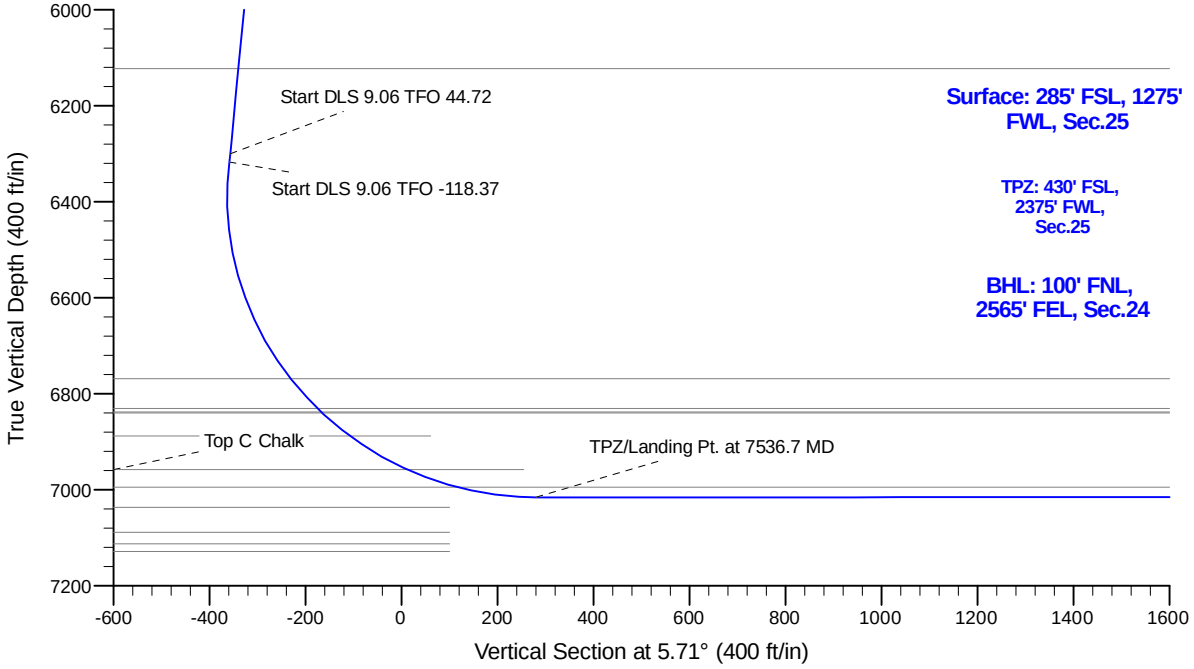
Project: Conceptual Wells
Site: DP 408
Well: Emmy State H25-751
Wellbore: Wellbore #1
Design: Design #1

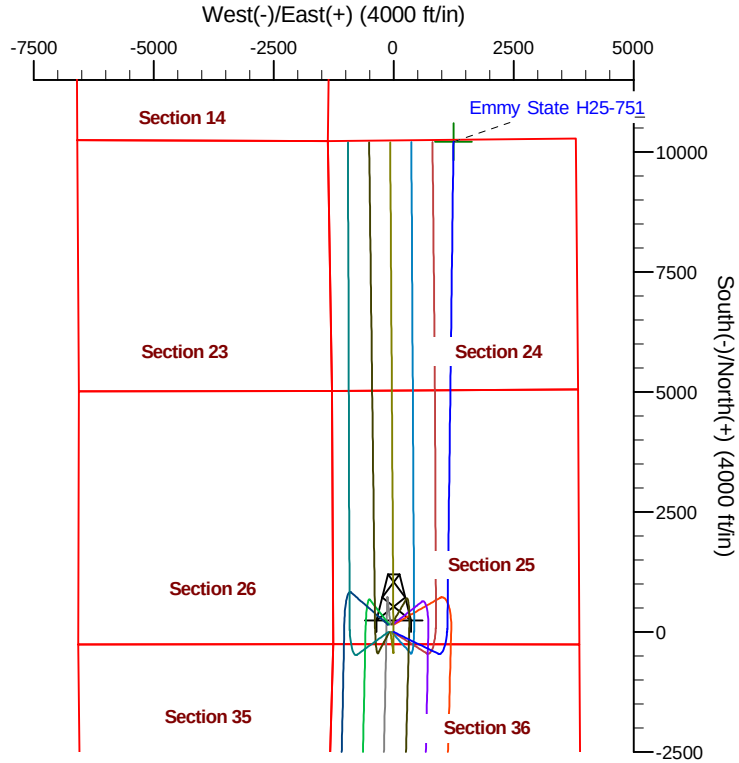
Northern Region Drilling - DJ Basin

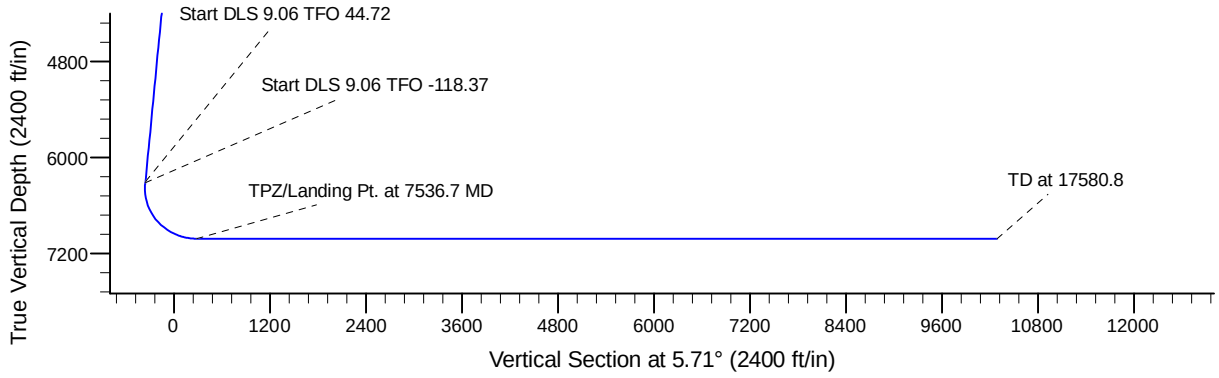
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: Colorado Northern Zone
System Datum: Mean Sea Level

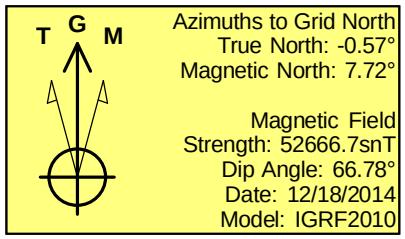
SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	2200.0	0.00	0.00	2200.0	0.0	0.0	0.00	0.00	0.0	
3	2975.0	15.50	116.00	2965.6	-45.7	93.6	2.00	116.00	-36.1	
4	6435.3	15.50	116.00	6300.0	-451.0	924.8	0.00	0.00	-356.7	
5	6453.9	16.74	120.13	6317.9	-453.5	929.3	9.06	44.72	-358.7	
6	7536.7	90.00	0.71	7016.0	170.0	1120.0	9.06	-118.37	280.7	
7	17580.8	90.00	0.71	7016.0	10213.3	1244.4	0.00	0.00	10286.5	Emmy H25-751 BHL









WELL DETAILS: Emmy State H25-751

Ground Level: 4816.0

	Northing	Easting	Latitude	Longitude
0.00.0	1313168.54	3246775.73	40.189670	-104.616670

Plan: Design #1 (Emmy State H25-751/Wellbore #1)

Created By: Colby Baxter Date: 16:34, November 01 2017

Checked: _____ _____ Date: _____

Reviewed: _____ _____ Date: _____

Approved: _____ _____ Date: _____

Northern Region Drilling - Sandbox

Conceptual Wells
DP 408
Emmy State H25-751

Wellbore #1

Plan: Design #1

Standard Planning Report

01 November, 2017

Database:	EDMP	**Local Co-ordinate Reference:**	Well Emmy State H25-751
Company:	Northern Region Drilling - Sandbox	**TVD Reference:**	WELL @ 4846.0ft (Original Well Elev)
Project:	Conceptual Wells	**MD Reference:**	WELL @ 4846.0ft (Original Well Elev)
Site:	DP 408	**North Reference:**	Grid
Well:	Emmy State H25-751	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

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

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

Well	Emmy State H25-751					
Well Position	**+N/-S**	-5,016.4 ft	**Northing:**	1,313,168.54 usft	**Latitude:**	40.189670
	+E/-W	6,550.9 ft	**Easting:**	3,246,775.73 usft	**Longitude:**	-104.616670
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	0.0 ft	**Ground Level:**	4,816.0 ft

