

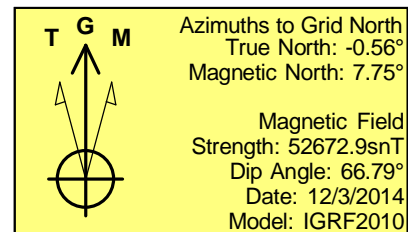
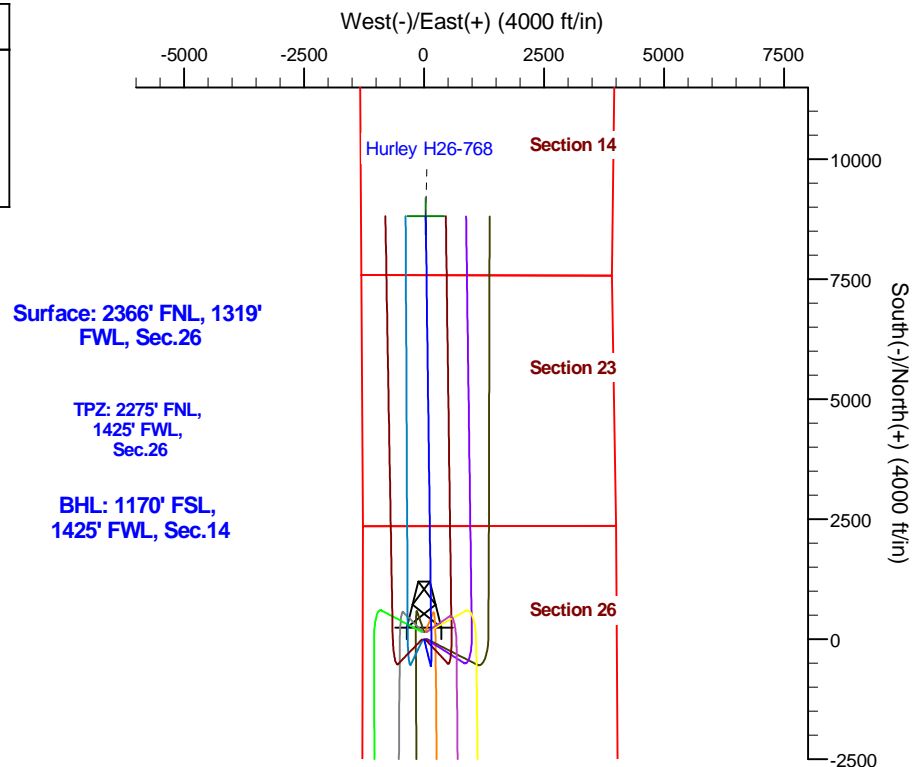
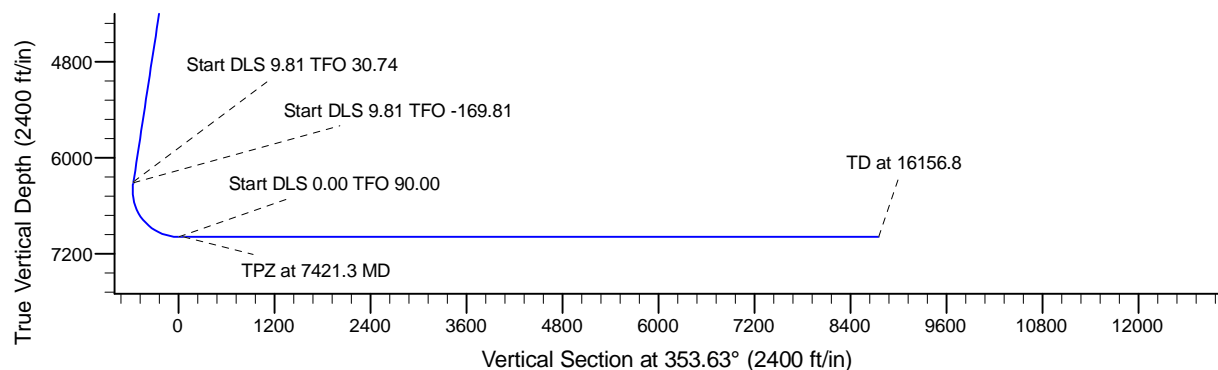
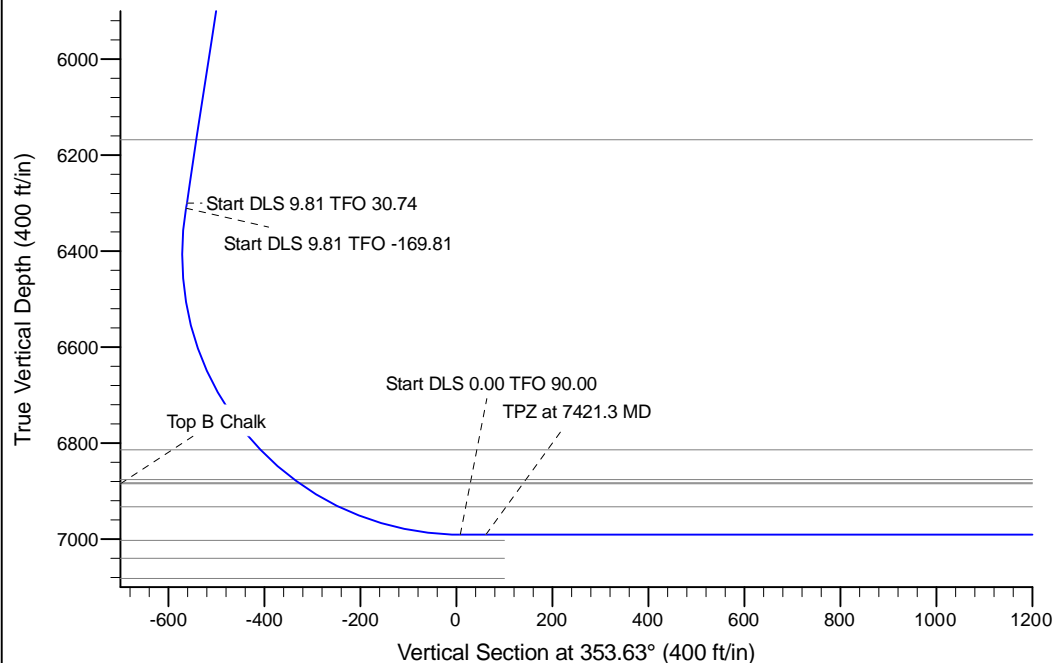
Project: Conceptual Wells  
Site: DP 408  
Well: Hurley H26-768  
Wellbore: Wellbore #1  
Design: Prelim - Rev 2

# Northern Region Drilling - DJ Basin

Geodetic System: US State Plane 1983  
Datum: North American Datum 1983  
Ellipsoid: GRS 1980  
Zone: Colorado Northern Zone  
System Datum: Mean Sea Level

## SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	2400.0	0.00	0.00	2400.0	0.0	0.0	0.00	0.00	0.0	
3	2837.5	8.75	166.00	2835.8	-32.4	8.1	2.00	166.00	-33.0	
4	6342.5	8.75	166.00	6300.0	-549.7	137.1	0.00	0.00	-561.5	
5	6353.2	9.66	169.19	6310.5	-551.4	137.4	9.81	30.74	-563.2	
6	7367.8	90.00	359.24	6991.0	25.0	150.0	9.81	-169.81	8.2	
7	16156.8	90.00	359.25	6991.0	8813.2	34.2	0.00	90.00	8755.0	Hurley H26-768



## WELL DETAILS: Hurley H26-768

Ground Level: 4821.0			
Northing	Easting	Latitude	Longitude
0.00.0	1315823.21	3241491.77	40.197100

Plan: Prelim - Rev 2 (Hurley H26-768/Wellbore #1)

Created By: Chad Stich Date: 15:59, October 30 2017  
Checked: \_\_\_\_\_ Date: \_\_\_\_\_  
Reviewed: \_\_\_\_\_ Date: \_\_\_\_\_  
Approved: \_\_\_\_\_ Date: \_\_\_\_\_

# **Northern Region Drilling - Sandbox**

**Conceptual Wells**

**DP 408**

**Hurley H26-768**

**Wellbore #1**

**Plan: Prelim - Rev 2**

## **Standard Planning Report**

**30 October, 2017**

# Noble Energy, Inc.

## Planning Report

<b>Database:</b>	EDMP	<b>Local Co-ordinate Reference:</b>	Well Hurley H26-768
<b>Company:</b>	Northern Region Drilling - Sandbox	<b>TVD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Project:</b>	Conceptual Wells	<b>MD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Site:</b>	DP 408	<b>North Reference:</b>	Grid
<b>Well:</b>	Hurley H26-768	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Prelim - Rev 2		

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

Site	DP 408				
Site Position:		Northing:	1,318,184.69 usft	Latitude:	40.203616
From:	Lat/Long	Easting:	3,240,225.17 usft	Longitude:	-104.639942
Position Uncertainty:	0.0 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.56 °

Well	Hurley H26-768					
Well Position	+N/-S	-2,361.6 ft	Northing:	1,315,823.21 usft	Latitude:	40.197100
	+E/-W	1,266.7 ft	Easting:	3,241,491.77 usft	Longitude:	-104.635490
Position Uncertainty		0.0 ft	Wellhead Elevation:	0.0 ft	Ground Level:	4,821.0 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	12/3/2014	8.31	66.79	52,672.93523635

<b>Design</b>	Prelim - Rev 2			
<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)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	353.63

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,837.5	8.75	166.00	2,835.8	-32.4	8.1	2.00	2.00	0.00	166.00	
6,342.5	8.75	166.00	6,300.0	-549.7	137.1	0.00	0.00	0.00	0.00	
6,353.2	9.66	169.19	6,310.5	-551.4	137.4	9.81	8.57	29.88	30.74	
7,367.8	90.00	359.24	6,991.0	25.0	150.0	9.81	7.92	-16.75	-169.81	
16,156.8	90.00	359.25	6,991.0	8,813.2	34.2	0.00	0.00	0.00	90.00	Hurley H26-768

# Noble Energy, Inc.

## Planning Report

<b>Database:</b>	EDMP	<b>Local Co-ordinate Reference:</b>	Well Hurley H26-768
<b>Company:</b>	Northern Region Drilling - Sandbox	<b>TVD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Project:</b>	Conceptual Wells	<b>MD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Site:</b>	DP 408	<b>North Reference:</b>	Grid
<b>Well:</b>	Hurley H26-768	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Prelim - Rev 2		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	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
300.0	0.00	0.00	300.0	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
500.0	0.00	0.00	500.0	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
700.0	0.00	0.00	700.0	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
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	2.00	166.00	2,500.0	-1.7	0.4	-1.7	2.00	2.00	0.00
2,600.0	4.00	166.00	2,599.8	-6.8	1.7	-6.9	2.00	2.00	0.00
2,700.0	6.00	166.00	2,699.5	-15.2	3.8	-15.6	2.00	2.00	0.00
2,800.0	8.00	166.00	2,798.7	-27.1	6.7	-27.6	2.00	2.00	0.00
2,837.5	8.75	166.00	2,835.8	-32.4	8.1	-33.0	2.00	2.00	0.00
2,900.0	8.75	166.00	2,897.6	-41.6	10.4	-42.5	0.00	0.00	0.00
3,000.0	8.75	166.00	2,996.4	-56.3	14.0	-57.5	0.00	0.00	0.00
3,100.0	8.75	166.00	3,095.2	-71.1	17.7	-72.6	0.00	0.00	0.00
3,200.0	8.75	166.00	3,194.1	-85.9	21.4	-87.7	0.00	0.00	0.00
3,300.0	8.75	166.00	3,292.9	-100.6	25.1	-102.8	0.00	0.00	0.00
3,400.0	8.75	166.00	3,391.8	-115.4	28.8	-117.9	0.00	0.00	0.00
3,500.0	8.75	166.00	3,490.6	-130.1	32.4	-132.9	0.00	0.00	0.00
3,600.0	8.75	166.00	3,589.4	-144.9	36.1	-148.0	0.00	0.00	0.00
3,700.0	8.75	166.00	3,688.3	-159.7	39.8	-163.1	0.00	0.00	0.00
3,800.0	8.75	166.00	3,787.1	-174.4	43.5	-178.2	0.00	0.00	0.00
3,900.0	8.75	166.00	3,885.9	-189.2	47.2	-193.2	0.00	0.00	0.00
4,000.0	8.75	166.00	3,984.8	-203.9	50.8	-208.3	0.00	0.00	0.00
4,100.0	8.75	166.00	4,083.6	-218.7	54.5	-223.4	0.00	0.00	0.00
4,200.0	8.75	166.00	4,182.4	-233.5	58.2	-238.5	0.00	0.00	0.00
4,300.0	8.75	166.00	4,281.3	-248.2	61.9	-253.6	0.00	0.00	0.00
4,400.0	8.75	166.00	4,380.1	-263.0	65.6	-268.6	0.00	0.00	0.00
4,500.0	8.75	166.00	4,479.0	-277.7	69.2	-283.7	0.00	0.00	0.00
4,600.0	8.75	166.00	4,577.8	-292.5	72.9	-298.8	0.00	0.00	0.00
4,700.0	8.75	166.00	4,676.6	-307.3	76.6	-313.9	0.00	0.00	0.00
4,800.0	8.75	166.00	4,775.5	-322.0	80.3	-328.9	0.00	0.00	0.00
4,900.0	8.75	166.00	4,874.3	-336.8	84.0	-344.0	0.00	0.00	0.00
5,000.0	8.75	166.00	4,973.1	-351.5	87.7	-359.1	0.00	0.00	0.00
5,100.0	8.75	166.00	5,072.0	-366.3	91.3	-374.2	0.00	0.00	0.00
5,200.0	8.75	166.00	5,170.8	-381.1	95.0	-389.3	0.00	0.00	0.00

