

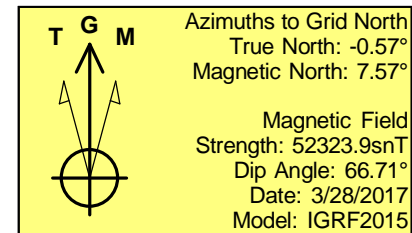
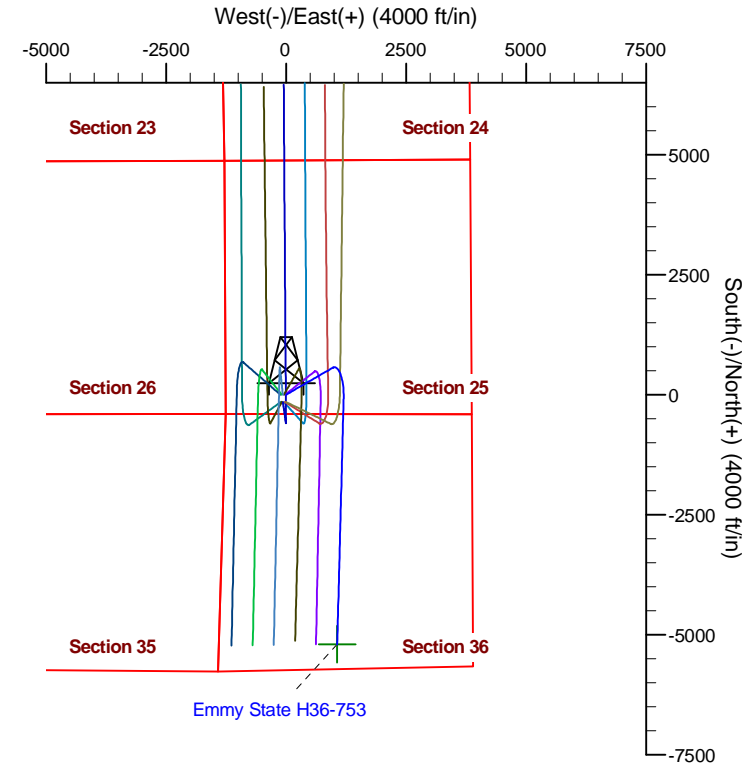
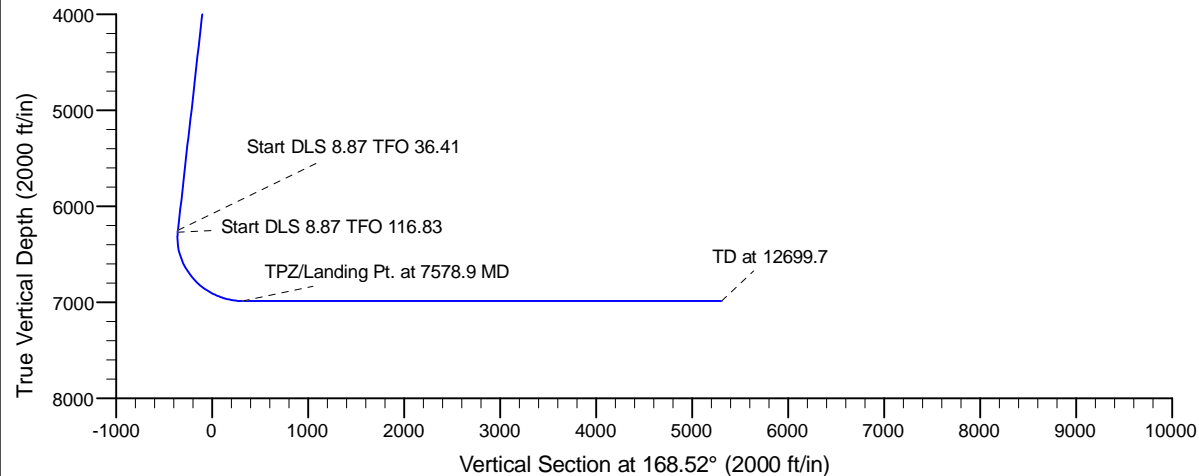
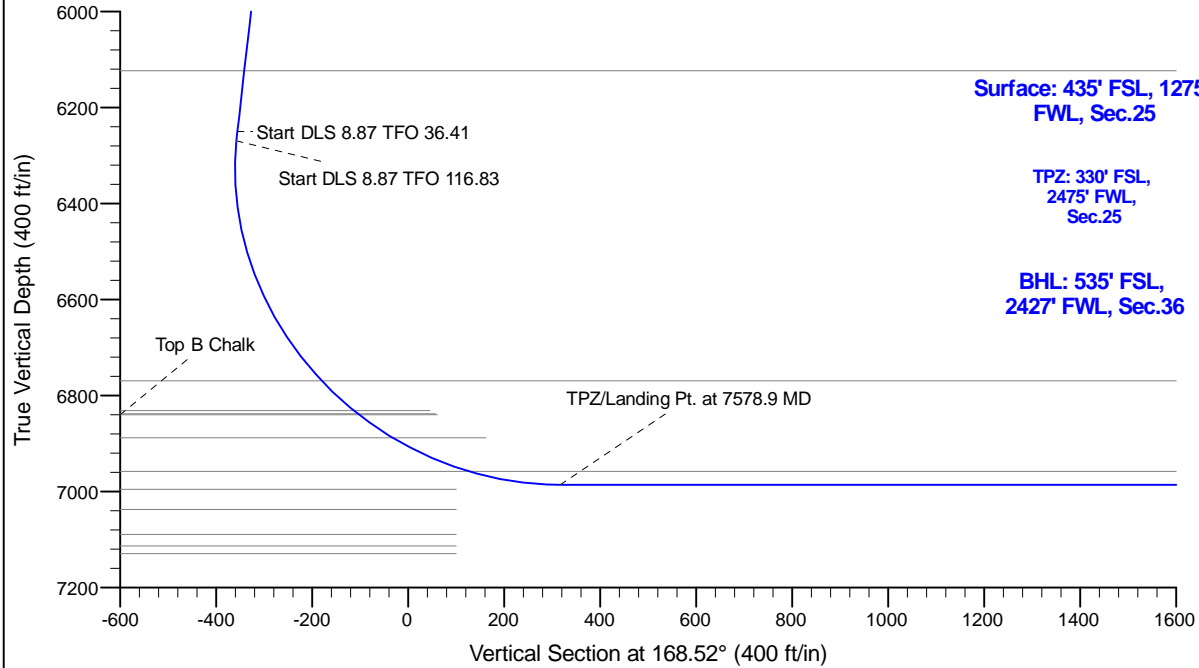
Project: Conceptual Wells
Site: DP 408
Well: Emmy State H36-753
Wellbore: Wellbore #1
Design: Design #1

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	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	2600.0	0.00	0.00	2600.0	0.0	0.0	0.00	0.00	0.0	
3	3575.0	19.50	60.00	3556.3	82.2	142.3	2.00	60.00	-52.2	
4	6432.6	19.50	60.00	6250.0	559.1	968.4	0.00	0.00	-355.3	
5	6453.3	21.01	63.04	6269.4	562.5	974.7	8.87	36.41	-357.4	
6	7578.9	90.00	181.49	6986.0	-80.0	1200.0	8.87	116.83	317.1	
7	12699.7	90.00	181.50	6986.0	-5199.1	1066.2	0.00	89.11	5307.3	Emmy State H36-753 BHL



WELL DETAILS: Emmy State H36-753

0.00.0	Northings	Easting	4816.0	Latitude	Longitude
	1313321.53	3246774.20	40.190090		-104.616670

Plan: Design #1 (Emmy State H36-753/Wellbore #1)

Created By: Chad Stich Date: 10:29, November 02 2017

Checked: _____ Date: _____

Reviewed: _____ Date: _____

Approved: _____ Date: _____

Northern Region Drilling - Sandbox

Conceptual Wells

DP 408

Emmy State H36-753

Wellbore #1

Plan: Design #1

Standard Planning Report

02 November, 2017

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Emmy State H36-753
Company:	Northern Region Drilling - Sandbox	TVD Reference:	WELL @ 4846.0ft (Original Well Elev)
Project:	Conceptual Wells	MD Reference:	WELL @ 4846.0ft (Original Well Elev)
Site:	DP 408	North Reference:	Grid
Well:	Emmy State H36-753	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

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	Emmy State H36-753			
Well Position	+N/-S	-4,863.4 ft	Northing:	1,313,321.53 usft
	+E/-W	6,549.3 ft	Easting:	3,246,774.21 usft
Position Uncertainty		0.0 ft	Wellhead Elevation:	Latitude: 40.190090
				Longitude: -104.616670
				Ground Level: 4,816.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	3/28/2017	8.14	66.71	52,323.88503415

Design	Design #1			
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	168.52

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	
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.00	0.00	0.00	0.00	
3,575.0	19.50	60.00	3,556.3	82.2	142.3	2.00	2.00	0.00	60.00	
6,432.6	19.50	60.00	6,250.0	559.1	968.4	0.00	0.00	0.00	0.00	
6,453.3	21.01	63.04	6,269.4	562.5	974.7	8.87	7.27	14.69	36.41	
7,578.9	90.00	181.49	6,986.0	-80.0	1,200.0	8.87	6.13	10.52	116.83	
12,699.7	90.00	181.50	6,986.0	-5,199.1	1,066.2	0.00	0.00	0.00	89.11	Emmy State H36-753

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Emmy State H36-753
Company:	Northern Region Drilling - Sandbox	TVD Reference:	WELL @ 4846.0ft (Original Well Elev)
Project:	Conceptual Wells	MD Reference:	WELL @ 4846.0ft (Original Well Elev)
Site:	DP 408	North Reference:	Grid
Well:	Emmy State H36-753	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

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	2.00	60.00	2,700.0	0.9	1.5	-0.6	2.00	2.00	0.00
2,800.0	4.00	60.00	2,799.8	3.5	6.0	-2.2	2.00	2.00	0.00
2,900.0	6.00	60.00	2,899.5	7.8	13.6	-5.0	2.00	2.00	0.00
3,000.0	8.00	60.00	2,998.7	13.9	24.1	-8.9	2.00	2.00	0.00
3,100.0	10.00	60.00	3,097.5	21.8	37.7	-13.8	2.00	2.00	0.00
3,200.0	12.00	60.00	3,195.6	31.3	54.2	-19.9	2.00	2.00	0.00
3,300.0	14.00	60.00	3,293.1	42.5	73.7	-27.0	2.00	2.00	0.00
3,400.0	16.00	60.00	3,389.6	55.5	96.1	-35.3	2.00	2.00	0.00
3,500.0	18.00	60.00	3,485.3	70.1	121.4	-44.5	2.00	2.00	0.00
3,575.0	19.50	60.00	3,556.3	82.2	142.3	-52.2	2.00	2.00	0.00
3,600.0	19.50	60.00	3,579.9	86.3	149.5	-54.9	0.00	0.00	0.00
3,700.0	19.50	60.00	3,674.1	103.0	178.4	-65.5	0.00	0.00	0.00
3,800.0	19.50	60.00	3,768.4	119.7	207.3	-76.1	0.00	0.00	0.00
3,900.0	19.50	60.00	3,862.6	136.4	236.3	-86.7	0.00	0.00	0.00
4,000.0	19.50	60.00	3,956.9	153.1	265.2	-97.3	0.00	0.00	0.00
4,100.0	19.50	60.00	4,051.2	169.8	294.1	-107.9	0.00	0.00	0.00
4,200.0	19.50	60.00	4,145.4	186.5	323.0	-118.5	0.00	0.00	0.00
4,300.0	19.50	60.00	4,239.7	203.2	351.9	-129.1	0.00	0.00	0.00
4,400.0	19.50	60.00	4,334.0	219.9	380.8	-139.7	0.00	0.00	0.00
4,500.0	19.50	60.00	4,428.2	236.5	409.7	-150.3	0.00	0.00	0.00
4,600.0	19.50	60.00	4,522.5	253.2	438.6	-160.9	0.00	0.00	0.00
4,700.0	19.50	60.00	4,616.8	269.9	467.5	-171.5	0.00	0.00	0.00
4,800.0	19.50	60.00	4,711.0	286.6	496.4	-182.1	0.00	0.00	0.00
4,900.0	19.50	60.00	4,805.3	303.3	525.3	-192.7	0.00	0.00	0.00
5,000.0	19.50	60.00	4,899.6	320.0	554.3	-203.3	0.00	0.00	0.00
5,100.0	19.50	60.00	4,993.8	336.7	583.2	-213.9	0.00	0.00	0.00
5,200.0	19.50	60.00	5,088.1	353.4	612.1	-224.5	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Emmy State H36-753
Company:	Northern Region Drilling - Sandbox	TVD Reference:	WELL @ 4846.0ft (Original Well Elev)
Project:	Conceptual Wells	MD Reference:	WELL @ 4846.0ft (Original Well Elev)
Site:	DP 408	North Reference:	Grid
Well:	Emmy State H36-753	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