Wellbore	Wellbore #1			
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF2010	12/18/2014	8.29	66.78	52,666.69707809

Design	Design #1			
Audit Notes:				
Version:	**Phase:**	PROTOTYPE	**Tie On Depth:**	0.0

Vertical Section:	**Depth From (TVD) (ft)**	**+N/-S (ft)**	**+E/-W (ft)**	**Direction (°)**
	0.0	0.0	0.0	5.71

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,975.0	15.50	116.00	2,965.6	-45.7	93.6	2.00	2.00	0.00	116.00	
6,435.3	15.50	116.00	6,300.0	-451.0	924.8	0.00	0.00	0.00	0.00	
6,453.9	16.74	120.13	6,317.9	-453.5	929.3	9.06	6.66	22.15	44.72	
7,536.7	90.00	0.71	7,016.0	170.0	1,120.0	9.06	6.77	-11.03	-118.37	
17,580.8	90.00	0.71	7,016.0	10,213.3	1,244.4	0.00	0.00	0.00	0.00	Emmy H25-751 BHL

Database:	EDMP	**Local Co-ordinate Reference:**	Well Emmy State H25-751
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Site:	DP 408	**North Reference:**	Grid
Well:	Emmy State H25-751	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	2.00	116.00	2,300.0	-0.8	1.6	-0.6	2.00	2.00	0.00
2,400.0	4.00	116.00	2,399.8	-3.1	6.3	-2.4	2.00	2.00	0.00
2,500.0	6.00	116.00	2,499.5	-6.9	14.1	-5.4	2.00	2.00	0.00
2,600.0	8.00	116.00	2,598.7	-12.2	25.1	-9.7	2.00	2.00	0.00
2,700.0	10.00	116.00	2,697.5	-19.1	39.1	-15.1	2.00	2.00	0.00
2,800.0	12.00	116.00	2,795.6	-27.4	56.3	-21.7	2.00	2.00	0.00
2,900.0	14.00	116.00	2,893.1	-37.3	76.5	-29.5	2.00	2.00	0.00
2,975.0	15.50	116.00	2,965.6	-45.7	93.6	-36.1	2.00	2.00	0.00
3,000.0	15.50	116.00	2,989.7	-48.6	99.7	-38.4	0.00	0.00	0.00
3,100.0	15.50	116.00	3,086.0	-60.3	123.7	-47.7	0.00	0.00	0.00
3,200.0	15.50	116.00	3,182.4	-72.0	147.7	-57.0	0.00	0.00	0.00
3,300.0	15.50	116.00	3,278.8	-83.7	171.7	-66.2	0.00	0.00	0.00
3,400.0	15.50	116.00	3,375.1	-95.5	195.7	-75.5	0.00	0.00	0.00
3,500.0	15.50	116.00	3,471.5	-107.2	219.7	-84.8	0.00	0.00	0.00
3,600.0	15.50	116.00	3,567.9	-118.9	243.8	-94.0	0.00	0.00	0.00
3,700.0	15.50	116.00	3,664.2	-130.6	267.8	-103.3	0.00	0.00	0.00
3,800.0	15.50	116.00	3,760.6	-142.3	291.8	-112.6	0.00	0.00	0.00
3,900.0	15.50	116.00	3,856.9	-154.0	315.8	-121.8	0.00	0.00	0.00
4,000.0	15.50	116.00	3,953.3	-165.8	339.8	-131.1	0.00	0.00	0.00
4,100.0	15.50	116.00	4,049.7	-177.5	363.9	-140.4	0.00	0.00	0.00
4,200.0	15.50	116.00	4,146.0	-189.2	387.9	-149.6	0.00	0.00	0.00
4,300.0	15.50	116.00	4,242.4	-200.9	411.9	-158.9	0.00	0.00	0.00
4,400.0	15.50	116.00	4,338.8	-212.6	435.9	-168.2	0.00	0.00	0.00
4,500.0	15.50	116.00	4,435.1	-224.3	459.9	-177.4	0.00	0.00	0.00
4,600.0	15.50	116.00	4,531.5	-236.0	484.0	-186.7	0.00	0.00	0.00
4,700.0	15.50	116.00	4,627.8	-247.8	508.0	-196.0	0.00	0.00	0.00
4,800.0	15.50	116.00	4,724.2	-259.5	532.0	-205.2	0.00	0.00	0.00
4,900.0	15.50	116.00	4,820.6	-271.2	556.0	-214.5	0.00	0.00	0.00
5,000.0	15.50	116.00	4,916.9	-282.9	580.0	-223.7	0.00	0.00	0.00
5,100.0	15.50	116.00	5,013.3	-294.6	604.1	-233.0	0.00	0.00	0.00
5,200.0	15.50	116.00	5,109.7	-306.3	628.1	-242.3	0.00	0.00	0.00

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Site:	DP 408	**North Reference:**	Grid
Well:	Emmy State H25-751	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,300.0	15.50	116.00	5,206.0	-318.0	652.1	-251.5	0.00	0.00	0.00
5,400.0	15.50	116.00	5,302.4	-329.8	676.1	-260.8	0.00	0.00	0.00
5,500.0	15.50	116.00	5,398.7	-341.5	700.1	-270.1	0.00	0.00	0.00
5,600.0	15.50	116.00	5,495.1	-353.2	724.2	-279.3	0.00	0.00	0.00
5,700.0	15.50	116.00	5,591.5	-364.9	748.2	-288.6	0.00	0.00	0.00
5,800.0	15.50	116.00	5,687.8	-376.6	772.2	-297.9	0.00	0.00	0.00
5,900.0	15.50	116.00	5,784.2	-388.3	796.2	-307.1	0.00	0.00	0.00
6,000.0	15.50	116.00	5,880.6	-400.1	820.2	-316.4	0.00	0.00	0.00
6,100.0	15.50	116.00	5,976.9	-411.8	844.2	-325.7	0.00	0.00	0.00
6,200.0	15.50	116.00	6,073.3	-423.5	868.3	-334.9	0.00	0.00	0.00
6,300.0	15.50	116.00	6,169.7	-435.2	892.3	-344.2	0.00	0.00	0.00
6,400.0	15.50	116.00	6,266.0	-446.9	916.3	-353.5	0.00	0.00	0.00
6,435.3	15.50	116.00	6,300.0	-451.0	924.8	-356.7	0.00	0.00	0.00
6,453.9	16.74	120.13	6,317.9	-453.5	929.3	-358.7	9.06	6.66	22.15
6,500.0	15.20	105.99	6,362.2	-458.5	940.9	-362.5	9.06	-3.36	-30.71
6,600.0	15.53	71.30	6,458.9	-457.8	966.2	-359.3	9.06	0.33	-34.68
6,700.0	20.29	45.83	6,554.1	-441.4	991.4	-340.5	9.06	4.77	-25.47
6,800.0	27.26	31.27	6,645.7	-409.7	1,015.8	-306.5	9.06	6.97	-14.56
6,900.0	35.14	22.56	6,731.2	-363.4	1,038.8	-258.2	9.06	7.88	-8.71
7,000.0	43.44	16.77	6,808.5	-303.8	1,059.8	-196.8	9.06	8.30	-5.79
7,100.0	51.95	12.54	6,875.8	-232.3	1,078.3	-123.8	9.06	8.51	-4.23
7,200.0	60.58	9.21	6,931.3	-150.7	1,093.8	-41.1	9.06	8.63	-3.34
7,300.0	69.28	6.40	6,973.6	-61.1	1,106.0	49.4	9.06	8.70	-2.81
7,400.0	78.02	3.90	7,001.8	34.4	1,114.6	145.2	9.06	8.74	-2.50
7,500.0	86.78	1.55	7,015.0	133.3	1,119.3	244.1	9.06	8.76	-2.34
7,536.7	90.00	0.71	7,016.0	170.0	1,120.0	280.7	9.06	8.77	-2.30
7,600.0	90.00	0.71	7,016.0	233.3	1,120.8	343.7	0.00	0.00	0.00
7,700.0	90.00	0.71	7,016.0	333.3	1,122.0	443.3	0.00	0.00	0.00
7,800.0	90.00	0.71	7,016.0	433.3	1,123.3	543.0	0.00	0.00	0.00
7,900.0	90.00	0.71	7,016.0	533.3	1,124.5	642.6	0.00	0.00	0.00
8,000.0	90.00	0.71	7,016.0	633.3	1,125.7	742.2	0.00	0.00	0.00
8,100.0	90.00	0.71	7,016.0	733.3	1,127.0	841.8	0.00	0.00	0.00
8,200.0	90.00	0.71	7,016.0	833.2	1,128.2	941.4	0.00	0.00	0.00
8,300.0	90.00	0.71	7,016.0	933.2	1,129.5	1,041.0	0.00	0.00	0.00
8,400.0	90.00	0.71	7,016.0	1,033.2	1,130.7	1,140.7	0.00	0.00	0.00
8,500.0	90.00	0.71	7,016.0	1,133.2	1,131.9	1,240.3	0.00	0.00	0.00
8,600.0	90.00	0.71	7,016.0	1,233.2	1,133.2	1,339.9	0.00	0.00	0.00
8,700.0	90.00	0.71	7,016.0	1,333.2	1,134.4	1,439.5	0.00	0.00	0.00
8,800.0	90.00	0.71	7,016.0	1,433.2	1,135.7	1,539.1	0.00	0.00	0.00
8,900.0	90.00	0.71	7,016.0	1,533.2	1,136.9	1,638.8	0.00	0.00	0.00
9,000.0	90.00	0.71	7,016.0	1,633.2	1,138.1	1,738.4	0.00	0.00	0.00
9,100.0	90.00	0.71	7,016.0	1,733.2	1,139.4	1,838.0	0.00	0.00	0.00
9,200.0	90.00	0.71	7,016.0	1,833.2	1,140.6	1,937.6	0.00	0.00	0.00
9,300.0	90.00	0.71	7,016.0	1,933.2	1,141.8	2,037.2	0.00	0.00	0.00
9,400.0	90.00	0.71	7,016.0	2,033.2	1,143.1	2,136.9	0.00	0.00	0.00
9,500.0	90.00	0.71	7,016.0	2,133.1	1,144.3	2,236.5	0.00	0.00	0.00
9,600.0	90.00	0.71	7,016.0	2,233.1	1,145.6	2,336.1	0.00	0.00	0.00
9,700.0	90.00	0.71	7,016.0	2,333.1	1,146.8	2,435.7	0.00	0.00	0.00
9,800.0	90.00	0.71	7,016.0	2,433.1	1,148.0	2,535.3	0.00	0.00	0.00
9,900.0	90.00	0.71	7,016.0	2,533.1	1,149.3	2,635.0	0.00	0.00	0.00
10,000.0	90.00	0.71	7,016.0	2,633.1	1,150.5	2,734.6	0.00	0.00	0.00
10,100.0	90.00	0.71	7,016.0	2,733.1	1,151.8	2,834.2	0.00	0.00	0.00
10,200.0	90.00	0.71	7,016.0	2,833.1	1,153.0	2,933.8	0.00	0.00	0.00
10,300.0	90.00	0.71	7,016.0	2,933.1	1,154.2	3,033.4	0.00	0.00	0.00

