

# ENSIGN

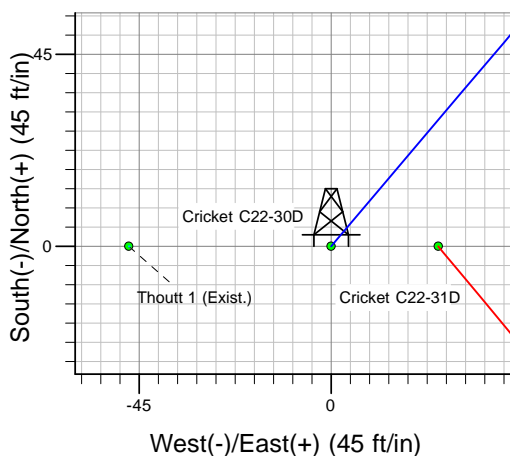
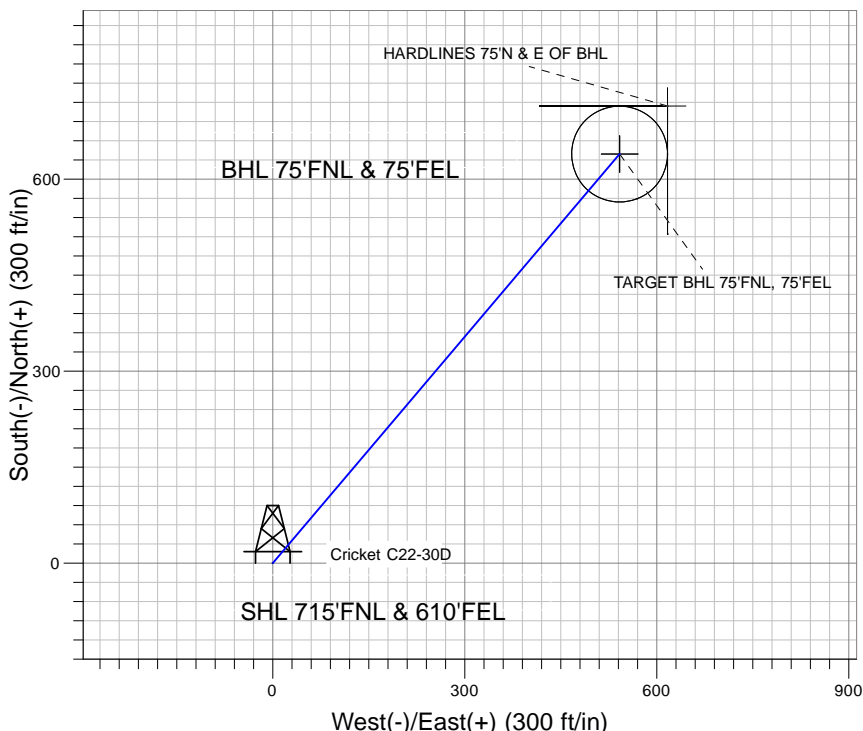
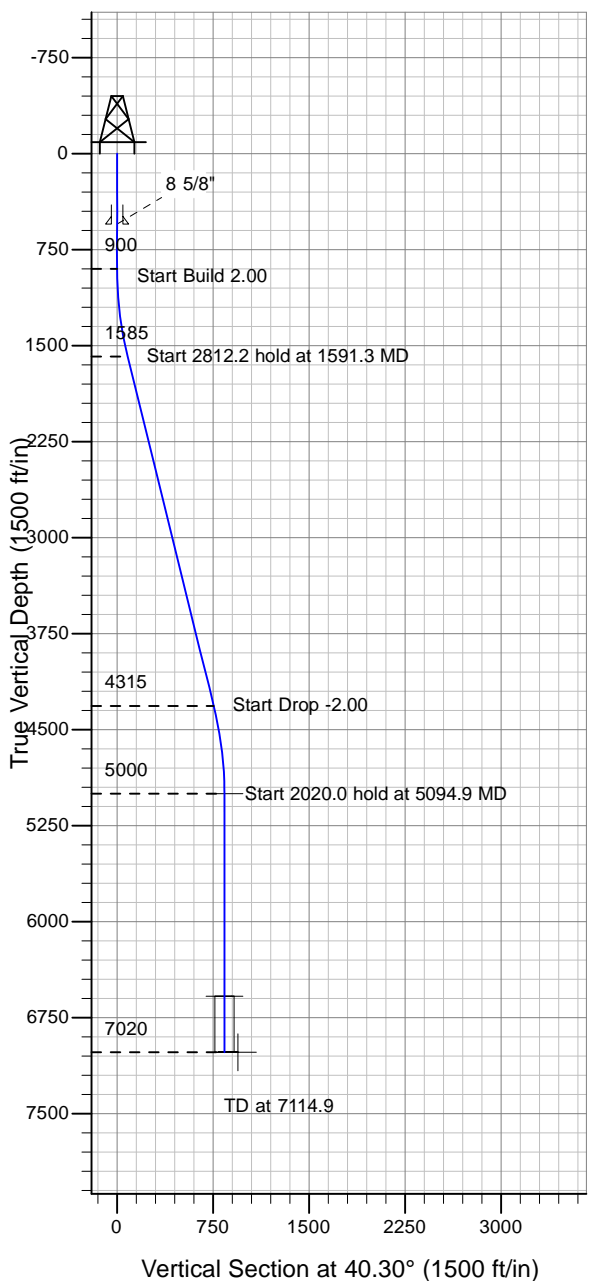
## Directional

### Well Name: Cricket C22-30D

Surface Location: Cricket C22-30D Pad Sec.21-T4N-R64W  
 North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone  
 Ground Elevation: 4687.0

+N/-S+E/-W Northing Easting Latitude Longitude Slot  
 0.0 0.0 1354717.09 3265389.88 40° 18' 11.484 N 104° 32' 54.420 W  
 Original Well Elev WELL @ 4700.0ft (Original Well Elev)

## NOBLE ENERGY INC WELD COUNTY CO



Cricket C22-30D Pad Sec.21-T4N-R64W  
 Cricket C22-30D  
 Noble Cricket C22-30D Plan #2 (05-10-10)  
 16:05, May 10 2010



Azimuths to True North  
 Magnetic North: 8.89°

Magnetic Field  
 Strength: 53226.8nT  
 Dip Angle: 67.05°  
 Date: 4/21/2010  
 Model: IGRF2010

### WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
TARGET BHL 75'FNL, 75'FEL	5000.0	639.2	542.0	40° 18' 17.800 N	104° 32' 47.424 W	Point
TARGET CIRCLE 75'FNL, 75'FEL	6583.0	639.2	542.0	40° 18' 17.800 N	104° 32' 47.424 W	Circle (Radius: 75.0)
HARDLINES 75'N & E OF BHL	7020.0	714.2	617.0	40° 18' 18.541 N	104° 32' 46.456 W	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	900.0	0.00	0.00	900.0	0.0	0.0	0.00	0.00	0.0	
3	1591.3	13.83	40.30	1584.6	63.3	53.7	2.00	40.30	83.0	
4	4403.6	13.83	40.30	4315.4	575.9	488.3	0.00	0.00	755.1	
5	5094.9	0.00	0.00	5000.0	639.2	542.0	2.00	180.00	838.1	TARGET BHL 75'FNL, 75'FEL
6	7114.9	0.00	0.00	7020.0	639.2	542.0	0.00	0.00	838.1	



# **NOBLE ENERGY INC WELD COUNTY CO**

**SEC.21-T4N-R64W**

**Cricket C22-30D Pad Sec.21-T4N-R64W**

**Cricket C22-30D**

**Wellbore #1**

**Plan: Noble Cricket C22-30D Plan #2 (05-10-10)**

## **Standard Planning Report**

**10 May, 2010**



<b>Database:</b>	EDM den0-adp01 Server Data	<b>Local Co-ordinate Reference:</b>	Well Cricket C22-30D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 4700.0ft (Original Well Elev)
<b>Project:</b>	SEC.21-T4N-R64W	<b>MD Reference:</b>	WELL @ 4700.0ft (Original Well Elev)
<b>Site:</b>	Cricket C22-30D Pad Sec.21-T4N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Cricket C22-30D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Cricket C22-30D Plan #2 (05-10-10)		

<b>Project</b>	SEC.21-T4N-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 Cricket C22-30D Pad Sec.21-T4N-R64W					
Site Position:		Northing:	1,354,717.10ft	Latitude:	40° 18' 11.484 N
From:	Lat/Long	Easting:	3,265,389.88ft	Longitude:	104° 32' 54.420 W
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.61 °

