

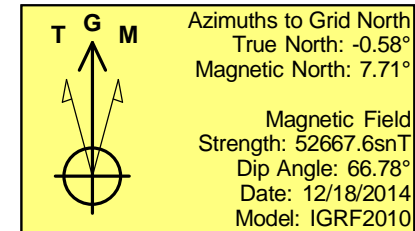
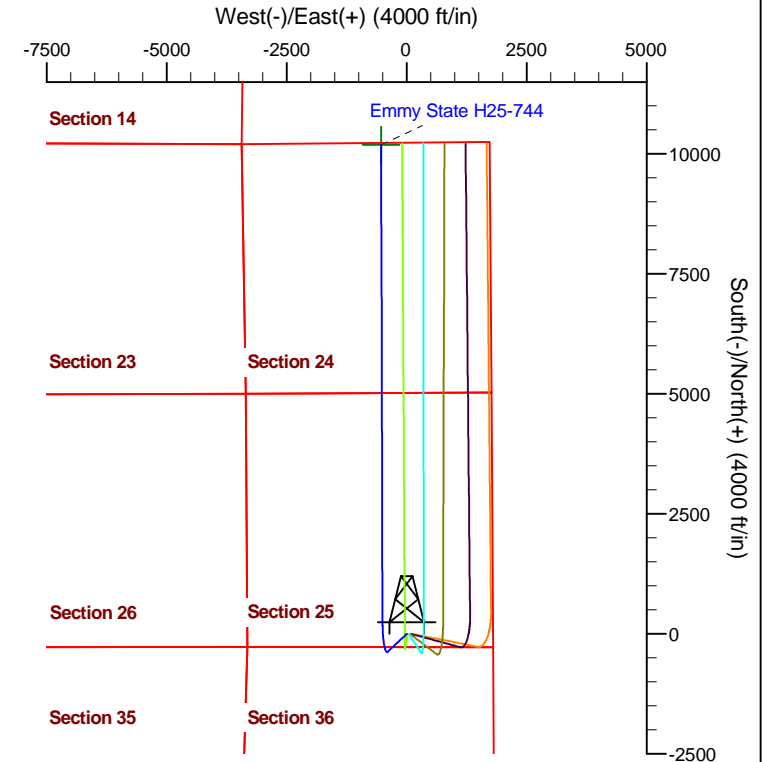
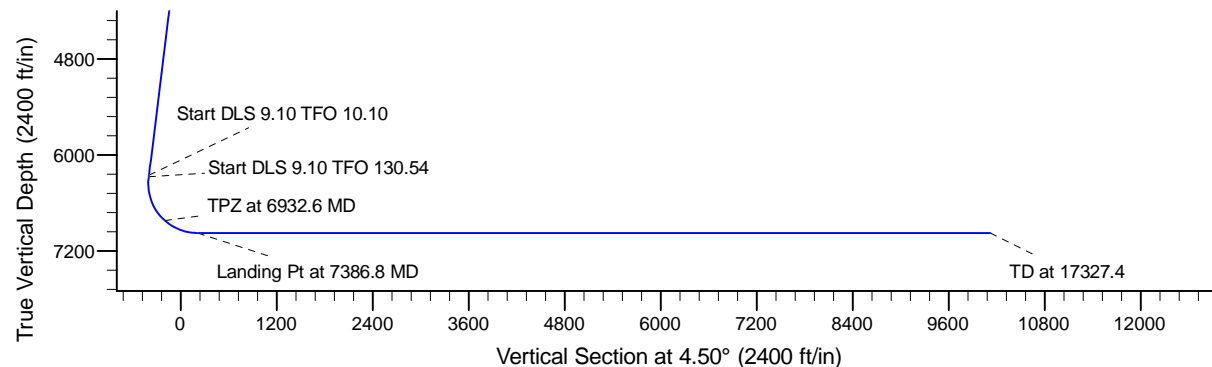
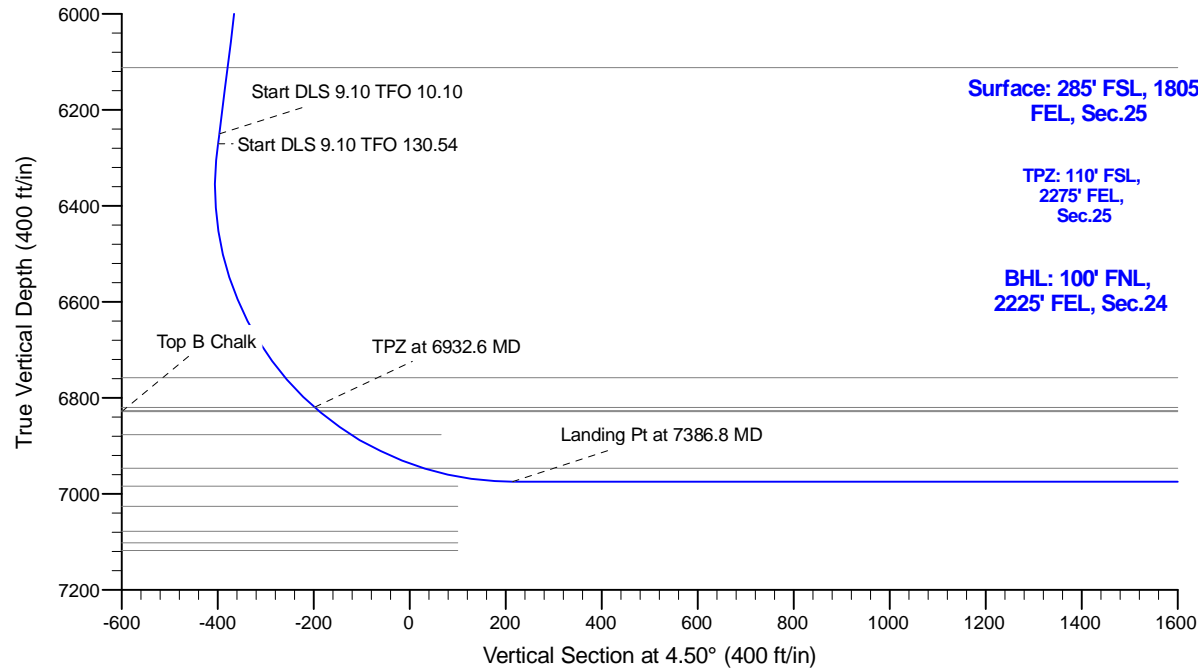
Project: Conceptual Wells
Site: DP 408
Well: Emmy State H25-744
Wellbore: Wellbore #1
Design: Prelim - Rev 2

Northern Region Drilling - DJ Basin

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

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	2800.0	0.00	0.00	2800.0	0.0	0.0	0.00	0.00	0.0	
3	3275.0	9.50	227.00	3272.8	-26.8	-28.7	2.00	227.00	-29.0	
4	6293.6	9.50	227.00	6250.0	-366.6	-393.1	0.00	0.00	-396.3	
5	6315.1	11.43	228.73	6271.2	-369.2	-396.0	9.10	10.10	-399.1	
6	7386.8	90.00	359.84	6975.0	255.0	-505.0	9.10	130.54	214.6	
7	17327.4	90.00	359.84	6975.0	10195.6	-532.5	0.00	0.00	10122.4	Emmy H25-744 BHL



WELL DETAILS: Emmy State H25-744

	Ground Level: 4805.0	
0.00.0	Northing Easting Latitude Longitude	
	1313189.22 3248843.00 40.189670 -104.609270	

Plan: Prelim - Rev 2 (Emmy State H25-744/Wellbore #1)

Created By: Colby Baxter Date: 15:56, November 01 2017

Checked: _____ Date: _____

Reviewed: _____ Date: _____

Approved: _____ Date: _____

Northern Region Drilling - Sandbox

Conceptual Wells

DP 408

Emmy State H25-744

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 H25-744
Company:	Northern Region Drilling - Sandbox	TVD Reference:	WELL @ 4835.0ft
Project:	Conceptual Wells	MD Reference:	WELL @ 4835.0ft
Site:	DP 408	North Reference:	Grid
Well:	Emmy State H25-744	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 H25-744					
Well Position	+N/-S	-4,995.7 ft	Northing:	1,313,189.22 usft	Latitude:	40.189670
	+E/-W	8,618.2 ft	Easting:	3,248,843.00 usft	Longitude:	-104.609270
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	52,667.55332324

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	4.50

Plan Sections										
Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Dogleg Rate	Build Rate	Turn Rate	TFO	Target
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(°/100usft)	(°/100usft)	(°/100usft)	(°)	
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.00	0.00	0.00	0.00	
3,275.0	9.50	227.00	3,272.8	-26.8	-28.7	2.00	2.00	0.00	227.00	
6,293.6	9.50	227.00	6,250.0	-366.6	-393.1	0.00	0.00	0.00	0.00	
6,315.1	11.43	228.73	6,271.2	-369.2	-396.0	9.10	8.98	8.05	10.10	
7,386.8	90.00	359.84	6,975.0	255.0	-505.0	9.10	7.33	12.23	130.54	
17,327.4	90.00	359.84	6,975.0	10,195.6	-532.5	0.00	0.00	0.00	0.00	Emmy H25-744 BHL

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Emmy State H25-744
Company:	Northern Region Drilling - Sandbox	TVD Reference:	WELL @ 4835.0ft
Project:	Conceptual Wells	MD Reference:	WELL @ 4835.0ft
Site:	DP 408	North Reference:	Grid
Well:	Emmy State H25-744	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Prelim - Rev 2		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00
2,900.0	2.00	227.00	2,900.0	-1.2	-1.3	-1.3	2.00	2.00	0.00
3,000.0	4.00	227.00	2,999.8	-4.8	-5.1	-5.1	2.00	2.00	0.00
3,100.0	6.00	227.00	3,099.5	-10.7	-11.5	-11.6	2.00	2.00	0.00
3,200.0	8.00	227.00	3,198.7	-19.0	-20.4	-20.6	2.00	2.00	0.00
3,275.0	9.50	227.00	3,272.8	-26.8	-28.7	-29.0	2.00	2.00	0.00
3,300.0	9.50	227.00	3,297.5	-29.6	-31.8	-32.0	0.00	0.00	0.00
3,400.0	9.50	227.00	3,396.1	-40.9	-43.8	-44.2	0.00	0.00	0.00
3,500.0	9.50	227.00	3,494.7	-52.1	-55.9	-56.3	0.00	0.00	0.00
3,600.0	9.50	227.00	3,593.4	-63.4	-68.0	-68.5	0.00	0.00	0.00
3,700.0	9.50	227.00	3,692.0	-74.6	-80.0	-80.7	0.00	0.00	0.00
3,800.0	9.50	227.00	3,790.6	-85.9	-92.1	-92.9	0.00	0.00	0.00
3,900.0	9.50	227.00	3,889.3	-97.1	-104.2	-105.0	0.00	0.00	0.00
4,000.0	9.50	227.00	3,987.9	-108.4	-116.2	-117.2	0.00	0.00	0.00
4,100.0	9.50	227.00	4,086.5	-119.7	-128.3	-129.4	0.00	0.00	0.00
4,200.0	9.50	227.00	4,185.1	-130.9	-140.4	-141.5	0.00	0.00	0.00
4,300.0	9.50	227.00	4,283.8	-142.2	-152.5	-153.7	0.00	0.00	0.00
4,400.0	9.50	227.00	4,382.4	-153.4	-164.5	-165.9	0.00	0.00	0.00
4,500.0	9.50	227.00	4,481.0	-164.7	-176.6	-178.0	0.00	0.00	0.00
4,600.0	9.50	227.00	4,579.7	-175.9	-188.7	-190.2	0.00	0.00	0.00
4,700.0	9.50	227.00	4,678.3	-187.2	-200.7	-202.4	0.00	0.00	0.00
4,800.0	9.50	227.00	4,776.9	-198.5	-212.8	-214.5	0.00	0.00	0.00
4,900.0	9.50	227.00	4,875.5	-209.7	-224.9	-226.7	0.00	0.00	0.00
5,000.0	9.50	227.00	4,974.2	-221.0	-237.0	-238.9	0.00	0.00	0.00
5,100.0	9.50	227.00	5,072.8	-232.2	-249.0	-251.0	0.00	0.00	0.00
5,200.0	9.50	227.00	5,171.4	-243.5	-261.1	-263.2	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Emmy State H25-744
Company:	Northern Region Drilling - Sandbox	TVD Reference:	WELL @ 4835.0ft
Project:	Conceptual Wells	MD Reference:	WELL @ 4835.0ft
Site:	DP 408	North Reference:	Grid
Well:	Emmy State H25-744	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	9.50	227.00	5,270.1	-254.7	-273.2	-275.4	0.00	0.00	0.00
5,400.0	9.50	227.00	5,368.7	-266.0	-285.2	-287.5	0.00	0.00	0.00
5,500.0	9.50	227.00	5,467.3	-277.2	-297.3	-299.7	0.00	0.00	0.00
5,600.0	9.50	227.00	5,565.9	-288.5	-309.4	-311.9	0.00	0.00	0.00
5,700.0	9.50	227.00	5,664.6	-299.8	-321.5	-324.1	0.00	0.00	0.00
5,800.0	9.50	227.00	5,763.2	-311.0	-333.5	-336.2	0.00	0.00	0.00
5,900.0	9.50	227.00	5,861.8	-322.3	-345.6	-348.4	0.00	0.00	0.00
6,000.0	9.50	227.00	5,960.5	-333.5	-357.7	-360.6	0.00	0.00	0.00
6,100.0	9.50	227.00	6,059.1	-344.8	-369.7	-372.7	0.00	0.00	0.00
6,200.0	9.50	227.00	6,157.7	-356.0	-381.8	-384.9	0.00	0.00	0.00
6,293.6	9.50	227.00	6,250.0	-366.6	-393.1	-396.3	0.00	0.00	0.00
6,300.0	10.08	227.59	6,256.3	-367.3	-393.9	-397.1	9.10	8.96	9.12
6,315.1	11.43	228.73	6,271.2	-369.2	-396.0	-399.1	9.10	8.99	7.59
6,400.0	8.67	271.40	6,354.9	-374.6	-408.7	-405.5	9.10	-3.26	50.25
6,500.0	12.71	317.32	6,453.3	-366.3	-423.8	-398.4	9.10	4.04	45.93
6,600.0	20.30	335.51	6,549.2	-342.4	-438.4	-375.7	9.10	7.59	18.19
6,700.0	28.75	343.72	6,640.1	-303.4	-452.4	-338.0	9.10	8.45	8.21
6,800.0	37.49	348.38	6,723.8	-250.4	-465.3	-286.2	9.10	8.74	4.67
6,900.0	46.35	351.48	6,798.1	-184.7	-476.8	-221.5	9.10	8.86	3.10
7,000.0	55.27	353.78	6,861.2	-107.9	-486.6	-145.7	9.10	8.92	2.30
7,100.0	64.23	355.62	6,911.6	-22.0	-494.6	-60.7	9.10	8.96	1.84
7,200.0	73.21	357.20	6,947.8	70.9	-500.3	31.5	9.10	8.98	1.58
7,300.0	82.19	358.64	6,969.1	168.5	-503.9	128.4	9.10	8.99	1.44
7,386.8	90.00	359.84	6,975.0	255.0	-505.0	214.6	9.10	8.99	1.38
7,400.0	90.00	359.84	6,975.0	268.2	-505.0	227.7	0.00	0.00	0.00
7,500.0	90.00	359.84	6,975.0	368.2	-505.3	327.4	0.00	0.00	0.00
7,600.0	90.00	359.84	6,975.0	468.2	-505.6	427.1	0.00	0.00	0.00
7,700.0	90.00	359.84	6,975.0	568.2	-505.9	526.7	0.00	0.00	0.00
7,800.0	90.00	359.84	6,975.0	668.2	-506.2	626.4	0.00	0.00	0.00
7,900.0	90.00	359.84	6,975.0	768.2	-506.4	726.1	0.00	0.00	0.00
8,000.0	90.00	359.84	6,975.0	868.2	-506.7	825.8	0.00	0.00	0.00
8,100.0	90.00	359.84	6,975.0	968.2	-507.0	925.4	0.00	0.00	0.00
8,200.0	90.00	359.84	6,975.0	1,068.2	-507.3	1,025.1	0.00	0.00	0.00
8,300.0	90.00	359.84	6,975.0	1,168.2	-507.6	1,124.8	0.00	0.00	0.00
8,400.0	90.00	359.84	6,975.0	1,268.2	-507.8	1,224.4	0.00	0.00	0.00
8,500.0	90.00	359.84	6,975.0	1,368.2	-508.1	1,324.1	0.00	0.00	0.00
8,600.0	90.00	359.84	6,975.0	1,468.2	-508.4	1,423.8	0.00	0.00	0.00
8,700.0	90.00	359.84	6,975.0	1,568.2	-508.7	1,523.4	0.00	0.00	0.00
8,800.0	90.00	359.84	6,975.0	1,668.2	-508.9	1,623.1	0.00	0.00	0.00
8,900.0	90.00	359.84	6,975.0	1,768.2	-509.2	1,722.8	0.00	0.00	0.00
9,000.0	90.00	359.84	6,975.0	1,868.2	-509.5	1,822.5	0.00	0.00	0.00
9,100.0	90.00	359.84	6,975.0	1,968.2	-509.8	1,922.1	0.00	0.00	0.00
9,200.0	90.00	359.84	6,975.0	2,068.2	-510.1	2,021.8	0.00	0.00	0.00
9,300.0	90.00	359.84	6,975.0	2,168.2	-510.3	2,121.5	0.00	0.00	0.00
9,400.0	90.00	359.84	6,975.0	2,268.2	-510.6	2,221.1	0.00	0.00	0.00
9,500.0	90.00	359.84	6,975.0	2,368.2	-510.9	2,320.8	0.00	0.00	0.00
9,600.0	90.00	359.84	6,975.0	2,468.2	-511.2	2,420.5	0.00	0.00	0.00
9,700.0	90.00	359.84	6,975.0	2,568.2	-511.5	2,520.1	0.00	0.00	0.00
9,800.0	90.00	359.84	6,975.0	2,668.2	-511.7	2,619.8	0.00	0.00	0.00
9,900.0	90.00	359.84	6,975.0	2,768.2	-512.0	2,719.5	0.00	0.00	0.00
10,000.0	90.00	359.84	6,975.0	2,868.2	-512.3	2,819.1	0.00	0.00	0.00
10,100.0	90.00	359.84	6,975.0	2,968.2	-512.6	2,918.8	0.00	0.00	0.00
10,200.0	90.00	359.84	6,975.0	3,068.2	-512.9	3,018.5	0.00	0.00	0.00
10,300.0	90.00	359.84	6,975.0	3,168.2	-513.1	3,118.2	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

