ENSIGN Directional

Well Name: Dechant D18-27D

Surface Location: Dechant D18-30D Pad Sec.7-T3N-R64W

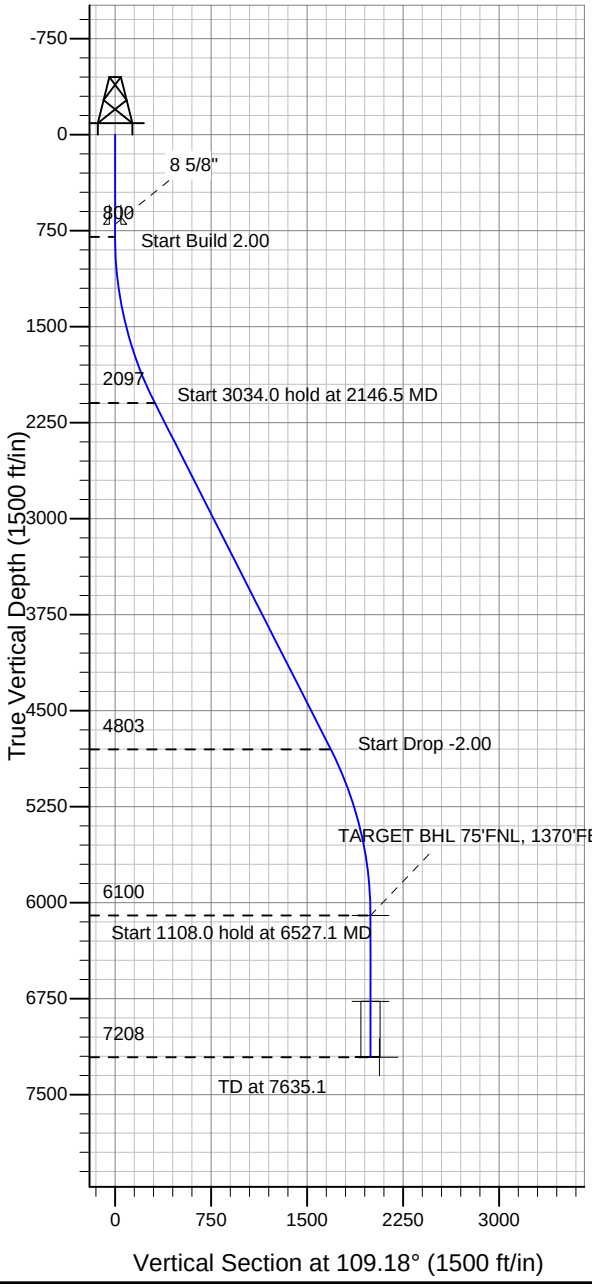
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

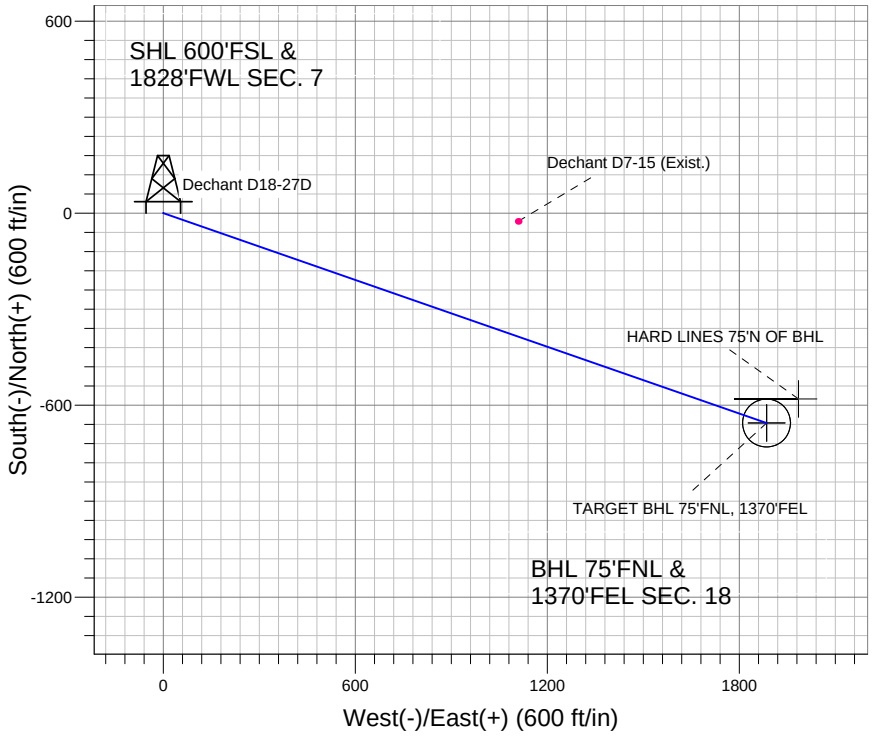
Ground Elevation: 4825.0

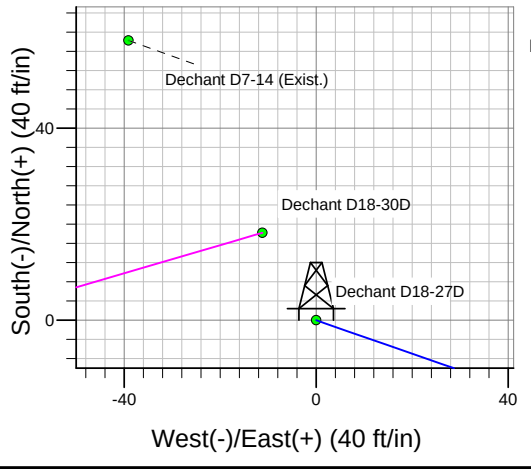
+N/-S	+E/-W	Northing	Easting	Latittude	Longitude	Slot
0.0	0.0	1329432.76	3252373.72	40.234160	-104.596040	

Original Well Elev WELL @ 4838.0ft (Original Well Elev)

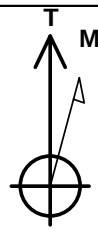
NOBLE ENERGY INC WELD COUNTY CO







Dechant D18-30D Pad Sec.7-T3N-R64W
Dechant D18-27D
Noble Dechant D18-27D Plan #2 (4-29-11)
15:36, April 29 2011



Azimuths to True North
Magnetic North: 8.78°

Magnetic Field
Strength: 53076.2snT
Dip Angle: 66.95°
Date: 4/29/2011
Model: IGRF2010

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
TARGET BHL 75'FNL, 1370'FEL	6100.0	-655.7	1884.7	40.232360	-104.589290	Point
TARGET CIRCLE 75'FNL & 1370'FEL	6771.0	-655.7	1884.7	40.232360	-104.589290	Circle (Radius: 75.0)
HARD LINES 75'N OF BHL	7208.0	-580.7	1984.7	40.232566	-104.588932	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	800.0	0.00	0.00	800.0	0.0	0.0	0.00	0.00	0.0	
3	2146.5	26.93	109.18	2097.5	-102.1	293.4	2.00	109.18	310.7	
4	5180.6	26.93	109.18	4802.5	-553.6	1591.3	0.00	0.00	1684.8	
5	6527.1	0.00	0.00	6100.0	-655.7	1884.7	2.00	180.00	1995.5	TARGET BHL 75'FNL, 1370'FEL
6	7635.1	0.00	0.00	7208.0	-655.7	1884.7	0.00	0.00	1995.5	

ENSIGN Directional

NOBLE ENERGY INC WELD COUNTY CO

SEC.7-T3N-R64W
Dechant D18-30D Pad Sec.7-T3N-R64W
Dechant D18-27D

Wellbore #1

Plan: Noble Dechant D18-27D Plan #2 (4-29-11)

Standard Planning Report

29 April, 2011

noble energy

Database:	Landmark	**Local Co-ordinate Reference:**	Well Dechant D18-27D
Company:	NOBLE ENERGY INC WELD COUNTY CO	**TVD Reference:**	WELL @ 4838.0ft (Original Well Elev)
Project:	SEC.7-T3N-R64W	**MD Reference:**	WELL @ 4838.0ft (Original Well Elev)
Site:	Dechant D18-30D Pad Sec.7-T3N-R64W	**North Reference:**	True
Well:	Dechant D18-27D	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Dechant D18-27D Plan #2 (4-29-11)		

Project SEC.7-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 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 D18-27D

Well Position	**+N/-S**	-18.2 ft	**Northing:**	1,329,432.76 ft	**Latitude:**	40.234160
	+E/-W	11.2 ft	**Easting:**	3,252,373.72 ft	**Longitude:**	-104.596040
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	4,825.0 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	4/29/2011	8.78	66.95	53,076

Design Noble Dechant D18-27D Plan #2 (4-29-11)

Audit Notes:

Version:		**Phase:**	PROTOTYPE	**Tie On Depth:**	0.0

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	109.18

Plan Sections

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	
800.0	0.00	0.00	800.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,146.5	26.93	109.18	2,097.5	-102.1	293.4	2.00	2.00	0.00	109.18	
5,180.6	26.93	109.18	4,802.5	-553.6	1,591.3	0.00	0.00	0.00	0.00	
6,527.1	0.00	0.00	6,100.0	-655.7	1,884.7	2.00	-2.00	0.00	180.00	TARGET BHL 75'FI
7,635.1	0.00	0.00	7,208.0	-655.7	1,884.7	0.00	0.00	0.00	0.00	

Database:	Landmark	**Local Co-ordinate Reference:**	Well Dechant D18-27D
Company:	NOBLE ENERGY INC WELD COUNTY CO	**TVD Reference:**	WELL @ 4838.0ft (Original Well Elev)
Project:	SEC.7-T3N-R64W	**MD Reference:**	WELL @ 4838.0ft (Original Well Elev)
Site:	Dechant D18-30D Pad Sec.7-T3N-R64W	**North Reference:**	True
Well:	Dechant D18-27D	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Dechant D18-27D Plan #2 (4-29-11)		