Well	Cricket C22-30D					
Well Position	+N/-S	0.0 ft	Northing:	1,354,717.09 ft	Latitude:	40° 18' 11.484 N
	+E/-W	0.0 ft	Easting:	3,265,389.88 ft	Longitude:	104° 32' 54.420 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,687.0 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	4/21/2010	8.89	67.05	53,227

<b>Design</b>	Noble Cricket C22-30D Plan #2 (05-10-10)			
<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	40.30

<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	
900.0	0.00	0.00	900.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,591.3	13.83	40.30	1,584.6	63.3	53.7	2.00	2.00	0.00	40.30	
4,403.6	13.83	40.30	4,315.4	575.9	488.3	0.00	0.00	0.00	0.00	
5,094.9	0.00	0.00	5,000.0	639.2	542.0	2.00	-2.00	0.00	180.00	TARGET BHL 75'FI
7,114.9	0.00	0.00	7,020.0	639.2	542.0	0.00	0.00	0.00	0.00	

<b>Database:</b>	EDM den0-adp01 Server Data	<b>Local Co-ordinate Reference:</b>	Well Cricket C22-30D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 4700.0ft (Original Well Elev)
<b>Project:</b>	SEC.21-T4N-R64W	<b>MD Reference:</b>	WELL @ 4700.0ft (Original Well Elev)
<b>Site:</b>	Cricket C22-30D Pad Sec.21-T4N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Cricket C22-30D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Cricket C22-30D Plan #2 (05-10-10)		

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
550.0	0.00	0.00	550.0	0.0	0.0	0.0	0.00	0.00	0.00
8 5/8"									
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
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	0.00	0.00	840.0	0.0	0.0	0.0	0.00	0.00	0.00
880.0	0.00	0.00	880.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
920.0	0.40	40.30	920.0	0.1	0.0	0.1	2.00	2.00	0.00
960.0	1.20	40.30	960.0	0.5	0.4	0.6	2.00	2.00	0.00
1,000.0	2.00	40.30	1,000.0	1.3	1.1	1.7	2.00	2.00	0.00
1,040.0	2.80	40.30	1,039.9	2.6	2.2	3.4	2.00	2.00	0.00
1,080.0	3.60	40.30	1,079.9	4.3	3.7	5.7	2.00	2.00	0.00
1,120.0	4.40	40.30	1,119.8	6.4	5.5	8.4	2.00	2.00	0.00
1,160.0	5.20	40.30	1,159.6	9.0	7.6	11.8	2.00	2.00	0.00
1,200.0	6.00	40.30	1,199.5	12.0	10.1	15.7	2.00	2.00	0.00
1,240.0	6.80	40.30	1,239.2	15.4	13.0	20.2	2.00	2.00	0.00
1,280.0	7.60	40.30	1,278.9	19.2	16.3	25.2	2.00	2.00	0.00
1,320.0	8.40	40.30	1,318.5	23.4	19.9	30.7	2.00	2.00	0.00
1,360.0	9.20	40.30	1,358.0	28.1	23.8	36.9	2.00	2.00	0.00
1,400.0	10.00	40.30	1,397.5	33.2	28.1	43.5	2.00	2.00	0.00
1,440.0	10.80	40.30	1,436.8	38.7	32.8	50.7	2.00	2.00	0.00
1,480.0	11.60	40.30	1,476.0	44.6	37.8	58.5	2.00	2.00	0.00
1,520.0	12.40	40.30	1,515.2	51.0	43.2	66.8	2.00	2.00	0.00
1,560.0	13.20	40.30	1,554.2	57.7	49.0	75.7	2.00	2.00	0.00
1,591.3	13.83	40.30	1,584.6	63.3	53.7	83.0	2.00	2.00	0.00
1,600.0	13.83	40.30	1,593.1	64.9	55.0	85.1	0.00	0.00	0.00
1,640.0	13.83	40.30	1,631.9	72.2	61.2	94.6	0.00	0.00	0.00
1,680.0	13.83	40.30	1,670.7	79.5	67.4	104.2	0.00	0.00	0.00
1,720.0	13.83	40.30	1,709.6	86.8	73.6	113.8	0.00	0.00	0.00
1,760.0	13.83	40.30	1,748.4	94.1	79.8	123.3	0.00	0.00	0.00
1,800.0	13.83	40.30	1,787.3	101.3	85.9	132.9	0.00	0.00	0.00
1,840.0	13.83	40.30	1,826.1	108.6	92.1	142.4	0.00	0.00	0.00
1,880.0	13.83	40.30	1,864.9	115.9	98.3	152.0	0.00	0.00	0.00
1,920.0	13.83	40.30	1,903.8	123.2	104.5	161.6	0.00	0.00	0.00
1,960.0	13.83	40.30	1,942.6	130.5	110.7	171.1	0.00	0.00	0.00

<b>Database:</b>	EDM den0-adp01 Server Data	<b>Local Co-ordinate Reference:</b>	Well Cricket C22-30D
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<b>Project:</b>	SEC.21-T4N-R64W	<b>MD Reference:</b>	WELL @ 4700.0ft (Original Well Elev)
<b>Site:</b>	Cricket C22-30D Pad Sec.21-T4N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Cricket C22-30D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Cricket C22-30D Plan #2 (05-10-10)		

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)
2,000.0	13.83	40.30	1,981.5	137.8	116.9	180.7	0.00	0.00	0.00
2,040.0	13.83	40.30	2,020.3	145.1	123.0	190.2	0.00	0.00	0.00
2,080.0	13.83	40.30	2,059.2	152.4	129.2	199.8	0.00	0.00	0.00
2,120.0	13.83	40.30	2,098.0	159.7	135.4	209.4	0.00	0.00	0.00
2,160.0	13.83	40.30	2,136.8	167.0	141.6	218.9	0.00	0.00	0.00
2,200.0	13.83	40.30	2,175.7	174.3	147.8	228.5	0.00	0.00	0.00
2,240.0	13.83	40.30	2,214.5	181.5	153.9	238.0	0.00	0.00	0.00
2,280.0	13.83	40.30	2,253.4	188.8	160.1	247.6	0.00	0.00	0.00
2,320.0	13.83	40.30	2,292.2	196.1	166.3	257.1	0.00	0.00	0.00
2,360.0	13.83	40.30	2,331.0	203.4	172.5	266.7	0.00	0.00	0.00
2,400.0	13.83	40.30	2,369.9	210.7	178.7	276.3	0.00	0.00	0.00
2,440.0	13.83	40.30	2,408.7	218.0	184.9	285.8	0.00	0.00	0.00
2,480.0	13.83	40.30	2,447.6	225.3	191.0	295.4	0.00	0.00	0.00
2,520.0	13.83	40.30	2,486.4	232.6	197.2	304.9	0.00	0.00	0.00
2,560.0	13.83	40.30	2,525.2	239.9	203.4	314.5	0.00	0.00	0.00
2,600.0	13.83	40.30	2,564.1	247.2	209.6	324.1	0.00	0.00	0.00
2,640.0	13.83	40.30	2,602.9	254.5	215.8	333.6	0.00	0.00	0.00
2,680.0	13.83	40.30	2,641.8	261.7	222.0	343.2	0.00	0.00	0.00
2,720.0	13.83	40.30	2,680.6	269.0	228.1	352.7	0.00	0.00	0.00
2,760.0	13.83	40.30	2,719.4	276.3	234.3	362.3	0.00	0.00	0.00
2,800.0	13.83	40.30	2,758.3	283.6	240.5	371.9	0.00	0.00	0.00
2,840.0	13.83	40.30	2,797.1	290.9	246.7	381.4	0.00	0.00	0.00
2,880.0	13.83	40.30	2,836.0	298.2	252.9	391.0	0.00	0.00	0.00
2,920.0	13.83	40.30	2,874.8	305.5	259.0	400.5	0.00	0.00	0.00
2,960.0	13.83	40.30	2,913.7	312.8	265.2	410.1	0.00	0.00	0.00
3,000.0	13.83	40.30	2,952.5	320.1	271.4	419.7	0.00	0.00	0.00
3,040.0	13.83	40.30	2,991.3	327.4	277.6	429.2	0.00	0.00	0.00
3,080.0	13.83	40.30	3,030.2	334.7	283.8	438.8	0.00	0.00	0.00
3,120.0	13.83	40.30	3,069.0	341.9	290.0	448.3	0.00	0.00	0.00
3,160.0	13.83	40.30	3,107.9	349.2	296.1	457.9	0.00	0.00	0.00
3,200.0	13.83	40.30	3,146.7	356.5	302.3	467.4	0.00	0.00	0.00
3,240.0	13.83	40.30	3,185.5	363.8	308.5	477.0	0.00	0.00	0.00
3,280.0	13.83	40.30	3,224.4	371.1	314.7	486.6	0.00	0.00	0.00
3,320.0	13.83	40.30	3,263.2	378.4	320.9	496.1	0.00	0.00	0.00
3,360.0	13.83	40.30	3,302.1	385.7	327.1	505.7	0.00	0.00	0.00
3,400.0	13.83	40.30	3,340.9	393.0	333.2	515.2	0.00	0.00	0.00
3,440.0	13.83	40.30	3,379.7	400.3	339.4	524.8	0.00	0.00	0.00
3,480.0	13.83	40.30	3,418.6	407.6	345.6	534.4	0.00	0.00	0.00
3,520.0	13.83	40.30	3,457.4	414.9	351.8	543.9	0.00	0.00	0.00
3,560.0	13.83	40.30	3,496.3	422.1	358.0	553.5	0.00	0.00	0.00
3,600.0	13.83	40.30	3,535.1	429.4	364.1	563.0	0.00	0.00	0.00
3,640.0	13.83	40.30	3,573.9	436.7	370.3	572.6	0.00	0.00	0.00
3,680.0	13.83	40.30	3,612.8	444.0	376.5	582.2	0.00	0.00	0.00
3,720.0	13.83	40.30	3,651.6	451.3	382.7	591.7	0.00	0.00	0.00
3,760.0	13.83	40.30	3,690.5	458.6	388.9	601.3	0.00	0.00	0.00
3,800.0	13.83	40.30	3,729.3	465.9	395.1	610.8	0.00	0.00	0.00
3,840.0	13.83	40.30	3,768.2	473.2	401.2	620.4	0.00	0.00	0.00
3,880.0	13.83	40.30	3,807.0	480.5	407.4	630.0	0.00	0.00	0.00
3,920.0	13.83	40.30	3,845.8	487.8	413.6	639.5	0.00	0.00	0.00
3,960.0	13.83	40.30	3,884.7	495.0	419.8	649.1	0.00	0.00	0.00
4,000.0	13.83	40.30	3,923.5	502.3	426.0	658.6	0.00	0.00	0.00
4,040.0	13.83	40.30	3,962.4	509.6	432.2	668.2	0.00	0.00	0.00
4,080.0	13.83	40.30	4,001.2	516.9	438.3	677.8	0.00	0.00	0.00
4,120.0	13.83	40.30	4,040.0	524.2	444.5	687.3	0.00	0.00	0.00