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Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,400.0	90.00	0.71	7,016.0	3,033.1	1,155.5	3,133.0	0.00	0.00	0.00
10,500.0	90.00	0.71	7,016.0	3,133.1	1,156.7	3,232.7	0.00	0.00	0.00
10,600.0	90.00	0.71	7,016.0	3,233.1	1,158.0	3,332.3	0.00	0.00	0.00
10,700.0	90.00	0.71	7,016.0	3,333.1	1,159.2	3,431.9	0.00	0.00	0.00
10,800.0	90.00	0.71	7,016.0	3,433.0	1,160.4	3,531.5	0.00	0.00	0.00
10,900.0	90.00	0.71	7,016.0	3,533.0	1,161.7	3,631.1	0.00	0.00	0.00
11,000.0	90.00	0.71	7,016.0	3,633.0	1,162.9	3,730.8	0.00	0.00	0.00
11,100.0	90.00	0.71	7,016.0	3,733.0	1,164.2	3,830.4	0.00	0.00	0.00
11,200.0	90.00	0.71	7,016.0	3,833.0	1,165.4	3,930.0	0.00	0.00	0.00
11,300.0	90.00	0.71	7,016.0	3,933.0	1,166.6	4,029.6	0.00	0.00	0.00
11,400.0	90.00	0.71	7,016.0	4,033.0	1,167.9	4,129.2	0.00	0.00	0.00
11,500.0	90.00	0.71	7,016.0	4,133.0	1,169.1	4,228.9	0.00	0.00	0.00
11,600.0	90.00	0.71	7,016.0	4,233.0	1,170.4	4,328.5	0.00	0.00	0.00
11,700.0	90.00	0.71	7,016.0	4,333.0	1,171.6	4,428.1	0.00	0.00	0.00
11,800.0	90.00	0.71	7,016.0	4,433.0	1,172.8	4,527.7	0.00	0.00	0.00
11,900.0	90.00	0.71	7,016.0	4,533.0	1,174.1	4,627.3	0.00	0.00	0.00
12,000.0	90.00	0.71	7,016.0	4,633.0	1,175.3	4,726.9	0.00	0.00	0.00
12,100.0	90.00	0.71	7,016.0	4,732.9	1,176.5	4,826.6	0.00	0.00	0.00
12,200.0	90.00	0.71	7,016.0	4,832.9	1,177.8	4,926.2	0.00	0.00	0.00
12,300.0	90.00	0.71	7,016.0	4,932.9	1,179.0	5,025.8	0.00	0.00	0.00
12,400.0	90.00	0.71	7,016.0	5,032.9	1,180.3	5,125.4	0.00	0.00	0.00
12,500.0	90.00	0.71	7,016.0	5,132.9	1,181.5	5,225.0	0.00	0.00	0.00
12,600.0	90.00	0.71	7,016.0	5,232.9	1,182.7	5,324.7	0.00	0.00	0.00
12,700.0	90.00	0.71	7,016.0	5,332.9	1,184.0	5,424.3	0.00	0.00	0.00
12,800.0	90.00	0.71	7,016.0	5,432.9	1,185.2	5,523.9	0.00	0.00	0.00
12,900.0	90.00	0.71	7,016.0	5,532.9	1,186.5	5,623.5	0.00	0.00	0.00
13,000.0	90.00	0.71	7,016.0	5,632.9	1,187.7	5,723.1	0.00	0.00	0.00
13,100.0	90.00	0.71	7,016.0	5,732.9	1,188.9	5,822.8	0.00	0.00	0.00
13,200.0	90.00	0.71	7,016.0	5,832.9	1,190.2	5,922.4	0.00	0.00	0.00
13,300.0	90.00	0.71	7,016.0	5,932.9	1,191.4	6,022.0	0.00	0.00	0.00
13,400.0	90.00	0.71	7,016.0	6,032.8	1,192.7	6,121.6	0.00	0.00	0.00
13,500.0	90.00	0.71	7,016.0	6,132.8	1,193.9	6,221.2	0.00	0.00	0.00
13,600.0	90.00	0.71	7,016.0	6,232.8	1,195.1	6,320.8	0.00	0.00	0.00
13,700.0	90.00	0.71	7,016.0	6,332.8	1,196.4	6,420.5	0.00	0.00	0.00
13,800.0	90.00	0.71	7,016.0	6,432.8	1,197.6	6,520.1	0.00	0.00	0.00
13,900.0	90.00	0.71	7,016.0	6,532.8	1,198.9	6,619.7	0.00	0.00	0.00
14,000.0	90.00	0.71	7,016.0	6,632.8	1,200.1	6,719.3	0.00	0.00	0.00
14,100.0	90.00	0.71	7,016.0	6,732.8	1,201.3	6,818.9	0.00	0.00	0.00
14,200.0	90.00	0.71	7,016.0	6,832.8	1,202.6	6,918.6	0.00	0.00	0.00
14,300.0	90.00	0.71	7,016.0	6,932.8	1,203.8	7,018.2	0.00	0.00	0.00
14,400.0	90.00	0.71	7,016.0	7,032.8	1,205.0	7,117.8	0.00	0.00	0.00
14,500.0	90.00	0.71	7,016.0	7,132.8	1,206.3	7,217.4	0.00	0.00	0.00
14,600.0	90.00	0.71	7,016.0	7,232.8	1,207.5	7,317.0	0.00	0.00	0.00
14,700.0	90.00	0.71	7,016.0	7,332.7	1,208.8	7,416.7	0.00	0.00	0.00
14,800.0	90.00	0.71	7,016.0	7,432.7	1,210.0	7,516.3	0.00	0.00	0.00
14,900.0	90.00	0.71	7,016.0	7,532.7	1,211.2	7,615.9	0.00	0.00	0.00
15,000.0	90.00	0.71	7,016.0	7,632.7	1,212.5	7,715.5	0.00	0.00	0.00
15,100.0	90.00	0.71	7,016.0	7,732.7	1,213.7	7,815.1	0.00	0.00	0.00
15,200.0	90.00	0.71	7,016.0	7,832.7	1,215.0	7,914.8	0.00	0.00	0.00
15,300.0	90.00	0.71	7,016.0	7,932.7	1,216.2	8,014.4	0.00	0.00	0.00
15,400.0	90.00	0.71	7,016.0	8,032.7	1,217.4	8,114.0	0.00	0.00	0.00
15,500.0	90.00	0.71	7,016.0	8,132.7	1,218.7	8,213.6	0.00	0.00	0.00
15,600.0	90.00	0.71	7,016.0	8,232.7	1,219.9	8,313.2	0.00	0.00	0.00
15,700.0	90.00	0.71	7,016.0	8,332.7	1,221.2	8,412.8	0.00	0.00	0.00

