

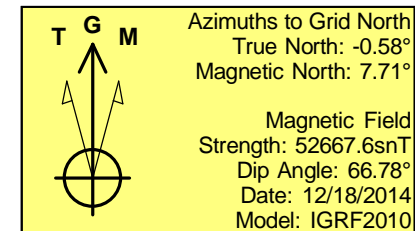
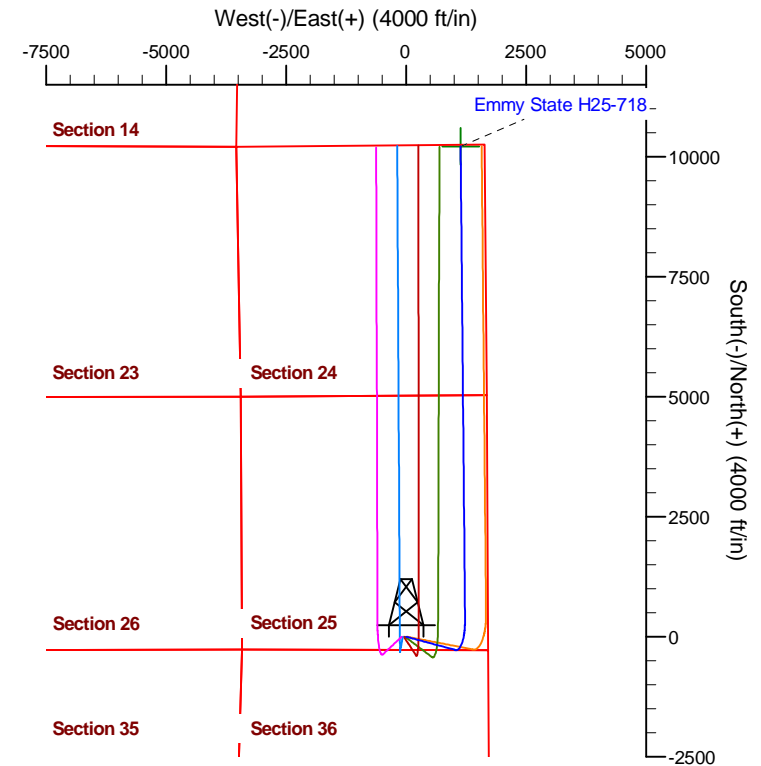
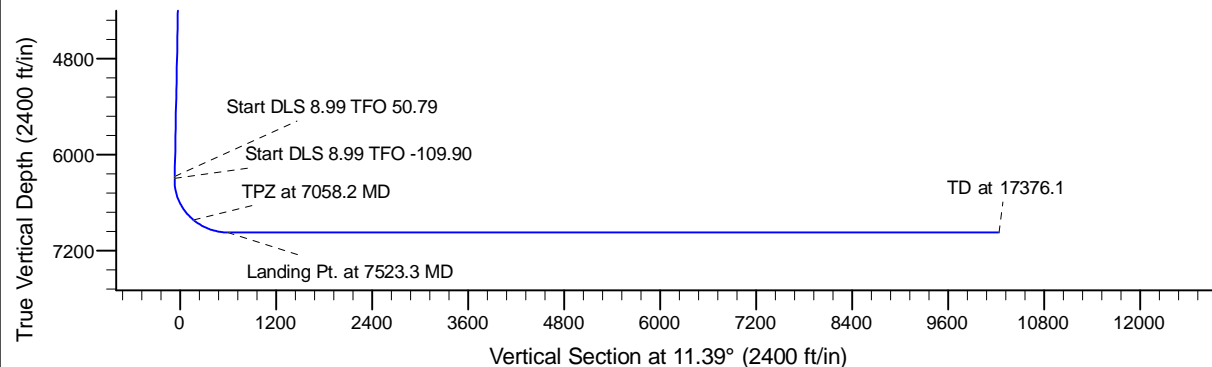
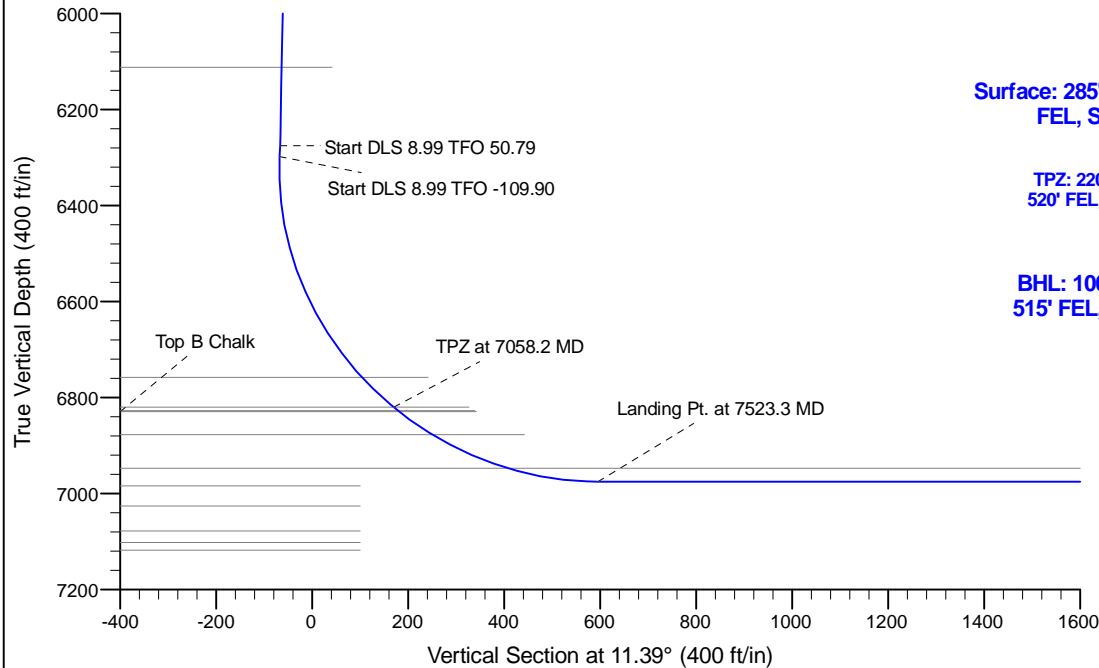
Project: Conceptual Wells
Site: DP 408
Well: Emmy State H25-718
Wellbore: Wellbore #1
Design: Prelim - Rev 2

Northern Region Drilling - DJ Basin

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

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	2400.0	0.00	0.00	2400.0	0.0	0.0	0.00	0.00	0.0	
3	3250.0	17.00	105.00	3237.6	-32.4	120.9	2.00	105.00	-7.9	
4	6426.2	17.00	105.00	6275.0	-272.7	1017.9	0.00	0.00	-66.4	
5	6450.5	18.46	110.35	6298.1	-275.0	1024.9	8.99	50.79	-67.3	
6	7523.3	90.00	359.46	6975.0	360.0	1230.0	8.99	-109.90	595.7	
7	17376.1	90.00	359.46	6975.0	10212.4	1137.4	0.00	0.00	10235.9	Emmy H25-718 BHL



WELL DETAILS: Emmy State H25-718

Ground Level:	4805.0
Northing	1313190.12
Easting	3248932.39
Latitude	40.189670
Longitude	-104.608950

Plan: Prelim - Rev 2 (Emmy State H25-718/Wellbore #1)

Created By: Chad Stich Date: 13:54, November 01 2017

Checked: _____ Date: _____

Reviewed: _____ Date: _____

Approved: _____ Date: _____

Northern Region Drilling - Sandbox

Conceptual Wells

DP 408

Emmy State H25-718

Wellbore #1

Plan: Prelim - Rev 2

Standard Planning Report

01 November, 2017

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Emmy State H25-718
Company:	Northern Region Drilling - Sandbox	TVD Reference:	WELL @ 4835.0ft (Original Well Elev)
Project:	Conceptual Wells	MD Reference:	WELL @ 4835.0ft (Original Well Elev)
Site:	DP 408	North Reference:	Grid
Well:	Emmy State H25-718	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	Emmy State H25-718					
Well Position	+N/-S	-4,994.8 ft	Northing:	1,313,190.12 usft	Latitude:	40.189670
	+E/-W	8,707.6 ft	Easting:	3,248,932.39 usft	Longitude:	-104.608950
Position Uncertainty		0.0 ft	Wellhead Elevation:	0.0 ft	Ground Level:	4,805.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	12/18/2014	8.29	66.78	52,667.58647516

Design	Prelim - Rev 2			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(ft)	(ft)	(ft)	(°)
	0.0	0.0	0.0	11.39

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	
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.00	0.00	0.00	0.00	
3,250.0	17.00	105.00	3,237.6	-32.4	120.9	2.00	2.00	0.00	105.00	
6,426.2	17.00	105.00	6,275.0	-272.7	1,017.9	0.00	0.00	0.00	0.00	
6,450.5	18.46	110.35	6,298.1	-275.0	1,024.9	8.99	6.00	22.04	50.79	
7,523.3	90.00	359.46	6,975.0	360.0	1,230.0	8.99	6.67	-10.34	-109.90	
17,376.1	90.00	359.46	6,975.0	10,212.4	1,137.4	0.00	0.00	0.00	0.00	Emmy H25-718 BHL

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Emmy State H25-718
Company:	Northern Region Drilling - Sandbox	TVD Reference:	WELL @ 4835.0ft (Original Well Elev)
Project:	Conceptual Wells	MD Reference:	WELL @ 4835.0ft (Original Well Elev)
Site:	DP 408	North Reference:	Grid
Well:	Emmy State H25-718	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	2.00	105.00	2,500.0	-0.5	1.7	-0.1	2.00	2.00	0.00
2,600.0	4.00	105.00	2,599.8	-1.8	6.7	-0.4	2.00	2.00	0.00
2,700.0	6.00	105.00	2,699.5	-4.1	15.2	-1.0	2.00	2.00	0.00
2,800.0	8.00	105.00	2,798.7	-7.2	26.9	-1.8	2.00	2.00	0.00
2,900.0	10.00	105.00	2,897.5	-11.3	42.0	-2.7	2.00	2.00	0.00
3,000.0	12.00	105.00	2,995.6	-16.2	60.5	-3.9	2.00	2.00	0.00
3,100.0	14.00	105.00	3,093.1	-22.0	82.2	-5.4	2.00	2.00	0.00
3,200.0	16.00	105.00	3,189.6	-28.7	107.2	-7.0	2.00	2.00	0.00
3,250.0	17.00	105.00	3,237.6	-32.4	120.9	-7.9	2.00	2.00	0.00
3,300.0	17.00	105.00	3,285.4	-36.2	135.0	-8.8	0.00	0.00	0.00
3,400.0	17.00	105.00	3,381.0	-43.7	163.3	-10.7	0.00	0.00	0.00
3,500.0	17.00	105.00	3,476.7	-51.3	191.5	-12.5	0.00	0.00	0.00
3,600.0	17.00	105.00	3,572.3	-58.9	219.8	-14.3	0.00	0.00	0.00
3,700.0	17.00	105.00	3,667.9	-66.5	248.0	-16.2	0.00	0.00	0.00
3,800.0	17.00	105.00	3,763.6	-74.0	276.2	-18.0	0.00	0.00	0.00
3,900.0	17.00	105.00	3,859.2	-81.6	304.5	-19.9	0.00	0.00	0.00
4,000.0	17.00	105.00	3,954.8	-89.2	332.7	-21.7	0.00	0.00	0.00
4,100.0	17.00	105.00	4,050.4	-96.7	361.0	-23.6	0.00	0.00	0.00
4,200.0	17.00	105.00	4,146.1	-104.3	389.2	-25.4	0.00	0.00	0.00
4,300.0	17.00	105.00	4,241.7	-111.9	417.4	-27.2	0.00	0.00	0.00
4,400.0	17.00	105.00	4,337.3	-119.4	445.7	-29.1	0.00	0.00	0.00
4,500.0	17.00	105.00	4,433.0	-127.0	473.9	-30.9	0.00	0.00	0.00
4,600.0	17.00	105.00	4,528.6	-134.6	502.2	-32.8	0.00	0.00	0.00
4,700.0	17.00	105.00	4,624.2	-142.1	530.4	-34.6	0.00	0.00	0.00
4,800.0	17.00	105.00	4,719.9	-149.7	558.6	-36.5	0.00	0.00	0.00
4,900.0	17.00	105.00	4,815.5	-157.3	586.9	-38.3	0.00	0.00	0.00
5,000.0	17.00	105.00	4,911.1	-164.8	615.1	-40.1	0.00	0.00	0.00
5,100.0	17.00	105.00	5,006.7	-172.4	643.4	-42.0	0.00	0.00	0.00
5,200.0	17.00	105.00	5,102.4	-180.0	671.6	-43.8	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Emmy State H25-718
Company:	Northern Region Drilling - Sandbox	TVD Reference:	WELL @ 4835.0ft (Original Well Elev)
Project:	Conceptual Wells	MD Reference:	WELL @ 4835.0ft (Original Well Elev)
Site:	DP 408	North Reference:	Grid
Well:	Emmy State H25-718	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	17.00	105.00	5,198.0	-187.5	699.9	-45.7	0.00	0.00	0.00
5,400.0	17.00	105.00	5,293.6	-195.1	728.1	-47.5	0.00	0.00	0.00
5,500.0	17.00	105.00	5,389.3	-202.7	756.3	-49.4	0.00	0.00	0.00
5,600.0	17.00	105.00	5,484.9	-210.2	784.6	-51.2	0.00	0.00	0.00
5,700.0	17.00	105.00	5,580.5	-217.8	812.8	-53.0	0.00	0.00	0.00
5,800.0	17.00	105.00	5,676.2	-225.4	841.1	-54.9	0.00	0.00	0.00
5,900.0	17.00	105.00	5,771.8	-232.9	869.3	-56.7	0.00	0.00	0.00
6,000.0	17.00	105.00	5,867.4	-240.5	897.5	-58.6	0.00	0.00	0.00
6,100.0	17.00	105.00	5,963.1	-248.1	925.8	-60.4	0.00	0.00	0.00
6,200.0	17.00	105.00	6,058.7	-255.6	954.0	-62.3	0.00	0.00	0.00
6,300.0	17.00	105.00	6,154.3	-263.2	982.3	-64.1	0.00	0.00	0.00
6,400.0	17.00	105.00	6,249.9	-270.8	1,010.5	-65.9	0.00	0.00	0.00
6,426.2	17.00	105.00	6,275.0	-272.7	1,017.9	-66.4	0.00	0.00	0.00
6,450.5	18.46	110.35	6,298.1	-275.0	1,024.9	-67.3	8.99	6.00	22.04
6,500.0	17.43	96.24	6,345.3	-278.5	1,039.7	-67.8	8.99	-2.07	-28.49
6,600.0	18.63	67.14	6,440.5	-273.9	1,069.3	-57.5	8.99	1.19	-29.10
6,700.0	23.38	45.61	6,534.0	-253.8	1,098.3	-32.0	8.99	4.76	-21.54
6,800.0	30.05	32.07	6,623.4	-218.6	1,125.8	7.9	8.99	6.67	-13.54
6,900.0	37.63	23.31	6,706.4	-169.3	1,151.2	61.3	8.99	7.58	-8.75
7,000.0	45.66	17.20	6,781.1	-107.0	1,173.9	126.9	8.99	8.03	-6.12
7,100.0	53.94	12.58	6,845.6	-33.2	1,193.4	203.0	8.99	8.28	-4.62
7,200.0	62.36	8.86	6,898.4	50.2	1,209.0	287.9	8.99	8.42	-3.73
7,300.0	70.86	5.67	6,938.0	141.1	1,220.5	379.3	8.99	8.51	-3.19
7,400.0	79.42	2.80	6,963.6	237.4	1,227.6	475.1	8.99	8.56	-2.87
7,500.0	88.00	0.08	6,974.6	336.7	1,230.1	572.9	8.99	8.58	-2.71
7,523.3	90.00	359.46	6,975.0	360.0	1,230.0	595.7	8.99	8.59	-2.68
7,600.0	90.00	359.46	6,975.0	436.7	1,229.3	670.8	0.00	0.00	0.00
7,700.0	90.00	359.46	6,975.0	536.7	1,228.3	768.6	0.00	0.00	0.00
7,800.0	90.00	359.46	6,975.0	636.7	1,227.4	866.5	0.00	0.00	0.00
7,900.0	90.00	359.46	6,975.0	736.7	1,226.4	964.3	0.00	0.00	0.00
8,000.0	90.00	359.46	6,975.0	836.7	1,225.5	1,062.1	0.00	0.00	0.00
8,100.0	90.00	359.46	6,975.0	936.7	1,224.6	1,160.0	0.00	0.00	0.00
8,200.0	90.00	359.46	6,975.0	1,036.7	1,223.6	1,257.8	0.00	0.00	0.00
8,300.0	90.00	359.46	6,975.0	1,136.7	1,222.7	1,355.7	0.00	0.00	0.00
8,400.0	90.00	359.46	6,975.0	1,236.7	1,221.7	1,453.5	0.00	0.00	0.00
8,500.0	90.00	359.46	6,975.0	1,336.7	1,220.8	1,551.3	0.00	0.00	0.00
8,600.0	90.00	359.46	6,975.0	1,436.6	1,219.9	1,649.2	0.00	0.00	0.00
8,700.0	90.00	359.46	6,975.0	1,536.6	1,218.9	1,747.0	0.00	0.00	0.00
8,800.0	90.00	359.46	6,975.0	1,636.6	1,218.0	1,844.9	0.00	0.00	0.00
8,900.0	90.00	359.46	6,975.0	1,736.6	1,217.0	1,942.7	0.00	0.00	0.00
9,000.0	90.00	359.46	6,975.0	1,836.6	1,216.1	2,040.6	0.00	0.00	0.00
9,100.0	90.00	359.46	6,975.0	1,936.6	1,215.1	2,138.4	0.00	0.00	0.00
9,200.0	90.00	359.46	6,975.0	2,036.6	1,214.2	2,236.2	0.00	0.00	0.00
9,300.0	90.00	359.46	6,975.0	2,136.6	1,213.3	2,334.1	0.00	0.00	0.00
9,400.0	90.00	359.46	6,975.0	2,236.6	1,212.3	2,431.9	0.00	0.00	0.00
9,500.0	90.00	359.46	6,975.0	2,336.6	1,211.4	2,529.8	0.00	0.00	0.00
9,600.0	90.00	359.46	6,975.0	2,436.6	1,210.4	2,627.6	0.00	0.00	0.00
9,700.0	90.00	359.46	6,975.0	2,536.6	1,209.5	2,725.4	0.00	0.00	0.00
9,800.0	90.00	359.46	6,975.0	2,636.6	1,208.5	2,823.3	0.00	0.00	0.00
9,900.0	90.00	359.46	6,975.0	2,736.6	1,207.6	2,921.1	0.00	0.00	0.00
10,000.0	90.00	359.46	6,975.0	2,836.6	1,206.7	3,019.0	0.00	0.00	0.00
10,100.0	90.00	359.46	6,975.0	2,936.6	1,205.7	3,116.8	0.00	0.00	0.00
10,200.0	90.00	359.46	6,975.0	3,036.6	1,204.8	3,214.7	0.00	0.00	0.00
10,300.0	90.00	359.46	6,975.0	3,136.6	1,203.8	3,312.5	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