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	19.50	60.00	5,182.3	370.1	641.0	-235.2	0.00	0.00	0.00
5,400.0	19.50	60.00	5,276.6	386.8	669.9	-245.8	0.00	0.00	0.00
5,500.0	19.50	60.00	5,370.9	403.4	698.8	-256.4	0.00	0.00	0.00
5,600.0	19.50	60.00	5,465.1	420.1	727.7	-267.0	0.00	0.00	0.00
5,700.0	19.50	60.00	5,559.4	436.8	756.6	-277.6	0.00	0.00	0.00
5,800.0	19.50	60.00	5,653.7	453.5	785.5	-288.2	0.00	0.00	0.00
5,900.0	19.50	60.00	5,747.9	470.2	814.4	-298.8	0.00	0.00	0.00
6,000.0	19.50	60.00	5,842.2	486.9	843.3	-309.4	0.00	0.00	0.00
6,100.0	19.50	60.00	5,936.5	503.6	872.2	-320.0	0.00	0.00	0.00
6,200.0	19.50	60.00	6,030.7	520.3	901.2	-330.6	0.00	0.00	0.00
6,300.0	19.50	60.00	6,125.0	537.0	930.1	-341.2	0.00	0.00	0.00
6,400.0	19.50	60.00	6,219.2	553.7	959.0	-351.8	0.00	0.00	0.00
6,432.6	19.50	60.00	6,250.0	559.1	968.4	-355.3	0.00	0.00	0.00
6,453.3	21.01	63.04	6,269.4	562.5	974.7	-357.4	8.87	7.27	14.69
6,500.0	19.48	74.18	6,313.2	568.4	989.7	-360.2	8.87	-3.28	23.87
6,600.0	18.91	101.33	6,407.9	569.8	1,021.6	-355.2	8.87	-0.56	27.15
6,700.0	22.09	125.20	6,501.7	555.7	1,053.0	-335.2	8.87	3.18	23.87
6,800.0	27.75	141.56	6,592.4	526.6	1,082.9	-300.7	8.87	5.66	16.36
6,900.0	34.69	152.29	6,678.0	483.1	1,110.6	-252.5	8.87	6.94	10.73
7,000.0	42.28	159.69	6,756.2	426.3	1,135.6	-191.8	8.87	7.59	7.40
7,100.0	50.22	165.17	6,825.4	357.4	1,157.1	-120.1	8.87	7.95	5.47
7,200.0	58.37	169.49	6,883.7	278.3	1,174.8	-39.0	8.87	8.15	4.32
7,300.0	66.64	173.11	6,929.8	190.7	1,188.1	49.5	8.87	8.27	3.62
7,400.0	74.99	176.30	6,962.7	96.7	1,196.7	143.3	8.87	8.34	3.19
7,500.0	83.37	179.24	6,981.4	-1.3	1,200.5	240.2	8.87	8.39	2.95
7,578.9	90.00	181.49	6,986.0	-80.0	1,200.0	317.1	8.87	8.40	2.85
7,600.0	90.00	181.49	6,986.0	-101.1	1,199.5	337.7	0.00	0.00	0.00
7,700.0	90.00	181.49	6,986.0	-201.1	1,196.9	435.2	0.00	0.00	0.00
7,800.0	90.00	181.49	6,986.0	-301.0	1,194.2	532.6	0.00	0.00	0.00
7,900.0	90.00	181.49	6,986.0	-401.0	1,191.6	630.1	0.00	0.00	0.00
8,000.0	90.00	181.49	6,986.0	-501.0	1,189.0	727.5	0.00	0.00	0.00
8,100.0	90.00	181.49	6,986.0	-600.9	1,186.4	825.0	0.00	0.00	0.00
8,200.0	90.00	181.49	6,986.0	-700.9	1,183.8	922.4	0.00	0.00	0.00
8,300.0	90.00	181.49	6,986.0	-800.9	1,181.2	1,019.9	0.00	0.00	0.00
8,400.0	90.00	181.49	6,986.0	-900.8	1,178.6	1,117.3	0.00	0.00	0.00
8,500.0	90.00	181.49	6,986.0	-1,000.8	1,176.0	1,214.8	0.00	0.00	0.00
8,600.0	90.00	181.49	6,986.0	-1,100.8	1,173.4	1,312.2	0.00	0.00	0.00
8,700.0	90.00	181.49	6,986.0	-1,200.7	1,170.8	1,409.7	0.00	0.00	0.00
8,800.0	90.00	181.49	6,986.0	-1,300.7	1,168.2	1,507.1	0.00	0.00	0.00
8,900.0	90.00	181.49	6,986.0	-1,400.7	1,165.6	1,604.6	0.00	0.00	0.00
9,000.0	90.00	181.49	6,986.0	-1,500.6	1,163.0	1,702.0	0.00	0.00	0.00
9,100.0	90.00	181.49	6,986.0	-1,600.6	1,160.4	1,799.5	0.00	0.00	0.00
9,200.0	90.00	181.49	6,986.0	-1,700.6	1,157.8	1,896.9	0.00	0.00	0.00
9,300.0	90.00	181.49	6,986.0	-1,800.5	1,155.2	1,994.4	0.00	0.00	0.00
9,400.0	90.00	181.49	6,986.0	-1,900.5	1,152.6	2,091.8	0.00	0.00	0.00
9,500.0	90.00	181.50	6,986.0	-2,000.5	1,150.0	2,189.3	0.00	0.00	0.00
9,600.0	90.00	181.50	6,986.0	-2,100.4	1,147.3	2,286.7	0.00	0.00	0.00
9,700.0	90.00	181.50	6,986.0	-2,200.4	1,144.7	2,384.1	0.00	0.00	0.00
9,800.0	90.00	181.50	6,986.0	-2,300.4	1,142.1	2,481.6	0.00	0.00	0.00
9,900.0	90.00	181.50	6,986.0	-2,400.3	1,139.5	2,579.0	0.00	0.00	0.00
10,000.0	90.00	181.50	6,986.0	-2,500.3	1,136.9	2,676.5	0.00	0.00	0.00
10,100.0	90.00	181.50	6,986.0	-2,600.3	1,134.3	2,773.9	0.00	0.00	0.00
10,200.0	90.00	181.50	6,986.0	-2,700.2	1,131.7	2,871.4	0.00	0.00	0.00
10,300.0	90.00	181.50	6,986.0	-2,800.2	1,129.1	2,968.8	0.00	0.00	0.00

Noble Energy, Inc.

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Well:	Emmy State H36-753	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

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	181.50	6,986.0	-2,900.2	1,126.5	3,066.3	0.00	0.00	0.00
10,500.0	90.00	181.50	6,986.0	-3,000.1	1,123.8	3,163.7	0.00	0.00	0.00
10,600.0	90.00	181.50	6,986.0	-3,100.1	1,121.2	3,261.2	0.00	0.00	0.00
10,700.0	90.00	181.50	6,986.0	-3,200.1	1,118.6	3,358.6	0.00	0.00	0.00
10,800.0	90.00	181.50	6,986.0	-3,300.0	1,116.0	3,456.1	0.00	0.00	0.00
10,900.0	90.00	181.50	6,986.0	-3,400.0	1,113.4	3,553.5	0.00	0.00	0.00
11,000.0	90.00	181.50	6,986.0	-3,500.0	1,110.8	3,651.0	0.00	0.00	0.00
11,100.0	90.00	181.50	6,986.0	-3,599.9	1,108.1	3,748.4	0.00	0.00	0.00
11,200.0	90.00	181.50	6,986.0	-3,699.9	1,105.5	3,845.9	0.00	0.00	0.00
11,300.0	90.00	181.50	6,986.0	-3,799.8	1,102.9	3,943.3	0.00	0.00	0.00
11,400.0	90.00	181.50	6,986.0	-3,899.8	1,100.3	4,040.8	0.00	0.00	0.00
11,500.0	90.00	181.50	6,986.0	-3,999.8	1,097.7	4,138.2	0.00	0.00	0.00
11,600.0	90.00	181.50	6,986.0	-4,099.7	1,095.1	4,235.6	0.00	0.00	0.00
11,700.0	90.00	181.50	6,986.0	-4,199.7	1,092.4	4,333.1	0.00	0.00	0.00
11,800.0	90.00	181.50	6,986.0	-4,299.7	1,089.8	4,430.5	0.00	0.00	0.00
11,900.0	90.00	181.50	6,986.0	-4,399.6	1,087.2	4,528.0	0.00	0.00	0.00
12,000.0	90.00	181.50	6,986.0	-4,499.6	1,084.6	4,625.4	0.00	0.00	0.00
12,100.0	90.00	181.50	6,986.0	-4,599.6	1,082.0	4,722.9	0.00	0.00	0.00
12,200.0	90.00	181.50	6,986.0	-4,699.5	1,079.3	4,820.3	0.00	0.00	0.00
12,300.0	90.00	181.50	6,986.0	-4,799.5	1,076.7	4,917.8	0.00	0.00	0.00
12,400.0	90.00	181.50	6,986.0	-4,899.5	1,074.1	5,015.2	0.00	0.00	0.00
12,500.0	90.00	181.50	6,986.0	-4,999.4	1,071.5	5,112.7	0.00	0.00	0.00
12,600.0	90.00	181.50	6,986.0	-5,099.4	1,068.8	5,210.1	0.00	0.00	0.00
12,699.7	90.00	181.50	6,986.0	-5,199.1	1,066.2	5,307.3	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									
Emmy State H36-753 Bl	0.00	0.00	6,986.0	-5,199.1	1,066.2	1,308,122.69	3,247,840.38	40.175790	-104.613040
- plan hits target center									
- Point									

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Emmy State H36-753
Company:	Northern Region Drilling - Sandbox	TVD Reference:	WELL @ 4846.0ft (Original Well Elev)
Project:	Conceptual Wells	MD Reference:	WELL @ 4846.0ft (Original Well Elev)
Site:	DP 408	North Reference:	Grid
Well:	Emmy State H36-753	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
572.0	572.0	Pierre				
724.0	724.0	Upper Pierre Aquifer Top				
1,612.0	1,612.0	Upper Pierre Aquifer Base				
3,917.4	3,879.0	Parkman				
4,544.3	4,470.0	Sussex				
5,267.8	5,152.0	Shannon				
6,297.9	6,123.0	Teepee Buttes				
7,017.4	6,769.0	Sharon Springs				
7,108.9	6,831.0	Top A Chalk				
7,120.1	6,838.0	Top A Marl				
7,123.3	6,840.0	Top B Chalk				
7,208.3	6,888.0	Top B Marl				
7,382.8	6,958.0	Top C Chalk				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
2,600.0	2,600.0	0.0	0.0	KOP - Start Build 2.00	
6,432.6	6,250.0	82.2	142.3	Start DLS 8.87 TFO 36.41	
6,453.3	6,269.4	559.1	968.4	Start DLS 8.87 TFO 116.83	
7,578.9	6,986.0	562.5	974.7	TPZ/Landing Pt. at 7578.9 MD	
12,699.7	6,986.0	-80.0	1,200.0	TD at 12699.7	

Northern Region Drilling - Sandbox

Conceptual Wells

DP 408

Emmy State H36-753

Wellbore #1

Design #1

Anticollision Summary Report

02 November, 2017

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region Drilling - Sandbox	Local Co-ordinate Reference:	Well Emmy State H36-753
Project:	Conceptual Wells	TVD Reference:	WELL @ 4846.0ft (Original Well Elev)
Reference Site:	DP 408	MD Reference:	WELL @ 4846.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Emmy State H36-753	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:	Design #1	Offset TVD Reference:	Offset Datum