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	0.00	0.00	440.0	0.0	0.0	0.0	0.00	0.00	0.00
480.0	0.00	0.00	480.0	0.0	0.0	0.0	0.00	0.00	0.00
520.0	0.00	0.00	520.0	0.0	0.0	0.0	0.00	0.00	0.00
560.0	0.00	0.00	560.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
640.0	0.00	0.00	640.0	0.0	0.0	0.0	0.00	0.00	0.00
680.0	0.00	0.00	680.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
8 5/8"									
720.0	0.00	0.00	720.0	0.0	0.0	0.0	0.00	0.00	0.00
760.0	0.00	0.00	760.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
840.0	0.80	109.18	840.0	-0.1	0.3	0.3	2.00	2.00	0.00
880.0	1.60	109.18	880.0	-0.4	1.1	1.1	2.00	2.00	0.00
920.0	2.40	109.18	920.0	-0.8	2.4	2.5	2.00	2.00	0.00
960.0	3.20	109.18	959.9	-1.5	4.2	4.5	2.00	2.00	0.00
1,000.0	4.00	109.18	999.8	-2.3	6.6	7.0	2.00	2.00	0.00
1,040.0	4.80	109.18	1,039.7	-3.3	9.5	10.0	2.00	2.00	0.00
1,080.0	5.60	109.18	1,079.6	-4.5	12.9	13.7	2.00	2.00	0.00
1,120.0	6.40	109.18	1,119.3	-5.9	16.9	17.9	2.00	2.00	0.00
1,160.0	7.20	109.18	1,159.1	-7.4	21.3	22.6	2.00	2.00	0.00
1,200.0	8.00	109.18	1,198.7	-9.2	26.3	27.9	2.00	2.00	0.00
1,240.0	8.80	109.18	1,238.3	-11.1	31.9	33.7	2.00	2.00	0.00
1,280.0	9.60	109.18	1,277.8	-13.2	37.9	40.1	2.00	2.00	0.00
1,320.0	10.40	109.18	1,317.1	-15.5	44.5	47.1	2.00	2.00	0.00
1,360.0	11.20	109.18	1,356.4	-17.9	51.5	54.6	2.00	2.00	0.00
1,400.0	12.00	109.18	1,395.6	-20.6	59.1	62.6	2.00	2.00	0.00
1,440.0	12.80	109.18	1,434.7	-23.4	67.2	71.2	2.00	2.00	0.00
1,480.0	13.60	109.18	1,473.6	-26.4	75.9	80.3	2.00	2.00	0.00
1,520.0	14.40	109.18	1,512.4	-29.6	85.0	90.0	2.00	2.00	0.00
1,560.0	15.20	109.18	1,551.1	-32.9	94.7	100.2	2.00	2.00	0.00
1,600.0	16.00	109.18	1,589.6	-36.5	104.8	111.0	2.00	2.00	0.00
1,640.0	16.80	109.18	1,628.0	-40.2	115.5	122.3	2.00	2.00	0.00
1,680.0	17.60	109.18	1,666.2	-44.1	126.7	134.1	2.00	2.00	0.00
1,720.0	18.40	109.18	1,704.3	-48.1	138.3	146.5	2.00	2.00	0.00
1,760.0	19.20	109.18	1,742.1	-52.4	150.5	159.3	2.00	2.00	0.00
1,800.0	20.00	109.18	1,779.8	-56.8	163.2	172.8	2.00	2.00	0.00
1,840.0	20.80	109.18	1,817.3	-61.3	176.3	186.7	2.00	2.00	0.00
1,880.0	21.60	109.18	1,854.6	-66.1	190.0	201.2	2.00	2.00	0.00
1,920.0	22.40	109.18	1,891.7	-71.0	204.2	216.2	2.00	2.00	0.00
1,960.0	23.20	109.18	1,928.6	-76.1	218.8	231.7	2.00	2.00	0.00
2,000.0	24.00	109.18	1,965.2	-81.4	233.9	247.7	2.00	2.00	0.00
2,040.0	24.80	109.18	2,001.6	-86.8	249.5	264.2	2.00	2.00	0.00

Database:	Landmark	**Local Co-ordinate Reference:**	Well Dechant D18-27D
Company:	NOBLE ENERGY INC WELD COUNTY CO	**TVD Reference:**	WELL @ 4838.0ft (Original Well Elev)
Project:	SEC.7-T3N-R64W	**MD Reference:**	WELL @ 4838.0ft (Original Well Elev)
Site:	Dechant D18-30D Pad Sec.7-T3N-R64W	**North Reference:**	True
Well:	Dechant D18-27D	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Dechant D18-27D Plan #2 (4-29-11)		

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)
2,080.0	25.60	109.18	2,037.8	-92.4	265.6	281.2	2.00	2.00	0.00
2,120.0	26.40	109.18	2,073.8	-98.2	282.2	298.8	2.00	2.00	0.00
2,146.5	26.93	109.18	2,097.5	-102.1	293.4	310.7	2.00	2.00	0.00
2,160.0	26.93	109.18	2,109.5	-104.1	299.2	316.8	0.00	0.00	0.00
2,200.0	26.93	109.18	2,145.2	-110.0	316.3	334.9	0.00	0.00	0.00
2,240.0	26.93	109.18	2,180.8	-116.0	333.4	353.0	0.00	0.00	0.00
2,280.0	26.93	109.18	2,216.5	-121.9	350.5	371.1	0.00	0.00	0.00
2,320.0	26.93	109.18	2,252.2	-127.9	367.6	389.2	0.00	0.00	0.00
2,360.0	26.93	109.18	2,287.8	-133.8	384.7	407.4	0.00	0.00	0.00
2,400.0	26.93	109.18	2,323.5	-139.8	401.8	425.5	0.00	0.00	0.00
2,440.0	26.93	109.18	2,359.1	-145.7	419.0	443.6	0.00	0.00	0.00
2,480.0	26.93	109.18	2,394.8	-151.7	436.1	461.7	0.00	0.00	0.00
2,520.0	26.93	109.18	2,430.5	-157.7	453.2	479.8	0.00	0.00	0.00
2,560.0	26.93	109.18	2,466.1	-163.6	470.3	497.9	0.00	0.00	0.00
2,600.0	26.93	109.18	2,501.8	-169.6	487.4	516.0	0.00	0.00	0.00
2,640.0	26.93	109.18	2,537.5	-175.5	504.5	534.2	0.00	0.00	0.00
2,680.0	26.93	109.18	2,573.1	-181.5	521.6	552.3	0.00	0.00	0.00
2,720.0	26.93	109.18	2,608.8	-187.4	538.7	570.4	0.00	0.00	0.00
2,760.0	26.93	109.18	2,644.4	-193.4	555.8	588.5	0.00	0.00	0.00
2,800.0	26.93	109.18	2,680.1	-199.3	572.9	606.6	0.00	0.00	0.00
2,840.0	26.93	109.18	2,715.8	-205.3	590.1	624.7	0.00	0.00	0.00
2,880.0	26.93	109.18	2,751.4	-211.2	607.2	642.9	0.00	0.00	0.00
2,920.0	26.93	109.18	2,787.1	-217.2	624.3	661.0	0.00	0.00	0.00
2,960.0	26.93	109.18	2,822.7	-223.1	641.4	679.1	0.00	0.00	0.00
3,000.0	26.93	109.18	2,858.4	-229.1	658.5	697.2	0.00	0.00	0.00
3,040.0	26.93	109.18	2,894.1	-235.0	675.6	715.3	0.00	0.00	0.00
3,080.0	26.93	109.18	2,929.7	-241.0	692.7	733.4	0.00	0.00	0.00
3,120.0	26.93	109.18	2,965.4	-246.9	709.8	751.6	0.00	0.00	0.00
3,160.0	26.93	109.18	3,001.1	-252.9	726.9	769.7	0.00	0.00	0.00
3,200.0	26.93	109.18	3,036.7	-258.8	744.1	787.8	0.00	0.00	0.00
3,240.0	26.93	109.18	3,072.4	-264.8	761.2	805.9	0.00	0.00	0.00
3,280.0	26.93	109.18	3,108.0	-270.8	778.3	824.0	0.00	0.00	0.00
3,320.0	26.93	109.18	3,143.7	-276.7	795.4	842.1	0.00	0.00	0.00
3,360.0	26.93	109.18	3,179.4	-282.7	812.5	860.3	0.00	0.00	0.00
3,400.0	26.93	109.18	3,215.0	-288.6	829.6	878.4	0.00	0.00	0.00
3,440.0	26.93	109.18	3,250.7	-294.6	846.7	896.5	0.00	0.00	0.00
3,480.0	26.93	109.18	3,286.4	-300.5	863.8	914.6	0.00	0.00	0.00
3,520.0	26.93	109.18	3,322.0	-306.5	880.9	932.7	0.00	0.00	0.00
3,560.0	26.93	109.18	3,357.7	-312.4	898.0	950.8	0.00	0.00	0.00
3,600.0	26.93	109.18	3,393.3	-318.4	915.2	969.0	0.00	0.00	0.00
3,640.0	26.93	109.18	3,429.0	-324.3	932.3	987.1	0.00	0.00	0.00
3,680.0	26.93	109.18	3,464.7	-330.3	949.4	1,005.2	0.00	0.00	0.00
3,720.0	26.93	109.18	3,500.3	-336.2	966.5	1,023.3	0.00	0.00	0.00
3,760.0	26.93	109.18	3,536.0	-342.2	983.6	1,041.4	0.00	0.00	0.00
3,800.0	26.93	109.18	3,571.7	-348.1	1,000.7	1,059.5	0.00	0.00	0.00
3,840.0	26.93	109.18	3,607.3	-354.1	1,017.8	1,077.7	0.00	0.00	0.00
3,880.0	26.93	109.18	3,643.0	-360.0	1,034.9	1,095.8	0.00	0.00	0.00
3,920.0	26.93	109.18	3,678.6	-366.0	1,052.0	1,113.9	0.00	0.00	0.00
3,960.0	26.93	109.18	3,714.3	-371.9	1,069.2	1,132.0	0.00	0.00	0.00
4,000.0	26.93	109.18	3,750.0	-377.9	1,086.3	1,150.1	0.00	0.00	0.00
4,040.0	26.93	109.18	3,785.6	-383.9	1,103.4	1,168.2	0.00	0.00	0.00
4,080.0	26.93	109.18	3,821.3	-389.8	1,120.5	1,186.4	0.00	0.00	0.00
4,120.0	26.93	109.18	3,857.0	-395.8	1,137.6	1,204.5	0.00	0.00	0.00
4,160.0	26.93	109.18	3,892.6	-401.7	1,154.7	1,222.6	0.00	0.00	0.00

Database:	Landmark	**Local Co-ordinate Reference:**	Well Dechant D18-27D
Company:	NOBLE ENERGY INC WELD COUNTY CO	**TVD Reference:**	WELL @ 4838.0ft (Original Well Elev)
Project:	SEC.7-T3N-R64W	**MD Reference:**	WELL @ 4838.0ft (Original Well Elev)
Site:	Dechant D18-30D Pad Sec.7-T3N-R64W	**North Reference:**	True
Well:	Dechant D18-27D	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Dechant D18-27D Plan #2 (4-29-11)		