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Project:	Conceptual Wells	MD Reference:	WELL @ 4835.0ft (Original Well Elev)
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Well:	Emmy State H25-718	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	359.46	6,975.0	3,236.6	1,202.9	3,410.3	0.00	0.00	0.00
10,500.0	90.00	359.46	6,975.0	3,336.6	1,201.9	3,508.2	0.00	0.00	0.00
10,600.0	90.00	359.46	6,975.0	3,436.6	1,201.0	3,606.0	0.00	0.00	0.00
10,700.0	90.00	359.46	6,975.0	3,536.6	1,200.1	3,703.9	0.00	0.00	0.00
10,800.0	90.00	359.46	6,975.0	3,636.5	1,199.1	3,801.7	0.00	0.00	0.00
10,900.0	90.00	359.46	6,975.0	3,736.5	1,198.2	3,899.5	0.00	0.00	0.00
11,000.0	90.00	359.46	6,975.0	3,836.5	1,197.2	3,997.4	0.00	0.00	0.00
11,100.0	90.00	359.46	6,975.0	3,936.5	1,196.3	4,095.2	0.00	0.00	0.00
11,200.0	90.00	359.46	6,975.0	4,036.5	1,195.3	4,193.1	0.00	0.00	0.00
11,300.0	90.00	359.46	6,975.0	4,136.5	1,194.4	4,290.9	0.00	0.00	0.00
11,400.0	90.00	359.46	6,975.0	4,236.5	1,193.5	4,388.8	0.00	0.00	0.00
11,500.0	90.00	359.46	6,975.0	4,336.5	1,192.5	4,486.6	0.00	0.00	0.00
11,600.0	90.00	359.46	6,975.0	4,436.5	1,191.6	4,584.4	0.00	0.00	0.00
11,700.0	90.00	359.46	6,975.0	4,536.5	1,190.6	4,682.3	0.00	0.00	0.00
11,800.0	90.00	359.46	6,975.0	4,636.5	1,189.7	4,780.1	0.00	0.00	0.00
11,900.0	90.00	359.46	6,975.0	4,736.5	1,188.8	4,878.0	0.00	0.00	0.00
12,000.0	90.00	359.46	6,975.0	4,836.5	1,187.8	4,975.8	0.00	0.00	0.00
12,100.0	90.00	359.46	6,975.0	4,936.5	1,186.9	5,073.6	0.00	0.00	0.00
12,200.0	90.00	359.46	6,975.0	5,036.5	1,185.9	5,171.5	0.00	0.00	0.00
12,300.0	90.00	359.46	6,975.0	5,136.5	1,185.0	5,269.3	0.00	0.00	0.00
12,400.0	90.00	359.46	6,975.0	5,236.5	1,184.0	5,367.2	0.00	0.00	0.00
12,500.0	90.00	359.46	6,975.0	5,336.5	1,183.1	5,465.0	0.00	0.00	0.00
12,600.0	90.00	359.46	6,975.0	5,436.5	1,182.2	5,562.9	0.00	0.00	0.00
12,700.0	90.00	359.46	6,975.0	5,536.5	1,181.2	5,660.7	0.00	0.00	0.00
12,800.0	90.00	359.46	6,975.0	5,636.5	1,180.3	5,758.5	0.00	0.00	0.00
12,900.0	90.00	359.46	6,975.0	5,736.5	1,179.3	5,856.4	0.00	0.00	0.00
13,000.0	90.00	359.46	6,975.0	5,836.5	1,178.4	5,954.2	0.00	0.00	0.00
13,100.0	90.00	359.46	6,975.0	5,936.4	1,177.4	6,052.1	0.00	0.00	0.00
13,200.0	90.00	359.46	6,975.0	6,036.4	1,176.5	6,149.9	0.00	0.00	0.00
13,300.0	90.00	359.46	6,975.0	6,136.4	1,175.6	6,247.7	0.00	0.00	0.00
13,400.0	90.00	359.46	6,975.0	6,236.4	1,174.6	6,345.6	0.00	0.00	0.00
13,500.0	90.00	359.46	6,975.0	6,336.4	1,173.7	6,443.4	0.00	0.00	0.00
13,600.0	90.00	359.46	6,975.0	6,436.4	1,172.7	6,541.3	0.00	0.00	0.00
13,700.0	90.00	359.46	6,975.0	6,536.4	1,171.8	6,639.1	0.00	0.00	0.00
13,800.0	90.00	359.46	6,975.0	6,636.4	1,170.8	6,737.0	0.00	0.00	0.00
13,900.0	90.00	359.46	6,975.0	6,736.4	1,169.9	6,834.8	0.00	0.00	0.00
14,000.0	90.00	359.46	6,975.0	6,836.4	1,169.0	6,932.6	0.00	0.00	0.00
14,100.0	90.00	359.46	6,975.0	6,936.4	1,168.0	7,030.5	0.00	0.00	0.00
14,200.0	90.00	359.46	6,975.0	7,036.4	1,167.1	7,128.3	0.00	0.00	0.00
14,300.0	90.00	359.46	6,975.0	7,136.4	1,166.1	7,226.2	0.00	0.00	0.00
14,400.0	90.00	359.46	6,975.0	7,236.4	1,165.2	7,324.0	0.00	0.00	0.00
14,500.0	90.00	359.46	6,975.0	7,336.4	1,164.2	7,421.8	0.00	0.00	0.00
14,600.0	90.00	359.46	6,975.0	7,436.4	1,163.3	7,519.7	0.00	0.00	0.00
14,700.0	90.00	359.46	6,975.0	7,536.4	1,162.4	7,617.5	0.00	0.00	0.00
14,800.0	90.00	359.46	6,975.0	7,636.4	1,161.4	7,715.4	0.00	0.00	0.00
14,900.0	90.00	359.46	6,975.0	7,736.4	1,160.5	7,813.2	0.00	0.00	0.00
15,000.0	90.00	359.46	6,975.0	7,836.4	1,159.5	7,911.1	0.00	0.00	0.00
15,100.0	90.00	359.46	6,975.0	7,936.4	1,158.6	8,008.9	0.00	0.00	0.00
15,200.0	90.00	359.46	6,975.0	8,036.4	1,157.6	8,106.7	0.00	0.00	0.00
15,300.0	90.00	359.46	6,975.0	8,136.3	1,156.7	8,204.6	0.00	0.00	0.00
15,400.0	90.00	359.46	6,975.0	8,236.3	1,155.8	8,302.4	0.00	0.00	0.00
15,500.0	90.00	359.46	6,975.0	8,336.3	1,154.8	8,400.3	0.00	0.00	0.00
15,600.0	90.00	359.46	6,975.0	8,436.3	1,153.9	8,498.1	0.00	0.00	0.00
15,700.0	90.00	359.46	6,975.0	8,536.3	1,152.9	8,595.9	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Emmy State H25-718
Company:	Northern Region Drilling - Sandbox	TVD Reference:	WELL @ 4835.0ft (Original Well Elev)
Project:	Conceptual Wells	MD Reference:	WELL @ 4835.0ft (Original Well Elev)
Site:	DP 408	North Reference:	Grid
Well:	Emmy State H25-718	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)	
15,800.0	90.00	359.46	6,975.0	8,636.3	1,152.0	8,693.8	0.00	0.00	0.00	
15,900.0	90.00	359.46	6,975.0	8,736.3	1,151.1	8,791.6	0.00	0.00	0.00	
16,000.0	90.00	359.46	6,975.0	8,836.3	1,150.1	8,889.5	0.00	0.00	0.00	
16,100.0	90.00	359.46	6,975.0	8,936.3	1,149.2	8,987.3	0.00	0.00	0.00	
16,200.0	90.00	359.46	6,975.0	9,036.3	1,148.2	9,085.2	0.00	0.00	0.00	
16,300.0	90.00	359.46	6,975.0	9,136.3	1,147.3	9,183.0	0.00	0.00	0.00	
16,400.0	90.00	359.46	6,975.0	9,236.3	1,146.3	9,280.8	0.00	0.00	0.00	
16,500.0	90.00	359.46	6,975.0	9,336.3	1,145.4	9,378.7	0.00	0.00	0.00	
16,600.0	90.00	359.46	6,975.0	9,436.3	1,144.5	9,476.5	0.00	0.00	0.00	
16,700.0	90.00	359.46	6,975.0	9,536.3	1,143.5	9,574.4	0.00	0.00	0.00	
16,800.0	90.00	359.46	6,975.0	9,636.3	1,142.6	9,672.2	0.00	0.00	0.00	
16,900.0	90.00	359.46	6,975.0	9,736.3	1,141.6	9,770.0	0.00	0.00	0.00	
17,000.0	90.00	359.46	6,975.0	9,836.3	1,140.7	9,867.9	0.00	0.00	0.00	
17,100.0	90.00	359.46	6,975.0	9,936.3	1,139.7	9,965.7	0.00	0.00	0.00	
17,200.0	90.00	359.46	6,975.0	10,036.3	1,138.8	10,063.6	0.00	0.00	0.00	
17,300.0	90.00	359.46	6,975.0	10,136.3	1,137.9	10,161.4	0.00	0.00	0.00	
17,376.1	90.00	359.46	6,975.0	10,212.4	1,137.4	10,235.9	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 H25-718 BHL	0.00	0.00	6,975.0	10,212.4	1,137.4	1,323,402.04	3,250,069.75	40.217670		-104.604510
- plan hits target center										
- Point										

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
561.0	561.0	Pierre				
713.0	713.0	Upper Pierre Aquifer Top				
1,601.0	1,601.0	Upper Pierre Aquifer Base				
3,909.2	3,868.0	Parkman				
4,527.2	4,459.0	Sussex				
5,240.4	5,141.0	Shannon				
6,255.8	6,112.0	Teepee Buttes				
6,967.7	6,758.0	Sharon Springs				
7,058.2	6,820.0	Top A Chalk				
7,069.3	6,827.0	Top A Marl				
7,072.5	6,829.0	Top B Chalk				
7,156.6	6,877.0	Top B Marl				
7,329.2	6,947.0	Top C Chalk				

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Emmy State H25-718
Company:	Northern Region Drilling - Sandbox	TVD Reference:	WELL @ 4835.0ft (Original Well Elev)
Project:	Conceptual Wells	MD Reference:	WELL @ 4835.0ft (Original Well Elev)
Site:	DP 408	North Reference:	Grid
Well:	Emmy State H25-718	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Prelim - Rev 2		

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
2,400.0	2,400.0	0.0	0.0	KOP - Start Build 2.00
3,250.0	3,237.6	-32.4	120.9	Start 3176.2 hold at 3250.0 MD
6,426.2	6,275.0	-272.7	1,017.9	Start DLS 8.99 TFO 50.79
6,450.5	6,298.1	-275.0	1,024.9	Start DLS 8.99 TFO -109.90
7,058.2	6,820.0	-65.3	1,185.7	TPZ at 7058.2 MD
7,523.3	6,975.0	360.0	1,230.0	Landing Pt. at 7523.3 MD
17,376.1	6,975.0	10,212.4	1,137.4	TD at 17376.1