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Company:	Northern Region Drilling - Sandbox	TVD Reference:	WELL @ 4835.0ft
Project:	Conceptual Wells	MD Reference:	WELL @ 4835.0ft
Site:	DP 408	North Reference:	Grid
Well:	Emmy State H25-744	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	359.84	6,975.0	3,268.2	-513.4	3,217.8	0.00	0.00	0.00
10,500.0	90.00	359.84	6,975.0	3,368.2	-513.7	3,317.5	0.00	0.00	0.00
10,600.0	90.00	359.84	6,975.0	3,468.2	-514.0	3,417.2	0.00	0.00	0.00
10,700.0	90.00	359.84	6,975.0	3,568.2	-514.3	3,516.8	0.00	0.00	0.00
10,800.0	90.00	359.84	6,975.0	3,668.2	-514.5	3,616.5	0.00	0.00	0.00
10,900.0	90.00	359.84	6,975.0	3,768.2	-514.8	3,716.2	0.00	0.00	0.00
11,000.0	90.00	359.84	6,975.0	3,868.2	-515.1	3,815.8	0.00	0.00	0.00
11,100.0	90.00	359.84	6,975.0	3,968.2	-515.4	3,915.5	0.00	0.00	0.00
11,200.0	90.00	359.84	6,975.0	4,068.2	-515.6	4,015.2	0.00	0.00	0.00
11,300.0	90.00	359.84	6,975.0	4,168.2	-515.9	4,114.9	0.00	0.00	0.00
11,400.0	90.00	359.84	6,975.0	4,268.2	-516.2	4,214.5	0.00	0.00	0.00
11,500.0	90.00	359.84	6,975.0	4,368.2	-516.5	4,314.2	0.00	0.00	0.00
11,600.0	90.00	359.84	6,975.0	4,468.2	-516.8	4,413.9	0.00	0.00	0.00
11,700.0	90.00	359.84	6,975.0	4,568.2	-517.0	4,513.5	0.00	0.00	0.00
11,800.0	90.00	359.84	6,975.0	4,668.2	-517.3	4,613.2	0.00	0.00	0.00
11,900.0	90.00	359.84	6,975.0	4,768.2	-517.6	4,712.9	0.00	0.00	0.00
12,000.0	90.00	359.84	6,975.0	4,868.2	-517.9	4,812.5	0.00	0.00	0.00
12,100.0	90.00	359.84	6,975.0	4,968.2	-518.2	4,912.2	0.00	0.00	0.00
12,200.0	90.00	359.84	6,975.0	5,068.2	-518.4	5,011.9	0.00	0.00	0.00
12,300.0	90.00	359.84	6,975.0	5,168.2	-518.7	5,111.5	0.00	0.00	0.00
12,400.0	90.00	359.84	6,975.0	5,268.2	-519.0	5,211.2	0.00	0.00	0.00
12,500.0	90.00	359.84	6,975.0	5,368.2	-519.3	5,310.9	0.00	0.00	0.00
12,600.0	90.00	359.84	6,975.0	5,468.2	-519.6	5,410.6	0.00	0.00	0.00
12,700.0	90.00	359.84	6,975.0	5,568.2	-519.8	5,510.2	0.00	0.00	0.00
12,800.0	90.00	359.84	6,975.0	5,668.2	-520.1	5,609.9	0.00	0.00	0.00
12,900.0	90.00	359.84	6,975.0	5,768.2	-520.4	5,709.6	0.00	0.00	0.00
13,000.0	90.00	359.84	6,975.0	5,868.2	-520.7	5,809.2	0.00	0.00	0.00
13,100.0	90.00	359.84	6,975.0	5,968.2	-521.0	5,908.9	0.00	0.00	0.00
13,200.0	90.00	359.84	6,975.0	6,068.2	-521.2	6,008.6	0.00	0.00	0.00
13,300.0	90.00	359.84	6,975.0	6,168.2	-521.5	6,108.2	0.00	0.00	0.00
13,400.0	90.00	359.84	6,975.0	6,268.2	-521.8	6,207.9	0.00	0.00	0.00
13,500.0	90.00	359.84	6,975.0	6,368.2	-522.1	6,307.6	0.00	0.00	0.00
13,600.0	90.00	359.84	6,975.0	6,468.2	-522.4	6,407.2	0.00	0.00	0.00
13,700.0	90.00	359.84	6,975.0	6,568.2	-522.6	6,506.9	0.00	0.00	0.00
13,800.0	90.00	359.84	6,975.0	6,668.2	-522.9	6,606.6	0.00	0.00	0.00
13,900.0	90.00	359.84	6,975.0	6,768.2	-523.2	6,706.3	0.00	0.00	0.00
14,000.0	90.00	359.84	6,975.0	6,868.2	-523.5	6,805.9	0.00	0.00	0.00
14,100.0	90.00	359.84	6,975.0	6,968.2	-523.7	6,905.6	0.00	0.00	0.00
14,200.0	90.00	359.84	6,975.0	7,068.2	-524.0	7,005.3	0.00	0.00	0.00
14,300.0	90.00	359.84	6,975.0	7,168.2	-524.3	7,104.9	0.00	0.00	0.00
14,400.0	90.00	359.84	6,975.0	7,268.2	-524.6	7,204.6	0.00	0.00	0.00
14,500.0	90.00	359.84	6,975.0	7,368.2	-524.9	7,304.3	0.00	0.00	0.00
14,600.0	90.00	359.84	6,975.0	7,468.2	-525.1	7,403.9	0.00	0.00	0.00
14,700.0	90.00	359.84	6,975.0	7,568.2	-525.4	7,503.6	0.00	0.00	0.00
14,800.0	90.00	359.84	6,975.0	7,668.2	-525.7	7,603.3	0.00	0.00	0.00
14,900.0	90.00	359.84	6,975.0	7,768.2	-526.0	7,703.0	0.00	0.00	0.00
15,000.0	90.00	359.84	6,975.0	7,868.2	-526.3	7,802.6	0.00	0.00	0.00
15,100.0	90.00	359.84	6,975.0	7,968.2	-526.5	7,902.3	0.00	0.00	0.00
15,200.0	90.00	359.84	6,975.0	8,068.2	-526.8	8,002.0	0.00	0.00	0.00
15,300.0	90.00	359.84	6,975.0	8,168.2	-527.1	8,101.6	0.00	0.00	0.00
15,400.0	90.00	359.84	6,975.0	8,268.2	-527.4	8,201.3	0.00	0.00	0.00
15,500.0	90.00	359.84	6,975.0	8,368.2	-527.7	8,301.0	0.00	0.00	0.00
15,600.0	90.00	359.84	6,975.0	8,468.2	-527.9	8,400.6	0.00	0.00	0.00
15,700.0	90.00	359.84	6,975.0	8,568.2	-528.2	8,500.3	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Emmy State H25-744
Company:	Northern Region Drilling - Sandbox	TVD Reference:	WELL @ 4835.0ft
Project:	Conceptual Wells	MD Reference:	WELL @ 4835.0ft
Site:	DP 408	North Reference:	Grid
Well:	Emmy State H25-744	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	359.84	6,975.0	8,668.2	-528.5	8,600.0	0.00	0.00	0.00	
15,900.0	90.00	359.84	6,975.0	8,768.2	-528.8	8,699.6	0.00	0.00	0.00	
16,000.0	90.00	359.84	6,975.0	8,868.2	-529.1	8,799.3	0.00	0.00	0.00	
16,100.0	90.00	359.84	6,975.0	8,968.2	-529.3	8,899.0	0.00	0.00	0.00	
16,200.0	90.00	359.84	6,975.0	9,068.2	-529.6	8,998.7	0.00	0.00	0.00	
16,300.0	90.00	359.84	6,975.0	9,168.2	-529.9	9,098.3	0.00	0.00	0.00	
16,400.0	90.00	359.84	6,975.0	9,268.2	-530.2	9,198.0	0.00	0.00	0.00	
16,500.0	90.00	359.84	6,975.0	9,368.1	-530.4	9,297.7	0.00	0.00	0.00	
16,600.0	90.00	359.84	6,975.0	9,468.1	-530.7	9,397.3	0.00	0.00	0.00	
16,700.0	90.00	359.84	6,975.0	9,568.1	-531.0	9,497.0	0.00	0.00	0.00	
16,800.0	90.00	359.84	6,975.0	9,668.1	-531.3	9,596.7	0.00	0.00	0.00	
16,900.0	90.00	359.84	6,975.0	9,768.1	-531.6	9,696.3	0.00	0.00	0.00	
17,000.0	90.00	359.84	6,975.0	9,868.1	-531.8	9,796.0	0.00	0.00	0.00	
17,100.0	90.00	359.84	6,975.0	9,968.1	-532.1	9,895.7	0.00	0.00	0.00	
17,200.0	90.00	359.84	6,975.0	10,068.1	-532.4	9,995.4	0.00	0.00	0.00	
17,300.0	90.00	359.84	6,975.0	10,168.1	-532.7	10,095.0	0.00	0.00	0.00	
17,327.4	90.00	359.84	6,975.0	10,195.6	-532.5	10,122.4	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 H25-744 BHL	0.00	0.00	6,975.0	10,195.6	-532.5	1,323,384.33	3,248,310.50	40.217670	-104.610810	
- 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				
3,878.4	3,868.0	Parkman				
4,477.7	4,459.0	Sussex				
5,169.2	5,141.0	Shannon				
6,153.7	6,112.0	Teepee Buttes				
6,844.4	6,758.0	Sharon Springs				
6,932.6	6,820.0	Top A Chalk				
6,943.4	6,827.0	Top A Marl				
6,946.6	6,829.0	Top B Chalk				
7,028.6	6,877.0	Top B Marl				
7,197.2	6,947.0	Top C Chalk				

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Emmy State H25-744
Company:	Northern Region Drilling - Sandbox	TVD Reference:	WELL @ 4835.0ft
Project:	Conceptual Wells	MD Reference:	WELL @ 4835.0ft
Site:	DP 408	North Reference:	Grid
Well:	Emmy State H25-744	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)	
2,800.0	2,800.0	0.0	0.0	KOP - Start Build 2.00
6,293.6	6,250.0	-366.6	-393.1	Start DLS 9.10 TFO 10.10
6,315.1	6,271.2	-369.2	-396.0	Start DLS 9.10 TFO 130.54
6,932.6	6,820.0	-160.8	-480.2	TPZ at 6932.6 MD
7,386.8	6,975.0	255.0	-505.0	Landing Pt at 7386.8 MD
17,327.4	6,975.0	10,195.5	-532.8	TD at 17327.4