# Noble Energy, Inc.

## Planning Report

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<b>Company:</b>	Northern Region Drilling - Sandbox	<b>TVD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Project:</b>	Conceptual Wells	<b>MD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Site:</b>	DP 408	<b>North Reference:</b>	Grid
<b>Well:</b>	Hurley H26-768	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Prelim - Rev 2		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,300.0	8.75	166.00	5,269.6	-395.8	98.7	-404.3	0.00	0.00	0.00
5,400.0	8.75	166.00	5,368.5	-410.6	102.4	-419.4	0.00	0.00	0.00
5,500.0	8.75	166.00	5,467.3	-425.3	106.1	-434.5	0.00	0.00	0.00
5,600.0	8.75	166.00	5,566.1	-440.1	109.7	-449.6	0.00	0.00	0.00
5,700.0	8.75	166.00	5,665.0	-454.9	113.4	-464.6	0.00	0.00	0.00
5,800.0	8.75	166.00	5,763.8	-469.6	117.1	-479.7	0.00	0.00	0.00
5,900.0	8.75	166.00	5,862.7	-484.4	120.8	-494.8	0.00	0.00	0.00
6,000.0	8.75	166.00	5,961.5	-499.2	124.5	-509.9	0.00	0.00	0.00
6,100.0	8.75	166.00	6,060.3	-513.9	128.1	-525.0	0.00	0.00	0.00
6,200.0	8.75	166.00	6,159.2	-528.7	131.8	-540.0	0.00	0.00	0.00
6,300.0	8.75	166.00	6,258.0	-543.4	135.5	-555.1	0.00	0.00	0.00
6,342.5	8.75	166.00	6,300.0	-549.7	137.1	-561.5	0.00	0.00	0.00
6,353.2	9.66	169.19	6,310.5	-551.4	137.4	-563.2	9.81	8.57	29.88
6,400.0	5.21	160.21	6,357.0	-557.2	138.9	-569.2	9.81	-9.52	-19.18
6,500.0	5.17	18.40	6,456.8	-557.2	141.8	-569.5	9.81	-0.03	-141.80
6,600.0	14.79	5.70	6,555.2	-540.2	144.5	-552.9	9.81	9.62	-12.70
6,700.0	24.56	2.97	6,649.2	-506.7	146.9	-519.8	9.81	9.77	-2.73
6,800.0	34.35	1.73	6,736.2	-457.6	148.8	-471.3	9.81	9.79	-1.24
6,900.0	44.14	0.99	6,813.6	-394.4	150.3	-408.7	9.81	9.80	-0.74
7,000.0	53.94	0.48	6,879.0	-319.0	151.2	-333.8	9.81	9.80	-0.51
7,100.0	63.74	0.08	6,930.7	-233.5	151.6	-248.9	9.81	9.80	-0.40
7,200.0	73.55	359.74	6,967.1	-140.5	151.5	-156.5	9.81	9.80	-0.34
7,300.0	83.35	359.44	6,987.1	-42.7	150.8	-59.1	9.81	9.80	-0.30
7,367.8	90.00	359.24	6,991.0	25.0	150.0	8.2	9.81	9.80	-0.29
7,400.0	90.00	359.24	6,991.0	57.2	149.6	40.2	0.00	0.00	0.00
7,500.0	90.00	359.24	6,991.0	157.2	148.2	139.7	0.00	0.00	0.00
7,600.0	90.00	359.24	6,991.0	257.2	146.9	239.3	0.00	0.00	0.00
7,700.0	90.00	359.24	6,991.0	357.1	145.6	338.8	0.00	0.00	0.00
7,800.0	90.00	359.24	6,991.0	457.1	144.3	438.3	0.00	0.00	0.00
7,900.0	90.00	359.24	6,991.0	557.1	142.9	537.8	0.00	0.00	0.00
8,000.0	90.00	359.24	6,991.0	657.1	141.6	637.4	0.00	0.00	0.00
8,100.0	90.00	359.24	6,991.0	757.1	140.3	736.9	0.00	0.00	0.00
8,200.0	90.00	359.24	6,991.0	857.1	139.0	836.4	0.00	0.00	0.00
8,300.0	90.00	359.24	6,991.0	957.1	137.6	935.9	0.00	0.00	0.00
8,400.0	90.00	359.24	6,991.0	1,057.1	136.3	1,035.4	0.00	0.00	0.00
8,500.0	90.00	359.24	6,991.0	1,157.1	135.0	1,135.0	0.00	0.00	0.00
8,600.0	90.00	359.24	6,991.0	1,257.1	133.7	1,234.5	0.00	0.00	0.00
8,700.0	90.00	359.24	6,991.0	1,357.1	132.3	1,334.0	0.00	0.00	0.00
8,800.0	90.00	359.24	6,991.0	1,457.0	131.0	1,433.5	0.00	0.00	0.00
8,900.0	90.00	359.24	6,991.0	1,557.0	129.7	1,533.0	0.00	0.00	0.00
9,000.0	90.00	359.24	6,991.0	1,657.0	128.4	1,632.6	0.00	0.00	0.00
9,100.0	90.00	359.24	6,991.0	1,757.0	127.1	1,732.1	0.00	0.00	0.00
9,200.0	90.00	359.24	6,991.0	1,857.0	125.7	1,831.6	0.00	0.00	0.00
9,300.0	90.00	359.24	6,991.0	1,957.0	124.4	1,931.1	0.00	0.00	0.00
9,400.0	90.00	359.24	6,991.0	2,057.0	123.1	2,030.6	0.00	0.00	0.00
9,500.0	90.00	359.24	6,991.0	2,157.0	121.8	2,130.2	0.00	0.00	0.00
9,600.0	90.00	359.24	6,991.0	2,257.0	120.4	2,229.7	0.00	0.00	0.00
9,700.0	90.00	359.24	6,991.0	2,357.0	119.1	2,329.2	0.00	0.00	0.00
9,800.0	90.00	359.24	6,991.0	2,457.0	117.8	2,428.7	0.00	0.00	0.00
9,900.0	90.00	359.24	6,991.0	2,556.9	116.5	2,528.2	0.00	0.00	0.00
10,000.0	90.00	359.24	6,991.0	2,656.9	115.2	2,627.8	0.00	0.00	0.00
10,100.0	90.00	359.24	6,991.0	2,756.9	113.8	2,727.3	0.00	0.00	0.00
10,200.0	90.00	359.24	6,991.0	2,856.9	112.5	2,826.8	0.00	0.00	0.00
10,300.0	90.00	359.24	6,991.0	2,956.9	111.2	2,926.3	0.00	0.00	0.00

# Noble Energy, Inc.

## Planning Report

<b>Database:</b>	EDMP	<b>Local Co-ordinate Reference:</b>	Well Hurley H26-768
<b>Company:</b>	Northern Region Drilling - Sandbox	<b>TVD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Project:</b>	Conceptual Wells	<b>MD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Site:</b>	DP 408	<b>North Reference:</b>	Grid
<b>Well:</b>	Hurley H26-768	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Prelim - Rev 2		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
10,400.0	90.00	359.24	6,991.0	3,056.9	109.9	3,025.9	0.00	0.00	0.00	
10,500.0	90.00	359.24	6,991.0	3,156.9	108.5	3,125.4	0.00	0.00	0.00	
10,600.0	90.00	359.24	6,991.0	3,256.9	107.2	3,224.9	0.00	0.00	0.00	
10,700.0	90.00	359.24	6,991.0	3,356.9	105.9	3,324.4	0.00	0.00	0.00	
10,800.0	90.00	359.24	6,991.0	3,456.9	104.6	3,423.9	0.00	0.00	0.00	
10,900.0	90.00	359.24	6,991.0	3,556.9	103.3	3,523.5	0.00	0.00	0.00	
11,000.0	90.00	359.24	6,991.0	3,656.9	101.9	3,623.0	0.00	0.00	0.00	
11,100.0	90.00	359.24	6,991.0	3,756.8	100.6	3,722.5	0.00	0.00	0.00	
11,200.0	90.00	359.24	6,991.0	3,856.8	99.3	3,822.0	0.00	0.00	0.00	
11,300.0	90.00	359.24	6,991.0	3,956.8	98.0	3,921.5	0.00	0.00	0.00	
11,400.0	90.00	359.24	6,991.0	4,056.8	96.7	4,021.1	0.00	0.00	0.00	
11,500.0	90.00	359.24	6,991.0	4,156.8	95.4	4,120.6	0.00	0.00	0.00	
11,600.0	90.00	359.24	6,991.0	4,256.8	94.0	4,220.1	0.00	0.00	0.00	
11,700.0	90.00	359.24	6,991.0	4,356.8	92.7	4,319.6	0.00	0.00	0.00	
11,800.0	90.00	359.24	6,991.0	4,456.8	91.4	4,419.1	0.00	0.00	0.00	
11,900.0	90.00	359.24	6,991.0	4,556.8	90.1	4,518.7	0.00	0.00	0.00	
12,000.0	90.00	359.25	6,991.0	4,656.8	88.8	4,618.2	0.00	0.00	0.00	
12,100.0	90.00	359.25	6,991.0	4,756.8	87.4	4,717.7	0.00	0.00	0.00	
12,200.0	90.00	359.25	6,991.0	4,856.7	86.1	4,817.2	0.00	0.00	0.00	
12,300.0	90.00	359.25	6,991.0	4,956.7	84.8	4,916.7	0.00	0.00	0.00	
12,400.0	90.00	359.25	6,991.0	5,056.7	83.5	5,016.3	0.00	0.00	0.00	
12,500.0	90.00	359.25	6,991.0	5,156.7	82.2	5,115.8	0.00	0.00	0.00	
12,600.0	90.00	359.25	6,991.0	5,256.7	80.9	5,215.3	0.00	0.00	0.00	
12,700.0	90.00	359.25	6,991.0	5,356.7	79.5	5,314.8	0.00	0.00	0.00	
12,800.0	90.00	359.25	6,991.0	5,456.7	78.2	5,414.3	0.00	0.00	0.00	
12,900.0	90.00	359.25	6,991.0	5,556.7	76.9	5,513.9	0.00	0.00	0.00	
13,000.0	90.00	359.25	6,991.0	5,656.7	75.6	5,613.4	0.00	0.00	0.00	
13,100.0	90.00	359.25	6,991.0	5,756.7	74.3	5,712.9	0.00	0.00	0.00	
13,200.0	90.00	359.25	6,991.0	5,856.7	73.0	5,812.4	0.00	0.00	0.00	
13,300.0	90.00	359.25	6,991.0	5,956.7	71.7	5,911.9	0.00	0.00	0.00	
13,400.0	90.00	359.25	6,991.0	6,056.6	70.3	6,011.5	0.00	0.00	0.00	
13,500.0	90.00	359.25	6,991.0	6,156.6	69.0	6,111.0	0.00	0.00	0.00	
13,600.0	90.00	359.25	6,991.0	6,256.6	67.7	6,210.5	0.00	0.00	0.00	
13,700.0	90.00	359.25	6,991.0	6,356.6	66.4	6,310.0	0.00	0.00	0.00	
13,800.0	90.00	359.25	6,991.0	6,456.6	65.1	6,409.5	0.00	0.00	0.00	
13,900.0	90.00	359.25	6,991.0	6,556.6	63.8	6,509.1	0.00	0.00	0.00	
14,000.0	90.00	359.25	6,991.0	6,656.6	62.5	6,608.6	0.00	0.00	0.00	
14,100.0	90.00	359.25	6,991.0	6,756.6	61.1	6,708.1	0.00	0.00	0.00	
14,200.0	90.00	359.25	6,991.0	6,856.6	59.8	6,807.6	0.00	0.00	0.00	
14,300.0	90.00	359.25	6,991.0	6,956.6	58.5	6,907.1	0.00	0.00	0.00	
14,400.0	90.00	359.25	6,991.0	7,056.6	57.2	7,006.7	0.00	0.00	0.00	
14,500.0	90.00	359.25	6,991.0	7,156.5	55.9	7,106.2	0.00	0.00	0.00	
14,600.0	90.00	359.25	6,991.0	7,256.5	54.6	7,205.7	0.00	0.00	0.00	
14,700.0	90.00	359.25	6,991.0	7,356.5	53.3	7,305.2	0.00	0.00	0.00	
14,800.0	90.00	359.25	6,991.0	7,456.5	51.9	7,404.7	0.00	0.00	0.00	
14,900.0	90.00	359.25	6,991.0	7,556.5	50.6	7,504.3	0.00	0.00	0.00	
15,000.0	90.00	359.25	6,991.0	7,656.5	49.3	7,603.8	0.00	0.00	0.00	
15,100.0	90.00	359.25	6,991.0	7,756.5	48.0	7,703.3	0.00	0.00	0.00	
15,200.0	90.00	359.25	6,991.0	7,856.5	46.7	7,802.8	0.00	0.00	0.00	
15,300.0	90.00	359.25	6,991.0	7,956.5	45.4	7,902.3	0.00	0.00	0.00	
15,400.0	90.00	359.25	6,991.0	8,056.5	44.1	8,001.9	0.00	0.00	0.00	
15,500.0	90.00	359.25	6,991.0	8,156.5	42.8	8,101.4	0.00	0.00	0.00	
15,600.0	90.00	359.25	6,991.0	8,256.5	41.5	8,200.9	0.00	0.00	0.00	
15,700.0	90.00	359.25	6,991.0	8,356.4	40.1	8,300.4	0.00	0.00	0.00	

# Noble Energy, Inc.

## Planning Report

<b>Database:</b>	EDMP	<b>Local Co-ordinate Reference:</b>	Well Hurley H26-768
<b>Company:</b>	Northern Region Drilling - Sandbox	<b>TVD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Project:</b>	Conceptual Wells	<b>MD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Site:</b>	DP 408	<b>North Reference:</b>	Grid
<b>Well:</b>	Hurley H26-768	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Prelim - Rev 2		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
15,800.0	90.00	359.25	6,991.0	8,456.4	38.8	8,399.9	0.00	0.00	0.00
15,900.0	90.00	359.25	6,991.0	8,556.4	37.5	8,499.5	0.00	0.00	0.00
16,000.0	90.00	359.25	6,991.0	8,656.4	36.2	8,599.0	0.00	0.00	0.00
16,100.0	90.00	359.25	6,991.0	8,756.4	34.9	8,698.5	0.00	0.00	0.00
16,156.8	90.00	359.25	6,991.0	8,813.2	34.2	8,755.0	0.00	0.00	0.00

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Hurley H26-768	0.00	0.01	6,991.0	8,813.2	34.2	1,324,636.00	3,241,525.93	40.221290	-104.635060
- plan hits target center									
- Point									

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
617.0	617.0	Pierre				
769.0	769.0	Upper Pierre Aquifer Top				
1,657.0	1,657.0	Upper Pierre Aquifer Base				
3,938.5	3,924.0	Parkman				
4,536.5	4,515.0	Sussex				
5,226.5	5,197.0	Shannon				
6,208.9	6,168.0	Teepee Buttes				
6,900.6	6,814.0	Sharon Springs				
6,994.9	6,876.0	Top A Chalk				
7,006.8	6,883.0	Top A Marl				
7,010.3	6,885.0	Top B Chalk				
7,105.2	6,933.0	Top B Marl				

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
2,400.0	2,400.0	0.0	0.0	KOP - Start Build 2.00
6,342.5	6,300.0	-549.7	137.1	Start DLS 9.81 TFO 30.74
6,353.2	6,310.6	-551.4	137.4	Start DLS 9.81 TFO -169.81
7,367.8	6,991.0	25.0	150.0	Start DLS 0.00 TFO 90.00
7,421.3	6,991.0	78.5	149.3	TPZ at 7421.3 MD
16,156.8	6,991.0	8,813.2	34.2	TD at 16156.8

# **Northern Region Drilling - Sandbox**

**Conceptual Wells**

**DP 408**

**Hurley H26-768**

**Wellbore #1**

**Prelim - Rev 2**

## **Anticollision Summary Report**

**30 October, 2017**



**Noble Energy, Inc.**  
Anticollision Summary Report

<b>Company:</b>	Northern Region Drilling - Sandbox	<b>Local Co-ordinate Reference:</b>	Well Hurley H26-768
<b>Project:</b>	Conceptual Wells	<b>TVD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Reference Site:</b>	DP 408	<b>MD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Hurley H26-768	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Prelim - Rev 2	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	Prelim - Rev 2		
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
<b>Interpolation Method:</b>	Stations	<b>Error Model:</b>	ISCWSA
<b>Depth Range:</b>	Unlimited	<b>Scan Method:</b>	Closest Approach 3D
<b>Results Limited by:</b>	Maximum center-center distance of 10,000.0 ft	<b>Error Surface:</b>	Pedal Curve
<b>Warning Levels Evaluated at:</b>	2.00 Sigma	<b>Casing Method:</b>	Not applied

<b>Survey Tool Program</b>	<b>Date</b>	10/30/2017		
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.0	16,156.8	Prelim - Rev 2 (Wellbore #1)	MWD+IFR1+MS_WY	Fixed:v2:Rockies, crustal dec + 3-axis correction