Northern Region Drilling - Sandbox

Conceptual Wells

DP 408

Emmy State H25-718

Wellbore #1

Prelim - Rev 2

Anticollision Summary Report

01 November, 2017

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region Drilling - Sandbox	Local Co-ordinate Reference:	Well Emmy State H25-718
Project:	Conceptual Wells	TVD Reference:	WELL @ 4835.0ft (Original Well Elev)
Reference Site:	DP 408	MD Reference:	WELL @ 4835.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Emmy State H25-718	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	11/1/2017		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	17,376.1	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 13-19 - Butterball 13-19 - Butterball 13-19 - As	14,226.1	6,913.6	1,213.7	1,118.3	12.724	CC, ES
Butterball 13-19 - Butterball 13-19 - Butterball 13-19 - As	14,400.0	6,915.9	1,226.1	1,128.6	12.578	SF
Butterball 14-19 - Butterball 14-19 - Butterball 14-19 - As	12,878.5	6,882.1	1,303.9	1,221.1	15.746	CC
Butterball 14-19 - Butterball 14-19 - Butterball 14-19 - As	12,900.0	6,882.2	1,304.1	1,221.0	15.687	ES
Butterball 14-19 - Butterball 14-19 - Butterball 14-19 - As	13,100.0	6,883.6	1,322.6	1,237.2	15.485	SF
Butterball 23-19 - Butterball 23-19 - Butterball 23-19 - As	14,171.4	6,892.2	2,366.3	2,271.6	24.965	CC
Butterball 23-19 - Butterball 23-19 - Butterball 23-19 - As	14,200.0	6,892.4	2,366.5	2,271.4	24.872	ES
Butterball 23-19 - Butterball 23-19 - Butterball 23-19 - As	14,600.0	6,895.5	2,404.8	2,305.7	24.248	SF
Butterball B04-19 - Butterball B04-19 - Butterball B04-19	13,536.6	6,918.6	754.2	665.3	8.487	CC, ES
Butterball B04-19 - Butterball B04-19 - Butterball B04-19	13,600.0	6,918.4	756.8	666.9	8.418	SF
Butterball D18-75HN - Original Drilling - Design #2	17,376.1	7,300.0	3,102.9	3,003.8	31.324	CC, ES, SF
Butterball D18-75HN - Original Drilling - Original Drilling -	17,376.1	6,778.0	3,092.6	2,968.4	24.899	CC, ES, SF
Butterball D18-75HN - Original Drilling - Plan A - Rev 1	17,376.1	6,786.5	3,072.9	2,972.1	30.487	CC, ES, SF
Butterball D19-17D - Butterball D19-17D - Butterball D19	16,459.8	7,520.2	4,509.6	4,388.7	37.284	CC
Butterball D19-17D - Butterball D19-17D - Butterball D19	16,500.0	7,520.6	4,509.8	4,388.3	37.123	ES
Butterball D19-17D - Butterball D19-17D - Butterball D19	17,376.1	7,528.5	4,601.5	4,460.7	32.667	SF
Butterball D19-18D - Butterball D19-18D - Butterball D19	16,470.6	7,019.1	2,748.0	2,630.8	23.450	CC
Butterball D19-18D - Butterball D19-18D - Butterball D19	16,500.0	7,019.1	2,748.2	2,630.6	23.377	ES
Butterball D19-18D - Butterball D19-18D - Butterball D19	17,000.0	7,018.8	2,798.5	2,676.0	22.833	SF
Butterball D19-19D - Butterball D19-19D - Butterball D19	15,900.3	6,987.4	1,738.6	1,625.2	15.322	CC, ES
Butterball D19-19D - Butterball D19-19D - Butterball D19	16,100.0	6,989.1	1,750.1	1,634.1	15.086	SF
Butterball D19-20D - Butterball D19-20D - Butterball D19	14,927.7	7,004.5	1,865.0	1,761.2	17.969	CC, ES
Butterball D19-20D - Butterball D19-20D - Butterball D19	15,200.0	7,006.3	1,884.8	1,778.8	17.776	SF
Butterball D19-22D - Wellbore #1 - Wellbore #1 - As Drill	14,940.4	6,985.2	4,245.6	4,141.1	40.649	CC
Butterball D19-22D - Wellbore #1 - Wellbore #1 - As Drill	15,000.0	6,985.8	4,246.0	4,140.8	40.363	ES
Butterball D19-22D - Wellbore #1 - Wellbore #1 - As Drill	16,100.0	6,997.3	4,401.1	4,284.9	37.874	SF
Butterball D19-75HN - Original Drilling - Design #2	12,045.2	11,818.4	3,085.2	3,034.2	60.495	CC
Butterball D19-75HN - Original Drilling - Design #2	12,100.0	11,818.4	3,085.7	3,034.0	59.765	ES
Butterball D19-75HN - Original Drilling - Design #2	17,376.1	6,806.1	3,375.6	3,273.5	33.044	SF
Butterball D19-75HN - Original Drilling - Original Drilling -	12,111.0	11,711.0	3,074.0	2,932.2	21.672	CC, ES
Butterball D19-75HN - Original Drilling - Original Drilling -	15,400.0	15,400.0	3,268.2	3,049.0	14.911	SF
Butterball D19-75HN - Original Drilling - Plan A - Rev 1	12,045.2	11,815.8	3,068.6	3,017.6	60.163	CC
Butterball D19-75HN - Original Drilling - Plan A - Rev 1	12,100.0	11,815.8	3,069.1	3,017.4	59.435	ES
Butterball D19-75HN - Original Drilling - Plan A - Rev 1	17,376.1	6,804.2	3,359.1	3,257.0	32.882	SF
Butterball D24-19 - Butterball D24-19 - Butterball D24-19	12,930.2	6,888.7	2,356.1	2,273.0	28.340	CC, ES
Butterball D24-19 - Butterball D24-19 - Butterball D24-19	13,400.0	6,892.2	2,402.5	2,314.5	27.310	SF
Butterball H24-69HN - Original Drilling - Design #2	17,376.1	10,390.9	193.5	164.1	6.592	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 Emmy State H25-718
Project:	Conceptual Wells	TVD Reference:	WELL @ 4835.0ft (Original Well Elev)
Reference Site:	DP 408	MD Reference:	WELL @ 4835.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Emmy State H25-718	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						
D Section 19						
Butterball H24-69HN - Original Drilling - Original Drilling -	17,376.1	10,377.8	182.6	64.8	1.551	CC, ES, SF
Butterball H24-69HN - Original Drilling - Plan A - Rev 2	17,376.1	10,364.3	190.9	160.7	6.316	CC, ES, SF
Butterball H24-69HN - Original Drilling - Plan A - Rev 3	17,376.1	10,367.8	187.1	160.2	6.949	CC, ES, SF
Champlin 366 Amoco F 1 - Wellbore #1 - Wellbore #1 - A	13,829.8	6,905.9	4,230.6	4,139.1	46.206	CC
Champlin 366 Amoco F 1 - Wellbore #1 - Wellbore #1 - A	13,900.0	6,905.9	4,231.2	4,138.8	45.819	ES
Champlin 366 Amoco F 1 - Wellbore #1 - Wellbore #1 - A	15,000.0	6,905.5	4,389.5	4,287.3	42.962	SF
Dechant D19-32D - Dechant D19-32D - Dechant D19-32	14,800.6	7,465.1	406.7	261.1	2.793	CC
Dechant D19-32D - Dechant D19-32D - Dechant D19-32	14,900.0	7,466.6	418.7	259.6	2.632	ES, SF
Graznak 01-19 - Graznak 01-19 - Graznak 01-19 - As Dr	13,490.1	6,923.0	1,502.8	1,378.0	12.042	CC
Graznak 01-19 - Graznak 01-19 - Graznak 01-19 - As Dr	13,500.0	6,923.0	1,502.8	1,377.9	12.029	ES
Graznak 01-19 - Graznak 01-19 - Graznak 01-19 - As Dr	13,700.0	6,923.0	1,517.4	1,390.1	11.921	SF
Higgins D19-720 - Original Drilling - Original Drilling - As	17,376.1	6,953.8	4,899.8	4,778.8	40.505	CC, ES, SF
Higgins D19-720 - Original Drilling - Pilot Hole APD - Rev	17,376.1	6,964.0	4,903.6	4,802.2	48.345	CC, ES, SF
Higgins D19-720 - Sidetrack Curve/Horizontal - Sidetrack	12,741.7	11,636.0	4,897.5	4,840.6	86.153	CC
Higgins D19-720 - Sidetrack Curve/Horizontal - Sidetrack	17,376.1	6,950.2	4,903.8	4,802.2	48.248	ES, SF
Higgins D19-720 - Sidetrack Curve/Horizontal - Sidetrack	14,740.1	9,691.7	4,830.4	4,726.1	46.289	CC, ES
Higgins D19-720 - Sidetrack Curve/Horizontal - Sidetrack	17,376.1	7,045.1	4,900.3	4,779.2	40.485	SF
Higgins D19-720 - Sidetrack Curve/Horizontal - Sidetrack	14,740.1	9,691.7	4,830.4	4,726.1	46.289	CC, ES
Higgins D19-720 - Sidetrack Curve/Horizontal - Sidetrack	17,376.1	7,045.1	4,900.3	4,779.2	40.485	SF
Higgins D19-720 - Sidetrack Curve/Horizontal - Sidetrack	14,740.1	9,691.7	4,830.4	4,726.1	46.289	CC, ES
Higgins D19-720 - Sidetrack Curve/Horizontal - Sidetrack	17,376.1	7,045.1	4,900.3	4,779.2	40.485	SF
Higgins D19-720 - Sidetrack Curve/Horizontal - Sidetrack	14,740.1	9,691.7	4,830.4	4,726.1	46.289	CC, ES
Higgins D19-720 - Sidetrack Curve/Horizontal - Sidetrack	17,376.1	7,045.1	4,900.3	4,779.2	40.485	SF
Higgins D19-720 - Sidetrack Curve/Horizontal - ST01 - A	14,613.2	9,802.7	4,830.6	4,728.0	47.091	CC
Higgins D19-720 - Sidetrack Curve/Horizontal - ST01 - A	15,200.0	15,200.0	4,848.9	4,712.4	35.531	ES, SF
Independence D18-712 - Independence D18-712 - Prelim	16,781.3	6,029.1	5,321.8	5,203.9	45.141	CC
Independence D18-712 - Independence D18-712 - Prelim	16,800.0	6,027.7	5,321.8	5,203.7	45.065	ES
Independence D18-712 - Independence D18-712 - Prelim	17,376.1	5,983.2	5,354.5	5,230.8	43.295	SF
Independence D18-717 - Independence D18-717 - Prelim	16,746.2	6,341.9	5,015.1	4,896.7	42.382	CC
Independence D18-717 - Independence D18-717 - Prelim	16,800.0	6,350.9	5,015.3	4,896.4	42.162	ES
Independence D18-717 - Independence D18-717 - Prelim	17,376.1	6,834.6	5,048.5	4,922.7	40.117	SF
Independence D18-725 - Independence D18-725 - Prelim	17,123.7	6,925.6	4,498.8	4,375.9	36.610	CC
Independence D18-725 - Independence D18-725 - Prelim	17,376.1	7,126.5	4,500.7	4,375.0	35.794	ES, SF
Independence D18-732 - Independence D18-732 - Prelim	17,376.1	7,183.6	4,115.1	3,989.3	32.708	CC, ES, SF
Independence D18-739 - Independence D18-739 - Prelim	17,376.1	7,371.4	3,761.8	3,635.3	29.752	CC, ES, SF
Independence D18-744 - Independence D18-744 - Prelim	17,376.1	7,300.0	3,369.5	3,243.0	26.647	CC, ES, SF
Independence D18-753 - Independence D18-753 - Prelim	16,909.4	6,399.2	2,986.8	2,866.4	24.810	CC, ES
Independence D18-753 - Independence D18-753 - Prelim	17,376.1	6,646.8	3,018.9	2,892.9	23.957	SF
Independence D18-759 - Independence D18-759 - Prelim	17,027.2	6,634.8	2,695.4	2,573.4	22.092	CC
Independence D18-759 - Independence D18-759 - Prelim	17,100.0	6,682.5	2,696.0	2,573.1	21.926	ES
Independence D18-759 - Independence D18-759 - Prelim	17,376.1	6,976.4	2,704.9	2,578.6	21.422	SF
Independence D18-767 - Independence D18-767 - Prelim	17,376.1	7,095.8	2,142.3	2,016.7	17.056	CC, ES, SF
Independence D30-711 - Independence D30-711 - Prelim	17,376.1	5,814.6	5,419.1	5,297.5	44.570	CC, ES, SF
Independence D30-718 - Independence D30-718 - Prelim	7,500.0	17,288.6	5,059.0	4,955.0	48.606	ES
Independence D30-718 - Independence D30-718 - Prelim	7,500.7	17,287.9	5,059.0	4,955.0	48.608	CC
Independence D30-718 - Independence D30-718 - Prelim	17,300.0	7,487.7	5,155.0	5,029.4	41.017	SF
Independence D30-724 - Independence D30-724 - Prelim	7,506.4	17,303.2	4,618.5	4,514.6	44.450	CC, ES
Independence D30-724 - Independence D30-724 - Prelim	17,376.1	7,429.7	4,697.5	4,571.3	37.225	SF
Independence D30-731 - Independence D30-731 - Prelim	7,450.0	17,338.3	4,180.2	4,075.7	40.006	ES
Independence D30-731 - Independence D30-731 - Prelim	7,466.9	17,321.4	4,180.1	4,075.7	40.041	CC
Independence D30-731 - Independence D30-731 - Prelim	17,376.1	7,382.1	4,385.1	4,259.0	34.778	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 Emmy State H25-718
Project:	Conceptual Wells	TVD Reference:	WELL @ 4835.0ft (Original Well Elev)
Reference Site:	DP 408	MD Reference:	WELL @ 4835.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Emmy State H25-718	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
D Section 19						
Independence D30-737 - Independence D30-737 - Prelim	7,500.0	17,301.2	3,815.2	3,711.4	36.762	ES
Independence D30-737 - Independence D30-737 - Prelim	7,514.2	17,286.9	3,815.1	3,711.4	36.790	CC
Independence D30-737 - Independence D30-737 - Prelim	17,376.1	7,422.8	3,853.1	3,726.6	30.477	SF
Independence D30-743 - Independence D30-743 - Prelim	7,494.1	17,341.7	3,390.2	3,286.1	32.586	CC, ES
Independence D30-743 - Independence D30-743 - Prelim	17,376.1	7,452.8	3,501.5	3,374.8	27.631	SF
Independence D30-748 - Independence D30-748 - Prelim	17,376.1	7,358.4	2,956.8	2,830.2	23.352	CC, ES, SF
Independence D30-758 - Independence D30-758 - Prelim	7,500.0	17,305.0	2,606.8	2,503.3	25.185	ES
Independence D30-758 - Independence D30-758 - Prelim	7,519.0	17,286.0	2,606.7	2,503.3	25.210	CC
Independence D30-758 - Independence D30-758 - Prelim	17,376.1	7,432.1	2,632.0	2,505.6	20.820	SF
Independence D30-765 - Independence D30-765 - Prelim	7,490.5	17,238.7	2,150.8	2,047.2	20.747	CC, ES
Independence D30-765 - Independence D30-765 - Prelim	17,376.1	7,354.5	2,281.8	2,155.6	18.070	SF
Independence D30-770 - Independence D30-770 - Prelim	7,518.7	17,237.3	1,802.2	1,699.0	17.456	CC
Independence D30-770 - Independence D30-770 - Prelim	17,376.1	7,378.1	1,817.3	1,691.1	14.394	ES, SF
Independence D30-777 - Independence D30-777 - Prelim	7,485.1	17,253.2	1,362.0	1,258.6	13.175	CC, ES
Independence D30-777 - Independence D30-777 - Prelim	17,376.1	7,345.5	1,439.0	1,312.6	11.386	SF
Independence State D30-784 - Independence State D30	7,511.6	17,418.6	848.6	745.0	8.193	CC
Independence State D30-784 - Independence State D30	17,376.1	7,548.1	864.0	736.7	6.786	ES, SF
LDS White D19-10 - LDS White D19-10 - LDS White D19	14,269.9	6,902.6	3,420.2	3,324.5	35.736	CC
LDS White D19-10 - LDS White D19-10 - LDS White D19	14,300.0	6,902.6	3,420.3	3,324.2	35.605	ES
LDS White D19-10 - LDS White D19-10 - LDS White D19	15,100.0	6,903.5	3,519.5	3,416.0	34.031	SF
LDS White D19-15 - LDS White D19-15 - LDS White D19	12,856.4	6,944.3	3,482.3	3,399.8	42.224	CC
LDS White D19-15 - LDS White D19-15 - LDS White D19	12,900.0	6,943.8	3,482.6	3,399.6	41.973	ES
LDS White D19-15 - LDS White D19-15 - LDS White D19	13,800.0	6,934.9	3,607.8	3,516.6	39.536	SF
LDS White D19-16 - Wellbore #1 - Wellbore #1 - As Drill	12,888.8	6,898.3	4,773.1	4,690.4	57.731	CC
LDS White D19-16 - Wellbore #1 - Wellbore #1 - As Drill	12,900.0	6,898.3	4,773.1	4,690.3	57.646	ES
LDS White D19-16 - Wellbore #1 - Wellbore #1 - As Drill	14,500.0	6,896.0	5,037.7	4,940.9	52.017	SF
Mile High 02-19 - Wellbore #1 - Wellbore #1 - As Drilled	15,855.8	6,906.3	3,936.5	3,825.7	35.515	CC
Mile High 02-19 - Wellbore #1 - Wellbore #1 - As Drilled	15,900.0	6,906.5	3,936.8	3,825.4	35.354	ES
Mile High 02-19 - Wellbore #1 - Wellbore #1 - As Drilled	16,700.0	6,910.1	4,026.0	3,907.4	33.927	SF
Sean D19-09 - Wellbore #1 - Wellbore #1 - As Drilled	14,356.4	6,913.0	5,094.0	4,883.2	24.162	CC
Sean D19-09 - Wellbore #1 - Wellbore #1 - As Drilled	14,400.0	6,913.0	5,094.2	4,882.9	24.108	ES
Sean D19-09 - Wellbore #1 - Wellbore #1 - As Drilled	15,300.0	6,913.0	5,180.7	4,960.7	23.547	SF
Turk Blue D19-02J - Turk Blue D19-02J - Turk Blue D19-	16,536.2	6,916.4	1,942.4	1,825.0	16.542	CC, ES
Turk Blue D19-02J - Turk Blue D19-02J - Turk Blue D19-	16,800.0	6,918.9	1,960.2	1,840.0	16.304	SF
Turk Blue D19-04 - Turk Blue D19-04 - Turk Blue D19-04	16,967.1	6,949.7	1,074.3	952.7	8.833	CC
Turk Blue D19-04 - Turk Blue D19-04 - Turk Blue D19-04	17,000.0	6,950.0	1,074.8	952.7	8.799	ES
Turk Blue D19-04 - Turk Blue D19-04 - Turk Blue D19-04	17,100.0	6,950.6	1,082.5	959.3	8.786	SF
Turk Blue D19-05 - Turk Blue D19-05 - Turk Blue D19-05	15,318.7	6,900.9	1,096.9	991.0	10.358	CC, ES
Turk Blue D19-05 - Turk Blue D19-05 - Turk Blue D19-05	15,400.0	6,902.9	1,099.9	992.9	10.274	SF
Turk Blue D19-06 - Turk Blue D19-06 - Turk Blue D19-06	15,399.1	6,902.9	2,359.1	2,252.6	22.157	CC
Turk Blue D19-06 - Turk Blue D19-06 - Turk Blue D19-06	15,400.0	6,902.9	2,359.1	2,252.6	22.155	ES
Turk Blue D19-06 - Turk Blue D19-06 - Turk Blue D19-06	15,800.0	6,908.1	2,392.9	2,282.4	21.651	SF
Turk White D19-01 - Wellbore #1 - Wellbore #1 - As Drill	16,876.1	6,917.1	5,073.1	4,952.4	42.049	CC
Turk White D19-01 - Wellbore #1 - Wellbore #1 - As Drill	16,900.0	6,917.0	5,073.1	4,952.2	41.957	ES
Turk White D19-01 - Wellbore #1 - Wellbore #1 - As Drill	17,376.1	6,915.4	5,097.4	4,971.6	40.522	SF
Turk White D19-02 - Wellbore #1 - Wellbore #1 - As Drill	16,971.3	6,882.5	3,615.7	3,494.2	29.763	CC
Turk White D19-02 - Wellbore #1 - Wellbore #1 - As Drill	17,000.0	6,882.6	3,615.8	3,494.0	29.682	ES
Turk White D19-02 - Wellbore #1 - Wellbore #1 - As Drill	17,376.1	6,883.2	3,638.0	3,512.3	28.944	SF
Turk White D19-08 - Wellbore #1 - Wellbore #1 - As Drill	15,394.7	6,910.5	4,954.7	4,848.3	46.561	CC
Turk White D19-08 - Wellbore #1 - Wellbore #1 - As Drill	15,400.0	6,910.5	4,954.7	4,848.2	46.535	ES
Turk White D19-08 - Wellbore #1 - Wellbore #1 - As Drill	16,800.0	6,918.3	5,150.1	5,031.4	43.390	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 H25-718
Project:	Conceptual Wells	TVD Reference:	WELL @ 4835.0ft (Original Well Elev)
Reference Site:	DP 408	MD Reference:	WELL @ 4835.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Emmy State H25-718	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
D Section 29						
Guttersen D29 778 - Guttersen D29- 778 - Prelim - Rev 0	9,783.8	7,283.5	6,356.4	6,300.7	114.165	CC
Guttersen D29 778 - Guttersen D29- 778 - Prelim - Rev 0	17,376.1	14,855.2	6,380.3	6,208.8	37.199	ES, SF
Guttersen D29-30D - Wellbore #1 - Design #1	12,138.3	7,107.3	5,660.2	5,608.5	109.329	CC
Guttersen D29-30D - Wellbore #1 - Design #1	12,200.0	7,107.3	5,660.6	5,608.2	107.982	ES
Guttersen D29-30D - Wellbore #1 - Design #1	14,900.0	7,107.3	6,298.1	6,224.1	85.138	SF
Guttersen D29-31D - Wellbore #1 - Guttersen D29-31D	10,899.3	7,000.1	5,726.6	5,660.2	86.203	CC
Guttersen D29-31D - Wellbore #1 - Guttersen D29-31D	11,000.0	7,000.2	5,727.5	5,660.1	84.986	ES
Guttersen D29-31D - Wellbore #1 - Guttersen D29-31D	13,500.0	7,002.6	6,289.5	6,202.4	72.228	SF
Guttersen D29-65HN - Original Drilling - Original Drilling	9,523.1	6,221.0	5,862.8	5,813.3	118.306	CC
Guttersen D29-65HN - Original Drilling - Original Drilling	9,600.0	6,221.0	5,863.3	5,813.1	116.700	ES
Guttersen D29-65HN - Original Drilling - Original Drilling	12,900.0	6,316.0	6,762.2	6,685.7	88.315	SF
Guttersen D29-65HN - Original Drilling - Plan A Rev 1	9,501.0	6,151.6	5,883.4	5,853.8	198.932	CC
Guttersen D29-65HN - Original Drilling - Plan A Rev 1	9,600.0	6,151.6	5,884.2	5,853.7	193.197	ES
Guttersen D29-65HN - Original Drilling - Plan A Rev 1	13,500.0	6,151.6	7,113.8	7,054.4	119.713	SF
Guttersen D29-67HN - Original Drilling - Original Drilling	10,902.5	6,221.0	5,997.5	5,936.1	97.700	CC
Guttersen D29-67HN - Original Drilling - Original Drilling	11,000.0	6,221.0	5,998.3	5,935.9	96.185	ES
Guttersen D29-67HN - Original Drilling - Original Drilling	13,900.0	6,221.0	6,704.9	6,618.9	78.037	SF
Guttersen D29-67HN - Original Drilling - Plan A Rev 2	10,900.0	6,250.0	5,993.1	5,951.8	145.289	CC
Guttersen D29-67HN - Original Drilling - Plan A Rev 2	11,000.0	6,250.0	5,993.9	5,951.7	141.870	ES
Guttersen D29-67HN - Original Drilling - Plan A Rev 2	14,300.0	6,250.0	6,890.4	6,822.5	101.473	SF
Guttersen D29-69HN - Original Drilling - Original Drilling	12,154.7	6,411.0	6,006.9	5,925.8	74.122	CC
Guttersen D29-69HN - Original Drilling - Original Drilling	12,200.0	6,411.0	6,007.0	5,925.5	73.697	ES
Guttersen D29-69HN - Original Drilling - Original Drilling	14,500.0	6,411.0	6,448.5	6,348.1	64.280	SF
Guttersen D29-69HN - Original Drilling - Plan A Rev 2	12,147.2	6,446.9	6,006.4	5,953.9	114.412	CC
Guttersen D29-69HN - Original Drilling - Plan A Rev 2	12,200.0	6,446.9	6,006.6	5,953.6	113.228	ES
Guttersen D29-69HN - Original Drilling - Plan A Rev 2	15,100.0	6,446.9	6,693.0	6,616.8	87.899	SF
Guttersen D29-714 - Guttersen D29-714 - Prelim - Rev 0						Out of range
Guttersen D29-722 - Guttersen D29-722 - Prelim - Rev 0	9,198.7	5,822.2	9,967.0	9,919.3	208.730	CC
Guttersen D29-722 - Guttersen D29-722 - Prelim - Rev 0	9,300.0	5,806.5	9,967.5	9,919.0	205.453	ES
Guttersen D29-722 - Guttersen D29-722 - Prelim - Rev 0	10,000.0	5,702.3	9,998.4	9,944.3	184.705	SF
Guttersen D29-730 - Guttersen D29-730 - Prelim Rev 0	9,626.1	7,150.0	9,425.2	9,371.2	174.466	CC
Guttersen D29-730 - Guttersen D29-730 - Prelim Rev 0	17,376.1	14,811.7	9,497.0	9,325.9	55.523	ES, SF
Guttersen D29-738 - Guttersen D29-738 - Prelim - Rev 0	9,733.9	7,266.3	8,845.6	8,790.2	159.637	CC
Guttersen D29-738 - Guttersen D29-738 - Prelim - Rev 0	9,800.0	7,300.0	8,845.9	8,789.9	157.950	ES
Guttersen D29-738 - Guttersen D29-738 - Prelim - Rev 0	17,376.1	14,775.8	8,971.3	8,801.1	52.710	SF
Guttersen D29-746 - Guttersen D29-746 - Prelim - Rev 0	9,729.4	7,400.0	8,375.7	8,319.5	149.192	CC
Guttersen D29-746 - Guttersen D29-746 - Prelim - Rev 0	17,376.1	14,971.8	8,443.1	8,272.2	49.427	ES, SF
Guttersen D29-754 - Guttersen D29-754 - Prelim - Rev 0	9,100.5	5,405.0	7,701.8	7,655.5	166.163	CC
Guttersen D29-754 - Guttersen D29-754 - Prelim - Rev 0	9,200.0	5,388.8	7,702.4	7,655.3	163.562	ES
Guttersen D29-754 - Guttersen D29-754 - Prelim - Rev 0	17,376.1	15,169.7	7,936.5	7,764.1	46.034	SF
Guttersen D29-758 - Guttersen D29-758 - Prelim - Rev 0	9,130.3	5,880.6	7,482.3	7,434.5	156.642	CC
Guttersen D29-758 - Guttersen D29-758 - Prelim - Rev 0	9,200.0	5,871.1	7,482.6	7,434.3	154.922	ES
Guttersen D29-758 - Guttersen D29-758 - Prelim - Rev 0	17,376.1	14,941.0	7,649.9	7,478.4	44.607	SF
Guttersen D29-762 - Guttersen D29-762 - Prelim - Rev 0	9,186.8	6,231.0	7,268.2	7,219.3	148.605	CC
Guttersen D29-762 - Guttersen D29-762 - Prelim - Rev 0	9,200.0	6,231.0	7,268.3	7,219.2	148.280	ES
Guttersen D29-762 - Guttersen D29-762 - Prelim - Rev 0	17,376.1	14,788.2	7,399.7	7,228.7	43.294	SF
Guttersen D29-770 - Guttersen D29-770 - Prelim - Rev 0	9,544.9	7,116.5	6,812.6	6,759.3	127.745	CC
Guttersen D29-770 - Guttersen D29-770 - Prelim - Rev 0	17,376.1	14,877.2	6,892.1	6,720.3	40.133	ES, SF
Guttersen D29-786 - Guttersen D29-786 - Prelim - Rev 0	9,657.9	7,413.5	5,828.0	5,772.6	105.076	CC
Guttersen D29-786 - Guttersen D29-786 - Prelim - Rev 0	17,376.1	15,112.6	5,848.0	5,675.9	33.976	ES, SF
Guttersen D29-790 - Guttersen D29-790 - Prelim - Rev 0						Out of range
Guttersen D29-99HZ - Wellbore #1 - MWD Surveys	8,181.2	6,290.0	6,069.9	6,026.3	139.269	CC
Guttersen D29-99HZ - Wellbore #1 - MWD Surveys	8,200.0	6,290.0	6,070.0	6,026.3	138.942	ES