Database:	EDMP	**Local Co-ordinate Reference:**	Well Emmy State H25-751
Company:	Northern Region Drilling - Sandbox	**TVD Reference:**	WELL @ 4846.0ft (Original Well Elev)
Project:	Conceptual Wells	**MD Reference:**	WELL @ 4846.0ft (Original Well Elev)
Site:	DP 408	**North Reference:**	Grid
Well:	Emmy State H25-751	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
15,800.0	90.00	0.71	7,016.0	8,432.7	1,222.4	8,512.5	0.00	0.00	0.00
15,900.0	90.00	0.71	7,016.0	8,532.7	1,223.6	8,612.1	0.00	0.00	0.00
16,000.0	90.00	0.71	7,016.0	8,632.6	1,224.9	8,711.7	0.00	0.00	0.00
16,100.0	90.00	0.71	7,016.0	8,732.6	1,226.1	8,811.3	0.00	0.00	0.00
16,200.0	90.00	0.71	7,016.0	8,832.6	1,227.4	8,910.9	0.00	0.00	0.00
16,300.0	90.00	0.71	7,016.0	8,932.6	1,228.6	9,010.6	0.00	0.00	0.00
16,400.0	90.00	0.71	7,016.0	9,032.6	1,229.8	9,110.2	0.00	0.00	0.00
16,500.0	90.00	0.71	7,016.0	9,132.6	1,231.1	9,209.8	0.00	0.00	0.00
16,600.0	90.00	0.71	7,016.0	9,232.6	1,232.3	9,309.4	0.00	0.00	0.00
16,700.0	90.00	0.71	7,016.0	9,332.6	1,233.5	9,409.0	0.00	0.00	0.00
16,800.0	90.00	0.71	7,016.0	9,432.6	1,234.8	9,508.7	0.00	0.00	0.00
16,900.0	90.00	0.71	7,016.0	9,532.6	1,236.0	9,608.3	0.00	0.00	0.00
17,000.0	90.00	0.71	7,016.0	9,632.6	1,237.3	9,707.9	0.00	0.00	0.00
17,100.0	90.00	0.71	7,016.0	9,732.6	1,238.5	9,807.5	0.00	0.00	0.00
17,200.0	90.00	0.71	7,016.0	9,832.6	1,239.7	9,907.1	0.00	0.00	0.00
17,300.0	90.00	0.71	7,016.0	9,932.5	1,241.0	10,006.7	0.00	0.00	0.00
17,400.0	90.00	0.71	7,016.0	10,032.5	1,242.2	10,106.4	0.00	0.00	0.00
17,500.0	90.00	0.71	7,016.0	10,132.5	1,243.5	10,206.0	0.00	0.00	0.00
17,580.8	90.00	0.71	7,016.0	10,213.3	1,244.4	10,286.5	0.00	0.00	0.00

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Emmy H25-751 BHL - plan hits target center - Point	0.00	0.00	7,016.0	10,213.3	1,244.4	1,323,381.42	3,248,020.09	40.217670	-104.611850

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
572.0	572.0	Pierre			
724.0	724.0	Upper Pierre Aquifer Top			
1,612.0	1,612.0	Upper Pierre Aquifer Base			
3,922.9	3,879.0	Parkman			
4,536.2	4,470.0	Sussex			
5,243.9	5,152.0	Shannon			
6,251.6	6,123.0	Teepee Buttes			
6,947.4	6,769.0	Sharon Springs			
7,031.7	6,831.0	Top A Chalk			
7,041.8	6,838.0	Top A Marl			
7,044.8	6,840.0	Top B Chalk			
7,120.2	6,888.0	Top B Marl			
7,259.2	6,958.0	Top C Chalk			
7,370.6	6,995.0	Top C Marl			

Database:	EDMP	**Local Co-ordinate Reference:**	Well Emmy State H25-751
Company:	Northern Region Drilling - Sandbox	**TVD Reference:**	WELL @ 4846.0ft (Original Well Elev)
Project:	Conceptual Wells	**MD Reference:**	WELL @ 4846.0ft (Original Well Elev)
Site:	DP 408	**North Reference:**	Grid
Well:	Emmy State H25-751	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
2,200.0	2,200.0	0.0	0.0	KOP - Start Build 2.00
6,435.3	6,300.0	-451.0	924.8	Start DLS 9.06 TFO 44.72
6,453.9	6,317.9	-453.5	929.3	Start DLS 9.06 TFO -118.37
7,536.7	7,016.0	170.0	1,120.0	TPZ/Landing Pt. at 7536.7 MD
17,580.8	7,016.0	170.0	1,120.0	TD at 17580.8

Northern Region Drilling - Sandbox

Conceptual Wells
DP 408
Emmy State H25-751

Wellbore #1
Design #1

Anticollision Summary Report

01 November, 2017

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region Drilling - Sandbox	**Local Co-ordinate Reference:**	Well Emmy State H25-751
Project:	Conceptual Wells	**TVD Reference:**	WELL @ 4846.0ft (Original Well Elev)
Reference Site:	DP 408	**MD Reference:**	WELL @ 4846.0ft (Original Well Elev)
Site Error:	0.0 ft	**North Reference:**	Grid
Reference Well:	Emmy State H25-751	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMP
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Reference	Design #1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	**Error Model:**	ISCWSA
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.0 ft	**Error Surface:**	Pedal Curve
Warning Levels Evaluated at:	2.00 **Sigma**	**Casing Method:**	Not applied

Survey Tool Program **Date** 10/23/2017

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	17,580.8	Design #1 (Wellbore #1)	MWD+IFR1+MS_WY	Fixed:v2:Rockies, crustal dec + 3-axis correction

