

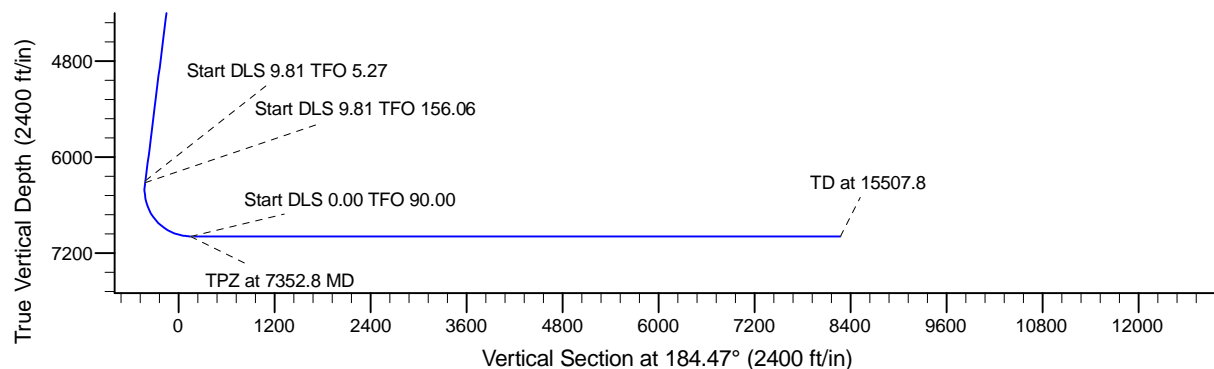
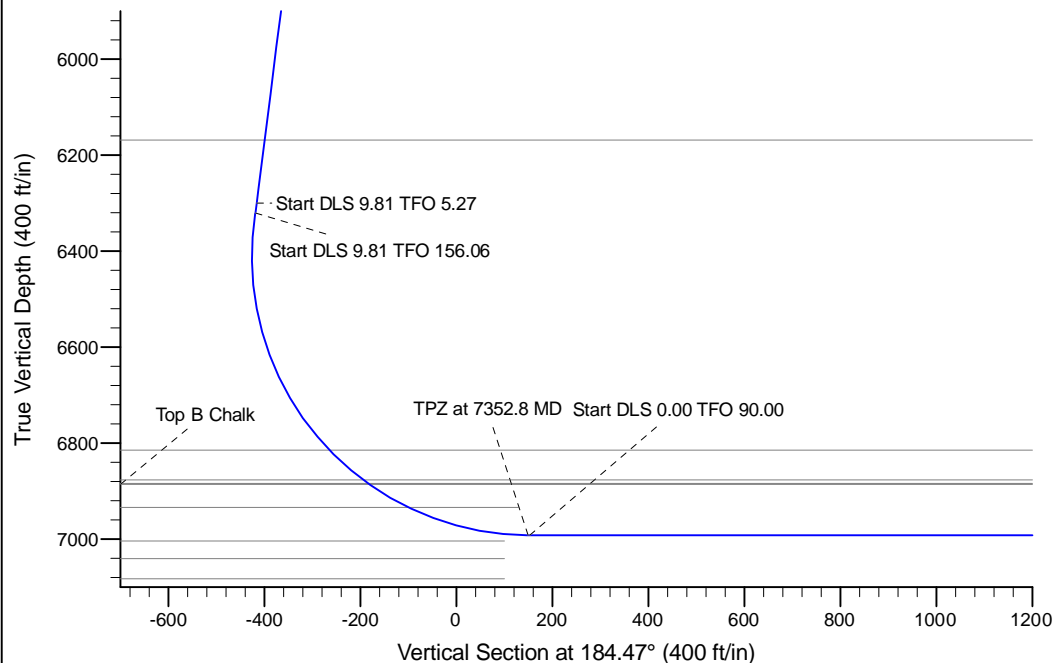
Project: Conceptual Wells
Site: DP 408
Well: Hurley H35-768
Wellbore: Wellbore #1
Design: Prelim - Rev 2

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

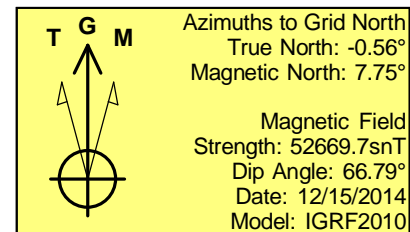
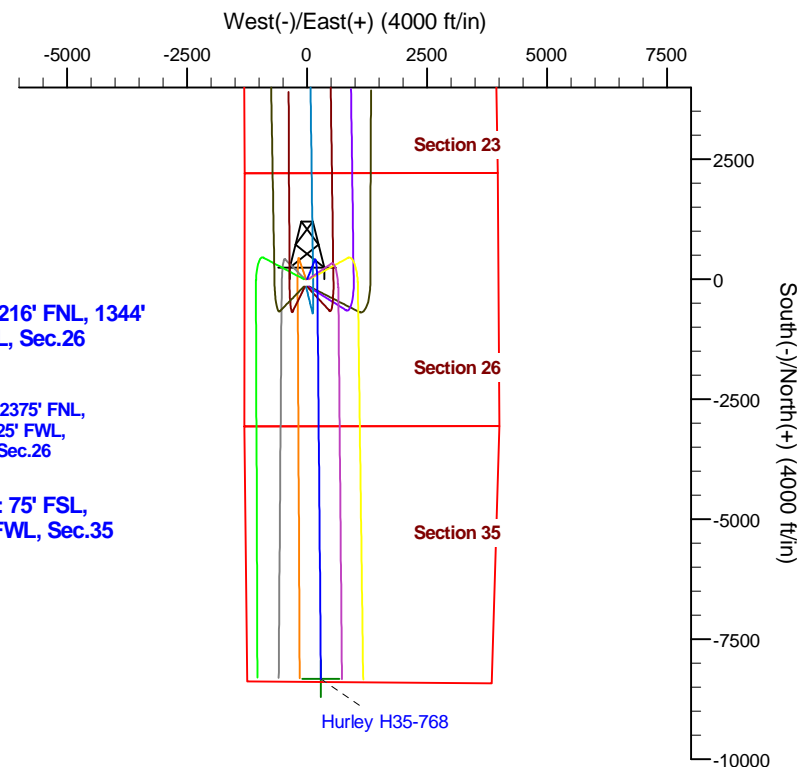
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	2800.0	0.00	0.00	2800.0	0.0	0.0	0.00	0.00	0.0	
3	3175.0	7.50	22.00	3173.9	22.7	9.2	2.00	22.00	-23.4	
4	6328.0	7.50	22.00	6300.0	404.3	163.4	0.00	0.00	-415.8	
5	6348.8	9.53	23.13	6320.5	407.2	164.5	9.81	5.27	-418.7	
6	7355.7	90.00	179.48	6992.0	-170.0	215.0	9.81	156.06	152.7	
7	15507.8	90.00	179.49	6992.0	-8321.8	287.9	0.00	90.00	8274.0	Hurley H35-768



Surface: 2216' FNL, 1344' FWL, Sec.26

TPZ: 2375' FNL, 1525' FWL, Sec.26

BHL: 75' FSL, 1547' FWL, Sec.35



WELL DETAILS: Hurley H35-768

	Ground Level:	4822.0	
0.00.0	Northing	Easting	Latitude
	1315972.81	3241515.45	40.197510
			Longitude
			-104.635400

Plan: Prelim - Rev 2 (Hurley H35-768/Wellbore #1)

Created By: Chad Stich Date: 16:22, October 30 2017
Checked: _____ Date: _____
Reviewed: _____ Date: _____
Approved: _____ Date: _____

Northern Region Drilling - Sandbox

Conceptual Wells

DP 408

Hurley H35-768

Wellbore #1

Plan: Prelim - Rev 2

Standard Planning Report

30 October, 2017

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Hurley H35-768
Company:	Northern Region Drilling - Sandbox	TVD Reference:	WELL @ 4852.0ft (Original Well Elev)
Project:	Conceptual Wells	MD Reference:	WELL @ 4852.0ft (Original Well Elev)
Site:	DP 408	North Reference:	Grid
Well:	Hurley H35-768	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Prelim - Rev 2		

Project	Conceptual Wells		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	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 H35-768					
Well Position	+N/-S	-2,212.0 ft	Northing:	1,315,972.81 usft	Latitude:	40.197510
	+E/-W	1,290.3 ft	Easting:	3,241,515.46 usft	Longitude:	-104.635400
Position Uncertainty		0.0 ft	Wellhead Elevation:	0.0 ft	Ground Level:	4,822.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	12/15/2014	8.31	66.79	52,669.68882333

Design	Prelim - Rev 2			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	184.47

Plan Sections										
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	
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.00	0.00	0.00	0.00	
3,175.0	7.50	22.00	3,173.9	22.7	9.2	2.00	2.00	0.00	22.00	
6,328.0	7.50	22.00	6,300.0	404.3	163.4	0.00	0.00	0.00	0.00	
6,348.8	9.53	23.13	6,320.5	407.2	164.5	9.81	9.77	5.44	5.27	
7,355.7	90.00	179.48	6,992.0	-170.0	215.0	9.81	7.99	15.53	156.06	
15,507.8	90.00	179.49	6,992.0	-8,321.8	287.9	0.00	0.00	0.00	90.00	Hurley H35-768

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Hurley H35-768
Company:	Northern Region Drilling - Sandbox	TVD Reference:	WELL @ 4852.0ft (Original Well Elev)
Project:	Conceptual Wells	MD Reference:	WELL @ 4852.0ft (Original Well Elev)
Site:	DP 408	North Reference:	Grid
Well:	Hurley H35-768	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	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	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00
2,900.0	2.00	22.00	2,900.0	1.6	0.7	-1.7	2.00	2.00	0.00
3,000.0	4.00	22.00	2,999.8	6.5	2.6	-6.7	2.00	2.00	0.00
3,100.0	6.00	22.00	3,099.5	14.6	5.9	-15.0	2.00	2.00	0.00
3,175.0	7.50	22.00	3,173.9	22.7	9.2	-23.4	2.00	2.00	0.00
3,200.0	7.50	22.00	3,198.7	25.7	10.4	-26.5	0.00	0.00	0.00
3,300.0	7.50	22.00	3,297.9	37.9	15.3	-38.9	0.00	0.00	0.00
3,400.0	7.50	22.00	3,397.0	50.0	20.2	-51.4	0.00	0.00	0.00
3,500.0	7.50	22.00	3,496.1	62.1	25.1	-63.8	0.00	0.00	0.00
3,600.0	7.50	22.00	3,595.3	74.2	30.0	-76.3	0.00	0.00	0.00
3,700.0	7.50	22.00	3,694.4	86.3	34.9	-88.7	0.00	0.00	0.00
3,800.0	7.50	22.00	3,793.6	98.4	39.7	-101.2	0.00	0.00	0.00
3,900.0	7.50	22.00	3,892.7	110.5	44.6	-113.6	0.00	0.00	0.00
4,000.0	7.50	22.00	3,991.9	122.6	49.5	-126.1	0.00	0.00	0.00
4,100.0	7.50	22.00	4,091.0	134.7	54.4	-138.5	0.00	0.00	0.00
4,200.0	7.50	22.00	4,190.2	146.8	59.3	-150.9	0.00	0.00	0.00
4,300.0	7.50	22.00	4,289.3	158.9	64.2	-163.4	0.00	0.00	0.00
4,400.0	7.50	22.00	4,388.4	171.0	69.1	-175.8	0.00	0.00	0.00
4,500.0	7.50	22.00	4,487.6	183.1	74.0	-188.3	0.00	0.00	0.00
4,600.0	7.50	22.00	4,586.7	195.2	78.9	-200.7	0.00	0.00	0.00
4,700.0	7.50	22.00	4,685.9	207.3	83.7	-213.2	0.00	0.00	0.00
4,800.0	7.50	22.00	4,785.0	219.4	88.6	-225.6	0.00	0.00	0.00
4,900.0	7.50	22.00	4,884.2	231.5	93.5	-238.1	0.00	0.00	0.00
5,000.0	7.50	22.00	4,983.3	243.6	98.4	-250.5	0.00	0.00	0.00
5,100.0	7.50	22.00	5,082.5	255.7	103.3	-263.0	0.00	0.00	0.00
5,200.0	7.50	22.00	5,181.6	267.8	108.2	-275.4	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Hurley H35-768
Company:	Northern Region Drilling - Sandbox	TVD Reference:	WELL @ 4852.0ft (Original Well Elev)
Project:	Conceptual Wells	MD Reference:	WELL @ 4852.0ft (Original Well Elev)
Site:	DP 408	North Reference:	Grid
Well:	Hurley H35-768	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	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	7.50	22.00	5,280.8	279.9	113.1	-287.9	0.00	0.00	0.00
5,400.0	7.50	22.00	5,379.9	292.0	118.0	-300.3	0.00	0.00	0.00
5,500.0	7.50	22.00	5,479.0	304.1	122.9	-312.8	0.00	0.00	0.00
5,600.0	7.50	22.00	5,578.2	316.2	127.8	-325.2	0.00	0.00	0.00
5,700.0	7.50	22.00	5,677.3	328.3	132.6	-337.7	0.00	0.00	0.00
5,800.0	7.50	22.00	5,776.5	340.4	137.5	-350.1	0.00	0.00	0.00
5,900.0	7.50	22.00	5,875.6	352.5	142.4	-362.5	0.00	0.00	0.00
6,000.0	7.50	22.00	5,974.8	364.6	147.3	-375.0	0.00	0.00	0.00
6,100.0	7.50	22.00	6,073.9	376.7	152.2	-387.4	0.00	0.00	0.00
6,200.0	7.50	22.00	6,173.1	388.8	157.1	-399.9	0.00	0.00	0.00
6,300.0	7.50	22.00	6,272.2	400.9	162.0	-412.3	0.00	0.00	0.00
6,328.0	7.50	22.00	6,300.0	404.3	163.4	-415.8	0.00	0.00	0.00
6,348.8	9.53	23.13	6,320.5	407.2	164.5	-418.7	9.81	9.77	5.44
6,400.0	5.34	45.54	6,371.3	412.7	167.9	-424.6	9.81	-8.18	43.78
6,500.0	7.21	147.32	6,470.9	410.7	174.6	-423.1	9.81	1.87	101.78
6,600.0	16.35	166.21	6,568.7	391.7	181.4	-404.7	9.81	9.14	18.89
6,700.0	25.98	171.53	6,661.9	356.3	188.0	-369.9	9.81	9.62	5.32
6,800.0	35.70	174.10	6,747.7	305.5	194.2	-319.7	9.81	9.72	2.57
6,900.0	45.45	175.68	6,823.5	240.8	199.9	-255.6	9.81	9.75	1.58
7,000.0	55.22	176.80	6,887.3	164.0	204.9	-179.5	9.81	9.77	1.12
7,100.0	64.99	177.68	6,937.1	77.6	209.1	-93.6	9.81	9.78	0.88
7,200.0	74.77	178.43	6,971.4	-16.2	212.2	-0.4	9.81	9.78	0.75
7,300.0	84.55	179.11	6,989.4	-114.4	214.3	97.3	9.81	9.78	0.68
7,355.7	90.00	179.48	6,992.0	-170.0	215.0	152.7	9.81	9.78	0.66
7,400.0	90.00	179.48	6,992.0	-214.3	215.4	196.9	0.00	0.00	0.00
7,500.0	90.00	179.48	6,992.0	-314.3	216.3	296.5	0.00	0.00	0.00
7,600.0	90.00	179.48	6,992.0	-414.3	217.2	396.1	0.00	0.00	0.00
7,700.0	90.00	179.48	6,992.0	-514.3	218.1	495.7	0.00	0.00	0.00
7,800.0	90.00	179.48	6,992.0	-614.3	219.0	595.3	0.00	0.00	0.00
7,900.0	90.00	179.48	6,992.0	-714.3	219.9	695.0	0.00	0.00	0.00
8,000.0	90.00	179.48	6,992.0	-814.3	220.8	794.6	0.00	0.00	0.00
8,100.0	90.00	179.48	6,992.0	-914.3	221.7	894.2	0.00	0.00	0.00
8,200.0	90.00	179.48	6,992.0	-1,014.3	222.7	993.8	0.00	0.00	0.00
8,300.0	90.00	179.48	6,992.0	-1,114.3	223.6	1,093.4	0.00	0.00	0.00
8,400.0	90.00	179.48	6,992.0	-1,214.3	224.5	1,193.1	0.00	0.00	0.00
8,500.0	90.00	179.48	6,992.0	-1,314.3	225.4	1,292.7	0.00	0.00	0.00
8,600.0	90.00	179.48	6,992.0	-1,414.3	226.3	1,392.3	0.00	0.00	0.00
8,700.0	90.00	179.48	6,992.0	-1,514.3	227.2	1,491.9	0.00	0.00	0.00
8,800.0	90.00	179.48	6,992.0	-1,614.3	228.1	1,591.5	0.00	0.00	0.00
8,900.0	90.00	179.48	6,992.0	-1,714.3	229.0	1,691.2	0.00	0.00	0.00
9,000.0	90.00	179.48	6,992.0	-1,814.3	229.9	1,790.8	0.00	0.00	0.00
9,100.0	90.00	179.48	6,992.0	-1,914.2	230.8	1,890.4	0.00	0.00	0.00
9,200.0	90.00	179.48	6,992.0	-2,014.2	231.7	1,990.0	0.00	0.00	0.00
9,300.0	90.00	179.48	6,992.0	-2,114.2	232.6	2,089.7	0.00	0.00	0.00
9,400.0	90.00	179.48	6,992.0	-2,214.2	233.5	2,189.3	0.00	0.00	0.00
9,500.0	90.00	179.48	6,992.0	-2,314.2	234.4	2,288.9	0.00	0.00	0.00
9,600.0	90.00	179.48	6,992.0	-2,414.2	235.3	2,388.5	0.00	0.00	0.00
9,700.0	90.00	179.48	6,992.0	-2,514.2	236.2	2,488.1	0.00	0.00	0.00
9,800.0	90.00	179.48	6,992.0	-2,614.2	237.1	2,587.8	0.00	0.00	0.00
9,900.0	90.00	179.48	6,992.0	-2,714.2	238.0	2,687.4	0.00	0.00	0.00
10,000.0	90.00	179.48	6,992.0	-2,814.2	238.9	2,787.0	0.00	0.00	0.00
10,100.0	90.00	179.48	6,992.0	-2,914.2	239.8	2,886.6	0.00	0.00	0.00
10,200.0	90.00	179.49	6,992.0	-3,014.2	240.7	2,986.2	0.00	0.00	0.00
10,300.0	90.00	179.49	6,992.0	-3,114.2	241.6	3,085.9	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

