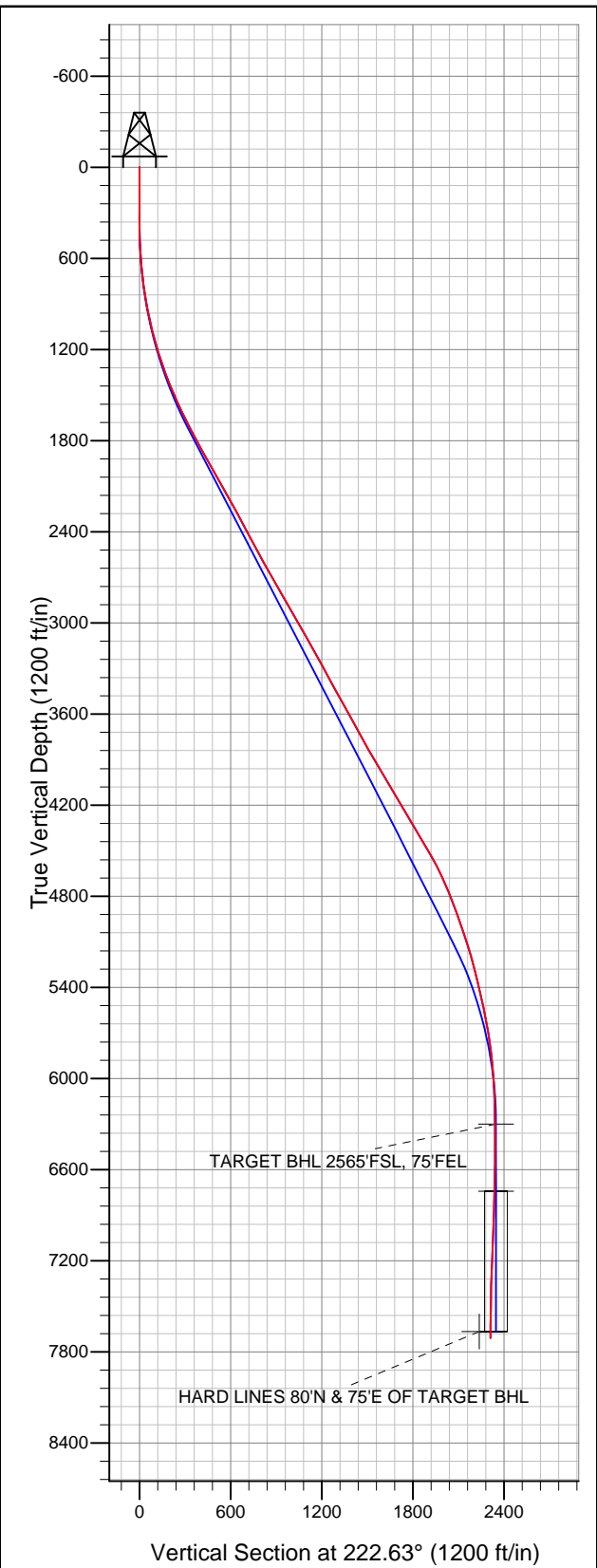


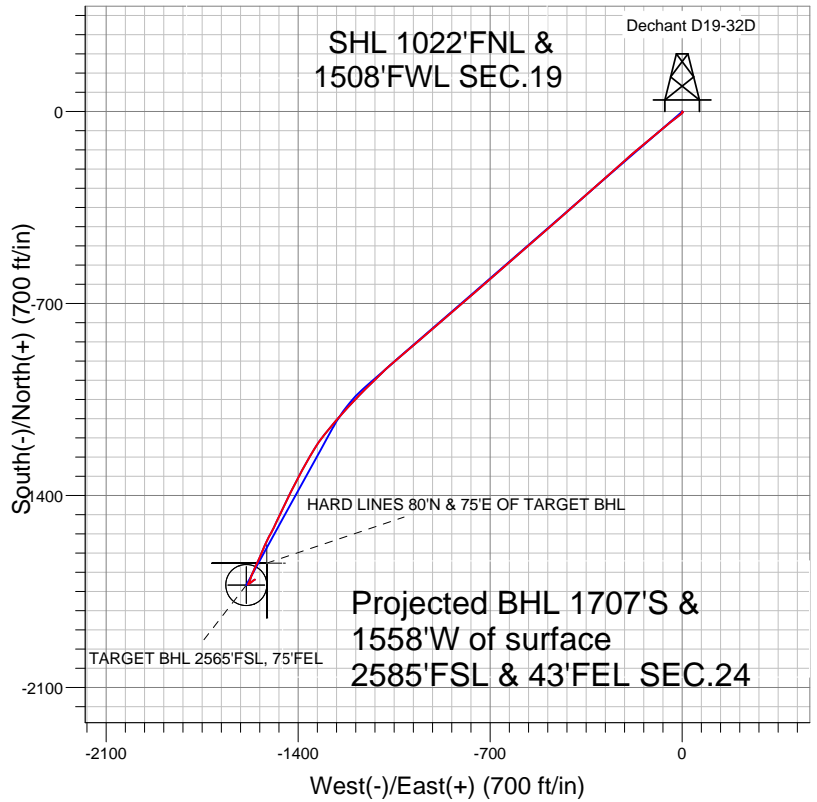


Well Name: Dechant D19-32D

Surface Location: Butterball D19-17D Pad Sec.19-T3N-R64W
North American Datum 1983 US State Plane 1983 Colorado Northern Zone
Ground Elevation: 4789.0
+N/-S 0.0 +E/-W 0.0 Northing 1322511.84 Easting 3252097.96 Latitude 40.215170 Longitude -104.597280 Slot
Original Well Elev WELL @ 4802.0ft (Original Well Elev)



NOBLE ENERGY INC WELD COUNTY CO



LEGEND

- Dechant D19-32D, Wellbore #1, Noble Dechant D19-32D Plan #2 (5-29-12) V0
- Wellbore #1
- Survey #1

Final Survey Plot

Projected Final Survey -
8260'MD & 7709'TVD @ 2311'VS
0.50 deg Inc 64.00 deg AZ

Project: SEC.19-T3N-R64W
Site: Butterball D19-17D Pad Sec.19-T3N-R64W
Well: Dechant D19-32D
Plan: Wellbore #1



NOBLE ENERGY INC WELD COUNTY CO

SEC.19-T3N-R64W

Butterball D19-17D Pad Sec.19-T3N-R64W

Dechant D19-32D

Wellbore #1

Survey: Survey #1

Standard Survey Report

06 June, 2012



Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Dechant D19-32D
Project:	SEC.19-T3N-R64W	TVD Reference:	WELL @ 4802.0ft (Original Well Elev)
Site:	Butterball D19-17D Pad Sec.19-T3N-R64W	MD Reference:	WELL @ 4802.0ft (Original Well Elev)
Well:	Dechant D19-32D	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	SEC.19-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	Butterball D19-17D Pad Sec.19-T3N-R64W		