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 19						
Butterball H24-69HN - Original Drilling - Original Drilling -	14,991.7	11,992.0	6,910.0	6,805.7	66.250	CC
Butterball H24-69HN - Original Drilling - Original Drilling -	15,100.0	11,992.0	6,910.8	6,805.6	65.675	ES
Butterball H24-69HN - Original Drilling - Original Drilling -	16,156.8	11,992.0	7,007.5	6,887.2	58.281	SF
DP 408						
Emmy H25-711 - Wellbore #1 - Prelim - Rev 2	2,000.0	1,984.0	7,914.1	7,905.5	913.610	CC, ES
Emmy H25-711 - Wellbore #1 - Prelim - Rev 2	16,156.8	17,530.1	9,066.9	8,878.5	48.117	SF
Emmy State H25-718 - Wellbore #1 - Prelim - Rev 2	3,316.8	2,639.1	7,872.2	7,859.6	622.394	CC, ES
Emmy State H25-718 - Wellbore #1 - Prelim - Rev 2	16,156.8	17,376.1	8,632.9	8,444.9	45.935	SF
Emmy State H25-724 - Wellbore #1 - Prelim - Rev 2	3,328.7	2,651.4	7,850.7	7,838.1	619.341	CC, ES
Emmy State H25-724 - Wellbore #1 - Prelim - Rev 2	16,156.8	17,460.5	8,197.1	8,011.6	44.180	SF
Emmy State H25-731 - Wellbore #1 - Prelim - Rev 2	7,164.8	9,615.8	7,552.8	7,509.9	175.957	CC
Emmy State H25-731 - Wellbore #1 - Prelim - Rev 2	14,900.0	17,345.3	7,647.8	7,473.0	43.750	ES
Emmy State H25-731 - Wellbore #1 - Prelim - Rev 2	16,156.8	17,379.3	7,760.4	7,575.0	41.864	SF
Emmy State H25-738 - Wellbore #1 - Prelim - Rev 2	7,241.2	9,646.1	7,147.3	7,102.5	159.258	CC
Emmy State H25-738 - Wellbore #1 - Prelim - Rev 2	14,900.0	17,303.7	7,206.7	7,030.0	40.776	ES
Emmy State H25-738 - Wellbore #1 - Prelim - Rev 2	16,156.8	17,299.8	7,325.7	7,139.6	39.365	SF
Emmy State H25-744 - Wellbore #1 - Prelim - Rev 2	7,191.6	9,636.0	6,688.8	6,643.9	149.012	CC
Emmy State H25-744 - Wellbore #1 - Prelim - Rev 2	14,900.0	17,300.0	6,768.3	6,591.7	38.333	ES
Emmy State H25-744 - Wellbore #1 - Prelim - Rev 2	16,000.0	17,327.4	6,870.6	6,686.1	37.225	SF
Emmy State H25-751 - Wellbore #1 - Design #1	3,092.9	2,500.0	5,911.4	5,899.5	499.001	CC
Emmy State H25-751 - Wellbore #1 - Design #1	3,100.0	2,500.0	5,911.4	5,899.5	498.463	ES
Emmy State H25-751 - Wellbore #1 - Design #1	16,156.8	17,580.8	6,614.6	6,427.2	35.289	SF
Emmy State H25-757 - Wellbore #1 - Design #1	3,289.9	2,700.0	5,871.7	5,859.0	463.105	CC
Emmy State H25-757 - Wellbore #1 - Design #1	3,300.0	2,700.0	5,871.7	5,859.0	462.404	ES
Emmy State H25-757 - Wellbore #1 - Design #1	15,900.0	17,501.0	6,135.1	5,949.6	33.073	SF
Emmy State H25-764 - Wellbore #1 - Design #1	7,251.5	9,854.2	5,544.6	5,529.3	363.880	CC
Emmy State H25-764 - Wellbore #1 - Design #1	14,900.0	17,466.3	5,601.1	5,526.0	74.568	ES
Emmy State H25-764 - Wellbore #1 - Design #1	16,156.8	17,466.3	5,757.1	5,672.0	67.598	SF
Emmy State H25-771 - Wellbore #1 - Design #1	7,248.7	9,782.6	5,110.0	5,064.0	110.950	CC
Emmy State H25-771 - Wellbore #1 - Design #1	14,900.0	17,391.2	5,159.8	4,982.3	29.065	ES
Emmy State H25-771 - Wellbore #1 - Design #1	15,600.0	17,391.2	5,217.2	5,034.6	28.575	SF
Emmy State H25-777 - Wellbore #1 - Design #1	7,350.9	9,954.5	4,713.8	4,666.4	99.359	CC
Emmy State H25-777 - Wellbore #1 - Design #1	14,900.0	17,434.0	4,721.5	4,543.9	26.586	ES
Emmy State H25-777 - Wellbore #1 - Design #1	15,400.0	17,434.0	4,755.7	4,574.6	26.263	SF
Emmy State H25-785 - Wellbore #1 - Prelim - Rev 2	7,207.5	9,818.3	4,205.1	4,159.4	92.046	CC
Emmy State H25-785 - Wellbore #1 - Prelim - Rev 2	14,900.0	17,481.1	4,280.2	4,103.2	24.190	ES

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

**Noble Energy, Inc.**  
Anticollision Summary Report

<b>Company:</b>	Northern Region Drilling - Sandbox	<b>Local Co-ordinate Reference:</b>	Well Hurley H26-768
<b>Project:</b>	Conceptual Wells	<b>TVD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Reference Site:</b>	DP 408	<b>MD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Hurley H26-768	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Prelim - Rev 2	<b>Offset TVD Reference:</b>	Offset Datum

**Summary**

Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
<b>Offset Well - Wellbore - Design</b>						
DP 408						
Emmy State H25-785 - Wellbore #1 - Prelim - Rev 2	15,300.0	17,481.1	4,305.2	4,125.7	23.991	SF
Emmy State H36-753 - Wellbore #1 - Design #1	3,614.7	3,055.5	5,797.2	5,783.0	407.916	CC, ES
Emmy State H36-753 - Wellbore #1 - Design #1	11,900.0	6,430.1	8,985.7	8,933.4	171.712	SF
Emmy State H36-760 - Wellbore #1 - Design #1	3,742.0	3,159.5	5,769.0	5,754.2	390.885	CC
Emmy State H36-760 - Wellbore #1 - Design #1	3,800.0	3,200.0	5,769.1	5,754.2	385.305	ES
Emmy State H36-760 - Wellbore #1 - Design #1	11,300.0	6,450.0	8,337.8	8,290.4	176.054	SF
Emmy State H36-766 - Wellbore #1 - Design #1	6,414.6	6,165.9	5,588.1	5,559.4	194.462	CC, ES
Emmy State H36-766 - Wellbore #1 - Design #1	10,800.0	6,421.9	7,709.8	7,665.7	174.988	SF
Emmy State H36-773 - Wellbore #1 - Design #1	6,520.6	6,515.6	5,196.7	5,167.1	176.009	CC, ES
Emmy State H36-773 - Wellbore #1 - Design #1	10,400.0	6,550.0	7,109.8	7,068.2	171.110	SF
Emmy State H36-780 - Wellbore #1 - Design #1	6,532.9	6,625.1	4,835.7	4,806.0	163.102	CC, ES
Emmy State H36-780 - Wellbore #1 - Design #1	6,750.0	6,673.9	4,852.2	4,822.3	162.233	SF
Emmy State H36-787 - Wellbore #1 - Prelim - Rev 2	6,569.5	6,827.7	4,394.1	4,363.2	142.171	CC, ES
Emmy State H36-787 - Wellbore #1 - Prelim - Rev 2	6,700.0	6,850.0	4,400.4	4,369.3	141.776	SF
Hurley H26-712 - Wellbore #1 - Design #1	1,800.2	1,833.2	3,044.1	3,036.3	386.574	CC
Hurley H26-712 - Wellbore #1 - Design #1	1,900.0	1,918.0	3,044.2	3,035.9	367.428	ES
Hurley H26-712 - Wellbore #1 - Design #1	16,156.8	16,119.1	3,852.9	3,677.9	22.017	SF
Hurley H26-717 - Wellbore #1 - Design #1	1,900.2	1,933.2	3,021.8	3,013.5	363.015	CC
Hurley H26-717 - Wellbore #1 - Design #1	2,000.0	2,019.9	3,021.9	3,013.1	345.830	ES
Hurley H26-717 - Wellbore #1 - Design #1	16,156.8	16,080.9	3,432.2	3,259.4	19.859	SF
Hurley H26-724 - Wellbore #1 - Design #1	7,163.3	7,060.2	2,884.4	2,854.1	95.282	CC
Hurley H26-724 - Wellbore #1 - Design #1	16,156.8	16,043.2	3,012.1	2,839.1	17.416	ES, SF
Hurley H26-730 - Wellbore #1 - Design #1	7,473.2	7,128.5	2,481.3	2,450.9	81.527	CC
Hurley H26-730 - Wellbore #1 - Design #1	16,156.8	15,789.0	2,593.2	2,419.2	14.904	ES, SF
Hurley H26-736 - Wellbore #1 - Design #1	7,676.8	7,488.5	2,116.3	2,084.3	66.130	CC
Hurley H26-736 - Wellbore #1 - Design #1	16,156.8	15,954.3	2,172.5	2,000.0	12.595	ES, SF
Hurley H26-743 - Wellbore #1 - Prelim - Rev 2	7,518.8	7,580.6	1,631.5	1,598.8	49.856	CC
Hurley H26-743 - Wellbore #1 - Prelim - Rev 2	16,156.8	16,205.3	1,752.6	1,577.8	10.029	ES, SF
Hurley H26-750 - Wellbore #1 - Prelim - Rev 2	2,400.0	2,401.0	67.0	56.5	6.386	CC, ES
Hurley H26-750 - Wellbore #1 - Prelim - Rev 2	2,500.0	2,498.9	68.2	57.3	6.262	SF
Hurley H26-756 - Wellbore #1 - Prelim - Rev 2	2,615.2	2,615.8	43.6	32.2	3.833	CC, ES, SF
Hurley H26-762 - Wellbore #1 - Prelim - Rev 2	2,572.5	2,572.4	21.7	10.5	1.941	CC
Hurley H26-762 - Wellbore #1 - Prelim - Rev 2	2,600.0	2,599.8	21.8	10.5	1.929	ES, SF
Hurley H26-776 - Wellbore #1 - Prelim - Rev 2	2,200.0	2,200.0	22.3	12.8	2.329	CC, ES
Hurley H26-776 - Wellbore #1 - Prelim - Rev 2	2,300.0	2,299.6	23.2	13.2	2.314	SF
Hurley H26-783 - Wellbore #1 - Prelim - Rev 2	2,000.0	2,000.0	44.7	36.0	5.139	CC, ES
Hurley H26-783 - Wellbore #1 - Prelim - Rev 2	16,156.8	16,124.8	840.5	664.7	4.782	SF
Hurley H35-720 - Wellbore #1 - Design #1	2,109.5	2,143.5	3,030.9	3,021.6	327.059	CC
Hurley H35-720 - Wellbore #1 - Design #1	2,200.0	2,223.0	3,030.9	3,021.3	314.127	ES
Hurley H35-720 - Wellbore #1 - Design #1	9,800.0	6,600.0	3,548.0	3,505.8	84.028	SF
Hurley H35-727 - Wellbore #1 - Design #1	7,092.7	7,848.6	2,775.0	2,743.7	88.588	CC, ES
Hurley H35-727 - Wellbore #1 - Design #1	9,400.0	6,650.0	3,142.1	3,103.6	81.511	SF
Hurley H35-733 - Wellbore #1 - Design #1	7,100.0	7,867.5	2,354.7	2,322.9	73.985	ES
Hurley H35-733 - Wellbore #1 - Design #1	7,120.6	7,848.8	2,354.7	2,322.9	74.111	CC
Hurley H35-733 - Wellbore #1 - Design #1	8,900.0	6,828.1	2,596.6	2,560.5	71.828	SF
Hurley H35-740 - Wellbore #1 - Design #1	6,800.0	8,130.4	1,851.5	1,818.0	55.245	SF
Hurley H35-740 - Wellbore #1 - Design #1	7,150.0	7,860.6	1,833.1	1,800.7	56.565	ES
Hurley H35-740 - Wellbore #1 - Design #1	7,156.6	7,854.5	1,833.1	1,800.7	56.594	CC
Hurley H35-746 - Wellbore #1 - Prelim - Rev 2	6,800.0	8,107.4	1,471.3	1,436.4	42.147	SF
Hurley H35-746 - Wellbore #1 - Prelim - Rev 2	7,150.0	7,822.8	1,445.7	1,412.1	43.002	ES
Hurley H35-746 - Wellbore #1 - Prelim - Rev 2	7,172.5	7,801.7	1,445.6	1,412.1	43.085	CC
Hurley H35-755 - Wellbore #1 - Prelim - Rev 2	2,400.0	2,401.0	164.9	154.4	15.705	CC, ES
Hurley H35-755 - Wellbore #1 - Prelim - Rev 2	2,600.0	2,600.8	170.4	159.1	15.059	SF

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

**Noble Energy, Inc.**  
Anticollision Summary Report

<b>Company:</b>	Northern Region Drilling - Sandbox	<b>Local Co-ordinate Reference:</b>	Well Hurley H26-768
<b>Project:</b>	Conceptual Wells	<b>TVD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Reference Site:</b>	DP 408	<b>MD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Hurley H26-768	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Prelim - Rev 2	<b>Offset TVD Reference:</b>	Offset Datum