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Well:	Hurley H35-768	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	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	179.49	6,992.0	-3,214.2	242.5	3,185.5	0.00	0.00	0.00
10,500.0	90.00	179.49	6,992.0	-3,314.2	243.4	3,285.1	0.00	0.00	0.00
10,600.0	90.00	179.49	6,992.0	-3,414.2	244.3	3,384.7	0.00	0.00	0.00
10,700.0	90.00	179.49	6,992.0	-3,514.2	245.2	3,484.3	0.00	0.00	0.00
10,800.0	90.00	179.49	6,992.0	-3,614.2	246.1	3,584.0	0.00	0.00	0.00
10,900.0	90.00	179.49	6,992.0	-3,714.2	247.0	3,683.6	0.00	0.00	0.00
11,000.0	90.00	179.49	6,992.0	-3,814.2	247.9	3,783.2	0.00	0.00	0.00
11,100.0	90.00	179.49	6,992.0	-3,914.2	248.8	3,882.8	0.00	0.00	0.00
11,200.0	90.00	179.49	6,992.0	-4,014.2	249.7	3,982.5	0.00	0.00	0.00
11,300.0	90.00	179.49	6,992.0	-4,114.2	250.6	4,082.1	0.00	0.00	0.00
11,400.0	90.00	179.49	6,992.0	-4,214.2	251.4	4,181.7	0.00	0.00	0.00
11,500.0	90.00	179.49	6,992.0	-4,314.2	252.3	4,281.3	0.00	0.00	0.00
11,600.0	90.00	179.49	6,992.0	-4,414.1	253.2	4,380.9	0.00	0.00	0.00
11,700.0	90.00	179.49	6,992.0	-4,514.1	254.1	4,480.6	0.00	0.00	0.00
11,800.0	90.00	179.49	6,992.0	-4,614.1	255.0	4,580.2	0.00	0.00	0.00
11,900.0	90.00	179.49	6,992.0	-4,714.1	255.9	4,679.8	0.00	0.00	0.00
12,000.0	90.00	179.49	6,992.0	-4,814.1	256.8	4,779.4	0.00	0.00	0.00
12,100.0	90.00	179.49	6,992.0	-4,914.1	257.7	4,879.0	0.00	0.00	0.00
12,200.0	90.00	179.49	6,992.0	-5,014.1	258.6	4,978.7	0.00	0.00	0.00
12,300.0	90.00	179.49	6,992.0	-5,114.1	259.5	5,078.3	0.00	0.00	0.00
12,400.0	90.00	179.49	6,992.0	-5,214.1	260.4	5,177.9	0.00	0.00	0.00
12,500.0	90.00	179.49	6,992.0	-5,314.1	261.3	5,277.5	0.00	0.00	0.00
12,600.0	90.00	179.49	6,992.0	-5,414.1	262.2	5,377.2	0.00	0.00	0.00
12,700.0	90.00	179.49	6,992.0	-5,514.1	263.1	5,476.8	0.00	0.00	0.00
12,800.0	90.00	179.49	6,992.0	-5,614.1	263.9	5,576.4	0.00	0.00	0.00
12,900.0	90.00	179.49	6,992.0	-5,714.1	264.8	5,676.0	0.00	0.00	0.00
13,000.0	90.00	179.49	6,992.0	-5,814.1	265.7	5,775.6	0.00	0.00	0.00
13,100.0	90.00	179.49	6,992.0	-5,914.1	266.6	5,875.3	0.00	0.00	0.00
13,200.0	90.00	179.49	6,992.0	-6,014.1	267.5	5,974.9	0.00	0.00	0.00
13,300.0	90.00	179.49	6,992.0	-6,114.1	268.4	6,074.5	0.00	0.00	0.00
13,400.0	90.00	179.49	6,992.0	-6,214.1	269.3	6,174.1	0.00	0.00	0.00
13,500.0	90.00	179.49	6,992.0	-6,314.1	270.2	6,273.8	0.00	0.00	0.00
13,600.0	90.00	179.49	6,992.0	-6,414.1	271.1	6,373.4	0.00	0.00	0.00
13,700.0	90.00	179.49	6,992.0	-6,514.1	271.9	6,473.0	0.00	0.00	0.00
13,800.0	90.00	179.49	6,992.0	-6,614.1	272.8	6,572.6	0.00	0.00	0.00
13,900.0	90.00	179.49	6,992.0	-6,714.1	273.7	6,672.2	0.00	0.00	0.00
14,000.0	90.00	179.49	6,992.0	-6,814.1	274.6	6,771.9	0.00	0.00	0.00
14,100.0	90.00	179.49	6,992.0	-6,914.0	275.5	6,871.5	0.00	0.00	0.00
14,200.0	90.00	179.49	6,992.0	-7,014.0	276.4	6,971.1	0.00	0.00	0.00
14,300.0	90.00	179.49	6,992.0	-7,114.0	277.3	7,070.7	0.00	0.00	0.00
14,400.0	90.00	179.49	6,992.0	-7,214.0	278.2	7,170.4	0.00	0.00	0.00
14,500.0	90.00	179.49	6,992.0	-7,314.0	279.0	7,270.0	0.00	0.00	0.00
14,600.0	90.00	179.49	6,992.0	-7,414.0	279.9	7,369.6	0.00	0.00	0.00
14,700.0	90.00	179.49	6,992.0	-7,514.0	280.8	7,469.2	0.00	0.00	0.00
14,800.0	90.00	179.49	6,992.0	-7,614.0	281.7	7,568.8	0.00	0.00	0.00
14,900.0	90.00	179.49	6,992.0	-7,714.0	282.6	7,668.5	0.00	0.00	0.00
15,000.0	90.00	179.49	6,992.0	-7,814.0	283.5	7,768.1	0.00	0.00	0.00
15,100.0	90.00	179.49	6,992.0	-7,914.0	284.3	7,867.7	0.00	0.00	0.00
15,200.0	90.00	179.49	6,992.0	-8,014.0	285.2	7,967.3	0.00	0.00	0.00
15,300.0	90.00	179.49	6,992.0	-8,114.0	286.1	8,067.0	0.00	0.00	0.00
15,400.0	90.00	179.49	6,992.0	-8,214.0	287.0	8,166.6	0.00	0.00	0.00
15,500.0	90.00	179.49	6,992.0	-8,314.0	287.9	8,266.2	0.00	0.00	0.00
15,507.8	90.00	179.49	6,992.0	-8,321.8	287.9	8,274.0	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Hurley H35-768
Company:	Northern Region Drilling - Sandbox	TVD Reference:	WELL @ 4852.0ft (Original Well Elev)
Project:	Conceptual Wells	MD Reference:	WELL @ 4852.0ft (Original Well Elev)
Site:	DP 408	North Reference:	Grid
Well:	Hurley H35-768	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Prelim - Rev 2		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)		
- Shape									
Hurley H35-768	0.00	0.00	6,992.0	-8,321.8	287.9	1,307,651.38	3,241,803.39	40.174660	-104.634660
- plan hits target center									
- Point									

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(ft)	(ft)			(°)	(°)	
618.0	618.0	Pierre				
770.0	770.0	Upper Pierre Aquifer Top				
1,658.0	1,658.0	Upper Pierre Aquifer Base				
3,932.6	3,925.0	Parkman				
4,528.7	4,516.0	Sussex				
5,216.5	5,198.0	Shannon				
6,195.9	6,169.0	Teepee Buttes				
6,888.0	6,815.0	Sharon Springs				
6,982.3	6,877.0	Top A Chalk				
6,994.3	6,884.0	Top A Marl				
6,997.7	6,886.0	Top B Chalk				
7,092.8	6,934.0	Top B Marl				

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates			
(ft)	(ft)	+N/-S	+E/-W	Comment	
(ft)	(ft)	(ft)	(ft)		
2,800.0	2,800.0	0.0	0.0	KOP - Start Build 2.00	
6,328.0	6,300.0	404.3	163.4	Start DLS 9.81 TFO 5.27	
6,348.8	6,320.5	407.1	164.5	Start DLS 9.81 TFO 156.06	
7,352.8	6,992.0	-167.1	215.0	TPZ at 7352.8 MD	
7,355.7	6,992.0	-170.0	215.0	Start DLS 0.00 TFO 90.00	
15,507.8	6,992.0	-8,321.8	287.9	TD at 15507.8	

Northern Region Drilling - Sandbox

Conceptual Wells

DP 408

Hurley H35-768

Wellbore #1

Prelim - Rev 2

Anticollision Summary Report

30 October, 2017

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region Drilling - Sandbox	Local Co-ordinate Reference:	Well Hurley H35-768
Project:	Conceptual Wells	TVD Reference:	WELL @ 4852.0ft (Original Well Elev)
Reference Site:	DP 408	MD Reference:	WELL @ 4852.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Hurley H35-768	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Prelim - Rev 2	Offset TVD Reference:	Offset Datum