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<b>Project:</b>	SEC.21-T4N-R64W	<b>MD Reference:</b>	WELL @ 4700.0ft (Original Well Elev)
<b>Site:</b>	Cricket C22-30D Pad Sec.21-T4N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Cricket C22-30D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Cricket C22-30D Plan #2 (05-10-10)		

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)
4,160.0	13.83	40.30	4,078.9	531.5	450.7	696.9	0.00	0.00	0.00
4,200.0	13.83	40.30	4,117.7	538.8	456.9	706.4	0.00	0.00	0.00
4,240.0	13.83	40.30	4,156.6	546.1	463.1	716.0	0.00	0.00	0.00
4,280.0	13.83	40.30	4,195.4	553.4	469.2	725.5	0.00	0.00	0.00
4,320.0	13.83	40.30	4,234.2	560.7	475.4	735.1	0.00	0.00	0.00
4,360.0	13.83	40.30	4,273.1	568.0	481.6	744.7	0.00	0.00	0.00
4,400.0	13.83	40.30	4,311.9	575.2	487.8	754.2	0.00	0.00	0.00
4,403.6	13.83	40.30	4,315.4	575.9	488.3	755.1	0.00	0.00	0.00
4,440.0	13.10	40.30	4,350.8	582.4	493.8	763.6	2.00	-2.00	0.00
4,480.0	12.30	40.30	4,389.8	589.1	499.5	772.3	2.00	-2.00	0.00
4,520.0	11.50	40.30	4,429.0	595.4	504.9	780.6	2.00	-2.00	0.00
4,560.0	10.70	40.30	4,468.2	601.2	509.8	788.3	2.00	-2.00	0.00
4,600.0	9.90	40.30	4,507.6	606.7	514.5	795.4	2.00	-2.00	0.00
4,640.0	9.10	40.30	4,547.0	611.7	518.7	802.0	2.00	-2.00	0.00
4,680.0	8.30	40.30	4,586.6	616.3	522.6	808.1	2.00	-2.00	0.00
4,720.0	7.50	40.30	4,626.2	620.5	526.2	813.6	2.00	-2.00	0.00
4,760.0	6.70	40.30	4,665.9	624.3	529.4	818.5	2.00	-2.00	0.00
4,800.0	5.90	40.30	4,705.7	627.6	532.2	822.9	2.00	-2.00	0.00
4,840.0	5.10	40.30	4,745.5	630.6	534.7	826.8	2.00	-2.00	0.00
4,880.0	4.30	40.30	4,785.3	633.1	536.8	830.0	2.00	-2.00	0.00
4,920.0	3.50	40.30	4,825.2	635.1	538.6	832.7	2.00	-2.00	0.00
4,960.0	2.70	40.30	4,865.2	636.8	540.0	834.9	2.00	-2.00	0.00
5,000.0	1.90	40.30	4,905.2	638.0	541.0	836.5	2.00	-2.00	0.00
5,040.0	1.10	40.30	4,945.1	638.8	541.7	837.6	2.00	-2.00	0.00
5,080.0	0.30	40.30	4,985.1	639.2	542.0	838.0	2.00	-2.00	0.00
5,094.9	0.00	0.00	5,000.0	639.2	542.0	838.1	2.00	-2.00	-271.09
TARGET BHL 75'FNL, 75'FEL									
5,120.0	0.00	0.00	5,025.1	639.2	542.0	838.1	0.00	0.00	0.00
5,160.0	0.00	0.00	5,065.1	639.2	542.0	838.1	0.00	0.00	0.00
5,200.0	0.00	0.00	5,105.1	639.2	542.0	838.1	0.00	0.00	0.00
5,240.0	0.00	0.00	5,145.1	639.2	542.0	838.1	0.00	0.00	0.00
5,280.0	0.00	0.00	5,185.1	639.2	542.0	838.1	0.00	0.00	0.00
5,320.0	0.00	0.00	5,225.1	639.2	542.0	838.1	0.00	0.00	0.00
5,360.0	0.00	0.00	5,265.1	639.2	542.0	838.1	0.00	0.00	0.00
5,400.0	0.00	0.00	5,305.1	639.2	542.0	838.1	0.00	0.00	0.00
5,440.0	0.00	0.00	5,345.1	639.2	542.0	838.1	0.00	0.00	0.00
5,480.0	0.00	0.00	5,385.1	639.2	542.0	838.1	0.00	0.00	0.00
5,520.0	0.00	0.00	5,425.1	639.2	542.0	838.1	0.00	0.00	0.00
5,560.0	0.00	0.00	5,465.1	639.2	542.0	838.1	0.00	0.00	0.00
5,600.0	0.00	0.00	5,505.1	639.2	542.0	838.1	0.00	0.00	0.00
5,640.0	0.00	0.00	5,545.1	639.2	542.0	838.1	0.00	0.00	0.00
5,680.0	0.00	0.00	5,585.1	639.2	542.0	838.1	0.00	0.00	0.00
5,720.0	0.00	0.00	5,625.1	639.2	542.0	838.1	0.00	0.00	0.00
5,760.0	0.00	0.00	5,665.1	639.2	542.0	838.1	0.00	0.00	0.00
5,800.0	0.00	0.00	5,705.1	639.2	542.0	838.1	0.00	0.00	0.00
5,840.0	0.00	0.00	5,745.1	639.2	542.0	838.1	0.00	0.00	0.00
5,880.0	0.00	0.00	5,785.1	639.2	542.0	838.1	0.00	0.00	0.00
5,920.0	0.00	0.00	5,825.1	639.2	542.0	838.1	0.00	0.00	0.00
5,960.0	0.00	0.00	5,865.1	639.2	542.0	838.1	0.00	0.00	0.00
6,000.0	0.00	0.00	5,905.1	639.2	542.0	838.1	0.00	0.00	0.00
6,040.0	0.00	0.00	5,945.1	639.2	542.0	838.1	0.00	0.00	0.00
6,080.0	0.00	0.00	5,985.1	639.2	542.0	838.1	0.00	0.00	0.00
6,120.0	0.00	0.00	6,025.1	639.2	542.0	838.1	0.00	0.00	0.00
6,160.0	0.00	0.00	6,065.1	639.2	542.0	838.1	0.00	0.00	0.00