**Summary**

Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
<b>Offset Well - Wellbore - Design</b>						
DP 408						
Hurley H35-761 - Wellbore #1 - Prelim - Rev 2	2,400.0	2,401.0	156.7	146.2	14.929	CC, ES
Hurley H35-761 - Wellbore #1 - Prelim - Rev 2	2,600.0	2,600.8	162.8	151.4	14.382	SF
Hurley H35-768 - Wellbore #1 - Prelim - Rev 2	7,320.4	7,356.8	88.1	57.6	2.881	CC
Hurley H35-768 - Wellbore #1 - Prelim - Rev 2	7,367.8	7,309.1	88.2	57.5	2.878	ES
Hurley H35-768 - Wellbore #1 - Prelim - Rev 2	7,400.0	7,277.0	88.2	57.5	2.877	SF
Hurley H35-774 - Wellbore #1 - Prelim - Rev 2	2,400.0	2,401.0	149.4	138.9	14.229	CC, ES
Hurley H35-774 - Wellbore #1 - Prelim - Rev 2	7,566.3	7,153.4	320.9	290.2	10.461	SF
Hurley H35-779 - Wellbore #1 - Prelim - Rev 2	2,200.0	2,200.0	154.3	144.7	16.072	CC, ES
Hurley H35-779 - Wellbore #1 - Prelim - Rev 2	2,400.0	2,391.5	159.6	149.2	15.262	SF
Hurley H35-787 - Wellbore #1 - Prelim - Rev 2	2,000.0	2,000.0	158.6	149.9	18.237	CC, ES
Hurley H35-787 - Wellbore #1 - Prelim - Rev 2	2,300.0	2,287.9	169.4	159.5	16.981	SF
Hurley State H35-713 - Wellbore #1 - Design #1	1,900.2	1,933.2	3,053.2	3,044.8	366.780	CC
Hurley State H35-713 - Wellbore #1 - Design #1	2,000.0	2,000.0	3,053.3	3,044.6	351.029	ES
Hurley State H35-713 - Wellbore #1 - Design #1	10,100.0	6,450.0	4,179.1	4,135.4	95.666	SF
<b>H Section 13</b>						
Karakakes H13-25 - Original Drilling - Original Drilling - A	16,156.8	7,067.0	5,354.2	5,241.1	47.341	CC, ES, SF
Karakakes H13-33 - Original Drilling - Original Drilling - A	16,156.8	7,011.9	4,039.4	3,928.1	36.297	CC, ES, SF
Karakakes H14-63HN - Original Drilling - Original Drilling	16,156.8	10,726.6	322.6	199.3	2.616	CC, ES, SF
Sarchet H13-75HN - Original Drilling - Original Drilling	15,800.0	15,800.0	6,611.6	6,407.2	32.356	ES, SF
Sarchet H13-75HN - Original Drilling - Original Drilling	16,156.8	8,475.8	6,586.7	6,462.0	52.814	CC
UPRC 13-13J - Original Drilling - Original Drilling - As Dri	15,732.0	7,117.8	4,712.2	4,604.4	43.720	CC
UPRC 13-13J - Original Drilling - Original Drilling - As Dri	15,800.0	7,116.8	4,712.7	4,604.3	43.461	ES
UPRC 13-13J - Original Drilling - Original Drilling - As Dri	16,156.8	7,111.5	4,731.3	4,619.7	42.397	SF
UPRC 13-14J - Original Drilling - Original Drilling - As Dri	15,910.5	6,863.4	5,769.3	5,659.2	52.398	CC
UPRC 13-14J - Original Drilling - Original Drilling - As Dri	16,000.0	6,864.5	5,770.0	5,659.0	51.991	ES
UPRC 13-14J - Original Drilling - Original Drilling - As Dri	16,156.8	6,866.4	5,774.5	5,662.1	51.343	SF
UPRC 13-15J - Original Drilling - Original Drilling - As Dri	15,639.2	6,957.3	7,126.8	7,019.8	66.601	CC
UPRC 13-15J - Original Drilling - Original Drilling - As Dri	15,700.0	6,957.5	7,127.0	7,019.4	66.237	ES
UPRC 13-15J - Original Drilling - Original Drilling - As Dri	16,156.8	6,959.5	7,145.6	7,033.7	63.882	SF
UPRC 13-16J - Wellbore #1 - Wellbore #1- As Drilled	15,687.7	6,951.9	8,136.0	8,029.2	76.186	CC
UPRC 13-16J - Wellbore #1 - Wellbore #1- As Drilled	15,800.0	6,951.2	8,136.8	8,028.9	75.427	ES
UPRC 13-16J - Wellbore #1 - Wellbore #1- As Drilled	16,156.8	6,948.9	8,149.5	8,038.3	73.275	SF
UPRR 39 Pan Am B1 (PA) - Original Drilling - Original Dr	15,501.2	6,987.0	4,401.8	4,181.2	19.953	CC, ES
UPRR 39 Pan Am B1 (PA) - Original Drilling - Original Dr	16,156.8	6,987.0	4,450.4	4,224.2	19.677	SF
<b>H Section 14</b>						
Bohlender H14-09 - Original Drilling - Original Drilling - A	16,156.8	7,082.8	3,485.4	3,377.0	32.153	CC, ES, SF
Bohlender H14-15 - Original Drilling - Original Drilling - A	15,314.0	7,011.4	1,976.4	1,873.1	19.124	CC, ES
Bohlender H14-15 - Original Drilling - Original Drilling - A	15,500.0	7,014.9	1,985.1	1,880.2	18.925	SF
Bohlender H14-16 - Original Drilling - Original Drilling - A	15,929.8	6,966.8	2,846.8	2,737.7	26.085	CC, ES
Bohlender H14-16 - Original Drilling - Original Drilling - A	16,156.8	6,970.3	2,855.8	2,744.7	25.693	SF
Wilcox H14-03J - Original Drilling - Original Drilling - As D	16,000.0	7,372.2	776.2	634.1	5.465	SF
Wilcox H14-03J - Original Drilling - Original Drilling - As D	16,100.0	7,372.0	760.5	623.3	5.546	ES
Wilcox H14-03J - Original Drilling - Original Drilling - As D	16,156.8	7,371.9	757.3	623.8	5.671	CC
Wilcox H14-10 - Original Drilling - Original Drilling - As Dr	16,156.8	7,355.6	2,285.0	2,167.5	19.436	CC, ES, SF
Wilcox H14-11 - Original Drilling - Original Drilling - As Dr	16,156.8	7,594.4	1,364.9	1,210.3	8.826	CC, ES, SF
Wilcox H14-13 - Original Drilling - Original Drilling - As Dr	15,740.6	7,621.7	112.9	-3.0	0.974	Level 1, CC
Wilcox H14-13 - Original Drilling - Original Drilling - As Dr	15,800.0	7,619.8	127.5	-39.8	0.762	Level 1, ES, SF

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

**Noble Energy, Inc.**  
Anticollision Summary Report

<b>Company:</b>	Northern Region Drilling - Sandbox	<b>Local Co-ordinate Reference:</b>	Well Hurley H26-768
<b>Project:</b>	Conceptual Wells	<b>TVD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Reference Site:</b>	DP 408	<b>MD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Hurley H26-768	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Prelim - Rev 2	<b>Offset TVD Reference:</b>	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
H Section 19						
Butterball 13-19 - Original Drilling - Original Drilling - As D	11,648.7	11,648.7	9,727.4	9,642.3	114.319	CC
Butterball 13-19 - Original Drilling - Original Drilling - As D	11,800.0	11,800.0	9,728.6	9,641.6	111.795	ES
Butterball 13-19 - Original Drilling - Original Drilling - As D	13,400.0	13,400.0	9,883.4	9,776.5	92.486	SF
H Section 21						
Moser 24-21 - Wellbore #1 - Wellbore #1 - As Drilled	12,368.5	6,824.8	8,068.9	7,993.7	107.261	CC
Moser 24-21 - Wellbore #1 - Wellbore #1 - As Drilled	12,400.0	6,825.0	8,068.9	7,993.4	106.830	ES
Moser 24-21 - Wellbore #1 - Wellbore #1 - As Drilled	16,156.8	6,853.5	8,914.0	8,809.2	85.066	SF
H Section 22						
HSR Demeules 09-22 - Original Drilling - Original Drilling	11,586.3	6,933.0	2,006.4	1,938.5	29.519	CC
HSR Demeules 09-22 - Original Drilling - Original Drilling	11,600.0	6,932.9	2,006.5	1,938.4	29.469	ES
HSR Demeules 09-22 - Original Drilling - Original Drilling	11,900.0	6,930.5	2,030.8	1,960.6	28.929	SF
HSR Duryea - Wellbore #1 - Wellbore #1 - As Drilled	10,728.1	6,949.9	2,544.4	2,484.1	42.195	CC, ES
HSR Duryea - Wellbore #1 - Wellbore #1 - As Drilled	11,300.0	6,966.8	2,607.8	2,543.4	40.486	SF
Sarchet 16-22 - Wellbore #1 - Wellbore #1 - As Drilled	10,169.3	6,980.3	2,144.8	2,089.2	38.587	CC
Sarchet 16-22 - Wellbore #1 - Wellbore #1 - As Drilled	10,200.0	6,981.1	2,145.0	2,089.2	38.421	ES
Sarchet 16-22 - Wellbore #1 - Wellbore #1 - As Drilled	10,600.0	6,992.3	2,187.6	2,129.0	37.344	SF

**Noble Energy, Inc.**  
Anticollision Summary Report

<b>Company:</b>	Northern Region Drilling - Sandbox	<b>Local Co-ordinate Reference:</b>	Well Hurley H26-768
<b>Project:</b>	Conceptual Wells	<b>TVD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Reference Site:</b>	DP 408	<b>MD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Hurley H26-768	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Prelim - Rev 2	<b>Offset TVD Reference:</b>	Offset Datum

**Summary**

Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
<b>Offset Well - Wellbore - Design</b>						
H Section 23						
Eachus 32-23 - Original Drilling - Original Drilling - As Dri	12,962.9	6,969.6	2,014.1	1,933.3	24.903	CC
Eachus 32-23 - Original Drilling - Original Drilling - As Dri	13,000.0	6,969.2	2,014.5	1,933.2	24.797	ES
Eachus 32-23 - Original Drilling - Original Drilling - As Dri	13,300.0	6,965.7	2,042.1	1,958.7	24.466	SF
Eachus 41-23 (PA) - Original Drilling - Original Drilling - A	14,170.5	6,979.0	3,212.0	3,004.3	15.463	CC
Eachus 41-23 (PA) - Original Drilling - Original Drilling - A	14,200.0	6,979.0	3,212.2	3,004.2	15.442	ES
Eachus 41-23 (PA) - Original Drilling - Original Drilling - A	14,500.0	6,979.0	3,228.9	3,018.3	15.330	SF
Eachus UPRR 31-23 - Original Drilling - Original Drilling -	14,294.4	6,931.0	1,963.7	1,813.5	13.075	CC
Eachus UPRR 31-23 - Original Drilling - Original Drilling -	14,300.0	6,931.0	1,963.7	1,813.4	13.070	ES
Eachus UPRR 31-23 - Original Drilling - Original Drilling -	14,500.0	6,931.5	1,974.4	1,822.5	12.996	SF
Eachus UPRR 42-23 (PA) - Original Drilling - Original Dri	12,851.6	6,989.0	3,232.9	3,037.4	16.541	CC
Eachus UPRR 42-23 (PA) - Original Drilling - Original Dri	12,900.0	6,989.0	3,233.2	3,037.3	16.504	ES
Eachus UPRR 42-23 (PA) - Original Drilling - Original Dri	13,300.0	6,989.0	3,263.8	3,064.5	16.377	SF
HSR Alberstein 16-23 - Original Drilling - Original Drilling	10,557.1	7,160.9	3,074.7	3,015.2	51.710	CC
HSR Alberstein 16-23 - Original Drilling - Original Drilling	10,600.0	7,163.2	3,075.0	3,015.1	51.380	ES
HSR Alberstein 16-23 - Original Drilling - Original Drilling	11,500.0	7,212.6	3,215.6	3,148.9	48.268	SF
HSR Ashley 15-23A - Original Drilling - Original Drilling -	10,631.2	7,032.7	1,748.4	1,688.7	29.284	CC, ES
HSR Ashley 15-23A - Original Drilling - Original Drilling -	10,900.0	7,039.1	1,768.9	1,707.0	28.591	SF
HSR Benirschke 10-23 - Original Drilling - Original Drillin	11,621.3	7,024.8	2,065.8	1,997.1	30.098	CC, ES
HSR Benirschke 10-23 - Original Drilling - Original Drillin	12,000.0	7,050.5	2,100.0	2,028.4	29.298	SF
HSR Eachus 03-23 - Original Drilling - Original Drilling - A	14,321.1	7,135.3	649.8	547.1	6.327	CC, ES, SF
HSR Eachus 04-23 - Original Drilling - Original Drilling - A	14,352.0	7,446.9	767.0	641.1	6.090	CC
HSR Eachus 04-23 - Original Drilling - Original Drilling - A	14,400.0	7,447.5	768.5	637.3	5.858	ES
HSR Eachus 04-23 - Original Drilling - Original Drilling - A	14,600.0	7,450.0	806.1	657.5	5.423	SF
HSR Eachus 05-23 - Original Drilling - Original Drilling - A	12,800.0	7,408.4	826.3	693.6	6.227	SF
HSR Eachus 05-23 - Original Drilling - Original Drilling - A	13,000.0	7,412.3	797.0	675.5	6.559	ES
HSR Eachus 05-23 - Original Drilling - Original Drilling - A	13,019.1	7,412.7	796.8	676.3	6.611	CC
HSR Fruman 06-23 - Original Drilling - Original Drilling - A	13,385.9	7,041.1	265.3	180.0	3.110	CC, ES, SF
HSR Grasshopper 09-23 - Original Drilling - Original Drill	11,367.5	6,870.0	2,970.7	2,904.9	45.155	CC
HSR Grasshopper 09-23 - Original Drilling - Original Drill	11,400.0	6,868.9	2,970.9	2,904.8	44.953	ES
HSR Grasshopper 09-23 - Original Drilling - Original Drill	12,100.0	6,845.8	3,059.5	2,988.1	42.823	SF
Ritchey 21-23 - Original Drilling - Original Drilling - As Dri	13,706.6	6,920.7	1,414.3	1,326.5	16.110	CC, ES
Ritchey 21-23 - Original Drilling - Original Drilling - As Dri	13,800.0	6,919.9	1,417.4	1,328.8	15.994	SF
Ritchey 24-23 - Original Drilling - Original Drilling - As Dri	12,260.2	7,048.7	2,440.0	2,362.8	31.625	CC
Ritchey 24-23 - Original Drilling - Original Drilling - As Dri	12,300.0	7,048.8	2,440.3	2,362.7	31.457	ES
Ritchey 24-23 - Original Drilling - Original Drilling - As Dri	12,800.0	7,050.2	2,499.0	2,417.3	30.582	SF
Ritchey 31-24 - Original Drilling - Original Drilling - As Dri	13,602.1	7,133.6	3,837.1	3,748.1	43.091	CC, ES
Ritchey 31-24 - Original Drilling - Original Drilling - As Dri	14,800.0	7,151.0	4,019.7	3,918.3	39.641	SF
UPRC 23-11J - Original Drilling - Original Drilling - As Dri	11,626.9	6,953.1	336.5	268.1	4.920	CC, ES, SF
UPRC 23-12J - Original Drilling - Original Drilling - As Dri	11,632.5	6,942.6	963.7	895.2	14.079	CC, ES
UPRC 23-12J - Original Drilling - Original Drilling - As Dri	11,700.0	6,943.1	966.0	897.1	14.020	SF
UPRC H23-13 - Wellbore #1 - Wellbore #1 - As Drilled	10,481.5	6,955.8	966.1	907.8	16.591	CC, ES
UPRC H23-13 - Wellbore #1 - Wellbore #1 - As Drilled	10,600.0	6,959.4	973.3	914.3	16.511	SF
UPRC H23-14J - Original Drilling - Original Drilling - As D	10,332.0	6,937.9	741.6	684.7	13.039	CC, ES
UPRC H23-14J - Original Drilling - Original Drilling - As D	10,400.0	6,942.7	744.7	687.2	12.961	SF
UPRC H23-24 - Original Drilling - Original Drilling - As Dr	11,244.3	6,977.3	984.6	919.5	15.141	CC, ES
UPRC H23-24 - Original Drilling - Original Drilling - As Dr	11,300.0	6,979.5	986.1	920.6	15.048	SF
UPRR 53 Pan Am B#1 (PA) - Original Drilling - Original D	10,692.5	6,946.0	405.7	230.9	2.321	CC, ES
UPRR 53 Pan Am B#1 (PA) - Original Drilling - Original D	10,700.0	6,946.0	405.8	230.9	2.321	SF
UPRR 53 Pan Am UT V#1 - Original Drilling - Original Dr	13,378.3	7,053.1	2,719.1	2,633.1	31.623	CC
UPRR 53 Pan Am UT V#1 - Original Drilling - Original Dr	13,400.0	7,053.3	2,719.2	2,633.0	31.545	ES
UPRR 53 Pan Am UT V#1 - Original Drilling - Original Dr	13,900.0	7,057.0	2,768.7	2,678.6	30.724	SF

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



**Noble Energy, Inc.**  
Anticollision Summary Report

<b>Company:</b>	Northern Region Drilling - Sandbox	<b>Local Co-ordinate Reference:</b>	Well Hurley H26-768
<b>Project:</b>	Conceptual Wells	<b>TVD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Reference Site:</b>	DP 408	<b>MD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Hurley H26-768	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Prelim - Rev 2	<b>Offset TVD Reference:</b>	Offset Datum