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Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region Drilling - Sandbox	Local Co-ordinate Reference:	Well Emmy State H25-718
Project:	Conceptual Wells	TVD Reference:	WELL @ 4835.0ft (Original Well Elev)
Reference Site:	DP 408	MD Reference:	WELL @ 4835.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Emmy State H25-718	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
D Section 29						
Guttersen D29-99HZ - Wellbore #1 - MWD Surveys	12,100.0	6,290.0	7,225.0	7,153.9	101.503	SF
Guttersen D30-68-1HN - Original Drilling - Original Drillin	11,193.2	11,278.0	1,031.4	960.2	14.488	CC
Guttersen D30-68-1HN - Original Drilling - Original Drillin	11,200.0	11,278.0	1,031.4	960.1	14.477	ES
Guttersen D30-68-1HN - Original Drilling - Original Drillin	11,900.0	11,278.0	1,250.3	1,133.8	10.735	SF
Guttersen D30-68-1HN - Original Drilling - Plan A Rev 3	11,187.4	11,260.0	1,030.4	987.0	23.755	CC
Guttersen D30-68-1HN - Original Drilling - Plan A Rev 3	11,200.0	11,260.0	1,030.5	986.9	23.647	ES
Guttersen D30-68-1HN - Original Drilling - Plan A Rev 3	11,400.0	11,260.0	1,052.1	1,006.1	22.870	SF
Guttersen D30-69-1HN - Original Drilling - Original Drillin	11,900.0	11,050.0	1,217.3	1,134.6	14.721	ES
Guttersen D30-69-1HN - Original Drilling - Original Drillin	11,931.5	11,050.0	1,216.9	1,134.7	14.803	CC
Guttersen D30-69-1HN - Original Drilling - Original Drillin	12,700.0	11,050.0	1,439.2	1,327.2	12.853	SF
Guttersen D30-69-1HN - Original Drilling - Plan A Rev 3	11,900.9	11,000.0	1,256.3	1,206.5	25.226	CC, ES
Guttersen D30-69-1HN - Original Drilling - Plan A Rev 3	12,200.0	11,000.0	1,291.4	1,238.3	24.331	SF
Guttersen Y05-711 - Guttersen Y05-711 - Prelim - Rev 0						Out of range
Guttersen Y05-719 - Guttersen Y05-719 - Prelim - Rev 0						Out of range
Guttersen Y05-726 - Guttersen Y05-726 - Prelim - Rev 0	10,180.1	6,046.0	9,877.4	9,821.0	175.160	CC
Guttersen Y05-726 - Guttersen Y05-726 - Prelim - Rev 0	10,300.0	6,064.6	9,878.1	9,820.6	171.659	ES
Guttersen Y05-726 - Guttersen Y05-726 - Prelim - Rev 0	11,700.0	6,250.0	9,991.0	9,919.9	140.500	SF
Guttersen Y05-734 - Guttersen Y05-734 - Prelim - Rev 0	9,653.2	7,219.5	9,123.9	9,069.5	167.673	CC
Guttersen Y05-734 - Guttersen Y05-734 - Prelim - Rev 0	9,800.0	7,165.6	9,124.7	9,069.1	164.058	ES
Guttersen Y05-734 - Guttersen Y05-734 - Prelim - Rev 0	14,100.0	6,550.0	9,983.1	9,891.7	109.170	SF
Guttersen Y05-741 - Guttersen Y05-741 - Prelim - Rev 0	9,816.8	7,350.0	8,626.1	8,569.7	153.044	CC
Guttersen Y05-741 - Guttersen Y05-741 - Prelim - Rev 0	9,900.0	7,327.7	8,626.4	8,569.3	151.128	ES
Guttersen Y05-741 - Guttersen Y05-741 - Prelim - Rev 0	15,200.0	6,700.0	9,973.3	9,874.2	100.598	SF
Guttersen Y05-749 - Guttersen Y05-749 - Prelim - Rev 0	9,600.1	7,481.0	8,124.4	8,069.0	146.642	CC
Guttersen Y05-749 - Guttersen Y05-749 - Prelim - Rev 0	9,700.0	7,450.0	8,124.9	8,068.6	144.470	ES
Guttersen Y05-749 - Guttersen Y05-749 - Prelim - Rev 0	15,100.0	6,873.6	9,622.4	9,524.1	97.902	SF
Guttersen Y05-756 - Guttersen Y05-756 - Prelim Rev 0	9,981.7	5,221.2	7,764.0	7,711.5	147.666	CC
Guttersen Y05-756 - Guttersen Y05-756 - Prelim Rev 0	10,100.0	5,237.5	7,764.9	7,711.2	144.563	ES
Guttersen Y05-756 - Guttersen Y05-756 - Prelim Rev 0	15,200.0	5,939.3	9,327.2	9,232.2	98.204	SF
Guttersen Y05-764 - Guttersen Y05-764 - Prelim Rev 0	10,246.4	6,210.7	7,337.8	7,280.0	126.928	CC
Guttersen Y05-764 - Guttersen Y05-764 - Prelim Rev 0	10,300.0	6,220.1	7,338.0	7,279.6	125.776	ES
Guttersen Y05-764 - Guttersen Y05-764 - Prelim Rev 0	14,500.0	6,350.0	8,472.7	8,380.6	92.040	SF
Guttersen Y05-767 - Guttersen Y05-767 - Prelim - Rev 0	10,099.8	6,332.4	7,181.5	7,124.8	126.652	CC
Guttersen Y05-767 - Guttersen Y05-767 - Prelim - Rev 0	10,200.0	6,334.7	7,182.2	7,124.6	124.599	ES
Guttersen Y05-767 - Guttersen Y05-767 - Prelim - Rev 0	14,300.0	6,350.0	8,319.5	8,229.5	92.439	SF
Guttersen Y05-771 - Guttersen Y05-771 - Prelim - Rev 0	7,500.0	9,308.5	6,955.8	6,907.4	143.817	ES
Guttersen Y05-771 - Guttersen Y05-771 - Prelim - Rev 0	7,506.0	9,302.5	6,955.8	6,907.4	143.866	CC
Guttersen Y05-771 - Guttersen Y05-771 - Prelim - Rev 0	14,100.0	6,400.0	8,058.4	7,969.8	90.941	SF
Guttersen Y05-779 - Guttersen Y05- 779 - Prelim - Rev 0	9,773.4	7,250.0	6,232.8	6,177.1	111.893	CC
Guttersen Y05-779 - Guttersen Y05- 779 - Prelim - Rev 0	9,900.0	7,200.0	6,233.5	6,176.7	109.771	ES
Guttersen Y05-779 - Guttersen Y05- 779 - Prelim - Rev 0	13,500.0	6,624.1	7,082.4	6,997.0	82.942	SF
Guttersen Y05-786 - Guttersen Y05-786 - Prelim - Rev 0	7,514.7	9,416.3	5,918.2	5,869.4	121.237	CC, ES
Guttersen Y05-786 - Guttersen Y05-786 - Prelim - Rev 0	13,200.0	6,750.0	6,777.9	6,694.6	81.373	SF
Hettinger C Unit 1 (Exist.) - Wellbore #1 - Design #1	11,162.8	6,948.0	4,555.8	4,512.9	106.188	CC
Hettinger C Unit 1 (Exist.) - Wellbore #1 - Design #1	11,200.0	6,948.0	4,555.9	4,512.6	105.232	ES
Hettinger C Unit 1 (Exist.) - Wellbore #1 - Design #1	13,400.0	6,948.0	5,075.4	5,014.3	83.027	SF
Jessie D29-1J - Wellbore #1 - Gyro Surveys	11,279.0	6,856.5	9,191.2	9,123.5	135.640	CC
Jessie D29-1J - Wellbore #1 - Gyro Surveys	11,400.0	6,855.7	9,192.0	9,123.1	133.328	ES
Jessie D29-1J - Wellbore #1 - Gyro Surveys	15,200.0	6,831.5	9,992.6	9,891.1	98.450	SF
Jessie D29-4J - Wellbore #1 - Gyro Surveys	8,613.4	6,669.6	9,245.6	9,199.9	202.141	CC
Jessie D29-4J - Wellbore #1 - Gyro Surveys	8,700.0	6,667.6	9,246.0	9,199.7	199.582	ES
Jessie D29-4J - Wellbore #1 - Gyro Surveys	12,400.0	6,600.0	9,990.5	9,913.9	130.352	SF
Kate Red D29-03J - Kate Red D29-03J - Kate Red D29-0	8,591.8	6,918.3	6,483.5	6,437.2	139.954	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 H25-718
Project:	Conceptual Wells	TVD Reference:	WELL @ 4835.0ft (Original Well Elev)
Reference Site:	DP 408	MD Reference:	WELL @ 4835.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Emmy State H25-718	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)	Between Ellipses (ft)	Separation Factor	Warning
D Section 29						
Kate Red D29-03J - Kate Red D29-03J - Kate Red D29-0	8,600.0	6,918.3	6,483.5	6,437.1	139.786	ES
Kate Red D29-03J - Kate Red D29-03J - Kate Red D29-0	12,800.0	6,930.9	7,729.5	7,651.6	99.230	SF
Kate Red D29-11 - Wellbore #1 - Gyro Surveys	8,958.6	6,998.7	7,455.6	7,406.8	152.563	CC
Kate Red D29-11 - Wellbore #1 - Gyro Surveys	9,000.0	6,999.1	7,455.8	7,406.6	151.575	ES
Kate Red D29-11 - Wellbore #1 - Gyro Surveys	13,900.0	7,049.3	8,944.3	8,857.8	103.348	SF
Kate Red D29-13 - Wellbore #1 - Gyro Surveys	7,521.4	6,895.3	6,132.3	6,090.7	147.370	CC
Kate Red D29-13 - Wellbore #1 - Gyro Surveys	7,523.3	6,895.3	6,132.3	6,090.7	147.353	ES
Kate Red D29-13 - Wellbore #1 - Gyro Surveys	11,900.0	6,866.9	7,538.2	7,468.2	107.744	SF
Kate Red D29-14 - Wellbore #1 - Gyro Surveys	7,624.6	6,914.5	7,498.0	7,456.2	179.209	CC, ES
Kate Red D29-14 - Wellbore #1 - Gyro Surveys	13,300.0	6,953.0	9,403.5	9,323.5	117.617	SF
Kate Red D29-2J - Wellbore #1 - Kate Red D29-2J	11,196.3	6,832.4	6,717.2	6,650.2	100.252	CC
Kate Red D29-2J - Wellbore #1 - Kate Red D29-2J	11,300.0	6,831.9	6,718.0	6,650.0	98.734	ES
Kate Red D29-2J - Wellbore #1 - Kate Red D29-2J	14,600.0	6,820.5	7,530.4	7,435.6	79.433	SF
Kate Red D29-3 - Wellbore #1 - Kate Red D29-3	11,599.7	6,869.2	7,603.3	7,532.6	107.551	CC
Kate Red D29-3 - Wellbore #1 - Kate Red D29-3	11,700.0	6,868.9	7,603.9	7,532.2	106.049	ES
Kate Red D29-3 - Wellbore #1 - Kate Red D29-3	15,500.0	6,856.8	8,545.3	8,442.9	83.455	SF
Kate Red D29-5 - Wellbore #1 - Gyro Surveys	10,283.8	6,813.4	6,233.9	6,175.0	105.775	CC
Kate Red D29-5 - Wellbore #1 - Gyro Surveys	10,300.0	6,813.5	6,233.9	6,174.8	105.496	ES
Kate Red D29-5 - Wellbore #1 - Gyro Surveys	13,600.0	6,834.1	7,061.1	6,975.1	82.147	SF
Kate Red D29-6 - Wellbore #1 - Gyro Surveys	10,246.1	6,902.9	7,590.4	7,531.6	129.026	CC
Kate Red D29-6 - Wellbore #1 - Gyro Surveys	10,300.0	6,902.7	7,590.6	7,531.3	127.930	ES
Kate Red D29-6 - Wellbore #1 - Gyro Surveys	14,700.0	6,910.0	8,800.7	8,706.5	93.418	SF
Kate White D29-1 - Wellbore #1 - Gyro Surveys						Out of range
Kate White D29-15 - Wellbore #1 - Gyro Surveys	7,731.1	6,600.0	8,743.2	8,702.0	211.969	CC, ES
Kate White D29-15 - Wellbore #1 - Gyro Surveys	12,500.0	6,600.0	9,959.2	9,883.2	131.030	SF
Kate White D29-16 - Wellbore #1 - Gyro Surveys						Out of range
Kate White D29-7 - Wellbore #1 - Gyro Surveys	10,248.1	6,824.6	9,075.8	9,017.1	154.676	CC
Kate White D29-7 - Wellbore #1 - Gyro Surveys	10,300.0	6,824.5	9,075.9	9,016.8	153.425	ES
Kate White D29-7 - Wellbore #1 - Gyro Surveys	14,400.0	6,814.7	9,980.4	9,886.4	106.199	SF
Kate White D29-8 - Wellbore #1 - Gyro Surveys						Out of range
Kate White D29-9 (SI) - Wellbore #1 - Gyro Surveys						Out of range