Summary

Site Name / Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 19						
Butterball H24-69HN - Original Drilling - Original Drilling -	17,580.8	11,992.0	471.1	321.1	3.140	CC, ES, SF
DP 408						
Emmy H25-711 - Wellbore #1 - Prelim - Rev 2	3,238.0	2,700.0	2,169.4	2,156.9	173.196	CC, ES
Emmy H25-711 - Wellbore #1 - Prelim - Rev 2	17,580.8	17,528.3	2,489.2	2,286.2	12.264	SF
Emmy State H25-718 - Wellbore #1 - Prelim - Rev 2	17,580.8	17,367.6	2,050.1	1,846.5	10.073	CC, ES, SF
Emmy State H25-724 - Wellbore #1 - Prelim - Rev 2	17,580.8	17,439.7	1,608.5	1,407.2	7.990	CC, ES, SF
Emmy State H25-731 - Wellbore #1 - Prelim - Rev 2	17,580.8	17,342.9	1,170.2	968.4	5.799	CC, ES, SF
Emmy State H25-738 - Wellbore #1 - Prelim - Rev 2	17,580.8	17,270.9	728.8	525.6	3.586	CC, ES, SF
Emmy State H25-744 - Wellbore #1 - Prelim - Rev 2	17,580.8	17,322.8	291.9	88.3	1.434	Level 3, CC, ES, SF
Emmy State H25-757 - Wellbore #1 - Design #1	2,200.0	2,200.0	22.4	12.8	2.329	CC, ES
Emmy State H25-757 - Wellbore #1 - Design #1	17,580.8	17,499.9	439.5	236.3	2.163	SF
Emmy State H25-764 - Wellbore #1 - Design #1	2,200.0	2,204.0	44.7	39.9	9.315	CC, ES
Emmy State H25-764 - Wellbore #1 - Design #1	17,580.8	17,466.8	876.9	775.0	8.605	SF
Emmy State H25-771 - Wellbore #1 - Design #1	2,200.0	2,200.0	67.1	57.5	6.986	CC, ES
Emmy State H25-771 - Wellbore #1 - Design #1	17,580.8	17,389.3	1,318.5	1,114.4	6.460	SF
Emmy State H25-777 - Wellbore #1 - Design #1	2,200.0	2,201.0	89.5	79.9	9.321	CC, ES
Emmy State H25-777 - Wellbore #1 - Design #1	17,580.8	17,418.6	1,756.6	1,552.4	8.603	SF
Emmy State H25-785 - Wellbore #1 - Prelim - Rev 2	2,000.0	2,001.0	114.5	105.8	13.165	CC, ES
Emmy State H25-785 - Wellbore #1 - Prelim - Rev 2	17,580.8	17,488.6	2,198.1	1,994.3	10.784	SF
Emmy State H36-753 - Wellbore #1 - Design #1	7,402.5	7,617.2	84.3	49.1	2.391	CC, ES
Emmy State H36-753 - Wellbore #1 - Design #1	7,450.0	7,570.3	84.8	49.3	2.387	SF
Emmy State H36-760 - Wellbore #1 - Design #1	2,200.0	2,171.0	154.6	145.1	16.164	CC, ES
Emmy State H36-760 - Wellbore #1 - Design #1	7,181.8	7,635.4	385.8	351.9	11.381	SF
Emmy State H36-766 - Wellbore #1 - Design #1	2,200.0	2,201.0	159.4	149.8	16.604	CC, ES
Emmy State H36-766 - Wellbore #1 - Design #1	2,400.0	2,400.8	164.2	153.8	15.727	SF
Emmy State H36-773 - Wellbore #1 - Design #1	2,200.0	2,201.0	167.1	157.5	17.402	CC, ES
Emmy State H36-773 - Wellbore #1 - Design #1	2,400.0	2,400.8	172.5	162.0	16.517	SF
Emmy State H36-780 - Wellbore #1 - Design #1	2,200.0	2,202.0	177.2	167.6	18.456	CC, ES
Emmy State H36-780 - Wellbore #1 - Design #1	2,300.0	2,296.0	180.4	170.4	18.015	SF
Emmy State H36-787 - Wellbore #1 - Prelim - Rev 2	2,000.0	2,003.0	191.1	182.4	21.957	CC, ES
Emmy State H36-787 - Wellbore #1 - Prelim - Rev 2	2,200.0	2,190.3	197.7	188.2	20.702	SF
Hurley H26-712 - Wellbore #1 - Design #1	10,163.9	7,471.4	2,532.2	2,482.3	50.708	CC
Hurley H26-712 - Wellbore #1 - Design #1	17,580.8	14,850.9	2,639.0	2,461.3	14.853	ES, SF
Hurley H26-717 - Wellbore #1 - Design #1	10,095.6	7,336.9	2,867.6	2,819.2	59.226	CC
Hurley H26-717 - Wellbore #1 - Design #1	10,200.0	7,400.0	2,868.4	2,819.1	58.166	ES
Hurley H26-717 - Wellbore #1 - Design #1	17,580.8	14,752.1	3,047.6	2,872.9	17.446	SF

CC - Min centre to center distance or covergent 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 H25-751
Project:	Conceptual Wells	**TVD Reference:**	WELL @ 4846.0ft (Original Well Elev)
Reference Site:	DP 408	**MD Reference:**	WELL @ 4846.0ft (Original Well Elev)
Site Error:	0.0 ft	**North Reference:**	Grid
Reference Well:	Emmy State H25-751	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMP
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
DP 408						
Hurley H26-724 - Wellbore #1 - Design #1	9,926.7	7,171.1	3,399.0	3,352.8	73.516	CC
Hurley H26-724 - Wellbore #1 - Design #1	17,580.8	14,796.5	3,484.1	3,308.3	19.817	ES, SF
Hurley H26-730 - Wellbore #1 - Design #1	2,200.0	2,238.0	3,624.9	3,615.2	374.357	CC, ES
Hurley H26-730 - Wellbore #1 - Design #1	17,580.8	14,533.2	3,901.2	3,724.5	22.081	SF
Hurley H26-736 - Wellbore #1 - Design #1	2,200.0	2,239.0	3,639.0	3,629.3	375.727	CC, ES
Hurley H26-736 - Wellbore #1 - Design #1	17,580.8	14,656.8	4,313.7	4,139.0	24.683	SF
Hurley H26-743 - Wellbore #1 - Prelim - Rev 2	2,200.0	2,238.0	3,653.2	3,643.5	377.281	CC, ES
Hurley H26-743 - Wellbore #1 - Prelim - Rev 2	17,580.8	14,945.7	4,743.1	4,565.6	26.720	SF
Hurley H26-750 - Wellbore #1 - Prelim - Rev 2	10,029.8	7,585.2	5,093.6	5,043.7	102.202	CC
Hurley H26-750 - Wellbore #1 - Prelim - Rev 2	17,580.8	15,087.0	5,165.7	4,986.6	28.841	ES, SF
Hurley H26-756 - Wellbore #1 - Prelim - Rev 2	9,968.4	7,400.0	5,440.2	5,392.1	113.098	CC
Hurley H26-756 - Wellbore #1 - Prelim - Rev 2	10,000.0	7,400.0	5,440.3	5,392.0	112.566	ES
Hurley H26-756 - Wellbore #1 - Prelim - Rev 2	17,580.8	14,868.1	5,636.2	5,460.7	32.110	SF
Hurley H26-762 - Wellbore #1 - Prelim - Rev 2	9,913.9	7,314.4	5,861.6	5,814.9	125.292	CC
Hurley H26-762 - Wellbore #1 - Prelim - Rev 2	10,000.0	7,350.0	5,862.0	5,814.5	123.440	ES
Hurley H26-762 - Wellbore #1 - Prelim - Rev 2	17,580.8	14,827.4	6,058.0	5,882.3	34.484	SF
Hurley H26-768 - Wellbore #1 - Prelim - Rev 2	2,483.4	3,076.3	5,911.3	5,899.6	501.659	CC
Hurley H26-768 - Wellbore #1 - Prelim - Rev 2	2,500.0	3,107.2	5,911.4	5,899.5	497.827	ES
Hurley H26-768 - Wellbore #1 - Prelim - Rev 2	17,580.8	14,817.0	6,477.5	6,301.4	36.779	SF
Hurley H26-776 - Wellbore #1 - Prelim - Rev 2	2,200.1	2,205.2	5,933.5	5,923.9	617.571	CC, ES
Hurley H26-776 - Wellbore #1 - Prelim - Rev 2	17,580.8	14,871.0	6,907.4	6,728.5	38.611	SF
Hurley H26-783 - Wellbore #1 - Prelim - Rev 2	2,000.0	2,005.0	5,953.4	5,944.7	683.535	CC, ES
Hurley H26-783 - Wellbore #1 - Prelim - Rev 2	17,580.8	14,757.9	7,312.3	7,135.0	41.249	SF
Hurley H35-720 - Wellbore #1 - Design #1	6,424.8	10,869.0	2,993.9	2,941.4	57.020	CC
Hurley H35-720 - Wellbore #1 - Design #1	6,435.3	10,870.2	2,993.9	2,941.3	56.970	ES
Hurley H35-720 - Wellbore #1 - Design #1	11,600.0	6,850.0	3,256.0	3,198.2	56.330	SF
Hurley H35-727 - Wellbore #1 - Design #1	6,291.5	10,615.8	3,388.4	3,337.0	65.980	CC
Hurley H35-727 - Wellbore #1 - Design #1	6,300.0	10,616.7	3,388.4	3,337.0	65.924	ES
Hurley H35-727 - Wellbore #1 - Design #1	11,700.0	6,700.0	3,670.0	3,612.8	64.206	SF
Hurley H35-733 - Wellbore #1 - Design #1	2,200.0	2,238.0	3,742.1	3,732.4	386.462	CC, ES
Hurley H35-733 - Wellbore #1 - Design #1	12,000.0	6,528.3	4,100.1	4,040.8	69.142	SF
Hurley H35-740 - Wellbore #1 - Design #1	2,200.0	2,239.0	3,755.8	3,746.1	387.784	CC, ES
Hurley H35-740 - Wellbore #1 - Design #1	12,500.0	6,339.0	4,669.2	4,607.5	75.575	SF
Hurley H35-746 - Wellbore #1 - Prelim - Rev 2	1,906.2	1,944.2	3,769.5	3,761.1	450.771	CC
Hurley H35-746 - Wellbore #1 - Prelim - Rev 2	2,000.0	2,000.0	3,769.7	3,761.0	433.386	ES
Hurley H35-746 - Wellbore #1 - Prelim - Rev 2	12,700.0	6,106.0	5,116.5	5,053.9	81.780	SF
Hurley H35-755 - Wellbore #1 - Prelim - Rev 2	5,875.0	10,587.4	5,100.0	5,048.3	98.671	CC
Hurley H35-755 - Wellbore #1 - Prelim - Rev 2	5,900.0	10,590.4	5,100.0	5,048.3	98.497	ES
Hurley H35-755 - Wellbore #1 - Prelim - Rev 2	12,800.0	6,950.0	5,932.4	5,866.9	90.489	SF
Hurley H35-761 - Wellbore #1 - Prelim - Rev 2	5,799.8	10,378.1	5,515.8	5,465.8	110.406	CC
Hurley H35-761 - Wellbore #1 - Prelim - Rev 2	5,800.0	10,378.1	5,515.8	5,465.8	110.404	ES
Hurley H35-761 - Wellbore #1 - Prelim - Rev 2	13,100.0	6,750.0	6,453.4	6,387.1	97.335	SF
Hurley H35-768 - Wellbore #1 - Prelim - Rev 2	5,664.4	10,402.6	5,932.5	5,884.2	122.900	CC
Hurley H35-768 - Wellbore #1 - Prelim - Rev 2	5,700.0	10,406.9	5,932.6	5,884.2	122.505	ES
Hurley H35-768 - Wellbore #1 - Prelim - Rev 2	13,500.0	6,600.0	6,941.2	6,872.4	100.787	SF
Hurley H35-774 - Wellbore #1 - Prelim - Rev 2	2,200.0	2,206.0	5,981.0	5,971.4	622.304	CC, ES
Hurley H35-774 - Wellbore #1 - Prelim - Rev 2	13,900.0	6,500.0	7,428.6	7,357.1	103.888	SF
Hurley H35-779 - Wellbore #1 - Prelim - Rev 2	2,200.0	2,205.0	6,002.3	5,992.7	624.675	CC, ES
Hurley H35-779 - Wellbore #1 - Prelim - Rev 2	14,100.0	6,450.0	7,788.6	7,715.5	106.575	SF
Hurley H35-787 - Wellbore #1 - Prelim - Rev 2	2,000.0	2,005.0	6,022.0	6,013.3	691.415	CC, ES
Hurley H35-787 - Wellbore #1 - Prelim - Rev 2	14,800.0	6,047.9	8,501.5	8,425.0	111.056	SF
Hurley State H35-713 - Wellbore #1 - Design #1	6,478.8	10,605.1	2,541.6	2,488.0	47.411	CC, ES
Hurley State H35-713 - Wellbore #1 - Design #1	6,600.0	10,604.2	2,544.4	2,490.5	47.212	SF

