

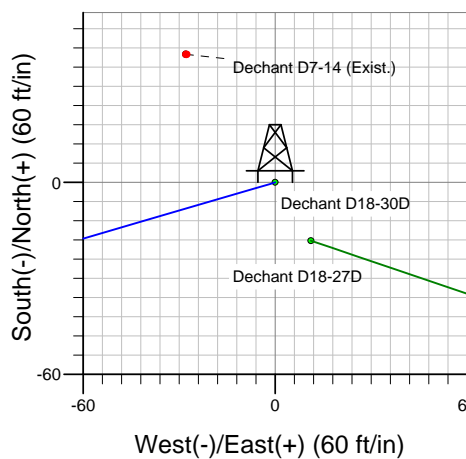
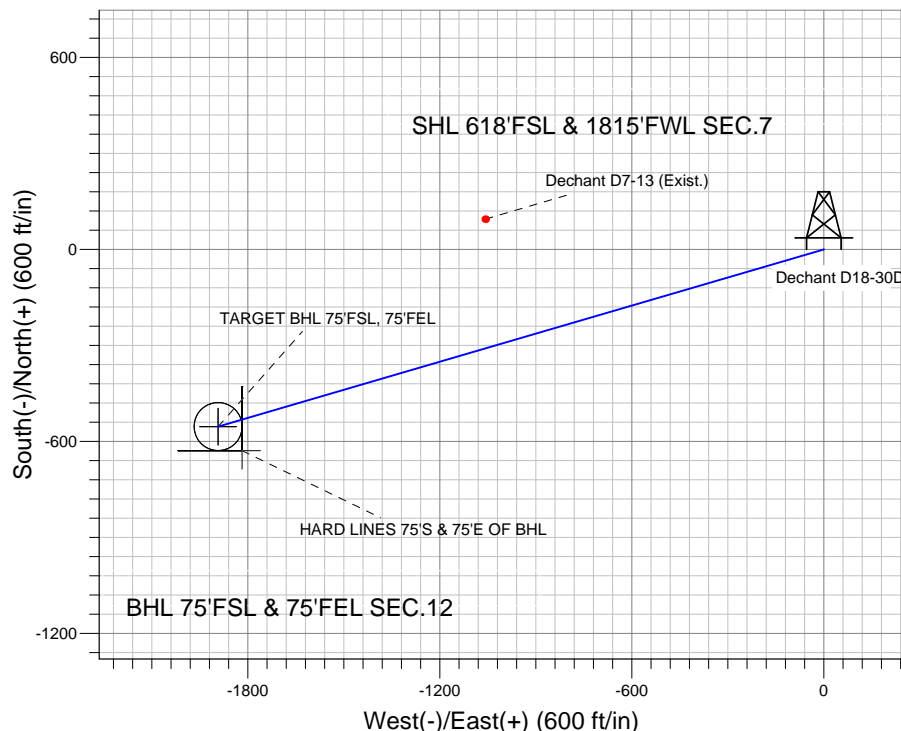
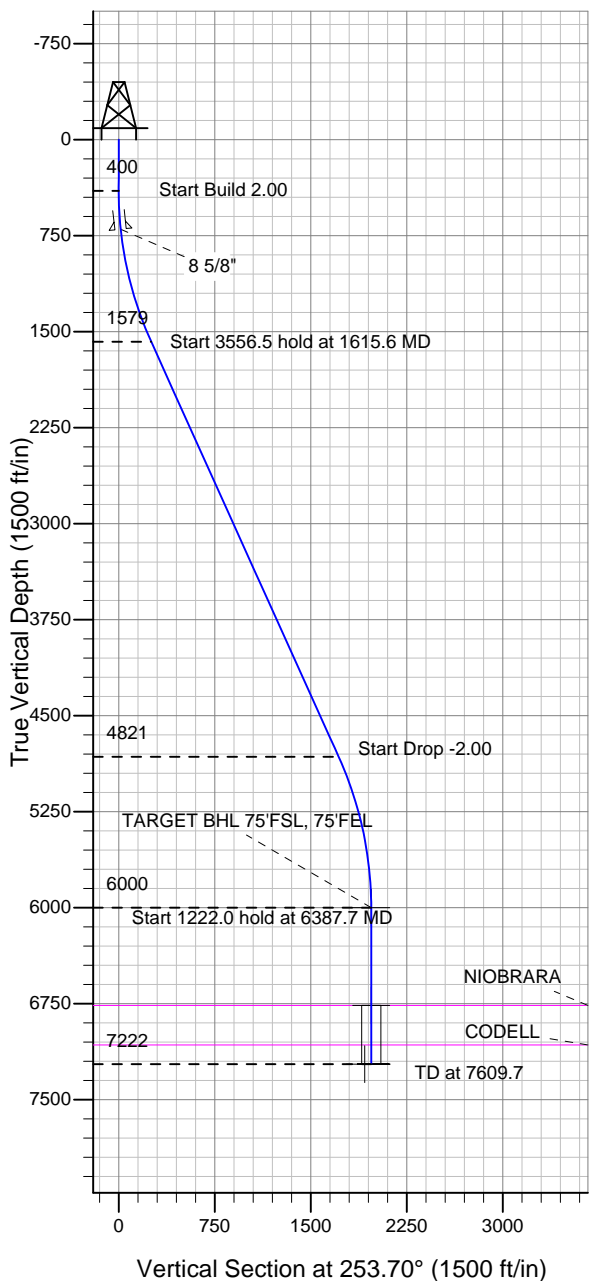
# ENSIGN

## Directional

### Well Name: Dechant D18-30D

Surface Location: Dechant D18-30D Pad Sec.7-T3N-R64W  
 North American Datum 1983 US State Plane 1983 Colorado Northern Zone  
 Ground Elevation: 4825.0  
 +N/-S +E/-W Northing Easting Latitude Longitude Slot  
 0.0 0.0 1329450.87 3252362.36 40.234210 -104.596080  
 Original Well Elev WELL @ 4838.0ft (Original Well Elev)

## NOBLE ENERGY INC WELD COUNTY CO



Dechant D18-30D Pad Sec.7-T3N-R64W  
 Dechant D18-30D  
 Noble Dechant D18-30D Plan #1 (4-07-11)  
 7:31, April 13 2011



Azimuths to True North  
 Magnetic North: 8.78°

Magnetic Field  
 Strength: 53080.8snT  
 Dip Angle: 66.95°  
 Date: 4/13/2011  
 Model: IGRF2010

### WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
TARGET BHL 75'FSL, 75'FEL	6000.0	-553.7	-1893.0	40.232690	-104.602860	Point
TARGET CIRC 75'FSL & 75'FEL	6763.0	-553.7	-1893.0	40.232690	-104.602860	Circle (Radius: 75.0)
HARD LINES 75'S & 75'E OF BHL	7222.0	-628.7	-1818.0	40.232484	-104.602591	Polygon

### SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.0	
3	1615.6	24.31	253.70	1579.5	-71.3	-243.8	2.00	253.70	254.1	
4	5172.1	24.31	253.70	4820.5	-482.3	-1649.2	0.00	0.00	1718.3	
5	6387.7	0.00	0.00	6000.0	-553.7	-1893.0	2.00	180.00	1972.3	TARGET BHL 75'FSL, 75'FEL
6	7609.7	0.00	0.00	7222.0	-553.7	-1893.0	0.00	0.00	1972.3	



## **Directional**

# **NOBLE ENERGY INC WELD COUNTY CO**

**SEC.7-T3N-R64W**

**Dechant D18-30D Pad Sec.7-T3N-R64W**

**Dechant D18-30D**

**Wellbore #1**

**Plan: Noble Dechant D18-30D Plan #1 (4-07-11)**

## **Standard Planning Report**

**13 April, 2011**



<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Dechant D18-30D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 4838.0ft (Original Well Elev)
<b>Project:</b>	SEC.7-T3N-R64W	<b>MD Reference:</b>	WELL @ 4838.0ft (Original Well Elev)
<b>Site:</b>	Dechant D18-30D Pad Sec.7-T3N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Dechant D18-30D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Dechant D18-30D Plan #1 (4-07-11)		

<b>Project</b>	SEC.7-T3N-R64W, 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 D18-30D Pad Sec.7-T3N-R64W											
Site Position:						Northing:			1,329,450.88 ft			Latitude:			40.234210		
From:			Lat/Long			Easting:			3,252,362.36 ft			Longitude:			-104.596080		
Position Uncertainty:			0.0 ft			Slot Radius:			"			Grid Convergence:			0.58 °		

Well	Dechant D18-30D					
Well Position	+N/-S	0.0 ft	Northing:	1,329,450.87 ft	Latitude:	40.234210
	+E/-W	0.0 ft	Easting:	3,252,362.36 ft	Longitude:	-104.596080
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,825.0 ft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	4/13/2011	8.78	66.95	53,081

<b>Design</b>	Noble Dechant D18-30D Plan #1 (4-07-11)			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	253.70

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,615.6	24.31	253.70	1,579.5	-71.3	-243.8	2.00	2.00	0.00	253.70	
5,172.1	24.31	253.70	4,820.5	-482.3	-1,649.2	0.00	0.00	0.00	0.00	
6,387.7	0.00	0.00	6,000.0	-553.7	-1,893.0	2.00	-2.00	0.00	180.00	TARGET BHL 75'F!
7,609.7	0.00	0.00	7,222.0	-553.7	-1,893.0	0.00	0.00	0.00	0.00	

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Dechant D18-30D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 4838.0ft (Original Well Elev)
<b>Project:</b>	SEC.7-T3N-R64W	<b>MD Reference:</b>	WELL @ 4838.0ft (Original Well Elev)
<b>Site:</b>	Dechant D18-30D Pad Sec.7-T3N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Dechant D18-30D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Dechant D18-30D Plan #1 (4-07-11)		