Northern Region Drilling - Sandbox

Conceptual Wells

DP 408

Emmy State H25-744

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 H25-744
Project:	Conceptual Wells	TVD Reference:	WELL @ 4835.0ft
Reference Site:	DP 408	MD Reference:	WELL @ 4835.0ft
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Emmy State H25-744	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	17,327.4	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	14,197.8	6,889.4	2,993.8	2,898.3	31.341	CC
Butterball 13-19 - Butterball 13-19 - Butterball 13-19 - As	14,200.0	6,889.5	2,993.8	2,898.3	31.335	ES
Butterball 13-19 - Butterball 13-19 - Butterball 13-19 - As	14,700.0	6,903.5	3,035.6	2,936.7	30.698	SF
Butterball 14-19 - Butterball 14-19 - Butterball 14-19 - As	12,850.8	6,820.5	3,092.1	3,009.6	37.474	CC
Butterball 14-19 - Butterball 14-19 - Butterball 14-19 - As	12,900.0	6,821.0	3,092.5	3,009.5	37.292	ES
Butterball 14-19 - Butterball 14-19 - Butterball 14-19 - As	13,400.0	6,826.5	3,140.5	3,054.2	36.391	SF
Butterball 23-19 - Butterball 23-19 - Butterball 23-19 - As	14,151.1	6,876.4	4,146.8	4,051.8	43.637	CC
Butterball 23-19 - Butterball 23-19 - Butterball 23-19 - As	14,200.0	6,876.7	4,147.1	4,051.6	43.444	ES
Butterball 23-19 - Butterball 23-19 - Butterball 23-19 - As	15,000.0	6,882.1	4,232.8	4,131.7	41.893	SF
Butterball B04-19 - Butterball B04-19 - Butterball B04-19	13,505.9	6,910.0	2,538.9	2,449.9	28.518	CC, ES
Butterball B04-19 - Butterball B04-19 - Butterball B04-19	13,900.0	6,908.3	2,569.3	2,477.8	28.069	SF
Butterball D18-75HN - Original Drilling - Design #2	17,327.4	7,350.0	4,846.0	4,744.7	47.803	CC, ES, SF
Butterball D18-75HN - Original Drilling - Original Drilling -	17,327.4	6,784.1	4,842.9	4,717.8	38.738	CC, ES, SF
Butterball D18-75HN - Original Drilling - Plan A - Rev 1	17,327.4	6,791.3	4,824.1	4,722.5	47.509	CC, ES, SF
Butterball D19-17D - Butterball D19-17D - Butterball D19	16,412.2	4,100.0	6,156.3	6,053.0	59.580	CC
Butterball D19-17D - Butterball D19-17D - Butterball D19	16,500.0	4,100.0	6,156.9	6,052.8	59.110	ES
Butterball D19-17D - Butterball D19-17D - Butterball D19	17,327.4	4,100.0	6,223.8	6,109.4	54.403	SF
Butterball D19-18D - Butterball D19-18D - Butterball D19	16,452.9	7,022.6	4,513.3	4,395.5	38.331	CC
Butterball D19-18D - Butterball D19-18D - Butterball D19	16,500.0	7,022.6	4,513.5	4,395.4	38.195	ES
Butterball D19-18D - Butterball D19-18D - Butterball D19	17,327.4	7,022.1	4,597.0	4,472.8	37.000	SF
Butterball D19-19D - Butterball D19-19D - Butterball D19	15,875.9	6,978.3	3,507.7	3,393.9	30.810	CC
Butterball D19-19D - Butterball D19-19D - Butterball D19	15,900.0	6,978.5	3,507.8	3,393.7	30.750	ES
Butterball D19-19D - Butterball D19-19D - Butterball D19	16,400.0	6,982.9	3,546.6	3,428.9	30.110	SF
Butterball D19-20D - Butterball D19-20D - Butterball D19	14,904.1	6,972.7	3,640.3	3,536.4	35.039	CC, ES
Butterball D19-20D - Butterball D19-20D - Butterball D19	15,500.0	6,976.2	3,688.8	3,581.5	34.376	SF
Butterball D19-22D - Wellbore #1 - Wellbore #1 - As Drill	14,932.6	6,981.3	6,021.0	5,915.9	57.339	CC
Butterball D19-22D - Wellbore #1 - Wellbore #1 - As Drill	15,000.0	6,982.0	6,021.3	5,915.7	56.980	ES
Butterball D19-22D - Wellbore #1 - Wellbore #1 - As Drill	16,800.0	7,001.3	6,303.9	6,184.2	52.694	SF
Butterball D19-75HN - Original Drilling - Design #2	12,029.9	11,818.4	4,879.7	4,828.6	95.388	CC
Butterball D19-75HN - Original Drilling - Design #2	12,100.0	11,818.4	4,880.2	4,828.5	94.280	ES
Butterball D19-75HN - Original Drilling - Design #2	17,327.4	6,859.2	5,125.2	5,024.1	50.682	SF
Butterball D19-75HN - Original Drilling - Original Drilling -	12,127.6	11,670.2	4,868.0	4,726.3	34.362	CC, ES
Butterball D19-75HN - Original Drilling - Original Drilling -	15,600.0	15,600.0	5,050.0	4,829.9	22.952	SF
Butterball D19-75HN - Original Drilling - Plan A - Rev 1	12,029.7	11,815.8	4,863.1	4,811.9	95.069	CC
Butterball D19-75HN - Original Drilling - Plan A - Rev 1	12,100.0	11,815.8	4,863.6	4,811.8	93.963	ES
Butterball D19-75HN - Original Drilling - Plan A - Rev 1	17,327.4	6,857.2	5,108.5	5,007.4	50.521	SF
Butterball D24-19 - Butterball D24-19 - Butterball D24-19	12,909.8	6,863.6	4,144.7	4,061.5	49.802	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 H25-744
Project:	Conceptual Wells	TVD Reference:	WELL @ 4835.0ft
Reference Site:	DP 408	MD Reference:	WELL @ 4835.0ft
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Emmy State H25-744	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 D24-19 - Butterball D24-19 - Butterball D24-19	13,900.0	6,870.4	4,261.4	4,171.2	47.251	SF
Butterball H24-69HN - Original Drilling - Design #2	17,327.4	12,150.3	191.8	163.3	6.717	CC, ES, SF
Butterball H24-69HN - Original Drilling - Original Drilling -	17,327.4	11,992.0	228.8	55.6	1.321	Level 3, CC, ES, SF
Butterball H24-69HN - Original Drilling - Plan A - Rev 2	17,327.4	11,988.8	227.4	161.6	3.454	CC, ES, SF
Butterball H24-69HN - Original Drilling - Plan A - Rev 3	17,327.4	11,992.1	222.2	156.5	3.379	CC, ES, SF
Champlin 366 Amoco F 1 - Wellbore #1 - Wellbore #1 - A	13,822.1	6,902.3	6,013.4	5,921.4	65.345	CC
Champlin 366 Amoco F 1 - Wellbore #1 - Wellbore #1 - A	13,900.0	6,902.3	6,013.9	5,921.2	64.860	ES
Champlin 366 Amoco F 1 - Wellbore #1 - Wellbore #1 - A	15,700.0	6,901.7	6,299.8	6,194.4	59.788	SF
Dechant D19-32D - Dechant D19-32D - Dechant D19-32	14,766.9	7,427.6	2,182.7	2,036.7	14.946	CC
Dechant D19-32D - Dechant D19-32D - Dechant D19-32	14,800.0	7,428.0	2,183.0	2,035.8	14.830	ES
Dechant D19-32D - Dechant D19-32D - Dechant D19-32	15,300.0	7,435.0	2,246.9	2,086.0	13.971	SF
Graznak 01-19 - Graznak 01-19 - Graznak 01-19 - As Dr	13,464.2	6,923.0	3,287.9	3,162.8	26.283	CC
Graznak 01-19 - Graznak 01-19 - Graznak 01-19 - As Dr	13,500.0	6,923.0	3,288.1	3,162.7	26.221	ES
Graznak 01-19 - Graznak 01-19 - Graznak 01-19 - As Dr	14,000.0	6,923.0	3,331.3	3,202.4	25.854	SF
Higgins D19-720 - Original Drilling - Original Drilling - As	17,327.4	6,949.8	6,659.2	6,537.9	54.910	CC, ES, SF
Higgins D19-720 - Original Drilling - Pilot Hole APD - Rev	17,327.4	6,964.0	6,663.0	6,561.3	65.479	CC, ES, SF
Higgins D19-720 - Sidetrack Curve/Horizontal - Sidetrack	17,327.4	6,954.0	6,663.0	6,561.3	65.515	CC, ES, SF
Higgins D19-720 - Sidetrack Curve/Horizontal - Sidetrack	14,737.1	9,678.5	6,603.8	6,498.2	62.572	CC
Higgins D19-720 - Sidetrack Curve/Horizontal - Sidetrack	14,800.0	9,645.7	6,603.9	6,498.0	62.339	ES
Higgins D19-720 - Sidetrack Curve/Horizontal - Sidetrack	17,327.4	7,088.0	6,659.3	6,538.0	54.920	SF
Higgins D19-720 - Sidetrack Curve/Horizontal - Sidetrack	14,737.1	9,678.5	6,603.8	6,498.2	62.572	CC
Higgins D19-720 - Sidetrack Curve/Horizontal - Sidetrack	14,800.0	9,645.7	6,603.9	6,498.0	62.339	ES
Higgins D19-720 - Sidetrack Curve/Horizontal - Sidetrack	17,327.4	7,088.0	6,659.3	6,538.0	54.920	SF
Higgins D19-720 - Sidetrack Curve/Horizontal - Sidetrack	14,737.1	9,678.5	6,603.8	6,498.2	62.572	CC
Higgins D19-720 - Sidetrack Curve/Horizontal - Sidetrack	14,800.0	9,645.7	6,603.9	6,498.0	62.339	ES
Higgins D19-720 - Sidetrack Curve/Horizontal - Sidetrack	17,327.4	7,088.0	6,659.3	6,538.0	54.920	SF
Higgins D19-720 - Sidetrack Curve/Horizontal - Sidetrack	14,737.1	9,678.5	6,603.8	6,498.2	62.572	CC
Higgins D19-720 - Sidetrack Curve/Horizontal - Sidetrack	14,800.0	9,645.7	6,603.9	6,498.0	62.339	ES
Higgins D19-720 - Sidetrack Curve/Horizontal - Sidetrack	17,327.4	7,088.0	6,659.3	6,538.0	54.920	SF
Higgins D19-720 - Sidetrack Curve/Horizontal - ST01 - A	14,597.8	9,796.1	6,604.9	6,501.3	63.728	CC
Higgins D19-720 - Sidetrack Curve/Horizontal - ST01 - A	15,200.0	15,200.0	6,619.5	6,482.2	48.196	ES, SF
Independence D18-712 - Independence D18-712 - Prelim	16,805.2	5,700.4	7,054.6	6,938.7	60.907	CC
Independence D18-712 - Independence D18-712 - Prelim	16,900.0	5,707.6	7,055.2	6,938.5	60.455	ES
Independence D18-712 - Independence D18-712 - Prelim	17,327.4	5,659.9	7,073.5	6,953.4	58.880	SF
Independence D18-717 - Independence D18-717 - Prelim	16,736.9	6,152.9	6,764.8	6,647.7	57.763	CC
Independence D18-717 - Independence D18-717 - Prelim	16,800.0	6,152.9	6,765.1	6,647.4	57.483	ES
Independence D18-717 - Independence D18-717 - Prelim	17,327.4	6,136.9	6,790.2	6,668.1	55.617	SF
Independence D18-725 - Independence D18-725 - Prelim	17,133.3	6,943.6	6,259.1	6,135.6	50.686	CC
Independence D18-725 - Independence D18-725 - Prelim	17,327.4	7,097.9	6,259.8	6,134.1	49.808	ES, SF
Independence D18-732 - Independence D18-732 - Prelim	17,327.4	7,178.3	5,874.1	5,748.2	46.683	CC, ES, SF
Independence D18-739 - Independence D18-739 - Prelim	17,327.4	7,372.5	5,521.2	5,394.5	43.571	CC, ES, SF
Independence D18-744 - Independence D18-744 - Prelim	17,327.4	7,300.0	5,127.9	5,001.0	40.412	CC, ES, SF
Independence D18-753 - Independence D18-753 - Prelim	16,882.0	6,151.3	4,713.5	4,595.3	39.870	CC
Independence D18-753 - Independence D18-753 - Prelim	16,900.0	6,150.8	4,713.6	4,595.2	39.817	ES
Independence D18-753 - Independence D18-753 - Prelim	17,327.4	6,138.8	4,734.3	4,612.6	38.898	SF
Independence D18-759 - Independence D18-759 - Prelim	16,899.6	6,347.1	4,439.6	4,320.4	37.248	CC
Independence D18-759 - Independence D18-759 - Prelim	17,327.4	17,327.4	4,457.5	4,300.8	28.433	ES, SF
Independence D18-767 - Independence D18-767 - Prelim	17,327.4	7,103.4	3,900.5	3,774.8	31.030	CC, ES, SF
Independence D30-711 - Independence D30-711 - Prelim	17,327.4	5,452.0	7,123.8	7,004.1	59.535	CC, ES, SF
Independence D30-718 - Independence D30-718 - Prelim	6,072.4	17,765.9	6,799.8	6,697.0	66.133	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 H25-744
Project:	Conceptual Wells	TVD Reference:	WELL @ 4835.0ft
Reference Site:	DP 408	MD Reference:	WELL @ 4835.0ft
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Emmy State H25-744	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 19						
Independence D30-718 - Independence D30-718 - Prelim	6,100.0	17,765.9	6,799.9	6,697.0	66.074	ES
Independence D30-718 - Independence D30-718 - Prelim	16,900.0	7,857.3	6,913.5	6,790.8	56.325	SF
Independence D30-724 - Independence D30-724 - Prelim	6,199.9	17,795.2	6,374.1	6,270.6	61.560	CC
Independence D30-724 - Independence D30-724 - Prelim	6,200.0	17,795.2	6,374.1	6,270.6	61.560	ES
Independence D30-724 - Independence D30-724 - Prelim	17,327.4	7,445.3	6,456.8	6,330.5	51.106	SF
Independence D30-731 - Independence D30-731 - Prelim	6,180.4	17,714.2	5,921.4	5,817.9	57.250	CC
Independence D30-731 - Independence D30-731 - Prelim	6,200.0	17,714.2	5,921.4	5,817.9	57.223	ES
Independence D30-731 - Independence D30-731 - Prelim	17,327.4	7,413.3	6,144.0	6,018.0	48.756	SF
Independence D30-737 - Independence D30-737 - Prelim	6,294.1	17,822.5	5,578.8	5,474.2	53.335	CC, ES
Independence D30-737 - Independence D30-737 - Prelim	17,327.4	7,430.2	5,612.5	5,485.8	44.326	SF
Independence D30-743 - Independence D30-743 - Prelim	6,276.4	17,826.4	5,142.7	5,037.9	49.060	CC, ES
Independence D30-743 - Independence D30-743 - Prelim	17,327.4	7,471.8	5,260.4	5,133.7	41.516	SF
Independence D30-748 - Independence D30-748 - Prelim	17,000.0	7,680.0	4,719.1	4,595.4	38.151	SF
Independence D30-748 - Independence D30-748 - Prelim	17,327.4	6,178.4	4,670.5	4,548.1	38.155	CC, ES
Independence D30-758 - Independence D30-758 - Prelim	6,315.1	17,833.1	4,384.3	4,281.0	42.454	CC
Independence D30-758 - Independence D30-758 - Prelim	17,327.4	7,438.9	4,391.4	4,264.8	34.691	ES, SF
Independence D30-765 - Independence D30-765 - Prelim	6,314.5	17,734.5	3,914.8	3,811.5	37.887	CC
Independence D30-765 - Independence D30-765 - Prelim	6,315.1	17,734.5	3,914.8	3,811.5	37.887	ES
Independence D30-765 - Independence D30-765 - Prelim	17,327.4	7,379.3	4,040.2	3,914.1	32.044	SF
Independence D30-770 - Independence D30-770 - Prelim	17,327.4	7,381.0	3,576.7	3,450.2	28.289	CC, ES, SF
Independence D30-777 - Independence D30-777 - Prelim	6,477.1	17,753.7	3,134.0	3,029.6	30.011	CC, ES
Independence D30-777 - Independence D30-777 - Prelim	17,327.4	7,349.8	3,196.7	3,070.4	25.309	SF
Independence State D30-784 - Independence State D30	17,327.4	7,545.9	2,623.3	2,495.8	20.571	CC, ES, SF
LDS White D19-10 - LDS White D19-10 - LDS White D19	14,256.7	6,894.8	5,200.0	5,103.9	54.101	CC
LDS White D19-10 - LDS White D19-10 - LDS White D19	14,300.0	6,894.9	5,200.2	5,103.7	53.887	ES
LDS White D19-10 - LDS White D19-10 - LDS White D19	15,600.0	6,896.4	5,370.7	5,265.1	50.830	SF
LDS White D19-15 - LDS White D19-15 - LDS White D19	12,843.6	6,957.1	5,271.5	5,188.5	63.542	CC
LDS White D19-15 - LDS White D19-15 - LDS White D19	12,900.0	6,956.5	5,271.8	5,188.3	63.170	ES
LDS White D19-15 - LDS White D19-15 - LDS White D19	14,500.0	6,940.4	5,525.6	5,431.1	58.474	SF
LDS White D19-16 - Wellbore #1 - Wellbore #1 - As Drill	12,884.6	6,892.5	6,562.1	6,479.0	78.989	CC
LDS White D19-16 - Wellbore #1 - Wellbore #1 - As Drill	12,900.0	6,892.4	6,562.1	6,478.9	78.859	ES
LDS White D19-16 - Wellbore #1 - Wellbore #1 - As Drill	15,300.0	6,889.8	6,992.5	6,892.2	69.751	SF
Mile High 02-19 - Wellbore #1 - Wellbore #1 - As Drilled	15,846.0	6,901.9	5,705.9	5,594.5	51.226	CC
Mile High 02-19 - Wellbore #1 - Wellbore #1 - As Drilled	15,900.0	6,902.1	5,706.1	5,594.3	51.006	ES
Mile High 02-19 - Wellbore #1 - Wellbore #1 - As Drilled	17,300.0	6,908.8	5,888.2	5,766.6	48.403	SF
Sean D19-09 - Wellbore #1 - Wellbore #1 - As Drilled	14,354.3	6,913.0	6,873.3	6,661.9	32.511	CC
Sean D19-09 - Wellbore #1 - Wellbore #1 - As Drilled	14,400.0	6,913.0	6,873.5	6,661.6	32.448	ES
Sean D19-09 - Wellbore #1 - Wellbore #1 - As Drilled	15,800.0	6,913.0	7,023.7	6,800.8	31.515	SF
Turk Blue D19-02J - Turk Blue D19-02J - Turk Blue D19-	15,800.0	15,800.0	3,775.2	3,634.1	26.759	SF
Turk Blue D19-02J - Turk Blue D19-02J - Turk Blue D19-	16,513.3	6,907.0	3,707.3	3,589.4	31.469	CC, ES
Turk Blue D19-04 - Turk Blue D19-04 - Turk Blue D19-04	16,938.3	6,953.5	2,836.4	2,714.3	23.231	CC, ES
Turk Blue D19-04 - Turk Blue D19-04 - Turk Blue D19-04	17,300.0	6,955.8	2,859.3	2,734.9	22.982	SF
Turk Blue D19-05 - Turk Blue D19-05 - Turk Blue D19-05	15,288.5	6,841.7	2,869.1	2,763.3	27.127	CC
Turk Blue D19-05 - Turk Blue D19-05 - Turk Blue D19-05	15,300.0	6,842.1	2,869.1	2,763.2	27.102	ES
Turk Blue D19-05 - Turk Blue D19-05 - Turk Blue D19-05	15,700.0	6,855.0	2,898.4	2,789.9	26.705	SF
Turk Blue D19-06 - Turk Blue D19-06 - Turk Blue D19-06	15,378.8	6,891.6	4,131.4	4,024.6	38.671	CC
Turk Blue D19-06 - Turk Blue D19-06 - Turk Blue D19-06	15,400.0	6,891.9	4,131.5	4,024.5	38.603	ES
Turk Blue D19-06 - Turk Blue D19-06 - Turk Blue D19-06	16,200.0	6,902.7	4,212.3	4,099.7	37.437	SF
Turk White D19-01 - Wellbore #1 - Wellbore #1 - As Drill	16,873.9	6,918.6	6,835.6	6,714.3	56.333	CC
Turk White D19-01 - Wellbore #1 - Wellbore #1 - As Drill	16,900.0	6,918.5	6,835.6	6,714.1	56.223	ES
Turk White D19-01 - Wellbore #1 - Wellbore #1 - As Drill	17,327.4	6,917.0	6,850.4	6,725.1	54.676	SF
Turk White D19-02 - Wellbore #1 - Wellbore #1 - As Drill	16,959.4	6,872.8	5,377.6	5,255.6	44.085	CC
Turk White D19-02 - Wellbore #1 - Wellbore #1 - As Drill	17,000.0	6,872.9	5,377.8	5,255.4	43.954	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 H25-744
Project:	Conceptual Wells	TVD Reference:	WELL @ 4835.0ft
Reference Site:	DP 408	MD Reference:	WELL @ 4835.0ft
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Emmy State H25-744	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
D Section 19						
Turk White D19-02 - Wellbore #1 - Wellbore #1 - As Drill	17,327.4	6,873.3	5,390.0	5,264.9	43.086	SF
Turk White D19-08 - Wellbore #1 - Wellbore #1 - As Drill	15,391.7	6,910.4	6,727.1	6,620.0	62.848	CC
Turk White D19-08 - Wellbore #1 - Wellbore #1 - As Drill	15,500.0	6,911.0	6,728.0	6,619.9	62.285	ES
Turk White D19-08 - Wellbore #1 - Wellbore #1 - As Drill	17,327.4	6,921.2	6,999.8	6,878.7	57.818	SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region Drilling - Sandbox	Local Co-ordinate Reference:	Well Emmy State H25-744
Project:	Conceptual Wells	TVD Reference:	WELL @ 4835.0ft
Reference Site:	DP 408	MD Reference:	WELL @ 4835.0ft
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Emmy State H25-744	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 29						
Guttersen D29 778 - Guttersen D29- 778 - Prelim - Rev 0	17,327.4	14,848.3	8,139.6	7,968.0	47.429	CC, ES, SF
Guttersen D29-30D - Wellbore #1 - Design #1	12,140.0	7,107.3	7,454.2	7,402.0	142.787	CC
Guttersen D29-30D - Wellbore #1 - Design #1	12,200.0	7,107.3	7,454.4	7,401.7	141.345	ES
Guttersen D29-30D - Wellbore #1 - Design #1	15,900.0	7,107.3	8,348.8	8,271.1	107.485	SF
Guttersen D29-31D - Wellbore #1 - Guttersen D29-31D	10,901.5	6,998.3	7,528.8	7,462.1	112.992	CC
Guttersen D29-31D - Wellbore #1 - Guttersen D29-31D	11,000.0	6,998.4	7,529.4	7,462.0	111.638	ES
Guttersen D29-31D - Wellbore #1 - Guttersen D29-31D	14,500.0	7,001.6	8,344.5	8,253.6	91.786	SF
Guttersen D29-65HN - Original Drilling - Original Drilling	1,983.0	1,956.0	7,513.3	7,503.8	792.226	CC
Guttersen D29-65HN - Original Drilling - Original Drilling	2,800.0	2,763.2	7,516.7	7,502.6	533.797	ES
Guttersen D29-65HN - Original Drilling - Original Drilling	14,200.0	6,284.0	8,973.9	8,893.5	111.628	SF
Guttersen D29-65HN - Original Drilling - Plan A Rev 1	2,800.0	2,773.0	7,516.4	7,510.2	1,222.662	CC, ES
Guttersen D29-65HN - Original Drilling - Plan A Rev 1	15,000.0	6,151.6	9,445.7	9,382.2	148.781	SF
Guttersen D29-67HN - Original Drilling - Original Drilling	10,906.2	6,221.0	7,789.6	7,729.0	128.410	CC
Guttersen D29-67HN - Original Drilling - Original Drilling	11,000.0	6,221.0	7,790.2	7,728.7	126.718	ES
Guttersen D29-67HN - Original Drilling - Original Drilling	15,000.0	6,221.0	8,799.9	8,710.6	98.566	SF
Guttersen D29-67HN - Original Drilling - Plan A Rev 2	10,903.7	6,250.0	7,786.0	7,745.5	192.166	CC
Guttersen D29-67HN - Original Drilling - Plan A Rev 2	11,000.0	6,250.0	7,786.6	7,745.3	188.295	ES
Guttersen D29-67HN - Original Drilling - Plan A Rev 2	15,600.0	6,250.0	9,092.7	9,020.9	126.681	SF
Guttersen D29-69HN - Original Drilling - Original Drilling	12,158.4	6,361.3	7,789.0	7,708.6	96.874	CC
Guttersen D29-69HN - Original Drilling - Original Drilling	12,200.0	6,361.3	7,789.1	7,708.3	96.432	ES
Guttersen D29-69HN - Original Drilling - Original Drilling	15,400.0	6,360.5	8,436.6	8,333.6	81.875	SF
Guttersen D29-69HN - Original Drilling - Plan A Rev 2	12,150.9	6,397.6	7,791.3	7,739.3	149.899	CC
Guttersen D29-69HN - Original Drilling - Plan A Rev 2	12,200.0	6,397.6	7,791.5	7,739.1	148.645	ES
Guttersen D29-69HN - Original Drilling - Plan A Rev 2	16,300.0	6,397.6	8,827.2	8,747.3	110.468	SF
Guttersen D29-714 - Guttersen D29-714 - Prelim - Rev 0						Out of range
Guttersen D29-722 - Guttersen D29-722 - Prelim - Rev 0						Out of range
Guttersen D29-730 - Guttersen D29-730 - Prelim Rev 0						Out of range
Guttersen D29-738 - Guttersen D29-738 - Prelim - Rev 0						Out of range
Guttersen D29-746 - Guttersen D29-746 - Prelim - Rev 0						Out of range
Guttersen D29-754 - Guttersen D29-754 - Prelim - Rev 0	2,000.0	1,979.0	8,553.6	8,542.4	763.010	CC
Guttersen D29-754 - Guttersen D29-754 - Prelim - Rev 0	2,100.0	2,028.7	8,553.9	8,542.2	736.843	ES
Guttersen D29-754 - Guttersen D29-754 - Prelim - Rev 0	17,327.4	15,153.7	9,695.8	9,523.4	56.249	SF
Guttersen D29-758 - Guttersen D29-758 - Prelim - Rev 0	2,200.0	2,179.0	8,553.6	8,541.2	691.099	CC
Guttersen D29-758 - Guttersen D29-758 - Prelim - Rev 0	2,300.0	2,230.8	8,553.8	8,541.1	669.182	ES
Guttersen D29-758 - Guttersen D29-758 - Prelim - Rev 0	17,327.4	14,920.0	9,409.1	9,237.7	54.897	SF
Guttersen D29-762 - Guttersen D29-762 - Prelim - Rev 0	2,600.0	2,579.0	8,553.6	8,538.9	581.492	CC
Guttersen D29-762 - Guttersen D29-762 - Prelim - Rev 0	2,700.0	2,635.6	8,553.8	8,538.7	565.294	ES
Guttersen D29-762 - Guttersen D29-762 - Prelim - Rev 0	17,327.4	14,767.1	9,158.9	8,988.1	53.618	SF
Guttersen D29-770 - Guttersen D29-770 - Prelim - Rev 0	2,976.9	3,432.8	8,536.8	8,518.5	466.578	CC
Guttersen D29-770 - Guttersen D29-770 - Prelim - Rev 0	17,327.4	14,857.6	8,651.3	8,479.7	50.400	ES, SF
Guttersen D29-786 - Guttersen D29-786 - Prelim - Rev 0	17,327.4	15,106.8	7,607.3	7,435.1	44.166	CC, ES, SF
Guttersen D29-790 - Guttersen D29-790 - Prelim - Rev 0						Out of range
Guttersen D29-99HZ - Wellbore #1 - MWD Surveys	2,833.6	2,909.7	7,409.3	7,393.8	476.882	CC, ES
Guttersen D29-99HZ - Wellbore #1 - MWD Surveys	13,600.0	6,258.0	9,560.5	9,485.0	126.678	SF
Guttersen D30-68-1HN - Original Drilling - Original Drilling	11,164.3	11,278.0	2,831.2	2,760.3	39.929	CC
Guttersen D30-68-1HN - Original Drilling - Original Drilling	11,200.0	11,278.0	2,831.5	2,760.3	39.797	ES
Guttersen D30-68-1HN - Original Drilling - Original Drilling	13,200.0	11,278.0	3,487.1	3,364.9	28.529	SF
Guttersen D30-68-1HN - Original Drilling - Plan A Rev 3	11,158.4	11,260.0	2,830.3	2,787.2	65.681	CC
Guttersen D30-68-1HN - Original Drilling - Plan A Rev 3	11,200.0	11,260.0	2,830.6	2,787.1	65.184	ES
Guttersen D30-68-1HN - Original Drilling - Plan A Rev 3	11,900.0	11,260.0	2,925.8	2,878.1	61.278	SF
Guttersen D30-69-1HN - Original Drilling - Original Drilling	11,900.0	11,050.0	3,012.0	2,930.1	36.754	ES
Guttersen D30-69-1HN - Original Drilling - Original Drilling	11,903.8	11,050.0	3,012.0	2,930.1	36.758	CC
Guttersen D30-69-1HN - Original Drilling - Original Drilling	13,900.0	11,050.0	3,613.5	3,496.0	30.765	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 H25-744
Project:	Conceptual Wells	TVD Reference:	WELL @ 4835.0ft
Reference Site:	DP 408	MD Reference:	WELL @ 4835.0ft
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Emmy State H25-744	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 29						
Guttersen D30-69-1HN - Original Drilling - Plan A Rev 3	11,873.5	11,000.0	3,051.5	3,001.9	61.417	CC
Guttersen D30-69-1HN - Original Drilling - Plan A Rev 3	11,900.0	11,000.0	3,051.7	3,001.7	61.150	ES
Guttersen D30-69-1HN - Original Drilling - Plan A Rev 3	12,700.0	11,000.0	3,161.5	3,106.7	57.661	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						Out of range
Guttersen Y05-734 - Guttersen Y05-734 - Prelim - Rev 0						Out of range
Guttersen Y05-741 - Guttersen Y05-741 - Prelim - Rev 0						Out of range
Guttersen Y05-749 - Guttersen Y05-749 - Prelim - Rev 0	5,733.5	10,159.1	9,860.3	9,811.3	201.550	CC, ES
Guttersen Y05-749 - Guttersen Y05-749 - Prelim - Rev 0	10,800.0	7,300.0	9,993.6	9,928.5	153.590	SF
Guttersen Y05-756 - Guttersen Y05-756 - Prelim Rev 0	2,000.0	1,979.0	8,553.6	8,542.4	763.010	CC, ES
Guttersen Y05-756 - Guttersen Y05-756 - Prelim Rev 0	13,000.0	5,224.7	9,992.9	9,918.1	133.558	SF
Guttersen Y05-764 - Guttersen Y05-764 - Prelim Rev 0	2,200.0	2,179.0	8,553.6	8,541.2	691.099	CC, ES
Guttersen Y05-764 - Guttersen Y05-764 - Prelim Rev 0	14,300.0	6,350.0	9,984.8	9,896.5	113.123	SF
Guttersen Y05-767 - Guttersen Y05-767 - Prelim - Rev 0	2,600.0	2,579.0	8,553.6	8,538.9	581.492	CC, ES
Guttersen Y05-767 - Guttersen Y05-767 - Prelim - Rev 0	14,500.0	6,327.1	9,997.4	9,908.9	113.065	SF
Guttersen Y05-771 - Guttersen Y05-771 - Prelim - Rev 0	2,400.0	2,379.0	8,553.6	8,540.1	631.575	CC
Guttersen Y05-771 - Guttersen Y05-771 - Prelim - Rev 0	2,500.0	2,435.0	8,553.8	8,539.9	612.377	ES
Guttersen Y05-771 - Guttersen Y05-771 - Prelim - Rev 0	14,800.0	6,373.6	9,968.9	9,879.1	111.020	SF
Guttersen Y05-779 - Guttersen Y05- 779 - Prelim - Rev 0	5,953.6	10,050.7	8,020.7	7,972.9	167.776	CC, ES
Guttersen Y05-779 - Guttersen Y05- 779 - Prelim - Rev 0	14,800.0	6,600.0	9,284.0	9,194.0	103.196	SF
Guttersen Y05-786 - Guttersen Y05-786 - Prelim - Rev 0	6,015.7	10,094.7	7,658.0	7,609.1	156.776	CC, ES
Guttersen Y05-786 - Guttersen Y05-786 - Prelim - Rev 0	14,500.0	6,700.0	8,982.8	8,894.9	102.202	SF
Hettinger C Unit 1 (Exist.) - Wellbore #1 - Design #1	11,157.3	6,948.0	6,356.2	6,313.1	147.410	CC
Hettinger C Unit 1 (Exist.) - Wellbore #1 - Design #1	11,200.0	6,948.0	6,356.4	6,312.9	146.159	ES
Hettinger C Unit 1 (Exist.) - Wellbore #1 - Design #1	14,500.0	6,948.0	7,181.6	7,116.5	110.257	SF
Jessie D29-1J - Wellbore #1 - Gyro Surveys						Out of range
Jessie D29-4J - Wellbore #1 - Gyro Surveys						Out of range
Kate Red D29-03J - Kate Red D29-03J - Kate Red D29-0	1,256.5	1,215.5	7,909.0	7,902.2	1,172.028	CC
Kate Red D29-03J - Kate Red D29-03J - Kate Red D29-0	2,800.0	2,742.6	7,914.2	7,898.7	508.963	ES
Kate Red D29-03J - Kate Red D29-03J - Kate Red D29-0	14,100.0	6,930.6	9,958.2	9,876.0	121.171	SF
Kate Red D29-11 - Wellbore #1 - Gyro Surveys	2,801.3	2,758.8	8,986.5	8,970.9	575.074	CC, ES
Kate Red D29-11 - Wellbore #1 - Gyro Surveys	12,700.0	7,054.0	9,991.8	9,914.8	129.821	SF
Kate Red D29-13 - Wellbore #1 - Gyro Surveys	1,119.7	1,088.7	7,466.2	7,460.2	1,244.228	CC
Kate Red D29-13 - Wellbore #1 - Gyro Surveys	2,500.0	2,432.4	7,468.3	7,454.5	541.564	ES
Kate Red D29-13 - Wellbore #1 - Gyro Surveys	13,400.0	6,833.2	9,893.0	9,818.5	132.763	SF
Kate Red D29-14 - Wellbore #1 - Gyro Surveys	1,165.2	1,142.2	8,831.8	8,825.6	1,404.259	CC
Kate Red D29-14 - Wellbore #1 - Gyro Surveys	2,812.9	2,820.5	8,832.5	8,816.7	557.427	ES
Kate Red D29-14 - Wellbore #1 - Gyro Surveys	11,200.0	6,937.7	9,978.8	9,914.9	156.056	SF
Kate Red D29-2J - Wellbore #1 - Kate Red D29-2J	11,205.1	6,800.0	8,517.2	8,450.1	126.898	CC
Kate Red D29-2J - Wellbore #1 - Kate Red D29-2J	11,300.0	6,800.0	8,517.8	8,449.8	125.348	ES
Kate Red D29-2J - Wellbore #1 - Kate Red D29-2J	15,700.0	6,791.5	9,630.5	9,531.8	97.509	SF
Kate Red D29-3 - Wellbore #1 - Kate Red D29-3	11,614.4	6,859.7	9,400.7	9,329.6	132.253	CC
Kate Red D29-3 - Wellbore #1 - Kate Red D29-3	11,700.0	6,859.5	9,401.1	9,329.3	130.855	ES
Kate Red D29-3 - Wellbore #1 - Kate Red D29-3	15,000.0	6,849.3	9,991.8	9,894.2	102.372	SF
Kate Red D29-5 - Wellbore #1 - Gyro Surveys	10,289.2	6,783.2	8,039.9	7,981.1	136.786	CC
Kate Red D29-5 - Wellbore #1 - Gyro Surveys	10,400.0	6,783.5	8,040.6	7,980.9	134.647	ES
Kate Red D29-5 - Wellbore #1 - Gyro Surveys	14,800.0	6,800.0	9,218.8	9,128.6	102.192	SF
Kate Red D29-6 - Wellbore #1 - Gyro Surveys	776.5	717.5	9,395.2	9,391.3	2,387.574	CC
Kate Red D29-6 - Wellbore #1 - Gyro Surveys	10,300.0	6,900.9	9,397.0	9,337.7	158.400	ES
Kate Red D29-6 - Wellbore #1 - Gyro Surveys	13,600.0	6,910.4	9,972.6	9,887.3	116.848	SF
Kate White D29-1 - Wellbore #1 - Gyro Surveys						Out of range
Kate White D29-15 - Wellbore #1 - Gyro Surveys						Out of range