Reference	Design #1		
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	11/2/2017		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	12,699.7	Design #1 (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
Offset Well - Wellbore - Design						
DP 408						
Emmy H25-711 - Wellbore #1 - Prelim - Rev 2	2,000.0	1,989.0	2,184.6	2,175.9	251.861	CC, ES
Emmy H25-711 - Wellbore #1 - Prelim - Rev 2	10,800.0	10,800.0	3,841.2	3,771.9	55.446	SF
Emmy State H25-718 - Wellbore #1 - Prelim - Rev 2	7,856.8	6,502.3	2,102.4	2,068.2	61.417	CC, ES
Emmy State H25-718 - Wellbore #1 - Prelim - Rev 2	8,800.0	6,500.0	2,304.3	2,263.4	56.396	SF
Emmy State H25-724 - Wellbore #1 - Prelim - Rev 2	7,932.8	6,804.6	1,603.6	1,569.9	47.540	CC, ES
Emmy State H25-724 - Wellbore #1 - Prelim - Rev 2	8,600.0	6,622.5	1,718.4	1,680.1	44.890	SF
Emmy State H25-731 - Wellbore #1 - Prelim - Rev 2	7,555.2	7,206.0	1,222.2	1,189.9	37.879	CC, ES
Emmy State H25-731 - Wellbore #1 - Prelim - Rev 2	8,200.0	6,750.0	1,276.7	1,241.9	36.647	SF
Emmy State H25-738 - Wellbore #1 - Prelim - Rev 2	7,516.8	7,189.2	828.2	796.5	26.079	CC, ES
Emmy State H25-738 - Wellbore #1 - Prelim - Rev 2	7,578.9	7,133.2	829.6	797.7	26.060	SF
Emmy State H25-744 - Wellbore #1 - Prelim - Rev 2	7,477.5	7,293.8	365.2	332.8	11.251	CC, ES
Emmy State H25-744 - Wellbore #1 - Prelim - Rev 2	7,500.0	7,274.1	365.4	333.0	11.250	SF
Emmy State H25-751 - Wellbore #1 - Design #1	7,578.9	7,440.1	84.7	49.2	2.384	SF
Emmy State H25-751 - Wellbore #1 - Design #1	7,600.0	7,419.3	84.4	49.0	2.384	ES
Emmy State H25-751 - Wellbore #1 - Design #1	7,617.2	7,402.5	84.3	49.1	2.391	CC
Emmy State H25-757 - Wellbore #1 - Design #1	2,400.0	2,400.0	154.6	144.1	14.732	CC, ES
Emmy State H25-757 - Wellbore #1 - Design #1	7,200.0	7,719.1	317.0	282.2	9.115	SF
Emmy State H25-764 - Wellbore #1 - Design #1	2,600.0	2,604.0	159.4	153.7	27.975	CC, ES
Emmy State H25-764 - Wellbore #1 - Design #1	2,700.0	2,701.0	161.6	155.7	27.321	SF
Emmy State H25-771 - Wellbore #1 - Design #1	2,400.0	2,400.0	167.1	156.6	15.915	CC, ES
Emmy State H25-771 - Wellbore #1 - Design #1	2,600.0	2,590.2	172.8	161.5	15.311	SF
Emmy State H25-777 - Wellbore #1 - Design #1	2,200.0	2,201.0	174.1	164.5	18.133	CC, ES
Emmy State H25-777 - Wellbore #1 - Design #1	2,400.0	2,389.2	180.7	170.3	17.399	SF
Emmy State H25-785 - Wellbore #1 - Prelim - Rev 2	2,000.0	2,001.0	191.1	182.4	21.968	CC, ES
Emmy State H25-785 - Wellbore #1 - Prelim - Rev 2	2,300.0	2,282.1	205.3	195.4	20.766	SF
Emmy State H36-760 - Wellbore #1 - Design #1	2,600.0	2,571.0	22.4	11.0	1.967	CC, ES
Emmy State H36-760 - Wellbore #1 - Design #1	2,700.0	2,671.5	23.2	11.4	1.963	SF
Emmy State H36-766 - Wellbore #1 - Design #1	2,695.3	2,697.7	40.2	28.4	3.408	CC
Emmy State H36-766 - Wellbore #1 - Design #1	2,700.0	2,702.4	40.2	28.4	3.403	ES, SF
Emmy State H36-773 - Wellbore #1 - Design #1	2,600.0	2,601.0	67.1	55.7	5.883	CC, ES
Emmy State H36-773 - Wellbore #1 - Design #1	2,700.0	2,700.9	68.7	56.8	5.799	SF
Emmy State H36-780 - Wellbore #1 - Design #1	2,200.0	2,202.0	89.4	79.8	9.311	CC, ES
Emmy State H36-780 - Wellbore #1 - Design #1	2,400.0	2,397.9	93.8	83.3	8.956	SF
Emmy State H36-787 - Wellbore #1 - Prelim - Rev 2	2,000.0	2,003.0	114.5	105.8	13.159	CC, ES
Emmy State H36-787 - Wellbore #1 - Prelim - Rev 2	2,200.0	2,196.8	119.9	110.3	12.528	SF
Hurley H26-712 - Wellbore #1 - Design #1	6,103.8	6,519.7	2,881.3	2,850.2	92.687	CC, ES
Hurley H26-712 - Wellbore #1 - Design #1	6,550.0	6,650.0	2,913.1	2,880.2	88.764	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 Emmy State H36-753
Project:	Conceptual Wells	TVD Reference:	WELL @ 4846.0ft (Original Well Elev)
Reference Site:	DP 408	MD Reference:	WELL @ 4846.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Emmy State H36-753	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:	Design #1	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						
DP 408						
Hurley H26-717 - Wellbore #1 - Design #1	5,928.8	6,389.3	3,120.5	3,090.8	105.289	CC, ES
Hurley H26-717 - Wellbore #1 - Design #1	6,600.0	6,572.3	3,185.9	3,153.7	98.988	SF
Hurley H26-724 - Wellbore #1 - Design #1	3,714.8	4,088.0	3,381.2	3,364.3	200.592	CC
Hurley H26-724 - Wellbore #1 - Design #1	3,800.0	4,165.8	3,381.4	3,364.1	195.784	ES
Hurley H26-724 - Wellbore #1 - Design #1	6,550.0	6,450.0	3,590.2	3,558.8	114.071	SF
Hurley H26-730 - Wellbore #1 - Design #1	2,663.2	2,717.3	3,506.8	3,495.1	300.298	CC
Hurley H26-730 - Wellbore #1 - Design #1	2,700.0	2,755.5	3,506.8	3,495.0	296.447	ES
Hurley H26-730 - Wellbore #1 - Design #1	6,600.0	6,436.1	4,067.0	4,035.6	129.507	SF
Hurley H26-736 - Wellbore #1 - Design #1	2,505.4	2,544.4	3,521.9	3,510.8	318.497	CC
Hurley H26-736 - Wellbore #1 - Design #1	2,600.0	2,635.6	3,521.9	3,510.5	307.124	ES
Hurley H26-736 - Wellbore #1 - Design #1	6,800.0	6,273.8	4,320.1	4,288.1	135.196	SF
Hurley H26-743 - Wellbore #1 - Prelim - Rev 2	2,600.0	2,638.0	3,536.6	3,525.1	308.036	CC
Hurley H26-743 - Wellbore #1 - Prelim - Rev 2	2,700.0	2,738.0	3,536.9	3,525.0	296.636	ES
Hurley H26-743 - Wellbore #1 - Prelim - Rev 2	6,750.0	5,743.6	4,530.3	4,499.5	147.144	SF
Hurley H26-750 - Wellbore #1 - Prelim - Rev 2	5,483.3	6,750.0	5,181.8	5,151.9	173.106	CC
Hurley H26-750 - Wellbore #1 - Prelim - Rev 2	5,500.0	6,750.0	5,181.8	5,151.9	172.776	ES
Hurley H26-750 - Wellbore #1 - Prelim - Rev 2	6,650.0	7,050.0	5,292.0	5,257.9	155.273	SF
Hurley H26-756 - Wellbore #1 - Prelim - Rev 2	5,294.3	6,572.0	5,465.8	5,437.7	194.531	CC
Hurley H26-756 - Wellbore #1 - Prelim - Rev 2	5,300.0	6,573.4	5,465.8	5,437.7	194.373	ES
Hurley H26-756 - Wellbore #1 - Prelim - Rev 2	6,650.0	6,900.0	5,605.2	5,572.2	170.023	SF
Hurley H26-762 - Wellbore #1 - Prelim - Rev 2	3,445.4	4,488.0	5,700.0	5,682.9	334.722	CC, ES
Hurley H26-762 - Wellbore #1 - Prelim - Rev 2	6,750.0	6,750.0	6,007.6	5,975.5	186.702	SF
Hurley H26-768 - Wellbore #1 - Prelim - Rev 2	3,055.5	3,614.8	5,797.2	5,783.0	407.916	CC, ES
Hurley H26-768 - Wellbore #1 - Prelim - Rev 2	12,100.0	6,500.0	9,046.2	9,000.5	198.022	SF
Hurley H26-776 - Wellbore #1 - Prelim - Rev 2	2,200.0	2,205.0	5,865.2	5,855.6	610.406	CC
Hurley H26-776 - Wellbore #1 - Prelim - Rev 2	2,600.0	2,591.9	5,865.7	5,854.5	523.544	ES
Hurley H26-776 - Wellbore #1 - Prelim - Rev 2	12,600.0	6,450.0	9,713.5	9,664.5	198.465	SF
Hurley H26-783 - Wellbore #1 - Prelim - Rev 2	2,000.0	2,005.0	5,885.4	5,876.7	675.728	CC, ES
Hurley H26-783 - Wellbore #1 - Prelim - Rev 2	12,699.7	6,425.6	9,977.0	9,926.3	196.750	SF
Hurley H35-720 - Wellbore #1 - Design #1	6,302.7	9,731.6	3,038.2	2,995.4	71.094	CC
Hurley H35-720 - Wellbore #1 - Design #1	12,699.7	15,451.9	3,083.7	2,950.5	23.149	ES, SF
Hurley H35-727 - Wellbore #1 - Design #1	6,158.3	9,515.4	3,416.9	3,375.2	82.032	CC, ES
Hurley H35-727 - Wellbore #1 - Design #1	12,699.7	15,224.9	3,523.3	3,390.1	26.437	SF
Hurley H35-733 - Wellbore #1 - Design #1	2,506.2	2,544.2	3,622.0	3,611.0	327.502	CC
Hurley H35-733 - Wellbore #1 - Design #1	2,600.0	2,600.0	3,622.2	3,610.8	317.870	ES
Hurley H35-733 - Wellbore #1 - Design #1	12,699.7	15,236.5	3,960.9	3,827.7	29.734	SF
Hurley H35-740 - Wellbore #1 - Design #1	2,600.0	2,639.0	3,636.2	3,624.7	316.647	CC
Hurley H35-740 - Wellbore #1 - Design #1	2,700.0	2,739.0	3,636.5	3,624.5	304.925	ES
Hurley H35-740 - Wellbore #1 - Design #1	12,699.7	15,337.8	4,407.8	4,274.1	32.967	SF
Hurley H35-746 - Wellbore #1 - Prelim - Rev 2	1,906.2	1,944.2	3,650.4	3,642.0	436.523	CC
Hurley H35-746 - Wellbore #1 - Prelim - Rev 2	2,000.0	2,000.0	3,650.6	3,641.9	419.689	ES
Hurley H35-746 - Wellbore #1 - Prelim - Rev 2	12,699.7	15,260.7	4,843.4	4,710.0	36.291	SF
Hurley H35-755 - Wellbore #1 - Prelim - Rev 2	5,606.8	9,626.9	5,129.8	5,086.8	119.338	CC
Hurley H35-755 - Wellbore #1 - Prelim - Rev 2	12,699.7	15,251.3	5,163.1	5,029.3	38.574	ES, SF
Hurley H35-761 - Wellbore #1 - Prelim - Rev 2	5,514.6	9,442.0	5,537.2	5,496.0	134.316	CC
Hurley H35-761 - Wellbore #1 - Prelim - Rev 2	12,699.7	15,050.0	5,602.9	5,469.7	42.076	ES, SF
Hurley H35-768 - Wellbore #1 - Prelim - Rev 2	2,600.0	2,606.0	5,889.6	5,878.1	516.214	CC, ES
Hurley H35-768 - Wellbore #1 - Prelim - Rev 2	12,699.7	15,089.8	6,041.2	5,908.7	45.602	SF
Hurley H35-774 - Wellbore #1 - Prelim - Rev 2	2,400.0	2,406.0	5,909.4	5,898.9	562.263	CC, ES
Hurley H35-774 - Wellbore #1 - Prelim - Rev 2	12,699.7	15,114.6	6,481.3	6,349.3	49.070	SF
Hurley H35-779 - Wellbore #1 - Prelim - Rev 2	2,200.0	2,205.0	5,931.0	5,921.4	617.246	CC, ES
Hurley H35-779 - Wellbore #1 - Prelim - Rev 2	12,699.7	15,007.4	6,913.8	6,781.9	52.416	SF
Hurley H35-787 - Wellbore #1 - Prelim - Rev 2	2,000.0	2,005.0	5,950.9	5,942.1	683.246	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 Emmy State H36-753
Project:	Conceptual Wells	TVD Reference:	WELL @ 4846.0ft (Original Well Elev)
Reference Site:	DP 408	MD Reference:	WELL @ 4846.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Emmy State H36-753	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:	Design #1	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						
Hurley H35-787 - Wellbore #1 - Prelim - Rev 2	12,699.7	15,221.7	7,361.4	7,228.3	55.289	SF
Hurley State H35-713 - Wellbore #1 - Design #1	6,415.3	9,428.9	2,582.6	2,538.8	58.943	CC
Hurley State H35-713 - Wellbore #1 - Design #1	12,699.7	15,182.5	2,643.8	2,510.3	19.814	ES, SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region Drilling - Sandbox	Local Co-ordinate Reference:	Well Emmy State H36-753
Project:	Conceptual Wells	TVD Reference:	WELL @ 4846.0ft (Original Well Elev)
Reference Site:	DP 408	MD Reference:	WELL @ 4846.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Emmy State H36-753	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:	Design #1	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	5,293.9	4,969.5	8,656.8	8,626.0	281.682	CC
Eachus 32-23 - Original Drilling - Original Drilling - As Dri	6,453.3	6,317.0	8,661.2	8,621.6	218.492	ES
Eachus 32-23 - Original Drilling - Original Drilling - As Dri	6,950.0	6,800.0	8,822.0	8,779.6	208.062	SF
Eachus 41-23 (PA) - Original Drilling - Original Drilling - A	6,488.2	6,295.1	9,299.8	9,156.0	64.691	CC
Eachus 41-23 (PA) - Original Drilling - Original Drilling - A	6,500.0	6,306.2	9,299.9	9,155.9	64.573	ES
Eachus 41-23 (PA) - Original Drilling - Original Drilling - A	7,100.0	6,818.4	9,554.1	9,398.7	61.491	SF
Eachus UPRR 31-23 - Original Drilling - Original Drilling -	6,462.4	6,287.5	9,873.3	9,796.9	129.214	CC
Eachus UPRR 31-23 - Original Drilling - Original Drilling -	6,500.0	6,322.9	9,874.3	9,796.6	126.975	ES
Eachus UPRR 31-23 - Original Drilling - Original Drilling -	6,850.0	6,647.0	9,975.4	9,885.6	111.085	SF
Eachus UPRR 42-23 (PA) - Original Drilling - Original Dri	6,476.9	6,294.5	8,048.7	7,905.0	56.005	CC
Eachus UPRR 42-23 (PA) - Original Drilling - Original Dri	6,500.0	6,316.2	8,049.1	7,904.8	55.808	ES
Eachus UPRR 42-23 (PA) - Original Drilling - Original Dri	7,050.0	6,795.1	8,270.2	8,115.3	53.405	SF
HSR Alberstein 16-23 - Original Drilling - Original Drilling	6,035.1	5,856.9	5,977.0	5,940.6	163.980	CC
HSR Alberstein 16-23 - Original Drilling - Original Drilling	6,100.0	5,900.0	5,977.2	5,940.4	162.261	ES
HSR Alberstein 16-23 - Original Drilling - Original Drilling	6,800.0	6,352.8	6,081.3	6,040.7	149.875	SF
HSR Ashley 15-23A - Original Drilling - Original Drilling -	0.0	0.0	6,632.8			
HSR Ashley 15-23A - Original Drilling - Original Drilling -	2,900.0	2,863.2	6,645.2	6,629.0	410.694	ES
HSR Ashley 15-23A - Original Drilling - Original Drilling -	6,850.0	6,474.0	6,948.8	6,907.9	169.700	SF
HSR Benirschke 10-23 - Original Drilling - Original Drillin	4,125.3	3,958.1	7,362.2	7,339.0	316.358	CC
HSR Benirschke 10-23 - Original Drilling - Original Drillin	4,500.0	4,297.2	7,364.0	7,338.4	287.045	ES
HSR Benirschke 10-23 - Original Drilling - Original Drillin	6,850.0	6,332.1	7,549.5	7,508.9	186.053	SF
HSR Eachus 03-23 - Original Drilling - Original Drilling - A	297.6	266.7	9,661.6	9,660.3	7,490.125	CC
HSR Eachus 03-23 - Original Drilling - Original Drilling - A	600.0	547.1	9,662.0	9,659.1	3,281.300	ES
HSR Eachus 03-23 - Original Drilling - Original Drilling - A	5,100.0	2,544.8	9,982.4	9,961.3	472.894	SF
HSR Eachus 04-23 - Original Drilling - Original Drilling - A	100.0	67.1	9,632.6	9,632.4	10,000.000	CC
HSR Eachus 04-23 - Original Drilling - Original Drilling - A	1,000.0	900.0	9,636.4	9,631.3	1,898.848	ES
HSR Eachus 04-23 - Original Drilling - Original Drilling - A	3,800.0	1,200.0	9,991.4	9,978.6	780.250	SF
HSR Eachus 05-23 - Original Drilling - Original Drilling - A	151.4	120.4	9,601.8	9,601.4	10,000.000	CC
HSR Eachus 05-23 - Original Drilling - Original Drilling - A	1,200.0	1,100.0	9,603.7	9,597.5	1,543.230	ES
HSR Eachus 05-23 - Original Drilling - Original Drilling - A	4,700.0	2,672.7	9,994.1	9,935.8	171.633	SF
HSR Fruman 06-23 - Original Drilling - Original Drilling - A	0.0	0.0	9,488.1			
HSR Fruman 06-23 - Original Drilling - Original Drilling - A	1,900.0	1,840.3	9,489.2	9,478.8	914.413	ES
HSR Fruman 06-23 - Original Drilling - Original Drilling - A	6,600.0	6,600.0	9,940.1	9,892.2	207.242	SF
HSR Grasshopper 09-23 - Original Drilling - Original Drilling	5,886.9	5,600.0	6,816.2	6,781.1	194.336	CC
HSR Grasshopper 09-23 - Original Drilling - Original Drilling	6,487.0	6,696.6	6,820.9	6,779.8	166.311	ES
HSR Grasshopper 09-23 - Original Drilling - Original Drilling	6,900.0	7,095.3	6,931.4	6,888.1	160.022	SF
Ritchey 06-23 - Original Drilling - Original Drilling - As Dri	5,396.5	5,531.1	9,266.4	9,231.8	268.113	CC
Ritchey 06-23 - Original Drilling - Original Drilling - As Dri	5,500.0	5,567.1	9,266.8	9,231.7	264.392	ES
Ritchey 06-23 - Original Drilling - Original Drilling - As Dri	6,900.0	6,812.2	9,428.4	9,384.9	216.388	SF