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	26.93	109.18	3,928.3	-407.7	1,171.8	1,240.7	0.00	0.00	0.00
4,240.0	26.93	109.18	3,963.9	-413.6	1,188.9	1,258.8	0.00	0.00	0.00
4,280.0	26.93	109.18	3,999.6	-419.6	1,206.0	1,276.9	0.00	0.00	0.00
4,320.0	26.93	109.18	4,035.3	-425.5	1,223.1	1,295.0	0.00	0.00	0.00
4,360.0	26.93	109.18	4,070.9	-431.5	1,240.3	1,313.2	0.00	0.00	0.00
4,400.0	26.93	109.18	4,106.6	-437.4	1,257.4	1,331.3	0.00	0.00	0.00
4,440.0	26.93	109.18	4,142.3	-443.4	1,274.5	1,349.4	0.00	0.00	0.00
4,480.0	26.93	109.18	4,177.9	-449.3	1,291.6	1,367.5	0.00	0.00	0.00
4,520.0	26.93	109.18	4,213.6	-455.3	1,308.7	1,385.6	0.00	0.00	0.00
4,560.0	26.93	109.18	4,249.2	-461.2	1,325.8	1,403.7	0.00	0.00	0.00
4,600.0	26.93	109.18	4,284.9	-467.2	1,342.9	1,421.9	0.00	0.00	0.00
4,640.0	26.93	109.18	4,320.6	-473.1	1,360.0	1,440.0	0.00	0.00	0.00
4,680.0	26.93	109.18	4,356.2	-479.1	1,377.1	1,458.1	0.00	0.00	0.00
4,720.0	26.93	109.18	4,391.9	-485.0	1,394.2	1,476.2	0.00	0.00	0.00
4,760.0	26.93	109.18	4,427.6	-491.0	1,411.4	1,494.3	0.00	0.00	0.00
4,800.0	26.93	109.18	4,463.2	-496.9	1,428.5	1,512.4	0.00	0.00	0.00
4,840.0	26.93	109.18	4,498.9	-502.9	1,445.6	1,530.6	0.00	0.00	0.00
4,880.0	26.93	109.18	4,534.5	-508.9	1,462.7	1,548.7	0.00	0.00	0.00
4,920.0	26.93	109.18	4,570.2	-514.8	1,479.8	1,566.8	0.00	0.00	0.00
4,960.0	26.93	109.18	4,605.9	-520.8	1,496.9	1,584.9	0.00	0.00	0.00
5,000.0	26.93	109.18	4,641.5	-526.7	1,514.0	1,603.0	0.00	0.00	0.00
5,040.0	26.93	109.18	4,677.2	-532.7	1,531.1	1,621.1	0.00	0.00	0.00
5,080.0	26.93	109.18	4,712.9	-538.6	1,548.2	1,639.3	0.00	0.00	0.00
5,120.0	26.93	109.18	4,748.5	-544.6	1,565.4	1,657.4	0.00	0.00	0.00
5,160.0	26.93	109.18	4,784.2	-550.5	1,582.5	1,675.5	0.00	0.00	0.00
5,180.6	26.93	109.18	4,802.5	-553.6	1,591.3	1,684.8	0.00	0.00	0.00
5,200.0	26.54	109.18	4,819.9	-556.5	1,599.5	1,693.5	2.00	-2.00	0.00
5,240.0	25.74	109.18	4,855.8	-562.2	1,616.2	1,711.2	2.00	-2.00	0.00
5,280.0	24.94	109.18	4,891.9	-567.9	1,632.3	1,728.3	2.00	-2.00	0.00
5,320.0	24.14	109.18	4,928.3	-573.3	1,648.0	1,744.9	2.00	-2.00	0.00
5,360.0	23.34	109.18	4,964.9	-578.6	1,663.2	1,761.0	2.00	-2.00	0.00
5,400.0	22.54	109.18	5,001.8	-583.7	1,678.0	1,776.6	2.00	-2.00	0.00
5,440.0	21.74	109.18	5,038.8	-588.7	1,692.2	1,791.7	2.00	-2.00	0.00
5,480.0	20.94	109.18	5,076.1	-593.5	1,705.9	1,806.2	2.00	-2.00	0.00
5,520.0	20.14	109.18	5,113.5	-598.1	1,719.2	1,820.3	2.00	-2.00	0.00
5,560.0	19.34	109.18	5,151.2	-602.5	1,732.0	1,833.8	2.00	-2.00	0.00
5,600.0	18.54	109.18	5,189.0	-606.8	1,744.2	1,846.8	2.00	-2.00	0.00
5,640.0	17.74	109.18	5,227.0	-610.9	1,756.0	1,859.2	2.00	-2.00	0.00
5,680.0	16.94	109.18	5,265.2	-614.8	1,767.3	1,871.1	2.00	-2.00	0.00
5,720.0	16.14	109.18	5,303.5	-618.5	1,778.0	1,882.5	2.00	-2.00	0.00
5,760.0	15.34	109.18	5,342.0	-622.1	1,788.3	1,893.4	2.00	-2.00	0.00
5,800.0	14.54	109.18	5,380.7	-625.5	1,798.0	1,903.7	2.00	-2.00	0.00
5,840.0	13.74	109.18	5,419.5	-628.7	1,807.2	1,913.5	2.00	-2.00	0.00
5,880.0	12.94	109.18	5,458.4	-631.7	1,815.9	1,922.7	2.00	-2.00	0.00
5,920.0	12.14	109.18	5,497.4	-634.6	1,824.2	1,931.4	2.00	-2.00	0.00
5,960.0	11.34	109.18	5,536.6	-637.3	1,831.8	1,939.5	2.00	-2.00	0.00
6,000.0	10.54	109.18	5,575.9	-639.8	1,839.0	1,947.1	2.00	-2.00	0.00
6,040.0	9.74	109.18	5,615.3	-642.1	1,845.7	1,954.2	2.00	-2.00	0.00
6,080.0	8.94	109.18	5,654.7	-644.2	1,851.8	1,960.7	2.00	-2.00	0.00
6,120.0	8.14	109.18	5,694.3	-646.2	1,857.4	1,966.6	2.00	-2.00	0.00
6,160.0	7.34	109.18	5,733.9	-647.9	1,862.5	1,972.0	2.00	-2.00	0.00
6,200.0	6.54	109.18	5,773.6	-649.5	1,867.1	1,976.8	2.00	-2.00	0.00
6,240.0	5.74	109.18	5,813.4	-650.9	1,871.1	1,981.1	2.00	-2.00	0.00
6,280.0	4.94	109.18	5,853.2	-652.2	1,874.6	1,984.8	2.00	-2.00	0.00

Database:	Landmark	**Local Co-ordinate Reference:**	Well Dechant D18-27D
Company:	NOBLE ENERGY INC WELD COUNTY CO	**TVD Reference:**	WELL @ 4838.0ft (Original Well Elev)
Project:	SEC.7-T3N-R64W	**MD Reference:**	WELL @ 4838.0ft (Original Well Elev)
Site:	Dechant D18-30D Pad Sec.7-T3N-R64W	**North Reference:**	True
Well:	Dechant D18-27D	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Dechant D18-27D Plan #2 (4-29-11)		

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	4.14	109.18	5,893.1	-653.2	1,877.6	1,988.0	2.00	-2.00	0.00
6,360.0	3.34	109.18	5,933.0	-654.1	1,880.1	1,990.6	2.00	-2.00	0.00
6,400.0	2.54	109.18	5,973.0	-654.7	1,882.0	1,992.7	2.00	-2.00	0.00
6,440.0	1.74	109.18	6,012.9	-655.2	1,883.4	1,994.1	2.00	-2.00	0.00
6,480.0	0.94	109.18	6,052.9	-655.5	1,884.3	1,995.1	2.00	-2.00	0.00
6,520.0	0.14	109.18	6,092.9	-655.7	1,884.7	1,995.5	2.00	-2.00	0.00
6,527.1	0.00	0.00	6,100.0	-655.7	1,884.7	1,995.5	2.00	-2.00	-1,540.47
TARGET BHL 75'FNL, 1370'FEL									
6,560.0	0.00	0.00	6,132.9	-655.7	1,884.7	1,995.5	0.00	0.00	0.00
6,600.0	0.00	0.00	6,172.9	-655.7	1,884.7	1,995.5	0.00	0.00	0.00
6,640.0	0.00	0.00	6,212.9	-655.7	1,884.7	1,995.5	0.00	0.00	0.00
6,680.0	0.00	0.00	6,252.9	-655.7	1,884.7	1,995.5	0.00	0.00	0.00
6,720.0	0.00	0.00	6,292.9	-655.7	1,884.7	1,995.5	0.00	0.00	0.00
6,760.0	0.00	0.00	6,332.9	-655.7	1,884.7	1,995.5	0.00	0.00	0.00
6,800.0	0.00	0.00	6,372.9	-655.7	1,884.7	1,995.5	0.00	0.00	0.00
6,840.0	0.00	0.00	6,412.9	-655.7	1,884.7	1,995.5	0.00	0.00	0.00
6,880.0	0.00	0.00	6,452.9	-655.7	1,884.7	1,995.5	0.00	0.00	0.00
6,920.0	0.00	0.00	6,492.9	-655.7	1,884.7	1,995.5	0.00	0.00	0.00
6,960.0	0.00	0.00	6,532.9	-655.7	1,884.7	1,995.5	0.00	0.00	0.00
7,000.0	0.00	0.00	6,572.9	-655.7	1,884.7	1,995.5	0.00	0.00	0.00
7,040.0	0.00	0.00	6,612.9	-655.7	1,884.7	1,995.5	0.00	0.00	0.00
7,080.0	0.00	0.00	6,652.9	-655.7	1,884.7	1,995.5	0.00	0.00	0.00
7,120.0	0.00	0.00	6,692.9	-655.7	1,884.7	1,995.5	0.00	0.00	0.00
7,160.0	0.00	0.00	6,732.9	-655.7	1,884.7	1,995.5	0.00	0.00	0.00
7,198.1	0.00	0.00	6,771.0	-655.7	1,884.7	1,995.5	0.00	0.00	0.00
NIOBRARA - TARGET CIRCLE 75'FNL & 1370'FEL									
7,200.0	0.00	0.00	6,772.9	-655.7	1,884.7	1,995.5	0.00	0.00	0.00
7,240.0	0.00	0.00	6,812.9	-655.7	1,884.7	1,995.5	0.00	0.00	0.00
7,280.0	0.00	0.00	6,852.9	-655.7	1,884.7	1,995.5	0.00	0.00	0.00
7,320.0	0.00	0.00	6,892.9	-655.7	1,884.7	1,995.5	0.00	0.00	0.00
7,360.0	0.00	0.00	6,932.9	-655.7	1,884.7	1,995.5	0.00	0.00	0.00
7,400.0	0.00	0.00	6,972.9	-655.7	1,884.7	1,995.5	0.00	0.00	0.00
7,440.0	0.00	0.00	7,012.9	-655.7	1,884.7	1,995.5	0.00	0.00	0.00
7,480.0	0.00	0.00	7,052.9	-655.7	1,884.7	1,995.5	0.00	0.00	0.00
7,485.1	0.00	0.00	7,058.0	-655.7	1,884.7	1,995.5	0.00	0.00	0.00
CODELL									
7,520.0	0.00	0.00	7,092.9	-655.7	1,884.7	1,995.5	0.00	0.00	0.00
7,560.0	0.00	0.00	7,132.9	-655.7	1,884.7	1,995.5	0.00	0.00	0.00
7,600.0	0.00	0.00	7,172.9	-655.7	1,884.7	1,995.5	0.00	0.00	0.00
7,635.1	0.00	0.00	7,208.0	-655.7	1,884.7	1,995.5	0.00	0.00	0.00
HARD LINES 75'N OF BHL									