**Summary**

Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
<b>Offset Well - Wellbore - Design</b>						
H Section 24						
Gurtler 24-09J - Original Drilling - Original Drilling - As Dr	11,613.0	6,800.0	8,399.7	8,331.9	123.914	CC
Gurtler 24-09J - Original Drilling - Original Drilling - As Dr	11,700.0	6,800.0	8,400.2	8,331.6	122.464	ES
Gurtler 24-09J - Original Drilling - Original Drilling - As Dr	16,100.0	6,800.0	9,522.9	9,421.8	94.175	SF
Gurtler 24-10J - Original Drilling - Original Drilling - As Dr	11,640.1	6,978.7	7,208.2	7,139.6	105.065	CC
Gurtler 24-10J - Original Drilling - Original Drilling - As Dr	11,700.0	6,979.0	7,208.5	7,139.3	104.222	ES
Gurtler 24-10J - Original Drilling - Original Drilling - As Dr	15,100.0	7,000.0	7,995.5	7,900.8	84.464	SF
Gurtler 24-11J - Original Drilling - Original Drilling - As Dr	11,581.9	6,800.0	5,742.3	5,674.8	85.081	CC
Gurtler 24-11J - Original Drilling - Original Drilling - As Dr	11,600.0	6,800.0	5,742.4	5,674.7	84.870	ES
Gurtler 24-11J - Original Drilling - Original Drilling - As Dr	14,000.0	6,800.0	6,230.6	6,144.8	72.640	SF
Gurtler 24-12J - Original Drilling - Original Drilling - As Dr	11,600.8	6,500.0	4,563.2	4,496.7	68.616	CC, ES
Gurtler 24-12J - Original Drilling - Original Drilling - As Dr	13,300.0	6,500.0	4,869.3	4,789.9	61.356	SF
Gurtler 24-12J - Original Drilling - ST01 - ST01 Original D	11,591.3	6,620.0	4,564.0	4,498.1	69.250	CC
Gurtler 24-12J - Original Drilling - ST01 - ST01 Original D	11,600.0	6,620.0	4,564.0	4,498.0	69.164	ES
Gurtler 24-12J - Original Drilling - ST01 - ST01 Original D	13,300.0	6,526.0	4,871.5	4,793.0	62.080	SF
Gurtler 24-13J - Original Drilling - Original Drilling - As Dr	10,314.8	6,241.7	4,562.3	4,508.3	84.410	CC, ES
Gurtler 24-13J - Original Drilling - Original Drilling - As Dr	12,300.0	6,200.0	4,974.4	4,905.8	72.497	SF
Gurtler 24-15J - Original Drilling - Original Drilling - As Dr	10,288.8	7,020.9	7,116.5	7,059.8	125.535	CC
Gurtler 24-15J - Original Drilling - Original Drilling - As Dr	10,400.0	7,020.3	7,117.3	7,059.7	123.443	ES
Gurtler 24-15J - Original Drilling - Original Drilling - As Dr	14,200.0	7,002.0	8,120.3	8,034.9	95.130	SF
Gurtler 24-16J - Original Drilling - Original Drilling - As Dr	10,308.3	6,931.7	8,103.1	8,046.5	143.274	CC
Gurtler 24-16J - Original Drilling - Original Drilling - As Dr	10,400.0	6,931.8	8,103.6	8,046.3	141.284	ES
Gurtler 24-16J - Original Drilling - Original Drilling - As Dr	15,100.0	6,937.0	9,413.7	9,322.1	102.784	SF
Gurtler H24-14 - Original Drilling - Original Drilling - As D	10,176.4	6,876.7	5,953.9	5,898.7	107.738	CC
Gurtler H24-14 - Original Drilling - Original Drilling - As D	10,200.0	6,876.9	5,954.0	5,898.5	107.341	ES
Gurtler H24-14 - Original Drilling - Original Drilling - As D	13,200.0	6,902.0	6,677.6	6,600.0	86.090	SF
Gurtler H24-21 (PA) - Original Drilling - Original Drilling -	12,124.7	7,051.0	6,502.8	6,429.5	88.665	CC
Gurtler H24-21 (PA) - Original Drilling - Original Drilling -	12,200.0	7,056.2	6,503.2	6,429.2	87.804	ES
Gurtler H24-21 (PA) - Original Drilling - Original Drilling -	15,000.0	7,249.5	7,107.3	7,011.8	74.409	SF
Gurtler H24-23 - Original Drilling - Original Drilling - As D	10,963.0	6,900.0	7,757.0	7,694.8	124.712	CC
Gurtler H24-23 - Original Drilling - Original Drilling - As D	11,000.0	6,900.0	7,757.1	7,694.5	124.046	ES
Gurtler H24-23 - Original Drilling - Original Drilling - As D	15,200.0	6,887.0	8,838.5	8,745.1	94.592	SF
Gurtler H24-24 - Original Drilling - Original Drilling - As D	10,971.8	6,447.7	6,638.7	6,577.9	109.276	CC
Gurtler H24-24 - Original Drilling - Original Drilling - As D	11,000.0	6,447.4	6,638.8	6,577.8	108.819	ES
Gurtler H24-24 - Original Drilling - Original Drilling - As D	14,200.0	6,413.6	7,381.8	7,296.8	86.932	SF
Gurtler H24-99HZ - Wellbore #1 - Original Drilling	10,939.3	11,118.0	4,275.4	4,210.5	65.894	CC
Gurtler H24-99HZ - Wellbore #1 - Original Drilling	11,000.0	11,118.0	4,275.9	4,209.6	64.486	ES
Gurtler H24-99HZ - Wellbore #1 - Original Drilling	14,000.0	11,118.0	5,258.0	5,119.6	37.988	SF
Gurtler H25-27 - Original Drilling - Original Drilling - As D	9,737.7	6,954.7	7,698.6	7,644.9	143.361	CC
Gurtler H25-27 - Original Drilling - Original Drilling - As D	9,800.0	6,954.4	7,698.9	7,644.7	141.950	ES
Gurtler H25-27 - Original Drilling - Original Drilling - As D	14,400.0	6,927.9	9,000.1	8,911.6	101.607	SF
Gurtler Russell L1 (PA) - Original Drilling - Original Drilling	10,704.2	7,031.7	5,333.1	5,263.0	76.060	CC
Gurtler Russell L1 (PA) - Original Drilling - Original Drilling	10,800.0	7,032.3	5,334.0	5,263.0	75.135	ES
Gurtler Russell L1 (PA) - Original Drilling - Original Drilling	12,900.0	7,046.4	5,767.4	5,680.2	66.152	SF
HSR Brutschy 04-24 - Original Drilling - Original Drilling -	14,111.6	7,189.1	4,633.3	4,540.8	50.107	CC
HSR Brutschy 04-24 - Original Drilling - Original Drilling -	14,200.0	7,192.7	4,634.1	4,540.8	49.656	ES
HSR Brutschy 04-24 - Original Drilling - Original Drilling -	15,400.0	7,242.1	4,808.8	4,706.4	46.953	SF
HSR Epstein 05-24 - Original Drilling - Original Drilling - A	13,286.4	7,004.4	5,157.8	5,073.8	61.363	CC
HSR Epstein 05-24 - Original Drilling - Original Drilling - A	13,700.0	13,700.0	5,174.3	5,063.1	46.523	ES
HSR Epstein 05-24 - Original Drilling - Original Drilling - A	13,900.0	13,900.0	5,194.2	5,080.5	45.718	SF
HSR Hoffman 03-24 - Original Drilling - Original Drilling -	14,155.0	7,011.8	5,946.8	5,848.2	60.294	CC
HSR Hoffman 03-24 - Original Drilling - Original Drilling -	14,200.0	7,011.0	5,947.0	5,847.9	60.035	ES
HSR Hoffman 03-24 - Original Drilling - Original Drilling -	16,000.0	6,980.4	6,226.3	6,113.7	55.263	SF
HSR Sarchet 02-24 - Original Drilling - Original Drilling - A	14,147.6	6,933.1	7,298.9	7,207.0	79.357	CC

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

**Noble Energy, Inc.**  
Anticollision Summary Report

<b>Company:</b>	Northern Region Drilling - Sandbox	<b>Local Co-ordinate Reference:</b>	Well Hurley H26-768
<b>Project:</b>	Conceptual Wells	<b>TVD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Reference Site:</b>	DP 408	<b>MD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Hurley H26-768	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Prelim - Rev 2	<b>Offset TVD Reference:</b>	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
H Section 24						
HSR Sarchet 02-24 - Original Drilling - Original Drilling - A	14,200.0	6,933.3	7,299.1	7,206.6	78.925	ES
HSR Sarchet 02-24 - Original Drilling - Original Drilling - A	16,156.8	6,940.5	7,570.4	7,461.8	69.726	SF
HSR Sarchet 06-24 - Original Drilling - Original Drilling - A	12,794.7	6,897.0	6,077.0	5,997.9	76.849	CC
HSR Sarchet 06-24 - Original Drilling - Original Drilling - A	12,900.0	6,898.3	6,077.9	5,997.8	75.896	ES
HSR Sarchet 06-24 - Original Drilling - Original Drilling - A	15,200.0	6,931.8	6,535.6	6,438.2	67.159	SF
HSR Traurig 01-24 - Original Drilling - Original Drilling - A	14,387.8	7,019.4	8,179.7	8,085.2	86.502	CC
HSR Traurig 01-24 - Original Drilling - Original Drilling - A	14,500.0	7,020.7	8,180.5	8,084.9	85.531	ES
HSR Traurig 01-24 - Original Drilling - Original Drilling - A	16,156.8	7,019.6	8,368.8	8,258.9	76.169	SF
Nopens D19-31 - Original Drilling - Original Drilling - As D	13,536.5	6,933.5	8,889.8	8,803.6	103.107	CC
Nopens D19-31 - Original Drilling - Original Drilling - As D	13,600.0	6,934.6	8,890.0	8,803.2	102.384	ES
Nopens D19-31 - Original Drilling - Original Drilling - As D	16,156.8	6,980.3	9,267.7	9,159.3	85.521	SF
Nopens H24-08 - Original Drilling - Original Drilling - As D	12,944.2	6,800.0	8,391.4	8,311.2	104.670	CC
Nopens H24-08 - Original Drilling - Original Drilling - As D	13,000.0	6,800.0	8,391.6	8,310.9	103.984	ES
Nopens H24-08 - Original Drilling - Original Drilling - As D	16,156.8	6,915.5	8,984.8	8,878.7	84.646	SF
Sarchet H24-22 - Original Drilling - Original Drilling - As D	12,623.0	6,958.0	7,553.3	7,475.6	97.208	CC
Sarchet H24-22 - Original Drilling - Original Drilling - As D	12,700.0	6,961.8	7,553.7	7,475.3	96.293	ES
Sarchet H24-22 - Original Drilling - Original Drilling - As D	16,156.8	7,231.4	8,334.5	8,229.4	79.349	SF
Weld County Lumber 01 - Original Drilling - Original Drilling	13,368.3	6,946.6	7,374.5	7,289.9	87.124	CC
Weld County Lumber 01 - Original Drilling - Original Drilling	13,400.0	6,946.9	7,374.6	7,289.6	86.813	ES
Weld County Lumber 01 - Original Drilling - Original Drilling	16,156.8	6,969.1	7,883.9	7,777.6	74.105	SF

**Noble Energy, Inc.**  
Anticollision Summary Report

<b>Company:</b>	Northern Region Drilling - Sandbox	<b>Local Co-ordinate Reference:</b>	Well Hurley H26-768
<b>Project:</b>	Conceptual Wells	<b>TVD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Reference Site:</b>	DP 408	<b>MD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Hurley H26-768	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Prelim - Rev 2	<b>Offset TVD Reference:</b>	Offset Datum