Ritchey 21-23 - Original Drilling - Original Drilling - As Dri	6,449.4	6,394.7	9,606.0	9,566.1	240.974	CC
Ritchey 21-23 - Original Drilling - Original Drilling - As Dri	6,453.3	6,398.1	9,606.0	9,566.1	240.815	ES
Ritchey 21-23 - Original Drilling - Original Drilling - As Dri	7,050.0	7,018.3	9,828.5	9,785.3	227.610	SF
Ritchey 24-23 - Original Drilling - Original Drilling - As Dri	1,743.5	1,735.6	7,465.4	7,455.7	772.360	CC
Ritchey 24-23 - Original Drilling - Original Drilling - As Dri	1,800.0	1,770.8	7,465.5	7,455.5	752.840	ES
Ritchey 24-23 - Original Drilling - Original Drilling - As Dri	6,950.0	6,805.0	7,999.5	7,954.6	177.936	SF
Ritchey 31-24 - Original Drilling - Original Drilling - As Dri	6,491.0	6,341.0	8,576.1	8,519.4	151.382	CC, ES
Ritchey 31-24 - Original Drilling - Original Drilling - As Dri	6,900.0	6,913.6	8,690.9	8,632.2	147.926	SF
UPRC 23-11J - Original Drilling - Original Drilling - As Dri	1,070.7	1,030.7	8,275.3	8,269.6	1,455.414	CC
UPRC 23-11J - Original Drilling - Original Drilling - As Dri	1,800.0	1,728.2	8,276.8	8,267.0	848.192	ES
UPRC 23-11J - Original Drilling - Original Drilling - As Dri	6,900.0	6,604.4	8,677.3	8,636.0	209.805	SF
UPRC 23-12J - Original Drilling - Original Drilling - As Dri	1,032.0	992.0	9,063.4	9,058.0	1,658.241	CC
UPRC 23-12J - Original Drilling - Original Drilling - As Dri	1,600.0	1,527.9	9,064.4	9,055.8	1,052.691	ES
UPRC 23-12J - Original Drilling - Original Drilling - As Dri	6,750.0	6,750.0	9,539.8	9,498.3	229.870	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 Emmy State H36-753
Project:	Conceptual Wells	TVD Reference:	WELL @ 4846.0ft (Original Well Elev)
Reference Site:	DP 408	MD Reference:	WELL @ 4846.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Emmy State H36-753	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:	Design #1	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						
UPRC H23-13 - Wellbore #1 - Wellbore #1 - As Drilled	240.2	209.7	8,197.4	8,196.4	8,608.682	CC
UPRC H23-13 - Wellbore #1 - Wellbore #1 - As Drilled	400.0	326.7	8,197.8	8,196.0	4,767.551	ES
UPRC H23-13 - Wellbore #1 - Wellbore #1 - As Drilled	6,900.0	6,522.3	8,883.9	8,843.1	217.908	SF
UPRC H23-14J - Original Drilling - Original Drilling - As D	1,117.1	1,079.1	7,003.5	6,997.5	1,174.766	CC
UPRC H23-14J - Original Drilling - Original Drilling - As D	1,700.0	1,626.5	7,005.1	6,996.0	762.587	ES
UPRC H23-14J - Original Drilling - Original Drilling - As D	6,800.0	6,800.0	7,417.2	7,375.4	177.292	SF
UPRC H23-24 - Original Drilling - Original Drilling - As Dr	1,572.7	1,540.7	7,507.6	7,499.0	873.345	CC
UPRC H23-24 - Original Drilling - Original Drilling - As Dr	1,700.0	1,635.8	7,507.9	7,498.7	814.872	ES
UPRC H23-24 - Original Drilling - Original Drilling - As Dr	7,000.0	6,438.4	8,007.9	7,967.1	195.930	SF
UPRR 53 Pan Am B#1 (PA) - Original Drilling - Original D	2,600.0	2,560.0	8,083.1	8,026.2	142.063	CC
UPRR 53 Pan Am B#1 (PA) - Original Drilling - Original D	2,900.0	2,859.5	8,086.8	8,023.3	127.293	ES
UPRR 53 Pan Am B#1 (PA) - Original Drilling - Original D	7,150.0	6,816.0	8,723.1	8,568.6	56.461	SF
UPRR 53 Pan Am UT V#1 - Original Drilling - Original Dr	6,477.1	6,400.0	8,720.3	8,680.3	217.975	CC, ES
UPRR 53 Pan Am UT V#1 - Original Drilling - Original Dr	6,950.0	6,600.0	8,878.5	8,836.8	212.618	SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region Drilling - Sandbox	Local Co-ordinate Reference:	Well Emmy State H36-753
Project:	Conceptual Wells	TVD Reference:	WELL @ 4846.0ft (Original Well Elev)
Reference Site:	DP 408	MD Reference:	WELL @ 4846.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Emmy State H36-753	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:	Design #1	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	6,628.1	6,370.5	6,678.9	6,639.4	169.284	CC, ES
Gurtler 24-09J - Original Drilling - Original Drilling - As Dr	7,100.0	6,750.6	6,839.7	6,797.9	163.303	SF
Gurtler 24-10J - Original Drilling - Original Drilling - As Dr	6,587.3	6,326.2	6,400.8	6,361.2	161.706	CC, ES
Gurtler 24-10J - Original Drilling - Original Drilling - As Dr	7,000.0	6,757.4	6,526.8	6,484.7	155.211	SF
Gurtler 24-11J - Original Drilling - Original Drilling - As Dr	6,549.4	6,549.4	6,257.4	6,216.8	154.230	CC
Gurtler 24-11J - Original Drilling - Original Drilling - As Dr	6,550.0	6,550.0	6,257.4	6,216.8	154.214	ES
Gurtler 24-11J - Original Drilling - Original Drilling - As Dr	7,150.0	7,150.0	6,526.2	6,482.3	148.792	SF
Gurtler 24-12J - Original Drilling - Original Drilling - As Dr	6,520.2	6,500.0	6,465.0	6,424.6	159.893	CC, ES
Gurtler 24-12J - Original Drilling - Original Drilling - As Dr	6,750.0	6,500.0	6,507.8	6,466.7	158.436	SF
Gurtler 24-12J - Original Drilling - ST01 - ST01 Original D	6,597.1	7,340.0	6,299.4	6,257.0	148.580	CC
Gurtler 24-12J - Original Drilling - ST01 - ST01 Original D	6,600.0	7,340.0	6,299.4	6,257.0	148.545	ES
Gurtler 24-12J - Original Drilling - ST01 - ST01 Original D	6,800.0	7,340.0	6,332.7	6,289.7	147.257	SF
Gurtler 24-13J - Original Drilling - Original Drilling - As Dr	6,605.1	7,380.0	4,927.0	4,883.7	113.813	CC, ES
Gurtler 24-13J - Original Drilling - Original Drilling - As Dr	6,800.0	7,380.0	4,957.7	4,913.7	112.844	SF
Gurtler 24-15J - Original Drilling - Original Drilling - As Dr	6,597.8	6,373.9	5,062.6	5,022.9	127.622	CC
Gurtler 24-15J - Original Drilling - Original Drilling - As Dr	6,600.0	6,376.2	5,062.6	5,022.9	127.576	ES
Gurtler 24-15J - Original Drilling - Original Drilling - As Dr	6,950.0	6,751.1	5,153.8	5,111.9	123.203	SF
Gurtler 24-16J - Original Drilling - Original Drilling - As Dr	6,628.3	6,309.0	5,349.4	5,310.3	136.568	CC, ES
Gurtler 24-16J - Original Drilling - Original Drilling - As Dr	7,800.0	7,800.0	6,126.3	6,079.8	131.616	SF
Gurtler H24-14 - Original Drilling - Original Drilling - As D	6,547.7	6,332.3	4,845.5	4,805.7	121.794	CC
Gurtler H24-14 - Original Drilling - Original Drilling - As D	6,550.0	6,334.7	4,845.5	4,805.7	121.747	ES
Gurtler H24-14 - Original Drilling - Original Drilling - As D	6,900.0	6,643.4	4,939.9	4,898.2	118.357	SF
Gurtler H24-21 (PA) - Original Drilling - Original Drilling -	6,549.4	6,127.9	6,765.7	6,726.7	173.559	CC
Gurtler H24-21 (PA) - Original Drilling - Original Drilling -	6,550.0	6,128.3	6,765.7	6,726.7	173.545	ES
Gurtler H24-21 (PA) - Original Drilling - Original Drilling -	7,000.0	6,435.9	6,920.8	6,879.7	168.319	SF
Gurtler H24-23 - Original Drilling - Original Drilling - As D	6,615.7	6,386.0	5,866.2	5,826.6	148.192	CC, ES
Gurtler H24-23 - Original Drilling - Original Drilling - As D	7,050.0	6,798.2	6,003.8	5,961.8	142.820	SF
Gurtler H24-24 - Original Drilling - Original Drilling - As D	6,580.2	6,427.1	5,663.3	5,623.1	141.035	CC, ES
Gurtler H24-24 - Original Drilling - Original Drilling - As D	7,100.0	6,959.9	5,860.0	5,816.8	135.737	SF
Gurtler H24-99HZ - Wellbore #1 - Original Drilling	6,586.4	9,972.2	5,805.3	5,696.9	53.525	CC, ES, SF
Gurtler H25-27 - Original Drilling - Original Drilling - As D	6,633.0	6,428.6	4,682.8	4,642.3	115.562	CC, ES
Gurtler H25-27 - Original Drilling - Original Drilling - As D	7,000.0	6,746.0	4,782.4	4,739.8	112.365	SF
Gurtler Russell L1 (PA) - Original Drilling - Original Drilling	6,532.8	6,401.3	5,426.6	5,386.5	135.398	CC, ES
Gurtler Russell L1 (PA) - Original Drilling - Original Drilling	7,350.0	6,901.2	5,880.3	5,830.5	118.036	SF
HSR Brutschy 04-24 - Original Drilling - Original Drilling -	6,507.6	6,124.8	8,868.8	8,829.7	226.956	CC, ES
HSR Brutschy 04-24 - Original Drilling - Original Drilling -	7,450.0	7,450.0	9,438.7	9,393.8	210.265	SF
HSR Epstein 05-24 - Original Drilling - Original Drilling - A	6,515.3	6,116.6	8,004.4	7,965.3	205.117	CC, ES
HSR Epstein 05-24 - Original Drilling - Original Drilling - A	7,000.0	6,800.0	8,172.1	8,129.6	192.405	SF
HSR Hoffman 03-24 - Original Drilling - Original Drilling -	6,562.5	6,509.0	8,834.7	8,791.4	203.825	CC, ES
HSR Hoffman 03-24 - Original Drilling - Original Drilling -	7,300.0	7,071.8	9,212.8	9,162.5	183.085	SF
HSR Sarchet 02-24 - Original Drilling - Original Drilling - A	6,589.7	6,466.3	8,892.9	8,852.8	221.768	CC, ES
HSR Sarchet 02-24 - Original Drilling - Original Drilling - A	7,150.0	6,757.3	9,127.1	9,084.7	215.620	SF
HSR Sarchet 06-24 - Original Drilling - Original Drilling - A	6,529.6	6,019.5	7,439.0	7,400.4	192.572	CC, ES
HSR Sarchet 06-24 - Original Drilling - Original Drilling - A	7,250.0	6,836.5	7,803.6	7,760.8	182.261	SF
HSR Traurig 01-24 - Original Drilling - Original Drilling - A	6,606.0	6,438.8	9,287.5	9,247.6	233.039	CC, ES
HSR Traurig 01-24 - Original Drilling - Original Drilling - A	7,100.0	7,100.0	9,468.2	9,424.9	218.735	SF
Nopens D19-31 - Original Drilling - Original Drilling - As D	6,595.9	5,974.3	8,636.8	8,598.8	226.926	CC
Nopens D19-31 - Original Drilling - Original Drilling - As D	6,600.0	5,977.8	8,636.8	8,598.8	226.785	ES
Nopens D19-31 - Original Drilling - Original Drilling - As D	7,250.0	6,679.5	8,927.6	8,885.7	212.816	SF
Nopens H24-08 - Original Drilling - Original Drilling - As D	6,592.2	6,052.0	7,924.0	7,885.6	206.297	CC, ES
Nopens H24-08 - Original Drilling - Original Drilling - As D	7,150.0	6,553.3	8,144.5	8,103.1	196.588	SF
Sarchet H24-22 - Original Drilling - Original Drilling - As D	6,576.2	6,100.0	7,391.6	7,352.9	190.915	CC, ES
Sarchet H24-22 - Original Drilling - Original Drilling - As D	7,000.0	6,415.7	7,527.9	7,487.1	184.279	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 Emmy State H36-753
Project:	Conceptual Wells	TVD Reference:	WELL @ 4846.0ft (Original Well Elev)
Reference Site:	DP 408	MD Reference:	WELL @ 4846.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Emmy State H36-753	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:	Design #1	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	6,583.8	6,300.0	8,128.2	8,088.7	205.863	CC, ES
Weld County Lumber 01 - Original Drilling - Original Drilli	7,200.0	6,786.8	8,402.4	8,359.9	197.811	SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region Drilling - Sandbox	Local Co-ordinate Reference:	Well Emmy State H36-753
Project:	Conceptual Wells	TVD Reference:	WELL @ 4846.0ft (Original Well Elev)
Reference Site:	DP 408	MD Reference:	WELL @ 4846.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Emmy State H36-753	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:	Design #1	Offset TVD Reference:	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 25						
Dechant 21-25 - Original Drilling - Original Drilling - As D	6,589.4	6,534.3	2,921.7	2,872.8	59.790	CC, ES
Dechant 21-25 - Original Drilling - Original Drilling - As D	6,800.0	6,731.0	2,956.4	2,906.2	58.903	SF
Dechant D30-33D - Original Drilling - Original Drilling - As	7,125.4	6,827.9	2,664.1	2,622.6	64.331	CC, ES
Dechant D30-33D - Original Drilling - Original Drilling - As	7,400.0	7,020.2	2,695.2	2,652.8	63.575	SF
Dechant D31-30D - Original Drilling - Original Drilling - As	7,561.5	7,056.5	2,463.8	2,417.8	53.552	CC, ES
Dechant D31-30D - Original Drilling - Original Drilling - As	8,600.0	7,075.7	2,681.6	2,628.8	50.871	SF
Dechant H25-64-1HN - Original Drilling - Original Drilling	6,836.8	9,072.9	790.2	723.7	11.885	CC
Dechant H25-64-1HN - Original Drilling - Original Drilling	6,850.0	9,076.9	790.4	723.4	11.795	ES
Dechant H25-64-1HN - Original Drilling - Original Drilling	6,950.0	9,106.3	807.2	736.7	11.450	SF
Dechant H25-64-1HN - Original Drilling - Plan A - Rev 3	6,835.7	9,081.3	772.5	755.7	45.976	CC, ES
Dechant H25-64-1HN - Original Drilling - Plan A - Rev 3	6,950.0	9,110.8	790.1	772.3	44.456	SF
Dechant H25-65HN - Original Drilling - Original Drilling	6,727.2	9,032.4	1,625.2	1,556.9	23.766	CC, ES
Dechant H25-65HN - Original Drilling - Original Drilling	6,900.0	9,066.3	1,656.3	1,585.2	23.288	SF
Dechant H25-65HN - Original Drilling - Plan A - Rev 3	6,725.7	9,046.7	1,634.7	1,617.2	93.508	CC, ES
Dechant H25-65HN - Original Drilling - Plan A - Rev 3	6,900.0	9,095.4	1,666.1	1,647.8	91.385	SF
HSR Cohn 03-25 - Original Drilling - Original Drilling - As	6,525.7	6,312.2	3,652.7	3,612.9	91.886	CC, ES
HSR Cohn 03-25 - Original Drilling - Original Drilling - As	6,850.0	6,620.6	3,733.3	3,691.7	89.646	SF
HSR Crowe 06-25 - Original Drilling - Original Drilling - A	6,511.8	6,289.8	2,316.4	2,276.7	58.362	CC, ES
HSR Crowe 06-25 - Original Drilling - Original Drilling - A	6,700.0	6,466.4	2,343.2	2,302.3	57.376	SF
HSR Dechant 04-25 - Original Drilling - Original Drilling -	1,545.6	1,540.7	2,708.2	2,699.7	316.753	CC, ES
HSR Dechant 04-25 - Original Drilling - Original Drilling -	6,800.0	7,035.6	4,093.2	4,048.8	92.207	SF
HSR Dechant 05-25 - Original Drilling - Original Drilling -	6,251.9	6,113.1	2,605.0	2,566.8	68.353	CC
HSR Dechant 05-25 - Original Drilling - Original Drilling -	6,300.0	6,146.1	2,605.1	2,566.7	67.841	ES
HSR Dechant 05-25 - Original Drilling - Original Drilling -	6,650.0	6,442.7	2,640.9	2,600.3	65.125	SF
KY Blue D30-32 - Original Drilling - Original Drilling - As D	6,843.4	6,544.4	3,072.0	3,032.7	78.185	CC
KY Blue D30-32 - Original Drilling - Original Drilling - As D	6,850.0	6,550.5	3,072.0	3,032.7	78.118	ES
KY Blue D30-32 - Original Drilling - Original Drilling - As D	7,150.0	6,779.9	3,121.4	3,080.7	76.626	SF
KY Blue H25-04J - Original Drilling - Original Drilling - As	7,181.6	6,827.8	1,744.3	1,715.5	60.754	CC, ES
KY Blue H25-04J - Original Drilling - Original Drilling - As	7,350.0	6,902.0	1,759.0	1,730.0	60.481	SF
KY Blue H25-09 - Original Drilling - Original Drilling - As D	6,883.8	6,607.3	2,363.4	2,323.9	59.815	CC, ES
KY Blue H25-09 - Original Drilling - Original Drilling - As D	7,150.0	6,792.8	2,401.6	2,360.9	59.004	SF
KY Blue H25-10 - Original Drilling - Original Drilling - As D	6,664.9	6,408.1	1,408.8	1,369.4	35.799	CC, ES
KY Blue H25-10 - Original Drilling - Original Drilling - As D	6,800.0	6,543.8	1,421.7	1,381.5	35.350	SF