Planned 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
40.0	0.00	0.00	40.0	0.0	0.0	0.0	0.00	0.00	0.00
80.0	0.00	0.00	80.0	0.0	0.0	0.0	0.00	0.00	0.00
120.0	0.00	0.00	120.0	0.0	0.0	0.0	0.00	0.00	0.00
160.0	0.00	0.00	160.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
240.0	0.00	0.00	240.0	0.0	0.0	0.0	0.00	0.00	0.00
280.0	0.00	0.00	280.0	0.0	0.0	0.0	0.00	0.00	0.00
320.0	0.00	0.00	320.0	0.0	0.0	0.0	0.00	0.00	0.00
360.0	0.00	0.00	360.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
440.0	0.80	253.70	440.0	-0.1	-0.3	0.3	2.00	2.00	0.00
480.0	1.60	253.70	480.0	-0.3	-1.1	1.1	2.00	2.00	0.00
520.0	2.40	253.70	520.0	-0.7	-2.4	2.5	2.00	2.00	0.00
560.0	3.20	253.70	559.9	-1.3	-4.3	4.5	2.00	2.00	0.00
600.0	4.00	253.70	599.8	-2.0	-6.7	7.0	2.00	2.00	0.00
640.0	4.80	253.70	639.7	-2.8	-9.6	10.0	2.00	2.00	0.00
680.0	5.60	253.70	679.6	-3.8	-13.1	13.7	2.00	2.00	0.00
700.6	6.01	253.70	700.0	-4.4	-15.1	15.8	2.00	2.00	0.00
8 5/8"									
720.0	6.40	253.70	719.3	-5.0	-17.1	17.9	2.00	2.00	0.00
760.0	7.20	253.70	759.1	-6.3	-21.7	22.6	2.00	2.00	0.00
800.0	8.00	253.70	798.7	-7.8	-26.8	27.9	2.00	2.00	0.00
840.0	8.80	253.70	838.3	-9.5	-32.4	33.7	2.00	2.00	0.00
880.0	9.60	253.70	877.8	-11.3	-38.5	40.1	2.00	2.00	0.00
920.0	10.40	253.70	917.1	-13.2	-45.2	47.1	2.00	2.00	0.00
960.0	11.20	253.70	956.4	-15.3	-52.4	54.6	2.00	2.00	0.00
1,000.0	12.00	253.70	995.6	-17.6	-60.1	62.6	2.00	2.00	0.00
1,040.0	12.80	253.70	1,034.7	-20.0	-68.3	71.2	2.00	2.00	0.00
1,080.0	13.60	253.70	1,073.6	-22.5	-77.1	80.3	2.00	2.00	0.00
1,120.0	14.40	253.70	1,112.4	-25.3	-86.4	90.0	2.00	2.00	0.00
1,160.0	15.20	253.70	1,151.1	-28.1	-96.2	100.2	2.00	2.00	0.00
1,200.0	16.00	253.70	1,189.6	-31.2	-106.5	111.0	2.00	2.00	0.00
1,240.0	16.80	253.70	1,228.0	-34.3	-117.4	122.3	2.00	2.00	0.00
1,280.0	17.60	253.70	1,266.2	-37.6	-128.7	134.1	2.00	2.00	0.00
1,320.0	18.40	253.70	1,304.3	-41.1	-140.6	146.5	2.00	2.00	0.00
1,360.0	19.20	253.70	1,342.1	-44.7	-152.9	159.3	2.00	2.00	0.00
1,400.0	20.00	253.70	1,379.8	-48.5	-165.8	172.8	2.00	2.00	0.00
1,440.0	20.80	253.70	1,417.3	-52.4	-179.2	186.7	2.00	2.00	0.00
1,480.0	21.60	253.70	1,454.6	-56.5	-193.1	201.2	2.00	2.00	0.00
1,520.0	22.40	253.70	1,491.7	-60.7	-207.5	216.2	2.00	2.00	0.00
1,560.0	23.20	253.70	1,528.6	-65.0	-222.3	231.7	2.00	2.00	0.00
1,600.0	24.00	253.70	1,565.2	-69.5	-237.7	247.7	2.00	2.00	0.00
1,615.6	24.31	253.70	1,579.5	-71.3	-243.8	254.1	2.00	2.00	0.00
1,640.0	24.31	253.70	1,601.7	-74.1	-253.5	264.1	0.00	0.00	0.00
1,680.0	24.31	253.70	1,638.1	-78.8	-269.3	280.6	0.00	0.00	0.00
1,720.0	24.31	253.70	1,674.6	-83.4	-285.1	297.0	0.00	0.00	0.00
1,760.0	24.31	253.70	1,711.0	-88.0	-300.9	313.5	0.00	0.00	0.00
1,800.0	24.31	253.70	1,747.5	-92.6	-316.7	330.0	0.00	0.00	0.00
1,840.0	24.31	253.70	1,783.9	-97.3	-332.5	346.4	0.00	0.00	0.00
1,880.0	24.31	253.70	1,820.4	-101.9	-348.3	362.9	0.00	0.00	0.00
1,920.0	24.31	253.70	1,856.9	-106.5	-364.1	379.4	0.00	0.00	0.00
1,960.0	24.31	253.70	1,893.3	-111.1	-379.9	395.8	0.00	0.00	0.00
2,000.0	24.31	253.70	1,929.8	-115.7	-395.7	412.3	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Dechant D18-30D
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<b>Project:</b>	SEC.7-T3N-R64W	<b>MD Reference:</b>	WELL @ 4838.0ft (Original Well Elev)
<b>Site:</b>	Dechant D18-30D Pad Sec.7-T3N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Dechant D18-30D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Dechant D18-30D Plan #1 (4-07-11)		

Planned 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)
2,040.0	24.31	253.70	1,966.2	-120.4	-411.5	428.8	0.00	0.00	0.00
2,080.0	24.31	253.70	2,002.7	-125.0	-427.4	445.3	0.00	0.00	0.00
2,120.0	24.31	253.70	2,039.1	-129.6	-443.2	461.7	0.00	0.00	0.00
2,160.0	24.31	253.70	2,075.6	-134.2	-459.0	478.2	0.00	0.00	0.00
2,200.0	24.31	253.70	2,112.0	-138.9	-474.8	494.7	0.00	0.00	0.00
2,240.0	24.31	253.70	2,148.5	-143.5	-490.6	511.1	0.00	0.00	0.00
2,280.0	24.31	253.70	2,184.9	-148.1	-506.4	527.6	0.00	0.00	0.00
2,320.0	24.31	253.70	2,221.4	-152.7	-522.2	544.1	0.00	0.00	0.00
2,360.0	24.31	253.70	2,257.8	-157.3	-538.0	560.5	0.00	0.00	0.00
2,400.0	24.31	253.70	2,294.3	-162.0	-553.8	577.0	0.00	0.00	0.00
2,440.0	24.31	253.70	2,330.7	-166.6	-569.6	593.5	0.00	0.00	0.00
2,480.0	24.31	253.70	2,367.2	-171.2	-585.4	609.9	0.00	0.00	0.00
2,520.0	24.31	253.70	2,403.6	-175.8	-601.2	626.4	0.00	0.00	0.00
2,560.0	24.31	253.70	2,440.1	-180.5	-617.0	642.9	0.00	0.00	0.00
2,600.0	24.31	253.70	2,476.5	-185.1	-632.8	659.3	0.00	0.00	0.00
2,640.0	24.31	253.70	2,513.0	-189.7	-648.6	675.8	0.00	0.00	0.00
2,680.0	24.31	253.70	2,549.5	-194.3	-664.4	692.3	0.00	0.00	0.00
2,720.0	24.31	253.70	2,585.9	-199.0	-680.2	708.7	0.00	0.00	0.00
2,760.0	24.31	253.70	2,622.4	-203.6	-696.1	725.2	0.00	0.00	0.00
2,800.0	24.31	253.70	2,658.8	-208.2	-711.9	741.7	0.00	0.00	0.00
2,840.0	24.31	253.70	2,695.3	-212.8	-727.7	758.2	0.00	0.00	0.00
2,880.0	24.31	253.70	2,731.7	-217.4	-743.5	774.6	0.00	0.00	0.00
2,920.0	24.31	253.70	2,768.2	-222.1	-759.3	791.1	0.00	0.00	0.00
2,960.0	24.31	253.70	2,804.6	-226.7	-775.1	807.6	0.00	0.00	0.00
3,000.0	24.31	253.70	2,841.1	-231.3	-790.9	824.0	0.00	0.00	0.00
3,040.0	24.31	253.70	2,877.5	-235.9	-806.7	840.5	0.00	0.00	0.00
3,080.0	24.31	253.70	2,914.0	-240.6	-822.5	857.0	0.00	0.00	0.00
3,120.0	24.31	253.70	2,950.4	-245.2	-838.3	873.4	0.00	0.00	0.00
3,160.0	24.31	253.70	2,986.9	-249.8	-854.1	889.9	0.00	0.00	0.00
3,200.0	24.31	253.70	3,023.3	-254.4	-869.9	906.4	0.00	0.00	0.00
3,240.0	24.31	253.70	3,059.8	-259.0	-885.7	922.8	0.00	0.00	0.00
3,280.0	24.31	253.70	3,096.2	-263.7	-901.5	939.3	0.00	0.00	0.00
3,320.0	24.31	253.70	3,132.7	-268.3	-917.3	955.8	0.00	0.00	0.00
3,360.0	24.31	253.70	3,169.1	-272.9	-933.1	972.2	0.00	0.00	0.00
3,400.0	24.31	253.70	3,205.6	-277.5	-949.0	988.7	0.00	0.00	0.00
3,440.0	24.31	253.70	3,242.1	-282.2	-964.8	1,005.2	0.00	0.00	0.00
3,480.0	24.31	253.70	3,278.5	-286.8	-980.6	1,021.6	0.00	0.00	0.00
3,520.0	24.31	253.70	3,315.0	-291.4	-996.4	1,038.1	0.00	0.00	0.00
3,560.0	24.31	253.70	3,351.4	-296.0	-1,012.2	1,054.6	0.00	0.00	0.00
3,600.0	24.31	253.70	3,387.9	-300.7	-1,028.0	1,071.0	0.00	0.00	0.00
3,640.0	24.31	253.70	3,424.3	-305.3	-1,043.8	1,087.5	0.00	0.00	0.00
3,680.0	24.31	253.70	3,460.8	-309.9	-1,059.6	1,104.0	0.00	0.00	0.00
3,720.0	24.31	253.70	3,497.2	-314.5	-1,075.4	1,120.5	0.00	0.00	0.00
3,760.0	24.31	253.70	3,533.7	-319.1	-1,091.2	1,136.9	0.00	0.00	0.00
3,800.0	24.31	253.70	3,570.1	-323.8	-1,107.0	1,153.4	0.00	0.00	0.00
3,840.0	24.31	253.70	3,606.6	-328.4	-1,122.8	1,169.9	0.00	0.00	0.00
3,880.0	24.31	253.70	3,643.0	-333.0	-1,138.6	1,186.3	0.00	0.00	0.00
3,920.0	24.31	253.70	3,679.5	-337.6	-1,154.4	1,202.8	0.00	0.00	0.00
3,960.0	24.31	253.70	3,715.9	-342.3	-1,170.2	1,219.3	0.00	0.00	0.00
4,000.0	24.31	253.70	3,752.4	-346.9	-1,186.0	1,235.7	0.00	0.00	0.00
4,040.0	24.31	253.70	3,788.8	-351.5	-1,201.8	1,252.2	0.00	0.00	0.00
4,080.0	24.31	253.70	3,825.3	-356.1	-1,217.7	1,268.7	0.00	0.00	0.00
4,120.0	24.31	253.70	3,861.8	-360.7	-1,233.5	1,285.1	0.00	0.00	0.00
4,160.0	24.31	253.70	3,898.2	-365.4	-1,249.3	1,301.6	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Dechant D18-30D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 4838.0ft (Original Well Elev)
<b>Project:</b>	SEC.7-T3N-R64W	<b>MD Reference:</b>	WELL @ 4838.0ft (Original Well Elev)
<b>Site:</b>	Dechant D18-30D Pad Sec.7-T3N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Dechant D18-30D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Dechant D18-30D Plan #1 (4-07-11)		