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region Drilling - Sandbox	Local Co-ordinate Reference:	Well Emmy State H25-718
Project:	Conceptual Wells	TVD Reference:	WELL @ 4835.0ft (Original Well Elev)
Reference Site:	DP 408	MD Reference:	WELL @ 4835.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Emmy State H25-718	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)	Between Ellipses (ft)	Separation Factor	Warning
D Section 30						
Adams D30-27D - Adams D30-27D - Adams D30-27D - A	12,367.0	6,956.3	4,114.1	4,033.4	51.005	CC
Adams D30-27D - Adams D30-27D - Adams D30-27D - A	12,400.0	6,956.3	4,114.2	4,033.1	50.759	ES
Adams D30-27D - Adams D30-27D - Adams D30-27D - A	13,700.0	6,959.6	4,324.6	4,231.1	46.232	SF
Adams D30-29D - Wellbore #1 - Wellbore #1 - As Drilled	12,120.5	7,025.4	1,768.7	1,692.2	23.124	CC, ES
Adams D30-29D - Wellbore #1 - Wellbore #1 - As Drilled	12,500.0	7,023.6	1,809.0	1,728.4	22.442	SF
Adams D30-30D - Adams D30-30D - Adams D30-30D - A	12,287.3	7,418.5	427.7	346.0	5.239	CC, ES
Adams D30-30D - Adams D30-30D - Adams D30-30D - A	12,500.0	7,418.4	477.6	374.2	4.620	SF
Adams D30-31D - Adams D30-31D - Adams D30-31D - A	10,994.5	7,387.5	709.8	616.3	7.586	CC
Adams D30-31D - Adams D30-31D - Adams D30-31D - A	11,100.0	7,387.1	717.6	612.4	6.821	ES
Adams D30-31D - Adams D30-31D - Adams D30-31D - A	11,300.0	7,386.3	772.8	650.9	6.340	SF
Corbin D30-23D - Corbin D30-23D - Corbin D30-23D - As	407.8	373.8	3,792.7	3,790.8	1,978.124	CC, ES
Corbin D30-23D - Corbin D30-23D - Corbin D30-23D - As	10,900.0	7,244.1	5,256.2	5,149.0	49.066	SF
Corbin Red D30-04J - Corbin Red D30-04J - Corbin Red	8,535.9	6,852.6	3,972.8	3,926.9	86.608	CC, ES
Corbin Red D30-04J - Corbin Red D30-04J - Corbin Red	10,600.0	6,685.7	4,473.9	4,412.5	72.884	SF
Corbin Red D30-09 - Corbin Red D30-09 - Corbin Red D	8,908.2	6,777.5	4,961.8	4,913.7	103.179	CC, ES
Corbin Red D30-09 - Corbin Red D30-09 - Corbin Red D	11,700.0	6,726.8	5,693.0	5,623.3	81.584	SF
Corbin Red D30-15 - Corbin Red D30-15 - Corbin Red D	7,553.7	6,982.2	3,616.8	3,574.9	86.300	CC, ES
Corbin Red D30-15 - Corbin Red D30-15 - Corbin Red D	9,500.0	6,833.6	4,105.3	4,051.9	76.854	SF
Corbin Red D30-16 - Corbin Red D30-16 - Corbin Red D	7,508.1	6,938.7	4,852.0	4,810.3	116.341	CC, ES
Corbin Red D30-16 - Corbin Red D30-16 - Corbin Red D	10,700.0	6,962.7	5,826.5	5,764.6	94.233	SF
Dechant D30-17D - Dechant D30-17D - Dechant D30-17	10,400.0	7,352.8	4,185.7	4,087.6	42.677	SF
Dechant D30-17D - Dechant D30-17D - Dechant D30-17	10,571.0	7,353.1	4,182.2	4,084.3	42.746	CC, ES
Dechant D30-20D - Dechant D30-20D - Dechant D30-20	9,621.4	7,037.1	1,722.4	1,665.7	30.389	CC, ES
Dechant D30-20D - Dechant D30-20D - Dechant D30-20	10,200.0	7,036.5	1,817.0	1,752.8	28.306	SF
Dechant D30-24D - Dechant D30-24D - Dechant D30-24	8,192.1	6,948.1	2,882.8	2,834.4	59.497	CC
Dechant D30-24D - Dechant D30-24D - Dechant D30-24	8,200.0	6,947.8	2,882.8	2,834.3	59.432	ES
Dechant D30-24D - Dechant D30-24D - Dechant D30-24	9,400.0	6,907.0	3,125.4	3,067.7	54.212	SF
Dechant D30-25D - Dechant D30-25D - Dechant D30-25	8,200.0	7,101.0	1,703.7	1,649.1	31.204	SF
Dechant D30-25D - Dechant D30-25D - Dechant D30-25	8,228.5	7,100.3	1,703.4	1,648.8	31.210	CC, ES
Dechant D31-27D - Dechant D31-27D - Dechant D31-27	433.9	400.0	3,794.3	3,792.2	1,843.940	CC
Dechant D31-27D - Dechant D31-27D - Dechant D31-27	500.0	434.3	3,794.5	3,792.1	1,630.949	ES
Dechant D31-27D - Dechant D31-27D - Dechant D31-27	11,100.0	7,246.5	5,896.9	5,809.2	67.254	SF
Dechant D31-28D - Dechant D31-28D - Dechant D31-28	7,326.8	6,899.8	2,868.4	2,827.2	69.480	CC, ES
Dechant D31-28D - Dechant D31-28D - Dechant D31-28	8,400.0	6,918.7	3,143.0	3,096.6	67.810	SF
Dechant D31-29D - Dechant D31-29D - Dechant D31-29	7,218.9	6,980.7	1,710.8	1,667.2	39.288	CC, ES
Dechant D31-29D - Dechant D31-29D - Dechant D31-29	7,700.0	7,030.0	1,821.8	1,773.5	37.693	SF
Dechant D31-77HN - Original Drilling - Original Drilling - A	7,081.7	6,746.3	2,351.6	2,312.7	60.522	CC, ES
Dechant D31-77HN - Original Drilling - Original Drilling - A	7,350.0	6,730.0	2,382.6	2,343.1	60.221	SF
Dechant D31-77HN - Original Drilling - Plan A - Rev 2	7,086.7	6,708.8	2,352.7	2,335.8	139.058	CC, ES
Dechant D31-77HN - Original Drilling - Plan A - Rev 2	8,600.0	6,450.0	2,936.3	2,912.2	121.544	SF
Dechant D31-77HN - Original Drilling - Plan B - Rev 0	7,090.0	6,713.6	2,351.9	2,335.0	138.977	CC, ES
Dechant D31-77HN - Original Drilling - Plan B - Rev 0	8,600.0	6,446.9	2,934.3	2,910.2	121.435	SF
Dechant D32-69HN - Original Drilling - APD Rev 0	7,313.6	6,348.4	5,512.9	5,495.4	314.672	CC, ES
Dechant D32-69HN - Original Drilling - APD Rev 0	12,200.0	6,348.4	7,585.4	7,539.8	166.094	SF
Hanson D30-11 - Hanson D30-11 - Hanson D30-11 - As D	9,018.6	6,857.3	2,265.9	2,216.7	46.101	CC, ES
Hanson D30-11 - Hanson D30-11 - Hanson D30-11 - As D	9,800.0	6,863.6	2,396.8	2,340.7	42.722	SF
Hanson D30-12 - Hanson D30-12 - Hanson D30-12 - As	9,125.8	6,930.5	1,101.7	1,051.7	22.035	CC, ES
Hanson D30-12 - Hanson D30-12 - Hanson D30-12 - As	9,400.0	6,932.7	1,135.3	1,082.3	21.423	SF
Hanson D30-13 - Hanson D30-13 - Hanson D30-13 - As	7,548.8	6,932.1	977.0	935.2	23.370	CC, ES
Hanson D30-13 - Hanson D30-13 - Hanson D30-13 - As	7,700.0	6,931.8	988.7	946.2	23.305	SF
Hanson D30-14 - Hanson D30-14 - Hanson D30-14 - As	7,624.7	6,772.5	2,445.4	2,403.8	58.699	CC, ES
Hanson D30-14 - Hanson D30-14 - Hanson D30-14 - As	8,600.0	6,747.2	2,632.6	2,585.3	55.752	SF
Hettinger C Unit 1 - Hettinger C Unit 1 - Hettinger C Unit	11,394.8	6,765.0	4,512.0	4,443.3	65.630	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 H25-718
Project:	Conceptual Wells	TVD Reference:	WELL @ 4835.0ft (Original Well Elev)
Reference Site:	DP 408	MD Reference:	WELL @ 4835.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Emmy State H25-718	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						
D Section 30						
Hettinger C Unit 1 - Hettinger C Unit 1 - Hettinger C Unit	11,400.0	6,765.0	4,512.0	4,443.2	65.577	ES
Hettinger C Unit 1 - Hettinger C Unit 1 - Hettinger C Unit	13,200.0	6,782.5	4,859.7	4,775.3	57.606	SF
Hettinger D30-02 - Hettinger D30-02 - Hettinger D30-02 -	11,712.1	6,919.0	3,602.8	3,494.5	33.283	CC, ES
Hettinger D30-02 - Hettinger D30-02 - Hettinger D30-02 -	12,600.0	6,919.0	3,710.6	3,593.7	31.759	SF
Hettinger D30-03 - Hettinger D30-03 - Hettinger D30-03 -	11,748.0	6,899.4	2,250.4	2,178.2	31.177	CC
Hettinger D30-03 - Hettinger D30-03 - Hettinger D30-03 -	11,800.0	6,899.3	2,251.0	2,178.2	30.913	ES
Hettinger D30-03 - Hettinger D30-03 - Hettinger D30-03 -	12,300.0	6,898.5	2,317.1	2,239.4	29.804	SF
Hettinger D30-04 - Hettinger D30-04 - Hettinger D30-04 -	11,786.1	6,900.0	1,084.7	1,012.1	14.937	CC
Hettinger D30-04 - Hettinger D30-04 - Hettinger D30-04 -	11,800.0	6,900.0	1,084.8	1,012.0	14.894	ES
Hettinger D30-04 - Hettinger D30-04 - Hettinger D30-04 -	11,900.0	6,900.0	1,090.7	1,016.5	14.697	SF
Hettinger D30-05 - Hettinger D30-05 - Hettinger D30-05 -	10,004.1	6,967.2	1,098.6	1,041.7	19.279	CC, ES
Hettinger D30-05 - Hettinger D30-05 - Hettinger D30-05 -	10,200.0	6,968.4	1,116.0	1,056.5	18.775	SF
Hettinger D30-06 - Hettinger D30-06 - Hettinger D30-06 -	10,045.7	6,902.2	2,290.8	2,233.5	40.044	CC, ES
Hettinger D30-06 - Hettinger D30-06 - Hettinger D30-06 -	10,700.0	6,907.7	2,382.4	2,318.8	37.460	SF
Hettinger D30-08 - Hettinger D30-08 - Hettinger D30-08 -	10,139.4	6,938.9	4,780.9	4,722.8	82.394	CC
Hettinger D30-08 - Hettinger D30-08 - Hettinger D30-08 -	10,200.0	6,938.8	4,781.3	4,722.6	81.566	ES
Hettinger D30-08 - Hettinger D30-08 - Hettinger D30-08 -	12,400.0	6,934.1	5,288.4	5,211.4	68.718	SF
Leslie E Hanson Gas Unit 1 - Leslie E Hanson Gas Unit	8,161.4	6,937.0	1,458.1	1,377.6	18.120	CC, ES
Leslie E Hanson Gas Unit 1 - Leslie E Hanson Gas Unit	8,400.0	6,937.0	1,477.5	1,395.2	17.955	SF
McWilliams D29-32 - McWilliams D29-32 - McWilliams D	9,652.0	6,798.0	5,463.2	5,409.5	101.678	CC
McWilliams D29-32 - McWilliams D29-32 - McWilliams D	9,700.0	6,797.6	5,463.4	5,409.3	100.861	ES
McWilliams D29-32 - McWilliams D29-32 - McWilliams D	12,600.0	6,777.0	6,207.8	6,130.3	80.141	SF
McWilliams D30-07 - McWilliams D30-07 - McWilliams D	10,380.6	6,927.0	3,600.2	3,503.7	37.314	CC
McWilliams D30-07 - McWilliams D30-07 - McWilliams D	10,400.0	6,927.0	3,600.3	3,503.6	37.236	ES
McWilliams D30-07 - McWilliams D30-07 - McWilliams D	11,400.0	6,927.0	3,741.8	3,635.7	35.272	SF
McWilliams D30-18 - McWilliams D30-18 - McWilliams D	10,869.7	6,835.0	2,938.4	2,874.2	45.779	CC
McWilliams D30-18 - McWilliams D30-18 - McWilliams D	10,900.0	6,835.3	2,938.5	2,874.0	45.541	ES
McWilliams D30-18 - McWilliams D30-18 - McWilliams D	11,800.0	6,843.9	3,082.1	3,009.2	42.276	SF
McWilliams D30-19 - McWilliams D30-19 - McWilliams D	10,916.1	6,903.1	1,754.5	1,687.9	26.363	CC, ES
McWilliams D30-19 - McWilliams D30-19 - McWilliams D	11,300.0	6,905.0	1,796.0	1,725.3	25.400	SF
McWilliams D30-21 - McWilliams D30-21 - McWilliams D	9,273.8	6,869.8	3,269.1	3,218.2	64.110	CC
McWilliams D30-21 - McWilliams D30-21 - McWilliams D	9,300.0	6,869.4	3,269.3	3,218.0	63.810	ES
McWilliams D30-21 - McWilliams D30-21 - McWilliams D	10,600.0	6,849.0	3,527.9	3,465.5	56.601	SF
McWilliams D30-22 - McWilliams D30-22 - McWilliams D	9,643.5	6,916.9	4,113.9	4,060.0	76.289	CC
McWilliams D30-22 - McWilliams D30-22 - McWilliams D	9,700.0	6,915.6	4,114.3	4,059.8	75.550	ES
McWilliams D30-22 - McWilliams D30-22 - McWilliams D	11,500.0	6,869.9	4,513.2	4,443.7	64.932	SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region Drilling - Sandbox	Local Co-ordinate Reference:	Well Emmy State H25-718
Project:	Conceptual Wells	TVD Reference:	WELL @ 4835.0ft (Original Well Elev)
Reference Site:	DP 408	MD Reference:	WELL @ 4835.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Emmy State H25-718	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						
Emmy H25-711 - Wellbore #1 - Prelim - Rev 2	2,000.0	2,000.0	22.4	13.7	2.570	CC, ES
Emmy H25-711 - Wellbore #1 - Prelim - Rev 2	17,376.1	17,529.8	448.6	250.7	2.267	SF
Emmy State H25-724 - Wellbore #1 - Prelim - Rev 2	2,400.0	2,400.0	22.4	11.9	2.129	CC
Emmy State H25-724 - Wellbore #1 - Prelim - Rev 2	2,500.0	2,500.6	22.6	11.7	2.077	ES, SF
Emmy State H25-731 - Wellbore #1 - Prelim - Rev 2	2,400.0	2,399.0	44.7	34.2	4.260	CC, ES
Emmy State H25-731 - Wellbore #1 - Prelim - Rev 2	2,500.0	2,499.8	45.5	34.6	4.172	SF
Emmy State H25-738 - Wellbore #1 - Prelim - Rev 2	2,400.0	2,400.0	67.1	56.6	6.388	CC, ES
Emmy State H25-738 - Wellbore #1 - Prelim - Rev 2	2,500.0	2,500.0	68.7	57.8	6.290	SF
Emmy State H25-744 - Wellbore #1 - Prelim - Rev 2	2,400.0	2,400.0	89.4	78.9	8.517	CC, ES
Emmy State H25-744 - Wellbore #1 - Prelim - Rev 2	2,500.0	2,500.0	91.1	80.2	8.335	SF
Emmy State H25-751 - Wellbore #1 - Design #1	17,374.8	17,580.8	2,049.8	1,846.3	10.072	CC, ES, SF
Emmy State H25-757 - Wellbore #1 - Design #1	2,975.3	3,406.4	2,144.4	2,130.9	158.495	CC
Emmy State H25-757 - Wellbore #1 - Design #1	3,000.0	3,431.0	2,144.5	2,130.9	157.257	ES
Emmy State H25-757 - Wellbore #1 - Design #1	17,376.1	17,494.8	2,488.3	2,284.6	12.214	SF
Emmy State H25-764 - Wellbore #1 - Design #1	2,400.0	2,415.0	2,201.6	2,196.3	419.467	CC, ES
Emmy State H25-764 - Wellbore #1 - Design #1	17,376.1	17,466.3	2,926.9	2,825.4	28.821	SF
Emmy State H25-771 - Wellbore #1 - Design #1	2,401.9	2,414.4	2,223.9	2,213.4	211.227	CC, ES
Emmy State H25-771 - Wellbore #1 - Design #1	17,376.1	17,392.2	3,368.0	3,164.1	16.518	SF
Emmy State H25-777 - Wellbore #1 - Design #1	2,112.1	2,124.1	2,246.3	2,237.0	243.381	CC
Emmy State H25-777 - Wellbore #1 - Design #1	2,200.0	2,208.7	2,246.3	2,236.7	233.631	ES
Emmy State H25-777 - Wellbore #1 - Design #1	17,376.1	17,404.9	3,806.5	3,602.8	18.687	SF
Emmy State H25-785 - Wellbore #1 - Prelim - Rev 2	1,912.1	1,924.1	2,271.4	2,263.1	272.667	CC
Emmy State H25-785 - Wellbore #1 - Prelim - Rev 2	2,000.0	2,000.0	2,271.4	2,262.7	261.134	ES
Emmy State H25-785 - Wellbore #1 - Prelim - Rev 2	17,376.1	17,481.1	4,247.7	4,044.4	20.886	SF
Emmy State H36-753 - Wellbore #1 - Design #1	6,502.3	7,856.8	2,102.4	2,068.2	61.417	CC, ES
Emmy State H36-753 - Wellbore #1 - Design #1	6,650.0	7,842.9	2,106.9	2,072.5	61.123	SF
Emmy State H36-760 - Wellbore #1 - Design #1	2,400.0	2,382.0	2,184.6	2,174.1	208.256	CC, ES
Emmy State H36-760 - Wellbore #1 - Design #1	6,700.0	7,659.9	2,582.2	2,549.2	78.133	SF
Emmy State H36-766 - Wellbore #1 - Design #1	2,427.6	2,460.5	2,206.8	2,196.1	206.483	CC
Emmy State H36-766 - Wellbore #1 - Design #1	2,500.0	2,570.8	2,207.1	2,196.0	199.252	ES
Emmy State H36-766 - Wellbore #1 - Design #1	8,800.0	6,750.0	3,256.3	3,220.1	90.044	SF
Emmy State H36-773 - Wellbore #1 - Design #1	2,400.0	2,412.0	2,229.2	2,218.6	211.827	CC, ES
Emmy State H36-773 - Wellbore #1 - Design #1	9,300.0	6,622.2	3,810.6	3,772.0	98.914	SF
Emmy State H36-780 - Wellbore #1 - Design #1	2,111.7	2,124.7	2,251.5	2,242.2	243.937	CC
Emmy State H36-780 - Wellbore #1 - Design #1	2,200.0	2,200.0	2,251.5	2,241.9	234.595	ES
Emmy State H36-780 - Wellbore #1 - Design #1	9,700.0	6,500.0	4,345.7	4,305.3	107.395	SF
Emmy State H36-787 - Wellbore #1 - Prelim - Rev 2	1,911.2	1,925.2	2,276.6	2,268.2	273.266	CC
Emmy State H36-787 - Wellbore #1 - Prelim - Rev 2	2,000.0	2,000.0	2,276.6	2,267.9	261.727	ES
Emmy State H36-787 - Wellbore #1 - Prelim - Rev 2	10,300.0	6,525.5	4,890.5	4,845.1	107.622	SF
Hurley H26-712 - Wellbore #1 - Design #1	17,376.1	14,867.2	4,688.9	4,511.4	26.415	CC, ES, SF
Hurley H26-717 - Wellbore #1 - Design #1	2,895.0	3,803.0	5,072.7	5,058.5	355.887	CC
Hurley H26-717 - Wellbore #1 - Design #1	17,376.1	14,749.1	5,097.3	4,923.0	29.233	ES, SF
Hurley H26-724 - Wellbore #1 - Design #1	2,638.4	3,110.5	5,207.3	5,195.1	427.044	CC, ES
Hurley H26-724 - Wellbore #1 - Design #1	17,376.1	14,819.6	5,533.9	5,358.2	31.501	SF
Hurley H26-730 - Wellbore #1 - Design #1	2,304.6	2,353.6	5,257.0	5,246.9	516.508	CC
Hurley H26-730 - Wellbore #1 - Design #1	2,400.0	2,433.6	5,257.1	5,246.6	497.657	ES
Hurley H26-730 - Wellbore #1 - Design #1	17,376.1	14,553.5	5,950.8	5,774.3	33.714	SF
Hurley H26-736 - Wellbore #1 - Design #1	2,400.0	2,450.0	5,275.9	5,265.3	497.309	CC, ES
Hurley H26-736 - Wellbore #1 - Design #1	17,376.1	14,663.9	6,363.7	6,189.2	36.477	SF
Hurley H26-743 - Wellbore #1 - Prelim - Rev 2	2,400.0	2,449.0	5,294.8	5,284.2	499.198	CC, ES
Hurley H26-743 - Wellbore #1 - Prelim - Rev 2	17,376.1	14,968.1	6,792.7	6,615.4	38.307	SF
Hurley H26-750 - Wellbore #1 - Prelim - Rev 2	17,376.1	15,113.3	7,215.4	7,036.4	40.307	CC, ES, SF
Hurley H26-756 - Wellbore #1 - Prelim - Rev 2	3,156.1	5,227.7	7,629.2	7,610.9	417.688	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 H25-718
Project:	Conceptual Wells	TVD Reference:	WELL @ 4835.0ft (Original Well Elev)
Reference Site:	DP 408	MD Reference:	WELL @ 4835.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Emmy State H25-718	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)	Between Ellipses (ft)	Separation Factor	Warning
DP 408						
Hurley H26-756 - Wellbore #1 - Prelim - Rev 2	17,376.1	14,860.6	7,686.0	7,510.9	43.886	ES, SF
Hurley H26-762 - Wellbore #1 - Prelim - Rev 2	2,897.1	4,278.2	7,790.7	7,775.4	510.593	CC
Hurley H26-762 - Wellbore #1 - Prelim - Rev 2	2,900.0	4,281.0	7,790.7	7,775.4	510.174	ES
Hurley H26-762 - Wellbore #1 - Prelim - Rev 2	17,376.1	14,820.2	8,107.9	7,932.6	46.263	SF
Hurley H26-768 - Wellbore #1 - Prelim - Rev 2	2,639.1	3,316.8	7,872.2	7,859.6	622.394	CC, ES
Hurley H26-768 - Wellbore #1 - Prelim - Rev 2	17,376.1	14,810.8	8,527.3	8,351.6	48.531	SF
Hurley H26-776 - Wellbore #1 - Prelim - Rev 2	2,110.3	2,126.3	7,914.1	7,904.9	857.406	CC
Hurley H26-776 - Wellbore #1 - Prelim - Rev 2	2,300.0	2,288.1	7,914.3	7,904.3	791.812	ES
Hurley H26-776 - Wellbore #1 - Prelim - Rev 2	17,376.1	14,881.6	8,957.3	8,778.7	50.147	SF
Hurley H26-783 - Wellbore #1 - Prelim - Rev 2	1,910.3	1,926.3	7,935.1	7,926.8	952.454	CC
Hurley H26-783 - Wellbore #1 - Prelim - Rev 2	2,000.0	2,000.0	7,935.2	7,926.5	912.251	ES
Hurley H26-783 - Wellbore #1 - Prelim - Rev 2	17,376.1	14,743.0	9,362.0	9,185.3	52.965	SF
Hurley H35-720 - Wellbore #1 - Design #1	5,661.9	10,601.5	5,151.0	5,103.3	107.953	CC
Hurley H35-720 - Wellbore #1 - Design #1	5,700.0	10,604.3	5,151.2	5,103.3	107.619	ES
Hurley H35-720 - Wellbore #1 - Design #1	12,900.0	6,700.0	5,783.0	5,715.9	86.241	SF
Hurley H35-727 - Wellbore #1 - Design #1	2,303.3	2,353.3	5,320.0	5,309.8	522.877	CC
Hurley H35-727 - Wellbore #1 - Design #1	2,400.0	2,422.8	5,320.1	5,309.5	504.389	ES
Hurley H35-727 - Wellbore #1 - Design #1	13,100.0	6,550.0	6,245.9	6,178.9	93.191	SF
Hurley H35-733 - Wellbore #1 - Design #1	2,400.0	2,449.0	5,338.5	5,327.9	503.317	CC, ES
Hurley H35-733 - Wellbore #1 - Design #1	13,400.0	6,450.0	6,684.7	6,615.2	96.246	SF
Hurley H35-740 - Wellbore #1 - Design #1	2,400.0	2,450.0	5,357.1	5,346.5	504.963	CC, ES
Hurley H35-740 - Wellbore #1 - Design #1	14,100.0	6,048.0	7,361.3	7,289.4	102.437	SF
Hurley H35-746 - Wellbore #1 - Prelim - Rev 2	1,904.6	1,953.6	5,375.8	5,367.4	641.506	CC
Hurley H35-746 - Wellbore #1 - Prelim - Rev 2	2,000.0	2,000.0	5,376.0	5,367.3	618.051	ES
Hurley H35-746 - Wellbore #1 - Prelim - Rev 2	14,300.0	5,641.5	7,797.6	7,725.5	108.095	SF
Hurley H35-755 - Wellbore #1 - Prelim - Rev 2	5,022.4	10,373.3	7,235.7	7,188.5	153.087	CC, ES
Hurley H35-755 - Wellbore #1 - Prelim - Rev 2	14,600.0	6,850.0	8,742.3	8,663.9	111.576	SF
Hurley H35-761 - Wellbore #1 - Prelim - Rev 2	4,930.0	10,157.7	7,647.2	7,601.9	168.691	CC, ES
Hurley H35-761 - Wellbore #1 - Prelim - Rev 2	15,000.0	6,700.0	9,323.4	9,243.8	117.141	SF
Hurley H35-768 - Wellbore #1 - Prelim - Rev 2	2,400.0	2,417.0	7,922.1	7,911.6	751.996	CC, ES
Hurley H35-768 - Wellbore #1 - Prelim - Rev 2	15,400.0	6,550.0	9,808.4	9,726.1	119.288	SF
Hurley H35-774 - Wellbore #1 - Prelim - Rev 2	2,309.8	2,326.8	7,943.0	7,932.8	784.143	CC
Hurley H35-774 - Wellbore #1 - Prelim - Rev 2	2,400.0	2,400.0	7,943.0	7,932.5	756.722	ES
Hurley H35-774 - Wellbore #1 - Prelim - Rev 2	15,100.0	6,450.0	9,956.3	9,874.5	121.741	SF
Hurley H35-779 - Wellbore #1 - Prelim - Rev 2	2,110.3	2,126.3	7,965.1	7,955.9	862.931	CC
Hurley H35-779 - Wellbore #1 - Prelim - Rev 2	2,200.0	2,200.0	7,965.1	7,955.5	829.919	ES
Hurley H35-779 - Wellbore #1 - Prelim - Rev 2	14,500.0	6,400.0	9,962.6	9,883.3	125.685	SF
Hurley H35-787 - Wellbore #1 - Prelim - Rev 2	1,910.3	1,926.3	7,986.0	7,977.7	958.558	CC
Hurley H35-787 - Wellbore #1 - Prelim - Rev 2	2,000.0	2,000.0	7,986.0	7,977.3	918.097	ES
Hurley H35-787 - Wellbore #1 - Prelim - Rev 2	13,500.0	5,463.9	9,971.2	9,900.3	140.644	SF
Hurley State H35-713 - Wellbore #1 - Design #1	5,762.0	10,314.2	4,700.4	4,651.6	96.273	CC, ES
Hurley State H35-713 - Wellbore #1 - Design #1	12,400.0	6,800.0	5,281.8	5,218.8	83.816	SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region Drilling - Sandbox	Local Co-ordinate Reference:	Well Emmy State H25-718
Project:	Conceptual Wells	TVD Reference:	WELL @ 4835.0ft (Original Well Elev)
Reference Site:	DP 408	MD Reference:	WELL @ 4835.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Emmy State H25-718	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	15,504.0	7,005.2	6,505.9	6,398.1	60.342	CC
Eachus 32-23 - Original Drilling - Original Drilling - As Dri	15,600.0	7,006.4	6,506.6	6,398.0	59.908	ES
Eachus 32-23 - Original Drilling - Original Drilling - As Dri	17,300.0	6,976.1	6,749.2	6,629.9	56.557	SF
Eachus 41-23 (PA) - Original Drilling - Original Drilling - A	16,716.2	6,979.0	5,312.6	5,077.9	22.634	CC
Eachus 41-23 (PA) - Original Drilling - Original Drilling - A	16,800.0	6,979.0	5,313.2	5,077.9	22.573	ES
Eachus 41-23 (PA) - Original Drilling - Original Drilling - A	17,376.1	6,979.0	5,353.7	5,114.3	22.370	SF
Eachus UPRR 31-23 - Original Drilling - Original Drilling -	16,835.8	7,051.2	6,560.6	6,379.2	36.170	CC
Eachus UPRR 31-23 - Original Drilling - Original Drilling -	16,900.0	7,051.4	6,560.9	6,379.0	36.065	ES
Eachus UPRR 31-23 - Original Drilling - Original Drilling -	17,376.1	7,052.6	6,583.0	6,397.4	35.463	SF
Eachus UPRR 42-23 (PA) - Original Drilling - Original Dri	15,397.5	6,989.0	5,286.8	5,064.6	23.786	CC
Eachus UPRR 42-23 (PA) - Original Drilling - Original Dri	15,400.0	6,989.0	5,286.8	5,064.5	23.783	ES
Eachus UPRR 42-23 (PA) - Original Drilling - Original Dri	16,100.0	6,989.0	5,333.3	5,106.1	23.474	SF
HSR Alberstein 16-23 - Original Drilling - Original Drilling	13,080.1	6,714.7	5,424.5	5,341.1	65.050	CC
HSR Alberstein 16-23 - Original Drilling - Original Drilling	13,100.0	6,715.3	5,424.5	5,340.9	64.925	ES
HSR Alberstein 16-23 - Original Drilling - Original Drilling	14,700.0	6,779.8	5,660.9	5,567.0	60.304	SF
HSR Ashley 15-23A - Original Drilling - Original Drilling -	13,158.7	6,700.0	6,755.3	6,671.1	80.226	CC
HSR Ashley 15-23A - Original Drilling - Original Drilling -	13,200.0	6,700.0	6,755.4	6,670.9	79.906	ES
HSR Ashley 15-23A - Original Drilling - Original Drilling -	15,600.0	6,759.8	7,182.7	7,082.4	71.631	SF
HSR Benirschke 10-23 - Original Drilling - Original Drillin	14,151.7	6,849.1	6,447.3	6,353.1	68.383	CC
HSR Benirschke 10-23 - Original Drilling - Original Drillin	14,200.0	6,851.3	6,447.5	6,352.8	68.091	ES
HSR Benirschke 10-23 - Original Drilling - Original Drillin	16,200.0	6,981.9	6,763.8	6,655.8	62.597	SF
HSR Eachus 03-23 - Original Drilling - Original Drilling - A	16,857.8	7,316.8	7,873.4	7,743.3	60.490	CC
HSR Eachus 03-23 - Original Drilling - Original Drilling - A	16,900.0	7,316.9	7,873.5	7,743.0	60.303	ES
HSR Eachus 03-23 - Original Drilling - Original Drilling - A	17,376.1	7,318.2	7,890.7	7,755.8	58.488	SF
HSR Eachus 04-23 - Original Drilling - Original Drilling - A	16,880.4	7,234.1	9,289.6	9,139.3	61.783	CC
HSR Eachus 04-23 - Original Drilling - Original Drilling - A	17,000.0	7,235.6	9,290.4	9,137.9	60.931	ES
HSR Eachus 04-23 - Original Drilling - Original Drilling - A	17,376.1	7,240.3	9,303.1	9,144.1	58.508	SF
HSR Eachus 05-23 - Original Drilling - Original Drilling - A	15,545.1	7,156.9	9,313.2	9,171.9	65.892	CC
HSR Eachus 05-23 - Original Drilling - Original Drilling - A	15,600.0	7,158.0	9,313.4	9,171.9	65.804	ES
HSR Eachus 05-23 - Original Drilling - Original Drilling - A	17,300.0	7,190.5	9,477.1	9,328.2	63.636	SF
HSR Fruman 06-23 - Original Drilling - Original Drilling - A	15,919.8	6,952.0	8,255.9	8,144.2	73.896	CC
HSR Fruman 06-23 - Original Drilling - Original Drilling - A	16,000.0	6,952.9	8,256.3	8,143.8	73.438	ES
HSR Fruman 06-23 - Original Drilling - Original Drilling - A	17,376.1	6,968.5	8,383.6	8,260.3	67.974	SF