KY Blue H25-11 - Original Drilling - Original Drilling - As D	6,465.5	6,231.1	1,101.6	1,041.2	18.225	CC, ES
KY Blue H25-11 - Original Drilling - Original Drilling - As D	6,650.0	6,404.4	1,127.5	1,063.8	17.701	SF
KY Blue H25-12 - Original Drilling - Original Drilling - As D	1,322.1	1,318.0	1,789.3	1,781.5	230.092	CC
KY Blue H25-12 - Original Drilling - Original Drilling - As D	1,500.0	1,484.8	1,789.9	1,781.1	203.358	ES
KY Blue H25-12 - Original Drilling - Original Drilling - As D	6,650.0	6,522.2	2,196.7	2,156.5	54.639	SF
KY Blue H25-14 - Original Drilling - Original Drilling - As D	5,002.7	4,869.4	230.2	200.9	7.858	CC, ES
KY Blue H25-14 - Original Drilling - Original Drilling - As D	5,100.0	4,962.5	232.3	202.3	7.746	SF
KY Blue H25-15 - Original Drilling - Original Drilling - As D	7,260.6	6,868.7	532.2	491.5	13.077	CC, ES, SF
KY H25-24 - Original Drilling - Original Drilling - As Drilled	6,693.6	6,462.0	469.1	429.7	11.906	CC
KY H25-24 - Original Drilling - Original Drilling - As Drilled	6,700.0	6,468.0	469.1	429.7	11.893	ES
KY H25-24 - Original Drilling - Original Drilling - As Drilled	6,750.0	6,514.6	471.7	431.9	11.849	SF
Moore UPRC H25-01 - Original Drilling - Original Drilling	6,685.4	6,458.2	4,395.0	4,355.6	111.534	CC, ES
Moore UPRC H25-01 - Original Drilling - Original Drilling	7,050.0	6,727.0	4,488.0	4,446.8	108.792	SF
Moore UPRC H25-02 - Original Drilling - Original Drilling	6,605.5	6,347.0	3,734.5	3,695.0	94.538	CC, ES
Moore UPRC H25-02 - Original Drilling - Original Drilling	6,900.0	6,623.1	3,799.8	3,758.5	92.161	SF
Moser 25-32 - Original Drilling - Original Drilling - As Drill	6,621.1	6,409.7	2,277.8	2,238.1	57.380	CC, ES
Moser 25-32 - Original Drilling - Original Drilling - As Drill	6,800.0	6,564.0	2,303.0	2,262.3	56.522	SF
Moser 25-42 - Original Drilling - Original Drilling - As Drill	6,740.2	6,488.7	3,330.4	3,291.1	84.761	CC, ES
Moser 25-42 - Original Drilling - Original Drilling - As Drill	7,050.0	6,745.9	3,391.4	3,350.4	82.859	SF
UPRR 53 Pan Am T#2 - Original Drilling - Original Drilling	6,488.4	6,223.1	3,002.4	2,963.0	76.217	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 Emmy State H36-753
Project:	Conceptual Wells	TVD Reference:	WELL @ 4846.0ft (Original Well Elev)
Reference Site:	DP 408	MD Reference:	WELL @ 4846.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Emmy State H36-753	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:	Design #1	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)		Separation Factor	Warning
Offset Well - Wellbore - Design						
H Section 25						
UPRR 53 Pan Am T#2 - Original Drilling - Original Drilling	6,750.0	6,453.9	3,054.3	3,013.3	74.651	SF
UPRR 53 Pan Am UT T#1 - Original Drilling - Original Dr	6,673.2	6,423.7	3,203.8	3,058.2	22.013	CC
UPRR 53 Pan Am UT T#1 - Original Drilling - Original Dr	6,700.0	6,448.7	3,204.3	3,058.2	21.930	ES
UPRR 53 Pan Am UT T#1 - Original Drilling - Original Dr	6,950.0	6,665.1	3,258.3	3,107.2	21.566	SF
Von Feldt 1-25B - Original Drilling - Original Drilling - As D	2,159.0	2,138.1	616.4	604.4	51.358	CC
Von Feldt 1-25B - Original Drilling - Original Drilling - As D	2,200.0	2,176.2	616.4	604.2	50.421	ES
Von Feldt 1-25B - Original Drilling - Original Drilling - As D	4,400.0	4,310.4	778.8	753.8	31.109	SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region Drilling - Sandbox	Local Co-ordinate Reference:	Well Emmy State H36-753
Project:	Conceptual Wells	TVD Reference:	WELL @ 4846.0ft (Original Well Elev)
Reference Site:	DP 408	MD Reference:	WELL @ 4846.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Emmy State H36-753	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:	Design #1	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	0.0	0.0	5,508.7			
Bullard 31-26 - Original Drilling - Original Drilling - As Dril	700.0	671.8	5,511.5	5,507.9	1,529.260	ES
Bullard 31-26 - Original Drilling - Original Drilling - As Dril	7,000.0	6,581.0	6,048.5	6,007.4	147.023	SF
Bullard 32-26 - Original Drilling - Original Drilling - As Dril	809.9	815.9	4,237.8	4,233.4	971.921	CC
Bullard 32-26 - Original Drilling - Original Drilling - As Dril	900.0	883.6	4,238.0	4,233.2	883.065	ES
Bullard 32-26 - Original Drilling - Original Drilling - As Dril	6,900.0	6,665.0	4,904.1	4,863.2	119.976	SF
Bullard 41-26 - Original Drilling - Original Drilling - As Dril	0.0	5.6	4,542.7			
Bullard 41-26 - Original Drilling - Original Drilling - As Dril	3,400.0	3,442.6	4,554.6	4,535.3	235.569	ES
Bullard 41-26 - Original Drilling - Original Drilling - As Dril	6,850.0	6,850.0	4,911.2	4,869.3	117.092	SF
Dechant H25-29D - Original Drilling - Original Drilling - As	6,521.5	6,813.6	4,458.8	4,395.1	70.018	CC, ES
Dechant H25-29D - Original Drilling - Original Drilling - As	6,750.0	7,039.8	4,498.2	4,433.4	69.414	SF
Dechant H25-33D - Original Drilling - Original Drilling - As	5,677.8	6,696.2	2,327.3	2,267.7	39.057	CC
Dechant H25-33D - Original Drilling - Original Drilling - As	5,700.0	6,707.4	2,327.3	2,267.5	38.907	ES
Dechant H25-33D - Original Drilling - Original Drilling - As	6,700.0	7,552.2	2,427.3	2,355.9	34.025	SF
Harsh H26-09D - Original Drilling - Original Drilling - As D	321.5	330.5	2,477.2	2,475.6	1,586.148	CC
Harsh H26-09D - Original Drilling - Original Drilling - As D	400.0	388.1	2,477.5	2,475.6	1,276.632	ES
Harsh H26-09D - Original Drilling - Original Drilling - As D	6,750.0	6,647.2	3,141.6	3,101.1	77.692	SF
Harsh H26-10 - Original Drilling - Original Drilling - As Dr	511.3	522.3	3,575.2	3,572.5	1,347.873	CC
Harsh H26-10 - Original Drilling - Original Drilling - As Dr	2,609.1	2,626.1	3,584.7	3,570.0	243.594	ES
Harsh H26-10 - Original Drilling - Original Drilling - As Dr	6,900.0	6,681.2	4,455.2	4,414.7	109.975	SF
Harsh H26-15 - Original Drilling - Original Drilling - As Dr	1,134.5	1,149.5	3,262.1	3,255.8	521.576	CC
Harsh H26-15 - Original Drilling - Original Drilling - As Dr	2,627.4	2,668.3	3,268.6	3,253.7	219.249	ES
Harsh H26-15 - Original Drilling - Original Drilling - As Dr	9,300.0	7,157.2	4,861.5	4,813.3	100.730	SF
Harsh H26-16 - Original Drilling - Original Drilling - As Dr	0.0	3.6	2,182.8			
Harsh H26-16 - Original Drilling - Original Drilling - As Dr	1,200.0	1,188.0	2,185.2	2,178.7	334.756	ES
Harsh H26-16 - Original Drilling - Original Drilling - As Dr	7,500.0	7,035.9	3,357.6	3,316.2	81.030	SF
Harsh H26-23D - Original Drilling - Original Drilling - As D	3,978.9	4,784.0	3,100.9	3,074.2	116.275	CC
Harsh H26-23D - Original Drilling - Original Drilling - As D	4,000.0	4,792.6	3,100.9	3,074.1	115.781	ES
Harsh H26-23D - Original Drilling - Original Drilling - As D	6,650.0	6,598.4	3,578.4	3,536.6	85.567	SF
HSR Moser 04-26 - Original Drilling - Original Drilling - As	1,893.7	1,862.7	7,473.0	7,462.6	715.819	CC
HSR Moser 04-26 - Original Drilling - Original Drilling - As	2,000.0	1,932.1	7,473.3	7,462.4	684.303	ES
HSR Moser 04-26 - Original Drilling - Original Drilling - As	6,950.0	6,432.8	8,224.1	8,183.9	204.478	SF
HSR Moser 06-26 - Original Drilling - Original Drilling - As	0.0	0.0	5,223.4			
HSR Moser 06-26 - Original Drilling - Original Drilling - As	2,500.0	2,463.4	5,229.4	5,215.5	376.177	ES
HSR Moser 06-26 - Original Drilling - Original Drilling - As	6,750.0	6,600.0	5,898.9	5,858.6	146.276	SF
HSR Regalia 05-26 - Original Drilling - Original Drilling - A	2,313.9	2,286.1	6,474.4	6,461.5	502.801	CC
HSR Regalia 05-26 - Original Drilling - Original Drilling - A	2,500.0	2,439.7	6,474.9	6,461.0	468.211	ES
HSR Regalia 05-26 - Original Drilling - Original Drilling - A	7,000.0	6,903.5	7,229.9	7,188.2	173.579	SF
HSR-Moser 03-26A - Original Drilling - Original Drilling - A	571.7	543.7	6,195.7	6,192.9	2,164.217	CC
HSR-Moser 03-26A - Original Drilling - Original Drilling - A	2,300.0	2,245.2	6,197.8	6,185.1	488.449	ES
HSR-Moser 03-26A - Original Drilling - Original Drilling - A	6,850.0	6,500.0	6,692.6	6,652.1	165.058	SF
John 03-26 - Original Drilling - Original Drilling - As Drille	2,166.1	2,143.4	6,104.3	6,092.2	506.650	CC
John 03-26 - Original Drilling - Original Drilling - As Drille	2,500.0	2,444.6	6,105.2	6,091.4	440.888	ES
John 03-26 - Original Drilling - Original Drilling - As Drille	6,800.0	6,485.2	6,646.5	6,606.1	164.663	SF
Lamp H25-31 - Original Drilling - Original Drilling - As Dri	5,139.8	5,110.8	3,798.2	3,767.6	124.161	CC
Lamp H25-31 - Original Drilling - Original Drilling - As Dri	5,200.0	5,149.0	3,798.4	3,767.5	122.789	ES
Lamp H25-31 - Original Drilling - Original Drilling - As Dri	6,750.0	6,547.7	3,901.8	3,860.8	95.112	SF
Lamp H26-01 - Original Drilling - Original Drilling - As Dri	1,430.9	1,444.0	3,846.4	3,838.5	483.878	CC, ES
Lamp H26-01 - Original Drilling - Original Drilling - As Dri	6,850.0	6,799.2	4,806.1	4,763.6	113.086	SF
Lamp H26-08 - Original Drilling - Original Drilling - As Dri	1,713.2	1,720.3	3,565.9	3,556.4	373.304	CC
Lamp H26-08 - Original Drilling - Original Drilling - As Dri	1,800.0	1,787.1	3,566.2	3,556.2	357.318	ES
Lamp H26-08 - Original Drilling - Original Drilling - As Dri	6,750.0	6,808.6	3,869.3	3,827.7	92.956	SF
Lamp H26-22 - Original Drilling - Original Drilling - As Dri	3,268.3	3,483.7	3,503.2	3,480.0	150.982	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 Emmy State H36-753
Project:	Conceptual Wells	TVD Reference:	WELL @ 4846.0ft (Original Well Elev)
Reference Site:	DP 408	MD Reference:	WELL @ 4846.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Emmy State H36-753	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:	Design #1	Offset TVD Reference:	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 26						
Lamp H26-22 - Original Drilling - Original Drilling - As Dri	3,300.0	3,500.0	3,503.3	3,479.9	149.726	ES
Lamp H26-22 - Original Drilling - Original Drilling - As Dri	6,650.0	6,554.7	4,012.5	3,963.9	82.553	SF
Moser 05-26 - Original Drilling - Original Drilling - As Drill	2,714.8	2,846.0	6,675.9	6,660.2	425.040	CC, ES
Moser 05-26 - Original Drilling - Original Drilling - As Drill	11,800.0	6,985.3	9,987.1	9,932.1	181.508	SF
Moser 41-27 - Original Drilling - Original Drilling - As Drill	884.9	858.9	6,687.1	6,682.4	1,429.612	CC
Moser 41-27 - Original Drilling - Original Drilling - As Drill	900.0	867.8	6,687.1	6,682.3	1,409.945	ES
Moser 41-27 - Original Drilling - Original Drilling - As Drill	6,900.0	6,770.0	8,351.8	8,308.9	194.417	SF
Moser H26-11 - Original Drilling - Original Drilling - As Dr	397.4	381.5	5,105.3	5,103.4	2,674.780	CC
Moser H26-11 - Original Drilling - Original Drilling - As Dr	1,000.0	955.6	5,107.1	5,101.8	970.010	ES
Moser H26-11 - Original Drilling - Original Drilling - As Dr	7,100.0	6,782.9	6,109.7	6,068.9	150.084	SF
Moser H26-12 - Wellbore #1 - Wellbore #1 - As Drilled	0.0	0.0	6,141.3			
Moser H26-12 - Wellbore #1 - Wellbore #1 - As Drilled	2,400.0	2,344.6	6,147.9	6,134.7	463.411	ES
Moser H26-12 - Wellbore #1 - Wellbore #1 - As Drilled	12,300.0	7,195.8	9,451.4	9,391.2	156.866	SF
Moser H26-13 - Wellbore #1 - Wellbore #1 - As Drilled	0.0	0.0	5,918.6			
Moser H26-13 - Wellbore #1 - Wellbore #1 - As Drilled	1,200.0	1,152.6	5,923.6	5,917.2	923.859	ES
Moser H26-13 - Wellbore #1 - Wellbore #1 - As Drilled	12,699.7	7,234.2	8,886.5	8,820.8	135.373	SF
Moser H26-14 - Original Drilling - Original Drilling - As Dr	571.8	565.9	4,414.9	4,412.0	1,499.293	CC
Moser H26-14 - Original Drilling - Original Drilling - As Dr	2,400.0	2,377.0	4,420.1	4,406.7	330.482	ES
Moser H26-14 - Original Drilling - Original Drilling - As Dr	11,100.0	6,845.5	6,629.7	6,575.1	121.411	SF
Moser H26-18D - Original Drilling - Original Drilling - As D	0.0	0.0	4,466.5			
Moser H26-18D - Original Drilling - Original Drilling - As D	5,800.0	5,800.0	5,475.3	5,422.2	103.021	SF
Moser H26-24 - Original Drilling - Original Drilling - As Dr	239.7	245.7	4,220.7	4,219.6	3,914.233	CC
Moser H26-24 - Original Drilling - Original Drilling - As Dr	2,606.5	2,619.8	4,228.2	4,213.5	287.639	ES
Moser H26-24 - Original Drilling - Original Drilling - As Dr	6,850.0	6,850.0	5,251.3	5,210.7	129.145	SF
Moser H26-25 - Original Drilling - Original Drilling - As Dr	0.0	0.0	4,979.7			
Moser H26-25 - Original Drilling - Original Drilling - As Dr	1,800.0	1,765.7	4,984.5	4,974.6	503.502	ES
Moser H26-25 - Original Drilling - Original Drilling - As Dr	11,200.0	7,046.3	7,556.4	7,501.6	137.973	SF
Moser H26-27D - Original Drilling - Original Drilling - As D	0.0	15.3	4,489.2			
Moser H26-27D - Original Drilling - Original Drilling - As D	6,850.0	6,808.8	5,635.7	5,592.9	131.443	SF
Moser H26-28D - Original Drilling - Original Drilling - As D	0.0	16.5	4,482.6			
Moser H26-28D - Original Drilling - Original Drilling - As D	7,700.0	7,700.0	7,252.2	7,194.7	126.062	SF
Moser H26-29D - Original Drilling - Original Drilling - As D	0.0	20.5	4,476.1			
Moser H26-29D - Original Drilling - Original Drilling - As D	200.0	196.0	4,476.7	4,475.9	5,688.873	ES
Moser H26-29D - Original Drilling - Original Drilling - As D	6,500.0	3,007.0	6,514.4	6,484.4	217.492	SF
Moser, Wesley E. G. U. B1 (PA) - Original Drilling - Origin	2,600.0	2,586.0	5,594.1	5,536.7	97.427	CC
Moser, Wesley E. G. U. B1 (PA) - Original Drilling - Origin	2,700.0	2,686.0	5,595.5	5,535.9	93.829	ES
Moser, Wesley E. G. U. B1 (PA) - Original Drilling - Origin	7,500.0	6,967.4	6,789.6	6,633.3	43.432	SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region Drilling - Sandbox	Local Co-ordinate Reference:	Well Emmy State H36-753
Project:	Conceptual Wells	TVD Reference:	WELL @ 4846.0ft (Original Well Elev)
Reference Site:	DP 408	MD Reference:	WELL @ 4846.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Emmy State H36-753	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:	Design #1	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
H Section 35						
Cannon Farms 01-35C - Original Drilling - Original Drilling	12,218.7	7,033.6	3,532.6	3,458.9	47.924	CC, ES