<b>Database:</b>	EDM den0-adp01 Server Data	<b>Local Co-ordinate Reference:</b>	Well Cricket C22-30D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 4700.0ft (Original Well Elev)
<b>Project:</b>	SEC.21-T4N-R64W	<b>MD Reference:</b>	WELL @ 4700.0ft (Original Well Elev)
<b>Site:</b>	Cricket C22-30D Pad Sec.21-T4N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Cricket C22-30D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Cricket C22-30D Plan #2 (05-10-10)		

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)
6,200.0	0.00	0.00	6,105.1	639.2	542.0	838.1	0.00	0.00	0.00
6,240.0	0.00	0.00	6,145.1	639.2	542.0	838.1	0.00	0.00	0.00
6,280.0	0.00	0.00	6,185.1	639.2	542.0	838.1	0.00	0.00	0.00
6,320.0	0.00	0.00	6,225.1	639.2	542.0	838.1	0.00	0.00	0.00
6,360.0	0.00	0.00	6,265.1	639.2	542.0	838.1	0.00	0.00	0.00
6,400.0	0.00	0.00	6,305.1	639.2	542.0	838.1	0.00	0.00	0.00
6,440.0	0.00	0.00	6,345.1	639.2	542.0	838.1	0.00	0.00	0.00
6,480.0	0.00	0.00	6,385.1	639.2	542.0	838.1	0.00	0.00	0.00
6,520.0	0.00	0.00	6,425.1	639.2	542.0	838.1	0.00	0.00	0.00
6,560.0	0.00	0.00	6,465.1	639.2	542.0	838.1	0.00	0.00	0.00
6,600.0	0.00	0.00	6,505.1	639.2	542.0	838.1	0.00	0.00	0.00
6,640.0	0.00	0.00	6,545.1	639.2	542.0	838.1	0.00	0.00	0.00
6,677.9	0.00	0.00	6,583.0	639.2	542.0	838.1	0.00	0.00	0.00
<b>NIORARA - TARGET CIRCLE 75'FNL, 75'FEL</b>									
6,680.0	0.00	0.00	6,585.1	639.2	542.0	838.1	0.00	0.00	0.00
6,720.0	0.00	0.00	6,625.1	639.2	542.0	838.1	0.00	0.00	0.00
6,760.0	0.00	0.00	6,665.1	639.2	542.0	838.1	0.00	0.00	0.00
6,800.0	0.00	0.00	6,705.1	639.2	542.0	838.1	0.00	0.00	0.00
6,840.0	0.00	0.00	6,745.1	639.2	542.0	838.1	0.00	0.00	0.00
6,880.0	0.00	0.00	6,785.1	639.2	542.0	838.1	0.00	0.00	0.00
6,920.0	0.00	0.00	6,825.1	639.2	542.0	838.1	0.00	0.00	0.00
6,960.0	0.00	0.00	6,865.1	639.2	542.0	838.1	0.00	0.00	0.00
6,964.9	0.00	0.00	6,870.0	639.2	542.0	838.1	0.00	0.00	0.00
<b>CODELL</b>									
7,000.0	0.00	0.00	6,905.1	639.2	542.0	838.1	0.00	0.00	0.00
7,040.0	0.00	0.00	6,945.1	639.2	542.0	838.1	0.00	0.00	0.00
7,080.0	0.00	0.00	6,985.1	639.2	542.0	838.1	0.00	0.00	0.00
7,114.9	0.00	0.00	7,020.0	639.2	542.0	838.1	0.00	0.00	0.00
<b>HARDLINES 75'N &amp; E OF BHL</b>									

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
TARGET CIRCLE 75'	0.00	0.00	6,583.0	639.2	542.0	1,355,362.04	3,265,924.97	40° 18' 17.800 N	104° 32' 47.424 W
- plan hits target center									
- Circle (radius 75.0)									
HARDLINES 75'N & E	0.00	0.00	7,020.0	714.2	617.0	1,355,437.84	3,265,999.15	40° 18' 18.541 N	104° 32' 46.456 W
- plan misses target center by 106.0ft at 7114.9ft MD (7020.0 TVD, 639.2 N, 542.0 E)									
- Polygon									
Point 1			7,020.0	0.0	0.0	1,355,437.84	3,265,999.15		
Point 2			7,020.0	0.0	-200.0	1,355,435.69	3,265,799.18		
Point 3			7,020.0	0.0	0.0	1,355,437.84	3,265,999.15		
Point 4			7,020.0	-200.0	0.0	1,355,237.86	3,266,001.30		
TARGET BHL 75'FNL	0.00	0.00	5,000.0	639.2	542.0	1,355,362.05	3,265,925.00	40° 18' 17.800 N	104° 32' 47.424 W
- plan hits target center									
- Point									



<b>Database:</b>	EDM den0-adp01 Server Data	<b>Local Co-ordinate Reference:</b>	Well Cricket C22-30D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 4700.0ft (Original Well Elev)
<b>Project:</b>	SEC.21-T4N-R64W	<b>MD Reference:</b>	WELL @ 4700.0ft (Original Well Elev)
<b>Site:</b>	Cricket C22-30D Pad Sec.21-T4N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Cricket C22-30D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Cricket C22-30D Plan #2 (05-10-10)		

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
550.0	550.0	8 5/8"	8-5/8	12-1/4	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
6,677.9	6,583.0	NIOBRARA		0.00		
6,964.9	6,870.0	CODELL		0.00		



**NOBLE ENERGY INC WELD  
COUNTY CO**

**SEC.21-T4N-R64W**

**Cricket C22-30D Pad Sec.21-T4N-R64W**

**Cricket C22-30D**

**Wellbore #1**

**Noble Cricket C22-30D Plan #2 (05-10-10)**

**Anticollision Report**

**10 May, 2010**

<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>Local Co-ordinate Reference:</b>	Well Cricket C22-30D
<b>Project:</b>	SEC.21-T4N-R64W	<b>TVD Reference:</b>	WELL @ 4700.0ft (Original Well Elev)
<b>Reference Site:</b>	Cricket C22-30D Pad Sec.21-T4N-R64W	<b>MD Reference:</b>	WELL @ 4700.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Cricket C22-30D	<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>	EDM den0-adp01 Server Data
<b>Reference Design:</b>	Noble Cricket C22-30D Plan #2 (05-10-10)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	Noble Cricket C22-30D Plan #2 (05-		
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
<b>Interpolation Method:</b>	MD Interval 100.0ft	<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 2,000.0ft	<b>Error Surface:</b>	Elliptical Conic
<b>Warning Levels Evaluated at:</b>	2.00 Sigma		

<b>Survey Tool Program</b>	<b>Date</b> 5/10/2010			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.0	7,114.9	Noble Cricket C22-30D Plan #2 (05-10-10	MWD	MWD - Standard

<b>Summary</b>						
<b>Site Name</b>	<b>Reference Measured Depth (ft)</b>	<b>Offset Measured Depth (ft)</b>	<b>Distance Between Centres (ft)</b>	<b>Distance Between Ellipses (ft)</b>	<b>Separation Factor</b>	<b>Warning</b>
<b>Offset Well - Wellbore - Design</b>						
Cricket C22-30D Pad Sec.21-T4N-R64W						
Cricket C22-31D - Wellbore #1 - Noble Cricket C22-31D	700.0	700.0	25.1	22.2	8.591	CC, ES
Cricket C22-31D - Wellbore #1 - Noble Cricket C22-31D	800.0	799.4	26.2	22.9	7.844	SF
Thoutt 1 (Exist.) - Wellbore #1 - Design #1	900.0	900.0	47.4	43.6	12.409	CC, ES
Thoutt 1 (Exist.) - Wellbore #1 - Design #1	1,100.0	1,099.8	52.2	47.5	11.088	SF