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

Survey Tool Program	Date	10/30/2017		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	15,507.8	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 -	6,513.6	11,992.0	9,872.5	9,758.3	86.422	CC, ES
Butterball H24-69HN - Original Drilling - Original Drilling -	6,850.0	11,992.0	9,946.3	9,830.7	86.014	SF
DP 408						
Emmy H25-711 - Wellbore #1 - Prelim - Rev 2	2,000.0	1,983.0	7,943.0	7,934.3	917.177	CC, ES
Emmy H25-711 - Wellbore #1 - Prelim - Rev 2	15,507.8	4,655.6	9,856.0	9,773.9	120.056	SF
Emmy State H25-718 - Wellbore #1 - Prelim - Rev 2	2,400.0	2,383.0	7,922.1	7,911.7	757.491	CC, ES
Emmy State H25-718 - Wellbore #1 - Prelim - Rev 2	15,507.8	5,206.7	9,647.8	9,564.9	116.354	SF
Emmy State H25-724 - Wellbore #1 - Prelim - Rev 2	10,402.6	5,854.2	7,727.6	7,679.4	160.485	CC
Emmy State H25-724 - Wellbore #1 - Prelim - Rev 2	10,500.0	5,865.5	7,728.2	7,679.1	157.526	ES
Emmy State H25-724 - Wellbore #1 - Prelim - Rev 2	15,300.0	6,385.8	9,131.5	9,046.6	107.543	SF
Emmy State H25-731 - Wellbore #1 - Prelim - Rev 2	10,437.7	6,425.2	7,418.0	7,368.7	150.340	CC
Emmy State H25-731 - Wellbore #1 - Prelim - Rev 2	10,500.0	6,423.3	7,418.3	7,368.4	148.673	ES
Emmy State H25-731 - Wellbore #1 - Prelim - Rev 2	14,800.0	6,400.0	8,605.7	8,524.9	106.474	SF
Emmy State H25-738 - Wellbore #1 - Prelim - Rev 2	10,019.6	7,074.7	7,049.8	7,003.7	153.062	CC
Emmy State H25-738 - Wellbore #1 - Prelim - Rev 2	10,200.0	6,946.4	7,050.7	7,003.2	148.556	ES
Emmy State H25-738 - Wellbore #1 - Prelim - Rev 2	14,400.0	6,472.6	8,147.6	8,070.3	105.361	SF
Emmy State H25-744 - Wellbore #1 - Prelim - Rev 2	9,799.7	7,360.9	6,586.2	6,541.0	145.604	CC
Emmy State H25-744 - Wellbore #1 - Prelim - Rev 2	9,900.0	7,322.1	6,586.7	6,540.7	143.180	ES
Emmy State H25-744 - Wellbore #1 - Prelim - Rev 2	14,100.0	6,600.0	7,633.7	7,558.0	100.783	SF
Emmy State H25-751 - Wellbore #1 - Design #1	10,402.6	5,664.4	5,932.5	5,884.2	122.900	CC
Emmy State H25-751 - Wellbore #1 - Design #1	10,500.0	5,676.0	5,933.3	5,884.1	120.601	ES
Emmy State H25-751 - Wellbore #1 - Design #1	13,800.0	6,069.7	6,824.5	6,750.1	91.622	SF
Emmy State H25-757 - Wellbore #1 - Design #1	10,432.3	5,952.5	5,731.8	5,682.8	117.121	CC
Emmy State H25-757 - Wellbore #1 - Design #1	10,500.0	5,960.8	5,732.2	5,682.6	115.609	ES
Emmy State H25-757 - Wellbore #1 - Design #1	13,600.0	6,342.7	6,537.4	6,464.0	89.147	SF
Emmy State H25-764 - Wellbore #1 - Design #1	10,488.6	6,470.9	5,413.0	5,377.3	151.945	CC
Emmy State H25-764 - Wellbore #1 - Design #1	10,500.0	6,470.6	5,413.0	5,377.2	151.508	ES
Emmy State H25-764 - Wellbore #1 - Design #1	13,500.0	6,450.0	6,194.3	6,137.7	109.391	SF
Emmy State H25-771 - Wellbore #1 - Design #1	10,100.4	7,115.3	5,015.5	4,968.5	106.609	CC
Emmy State H25-771 - Wellbore #1 - Design #1	10,200.0	7,033.4	5,015.8	4,967.9	104.890	ES
Emmy State H25-771 - Wellbore #1 - Design #1	12,800.0	6,500.0	5,552.2	5,485.6	83.325	SF
Emmy State H25-777 - Wellbore #1 - Design #1	7,250.0	10,030.0	4,626.1	4,578.2	96.567	ES
Emmy State H25-777 - Wellbore #1 - Design #1	7,330.8	9,949.8	4,625.7	4,578.3	97.777	CC
Emmy State H25-777 - Wellbore #1 - Design #1	12,500.0	6,650.0	5,116.0	5,051.2	79.042	SF
Emmy State H25-785 - Wellbore #1 - Prelim - Rev 2	9,871.1	7,438.2	4,103.5	4,056.8	87.833	CC
Emmy State H25-785 - Wellbore #1 - Prelim - Rev 2	9,900.0	7,425.4	4,103.6	4,056.6	87.419	ES

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

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region Drilling - Sandbox	Local Co-ordinate Reference:	Well Hurley H35-768
Project:	Conceptual Wells	TVD Reference:	WELL @ 4852.0ft (Original Well Elev)
Reference Site:	DP 408	MD Reference:	WELL @ 4852.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Hurley H35-768	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Prelim - Rev 2	Offset TVD Reference:	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						
DP 408						
Emmy State H25-785 - Wellbore #1 - Prelim - Rev 2	12,100.0	6,800.0	4,502.7	4,440.0	71.845	SF
Emmy State H36-753 - Wellbore #1 - Design #1	2,600.0	2,594.0	5,889.6	5,878.2	517.438	CC, ES
Emmy State H36-753 - Wellbore #1 - Design #1	15,507.8	12,699.7	6,055.6	5,919.0	44.311	SF
Emmy State H36-760 - Wellbore #1 - Design #1	15,090.4	12,527.7	5,599.7	5,467.3	42.284	CC
Emmy State H36-760 - Wellbore #1 - Design #1	15,100.0	12,527.7	5,599.8	5,467.2	42.251	ES
Emmy State H36-760 - Wellbore #1 - Design #1	15,507.8	12,527.7	5,615.3	5,478.8	41.147	SF
Emmy State H36-766 - Wellbore #1 - Design #1	15,015.0	12,453.6	5,163.6	5,033.4	39.654	CC
Emmy State H36-766 - Wellbore #1 - Design #1	15,100.0	12,453.6	5,164.3	5,033.3	39.411	ES
Emmy State H36-766 - Wellbore #1 - Design #1	15,507.8	12,453.6	5,187.1	5,052.6	38.554	SF
Emmy State H36-773 - Wellbore #1 - Design #1	15,095.0	12,608.4	4,719.5	4,586.9	35.581	CC
Emmy State H36-773 - Wellbore #1 - Design #1	15,100.0	12,608.4	4,719.5	4,586.8	35.569	ES
Emmy State H36-773 - Wellbore #1 - Design #1	15,507.8	12,608.4	4,737.5	4,601.5	34.831	SF
Emmy State H36-780 - Wellbore #1 - Design #1	15,099.1	12,543.0	4,280.7	4,148.1	32.289	CC
Emmy State H36-780 - Wellbore #1 - Design #1	15,100.0	12,543.0	4,280.7	4,148.1	32.287	ES
Emmy State H36-780 - Wellbore #1 - Design #1	15,507.8	12,543.0	4,300.2	4,164.7	31.732	SF
Emmy State H36-787 - Wellbore #1 - Prelim - Rev 2	15,103.2	12,821.8	3,839.3	3,707.2	29.068	CC, ES
Emmy State H36-787 - Wellbore #1 - Prelim - Rev 2	15,507.8	12,821.8	3,860.6	3,726.2	28.737	SF
Hurley H26-712 - Wellbore #1 - Design #1	1,801.0	1,833.0	3,017.3	3,009.4	383.114	CC
Hurley H26-712 - Wellbore #1 - Design #1	1,900.0	1,900.0	3,017.5	3,009.2	365.810	ES
Hurley H26-712 - Wellbore #1 - Design #1	9,800.0	6,524.1	4,134.3	4,090.2	93.792	SF
Hurley H26-717 - Wellbore #1 - Design #1	1,901.0	1,933.0	2,995.0	2,986.6	359.743	CC
Hurley H26-717 - Wellbore #1 - Design #1	2,000.0	2,018.9	2,995.0	2,986.3	342.833	ES
Hurley H26-717 - Wellbore #1 - Design #1	9,500.0	6,521.1	3,737.6	3,696.4	90.720	SF
Hurley H26-724 - Wellbore #1 - Design #1	7,462.4	7,115.6	2,796.6	2,766.0	91.361	CC, ES
Hurley H26-724 - Wellbore #1 - Design #1	9,100.0	6,650.0	3,130.1	3,092.3	82.812	SF
Hurley H26-730 - Wellbore #1 - Design #1	7,240.7	7,094.9	2,393.3	2,363.3	79.693	CC, ES
Hurley H26-730 - Wellbore #1 - Design #1	8,400.0	6,674.5	2,583.0	2,549.7	77.618	SF
Hurley H26-736 - Wellbore #1 - Design #1	7,000.0	7,469.9	2,038.1	2,006.9	65.254	SF
Hurley H26-736 - Wellbore #1 - Design #1	7,161.6	7,377.7	2,032.5	2,001.4	65.343	CC, ES
Hurley H26-743 - Wellbore #1 - Prelim - Rev 2	7,000.0	7,704.7	1,554.2	1,521.7	47.743	SF
Hurley H26-743 - Wellbore #1 - Prelim - Rev 2	7,210.9	7,550.0	1,544.6	1,512.3	47.856	CC, ES
Hurley H26-750 - Wellbore #1 - Prelim - Rev 2	2,400.0	2,400.0	155.1	144.6	14.779	CC, ES
Hurley H26-750 - Wellbore #1 - Prelim - Rev 2	2,600.0	2,592.6	159.8	148.5	14.122	SF
Hurley H26-756 - Wellbore #1 - Prelim - Rev 2	2,600.0	2,600.0	150.6	139.2	13.219	CC, ES
Hurley H26-756 - Wellbore #1 - Prelim - Rev 2	2,800.0	2,793.2	155.1	142.8	12.696	SF
Hurley H26-762 - Wellbore #1 - Prelim - Rev 2	2,600.0	2,599.0	149.4	138.0	13.112	CC, ES
Hurley H26-762 - Wellbore #1 - Prelim - Rev 2	7,537.9	7,139.1	329.2	297.9	10.522	SF
Hurley H26-768 - Wellbore #1 - Prelim - Rev 2	7,300.0	7,376.9	88.2	57.5	2.877	ES, SF
Hurley H26-768 - Wellbore #1 - Prelim - Rev 2	7,356.8	7,320.4	88.1	57.6	2.881	CC
Hurley H26-776 - Wellbore #1 - Prelim - Rev 2	2,200.0	2,199.0	156.7	147.1	16.335	CC, ES
Hurley H26-776 - Wellbore #1 - Prelim - Rev 2	2,400.0	2,388.5	163.2	152.8	15.716	SF
Hurley H26-783 - Wellbore #1 - Prelim - Rev 2	2,000.0	1,999.0	164.9	156.2	18.960	CC, ES
Hurley H26-783 - Wellbore #1 - Prelim - Rev 2	2,200.0	2,188.5	171.1	161.6	18.014	SF
Hurley H35-720 - Wellbore #1 - Design #1	15,507.8	15,976.1	2,948.8	2,781.8	17.662	CC, ES, SF
Hurley H35-727 - Wellbore #1 - Design #1	15,507.8	15,763.0	2,507.0	2,339.7	14.986	CC, ES, SF
Hurley H35-733 - Wellbore #1 - Design #1	15,507.8	15,790.0	2,068.5	1,901.2	12.361	CC, ES, SF
Hurley H35-740 - Wellbore #1 - Design #1	15,507.8	15,842.9	1,626.7	1,459.4	9.721	CC, ES, SF
Hurley H35-746 - Wellbore #1 - Prelim - Rev 2	15,400.0	29,803.5	1,190.5	890.4	3.967	ES, SF
Hurley H35-746 - Wellbore #1 - Prelim - Rev 2	15,507.8	15,803.5	1,188.3	1,020.7	7.090	CC
Hurley H35-755 - Wellbore #1 - Prelim - Rev 2	2,600.0	2,600.0	44.7	33.3	3.922	CC, ES
Hurley H35-755 - Wellbore #1 - Prelim - Rev 2	2,700.0	2,698.6	46.2	34.4	3.906	SF
Hurley H35-761 - Wellbore #1 - Prelim - Rev 2	2,800.0	2,800.0	22.3	10.1	1.818	CC, ES
Hurley H35-761 - Wellbore #1 - Prelim - Rev 2	2,900.0	2,899.3	23.1	10.4	1.817	SF

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

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region Drilling - Sandbox	Local Co-ordinate Reference:	Well Hurley H35-768
Project:	Conceptual Wells	TVD Reference:	WELL @ 4852.0ft (Original Well Elev)
Reference Site:	DP 408	MD Reference:	WELL @ 4852.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Hurley H35-768	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Prelim - Rev 2	Offset TVD Reference:	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
DP 408						
Hurley H35-774 - Wellbore #1 - Prelim - Rev 2	2,400.0	2,400.0	22.3	11.9	2.129	CC, ES
Hurley H35-774 - Wellbore #1 - Prelim - Rev 2	2,500.0	2,499.7	23.0	12.0	2.098	SF
Hurley H35-779 - Wellbore #1 - Prelim - Rev 2	2,200.0	2,199.0	44.8	35.2	4.674	CC, ES
Hurley H35-779 - Wellbore #1 - Prelim - Rev 2	2,300.0	2,297.8	46.1	36.1	4.597	SF
Hurley H35-787 - Wellbore #1 - Prelim - Rev 2	2,000.0	1,999.0	67.1	58.4	7.721	CC, ES
Hurley H35-787 - Wellbore #1 - Prelim - Rev 2	2,100.0	2,096.9	68.7	59.5	7.519	SF
Hurley State H35-713 - Wellbore #1 - Design #1	1,901.0	1,933.0	3,019.0	3,010.7	362.632	CC
Hurley State H35-713 - Wellbore #1 - Design #1	2,000.0	2,000.0	3,019.2	3,010.5	347.102	ES
Hurley State H35-713 - Wellbore #1 - Design #1	15,507.8	15,707.5	3,387.4	3,220.0	20.242	SF
H Section 13						
Karakakes H13-25 - Original Drilling - Original Drilling - A	6,457.8	6,517.6	9,878.2	9,821.4	173.888	CC, ES
Karakakes H13-25 - Original Drilling - Original Drilling - A	6,750.0	6,800.0	9,938.9	9,881.1	171.995	SF
Karakakes H13-33 - Original Drilling - Original Drilling - A	6,485.8	6,882.7	9,413.1	9,374.7	244.814	CC, ES
Karakakes H13-33 - Original Drilling - Original Drilling - A	6,950.0	7,292.6	9,572.9	9,532.5	237.033	SF
Karakakes H14-63HN - Original Drilling - Original Drilling	6,477.2	10,361.0	8,587.9	8,480.9	80.280	CC, ES
Karakakes H14-63HN - Original Drilling - Original Drilling	6,550.0	10,361.0	8,592.7	8,485.6	80.202	SF
Sarchet H13-75HN - Original Drilling - Original Drilling	6,450.0	6,206.1	9,513.8	9,480.4	285.452	CC
Sarchet H13-75HN - Original Drilling - Original Drilling	6,457.3	6,220.0	9,513.8	9,480.4	284.941	ES
Sarchet H13-75HN - Original Drilling - Original Drilling	6,800.0	6,251.0	9,589.5	9,555.6	282.861	SF
UPRC 13-13J - Original Drilling - Original Drilling - As Dri	6,464.3	6,472.5	9,122.2	9,085.2	246.446	CC
UPRC 13-13J - Original Drilling - Original Drilling - As Dri	6,500.0	6,724.4	9,122.7	9,084.7	240.484	ES
UPRC 13-13J - Original Drilling - Original Drilling - As Dri	7,000.0	7,131.5	9,311.2	9,271.3	233.474	SF
UPRC 13-14J - Original Drilling - Original Drilling - As Dri	6,458.4	6,330.1	9,825.1	9,788.5	269.006	CC, ES
UPRC 13-14J - Original Drilling - Original Drilling - As Dri	6,950.0	6,631.2	9,988.8	9,950.1	258.440	SF
UPRC 13-15J - Original Drilling - Original Drilling - As Dri						Out of range
UPRC 13-16J - Wellbore #1 - Wellbore #1- As Drilled						Out of range
UPRR 39 Pan Am B1 (PA) - Original Drilling - Original Dr	6,460.1	6,426.2	8,752.5	8,609.5	61.178	CC, ES
UPRR 39 Pan Am B1 (PA) - Original Drilling - Original Dr	7,000.0	6,882.3	8,955.9	8,803.1	58.621	SF
H Section 14						
Bohlender H14-09 - Original Drilling - Original Drilling - A	6,453.7	6,427.3	9,772.9	9,736.1	265.249	CC, ES
Bohlender H14-09 - Original Drilling - Original Drilling - A	6,950.0	7,060.5	9,952.2	9,912.7	251.412	SF
Bohlender H14-15 - Original Drilling - Original Drilling - A	6,426.7	6,100.0	7,650.8	7,615.1	214.429	CC, ES
Bohlender H14-15 - Original Drilling - Original Drilling - A	6,800.0	6,800.0	7,753.5	7,714.9	200.873	SF
Bohlender H14-16 - Original Drilling - Original Drilling - A	6,453.4	6,428.5	8,493.0	8,456.1	230.565	CC, ES
Bohlender H14-16 - Original Drilling - Original Drilling - A	6,800.0	6,678.7	8,589.2	8,551.0	225.097	SF
Wilcox H14-03J - Original Drilling - Original Drilling - As D	188.5	159.5	8,295.7	8,295.0	10,000.000	CC
Wilcox H14-03J - Original Drilling - Original Drilling - As D	6,426.3	6,542.3	8,299.6	8,205.5	88.221	ES
Wilcox H14-03J - Original Drilling - Original Drilling - As D	6,550.0	7,100.0	8,312.6	8,217.8	87.732	SF
Wilcox H14-10 - Original Drilling - Original Drilling - As Dr	1,286.7	1,257.7	8,360.3	8,353.3	1,200.320	CC
Wilcox H14-10 - Original Drilling - Original Drilling - As Dr	1,300.0	1,263.0	8,360.3	8,353.3	1,192.048	ES
Wilcox H14-10 - Original Drilling - Original Drilling - As Dr	6,900.0	7,320.3	9,576.4	9,535.7	235.118	SF
Wilcox H14-11 - Original Drilling - Original Drilling - As Dr	330.1	301.3	8,326.5	8,325.1	5,648.392	CC
Wilcox H14-11 - Original Drilling - Original Drilling - As Dr	930.3	919.4	8,327.4	8,322.4	1,671.756	ES
Wilcox H14-11 - Original Drilling - Original Drilling - As Dr	6,550.0	7,275.2	9,268.4	9,190.4	118.767	SF
Wilcox H14-13 - Original Drilling - Original Drilling - As Dr	6,430.6	6,947.3	7,846.8	7,675.6	45.843	CC, ES
Wilcox H14-13 - Original Drilling - Original Drilling - As Dr	6,450.0	6,953.1	7,847.2	7,676.0	45.836	SF
H Section 19						
Butterball 13-19 - Original Drilling - Original Drilling - As D						Out of range