Planned 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)	
4,200.0	24.31	253.70	3,934.7	-370.0	-1,265.1	1,318.1	0.00	0.00	0.00	
4,240.0	24.31	253.70	3,971.1	-374.6	-1,280.9	1,334.5	0.00	0.00	0.00	
4,280.0	24.31	253.70	4,007.6	-379.2	-1,296.7	1,351.0	0.00	0.00	0.00	
4,320.0	24.31	253.70	4,044.0	-383.9	-1,312.5	1,367.5	0.00	0.00	0.00	
4,360.0	24.31	253.70	4,080.5	-388.5	-1,328.3	1,383.9	0.00	0.00	0.00	
4,400.0	24.31	253.70	4,116.9	-393.1	-1,344.1	1,400.4	0.00	0.00	0.00	
4,440.0	24.31	253.70	4,153.4	-397.7	-1,359.9	1,416.9	0.00	0.00	0.00	
4,480.0	24.31	253.70	4,189.8	-402.4	-1,375.7	1,433.3	0.00	0.00	0.00	
4,520.0	24.31	253.70	4,226.3	-407.0	-1,391.5	1,449.8	0.00	0.00	0.00	
4,560.0	24.31	253.70	4,262.7	-411.6	-1,407.3	1,466.3	0.00	0.00	0.00	
4,600.0	24.31	253.70	4,299.2	-416.2	-1,423.1	1,482.8	0.00	0.00	0.00	
4,640.0	24.31	253.70	4,335.6	-420.8	-1,438.9	1,499.2	0.00	0.00	0.00	
4,680.0	24.31	253.70	4,372.1	-425.5	-1,454.7	1,515.7	0.00	0.00	0.00	
4,720.0	24.31	253.70	4,408.5	-430.1	-1,470.6	1,532.2	0.00	0.00	0.00	
4,760.0	24.31	253.70	4,445.0	-434.7	-1,486.4	1,548.6	0.00	0.00	0.00	
4,800.0	24.31	253.70	4,481.4	-439.3	-1,502.2	1,565.1	0.00	0.00	0.00	
4,840.0	24.31	253.70	4,517.9	-444.0	-1,518.0	1,581.6	0.00	0.00	0.00	
4,880.0	24.31	253.70	4,554.4	-448.6	-1,533.8	1,598.0	0.00	0.00	0.00	
4,920.0	24.31	253.70	4,590.8	-453.2	-1,549.6	1,614.5	0.00	0.00	0.00	
4,960.0	24.31	253.70	4,627.3	-457.8	-1,565.4	1,631.0	0.00	0.00	0.00	
5,000.0	24.31	253.70	4,663.7	-462.5	-1,581.2	1,647.4	0.00	0.00	0.00	
5,040.0	24.31	253.70	4,700.2	-467.1	-1,597.0	1,663.9	0.00	0.00	0.00	
5,080.0	24.31	253.70	4,736.6	-471.7	-1,612.8	1,680.4	0.00	0.00	0.00	
5,120.0	24.31	253.70	4,773.1	-476.3	-1,628.6	1,696.8	0.00	0.00	0.00	
5,160.0	24.31	253.70	4,809.5	-480.9	-1,644.4	1,713.3	0.00	0.00	0.00	
5,172.1	24.31	253.70	4,820.5	-482.3	-1,649.2	1,718.3	0.00	0.00	0.00	
5,200.0	23.75	253.70	4,846.0	-485.5	-1,660.1	1,729.7	2.00	-2.00	0.00	
5,240.0	22.95	253.70	4,882.8	-490.0	-1,675.3	1,745.5	2.00	-2.00	0.00	
5,280.0	22.15	253.70	4,919.7	-494.3	-1,690.1	1,760.9	2.00	-2.00	0.00	
5,320.0	21.35	253.70	4,956.8	-498.4	-1,704.3	1,775.7	2.00	-2.00	0.00	
5,360.0	20.55	253.70	4,994.2	-502.5	-1,718.0	1,790.0	2.00	-2.00	0.00	
5,400.0	19.75	253.70	5,031.7	-506.3	-1,731.2	1,803.8	2.00	-2.00	0.00	
5,440.0	18.95	253.70	5,069.5	-510.1	-1,744.0	1,817.0	2.00	-2.00	0.00	
5,480.0	18.15	253.70	5,107.4	-513.6	-1,756.2	1,829.7	2.00	-2.00	0.00	
5,520.0	17.35	253.70	5,145.5	-517.1	-1,767.9	1,841.9	2.00	-2.00	0.00	
5,560.0	16.55	253.70	5,183.8	-520.3	-1,779.1	1,853.6	2.00	-2.00	0.00	
5,600.0	15.75	253.70	5,222.2	-523.4	-1,789.8	1,864.7	2.00	-2.00	0.00	
5,640.0	14.95	253.70	5,260.8	-526.4	-1,799.9	1,875.3	2.00	-2.00	0.00	
5,680.0	14.15	253.70	5,299.5	-529.2	-1,809.6	1,885.4	2.00	-2.00	0.00	
5,720.0	13.35	253.70	5,338.3	-531.9	-1,818.7	1,894.9	2.00	-2.00	0.00	
5,760.0	12.55	253.70	5,377.3	-534.4	-1,827.3	1,903.9	2.00	-2.00	0.00	
5,800.0	11.75	253.70	5,416.4	-536.8	-1,835.4	1,912.3	2.00	-2.00	0.00	
5,840.0	10.95	253.70	5,455.6	-539.0	-1,842.9	1,920.2	2.00	-2.00	0.00	
5,880.0	10.15	253.70	5,494.9	-541.1	-1,850.0	1,927.5	2.00	-2.00	0.00	
5,920.0	9.35	253.70	5,534.4	-543.0	-1,856.5	1,934.3	2.00	-2.00	0.00	
5,960.0	8.55	253.70	5,573.9	-544.7	-1,862.5	1,940.5	2.00	-2.00	0.00	
6,000.0	7.75	253.70	5,613.5	-546.3	-1,867.9	1,946.2	2.00	-2.00	0.00	
6,040.0	6.95	253.70	5,653.1	-547.7	-1,872.8	1,951.3	2.00	-2.00	0.00	
6,080.0	6.15	253.70	5,692.9	-549.0	-1,877.2	1,955.8	2.00	-2.00	0.00	
6,120.0	5.35	253.70	5,732.7	-550.1	-1,881.0	1,959.8	2.00	-2.00	0.00	
6,160.0	4.55	253.70	5,772.5	-551.1	-1,884.4	1,963.3	2.00	-2.00	0.00	
6,200.0	3.75	253.70	5,812.4	-551.9	-1,887.1	1,966.2	2.00	-2.00	0.00	
6,240.0	2.95	253.70	5,852.4	-552.6	-1,889.4	1,968.5	2.00	-2.00	0.00	
6,280.0	2.15	253.70	5,892.3	-553.1	-1,891.1	1,970.3	2.00	-2.00	0.00	

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Dechant D18-30D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 4838.0ft (Original Well Elev)
<b>Project:</b>	SEC.7-T3N-R64W	<b>MD Reference:</b>	WELL @ 4838.0ft (Original Well Elev)
<b>Site:</b>	Dechant D18-30D Pad Sec.7-T3N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Dechant D18-30D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Dechant D18-30D Plan #1 (4-07-11)		

Planned 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)
6,320.0	1.35	253.70	5,932.3	-553.4	-1,892.3	1,971.5	2.00	-2.00	0.00
6,360.0	0.55	253.70	5,972.3	-553.6	-1,892.9	1,972.2	2.00	-2.00	0.00
6,387.7	0.00	0.00	6,000.0	-553.7	-1,893.0	1,972.3	2.00	-2.00	383.70
<b>TARGET BHL 75'FSL, 75'FEL</b>									
6,400.0	0.00	0.00	6,012.3	-553.7	-1,893.0	1,972.3	0.00	0.00	0.00
6,440.0	0.00	0.00	6,052.3	-553.7	-1,893.0	1,972.3	0.00	0.00	0.00
6,480.0	0.00	0.00	6,092.3	-553.7	-1,893.0	1,972.3	0.00	0.00	0.00
6,520.0	0.00	0.00	6,132.3	-553.7	-1,893.0	1,972.3	0.00	0.00	0.00
6,560.0	0.00	0.00	6,172.3	-553.7	-1,893.0	1,972.3	0.00	0.00	0.00
6,600.0	0.00	0.00	6,212.3	-553.7	-1,893.0	1,972.3	0.00	0.00	0.00
6,640.0	0.00	0.00	6,252.3	-553.7	-1,893.0	1,972.3	0.00	0.00	0.00
6,680.0	0.00	0.00	6,292.3	-553.7	-1,893.0	1,972.3	0.00	0.00	0.00
6,720.0	0.00	0.00	6,332.3	-553.7	-1,893.0	1,972.3	0.00	0.00	0.00
6,760.0	0.00	0.00	6,372.3	-553.7	-1,893.0	1,972.3	0.00	0.00	0.00
6,800.0	0.00	0.00	6,412.3	-553.7	-1,893.0	1,972.3	0.00	0.00	0.00
6,840.0	0.00	0.00	6,452.3	-553.7	-1,893.0	1,972.3	0.00	0.00	0.00
6,880.0	0.00	0.00	6,492.3	-553.7	-1,893.0	1,972.3	0.00	0.00	0.00
6,920.0	0.00	0.00	6,532.3	-553.7	-1,893.0	1,972.3	0.00	0.00	0.00
6,960.0	0.00	0.00	6,572.3	-553.7	-1,893.0	1,972.3	0.00	0.00	0.00
7,000.0	0.00	0.00	6,612.3	-553.7	-1,893.0	1,972.3	0.00	0.00	0.00
7,040.0	0.00	0.00	6,652.3	-553.7	-1,893.0	1,972.3	0.00	0.00	0.00
7,080.0	0.00	0.00	6,692.3	-553.7	-1,893.0	1,972.3	0.00	0.00	0.00
7,120.0	0.00	0.00	6,732.3	-553.7	-1,893.0	1,972.3	0.00	0.00	0.00
7,150.7	0.00	0.00	6,763.0	-553.7	-1,893.0	1,972.3	0.00	0.00	0.00
<b>NIORARA - TARGET CIRCLE 75'FSL &amp; 75'FEL</b>									
7,160.0	0.00	0.00	6,772.3	-553.7	-1,893.0	1,972.3	0.00	0.00	0.00
7,200.0	0.00	0.00	6,812.3	-553.7	-1,893.0	1,972.3	0.00	0.00	0.00
7,240.0	0.00	0.00	6,852.3	-553.7	-1,893.0	1,972.3	0.00	0.00	0.00
7,280.0	0.00	0.00	6,892.3	-553.7	-1,893.0	1,972.3	0.00	0.00	0.00
7,320.0	0.00	0.00	6,932.3	-553.7	-1,893.0	1,972.3	0.00	0.00	0.00
7,360.0	0.00	0.00	6,972.3	-553.7	-1,893.0	1,972.3	0.00	0.00	0.00
7,400.0	0.00	0.00	7,012.3	-553.7	-1,893.0	1,972.3	0.00	0.00	0.00
7,440.0	0.00	0.00	7,052.3	-553.7	-1,893.0	1,972.3	0.00	0.00	0.00
7,459.7	0.00	0.00	7,072.0	-553.7	-1,893.0	1,972.3	0.00	0.00	0.00
<b>CODELL</b>									
7,480.0	0.00	0.00	7,092.3	-553.7	-1,893.0	1,972.3	0.00	0.00	0.00
7,520.0	0.00	0.00	7,132.3	-553.7	-1,893.0	1,972.3	0.00	0.00	0.00
7,560.0	0.00	0.00	7,172.3	-553.7	-1,893.0	1,972.3	0.00	0.00	0.00
7,600.0	0.00	0.00	7,212.3	-553.7	-1,893.0	1,972.3	0.00	0.00	0.00
7,609.7	0.00	0.00	7,222.0	-553.7	-1,893.0	1,972.3	0.00	0.00	0.00
<b>HARD LINES 75'S &amp; 75'E OF BHL</b>									