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

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region Drilling - Sandbox	Local Co-ordinate Reference:	Well Emmy State H25-744
Project:	Conceptual Wells	TVD Reference:	WELL @ 4835.0ft
Reference Site:	DP 408	MD Reference:	WELL @ 4835.0ft
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Emmy State H25-744	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 29						
Kate White D29-16 - Wellbore #1 - Gyro Surveys						Out of range
Kate White D29-7 - Wellbore #1 - Gyro Surveys						Out of range
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 H25-744
Project:	Conceptual Wells	TVD Reference:	WELL @ 4835.0ft
Reference Site:	DP 408	MD Reference:	WELL @ 4835.0ft
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Emmy State H25-744	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	12,358.4	6,913.7	5,906.3	5,825.6	73.120	CC
Adams D30-27D - Adams D30-27D - Adams D30-27D - A	12,400.0	6,913.7	5,906.5	5,825.3	72.769	ES
Adams D30-27D - Adams D30-27D - Adams D30-27D - A	14,500.0	6,914.6	6,282.6	6,185.7	64.870	SF
Adams D30-29D - Wellbore #1 - Wellbore #1 - As Drilled	12,096.4	7,034.7	3,562.9	3,486.1	46.418	CC
Adams D30-29D - Wellbore #1 - Wellbore #1 - As Drilled	12,100.0	7,034.7	3,562.9	3,486.1	46.400	ES
Adams D30-29D - Wellbore #1 - Wellbore #1 - As Drilled	13,000.0	7,030.5	3,675.6	3,592.7	44.329	SF
Adams D30-30D - Adams D30-30D - Adams D30-30D - A	12,254.4	7,423.7	2,220.7	2,139.1	27.194	CC, ES
Adams D30-30D - Adams D30-30D - Adams D30-30D - A	13,600.0	7,423.1	2,596.6	2,483.8	23.026	SF
Adams D30-31D - Adams D30-31D - Adams D30-31D - A	10,963.4	7,404.5	2,511.4	2,417.3	26.692	CC
Adams D30-31D - Adams D30-31D - Adams D30-31D - A	11,100.0	7,403.9	2,515.1	2,416.3	25.446	ES
Adams D30-31D - Adams D30-31D - Adams D30-31D - A	12,100.0	7,399.4	2,756.7	2,630.9	21.926	SF
Corbin D30-23D - Corbin D30-23D - Corbin D30-23D - As	407.8	373.8	3,882.1	3,880.2	2,024.818	CC, ES
Corbin D30-23D - Corbin D30-23D - Corbin D30-23D - As	12,200.0	7,217.8	7,498.0	7,386.8	67.414	SF
Corbin Red D30-04J - Corbin Red D30-04J - Corbin Red	1,486.9	1,444.9	5,426.3	5,418.2	671.590	CC
Corbin Red D30-04J - Corbin Red D30-04J - Corbin Red	1,600.0	1,526.1	5,426.6	5,418.0	629.693	ES
Corbin Red D30-04J - Corbin Red D30-04J - Corbin Red	16,300.0	16,300.0	9,678.1	9,567.9	87.780	SF
Corbin Red D30-09 - Corbin Red D30-09 - Corbin Red D	274.0	236.0	6,474.3	6,473.2	5,776.652	CC
Corbin Red D30-09 - Corbin Red D30-09 - Corbin Red D	2,803.8	2,773.8	6,482.0	6,466.3	413.463	ES
Corbin Red D30-09 - Corbin Red D30-09 - Corbin Red D	12,900.0	6,662.6	7,865.2	7,791.8	107.170	SF
Corbin Red D30-15 - Corbin Red D30-15 - Corbin Red D	2,804.5	2,775.9	4,930.9	4,915.2	314.441	CC, ES
Corbin Red D30-15 - Corbin Red D30-15 - Corbin Red D	10,900.0	10,900.0	6,390.0	6,317.8	88.462	SF
Corbin Red D30-16 - Corbin Red D30-16 - Corbin Red D	100.0	55.4	6,243.1	6,242.9	10,000.000	CC
Corbin Red D30-16 - Corbin Red D30-16 - Corbin Red D	2,834.5	2,859.0	6,253.7	6,237.6	389.878	ES
Corbin Red D30-16 - Corbin Red D30-16 - Corbin Red D	12,100.0	6,971.9	8,124.7	8,058.5	122.663	SF
Dechant D30-17D - Dechant D30-17D - Dechant D30-17	10,563.0	7,343.3	5,986.5	5,889.0	61.406	CC, ES
Dechant D30-17D - Dechant D30-17D - Dechant D30-17	14,800.0	14,800.0	7,296.0	7,154.9	51.716	SF
Dechant D30-20D - Dechant D30-20D - Dechant D30-20	307.1	266.1	3,060.5	3,059.3	2,639.000	CC
Dechant D30-20D - Dechant D30-20D - Dechant D30-20	700.0	641.5	3,061.7	3,058.4	913.032	ES
Dechant D30-20D - Dechant D30-20D - Dechant D30-20	10,900.0	7,046.1	3,765.7	3,698.9	56.369	SF
Dechant D30-24D - Dechant D30-24D - Dechant D30-24	397.6	363.6	3,884.7	3,882.8	2,096.361	CC
Dechant D30-24D - Dechant D30-24D - Dechant D30-24	500.0	434.7	3,885.1	3,882.8	1,660.184	ES
Dechant D30-24D - Dechant D30-24D - Dechant D30-24	10,400.0	6,853.3	5,200.3	5,139.9	86.027	SF
Dechant D30-25D - Dechant D30-25D - Dechant D30-25	3,261.9	3,836.8	3,439.0	3,408.0	110.926	CC
Dechant D30-25D - Dechant D30-25D - Dechant D30-25	3,600.0	4,177.5	3,440.2	3,405.7	99.725	ES
Dechant D30-25D - Dechant D30-25D - Dechant D30-25	8,600.0	7,062.2	3,545.3	3,491.4	65.861	SF
Dechant D31-27D - Dechant D31-27D - Dechant D31-27	433.9	400.0	3,883.7	3,881.6	1,887.346	CC
Dechant D31-27D - Dechant D31-27D - Dechant D31-27	500.0	434.0	3,883.9	3,881.5	1,670.192	ES
Dechant D31-27D - Dechant D31-27D - Dechant D31-27	12,800.0	7,241.6	8,398.1	8,306.2	91.407	SF
Dechant D31-28D - Dechant D31-28D - Dechant D31-28	813.3	779.4	3,880.4	3,876.2	915.044	CC
Dechant D31-28D - Dechant D31-28D - Dechant D31-28	900.0	846.0	3,880.6	3,875.9	830.267	ES
Dechant D31-28D - Dechant D31-28D - Dechant D31-28	9,900.0	6,883.1	5,473.4	5,422.4	107.336	SF
Dechant D31-29D - Dechant D31-29D - Dechant D31-29	4,048.1	4,500.0	3,180.6	3,154.2	120.302	CC, ES
Dechant D31-29D - Dechant D31-29D - Dechant D31-29	9,000.0	6,984.4	4,055.4	4,003.0	77.398	SF
Dechant D31-77HN - Original Drilling - Original Drilling - A	3,750.3	4,186.5	3,741.0	3,720.6	183.525	CC
Dechant D31-77HN - Original Drilling - Original Drilling - A	3,800.0	4,212.0	3,741.1	3,720.6	181.663	ES
Dechant D31-77HN - Original Drilling - Original Drilling - A	6,950.0	6,950.0	4,083.7	4,045.3	106.503	SF
Dechant D31-77HN - Original Drilling - Plan A - Rev 2	3,787.4	4,225.4	3,748.5	3,740.5	467.556	CC
Dechant D31-77HN - Original Drilling - Plan A - Rev 2	3,800.0	4,232.3	3,748.5	3,740.5	465.983	ES
Dechant D31-77HN - Original Drilling - Plan A - Rev 2	10,600.0	6,350.0	5,610.8	5,582.6	198.568	SF
Dechant D31-77HN - Original Drilling - Plan B - Rev 0	3,787.4	4,225.4	3,748.5	3,740.5	467.556	CC
Dechant D31-77HN - Original Drilling - Plan B - Rev 0	3,800.0	4,232.3	3,748.5	3,740.5	465.983	ES
Dechant D31-77HN - Original Drilling - Plan B - Rev 0	10,600.0	6,348.4	5,609.6	5,581.3	198.475	SF
Dechant D32-69HN - Original Drilling - APD Rev 0	2,000.0	1,995.0	6,597.1	6,592.8	1,516.781	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 H25-744
Project:	Conceptual Wells	TVD Reference:	WELL @ 4835.0ft
Reference Site:	DP 408	MD Reference:	WELL @ 4835.0ft
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Emmy State H25-744	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						
Dechant D32-69HN - Original Drilling - APD Rev 0	13,700.0	6,322.1	9,937.0	9,888.4	204.388	SF
Hanson D30-11 - Hanson D30-11 - Hanson D30-11 - As D	731.8	687.9	4,010.9	4,007.1	1,070.686	CC
Hanson D30-11 - Hanson D30-11 - Hanson D30-11 - As D	1,300.0	1,236.0	4,013.1	4,006.1	577.010	ES
Hanson D30-11 - Hanson D30-11 - Hanson D30-11 - As D	10,700.0	6,800.0	4,420.5	4,361.5	74.997	SF
Hanson D30-12 - Hanson D30-12 - Hanson D30-12 - As	9,097.3	6,927.7	2,915.7	2,866.4	59.079	CC
Hanson D30-12 - Hanson D30-12 - Hanson D30-12 - As	9,100.0	6,927.7	2,915.7	2,866.3	59.057	ES
Hanson D30-12 - Hanson D30-12 - Hanson D30-12 - As	10,000.0	6,935.2	3,052.2	2,997.3	55.543	SF
Hanson D30-13 - Hanson D30-13 - Hanson D30-13 - As	100.0	61.9	2,288.3	2,288.1	10,000.000	CC
Hanson D30-13 - Hanson D30-13 - Hanson D30-13 - As	2,834.1	2,822.9	2,289.9	2,274.0	143.972	ES
Hanson D30-13 - Hanson D30-13 - Hanson D30-13 - As	8,400.0	6,914.1	2,936.5	2,893.1	67.705	SF
Hanson D30-14 - Hanson D30-14 - Hanson D30-14 - As	1,306.9	1,272.1	3,789.8	3,782.7	534.695	CC
Hanson D30-14 - Hanson D30-14 - Hanson D30-14 - As	1,400.0	1,342.5	3,790.0	3,782.5	502.116	ES
Hanson D30-14 - Hanson D30-14 - Hanson D30-14 - As	9,800.0	6,637.1	4,795.3	4,745.0	95.403	SF
Hettinger C Unit 1 - Hettinger C Unit 1 - Hettinger C Unit	11,388.1	6,714.5	6,309.8	6,241.3	92.137	CC
Hettinger C Unit 1 - Hettinger C Unit 1 - Hettinger C Unit	11,400.0	6,714.6	6,309.8	6,241.2	91.998	ES
Hettinger C Unit 1 - Hettinger C Unit 1 - Hettinger C Unit	14,100.0	6,746.3	6,867.8	6,780.2	78.431	SF
Hettinger D30-02 - Hettinger D30-02 - Hettinger D30-02 -	11,700.2	6,919.0	5,399.6	5,291.1	49.769	CC, ES
Hettinger D30-02 - Hettinger D30-02 - Hettinger D30-02 -	13,200.0	6,919.0	5,604.0	5,484.3	46.831	SF
Hettinger D30-03 - Hettinger D30-03 - Hettinger D30-03 -	11,727.2	6,877.5	4,046.9	3,974.7	56.077	CC, ES
Hettinger D30-03 - Hettinger D30-03 - Hettinger D30-03 -	12,900.0	6,877.0	4,213.4	4,133.2	52.546	SF
Hettinger D30-04 - Hettinger D30-04 - Hettinger D30-04 -	11,757.4	6,836.9	2,880.5	2,808.2	39.867	CC
Hettinger D30-04 - Hettinger D30-04 - Hettinger D30-04 -	11,800.0	6,837.2	2,880.8	2,808.2	39.680	ES
Hettinger D30-04 - Hettinger D30-04 - Hettinger D30-04 -	12,300.0	6,841.0	2,931.1	2,855.2	38.593	SF
Hettinger D30-05 - Hettinger D30-05 - Hettinger D30-05 -	9,975.7	6,962.9	2,906.9	2,850.1	51.244	CC
Hettinger D30-05 - Hettinger D30-05 - Hettinger D30-05 -	10,000.0	6,963.1	2,907.0	2,850.0	51.077	ES
Hettinger D30-05 - Hettinger D30-05 - Hettinger D30-05 -	10,700.0	6,967.3	2,995.7	2,934.2	48.712	SF
Hettinger D30-06 - Hettinger D30-06 - Hettinger D30-06 -	10,025.0	6,874.9	4,098.5	4,041.7	72.156	CC, ES
Hettinger D30-06 - Hettinger D30-06 - Hettinger D30-06 -	11,500.0	6,886.0	4,355.8	4,289.1	65.244	SF
Hettinger D30-08 - Hettinger D30-08 - Hettinger D30-08 -	10,135.4	6,941.5	6,588.1	6,530.1	113.515	CC
Hettinger D30-08 - Hettinger D30-08 - Hettinger D30-08 -	10,200.0	6,941.4	6,588.4	6,529.8	112.482	ES
Hettinger D30-08 - Hettinger D30-08 - Hettinger D30-08 -	13,400.0	6,934.9	7,352.6	7,271.9	91.154	SF
Leslie E Hanson Gas Unit 1 - Leslie E Hanson Gas Unit	2,800.0	2,762.0	2,950.7	2,920.4	97.541	CC, ES
Leslie E Hanson Gas Unit 1 - Leslie E Hanson Gas Unit	8,900.0	6,937.0	3,366.5	3,283.0	40.311	SF
McWilliams D29-32 - McWilliams D29-32 - McWilliams D	100.0	47.6	7,187.4	7,187.2	10,000.000	CC
McWilliams D29-32 - McWilliams D29-32 - McWilliams D	1,700.0	1,618.8	7,193.8	7,184.6	784.907	ES
McWilliams D29-32 - McWilliams D29-32 - McWilliams D	13,800.0	6,721.4	8,372.4	8,290.9	102.845	SF
McWilliams D30-07 - McWilliams D30-07 - McWilliams D	10,368.7	6,927.0	5,405.9	5,309.4	56.036	CC
McWilliams D30-07 - McWilliams D30-07 - McWilliams D	10,400.0	6,927.0	5,406.0	5,309.2	55.887	ES
McWilliams D30-07 - McWilliams D30-07 - McWilliams D	12,100.0	6,927.0	5,676.3	5,567.2	51.991	SF
McWilliams D30-18 - McWilliams D30-18 - McWilliams D	10,852.7	6,752.6	4,739.8	4,676.2	74.483	CC
McWilliams D30-18 - McWilliams D30-18 - McWilliams D	10,900.0	6,753.3	4,740.1	4,676.0	74.020	ES
McWilliams D30-18 - McWilliams D30-18 - McWilliams D	14,500.0	14,500.0	5,980.5	5,871.7	54.953	SF
McWilliams D30-19 - McWilliams D30-19 - McWilliams D	10,891.8	6,878.7	3,556.4	3,490.1	53.638	CC
McWilliams D30-19 - McWilliams D30-19 - McWilliams D	10,900.0	6,878.8	3,556.5	3,490.1	53.583	ES
McWilliams D30-19 - McWilliams D30-19 - McWilliams D	11,900.0	6,883.9	3,696.6	3,623.5	50.550	SF
McWilliams D30-21 - McWilliams D30-21 - McWilliams D	100.0	52.2	5,012.1	5,011.9	10,000.000	CC
McWilliams D30-21 - McWilliams D30-21 - McWilliams D	2,800.0	2,739.7	5,016.1	5,000.5	322.767	ES
McWilliams D30-21 - McWilliams D30-21 - McWilliams D	10,900.0	10,900.0	5,339.7	5,263.6	70.180	SF
McWilliams D30-22 - McWilliams D30-22 - McWilliams D	9,635.2	6,908.5	5,924.4	5,870.8	110.450	CC
McWilliams D30-22 - McWilliams D30-22 - McWilliams D	9,700.0	6,907.0	5,924.8	5,870.6	109.421	ES
McWilliams D30-22 - McWilliams D30-22 - McWilliams D	12,500.0	6,820.3	6,580.3	6,507.4	90.241	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 H25-744
Project:	Conceptual Wells	TVD Reference:	WELL @ 4835.0ft
Reference Site:	DP 408	MD Reference:	WELL @ 4835.0ft
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Emmy State H25-744	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Prelim - Rev 2	Offset TVD Reference:	Offset Datum