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

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region Drilling - Sandbox	Local Co-ordinate Reference:	Well Hurley H35-768
Project:	Conceptual Wells	TVD Reference:	WELL @ 4852.0ft (Original Well Elev)
Reference Site:	DP 408	MD Reference:	WELL @ 4852.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Hurley H35-768	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Prelim - Rev 2	Offset TVD Reference:	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 21						
Moser 24-21 - Wellbore #1 - Wellbore #1 - As Drilled	100.0	55.4	8,466.1	8,465.9	10,000.000	CC
Moser 24-21 - Wellbore #1 - Wellbore #1 - As Drilled	500.0	424.8	8,467.0	8,465.3	4,865.148	ES
Moser 24-21 - Wellbore #1 - Wellbore #1 - As Drilled	7,050.0	6,774.4	9,436.5	9,398.5	248.523	SF
H Section 22						
HSR Demeules 09-22 - Original Drilling - Original Drilling	6,411.9	6,317.7	4,210.7	4,174.2	115.454	CC, ES
HSR Demeules 09-22 - Original Drilling - Original Drilling	6,800.0	6,640.4	4,322.4	4,284.3	113.487	SF
HSR Duryea - Wellbore #1 - Wellbore #1 - As Drilled	6,388.5	6,254.3	3,820.0	3,783.8	105.500	CC, ES
HSR Duryea - Wellbore #1 - Wellbore #1 - As Drilled	6,700.0	6,523.8	3,880.8	3,843.2	103.259	SF
Sarchet 16-22 - Wellbore #1 - Wellbore #1 - As Drilled	6,390.4	6,289.5	3,146.3	3,109.8	86.177	CC, ES
Sarchet 16-22 - Wellbore #1 - Wellbore #1 - As Drilled	6,650.0	6,546.8	3,186.8	3,149.0	84.340	SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region Drilling - Sandbox	Local Co-ordinate Reference:	Well Hurley H35-768
Project:	Conceptual Wells	TVD Reference:	WELL @ 4852.0ft (Original Well Elev)
Reference Site:	DP 408	MD Reference:	WELL @ 4852.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Hurley H35-768	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Prelim - Rev 2	Offset TVD Reference:	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 23						
Eachus 32-23 - Original Drilling - Original Drilling - As Dri	6,431.3	6,200.0	5,426.1	5,390.1	150.607	CC, ES
Eachus 32-23 - Original Drilling - Original Drilling - As Dri	6,800.0	6,769.2	5,519.8	5,481.3	143.459	SF
Eachus 41-23 (PA) - Original Drilling - Original Drilling - A	6,457.4	6,415.5	7,016.5	6,873.6	49.116	CC, ES
Eachus 41-23 (PA) - Original Drilling - Original Drilling - A	6,950.0	6,844.0	7,192.6	7,040.6	47.325	SF
Eachus UPRR 31-23 - Original Drilling - Original Drilling -	6,445.5	6,341.2	6,664.8	6,589.8	88.807	CC
Eachus UPRR 31-23 - Original Drilling - Original Drilling -	6,450.0	6,345.7	6,664.8	6,589.6	88.614	ES
Eachus UPRR 31-23 - Original Drilling - Original Drilling -	7,150.0	6,880.3	7,026.6	6,932.2	74.436	SF
Eachus UPRR 42-23 (PA) - Original Drilling - Original Dri	6,462.8	6,430.9	5,880.2	5,737.0	41.074	CC, ES
Eachus UPRR 42-23 (PA) - Original Drilling - Original Dri	6,900.0	6,820.5	6,013.1	5,861.6	39.701	SF
HSR Alberstein 16-23 - Original Drilling - Original Drilling	6,483.2	6,459.6	4,021.9	3,984.9	108.819	CC, ES
HSR Alberstein 16-23 - Original Drilling - Original Drilling	6,950.0	6,935.0	4,138.9	4,099.8	105.796	SF
HSR Ashley 15-23A - Original Drilling - Original Drilling -	6,448.2	6,337.1	3,202.6	3,166.1	87.636	CC
HSR Ashley 15-23A - Original Drilling - Original Drilling -	6,450.0	6,338.8	3,202.6	3,166.0	87.614	ES
HSR Ashley 15-23A - Original Drilling - Original Drilling -	6,700.0	6,625.0	3,246.6	3,208.7	85.684	SF
HSR Benirschke 10-23 - Original Drilling - Original Drillin	6,438.0	6,264.3	4,195.1	4,158.8	115.833	CC, ES
HSR Benirschke 10-23 - Original Drilling - Original Drillin	6,650.0	6,426.7	4,229.3	4,192.2	114.038	SF
HSR Eachus 03-23 - Original Drilling - Original Drilling - A	788.3	751.4	6,093.7	6,089.6	1,492.697	CC
HSR Eachus 03-23 - Original Drilling - Original Drilling - A	2,100.0	2,030.7	6,095.3	6,083.8	530.139	ES
HSR Eachus 03-23 - Original Drilling - Original Drilling - A	6,750.0	6,872.7	6,521.8	6,479.3	153.612	SF
HSR Eachus 04-23 - Original Drilling - Original Drilling - A	100.0	55.6	6,066.2	6,066.0	10,000.000	CC
HSR Eachus 04-23 - Original Drilling - Original Drilling - A	985.5	931.3	6,068.6	6,063.4	1,174.653	ES
HSR Eachus 04-23 - Original Drilling - Original Drilling - A	6,550.0	6,863.2	6,498.6	6,392.5	61.241	SF
HSR Eachus 05-23 - Original Drilling - Original Drilling - A	6,417.2	6,709.6	5,168.0	5,038.5	39.909	CC, ES
HSR Eachus 05-23 - Original Drilling - Original Drilling - A	6,650.0	6,935.9	5,213.2	5,080.9	39.422	SF
HSR Fruman 06-23 - Original Drilling - Original Drilling - A	6,443.5	6,500.0	5,481.7	5,437.1	123.043	CC
HSR Fruman 06-23 - Original Drilling - Original Drilling - A	6,450.0	6,508.2	5,481.7	5,437.1	122.953	ES
HSR Fruman 06-23 - Original Drilling - Original Drilling - A	6,650.0	6,646.4	5,518.6	5,473.4	121.949	SF
HSR Grasshopper 09-23 - Original Drilling - Original Drill	6,463.7	6,399.5	4,527.7	4,490.9	123.119	CC, ES
HSR Grasshopper 09-23 - Original Drilling - Original Drill	6,800.0	6,818.4	4,597.3	4,558.7	119.020	SF
Ritchey 21-23 - Original Drilling - Original Drilling - As Dri	6,448.6	6,409.0	5,960.6	5,923.8	161.947	CC
Ritchey 21-23 - Original Drilling - Original Drilling - As Dri	6,450.0	6,410.4	5,960.6	5,923.8	161.915	ES
Ritchey 21-23 - Original Drilling - Original Drilling - As Dri	6,800.0	6,752.7	6,060.3	6,021.9	157.598	SF
Ritchey 24-23 - Original Drilling - Original Drilling - As Dri	1,041.5	1,027.5	4,643.4	4,637.7	826.833	CC
Ritchey 24-23 - Original Drilling - Original Drilling - As Dri	1,600.0	1,556.3	4,646.1	4,637.4	533.156	ES
Ritchey 24-23 - Original Drilling - Original Drilling - As Dri	6,800.0	6,770.4	5,050.1	5,011.4	130.434	SF
Ritchey 31-24 - Original Drilling - Original Drilling - As Dri	1,403.0	1,400.0	6,543.0	6,535.3	847.413	CC
Ritchey 31-24 - Original Drilling - Original Drilling - As Dri	1,500.0	1,448.3	6,543.3	6,535.2	806.996	ES
Ritchey 31-24 - Original Drilling - Original Drilling - As Dri	6,800.0	6,858.2	6,915.6	6,868.1	145.815	SF
UPRC 23-11J - Original Drilling - Original Drilling - As Dri	6,440.6	6,367.5	3,735.2	3,698.5	101.899	CC, ES
UPRC 23-11J - Original Drilling - Original Drilling - As Dri	6,700.0	6,646.4	3,790.7	3,752.7	99.794	SF
UPRC 23-12J - Original Drilling - Original Drilling - As Dri	6,429.9	6,377.1	3,863.6	3,826.8	105.233	CC, ES
UPRC 23-12J - Original Drilling - Original Drilling - As Dri	6,650.0	6,620.4	3,902.4	3,864.5	103.041	SF
UPRC H23-13 - Wellbore #1 - Wellbore #1 - As Drilled	6,413.0	6,310.0	2,755.5	2,719.0	75.373	CC, ES
UPRC H23-13 - Wellbore #1 - Wellbore #1 - As Drilled	6,600.0	6,478.0	2,783.4	2,746.0	74.342	SF
UPRC H23-14J - Original Drilling - Original Drilling - As D	6,433.6	6,302.2	2,496.4	2,460.0	68.537	CC, ES
UPRC H23-14J - Original Drilling - Original Drilling - As D	6,600.0	6,456.2	2,519.5	2,482.3	67.690	SF
UPRC H23-24 - Original Drilling - Original Drilling - As D	6,419.8	6,191.2	3,443.4	3,407.4	95.639	CC, ES
UPRC H23-24 - Original Drilling - Original Drilling - As D	6,700.0	6,506.6	3,504.8	3,467.3	93.414	SF
UPRR 53 Pan Am B#1 (PA) - Original Drilling - Original D	6,431.2	6,356.4	2,823.9	2,682.2	19.928	CC
UPRR 53 Pan Am B#1 (PA) - Original Drilling - Original D	6,450.0	6,375.2	2,824.2	2,682.1	19.873	ES
UPRR 53 Pan Am B#1 (PA) - Original Drilling - Original D	6,650.0	6,570.1	2,863.9	2,717.6	19.575	SF
UPRR 53 Pan Am UT V#1 - Original Drilling - Original Dr	6,468.7	6,549.8	6,090.6	6,053.4	163.519	CC, ES
UPRR 53 Pan Am UT V#1 - Original Drilling - Original Dr	6,800.0	6,761.3	6,176.2	6,137.8	160.778	SF

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

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region Drilling - Sandbox	Local Co-ordinate Reference:	Well Hurley H35-768
Project:	Conceptual Wells	TVD Reference:	WELL @ 4852.0ft (Original Well Elev)
Reference Site:	DP 408	MD Reference:	WELL @ 4852.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Hurley H35-768	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Prelim - Rev 2	Offset TVD Reference:	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						