<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Dechant D18-30D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 4838.0ft (Original Well Elev)
<b>Project:</b>	SEC.7-T3N-R64W	<b>MD Reference:</b>	WELL @ 4838.0ft (Original Well Elev)
<b>Site:</b>	Dechant D18-30D Pad Sec.7-T3N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Dechant D18-30D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Dechant D18-30D Plan #1 (4-07-11)		

Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
HARD LINES 75'S & 75'W	0.00	0.00	7,222.0	-628.7	-1,818.0	1,328,803.71	3,250,550.95	40.232484	-104.602591
- plan misses target center by 106.1ft at 7609.7ft MD (7222.0 TVD, -553.7 N, -1893.0 E)									
- Polygon									
Point 1			7,222.0	0.0	0.0	1,328,803.71	3,250,550.95		
Point 2			7,222.0	200.0	0.0	1,329,003.69	3,250,548.91		
Point 3			7,222.0	0.0	0.0	1,328,803.71	3,250,550.95		
Point 4			7,222.0	0.0	-200.0	1,328,801.67	3,250,350.97		
TARGET BHL 75'FSL	0.00	0.00	6,000.0	-553.7	-1,893.0	1,328,877.97	3,250,475.15	40.232690	-104.602860
- plan hits target center									
- Point									
TARGET CIRCLE 75'	0.00	0.00	6,763.0	-553.7	-1,893.0	1,328,877.97	3,250,475.15	40.232690	-104.602860
- plan hits target center									
- Circle (radius 75.0)									

Casing Points					
	Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
	700.6	700.0	8 5/8"	8-5/8	12-1/4

Formations					
	Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)
	7,150.7	6,763.0	NIOBRARA		0.00
	7,459.7	7,072.0	CODELL		0.00





## **Directional**

# **NOBLE ENERGY INC WELD COUNTY CO**

**SEC.7-T3N-R64W**

**Dechant D18-30D Pad Sec.7-T3N-R64W**

**Dechant D18-30D**

**Wellbore #1**

**Noble Dechant D18-30D Plan #1 (4-07-11)**

## **Anticollision Report**

**13 April, 2011**



<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>Local Co-ordinate Reference:</b>	Well Dechant D18-30D
<b>Project:</b>	SEC.7-T3N-R64W	<b>TVD Reference:</b>	WELL @ 4838.0ft (Original Well Elev)
<b>Reference Site:</b>	Dechant D18-30D Pad Sec.7-T3N-R64W	<b>MD Reference:</b>	WELL @ 4838.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dechant D18-30D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Noble Dechant D18-30D Plan #1 (4-07-11)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	Noble Dechant D18-30D Plan #1 (4-		
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
<b>Interpolation Method:</b>	Stations	<b>Error Model:</b>	ISCWSA
<b>Depth Range:</b>	Unlimited	<b>Scan Method:</b>	Closest Approach 3D
<b>Results Limited by:</b>	Maximum center-center distance of 10,000.0ft	<b>Error Surface:</b>	Elliptical Conic
<b>Warning Levels Evaluated at:</b>	2.00 Sigma		

<b>Survey Tool Program</b>	<b>Date</b> 4/13/2011			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.0	7,609.7	Noble Dechant D18-30D Plan #1 (4-07-11	MWD	MWD - Standard

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Dechant D18-30D Pad Sec.7-T3N-R64W						
Dechant D18-27D - Wellbore #1 - Noble Dechant D18-27	400.0	400.0	21.4	19.8	13.582	CC, ES
Dechant D18-27D - Wellbore #1 - Noble Dechant D18-27	600.0	599.8	24.2	21.7	9.902	SF
Dechant D7-13 (Exist.) - Wellbore #1 - Design #1	3,400.8	3,201.3	388.0	359.2	13.472	CC, ES
Dechant D7-13 (Exist.) - Wellbore #1 - Design #1	3,600.0	3,382.9	396.5	366.0	12.972	SF
Dechant D7-14 (Exist.) - Wellbore #1 - Design #1	698.6	698.1	46.3	43.4	16.007	CC
Dechant D7-14 (Exist.) - Wellbore #1 - Design #1	700.0	699.5	46.3	43.4	15.972	ES
Dechant D7-14 (Exist.) - Wellbore #1 - Design #1	900.0	897.5	54.1	50.2	13.931	SF