Cannon Farms 01-35C - Original Drilling - Original Drilling	12,699.7	7,045.4	3,565.2	3,488.4	46.464	SF
Cannon H35-03D - Original Drilling - Original Drilling - As	11,776.5	6,837.6	5,972.3	5,903.6	86.913	CC
Cannon H35-03D - Original Drilling - Original Drilling - As	11,800.0	6,838.0	5,972.4	5,903.5	86.681	ES
Cannon H35-03D - Original Drilling - Original Drilling - As	12,699.7	6,853.8	6,043.2	5,967.7	80.022	SF
Cannon H35-09 - Original Drilling - Original Drilling - As D	11,277.9	6,918.0	3,182.9	3,115.0	46.855	CC
Cannon H35-11 - Original Drilling - Original Drilling - As D	11,300.0	6,917.5	3,183.0	3,114.9	46.764	ES
Cannon H35-09 - Original Drilling - Original Drilling - As D	11,900.0	6,904.9	3,243.1	3,172.0	45.625	SF
Cannon H35-10 - Original Drilling - Original Drilling - As D	11,426.2	7,051.8	4,420.3	4,353.7	66.361	CC, ES
Cannon H35-10 - Original Drilling - Original Drilling - As D	12,699.7	7,055.8	4,600.1	4,525.8	61.951	SF
Cannon H35-11 - Original Drilling - Original Drilling - As D	11,342.7	6,846.6	5,490.3	5,425.4	84.633	CC
Cannon H35-11 - Original Drilling - Original Drilling - As D	11,400.0	6,847.0	5,490.6	5,425.3	84.078	ES
Cannon H35-11 - Original Drilling - Original Drilling - As D	12,699.7	6,856.3	5,655.4	5,581.4	76.363	SF
Cannon H35-12 - Original Drilling - Original Drilling - As D	11,496.2	7,035.6	6,954.2	6,887.1	103.585	CC
Cannon H35-12 - Original Drilling - Original Drilling - As D	11,600.0	7,036.3	6,955.0	6,887.0	102.353	ES
Cannon H35-12 - Original Drilling - Original Drilling - As D	12,699.7	7,044.3	7,057.5	6,981.4	92.711	SF
Cannon H35-13 - Wellbore #1 - Wellbore #1 - As Drilled	12,688.5	7,047.1	6,976.6	6,898.6	89.400	CC
Cannon H35-13 - Wellbore #1 - Wellbore #1 - As Drilled	12,699.7	7,046.8	6,976.6	6,898.5	89.299	ES, SF
Cannon H35-14 - Original Drilling - Original Drilling - As D	12,677.0	6,994.7	5,582.9	5,498.8	66.429	CC
Cannon H35-14 - Original Drilling - Original Drilling - As D	12,699.7	6,994.6	5,582.9	5,498.7	66.292	ES, SF
Cannon H35-15 (PA) - Original Drilling - Original Drilling -	12,672.8	6,984.0	4,365.9	4,172.9	22.614	CC
Cannon H35-15 (PA) - Original Drilling - Original Drilling -	12,699.7	6,984.0	4,366.0	4,172.7	22.591	ES, SF
Cannon H35-20 - Original Drilling - Original Drilling - As D	2,100.0	2,100.0	6,159.0	6,147.2	521.192	CC
Cannon H35-20 - Original Drilling - Original Drilling - As D	2,200.0	2,164.3	6,159.3	6,147.0	502.304	ES
Cannon H35-20 - Original Drilling - Original Drilling - As D	12,699.7	6,852.2	6,626.9	6,553.5	90.297	SF
Cannon H35-21 - Original Drilling - Original Drilling - As D	10,910.8	7,034.1	4,952.0	4,890.1	79.914	CC, ES
Cannon H35-21 - Original Drilling - Original Drilling - As D	12,699.7	7,039.7	5,265.2	5,192.4	72.376	SF
Cannon H35-22 - Original Drilling - Original Drilling - As D	10,795.7	7,051.1	4,023.4	3,962.1	65.689	CC
Cannon H35-22 - Original Drilling - Original Drilling - As D	10,800.0	7,051.1	4,023.4	3,962.1	65.658	ES
Cannon H35-22 - Original Drilling - Original Drilling - As D	11,900.0	7,036.0	4,172.1	4,104.6	61.793	SF
Cannon H35-24 - Original Drilling - Original Drilling - As D	12,101.0	6,800.0	5,111.4	5,040.0	71.548	CC, ES
Cannon H35-24 - Original Drilling - Original Drilling - As D	12,699.7	6,815.9	5,146.3	5,070.5	67.882	SF
Cannon X02-27 - Original Drilling - Original Drilling - As D	12,699.7	6,988.0	3,954.1	3,875.7	50.421	CC, ES, SF
Cannon X02-28 - Original Drilling - Original Drilling - As D	12,699.7	6,891.6	5,124.8	5,047.1	65.947	CC, ES, SF
Cannon X02-29 - Original Drilling - Original Drilling - As D	12,699.7	7,169.4	6,451.9	6,372.5	81.295	CC, ES, SF
Foster 18-35 - Original Drilling - Original Drilling - As Drill	662.5	652.5	5,564.9	5,561.5	1,613.871	CC
Foster 18-35 - Original Drilling - Original Drilling - As Drill	1,200.0	1,154.0	5,567.3	5,560.9	868.982	ES
Foster 18-35 - Original Drilling - Original Drilling - As Drill	12,699.7	6,900.0	7,422.5	7,353.9	108.229	SF
Foster UPRR 31-35 #1 (PA) - Original Drilling - Original D	2,600.0	2,610.0	3,407.1	3,349.3	58.934	CC
Foster UPRR 31-35 #1 (PA) - Original Drilling - Original D	2,700.0	2,710.0	3,408.8	3,348.7	56.789	ES
Foster UPRR 31-35 #1 (PA) - Original Drilling - Original D	9,200.0	6,996.0	4,491.0	4,328.3	27.604	SF
Foster UPRR 32-35 - Original Drilling - Original Drilling -	0.0	0.0	4,128.5			
Foster UPRR 32-35 - Original Drilling - Original Drilling -	2,500.0	2,495.2	4,136.1	4,122.1	295.091	ES
Foster UPRR 32-35 - Original Drilling - Original Drilling -	11,600.0	7,012.2	4,840.7	4,777.5	76.658	SF
Foster UPRR 41-35 - Original Drilling - Original Drilling -	1,785.6	1,781.7	2,305.3	2,295.4	232.350	CC
Foster UPRR 41-35 - Original Drilling - Original Drilling -	2,610.6	2,615.4	2,308.9	2,294.3	157.247	ES
Foster UPRR 41-35 - Original Drilling - Original Drilling -	9,500.0	6,993.1	3,202.0	3,144.2	55.372	SF
Foster UPRR 42-35 #2 - Original Drilling - Original Drilling	0.0	0.0	3,079.2			
Foster UPRR 42-35 #2 - Original Drilling - Original Drilling	9,843.0	7,088.3	3,121.4	3,067.9	58.383	ES
Foster UPRR 42-35 #2 - Original Drilling - Original Drilling	10,600.0	7,106.4	3,211.8	3,154.4	55.983	SF
HSR Foster 03-35 - Original Drilling - Original Drilling - A	0.0	0.0	4,696.6			
HSR Foster 03-35 - Original Drilling - Original Drilling - A	2,400.0	2,371.6	4,709.6	4,696.3	352.137	ES
HSR Foster 03-35 - Original Drilling - Original Drilling - A	12,300.0	12,300.0	6,658.2	6,575.5	80.532	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 Emmy State H36-753
Project:	Conceptual Wells	TVD Reference:	WELL @ 4846.0ft (Original Well Elev)
Reference Site:	DP 408	MD Reference:	WELL @ 4846.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Emmy State H36-753	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:	Design #1	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 35						
HSR Foster 04-35 - Wellbore #1 - Wellbore #1 - As Drille	164.4	144.4	6,185.3	6,184.7	10,000.000	CC
HSR Foster 04-35 - Wellbore #1 - Wellbore #1 - As Drille	1,200.0	1,150.5	6,187.6	6,181.2	967.312	ES
HSR Foster 04-35 - Wellbore #1 - Wellbore #1 - As Drille	12,699.7	6,709.8	8,428.0	8,360.8	125.473	SF
HSR Foster 05-35 - Wellbore #1 - Wellbore #1 - As Drille	347.0	336.0	6,382.6	6,380.9	3,906.288	CC
HSR Foster 05-35 - Wellbore #1 - Wellbore #1 - As Drille	2,000.0	1,946.5	6,388.0	6,377.0	581.593	ES
HSR Foster 05-35 - Wellbore #1 - Wellbore #1 - As Drille	12,699.7	6,658.2	7,531.5	7,460.4	105.833	SF
HSR Foster 06-35 - Original Drilling - Original Drilling - A	523.0	525.0	5,162.2	5,159.5	1,917.625	CC
HSR Foster 06-35 - Original Drilling - Original Drilling - A	700.0	683.8	5,162.5	5,158.9	1,417.571	ES
HSR Foster 06-35 - Original Drilling - Original Drilling - A	12,600.0	6,976.4	6,290.4	6,220.6	90.183	SF
UPRR 53 Pan Am Unit P1 - Original Drilling - Original Dri	426.5	424.5	3,121.9	3,119.8	1,470.138	CC
UPRR 53 Pan Am Unit P1 - Original Drilling - Original Dri	2,627.6	2,655.7	3,124.0	3,109.2	210.263	ES
UPRR 53 Pan Am Unit P1 - Original Drilling - Original Dri	10,500.0	6,971.9	3,825.2	3,770.2	69.591	SF
UPRR 53 Pan Am UT P2 - Original Drilling - Original Drill	0.0	0.0	5,162.1			
UPRR 53 Pan Am UT P2 - Original Drilling - Original Drill	1,700.0	1,663.0	5,163.6	5,154.3	554.818	ES
UPRR 53 Pan Am UT P2 - Original Drilling - Original Drill	12,400.0	6,800.0	6,985.8	6,920.3	106.711	SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region Drilling - Sandbox	Local Co-ordinate Reference:	Well Emmy State H36-753
Project:	Conceptual Wells	TVD Reference:	WELL @ 4846.0ft (Original Well Elev)
Reference Site:	DP 408	MD Reference:	WELL @ 4846.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Emmy State H36-753	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:	Design #1	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	10,117.2	6,945.0	566.3	511.3	10.290	CC, ES
Dechant 07-36 - Original Drilling - Original Drilling - As D	10,200.0	6,945.3	572.3	515.9	10.132	SF
Dechant 13N-1HZ - Original Drilling - Original Drilling - A	12,699.7	6,606.4	1,974.7	1,898.6	25.967	CC, ES, SF
Dechant 14C-1HZ - Original Drilling - Original Drilling - A	12,699.7	6,810.7	645.2	578.1	9.605	CC, ES, SF
Dechant 15-36 - Original Drilling - Original Drilling - As D	12,569.5	6,962.1	636.1	542.2	6.770	CC, ES
Dechant 15-36 - Original Drilling - Original Drilling - As D	12,600.0	6,962.2	636.8	542.3	6.735	SF
Dechant 15C-1HZ - Original Drilling - Original Drilling - A	8,250.9	6,959.6	681.6	638.0	15.636	CC, ES
Dechant 15C-1HZ - Original Drilling - Original Drilling - A	12,699.7	11,431.6	798.4	661.2	5.818	SF
Dechant 24-36 - Original Drilling - Original Drilling - As D	10,429.6	7,069.6	1,266.3	1,206.4	21.144	CC, ES
Dechant 24-36 - Original Drilling - Original Drilling - As D	10,800.0	7,069.8	1,319.3	1,252.7	19.804	SF
Dechant 35N-E1HZ - Original Drilling - Original Drilling -	12,699.7	6,670.4	961.2	891.7	13.833	CC, ES, SF
Dechant 35N-W1HZ - Original Drilling - Original Drilling -	12,699.7	6,672.0	1,462.1	1,387.3	19.548	CC, ES, SF
Dechant 36N-W1HZ - Original Drilling - Original Drilling -	12,699.7	6,750.0	568.0	511.4	10.037	CC, ES, SF
Dechant 37N-E1HZ - Original Drilling - Original Drilling -	12,699.7	6,590.3	1,803.9	1,725.6	23.038	CC, ES, SF
Dechant 37N-W1HZ - Original Drilling - Original Drilling -	12,699.7	6,676.4	1,228.6	1,153.8	16.429	CC, ES, SF
Dechant State 16C-1HZ - Original Drilling - Original Drilling	8,110.0	6,981.6	1,862.1	1,819.5	43.707	CC, ES
Dechant State 16C-1HZ - Original Drilling - Original Drilling	12,699.7	11,686.8	2,054.1	1,913.9	14.649	SF
Dechant State 36N-E1HZ - Original Drilling - Original Drilling	8,557.6	7,127.1	417.2	371.0	9.029	CC
Dechant State 36N-E1HZ - Original Drilling - Original Drilling	8,600.0	7,165.8	417.4	370.8	8.944	ES
Dechant State 36N-E1HZ - Original Drilling - Original Drilling	12,699.7	11,259.1	512.8	373.7	3.686	SF
Dechant State 37N-E36HZ - Original Drilling - Original Drilling	8,415.7	7,118.1	1,638.7	1,593.9	36.617	CC
Dechant State 37N-E36HZ - Original Drilling - Original Drilling	12,699.7	11,366.1	1,730.1	1,591.2	12.457	ES, SF
Dechant State 37N-W36HZ - Original Drilling - Original Drilling	8,191.7	6,925.2	1,032.5	988.8	23.668	CC
Dechant State 37N-W36HZ - Original Drilling - Original Drilling	8,200.0	6,931.7	1,032.5	988.8	23.639	ES
Dechant State 37N-W36HZ - Original Drilling - Original Drilling	12,699.7	11,431.0	1,132.9	992.7	8.083	SF
Dechant State 38N-1HZ - Original Drilling - Original Drilling	8,403.1	6,916.1	2,339.3	2,295.3	53.094	CC
Dechant State 38N-1HZ - Original Drilling - Original Drilling	8,500.0	6,990.6	2,340.1	2,295.2	52.150	ES
Dechant State 38N-1HZ - Original Drilling - Original Drilling	12,699.7	11,175.4	2,437.6	2,300.4	17.759	SF
Dechant State H36-11D - Original Drilling - Original Drilling	11,343.4	6,972.3	560.9	495.3	8.546	CC, ES, SF
Dechant State H36-18D - Original Drilling - Original Drilling	9,276.3	7,168.2	59.9	9.8	1.197	Level 2, CC, ES, SF
Dechant State H36-19 - Original Drilling - Original Drilling	8,971.7	6,864.5	1,463.0	1,417.3	31.981	CC, ES
Dechant State H36-19 - Original Drilling - Original Drilling	9,100.0	6,867.5	1,468.7	1,422.6	31.867	SF
Dechant State H36-20D - Original Drilling - Original Drilling	10,748.1	7,037.8	1,204.2	1,143.8	19.930	CC, ES
Dechant State H36-20D - Original Drilling - Original Drilling	10,900.0	7,041.1	1,213.8	1,152.6	19.844	SF
Dechant State H36-21D - Original Drilling - Original Drilling	10,689.7	7,047.9	6.3	-54.9	0.103	Level 1, CC, ES, SF
Dechant State H36-24 - Original Drilling - Original Drilling	11,896.1	7,125.2	101.2	29.2	1.405	Level 3, CC
Dechant State H36-24 - Original Drilling - Original Drilling	11,900.0	7,125.1	101.3	28.9	1.399	Level 3, ES, SF
Dechant State H36-31D - Original Drilling - Original Drilling	1,085.6	1,071.7	1,539.3	1,534.6	327.380	CC
Dechant State H36-31D - Original Drilling - Original Drilling	1,100.0	1,079.5	1,539.3	1,534.5	323.332	ES
Dechant State H36-31D - Original Drilling - Original Drilling	10,000.0	7,147.5	2,550.1	2,496.2	47.293	SF
Dechant State H36-32D - Original Drilling - Original Drilling	10,608.9	7,023.1	2,444.8	2,384.8	40.750	CC, ES
Dechant State H36-32D - Original Drilling - Original Drilling	10,900.0	7,028.4	2,462.0	2,400.8	40.233	SF
Dechant State H36-33 - Original Drilling - Original Drilling	11,824.7	7,061.2	2,357.3	2,286.2	33.157	CC, ES
Dechant State H36-33 - Original Drilling - Original Drilling	12,200.0	7,060.2	2,387.0	2,314.0	32.701	SF
HSR Dechant State 02-36 - Original Drilling - Original Drilling	8,367.7	6,942.7	461.1	417.8	10.652	CC, ES
HSR Dechant State 02-36 - Original Drilling - Original Drilling	8,400.0	6,943.3	462.3	418.6	10.576	SF
HSR Dechant/State 07-36 (PA) - Original Drilling - Original Drilling	9,538.9	6,949.0	1,086.7	921.4	6.574	CC, ES
HSR Dechant/State 07-36 (PA) - Original Drilling - Original Drilling	9,600.0	6,949.0	1,088.4	922.3	6.553	SF
Spike State GWS H36-03 - Original Drilling - Original Drilling	8,543.0	6,949.7	453.4	409.3	10.292	CC, ES, SF
Spike State GWS H36-04 - Original Drilling - Original Drilling	0.0	0.0	1,174.3			
Spike State GWS H36-04 - Original Drilling - Original Drilling	2,602.5	2,577.6	1,178.1	1,163.5	81.054	ES
Spike State GWS H36-04 - Original Drilling - Original Drilling	8,600.0	6,919.2	1,965.8	1,914.4	38.198	SF
Spike State GWS H36-13 - Original Drilling - Original Drilling	12,562.4	7,444.0	1,827.6	1,747.0	22.679	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 Emmy State H36-753
Project:	Conceptual Wells	TVD Reference:	WELL @ 4846.0ft (Original Well Elev)
Reference Site:	DP 408	MD Reference:	WELL @ 4846.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Emmy State H36-753	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:	Design #1	Offset TVD Reference:	Offset Datum