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region Drilling - Sandbox	Local Co-ordinate Reference:	Well Hurley H35-768
Project:	Conceptual Wells	TVD Reference:	WELL @ 4852.0ft (Original Well Elev)
Reference Site:	DP 408	MD Reference:	WELL @ 4852.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Hurley H35-768	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Prelim - Rev 2	Offset TVD Reference:	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						
Gurtler 24-09J - Original Drilling - Original Drilling - As Dr	6,514.5	6,514.5	9,126.8	9,089.6	245.197	CC, ES
Gurtler 24-09J - Original Drilling - Original Drilling - As Dr	8,600.0	6,800.0	9,990.7	9,947.6	232.202	SF
Gurtler 24-10J - Original Drilling - Original Drilling - As Dr	6,459.2	6,053.2	8,060.1	8,024.6	227.138	CC, ES
Gurtler 24-10J - Original Drilling - Original Drilling - As Dr	10,000.0	6,932.4	9,966.6	9,917.2	201.410	SF
Gurtler 24-11J - Original Drilling - Original Drilling - As Dr	6,500.1	6,469.4	6,770.2	6,733.2	182.977	CC, ES
Gurtler 24-11J - Original Drilling - Original Drilling - As Dr	6,750.0	6,700.0	6,798.6	6,760.5	178.509	SF
Gurtler 24-12J - Original Drilling - Original Drilling - As Dr	6,483.7	6,443.7	5,810.3	5,773.4	157.524	CC, ES
Gurtler 24-12J - Original Drilling - Original Drilling - As Dr	6,650.0	6,500.0	5,826.3	5,789.0	156.176	SF
Gurtler 24-12J - Original Drilling - ST01 - ST01 Original D	6,483.8	6,444.2	5,813.8	5,778.0	161.973	CC, ES
Gurtler 24-12J - Original Drilling - ST01 - ST01 Original D	7,500.0	7,289.1	6,257.9	6,216.7	152.085	SF
Gurtler 24-13J - Original Drilling - Original Drilling - As Dr	6,687.3	7,388.2	5,046.2	5,002.3	114.898	CC
Gurtler 24-13J - Original Drilling - Original Drilling - As Dr	6,700.0	7,400.9	5,046.3	5,002.2	114.532	ES, SF
Gurtler 24-15J - Original Drilling - Original Drilling - As Dr	6,546.3	6,454.5	7,456.4	7,419.4	201.387	CC
Gurtler 24-15J - Original Drilling - Original Drilling - As Dr	6,550.0	6,457.3	7,456.4	7,419.3	201.306	ES
Gurtler 24-15J - Original Drilling - Original Drilling - As Dr	11,400.0	7,054.0	9,939.8	9,881.8	171.345	SF
Gurtler 24-16J - Original Drilling - Original Drilling - As Dr	6,574.5	6,524.8	8,398.5	8,361.2	225.152	CC, ES
Gurtler 24-16J - Original Drilling - Original Drilling - As Dr	10,300.0	10,300.0	9,980.8	9,915.8	153.447	SF
Gurtler H24-14 - Original Drilling - Original Drilling - As D	6,519.5	6,396.6	6,314.9	6,278.1	171.617	CC, ES
Gurtler H24-14 - Original Drilling - Original Drilling - As D	10,300.0	6,836.5	8,257.3	8,206.5	162.464	SF
Gurtler H24-21 (PA) - Original Drilling - Original Drilling -	6,474.2	6,246.0	7,696.1	7,659.9	212.622	CC, ES
Gurtler H24-21 (PA) - Original Drilling - Original Drilling -	7,000.0	6,806.3	7,817.4	7,778.8	202.173	SF
Gurtler H24-23 - Original Drilling - Original Drilling - As D	6,533.0	6,445.2	8,286.8	8,249.9	224.174	CC
Gurtler H24-23 - Original Drilling - Original Drilling - As D	6,550.0	6,476.2	8,286.9	8,249.8	223.384	ES
Gurtler H24-23 - Original Drilling - Original Drilling - As D	10,100.0	6,900.0	9,988.4	9,937.3	195.518	SF
Gurtler H24-24 - Original Drilling - Original Drilling - As D	6,438.4	5,948.3	7,233.3	7,198.2	206.062	CC
Gurtler H24-24 - Original Drilling - Original Drilling - As D	6,500.0	6,500.0	7,234.3	7,197.2	194.749	ES
Gurtler H24-24 - Original Drilling - Original Drilling - As D	11,200.0	6,559.4	9,963.9	9,910.2	185.554	SF
Gurtler H24-99HZ - Wellbore #1 - Original Drilling	6,563.1	11,118.0	5,215.4	5,138.3	67.639	CC, ES
Gurtler H24-99HZ - Wellbore #1 - Original Drilling	8,400.0	11,118.0	6,269.5	6,170.0	62.994	SF
Gurtler H25-27 - Original Drilling - Original Drilling - As D	6,613.0	6,601.6	7,860.8	7,822.0	202.392	CC, ES
Gurtler H25-27 - Original Drilling - Original Drilling - As D	11,400.0	6,991.4	9,995.9	9,935.9	166.611	SF
Gurtler Russell L1 (PA) - Original Drilling - Original Drilling	6,518.2	6,520.0	5,977.3	5,940.1	160.491	CC, ES
Gurtler Russell L1 (PA) - Original Drilling - Original Drilling	7,300.0	7,005.9	6,211.2	6,162.4	127.202	SF
HSR Brutschy 04-24 - Original Drilling - Original Drilling -	6,447.8	6,214.8	7,696.9	7,660.8	213.416	CC
HSR Brutschy 04-24 - Original Drilling - Original Drilling -	6,450.0	6,217.2	7,696.9	7,660.8	213.345	ES
HSR Brutschy 04-24 - Original Drilling - Original Drilling -	6,950.0	6,824.8	7,862.3	7,823.6	202.911	SF
HSR Epstein 05-24 - Original Drilling - Original Drilling - A	6,452.8	6,208.6	7,405.9	7,369.9	205.562	CC, ES
HSR Epstein 05-24 - Original Drilling - Original Drilling - A	6,900.0	6,741.9	7,523.9	7,485.5	195.988	SF
HSR Hoffman 03-24 - Original Drilling - Original Drilling -	6,487.7	6,584.5	8,598.6	8,557.8	210.542	CC
HSR Hoffman 03-24 - Original Drilling - Original Drilling -	6,500.0	6,596.7	8,598.7	8,557.7	209.811	ES
HSR Hoffman 03-24 - Original Drilling - Original Drilling -	7,200.0	7,104.2	8,885.0	8,838.2	189.868	SF
HSR Sarchet 02-24 - Original Drilling - Original Drilling - A	6,485.7	6,459.6	9,561.3	9,524.3	258.713	CC, ES
HSR Sarchet 02-24 - Original Drilling - Original Drilling - A	7,050.0	6,830.2	9,733.2	9,694.4	250.806	SF
HSR Sarchet 06-24 - Original Drilling - Original Drilling - A	6,454.5	6,141.9	7,737.3	7,701.5	216.103	CC, ES
HSR Sarchet 06-24 - Original Drilling - Original Drilling - A	7,100.0	6,784.9	7,949.1	7,910.4	205.417	SF
HSR Traurig 01-24 - Original Drilling - Original Drilling - A						Out of range
Nopens D19-31 - Original Drilling - Original Drilling - As D						Out of range
Nopens H24-08 - Original Drilling - Original Drilling - As D	6,457.9	5,997.7	9,725.6	9,690.3	275.342	CC
Nopens H24-08 - Original Drilling - Original Drilling - As D	6,500.0	6,500.0	9,726.2	9,689.0	261.824	ES
Nopens H24-08 - Original Drilling - Original Drilling - As D	7,200.0	6,665.4	9,941.8	9,903.5	259.027	SF
Sarchet H24-22 - Original Drilling - Original Drilling - As D	6,480.8	6,251.5	8,847.0	8,810.7	244.149	CC, ES
Sarchet H24-22 - Original Drilling - Original Drilling - As D	6,950.0	6,630.5	8,942.8	8,904.8	235.156	SF
Weld County Lumber 01 - Original Drilling - Original Drilling	6,490.3	6,425.1	9,134.6	9,097.8	247.720	CC

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

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region Drilling - Sandbox	Local Co-ordinate Reference:	Well Hurley H35-768
Project:	Conceptual Wells	TVD Reference:	WELL @ 4852.0ft (Original Well Elev)
Reference Site:	DP 408	MD Reference:	WELL @ 4852.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Hurley H35-768	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Prelim - Rev 2	Offset TVD Reference:	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						
Weld County Lumber 01 - Original Drilling - Original Drilli	6,500.0	6,435.6	9,134.7	9,097.8	247.374	ES
Weld County Lumber 01 - Original Drilling - Original Drilli	6,950.0	6,836.0	9,239.9	9,201.2	238.392	SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region Drilling - Sandbox	Local Co-ordinate Reference:	Well Hurley H35-768
Project:	Conceptual Wells	TVD Reference:	WELL @ 4852.0ft (Original Well Elev)
Reference Site:	DP 408	MD Reference:	WELL @ 4852.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Hurley H35-768	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Prelim - Rev 2	Offset TVD Reference:	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						
Dechant 21-25 - Original Drilling - Original Drilling - As D	576.0	554.0	5,789.2	5,786.3	1,989.007	CC
Dechant 21-25 - Original Drilling - Original Drilling - As D	1,400.0	1,358.1	5,790.1	5,782.6	765.064	ES
Dechant 21-25 - Original Drilling - Original Drilling - As D	12,000.0	7,204.1	8,508.3	8,442.9	129.923	SF
Dechant D30-33D - Original Drilling - Original Drilling - As	100.0	33.5	8,376.4	8,376.2	10,000.000	CC, ES
Dechant D30-33D - Original Drilling - Original Drilling - As	13,700.0	6,805.1	9,967.8	9,884.2	119.226	SF
Dechant D31-30D - Original Drilling - Original Drilling - As	100.0	36.9	8,379.9	8,379.7	10,000.000	CC, ES
Dechant D31-30D - Original Drilling - Original Drilling - As	14,900.0	7,073.5	9,960.7	9,861.3	100.191	SF
Dechant H25-64-1HN - Original Drilling - Original Drilling	8,704.5	6,423.0	3,817.7	3,775.4	90.355	CC, ES
Dechant H25-64-1HN - Original Drilling - Original Drilling	10,400.0	6,423.0	4,177.3	4,124.3	78.862	SF
Dechant H25-65HN - Original Drilling - Original Drilling	7,777.1	6,417.0	3,829.8	3,792.7	103.329	CC
Dechant H25-65HN - Original Drilling - Original Drilling	7,800.0	6,417.0	3,829.9	3,792.7	103.061	ES
Dechant H25-65HN - Original Drilling - Original Drilling	9,900.0	6,417.0	4,378.9	4,328.6	87.125	SF
HSR Cohn 03-25 - Original Drilling - Original Drilling - As	6,601.5	6,492.8	5,654.0	5,616.8	151.876	CC, ES
HSR Cohn 03-25 - Original Drilling - Original Drilling - As	10,400.0	6,858.6	7,252.9	7,200.1	137.476	SF
HSR Crowe 06-25 - Original Drilling - Original Drilling - A	7,176.8	6,978.0	5,581.3	5,542.0	142.051	CC, ES
HSR Crowe 06-25 - Original Drilling - Original Drilling - A	11,100.0	7,077.4	6,892.4	6,832.8	115.732	SF
HSR Dechant 04-25 - Original Drilling - Original Drilling -	6,581.8	7,001.2	4,630.6	4,569.1	75.283	CC, ES
HSR Dechant 04-25 - Original Drilling - Original Drilling -	6,850.0	7,208.9	4,649.2	4,587.2	74.981	SF
HSR Dechant 05-25 - Original Drilling - Original Drilling -	7,226.9	7,053.8	4,572.5	4,533.0	115.494	CC, ES
HSR Dechant 05-25 - Original Drilling - Original Drilling -	10,000.0	7,028.9	5,391.5	5,338.9	102.525	SF
KY Blue D30-32 - Original Drilling - Original Drilling - As D	7,770.7	6,902.7	8,739.2	8,699.0	217.479	CC
KY Blue D30-32 - Original Drilling - Original Drilling - As D	7,800.0	6,902.5	8,739.3	8,699.0	216.960	ES
KY Blue D30-32 - Original Drilling - Original Drilling - As D	12,600.0	6,874.7	9,985.1	9,912.0	136.650	SF
KY Blue H25-04J - Original Drilling - Original Drilling - As	9,274.8	6,940.0	7,909.6	7,872.1	211.060	CC
KY Blue H25-04J - Original Drilling - Original Drilling - As	9,300.0	6,940.0	7,909.6	7,871.9	209.951	ES
KY Blue H25-04J - Original Drilling - Original Drilling - As	14,800.0	6,940.0	9,648.6	9,572.9	127.439	SF
KY Blue H25-09 - Original Drilling - Original Drilling - As D	8,285.2	6,889.2	8,217.9	8,175.5	193.565	CC
KY Blue H25-09 - Original Drilling - Original Drilling - As D	8,300.0	6,889.2	8,217.9	8,175.4	193.192	ES
KY Blue H25-09 - Original Drilling - Original Drilling - As D	13,900.0	6,883.2	9,953.3	9,872.5	123.120	SF
KY Blue H25-10 - Original Drilling - Original Drilling - As D	8,112.4	7,015.9	6,780.4	6,738.4	161.471	CC, ES
KY Blue H25-10 - Original Drilling - Original Drilling - As D	15,400.0	15,400.0	9,954.6	9,843.1	89.255	SF
KY Blue H25-11 - Original Drilling - Original Drilling - As D	8,283.7	7,037.8	5,605.5	5,531.6	75.900	CC
KY Blue H25-11 - Original Drilling - Original Drilling - As D	8,300.0	7,037.6	5,605.5	5,531.5	75.811	ES
KY Blue H25-11 - Original Drilling - Original Drilling - As D	10,800.0	6,997.9	6,144.3	6,053.7	67.793	SF
KY Blue H25-12 - Original Drilling - Original Drilling - As D	8,258.7	6,895.9	4,156.2	4,113.8	98.048	CC
KY Blue H25-12 - Original Drilling - Original Drilling - As D	8,300.0	6,895.1	4,156.4	4,113.8	97.530	ES
KY Blue H25-12 - Original Drilling - Original Drilling - As D	10,400.0	6,855.8	4,675.3	4,619.4	83.569	SF
KY Blue H25-14 - Original Drilling - Original Drilling - As D	9,769.4	6,873.0	5,673.0	5,619.8	106.614	CC
KY Blue H25-14 - Original Drilling - Original Drilling - As D	9,800.0	6,873.1	5,673.1	5,619.7	106.098	ES
KY Blue H25-14 - Original Drilling - Original Drilling - As D	14,100.0	14,100.0	7,137.3	7,031.6	67.560	SF
KY Blue H25-15 - Original Drilling - Original Drilling - As D	9,597.7	6,894.4	6,734.8	6,682.9	129.851	CC
KY Blue H25-15 - Original Drilling - Original Drilling - As D	9,700.0	6,893.4	6,735.5	6,682.8	127.771	ES
KY Blue H25-15 - Original Drilling - Original Drilling - As D	13,400.0	6,874.9	7,734.2	7,654.8	97.435	SF
KY H25-24 - Original Drilling - Original Drilling - As Drilled	8,948.8	6,976.5	6,334.9	6,287.8	134.673	CC
KY H25-24 - Original Drilling - Original Drilling - As Drilled	9,000.0	6,977.5	6,335.1	6,287.7	133.594	ES
KY H25-24 - Original Drilling - Original Drilling - As Drilled	12,900.0	7,053.7	7,465.9	7,390.4	98.870	SF
Moore UPRC H25-01 - Original Drilling - Original Drilling	6,691.7	6,594.4	8,495.4	8,457.7	225.435	CC
Moore UPRC H25-01 - Original Drilling - Original Drilling	6,700.0	6,601.3	8,495.4	8,457.7	225.248	ES
Moore UPRC H25-01 - Original Drilling - Original Drilling	11,000.0	6,890.8	9,975.2	9,916.0	168.502	SF
Moore UPRC H25-02 - Original Drilling - Original Drilling	6,687.0	6,644.0	7,109.6	7,071.8	187.933	CC
Moore UPRC H25-02 - Original Drilling - Original Drilling	6,700.0	6,651.9	7,109.6	7,071.8	187.741	ES
Moore UPRC H25-02 - Original Drilling - Original Drilling	12,100.0	6,863.0	9,479.6	9,416.4	150.024	SF
Moser 25-32 - Original Drilling - Original Drilling - As Drill	7,237.4	6,959.5	6,694.1	6,654.8	170.400	CC