<b>Offset Design</b>												
Cricket C22-30D Pad Sec.21-T4N-R64W - Cricket C22-31D - Wellbore #1 - Noble Cricket C22-31D Plan												
Survey Program: 0-MWD												
<b>Reference</b>		<b>Offset</b>		<b>Semi Major Axis</b>			<b>Distance</b>					
<b>Measured Depth (ft)</b>	<b>Vertical Depth (ft)</b>	<b>Measured Depth (ft)</b>	<b>Vertical Depth (ft)</b>	<b>Reference (ft)</b>	<b>Offset (ft)</b>	<b>Highside Toolface (°)</b>	<b>Offset Wellbore Centre +N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Between Centres (ft)</b>	<b>Between Ellipses (ft)</b>	<b>Minimum Separation (ft)</b>	<b>Separation Factor</b>
0.0	0.0	0.0	0.0	0.0	0.0	90.00	0.0	25.1	25.1			
100.0	100.0	100.0	100.0	0.1	0.1	90.00	0.0	25.1	25.1	24.9	0.22	111.684
200.0	200.0	200.0	200.0	0.3	0.3	90.00	0.0	25.1	25.1	24.4	0.67	37.228
300.0	300.0	300.0	300.0	0.6	0.6	90.00	0.0	25.1	25.1	24.0	1.12	22.337
400.0	400.0	400.0	400.0	0.8	0.8	90.00	0.0	25.1	25.1	23.5	1.57	15.955
500.0	500.0	500.0	500.0	1.0	1.0	90.00	0.0	25.1	25.1	23.1	2.02	12.409
600.0	600.0	600.0	600.0	1.2	1.2	90.00	0.0	25.1	25.1	22.6	2.47	10.153
700.0	700.0	700.0	700.0	1.5	1.5	90.00	0.0	25.1	25.1	22.2	2.92	8.591 CC, ES
800.0	800.0	799.4	799.4	1.7	1.7	92.90	-1.3	26.2	26.2	22.9	3.35	7.844 SF
900.0	900.0	898.6	898.4	1.9	1.8	100.16	-5.3	29.5	30.0	26.3	3.76	7.989
1,000.0	1,000.0	997.2	996.7	2.1	2.1	70.82	-11.8	35.0	36.4	32.3	4.17	8.732
1,100.0	1,099.8	1,094.9	1,093.7	2.4	2.3	83.81	-20.9	42.5	46.6	42.0	4.60	10.117
1,200.0	1,199.5	1,191.3	1,188.9	2.6	2.6	95.26	-32.3	52.0	61.8	56.8	5.05	12.250
1,300.0	1,298.7	1,286.1	1,282.0	2.8	2.9	103.98	-45.9	63.3	82.7	77.2	5.52	14.996
1,400.0	1,397.5	1,381.6	1,375.5	3.1	3.2	110.56	-61.2	76.0	108.1	102.1	6.02	17.966
1,500.0	1,495.6	1,476.9	1,468.7	3.4	3.6	115.77	-76.5	88.7	136.0	129.4	6.55	20.762
1,600.0	1,593.1	1,571.4	1,561.1	3.8	4.0	120.11	-91.6	101.3	166.3	159.2	7.12	23.371
1,700.0	1,690.2	1,665.5	1,653.1	4.2	4.4	123.83	-106.7	113.9	198.2	190.5	7.72	25.667
1,800.0	1,787.3	1,759.6	1,745.2	4.6	4.8	126.52	-121.8	126.4	230.7	222.3	8.35	27.631
1,900.0	1,884.4	1,853.8	1,837.2	5.0	5.2	128.56	-136.9	139.0	263.5	254.5	8.99	29.319
2,000.0	1,981.5	1,947.9	1,929.2	5.5	5.6	130.14	-152.0	151.5	296.5	286.8	9.64	30.770
2,100.0	2,078.6	2,042.0	2,021.3	5.9	6.0	131.40	-167.1	164.1	329.7	319.4	10.29	32.026
2,200.0	2,175.7	2,136.1	2,113.3	6.4	6.4	132.44	-182.1	176.6	363.0	352.0	10.96	33.120

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 Cricket C22-30D
<b>Project:</b>	SEC.21-T4N-R64W	<b>TVD Reference:</b>	WELL @ 4700.0ft (Original Well Elev)
<b>Reference Site:</b>	Cricket C22-30D Pad Sec.21-T4N-R64W	<b>MD Reference:</b>	WELL @ 4700.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Cricket C22-30D	<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>	EDM den0-adp01 Server Data
<b>Reference Design:</b>	Noble Cricket C22-30D Plan #2 (05-10-10)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Cricket C22-30D Pad Sec.21-T4N-R64W - Cricket C22-31D - Wellbore #1 - Noble Cricket C22-31D Plar												<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 Tooface (")	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
2,300.0	2,272.8	2,230.2	2,205.4	6.8	6.8	133.30	-197.2	189.2	396.4	384.7	11.63	34.079	
2,400.0	2,369.9	2,324.3	2,297.4	7.3	7.3	134.03	-212.3	201.7	429.8	417.5	12.31	34.925	
2,500.0	2,467.0	2,418.4	2,389.4	7.8	7.7	134.65	-227.4	214.3	463.3	450.3	12.99	35.676	
2,600.0	2,564.1	2,512.5	2,481.5	8.3	8.1	135.19	-242.5	226.8	496.9	483.2	13.67	36.346	
2,700.0	2,661.2	2,606.6	2,573.5	8.7	8.5	135.66	-257.6	239.4	530.5	516.1	14.36	36.947	
2,800.0	2,758.3	2,700.7	2,665.6	9.2	9.0	136.08	-272.7	251.9	564.1	549.0	15.05	37.488	
2,900.0	2,855.4	2,794.8	2,757.6	9.7	9.4	136.45	-287.7	264.5	597.7	582.0	15.74	37.978	
3,000.0	2,952.5	2,888.9	2,849.6	10.2	9.8	136.77	-302.8	277.1	631.4	614.9	16.43	38.423	
3,100.0	3,049.6	2,983.0	2,941.7	10.7	10.3	137.07	-317.9	289.6	665.0	647.9	17.13	38.829	
3,200.0	3,146.7	3,077.2	3,033.7	11.2	10.7	137.34	-333.0	302.2	698.7	680.9	17.82	39.201	
3,300.0	3,243.8	3,171.3	3,125.7	11.7	11.1	137.58	-348.1	314.7	732.4	713.9	18.52	39.543	
3,400.0	3,340.9	3,265.4	3,217.8	12.2	11.6	137.80	-363.2	327.3	766.1	746.9	19.22	39.858	
3,500.0	3,438.0	3,359.5	3,309.8	12.7	12.0	138.00	-378.3	339.8	799.8	779.9	19.92	40.149	
3,600.0	3,535.1	3,453.6	3,401.9	13.1	12.4	138.19	-393.3	352.4	833.6	813.0	20.62	40.419	
3,700.0	3,632.2	3,547.7	3,493.9	13.6	12.9	138.36	-408.4	364.9	867.3	846.0	21.33	40.670	
3,800.0	3,729.3	3,641.8	3,585.9	14.1	13.3	138.52	-423.5	377.5	901.0	879.0	22.03	40.903	
3,900.0	3,826.4	3,735.9	3,678.0	14.6	13.7	138.67	-438.6	390.0	934.8	912.1	22.73	41.121	
4,000.0	3,923.5	3,830.0	3,770.0	15.1	14.2	138.81	-453.7	402.6	968.5	945.1	23.44	41.325	
4,100.0	4,020.6	3,924.1	3,862.1	15.6	14.6	138.93	-468.8	415.1	1,002.3	978.2	24.14	41.516	
4,200.0	4,117.7	4,018.2	3,954.1	16.1	15.0	139.05	-483.8	427.7	1,036.1	1,011.2	24.85	41.695	
4,300.0	4,214.8	4,112.3	4,046.1	16.6	15.5	139.17	-498.9	440.2	1,069.8	1,044.3	25.55	41.864	
4,400.0	4,311.9	4,206.4	4,138.2	17.1	15.9	139.27	-514.0	452.8	1,103.6	1,077.3	26.26	42.023	
4,500.0	4,409.4	4,301.0	4,230.6	17.5	16.3	139.75	-529.2	465.4	1,136.2	1,109.2	27.01	42.059	
4,600.0	4,507.6	4,396.3	4,323.9	17.9	16.8	140.08	-544.5	478.1	1,166.3	1,138.6	27.70	42.110	
4,700.0	4,606.4	4,499.6	4,424.9	18.2	17.3	140.24	-560.9	491.8	1,193.8	1,165.4	28.36	42.092	
4,800.0	4,705.7	4,642.5	4,565.6	18.4	17.7	140.27	-580.3	507.9	1,216.3	1,187.3	29.00	41.946	
4,900.0	4,805.3	4,788.7	4,710.5	18.6	18.0	140.29	-594.5	519.7	1,232.4	1,202.9	29.55	41.703	
5,000.0	4,905.2	4,936.9	4,858.4	18.8	18.3	140.30	-603.1	526.9	1,242.1	1,212.0	30.01	41.385	
5,100.0	5,005.1	5,083.8	5,005.1	18.9	18.5	-179.41	-605.8	529.1	1,245.0	1,214.7	30.38	40.979	
5,200.0	5,105.1	5,183.8	5,105.1	19.0	18.6	-179.41	-605.8	529.1	1,245.0	1,214.4	30.68	40.582	
5,300.0	5,205.1	5,283.8	5,205.1	19.2	18.8	-179.41	-605.8	529.1	1,245.0	1,214.1	30.98	40.190	
5,400.0	5,305.1	5,383.8	5,305.1	19.3	18.9	-179.41	-605.8	529.1	1,245.0	1,213.8	31.28	39.800	
5,500.0	5,405.1	5,483.8	5,405.1	19.4	19.0	-179.41	-605.8	529.1	1,245.0	1,213.5	31.59	39.414	
5,600.0	5,505.1	5,583.8	5,505.1	19.6	19.1	-179.41	-605.8	529.1	1,245.0	1,213.1	31.90	39.030	
5,700.0	5,605.1	5,683.8	5,605.1	19.7	19.2	-179.41	-605.8	529.1	1,245.0	1,212.8	32.21	38.651	
5,800.0	5,705.1	5,783.8	5,705.1	19.8	19.4	-179.41	-605.8	529.1	1,245.0	1,212.5	32.53	38.274	
5,900.0	5,805.1	5,883.8	5,805.1	20.0	19.5	-179.41	-605.8	529.1	1,245.0	1,212.2	32.85	37.902	
6,000.0	5,905.1	5,983.8	5,905.1	20.1	19.6	-179.41	-605.8	529.1	1,245.0	1,211.9	33.17	37.533	
6,100.0	6,005.1	6,083.8	6,005.1	20.2	19.7	-179.41	-605.8	529.1	1,245.0	1,211.5	33.50	37.168	
6,200.0	6,105.1	6,183.8	6,105.1	20.4	19.9	-179.41	-605.8	529.1	1,245.0	1,211.2	33.83	36.807	
6,300.0	6,205.1	6,283.8	6,205.1	20.5	20.0	-179.41	-605.8	529.1	1,245.0	1,210.9	34.16	36.450	
6,400.0	6,305.1	6,383.8	6,305.1	20.7	20.1	-179.41	-605.8	529.1	1,245.0	1,210.6	34.49	36.097	
6,500.0	6,405.1	6,483.8	6,405.1	20.8	20.3	-179.41	-605.8	529.1	1,245.0	1,210.2	34.83	35.749	
6,600.0	6,505.1	6,583.8	6,505.1	21.0	20.4	-179.41	-605.8	529.1	1,245.0	1,209.9	35.17	35.404	
6,700.0	6,605.1	6,683.8	6,605.1	21.1	20.5	-179.41	-605.8	529.1	1,245.0	1,209.5	35.51	35.063	
6,800.0	6,705.1	6,783.8	6,705.1	21.3	20.7	-179.41	-605.8	529.1	1,245.0	1,209.2	35.85	34.727	
6,900.0	6,805.1	6,883.8	6,805.1	21.4	20.8	-179.41	-605.8	529.1	1,245.0	1,208.8	36.20	34.395	
7,000.0	6,905.1	6,983.8	6,905.1	21.6	21.0	-179.41	-605.8	529.1	1,245.0	1,208.5	36.55	34.067	
7,100.0	7,005.1	7,083.8	7,005.1	21.7	21.1	-179.41	-605.8	529.1	1,245.0	1,208.1	36.90	33.743	
7,102.4	7,007.5	7,086.2	7,007.5	21.7	21.1	-179.41	-605.8	529.1	1,245.0	1,208.1	36.91	33.736	
7,114.9	7,020.0	7,093.6	7,015.0	21.7	21.1	-179.41	-605.8	529.1	1,245.1	1,208.1	36.94	33.704	