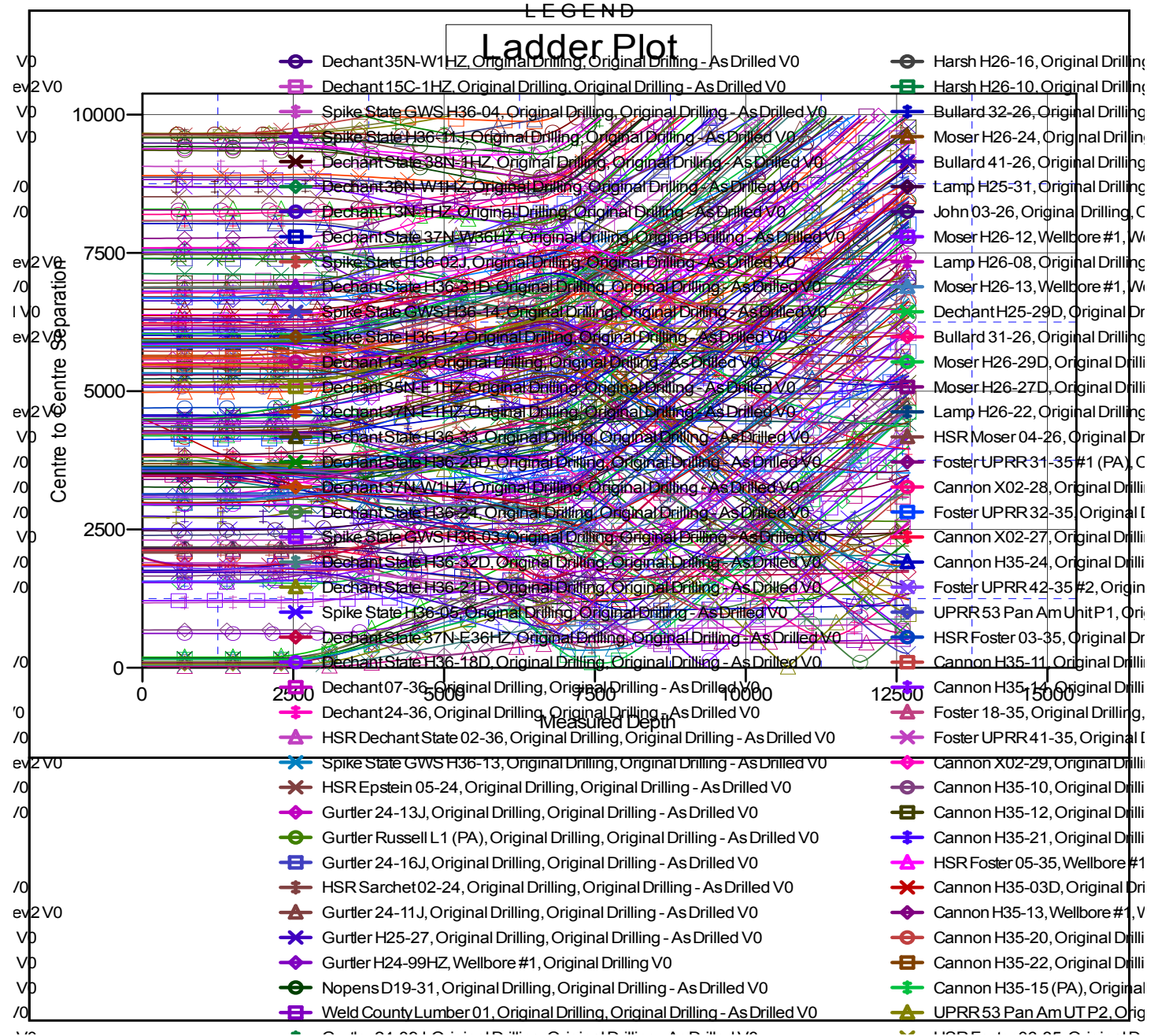
Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
H Section 36						
Spike State GWS H36-13 - Original Drilling - Original Dri	12,600.0	7,475.0	1,827.7	1,746.7	22.566	ES
Spike State GWS H36-13 - Original Drilling - Original Dri	12,699.7	7,445.1	1,832.7	1,751.4	22.533	SF
Spike State GWS H36-14 - Original Drilling - Original Dri	12,690.9	6,975.5	258.7	180.8	3.322	CC, ES, SF
Spike State H36-02J - Original Drilling - Original Drilling -	9,625.0	6,967.0	972.3	888.0	11.527	CC, ES, SF
Spike State H36-05 - Original Drilling - Original Drilling - A	9,835.0	6,912.8	1,971.0	1,918.6	37.640	CC, ES
Spike State H36-05 - Original Drilling - Original Drilling - A	10,100.0	6,913.1	1,988.7	1,935.3	37.234	SF
Spike State H36-11J - Original Drilling - Original Drilling -	11,967.5	6,973.3	1,131.3	1,060.1	15.901	CC, ES
Spike State H36-11J - Original Drilling - Original Drilling -	12,000.0	6,972.9	1,131.7	1,060.5	15.896	SF
Spike State H36-12 - Original Drilling - Original Drilling - A	11,106.9	6,968.7	2,041.5	1,978.1	32.206	CC, ES
Spike State H36-12 - Original Drilling - Original Drilling - A	11,300.0	6,966.3	2,050.6	1,986.4	31.924	SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region Drilling - Sandbox	Local Co-ordinate Reference:	Well Emmy State H36-753
Project:	Conceptual Wells	TVD Reference:	WELL @ 4846.0ft (Original Well Elev)
Reference Site:	DP 408	MD Reference:	WELL @ 4846.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Emmy State H36-753	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:	Design #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4846.0ft (Original Well Elev)
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000