Database:	Landmark	**Local Co-ordinate Reference:**	Well Dechant D18-27D
Company:	NOBLE ENERGY INC WELD COUNTY CO	**TVD Reference:**	WELL @ 4838.0ft (Original Well Elev)
Project:	SEC.7-T3N-R64W	**MD Reference:**	WELL @ 4838.0ft (Original Well Elev)
Site:	Dechant D18-30D Pad Sec.7-T3N-R64W	**North Reference:**	True
Well:	Dechant D18-27D	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Dechant D18-27D Plan #2 (4-29-11)		

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
HARD LINES 75'N OF	0.00	0.00	7,208.0	-580.7	1,984.7	1,328,872.36	3,254,364.14	40.232566	-104.588932
- plan misses target center by 125.0ft at 7635.1ft MD (7208.0 TVD, -655.7 N, 1884.7 E)									
- Polygon									
Point 1			7,208.0	0.0	0.0	1,328,872.36	3,254,364.14		
Point 2			7,208.0	0.0	-200.0	1,328,870.32	3,254,164.16		
TARGET BHL 75'FNL	0.00	0.00	6,100.0	-655.7	1,884.7	1,328,796.38	3,254,264.90	40.232360	-104.589290
- plan hits target center									
- Point									
TARGET CIRCLE 75'	0.00	0.00	6,771.0	-655.7	1,884.7	1,328,796.38	3,254,264.90	40.232360	-104.589290
- plan hits target center									
- Circle (radius 75.0)									

Casing Points

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

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
7,198.1	6,771.0	NIOBRARA		0.00	
7,485.1	7,058.0	CODELL		0.00	

ENSIGN Directional

NOBLE ENERGY INC WELD COUNTY CO

SEC.7-T3N-R64W
Dechant D18-30D Pad Sec.7-T3N-R64W
Dechant D18-27D

Wellbore #1
Noble Dechant D18-27D Plan #2 (4-29-11)

Anticollision Report

29 April, 2011

noble energy

Company:	NOBLE ENERGY INC WELD COUNTY CO	**Local Co-ordinate Reference:**	Well Dechant D18-27D
Project:	SEC.7-T3N-R64W	**TVD Reference:**	WELL @ 4838.0ft (Original Well Elev)
Reference Site:	Dechant D18-30D Pad Sec.7-T3N-R64W	**MD Reference:**	WELL @ 4838.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Dechant D18-27D	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Noble Dechant D18-27D Plan #2 (4-29-11)	**Offset TVD Reference:**	Offset Datum

Reference Noble Dechant D18-27D Plan #2 (4-

Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	**Error Model:**	ISCWSA
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.0ft	**Error Surface:**	Elliptical Conic

Warning Levels Evaluated at: 2.00 **Sigma**

Survey Tool Program **Date** 4/29/2011

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	7,635.1	Noble Dechant D18-27D Plan #2 (4-29-11	MWD	MWD - Standard

Summary

Site Name / Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Dechant D18-30D Pad Sec.7-T3N-R64W						
Dechant D18-30D - Wellbore #1 - Noble Dechant D18-3(	400.0	400.0	21.4	19.8	13.584	CC, ES
Dechant D18-30D - Wellbore #1 - Noble Dechant D18-3(	600.0	599.3	24.2	21.7	9.900	SF
Dechant D7-14 (Exist.) - Wellbore #1 - Design #1	800.0	800.0	70.2	66.8	20.817	CC, ES
Dechant D7-14 (Exist.) - Wellbore #1 - Design #1	1,100.0	1,099.5	83.3	78.6	17.918	SF
Dechant D7-15 (Exist.) - Wellbore #1 - Design #1	3,790.6	3,551.3	340.1	308.6	10.781	CC
Dechant D7-15 (Exist.) - Wellbore #1 - Design #1	3,800.0	3,559.7	340.2	308.5	10.745	ES
Dechant D7-15 (Exist.) - Wellbore #1 - Design #1	3,900.0	3,648.8	343.7	311.1	10.529	SF

Offset Design Dechant D18-30D Pad Sec.7-T3N-R64W - Dechant D18-30D - Wellbore #1 - Noble Dechant D18-30D P

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-31.50	18.2	-11.2	21.4				
100.0	100.0	100.0	100.0	0.1	0.1	-31.50	18.2	-11.2	21.4	21.1	0.22	95.091	
200.0	200.0	200.0	200.0	0.3	0.3	-31.50	18.2	-11.2	21.4	20.7	0.67	31.697	
300.0	300.0	300.0	300.0	0.6	0.6	-31.50	18.2	-11.2	21.4	20.2	1.12	19.018	
400.0	400.0	400.0	400.0	0.8	0.8	-31.50	18.2	-11.2	21.4	19.8	1.57	13.584	CC, ES
500.0	500.0	499.8	499.7	1.0	1.0	-35.89	17.7	-12.8	21.9	19.9	2.01	10.908	
600.0	600.0	599.3	599.1	1.2	1.2	-47.59	16.3	-17.8	24.2	21.7	2.44	9.900	SF
700.0	700.0	698.3	697.8	1.5	1.4	-61.99	13.9	-26.1	29.6	26.7	2.89	10.232	
800.0	800.0	796.7	795.4	1.7	1.7	-74.31	10.5	-37.5	39.2	35.8	3.38	11.592	
900.0	900.0	893.8	891.4	1.9	2.0	168.06	6.3	-51.9	54.7	50.9	3.80	14.396	
1,000.0	999.8	989.0	984.9	2.1	2.3	163.26	1.3	-69.1	77.2	73.0	4.24	18.215	
1,100.0	1,099.5	1,081.8	1,075.4	2.3	2.7	160.65	-4.4	-88.7	106.3	101.6	4.69	22.677	
1,200.0	1,198.7	1,171.7	1,162.4	2.6	3.2	159.20	-10.8	-110.3	141.4	136.3	5.14	27.535	
1,300.0	1,297.5	1,258.2	1,245.4	2.8	3.6	158.34	-17.6	-133.6	182.3	176.8	5.59	32.635	
1,400.0	1,395.6	1,341.0	1,324.1	3.2	4.1	157.79	-24.8	-158.2	228.8	222.7	6.04	37.875	
1,500.0	1,493.1	1,419.8	1,398.4	3.5	4.6	157.37	-32.2	-183.6	280.4	273.9	6.49	43.197	
1,600.0	1,589.6	1,494.5	1,468.1	4.0	5.2	157.01	-39.8	-209.4	336.9	330.0	6.95	48.465	
1,700.0	1,685.3	1,564.9	1,533.1	4.5	5.7	156.67	-47.4	-235.4	398.0	390.6	7.41	53.690	
1,800.0	1,779.8	1,633.4	1,595.6	5.1	6.3	156.31	-55.1	-262.0	463.4	455.5	7.89	58.741	
1,900.0	1,873.2	1,706.4	1,662.2	5.7	6.9	156.01	-63.6	-290.9	531.6	523.2	8.37	63.494	
2,000.0	1,965.2	1,777.2	1,726.7	6.5	7.5	155.74	-71.8	-318.9	602.1	593.2	8.87	67.876	

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

Company:	NOBLE ENERGY INC WELD COUNTY CO	**Local Co-ordinate Reference:**	Well Dechant D18-27D
Project:	SEC.7-T3N-R64W	**TVD Reference:**	WELL @ 4838.0ft (Original Well Elev)
Reference Site:	Dechant D18-30D Pad Sec.7-T3N-R64W	**MD Reference:**	WELL @ 4838.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Dechant D18-27D	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Noble Dechant D18-27D Plan #2 (4-29-11)	**Offset TVD Reference:**	Offset Datum

Offset Design Dechant D18-30D Pad Sec.7-T3N-R64W - Dechant D18-30D - Wellbore #1 - Noble Dechant D18-30D F