Summary

Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
DP 408						
Emmy H25-711 - Wellbore #1 - Prelim - Rev 2	2,000.0	2,000.0	111.8	103.1	12.848	CC, ES
Emmy H25-711 - Wellbore #1 - Prelim - Rev 2	17,327.4	17,528.5	2,199.9	1,997.0	10.842	SF
Emmy State H25-718 - Wellbore #1 - Prelim - Rev 2	2,400.0	2,400.0	89.4	78.9	8.517	CC, ES
Emmy State H25-718 - Wellbore #1 - Prelim - Rev 2	2,500.0	2,497.0	91.0	80.1	8.338	SF
Emmy State H25-724 - Wellbore #1 - Prelim - Rev 2	2,400.0	2,400.0	67.1	56.6	6.388	CC, ES
Emmy State H25-724 - Wellbore #1 - Prelim - Rev 2	2,500.0	2,498.1	68.4	57.5	6.268	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	2,498.1	45.6	34.7	4.181	SF
Emmy State H25-738 - Wellbore #1 - Prelim - Rev 2	2,757.5	2,757.6	21.9	9.9	1.821	CC
Emmy State H25-738 - Wellbore #1 - Prelim - Rev 2	2,800.0	2,800.0	22.1	9.9	1.809	ES, SF
Emmy State H25-751 - Wellbore #1 - Design #1	17,327.4	17,587.2	291.9	88.2	1.433	Level 3, CC, ES, SF
Emmy State H25-757 - Wellbore #1 - Design #1	8,257.4	8,436.1	684.5	644.5	17.098	CC
Emmy State H25-757 - Wellbore #1 - Design #1	17,327.4	17,499.1	728.9	524.8	3.572	ES, SF
Emmy State H25-764 - Wellbore #1 - Design #1	7,376.2	7,516.5	1,138.0	1,122.4	72.930	CC
Emmy State H25-764 - Wellbore #1 - Design #1	17,300.0	17,440.7	1,167.4	1,066.0	11.514	ES
Emmy State H25-764 - Wellbore #1 - Design #1	17,327.4	17,468.1	1,167.7	1,066.1	11.487	SF
Emmy State H25-771 - Wellbore #1 - Design #1	7,370.8	7,436.4	1,570.0	1,538.9	50.507	CC
Emmy State H25-771 - Wellbore #1 - Design #1	17,327.4	17,389.7	1,608.6	1,404.5	7.880	ES, SF
Emmy State H25-777 - Wellbore #1 - Design #1	7,351.2	7,450.0	1,953.0	1,921.8	62.550	CC
Emmy State H25-777 - Wellbore #1 - Design #1	17,300.0	17,398.4	2,046.6	1,843.0	10.053	ES
Emmy State H25-777 - Wellbore #1 - Design #1	17,327.4	17,416.6	2,047.2	1,843.2	10.033	SF
Emmy State H25-785 - Wellbore #1 - Prelim - Rev 2	1,912.1	1,924.1	2,182.0	2,173.7	261.934	CC
Emmy State H25-785 - Wellbore #1 - Prelim - Rev 2	2,000.0	2,000.0	2,182.0	2,173.3	250.856	ES
Emmy State H25-785 - Wellbore #1 - Prelim - Rev 2	17,327.4	17,481.1	2,488.3	2,284.7	12.220	SF
Emmy State H36-753 - Wellbore #1 - Design #1	7,293.8	7,477.5	365.2	332.8	11.251	CC, ES, SF
Emmy State H36-760 - Wellbore #1 - Design #1	7,315.1	7,290.1	843.0	811.6	26.856	CC, ES
Emmy State H36-760 - Wellbore #1 - Design #1	7,400.0	7,227.7	845.2	813.7	26.802	SF
Emmy State H36-766 - Wellbore #1 - Design #1	7,363.6	7,227.5	1,236.8	1,205.9	39.997	CC, ES
Emmy State H36-766 - Wellbore #1 - Design #1	7,800.0	6,950.0	1,268.4	1,236.0	39.164	SF
Emmy State H36-773 - Wellbore #1 - Design #1	7,600.8	7,036.7	1,703.7	1,672.2	53.983	CC, ES
Emmy State H36-773 - Wellbore #1 - Design #1	8,300.0	6,750.0	1,795.7	1,760.5	50.955	SF
Emmy State H36-780 - Wellbore #1 - Design #1	7,694.0	6,804.8	2,124.7	2,092.6	66.168	CC
Emmy State H36-780 - Wellbore #1 - Design #1	7,700.0	6,801.8	2,124.7	2,092.5	66.118	ES
Emmy State H36-780 - Wellbore #1 - Design #1	8,600.0	6,600.0	2,286.4	2,249.1	61.338	SF
Emmy State H36-787 - Wellbore #1 - Prelim - Rev 2	1,911.2	1,925.2	2,187.4	2,179.0	262.560	CC
Emmy State H36-787 - Wellbore #1 - Prelim - Rev 2	2,000.0	2,000.0	2,187.4	2,178.7	251.473	ES
Emmy State H36-787 - Wellbore #1 - Prelim - Rev 2	9,100.0	6,600.0	2,777.3	2,735.1	65.889	SF
Hurley H26-712 - Wellbore #1 - Design #1	17,311.4	14,837.2	2,929.3	2,752.1	16.531	CC
Hurley H26-712 - Wellbore #1 - Design #1	17,327.4	14,853.2	2,929.6	2,752.1	16.503	ES, SF
Hurley H26-717 - Wellbore #1 - Design #1	9,947.0	7,400.0	3,270.4	3,222.0	67.558	CC
Hurley H26-717 - Wellbore #1 - Design #1	17,327.4	14,751.6	3,337.9	3,163.2	19.108	ES, SF
Hurley H26-724 - Wellbore #1 - Design #1	17,313.3	14,785.7	3,774.4	3,599.1	21.530	CC
Hurley H26-724 - Wellbore #1 - Design #1	17,327.4	14,799.8	3,774.6	3,599.0	21.498	ES, SF
Hurley H26-730 - Wellbore #1 - Design #1	17,312.5	14,521.2	4,191.3	4,015.0	23.784	CC
Hurley H26-730 - Wellbore #1 - Design #1	17,327.4	14,536.1	4,191.5	4,015.0	23.747	ES, SF
Hurley H26-736 - Wellbore #1 - Design #1	9,507.4	6,365.1	4,490.9	4,447.5	103.502	CC
Hurley H26-736 - Wellbore #1 - Design #1	17,327.4	14,657.8	4,604.3	4,429.7	26.374	ES, SF
Hurley H26-743 - Wellbore #1 - Prelim - Rev 2	9,524.1	5,703.5	4,788.4	4,746.2	113.535	CC
Hurley H26-743 - Wellbore #1 - Prelim - Rev 2	9,600.0	5,709.9	4,789.0	4,746.1	111.802	ES
Hurley H26-743 - Wellbore #1 - Prelim - Rev 2	17,327.4	14,948.9	5,033.4	4,856.1	28.390	SF
Hurley H26-750 - Wellbore #1 - Prelim - Rev 2	17,314.4	15,077.6	5,456.0	5,277.4	30.541	CC
Hurley H26-750 - Wellbore #1 - Prelim - Rev 2	17,327.4	15,109.3	5,456.2	5,277.1	30.469	ES, SF
Hurley H26-756 - Wellbore #1 - Prelim - Rev 2	9,846.2	7,450.0	5,844.8	5,796.6	121.269	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 H25-744
Project:	Conceptual Wells	TVD Reference:	WELL @ 4835.0ft
Reference Site:	DP 408	MD Reference:	WELL @ 4835.0ft
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Emmy State H25-744	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Prelim - Rev 2	Offset TVD Reference:	Offset Datum