Coordinates are relative to: Emmy State H36-753
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.57°



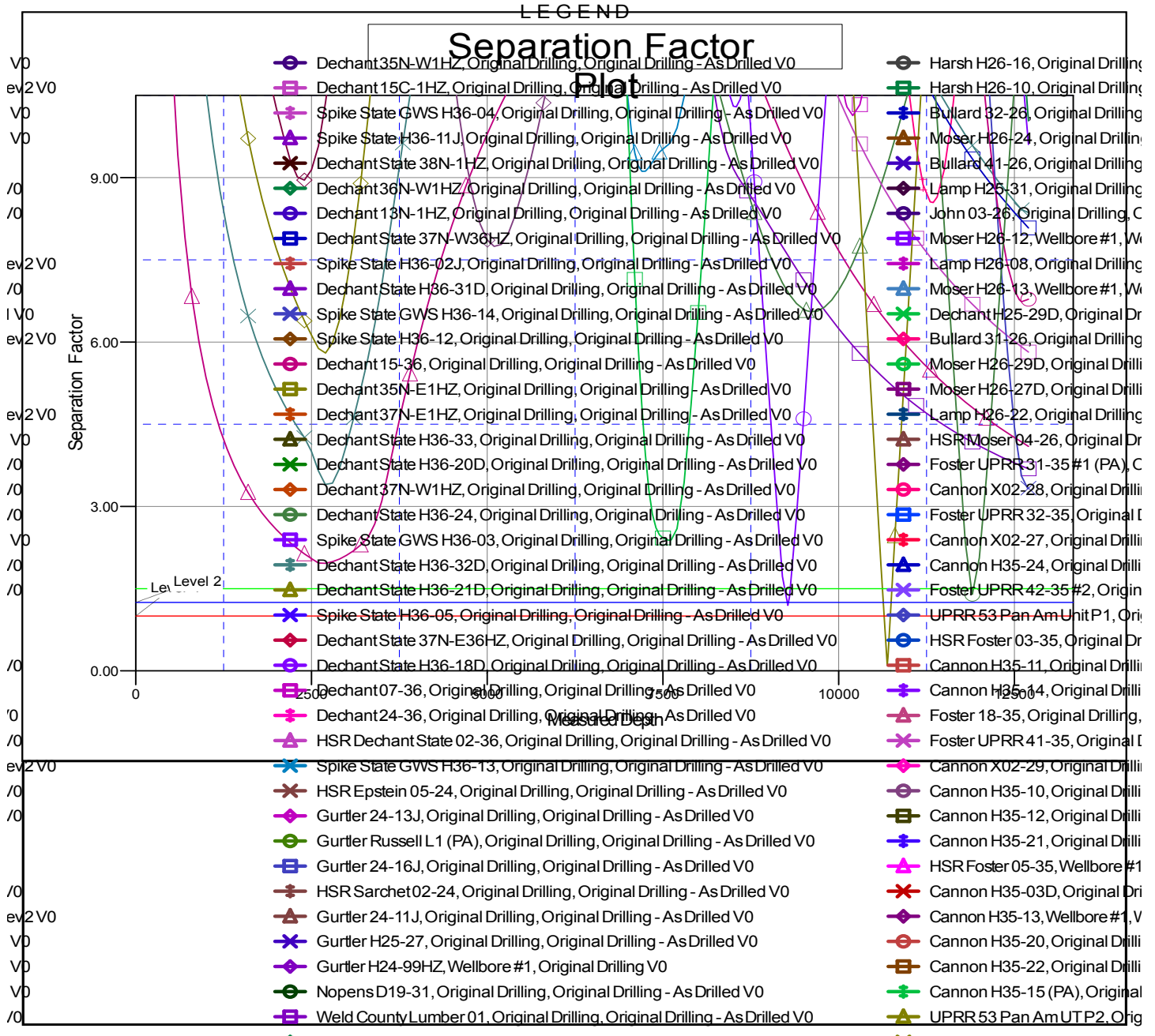
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region Drilling - Sandbox	Local Co-ordinate Reference:	Well Emmy State H36-753
Project:	Conceptual Wells	TVD Reference:	WELL @ 4846.0ft (Original Well Elev)
Reference Site:	DP 408	MD Reference:	WELL @ 4846.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Emmy State H36-753	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:	Design #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4846.0ft (Original Well Elev)
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000

Coordinates are relative to: Emmy State H36-753
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.57°



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