

Project: SEC.36-T3N-R65W  
Site: Dechant State H36-18D Pad Sec. 36-T3N-R65W  
Well: Dechant State H36-18D  
Plan: Wellbore #1

**Company:** NOBLE ENERGY INC WELD COUNTY CO  
**Project:** SEC.36-T3N-R65W  
**Site:** Dechant State H36-18D Pad Sec.  
 36-T3N-R65W  
**Well:** Dechant State H36-18D  
**Wellbore:** Wellbore #1  
**Design:** Wellbore #1

**Local Co-ordinate Reference:** Site Dechant State H36-18D Pad Sec.  
 36-T3N-R65W  
**TVD Reference:** WELL @ 4829.0ft (Original Well Elev)  
**MD Reference:** WELL @ 4829.0ft (Original Well Elev)  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature  
**Database:** Landmark

**Project** SEC.36-T3N-R65W, Weld County, Colorado

<b>Map System:</b> US State Plane 1983	<b>System Datum:</b> Mean Sea Level
<b>Geo Datum:</b> North American Datum 1983	Using Well Reference Point
<b>Map Zone:</b> Colorado Northern Zone	Using geodetic scale factor

**Site** Dechant State H36-18D Pad Sec. 36-T3N-R65W

<b>Site Position:</b>	<b>Northing:</b> 1,311,792.94 ft	<b>Latitude:</b> 40° 11' 9.240 N
<b>From:</b> Lat/Long	<b>Easting:</b> 3,246,554.73 ft	<b>Longitude:</b> 104° 37' 3.036 W
<b>Position Uncertainty:</b> 0.0 ft	<b>Slot Radius:</b> "	<b>Grid Convergence:</b> 0.57 °

**Well** Dechant State H36-18D

<b>Well Position</b>	<b>+N/-S</b> 0.0 ft	<b>Northing:</b> 1,311,792.92 ft	<b>Latitude:</b> 40° 11' 9.240 N
	<b>+E/-W</b> 0.0 ft	<b>Easting:</b> 3,246,554.73 ft	<b>Longitude:</b> 104° 37' 3.036 W
<b>Position Uncertainty</b> 0.0 ft	<b>Wellhead Elevation:</b> ft	<b>Ground Level:</b> 4,816.0 ft	

**Wellbore** Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	6/9/2010	8.90	66.94	53,142

**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	100.11

**Survey Program** Date 4/19/2011

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
781.0	7,896.0	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
781.0	0.30	120.20	781.0	-1.0	1.8	1.9	0.04	0.04	0.00
874.0	0.30	118.90	874.0	-1.3	2.2	2.4	0.01	0.00	-1.40
967.0	1.80	104.10	967.0	-1.8	3.8	4.1	1.63	1.61	-15.91
1,060.0	2.90	98.20	1,059.9	-2.4	7.6	7.9	1.21	1.18	-6.34
1,155.0	4.40	97.00	1,154.7	-3.2	13.6	13.9	1.58	1.58	-1.26
1,248.0	6.30	100.20	1,247.3	-4.6	22.1	22.6	2.07	2.04	3.44
1,342.0	8.00	100.60	1,340.6	-6.7	33.6	34.3	1.81	1.81	0.43
1,435.0	9.80	101.40	1,432.4	-9.4	47.8	48.7	1.94	1.94	0.86
1,529.0	12.20	102.50	1,524.7	-13.2	65.3	66.6	2.56	2.55	1.17
1,622.0	14.30	98.20	1,615.2	-16.9	86.3	87.9	2.49	2.26	-4.62



Company: NOBLE ENERGY INC WELD COUNTY CO  
Project: SEC.36-T3N-R65W  
Site: Dechant State H36-18D Pad Sec.  
36-T3N-R65W  
Well: Dechant State H36-18D  
Wellbore: Wellbore #1  
Design: Wellbore #1