Offset Design      Dechant D18-30D Pad Sec.7-T3N-R64W - Dechant D18-27D - Wellbore #1 - Noble Dechant D18-27D P													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	148.49	-18.2	11.2	21.4					
100.0	100.0	100.0	100.0	0.1	0.1	148.49	-18.2	11.2	21.4	21.1	0.22	95.076		
200.0	200.0	200.0	200.0	0.3	0.3	148.49	-18.2	11.2	21.4	20.7	0.67	31.692		
300.0	300.0	300.0	300.0	0.6	0.6	148.49	-18.2	11.2	21.4	20.2	1.12	19.015		
400.0	400.0	400.0	400.0	0.8	0.8	148.49	-18.2	11.2	21.4	19.8	1.57	13.582 CC, ES		
500.0	500.0	500.0	500.0	1.0	1.0	-109.61	-18.2	11.2	21.9	19.9	2.01	10.906		
600.0	599.8	599.8	599.8	1.2	1.2	-121.33	-18.2	11.2	24.2	21.7	2.44	9.902 SF		
700.0	699.5	699.5	699.5	1.4	1.5	-135.77	-18.2	11.2	29.6	26.8	2.89	10.266		
800.0	798.7	798.7	798.7	1.7	1.7	-148.12	-18.2	11.2	39.3	36.0	3.34	11.773		
900.0	897.5	895.7	895.7	2.0	1.9	-156.42	-18.7	12.7	54.9	51.1	3.78	14.522		
1,000.0	995.6	990.8	990.7	2.4	2.1	-161.07	-20.3	17.2	77.5	73.3	4.22	18.375		
1,100.0	1,093.1	1,083.6	1,083.1	2.8	2.3	-163.49	-22.7	24.4	106.6	101.9	4.66	22.854		
1,200.0	1,189.6	1,173.4	1,172.4	3.3	2.5	-164.71	-26.0	34.2	141.9	136.7	5.12	27.696		
1,300.0	1,285.3	1,260.0	1,258.0	3.9	2.7	-165.28	-30.0	46.1	182.9	177.3	5.59	32.730		
1,400.0	1,379.8	1,342.9	1,339.7	4.5	3.0	-165.49	-34.7	59.7	229.5	223.5	6.07	37.840		
1,500.0	1,473.2	1,421.9	1,417.0	5.2	3.2	-165.48	-39.8	74.9	281.4	274.8	6.55	42.945		
1,600.0	1,565.2	1,500.0	1,493.1	6.0	3.5	-165.35	-45.5	91.8	338.1	331.1	7.05	47.935		
1,615.6	1,579.5	1,508.0	1,500.8	6.1	3.6	-165.31	-46.2	93.6	347.4	340.3	7.13	48.754		
1,700.0	1,656.4	1,567.9	1,558.8	6.8	3.8	-165.40	-51.1	108.1	398.6	391.0	7.58	52.575		
1,800.0	1,747.5	1,636.7	1,624.8	7.7	4.2	-165.38	-57.2	126.1	460.8	452.7	8.13	56.688		
1,900.0	1,838.6	1,700.0	1,685.3	8.5	4.5	-165.28	-63.2	144.0	524.8	516.1	8.68	60.467		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>Local Co-ordinate Reference:</b>	Well Dechant D18-30D
<b>Project:</b>	SEC.7-T3N-R64W	<b>TVD Reference:</b>	WELL @ 4838.0ft (Original Well Elev)
<b>Reference Site:</b>	Dechant D18-30D Pad Sec.7-T3N-R64W	<b>MD Reference:</b>	WELL @ 4838.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dechant D18-30D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Noble Dechant D18-30D Plan #1 (4-07-11)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b>												<b>Offset Site Error:</b>	0.0ft
Survey Program: 0-MWD												<b>Offset Well Error:</b>	0.0ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
2,000.0	1,929.8	1,767.0	1,748.7	9.4	4.9	-165.13	-70.1	164.3	590.3	581.1	9.25	63.845	
2,100.0	2,020.9	1,828.7	1,806.7	10.3	5.3	-164.95	-76.9	184.2	657.4	647.6	9.83	66.901	
2,200.0	2,112.0	1,888.2	1,862.2	11.1	5.7	-164.75	-83.8	204.6	725.9	715.5	10.40	69.806	
2,300.0	2,203.2	1,945.5	1,915.2	12.0	6.1	-164.54	-90.7	225.2	795.8	784.8	10.98	72.485	
2,400.0	2,294.3	2,000.0	1,965.2	12.9	6.5	-164.33	-97.7	245.7	867.0	855.4	11.56	75.032	
2,500.0	2,385.4	2,054.0	2,014.4	13.8	6.9	-164.12	-104.9	267.0	939.4	927.3	12.14	77.356	
2,600.0	2,476.5	2,100.0	2,055.8	14.6	7.3	-163.93	-111.3	285.8	1,013.0	1,000.3	12.71	79.706	
2,700.0	2,567.7	2,154.8	2,104.9	15.5	7.8	-163.70	-119.1	309.0	1,087.7	1,074.4	13.32	81.688	
2,800.0	2,658.8	2,208.5	2,152.4	16.4	8.3	-163.48	-127.1	332.5	1,163.4	1,149.5	13.93	83.550	
2,900.0	2,749.9	2,273.4	2,209.9	17.3	8.9	-163.23	-136.8	361.1	1,239.4	1,224.8	14.56	85.102	
3,000.0	2,841.1	2,338.4	2,267.4	18.2	9.6	-163.01	-146.5	389.7	1,315.3	1,300.1	15.20	86.509	
3,100.0	2,932.2	2,403.4	2,325.0	19.1	10.2	-162.81	-156.2	418.4	1,391.3	1,375.5	15.85	87.790	
3,200.0	3,023.3	2,468.3	2,382.5	19.9	10.8	-162.64	-165.9	447.0	1,467.3	1,450.8	16.50	88.941	
3,300.0	3,114.5	2,533.3	2,440.0	20.8	11.5	-162.48	-175.6	475.6	1,543.2	1,526.1	17.15	89.996	
3,400.0	3,205.6	2,598.3	2,497.5	21.7	12.1	-162.34	-185.3	504.3	1,619.2	1,601.4	17.80	90.965	
3,500.0	3,296.7	2,663.2	2,555.0	22.6	12.8	-162.21	-195.0	532.9	1,695.2	1,676.7	18.46	91.844	
3,600.0	3,387.9	2,728.2	2,612.5	23.5	13.4	-162.09	-204.7	561.6	1,771.2	1,752.1	19.12	92.659	
3,700.0	3,479.0	2,793.2	2,670.0	24.4	14.0	-161.98	-214.4	590.2	1,847.2	1,827.4	19.77	93.410	
3,800.0	3,570.1	2,858.2	2,727.5	25.3	14.7	-161.88	-224.1	618.8	1,923.2	1,902.7	20.44	94.101	
3,900.0	3,661.3	2,923.1	2,785.0	26.1	15.4	-161.79	-233.8	647.5	1,999.1	1,978.0	21.10	94.744	
4,000.0	3,752.4	2,988.1	2,842.5	27.0	16.0	-161.70	-243.5	676.1	2,075.1	2,053.4	21.77	95.342	
4,100.0	3,843.5	3,053.1	2,900.0	27.9	16.7	-161.62	-253.2	704.7	2,151.1	2,128.7	22.43	95.895	
4,200.0	3,934.7	3,118.0	2,957.5	28.8	17.3	-161.54	-262.9	733.4	2,227.1	2,204.0	23.10	96.414	
4,300.0	4,025.8	3,183.0	3,015.0	29.7	18.0	-161.47	-272.6	762.0	2,303.1	2,279.4	23.77	96.898	
4,400.0	4,116.9	3,248.0	3,072.5	30.6	18.6	-161.41	-282.4	790.7	2,379.1	2,354.7	24.44	97.350	
4,500.0	4,208.1	3,312.9	3,130.0	31.5	19.3	-161.35	-292.1	819.3	2,455.1	2,430.0	25.11	97.775	
4,600.0	4,299.2	3,377.9	3,187.5	32.4	20.0	-161.29	-301.8	847.9	2,531.1	2,505.3	25.78	98.173	
4,700.0	4,390.3	3,442.9	3,245.0	33.2	20.6	-161.24	-311.5	876.6	2,607.1	2,580.7	26.46	98.547	
4,800.0	4,481.4	3,507.9	3,302.5	34.1	21.3	-161.19	-321.2	905.2	2,683.1	2,656.0	27.13	98.901	
4,900.0	4,572.6	3,572.8	3,360.0	35.0	22.0	-161.14	-330.9	933.8	2,759.1	2,731.3	27.80	99.234	
5,000.0	4,663.7	3,637.8	3,417.6	35.9	22.6	-161.09	-340.6	962.5	2,835.1	2,806.7	28.48	99.548	
5,100.0	4,754.8	3,702.8	3,475.1	36.8	23.3	-161.05	-350.3	991.1	2,911.1	2,882.0	29.16	99.846	
5,172.1	4,820.5	3,749.6	3,516.5	37.4	23.8	-161.02	-357.3	1,011.8	2,966.0	2,936.3	29.64	100.050	
5,200.0	4,846.0	3,767.8	3,532.6	37.7	23.9	-161.21	-360.0	1,019.8	2,987.1	2,957.2	29.87	99.988	
5,300.0	4,938.2	3,834.7	3,591.8	38.3	24.6	-161.85	-370.0	1,049.3	3,061.4	3,030.7	30.66	99.840	
5,400.0	5,031.7	3,904.0	3,653.1	38.9	25.3	-162.40	-380.3	1,079.8	3,133.4	3,102.0	31.45	99.635	
5,500.0	5,126.4	3,975.5	3,716.5	39.5	26.1	-162.87	-391.0	1,111.3	3,203.1	3,170.9	32.23	99.395	
5,600.0	5,222.2	4,049.3	3,781.8	40.0	26.8	-163.27	-402.0	1,143.9	3,270.4	3,237.4	32.99	99.139	
5,700.0	5,318.9	4,125.2	3,848.9	40.4	27.6	-163.60	-413.4	1,177.3	3,335.2	3,301.5	33.73	98.879	
5,800.0	5,416.4	4,203.1	3,917.9	40.8	28.4	-163.88	-425.0	1,211.6	3,397.4	3,363.0	34.45	98.627	
5,900.0	5,514.6	4,282.9	3,988.5	41.1	29.2	-164.11	-436.9	1,246.8	3,457.0	3,421.9	35.14	98.388	
6,000.0	5,613.5	4,364.6	4,060.8	41.4	30.1	-164.30	-449.1	1,282.8	3,513.9	3,478.1	35.79	98.170	
6,100.0	5,712.8	4,448.0	4,134.7	41.6	30.9	-164.44	-461.6	1,319.6	3,568.0	3,531.6	36.42	97.977	
6,200.0	5,812.4	4,533.0	4,209.9	41.7	31.8	-164.54	-474.3	1,357.1	3,619.3	3,582.3	37.00	97.814	
6,300.0	5,912.3	4,619.6	4,286.6	41.9	32.7	-164.61	-487.2	1,395.2	3,667.7	3,630.1	37.55	97.683	
6,387.7	6,000.0	4,696.7	4,354.8	41.9	33.5	89.05	-498.7	1,429.2	3,707.7	3,669.7	38.00	97.581	
6,400.0	6,012.3	4,707.6	4,364.4	41.9	33.6	89.08	-500.4	1,434.0	3,713.2	3,675.1	38.06	97.553	
6,500.0	6,112.3	4,796.1	4,442.8	42.0	34.5	89.32	-513.6	1,473.0	3,757.6	3,719.0	38.60	97.339	
6,600.0	6,212.3	4,884.6	4,521.1	42.1	35.4	89.55	-526.8	1,512.0	3,802.0	3,762.9	39.14	97.137	
6,700.0	6,312.3	4,971.2	4,600.0	42.1	36.3	89.79	-540.0	1,551.0	3,841.0	3,800.0	39.68	96.944	
6,800.0	6,412.3	5,058.7	4,678.8	42.2	37.2	90.03	-553.2	1,590.0	3,880.0	3,840.0	40.22	96.751	
6,900.0	6,512.3	5,146.2	4,757.6	42.3	38.1	90.27	-566.4	1,629.0	3,919.0	3,880.0	40.76	96.558	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>Local Co-ordinate Reference:</b>	Well Dechant D18-30D
<b>Project:</b>	SEC.7-T3N-R64W	<b>TVD Reference:</b>	WELL @ 4838.0ft (Original Well Elev)
<b>Reference Site:</b>	Dechant D18-30D Pad Sec.7-T3N-R64W	<b>MD Reference:</b>	WELL @ 4838.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dechant D18-30D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Noble Dechant D18-30D Plan #1 (4-07-11)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:		
Dechant D18-30D Pad Sec.7-T3N-R64W - Dechant D18-27D - Wellbore #1 - Noble Dechant D18-27D F													Offset Well Error:		
Survey Program: 0-MWD														0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor			
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)				
7,000.0	6,612.3	7,061.2	6,612.3	42.4	44.6	91.79	-673.9	1,946.1	3,841.0	3,796.0	45.03	85.299			
7,100.0	6,712.3	7,161.2	6,712.3	42.4	44.7	91.79	-673.9	1,946.1	3,841.0	3,795.8	45.27	84.840			
7,200.0	6,812.3	7,261.2	6,812.3	42.5	44.7	91.79	-673.9	1,946.1	3,841.0	3,795.5	45.52	84.381			
7,300.0	6,912.3	7,361.2	6,912.3	42.6	44.8	91.79	-673.9	1,946.1	3,841.0	3,795.3	45.77	83.921			
7,400.0	7,012.3	7,461.2	7,012.3	42.6	44.9	91.79	-673.9	1,946.1	3,841.0	3,795.0	46.02	83.460			
7,500.0	7,112.3	7,561.2	7,112.3	42.7	45.0	91.79	-673.9	1,946.1	3,841.0	3,794.8	46.28	83.000			
7,567.8	7,180.1	7,629.0	7,180.1	42.8	45.0	91.79	-673.9	1,946.1	3,841.0	3,794.6	46.45	82.687			
7,609.7	7,222.0	7,656.9	7,208.0	42.8	45.0	91.79	-673.9	1,946.1	3,841.1	3,794.5	46.54	82.527			

