan: Wellbore #1



NOBLE ENERGY INC WELD COUNTY CO

SEC.9-T3N-R64W

Front Range D09-25D Pad Sec.9-T3N-R64W

Front Range D09-32D

Wellbore #1

Survey: Survey #1

Standard Survey Report

24 May, 2012



Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Front Range D09-32D
Project:	SEC.9-T3N-R64W	TVD Reference:	WELL @ 4750.0ft (Original Well Elev)
Site:	Front Range D09-25D Pad Sec.9-T3N-R64W	MD Reference:	WELL @ 4750.0ft (Original Well Elev)
Well:	Front Range D09-32D	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	SEC.9-T3N-R64W, 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	Front Range D09-25D Pad Sec.9-T3N-R64W		
Site Position:		Northing:	1,330,215.10ft
From:	Lat/Long	Easting:	3,261,065.56ft
Position Uncertainty:	0.0 ft	Slot Radius:	"
		Latitude:	40.236060
		Longitude:	-104.564880
		Grid Convergence:	0.60 °

Well	Front Range D09-32D		
Well Position	+N/-S	0.0 ft	Northing:
	+E/-W	0.0 ft	Easting:
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft
		Latitude:	40.236180
		Longitude:	-104.564880
		Ground Level:	4,737.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2/6/2012	8.66	66.93	52,999

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 (°)	
	5,800.0	0.0	0.0	355.67	

Survey Program	Date	5/24/2012			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
73.0	7,800.0	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	
73.0	0.30	60.70	73.0	0.1	0.2	0.1	0.41	0.41	0.00	
163.0	0.30	341.00	163.0	0.4	0.3	0.4	0.43	0.00	-88.56	
253.0	1.30	295.00	253.0	1.1	-0.7	1.1	1.24	1.11	-51.11	
344.0	2.90	286.50	343.9	2.2	-3.8	2.5	1.79	1.76	-9.34	
471.0	4.70	282.80	470.6	4.2	-12.0	5.1	1.43	1.42	-2.91	
599.0	5.80	303.10	598.1	8.9	-22.5	10.6	1.67	0.86	15.86	
700.0	6.90	319.90	698.5	16.4	-30.7	18.6	2.13	1.09	16.63	
768.0	7.00	324.90	766.0	22.9	-35.7	25.5	0.90	0.15	7.35	
897.0	8.00	337.00	893.9	37.6	-43.8	40.8	1.44	0.78	9.38	
1,025.0	9.80	350.70	1,020.4	56.5	-49.0	60.1	2.16	1.41	10.70	
1,153.0	11.30	1.40	1,146.2	79.8	-50.5	83.4	1.92	1.17	8.36	
1,282.0	14.10	4.80	1,272.1	108.1	-48.8	111.5	2.25	2.17	2.64	

Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Front Range D09-32D
Project:	SEC.9-T3N-R64W	TVD Reference:	WELL @ 4750.0ft (Original Well Elev)
Site:	Front Range D09-25D Pad Sec.9-T3N-R64W	MD Reference:	WELL @ 4750.0ft (Original Well Elev)
Well:	Front Range D09-32D	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)
1,410.0	17.00	6.90	1,395.4	142.2	-45.3	145.3	2.31	2.27	1.64
1,539.0	16.50	2.50	1,518.9	179.3	-42.2	181.9	1.06	-0.39	-3.41
1,667.0	16.60	356.00	1,641.6	215.7	-42.7	218.3	1.45	0.08	-5.08
1,795.0	16.20	354.60	1,764.4	251.7	-45.7	254.4	0.44	-0.31	-1.09
1,924.0	16.00	355.60	1,888.3	287.3	-48.7	290.2	0.27	-0.16	0.78
2,052.0	16.00	354.40	2,011.4	322.5	-51.8	325.5	0.26	0.00	-0.94
2,181.0	16.10	355.80	2,135.3	358.0	-54.8	361.1	0.31	0.08	1.09
2,309.0	15.60	355.60	2,258.5	392.9	-57.5	396.1	0.39	-0.39	-0.16
2,437.0	16.90	359.80	2,381.4	428.6	-58.8	431.8	1.37	1.02	3.28
2,566.0	17.80	357.00	2,504.5	467.1	-59.9	470.3	0.95	0.70	-2.17
2,694.0	20.10	358.10	2,625.5	508.6	-61.7	511.8	1.82	1.80	0.86
2,823.0	20.40	355.60	2,746.6	553.2	-64.1	556.4	0.71	0.23	-1.94
2,951.0	20.70	357.00	2,866.4	598.0	-67.0	601.4	0.45	0.23	1.09
3,079.0	18.80	357.00	2,986.9	641.2	-69.3	644.6	1.48	-1.48	0.00
3,208.0	18.60	357.50	3,109.1	682.5	-71.3	685.9	0.20	-0.16	0.39
3,336.0	18.10	358.20	3,230.6	722.8	-72.8	726.2	0.43	-0.39	0.55
3,465.0	19.20	355.40	3,352.8	763.9	-75.1	767.4	1.10	0.85	-2.17
3,593.0	19.20	358.20	3,473.7	806.0	-77.5	809.5	0.72	0.00	2.19
3,721.0	18.60	359.70	3,594.8	847.4	-78.3	850.9	0.60	-0.47	1.17
3,850.0	21.40	359.70	3,716.0	891.5	-78.5	894.9	2.17	2.17	0.00
3,978.0	22.10	356.00	3,834.9	938.9	-80.3	942.3	1.20	0.55	-2.89
4,107.0	20.00	357.40	3,955.3	985.2	-83.0	988.6	1.67	-1.63	1.09
4,235.0	20.40	356.70	4,075.4	1,029.3	-85.3	1,032.8	0.37	0.31	-0.55
4,363.0	18.10	355.40	4,196.2	1,071.4	-88.1	1,075.0	1.83	-1.80	-1.02
4,492.0	18.60	357.40	4,318.7	1,111.9	-90.7	1,115.6	0.62	0.39	1.55
4,620.0	19.30	353.30	4,439.7	1,153.3	-94.1	1,157.1	1.17	0.55	-3.20
4,749.0	16.30	356.10	4,562.6	1,192.6	-97.8	1,196.5	2.42	-2.33	2.17
4,877.0	13.40	356.30	4,686.3	1,225.3	-100.0	1,229.3	2.27	-2.27	0.16
5,005.0	11.50	0.50	4,811.3	1,252.9	-100.8	1,256.9	1.64	-1.48	3.28
5,134.0	10.70	3.50	4,937.8	1,277.7	-100.0	1,281.6	0.76	-0.62	2.33
5,262.0	8.60	3.30	5,064.0	1,299.1	-98.7	1,302.8	1.64	-1.64	-0.16
5,391.0	6.00	3.30	5,192.0	1,315.4	-97.8	1,319.1	2.02	-2.02	0.00
5,519.0	4.10	359.10	5,319.5	1,326.7	-97.4	1,330.3	1.51	-1.48	-3.28
5,647.0	2.30	347.40	5,447.3	1,333.8	-98.1	1,337.4	1.49	-1.41	-9.14
5,776.0	0.60	332.40	5,576.2	1,336.9	-99.0	1,340.6	1.34	-1.32	-11.63
5,904.0	0.40	17.60	5,704.2	1,337.9	-99.1	1,341.6	0.33	-0.16	35.31
5,999.7	0.31	43.30	5,799.9	1,338.4	-98.8	1,342.1	0.19	-0.09	26.85
TARGET BHL 2600'FSL, 75'FWL									
6,033.0	0.30	54.90	5,833.2	1,338.6	-98.7	1,342.2	0.19	-0.03	34.85
6,161.0	0.40	37.60	5,961.2	1,339.1	-98.2	1,342.7	0.11	0.08	-13.52
6,289.0	0.30	62.80	6,089.2	1,339.6	-97.6	1,343.2	0.14	-0.08	19.69
6,418.0	0.40	73.10	6,218.2	1,339.9	-96.9	1,343.4	0.09	0.08	7.98
6,546.0	0.40	75.90	6,346.2	1,340.1	-96.0	1,343.6	0.02	0.00	2.19
6,675.0	0.50	92.60	6,475.2	1,340.2	-95.0	1,343.6	0.13	0.08	12.95
6,803.0	0.70	79.80	6,603.2	1,340.3	-93.7	1,343.6	0.19	0.16	-10.00
6,859.7	0.74	79.70	6,659.9	1,340.5	-93.0	1,343.7	0.08	0.08	-0.17
TARGET CIRCLE 2600'FSL & 75'FWL									
6,931.0	0.80	79.60	6,731.2	1,340.6	-92.0	1,343.8	0.08	0.08	-0.15
7,060.0	0.60	86.80	6,860.2	1,340.8	-90.5	1,343.8	0.17	-0.16	5.58
7,188.0	0.60	108.10	6,988.2	1,340.7	-89.2	1,343.6	0.17	0.00	16.64
7,317.0	0.50	146.80	7,117.2	1,340.0	-88.2	1,342.8	0.29	-0.08	30.00
7,445.0	0.40	99.70	7,245.2	1,339.4	-87.5	1,342.2	0.29	-0.08	-36.80
7,573.0	0.40	77.20	7,373.1	1,339.5	-86.6	1,342.2	0.12	0.00	-17.58
7,702.0	0.40	81.90	7,502.1	1,339.6	-85.7	1,342.3	0.03	0.00	3.64

Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Front Range D09-32D
Project:	SEC.9-T3N-R64W	TVD Reference:	WELL @ 4750.0ft (Original Well Elev)
Site:	Front Range D09-25D Pad Sec.9-T3N-R64W	MD Reference:	WELL @ 4750.0ft (Original Well Elev)
Well:	Front Range D09-32D	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)
7,753.0	0.40	83.00	7,553.1	1,339.7	-85.4	1,342.3	0.02	0.00	2.16
HARD LINES 76°N & 75°W OF TARGET BHL									
7,800.0	0.40	83.00	7,600.1	1,339.7	-85.0	1,342.3	0.00	0.00	0.00

Checked By: _____ Approved By: _____ Date: _____