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
2,100.0	2,055.8	1,845.6	1,789.1	7.3	8.1	155.46	-79.7	-345.9	674.9	665.5	9.39	71.912	
2,146.5	2,097.5	1,876.6	1,817.3	7.7	8.3	155.32	-83.3	-358.2	709.5	699.9	9.63	73.673	
2,200.0	2,145.2	1,912.0	1,849.5	8.2	8.6	155.65	-87.3	-372.1	749.6	739.6	9.96	75.276	
2,300.0	2,234.3	1,978.0	1,909.7	9.1	9.2	156.17	-95.0	-398.2	824.5	813.9	10.58	77.928	
2,400.0	2,323.5	2,044.1	1,970.0	10.1	9.8	156.61	-102.6	-424.3	899.4	888.2	11.21	80.217	
2,500.0	2,412.6	2,110.2	2,030.2	11.0	10.3	156.98	-110.3	-450.4	974.4	962.5	11.85	82.211	
2,600.0	2,501.8	2,176.2	2,090.4	12.0	10.9	157.30	-117.9	-476.5	1,049.3	1,036.8	12.50	83.948	
2,700.0	2,590.9	2,242.3	2,150.6	13.0	11.5	157.58	-125.5	-502.7	1,124.3	1,111.2	13.15	85.479	
2,800.0	2,680.1	2,308.4	2,210.8	13.9	12.1	157.82	-133.2	-528.8	1,199.3	1,185.5	13.81	86.838	
2,900.0	2,769.3	2,374.4	2,271.0	14.9	12.7	158.03	-140.8	-554.9	1,274.3	1,259.9	14.47	88.043	
3,000.0	2,858.4	2,440.5	2,331.2	15.9	13.2	158.22	-148.4	-581.0	1,349.4	1,334.2	15.14	89.123	
3,100.0	2,947.6	2,506.6	2,391.4	16.9	13.8	158.39	-156.1	-607.1	1,424.4	1,408.6	15.81	90.095	
3,200.0	3,036.7	2,572.6	2,451.6	17.8	14.4	158.54	-163.7	-633.2	1,499.4	1,482.9	16.48	90.970	
3,300.0	3,125.9	2,638.7	2,511.8	18.8	15.0	158.68	-171.3	-659.3	1,574.4	1,557.3	17.16	91.764	
3,400.0	3,215.0	2,704.8	2,572.0	19.8	15.6	158.80	-179.0	-685.4	1,649.5	1,631.6	17.83	92.487	
3,500.0	3,304.2	2,770.8	2,632.2	20.8	16.1	158.92	-186.6	-711.5	1,724.5	1,706.0	18.51	93.145	
3,600.0	3,393.3	2,836.9	2,692.4	21.8	16.7	159.02	-194.2	-737.6	1,799.5	1,780.3	19.20	93.749	
3,700.0	3,482.5	2,903.0	2,752.6	22.8	17.3	159.12	-201.9	-763.7	1,874.6	1,854.7	19.88	94.304	
3,800.0	3,571.7	2,969.0	2,812.9	23.8	17.9	159.21	-209.5	-789.8	1,949.6	1,929.1	20.56	94.813	
3,900.0	3,660.8	3,035.1	2,873.1	24.8	18.5	159.29	-217.1	-815.9	2,024.7	2,003.4	21.25	95.285	
4,000.0	3,750.0	3,101.2	2,933.3	25.8	19.1	159.37	-224.8	-842.0	2,099.7	2,077.8	21.94	95.721	
4,100.0	3,839.1	3,167.2	2,993.5	26.8	19.6	159.44	-232.4	-868.1	2,174.8	2,152.1	22.62	96.125	
4,200.0	3,928.3	3,233.3	3,053.7	27.7	20.2	159.51	-240.0	-894.2	2,249.8	2,226.5	23.31	96.502	
4,300.0	4,017.4	3,299.4	3,113.9	28.7	20.8	159.57	-247.7	-920.4	2,324.9	2,300.9	24.00	96.853	
4,400.0	4,106.6	3,365.4	3,174.1	29.7	21.4	159.63	-255.3	-946.5	2,399.9	2,375.2	24.70	97.179	
4,500.0	4,195.7	3,431.5	3,234.3	30.7	22.0	159.68	-263.0	-972.6	2,475.0	2,449.6	25.39	97.485	
4,600.0	4,284.9	3,497.6	3,294.5	31.7	22.6	159.73	-270.6	-998.7	2,550.0	2,523.9	26.08	97.772	
4,700.0	4,374.1	3,563.6	3,354.7	32.7	23.2	159.78	-278.2	-1,024.8	2,625.1	2,598.3	26.78	98.040	
4,800.0	4,463.2	3,629.7	3,414.9	33.7	23.7	159.83	-285.9	-1,050.9	2,700.1	2,672.7	27.47	98.293	
4,900.0	4,552.4	3,695.8	3,475.1	34.7	24.3	159.87	-293.5	-1,077.0	2,775.2	2,747.0	28.17	98.531	
5,000.0	4,641.5	3,761.8	3,535.3	35.7	24.9	159.91	-301.1	-1,103.1	2,850.2	2,821.4	28.86	98.755	
5,100.0	4,730.7	3,827.9	3,595.5	36.7	25.5	159.95	-308.8	-1,129.2	2,925.3	2,895.7	29.56	98.966	
5,180.6	4,802.5	3,881.1	3,644.1	37.5	26.0	159.98	-314.9	-1,150.2	2,985.8	2,955.6	30.12	99.128	
5,200.0	4,819.9	3,894.0	3,655.8	37.7	26.1	160.14	-316.4	-1,155.3	3,000.3	2,970.0	30.29	99.047	
5,300.0	4,910.1	3,961.8	3,717.6	38.5	26.7	160.87	-324.2	-1,182.1	3,073.8	3,042.7	31.14	98.710	
5,400.0	5,001.8	4,031.9	3,781.5	39.2	27.3	161.51	-332.3	-1,209.8	3,145.1	3,113.1	31.99	98.324	
5,500.0	5,094.8	4,104.4	3,847.5	39.8	28.0	162.06	-340.7	-1,238.5	3,214.0	3,181.2	32.82	97.917	
5,600.0	5,189.0	4,179.0	3,915.6	40.4	28.6	162.53	-349.3	-1,268.0	3,280.4	3,246.8	33.64	97.503	
5,700.0	5,284.4	4,255.8	3,985.5	40.9	29.3	162.94	-358.2	-1,298.3	3,344.4	3,309.9	34.44	97.097	
5,800.0	5,380.7	4,334.6	4,057.4	41.4	30.0	163.28	-367.3	-1,329.4	3,405.7	3,370.5	35.22	96.708	
5,900.0	5,477.9	4,415.4	4,130.9	41.8	30.7	163.57	-376.7	-1,361.4	3,464.4	3,428.4	35.96	96.341	
6,000.0	5,575.9	4,498.0	4,206.2	42.2	31.5	163.81	-386.2	-1,394.0	3,520.3	3,483.6	36.67	96.003	
6,100.0	5,674.5	4,582.3	4,283.0	42.5	32.2	164.00	-396.0	-1,427.3	3,573.5	3,536.1	37.34	95.696	
6,200.0	5,773.6	4,668.2	4,361.3	42.7	33.0	164.15	-405.9	-1,461.3	3,623.8	3,585.8	37.98	95.424	
6,300.0	5,873.2	4,755.7	4,441.1	42.9	33.7	164.26	-416.0	-1,495.8	3,671.1	3,632.6	38.57	95.188	
6,400.0	5,973.0	4,844.6	4,522.1	43.0	34.5	164.34	-426.3	-1,530.9	3,715.6	3,676.5	39.12	94.990	
6,500.0	6,072.9	4,934.7	4,604.2	43.1	35.3	164.39	-436.7	-1,566.6	3,757.0	3,717.4	39.62	94.831	
6,527.1	6,100.0	4,959.4	4,626.7	43.1	35.6	-86.43	-439.5	-1,576.3	3,767.7	3,728.0	39.75	94.792	
6,600.0	6,172.9	6,560.6	6,172.9	43.2	42.0	-88.18	-535.4	-1,904.2	3,790.8	3,747.0	43.85	86.457	
6,700.0	6,272.9	6,660.6	6,272.9	43.3	42.1	-88.18	-535.4	-1,904.2	3,790.8	3,746.7	44.08	86.006	
6,800.0	6,372.9	6,760.6	6,372.9	43.3	42.2	-88.18	-535.4	-1,904.2	3,790.8	3,746.5	44.31	85.554	
6,900.0	6,472.9	6,860.6	6,472.9	43.4	42.3	-88.18	-535.4	-1,904.2	3,790.8	3,746.3	44.55	85.099	

Company:	NOBLE ENERGY INC WELD COUNTY CO	**Local Co-ordinate Reference:**	Well Dechant D18-27D
Project:	SEC.7-T3N-R64W	**TVD Reference:**	WELL @ 4838.0ft (Original Well Elev)
Reference Site:	Dechant D18-30D Pad Sec.7-T3N-R64W	**MD Reference:**	WELL @ 4838.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Dechant D18-27D	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Noble Dechant D18-27D Plan #2 (4-29-11)	**Offset TVD Reference:**	Offset Datum

Offset Design Dechant D18-30D Pad Sec.7-T3N-R64W - Dechant D18-30D - Wellbore #1 - Noble Dechant D18-30D F

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
7,000.0	6,572.9	6,960.6	6,572.9	43.5	42.3	-88.18	-535.4	-1,904.2	3,790.8	3,746.0	44.79	84.644	
7,100.0	6,672.9	7,060.6	6,672.9	43.5	42.4	-88.18	-535.4	-1,904.2	3,790.8	3,745.8	45.03	84.187	
7,200.0	6,772.9	7,160.6	6,772.9	43.6	42.5	-88.18	-535.4	-1,904.2	3,790.8	3,745.5	45.27	83.729	
7,300.0	6,872.9	7,260.6	6,872.9	43.7	42.5	-88.18	-535.4	-1,904.2	3,790.8	3,745.3	45.52	83.271	
7,400.0	6,972.9	7,360.6	6,972.9	43.7	42.6	-88.18	-535.4	-1,904.2	3,790.8	3,745.0	45.78	82.812	
7,500.0	7,072.9	7,460.6	7,072.9	43.8	42.7	-88.18	-535.4	-1,904.2	3,790.8	3,744.8	46.03	82.352	
7,600.0	7,172.9	7,560.6	7,172.9	43.9	42.8	-88.18	-535.4	-1,904.2	3,790.8	3,744.5	46.29	81.893	
7,635.1	7,208.0	7,595.7	7,208.0	43.9	42.8	-88.18	-535.4	-1,904.2	3,790.8	3,744.4	46.38	81.732	

Company:	NOBLE ENERGY INC WELD COUNTY CO	**Local Co-ordinate Reference:**	Well Dechant D18-27D
Project:	SEC.7-T3N-R64W	**TVD Reference:**	WELL @ 4838.0ft (Original Well Elev)
Reference Site:	Dechant D18-30D Pad Sec.7-T3N-R64W	**MD Reference:**	WELL @ 4838.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Dechant D18-27D	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Noble Dechant D18-27D Plan #2 (4-29-11)	**Offset TVD Reference:**	Offset Datum