**Summary**

Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
<b>Offset Well - Wellbore - Design</b>						
H Section 25						
Dechant 21-25 - Original Drilling - Original Drilling - As D	575.1	554.1	5,822.2	5,819.3	2,001.528	CC
Dechant 21-25 - Original Drilling - Original Drilling - As D	1,400.0	1,358.5	5,823.1	5,815.6	769.267	ES
Dechant 21-25 - Original Drilling - Original Drilling - As D	12,700.0	7,101.5	7,915.7	7,834.5	97.499	SF
Dechant D30-33D - Original Drilling - Original Drilling - As	0.0	0.0	8,365.9			
Dechant D30-33D - Original Drilling - Original Drilling - As	100.0	34.1	8,366.0	8,365.8	10,000.000	ES
Dechant D30-33D - Original Drilling - Original Drilling - As	10,200.0	6,768.1	9,985.0	9,929.7	180.438	SF
Dechant D31-30D - Original Drilling - Original Drilling - As	100.0	37.7	8,369.0	8,368.9	10,000.000	CC, ES
Dechant D31-30D - Original Drilling - Original Drilling - As	9,400.0	6,935.7	9,979.7	9,930.1	201.478	SF
Dechant H25-64-1HN - Original Drilling - Original Drilling	6,435.4	6,328.0	3,945.0	3,909.0	109.617	CC, ES
Dechant H25-64-1HN - Original Drilling - Original Drilling	6,800.0	6,423.0	3,982.6	3,946.0	108.777	SF
Dechant H25-65HN - Original Drilling - Original Drilling	6,353.3	6,285.8	3,873.9	3,838.7	110.107	CC, ES
Dechant H25-65HN - Original Drilling - Original Drilling	6,750.0	6,417.0	3,885.5	3,849.6	108.016	SF
HSR Cohn 03-25 - Original Drilling - Original Drilling - As	8,953.6	6,879.3	5,619.1	5,573.4	123.050	CC
HSR Cohn 03-25 - Original Drilling - Original Drilling - As	9,000.0	6,879.5	5,619.3	5,573.3	122.183	ES
HSR Cohn 03-25 - Original Drilling - Original Drilling - As	14,300.0	14,300.0	7,755.7	7,652.8	75.391	SF
HSR Crowe 06-25 - Original Drilling - Original Drilling - A	7,603.1	7,016.9	5,667.2	5,627.2	141.757	CC, ES
HSR Crowe 06-25 - Original Drilling - Original Drilling - A	11,500.0	6,945.7	6,877.4	6,816.1	112.181	SF
HSR Dechant 04-25 - Original Drilling - Original Drilling -	9,038.2	7,390.2	4,550.8	4,481.4	65.555	CC, ES
HSR Dechant 04-25 - Original Drilling - Original Drilling -	10,300.0	7,392.5	4,722.5	4,646.5	62.147	SF
HSR Dechant 05-25 - Original Drilling - Original Drilling -	7,518.0	7,078.5	4,659.4	4,619.3	116.224	CC, ES
HSR Dechant 05-25 - Original Drilling - Original Drilling -	10,400.0	7,137.8	5,478.3	5,423.6	100.070	SF
KY Blue D30-32 - Original Drilling - Original Drilling - As D	6,998.3	6,770.0	8,829.5	8,791.0	229.070	CC
KY Blue D30-32 - Original Drilling - Original Drilling - As D	7,000.0	6,770.8	8,829.5	8,791.0	229.048	ES
KY Blue D30-32 - Original Drilling - Original Drilling - As D	11,500.0	6,918.9	9,966.3	9,902.9	157.290	SF
KY Blue H25-04J - Original Drilling - Original Drilling - As	6,546.9	6,452.3	8,129.5	8,103.6	313.833	CC
KY Blue H25-04J - Original Drilling - Original Drilling - As	6,550.0	6,455.4	8,129.5	8,103.6	313.711	ES
KY Blue H25-04J - Original Drilling - Original Drilling - As	11,300.0	6,940.0	9,950.4	9,903.3	210.901	SF
KY Blue H25-09 - Original Drilling - Original Drilling - As D	6,713.0	6,600.0	8,323.7	8,285.9	220.498	CC
KY Blue H25-09 - Original Drilling - Original Drilling - As D	6,750.0	6,624.7	8,323.8	8,285.9	219.829	ES
KY Blue H25-09 - Original Drilling - Original Drilling - As D	11,900.0	6,895.4	9,982.1	9,917.7	154.944	SF
KY Blue H25-10 - Original Drilling - Original Drilling - As D	6,798.6	6,723.2	6,883.5	6,845.2	179.874	CC
KY Blue H25-10 - Original Drilling - Original Drilling - As D	6,800.0	6,724.4	6,883.5	6,845.2	179.850	ES
KY Blue H25-10 - Original Drilling - Original Drilling - As D	12,300.0	7,017.7	8,964.0	8,898.9	137.780	SF
KY Blue H25-11 - Original Drilling - Original Drilling - As D	6,734.5	6,735.7	5,723.9	5,658.5	87.460	CC
KY Blue H25-11 - Original Drilling - Original Drilling - As D	6,800.0	6,792.2	5,724.4	5,658.0	86.243	ES
KY Blue H25-11 - Original Drilling - Original Drilling - As D	9,500.0	7,088.5	6,493.7	6,413.5	81.004	SF
KY Blue H25-12 - Original Drilling - Original Drilling - As D	6,504.7	6,367.0	4,259.1	4,222.4	115.899	CC, ES
KY Blue H25-12 - Original Drilling - Original Drilling - As D	7,300.0	6,907.9	4,334.8	4,295.5	110.343	SF
KY Blue H25-14 - Original Drilling - Original Drilling - As D	6,511.9	6,461.1	6,070.0	6,033.1	164.460	CC, ES
KY Blue H25-14 - Original Drilling - Original Drilling - As D	10,400.0	6,831.7	7,968.9	7,918.3	157.456	SF
KY Blue H25-15 - Original Drilling - Original Drilling - As D	6,484.5	6,484.5	7,040.9	7,004.0	190.360	CC, ES
KY Blue H25-15 - Original Drilling - Original Drilling - As D	12,300.0	12,300.0	9,948.4	9,868.3	124.223	SF
KY H25-24 - Original Drilling - Original Drilling - As Drilled	6,447.2	6,165.8	6,517.7	6,481.8	181.730	CC
KY H25-24 - Original Drilling - Original Drilling - As Drilled	6,450.0	6,167.8	6,517.7	6,481.8	181.667	ES
KY H25-24 - Original Drilling - Original Drilling - As Drilled	11,600.0	6,911.0	8,715.1	8,656.4	148.239	SF
Moore UPRC H25-01 - Original Drilling - Original Drilling	9,047.9	6,903.4	8,478.5	8,432.1	182.645	CC
Moore UPRC H25-01 - Original Drilling - Original Drilling	9,100.0	6,903.6	8,478.7	8,431.9	181.190	ES
Moore UPRC H25-01 - Original Drilling - Original Drilling	14,300.0	6,917.0	9,973.2	9,888.9	118.297	SF
Moore UPRC H25-02 - Original Drilling - Original Drilling	8,941.6	6,904.0	7,093.4	7,047.8	155.339	CC
Moore UPRC H25-02 - Original Drilling - Original Drilling	9,000.0	6,904.4	7,093.7	7,047.6	153.968	ES
Moore UPRC H25-02 - Original Drilling - Original Drilling	13,500.0	6,939.6	8,431.6	8,354.1	108.874	SF
Moser 25-32 - Original Drilling - Original Drilling - As Drill	7,507.1	6,971.2	6,781.4	6,741.7	170.734	CC, ES
Moser 25-32 - Original Drilling - Original Drilling - As Drill	13,700.0	13,700.0	9,183.1	9,086.3	94.842	SF

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



**Noble Energy, Inc.**  
Anticollision Summary Report

<b>Company:</b>	Northern Region Drilling - Sandbox	<b>Local Co-ordinate Reference:</b>	Well Hurley H26-768
<b>Project:</b>	Conceptual Wells	<b>TVD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Reference Site:</b>	DP 408	<b>MD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Hurley H26-768	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Prelim - Rev 2	<b>Offset TVD Reference:</b>	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
H Section 25						
UPRR 53 Pan Am T#2 - Original Drilling - Original Drilling	8,258.2	6,772.5	5,375.9	5,334.7	130.517	CC
UPRR 53 Pan Am T#2 - Original Drilling - Original Drilling	8,300.0	6,773.7	5,376.1	5,334.7	129.876	ES
UPRR 53 Pan Am T#2 - Original Drilling - Original Drilling	11,600.0	6,855.4	6,328.9	6,266.2	100.962	SF
UPRR 53 Pan Am UT T#1 - Original Drilling - Original Dr	8,087.0	6,933.0	7,766.3	7,610.6	49.906	CC
UPRR 53 Pan Am UT T#1 - Original Drilling - Original Dr	8,100.0	6,933.0	7,766.3	7,610.6	49.890	ES
UPRR 53 Pan Am UT T#1 - Original Drilling - Original Dr	10,900.0	6,933.0	8,259.9	8,085.1	47.244	SF
Von Feldt 1-25B - Original Drilling - Original Drilling - As D	6,474.6	6,323.9	5,015.8	4,979.4	137.854	CC, ES
Von Feldt 1-25B - Original Drilling - Original Drilling - As D	8,500.0	8,500.0	5,750.0	5,702.4	120.831	SF

**Noble Energy, Inc.**  
Anticollision Summary Report

<b>Company:</b>	Northern Region Drilling - Sandbox	<b>Local Co-ordinate Reference:</b>	Well Hurley H26-768
<b>Project:</b>	Conceptual Wells	<b>TVD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Reference Site:</b>	DP 408	<b>MD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Hurley H26-768	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Prelim - Rev 2	<b>Offset TVD Reference:</b>	Offset Datum

**Summary**

Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Separation Factor	Warning
<b>Offset Well - Wellbore - Design</b>						
H Section 26						
Bullard 31-26 - Original Drilling - Original Drilling - As Dril	9,271.4	7,019.5	1,762.0	1,713.5	36.368	CC, ES
Bullard 31-26 - Original Drilling - Original Drilling - As Dril	9,700.0	7,039.1	1,813.2	1,761.7	35.216	SF
Bullard 32-26 - Original Drilling - Original Drilling - As Dril	7,581.5	6,996.8	1,904.5	1,864.6	47.731	CC, ES
Bullard 32-26 - Original Drilling - Original Drilling - As Dril	7,800.0	6,998.0	1,917.0	1,876.7	47.553	SF
Bullard 41-26 - Original Drilling - Original Drilling - As Dril	8,743.0	7,051.6	2,715.5	2,670.5	60.448	CC, ES
Bullard 41-26 - Original Drilling - Original Drilling - As Dril	9,700.0	7,055.2	2,879.2	2,828.0	56.316	SF
Dechant H25-29D - Original Drilling - Original Drilling - As	110.1	129.1	3,835.6	3,835.2	9,580.830	CC
Dechant H25-29D - Original Drilling - Original Drilling - As	200.0	196.7	3,835.9	3,835.0	4,562.120	ES
Dechant H25-29D - Original Drilling - Original Drilling - As	12,800.0	7,424.6	6,181.5	6,091.5	68.669	SF
Dechant H25-33D - Original Drilling - Original Drilling - As	3,313.8	3,555.5	3,702.8	3,671.7	118.993	CC
Dechant H25-33D - Original Drilling - Original Drilling - As	3,500.0	3,723.6	3,703.5	3,670.4	112.143	ES
Dechant H25-33D - Original Drilling - Original Drilling - As	6,800.0	7,222.8	3,933.6	3,865.4	57.674	SF
Harsh H26-09D - Original Drilling - Original Drilling - As D	6,538.9	6,455.3	3,283.8	3,246.7	88.559	CC
Harsh H26-09D - Original Drilling - Original Drilling - As D	6,550.0	6,466.0	3,283.8	3,246.7	88.431	ES
Harsh H26-09D - Original Drilling - Original Drilling - As D	7,100.0	6,904.2	3,325.7	3,286.7	85.180	SF
Harsh H26-10 - Original Drilling - Original Drilling - As Dr	6,639.5	6,611.9	1,997.4	1,959.7	52.943	CC
Harsh H26-10 - Original Drilling - Original Drilling - As Dr	6,650.0	6,621.3	1,997.5	1,959.7	52.881	ES
Harsh H26-10 - Original Drilling - Original Drilling - As Dr	6,950.0	6,865.0	2,014.0	1,975.2	51.908	SF
Harsh H26-15 - Original Drilling - Original Drilling - As Dr	6,476.0	6,459.4	2,505.7	2,469.1	68.406	CC, ES
Harsh H26-15 - Original Drilling - Original Drilling - As Dr	6,700.0	6,670.2	2,533.4	2,495.7	67.267	SF
Harsh H26-16 - Original Drilling - Original Drilling - As Dr	6,466.8	6,385.2	3,422.1	3,385.6	93.782	CC, ES
Harsh H26-16 - Original Drilling - Original Drilling - As Dr	6,800.0	6,707.7	3,469.5	3,431.5	91.323	SF
Harsh H26-23D - Original Drilling - Original Drilling - As D	1,055.0	1,074.0	2,291.5	2,286.8	484.416	CC
Harsh H26-23D - Original Drilling - Original Drilling - As D	1,100.0	1,109.6	2,291.6	2,286.7	462.881	ES
Harsh H26-23D - Original Drilling - Original Drilling - As D	6,750.0	6,886.0	2,818.6	2,779.2	71.623	SF
HSR Moser 04-26 - Original Drilling - Original Drilling - As	9,387.4	6,911.5	887.8	838.9	18.150	CC
HSR Moser 04-26 - Original Drilling - Original Drilling - As	9,400.0	6,912.8	887.9	838.9	18.117	ES
HSR Moser 04-26 - Original Drilling - Original Drilling - As	9,500.0	6,923.7	894.9	845.2	18.030	SF
HSR Moser 06-26 - Original Drilling - Original Drilling - As	7,653.9	7,024.8	761.7	721.6	18.988	CC, ES
HSR Moser 06-26 - Original Drilling - Original Drilling - As	7,700.0	7,024.0	763.1	722.9	18.986	SF
HSR Regalia 05-26 - Original Drilling - Original Drilling - A	8,211.0	6,967.1	322.5	280.8	7.739	CC, ES, SF
HSR-Moser 03-26A - Original Drilling - Original Drilling - A	9,253.5	7,016.7	793.8	745.6	16.475	CC, ES
HSR-Moser 03-26A - Original Drilling - Original Drilling - A	9,300.0	7,018.7	795.1	746.6	16.384	SF
John 03-26 - Original Drilling - Original Drilling - As Drille	9,000.4	7,004.1	648.8	602.5	14.003	CC, ES
John 03-26 - Original Drilling - Original Drilling - As Drille	9,100.0	7,007.9	656.4	609.4	13.973	SF
Lamp H25-31 - Original Drilling - Original Drilling - As Dri	8,333.1	7,079.1	3,707.8	3,665.2	87.053	CC, ES
Lamp H25-31 - Original Drilling - Original Drilling - As Dri	10,100.0	7,069.0	4,107.2	4,053.9	76.970	SF
Lamp H26-01 - Original Drilling - Original Drilling - As Dri	9,128.9	7,085.3	3,345.0	3,294.3	65.929	CC, ES
Lamp H26-01 - Original Drilling - Original Drilling - As Dri	10,300.0	7,092.7	3,544.1	3,486.2	61.161	SF
Lamp H26-08 - Original Drilling - Original Drilling - As Dri	7,802.4	6,835.4	3,237.8	3,198.1	81.473	CC, ES
Lamp H26-08 - Original Drilling - Original Drilling - As Dri	9,200.0	6,777.2	3,526.1	3,479.8	76.130	SF
Lamp H26-22 - Original Drilling - Original Drilling - As Dri	7,083.4	7,114.7	2,502.7	2,457.3	55.101	CC
Lamp H26-22 - Original Drilling - Original Drilling - As Dri	7,100.0	7,118.7	2,502.8	2,457.3	55.024	ES
Lamp H26-22 - Original Drilling - Original Drilling - As Dri	7,500.0	7,151.6	2,543.6	2,496.5	54.039	SF
Moser 05-26 - Original Drilling - Original Drilling - As Drill	2,428.5	2,401.6	846.7	833.1	62.655	CC
Moser 05-26 - Original Drilling - Original Drilling - As Drill	7,582.7	6,972.4	868.9	829.0	21.800	ES
Moser 05-26 - Original Drilling - Original Drilling - As Drill	7,600.0	6,972.5	869.0	829.2	21.796	SF
Moser 41-27 - Original Drilling - Original Drilling - As Drill	925.0	894.1	851.0	846.1	173.992	CC, ES
Moser 41-27 - Original Drilling - Original Drilling - As Drill	8,700.0	7,076.1	1,555.6	1,506.2	31.493	SF
Moser H26-11 - Original Drilling - Original Drilling - As Dr	6,447.2	6,372.5	391.2	354.8	10.742	CC
Moser H26-11 - Original Drilling - Original Drilling - As Dr	6,450.0	6,375.3	391.2	354.8	10.738	ES
Moser H26-11 - Original Drilling - Original Drilling - As Dr	6,550.0	6,478.9	394.9	358.0	10.690	SF
Moser H26-12 - Wellbore #1 - Wellbore #1 - As Drilled	6,482.9	6,457.9	885.4	848.5	23.963	CC, ES

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

**Noble Energy, Inc.**  
Anticollision Summary Report

<b>Company:</b>	Northern Region Drilling - Sandbox	<b>Local Co-ordinate Reference:</b>	Well Hurley H26-768
<b>Project:</b>	Conceptual Wells	<b>TVD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Reference Site:</b>	DP 408	<b>MD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Hurley H26-768	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Prelim - Rev 2	<b>Offset TVD Reference:</b>	Offset Datum