HSR Grasshopper 09-23 - Original Drilling - Original Drill	13,898.1	7,200.0	5,536.0	5,442.6	59.229	CC
HSR Grasshopper 09-23 - Original Drilling - Original Drill	13,900.0	7,200.0	5,536.0	5,442.5	59.219	ES
HSR Grasshopper 09-23 - Original Drilling - Original Drill	15,300.0	7,160.5	5,710.6	5,608.3	55.801	SF
Ritchey 06-23 - Original Drilling - Original Drilling - As Dri	15,399.5	6,837.8	7,854.6	7,747.3	73.241	CC
Ritchey 06-23 - Original Drilling - Original Drilling - As Dri	15,500.0	6,836.4	7,855.2	7,747.1	72.685	ES
Ritchey 06-23 - Original Drilling - Original Drilling - As Dri	17,376.1	6,800.0	8,099.6	7,978.8	67.042	SF
Ritchey 21-23 - Original Drilling - Original Drilling - As Dri	16,243.5	7,109.7	7,105.3	6,989.9	61.556	CC
Ritchey 21-23 - Original Drilling - Original Drilling - As Dri	16,300.0	7,100.0	7,105.6	6,989.7	61.328	ES
Ritchey 21-23 - Original Drilling - Original Drilling - As Dri	17,376.1	7,100.0	7,195.3	7,071.5	58.123	SF
Ritchey 24-23 - Original Drilling - Original Drilling - As Dri	14,803.3	7,070.9	6,077.5	5,973.5	58.477	CC, ES
Ritchey 24-23 - Original Drilling - Original Drilling - As Dri	16,300.0	7,073.3	6,259.1	6,145.9	55.318	SF
Ritchey 31-24 - Original Drilling - Original Drilling - As Dri	16,150.2	7,128.9	4,685.4	4,569.4	40.387	CC
Ritchey 31-24 - Original Drilling - Original Drilling - As Dri	16,200.0	7,129.4	4,685.7	4,569.4	40.287	ES
Ritchey 31-24 - Original Drilling - Original Drilling - As Dri	16,900.0	7,135.8	4,745.0	4,625.2	39.606	SF
UPRC 23-11J - Original Drilling - Original Drilling - As Dri	14,162.6	6,833.0	8,177.8	8,083.4	86.675	CC
UPRC 23-11J - Original Drilling - Original Drilling - As Dri	14,200.0	6,832.7	8,177.8	8,083.2	86.386	ES
UPRC 23-11J - Original Drilling - Original Drilling - As Dri	17,376.1	17,376.1	8,786.7	8,634.7	57.813	SF
UPRC 23-12J - Original Drilling - Original Drilling - As Dri	14,162.3	6,882.7	9,478.5	9,384.0	100.208	CC
UPRC 23-12J - Original Drilling - Original Drilling - As Dri	14,200.0	6,882.9	9,478.6	9,383.7	99.864	ES
UPRC 23-12J - Original Drilling - Original Drilling - As Dri	17,300.0	6,898.8	9,984.4	9,867.1	85.115	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 H25-718
Project:	Conceptual Wells	TVD Reference:	WELL @ 4835.0ft (Original Well Elev)
Reference Site:	DP 408	MD Reference:	WELL @ 4835.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Emmy State H25-718	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						
UPRC H23-13 - Wellbore #1 - Wellbore #1 - As Drilled	13,011.0	6,932.6	9,476.8	9,392.8	112.828	CC
UPRC H23-13 - Wellbore #1 - Wellbore #1 - As Drilled	13,100.0	6,935.5	9,477.2	9,392.5	111.809	ES
UPRC H23-13 - Wellbore #1 - Wellbore #1 - As Drilled	16,200.0	7,060.0	9,998.3	9,890.5	92.724	SF
UPRC H23-14J - Original Drilling - Original Drilling - As D	12,879.2	7,088.0	7,767.3	7,683.9	93.094	CC
UPRC H23-14J - Original Drilling - Original Drilling - As D	12,900.0	7,089.5	7,767.3	7,683.7	92.893	ES
UPRC H23-14J - Original Drilling - Original Drilling - As D	16,100.0	7,315.0	8,405.6	8,300.0	79.631	SF
UPRC H23-24 - Original Drilling - Original Drilling - As Dr	13,778.0	6,867.8	7,528.1	7,437.3	82.840	CC
UPRC H23-24 - Original Drilling - Original Drilling - As Dr	13,800.0	6,868.4	7,528.2	7,437.1	82.671	ES
UPRC H23-24 - Original Drilling - Original Drilling - As Dr	16,500.0	6,931.7	8,004.7	7,895.6	73.322	SF
UPRR 53 Pan Am B#1 (PA) - Original Drilling - Original D	13,224.9	6,946.0	8,917.3	8,716.5	44.407	CC
UPRR 53 Pan Am B#1 (PA) - Original Drilling - Original D	13,300.0	6,946.0	8,917.6	8,716.1	44.268	ES
UPRR 53 Pan Am B#1 (PA) - Original Drilling - Original D	15,700.0	6,946.0	9,254.4	9,035.1	42.210	SF
UPRR 53 Pan Am UT V#1 - Original Drilling - Original Dr	15,920.8	6,888.9	5,800.8	5,689.5	52.134	CC
UPRR 53 Pan Am UT V#1 - Original Drilling - Original Dr	16,000.0	6,890.5	5,801.3	5,689.4	51.837	ES
UPRR 53 Pan Am UT V#1 - Original Drilling - Original Dr	17,300.0	6,918.3	5,962.5	5,842.3	49.608	SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region Drilling - Sandbox	Local Co-ordinate Reference:	Well Emmy State H25-718
Project:	Conceptual Wells	TVD Reference:	WELL @ 4835.0ft (Original Well Elev)
Reference Site:	DP 408	MD Reference:	WELL @ 4835.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Emmy State H25-718	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	14,178.2	6,937.3	112.8	17.6	1.185	Level 2, CC, ES, SF
Gurtler 24-10J - Original Drilling - Original Drilling - As Dr	14,200.9	6,951.1	1,306.9	1,211.7	13.732	CC, ES, SF
Gurtler 24-11J - Original Drilling - Original Drilling - As Dr	14,143.8	7,121.9	2,761.4	2,665.8	28.888	CC, ES
Gurtler 24-11J - Original Drilling - Original Drilling - As Dr	14,500.0	7,129.2	2,784.3	2,686.9	28.582	SF
Gurtler 24-12J - Original Drilling - Original Drilling - As Dr	14,151.7	6,500.0	4,008.0	3,916.0	43.576	CC
Gurtler 24-12J - Original Drilling - Original Drilling - As Dr	14,200.0	6,500.0	4,008.3	3,915.9	43.411	ES
Gurtler 24-12J - Original Drilling - Original Drilling - As Dr	14,900.0	6,500.0	4,077.2	3,980.8	42.285	SF
Gurtler 24-12J - Original Drilling - ST01 - ST01 Original D	13,951.7	7,340.0	3,830.8	3,736.3	40.521	CC
Gurtler 24-12J - Original Drilling - ST01 - ST01 Original D	14,000.0	7,340.0	3,831.1	3,736.2	40.366	ES
Gurtler 24-12J - Original Drilling - ST01 - ST01 Original D	14,600.0	7,340.0	3,885.3	3,786.7	39.396	SF
Gurtler 24-13J - Original Drilling - Original Drilling - As Dr	12,510.4	7,324.6	3,901.9	3,817.5	46.263	CC, ES
Gurtler 24-13J - Original Drilling - Original Drilling - As Dr	12,900.0	7,165.0	3,918.0	3,832.7	45.906	SF
Gurtler 24-15J - Original Drilling - Original Drilling - As Dr	12,850.0	6,966.6	1,393.2	1,310.7	16.895	CC, ES
Gurtler 24-15J - Original Drilling - Original Drilling - As Dr	12,900.0	6,966.8	1,394.1	1,311.5	16.874	SF
Gurtler 24-16J - Original Drilling - Original Drilling - As Dr	12,872.8	6,929.0	407.1	324.5	4.927	CC, ES, SF
Gurtler H24-14 - Original Drilling - Original Drilling - As D	12,734.0	7,010.6	2,554.6	2,472.9	31.259	CC, ES
Gurtler H24-14 - Original Drilling - Original Drilling - As D	13,000.0	7,012.5	2,568.4	2,485.3	30.897	SF
Gurtler H24-21 (PA) - Original Drilling - Original Drilling -	14,675.2	6,932.9	2,013.3	1,913.8	20.225	CC, ES
Gurtler H24-21 (PA) - Original Drilling - Original Drilling -	14,800.0	6,940.8	2,017.2	1,917.0	20.138	SF
Gurtler H24-23 - Original Drilling - Original Drilling - As D	13,526.2	6,948.2	755.4	666.5	8.499	CC, ES, SF
Gurtler H24-24 - Original Drilling - Original Drilling - As D	13,511.8	7,158.3	1,837.4	1,747.4	20.415	CC, ES
Gurtler H24-24 - Original Drilling - Original Drilling - As D	13,600.0	7,155.2	1,839.6	1,749.2	20.356	SF
Gurtler H24-99HZ - Wellbore #1 - Original Drilling	13,997.9	6,921.0	194.3	125.5	2.825	CC, ES, SF
Gurtler H25-27 - Original Drilling - Original Drilling - As D	12,300.0	6,938.8	809.4	730.2	10.221	ES, SF
Gurtler H25-27 - Original Drilling - Original Drilling - As D	12,300.8	6,938.8	809.4	730.2	10.222	CC
Gurtler Russell L1 (PA) - Original Drilling - Original Drilling	13,257.7	6,959.4	3,178.2	3,083.9	33.671	CC
Gurtler Russell L1 (PA) - Original Drilling - Original Drilling	13,300.0	6,959.7	3,178.5	3,083.8	33.569	ES
Gurtler Russell L1 (PA) - Original Drilling - Original Drilling	13,700.0	6,962.4	3,208.9	3,111.9	33.086	SF
HSR Brutschy 04-24 - Original Drilling - Original Drilling -	16,650.2	6,861.2	3,884.1	3,766.1	32.903	CC
HSR Brutschy 04-24 - Original Drilling - Original Drilling -	16,700.0	6,862.4	3,884.4	3,766.0	32.802	ES
HSR Brutschy 04-24 - Original Drilling - Original Drilling -	17,200.0	6,873.6	3,922.8	3,801.5	32.329	SF
HSR Epstein 05-24 - Original Drilling - Original Drilling - A	15,838.7	7,035.5	3,363.4	3,252.2	30.231	CC, ES
HSR Epstein 05-24 - Original Drilling - Original Drilling - A	16,200.0	7,028.4	3,382.8	3,269.5	29.849	SF
HSR Hoffman 03-24 - Original Drilling - Original Drilling -	16,711.8	6,957.3	2,577.6	2,452.5	20.599	CC, ES
HSR Hoffman 03-24 - Original Drilling - Original Drilling -	16,900.0	6,954.1	2,584.4	2,458.4	20.501	SF
HSR Sarchet 02-24 - Original Drilling - Original Drilling - A	16,708.7	6,974.0	1,225.5	1,106.2	10.272	CC, ES, SF
HSR Sarchet 06-24 - Original Drilling - Original Drilling - A	15,352.9	7,001.4	2,441.9	2,335.5	22.941	CC, ES
HSR Sarchet 06-24 - Original Drilling - Original Drilling - A	15,600.0	7,007.2	2,454.4	2,346.8	22.804	SF
HSR Traurig 01-24 - Original Drilling - Original Drilling - A	16,951.7	6,957.5	345.6	224.1	2.844	CC, ES, SF
Nopens D19-31 - Original Drilling - Original Drilling - As D	16,103.8	6,946.7	367.5	254.1	3.241	CC, ES, SF
Nopens H24-08 - Original Drilling - Original Drilling - As D	15,513.3	6,948.6	127.6	19.7	1.183	Level 2, CC, ES, SF
Sarchet H24-22 - Original Drilling - Original Drilling - As D	15,184.1	6,946.5	965.5	861.0	9.233	CC, ES
Sarchet H24-22 - Original Drilling - Original Drilling - As D	15,200.0	6,947.9	965.7	861.1	9.232	SF
Weld County Lumber 01 - Original Drilling - Original Drilling	15,929.8	6,953.8	1,147.2	1,035.4	10.267	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 Emmy State H25-718
Project:	Conceptual Wells	TVD Reference:	WELL @ 4835.0ft (Original Well Elev)
Reference Site:	DP 408	MD Reference:	WELL @ 4835.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Emmy State H25-718	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	10,777.7	7,085.9	1,976.9	1,909.0	29.120	CC, ES, SF
Dechant D30-33D - Original Drilling - Original Drilling - As	8,195.5	7,051.3	386.2	340.7	8.476	CC
Dechant D30-33D - Original Drilling - Original Drilling - As	8,200.0	7,051.3	386.3	340.6	8.462	ES
Dechant D30-33D - Original Drilling - Original Drilling - As	8,300.0	7,049.6	400.1	352.6	8.412	SF
Dechant D31-30D - Original Drilling - Original Drilling - As	7,200.0	7,006.7	296.7	251.3	6.536	SF
Dechant D31-30D - Original Drilling - Original Drilling - As	7,218.3	7,014.8	296.2	251.1	6.563	CC, ES
Dechant H25-64-1HN - Original Drilling - Original Drilling	8,500.0	11,317.0	56.8	-35.0	0.619	Level 1, ES, SF
Dechant H25-64-1HN - Original Drilling - Original Drilling	8,535.1	11,317.0	44.6	-3.8	0.921	Level 1, CC
Dechant H25-64-1HN - Original Drilling - Plan A - Rev 3	8,538.1	11,328.5	55.6	37.1	2.999	CC, ES, SF
Dechant H25-65HN - Original Drilling - Original Drilling	9,400.0	11,344.0	80.1	-38.6	0.674	Level 1, ES, SF
Dechant H25-65HN - Original Drilling - Original Drilling	9,464.4	11,344.0	47.6	-6.6	0.879	Level 1, CC
Dechant H25-65HN - Original Drilling - Plan A - Rev 3	9,452.5	11,335.6	47.1	21.3	1.825	CC, ES, SF
HSR Cohn 03-25 - Original Drilling - Original Drilling - As	11,510.7	7,016.1	2,884.8	2,814.4	40.947	CC, ES
HSR Cohn 03-25 - Original Drilling - Original Drilling - As	12,000.0	7,026.4	2,926.0	2,852.9	40.024	SF
HSR Crowe 06-25 - Original Drilling - Original Drilling - A	10,159.8	6,936.3	2,832.5	2,774.4	48.737	CC, ES
HSR Crowe 06-25 - Original Drilling - Original Drilling - A	10,700.0	6,915.0	2,883.5	2,822.7	47.424	SF
HSR Dechant 04-25 - Original Drilling - Original Drilling -	1,593.7	1,600.0	3,758.5	3,749.6	423.824	CC
HSR Dechant 04-25 - Original Drilling - Original Drilling -	1,600.0	1,600.0	3,758.5	3,749.6	423.146	ES
HSR Dechant 04-25 - Original Drilling - Original Drilling -	12,400.0	7,504.1	4,036.0	3,936.5	40.542	SF
HSR Dechant 05-25 - Original Drilling - Original Drilling -	10,068.1	6,925.5	3,839.0	3,781.7	67.009	CC
HSR Dechant 05-25 - Original Drilling - Original Drilling -	10,100.0	6,925.8	3,839.2	3,781.7	66.765	ES
HSR Dechant 05-25 - Original Drilling - Original Drilling -	11,200.0	6,936.2	4,002.4	3,938.7	62.802	SF
KY Blue D30-32 - Original Drilling - Original Drilling - As D	9,437.4	6,934.2	328.5	276.1	6.270	CC, ES
KY Blue D30-32 - Original Drilling - Original Drilling - As D	9,500.0	6,934.5	334.4	280.7	6.228	SF
KY Blue H25-04J - Original Drilling - Original Drilling - As	7,933.1	6,940.0	501.8	470.8	16.171	CC, ES, SF
KY Blue H25-09 - Original Drilling - Original Drilling - As D	8,900.0	6,943.6	194.3	145.3	3.966	SF
KY Blue H25-09 - Original Drilling - Original Drilling - As D	8,922.9	6,943.6	192.9	144.3	3.967	CC, ES
KY Blue H25-10 - Original Drilling - Original Drilling - As D	9,096.1	6,933.4	1,630.1	1,580.4	32.770	CC
KY Blue H25-10 - Original Drilling - Original Drilling - As D	9,100.0	6,933.4	1,630.1	1,580.4	32.760	ES
KY Blue H25-10 - Original Drilling - Original Drilling - As D	9,300.0	6,934.0	1,642.8	1,592.4	32.569	SF
KY Blue H25-11 - Original Drilling - Original Drilling - As D	2,210.3	2,192.7	2,276.5	2,264.2	184.671	CC
KY Blue H25-11 - Original Drilling - Original Drilling - As D	2,300.0	2,273.1	2,276.7	2,263.9	177.749	ES
KY Blue H25-11 - Original Drilling - Original Drilling - As D	9,400.0	6,926.2	2,844.9	2,764.6	35.426	SF
KY Blue H25-12 - Original Drilling - Original Drilling - As D	697.1	700.0	3,456.5	3,452.7	894.115	CC
KY Blue H25-12 - Original Drilling - Original Drilling - As D	800.0	775.6	3,457.0	3,452.6	775.430	ES
KY Blue H25-12 - Original Drilling - Original Drilling - As D	10,600.0	7,110.5	4,560.0	4,501.7	78.128	SF
KY Blue H25-14 - Original Drilling - Original Drilling - As D	2,308.4	2,286.4	1,503.5	1,490.7	116.994	CC
KY Blue H25-14 - Original Drilling - Original Drilling - As D	2,400.0	2,377.9	1,503.6	1,490.2	112.408	ES
KY Blue H25-14 - Original Drilling - Original Drilling - As D	7,900.0	6,967.1	2,776.5	2,733.9	65.145	SF
KY Blue H25-15 - Original Drilling - Original Drilling - As D	1,989.8	1,959.9	580.3	569.3	52.746	CC
KY Blue H25-15 - Original Drilling - Original Drilling - As D	2,100.0	2,066.7	580.6	569.0	49.960	ES
KY Blue H25-15 - Original Drilling - Original Drilling - As D	3,000.0	2,946.3	645.8	629.2	38.966	SF
KY H25-24 - Original Drilling - Original Drilling - As Drilled	1,934.4	1,907.1	1,303.5	1,292.8	121.811	CC
KY H25-24 - Original Drilling - Original Drilling - As Drilled	2,000.0	1,966.9	1,303.6	1,292.6	117.913	ES
KY H25-24 - Original Drilling - Original Drilling - As Drilled	8,600.0	6,939.3	2,103.9	2,058.3	46.125	SF
Moore UPRC H25-01 - Original Drilling - Original Drilling	11,614.1	6,925.6	26.9	-44.1	0.378	Level 1, CC, ES, SF
Moore UPRC H25-02 - Original Drilling - Original Drilling	11,503.0	6,960.7	1,411.4	1,341.2	20.122	CC, ES
Moore UPRC H25-02 - Original Drilling - Original Drilling	11,600.0	6,961.5	1,414.7	1,344.3	20.089	SF
Moser 25-32 - Original Drilling - Original Drilling - As Drill	10,067.3	6,945.9	1,718.0	1,660.6	29.909	CC, ES
Moser 25-32 - Original Drilling - Original Drilling - As Drill	10,200.0	6,944.5	1,723.1	1,665.2	29.732	SF
Moser 25-42 - Original Drilling - Original Drilling - As Drill	10,293.7	6,934.0	44.1	-15.2	0.743	Level 1, CC, ES, SF
UPRR 53 Pan Am T#2 - Original Drilling - Original Drilling	10,821.7	7,113.5	3,117.8	3,053.0	48.118	CC, ES
UPRR 53 Pan Am T#2 - Original Drilling - Original Drilling	11,500.0	7,120.0	3,190.8	3,122.3	46.615	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 H25-718
Project:	Conceptual Wells	TVD Reference:	WELL @ 4835.0ft (Original Well Elev)
Reference Site:	DP 408	MD Reference:	WELL @ 4835.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Emmy State H25-718	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						
UPRR 53 Pan Am UT T#1 - Original Drilling - Original Dr	10,650.6	6,933.0	735.5	558.4	4.154	CC, ES, SF
Von Feldt 1-25B - Original Drilling - Original Drilling - As D	0.0	0.0	2,536.7			
Von Feldt 1-25B - Original Drilling - Original Drilling - As D	2,100.0	2,082.5	2,541.6	2,529.9	217.726	ES
Von Feldt 1-25B - Original Drilling - Original Drilling - As D	9,200.0	6,900.0	3,926.1	3,878.4	82.276	SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region Drilling - Sandbox	Local Co-ordinate Reference:	Well Emmy State H25-718
Project:	Conceptual Wells	TVD Reference:	WELL @ 4835.0ft (Original Well Elev)
Reference Site:	DP 408	MD Reference:	WELL @ 4835.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Emmy State H25-718	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						
Bullard 31-26 - Original Drilling - Original Drilling - As Dril	11,804.4	6,866.2	6,742.7	6,670.2	93.109	CC
Bullard 31-26 - Original Drilling - Original Drilling - As Dril	11,900.0	6,870.2	6,743.3	6,670.1	92.124	ES
Bullard 31-26 - Original Drilling - Original Drilling - As Dril	16,500.0	16,500.0	8,213.1	8,091.1	67.323	SF
Bullard 32-26 - Original Drilling - Original Drilling - As Dril	725.0	742.0	6,118.2	6,114.3	1,564.733	CC
Bullard 32-26 - Original Drilling - Original Drilling - As Dril	800.0	800.0	6,118.3	6,114.0	1,428.948	ES
Bullard 32-26 - Original Drilling - Original Drilling - As Dril	13,300.0	7,004.5	7,320.7	7,242.7	93.865	SF
Bullard 41-26 - Original Drilling - Original Drilling - As Dril	11,286.2	6,884.9	5,786.6	5,718.8	85.331	CC
Bullard 41-26 - Original Drilling - Original Drilling - As Dril	11,300.0	6,885.1	5,786.7	5,718.7	85.196	ES
Bullard 41-26 - Original Drilling - Original Drilling - As Dril	13,400.0	6,900.0	6,160.6	6,079.3	75.795	SF
Dechant H25-29D - Original Drilling - Original Drilling - As	12,280.6	7,493.0	3,144.5	3,059.6	37.060	CC, ES
Dechant H25-29D - Original Drilling - Original Drilling - As	12,500.0	7,494.9	3,152.1	3,066.9	36.977	SF
Dechant H25-33D - Original Drilling - Original Drilling - As	4,406.6	6,340.2	4,530.4	4,477.8	86.087	CC
Dechant H25-33D - Original Drilling - Original Drilling - As	4,500.0	6,397.0	4,530.8	4,477.4	84.732	ES
Dechant H25-33D - Original Drilling - Original Drilling - As	15,600.0	15,600.0	8,102.3	7,940.6	50.108	SF
Harsh H26-09D - Original Drilling - Original Drilling - As D	338.2	358.2	4,426.2	4,424.5	2,609.246	CC
Harsh H26-09D - Original Drilling - Original Drilling - As D	1,600.0	1,594.5	4,431.1	4,422.2	500.374	ES
Harsh H26-09D - Original Drilling - Original Drilling - As D	11,300.0	6,997.9	5,719.7	5,657.2	91.456	SF
Harsh H26-10 - Original Drilling - Original Drilling - As Dr	519.6	541.6	5,609.0	5,606.2	2,048.389	CC
Harsh H26-10 - Original Drilling - Original Drilling - As Dr	2,419.2	2,478.8	5,618.5	5,604.7	407.945	ES
Harsh H26-10 - Original Drilling - Original Drilling - As Dr	12,600.0	6,981.2	7,381.2	7,310.1	103.922	SF
Harsh H26-15 - Original Drilling - Original Drilling - As Dr	1,122.0	1,148.0	5,423.9	5,417.7	871.876	CC
Harsh H26-15 - Original Drilling - Original Drilling - As Dr	1,300.0	1,319.7	5,424.4	5,417.2	751.201	ES
Harsh H26-15 - Original Drilling - Original Drilling - As Dr	11,600.0	7,096.8	7,660.8	7,597.5	120.982	SF
Harsh H26-16 - Original Drilling - Original Drilling - As Dr	0.0	12.5	4,344.9			
Harsh H26-16 - Original Drilling - Original Drilling - As Dr	1,200.0	1,184.0	4,347.2	4,340.7	667.371	ES
Harsh H26-16 - Original Drilling - Original Drilling - As Dr	9,200.0	9,200.0	5,754.1	5,697.6	101.869	SF
Harsh H26-23D - Original Drilling - Original Drilling - As D	3,096.1	4,472.0	5,234.3	5,211.2	226.340	CC
Harsh H26-23D - Original Drilling - Original Drilling - As D	3,100.0	4,476.2	5,234.3	5,211.2	226.065	ES
Harsh H26-23D - Original Drilling - Original Drilling - As D	11,500.0	7,176.2	6,706.8	6,639.8	100.057	SF
HSR Moser 04-26 - Original Drilling - Original Drilling - As	1,869.6	1,849.6	9,378.5	9,368.2	907.007	CC
HSR Moser 04-26 - Original Drilling - Original Drilling - As	12,000.0	6,600.0	9,383.5	9,310.4	128.405	ES
HSR Moser 04-26 - Original Drilling - Original Drilling - As	15,300.0	6,631.9	9,978.5	9,881.4	102.764	SF
HSR Moser 06-26 - Original Drilling - Original Drilling - As	0.0	0.0	7,203.2			
HSR Moser 06-26 - Original Drilling - Original Drilling - As	2,400.0	2,383.4	7,209.6	7,196.2	538.120	ES
HSR Moser 06-26 - Original Drilling - Original Drilling - As	14,300.0	7,074.1	8,761.2	8,675.9	102.721	SF
HSR Regalia 05-26 - Original Drilling - Original Drilling - A	2,293.2	2,276.4	8,456.0	8,443.2	660.918	CC
HSR Regalia 05-26 - Original Drilling - Original Drilling - A	2,400.0	2,355.8	8,456.2	8,442.9	635.277	ES
HSR Regalia 05-26 - Original Drilling - Original Drilling - A	14,500.0	7,375.5	9,590.6	9,499.4	105.202	SF
HSR-Moser 03-26A - Original Drilling - Original Drilling - A	11,776.2	6,730.1	7,702.6	7,631.0	107.596	CC
HSR-Moser 03-26A - Original Drilling - Original Drilling - A	11,800.0	6,730.6	7,702.6	7,630.8	107.302	ES
HSR-Moser 03-26A - Original Drilling - Original Drilling - A	15,200.0	6,800.0	8,428.4	8,333.9	89.250	SF
John 03-26 - Original Drilling - Original Drilling - As Drille	11,526.0	6,700.0	7,846.6	7,777.4	113.465	CC
John 03-26 - Original Drilling - Original Drilling - As Drille	11,600.0	6,700.0	7,846.9	7,777.2	112.496	ES
John 03-26 - Original Drilling - Original Drilling - As Drille	15,200.0	6,765.5	8,663.7	8,570.2	92.683	SF
Lamp H25-31 - Original Drilling - Original Drilling - As Dri	10,882.5	6,873.4	4,792.5	4,728.5	74.831	CC
Lamp H25-31 - Original Drilling - Original Drilling - As Dri	10,900.0	6,873.3	4,792.5	4,728.4	74.682	ES
Lamp H25-31 - Original Drilling - Original Drilling - As Dri	12,500.0	6,867.5	5,058.1	4,984.3	68.557	SF
Lamp H26-01 - Original Drilling - Original Drilling - As Dri	11,675.7	7,112.0	5,160.6	5,085.3	68.541	CC
Lamp H26-01 - Original Drilling - Original Drilling - As Dri	11,700.0	7,112.2	5,160.7	5,085.2	68.361	ES
Lamp H26-01 - Original Drilling - Original Drilling - As Dri	13,300.0	7,121.6	5,410.2	5,323.8	62.616	SF
Lamp H26-08 - Original Drilling - Original Drilling - As Dri	1,489.6	1,508.4	5,165.3	5,157.0	621.876	CC
Lamp H26-08 - Original Drilling - Original Drilling - As Dri	1,700.0	1,694.7	5,165.8	5,156.4	547.809	ES
Lamp H26-08 - Original Drilling - Original Drilling - As Dri	12,200.0	7,079.9	5,577.8	5,504.6	76.157	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 H25-718
Project:	Conceptual Wells	TVD Reference:	WELL @ 4835.0ft (Original Well Elev)
Reference Site:	DP 408	MD Reference:	WELL @ 4835.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Emmy State H25-718	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)	Between Ellipses (ft)	Separation Factor	Warning
H Section 26						
Lamp H26-22 - Original Drilling - Original Drilling - As Dri	2,008.4	2,027.7	5,177.7	5,166.3	455.253	CC
Lamp H26-22 - Original Drilling - Original Drilling - As Dri	2,100.0	2,083.2	5,178.0	5,166.2	438.513	ES
Lamp H26-22 - Original Drilling - Original Drilling - As Dri	12,000.0	6,922.3	6,470.0	6,399.1	91.309	SF
Moser 05-26 - Original Drilling - Original Drilling - As Drill	2,420.4	2,467.4	8,737.3	8,723.5	636.398	CC
Moser 05-26 - Original Drilling - Original Drilling - As Drill	2,500.0	2,656.0	8,737.6	8,723.1	600.474	ES