Offset Design Dechant D18-30D Pad Sec.7-T3N-R64W - Dechant D7-14 (Exist.) - Wellbore #1 - Design #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-33.84	58.3	-39.1	70.2				
100.0	100.0	100.0	100.0	0.1	0.1	-33.84	58.3	-39.1	70.2	70.0	0.22	312.258	
200.0	200.0	200.0	200.0	0.3	0.3	-33.84	58.3	-39.1	70.2	69.5	0.67	104.086	
300.0	300.0	300.0	300.0	0.6	0.6	-33.84	58.3	-39.1	70.2	69.1	1.12	62.452	
400.0	400.0	400.0	400.0	0.8	0.8	-33.84	58.3	-39.1	70.2	68.6	1.57	44.608	
500.0	500.0	500.0	500.0	1.0	1.0	-33.84	58.3	-39.1	70.2	68.2	2.02	34.695	
600.0	600.0	600.0	600.0	1.2	1.2	-33.84	58.3	-39.1	70.2	67.7	2.47	28.387	
700.0	700.0	700.0	700.0	1.5	1.5	-33.84	58.3	-39.1	70.2	67.3	2.92	24.020	
800.0	800.0	800.0	800.0	1.7	1.7	-33.84	58.3	-39.1	70.2	66.8	3.37	20.817	CC, ES
900.0	900.0	900.0	900.0	1.9	1.9	-143.85	58.3	-39.1	71.6	67.8	3.80	18.822	
1,000.0	999.8	999.8	999.8	2.1	2.1	-146.13	58.3	-39.1	75.9	71.7	4.22	17.970	
1,100.0	1,099.5	1,099.5	1,099.5	2.3	2.4	-149.40	58.3	-39.1	83.3	78.6	4.65	17.918	SF
1,200.0	1,198.7	1,198.7	1,198.7	2.6	2.6	-153.08	58.3	-39.1	94.0	88.9	5.07	18.519	
1,300.0	1,297.5	1,297.5	1,297.5	2.8	2.8	-156.71	58.3	-39.1	108.2	102.7	5.50	19.662	
1,400.0	1,395.6	1,395.6	1,395.6	3.2	3.0	-160.02	58.3	-39.1	126.0	120.0	5.93	21.248	
1,500.0	1,493.1	1,493.1	1,493.1	3.5	3.2	-162.87	58.3	-39.1	147.3	141.0	6.35	23.196	
1,600.0	1,589.6	1,589.6	1,589.6	4.0	3.5	-165.27	58.3	-39.1	172.3	165.5	6.77	25.436	
1,700.0	1,685.3	1,685.3	1,685.3	4.5	3.7	-167.26	58.3	-39.1	200.8	193.6	7.19	27.909	
1,800.0	1,779.8	1,779.8	1,779.8	5.1	3.9	-168.89	58.3	-39.1	232.7	225.1	7.61	30.570	
1,900.0	1,873.2	1,873.2	1,873.2	5.7	4.1	-170.24	58.3	-39.1	268.0	260.0	8.03	33.380	
2,000.0	1,965.2	1,965.2	1,965.2	6.5	4.3	-171.35	58.3	-39.1	306.7	298.2	8.45	36.309	
2,100.0	2,055.8	2,055.8	2,055.8	7.3	4.5	-172.27	58.3	-39.1	348.6	339.7	8.86	39.333	
2,146.5	2,097.5	2,097.5	2,097.5	7.7	4.6	-172.64	58.3	-39.1	369.2	360.1	9.06	40.767	
2,200.0	2,145.2	2,145.2	2,145.2	8.2	4.7	-173.09	58.3	-39.1	393.2	383.9	9.33	42.163	
2,300.0	2,234.3	2,234.3	2,234.3	9.1	4.9	-173.81	58.3	-39.1	438.3	428.4	9.84	44.543	
2,400.0	2,323.5	2,323.5	2,323.5	10.1	5.1	-174.38	58.3	-39.1	483.4	473.0	10.36	46.658	
2,500.0	2,412.6	2,412.6	2,412.6	11.0	5.3	-174.86	58.3	-39.1	528.5	517.6	10.89	48.547	
2,600.0	2,501.8	2,501.8	2,501.8	12.0	5.5	-175.27	58.3	-39.1	573.7	562.3	11.42	50.241	
2,700.0	2,590.9	2,590.9	2,590.9	13.0	5.7	-175.61	58.3	-39.1	618.9	606.9	11.95	51.766	
2,800.0	2,680.1	2,680.1	2,680.1	13.9	5.9	-175.91	58.3	-39.1	664.0	651.6	12.49	53.145	
2,900.0	2,769.3	2,769.3	2,769.3	14.9	6.1	-176.17	58.3	-39.1	709.2	696.2	13.04	54.397	
3,000.0	2,858.4	2,858.4	2,858.4	15.9	6.3	-176.40	58.3	-39.1	754.5	740.9	13.58	55.538	
3,100.0	2,947.6	2,947.6	2,947.6	16.9	6.5	-176.61	58.3	-39.1	799.7	785.6	14.13	56.582	
3,200.0	3,036.7	3,036.7	3,036.7	17.8	6.7	-176.79	58.3	-39.1	844.9	830.2	14.68	57.539	
3,300.0	3,125.9	3,125.9	3,125.9	18.8	6.9	-176.95	58.3	-39.1	890.2	874.9	15.24	58.419	
3,400.0	3,215.0	3,215.0	3,215.0	19.8	7.1	-177.10	58.3	-39.1	935.4	919.6	15.79	59.232	
3,500.0	3,304.2	3,304.2	3,304.2	20.8	7.3	-177.23	58.3	-39.1	980.6	964.3	16.35	59.984	
3,600.0	3,393.3	3,393.3	3,393.3	21.8	7.5	-177.36	58.3	-39.1	1,025.9	1,009.0	16.91	60.681	
3,700.0	3,482.5	3,482.5	3,482.5	22.8	7.7	-177.47	58.3	-39.1	1,071.2	1,053.7	17.47	61.330	
3,800.0	3,571.7	3,571.7	3,571.7	23.8	7.9	-177.57	58.3	-39.1	1,116.4	1,098.4	18.03	61.934	
3,900.0	3,660.8	3,660.8	3,660.8	24.8	8.1	-177.66	58.3	-39.1	1,161.7	1,143.1	18.59	62.498	
4,000.0	3,750.0	3,750.0	3,750.0	25.8	8.3	-177.75	58.3	-39.1	1,206.9	1,187.8	19.15	63.026	
4,100.0	3,839.1	3,839.1	3,839.1	26.8	8.5	-177.83	58.3	-39.1	1,252.2	1,232.5	19.71	63.521	
4,200.0	3,928.3	3,928.3	3,928.3	27.7	8.7	-177.91	58.3	-39.1	1,297.5	1,277.2	20.28	63.985	
4,300.0	4,017.4	4,017.4	4,017.4	28.7	8.9	-177.98	58.3	-39.1	1,342.7	1,321.9	20.84	64.422	
4,400.0	4,106.6	4,106.6	4,106.6	29.7	9.1	-178.05	58.3	-39.1	1,388.0	1,366.6	21.41	64.834	
4,500.0	4,195.7	4,195.7	4,195.7	30.7	9.3	-178.11	58.3	-39.1	1,433.3	1,411.3	21.98	65.222	
4,600.0	4,284.9	4,284.9	4,284.9	31.7	9.5	-178.17	58.3	-39.1	1,478.5	1,456.0	22.54	65.589	
4,700.0	4,374.1	4,374.1	4,374.1	32.7	9.7	-178.22	58.3	-39.1	1,523.8	1,500.7	23.11	65.936	
4,800.0	4,463.2	4,463.2	4,463.2	33.7	9.9	-178.27	58.3	-39.1	1,569.1	1,545.4	23.68	66.265	
4,900.0	4,552.4	4,552.4	4,552.4	34.7	10.1	-178.32	58.3	-39.1	1,614.4	1,590.1	24.25	66.577	
5,000.0	4,641.5	4,641.5	4,641.5	35.7	10.3	-178.37	58.3	-39.1	1,659.6	1,634.8	24.82	66.873	

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

Company:	NOBLE ENERGY INC WELD COUNTY CO	**Local Co-ordinate Reference:**	Well Dechant D18-27D
Project:	SEC.7-T3N-R64W	**TVD Reference:**	WELL @ 4838.0ft (Original Well Elev)
Reference Site:	Dechant D18-30D Pad Sec.7-T3N-R64W	**MD Reference:**	WELL @ 4838.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Dechant D18-27D	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Noble Dechant D18-27D Plan #2 (4-29-11)	**Offset TVD Reference:**	Offset Datum

Offset Design Dechant D18-30D Pad Sec.7-T3N-R64W - Dechant D7-14 (Exist.) - Wellbore #1 - Design #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	4,730.7	4,730.7	4,730.7	36.7	10.5	-178.41	58.3	-39.1	1,704.9	1,679.5	25.39	67.154	
5,180.6	4,802.5	4,802.5	4,802.5	37.5	10.7	-178.44	58.3	-39.1	1,741.4	1,715.5	25.85	67.371	
5,200.0	4,819.9	4,819.9	4,819.9	37.7	10.7	-178.46	58.3	-39.1	1,750.1	1,724.1	25.99	67.341	
5,300.0	4,910.1	4,910.1	4,910.1	38.5	10.9	-178.52	58.3	-39.1	1,793.2	1,766.5	26.68	67.208	
5,400.0	5,001.8	5,001.8	5,001.8	39.2	11.1	-178.57	58.3	-39.1	1,833.2	1,805.8	27.34	67.053	
5,500.0	5,094.8	5,094.8	5,094.8	39.8	11.3	-178.62	58.3	-39.1	1,869.9	1,841.9	27.96	66.882	
5,600.0	5,189.0	5,189.0	5,189.0	40.4	11.6	-178.66	58.3	-39.1	1,903.3	1,874.8	28.54	66.696	
5,700.0	5,284.4	5,284.4	5,284.4	40.9	11.8	-178.69	58.3	-39.1	1,933.4	1,904.4	29.08	66.498	
5,800.0	5,380.7	5,380.7	5,380.7	41.4	12.0	-178.73	58.3	-39.1	1,960.2	1,930.7	29.57	66.290	
5,900.0	5,477.9	5,477.9	5,477.9	41.8	12.2	-178.75	58.3	-39.1	1,983.6	1,953.6	30.02	66.073	
6,000.0	5,575.9	5,575.9	5,575.9	42.2	12.4	-178.77	58.3	-39.1	2,003.6	1,973.2	30.43	65.849	
6,100.0	5,674.5	5,674.5	5,674.5	42.5	12.6	-178.79	58.3	-39.1	2,020.2	1,989.4	30.79	65.618	
6,200.0	5,773.6	5,773.6	5,773.6	42.7	12.9	-178.80	58.3	-39.1	2,033.3	2,002.2	31.10	65.381	
6,300.0	5,873.2	5,873.2	5,873.2	42.9	13.1	-178.81	58.3	-39.1	2,043.0	2,011.6	31.36	65.137	
6,400.0	5,973.0	5,973.0	5,973.0	43.0	13.3	-178.82	58.3	-39.1	2,049.2	2,017.6	31.58	64.886	
6,500.0	6,072.9	6,072.9	6,072.9	43.1	13.5	-178.82	58.3	-39.1	2,051.8	2,020.1	31.75	64.627	
6,527.1	6,100.0	6,100.0	6,100.0	43.1	13.6	-69.64	58.3	-39.1	2,052.0	2,020.2	31.79	64.554	
6,600.0	6,172.9	6,172.9	6,172.9	43.2	13.8	-69.64	58.3	-39.1	2,052.0	2,019.9	32.05	64.022	
6,700.0	6,272.9	6,272.9	6,272.9	43.3	14.0	-69.64	58.3	-39.1	2,052.0	2,019.6	32.41	63.305	
6,800.0	6,372.9	6,372.9	6,372.9	43.3	14.2	-69.64	58.3	-39.1	2,052.0	2,019.2	32.78	62.600	
6,900.0	6,472.9	6,472.9	6,472.9	43.4	14.4	-69.64	58.3	-39.1	2,052.0	2,018.8	33.15	61.907	
7,000.0	6,572.9	6,572.9	6,572.9	43.5	14.7	-69.64	58.3	-39.1	2,052.0	2,018.5	33.51	61.227	
7,100.0	6,672.9	6,672.9	6,672.9	43.5	14.9	-69.64	58.3	-39.1	2,052.0	2,018.1	33.88	60.558	
7,200.0	6,772.9	6,772.9	6,772.9	43.6	15.1	-69.64	58.3	-39.1	2,052.0	2,017.7	34.26	59.902	
7,300.0	6,872.9	6,872.9	6,872.9	43.7	15.3	-69.64	58.3	-39.1	2,052.0	2,017.3	34.63	59.256	
7,400.0	6,972.9	6,972.9	6,972.9	43.7	15.6	-69.64	58.3	-39.1	2,052.0	2,017.0	35.00	58.623	
7,500.0	7,072.9	7,072.9	7,072.9	43.8	15.8	-69.64	58.3	-39.1	2,052.0	2,016.6	35.38	58.000	
7,600.0	7,172.9	7,172.9	7,172.9	43.9	16.0	-69.64	58.3	-39.1	2,052.0	2,016.2	35.76	57.388	
7,635.1	7,208.0	7,208.0	7,208.0	43.9	16.1	-69.64	58.3	-39.1	2,052.0	2,016.1	35.89	57.176	