Local Co-ordinate Reference: Site Dechant State H36-18D Pad Sec.  
36-T3N-R65W  
TVD Reference: WELL @ 4829.0ft (Original Well Elev)  
MD Reference: WELL @ 4829.0ft (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)
1,716.0	14.60	99.40	1,706.2	-20.5	109.4	111.3	0.45	0.32	1.28
1,810.0	16.50	98.50	1,796.8	-24.4	134.3	136.5	2.04	2.02	-0.96
1,905.0	18.70	100.90	1,887.4	-29.3	162.6	165.2	2.44	2.32	2.53
1,998.0	18.00	100.00	1,975.6	-34.6	191.4	194.5	0.81	-0.75	-0.97
2,091.0	17.70	99.90	2,064.1	-39.6	219.5	223.0	0.32	-0.32	-0.11
2,185.0	17.30	100.00	2,153.8	-44.4	247.3	251.3	0.43	-0.43	0.11
2,278.0	18.90	98.80	2,242.2	-49.1	275.8	280.2	1.77	1.72	-1.29
2,371.0	18.40	102.30	2,330.3	-54.6	305.1	309.9	1.32	-0.54	3.76
2,465.0	18.50	100.60	2,419.5	-60.5	334.2	339.7	0.58	0.11	-1.81
2,558.0	18.70	101.30	2,507.6	-66.1	363.3	369.3	0.32	0.22	0.75
2,653.0	18.20	98.50	2,597.7	-71.3	393.0	399.4	1.07	-0.53	-2.95
2,747.0	18.30	98.50	2,687.0	-75.6	422.1	428.8	0.11	0.11	0.00
2,840.0	19.60	101.80	2,775.0	-81.0	451.8	459.0	1.81	1.40	3.55
2,934.0	18.80	100.80	2,863.7	-87.1	482.1	489.9	0.92	-0.85	-1.06
3,027.0	17.70	100.70	2,952.1	-92.5	510.7	519.0	1.18	-1.18	-0.11
3,121.0	17.60	103.20	3,041.6	-98.4	538.6	547.5	0.81	-0.11	2.66
3,214.0	17.10	100.70	3,130.4	-104.1	565.7	575.2	0.97	-0.54	-2.69
3,307.0	19.10	98.40	3,218.8	-108.9	594.2	604.1	2.28	2.15	-2.47
3,401.0	17.00	98.70	3,308.2	-113.2	623.0	633.2	2.24	-2.23	0.32
3,495.0	17.20	100.10	3,398.0	-117.7	650.3	660.8	0.49	0.21	1.49
3,589.0	18.90	98.70	3,487.4	-122.5	679.0	690.0	1.87	1.81	-1.49
3,682.0	18.50	98.50	3,575.5	-126.9	708.5	719.8	0.44	-0.43	-0.22
3,775.0	17.90	97.90	3,663.8	-131.1	737.2	748.8	0.68	-0.65	-0.65
3,869.0	18.50	100.90	3,753.1	-135.9	766.2	778.1	1.18	0.64	3.19
3,962.0	20.10	100.50	3,840.9	-141.6	796.4	808.9	1.73	1.72	-0.43
4,056.0	19.60	99.00	3,929.3	-147.0	827.8	840.8	0.76	-0.53	-1.60
4,149.0	18.60	99.10	4,017.2	-151.8	857.9	871.2	1.08	-1.08	0.11
4,243.0	17.10	98.30	4,106.7	-156.2	886.4	900.0	1.62	-1.60	-0.85
4,337.0	16.50	101.80	4,196.7	-160.9	913.1	927.2	1.25	-0.64	3.72
4,430.0	17.90	103.50	4,285.5	-166.9	939.9	954.6	1.60	1.51	1.83
4,524.0	17.80	104.60	4,375.0	-173.9	967.9	983.4	0.37	-0.11	1.17
4,618.0	18.40	101.50	4,464.3	-180.5	996.3	1,012.5	1.21	0.64	-3.30
4,712.0	19.30	103.00	4,553.3	-186.9	1,026.0	1,042.9	1.09	0.96	1.60
4,805.0	18.50	100.50	4,641.3	-193.1	1,055.5	1,073.0	1.22	-0.86	-2.69
4,899.0	17.10	99.10	4,730.8	-198.0	1,083.8	1,101.7	1.56	-1.49	-1.49
4,992.0	17.20	100.70	4,819.6	-202.7	1,110.8	1,129.1	0.52	0.11	1.72
5,086.0	19.50	99.50	4,908.8	-207.9	1,140.0	1,158.7	2.48	2.45	-1.28
5,179.0	18.70	98.20	4,996.7	-212.6	1,170.0	1,189.2	0.97	-0.86	-1.40
5,273.0	17.50	97.00	5,086.1	-216.4	1,199.0	1,218.3	1.34	-1.28	-1.28
5,366.0	14.70	97.70	5,175.4	-219.7	1,224.5	1,244.1	3.02	-3.01	0.75
5,459.0	13.10	99.30	5,265.7	-223.0	1,246.6	1,266.4	1.77	-1.72	1.72
5,552.0	10.50	96.90	5,356.7	-225.7	1,265.4	1,285.4	2.84	-2.80	-2.58
5,646.0	8.90	94.50	5,449.4	-227.3	1,281.2	1,301.2	1.76	-1.70	-2.55
5,739.0	6.70	99.30	5,541.5	-228.8	1,293.7	1,313.8	2.47	-2.37	5.16
5,832.0	4.10	107.60	5,634.1	-230.7	1,302.3	1,322.5	2.91	-2.80	8.92
5,925.0	1.60	100.90	5,727.0	-231.9	1,306.7	1,327.1	2.71	-2.69	-7.20
6,021.0	0.70	141.10	5,822.9	-232.6	1,308.4	1,328.9	1.21	-0.94	41.88
6,098.0	0.70	127.72	5,900.0	-233.3	1,309.0	1,329.7	0.21	-0.01	-17.37
TARGET BHL 1320'FNL, 2500'FWL									
6,115.0	0.70	124.80	5,916.9	-233.4	1,309.2	1,329.9	0.21	0.02	-17.22
6,209.0	0.50	119.50	6,010.9	-233.9	1,310.0	1,330.8	0.22	-0.21	-5.64
6,302.0	0.60	133.70	6,103.9	-234.5	1,310.7	1,331.6	0.18	0.11	15.27