CC - Min centre to center distance or covergent 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 H25-751
Project:	Conceptual Wells	**TVD Reference:**	WELL @ 4846.0ft (Original Well Elev)
Reference Site:	DP 408	**MD Reference:**	WELL @ 4846.0ft (Original Well Elev)
Site Error:	0.0 ft	**North Reference:**	Grid
Reference Well:	Emmy State H25-751	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMP
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
H Section 13						
Karakakes H13-25 - Original Drilling - Original Drilling - A	17,580.8	7,146.9	1,822.2	1,712.8	16.647	CC, ES, SF
Karakakes H13-33 - Original Drilling - Original Drilling - A	17,580.8	7,075.9	2,923.3	2,807.1	25.159	CC, ES, SF
Karakakes H14-63HN - Original Drilling - Original Drilling	17,580.8	6,423.1	2,953.7	2,842.4	26.550	CC, ES, SF
Sarchet H13-75HN - Original Drilling - Original Drilling	17,580.8	6,848.3	405.8	313.3	4.386	CC, ES, SF
UPRC 13-13J - Original Drilling - Original Drilling - As Dri	17,580.8	7,021.3	1,987.7	1,868.0	16.610	CC, ES, SF
UPRC 13-14J - Original Drilling - Original Drilling - As Dri	17,580.8	7,023.0	1,303.1	1,210.3	14.040	CC, ES, SF
UPRC 13-15J - Original Drilling - Original Drilling - As Dri	17,580.8	7,002.1	1,047.8	964.2	12.540	CC, ES, SF
UPRC 13-16J - Wellbore #1 - Wellbore #1- As Drilled	17,580.8	7,002.4	1,873.1	1,762.5	16.929	CC, ES, SF
UPRR 39 Pan Am B1 (PA) - Original Drilling - Original Dr	17,580.8	7,017.0	2,185.4	1,945.1	9.092	CC, ES, SF
H Section 14						
Bohlender H14-09 - Original Drilling - Original Drilling - A	17,580.8	6,914.1	3,858.8	3,745.9	34.185	CC, ES, SF
Bohlender H14-15 - Original Drilling - Original Drilling - A	17,580.8	6,837.8	4,525.9	4,400.1	35.989	CC, ES, SF
Bohlender H14-16 - Original Drilling - Original Drilling - A	17,580.8	6,980.9	3,797.4	3,672.8	30.476	CC, ES, SF
Wilcox H14-03J - Original Drilling - Original Drilling - As D	17,580.8	7,210.4	5,875.8	5,743.0	44.234	CC, ES, SF
Wilcox H14-10 - Original Drilling - Original Drilling - As Dr	17,580.8	7,437.8	4,948.7	4,814.4	36.859	CC, ES, SF
Wilcox H14-11 - Original Drilling - Original Drilling - As Dr	17,580.8	7,408.1	5,958.0	5,806.6	39.355	CC, ES, SF
Wilcox H14-13 - Original Drilling - Original Drilling - As Dr	17,580.8	7,655.3	6,654.7	6,525.8	51.638	CC, ES, SF
H Section 19						
Butterball 13-19 - Original Drilling - Original Drilling - As D	14,504.1	6,919.3	3,331.4	3,234.6	34.436	CC, ES
Butterball 13-19 - Original Drilling - Original Drilling - As D	15,300.0	6,937.1	3,425.1	3,321.1	32.954	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	14,134.9	6,900.0	8,398.8	8,305.7	90.242	CC
HSR Demeules 09-22 - Original Drilling - Original Drilling	14,200.0	6,900.0	8,399.0	8,305.4	89.707	ES
HSR Demeules 09-22 - Original Drilling - Original Drilling	17,400.0	6,900.0	9,011.1	8,895.9	78.244	SF
HSR Duryea - Wellbore #1 - Wellbore #1 - As Drilled	13,263.6	6,978.1	8,914.5	8,829.2	104.620	CC
HSR Duryea - Wellbore #1 - Wellbore #1 - As Drilled	13,300.0	6,979.3	8,914.5	8,829.0	104.234	ES
HSR Duryea - Wellbore #1 - Wellbore #1 - As Drilled	17,200.0	7,076.6	9,744.2	9,632.0	86.833	SF
Sarchet 16-22 - Wellbore #1 - Wellbore #1 - As Drilled	12,715.0	7,000.0	8,500.3	8,420.1	105.970	CC
Sarchet 16-22 - Wellbore #1 - Wellbore #1 - As Drilled	12,800.0	7,000.0	8,500.7	8,419.8	105.036	ES
Sarchet 16-22 - Wellbore #1 - Wellbore #1 - As Drilled	16,500.0	7,000.0	9,304.9	9,199.3	88.076	SF