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

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region Drilling - Sandbox	Local Co-ordinate Reference:	Well Hurley H35-768
Project:	Conceptual Wells	TVD Reference:	WELL @ 4852.0ft (Original Well Elev)
Reference Site:	DP 408	MD Reference:	WELL @ 4852.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Hurley H35-768	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Prelim - Rev 2	Offset TVD Reference:	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						
Moser 25-32 - Original Drilling - Original Drilling - As Drill	7,250.0	6,962.1	6,694.1	6,654.8	170.306	ES
Moser 25-32 - Original Drilling - Original Drilling - As Drill	12,300.0	7,025.8	8,449.8	8,382.4	125.356	SF
Moser 25-42 - Original Drilling - Original Drilling - As Drill	7,127.3	6,858.0	8,372.0	8,333.2	215.391	CC
Moser 25-42 - Original Drilling - Original Drilling - As Drill	7,150.0	6,869.1	8,372.1	8,333.2	215.085	ES
Moser 25-42 - Original Drilling - Original Drilling - As Drill	12,300.0	6,918.5	9,950.1	9,880.9	143.664	SF
UPRR 53 Pan Am T#2 - Original Drilling - Original Drilling	6,747.5	6,600.0	5,314.1	5,276.4	140.838	CC
UPRR 53 Pan Am T#2 - Original Drilling - Original Drilling	6,750.0	6,600.0	5,314.1	5,276.4	140.832	ES
UPRR 53 Pan Am T#2 - Original Drilling - Original Drilling	10,200.0	6,700.0	6,509.4	6,457.3	124.857	SF
UPRR 53 Pan Am UT T#1 - Original Drilling - Original Dr	6,952.6	6,799.7	7,695.7	7,544.7	50.979	CC
UPRR 53 Pan Am UT T#1 - Original Drilling - Original Dr	7,000.0	6,828.3	7,695.9	7,544.4	50.781	ES
UPRR 53 Pan Am UT T#1 - Original Drilling - Original Dr	9,300.0	6,933.0	8,150.1	7,986.6	49.836	SF
Von Feldt 1-25B - Original Drilling - Original Drilling - As D	9,334.4	7,017.4	4,714.0	4,663.8	93.895	CC
Von Feldt 1-25B - Original Drilling - Original Drilling - As D	9,400.0	7,019.7	4,714.5	4,663.7	92.900	ES
Von Feldt 1-25B - Original Drilling - Original Drilling - As D	11,600.0	7,098.3	5,229.7	5,162.7	78.114	SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region Drilling - Sandbox	Local Co-ordinate Reference:	Well Hurley H35-768
Project:	Conceptual Wells	TVD Reference:	WELL @ 4852.0ft (Original Well Elev)
Reference Site:	DP 408	MD Reference:	WELL @ 4852.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Hurley H35-768	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Prelim - Rev 2	Offset TVD Reference:	Offset Datum

Summary

Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
H Section 26						
Bullard 31-26 - Original Drilling - Original Drilling - As Dril	6,473.6	6,404.2	2,177.7	2,141.0	59.247	CC, ES
Bullard 31-26 - Original Drilling - Original Drilling - As Dril	6,700.0	6,610.1	2,205.3	2,167.5	58.393	SF
Bullard 32-26 - Original Drilling - Original Drilling - As Dril	7,132.8	6,955.2	1,818.9	1,779.7	46.408	CC, ES
Bullard 32-26 - Original Drilling - Original Drilling - As Dril	7,250.0	6,986.6	1,823.3	1,783.8	46.252	SF
Bullard 41-26 - Original Drilling - Original Drilling - As Dril	6,561.2	6,538.8	2,793.5	2,756.1	74.701	CC, ES
Bullard 41-26 - Original Drilling - Original Drilling - As Dril	7,000.0	6,939.8	2,851.0	2,811.9	72.868	SF
Dechant H25-29D - Original Drilling - Original Drilling - As	111.8	131.0	3,752.9	3,752.5	9,137.121	CC
Dechant H25-29D - Original Drilling - Original Drilling - As	200.0	197.1	3,753.2	3,752.3	4,455.200	ES
Dechant H25-29D - Original Drilling - Original Drilling - As	11,300.0	11,300.0	8,209.8	8,114.5	86.218	SF
Dechant H25-33D - Original Drilling - Original Drilling - As	3,401.8	3,480.3	3,654.8	3,624.0	118.620	CC
Dechant H25-33D - Original Drilling - Original Drilling - As	3,500.0	3,562.9	3,655.3	3,623.5	115.059	ES
Dechant H25-33D - Original Drilling - Original Drilling - As	9,800.0	7,816.5	3,910.0	3,821.4	44.160	SF
Harsh H26-09D - Original Drilling - Original Drilling - As D	8,211.1	6,974.1	3,174.7	3,132.3	74.882	CC, ES
Harsh H26-09D - Original Drilling - Original Drilling - As D	9,500.0	6,997.4	3,426.3	3,375.9	67.930	SF
Harsh H26-10 - Original Drilling - Original Drilling - As Dr	8,064.6	7,003.7	1,887.8	1,846.1	45.240	CC, ES
Harsh H26-10 - Original Drilling - Original Drilling - As Dr	8,500.0	7,003.1	1,937.4	1,893.3	43.957	SF
Harsh H26-15 - Original Drilling - Original Drilling - As Dr	9,507.0	6,967.3	1,814.9	1,763.5	35.312	CC, ES
Harsh H26-15 - Original Drilling - Original Drilling - As Dr	9,900.0	6,971.2	1,856.9	1,802.6	34.178	SF
Harsh H26-16 - Original Drilling - Original Drilling - As Dr	9,588.2	6,966.8	2,877.8	2,825.8	55.292	CC
Harsh H26-16 - Original Drilling - Original Drilling - As Dr	9,600.0	6,967.0	2,877.9	2,825.7	55.186	ES
Harsh H26-16 - Original Drilling - Original Drilling - As Dr	10,500.0	6,977.2	3,018.8	2,960.0	51.345	SF
Harsh H26-23D - Original Drilling - Original Drilling - As D	1,056.0	1,074.0	2,327.2	2,322.4	491.720	CC
Harsh H26-23D - Original Drilling - Original Drilling - As D	1,100.0	1,108.5	2,327.3	2,322.3	470.418	ES
Harsh H26-23D - Original Drilling - Original Drilling - As D	9,700.0	7,087.5	2,634.2	2,577.8	46.705	SF
HSR Moser 04-26 - Original Drilling - Original Drilling - As	6,394.3	6,288.6	1,723.6	1,687.2	47.267	CC
HSR Moser 04-26 - Original Drilling - Original Drilling - As	6,400.0	6,293.2	1,723.7	1,687.2	47.233	ES
HSR Moser 04-26 - Original Drilling - Original Drilling - As	6,550.0	6,441.9	1,741.0	1,703.7	46.728	SF
HSR Moser 06-26 - Original Drilling - Original Drilling - As	7,034.2	6,892.4	678.6	639.7	17.437	CC, ES
HSR Moser 06-26 - Original Drilling - Original Drilling - As	7,050.0	6,900.0	678.8	639.8	17.425	SF
HSR Regalia 05-26 - Original Drilling - Original Drilling - A	6,392.4	6,335.2	489.7	453.2	13.398	CC
HSR Regalia 05-26 - Original Drilling - Original Drilling - A	6,400.0	6,342.7	489.8	453.2	13.384	ES
HSR Regalia 05-26 - Original Drilling - Original Drilling - A	6,450.0	6,392.6	491.6	454.7	13.337	SF
HSR-Moser 03-26A - Original Drilling - Original Drilling - A	6,440.6	6,336.0	1,517.7	1,481.1	41.550	CC, ES
HSR-Moser 03-26A - Original Drilling - Original Drilling - A	6,550.0	6,432.9	1,527.0	1,489.9	41.228	SF
John 03-26 - Original Drilling - Original Drilling - As Drille	6,460.7	6,407.2	1,241.5	1,204.8	33.796	CC, ES
John 03-26 - Original Drilling - Original Drilling - As Drille	6,550.0	6,480.6	1,248.0	1,210.9	33.606	SF
Lamp H25-31 - Original Drilling - Original Drilling - As Dri	6,759.1	6,802.6	3,679.3	3,640.8	95.726	CC, ES
Lamp H25-31 - Original Drilling - Original Drilling - As Dri	7,200.0	7,061.6	3,721.2	3,681.6	93.909	SF
Lamp H26-01 - Original Drilling - Original Drilling - As Dri	6,497.8	6,478.2	3,502.0	3,460.9	85.067	CC
Lamp H26-01 - Original Drilling - Original Drilling - As Dri	6,500.0	6,480.0	3,502.0	3,460.9	85.049	ES
Lamp H26-01 - Original Drilling - Original Drilling - As Dri	6,900.0	6,894.3	3,551.8	3,509.0	83.013	SF
Lamp H26-08 - Original Drilling - Original Drilling - As Dri	6,889.8	6,687.7	3,152.1	3,114.0	82.704	CC
Lamp H26-08 - Original Drilling - Original Drilling - As Dri	6,900.0	6,695.8	3,152.2	3,114.0	82.632	ES
Lamp H26-08 - Original Drilling - Original Drilling - As Dri	7,350.0	6,870.3	3,185.4	3,146.3	81.328	SF
Lamp H26-22 - Original Drilling - Original Drilling - As Dri	7,500.0	7,151.8	2,415.9	2,369.8	52.325	SF
Lamp H26-22 - Original Drilling - Original Drilling - As Dri	7,643.9	7,152.5	2,411.6	2,365.6	52.343	CC, ES
Moser 05-26 - Original Drilling - Original Drilling - As Drill	3,065.0	3,056.5	834.4	817.2	48.441	CC
Moser 05-26 - Original Drilling - Original Drilling - As Drill	3,100.0	3,091.7	834.5	817.1	47.891	ES
Moser 05-26 - Original Drilling - Original Drilling - As Drill	7,100.0	6,918.2	955.1	916.0	24.442	SF
Moser 41-27 - Original Drilling - Original Drilling - As Drill	936.5	908.3	844.9	839.9	170.118	CC, ES
Moser 41-27 - Original Drilling - Original Drilling - As Drill	6,600.0	6,657.7	1,662.5	1,622.1	41.202	SF
Moser H26-11 - Original Drilling - Original Drilling - As Dr	8,059.9	6,968.9	252.4	210.8	6.072	CC, ES, SF
Moser H26-12 - Wellbore #1 - Wellbore #1 - As Drilled	8,275.9	6,974.5	889.3	846.6	20.822	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

Company:	Northern Region Drilling - Sandbox	Local Co-ordinate Reference:	Well Hurley H35-768
Project:	Conceptual Wells	TVD Reference:	WELL @ 4852.0ft (Original Well Elev)
Reference Site:	DP 408	MD Reference:	WELL @ 4852.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Hurley H35-768	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Prelim - Rev 2	Offset TVD Reference:	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 26						
Moser H26-12 - Wellbore #1 - Wellbore #1 - As Drilled	8,400.0	6,978.0	897.9	854.7	20.747	SF
Moser H26-13 - Wellbore #1 - Wellbore #1 - As Drilled	9,584.9	6,969.4	939.5	887.4	18.053	CC, ES
Moser H26-13 - Wellbore #1 - Wellbore #1 - As Drilled	9,700.0	6,974.9	946.5	893.7	17.935	SF
Moser H26-14 - Original Drilling - Original Drilling - As Dr	9,790.0	7,004.2	594.2	540.4	11.051	CC
Moser H26-14 - Original Drilling - Original Drilling - As Dr	9,800.0	7,004.1	594.2	540.4	11.034	ES, SF
Moser H26-18D - Original Drilling - Original Drilling - As D	6,551.3	6,962.4	1,325.4	1,284.0	32.011	CC, ES
Moser H26-18D - Original Drilling - Original Drilling - As D	6,800.0	7,182.0	1,348.3	1,305.6	31.559	SF
Moser H26-24 - Original Drilling - Original Drilling - As Dr	8,776.8	6,979.6	911.2	865.3	19.852	CC, ES
Moser H26-24 - Original Drilling - Original Drilling - As Dr	8,900.0	6,981.3	919.5	872.7	19.659	SF
Moser H26-25 - Original Drilling - Original Drilling - As Dr	8,976.9	6,980.1	109.9	62.6	2.322	CC, ES, SF
Moser H26-27D - Original Drilling - Original Drilling - As D	6,502.9	6,638.2	3,059.5	3,016.3	70.822	CC, ES
Moser H26-27D - Original Drilling - Original Drilling - As D	6,750.0	6,871.2	3,089.2	3,045.0	69.979	SF
Moser H26-28D - Original Drilling - Original Drilling - As D	6,453.8	7,004.4	2,182.9	2,116.1	32.689	CC, ES
Moser H26-28D - Original Drilling - Original Drilling - As D	6,500.0	7,055.8	2,184.5	2,117.5	32.626	SF
Moser H26-29D - Original Drilling - Original Drilling - As D	6,383.9	7,195.2	1,922.4	1,836.1	22.289	CC, ES
Moser H26-29D - Original Drilling - Original Drilling - As D	6,450.0	7,284.2	1,925.7	1,839.0	22.214	SF
Moser, Wesley E. G. U. B1 (PA) - Original Drilling - Origin	9,267.8	6,972.0	538.9	374.1	3.271	CC, ES, SF
H Section 27						
HSR Moser 1-27 - Original Drilling - Original Drilling - As	6,368.9	6,278.2	2,431.1	2,394.8	66.994	CC, ES
HSR Moser 1-27 - Original Drilling - Original Drilling - As	6,600.0	6,469.5	2,458.1	2,420.8	65.858	SF
HSR Moser 16-27 - Original Drilling - Original Drilling - As	9,742.0	6,979.3	2,037.0	1,983.6	38.175	CC, ES
HSR Moser 16-27 - Original Drilling - Original Drilling - As	10,200.0	6,981.1	2,087.8	2,031.3	36.969	SF
Moser 09-27X (PA) - Original Drilling - Original Drilling - A	8,328.0	6,980.3	2,078.2	2,033.3	46.258	CC, ES
Moser 09-27X (PA) - Original Drilling - Original Drilling - A	8,800.0	6,972.1	2,131.1	2,083.8	45.075	SF
Moser 24-27 - Original Drilling - Original Drilling - As Drill	850.6	818.6	2,064.3	2,059.8	463.952	CC
Moser 24-27 - Original Drilling - Original Drilling - As Drill	900.0	858.1	2,064.4	2,059.7	439.333	ES
Moser 24-27 - Original Drilling - Original Drilling - As Drill	8,400.0	7,021.5	2,900.1	2,856.0	65.741	SF
H Section 34						
Moser H34-09 - Wellbore #1 - Wellbore #1 - As Drilled	13,562.2	7,000.4	2,122.3	2,034.0	24.034	CC, ES
Moser H34-09 - Wellbore #1 - Wellbore #1 - As Drilled	13,800.0	7,000.6	2,135.6	2,045.5	23.705	SF
Moser H34-16 - Wellbore #1 - Wellbore #1 - As Drilled	14,810.3	6,964.1	2,132.2	2,032.1	21.308	CC, ES
Moser H34-16 - Wellbore #1 - Wellbore #1 - As Drilled	15,100.0	6,970.3	2,151.8	2,049.7	21.077	SF
Moser H34-31 - Wellbore #1 - Wellbore #1 - As Drilled	11,535.0	7,079.4	6,768.6	6,699.0	97.244	CC
Moser H34-31 - Wellbore #1 - Wellbore #1 - As Drilled	11,600.0	7,081.3	6,768.9	6,698.7	96.424	ES
Moser H34-31 - Wellbore #1 - Wellbore #1 - As Drilled	14,600.0	7,155.1	7,429.5	7,337.2	80.498	SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region Drilling - Sandbox	Local Co-ordinate Reference:	Well Hurley H35-768
Project:	Conceptual Wells	TVD Reference:	WELL @ 4852.0ft (Original Well Elev)
Reference Site:	DP 408	MD Reference:	WELL @ 4852.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Hurley H35-768	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Prelim - Rev 2	Offset TVD Reference:	Offset Datum