<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>Local Co-ordinate Reference:</b>	Well Dechant D18-30D
<b>Project:</b>	SEC.7-T3N-R64W	<b>TVD Reference:</b>	WELL @ 4838.0ft (Original Well Elev)
<b>Reference Site:</b>	Dechant D18-30D Pad Sec.7-T3N-R64W	<b>MD Reference:</b>	WELL @ 4838.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dechant D18-30D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Noble Dechant D18-30D Plan #1 (4-07-11)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												Offset Site Error:	0.0ft
Survey Program: 0-MWD												Offset Well Error:	0.0ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-84.88	94.7	-1,058.2	1,062.4				
100.0	100.0	95.0	95.0	0.1	0.1	-84.88	94.7	-1,058.2	1,062.4	1,062.2	0.22	4,847.722	
200.0	200.0	195.0	195.0	0.3	0.3	-84.88	94.7	-1,058.2	1,062.4	1,061.7	0.66	1,602.286	
300.0	300.0	295.0	295.0	0.6	0.6	-84.88	94.7	-1,058.2	1,062.4	1,061.3	1.11	954.898	
400.0	400.0	395.0	395.0	0.8	0.8	-84.88	94.7	-1,058.2	1,062.4	1,060.8	1.56	680.107	
500.0	500.0	495.0	495.0	1.0	1.0	21.46	94.7	-1,058.2	1,060.8	1,058.8	2.00	530.964	
600.0	599.8	594.8	594.8	1.2	1.2	21.60	94.7	-1,058.2	1,055.9	1,053.5	2.43	434.777	
700.0	699.5	694.5	694.5	1.4	1.4	21.84	94.7	-1,058.2	1,047.8	1,044.9	2.87	365.178	
800.0	798.7	793.7	793.7	1.7	1.7	22.18	94.7	-1,058.2	1,036.5	1,033.2	3.32	312.278	
900.0	897.5	892.5	892.5	2.0	1.9	22.62	94.7	-1,058.2	1,022.0	1,018.2	3.78	270.411	
1,000.0	995.6	990.6	990.6	2.4	2.1	23.18	94.7	-1,058.2	1,004.4	1,000.1	4.25	236.163	
1,100.0	1,093.1	1,088.1	1,088.1	2.8	2.3	23.86	94.7	-1,058.2	983.7	978.9	4.74	207.382	
1,200.0	1,189.6	1,184.6	1,184.6	3.3	2.6	24.69	94.7	-1,058.2	960.0	954.7	5.26	182.655	
1,300.0	1,285.3	1,280.3	1,280.3	3.9	2.8	25.67	94.7	-1,058.2	933.3	927.5	5.80	161.024	
1,400.0	1,379.8	1,374.8	1,374.8	4.5	3.0	26.83	94.7	-1,058.2	903.8	897.4	6.37	141.824	
1,500.0	1,473.2	1,468.2	1,468.2	5.2	3.2	28.20	94.7	-1,058.2	871.6	864.6	7.00	124.587	
1,600.0	1,565.2	1,560.2	1,560.2	6.0	3.4	29.81	94.7	-1,058.2	836.7	829.1	7.68	108.982	
1,615.6	1,579.5	1,574.5	1,574.5	6.1	3.4	30.08	94.7	-1,058.2	831.1	823.3	7.79	106.679	
1,700.0	1,656.4	1,651.4	1,651.4	6.8	3.6	31.30	94.7	-1,058.2	800.5	792.1	8.44	94.887	
1,800.0	1,747.5	1,742.5	1,742.5	7.7	3.8	32.86	94.7	-1,058.2	764.8	755.5	9.24	82.726	
1,900.0	1,838.6	1,833.6	1,833.6	8.5	4.0	34.57	94.7	-1,058.2	729.6	719.5	10.10	72.231	
2,000.0	1,929.8	1,924.8	1,924.8	9.4	4.2	36.43	94.7	-1,058.2	695.1	684.1	11.01	63.138	
2,100.0	2,020.9	2,015.9	2,015.9	10.3	4.4	38.48	94.7	-1,058.2	661.3	649.3	11.97	55.236	
2,200.0	2,112.0	2,107.0	2,107.0	11.1	4.6	40.73	94.7	-1,058.2	628.4	615.4	13.00	48.354	
2,300.0	2,203.2	2,198.2	2,198.2	12.0	4.8	43.21	94.7	-1,058.2	596.6	582.5	14.09	42.355	
2,400.0	2,294.3	2,289.3	2,289.3	12.9	5.0	45.94	94.7	-1,058.2	565.9	550.7	15.24	37.129	
2,500.0	2,385.4	2,380.4	2,380.4	13.8	5.2	48.94	94.7	-1,058.2	536.7	520.2	16.47	32.585	
2,600.0	2,476.5	2,471.5	2,471.5	14.6	5.4	52.24	94.7	-1,058.2	509.1	491.4	17.77	28.650	
2,700.0	2,567.7	2,562.7	2,562.7	15.5	5.6	55.87	94.7	-1,058.2	483.5	464.4	19.14	25.266	
2,800.0	2,658.8	2,653.8	2,653.8	16.4	5.9	59.84	94.7	-1,058.2	460.1	439.6	20.56	22.380	
2,900.0	2,749.9	2,744.9	2,744.9	17.3	6.1	64.16	94.7	-1,058.2	439.4	417.3	22.02	19.952	
3,000.0	2,841.1	2,836.1	2,836.1	18.2	6.3	68.81	94.7	-1,058.2	421.6	398.1	23.50	17.943	
3,100.0	2,932.2	2,927.2	2,927.2	19.1	6.5	73.78	94.7	-1,058.2	407.3	382.3	24.95	16.322	
3,200.0	3,023.3	3,018.3	3,018.3	19.9	6.7	79.01	94.7	-1,058.2	396.7	370.3	26.35	15.056	
3,300.0	3,114.5	3,109.5	3,109.5	20.8	6.9	84.43	94.7	-1,058.2	390.2	362.5	27.64	14.118	
3,400.0	3,205.6	3,200.6	3,200.6	21.7	7.1	89.96	94.7	-1,058.2	388.0	359.2	28.79	13.476	
3,400.8	3,206.3	3,201.3	3,201.3	21.7	7.1	90.00	94.7	-1,058.2	388.0	359.2	28.80	13.472 CC, ES	
3,500.0	3,296.7	3,291.7	3,291.7	22.6	7.3	95.48	94.7	-1,058.2	390.1	360.3	29.77	13.104	
3,600.0	3,387.9	3,382.9	3,382.9	23.5	7.5	100.90	94.7	-1,058.2	396.5	366.0	30.57	12.972 SF	
3,700.0	3,479.0	3,474.0	3,474.0	24.4	7.7	106.14	94.7	-1,058.2	407.1	375.9	31.19	13.050	
3,800.0	3,570.1	3,565.1	3,565.1	25.3	7.9	111.11	94.7	-1,058.2	421.3	389.7	31.65	13.312	
3,900.0	3,661.3	3,656.3	3,656.3	26.1	8.1	115.77	94.7	-1,058.2	439.0	407.1	31.98	13.730	
4,000.0	3,752.4	3,747.4	3,747.4	27.0	8.3	120.09	94.7	-1,058.2	459.8	427.6	32.20	14.280	
4,100.0	3,843.5	3,838.5	3,838.5	27.9	8.5	124.07	94.7	-1,058.2	483.1	450.8	32.34	14.938	
4,200.0	3,934.7	3,929.7	3,929.7	28.8	8.7	127.70	94.7	-1,058.2	508.7	476.3	32.43	15.684	
4,300.0	4,025.8	4,020.8	4,020.8	29.7	8.9	131.01	94.7	-1,058.2	536.3	503.8	32.50	16.499	
4,400.0	4,116.9	4,111.9	4,111.9	30.6	9.1	134.02	94.7	-1,058.2	565.5	532.9	32.56	17.367	
4,500.0	4,208.1	4,203.1	4,203.1	31.5	9.3	136.75	94.7	-1,058.2	596.1	563.5	32.62	18.273	
4,600.0	4,299.2	4,294.2	4,294.2	32.4	9.5	139.23	94.7	-1,058.2	627.9	595.2	32.69	19.206	
4,700.0	4,390.3	4,385.3	4,385.3	33.2	9.7	141.48	94.7	-1,058.2	660.8	628.0	32.78	20.156	
4,800.0	4,481.4	4,476.4	4,476.4	34.1	9.9	143.53	94.7	-1,058.2	694.5	661.6	32.89	21.114	
4,900.0	4,572.6	4,567.6	4,567.6	35.0	10.2	145.40	94.7	-1,058.2	729.0	696.0	33.03	22.074	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>Local Co-ordinate Reference:</b>	Well Dechant D18-30D
<b>Project:</b>	SEC.7-T3N-R64W	<b>TVD Reference:</b>	WELL @ 4838.0ft (Original Well Elev)
<b>Reference Site:</b>	Dechant D18-30D Pad Sec.7-T3N-R64W	<b>MD Reference:</b>	WELL @ 4838.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dechant D18-30D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Noble Dechant D18-30D Plan #1 (4-07-11)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Dechant D18-30D Pad Sec.7-T3N-R64W - Dechant D7-13 (Exist.) - Wellbore #1 - Design #1												<b>Offset Site Error:</b>	0.0ft
Survey Program: 0-MWD												<b>Offset Well Error:</b>	0.0ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.0	4,663.7	4,658.7	4,658.7	35.9	10.4	147.11	94.7	-1,058.2	764.2	731.0	33.19	23.028	
5,100.0	4,754.8	4,749.8	4,749.8	36.8	10.6	148.68	94.7	-1,058.2	799.9	766.6	33.37	23.974	
5,172.1	4,820.5	4,815.5	4,815.5	37.4	10.7	149.72	94.7	-1,058.2	826.0	792.5	33.51	24.648	
5,200.0	4,846.0	4,841.0	4,841.0	37.7	10.8	150.22	94.7	-1,058.2	836.1	802.5	33.55	24.920	
5,300.0	4,938.2	4,933.2	4,933.2	38.3	11.0	151.81	94.7	-1,058.2	870.5	836.8	33.68	25.845	
5,400.0	5,031.7	5,026.7	5,026.7	38.9	11.2	153.16	94.7	-1,058.2	902.4	868.5	33.86	26.653	
5,500.0	5,126.4	5,121.4	5,121.4	39.5	11.4	154.31	94.7	-1,058.2	931.5	897.4	34.06	27.348	
5,600.0	5,222.2	5,217.2	5,217.2	40.0	11.6	155.28	94.7	-1,058.2	957.8	923.5	34.29	27.934	
5,700.0	5,318.9	5,313.9	5,313.9	40.4	11.8	156.10	94.7	-1,058.2	981.1	946.6	34.53	28.417	
5,800.0	5,416.4	5,411.4	5,411.4	40.8	12.1	156.77	94.7	-1,058.2	1,001.4	966.7	34.77	28.804	
5,900.0	5,514.6	5,509.6	5,509.6	41.1	12.3	157.32	94.7	-1,058.2	1,018.7	983.7	35.01	29.098	
6,000.0	5,613.5	5,608.5	5,608.5	41.4	12.5	157.75	94.7	-1,058.2	1,032.8	997.5	35.24	29.304	
6,100.0	5,712.8	5,707.8	5,707.8	41.6	12.7	158.08	94.7	-1,058.2	1,043.7	1,008.2	35.47	29.425	
6,200.0	5,812.4	5,807.4	5,807.4	41.7	12.9	158.30	94.7	-1,058.2	1,051.4	1,015.7	35.68	29.465	
6,300.0	5,912.3	5,907.3	5,907.3	41.9	13.2	158.43	94.7	-1,058.2	1,055.8	1,019.9	35.88	29.425	
6,387.7	6,000.0	5,995.0	5,995.0	41.9	13.4	52.17	94.7	-1,058.2	1,057.1	1,021.0	36.05	29.323	
6,400.0	6,012.3	6,007.3	6,007.3	41.9	13.4	52.17	94.7	-1,058.2	1,057.1	1,021.0	36.09	29.290	
6,500.0	6,112.3	6,107.3	6,107.3	42.0	13.6	52.17	94.7	-1,058.2	1,057.1	1,020.7	36.43	29.019	
6,600.0	6,212.3	6,207.3	6,207.3	42.1	13.8	52.17	94.7	-1,058.2	1,057.1	1,020.3	36.77	28.752	
6,700.0	6,312.3	6,307.3	6,307.3	42.1	14.1	52.17	94.7	-1,058.2	1,057.1	1,020.0	37.11	28.488	
6,800.0	6,412.3	6,407.3	6,407.3	42.2	14.3	52.17	94.7	-1,058.2	1,057.1	1,019.6	37.45	28.228	
6,900.0	6,512.3	6,507.3	6,507.3	42.3	14.5	52.17	94.7	-1,058.2	1,057.1	1,019.3	37.79	27.972	
7,000.0	6,612.3	6,607.3	6,607.3	42.4	14.7	52.17	94.7	-1,058.2	1,057.1	1,018.9	38.14	27.719	
7,100.0	6,712.3	6,707.3	6,707.3	42.4	15.0	52.17	94.7	-1,058.2	1,057.1	1,018.6	38.48	27.469	
7,200.0	6,812.3	6,807.3	6,807.3	42.5	15.2	52.17	94.7	-1,058.2	1,057.1	1,018.2	38.83	27.223	
7,300.0	6,912.3	6,907.3	6,907.3	42.6	15.4	52.17	94.7	-1,058.2	1,057.1	1,017.9	39.18	26.981	
7,400.0	7,012.3	7,007.3	7,007.3	42.6	15.6	52.17	94.7	-1,058.2	1,057.1	1,017.5	39.53	26.741	
7,500.0	7,112.3	7,107.3	7,107.3	42.7	15.9	52.17	94.7	-1,058.2	1,057.1	1,017.2	39.88	26.505	
7,609.7	7,222.0	7,217.0	7,217.0	42.8	16.1	52.17	94.7	-1,058.2	1,057.1	1,016.8	40.27	26.249	