Summary

Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
DP 408						
Hurley H26-756 - Wellbore #1 - Prelim - Rev 2	17,300.0	14,839.6	5,926.1	5,751.1	33.867	ES
Hurley H26-756 - Wellbore #1 - Prelim - Rev 2	17,327.4	14,867.0	5,926.6	5,751.1	33.768	SF
Hurley H26-762 - Wellbore #1 - Prelim - Rev 2	9,812.0	7,378.8	6,267.1	6,220.1	133.348	CC
Hurley H26-762 - Wellbore #1 - Prelim - Rev 2	17,300.0	14,798.9	6,348.0	6,172.9	36.260	ES
Hurley H26-762 - Wellbore #1 - Prelim - Rev 2	17,327.4	14,826.3	6,348.5	6,172.9	36.155	SF
Hurley H26-768 - Wellbore #1 - Prelim - Rev 2	9,636.0	7,191.6	6,688.8	6,643.9	149.012	CC
Hurley H26-768 - Wellbore #1 - Prelim - Rev 2	17,327.4	14,816.1	6,767.9	6,591.8	38.439	ES, SF
Hurley H26-776 - Wellbore #1 - Prelim - Rev 2	9,253.6	6,424.3	7,151.1	7,109.8	173.154	CC
Hurley H26-776 - Wellbore #1 - Prelim - Rev 2	17,327.4	14,872.5	7,198.0	7,019.3	40.278	ES, SF
Hurley H26-783 - Wellbore #1 - Prelim - Rev 2	9,299.4	6,145.3	7,411.2	7,369.8	178.931	CC
Hurley H26-783 - Wellbore #1 - Prelim - Rev 2	9,400.0	6,132.8	7,411.9	7,369.6	175.542	ES
Hurley H26-783 - Wellbore #1 - Prelim - Rev 2	17,327.4	14,755.7	7,602.7	7,425.4	42.897	SF
Hurley H35-720 - Wellbore #1 - Design #1	10,138.3	7,418.9	3,521.9	3,472.4	71.130	CC
Hurley H35-720 - Wellbore #1 - Design #1	10,200.0	7,374.5	3,522.0	3,472.0	70.370	ES
Hurley H35-720 - Wellbore #1 - Design #1	11,900.0	6,750.0	3,773.3	3,709.3	58.961	SF
Hurley H35-727 - Wellbore #1 - Design #1	10,248.6	7,080.0	3,904.0	3,854.2	78.297	CC
Hurley H35-727 - Wellbore #1 - Design #1	10,300.0	7,044.8	3,904.2	3,853.9	77.577	ES
Hurley H35-727 - Wellbore #1 - Design #1	12,100.0	6,600.0	4,232.4	4,168.0	65.743	SF
Hurley H35-733 - Wellbore #1 - Design #1	10,533.2	6,574.1	4,285.8	4,233.1	81.311	CC
Hurley H35-733 - Wellbore #1 - Design #1	10,600.0	6,564.7	4,286.3	4,233.0	80.360	ES
Hurley H35-733 - Wellbore #1 - Design #1	12,300.0	6,500.0	4,633.1	4,566.6	69.646	SF
Hurley H35-740 - Wellbore #1 - Design #1	10,446.3	5,946.3	4,672.7	4,622.0	92.183	CC
Hurley H35-740 - Wellbore #1 - Design #1	10,500.0	5,954.5	4,673.0	4,621.8	91.220	ES
Hurley H35-740 - Wellbore #1 - Design #1	12,800.0	6,302.4	5,219.9	5,150.0	74.672	SF
Hurley H35-746 - Wellbore #1 - Prelim - Rev 2	10,366.3	5,778.8	5,026.0	4,975.7	99.975	CC
Hurley H35-746 - Wellbore #1 - Prelim - Rev 2	10,400.0	5,781.8	5,026.1	4,975.5	99.331	ES
Hurley H35-746 - Wellbore #1 - Prelim - Rev 2	12,900.0	6,006.3	5,623.9	5,553.4	79.745	SF
Hurley H35-755 - Wellbore #1 - Prelim - Rev 2	7,300.0	10,023.1	5,731.3	5,684.1	121.467	ES
Hurley H35-755 - Wellbore #1 - Prelim - Rev 2	7,343.2	9,980.2	5,731.1	5,684.2	122.165	CC
Hurley H35-755 - Wellbore #1 - Prelim - Rev 2	13,400.0	6,872.1	6,625.5	6,550.8	88.661	SF
Hurley H35-761 - Wellbore #1 - Prelim - Rev 2	7,350.0	9,769.9	6,149.7	6,103.7	133.774	ES
Hurley H35-761 - Wellbore #1 - Prelim - Rev 2	7,360.7	9,759.2	6,149.7	6,103.8	133.966	CC
Hurley H35-761 - Wellbore #1 - Prelim - Rev 2	13,600.0	6,700.0	7,108.2	7,033.0	94.506	SF
Hurley H35-768 - Wellbore #1 - Prelim - Rev 2	7,350.0	9,810.5	6,586.2	6,540.9	145.389	ES
Hurley H35-768 - Wellbore #1 - Prelim - Rev 2	7,360.9	9,800.3	6,586.2	6,541.0	145.587	CC
Hurley H35-768 - Wellbore #1 - Prelim - Rev 2	14,000.0	6,578.5	7,594.5	7,516.5	97.347	SF
Hurley H35-774 - Wellbore #1 - Prelim - Rev 2	7,376.3	9,806.6	7,007.4	6,962.6	156.364	CC
Hurley H35-774 - Wellbore #1 - Prelim - Rev 2	10,400.0	6,713.1	7,008.6	6,957.3	136.500	ES
Hurley H35-774 - Wellbore #1 - Prelim - Rev 2	14,400.0	6,478.1	8,085.7	8,004.8	99.924	SF
Hurley H35-779 - Wellbore #1 - Prelim - Rev 2	10,342.0	6,267.2	7,302.5	7,252.2	145.114	CC
Hurley H35-779 - Wellbore #1 - Prelim - Rev 2	10,400.0	6,273.3	7,302.7	7,251.9	143.548	ES
Hurley H35-779 - Wellbore #1 - Prelim - Rev 2	14,600.0	6,450.0	8,446.1	8,363.5	102.137	SF
Hurley H35-787 - Wellbore #1 - Prelim - Rev 2	10,284.2	5,480.9	7,697.0	7,648.5	158.854	CC
Hurley H35-787 - Wellbore #1 - Prelim - Rev 2	10,400.0	5,493.7	7,697.8	7,648.3	155.346	ES
Hurley H35-787 - Wellbore #1 - Prelim - Rev 2	15,200.0	6,022.5	9,116.7	9,030.3	105.534	SF
Hurley State H35-713 - Wellbore #1 - Design #1	9,866.3	7,421.4	3,039.9	2,992.1	63.628	CC
Hurley State H35-713 - Wellbore #1 - Design #1	9,900.0	7,400.0	3,040.0	2,991.9	63.276	ES
Hurley State H35-713 - Wellbore #1 - Design #1	11,400.0	6,850.0	3,269.2	3,209.4	54.675	SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region Drilling - Sandbox	Local Co-ordinate Reference:	Well Emmy State H25-744
Project:	Conceptual Wells	TVD Reference:	WELL @ 4835.0ft
Reference Site:	DP 408	MD Reference:	WELL @ 4835.0ft
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Emmy State H25-744	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 13						
Karakakes H13-25 - Original Drilling - Original Drilling - A	17,327.4	7,123.1	2,014.5	1,908.5	18.999	CC, ES, SF
Karakakes H13-33 - Original Drilling - Original Drilling - A	17,327.4	7,044.6	3,171.4	3,059.6	28.348	CC, ES, SF
Karakakes H14-63HN - Original Drilling - Original Drilling	17,327.4	6,405.0	3,193.1	3,083.9	29.230	CC, ES, SF
Sarchet H13-75HN - Original Drilling - Original Drilling	17,327.4	6,834.0	340.5	258.2	4.135	CC, ES, SF
UPRC 13-13J - Original Drilling - Original Drilling - As Dri	17,327.4	6,942.3	2,249.1	2,132.5	19.297	CC, ES, SF
UPRC 13-14J - Original Drilling - Original Drilling - As Dri	17,327.4	6,999.4	1,481.5	1,386.4	15.576	CC, ES, SF
UPRC 13-15J - Original Drilling - Original Drilling - As Dri	17,327.4	6,972.9	897.9	825.9	12.473	CC, ES, SF
UPRC 13-16J - Wellbore #1 - Wellbore #1 - As Drilled	17,327.4	6,970.9	1,622.1	1,510.1	14.488	CC, ES, SF
UPRR 39 Pan Am B1 (PA) - Original Drilling - Original Dr	17,327.4	6,987.0	2,463.2	2,226.1	10.390	CC, ES, SF
H Section 14						
Bohlender H14-09 - Original Drilling - Original Drilling - A	17,327.4	6,900.0	4,096.8	3,988.6	37.845	CC, ES, SF
Bohlender H14-15 - Original Drilling - Original Drilling - A	17,327.4	6,806.4	4,813.6	4,689.0	38.617	CC, ES, SF
Bohlender H14-16 - Original Drilling - Original Drilling - A	17,327.4	6,949.5	4,076.1	3,954.5	33.528	CC, ES, SF
Wilcox H14-03J - Original Drilling - Original Drilling - As D	17,327.4	7,146.7	6,158.0	6,027.1	47.045	CC, ES, SF
Wilcox H14-10 - Original Drilling - Original Drilling - As Dr	17,327.4	7,409.6	5,209.0	5,079.0	40.089	CC, ES, SF
Wilcox H14-11 - Original Drilling - Original Drilling - As Dr	17,327.4	7,361.8	6,226.3	6,077.6	41.857	CC, ES, SF
Wilcox H14-13 - Original Drilling - Original Drilling - As Dr	17,327.4	7,624.2	6,942.6	6,815.5	54.637	CC, ES, SF
H Section 19						
Butterball 13-19 - Original Drilling - Original Drilling - As D	14,197.8	6,889.4	2,993.8	2,898.3	31.341	CC
Butterball 13-19 - Original Drilling - Original Drilling - As D	14,200.0	6,889.5	2,993.8	2,898.3	31.335	ES
Butterball 13-19 - Original Drilling - Original Drilling - As D	14,700.0	6,903.5	3,035.6	2,936.7	30.698	SF
H Section 21						
Moser 24-21 - Wellbore #1 - Wellbore #1 - As Drilled						Out of range
H Section 22						
HSR Demeules 09-22 - Original Drilling - Original Drilling	14,007.3	14,007.3	8,740.0	8,621.4	73.674	CC
HSR Demeules 09-22 - Original Drilling - Original Drilling	14,100.0	14,100.0	8,740.5	8,620.6	72.917	ES
HSR Demeules 09-22 - Original Drilling - Original Drilling	14,300.0	14,300.0	8,744.9	8,622.4	71.378	SF
HSR Duryea - Wellbore #1 - Wellbore #1 - As Drilled	13,143.2	6,951.1	9,269.1	9,183.4	108.083	CC
HSR Duryea - Wellbore #1 - Wellbore #1 - As Drilled	13,200.0	6,952.7	9,269.3	9,183.0	107.384	ES
HSR Duryea - Wellbore #1 - Wellbore #1 - As Drilled	16,800.0	7,050.6	9,963.8	9,847.9	86.018	SF
Sarchet 16-22 - Wellbore #1 - Wellbore #1 - As Drilled	12,589.1	7,000.0	8,863.5	8,782.7	109.813	CC
Sarchet 16-22 - Wellbore #1 - Wellbore #1 - As Drilled	12,700.0	7,000.0	8,864.2	8,782.4	108.378	ES
Sarchet 16-22 - Wellbore #1 - Wellbore #1 - As Drilled	17,000.0	7,000.0	9,900.3	9,785.9	86.511	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 H25-744
Project:	Conceptual Wells	TVD Reference:	WELL @ 4835.0ft
Reference Site:	DP 408	MD Reference:	WELL @ 4835.0ft
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Emmy State H25-744	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	15,425.1	7,009.8	4,734.0	4,626.3	43.952	CC
Eachus 32-23 - Original Drilling - Original Drilling - As Dri	15,500.0	7,010.8	4,734.6	4,626.2	43.649	ES
Eachus 32-23 - Original Drilling - Original Drilling - As Dri	16,400.0	7,022.4	4,833.4	4,717.4	41.682	SF
Eachus 41-23 (PA) - Original Drilling - Original Drilling - A	16,645.1	6,979.0	3,548.7	3,314.0	15.119	CC
Eachus 41-23 (PA) - Original Drilling - Original Drilling - A	16,700.0	6,979.0	3,549.2	3,313.9	15.084	ES
Eachus 41-23 (PA) - Original Drilling - Original Drilling - A	17,000.0	6,979.0	3,566.4	3,328.4	14.985	SF
Eachus UPRR 31-23 - Original Drilling - Original Drilling -	16,756.3	7,026.3	4,797.7	4,617.3	26.606	CC
Eachus UPRR 31-23 - Original Drilling - Original Drilling -	16,800.0	7,026.4	4,797.9	4,617.1	26.541	ES
Eachus UPRR 31-23 - Original Drilling - Original Drilling -	17,327.4	7,027.8	4,831.8	4,646.2	26.037	SF
Eachus UPRR 42-23 (PA) - Original Drilling - Original Dri	15,326.6	6,989.0	3,514.3	3,292.0	15.813	CC, ES
Eachus UPRR 42-23 (PA) - Original Drilling - Original Dri	15,800.0	6,989.0	3,546.0	3,319.5	15.657	SF
HSR Alberstein 16-23 - Original Drilling - Original Drilling	13,011.9	6,804.1	3,639.0	3,554.9	43.290	CC, ES
HSR Alberstein 16-23 - Original Drilling - Original Drilling	13,900.0	6,846.3	3,745.6	3,654.0	40.907	SF
HSR Ashley 15-23A - Original Drilling - Original Drilling -	13,079.7	6,743.5	4,969.7	4,885.1	58.799	CC
HSR Ashley 15-23A - Original Drilling - Original Drilling -	13,100.0	6,744.2	4,969.7	4,885.0	58.656	ES
HSR Ashley 15-23A - Original Drilling - Original Drilling -	14,700.0	6,811.4	5,226.7	5,129.1	53.539	SF
HSR Benirschke 10-23 - Original Drilling - Original Drillin	14,074.8	6,878.1	4,666.9	4,572.4	49.416	CC
HSR Benirschke 10-23 - Original Drilling - Original Drillin	14,100.0	6,879.4	4,666.9	4,572.2	49.281	ES
HSR Benirschke 10-23 - Original Drilling - Original Drillin	15,400.0	6,966.5	4,850.7	4,745.4	46.078	SF
HSR Eachus 03-23 - Original Drilling - Original Drilling - A	16,769.6	7,279.2	6,110.9	5,981.2	47.127	CC
HSR Eachus 03-23 - Original Drilling - Original Drilling - A	16,800.0	7,279.2	6,110.9	5,980.9	47.002	ES
HSR Eachus 03-23 - Original Drilling - Original Drilling - A	17,327.4	7,280.7	6,136.5	6,000.9	45.246	SF
HSR Eachus 04-23 - Original Drilling - Original Drilling - A	16,783.4	7,277.4	7,527.4	7,377.1	50.108	CC
HSR Eachus 04-23 - Original Drilling - Original Drilling - A	16,900.0	7,278.9	7,528.3	7,375.6	49.312	ES
HSR Eachus 04-23 - Original Drilling - Original Drilling - A	17,327.4	7,284.2	7,547.2	7,385.8	46.761	SF
HSR Eachus 05-23 - Original Drilling - Original Drilling - A	15,448.5	7,209.1	7,542.4	7,399.5	52.783	CC
HSR Eachus 05-23 - Original Drilling - Original Drilling - A	15,500.0	7,210.1	7,542.5	7,399.5	52.718	ES
HSR Eachus 05-23 - Original Drilling - Original Drilling - A	17,327.4	7,244.7	7,773.0	7,621.1	51.159	SF
HSR Fruman 06-23 - Original Drilling - Original Drilling - A	15,829.4	6,970.9	6,486.8	6,375.1	58.083	CC
HSR Fruman 06-23 - Original Drilling - Original Drilling - A	15,900.0	6,971.6	6,487.2	6,374.8	57.713	ES
HSR Fruman 06-23 - Original Drilling - Original Drilling - A	17,327.4	6,987.2	6,657.7	6,532.7	53.260	SF
HSR Grasshopper 09-23 - Original Drilling - Original Drill	13,827.4	7,147.2	3,754.8	3,661.9	40.450	CC
HSR Grasshopper 09-23 - Original Drilling - Original Drill	13,900.0	7,145.1	3,755.5	3,661.9	40.141	ES
HSR Grasshopper 09-23 - Original Drilling - Original Drill	14,700.0	7,120.5	3,854.7	3,754.8	38.572	SF
Ritchey 21-23 - Original Drilling - Original Drilling - As Dri	16,160.8	7,085.6	5,338.7	5,223.7	46.411	CC
Ritchey 21-23 - Original Drilling - Original Drilling - As Dri	16,200.0	7,085.3	5,338.9	5,223.5	46.253	ES
Ritchey 21-23 - Original Drilling - Original Drilling - As Dri	17,327.4	7,076.3	5,464.9	5,340.3	43.828	SF
Ritchey 24-23 - Original Drilling - Original Drilling - As Dri	14,727.1	7,067.8	4,300.9	4,197.1	41.429	CC
Ritchey 24-23 - Original Drilling - Original Drilling - As Dri	14,800.0	7,067.9	4,301.6	4,197.0	41.159	ES
Ritchey 24-23 - Original Drilling - Original Drilling - As Dri	15,700.0	7,069.5	4,409.6	4,298.4	39.652	SF
Ritchey 31-24 - Original Drilling - Original Drilling - As Dri	16,083.2	7,129.4	2,917.8	2,801.7	25.128	CC
Ritchey 31-24 - Original Drilling - Original Drilling - As Dri	16,100.0	7,129.5	2,917.9	2,801.6	25.101	ES
Ritchey 31-24 - Original Drilling - Original Drilling - As Dri	16,500.0	7,133.6	2,947.4	2,828.7	24.828	SF
UPRC 23-11J - Original Drilling - Original Drilling - As Dri	14,072.4	6,859.8	6,397.1	6,302.8	67.832	CC
UPRC 23-11J - Original Drilling - Original Drilling - As Dri	14,100.0	6,859.7	6,397.2	6,302.6	67.635	ES
UPRC 23-11J - Original Drilling - Original Drilling - As Dri	16,300.0	6,847.5	6,773.8	6,662.0	60.581	SF
UPRC 23-12J - Original Drilling - Original Drilling - As Dri	14,063.7	6,894.1	7,697.7	7,603.4	81.589	CC
UPRC 23-12J - Original Drilling - Original Drilling - As Dri	14,100.0	6,894.3	7,697.8	7,603.1	81.279	ES
UPRC 23-12J - Original Drilling - Original Drilling - As Dri	17,200.0	6,913.5	8,312.1	8,193.4	70.055	SF
UPRC H23-13 - Wellbore #1 - Wellbore #1 - As Drilled	12,912.5	6,936.5	7,688.3	7,604.7	91.954	CC
UPRC H23-13 - Wellbore #1 - Wellbore #1 - As Drilled	13,000.0	6,939.3	7,688.8	7,604.3	91.018	ES
UPRC H23-13 - Wellbore #1 - Wellbore #1 - As Drilled	16,400.0	7,071.5	8,441.4	8,330.6	76.186	SF
UPRC H23-14J - Original Drilling - Original Drilling - As D	12,789.5	7,054.1	5,978.2	5,895.4	72.202	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 H25-744
Project:	Conceptual Wells	TVD Reference:	WELL @ 4835.0ft
Reference Site:	DP 408	MD Reference:	WELL @ 4835.0ft
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Emmy State H25-744	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 H23-14J - Original Drilling - Original Drilling - As D	12,800.0	7,054.8	5,978.2	5,895.3	72.109	ES
UPRC H23-14J - Original Drilling - Original Drilling - As D	15,100.0	7,217.1	6,407.1	6,305.8	63.225	SF
UPRC H23-24 - Original Drilling - Original Drilling - As Dr	13,692.9	6,884.6	5,744.9	5,654.1	63.266	CC
UPRC H23-24 - Original Drilling - Original Drilling - As Dr	13,800.0	6,887.7	5,745.9	5,654.0	62.536	ES
UPRC H23-24 - Original Drilling - Original Drilling - As Dr	15,600.0	6,930.8	6,052.9	5,946.8	57.056	SF
UPRR 53 Pan Am B#1 (PA) - Original Drilling - Original D	13,129.9	6,946.0	7,130.2	6,929.8	35.574	CC
UPRR 53 Pan Am B#1 (PA) - Original Drilling - Original D	13,200.0	6,946.0	7,130.5	6,929.4	35.453	ES
UPRR 53 Pan Am B#1 (PA) - Original Drilling - Original D	15,000.0	6,946.0	7,371.4	7,154.7	34.031	SF
UPRR 53 Pan Am UT V#1 - Original Drilling - Original Dr	15,846.8	6,917.9	4,031.9	3,920.5	36.167	CC
UPRR 53 Pan Am UT V#1 - Original Drilling - Original Dr	15,900.0	6,918.4	4,032.3	3,920.3	35.994	ES
UPRR 53 Pan Am UT V#1 - Original Drilling - Original Dr	16,700.0	6,925.3	4,121.2	4,002.8	34.810	SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region Drilling - Sandbox	Local Co-ordinate Reference:	Well Emmy State H25-744
Project:	Conceptual Wells	TVD Reference:	WELL @ 4835.0ft
Reference Site:	DP 408	MD Reference:	WELL @ 4835.0ft
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Emmy State H25-744	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	14,141.7	6,886.2	1,666.9	1,571.9	17.554	CC, ES
Gurtler 24-09J - Original Drilling - Original Drilling - As Dr	14,300.0	6,886.0	1,674.4	1,578.5	17.465	SF
Gurtler 24-10J - Original Drilling - Original Drilling - As Dr	14,156.4	6,958.3	473.5	378.1	4.963	CC, ES, SF
Gurtler 24-11J - Original Drilling - Original Drilling - As Dr	14,087.7	7,027.9	983.1	888.2	10.368	CC
Gurtler 24-11J - Original Drilling - Original Drilling - As Dr	14,100.0	7,028.2	983.1	888.2	10.352	ES
Gurtler 24-11J - Original Drilling - Original Drilling - As Dr	14,200.0	7,030.3	989.5	893.7	10.330	SF
Gurtler 24-12J - Original Drilling - Original Drilling - As Dr	14,089.5	6,500.0	2,250.9	2,158.4	24.314	CC
Gurtler 24-12J - Original Drilling - Original Drilling - As Dr	14,100.0	6,500.0	2,251.0	2,158.3	24.285	ES
Gurtler 24-12J - Original Drilling - Original Drilling - As Dr	14,400.0	6,500.0	2,272.3	2,176.9	23.832	SF
Gurtler 24-12J - Original Drilling - ST01 - ST01 Original D	13,890.6	7,340.0	2,059.3	1,966.0	22.084	CC
Gurtler 24-12J - Original Drilling - ST01 - ST01 Original D	13,900.0	7,340.0	2,059.3	1,966.0	22.058	ES
Gurtler 24-12J - Original Drilling - ST01 - ST01 Original D	14,200.0	7,340.0	2,082.4	1,986.3	21.671	SF
Gurtler 24-13J - Original Drilling - Original Drilling - As Dr	12,497.8	7,205.0	2,114.2	2,031.5	25.540	CC
Gurtler 24-13J - Original Drilling - Original Drilling - As Dr	12,500.0	7,204.1	2,114.2	2,031.4	25.535	ES
Gurtler 24-13J - Original Drilling - Original Drilling - As Dr	12,800.0	7,081.2	2,132.1	2,047.5	25.197	SF
Gurtler 24-15J - Original Drilling - Original Drilling - As Dr	12,804.9	6,951.8	396.1	313.5	4.797	CC, ES, SF
Gurtler 24-16J - Original Drilling - Original Drilling - As Dr	12,834.3	6,929.6	1,382.1	1,299.4	16.702	CC, ES
Gurtler 24-16J - Original Drilling - Original Drilling - As Dr	12,900.0	6,929.7	1,383.7	1,300.5	16.638	SF
Gurtler H24-14 - Original Drilling - Original Drilling - As D	12,681.1	6,982.7	764.6	683.2	9.386	CC
Gurtler H24-14 - Original Drilling - Original Drilling - As D	12,700.0	6,982.9	764.9	683.2	9.362	ES, SF
Gurtler H24-21 (PA) - Original Drilling - Original Drilling -	14,627.7	6,960.5	236.3	136.3	2.364	CC, ES, SF
Gurtler H24-23 - Original Drilling - Original Drilling - As D	13,485.4	6,969.4	1,029.4	940.4	11.564	CC, ES
Gurtler H24-23 - Original Drilling - Original Drilling - As D	13,500.0	6,969.4	1,029.5	940.4	11.554	SF
Gurtler H24-24 - Original Drilling - Original Drilling - As D	13,470.1	6,976.5	61.7	-26.8	0.697	Level 1, CC, ES, SF
Gurtler H24-99HZ - Wellbore #1 - Original Drilling	13,745.2	8,644.2	63.8	-6.9	0.902	Level 1, CC, ES, SF
Gurtler H25-27 - Original Drilling - Original Drilling - As D	12,259.7	6,941.8	983.7	904.4	12.408	CC, ES
Gurtler H25-27 - Original Drilling - Original Drilling - As D	12,300.0	6,941.6	984.5	904.9	12.366	SF
Gurtler Russell L1 (PA) - Original Drilling - Original Drilling	13,201.0	6,974.5	1,391.6	1,296.7	14.670	CC, ES
Gurtler Russell L1 (PA) - Original Drilling - Original Drilling	13,400.0	6,975.8	1,405.7	1,309.1	14.549	SF
HSR Brutschy 04-24 - Original Drilling - Original Drilling -	16,590.0	6,911.5	2,120.9	2,002.3	17.876	CC
HSR Brutschy 04-24 - Original Drilling - Original Drilling -	16,600.0	6,911.8	2,121.0	2,002.2	17.859	ES
HSR Brutschy 04-24 - Original Drilling - Original Drilling -	16,800.0	6,917.2	2,131.3	2,010.7	17.678	SF
HSR Epstein 05-24 - Original Drilling - Original Drilling - A	15,780.7	7,027.8	1,593.9	1,482.5	14.314	CC
HSR Epstein 05-24 - Original Drilling - Original Drilling - A	15,800.0	7,027.4	1,594.0	1,482.4	14.287	ES
HSR Epstein 05-24 - Original Drilling - Original Drilling - A	15,900.0	7,025.5	1,598.3	1,485.8	14.210	SF
HSR Hoffman 03-24 - Original Drilling - Original Drilling -	16,658.6	6,968.6	813.8	688.3	6.485	CC, ES
HSR Hoffman 03-24 - Original Drilling - Original Drilling -	16,700.0	6,967.9	814.9	688.9	6.471	SF
HSR Sarchet 02-24 - Original Drilling - Original Drilling - A	16,664.7	6,960.8	538.3	418.8	4.506	CC, ES, SF
HSR Sarchet 06-24 - Original Drilling - Original Drilling - A	15,300.4	6,980.2	669.2	562.8	6.289	CC, ES, SF
HSR Traurig 01-24 - Original Drilling - Original Drilling - A	16,913.6	6,965.4	1,416.6	1,294.7	11.620	CC, ES
HSR Traurig 01-24 - Original Drilling - Original Drilling - A	17,000.0	6,965.6	1,419.2	1,296.8	11.597	SF
Nopens D19-31 - Original Drilling - Original Drilling - As D	16,070.3	6,943.5	2,135.3	2,021.5	18.774	CC
Nopens D19-31 - Original Drilling - Original Drilling - As D	16,100.0	6,944.3	2,135.5	2,021.5	18.737	ES
Nopens D19-31 - Original Drilling - Original Drilling - As D	16,300.0	6,949.1	2,147.6	2,032.4	18.652	SF
Nopens H24-08 - Original Drilling - Original Drilling - As D	15,475.8	6,921.9	1,643.9	1,536.0	15.235	CC
Nopens H24-08 - Original Drilling - Original Drilling - As D	15,500.0	6,922.6	1,644.1	1,536.0	15.211	ES
Nopens H24-08 - Original Drilling - Original Drilling - As D	15,600.0	6,925.4	1,648.6	1,540.0	15.173	SF
Sarchet H24-22 - Original Drilling - Original Drilling - As D	15,142.3	6,951.1	808.4	703.5	7.709	CC, ES, SF
Weld County Lumber 01 - Original Drilling - Original Drilling	15,886.2	6,951.5	621.8	509.8	5.554	CC, ES
Weld County Lumber 01 - Original Drilling - Original Drilling	15,900.0	6,951.7	622.0	509.9	5.553	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 H25-744
Project:	Conceptual Wells	TVD Reference:	WELL @ 4835.0ft
Reference Site:	DP 408	MD Reference:	WELL @ 4835.0ft
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Emmy State H25-744	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	10,728.7	7,100.7	173.8	106.0	2.563	CC, ES, SF
Dechant D30-33D - Original Drilling - Original Drilling - As	100.0	72.7	1,169.6	1,169.5	6,015.114	CC, ES
Dechant D30-33D - Original Drilling - Original Drilling - As	8,800.0	7,040.8	2,296.6	2,248.5	47.744	SF
Dechant D31-30D - Original Drilling - Original Drilling - As	109.8	86.9	1,149.6	1,149.4	4,974.807	CC
Dechant D31-30D - Original Drilling - Original Drilling - As	800.0	769.1	1,151.6	1,147.3	271.384	ES
Dechant D31-30D - Original Drilling - Original Drilling - As	7,000.0	6,949.3	2,084.6	2,040.6	47.328	SF
Dechant H25-64-1HN - Original Drilling - Original Drilling	8,483.5	9,542.6	16.6	-20.0	0.454	Level 1, CC
Dechant H25-64-1HN - Original Drilling - Original Drilling	8,500.0	9,542.4	23.6	-42.4	0.358	Level 1, ES, SF
Dechant H25-65HN - Original Drilling - Original Drilling	9,388.4	9,575.4	8.3	-34.2	0.195	Level 1, CC
Dechant H25-65HN - Original Drilling - Original Drilling	9,400.0	9,575.6	14.2	-59.6	0.193	Level 1, ES, SF
HSR Cohn 03-25 - Original Drilling - Original Drilling - As	11,455.2	6,989.7	1,086.7	1,016.7	15.517	CC, ES
HSR Cohn 03-25 - Original Drilling - Original Drilling - As	11,600.0	6,992.5	1,096.3	1,024.9	15.356	SF
HSR Crowe 06-25 - Original Drilling - Original Drilling - A	10,104.7	6,963.0	1,025.3	967.5	17.720	CC, ES
HSR Crowe 06-25 - Original Drilling - Original Drilling - A	10,200.0	6,960.4	1,029.7	970.9	17.505	SF
HSR Dechant 04-25 - Original Drilling - Original Drilling -	11,527.9	7,472.7	2,156.3	2,062.7	23.040	CC, ES
HSR Dechant 04-25 - Original Drilling - Original Drilling -	11,900.0	7,478.1	2,188.1	2,090.6	22.442	SF
HSR Dechant 05-25 - Original Drilling - Original Drilling -	10,007.2	6,952.3	2,031.3	1,974.3	35.641	CC, ES
HSR Dechant 05-25 - Original Drilling - Original Drilling -	10,500.0	6,956.8	2,090.3	2,029.1	34.193	SF
KY Blue D30-32 - Original Drilling - Original Drilling - As D	9,403.9	6,926.4	2,140.4	2,088.6	41.319	CC, ES
KY Blue D30-32 - Original Drilling - Original Drilling - As D	9,800.0	6,928.2	2,176.8	2,122.5	40.119	SF
KY Blue H25-04J - Original Drilling - Original Drilling - As	2,800.0	2,765.0	1,117.5	1,106.5	101.745	CC, ES
KY Blue H25-04J - Original Drilling - Original Drilling - As	8,100.0	6,940.0	1,336.1	1,305.8	44.028	SF
KY Blue H25-09 - Original Drilling - Original Drilling - As D	8,886.0	6,931.5	1,622.5	1,574.7	33.990	CC
KY Blue H25-09 - Original Drilling - Original Drilling - As D	8,900.0	6,931.5	1,622.5	1,574.7	33.931	ES
KY Blue H25-09 - Original Drilling - Original Drilling - As D	9,100.0	6,931.5	1,636.5	1,587.6	33.444	SF
KY Blue H25-10 - Original Drilling - Original Drilling - As D	9,049.6	6,947.7	184.1	135.0	3.750	CC, ES, SF
KY Blue H25-11 - Original Drilling - Original Drilling - As D	8,869.5	6,944.2	989.4	911.9	12.771	CC, ES
KY Blue H25-11 - Original Drilling - Original Drilling - As D	9,000.0	6,946.3	998.0	919.3	12.687	SF
KY Blue H25-12 - Original Drilling - Original Drilling - As D	8,889.7	7,037.3	2,438.0	2,389.9	50.648	CC
KY Blue H25-12 - Original Drilling - Original Drilling - As D	8,900.0	7,037.5	2,438.0	2,389.8	50.559	ES
KY Blue H25-12 - Original Drilling - Original Drilling - As D	9,700.0	7,054.6	2,569.1	2,514.8	47.331	SF
KY Blue H25-14 - Original Drilling - Original Drilling - As D	7,385.6	6,960.2	912.7	872.9	22.943	CC
KY Blue H25-14 - Original Drilling - Original Drilling - As D	7,386.8	6,960.2	912.7	872.9	22.941	ES
KY Blue H25-14 - Original Drilling - Original Drilling - As D	7,400.0	6,960.1	912.8	873.0	22.926	SF
KY Blue H25-15 - Original Drilling - Original Drilling - As D	7,564.1	6,944.8	147.6	107.4	3.671	CC, ES, SF
KY H25-24 - Original Drilling - Original Drilling - As Drilled	8,210.8	6,948.5	256.5	213.3	5.933	CC, ES, SF
Moore UPRC H25-01 - Original Drilling - Original Drilling	11,578.2	6,921.1	1,770.7	1,699.7	24.943	CC
Moore UPRC H25-01 - Original Drilling - Original Drilling	11,600.0	6,921.2	1,770.8	1,699.7	24.888	ES
Moore UPRC H25-01 - Original Drilling - Original Drilling	11,800.0	6,921.7	1,784.5	1,712.2	24.666	SF
Moore UPRC H25-02 - Original Drilling - Original Drilling	11,457.8	6,948.8	386.9	317.0	5.532	CC, ES, SF
Moser 25-32 - Original Drilling - Original Drilling - As Drill	10,020.1	6,951.1	89.8	32.7	1.574	CC, ES, SF
Moser 25-42 - Original Drilling - Original Drilling - As Drill	10,257.6	6,929.3	1,762.2	1,703.1	29.823	CC, ES
Moser 25-42 - Original Drilling - Original Drilling - As Drill	10,500.0	6,929.1	1,778.8	1,718.2	29.367	SF
UPRR 53 Pan Am T#2 - Original Drilling - Original Drilling	10,764.3	7,040.5	1,316.6	1,252.8	20.633	CC, ES
UPRR 53 Pan Am T#2 - Original Drilling - Original Drilling	11,000.0	7,044.1	1,337.6	1,271.7	20.302	SF
UPRR 53 Pan Am UT T#1 - Original Drilling - Original Dr	10,610.0	6,933.0	1,068.5	891.7	6.043	CC, ES, SF
Von Feldt 1-25B - Original Drilling - Original Drilling - As D	7,817.1	6,948.5	1,874.6	1,833.4	45.481	CC, ES
Von Feldt 1-25B - Original Drilling - Original Drilling - As D	8,300.0	6,933.5	1,935.7	1,891.8	44.067	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 H25-744
Project:	Conceptual Wells	TVD Reference:	WELL @ 4835.0ft
Reference Site:	DP 408	MD Reference:	WELL @ 4835.0ft
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Emmy State H25-744	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Prelim - Rev 2	Offset TVD Reference:	Offset Datum