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region Drilling - Sandbox	**Local Co-ordinate Reference:**	Well Emmy State H25-751
Project:	Conceptual Wells	**TVD Reference:**	WELL @ 4846.0ft (Original Well Elev)
Reference Site:	DP 408	**MD Reference:**	WELL @ 4846.0ft (Original Well Elev)
Site Error:	0.0 ft	**North Reference:**	Grid
Reference Well:	Emmy State H25-751	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMP
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
H Section 23						
Eachus 32-23 - Original Drilling - Original Drilling - As Dri	15,612.9	7,020.1	4,414.4	4,306.9	41.037	CC, ES
Eachus 32-23 - Original Drilling - Original Drilling - As Dri	16,400.0	7,010.0	4,484.0	4,371.6	39.873	SF
Eachus 41-23 (PA) - Original Drilling - Original Drilling - A	16,851.2	7,009.0	3,247.9	3,012.7	13.807	CC, ES
Eachus 41-23 (PA) - Original Drilling - Original Drilling - A	17,100.0	7,009.0	3,257.4	3,020.6	13.756	SF
Eachus UPRR 31-23 - Original Drilling - Original Drilling -	16,943.5	7,051.9	4,498.0	4,316.9	24.844	CC
Eachus UPRR 31-23 - Original Drilling - Original Drilling -	17,000.0	7,052.1	4,498.3	4,316.8	24.784	ES
Eachus UPRR 31-23 - Original Drilling - Original Drilling -	17,500.0	7,053.4	4,532.3	4,347.4	24.522	SF
Eachus UPRR 42-23 (PA) - Original Drilling - Original Dri	15,533.3	7,019.0	3,193.4	2,970.6	14.331	CC, ES
Eachus UPRR 42-23 (PA) - Original Drilling - Original Dri	15,800.0	7,019.0	3,204.5	2,980.0	14.274	SF
HSR Alberstein 16-23 - Original Drilling - Original Drilling	13,219.2	6,849.6	3,285.1	3,201.2	39.146	CC, ES
HSR Alberstein 16-23 - Original Drilling - Original Drilling	13,800.0	6,878.6	3,335.9	3,248.5	38.148	SF
HSR Ashley 15-23A - Original Drilling - Original Drilling -	13,266.2	6,780.6	4,616.4	4,532.2	54.831	CC
HSR Ashley 15-23A - Original Drilling - Original Drilling -	13,300.0	6,781.8	4,616.5	4,532.0	54.656	ES
HSR Ashley 15-23A - Original Drilling - Original Drilling -	14,400.0	6,835.3	4,753.3	4,661.7	51.884	SF
HSR Benirschke 10-23 - Original Drilling - Original Drillin	14,266.1	6,908.2	4,327.7	4,233.4	45.908	CC
HSR Benirschke 10-23 - Original Drilling - Original Drillin	14,300.0	6,910.5	4,327.8	4,233.3	45.775	ES
HSR Benirschke 10-23 - Original Drilling - Original Drillin	15,200.0	6,974.9	4,426.9	4,326.5	44.123	SF
HSR Eachus 03-23 - Original Drilling - Original Drilling - A	16,936.9	7,302.5	5,811.0	5,681.7	44.938	CC
HSR Eachus 03-23 - Original Drilling - Original Drilling - A	17,000.0	7,302.7	5,811.4	5,681.5	44.729	ES
HSR Eachus 03-23 - Original Drilling - Original Drilling - A	17,580.8	7,304.5	5,846.6	5,711.6	43.322	SF
HSR Eachus 04-23 - Original Drilling - Original Drilling - A	16,929.5	7,313.6	7,229.0	7,080.6	48.703	CC
HSR Eachus 04-23 - Original Drilling - Original Drilling - A	17,100.0	7,315.6	7,231.0	7,079.2	47.632	ES
HSR Eachus 04-23 - Original Drilling - Original Drilling - A	17,580.8	7,321.4	7,258.2	7,097.2	45.077	SF
HSR Eachus 05-23 - Original Drilling - Original Drilling - A	15,594.8	7,246.7	7,223.9	7,080.2	50.277	CC
HSR Eachus 05-23 - Original Drilling - Original Drilling - A	15,600.0	7,246.8	7,223.9	7,080.2	50.274	ES
HSR Eachus 05-23 - Original Drilling - Original Drilling - A	16,900.0	7,270.8	7,340.9	7,194.0	49.990	SF
HSR Fruman 06-23 - Original Drilling - Original Drilling - A	15,991.3	7,004.9	6,173.5	6,062.3	55.506	CC
HSR Fruman 06-23 - Original Drilling - Original Drilling - A	16,000.0	7,005.0	6,173.6	6,062.3	55.469	ES
HSR Fruman 06-23 - Original Drilling - Original Drilling - A	17,580.8	7,000.0	6,374.9	6,252.6	52.143	SF
HSR Grasshopper 09-23 - Original Drilling - Original Drill	14,030.2	7,161.2	3,410.2	3,316.9	36.555	CC, ES
HSR Grasshopper 09-23 - Original Drilling - Original Drill	14,600.0	7,145.0	3,457.4	3,360.9	35.825	SF
Ritchey 21-23 - Original Drilling - Original Drilling - As Dri	16,339.7	7,100.0	5,029.7	4,914.8	43.757	CC
Ritchey 21-23 - Original Drilling - Original Drilling - As Dri	16,400.0	7,100.0	5,030.1	4,914.7	43.577	ES
Ritchey 21-23 - Original Drilling - Original Drilling - As Dri	17,300.0	7,100.0	5,120.6	4,999.5	42.275	SF
Ritchey 24-23 - Original Drilling - Original Drilling - As Dri	14,922.1	7,091.0	3,970.8	3,867.0	38.236	CC, ES
Ritchey 24-23 - Original Drilling - Original Drilling - As Dri	15,500.0	7,092.0	4,012.7	3,905.5	37.452	SF
Ritchey 31-24 - Original Drilling - Original Drilling - As Dri	16,299.3	7,155.1	2,608.6	2,492.2	22.420	CC
Ritchey 31-24 - Original Drilling - Original Drilling - As Dri	16,300.0	7,155.1	2,608.6	2,492.2	22.419	ES
Ritchey 31-24 - Original Drilling - Original Drilling - As Dri	16,400.0	7,156.1	2,610.5	2,493.9	22.383	SF
UPRC 23-11J - Original Drilling - Original Drilling - As Dri	14,235.4	6,896.9	6,057.3	5,963.3	64.452	CC
UPRC 23-11J - Original Drilling - Original Drilling - As Dri	14,300.0	6,896.5	6,057.6	5,963.1	64.094	ES
UPRC 23-11J - Original Drilling - Original Drilling - As Dri	16,000.0	6,887.2	6,309.1	6,203.6	59.816	SF
UPRC 23-12J - Original Drilling - Original Drilling - As Dri	14,207.3	6,925.7	7,357.4	7,263.6	78.375	CC
UPRC 23-12J - Original Drilling - Original Drilling - As Dri	14,300.0	6,926.3	7,358.0	7,263.4	77.731	ES
UPRC 23-12J - Original Drilling - Original Drilling - As Dri	16,800.0	6,946.3	7,800.9	7,689.6	70.136	SF
UPRC H23-13 - Wellbore #1 - Wellbore #1 - As Drilled	13,057.1	6,968.0	7,330.4	7,247.1	87.998	CC
UPRC H23-13 - Wellbore #1 - Wellbore #1 - As Drilled	13,100.0	6,969.5	7,330.5	7,246.9	87.615	ES
UPRC H23-13 - Wellbore #1 - Wellbore #1 - As Drilled	15,900.0	7,074.6	7,861.7	7,759.0	76.599	SF
UPRC H23-14J - Original Drilling - Original Drilling - As D	12,960.4	7,072.0	5,618.1	5,535.2	67.790	CC
UPRC H23-14J - Original Drilling - Original Drilling - As D	13,000.0	7,074.8	5,618.3	5,535.0	67.521	ES
UPRC H23-14J - Original Drilling - Original Drilling - As D	14,700.0	7,195.2	5,880.0	5,785.3	62.125	SF
UPRC H23-24 - Original Drilling - Original Drilling - As Dr	13,866.5	6,900.0	5,399.4	5,308.9	59.648	CC
UPRC H23-24 - Original Drilling - Original Drilling - As Dr	13,900.0	6,900.0	5,399.5	5,308.7	59.471	ES

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region Drilling - Sandbox	**Local Co-ordinate Reference:**	Well Emmy State H25-751
Project:	Conceptual Wells	**TVD Reference:**	WELL @ 4846.0ft (Original Well Elev)
Reference Site:	DP 408	**MD Reference:**	WELL @ 4846.0ft (Original Well Elev)
Site Error:	0.0 ft	**North Reference:**	Grid
Reference Well:	Emmy State H25-751	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMP
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
H Section 23						
UPRC H23-24 - Original Drilling - Original Drilling - As Dr	15,300.0	6,941.7	5,586.3	5,486.3	55.867 SF	
UPRR 53 Pan Am B#1 (PA) - Original Drilling - Original D	13,282.0	6,976.0	6,775.6	6,574.9	33.762 CC	
UPRR 53 Pan Am B#1 (PA) - Original Drilling - Original D	13,300.0	6,976.0	6,775.6	6,574.7	33.737 ES	
UPRR 53 Pan Am B#1 (PA) - Original Drilling - Original D	14,700.0	6,976.0	6,922.3	6,711.2	32.784 SF	
UPRR 53 Pan Am UT V#1 - Original Drilling - Original Dr	16,045.9	6,946.2	3,719.5	3,608.3	33.430 CC	
UPRR 53 Pan Am UT V#1 - Original Drilling - Original Dr	16,100.0	6,946.6	3,719.9	3,608.3	33.312 ES	
UPRR 53 Pan Am UT V#1 - Original Drilling - Original Dr	16,600.0	6,950.4	3,760.6	3,646.0	32.822 SF	