Summary

Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
H Section 35						
Cannon Farms 01-35C - Original Drilling - Original Drilling	14,485.0	6,980.1	2,527.6	2,430.5	26.046	CC
Cannon Farms 01-35C - Original Drilling - Original Drilling	14,500.0	6,979.6	2,527.6	2,430.4	26.007	ES
Cannon Farms 01-35C - Original Drilling - Original Drilling	14,900.0	6,966.1	2,561.4	2,461.3	25.575	SF
Cannon H35-03D - Original Drilling - Original Drilling - As	13,962.7	6,991.6	102.1	10.1	1.110	Level 2, CC, ES, SF
Cannon H35-09 - Original Drilling - Original Drilling - As D	13,555.6	7,012.8	2,909.4	2,816.3	31.272	CC
Cannon H35-09 - Original Drilling - Original Drilling - As D	13,600.0	7,011.8	2,909.7	2,816.3	31.139	ES
Cannon H35-09 - Original Drilling - Original Drilling - As D	14,100.0	7,001.0	2,959.9	2,862.8	30.500	SF
Cannon H35-10 - Original Drilling - Original Drilling - As D	13,662.0	6,962.6	1,667.6	1,578.5	18.712	CC, ES
Cannon H35-10 - Original Drilling - Original Drilling - As D	13,800.0	6,963.3	1,673.3	1,583.0	18.532	SF
Cannon H35-11 - Original Drilling - Original Drilling - As D	13,543.4	7,010.8	599.6	511.5	6.805	CC, ES, SF
Cannon H35-12 - Original Drilling - Original Drilling - As D	13,643.0	6,985.0	866.8	777.8	9.737	CC, ES
Cannon H35-12 - Original Drilling - Original Drilling - As D	13,700.0	6,985.7	868.6	779.3	9.719	SF
Cannon H35-13 - Wellbore #1 - Wellbore #1 - As Drilled	14,835.4	6,989.9	931.0	830.6	9.271	CC, ES
Cannon H35-13 - Wellbore #1 - Wellbore #1 - As Drilled	14,900.0	6,988.2	933.2	832.4	9.258	SF
Cannon H35-14 - Original Drilling - Original Drilling - As D	14,871.3	6,991.7	462.5	355.5	4.321	CC, ES, SF
Cannon H35-15 (PA) - Original Drilling - Original Drilling -	14,909.9	6,984.0	1,678.9	1,462.3	7.753	CC, ES
Cannon H35-15 (PA) - Original Drilling - Original Drilling -	15,000.0	6,984.0	1,681.3	1,463.9	7.735	SF
Cannon H35-20 - Original Drilling - Original Drilling - As D	13,043.4	6,973.8	264.3	181.1	3.177	CC, ES, SF
Cannon H35-21 - Original Drilling - Original Drilling - As D	13,128.6	6,983.2	1,154.7	1,070.6	13.726	CC, ES
Cannon H35-21 - Original Drilling - Original Drilling - As D	13,200.0	6,983.4	1,156.9	1,072.2	13.652	SF
Cannon H35-22 - Original Drilling - Original Drilling - As D	13,048.9	6,842.7	2,082.8	1,999.8	25.110	CC, ES
Cannon H35-22 - Original Drilling - Original Drilling - As D	13,400.0	6,842.2	2,112.2	2,026.5	24.656	SF
Cannon H35-24 - Original Drilling - Original Drilling - As D	14,315.7	7,024.6	948.7	853.2	9.937	CC, ES
Cannon H35-24 - Original Drilling - Original Drilling - As D	14,400.0	7,025.5	952.4	856.3	9.913	SF
Cannon X02-27 - Original Drilling - Original Drilling - As D	15,394.1	6,975.4	2,098.8	1,993.1	19.858	CC
Cannon X02-27 - Original Drilling - Original Drilling - As D	15,400.0	6,975.4	2,098.8	1,993.0	19.847	ES
Cannon X02-27 - Original Drilling - Original Drilling - As D	15,507.8	6,975.3	2,101.9	1,995.1	19.696	SF
Cannon X02-28 - Original Drilling - Original Drilling - As D	15,160.2	7,011.9	915.5	812.0	8.840	CC, ES
Cannon X02-28 - Original Drilling - Original Drilling - As D	15,200.0	7,012.0	916.4	812.5	8.820	SF
Cannon X02-29 - Original Drilling - Original Drilling - As D	15,240.2	7,022.9	411.4	306.7	3.928	CC, ES, SF
Foster 18-35 - Original Drilling - Original Drilling - As Drill	11,379.5	6,967.8	387.7	320.0	5.723	CC, ES
Foster 18-35 - Original Drilling - Original Drilling - As Drill	11,400.0	6,967.9	388.3	320.4	5.722	SF
Foster UPRR 31-35 #1 (PA) - Original Drilling - Original D	10,806.9	6,996.0	1,742.2	1,564.1	9.782	CC, ES
Foster UPRR 31-35 #1 (PA) - Original Drilling - Original D	10,900.0	6,996.0	1,744.6	1,565.7	9.751	SF
Foster UPRR 32-35 - Original Drilling - Original Drilling -	12,140.1	6,988.7	1,607.0	1,532.1	21.464	CC, ES
Foster UPRR 32-35 - Original Drilling - Original Drilling -	12,300.0	6,989.2	1,614.9	1,538.7	21.190	SF
Foster UPRR 41-35 - Original Drilling - Original Drilling -	11,031.0	6,977.5	3,069.5	2,995.8	41.680	CC, ES
Foster UPRR 41-35 - Original Drilling - Original Drilling -	11,800.0	6,981.7	3,164.3	3,084.6	39.685	SF
Foster UPRR 42-35 #2 - Original Drilling - Original Drilling	12,121.2	6,855.6	3,017.8	2,943.6	40.643	CC, ES
Foster UPRR 42-35 #2 - Original Drilling - Original Drilling	12,800.0	6,864.6	3,093.2	3,013.6	38.864	SF
HSR Foster 03-35 - Original Drilling - Original Drilling - A	11,020.0	6,979.1	500.3	435.7	7.752	CC, ES, SF
HSR Foster 04-35 - Wellbore #1 - Wellbore #1 - As Drille	10,713.3	6,878.8	1,168.2	1,106.9	19.068	CC, ES
HSR Foster 04-35 - Wellbore #1 - Wellbore #1 - As Drille	10,800.0	6,879.3	1,171.4	1,109.5	18.920	SF
HSR Foster 05-35 - Wellbore #1 - Wellbore #1 - As Drille	12,304.0	6,914.9	964.7	888.7	12.693	CC, ES
HSR Foster 05-35 - Wellbore #1 - Wellbore #1 - As Drille	12,400.0	6,916.5	969.5	892.9	12.654	SF
HSR Foster 06-35 - Original Drilling - Original Drilling - A	12,199.5	6,993.1	407.3	331.9	5.402	CC
HSR Foster 06-35 - Original Drilling - Original Drilling - A	12,200.0	6,993.1	407.4	331.9	5.402	ES, SF
UPRR 53 Pan Am Unit P1 - Original Drilling - Original Dri	11,615.6	6,991.4	2,512.3	2,442.3	35.889	CC, ES
UPRR 53 Pan Am Unit P1 - Original Drilling - Original Dri	12,100.0	6,990.1	2,558.6	2,484.8	34.652	SF
UPRR 53 Pan Am UT P2 - Original Drilling - Original Drill	11,237.3	6,983.5	33.3	-33.1	0.502	Level 1, CC, 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

Company:	Northern Region Drilling - Sandbox	Local Co-ordinate Reference:	Well Hurley H35-768
Project:	Conceptual Wells	TVD Reference:	WELL @ 4852.0ft (Original Well Elev)
Reference Site:	DP 408	MD Reference:	WELL @ 4852.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Hurley H35-768	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Prelim - Rev 2	Offset TVD Reference:	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	12,528.7	6,831.1	6,696.6	6,618.6	85.907	CC
Dechant 07-36 - Original Drilling - Original Drilling - As D	12,600.0	6,831.4	6,697.0	6,618.3	85.173	ES
Dechant 07-36 - Original Drilling - Original Drilling - As D	15,300.0	6,842.6	7,247.5	7,148.5	73.260	SF
Dechant 13N-1HZ - Original Drilling - Original Drilling - A	15,507.8	7,076.0	4,116.3	4,008.0	37.983	CC, ES, SF
Dechant 14C-1HZ - Original Drilling - Original Drilling - A	15,385.4	6,436.3	5,576.7	5,472.2	53.407	CC
Dechant 14C-1HZ - Original Drilling - Original Drilling - A	15,400.0	6,436.9	5,576.7	5,472.1	53.332	ES
Dechant 14C-1HZ - Original Drilling - Original Drilling - A	15,507.8	6,441.8	5,578.0	5,472.4	52.810	SF
Dechant 15-36 - Original Drilling - Original Drilling - As D	14,981.9	6,928.9	6,681.4	6,563.2	56.529	CC
Dechant 15-36 - Original Drilling - Original Drilling - As D	15,000.0	6,929.0	6,681.4	6,563.0	56.445	ES
Dechant 15-36 - Original Drilling - Original Drilling - As D	15,507.8	6,931.1	6,702.1	6,578.9	54.435	SF
Dechant 15C-1HZ - Original Drilling - Original Drilling - A	15,507.8	11,919.8	6,826.8	6,650.5	38.718	CC, ES, SF
Dechant 24-36 - Original Drilling - Original Drilling - As D	12,865.9	7,096.0	7,386.2	7,301.9	87.612	CC
Dechant 24-36 - Original Drilling - Original Drilling - As D	12,900.0	7,096.0	7,386.3	7,301.6	87.236	ES
Dechant 24-36 - Original Drilling - Original Drilling - As D	15,507.8	7,097.0	7,844.6	7,736.1	72.309	SF
Dechant 35N-E1HZ - Original Drilling - Original Drilling -	15,507.8	6,733.3	5,277.4	5,170.9	49.559	CC, ES, SF
Dechant 35N-W1HZ - Original Drilling - Original Drilling -	15,507.8	6,929.9	4,676.0	4,568.8	43.611	CC, ES, SF
Dechant 36N-W1HZ - Original Drilling - Original Drilling -	15,381.1	6,213.2	5,817.0	5,713.3	56.077	CC
Dechant 36N-W1HZ - Original Drilling - Original Drilling -	15,400.0	6,213.2	5,817.1	5,713.1	55.977	ES
Dechant 36N-W1HZ - Original Drilling - Original Drilling -	15,507.8	6,213.3	5,818.4	5,713.4	55.434	SF
Dechant 37N-E1HZ - Original Drilling - Original Drilling -	15,373.8	5,096.1	7,599.7	7,500.0	76.254	CC
Dechant 37N-E1HZ - Original Drilling - Original Drilling -	15,400.0	5,096.3	7,599.7	7,499.8	76.059	ES
Dechant 37N-E1HZ - Original Drilling - Original Drilling -	15,507.8	5,103.1	7,600.9	7,499.9	75.265	SF
Dechant 37N-W1HZ - Original Drilling - Original Drilling -	15,377.0	5,923.4	7,125.9	7,023.4	69.494	CC
Dechant 37N-W1HZ - Original Drilling - Original Drilling -	15,400.0	5,923.5	7,125.9	7,023.2	69.343	ES
Dechant 37N-W1HZ - Original Drilling - Original Drilling -	15,507.8	5,923.6	7,127.1	7,023.3	68.659	SF
Dechant State 16C-1HZ - Original Drilling - Original Drilling	15,507.8	12,646.0	8,020.9	7,835.3	43.228	CC, ES, SF
Dechant State 36N-E1HZ - Original Drilling - Original Drilling	15,507.8	11,746.3	6,547.8	6,371.8	37.212	CC, ES, SF
Dechant State 37N-E36HZ - Original Drilling - Original Drilling	15,148.1	11,401.3	7,768.3	7,603.7	47.192	CC
Dechant State 37N-E36HZ - Original Drilling - Original Drilling	15,200.0	11,401.3	7,768.5	7,603.4	47.066	ES
Dechant State 37N-E36HZ - Original Drilling - Original Drilling	15,507.8	11,401.3	7,776.6	7,609.1	46.414	SF
Dechant State 37N-W36HZ - Original Drilling - Original Drilling	15,162.6	11,489.0	7,172.6	7,006.1	43.083	CC
Dechant State 37N-W36HZ - Original Drilling - Original Drilling	15,200.0	11,489.0	7,172.7	7,005.8	42.982	ES
Dechant State 37N-W36HZ - Original Drilling - Original Drilling	15,507.8	11,489.0	7,180.9	7,010.9	42.252	SF
Dechant State 38N-1HZ - Original Drilling - Original Drilling	15,507.8	11,663.6	8,473.5	8,299.2	48.615	CC, ES, SF
Dechant State H36-11D - Original Drilling - Original Drilling	13,716.7	6,900.0	5,527.6	5,438.2	61.809	CC
Dechant State H36-11D - Original Drilling - Original Drilling	13,800.0	6,900.0	5,528.3	5,438.0	61.269	ES
Dechant State H36-11D - Original Drilling - Original Drilling	15,507.8	6,900.0	5,810.6	5,707.6	56.400	SF
Dechant State H36-18D - Original Drilling - Original Drilling	11,663.2	7,076.0	6,100.6	6,029.1	85.261	CC
Dechant State H36-18D - Original Drilling - Original Drilling	11,700.0	7,077.3	6,100.7	6,028.8	84.819	ES
Dechant State H36-18D - Original Drilling - Original Drilling	14,600.0	7,209.4	6,769.7	6,673.3	70.223	SF
Dechant State H36-19 - Original Drilling - Original Drilling	11,319.4	7,216.6	4,697.4	4,629.5	69.118	CC
Dechant State H36-19 - Original Drilling - Original Drilling	11,400.0	7,217.5	4,698.1	4,629.4	68.380	ES
Dechant State H36-19 - Original Drilling - Original Drilling	13,000.0	7,236.4	4,989.0	4,908.2	61.766	SF
Dechant State H36-20D - Original Drilling - Original Drilling	13,107.4	7,402.1	4,900.4	4,815.4	57.643	CC, ES
Dechant State H36-20D - Original Drilling - Original Drilling	14,700.0	14,700.0	5,152.6	5,034.6	43.649	SF
Dechant State H36-21D - Original Drilling - Original Drilling	13,081.2	7,041.9	6,105.4	6,020.5	71.947	CC
Dechant State H36-21D - Original Drilling - Original Drilling	13,100.0	7,041.8	6,105.4	6,020.4	71.803	ES
Dechant State H36-21D - Original Drilling - Original Drilling	15,200.0	7,049.0	6,462.6	6,362.4	64.477	SF
Dechant State H36-24 - Original Drilling - Original Drilling	14,290.0	7,169.8	6,170.4	6,073.5	63.679	CC
Dechant State H36-24 - Original Drilling - Original Drilling	14,400.0	7,168.5	6,171.3	6,073.4	62.990	ES
Dechant State H36-24 - Original Drilling - Original Drilling	15,507.8	7,156.1	6,289.4	6,181.7	58.388	SF
Dechant State H36-31D - Original Drilling - Original Drilling	11,663.4	7,078.1	3,691.6	3,620.8	52.155	CC
Dechant State H36-31D - Original Drilling - Original Drilling	11,700.0	7,078.4	3,691.8	3,620.7	51.930	ES