Summary

Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
H Section 26						
Bullard 31-26 - Original Drilling - Original Drilling - As Dril	11,725.2	6,893.3	4,946.5	4,874.2	68.400	CC
Bullard 31-26 - Original Drilling - Original Drilling - As Dril	11,800.0	6,896.6	4,947.1	4,874.0	67.712	ES
Bullard 31-26 - Original Drilling - Original Drilling - As Dril	16,300.0	16,300.0	6,733.5	6,614.2	56.449	SF
Bullard 32-26 - Original Drilling - Original Drilling - As Dril	10,043.2	6,987.5	4,787.6	4,730.2	83.386	CC
Bullard 32-26 - Original Drilling - Original Drilling - As Dril	10,100.0	6,987.8	4,788.0	4,730.0	82.640	ES
Bullard 32-26 - Original Drilling - Original Drilling - As Dril	12,200.0	7,000.1	5,251.0	5,176.9	70.872	SF
Bullard 41-26 - Original Drilling - Original Drilling - As Dril	11,212.5	6,914.8	3,987.1	3,919.4	58.878	CC, ES
Bullard 41-26 - Original Drilling - Original Drilling - As Dril	12,600.0	6,926.2	4,221.6	4,142.8	53.580	SF
Dechant H25-29D - Original Drilling - Original Drilling - As	12,223.8	7,473.7	1,351.4	1,266.7	15.955	CC, ES, SF
Dechant H25-33D - Original Drilling - Original Drilling - As	8,359.8	7,923.1	2,823.7	2,744.2	35.511	CC
Dechant H25-33D - Original Drilling - Original Drilling - As	8,400.0	7,916.6	2,824.0	2,744.1	35.362	ES
Dechant H25-33D - Original Drilling - Original Drilling - As	8,700.0	8,700.0	2,842.9	2,756.1	32.775	SF
Harsh H26-09D - Original Drilling - Original Drilling - As D	8,927.5	7,023.4	3,421.1	3,372.6	70.664	CC, ES
Harsh H26-09D - Original Drilling - Original Drilling - As D	10,300.0	7,002.3	3,686.0	3,627.3	62.763	SF
Harsh H26-10 - Original Drilling - Original Drilling - As Dr	9,066.8	6,984.6	4,709.0	4,659.6	95.434	CC
Harsh H26-10 - Original Drilling - Original Drilling - As Dr	9,100.0	6,984.7	4,709.1	4,659.5	94.914	ES
Harsh H26-10 - Original Drilling - Original Drilling - As Dr	11,400.0	6,987.1	5,255.3	5,188.5	78.680	SF
Harsh H26-15 - Original Drilling - Original Drilling - As Dr	7,621.3	7,126.3	4,771.0	4,728.7	112.563	CC, ES
Harsh H26-15 - Original Drilling - Original Drilling - As Dr	10,400.0	7,072.7	5,521.0	5,462.4	94.263	SF
Harsh H26-16 - Original Drilling - Original Drilling - As Dr	7,548.4	7,045.9	3,709.2	3,668.7	91.545	CC, ES
Harsh H26-16 - Original Drilling - Original Drilling - As Dr	9,500.0	7,003.3	4,191.1	4,139.4	81.063	SF
Harsh H26-23D - Original Drilling - Original Drilling - As D	8,241.8	7,142.0	4,083.7	4,037.2	87.727	CC
Harsh H26-23D - Original Drilling - Original Drilling - As D	8,300.0	7,142.0	4,084.1	4,037.1	86.921	ES
Harsh H26-23D - Original Drilling - Original Drilling - As D	10,300.0	7,156.4	4,573.0	4,510.6	73.222	SF
HSR Moser 04-26 - Original Drilling - Original Drilling - As	11,806.8	6,628.7	7,588.7	7,516.5	105.062	CC
HSR Moser 04-26 - Original Drilling - Original Drilling - As	11,900.0	6,630.1	7,589.3	7,516.2	103.773	ES
HSR Moser 04-26 - Original Drilling - Original Drilling - As	16,400.0	7,168.2	8,869.0	8,762.2	83.044	SF
HSR Moser 06-26 - Original Drilling - Original Drilling - As	10,104.0	6,996.6	5,931.1	5,873.1	102.314	CC
HSR Moser 06-26 - Original Drilling - Original Drilling - As	10,200.0	6,998.9	5,931.9	5,873.0	100.790	ES
HSR Moser 06-26 - Original Drilling - Original Drilling - As	13,100.0	7,048.4	6,644.6	6,563.6	82.029	SF
HSR Regalia 05-26 - Original Drilling - Original Drilling - A	10,649.1	7,033.0	7,020.7	6,957.8	111.610	CC
HSR Regalia 05-26 - Original Drilling - Original Drilling - A	10,700.0	7,032.9	7,020.9	6,957.5	110.778	ES
HSR Regalia 05-26 - Original Drilling - Original Drilling - A	14,300.0	7,023.0	7,913.2	7,822.5	87.200	SF
HSR-Moser 03-26A - Original Drilling - Original Drilling - A	11,690.6	6,751.6	5,906.9	5,835.3	82.581	CC
HSR-Moser 03-26A - Original Drilling - Original Drilling - A	11,700.0	6,751.9	5,906.9	5,835.3	82.475	ES
HSR-Moser 03-26A - Original Drilling - Original Drilling - A	14,200.0	6,800.0	6,417.1	6,325.8	70.306	SF
John 03-26 - Original Drilling - Original Drilling - As Drille	11,439.3	6,732.5	6,049.5	5,980.3	87.514	CC
John 03-26 - Original Drilling - Original Drilling - As Drille	11,500.0	6,733.9	6,049.8	5,980.0	86.777	ES
John 03-26 - Original Drilling - Original Drilling - As Drille	14,100.0	6,800.0	6,608.3	6,518.3	73.385	SF
Lamp H25-31 - Original Drilling - Original Drilling - As Dri	10,814.6	6,921.1	2,990.7	2,926.6	46.685	CC, ES
Lamp H25-31 - Original Drilling - Original Drilling - As Dri	11,700.0	6,912.2	3,118.9	3,047.7	43.778	SF
Lamp H26-01 - Original Drilling - Original Drilling - As Dri	11,605.6	7,105.1	3,363.3	3,288.4	44.886	CC, ES
Lamp H26-01 - Original Drilling - Original Drilling - As Dri	12,500.0	7,111.9	3,480.2	3,397.3	41.978	SF
Lamp H26-08 - Original Drilling - Original Drilling - As Dri	10,271.8	7,079.5	3,453.6	3,392.7	56.647	CC
Lamp H26-08 - Original Drilling - Original Drilling - As Dri	10,300.0	7,078.8	3,453.8	3,392.5	56.412	ES
Lamp H26-08 - Original Drilling - Original Drilling - As Dri	11,400.0	7,053.9	3,633.2	3,563.6	52.216	SF
Lamp H26-22 - Original Drilling - Original Drilling - As Dri	9,493.2	6,989.8	4,185.7	4,127.2	71.634	CC
Lamp H26-22 - Original Drilling - Original Drilling - As Dri	9,500.0	6,989.8	4,185.7	4,127.2	71.576	ES
Lamp H26-22 - Original Drilling - Original Drilling - As Dri	11,000.0	6,972.4	4,448.6	4,380.9	65.722	SF
Moser 05-26 - Original Drilling - Original Drilling - As Drill	10,016.2	7,058.8	7,560.3	7,502.7	131.195	CC
Moser 05-26 - Original Drilling - Original Drilling - As Drill	10,100.0	7,059.7	7,560.8	7,502.4	129.495	ES
Moser 05-26 - Original Drilling - Original Drilling - As Drill	14,400.0	7,104.9	8,739.2	8,648.3	96.159	SF
Moser 41-27 - Original Drilling - Original Drilling - As Drill	10,808.9	7,086.9	8,223.3	8,154.8	120.078	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 H25-744
Project:	Conceptual Wells	TVD Reference:	WELL @ 4835.0ft
Reference Site:	DP 408	MD Reference:	WELL @ 4835.0ft
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Emmy State H25-744	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Prelim - Rev 2	Offset TVD Reference:	Offset Datum

Summary

Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
H Section 26						
Moser 41-27 - Original Drilling - Original Drilling - As Drill	10,900.0	7,087.6	8,223.8	8,154.4	118.502	ES
Moser 41-27 - Original Drilling - Original Drilling - As Drill	14,300.0	14,300.0	8,933.6	8,822.5	80.404	SF
Moser H26-11 - Original Drilling - Original Drilling - As Dr	9,062.9	7,026.2	6,344.2	6,294.8	128.425	CC
Moser H26-11 - Original Drilling - Original Drilling - As Dr	9,100.0	7,026.9	6,344.3	6,294.6	127.647	ES
Moser H26-11 - Original Drilling - Original Drilling - As Dr	12,800.0	7,112.5	7,362.5	7,285.3	95.367	SF
Moser H26-12 - Wellbore #1 - Wellbore #1 - As Drilled	8,836.8	7,022.7	7,484.6	7,436.9	156.936	CC
Moser H26-12 - Wellbore #1 - Wellbore #1 - As Drilled	8,900.0	7,020.9	7,484.8	7,436.7	155.378	ES
Moser H26-12 - Wellbore #1 - Wellbore #1 - As Drilled	13,700.0	6,903.4	8,924.8	8,842.2	108.034	SF
Moser H26-13 - Wellbore #1 - Wellbore #1 - As Drilled	7,531.8	6,894.6	7,526.7	7,486.7	188.174	CC, ES
Moser H26-13 - Wellbore #1 - Wellbore #1 - As Drilled	13,200.0	6,780.9	9,421.2	9,345.0	123.649	SF
Moser H26-14 - Original Drilling - Original Drilling - As Dr	7,362.5	6,847.3	5,989.2	5,949.9	152.107	CC, ES
Moser H26-14 - Original Drilling - Original Drilling - As Dr	11,600.0	6,857.6	7,353.8	7,288.7	112.968	SF
Moser H26-18D - Original Drilling - Original Drilling - As D	10,819.1	7,401.1	5,403.4	5,333.9	77.804	CC, ES
Moser H26-18D - Original Drilling - Original Drilling - As D	13,400.0	7,430.9	5,988.0	5,899.8	67.909	SF
Moser H26-24 - Original Drilling - Original Drilling - As Dr	8,347.0	7,094.0	5,680.2	5,635.6	127.496	CC
Moser H26-24 - Original Drilling - Original Drilling - As Dr	8,400.0	7,093.2	5,680.4	5,635.5	126.514	ES
Moser H26-24 - Original Drilling - Original Drilling - As Dr	11,800.0	7,045.8	6,647.2	6,578.5	96.712	SF
Moser H26-25 - Original Drilling - Original Drilling - As Dr	8,143.7	7,065.5	6,480.7	6,437.4	149.849	CC
Moser H26-25 - Original Drilling - Original Drilling - As Dr	8,200.0	7,065.7	6,480.9	6,437.3	148.709	ES
Moser H26-25 - Original Drilling - Original Drilling - As Dr	12,400.0	7,077.7	7,753.4	7,680.6	106.581	SF
Moser H26-27D - Original Drilling - Original Drilling - As D	12,065.1	7,104.7	4,115.0	4,035.8	52.006	CC
Moser H26-27D - Original Drilling - Original Drilling - As D	12,100.0	7,104.4	4,115.1	4,035.6	51.754	ES
Moser H26-27D - Original Drilling - Original Drilling - As D	13,400.0	7,092.3	4,326.0	4,234.9	47.463	SF
Moser H26-28D - Original Drilling - Original Drilling - As D	12,282.4	7,497.0	5,620.9	5,534.2	64.814	CC
Moser H26-28D - Original Drilling - Original Drilling - As D	12,400.0	7,499.6	5,622.2	5,533.8	63.652	ES
Moser H26-28D - Original Drilling - Original Drilling - As D	14,900.0	7,557.8	6,200.2	6,083.7	53.227	SF
Moser H26-29D - Original Drilling - Original Drilling - As D	0.0	31.6	5,758.5			
Moser H26-29D - Original Drilling - Original Drilling - As D	200.0	196.0	5,759.0	5,758.2	7,318.066	ES
Moser H26-29D - Original Drilling - Original Drilling - As D	15,400.0	4,357.7	7,023.0	6,920.0	68.168	SF
Moser, Wesley E. G. U. B1 (PA) - Original Drilling - Origin	7,848.6	6,972.0	7,128.1	6,971.5	45.492	CC
Moser, Wesley E. G. U. B1 (PA) - Original Drilling - Origin	7,900.0	6,972.0	7,128.3	6,971.4	45.423	ES
Moser, Wesley E. G. U. B1 (PA) - Original Drilling - Origin	10,300.0	6,972.0	7,537.9	7,363.7	43.271	SF
H Section 27						
HSR Moser 1-27 - Original Drilling - Original Drilling - As	11,707.5	6,904.0	8,675.3	8,603.2	120.181	CC
HSR Moser 1-27 - Original Drilling - Original Drilling - As	11,800.0	6,904.6	8,675.8	8,602.8	118.727	ES
HSR Moser 1-27 - Original Drilling - Original Drilling - As	16,300.0	6,916.8	9,815.9	9,708.7	91.555	SF
HSR Moser 16-27 - Original Drilling - Original Drilling - As	7,379.8	7,010.1	8,623.2	8,583.2	215.855	CC
HSR Moser 16-27 - Original Drilling - Original Drilling - As	7,386.8	7,010.1	8,623.2	8,583.2	215.771	ES
HSR Moser 16-27 - Original Drilling - Original Drilling - As	12,400.0	7,000.0	9,985.5	9,911.8	135.446	SF
Moser 09-27X (PA) - Original Drilling - Original Drilling - A	8,778.5	6,968.2	8,673.3	8,624.5	177.816	CC
Moser 09-27X (PA) - Original Drilling - Original Drilling - A	8,800.0	6,968.6	8,673.3	8,624.4	177.201	ES
Moser 09-27X (PA) - Original Drilling - Original Drilling - A	13,700.0	7,054.0	9,971.9	9,883.8	113.197	SF
Moser 24-27 - Original Drilling - Original Drilling - As Drill	815.0	800.0	9,352.3	9,348.0	2,172.964	CC, ES
Moser 24-27 - Original Drilling - Original Drilling - As Drill	12,800.0	6,887.8	9,983.6	9,899.5	118.648	SF
H Section 34						
Moser H34-09 - Wellbore #1 - Wellbore #1 - As Drilled	6,674.6	6,842.2	9,337.9	9,299.8	244.685	CC, ES
Moser H34-09 - Wellbore #1 - Wellbore #1 - As Drilled	8,500.0	7,034.0	9,999.1	9,954.1	222.318	SF
Moser H34-16 - Wellbore #1 - Wellbore #1 - As Drilled	6,571.6	6,517.8	9,833.9	9,797.0	266.789	CC, ES
Moser H34-16 - Wellbore #1 - Wellbore #1 - As Drilled	7,200.0	6,839.9	9,979.8	9,940.8	256.131	SF
Moser H34-31 - Wellbore #1 - Wellbore #1 - As Drilled						Out of range