Moser 05-26 - Original Drilling - Original Drilling - As Drill	13,600.0	7,119.1	9,995.3	9,911.0	118.658	SF
Moser 41-27 - Original Drilling - Original Drilling - As Drill	893.4	878.4	8,743.0	8,738.3	1,834.778	CC
Moser 41-27 - Original Drilling - Original Drilling - As Drill	900.0	882.2	8,743.0	8,738.3	1,823.965	ES
Moser 41-27 - Original Drilling - Original Drilling - As Drill	4,000.0	4,000.0	9,457.9	9,433.6	388.893	SF
Moser H26-11 - Original Drilling - Original Drilling - As Dr	405.0	400.0	7,205.0	7,203.1	3,619.963	CC
Moser H26-11 - Original Drilling - Original Drilling - As Dr	1,000.0	957.1	7,206.5	7,201.3	1,367.414	ES
Moser H26-11 - Original Drilling - Original Drilling - As Dr	14,200.0	7,160.4	9,592.3	9,510.0	116.579	SF
Moser H26-12 - Wellbore #1 - Wellbore #1 - As Drilled	0.0	0.0	8,273.6			
Moser H26-12 - Wellbore #1 - Wellbore #1 - As Drilled	2,200.0	2,146.0	8,278.8	8,266.7	682.941	ES
Moser H26-12 - Wellbore #1 - Wellbore #1 - As Drilled	12,600.0	6,954.8	9,996.1	9,922.2	135.164	SF
Moser H26-13 - Wellbore #1 - Wellbore #1 - As Drilled	0.0	0.0	8,080.5			
Moser H26-13 - Wellbore #1 - Wellbore #1 - As Drilled	1,200.0	1,152.1	8,085.5	8,079.1	1,261.389	ES
Moser H26-13 - Wellbore #1 - Wellbore #1 - As Drilled	11,100.0	6,783.6	9,973.3	9,912.2	163.075	SF
Moser H26-14 - Original Drilling - Original Drilling - As Dr	560.8	565.8	6,575.3	6,572.4	2,252.062	CC
Moser H26-14 - Original Drilling - Original Drilling - As Dr	2,400.0	2,379.0	6,580.6	6,567.2	491.747	ES
Moser H26-14 - Original Drilling - Original Drilling - As Dr	13,100.0	6,836.5	9,660.4	9,590.8	138.728	SF
Moser H26-18D - Original Drilling - Original Drilling - As D	0.0	0.0	5,817.7			
Moser H26-18D - Original Drilling - Original Drilling - As D	17,200.0	17,200.0	9,451.8	9,286.8	57.291	SF
Moser H26-24 - Original Drilling - Original Drilling - As Dr	212.8	229.8	6,361.5	6,360.6	6,611.266	CC
Moser H26-24 - Original Drilling - Original Drilling - As Dr	2,403.1	2,427.1	6,368.1	6,354.6	469.311	ES
Moser H26-24 - Original Drilling - Original Drilling - As Dr	13,100.0	7,059.4	8,832.7	8,759.6	120.775	SF
Moser H26-25 - Original Drilling - Original Drilling - As Dr	0.0	4.4	7,134.7			
Moser H26-25 - Original Drilling - Original Drilling - As Dr	1,800.0	1,767.0	7,139.2	7,129.3	720.828	ES
Moser H26-25 - Original Drilling - Original Drilling - As Dr	13,800.0	7,104.7	9,993.8	9,916.3	129.022	SF
Moser H26-27D - Original Drilling - Original Drilling - As D	0.0	20.1	5,817.8			
Moser H26-27D - Original Drilling - Original Drilling - As D	14,200.0	7,068.3	6,257.8	6,164.0	66.702	SF
Moser H26-28D - Original Drilling - Original Drilling - As D	0.0	20.5	5,818.6			
Moser H26-28D - Original Drilling - Original Drilling - As D	16,000.0	7,555.6	8,255.4	8,134.8	68.482	SF
Moser H26-29D - Original Drilling - Original Drilling - As D	0.0	31.7	5,819.4			
Moser H26-29D - Original Drilling - Original Drilling - As D	200.0	196.0	5,819.9	5,819.1	7,395.561	ES
Moser H26-29D - Original Drilling - Original Drilling - As D	14,500.0	14,500.0	8,022.3	7,843.8	44.946	SF
Moser, Wesley E. G. U. B1 (PA) - Original Drilling - Origin	2,400.0	2,397.0	7,755.1	7,701.9	145.804	CC
Moser, Wesley E. G. U. B1 (PA) - Original Drilling - Origin	2,500.0	2,497.0	7,756.8	7,701.4	140.028	ES
Moser, Wesley E. G. U. B1 (PA) - Original Drilling - Origin	11,200.0	6,972.0	9,524.2	9,346.1	53.470	SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region Drilling - Sandbox	Local Co-ordinate Reference:	Well Emmy State H25-718
Project:	Conceptual Wells	TVD Reference:	WELL @ 4835.0ft (Original Well Elev)
Reference Site:	DP 408	MD Reference:	WELL @ 4835.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Emmy State H25-718	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 35						
Cannon Farms 01-35C - Original Drilling - Original Drilling	0.0	0.0	6,465.9			
Cannon Farms 01-35C - Original Drilling - Original Drilling	2,400.0	2,382.9	6,470.7	6,457.3	483.085	ES
Cannon Farms 01-35C - Original Drilling - Original Drilling	7,100.0	7,058.1	7,321.3	7,278.5	171.111	SF
Cannon H35-03D - Original Drilling - Original Drilling - As	0.0	11.0	8,079.2			
Cannon H35-03D - Original Drilling - Original Drilling - As	2,200.0	2,173.3	8,081.6	8,069.4	661.674	ES
Cannon H35-03D - Original Drilling - Original Drilling - As	7,100.0	6,690.3	9,128.1	9,087.3	223.872	SF
Cannon H35-09 - Original Drilling - Original Drilling - As D	2,477.5	2,554.2	5,545.1	5,531.0	391.594	CC
Cannon H35-09 - Original Drilling - Original Drilling - As D	2,500.0	2,570.4	5,545.2	5,530.9	388.755	ES
Cannon H35-09 - Original Drilling - Original Drilling - As D	7,400.0	6,954.9	6,655.6	6,609.6	144.725	SF
Cannon H35-10 - Original Drilling - Original Drilling - As D	0.0	0.0	6,617.3			
Cannon H35-10 - Original Drilling - Original Drilling - As D	2,406.1	2,423.6	6,618.8	6,605.3	488.371	ES
Cannon H35-10 - Original Drilling - Original Drilling - As D	7,200.0	6,990.3	7,656.7	7,614.7	182.053	SF
Cannon H35-11 - Original Drilling - Original Drilling - As D	510.7	525.8	7,457.7	7,455.0	2,780.827	CC
Cannon H35-11 - Original Drilling - Original Drilling - As D	700.0	668.7	7,458.2	7,454.6	2,063.060	ES
Cannon H35-11 - Original Drilling - Original Drilling - As D	6,950.0	6,643.9	8,430.1	8,389.6	208.373	SF
Cannon H35-12 - Original Drilling - Original Drilling - As D	0.0	0.0	8,795.2			
Cannon H35-12 - Original Drilling - Original Drilling - As D	7,300.0	6,987.5	9,993.4	9,951.5	238.717	SF
Cannon H35-13 - Wellbore #1 - Wellbore #1 - As Drilled	0.0	0.0	9,435.3			
Cannon H35-13 - Wellbore #1 - Wellbore #1 - As Drilled	1,000.0	967.0	9,439.9	9,434.6	1,777.551	ES
Cannon H35-13 - Wellbore #1 - Wellbore #1 - As Drilled	5,300.0	5,180.5	9,979.5	9,948.7	323.708	SF
Cannon H35-14 - Original Drilling - Original Drilling - As D	0.0	0.0	8,321.7			
Cannon H35-14 - Original Drilling - Original Drilling - As D	1,800.0	1,769.3	8,328.2	8,318.3	839.926	ES
Cannon H35-14 - Original Drilling - Original Drilling - As D	7,450.0	7,025.7	9,451.2	9,401.9	191.542	SF
Cannon H35-15 (PA) - Original Drilling - Original Drilling -	2,400.0	2,409.0	7,350.7	7,297.3	137.581	CC
Cannon H35-15 (PA) - Original Drilling - Original Drilling -	2,500.0	2,509.0	7,351.7	7,296.0	132.141	ES
Cannon H35-15 (PA) - Original Drilling - Original Drilling -	7,150.0	6,882.5	8,286.3	8,130.6	53.212	SF
Cannon H35-20 - Original Drilling - Original Drilling - As D	2,073.6	2,084.6	8,034.7	8,022.9	685.487	CC
Cannon H35-20 - Original Drilling - Original Drilling - As D	2,200.0	2,163.4	8,035.0	8,022.7	654.579	ES
Cannon H35-20 - Original Drilling - Original Drilling - As D	9,100.0	6,800.0	9,976.6	9,931.4	220.571	SF
Cannon H35-21 - Original Drilling - Original Drilling - As D	1,092.2	1,107.3	6,806.9	6,800.9	1,131.851	CC
Cannon H35-21 - Original Drilling - Original Drilling - As D	1,300.0	1,284.1	6,807.3	6,800.2	958.910	ES
Cannon H35-21 - Original Drilling - Original Drilling - As D	7,050.0	6,919.9	7,812.9	7,771.4	188.254	SF
Cannon H35-22 - Original Drilling - Original Drilling - As D	100.0	0.0	5,797.9	5,797.8	10,000.000	CC
Cannon H35-22 - Original Drilling - Original Drilling - As D	600.0	468.3	5,799.9	5,797.3	2,165.358	ES
Cannon H35-22 - Original Drilling - Original Drilling - As D	7,000.0	7,034.7	6,907.6	6,865.4	163.824	SF
Cannon H35-24 - Original Drilling - Original Drilling - As D	2,104.9	2,118.0	7,550.6	7,538.8	639.084	CC
Cannon H35-24 - Original Drilling - Original Drilling - As D	2,300.0	2,272.1	7,551.1	7,538.3	590.259	ES
Cannon H35-24 - Original Drilling - Original Drilling - As D	7,000.0	6,594.6	8,480.8	8,440.3	209.208	SF
Cannon X02-27 - Original Drilling - Original Drilling - As D	540.3	542.3	7,386.5	7,383.7	2,644.852	CC
Cannon X02-27 - Original Drilling - Original Drilling - As D	600.0	573.7	7,386.6	7,383.6	2,432.399	ES
Cannon X02-27 - Original Drilling - Original Drilling - As D	7,100.0	6,906.5	8,224.0	8,181.8	194.937	SF
Cannon X02-28 - Original Drilling - Original Drilling - As D	0.0	13.8	8,168.0			
Cannon X02-28 - Original Drilling - Original Drilling - As D	2,423.8	2,478.2	8,173.1	8,159.3	591.918	ES
Cannon X02-28 - Original Drilling - Original Drilling - As D	6,950.0	6,678.9	8,934.0	8,893.0	217.917	SF
Cannon X02-29 - Original Drilling - Original Drilling - As D	718.0	730.1	9,143.8	9,139.9	2,376.401	CC
Cannon X02-29 - Original Drilling - Original Drilling - As D	2,400.0	2,381.8	9,147.2	9,133.6	670.570	ES
Cannon X02-29 - Original Drilling - Original Drilling - As D	6,700.0	6,380.6	9,987.9	9,948.1	250.631	SF
Foster 18-35 - Original Drilling - Original Drilling - As Drill	651.1	652.1	7,633.6	7,630.2	2,231.388	CC
Foster 18-35 - Original Drilling - Original Drilling - As Drill	1,200.0	1,151.4	7,636.1	7,629.7	1,193.486	ES
Foster 18-35 - Original Drilling - Original Drilling - As Drill	10,500.0	6,860.6	9,960.2	9,905.7	182.746	SF
Foster UPRR 31-35 #1 (PA) - Original Drilling - Original D	2,400.0	2,421.0	5,491.0	5,437.4	102.466	CC
Foster UPRR 31-35 #1 (PA) - Original Drilling - Original D	2,500.0	2,521.0	5,492.6	5,436.8	98.449	ES
Foster UPRR 31-35 #1 (PA) - Original Drilling - Original D	7,400.0	6,984.7	6,740.5	6,583.7	42.963	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 H25-718
Project:	Conceptual Wells	TVD Reference:	WELL @ 4835.0ft (Original Well Elev)
Reference Site:	DP 408	MD Reference:	WELL @ 4835.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Emmy State H25-718	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 35						
Foster UPRR 32-35 - Original Drilling - Original Drilling -	1,146.8	1,163.9	6,006.0	5,999.7	949.599	CC
Foster UPRR 32-35 - Original Drilling - Original Drilling -	2,404.4	2,429.1	6,011.0	5,997.4	443.025	ES
Foster UPRR 32-35 - Original Drilling - Original Drilling -	11,000.0	7,000.0	9,026.6	8,973.0	168.547	SF
Foster UPRR 41-35 - Original Drilling - Original Drilling -	558.8	565.9	4,257.7	4,254.8	1,458.743	CC
Foster UPRR 41-35 - Original Drilling - Original Drilling -	2,400.0	2,376.7	4,263.1	4,249.7	318.631	ES
Foster UPRR 41-35 - Original Drilling - Original Drilling -	7,500.0	6,984.6	5,503.5	5,452.6	107.949	SF
Foster UPRR 42-35 #2 - Original Drilling - Original Drilling	0.0	0.0	4,752.2			
Foster UPRR 42-35 #2 - Original Drilling - Original Drilling	2,407.5	2,423.9	4,762.4	4,748.9	350.867	ES
Foster UPRR 42-35 #2 - Original Drilling - Original Drilling	6,950.0	6,928.7	5,667.0	5,625.6	136.926	SF
HSR Foster 03-35 - Original Drilling - Original Drilling - A	0.0	0.0	6,778.7			
HSR Foster 03-35 - Original Drilling - Original Drilling - A	1,900.0	1,865.0	6,789.1	6,778.6	648.476	ES
HSR Foster 03-35 - Original Drilling - Original Drilling - A	12,300.0	7,267.0	9,991.8	9,927.1	154.359	SF
HSR Foster 04-35 - Wellbore #1 - Wellbore #1 - As Drille	149.4	140.5	8,313.2	8,312.7	10,000.000	CC
HSR Foster 04-35 - Wellbore #1 - Wellbore #1 - As Drille	1,200.0	1,150.2	8,315.8	8,309.4	1,300.220	ES
HSR Foster 04-35 - Wellbore #1 - Wellbore #1 - As Drille	9,300.0	6,681.8	9,973.6	9,925.5	207.525	SF
HSR Foster 05-35 - Wellbore #1 - Wellbore #1 - As Drille	339.5	339.5	8,383.2	8,381.5	5,144.996	CC
HSR Foster 05-35 - Wellbore #1 - Wellbore #1 - As Drille	1,900.0	1,867.9	8,388.2	8,377.7	800.140	ES
HSR Foster 05-35 - Wellbore #1 - Wellbore #1 - As Drille	8,400.0	6,570.0	9,995.2	9,953.0	236.829	SF
HSR Foster 06-35 - Original Drilling - Original Drilling - A	512.8	525.8	7,101.8	7,099.1	2,657.266	CC
HSR Foster 06-35 - Original Drilling - Original Drilling - A	700.0	686.3	7,102.1	7,098.5	1,945.349	ES
HSR Foster 06-35 - Original Drilling - Original Drilling - A	11,000.0	6,917.4	9,997.0	9,942.1	181.983	SF
UPRR 53 Pan Am Unit P1 - Original Drilling - Original Dri	0.0	8.2	5,002.3			
UPRR 53 Pan Am Unit P1 - Original Drilling - Original Dri	2,435.6	2,496.1	5,006.5	4,992.6	361.024	ES
UPRR 53 Pan Am Unit P1 - Original Drilling - Original Dri	7,150.0	6,855.5	6,076.1	6,035.0	147.951	SF
UPRR 53 Pan Am UT P2 - Original Drilling - Original Drill	0.0	5.0	7,236.1			
UPRR 53 Pan Am UT P2 - Original Drilling - Original Drill	1,700.0	1,662.1	7,237.4	7,228.1	777.927	ES
UPRR 53 Pan Am UT P2 - Original Drilling - Original Drill	11,400.0	6,677.7	9,978.1	9,919.9	171.250	SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region Drilling - Sandbox	Local Co-ordinate Reference:	Well Emmy State H25-718
Project:	Conceptual Wells	TVD Reference:	WELL @ 4835.0ft (Original Well Elev)
Reference Site:	DP 408	MD Reference:	WELL @ 4835.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Emmy State H25-718	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 36						
Dechant 07-36 - Original Drilling - Original Drilling - As D	0.0	0.0	2,507.6			
Dechant 07-36 - Original Drilling - Original Drilling - As D	4,000.0	3,985.8	2,529.2	2,506.2	109.992	ES
Dechant 07-36 - Original Drilling - Original Drilling - As D	6,700.0	6,497.6	2,734.8	2,694.2	67.312	SF
Dechant 13N-1HZ - Original Drilling - Original Drilling - A	900.0	892.0	5,800.6	5,795.7	1,184.975	CC
Dechant 13N-1HZ - Original Drilling - Original Drilling - A	1,000.0	951.2	5,800.9	5,795.6	1,088.758	ES
Dechant 13N-1HZ - Original Drilling - Original Drilling - A	6,900.0	6,151.8	6,637.9	6,595.8	157.677	SF
Dechant 14C-1HZ - Original Drilling - Original Drilling - A	3,961.3	4,139.4	5,698.4	5,674.0	233.370	CC
Dechant 14C-1HZ - Original Drilling - Original Drilling - A	5,000.0	5,157.0	5,702.2	5,670.5	179.645	ES
Dechant 14C-1HZ - Original Drilling - Original Drilling - A	6,650.0	6,450.0	5,756.7	5,714.4	136.057	SF
Dechant 15-36 - Original Drilling - Original Drilling - As D	6,006.1	5,890.8	4,902.0	4,865.6	134.693	CC
Dechant 15-36 - Original Drilling - Original Drilling - As D	6,459.1	6,285.2	4,905.3	4,864.1	118.969	ES
Dechant 15-36 - Original Drilling - Original Drilling - As D	7,250.0	6,898.3	5,317.3	5,258.4	90.298	SF
Dechant 15C-1HZ - Original Drilling - Original Drilling - A	2,548.9	2,540.0	649.4	635.0	45.068	CC
Dechant 15C-1HZ - Original Drilling - Original Drilling - A	2,600.0	2,608.9	649.6	634.8	44.026	ES
Dechant 15C-1HZ - Original Drilling - Original Drilling - A	5,900.0	5,806.9	1,227.9	1,193.1	35.265	SF
Dechant 24-36 - Original Drilling - Original Drilling - As D	0.0	0.0	2,537.3			
Dechant 24-36 - Original Drilling - Original Drilling - As D	400.0	364.6	2,538.7	2,536.8	1,365.990	ES
Dechant 24-36 - Original Drilling - Original Drilling - As D	6,650.0	6,574.9	2,702.2	2,651.1	52.962	SF
Dechant 35N-E1HZ - Original Drilling - Original Drilling -	2,900.5	3,005.9	5,746.7	5,729.8	341.030	CC
Dechant 35N-E1HZ - Original Drilling - Original Drilling -	3,000.0	3,104.4	5,746.9	5,729.5	329.745	ES
Dechant 35N-E1HZ - Original Drilling - Original Drilling -	6,650.0	6,250.0	5,903.7	5,863.3	146.090	SF
Dechant 35N-W1HZ - Original Drilling - Original Drilling -	1,000.0	992.0	5,789.9	5,784.4	1,056.858	CC
Dechant 35N-W1HZ - Original Drilling - Original Drilling -	1,100.0	1,052.6	5,790.2	5,784.3	978.747	ES
Dechant 35N-W1HZ - Original Drilling - Original Drilling -	6,650.0	6,250.0	6,202.4	6,162.1	153.853	SF
Dechant 36N-W1HZ - Original Drilling - Original Drilling -	6,120.7	6,300.0	5,607.6	5,566.2	135.332	CC, ES
Dechant 36N-W1HZ - Original Drilling - Original Drilling -	6,700.0	6,371.8	5,670.6	5,627.2	130.422	SF
Dechant 37N-E1HZ - Original Drilling - Original Drilling -	6,489.9	6,400.0	5,092.1	5,041.7	101.099	CC, ES
Dechant 37N-E1HZ - Original Drilling - Original Drilling -	6,750.0	6,450.0	5,149.9	5,098.6	100.310	SF
Dechant 37N-W1HZ - Original Drilling - Original Drilling -	6,478.3	6,350.0	5,178.0	5,134.6	119.367	CC, ES
Dechant 37N-W1HZ - Original Drilling - Original Drilling -	6,700.0	6,400.0	5,219.4	5,175.2	118.062	SF
Dechant State 16C-1HZ - Original Drilling - Original Drilling	6,102.6	5,963.2	96.2	57.9	2.512	CC, ES, SF
Dechant State 36N-E1HZ - Original Drilling - Original Drilling	900.0	873.0	719.4	714.6	149.044	CC
Dechant State 36N-E1HZ - Original Drilling - Original Drilling	2,400.0	2,370.5	724.5	711.1	53.852	ES
Dechant State 36N-E1HZ - Original Drilling - Original Drilling	4,700.0	4,607.5	1,138.4	1,111.4	42.134	SF
Dechant State 37N-E36HZ - Original Drilling - Original Drilling	5,729.4	5,604.4	140.5	104.1	3.857	CC, ES, SF
Dechant State 37N-W36HZ - Original Drilling - Original Drilling	2,877.9	2,903.4	533.8	517.3	32.246	CC
Dechant State 37N-W36HZ - Original Drilling - Original Drilling	2,900.0	2,918.6	533.9	517.2	32.052	ES
Dechant State 37N-W36HZ - Original Drilling - Original Drilling	5,200.0	5,169.2	802.4	771.7	26.125	SF
Dechant State 38N-1HZ - Original Drilling - Original Drilling	6,623.9	6,400.0	411.8	372.9	10.566	CC, ES
Dechant State 38N-1HZ - Original Drilling - Original Drilling	6,650.0	6,416.1	412.6	373.5	10.543	SF
Dechant State H36-11D - Original Drilling - Original Drilling	2,177.3	2,162.5	3,974.2	3,962.0	327.160	CC
Dechant State H36-11D - Original Drilling - Original Drilling	2,400.0	2,376.4	3,974.4	3,961.0	296.769	ES
Dechant State H36-11D - Original Drilling - Original Drilling	7,050.0	7,050.0	4,584.7	4,541.6	106.541	SF
Dechant State H36-18D - Original Drilling - Original Drilling	4,867.9	5,366.0	2,300.2	2,263.0	61.871	CC
Dechant State H36-18D - Original Drilling - Original Drilling	4,900.0	5,387.9	2,300.3	2,262.9	61.530	ES
Dechant State H36-18D - Original Drilling - Original Drilling	6,550.0	6,582.5	2,517.0	2,471.8	55.768	SF
Dechant State H36-19 - Original Drilling - Original Drilling	1,151.5	1,132.5	2,793.3	2,787.1	448.940	CC
Dechant State H36-19 - Original Drilling - Original Drilling	2,500.0	2,537.7	2,793.8	2,779.7	197.574	ES
Dechant State H36-19 - Original Drilling - Original Drilling	6,800.0	6,436.4	3,720.2	3,681.1	95.034	SF
Dechant State H36-20D - Original Drilling - Original Drilling	4,264.1	4,865.9	4,037.8	4,009.8	144.415	CC
Dechant State H36-20D - Original Drilling - Original Drilling	4,300.0	4,897.0	4,038.0	4,009.8	143.292	ES
Dechant State H36-20D - Original Drilling - Original Drilling	6,850.0	6,695.7	4,439.7	4,398.8	108.404	SF
Dechant State H36-21D - Original Drilling - Original Drilling	5,201.1	5,458.0	3,371.7	3,339.4	104.503	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 H25-718
Project:	Conceptual Wells	TVD Reference:	WELL @ 4835.0ft (Original Well Elev)
Reference Site:	DP 408	MD Reference:	WELL @ 4835.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Emmy State H25-718	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 H36-21D - Original Drilling - Original Drilling	6,650.0	6,527.5	3,507.9	3,467.6	87.188	SF
Dechant State H36-24 - Original Drilling - Original Drilling	5,144.2	5,362.0	4,433.1	4,393.2	111.101	CC, ES
Dechant State H36-24 - Original Drilling - Original Drilling	6,750.0	6,803.8	4,539.9	4,491.0	92.851	SF
Dechant State H36-31D - Original Drilling - Original Drilling	1,012.7	1,006.7	2,777.9	2,773.6	645.160	CC
Dechant State H36-31D - Original Drilling - Original Drilling	1,100.0	1,065.0	2,778.1	2,773.4	589.855	ES
Dechant State H36-31D - Original Drilling - Original Drilling	7,000.0	6,965.3	4,900.5	4,859.4	119.410	SF
Dechant State H36-32D - Original Drilling - Original Drilling	2,677.3	2,930.7	4,613.6	4,597.4	285.907	CC
Dechant State H36-32D - Original Drilling - Original Drilling	2,700.0	2,946.9	4,613.6	4,597.4	283.734	ES
Dechant State H36-32D - Original Drilling - Original Drilling	6,700.0	6,700.0	5,292.6	5,250.4	125.426	SF
Dechant State H36-33 - Original Drilling - Original Drilling	0.0	3.0	4,736.0			
Dechant State H36-33 - Original Drilling - Original Drilling	500.0	477.6	4,736.9	4,734.5	1,944.255	ES
Dechant State H36-33 - Original Drilling - Original Drilling	6,800.0	6,791.3	5,996.5	5,949.7	128.243	SF
HSR Dechant State 02-36 - Original Drilling - Original Dri	100.0	72.0	885.1	884.9	4,309.766	CC
HSR Dechant State 02-36 - Original Drilling - Original Dri	600.0	569.7	886.5	883.5	293.283	ES
HSR Dechant State 02-36 - Original Drilling - Original Dri	6,500.0	6,348.8	1,633.0	1,594.7	42.671	SF
HSR Dechant/State 07-36 (PA) - Original Drilling - Origin	4,790.4	4,684.7	1,850.4	1,744.9	17.543	CC
HSR Dechant/State 07-36 (PA) - Original Drilling - Origin	5,300.0	5,172.0	1,856.4	1,739.4	15.873	ES
HSR Dechant/State 07-36 (PA) - Original Drilling - Origin	6,600.0	6,414.5	1,936.0	1,789.8	13.242	SF
Spike State GWS H36-03 - Original Drilling - Original Dri	0.0	0.0	1,648.9			
Spike State GWS H36-03 - Original Drilling - Original Dri	2,400.0	2,372.8	1,657.0	1,643.6	123.949	ES
Spike State GWS H36-03 - Original Drilling - Original Dri	6,650.0	6,414.0	2,585.3	2,546.6	66.796	SF
Spike State GWS H36-04 - Original Drilling - Original Dri	0.0	0.0	3,011.9			
Spike State GWS H36-04 - Original Drilling - Original Dri	2,448.8	2,478.5	3,018.3	3,004.4	218.176	ES
Spike State GWS H36-04 - Original Drilling - Original Dri	7,400.0	6,871.4	4,281.4	4,232.7	88.022	SF
Spike State GWS H36-13 - Original Drilling - Original Dri	1,945.4	1,934.5	5,952.6	5,941.8	550.460	CC
Spike State GWS H36-13 - Original Drilling - Original Dri	2,000.0	1,968.2	5,952.7	5,941.7	538.521	ES
Spike State GWS H36-13 - Original Drilling - Original Dri	6,750.0	7,444.0	6,170.6	6,126.9	141.429	SF
Spike State GWS H36-14 - Original Drilling - Original Dri	3,564.9	3,600.0	5,273.9	5,253.5	258.807	CC
Spike State GWS H36-14 - Original Drilling - Original Dri	3,600.0	3,619.9	5,273.9	5,253.4	256.681	ES
Spike State GWS H36-14 - Original Drilling - Original Dri	6,900.0	6,996.8	5,493.0	5,450.1	127.947	SF
Spike State H36-02J - Original Drilling - Original Drilling -	2,470.4	2,485.6	2,823.7	2,809.8	203.065	CC
Spike State H36-02J - Original Drilling - Original Drilling -	2,500.0	2,511.0	2,823.8	2,809.7	200.899	ES
Spike State H36-02J - Original Drilling - Original Drilling -	7,250.0	6,899.9	3,806.6	3,733.5	52.058	SF
Spike State H36-05 - Original Drilling - Original Drilling - A	2,551.2	2,669.7	3,788.3	3,773.6	257.821	CC
Spike State H36-05 - Original Drilling - Original Drilling - A	2,600.0	2,725.1	3,788.5	3,773.5	252.912	ES
Spike State H36-05 - Original Drilling - Original Drilling - A	6,900.0	6,648.8	4,584.4	4,543.9	113.276	SF
Spike State H36-11J - Original Drilling - Original Drilling -	0.0	0.0	4,852.9			
Spike State H36-11J - Original Drilling - Original Drilling -	2,400.0	2,377.6	4,858.0	4,844.7	362.998	ES
Spike State H36-11J - Original Drilling - Original Drilling -	6,900.0	6,817.3	5,330.5	5,288.5	126.857	SF
Spike State H36-12 - Original Drilling - Original Drilling - A	1,242.4	1,237.4	4,615.0	4,608.2	678.928	CC
Spike State H36-12 - Original Drilling - Original Drilling - A	2,426.2	2,440.2	4,616.1	4,602.5	338.266	ES
Spike State H36-12 - Original Drilling - Original Drilling - A	7,100.0	6,880.8	5,463.5	5,421.5	130.128	SF