**Summary**

Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
<b>Offset Well - Wellbore - Design</b>						
H Section 26						
Moser H26-12 - Wellbore #1 - Wellbore #1 - As Drilled	6,600.0	6,560.7	891.0	853.5	23.762	SF
Moser H26-13 - Wellbore #1 - Wellbore #1 - As Drilled	6,448.9	6,408.3	1,881.1	1,844.7	51.672	CC
Moser H26-13 - Wellbore #1 - Wellbore #1 - As Drilled	6,450.0	6,408.8	1,881.1	1,844.7	51.666	ES
Moser H26-13 - Wellbore #1 - Wellbore #1 - As Drilled	6,600.0	6,545.6	1,899.0	1,861.8	51.132	SF
Moser H26-14 - Original Drilling - Original Drilling - As Dr	6,468.0	6,452.0	2,029.0	1,992.6	55.831	CC, ES
Moser H26-14 - Original Drilling - Original Drilling - As Dr	6,650.0	6,625.5	2,055.7	2,018.4	55.212	SF
Moser H26-18D - Original Drilling - Original Drilling - As D	8,364.2	7,429.0	1,296.9	1,249.3	27.261	CC
Moser H26-18D - Original Drilling - Original Drilling - As D	8,400.0	7,429.4	1,297.4	1,249.3	26.976	ES
Moser H26-18D - Original Drilling - Original Drilling - As D	8,900.0	7,436.1	1,403.2	1,346.7	24.853	SF
Moser H26-24 - Original Drilling - Original Drilling - As Dr	6,480.2	6,456.1	1,337.8	1,301.1	36.539	CC, ES
Moser H26-24 - Original Drilling - Original Drilling - As Dr	6,600.0	6,554.5	1,346.9	1,309.7	36.264	SF
Moser H26-25 - Original Drilling - Original Drilling - As Dr	6,464.8	6,433.5	1,108.5	1,072.2	30.558	CC, ES
Moser H26-25 - Original Drilling - Original Drilling - As Dr	6,550.0	6,511.9	1,114.9	1,078.2	30.375	SF
Moser H26-27D - Original Drilling - Original Drilling - As D	9,596.1	7,156.2	2,598.1	2,543.7	47.753	CC
Moser H26-27D - Original Drilling - Original Drilling - As D	9,600.0	7,156.2	2,598.1	2,543.7	47.732	ES
Moser H26-27D - Original Drilling - Original Drilling - As D	10,200.0	7,154.7	2,667.3	2,609.4	46.063	SF
Moser H26-28D - Original Drilling - Original Drilling - As D	9,600.0	7,605.4	1,117.9	1,053.3	17.300	SF
Moser H26-28D - Original Drilling - Original Drilling - As D	9,832.8	7,613.3	1,093.5	1,031.2	17.572	CC, ES
Moser H26-29D - Original Drilling - Original Drilling - As D	9,866.4	8,017.2	134.3	66.8	1.990	CC
Moser H26-29D - Original Drilling - Original Drilling - As D	9,900.0	8,019.8	138.4	61.8	1.808	ES, SF
Moser, Wesley E. G. U. B1 (PA) - Original Drilling - Origin	6,444.6	6,382.5	1,441.4	1,299.7	10.168	CC
Moser, Wesley E. G. U. B1 (PA) - Original Drilling - Origin	6,450.0	6,387.9	1,441.4	1,299.6	10.159	ES
Moser, Wesley E. G. U. B1 (PA) - Original Drilling - Origin	6,600.0	6,536.2	1,461.0	1,315.9	10.069	SF
H Section 27						
HSR Moser 1-27 - Original Drilling - Original Drilling - As	9,286.5	6,940.1	1,965.7	1,917.4	40.684	CC
HSR Moser 1-27 - Original Drilling - Original Drilling - As	9,300.0	6,940.1	1,965.8	1,917.4	40.605	ES
HSR Moser 1-27 - Original Drilling - Original Drilling - As	9,700.0	6,941.5	2,008.8	1,957.8	39.420	SF
HSR Moser 16-27 - Original Drilling - Original Drilling - As	6,436.5	6,380.3	2,679.7	2,643.2	73.405	CC, ES
HSR Moser 16-27 - Original Drilling - Original Drilling - As	6,700.0	6,642.8	2,719.3	2,681.5	71.951	SF
Moser 09-27X (PA) - Original Drilling - Original Drilling - A	342.8	312.8	1,992.2	1,990.6	1,280.509	CC
Moser 09-27X (PA) - Original Drilling - Original Drilling - A	5,100.2	5,049.3	1,993.2	1,964.4	69.228	ES
Moser 09-27X (PA) - Original Drilling - Original Drilling - A	7,200.0	6,971.4	2,165.1	2,124.0	52.733	SF
Moser 24-27 - Original Drilling - Original Drilling - As Drill	847.2	816.2	1,979.2	1,974.7	446.468	CC
Moser 24-27 - Original Drilling - Original Drilling - As Drill	900.0	857.6	1,979.3	1,974.6	421.398	ES
Moser 24-27 - Original Drilling - Original Drilling - As Drill	7,500.0	7,002.9	2,757.6	2,714.8	64.473	SF
H Section 34						
Moser H34-09 - Wellbore #1 - Wellbore #1 - As Drilled	6,448.2	6,429.0	6,021.2	5,984.8	165.251	CC
Moser H34-09 - Wellbore #1 - Wellbore #1 - As Drilled	6,450.0	6,430.9	6,021.2	5,984.8	165.204	ES
Moser H34-09 - Wellbore #1 - Wellbore #1 - As Drilled	6,800.0	6,792.8	6,117.9	6,079.7	160.292	SF
Moser H34-16 - Wellbore #1 - Wellbore #1 - As Drilled	6,447.6	6,419.3	7,203.7	7,167.3	197.996	CC
Moser H34-16 - Wellbore #1 - Wellbore #1 - As Drilled	6,450.0	6,422.1	7,203.7	7,167.3	197.917	ES
Moser H34-16 - Wellbore #1 - Wellbore #1 - As Drilled	6,800.0	6,685.2	7,303.5	7,265.7	193.305	SF
Moser H34-31 - Wellbore #1 - Wellbore #1 - As Drilled	6,405.0	6,259.2	7,590.2	7,554.1	209.895	CC, ES
Moser H34-31 - Wellbore #1 - Wellbore #1 - As Drilled	7,000.0	6,912.6	7,724.0	7,685.0	197.921	SF

**Noble Energy, Inc.**  
Anticollision Summary Report

<b>Company:</b>	Northern Region Drilling - Sandbox	<b>Local Co-ordinate Reference:</b>	Well Hurley H26-768
<b>Project:</b>	Conceptual Wells	<b>TVD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Reference Site:</b>	DP 408	<b>MD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Hurley H26-768	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Prelim - Rev 2	<b>Offset TVD Reference:</b>	Offset Datum

**Summary**

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Separation Factor	Warning
H Section 35						
Cannon Farms 01-35C - Original Drilling - Original Drilling	6,464.9	6,500.0	7,103.0	7,066.5	194.318	CC, ES
Cannon Farms 01-35C - Original Drilling - Original Drilling	7,050.0	7,072.1	7,354.7	7,315.4	187.009	SF
Cannon H35-03D - Original Drilling - Original Drilling - As	6,447.1	6,363.8	6,059.5	6,023.5	168.124	CC
Cannon H35-03D - Original Drilling - Original Drilling - As	6,450.0	6,366.8	6,059.5	6,023.5	168.047	ES
Cannon H35-03D - Original Drilling - Original Drilling - As	6,750.0	6,600.0	6,137.3	6,100.0	164.494	SF
Cannon H35-09 - Original Drilling - Original Drilling - As D	6,470.0	6,508.8	6,426.7	6,390.1	175.393	CC, ES
Cannon H35-09 - Original Drilling - Original Drilling - As D	7,200.0	7,121.4	6,778.9	6,733.1	148.053	SF
Cannon H35-10 - Original Drilling - Original Drilling - As D	6,445.7	6,300.0	6,024.5	5,988.7	168.260	CC, ES
Cannon H35-10 - Original Drilling - Original Drilling - As D	6,750.0	6,600.0	6,097.9	6,060.6	163.548	SF
Cannon H35-11 - Original Drilling - Original Drilling - As D	6,455.9	6,449.1	5,694.0	5,657.6	156.500	CC, ES
Cannon H35-11 - Original Drilling - Original Drilling - As D	6,800.0	6,749.3	5,791.8	5,753.9	152.857	SF
Cannon H35-12 - Original Drilling - Original Drilling - As D	6,446.0	6,370.7	5,797.7	5,761.6	160.429	CC
Cannon H35-12 - Original Drilling - Original Drilling - As D	6,450.0	6,374.6	5,797.7	5,761.6	160.333	ES
Cannon H35-12 - Original Drilling - Original Drilling - As D	6,800.0	6,715.3	5,900.4	5,862.5	156.020	SF
Cannon H35-13 - Wellbore #1 - Wellbore #1 - As Drilled	6,450.1	6,422.8	6,995.0	6,958.7	192.722	CC, ES
Cannon H35-13 - Wellbore #1 - Wellbore #1 - As Drilled	6,900.0	6,995.9	7,158.2	7,119.4	184.483	SF
Cannon H35-14 - Original Drilling - Original Drilling - As D	6,455.7	6,464.1	7,004.2	6,967.8	192.439	CC, ES
Cannon H35-14 - Original Drilling - Original Drilling - As D	7,250.0	7,026.6	7,465.1	7,419.1	162.184	SF
Cannon H35-15 (PA) - Original Drilling - Original Drilling -	6,454.5	6,404.4	7,239.1	7,097.0	50.959	CC, ES
Cannon H35-15 (PA) - Original Drilling - Original Drilling -	6,900.0	6,806.6	7,396.2	7,245.6	49.103	SF
Cannon H35-20 - Original Drilling - Original Drilling - As D	6,440.2	6,310.3	5,143.7	5,107.8	143.526	CC, ES
Cannon H35-20 - Original Drilling - Original Drilling - As D	6,800.0	6,681.2	5,250.6	5,212.9	139.555	SF
Cannon H35-21 - Original Drilling - Original Drilling - As D	6,446.7	6,337.0	5,385.6	5,349.6	149.745	CC
Cannon H35-21 - Original Drilling - Original Drilling - As D	6,450.0	6,341.8	5,385.6	5,349.6	149.648	ES
Cannon H35-21 - Original Drilling - Original Drilling - As D	6,800.0	6,779.6	5,481.5	5,443.5	144.382	SF
Cannon H35-22 - Original Drilling - Original Drilling - As D	6,454.8	6,288.8	5,598.6	5,562.7	155.815	CC, ES
Cannon H35-22 - Original Drilling - Original Drilling - As D	6,800.0	6,649.6	5,689.2	5,651.6	151.182	SF
Cannon H35-24 - Original Drilling - Original Drilling - As D	6,445.0	6,311.9	6,499.3	6,463.5	181.418	CC
Cannon H35-24 - Original Drilling - Original Drilling - As D	6,450.0	6,318.0	6,499.3	6,463.5	181.259	ES
Cannon H35-24 - Original Drilling - Original Drilling - As D	6,850.0	6,669.7	6,633.1	6,595.5	176.432	SF
Cannon X02-27 - Original Drilling - Original Drilling - As D	6,457.5	6,433.3	7,816.5	7,780.2	215.272	CC, ES
Cannon X02-27 - Original Drilling - Original Drilling - As D	7,000.0	6,909.2	8,044.6	8,006.1	208.787	SF
Cannon X02-28 - Original Drilling - Original Drilling - As D	6,452.5	6,410.8	7,339.0	7,302.8	202.535	CC, ES
Cannon X02-28 - Original Drilling - Original Drilling - As D	6,850.0	6,815.4	7,466.8	7,428.7	195.752	SF
Cannon X02-29 - Original Drilling - Original Drilling - As D	6,408.4	5,869.5	7,269.2	7,234.7	211.204	CC, ES
Cannon X02-29 - Original Drilling - Original Drilling - As D	6,750.0	6,072.0	7,368.8	7,333.2	206.971	SF
Foster 18-35 - Original Drilling - Original Drilling - As Drill	6,439.9	6,330.1	3,491.2	3,455.3	97.137	CC, ES
Foster 18-35 - Original Drilling - Original Drilling - As Drill	6,700.0	6,636.0	3,547.5	3,510.1	94.851	SF
Foster UPRR 31-35 #1 (PA) - Original Drilling - Original D	6,461.1	6,423.0	3,448.4	3,306.1	24.234	CC, ES
Foster UPRR 31-35 #1 (PA) - Original Drilling - Original D	6,750.0	6,698.8	3,508.1	3,359.9	23.672	SF
Foster UPRR 32-35 - Original Drilling - Original Drilling -	6,460.2	6,442.1	4,579.5	4,543.1	126.025	CC, ES
Foster UPRR 32-35 - Original Drilling - Original Drilling -	6,800.0	6,795.5	4,670.0	4,632.0	122.882	SF
Foster UPRR 41-35 - Original Drilling - Original Drilling -	6,462.7	6,385.2	4,458.8	4,422.5	122.829	CC, ES
Foster UPRR 41-35 - Original Drilling - Original Drilling -	7,200.0	6,933.8	4,755.7	4,708.6	101.132	SF
Foster UPRR 42-35 #2 - Original Drilling - Original Drilling	6,478.9	6,547.0	5,252.9	5,216.1	142.716	CC, ES
Foster UPRR 42-35 #2 - Original Drilling - Original Drilling	6,750.0	6,700.0	5,305.9	5,268.2	140.679	SF
HSR Foster 03-35 - Original Drilling - Original Drilling - A	6,458.1	6,434.9	3,197.2	3,160.9	88.095	CC, ES
HSR Foster 03-35 - Original Drilling - Original Drilling - A	6,700.0	6,772.9	3,244.2	3,206.4	85.830	SF
HSR Foster 04-35 - Wellbore #1 - Wellbore #1 - As Drille	6,452.1	6,425.4	3,012.7	2,976.3	82.752	CC, ES
HSR Foster 04-35 - Wellbore #1 - Wellbore #1 - As Drille	6,650.0	6,600.0	3,043.9	3,006.6	81.532	SF
HSR Foster 05-35 - Wellbore #1 - Wellbore #1 - As Drille	6,412.9	6,100.0	4,473.2	4,438.1	127.339	CC, ES
HSR Foster 05-35 - Wellbore #1 - Wellbore #1 - As Drille	6,750.0	6,624.4	4,564.2	4,526.8	121.796	SF
HSR Foster 06-35 - Original Drilling - Original Drilling - A	6,456.5	6,444.2	4,339.2	4,302.9	119.416	CC, ES

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

**Noble Energy, Inc.**  
Anticollision Summary Report

<b>Company:</b>	Northern Region Drilling - Sandbox	<b>Local Co-ordinate Reference:</b>	Well Hurley H26-768
<b>Project:</b>	Conceptual Wells	<b>TVD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Reference Site:</b>	DP 408	<b>MD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Hurley H26-768	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Prelim - Rev 2	<b>Offset TVD Reference:</b>	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
H Section 35						
HSR Foster 06-35 - Original Drilling - Original Drilling - A	6,700.0	6,709.7	4,388.0	4,350.3	116.625	SF
UPRR 53 Pan Am Unit P1 - Original Drilling - Original Dri	6,471.9	6,485.3	4,550.4	4,513.8	124.466	CC, ES
UPRR 53 Pan Am Unit P1 - Original Drilling - Original Dri	6,800.0	6,728.6	4,627.5	4,589.7	122.332	SF
UPRR 53 Pan Am UT P2 - Original Drilling - Original Drill	6,449.3	6,388.0	3,341.9	3,305.8	92.537	CC
UPRR 53 Pan Am UT P2 - Original Drilling - Original Drill	6,450.0	6,388.6	3,341.9	3,305.8	92.529	ES
UPRR 53 Pan Am UT P2 - Original Drilling - Original Drill	6,650.0	6,543.0	3,377.3	3,340.3	91.319	SF