Company:	NOBLE ENERGY INC WELD COUNTY CO	**Local Co-ordinate Reference:**	Well Dechant D18-27D
Project:	SEC.7-T3N-R64W	**TVD Reference:**	WELL @ 4838.0ft (Original Well Elev)
Reference Site:	Dechant D18-30D Pad Sec.7-T3N-R64W	**MD Reference:**	WELL @ 4838.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Dechant D18-27D	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Noble Dechant D18-27D Plan #2 (4-29-11)	**Offset TVD Reference:**	Offset Datum

Offset Design Dechant D18-30D Pad Sec.7-T3N-R64W - Dechant D7-15 (Exist.) - Wellbore #1 - Design #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	91.32	-25.5	1,108.4	1,108.8				
100.0	100.0	88.0	88.0	0.1	0.1	91.32	-25.5	1,108.4	1,108.7	1,108.5	0.21	5,247.105	
200.0	200.0	188.0	188.0	0.3	0.3	91.32	-25.5	1,108.4	1,108.7	1,108.1	0.65	1,712.791	
300.0	300.0	288.0	288.0	0.6	0.5	91.32	-25.5	1,108.4	1,108.7	1,107.6	1.10	1,010.828	
400.0	400.0	388.0	388.0	0.8	0.8	91.32	-25.5	1,108.4	1,108.7	1,107.2	1.55	716.982	
500.0	500.0	488.0	488.0	1.0	1.0	91.32	-25.5	1,108.4	1,108.7	1,106.7	2.00	555.500	
600.0	600.0	588.0	588.0	1.2	1.2	91.32	-25.5	1,108.4	1,108.7	1,106.3	2.45	453.386	
700.0	700.0	688.0	688.0	1.5	1.4	91.32	-25.5	1,108.4	1,108.7	1,105.8	2.89	382.984	
800.0	800.0	788.0	788.0	1.7	1.7	91.32	-25.5	1,108.4	1,108.7	1,105.4	3.34	331.508	
900.0	900.0	888.0	888.0	1.9	1.9	-17.90	-25.5	1,108.4	1,107.1	1,103.3	3.78	293.206	
1,000.0	999.8	987.8	987.8	2.1	2.1	-18.02	-25.5	1,108.4	1,102.1	1,097.9	4.19	262.845	
1,100.0	1,099.5	1,087.5	1,087.5	2.3	2.3	-18.21	-25.5	1,108.4	1,093.8	1,089.2	4.61	237.054	
1,200.0	1,198.7	1,186.7	1,186.7	2.6	2.6	-18.49	-25.5	1,108.4	1,082.2	1,077.2	5.04	214.768	
1,300.0	1,297.5	1,285.5	1,285.5	2.8	2.8	-18.85	-25.5	1,108.4	1,067.4	1,061.9	5.47	195.190	
1,400.0	1,395.6	1,383.6	1,383.6	3.2	3.0	-19.31	-25.5	1,108.4	1,049.3	1,043.4	5.90	177.726	
1,500.0	1,493.1	1,481.1	1,481.1	3.5	3.2	-19.87	-25.5	1,108.4	1,028.1	1,021.7	6.35	161.928	
1,600.0	1,589.6	1,577.6	1,577.6	4.0	3.4	-20.54	-25.5	1,108.4	1,003.7	996.9	6.81	147.459	
1,700.0	1,685.3	1,673.3	1,673.3	4.5	3.6	-21.35	-25.5	1,108.4	976.2	968.9	7.28	134.060	
1,800.0	1,779.8	1,767.8	1,767.8	5.1	3.9	-22.30	-25.5	1,108.4	945.8	938.0	7.78	121.534	
1,900.0	1,873.2	1,861.2	1,861.2	5.7	4.1	-23.43	-25.5	1,108.4	912.4	904.1	8.32	109.731	
2,000.0	1,965.2	1,953.2	1,953.2	6.5	4.3	-24.75	-25.5	1,108.4	876.3	867.4	8.89	98.540	
2,100.0	2,055.8	2,043.8	2,043.8	7.3	4.5	-26.31	-25.5	1,108.4	837.5	828.0	9.53	87.884	
2,146.5	2,097.5	2,085.5	2,085.5	7.7	4.6	-27.13	-25.5	1,108.4	818.6	808.8	9.85	83.096	
2,200.0	2,145.2	2,133.2	2,133.2	8.2	4.7	-27.91	-25.5	1,108.4	796.7	786.4	10.26	77.618	
2,300.0	2,234.3	2,222.3	2,222.3	9.1	4.9	-29.47	-25.5	1,108.4	755.9	744.9	11.08	68.238	
2,400.0	2,323.5	2,311.5	2,311.5	10.1	5.1	-31.21	-25.5	1,108.4	715.8	703.8	11.95	59.883	
2,500.0	2,412.6	2,400.6	2,400.6	11.0	5.3	-33.13	-25.5	1,108.4	676.3	663.4	12.89	52.445	
2,600.0	2,501.8	2,489.8	2,489.8	12.0	5.5	-35.28	-25.5	1,108.4	637.5	623.6	13.91	45.829	
2,700.0	2,590.9	2,578.9	2,578.9	13.0	5.7	-37.68	-25.5	1,108.4	599.7	584.7	15.01	39.953	
2,800.0	2,680.1	2,668.1	2,668.1	13.9	5.9	-40.38	-25.5	1,108.4	563.0	546.8	16.20	34.749	
2,900.0	2,769.3	2,757.3	2,757.3	14.9	6.1	-43.41	-25.5	1,108.4	527.6	510.1	17.49	30.160	
3,000.0	2,858.4	2,846.4	2,846.4	15.9	6.3	-46.82	-25.5	1,108.4	493.9	475.0	18.89	26.139	
3,100.0	2,947.6	2,935.6	2,935.6	16.9	6.5	-50.66	-25.5	1,108.4	462.1	441.7	20.40	22.648	
3,200.0	3,036.7	3,024.7	3,024.7	17.8	6.7	-54.97	-25.5	1,108.4	432.7	410.7	22.02	19.654	
3,300.0	3,125.9	3,113.9	3,113.9	18.8	6.9	-59.78	-25.5	1,108.4	406.3	382.6	23.72	17.131	
3,400.0	3,215.0	3,203.0	3,203.0	19.8	7.1	-65.12	-25.5	1,108.4	383.4	357.9	25.47	15.055	
3,500.0	3,304.2	3,292.2	3,292.2	20.8	7.3	-70.97	-25.5	1,108.4	364.7	337.5	27.21	13.403	
3,600.0	3,393.3	3,381.3	3,381.3	21.8	7.5	-77.25	-25.5	1,108.4	350.9	322.0	28.88	12.151	
3,700.0	3,482.5	3,470.5	3,470.5	22.8	7.7	-83.86	-25.5	1,108.4	342.6	312.2	30.39	11.275	
3,790.6	3,563.3	3,551.3	3,551.3	23.7	7.9	-90.00	-25.5	1,108.4	340.1	308.6	31.55	10.781	CC
3,800.0	3,571.7	3,559.7	3,559.7	23.8	7.9	-90.64	-25.5	1,108.4	340.2	308.5	31.66	10.745	ES
3,900.0	3,660.8	3,648.8	3,648.8	24.8	8.1	-97.40	-25.5	1,108.4	343.7	311.1	32.65	10.529	SF
4,000.0	3,750.0	3,738.0	3,738.0	25.8	8.3	-103.96	-25.5	1,108.4	353.1	319.8	33.34	10.593	
4,100.0	3,839.1	3,827.1	3,827.1	26.8	8.5	-110.17	-25.5	1,108.4	367.9	334.1	33.75	10.899	
4,200.0	3,928.3	3,916.3	3,916.3	27.7	8.7	-115.92	-25.5	1,108.4	387.4	353.5	33.95	11.411	
4,300.0	4,017.4	4,005.4	4,005.4	28.7	8.9	-121.16	-25.5	1,108.4	411.0	377.0	33.99	12.093	
4,400.0	4,106.6	4,094.6	4,094.6	29.7	9.1	-125.88	-25.5	1,108.4	438.0	404.1	33.93	12.911	
4,500.0	4,195.7	4,183.7	4,183.7	30.7	9.3	-130.10	-25.5	1,108.4	467.9	434.1	33.82	13.837	
4,600.0	4,284.9	4,272.9	4,272.9	31.7	9.5	-133.86	-25.5	1,108.4	500.1	466.4	33.69	14.844	
4,700.0	4,374.1	4,362.1	4,362.1	32.7	9.7	-137.19	-25.5	1,108.4	534.2	500.6	33.58	15.910	
4,800.0	4,463.2	4,451.2	4,451.2	33.7	9.9	-140.15	-25.5	1,108.4	569.8	536.3	33.49	17.015	
4,900.0	4,552.4	4,540.4	4,540.4	34.7	10.1	-142.79	-25.5	1,108.4	606.8	573.3	33.44	18.145	