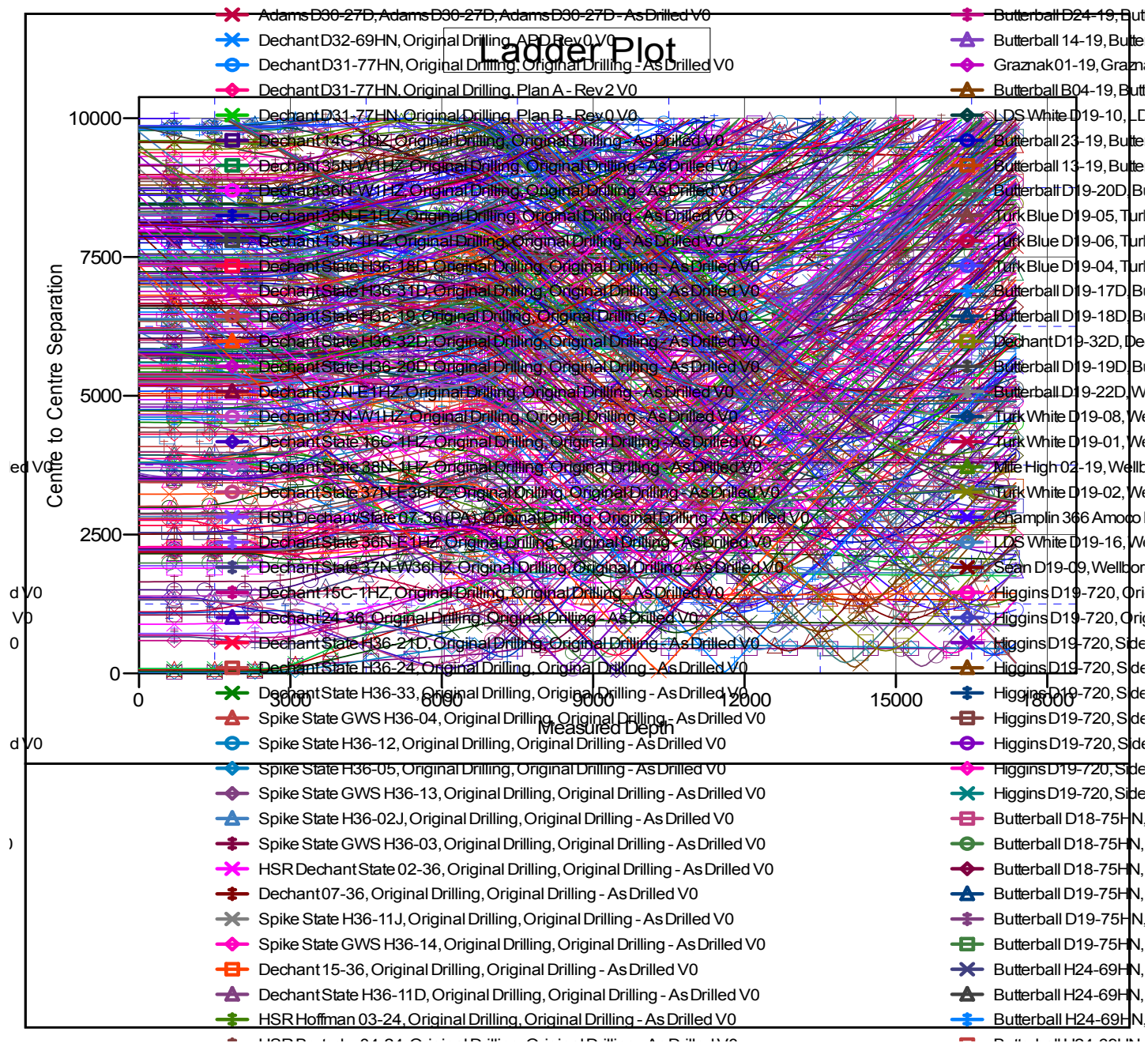
Anticollision Summary Report

Company:	Northern Region Drilling - Sandbox	Local Co-ordinate Reference:	Well Emmy State H25-718
Project:	Conceptual Wells	TVD Reference:	WELL @ 4835.0ft (Original Well Elev)
Reference Site:	DP 408	MD Reference:	WELL @ 4835.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Emmy State H25-718	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: Emmy State H25-718

Coordinate System is US State Plane 1983 Colorado Northern Zone

Grid Convergence at Surface is: 0.58°



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

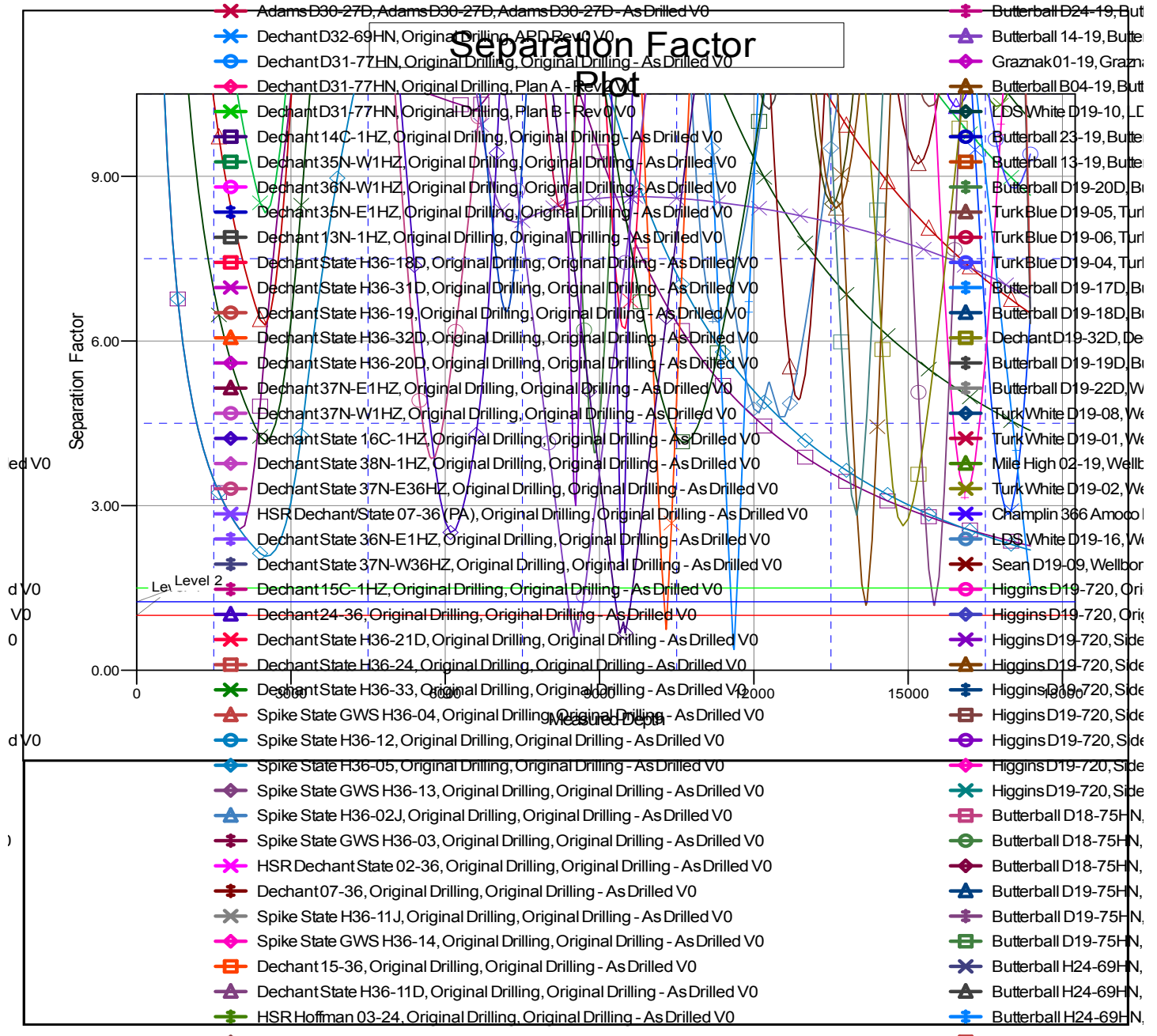
Anticollision Summary Report

Company:	Northern Region Drilling - Sandbox	Local Co-ordinate Reference:	Well Emmy State H25-718
Project:	Conceptual Wells	TVD Reference:	WELL @ 4835.0ft (Original Well Elev)
Reference Site:	DP 408	MD Reference:	WELL @ 4835.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Emmy State H25-718	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: Emmy State H25-718

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.58°



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