**Noble Energy, Inc.**  
Anticollision Summary Report

<b>Company:</b>	Northern Region Drilling - Sandbox	<b>Local Co-ordinate Reference:</b>	Well Hurley H26-768
<b>Project:</b>	Conceptual Wells	<b>TVD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Reference Site:</b>	DP 408	<b>MD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Hurley H26-768	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Prelim - Rev 2	<b>Offset TVD Reference:</b>	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
H Section 36						
Dechant 07-36 - Original Drilling - Original Drilling - As D	6,470.0	6,348.5	8,222.1	8,185.9	226.666	CC, ES
Dechant 07-36 - Original Drilling - Original Drilling - As D	7,000.0	6,721.4	8,354.7	8,316.6	219.403	SF
Dechant 13N-1HZ - Original Drilling - Original Drilling - A	6,453.1	6,350.0	8,631.0	8,591.7	219.643	CC, ES
Dechant 13N-1HZ - Original Drilling - Original Drilling - A	6,750.0	6,400.0	8,699.7	8,659.8	217.956	SF
Dechant 14C-1HZ - Original Drilling - Original Drilling - A	6,419.0	5,810.3	9,364.8	9,329.3	264.248	CC, ES
Dechant 14C-1HZ - Original Drilling - Original Drilling - A	7,000.0	6,312.1	9,579.2	9,541.2	252.010	SF
Dechant 15C-1HZ - Original Drilling - Original Drilling - As D	6,461.1	6,324.7	9,808.2	9,769.3	252.292	CC
Dechant 15-36 - Original Drilling - Original Drilling - As D	6,500.0	6,363.6	9,809.1	9,769.2	245.425	ES
Dechant 15-36 - Original Drilling - Original Drilling - As D	7,000.0	6,784.8	9,977.7	9,926.1	193.668	SF
Dechant 15C-1HZ - Original Drilling - Original Drilling - A	6,437.9	6,106.4	7,425.3	7,389.3	206.374	CC, ES
Dechant 15C-1HZ - Original Drilling - Original Drilling - A	11,300.0	6,500.0	9,967.0	9,912.2	181.649	SF
Dechant 24-36 - Original Drilling - Original Drilling - As D	937.9	900.0	8,661.4	8,656.5	1,752.590	CC, ES
Dechant 24-36 - Original Drilling - Original Drilling - As D	7,000.0	7,019.2	9,114.9	9,075.6	232.125	SF
Dechant 35N-E1HZ - Original Drilling - Original Drilling -	6,441.7	6,115.4	9,199.5	9,163.6	256.393	CC, ES
Dechant 35N-E1HZ - Original Drilling - Original Drilling -	6,700.0	6,200.0	9,247.3	9,210.7	252.848	SF
Dechant 35N-W1HZ - Original Drilling - Original Drilling -	6,453.9	6,300.0	8,890.0	8,853.3	242.345	CC, ES
Dechant 35N-W1HZ - Original Drilling - Original Drilling -	6,650.0	6,300.0	8,919.6	8,882.6	241.192	SF
Dechant 36N-W1HZ - Original Drilling - Original Drilling -	6,400.3	5,566.0	9,493.0	9,457.6	268.620	CC, ES
Dechant 36N-W1HZ - Original Drilling - Original Drilling -	7,050.0	6,112.0	9,752.4	9,714.1	254.718	SF
Dechant 37N-E1HZ - Original Drilling - Original Drilling -						Out of range
Dechant 37N-W1HZ - Original Drilling - Original Drilling -						Out of range
Dechant State 16C-1HZ - Original Drilling - Original Drilling	6,471.9	6,262.8	8,559.1	8,522.5	233.961	CC, ES
Dechant State 16C-1HZ - Original Drilling - Original Drilling	10,000.0	6,526.0	9,992.6	9,943.0	201.850	SF
Dechant State 36N-E1HZ - Original Drilling - Original Drilling	6,483.7	6,350.0	7,200.0	7,163.1	195.246	CC, ES
Dechant State 36N-E1HZ - Original Drilling - Original Drilling	11,500.0	6,400.0	9,953.7	9,898.9	181.593	SF
Dechant State 37N-E36HZ - Original Drilling - Original Drilling	6,509.0	6,472.3	8,356.0	8,318.4	221.954	CC, ES
Dechant State 37N-E36HZ - Original Drilling - Original Drilling	10,300.0	6,400.0	9,999.7	9,948.6	195.533	SF
Dechant State 37N-W36HZ - Original Drilling - Original Drilling	904.2	860.2	7,598.6	7,593.8	1,586.071	CC
Dechant State 37N-W36HZ - Original Drilling - Original Drilling	1,000.0	900.0	7,598.8	7,593.7	1,475.905	ES
Dechant State 37N-W36HZ - Original Drilling - Original Drilling	11,100.0	6,362.9	9,982.8	9,927.7	181.247	SF
Dechant State 38N-1HZ - Original Drilling - Original Drilling	6,478.1	6,264.7	9,045.5	9,008.9	247.077	CC, ES
Dechant State 38N-1HZ - Original Drilling - Original Drilling	9,000.0	6,400.0	9,951.2	9,907.6	228.199	SF
Dechant State H36-11D - Original Drilling - Original Drilling	6,477.3	6,510.0	8,106.9	8,070.1	220.735	CC, ES
Dechant State H36-11D - Original Drilling - Original Drilling	6,900.0	6,900.0	8,212.6	8,174.1	213.126	SF
Dechant State H36-18D - Original Drilling - Original Drilling	100.0	74.8	6,467.1	6,466.9	10,000.000	CC
Dechant State H36-18D - Original Drilling - Original Drilling	600.0	554.2	6,468.1	6,465.9	2,967.935	ES
Dechant State H36-18D - Original Drilling - Original Drilling	10,800.0	6,911.3	9,952.7	9,897.8	181.163	SF
Dechant State H36-19 - Original Drilling - Original Drilling	6,509.8	6,643.2	5,919.2	5,881.8	158.489	CC, ES
Dechant State H36-19 - Original Drilling - Original Drilling	6,950.0	7,075.3	6,012.7	5,973.4	153.180	SF
Dechant State H36-20D - Original Drilling - Original Drilling	6,480.9	6,657.2	7,230.7	7,189.9	176.817	CC, ES
Dechant State H36-20D - Original Drilling - Original Drilling	6,850.0	6,975.1	7,313.9	7,271.7	173.383	SF
Dechant State H36-21D - Original Drilling - Original Drilling	6,472.5	6,501.9	8,090.7	8,051.0	203.789	CC, ES
Dechant State H36-21D - Original Drilling - Original Drilling	6,950.0	6,909.4	8,212.0	8,170.7	198.753	SF
Dechant State H36-24 - Original Drilling - Original Drilling	164.7	150.7	8,675.7	8,675.1	10,000.000	CC
Dechant State H36-24 - Original Drilling - Original Drilling	400.0	332.3	8,676.1	8,674.3	4,893.645	ES
Dechant State H36-24 - Original Drilling - Original Drilling	7,100.0	7,181.8	9,185.9	9,142.2	209.939	SF
Dechant State H36-31D - Original Drilling - Original Drilling	6,464.0	6,525.0	5,341.6	5,299.7	127.529	CC, ES
Dechant State H36-31D - Original Drilling - Original Drilling	6,750.0	6,746.1	5,392.0	5,349.2	125.880	SF
Dechant State H36-32D - Original Drilling - Original Drilling	6,471.0	6,543.7	6,279.4	6,243.4	174.472	CC, ES
Dechant State H36-32D - Original Drilling - Original Drilling	7,050.0	7,050.0	6,501.3	6,463.1	170.209	SF
Dechant State H36-33 - Original Drilling - Original Drilling	6,462.4	6,605.2	7,322.4	7,278.2	165.835	CC, ES
Dechant State H36-33 - Original Drilling - Original Drilling	6,850.0	7,162.7	7,424.1	7,377.8	160.249	SF
HSR Dechant State 02-36 - Original Drilling - Original Drilling	6,445.8	6,140.9	7,329.7	7,294.1	205.774	CC

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



**Noble Energy, Inc.**  
Anticollision Summary Report

<b>Company:</b>	Northern Region Drilling - Sandbox	<b>Local Co-ordinate Reference:</b>	Well Hurley H26-768
<b>Project:</b>	Conceptual Wells	<b>TVD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Reference Site:</b>	DP 408	<b>MD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Hurley H26-768	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Prelim - Rev 2	<b>Offset TVD Reference:</b>	Offset Datum

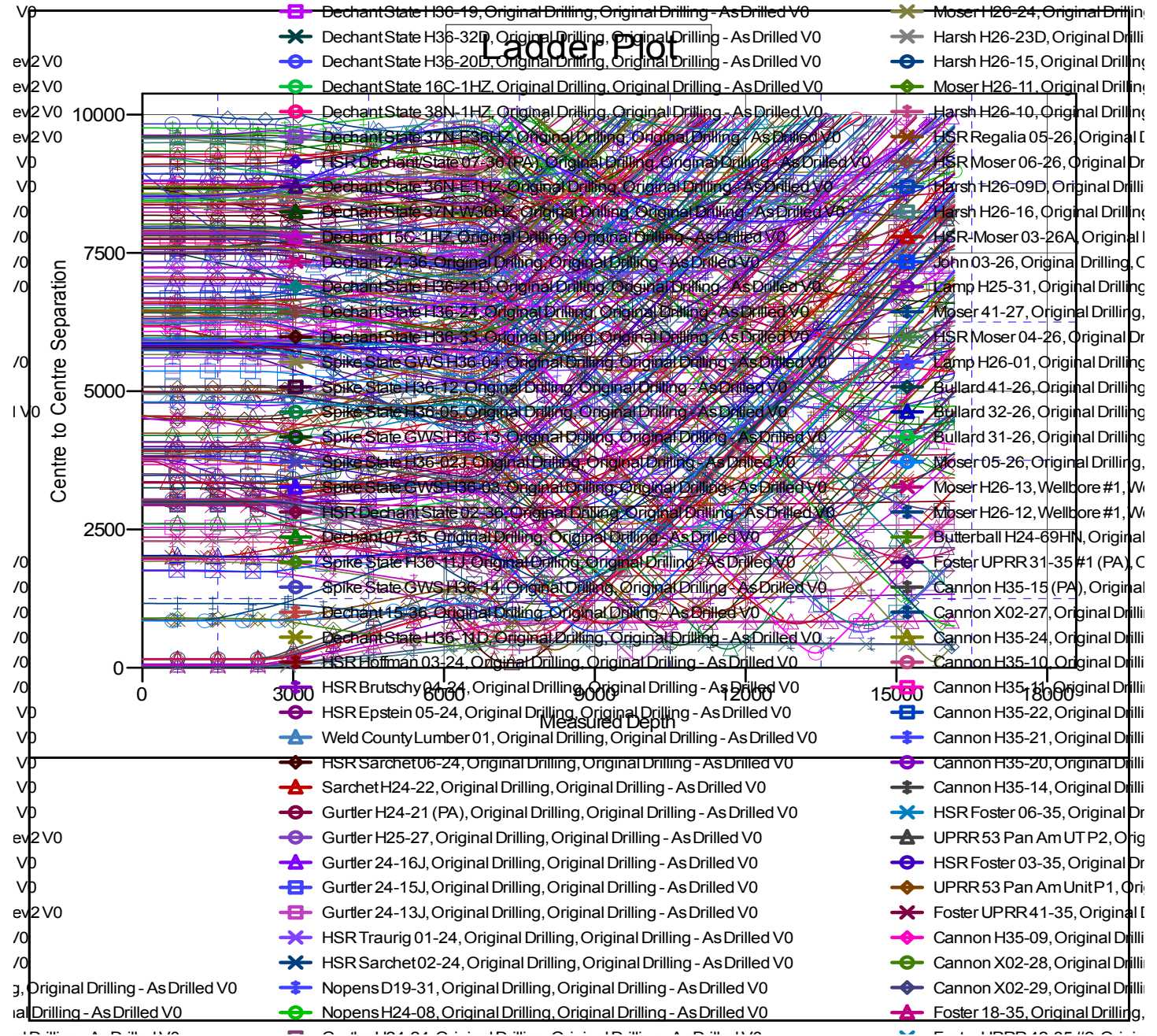
Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
H Section 36						
HSR Dechant State 02-36 - Original Drilling - Original Dri	6,450.0	6,143.9	7,329.7	7,294.1	205.668	ES
HSR Dechant State 02-36 - Original Drilling - Original Dri	11,200.0	6,700.0	9,944.3	9,890.6	185.288	SF
HSR Dechant/State 07-36 (PA) - Original Drilling - Origin	6,481.1	6,395.9	8,396.6	8,254.3	59.017	CC
HSR Dechant/State 07-36 (PA) - Original Drilling - Origin	6,500.0	6,414.8	8,396.8	8,254.1	58.848	ES
HSR Dechant/State 07-36 (PA) - Original Drilling - Origin	7,150.0	6,908.9	8,571.0	8,417.9	55.985	SF
Spike State GWS H36-03 - Original Drilling - Original Dri	6,474.4	6,342.2	6,565.1	6,528.7	180.683	CC, ES
Spike State GWS H36-03 - Original Drilling - Original Dri	6,900.0	6,685.6	6,637.4	6,599.4	174.778	SF
Spike State GWS H36-04 - Original Drilling - Original Dri	6,498.3	6,534.4	5,206.6	5,164.8	124.558	CC
Spike State GWS H36-04 - Original Drilling - Original Dri	6,500.0	6,536.1	5,206.6	5,164.7	124.493	ES
Spike State GWS H36-04 - Original Drilling - Original Dri	7,150.0	7,032.4	5,398.1	5,350.3	112.823	SF
Spike State GWS H36-13 - Original Drilling - Original Dri	6,537.4	7,444.0	8,308.0	8,265.3	194.170	CC, ES
Spike State GWS H36-13 - Original Drilling - Original Dri	6,700.0	7,444.0	8,328.8	8,285.8	193.438	SF
Spike State GWS H36-14 - Original Drilling - Original Dri	6,489.8	6,489.8	9,296.7	9,260.1	253.912	CC, ES
Spike State GWS H36-14 - Original Drilling - Original Dri	7,000.0	7,144.5	9,461.6	9,422.2	240.100	SF
Spike State H36-02J - Original Drilling - Original Drilling -	6,454.4	6,250.0	6,666.7	6,618.0	136.680	CC
Spike State H36-02J - Original Drilling - Original Drilling -	6,500.0	6,295.4	6,667.8	6,617.5	132.570	ES
Spike State H36-02J - Original Drilling - Original Drilling -	7,250.0	6,809.8	6,962.0	6,894.8	103.608	SF
Spike State H36-05 - Original Drilling - Original Drilling - A	6,460.0	6,340.3	6,036.5	6,000.3	166.857	CC, ES
Spike State H36-05 - Original Drilling - Original Drilling - A	6,950.0	6,984.0	6,174.9	6,136.0	158.793	SF
Spike State H36-11J - Original Drilling - Original Drilling -	6,463.6	6,396.1	8,169.6	8,133.4	225.359	CC, ES
Spike State H36-11J - Original Drilling - Original Drilling -	6,900.0	6,866.8	8,290.6	8,252.2	216.047	SF
Spike State H36-12 - Original Drilling - Original Drilling - A	6,459.2	6,358.3	6,927.5	6,891.4	191.867	CC, ES
Spike State H36-12 - Original Drilling - Original Drilling - A	6,850.0	6,870.4	7,024.4	6,986.0	183.215	SF

**Noble Energy, Inc.**  
**Anticollision Summary Report**

<b>Company:</b>	Northern Region Drilling - Sandbox	<b>Local Co-ordinate Reference:</b>	Well Hurley H26-768
<b>Project:</b>	Conceptual Wells	<b>TVD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Reference Site:</b>	DP 408	<b>MD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Hurley H26-768	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Prelim - Rev 2	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4851.0ft (Original Well Elev)  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.500000

Coordinates are relative to: Hurley H26-768  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 0.56°



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



**Noble Energy, Inc.**  
**Anticollision Summary Report**

<b>Company:</b>	Northern Region Drilling - Sandbox	<b>Local Co-ordinate Reference:</b>	Well Hurley H26-768
<b>Project:</b>	Conceptual Wells	<b>TVD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Reference Site:</b>	DP 408	<b>MD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Hurley H26-768	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Prelim - Rev 2	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4851.0ft (Original Well Elev)  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.500000

Coordinates are relative to: Hurley H26-768  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 0.56°