<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>Local Co-ordinate Reference:</b>	Well Cricket C22-30D
<b>Project:</b>	SEC.21-T4N-R64W	<b>TVD Reference:</b>	WELL @ 4700.0ft (Original Well Elev)
<b>Reference Site:</b>	Cricket C22-30D Pad Sec.21-T4N-R64W	<b>MD Reference:</b>	WELL @ 4700.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Cricket C22-30D	<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>	EDM den0-adp01 Server Data
<b>Reference Design:</b>	Noble Cricket C22-30D Plan #2 (05-10-10)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Cricket C22-30D Pad Sec.21-T4N-R64W - Thoutt 1 (Exist.) - Wellbore #1 - Design #1												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	-90.00	0.0	-47.4	47.4				
100.0	100.0	100.0	100.0	0.1	0.1	-90.00	0.0	-47.4	47.4	47.2	0.22	210.959	
200.0	200.0	200.0	200.0	0.3	0.3	-90.00	0.0	-47.4	47.4	46.7	0.67	70.320	
300.0	300.0	300.0	300.0	0.6	0.6	-90.00	0.0	-47.4	47.4	46.3	1.12	42.192	
400.0	400.0	400.0	400.0	0.8	0.8	-90.00	0.0	-47.4	47.4	45.8	1.57	30.137	
500.0	500.0	500.0	500.0	1.0	1.0	-90.00	0.0	-47.4	47.4	45.4	2.02	23.440	
600.0	600.0	600.0	600.0	1.2	1.2	-90.00	0.0	-47.4	47.4	44.9	2.47	19.178	
700.0	700.0	700.0	700.0	1.5	1.5	-90.00	0.0	-47.4	47.4	44.5	2.92	16.228	
800.0	800.0	800.0	800.0	1.7	1.7	-90.00	0.0	-47.4	47.4	44.0	3.37	14.064	
900.0	900.0	900.0	900.0	1.9	1.9	-90.00	0.0	-47.4	47.4	43.6	3.82	12.409 CC, ES	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-131.85	0.0	-47.4	48.6	44.3	4.27	11.383	
1,100.0	1,099.8	1,099.8	1,099.8	2.4	2.4	-136.08	0.0	-47.4	52.2	47.5	4.71	11.088 SF	
1,200.0	1,199.5	1,199.5	1,199.5	2.6	2.6	-141.89	0.0	-47.4	58.8	53.6	5.15	11.420	
1,300.0	1,298.7	1,298.7	1,298.7	2.8	2.8	-148.04	0.0	-47.4	68.8	63.2	5.59	12.315	
1,400.0	1,397.5	1,397.5	1,397.5	3.1	3.0	-153.67	0.0	-47.4	82.5	76.5	6.02	13.702	
1,500.0	1,495.6	1,495.6	1,495.6	3.4	3.2	-158.38	0.0	-47.4	100.0	93.6	6.45	15.500	
1,600.0	1,593.1	1,593.1	1,593.1	3.8	3.5	-162.16	0.0	-47.4	121.3	114.4	6.88	17.622	
1,700.0	1,690.2	1,690.2	1,690.2	4.2	3.7	-165.07	0.0	-47.4	144.3	136.9	7.34	19.659	
1,800.0	1,787.3	1,787.3	1,787.3	4.6	3.9	-167.17	0.0	-47.4	167.5	159.7	7.80	21.476	
1,900.0	1,884.4	1,884.4	1,884.4	5.0	4.1	-168.76	0.0	-47.4	190.9	182.6	8.26	23.100	
2,000.0	1,981.5	1,981.5	1,981.5	5.5	4.3	-170.01	0.0	-47.4	214.4	205.7	8.73	24.554	
2,100.0	2,078.6	2,078.6	2,078.6	5.9	4.6	-171.00	0.0	-47.4	238.0	228.8	9.20	25.860	
2,200.0	2,175.7	2,175.7	2,175.7	6.4	4.8	-171.82	0.0	-47.4	261.6	252.0	9.68	27.038	
2,300.0	2,272.8	2,272.8	2,272.8	6.8	5.0	-172.50	0.0	-47.4	285.3	275.2	10.15	28.104	
2,400.0	2,369.9	2,369.9	2,369.9	7.3	5.2	-173.08	0.0	-47.4	309.1	298.4	10.63	29.074	
2,500.0	2,467.0	2,467.0	2,467.0	7.8	5.4	-173.58	0.0	-47.4	332.8	321.7	11.11	29.957	
2,600.0	2,564.1	2,564.1	2,564.1	8.3	5.7	-174.01	0.0	-47.4	356.6	345.0	11.59	30.766	
2,700.0	2,661.2	2,661.2	2,661.2	8.7	5.9	-174.38	0.0	-47.4	380.3	368.3	12.07	31.509	
2,800.0	2,758.3	2,758.3	2,758.3	9.2	6.1	-174.71	0.0	-47.4	404.1	391.6	12.55	32.193	
2,900.0	2,855.4	2,855.4	2,855.4	9.7	6.3	-175.01	0.0	-47.4	428.0	414.9	13.04	32.825	
3,000.0	2,952.5	2,952.5	2,952.5	10.2	6.5	-175.27	0.0	-47.4	451.8	438.2	13.52	33.410	
3,100.0	3,049.6	3,049.6	3,049.6	10.7	6.7	-175.51	0.0	-47.4	475.6	461.6	14.01	33.954	
3,200.0	3,146.7	3,146.7	3,146.7	11.2	7.0	-175.72	0.0	-47.4	499.4	484.9	14.49	34.460	
3,300.0	3,243.8	3,243.8	3,243.8	11.7	7.2	-175.92	0.0	-47.4	523.3	508.3	14.98	34.932	
3,400.0	3,340.9	3,340.9	3,340.9	12.2	7.4	-176.10	0.0	-47.4	547.1	531.6	15.47	35.373	
3,500.0	3,438.0	3,438.0	3,438.0	12.7	7.6	-176.26	0.0	-47.4	571.0	555.0	15.95	35.786	
3,600.0	3,535.1	3,535.1	3,535.1	13.1	7.8	-176.41	0.0	-47.4	594.8	578.4	16.44	36.174	
3,700.0	3,632.2	3,632.2	3,632.2	13.6	8.1	-176.55	0.0	-47.4	618.7	601.7	16.93	36.539	
3,800.0	3,729.3	3,729.3	3,729.3	14.1	8.3	-176.68	0.0	-47.4	642.5	625.1	17.42	36.883	
3,900.0	3,826.4	3,826.4	3,826.4	14.6	8.5	-176.80	0.0	-47.4	666.4	648.5	17.91	37.207	
4,000.0	3,923.5	3,923.5	3,923.5	15.1	8.7	-176.91	0.0	-47.4	690.2	671.8	18.40	37.514	
4,100.0	4,020.6	4,020.6	4,020.6	15.6	8.9	-177.01	0.0	-47.4	714.1	695.2	18.89	37.804	
4,200.0	4,117.7	4,117.7	4,117.7	16.1	9.1	-177.11	0.0	-47.4	738.0	718.6	19.38	38.079	
4,300.0	4,214.8	4,214.8	4,214.8	16.6	9.4	-177.20	0.0	-47.4	761.9	742.0	19.87	38.340	
4,400.0	4,311.9	4,311.9	4,311.9	17.1	9.6	-177.28	0.0	-47.4	785.7	765.4	20.36	38.587	
4,500.0	4,409.4	4,409.4	4,409.4	17.5	9.8	-177.38	0.0	-47.4	808.0	787.1	20.90	38.663	
4,600.0	4,507.6	4,507.6	4,507.6	17.9	10.0	-177.46	0.0	-47.4	826.9	805.5	21.39	38.664	
4,700.0	4,606.4	4,606.4	4,606.4	18.2	10.2	-177.52	0.0	-47.4	842.4	820.5	21.85	38.560	
4,800.0	4,705.7	4,705.7	4,705.7	18.4	10.5	-177.56	0.0	-47.4	854.4	832.1	22.27	38.358	
4,900.0	4,805.3	4,805.3	4,805.3	18.6	10.7	-177.59	0.0	-47.4	862.9	840.2	22.67	38.066	
5,000.0	4,905.2	4,905.2	4,905.2	18.8	10.9	-177.61	0.0	-47.4	867.9	844.9	23.03	37.687	
5,100.0	5,005.1	5,005.1	5,005.1	18.9	11.1	-137.32	0.0	-47.4	869.5	846.1	23.36	37.217	