Site Position:		Northing:	1,322,464.95ft
From:	Lat/Long	Easting:	3,252,143.12ft
Position Uncertainty:	0.0 ft	Slot Radius:	"
		Latitude:	40.215040
		Longitude:	-104.597120
		Grid Convergence:	0.58 °

Well	Dechant D19-32D		
Well Position	+N/-S	0.0 ft	Northing: 1,322,511.84 ft
	+E/-W	0.0 ft	Easting: 3,252,097.96 ft
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft
		Latitude:	40.215170
		Longitude:	-104.597280
		Ground Level:	4,789.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/29/2012	8.63	66.90	52,952

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	222.63	

Survey Program	Date	6/6/2012			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
76.0	8,260.0	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	
76.0	0.40	162.80	76.0	-0.3	0.1	0.1	0.53	0.53	0.00	
165.0	0.60	121.30	165.0	-0.8	0.6	0.2	0.45	0.22	-46.63	
255.0	1.00	123.20	255.0	-1.5	1.6	0.0	0.45	0.44	2.11	
359.0	0.50	161.90	359.0	-2.4	2.5	0.1	0.66	-0.48	37.21	
487.0	1.90	225.40	487.0	-4.4	1.2	2.4	1.36	1.09	49.61	
615.0	4.10	229.90	614.8	-8.9	-3.8	9.1	1.73	1.72	3.52	
726.0	6.40	229.60	725.3	-15.4	-11.6	19.2	2.07	2.07	-0.27	
854.0	9.60	234.20	852.0	-26.3	-25.7	36.7	2.55	2.50	3.59	
983.0	12.40	231.50	978.7	-41.2	-45.2	60.9	2.21	2.17	-2.09	
1,111.0	14.90	229.20	1,103.0	-60.5	-68.4	90.9	2.00	1.95	-1.80	
1,239.0	17.30	231.00	1,226.0	-83.3	-95.7	126.1	1.91	1.88	1.41	
1,368.0	20.30	229.90	1,348.1	-109.7	-127.7	167.2	2.34	2.33	-0.85	

Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Dechant D19-32D
Project:	SEC.19-T3N-R64W	TVD Reference:	WELL @ 4802.0ft (Original Well Elev)
Site:	Butterball D19-17D Pad Sec.19-T3N-R64W	MD Reference:	WELL @ 4802.0ft (Original Well Elev)
Well:	Dechant D19-32D	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)	
1,496.0	23.20	230.60	1,467.0	-140.1	-164.2	214.3	2.27	2.27	0.55	
1,625.0	25.20	227.70	1,584.6	-174.7	-204.2	266.8	1.80	1.55	-2.25	
1,753.0	26.90	228.70	1,699.6	-212.1	-246.1	322.7	1.37	1.33	0.78	
1,881.0	29.50	229.20	1,812.4	-251.8	-291.7	382.8	2.04	2.03	0.39	
2,010.0	29.60	228.50	1,924.7	-293.7	-339.6	446.1	0.28	0.08	-0.54	
2,138.0	29.20	227.80	2,036.2	-335.6	-386.4	508.6	0.41	-0.31	-0.55	
2,267.0	28.50	227.50	2,149.2	-377.5	-432.4	570.6	0.55	-0.54	-0.23	
2,395.0	29.40	229.80	2,261.2	-418.5	-478.9	632.2	1.12	0.70	1.80	
2,523.0	28.30	229.20	2,373.3	-458.6	-525.9	693.5	0.89	-0.86	-0.47	
2,652.0	28.60	228.50	2,486.7	-499.0	-572.2	754.6	0.35	0.23	-0.54	
2,780.0	28.50	229.10	2,599.1	-539.3	-618.2	815.5	0.24	-0.08	0.47	
2,909.0	30.30	228.50	2,711.5	-581.0	-665.8	878.4	1.41	1.40	-0.47	
3,037.0	30.20	228.70	2,822.1	-623.7	-714.2	942.5	0.11	-0.08	0.16	
3,165.0	30.30	229.20	2,932.7	-666.0	-762.8	1,006.6	0.21	0.08	0.39	
3,294.0	29.00	228.70	3,044.8	-707.9	-810.9	1,070.1	1.03	-1.01	-0.39	
3,422.0	30.20	229.40	3,156.1	-749.3	-858.7	1,132.9	0.98	0.94	0.55	
3,551.0	28.10	230.60	3,268.7	-789.7	-906.8	1,195.2	1.69	-1.63	0.93	
3,679.0	28.80	228.40	3,381.3	-829.4	-953.2	1,255.7	0.98	0.55	-1.72	
3,807.0	30.10	230.10	3,492.7	-870.4	-1,000.9	1,318.2	1.21	1.02	1.33	
3,936.0	29.20	229.40	3,604.8	-911.6	-1,049.6	1,381.5	0.75	-0.70	-0.54	
4,064.0	28.20	224.50	3,717.1	-953.5	-1,094.5	1,442.8	2.00	-0.78	-3.83	
4,193.0	29.60	227.00	3,830.1	-997.0	-1,139.1	1,505.0	1.43	1.09	1.94	
4,321.0	30.80	223.30	3,940.7	-1,042.4	-1,184.7	1,569.3	1.73	0.94	-2.89	
4,449.0	31.00	222.20	4,050.5	-1,090.7	-1,229.4	1,635.1	0.47	0.16	-0.86	
4,578.0	29.70	220.80	4,161.8	-1,139.5	-1,272.6	1,700.2	1.15	-1.01	-1.09	
4,706.0	31.00	216.80	4,272.3	-1,189.9	-1,313.0	1,764.7	1.88	1.02	-3.13	
4,835.0	31.70	210.60	4,382.5	-1,245.7	-1,350.2	1,830.9	2.56	0.54	-4.81	
4,963.0	31.40	207.60	4,491.6	-1,304.2	-1,382.8	1,896.0	1.25	-0.23	-2.34	
5,091.0	28.10	208.10	4,602.7	-1,360.3	-1,412.4	1,957.4	2.59	-2.58	0.39	
5,220.0	24.40	206.20	4,718.4	-1,411.1	-1,438.5	2,012.4	2.94	-2.87	-1.47	
5,348.0	21.80	204.80	4,836.1	-1,456.4	-1,460.1	2,060.4	2.08	-2.03	-1.09	