<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>Local Co-ordinate Reference:</b>	Well Dechant D18-30D
<b>Project:</b>	SEC.7-T3N-R64W	<b>TVD Reference:</b>	WELL @ 4838.0ft (Original Well Elev)
<b>Reference Site:</b>	Dechant D18-30D Pad Sec.7-T3N-R64W	<b>MD Reference:</b>	WELL @ 4838.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dechant D18-30D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Noble Dechant D18-30D Plan #1 (4-07-11)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0ft
Survey Program: 0-MWD													Offset Well Error:	0.0ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-34.87	40.1	-27.9	48.8					
100.0	100.0	100.0	100.0	0.1	0.1	-34.87	40.1	-27.9	48.8	48.6	0.22	217.280		
200.0	200.0	200.0	200.0	0.3	0.3	-34.87	40.1	-27.9	48.8	48.2	0.67	72.427		
300.0	300.0	300.0	300.0	0.6	0.6	-34.87	40.1	-27.9	48.8	47.7	1.12	43.456		
400.0	400.0	400.0	400.0	0.8	0.8	-34.87	40.1	-27.9	48.8	47.3	1.57	31.040		
500.0	500.0	500.0	500.0	1.0	1.0	73.41	40.1	-27.9	48.3	46.3	2.01	24.068		
600.0	599.8	599.8	599.8	1.2	1.2	79.54	40.1	-27.9	47.1	44.6	2.44	19.295		
698.6	698.1	698.1	698.1	1.4	1.5	90.00	40.1	-27.9	46.3	43.4	2.89	16.007 CC		
700.0	699.5	699.5	699.5	1.4	1.5	90.18	40.1	-27.9	46.3	43.4	2.90	15.972 ES		
800.0	798.7	798.7	798.7	1.7	1.7	104.77	40.1	-27.9	47.9	44.5	3.39	14.149		
900.0	897.5	897.5	897.5	2.0	1.9	120.75	40.1	-27.9	54.1	50.2	3.88	13.931 SF		
1,000.0	995.6	995.6	995.6	2.4	2.1	134.83	40.1	-27.9	66.0	61.6	4.36	15.134		
1,100.0	1,093.1	1,093.1	1,093.1	2.8	2.3	145.55	40.1	-27.9	83.5	78.7	4.82	17.337		
1,200.0	1,189.6	1,189.6	1,189.6	3.3	2.6	153.22	40.1	-27.9	106.1	100.8	5.26	20.146		
1,300.0	1,285.3	1,285.3	1,285.3	3.9	2.8	158.67	40.1	-27.9	133.0	127.3	5.71	23.300		
1,400.0	1,379.8	1,379.8	1,379.8	4.5	3.0	162.60	40.1	-27.9	163.9	157.7	6.15	26.645		
1,500.0	1,473.2	1,473.2	1,473.2	5.2	3.2	165.50	40.1	-27.9	198.5	191.9	6.60	30.094		
1,600.0	1,565.2	1,565.2	1,565.2	6.0	3.4	167.68	40.1	-27.9	236.7	229.6	7.05	33.595		
1,615.6	1,579.5	1,579.5	1,579.5	6.1	3.4	167.98	40.1	-27.9	243.0	235.8	7.12	34.144		
1,700.0	1,656.4	1,656.4	1,656.4	6.8	3.6	169.47	40.1	-27.9	277.1	269.6	7.54	36.773		
1,800.0	1,747.5	1,747.5	1,747.5	7.7	3.8	170.82	40.1	-27.9	317.8	309.8	8.04	39.511		
1,900.0	1,838.6	1,838.6	1,838.6	8.5	4.0	171.87	40.1	-27.9	358.6	350.0	8.56	41.903		
2,000.0	1,929.8	1,929.8	1,929.8	9.4	4.2	172.70	40.1	-27.9	399.5	390.4	9.08	44.004		
2,100.0	2,020.9	2,020.9	2,020.9	10.3	4.4	173.38	40.1	-27.9	440.4	430.8	9.60	45.861		
2,200.0	2,112.0	2,112.0	2,112.0	11.1	4.6	173.95	40.1	-27.9	481.3	471.2	10.13	47.512		
2,300.0	2,203.2	2,203.2	2,203.2	12.0	4.8	174.42	40.1	-27.9	522.3	511.7	10.66	48.987		
2,400.0	2,294.3	2,294.3	2,294.3	12.9	5.0	174.83	40.1	-27.9	563.4	552.2	11.20	50.312		
2,500.0	2,385.4	2,385.4	2,385.4	13.8	5.2	175.18	40.1	-27.9	604.4	592.7	11.73	51.507		
2,600.0	2,476.5	2,476.5	2,476.5	14.6	5.5	175.49	40.1	-27.9	645.5	633.2	12.27	52.590		
2,700.0	2,567.7	2,567.7	2,567.7	15.5	5.7	175.76	40.1	-27.9	686.5	673.7	12.81	53.576		
2,800.0	2,658.8	2,658.8	2,658.8	16.4	5.9	176.00	40.1	-27.9	727.6	714.2	13.36	54.476		
2,900.0	2,749.9	2,749.9	2,749.9	17.3	6.1	176.21	40.1	-27.9	768.7	754.8	13.90	55.302		
3,000.0	2,841.1	2,841.1	2,841.1	18.2	6.3	176.40	40.1	-27.9	809.8	795.4	14.45	56.060		
3,100.0	2,932.2	2,932.2	2,932.2	19.1	6.5	176.58	40.1	-27.9	850.9	835.9	14.99	56.760		
3,200.0	3,023.3	3,023.3	3,023.3	19.9	6.7	176.74	40.1	-27.9	892.0	876.5	15.54	57.408		
3,300.0	3,114.5	3,114.5	3,114.5	20.8	6.9	176.88	40.1	-27.9	933.1	917.0	16.09	58.008		
3,400.0	3,205.6	3,205.6	3,205.6	21.7	7.1	177.01	40.1	-27.9	974.3	957.6	16.63	58.567		
3,500.0	3,296.7	3,296.7	3,296.7	22.6	7.3	177.13	40.1	-27.9	1,015.4	998.2	17.18	59.087		
3,600.0	3,387.9	3,387.9	3,387.9	23.5	7.5	177.24	40.1	-27.9	1,056.5	1,038.8	17.73	59.573		
3,700.0	3,479.0	3,479.0	3,479.0	24.4	7.7	177.35	40.1	-27.9	1,097.6	1,079.4	18.29	60.027		
3,800.0	3,570.1	3,570.1	3,570.1	25.3	7.9	177.44	40.1	-27.9	1,138.8	1,119.9	18.84	60.454		
3,900.0	3,661.3	3,661.3	3,661.3	26.1	8.1	177.53	40.1	-27.9	1,179.9	1,160.5	19.39	60.854		
4,000.0	3,752.4	3,752.4	3,752.4	27.0	8.3	177.62	40.1	-27.9	1,221.1	1,201.1	19.94	61.231		
4,100.0	3,843.5	3,843.5	3,843.5	27.9	8.5	177.69	40.1	-27.9	1,262.2	1,241.7	20.49	61.586		
4,200.0	3,934.7	3,934.7	3,934.7	28.8	8.7	177.77	40.1	-27.9	1,303.3	1,282.3	21.05	61.921		
4,300.0	4,025.8	4,025.8	4,025.8	29.7	8.9	177.83	40.1	-27.9	1,344.5	1,322.9	21.60	62.238		
4,400.0	4,116.9	4,116.9	4,116.9	30.6	9.1	177.90	40.1	-27.9	1,385.6	1,363.5	22.16	62.537		
4,500.0	4,208.1	4,208.1	4,208.1	31.5	9.3	177.96	40.1	-27.9	1,426.8	1,404.1	22.71	62.821		
4,600.0	4,299.2	4,299.2	4,299.2	32.4	9.6	178.02	40.1	-27.9	1,467.9	1,444.7	23.27	63.091		
4,700.0	4,390.3	4,390.3	4,390.3	33.2	9.8	178.07	40.1	-27.9	1,509.1	1,485.3	23.82	63.347		
4,800.0	4,481.4	4,481.4	4,481.4	34.1	10.0	178.12	40.1	-27.9	1,550.2	1,525.9	24.38	63.590		
4,900.0	4,572.6	4,572.6	4,572.6	35.0	10.2	178.17	40.1	-27.9	1,591.4	1,566.5	24.93	63.821		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