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

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region Drilling - Sandbox	Local Co-ordinate Reference:	Well Emmy State H25-744
Project:	Conceptual Wells	TVD Reference:	WELL @ 4835.0ft
Reference Site:	DP 408	MD Reference:	WELL @ 4835.0ft
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Emmy State H25-744	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 35						
Cannon Farms 01-35C - Original Drilling - Original Drilling	6,497.7	6,498.7	5,821.1	5,784.4	158.880	CC
Cannon Farms 01-35C - Original Drilling - Original Drilling	6,500.0	6,502.8	5,821.1	5,784.4	158.800	ES
Cannon Farms 01-35C - Original Drilling - Original Drilling	7,000.0	7,038.8	5,959.9	5,920.5	151.164	SF
Cannon H35-03D - Original Drilling - Original Drilling - As	6,553.0	6,444.2	7,451.4	7,414.9	203.819	CC, ES
Cannon H35-03D - Original Drilling - Original Drilling - As	10,800.0	6,700.0	9,998.5	9,944.7	185.689	SF
Cannon H35-09 - Original Drilling - Original Drilling - As D	6,515.7	6,509.1	4,909.3	4,872.6	133.808	CC, ES
Cannon H35-09 - Original Drilling - Original Drilling - As D	7,250.0	6,977.0	5,180.0	5,136.2	118.428	SF
Cannon H35-10 - Original Drilling - Original Drilling - As D	6,514.5	6,344.9	5,963.9	5,927.8	165.109	CC, ES
Cannon H35-10 - Original Drilling - Original Drilling - As D	7,150.0	7,003.7	6,133.7	6,094.3	155.710	SF
Cannon H35-11 - Original Drilling - Original Drilling - As D	6,573.7	6,554.8	6,819.3	6,782.3	184.287	CC, ES
Cannon H35-11 - Original Drilling - Original Drilling - As D	10,200.0	6,809.5	8,906.8	8,855.3	173.053	SF
Cannon H35-12 - Original Drilling - Original Drilling - As D	6,607.8	6,581.3	8,197.2	8,160.0	220.589	CC, ES
Cannon H35-12 - Original Drilling - Original Drilling - As D	10,100.0	6,978.2	9,956.3	9,903.2	187.489	SF
Cannon H35-13 - Wellbore #1 - Wellbore #1 - As Drilled	6,574.1	6,692.8	8,800.8	8,763.3	235.020	CC, ES
Cannon H35-13 - Wellbore #1 - Wellbore #1 - As Drilled	8,900.0	7,212.5	9,991.6	9,944.9	213.621	SF
Cannon H35-14 - Original Drilling - Original Drilling - As D	6,531.2	6,547.2	7,648.4	7,611.6	207.576	CC, ES
Cannon H35-14 - Original Drilling - Original Drilling - As D	7,350.0	7,027.1	7,944.5	7,897.5	169.108	SF
Cannon H35-15 (PA) - Original Drilling - Original Drilling -	6,500.0	6,462.2	6,724.1	6,580.8	46.908	CC
Cannon H35-15 (PA) - Original Drilling - Original Drilling -	6,500.0	6,462.3	6,724.1	6,580.8	46.908	ES
Cannon H35-15 (PA) - Original Drilling - Original Drilling -	7,050.0	6,897.1	6,883.6	6,730.7	45.018	SF
Cannon H35-20 - Original Drilling - Original Drilling - As D	6,625.8	6,578.9	7,401.8	7,364.6	198.923	CC, ES
Cannon H35-20 - Original Drilling - Original Drilling - As D	11,300.0	6,800.0	9,938.7	9,880.3	170.253	SF
Cannon H35-21 - Original Drilling - Original Drilling - As D	6,548.2	6,367.7	6,148.9	6,112.6	169.457	CC
Cannon H35-21 - Original Drilling - Original Drilling - As D	6,600.0	6,590.9	6,149.7	6,112.5	165.572	ES
Cannon H35-21 - Original Drilling - Original Drilling - As D	9,400.0	7,004.8	7,645.6	7,597.3	158.267	SF
Cannon H35-22 - Original Drilling - Original Drilling - As D	6,557.7	6,440.2	5,295.2	5,258.4	143.897	CC, ES
Cannon H35-22 - Original Drilling - Original Drilling - As D	7,050.0	7,053.9	5,393.7	5,354.1	136.344	SF
Cannon H35-24 - Original Drilling - Original Drilling - As D	6,516.5	6,383.9	6,909.5	6,873.2	190.471	CC, ES
Cannon H35-24 - Original Drilling - Original Drilling - As D	7,100.0	6,700.0	7,066.8	7,028.6	184.562	SF
Cannon X02-27 - Original Drilling - Original Drilling - As D	6,475.2	6,475.2	6,770.2	6,733.6	185.299	CC, ES
Cannon X02-27 - Original Drilling - Original Drilling - As D	7,000.0	6,918.5	6,922.9	6,884.0	177.900	SF
Cannon X02-28 - Original Drilling - Original Drilling - As D	6,506.3	6,455.4	7,459.6	7,423.1	204.387	CC, ES
Cannon X02-28 - Original Drilling - Original Drilling - As D	7,100.0	6,825.6	7,637.1	7,598.4	197.214	SF
Cannon X02-29 - Original Drilling - Original Drilling - As D	6,499.5	6,200.0	8,559.9	8,523.8	237.152	CC
Cannon X02-29 - Original Drilling - Original Drilling - As D	6,550.0	6,550.0	8,560.9	8,523.4	228.786	ES
Cannon X02-29 - Original Drilling - Original Drilling - As D	8,200.0	8,200.0	9,402.3	9,354.8	197.919	SF
Foster 18-35 - Original Drilling - Original Drilling - As Drill	6,863.5	6,800.0	7,092.2	7,053.8	184.756	CC, ES
Foster 18-35 - Original Drilling - Original Drilling - As Drill	12,000.0	6,857.5	9,364.1	9,298.9	143.533	SF
Foster UPRR 31-35 #1 (PA) - Original Drilling - Original D	6,931.3	6,840.2	4,904.2	4,752.7	32.380	CC
Foster UPRR 31-35 #1 (PA) - Original Drilling - Original D	6,950.0	6,852.2	4,904.3	4,752.5	32.325	ES
Foster UPRR 31-35 #1 (PA) - Original Drilling - Original D	7,300.0	6,990.1	4,936.1	4,781.1	31.836	SF
Foster UPRR 32-35 - Original Drilling - Original Drilling -	6,651.2	6,634.3	5,343.6	5,306.2	142.761	CC, ES
Foster UPRR 32-35 - Original Drilling - Original Drilling -	9,300.0	7,000.0	6,574.8	6,526.3	135.728	SF
Foster UPRR 41-35 - Original Drilling - Original Drilling -	6,783.8	6,720.8	3,630.7	3,588.6	86.253	CC
Foster UPRR 41-35 - Original Drilling - Original Drilling -	6,800.0	6,733.8	3,630.8	3,588.4	85.622	ES
Foster UPRR 41-35 - Original Drilling - Original Drilling -	7,350.0	6,981.3	3,722.6	3,673.7	76.126	SF
Foster UPRR 42-35 #2 - Original Drilling - Original Drilling	6,611.7	6,653.8	4,038.7	4,001.3	107.991	CC, ES
Foster UPRR 42-35 #2 - Original Drilling - Original Drilling	7,000.0	6,958.7	4,097.0	4,058.0	105.050	SF
HSR Foster 03-35 - Original Drilling - Original Drilling - A	6,939.3	6,933.2	6,164.9	6,126.0	158.444	CC
HSR Foster 03-35 - Original Drilling - Original Drilling - A	6,950.0	6,944.1	6,164.9	6,126.0	158.243	ES
HSR Foster 03-35 - Original Drilling - Original Drilling - A	11,200.0	7,212.9	7,929.2	7,867.5	128.619	SF
HSR Foster 04-35 - Wellbore #1 - Wellbore #1 - As Drille	7,012.0	6,628.5	7,780.1	7,742.0	204.673	CC, ES
HSR Foster 04-35 - Wellbore #1 - Wellbore #1 - As Drille	12,700.0	6,700.0	9,981.3	9,910.2	140.457	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 H25-744
Project:	Conceptual Wells	TVD Reference:	WELL @ 4835.0ft
Reference Site:	DP 408	MD Reference:	WELL @ 4835.0ft
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Emmy State H25-744	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						
HSR Foster 05-35 - Wellbore #1 - Wellbore #1 - As Drille	6,630.1	6,200.0	7,826.1	7,790.1	217.686	CC, ES
HSR Foster 05-35 - Wellbore #1 - Wellbore #1 - As Drille	11,300.0	6,618.2	9,936.3	9,876.1	165.037	SF
HSR Foster 06-35 - Original Drilling - Original Drilling - A	6,674.1	6,585.8	6,497.7	6,460.4	174.189	CC, ES
HSR Foster 06-35 - Original Drilling - Original Drilling - A	10,900.0	6,923.6	8,585.7	8,528.4	149.951	SF
UPRR 53 Pan Am Unit P1 - Original Drilling - Original Dri	6,674.6	6,618.9	4,315.1	4,277.7	115.275	CC, ES
UPRR 53 Pan Am Unit P1 - Original Drilling - Original Dri	7,250.0	6,959.1	4,418.1	4,378.6	111.893	SF
UPRR 53 Pan Am UT P2 - Original Drilling - Original Drill	6,838.3	6,628.9	6,646.6	6,608.9	176.088	CC, ES
UPRR 53 Pan Am UT P2 - Original Drilling - Original Drill	11,500.0	6,704.5	8,621.2	8,559.3	139.314	SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region Drilling - Sandbox	Local Co-ordinate Reference:	Well Emmy State H25-744
Project:	Conceptual Wells	TVD Reference:	WELL @ 4835.0ft
Reference Site:	DP 408	MD Reference:	WELL @ 4835.0ft
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Emmy State H25-744	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Prelim - Rev 2	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
H Section 36						
Dechant 07-36 - Original Drilling - Original Drilling - As D	6,383.4	6,275.0	2,119.4	2,083.4	58.871	CC, ES
Dechant 07-36 - Original Drilling - Original Drilling - As D	6,600.0	6,502.9	2,155.7	2,118.4	57.870	SF
Dechant 13N-1HZ - Original Drilling - Original Drilling - A	6,398.9	6,038.3	5,561.8	5,523.9	146.680	CC
Dechant 13N-1HZ - Original Drilling - Original Drilling - A	6,400.0	6,039.5	5,561.8	5,523.9	146.652	ES
Dechant 13N-1HZ - Original Drilling - Original Drilling - A	6,700.0	6,295.4	5,625.4	5,585.8	142.091	SF
Dechant 14C-1HZ - Original Drilling - Original Drilling - A	6,419.6	6,405.5	5,108.2	5,069.7	132.915	CC, ES
Dechant 14C-1HZ - Original Drilling - Original Drilling - A	6,550.0	6,450.0	5,122.6	5,083.7	131.748	SF
Dechant 15-36 - Original Drilling - Original Drilling - As D	6,394.2	6,320.0	4,576.2	4,537.3	117.764	CC
Dechant 15-36 - Original Drilling - Original Drilling - As D	6,400.0	6,325.8	4,576.2	4,537.2	117.266	ES
Dechant 15-36 - Original Drilling - Original Drilling - As D	7,150.0	6,900.2	4,978.6	4,923.4	90.219	SF
Dechant 15C-1HZ - Original Drilling - Original Drilling - A	5,885.4	5,820.1	167.8	134.0	4.953	CC
Dechant 15C-1HZ - Original Drilling - Original Drilling - A	5,900.0	5,834.4	167.9	133.9	4.941	ES
Dechant 15C-1HZ - Original Drilling - Original Drilling - A	6,000.0	5,932.6	169.3	134.7	4.898	SF
Dechant 24-36 - Original Drilling - Original Drilling - As D	0.0	0.0	2,521.9			
Dechant 24-36 - Original Drilling - Original Drilling - As D	400.0	365.5	2,523.2	2,521.3	1,355.237	ES
Dechant 24-36 - Original Drilling - Original Drilling - As D	6,550.0	6,609.3	2,588.9	2,545.4	59.566	SF
Dechant 35N-E1HZ - Original Drilling - Original Drilling -	6,404.2	6,200.0	5,177.1	5,140.7	142.266	CC, ES
Dechant 35N-E1HZ - Original Drilling - Original Drilling -	6,650.0	6,250.0	5,227.5	5,190.5	141.160	SF
Dechant 35N-W1HZ - Original Drilling - Original Drilling -	6,419.2	6,250.0	5,355.1	5,318.6	146.512	CC, ES
Dechant 35N-W1HZ - Original Drilling - Original Drilling -	6,700.0	6,300.0	5,418.7	5,381.5	145.412	SF
Dechant 36N-W1HZ - Original Drilling - Original Drilling -	6,403.8	6,323.2	5,060.0	5,020.4	127.689	CC, ES
Dechant 36N-W1HZ - Original Drilling - Original Drilling -	6,550.0	6,350.0	5,078.6	5,038.5	126.841	SF
Dechant 37N-E1HZ - Original Drilling - Original Drilling -	6,343.7	6,176.2	5,073.3	5,027.9	111.716	CC
Dechant 37N-E1HZ - Original Drilling - Original Drilling -	6,350.0	6,181.9	5,073.3	5,027.9	111.601	ES
Dechant 37N-E1HZ - Original Drilling - Original Drilling -	6,550.0	6,363.3	5,106.8	5,060.0	108.915	SF
Dechant 37N-W1HZ - Original Drilling - Original Drilling -	6,379.9	6,313.3	4,993.0	4,953.0	125.009	CC, ES
Dechant 37N-W1HZ - Original Drilling - Original Drilling -	6,500.0	6,350.0	5,005.4	4,965.0	124.023	SF
Dechant State 16C-1HZ - Original Drilling - Original Drilling	3,287.4	3,374.5	1,123.7	1,104.5	58.386	CC
Dechant State 16C-1HZ - Original Drilling - Original Drilling	3,300.0	3,386.0	1,123.7	1,104.4	58.185	ES
Dechant State 16C-1HZ - Original Drilling - Original Drilling	6,750.0	6,802.8	1,459.4	1,420.6	37.644	SF
Dechant State 36N-E1HZ - Original Drilling - Original Drilling	6,433.7	6,357.4	118.2	81.7	3.240	CC, ES, SF
Dechant State 37N-E36HZ - Original Drilling - Original Drilling	4,894.5	4,983.6	1,175.3	1,146.9	41.406	CC
Dechant State 37N-E36HZ - Original Drilling - Original Drilling	5,200.0	5,285.6	1,176.2	1,146.0	38.902	ES
Dechant State 37N-E36HZ - Original Drilling - Original Drilling	6,550.0	6,606.6	1,207.6	1,169.5	31.668	SF
Dechant State 37N-W36HZ - Original Drilling - Original Drilling	4,621.0	4,580.6	229.6	202.6	8.511	CC, ES
Dechant State 37N-W36HZ - Original Drilling - Original Drilling	4,800.0	4,754.0	233.9	206.0	8.374	SF
Dechant State 38N-1HZ - Original Drilling - Original Drilling	900.0	869.0	1,477.0	1,472.2	306.907	CC, ES
Dechant State 38N-1HZ - Original Drilling - Original Drilling	6,550.0	6,418.1	1,885.0	1,847.8	50.650	SF
Dechant State H36-11D - Original Drilling - Original Drilling	6,427.6	6,359.6	3,506.6	3,470.4	96.988	CC, ES
Dechant State H36-11D - Original Drilling - Original Drilling	6,700.0	6,610.2	3,562.7	3,525.1	94.865	SF
Dechant State H36-18D - Original Drilling - Original Drilling	6,437.2	6,577.3	1,377.0	1,330.8	29.777	CC, ES
Dechant State H36-18D - Original Drilling - Original Drilling	6,550.0	6,683.1	1,386.6	1,339.8	29.636	SF
Dechant State H36-19 - Original Drilling - Original Drilling	6,536.2	6,391.4	2,129.1	2,092.7	58.528	CC, ES
Dechant State H36-19 - Original Drilling - Original Drilling	6,800.0	6,595.0	2,158.0	2,120.6	57.593	SF
Dechant State H36-20D - Original Drilling - Original Drilling	6,449.2	6,474.1	3,210.0	3,172.5	85.483	CC
Dechant State H36-20D - Original Drilling - Original Drilling	6,450.0	6,474.7	3,210.0	3,172.5	85.475	ES
Dechant State H36-20D - Original Drilling - Original Drilling	6,750.0	6,755.1	3,271.2	3,232.1	83.843	SF
Dechant State H36-21D - Original Drilling - Original Drilling	6,414.9	6,434.0	2,733.8	2,696.5	73.279	CC, ES
Dechant State H36-21D - Original Drilling - Original Drilling	6,650.0	6,637.0	2,777.8	2,739.4	72.320	SF
Dechant State H36-24 - Original Drilling - Original Drilling	6,425.3	6,630.2	3,928.1	3,882.9	86.986	CC, ES
Dechant State H36-24 - Original Drilling - Original Drilling	6,650.0	6,794.2	3,969.5	3,923.4	86.125	SF
Dechant State H36-31D - Original Drilling - Original Drilling	1,014.7	1,008.7	2,700.3	2,696.0	625.447	CC
Dechant State H36-31D - Original Drilling - Original Drilling	1,100.0	1,065.0	2,700.6	2,695.9	573.391	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 H25-744
Project:	Conceptual Wells	TVD Reference:	WELL @ 4835.0ft
Reference Site:	DP 408	MD Reference:	WELL @ 4835.0ft
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Emmy State H25-744	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Prelim - Rev 2	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
H Section 36						
Dechant State H36-31D - Original Drilling - Original Drilling	7,050.0	7,049.0	3,302.8	3,263.4	83.963	SF
Dechant State H36-32D - Original Drilling - Original Drilling	6,493.7	6,452.8	3,906.2	3,868.0	102.206	CC
Dechant State H36-32D - Original Drilling - Original Drilling	6,500.0	6,458.5	3,906.2	3,868.0	102.128	ES
Dechant State H36-32D - Original Drilling - Original Drilling	6,800.0	6,770.8	3,953.1	3,913.4	99.654	SF
Dechant State H36-33 - Original Drilling - Original Drilling	0.0	3.0	4,695.3			
Dechant State H36-33 - Original Drilling - Original Drilling	500.0	480.0	4,696.2	4,693.8	1,920.812	ES
Dechant State H36-33 - Original Drilling - Original Drilling	6,800.0	6,875.7	4,823.1	4,777.6	105.941	SF
HSR Dechant State 02-36 - Original Drilling - Original Drilling	6,396.2	6,321.6	361.3	325.1	9.999	CC
HSR Dechant State 02-36 - Original Drilling - Original Drilling	6,400.0	6,325.4	361.3	325.1	9.993	ES
HSR Dechant State 02-36 - Original Drilling - Original Drilling	6,450.0	6,375.2	363.6	327.2	9.976	SF
HSR Dechant/State 07-36 (PA) - Original Drilling - Original Drilling	6,363.2	6,292.5	1,662.4	1,522.2	11.855	CC, ES
HSR Dechant/State 07-36 (PA) - Original Drilling - Original Drilling	6,550.0	6,475.7	1,688.4	1,544.1	11.701	SF
Spike State GWS H36-03 - Original Drilling - Original Drilling	6,527.3	6,421.9	1,043.9	1,007.5	28.639	CC, ES
Spike State GWS H36-03 - Original Drilling - Original Drilling	6,650.0	6,520.8	1,051.5	1,014.5	28.427	SF
Spike State GWS H36-04 - Original Drilling - Original Drilling	6,765.3	6,636.1	2,430.8	2,387.5	56.177	CC
Spike State GWS H36-04 - Original Drilling - Original Drilling	6,800.0	6,664.4	2,431.1	2,387.4	55.728	ES
Spike State GWS H36-04 - Original Drilling - Original Drilling	7,200.0	6,891.5	2,487.8	2,441.1	53.256	SF
Spike State GWS H36-13 - Original Drilling - Original Drilling	6,565.2	7,444.0	5,176.6	5,136.8	130.077	CC, ES
Spike State GWS H36-13 - Original Drilling - Original Drilling	6,750.0	7,444.0	5,204.2	5,163.9	129.251	SF
Spike State GWS H36-14 - Original Drilling - Original Drilling	6,448.3	6,651.2	4,778.9	4,741.6	128.195	CC
Spike State GWS H36-14 - Original Drilling - Original Drilling	6,450.0	6,653.0	4,778.9	4,741.6	128.161	ES
Spike State GWS H36-14 - Original Drilling - Original Drilling	6,750.0	6,960.0	4,848.4	4,809.4	124.605	SF
Spike State H36-02J - Original Drilling - Original Drilling	6,481.3	6,404.5	2,170.9	2,117.4	40.556	CC
Spike State H36-02J - Original Drilling - Original Drilling	6,500.0	6,422.7	2,171.1	2,117.0	40.098	ES
Spike State H36-02J - Original Drilling - Original Drilling	7,000.0	6,825.5	2,331.4	2,263.6	34.419	SF
Spike State H36-05 - Original Drilling - Original Drilling - A	6,516.2	6,428.8	3,042.9	3,006.4	83.529	CC, ES
Spike State H36-05 - Original Drilling - Original Drilling - A	6,850.0	6,708.0	3,098.3	3,060.4	81.706	SF
Spike State H36-11J - Original Drilling - Original Drilling - A	6,457.1	6,520.0	4,295.1	4,258.4	117.017	CC, ES
Spike State H36-11J - Original Drilling - Original Drilling - A	6,800.0	6,818.0	4,381.5	4,343.1	114.223	SF
Spike State H36-12 - Original Drilling - Original Drilling - A	6,477.8	6,428.3	3,997.3	3,960.9	109.985	CC, ES
Spike State H36-12 - Original Drilling - Original Drilling - A	7,000.0	7,000.0	4,160.6	4,121.4	106.188	SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region Drilling - Sandbox	Local Co-ordinate Reference:	Well Emmy State H25-744
Project:	Conceptual Wells	TVD Reference:	WELL @ 4835.0ft
Reference Site:	DP 408	MD Reference:	WELL @ 4835.0ft
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Emmy State H25-744	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 Depths are relative to WELL @ 4835.0ft

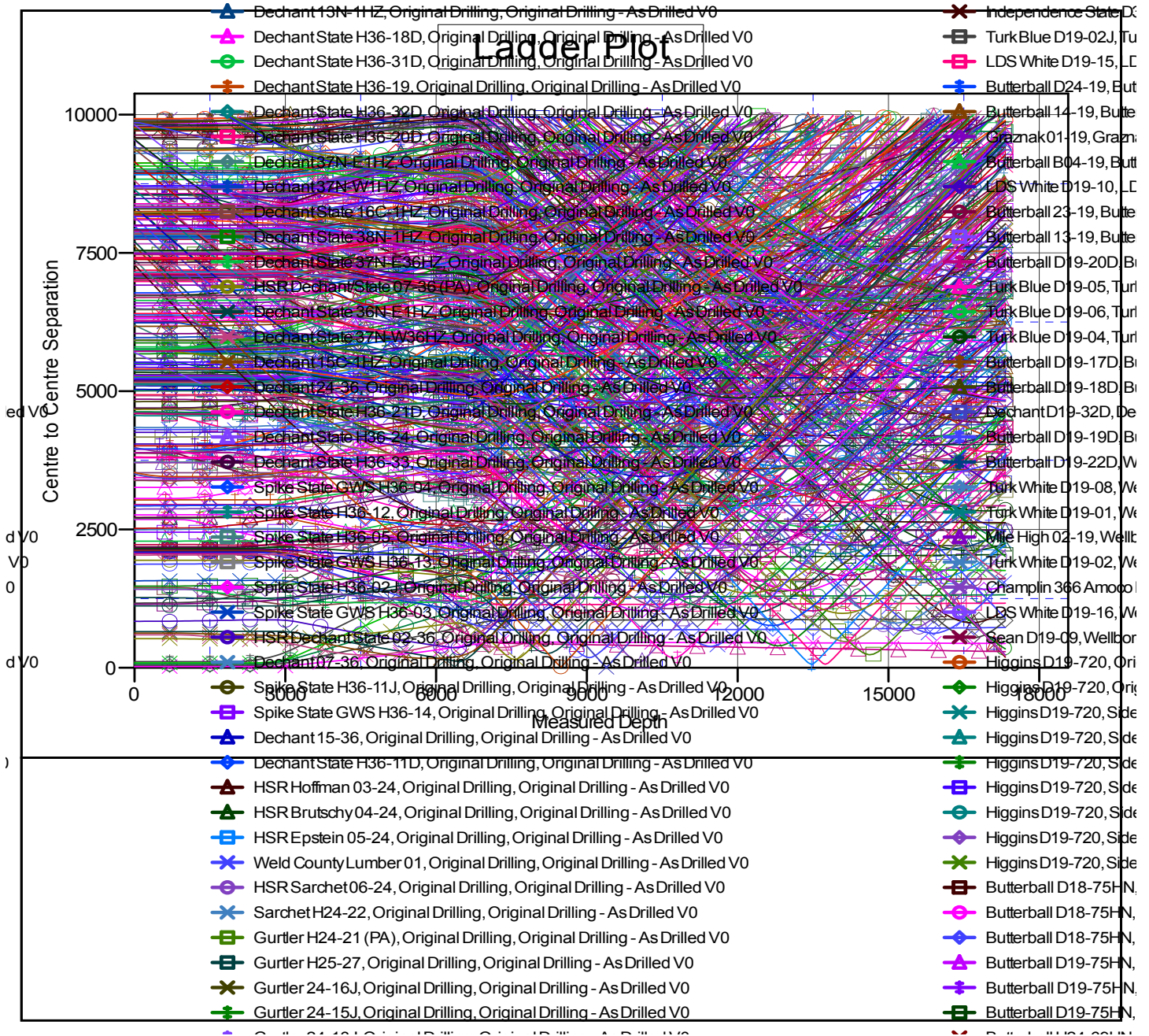
Offset Depths are relative to Offset Datum

Central Meridian is -105.500000

Coordinates are relative to: Emmy State H25-744

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