5,477.0	19.90	205.50	4,956.7	-1,497.9	-1,479.6	2,104.2	1.49	-1.47	0.54	
5,605.0	19.30	208.10	5,077.2	-1,536.3	-1,499.0	2,145.5	0.83	-0.47	2.03	
5,733.0	16.70	205.70	5,199.0	-1,571.5	-1,516.9	2,183.6	2.11	-2.03	-1.88	
5,862.0	14.40	201.60	5,323.2	-1,603.1	-1,530.9	2,216.3	1.98	-1.78	-3.18	
5,990.0	13.40	204.80	5,447.5	-1,631.4	-1,543.0	2,245.3	0.99	-0.78	2.50	
6,119.0	12.40	204.60	5,573.2	-1,657.6	-1,555.0	2,272.7	0.78	-0.78	-0.16	
6,247.0	9.80	202.70	5,698.8	-1,680.1	-1,564.9	2,296.0	2.05	-2.03	-1.48	
6,375.0	7.40	200.10	5,825.4	-1,697.9	-1,572.0	2,313.8	1.90	-1.88	-2.03	
6,504.0	4.90	198.80	5,953.6	-1,710.9	-1,576.6	2,326.6	1.94	-1.94	-1.01	
6,632.0	3.40	210.30	6,081.3	-1,719.4	-1,580.3	2,335.3	1.33	-1.17	8.98	
6,761.0	0.80	217.80	6,210.2	-1,723.4	-1,582.7	2,339.9	2.02	-2.02	5.81	
6,850.8	0.31	174.92	6,300.0	-1,724.1	-1,583.1	2,340.7	0.68	-0.55	-47.73	
TARGET BHL 2565'FSL, 75'FEL										
6,889.0	0.30	124.50	6,338.2	-1,724.3	-1,583.0	2,340.7	0.68	-0.02	-132.13	
7,017.0	0.50	83.50	6,466.2	-1,724.4	-1,582.2	2,340.3	0.26	0.16	-32.03	
7,146.0	0.70	48.50	6,595.2	-1,723.8	-1,581.0	2,339.1	0.32	0.16	-27.13	
7,274.0	1.10	52.90	6,723.2	-1,722.6	-1,579.5	2,337.1	0.32	0.31	3.44	
7,291.6	1.17	52.94	6,740.7	-1,722.3	-1,579.2	2,336.7	0.39	0.39	0.21	
TARGET CIRCLE 2565'FSL & 75'FEL										
7,403.0	1.60	53.10	6,852.1	-1,720.7	-1,577.0	2,334.1	0.39	0.39	0.15	
7,531.0	2.00	54.00	6,980.1	-1,718.3	-1,573.8	2,330.1	0.31	0.31	0.70	
7,659.0	2.60	50.80	7,108.0	-1,715.2	-1,569.7	2,325.1	0.48	0.47	-2.50	
7,788.0	2.70	49.80	7,236.8	-1,711.4	-1,565.2	2,319.2	0.09	0.08	-0.78	

Company: NOBLE ENERGY INC WELD COUNTY CO
Project: SEC.19-T3N-R64W
Site: Butterball D19-17D Pad Sec.19-T3N-R64W
Well: Dechant D19-32D
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Dechant D19-32D
TVD Reference: WELL @ 4802.0ft (Original Well Elev)
MD Reference: WELL @ 4802.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature
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)
7,916.0	1.10	59.30	7,364.7	-1,708.8	-1,561.8	2,315.0	1.27	-1.25	7.42
8,045.0	0.90	71.40	7,493.7	-1,707.9	-1,559.8	2,312.9	0.22	-0.16	9.38
8,173.0	0.60	63.30	7,621.7	-1,707.2	-1,558.2	2,311.4	0.25	-0.23	-6.33
8,213.0	0.50	64.00	7,661.7	-1,707.1	-1,557.9	2,311.1	0.25	-0.25	1.75
HARD LINES 80°N & 75°E OF TARGET BHL									
8,260.0	0.50	64.00	7,708.7	-1,706.9	-1,557.5	2,310.7	0.00	0.00	0.00

Checked By: _____ Approved By: _____ Date: _____