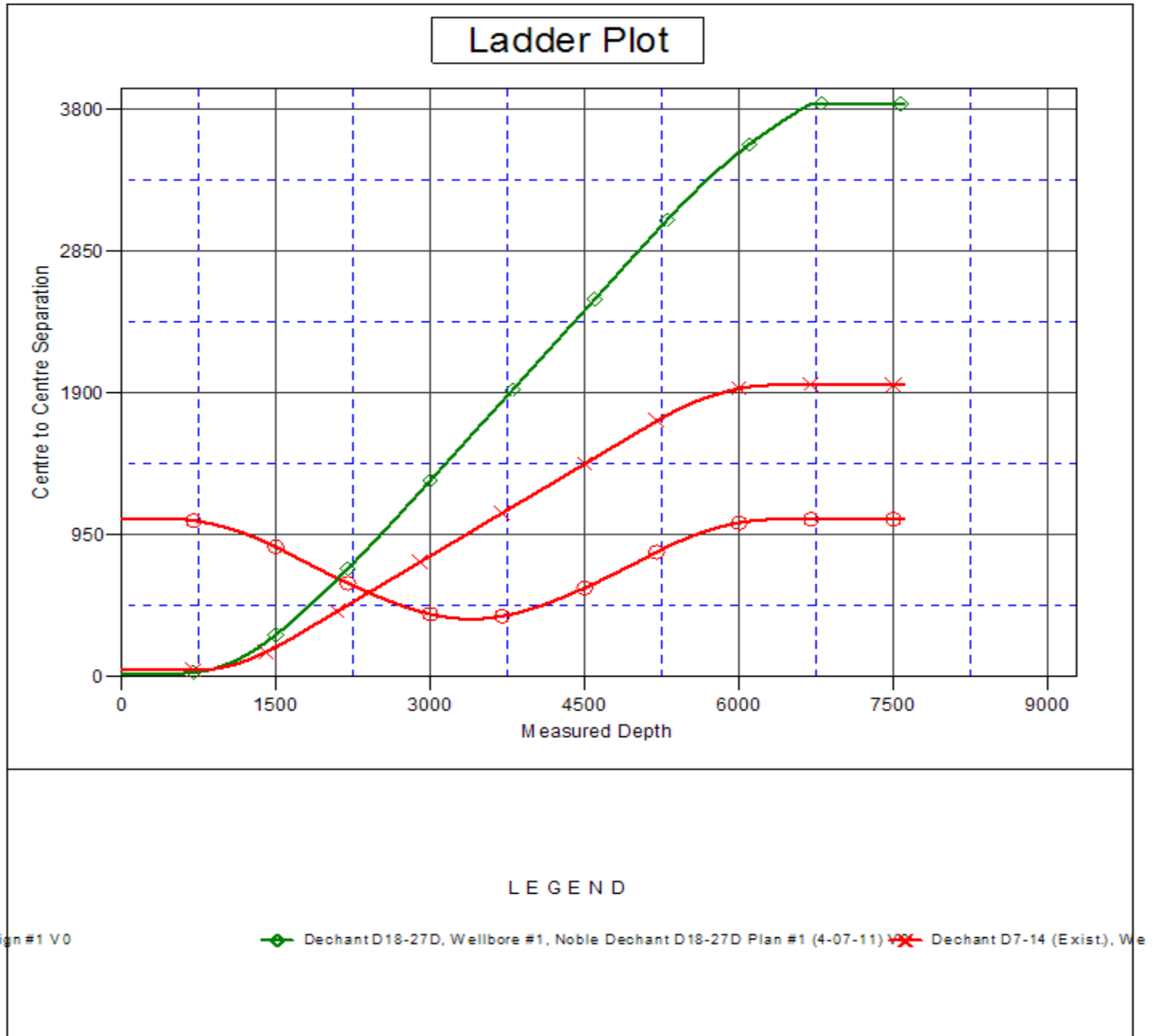


<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>Local Co-ordinate Reference:</b>	Well Dechant D18-30D
<b>Project:</b>	SEC.7-T3N-R64W	<b>TVD Reference:</b>	WELL @ 4838.0ft (Original Well Elev)
<b>Reference Site:</b>	Dechant D18-30D Pad Sec.7-T3N-R64W	<b>MD Reference:</b>	WELL @ 4838.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dechant D18-30D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Noble Dechant D18-30D Plan #1 (4-07-11)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Dechant D18-30D Pad Sec.7-T3N-R64W - Dechant D7-14 (Exist.) - Wellbore #1 - Design #1												<b>Offset Site Error:</b>	0.0 ft
Survey Program: 0-MWD												<b>Offset Well Error:</b>	0.0 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.0	4,663.7	4,663.7	4,663.7	35.9	10.4	178.22	40.1	-27.9	1,632.5	1,607.0	25.49	64.042	
5,100.0	4,754.8	4,754.8	4,754.8	36.8	10.6	178.26	40.1	-27.9	1,673.7	1,647.6	26.05	64.253	
5,172.1	4,820.5	4,820.5	4,820.5	37.4	10.7	178.29	40.1	-27.9	1,703.4	1,676.9	26.45	64.398	
5,200.0	4,846.0	4,846.0	4,846.0	37.7	10.8	178.31	40.1	-27.9	1,714.7	1,688.1	26.64	64.362	
5,300.0	4,938.2	4,938.2	4,938.2	38.3	11.0	178.37	40.1	-27.9	1,753.4	1,726.1	27.29	64.253	
5,400.0	5,031.7	5,031.7	5,031.7	38.9	11.2	178.42	40.1	-27.9	1,788.8	1,760.9	27.90	64.121	
5,500.0	5,126.4	5,126.4	5,126.4	39.5	11.4	178.47	40.1	-27.9	1,820.9	1,792.5	28.47	63.969	
5,600.0	5,222.2	5,222.2	5,222.2	40.0	11.6	178.51	40.1	-27.9	1,849.8	1,820.8	28.99	63.799	
5,700.0	5,318.9	5,318.9	5,318.9	40.4	11.8	178.54	40.1	-27.9	1,875.2	1,845.7	29.48	63.615	
5,800.0	5,416.4	5,416.4	5,416.4	40.8	12.1	178.57	40.1	-27.9	1,897.3	1,867.4	29.92	63.418	
5,900.0	5,514.6	5,514.6	5,514.6	41.1	12.3	178.60	40.1	-27.9	1,915.9	1,885.6	30.31	63.208	
6,000.0	5,613.5	5,613.5	5,613.5	41.4	12.5	178.61	40.1	-27.9	1,931.2	1,900.5	30.66	62.988	
6,100.0	5,712.8	5,712.8	5,712.8	41.6	12.7	178.63	40.1	-27.9	1,942.9	1,912.0	30.96	62.757	
6,200.0	5,812.4	5,812.4	5,812.4	41.7	13.0	178.64	40.1	-27.9	1,951.2	1,920.0	31.21	62.516	
6,300.0	5,912.3	5,912.3	5,912.3	41.9	13.2	178.64	40.1	-27.9	1,956.0	1,924.6	31.41	62.264	
6,387.7	6,000.0	6,000.0	6,000.0	41.9	13.4	72.34	40.1	-27.9	1,957.3	1,925.8	31.56	62.024	
6,400.0	6,012.3	6,012.3	6,012.3	41.9	13.4	72.34	40.1	-27.9	1,957.3	1,925.7	31.60	61.937	
6,500.0	6,112.3	6,112.3	6,112.3	42.0	13.6	72.34	40.1	-27.9	1,957.3	1,925.4	31.96	61.241	
6,600.0	6,212.3	6,212.3	6,212.3	42.1	13.9	72.34	40.1	-27.9	1,957.3	1,925.0	32.32	60.557	
6,700.0	6,312.3	6,312.3	6,312.3	42.1	14.1	72.34	40.1	-27.9	1,957.3	1,924.7	32.69	59.885	
6,800.0	6,412.3	6,412.3	6,412.3	42.2	14.3	72.34	40.1	-27.9	1,957.3	1,924.3	33.05	59.225	
6,900.0	6,512.3	6,512.3	6,512.3	42.3	14.5	72.34	40.1	-27.9	1,957.3	1,923.9	33.42	58.576	
7,000.0	6,612.3	6,612.3	6,612.3	42.4	14.7	72.34	40.1	-27.9	1,957.3	1,923.6	33.78	57.939	
7,100.0	6,712.3	6,712.3	6,712.3	42.4	15.0	72.34	40.1	-27.9	1,957.3	1,923.2	34.15	57.312	
7,200.0	6,812.3	6,812.3	6,812.3	42.5	15.2	72.34	40.1	-27.9	1,957.3	1,922.8	34.52	56.697	
7,300.0	6,912.3	6,912.3	6,912.3	42.6	15.4	72.34	40.1	-27.9	1,957.3	1,922.5	34.90	56.092	
7,400.0	7,012.3	7,012.3	7,012.3	42.6	15.6	72.34	40.1	-27.9	1,957.3	1,922.1	35.27	55.498	
7,500.0	7,112.3	7,112.3	7,112.3	42.7	15.9	72.34	40.1	-27.9	1,957.3	1,921.7	35.64	54.913	
7,609.7	7,222.0	7,222.0	7,222.0	42.8	16.1	72.34	40.1	-27.9	1,957.3	1,921.3	36.06	54.284	

<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>Local Co-ordinate Reference:</b>	Well Dechant D18-30D
<b>Project:</b>	SEC.7-T3N-R64W	<b>TVD Reference:</b>	WELL @ 4838.0ft (Original Well Elev)
<b>Reference Site:</b>	Dechant D18-30D Pad Sec.7-T3N-R64W	<b>MD Reference:</b>	WELL @ 4838.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dechant D18-30D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Noble Dechant D18-30D Plan #1 (4-07-11)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4838.0ft (Original Well Elev) Coordinates are relative to: Dechant D18-30D  
Offset Depths are relative to Offset Datum  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Central Meridian is -105.500000 °  
Grid Convergence at Surface is: 0.58°



<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>Local Co-ordinate Reference:</b>	Well Dechant D18-30D
<b>Project:</b>	SEC.7-T3N-R64W	<b>TVD Reference:</b>	WELL @ 4838.0ft (Original Well Elev)
<b>Reference Site:</b>	Dechant D18-30D Pad Sec.7-T3N-R64W	<b>MD Reference:</b>	WELL @ 4838.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dechant D18-30D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Noble Dechant D18-30D Plan #1 (4-07-11)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4838.0ft (Original Well Elev) Coordinates are relative to: Dechant D18-30D  
Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone  
Central Meridian is -105.500000 ° Grid Convergence at Surface is: 0.58°