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

Company:	NOBLE ENERGY INC WELD COUNTY CO	**Local Co-ordinate Reference:**	Well Dechant D18-27D
Project:	SEC.7-T3N-R64W	**TVD Reference:**	WELL @ 4838.0ft (Original Well Elev)
Reference Site:	Dechant D18-30D Pad Sec.7-T3N-R64W	**MD Reference:**	WELL @ 4838.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Dechant D18-27D	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Noble Dechant D18-27D Plan #2 (4-29-11)	**Offset TVD Reference:**	Offset Datum

Offset Design Dechant D18-30D Pad Sec.7-T3N-R64W - Dechant D7-15 (Exist.) - Wellbore #1 - Design #1

Offset Site Error: 0.0 ft

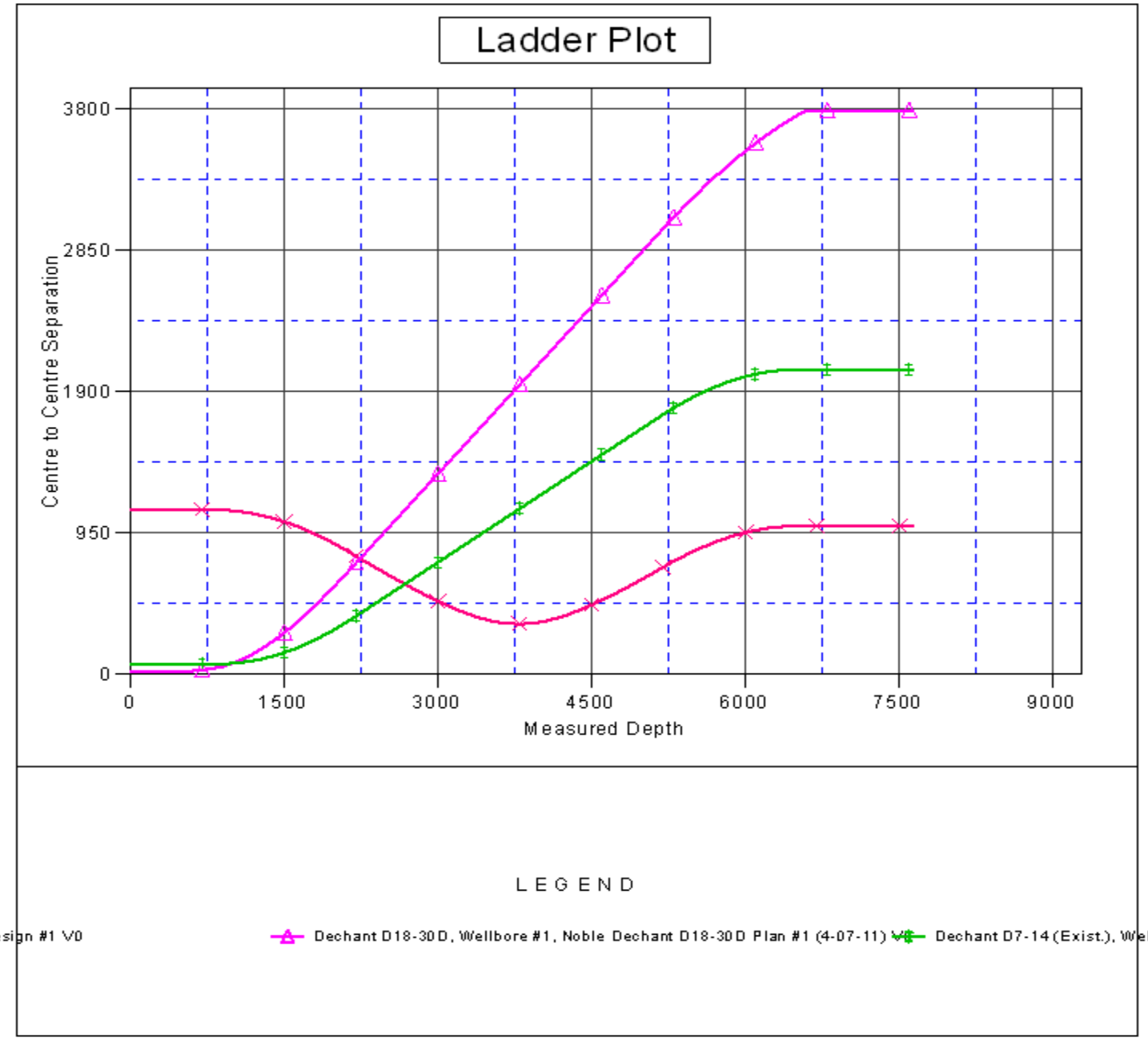
Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.0	4,641.5	4,629.5	4,629.5	35.7	10.3	-145.14	-25.5	1,108.4	644.8	611.3	33.43	19.287	
5,100.0	4,730.7	4,718.7	4,718.7	36.7	10.5	-147.25	-25.5	1,108.4	683.7	650.2	33.46	20.430	
5,180.6	4,802.5	4,790.5	4,790.5	37.5	10.7	-148.78	-25.5	1,108.4	715.6	682.0	33.52	21.346	
5,200.0	4,819.9	4,807.9	4,807.9	37.7	10.7	-149.22	-25.5	1,108.4	723.3	689.7	33.52	21.576	
5,300.0	4,910.1	4,898.1	4,898.1	38.5	10.9	-151.24	-25.5	1,108.4	761.6	728.0	33.53	22.710	
5,400.0	5,001.8	4,989.8	4,989.8	39.2	11.1	-152.95	-25.5	1,108.4	797.5	763.9	33.62	23.721	
5,500.0	5,094.8	5,082.8	5,082.8	39.8	11.3	-154.40	-25.5	1,108.4	830.9	797.1	33.76	24.610	
5,600.0	5,189.0	5,177.0	5,177.0	40.4	11.5	-155.62	-25.5	1,108.4	861.5	827.5	33.94	25.381	
5,700.0	5,284.4	5,272.4	5,272.4	40.9	11.7	-156.64	-25.5	1,108.4	889.3	855.1	34.15	26.039	
5,800.0	5,380.7	5,368.7	5,368.7	41.4	12.0	-157.50	-25.5	1,108.4	914.1	879.7	34.38	26.590	
5,900.0	5,477.9	5,465.9	5,465.9	41.8	12.2	-158.21	-25.5	1,108.4	935.8	901.2	34.61	27.040	
6,000.0	5,575.9	5,563.9	5,563.9	42.2	12.4	-158.80	-25.5	1,108.4	954.5	919.7	34.85	27.393	
6,100.0	5,674.5	5,662.5	5,662.5	42.5	12.6	-159.26	-25.5	1,108.4	970.0	934.9	35.08	27.655	
6,200.0	5,773.6	5,761.6	5,761.6	42.7	12.8	-159.62	-25.5	1,108.4	982.3	947.0	35.30	27.829	
6,300.0	5,873.2	5,861.2	5,861.2	42.9	13.1	-159.88	-25.5	1,108.4	991.4	955.9	35.51	27.918	
6,400.0	5,973.0	5,961.0	5,961.0	43.0	13.3	-160.04	-25.5	1,108.4	997.2	961.5	35.71	27.925	
6,500.0	6,072.9	6,060.9	6,060.9	43.1	13.5	-160.11	-25.5	1,108.4	999.7	963.8	35.89	27.852	
6,527.1	6,100.0	6,088.0	6,088.0	43.1	13.6	-50.93	-25.5	1,108.4	999.8	963.9	35.94	27.818	
6,600.0	6,172.9	6,160.9	6,160.9	43.2	13.7	-50.93	-25.5	1,108.4	999.8	963.7	36.19	27.629	
6,700.0	6,272.9	6,260.9	6,260.9	43.3	14.0	-50.93	-25.5	1,108.4	999.8	963.3	36.53	27.371	
6,800.0	6,372.9	6,360.9	6,360.9	43.3	14.2	-50.93	-25.5	1,108.4	999.8	963.0	36.87	27.116	
6,900.0	6,472.9	6,460.9	6,460.9	43.4	14.4	-50.93	-25.5	1,108.4	999.8	962.6	37.22	26.866	
7,000.0	6,572.9	6,560.9	6,560.9	43.5	14.6	-50.93	-25.5	1,108.4	999.8	962.3	37.56	26.618	
7,100.0	6,672.9	6,660.9	6,660.9	43.5	14.9	-50.93	-25.5	1,108.4	999.8	961.9	37.91	26.374	
7,200.0	6,772.9	6,760.9	6,760.9	43.6	15.1	-50.93	-25.5	1,108.4	999.8	961.6	38.26	26.134	
7,300.0	6,872.9	6,860.9	6,860.9	43.7	15.3	-50.93	-25.5	1,108.4	999.8	961.2	38.61	25.896	
7,400.0	6,972.9	6,960.9	6,960.9	43.7	15.5	-50.93	-25.5	1,108.4	999.8	960.9	38.96	25.663	
7,500.0	7,072.9	7,060.9	7,060.9	43.8	15.8	-50.93	-25.5	1,108.4	999.8	960.5	39.31	25.432	
7,600.0	7,172.9	7,160.9	7,160.9	43.9	16.0	-50.93	-25.5	1,108.4	999.8	960.2	39.67	25.204	
7,635.1	7,208.0	7,196.0	7,196.0	43.9	16.1	-50.93	-25.5	1,108.4	999.8	960.0	39.79	25.125	

Company:	NOBLE ENERGY INC WELD COUNTY CO	**Local Co-ordinate Reference:**	Well Dechant D18-27D
Project:	SEC.7-T3N-R64W	**TVD Reference:**	WELL @ 4838.0ft (Original Well Elev)
Reference Site:	Dechant D18-30D Pad Sec.7-T3N-R64W	**MD Reference:**	WELL @ 4838.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Dechant D18-27D	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Noble Dechant D18-27D Plan #2 (4-29-11)	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 4838.0ft (Original Well Elev)
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °
Coordinates are relative to: Dechant D18-27D
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.58°



Company:	NOBLE ENERGY INC WELD COUNTY CO	**Local Co-ordinate Reference:**	Well Dechant D18-27D
Project:	SEC.7-T3N-R64W	**TVD Reference:**	WELL @ 4838.0ft (Original Well Elev)
Reference Site:	Dechant D18-30D Pad Sec.7-T3N-R64W	**MD Reference:**	WELL @ 4838.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Dechant D18-27D	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Noble Dechant D18-27D Plan #2 (4-29-11)	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 4838.0ft (Original Well Elev) Coordinates are relative to: Dechant D18-27D
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°