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

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region Drilling - Sandbox	Local Co-ordinate Reference:	Well Hurley H35-768
Project:	Conceptual Wells	TVD Reference:	WELL @ 4852.0ft (Original Well Elev)
Reference Site:	DP 408	MD Reference:	WELL @ 4852.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Hurley H35-768	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Prelim - Rev 2	Offset TVD Reference:	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 State H36-31D - Original Drilling - Original Drilling	12,700.0	7,086.9	3,834.4	3,756.1	48.948	SF
Dechant State H36-32D - Original Drilling - Original Drilling	12,915.6	7,052.0	3,671.1	3,587.9	44.141	CC, ES
Dechant State H36-32D - Original Drilling - Original Drilling	13,900.0	7,072.1	3,800.7	3,709.6	41.716	SF
Dechant State H36-33 - Original Drilling - Original Drilling	14,131.9	7,389.7	3,708.5	3,612.2	38.514	CC
Dechant State H36-33 - Original Drilling - Original Drilling	14,200.0	7,389.7	3,709.1	3,612.1	38.255	ES
Dechant State H36-33 - Original Drilling - Original Drilling	15,000.0	7,391.6	3,808.7	3,705.2	36.810	SF
HSR Dechant State 02-36 - Original Drilling - Original Drilling	10,774.8	6,835.2	6,652.9	6,591.1	107.606	CC
HSR Dechant State 02-36 - Original Drilling - Original Drilling	10,800.0	6,836.0	6,653.0	6,590.9	107.206	ES
HSR Dechant State 02-36 - Original Drilling - Original Drilling	14,100.0	6,917.5	7,437.3	7,350.5	85.705	SF
HSR Dechant/State 07-36 (PA) - Original Drilling - Original Drilling	11,969.6	6,949.0	7,238.0	7,050.0	38.495	CC
HSR Dechant/State 07-36 (PA) - Original Drilling - Original Drilling	12,000.0	6,949.0	7,238.1	7,049.8	38.438	ES
HSR Dechant/State 07-36 (PA) - Original Drilling - Original Drilling	13,900.0	6,949.0	7,491.1	7,286.8	36.663	SF
Spike State GWS H36-03 - Original Drilling - Original Drilling	10,921.9	10,921.9	5,733.5	5,656.0	73.989	CC, ES, SF
Spike State GWS H36-04 - Original Drilling - Original Drilling	10,757.1	7,046.9	4,231.9	4,160.8	59.523	CC
Spike State GWS H36-04 - Original Drilling - Original Drilling	10,800.0	7,046.6	4,232.1	4,160.6	59.205	ES
Spike State GWS H36-04 - Original Drilling - Original Drilling	12,200.0	7,036.3	4,471.1	4,389.1	54.500	SF
Spike State GWS H36-13 - Original Drilling - Original Drilling	15,084.7	6,600.0	4,103.9	4,002.5	40.492	CC
Spike State GWS H36-13 - Original Drilling - Original Drilling	15,100.0	6,600.0	4,103.9	4,002.4	40.433	ES
Spike State GWS H36-13 - Original Drilling - Original Drilling	15,507.8	6,600.0	4,125.6	4,020.5	39.255	SF
Spike State GWS H36-14 - Original Drilling - Original Drilling	15,077.5	6,871.5	5,781.9	5,679.6	56.489	CC
Spike State GWS H36-14 - Original Drilling - Original Drilling	15,100.0	6,870.9	5,782.0	5,679.4	56.370	ES
Spike State GWS H36-14 - Original Drilling - Original Drilling	15,507.8	6,858.9	5,797.9	5,691.6	54.546	SF
Spike State H36-02J - Original Drilling - Original Drilling	11,982.4	6,901.3	5,176.9	5,072.5	49.593	CC
Spike State H36-02J - Original Drilling - Original Drilling	12,000.0	6,901.6	5,176.9	5,072.3	49.510	ES
Spike State H36-02J - Original Drilling - Original Drilling	13,600.0	6,929.3	5,423.7	5,305.6	45.946	SF
Spike State H36-05 - Original Drilling - Original Drilling - A	12,157.9	7,117.5	4,168.3	4,092.9	55.275	CC
Spike State H36-05 - Original Drilling - Original Drilling - A	12,200.0	7,117.4	4,168.5	4,092.7	54.990	ES
Spike State H36-05 - Original Drilling - Original Drilling - A	13,400.0	7,113.4	4,349.4	4,264.5	51.231	SF
Spike State H36-11J - Original Drilling - Original Drilling	14,319.3	6,926.8	4,936.2	4,840.9	51.823	CC
Spike State H36-11J - Original Drilling - Original Drilling	14,400.0	6,925.2	4,936.8	4,840.8	51.415	ES
Spike State H36-11J - Original Drilling - Original Drilling	15,507.8	6,902.0	5,077.2	4,972.6	48.546	SF
Spike State H36-12 - Original Drilling - Original Drilling - A	13,426.7	6,972.1	4,056.8	3,969.9	46.682	CC
Spike State H36-12 - Original Drilling - Original Drilling - A	13,500.0	6,971.3	4,057.4	3,969.8	46.318	ES
Spike State H36-12 - Original Drilling - Original Drilling - A	14,500.0	6,959.6	4,196.4	4,101.3	44.158	SF

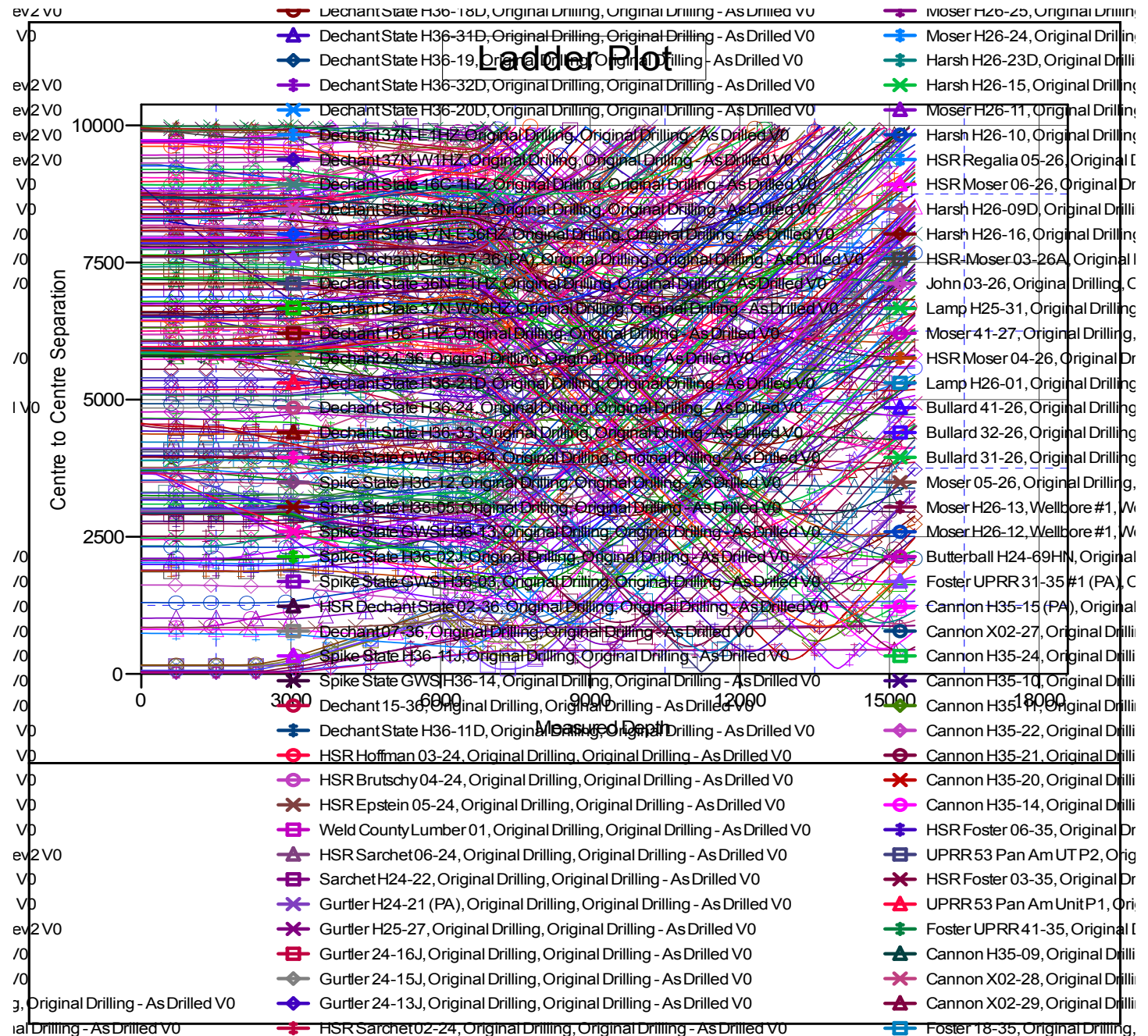
Anticollision Summary Report

Company:	Northern Region Drilling - Sandbox	Local Co-ordinate Reference:	Well Hurley H35-768
Project:	Conceptual Wells	TVD Reference:	WELL @ 4852.0ft (Original Well Elev)
Reference Site:	DP 408	MD Reference:	WELL @ 4852.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Hurley H35-768	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Prelim - Rev 2	Offset TVD Reference:	Offset Datum

Coordinates are relative to: Hurley H35-768

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

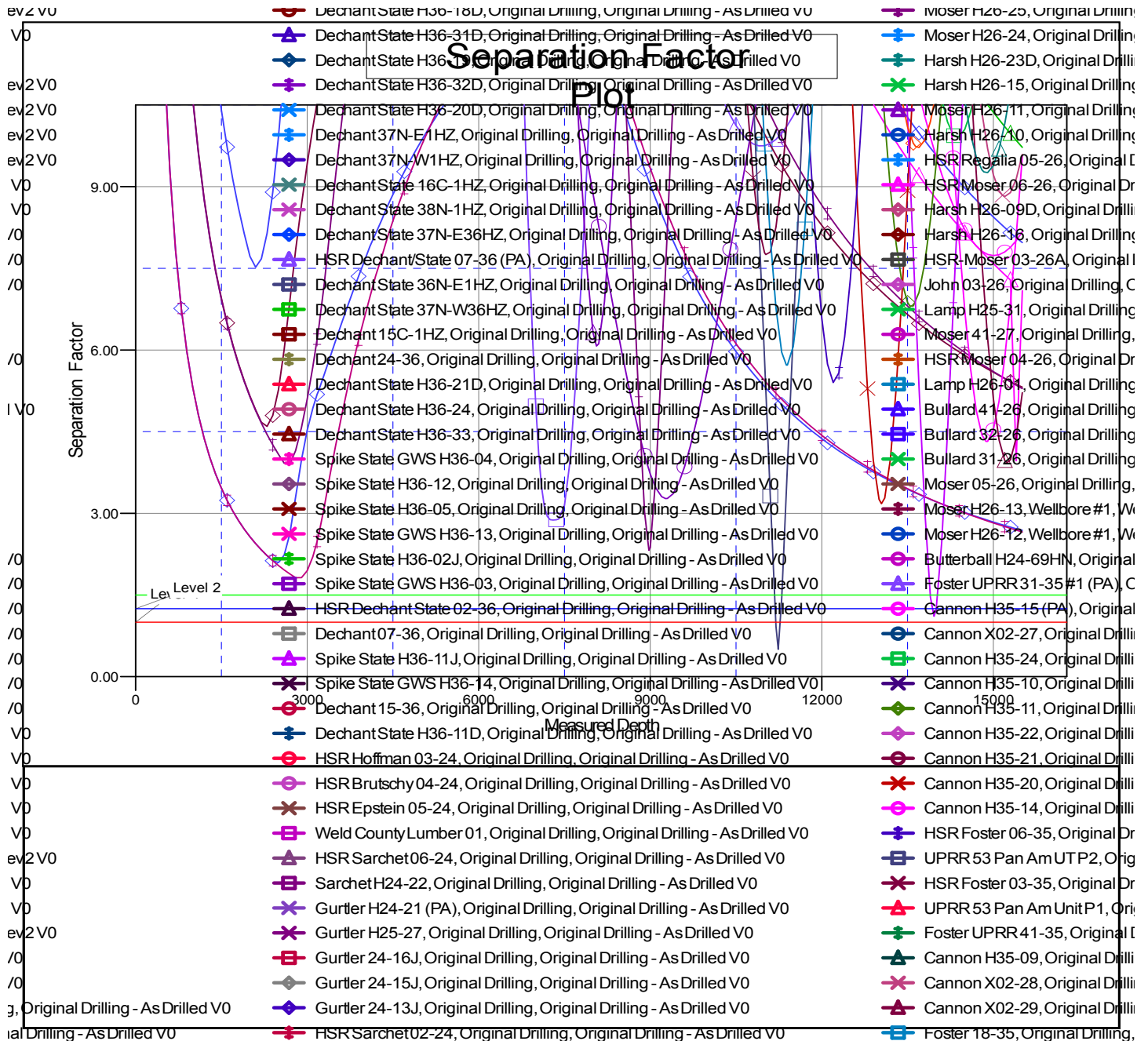
Anticollision Summary Report

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