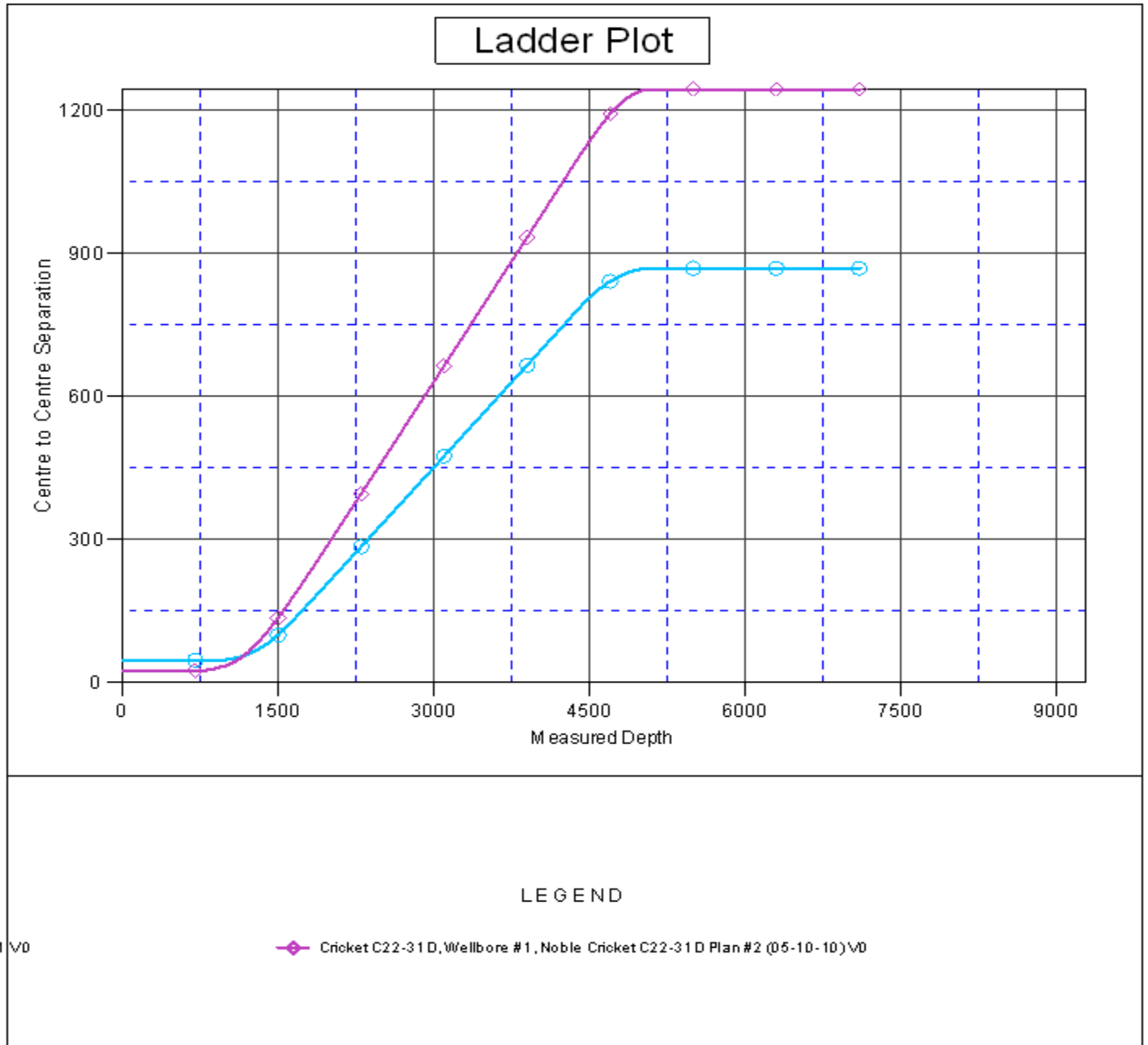
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>Local Co-ordinate Reference:</b>	Well Cricket C22-30D
<b>Project:</b>	SEC.21-T4N-R64W	<b>TVD Reference:</b>	WELL @ 4700.0ft (Original Well Elev)
<b>Reference Site:</b>	Cricket C22-30D Pad Sec.21-T4N-R64W	<b>MD Reference:</b>	WELL @ 4700.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Cricket C22-30D	<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>	EDM den0-adp01 Server Data
<b>Reference Design:</b>	Noble Cricket C22-30D Plan #2 (05-10-10)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Survey Program: 0-MWD													Cricket C22-30D Pad Sec.21-T4N-R64W - Thoutt 1 (Exist.) - Wellbore #1 - Design #1		Offset Site Error: 0.0 ft	
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				
5,200.0	5,105.1	5,105.1	5,105.1	19.0	11.4	-137.32	0.0	-47.4	869.5	845.7	23.78	36.567				
5,300.0	5,205.1	5,205.1	5,205.1	19.2	11.6	-137.32	0.0	-47.4	869.5	845.3	24.20	35.937				
5,400.0	5,305.1	5,305.1	5,305.1	19.3	11.8	-137.32	0.0	-47.4	869.5	844.9	24.61	35.327				
5,500.0	5,405.1	5,405.1	5,405.1	19.4	12.0	-137.32	0.0	-47.4	869.5	844.5	25.03	34.736				
5,600.0	5,505.1	5,505.1	5,505.1	19.6	12.3	-137.32	0.0	-47.4	869.5	844.0	25.45	34.163				
5,700.0	5,605.1	5,605.1	5,605.1	19.7	12.5	-137.32	0.0	-47.4	869.5	843.6	25.87	33.608				
5,800.0	5,705.1	5,705.1	5,705.1	19.8	12.7	-137.32	0.0	-47.4	869.5	843.2	26.29	33.069				
5,900.0	5,805.1	5,805.1	5,805.1	20.0	12.9	-137.32	0.0	-47.4	869.5	842.8	26.72	32.546				
6,000.0	5,905.1	5,905.1	5,905.1	20.1	13.2	-137.32	0.0	-47.4	869.5	842.4	27.14	32.039				
6,100.0	6,005.1	6,005.1	6,005.1	20.2	13.4	-137.32	0.0	-47.4	869.5	841.9	27.56	31.546				
6,200.0	6,105.1	6,105.1	6,105.1	20.4	13.6	-137.32	0.0	-47.4	869.5	841.5	27.99	31.067				
6,300.0	6,205.1	6,205.1	6,205.1	20.5	13.8	-137.32	0.0	-47.4	869.5	841.1	28.41	30.602				
6,400.0	6,305.1	6,305.1	6,305.1	20.7	14.1	-137.32	0.0	-47.4	869.5	840.7	28.84	30.150				
6,500.0	6,405.1	6,405.1	6,405.1	20.8	14.3	-137.32	0.0	-47.4	869.5	840.2	29.27	29.710				
6,600.0	6,505.1	6,505.1	6,505.1	21.0	14.5	-137.32	0.0	-47.4	869.5	839.8	29.69	29.282				
6,700.0	6,605.1	6,605.1	6,605.1	21.1	14.7	-137.32	0.0	-47.4	869.5	839.4	30.12	28.866				
6,800.0	6,705.1	6,705.1	6,705.1	21.3	15.0	-137.32	0.0	-47.4	869.5	838.9	30.55	28.461				
6,900.0	6,805.1	6,805.1	6,805.1	21.4	15.2	-137.32	0.0	-47.4	869.5	838.5	30.98	28.067				
7,000.0	6,905.1	6,905.1	6,905.1	21.6	15.4	-137.32	0.0	-47.4	869.5	838.1	31.41	27.683				
7,100.0	7,005.1	7,005.1	7,005.1	21.7	15.6	-137.32	0.0	-47.4	869.5	837.7	31.84	27.309				
7,114.9	7,020.0	7,020.0	7,020.0	21.7	15.7	-137.32	0.0	-47.4	869.5	837.6	31.90	27.254				