Company: NOBLE ENERGY INC WELD COUNTY CO  
 Project: SEC.36-T3N-R65W  
 Site: Dechant State H36-18D Pad Sec.  
 36-T3N-R65W  
 Well: Dechant State H36-18D  
 Wellbore: Wellbore #1  
 Design: Wellbore #1

Local Co-ordinate Reference: Site Dechant State H36-18D Pad Sec.  
 36-T3N-R65W  
 TVD Reference: WELL @ 4829.0ft (Original Well Elev)  
 MD Reference: WELL @ 4829.0ft (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)
6,395.0	0.50	151.60	6,196.9	-235.1	1,311.3	1,332.2	0.21	-0.11	19.25
6,489.0	0.50	148.30	6,290.9	-235.9	1,311.7	1,332.7	0.03	0.00	-3.51
6,583.0	0.40	155.80	6,384.9	-236.5	1,312.1	1,333.2	0.12	-0.11	7.98
6,676.0	0.60	158.00	6,477.9	-237.3	1,312.4	1,333.6	0.22	0.22	2.37
6,770.0	1.10	152.50	6,571.9	-238.5	1,313.0	1,334.4	0.54	0.53	-5.85
6,864.0	1.30	145.10	6,665.9	-240.2	1,314.0	1,335.8	0.27	0.21	-7.87
6,956.8	1.70	155.89	6,758.7	-242.3	1,315.2	1,337.3	0.52	0.43	11.62
TARGET CIRCLE 1320'FNL, 2500'FWL									
6,957.0	1.70	155.90	6,758.8	-242.3	1,315.2	1,337.3	0.52	0.45	8.83
7,051.0	2.30	158.50	6,852.8	-245.3	1,316.4	1,339.0	0.65	0.64	2.77
7,145.0	2.80	159.70	6,946.7	-249.2	1,317.9	1,341.2	0.53	0.53	1.28
7,238.0	1.10	174.40	7,039.6	-252.3	1,318.8	1,342.6	1.89	-1.83	15.81
7,333.0	0.50	122.80	7,134.6	-253.4	1,319.2	1,343.2	0.93	-0.63	-54.32
7,426.0	1.30	60.60	7,227.6	-253.1	1,320.5	1,344.4	1.24	0.86	-66.88
7,519.0	1.30	75.20	7,320.6	-252.3	1,322.4	1,346.2	0.36	0.00	15.70
7,614.0	1.10	97.50	7,415.6	-252.2	1,324.4	1,348.1	0.53	-0.21	23.47
7,707.0	1.40	97.30	7,508.6	-252.4	1,326.4	1,350.1	0.32	0.32	-0.22
7,800.0	1.40	100.60	7,601.5	-252.8	1,328.6	1,352.4	0.09	0.00	3.55
7,851.0	1.30	95.70	7,652.5	-252.9	1,329.8	1,353.6	0.30	-0.20	-9.61
7,896.0	1.30	95.70	7,697.5	-253.0	1,330.8	1,354.6	0.00	0.00	0.00
HARDLINE 96'E OF BHL									

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_