<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>Local Co-ordinate Reference:</b>	Well Cricket C22-30D
<b>Project:</b>	SEC.21-T4N-R64W	<b>TVD Reference:</b>	WELL @ 4700.0ft (Original Well Elev)
<b>Reference Site:</b>	Cricket C22-30D Pad Sec.21-T4N-R64W	<b>MD Reference:</b>	WELL @ 4700.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Cricket C22-30D	<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>	EDM den0-adp01 Server Data
<b>Reference Design:</b>	Noble Cricket C22-30D Plan #2 (05-10-10)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4700.0ft (Original Well Elev) Coordinates are relative to: Cricket C22-30D  
 Offset Depths are relative to Offset Datum  
 Coordinate System is US State Plane 1983, Colorado Northern Zone  
 Central Meridian is 105° 30' 0.000 W °  
 Grid Convergence at Surface is: 0.61°

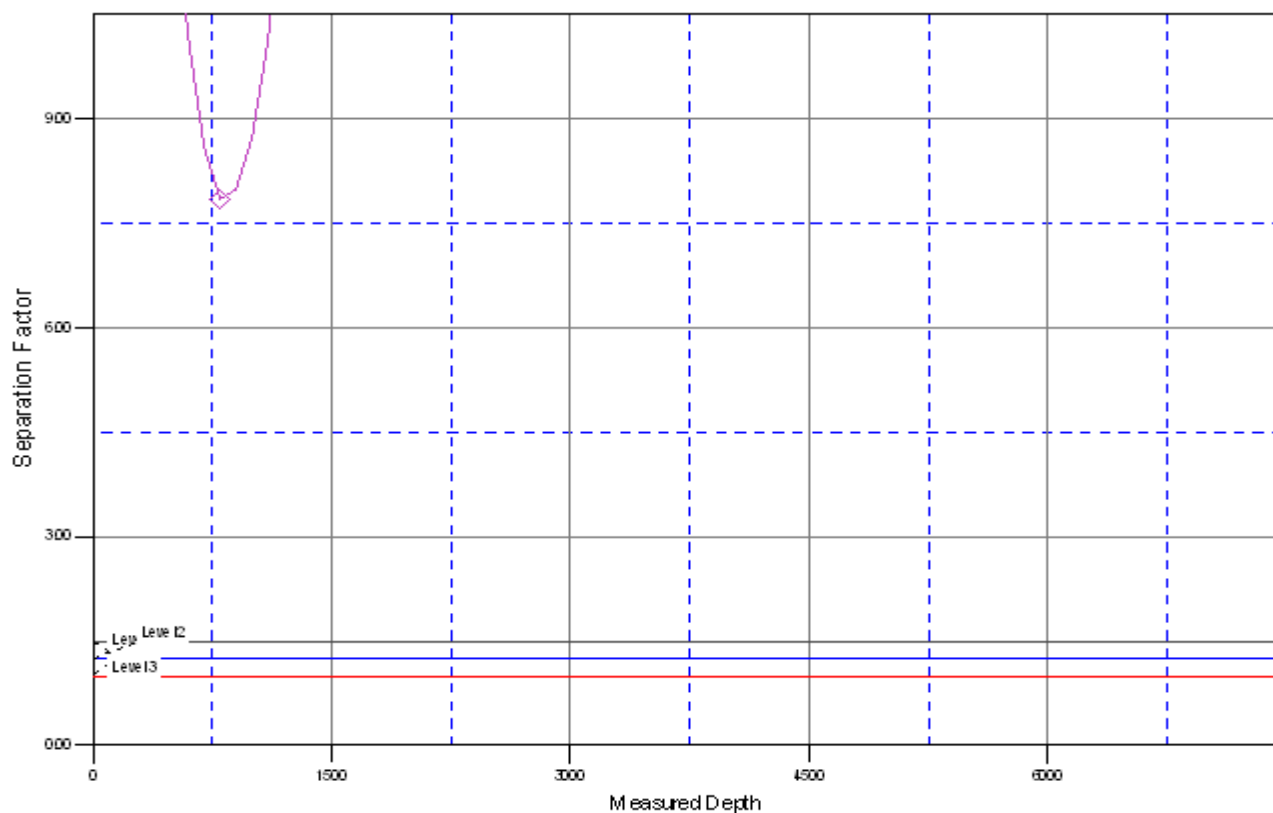


**Company:** NOBLE ENERGY INC WELD COUNTY CO  
**Project:** SEC.21-T4N-R64W  
**Reference Site:** Cricket C22-30D Pad Sec.21-T4N-R64W  
**Site Error:** 0.0ft  
**Reference Well:** Cricket C22-30D  
**Well Error:** 0.0ft  
**Reference Wellbore:** Wellbore #1  
**Reference Design:** Noble Cricket C22-30D Plan #2 (05-10-10)

**Local Co-ordinate Reference:** Well Cricket C22-30D  
**TVD Reference:** WELL @ 4700.0ft (Original Well Elev)  
**MD Reference:** WELL @ 4700.0ft (Original Well Elev)  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature  
**Output errors are at** 2.00 sigma  
**Database:** EDM den0-adp01 Server Data  
**Offset TVD Reference:** Offset Datum

Reference Depths are relative to WELL @ 4700.0ft (Original Well Elev) Coordinates are relative to: Cricket C22-30D  
Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone  
Central Meridian is 105° 30' 0.000 W ° Grid Convergence at Surface is: 0.61°

## Separation Factor Plot



### LEGEND

#1 \V0

Cricket C22-31 D, Wellbore #1, Noble Cricket C22-31 D Plan #2 (05-10-10) \V0