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region Drilling - Sandbox	**Local Co-ordinate Reference:**	Well Emmy State H25-751
Project:	Conceptual Wells	**TVD Reference:**	WELL @ 4846.0ft (Original Well Elev)
Reference Site:	DP 408	**MD Reference:**	WELL @ 4846.0ft (Original Well Elev)
Site Error:	0.0 ft	**North Reference:**	Grid
Reference Well:	Emmy State H25-751	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMP
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
H Section 24						
Gurtler 24-09J - Original Drilling - Original Drilling - As Dr	14,427.2	6,900.0	2,005.9	1,909.8	20.874	CC, ES
Gurtler 24-09J - Original Drilling - Original Drilling - As Dr	14,700.0	6,900.0	2,024.4	1,925.4	20.448	SF
Gurtler 24-10J - Original Drilling - Original Drilling - As Dr	14,424.1	6,988.8	811.6	715.4	8.442	CC, ES
Gurtler 24-10J - Original Drilling - Original Drilling - As Dr	14,500.0	6,989.3	815.1	717.9	8.384	SF
Gurtler 24-11J - Original Drilling - Original Drilling - As Dr	14,333.3	7,039.8	642.6	546.8	6.709	CC, ES, SF
Gurtler 24-12J - Original Drilling - Original Drilling - As Dr	14,316.4	6,500.0	1,928.8	1,838.7	21.405	CC, ES
Gurtler 24-12J - Original Drilling - Original Drilling - As Dr	14,500.0	6,500.0	1,937.5	1,846.6	21.306	SF
Gurtler 24-12J - Original Drilling - ST01 - ST01 Original D	14,119.9	7,340.0	1,716.3	1,621.4	18.090	CC, ES
Gurtler 24-12J - Original Drilling - ST01 - ST01 Original D	14,200.0	7,340.0	1,718.1	1,622.8	18.031	SF
Gurtler 24-13J - Original Drilling - Original Drilling - As Dr	12,718.5	7,223.9	1,749.3	1,665.3	20.836	CC, ES
Gurtler 24-13J - Original Drilling - Original Drilling - As Dr	12,800.0	7,190.6	1,750.9	1,666.8	20.835	SF
Gurtler 24-15J - Original Drilling - Original Drilling - As Dr	13,071.1	6,985.4	754.5	671.1	9.052	CC, ES
Gurtler 24-15J - Original Drilling - Original Drilling - As Dr	13,100.0	6,985.2	755.0	671.2	9.005	SF
Gurtler 24-16J - Original Drilling - Original Drilling - As Dr	13,115.8	6,959.7	1,740.3	1,656.5	20.781	CC, ES
Gurtler 24-16J - Original Drilling - Original Drilling - As Dr	13,400.0	6,959.6	1,763.3	1,676.6	20.320	SF
Gurtler H24-14 - Original Drilling - Original Drilling - As D	12,930.1	7,006.9	403.5	321.2	4.903	CC, ES, SF
Gurtler H24-21 (PA) - Original Drilling - Original Drilling -	14,886.6	6,995.6	94.3	-6.2	0.939	Level 1, CC, ES, SF
Gurtler H24-23 - Original Drilling - Original Drilling - As D	13,761.3	6,957.1	1,378.0	1,288.2	15.338	CC, ES
Gurtler H24-23 - Original Drilling - Original Drilling - As D	13,900.0	6,956.7	1,385.0	1,293.4	15.130	SF
Gurtler H24-24 - Original Drilling - Original Drilling - As D	13,729.7	6,971.0	288.2	198.1	3.199	CC, ES, SF
Gurtler H24-99HZ - Wellbore #1 - Original Drilling	13,959.3	8,992.8	95.2	20.2	1.270	Level 3, CC
Gurtler H24-99HZ - Wellbore #1 - Original Drilling	14,000.0	8,987.4	103.4	19.1	1.227	Level 2, ES, SF
Gurtler H25-27 - Original Drilling - Original Drilling - As D	12,534.9	6,972.9	1,350.5	1,270.2	16.819	CC, ES
Gurtler H25-27 - Original Drilling - Original Drilling - As D	12,800.0	6,971.5	1,376.3	1,292.6	16.450	SF
Gurtler Russell L1 (PA) - Original Drilling - Original Drillin	13,440.4	7,007.4	1,039.0	942.9	10.810	CC, ES, SF
HSR Brutschy 04-24 - Original Drilling - Original Drilling -	16,819.0	6,946.8	1,820.8	1,702.2	15.359	CC, ES
HSR Brutschy 04-24 - Original Drilling - Original Drilling -	16,900.0	6,949.3	1,822.6	1,703.6	15.323	SF
HSR Epstein 05-24 - Original Drilling - Original Drilling - A	16,017.2	7,003.3	1,280.3	1,168.9	11.498	CC, ES, SF
HSR Hoffman 03-24 - Original Drilling - Original Drilling -	16,900.0	7,000.7	513.7	387.6	4.074	SF
HSR Hoffman 03-24 - Original Drilling - Original Drilling -	16,905.7	7,000.6	513.7	387.6	4.075	CC, ES
HSR Sarchet 02-24 - Original Drilling - Original Drilling - A	16,932.9	6,986.8	838.6	718.5	6.981	CC, ES
HSR Sarchet 02-24 - Original Drilling - Original Drilling - A	17,000.0	6,986.9	841.3	720.2	6.950	SF
HSR Sarchet 06-24 - Original Drilling - Original Drilling - A	15,551.0	7,006.3	348.0	241.0	3.252	CC, ES, SF
HSR Traurig 01-24 - Original Drilling - Original Drilling - A	17,195.1	7,000.0	1,712.6	1,590.0	13.970	CC
HSR Traurig 01-24 - Original Drilling - Original Drilling - A	17,200.0	7,000.1	1,712.6	1,590.0	13.963	ES
HSR Traurig 01-24 - Original Drilling - Original Drilling - A	17,400.0	7,001.1	1,724.8	1,600.1	13.827	SF
Nopens D19-31 - Original Drilling - Original Drilling - As D	16,363.5	6,970.3	2,444.3	2,329.6	21.325	CC
Nopens D19-31 - Original Drilling - Original Drilling - As D	16,400.0	6,971.1	2,444.5	2,329.5	21.244	ES
Nopens D19-31 - Original Drilling - Original Drilling - As D	16,700.0	6,978.3	2,467.3	2,349.3	20.908	SF
Nopens H24-08 - Original Drilling - Original Drilling - As D	15,761.6	6,947.1	1,962.3	1,853.5	18.027	CC
Nopens H24-08 - Original Drilling - Original Drilling - As D	15,800.0	6,948.3	1,962.7	1,853.4	17.949	ES
Nopens H24-08 - Original Drilling - Original Drilling - As D	16,000.0	6,954.4	1,976.8	1,865.4	17.744	SF
Sarchet H24-22 - Original Drilling - Original Drilling - As D	15,416.9	7,021.4	1,131.4	1,025.7	10.698	CC, ES
Sarchet H24-22 - Original Drilling - Original Drilling - As D	15,500.0	7,014.3	1,134.5	1,027.7	10.622	SF
Weld County Lumber 01 - Original Drilling - Original Drilli	16,156.1	6,978.8	933.8	821.1	8.290	CC, ES
Weld County Lumber 01 - Original Drilling - Original Drilli	16,200.0	6,979.4	934.8	821.5	8.251	SF

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region Drilling - Sandbox	**Local Co-ordinate Reference:**	Well Emmy State H25-751
Project:	Conceptual Wells	**TVD Reference:**	WELL @ 4846.0ft (Original Well Elev)
Reference Site:	DP 408	**MD Reference:**	WELL @ 4846.0ft (Original Well Elev)
Site Error:	0.0 ft	**North Reference:**	Grid
Reference Well:	Emmy State H25-751	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMP
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
H Section 25						
Dechant 21-25 - Original Drilling - Original Drilling - As D	10,986.4	7,133.3	216.3	147.2	3.130	CC
Dechant 21-25 - Original Drilling - Original Drilling - As D	11,000.0	7,133.1	216.7	146.4	3.084	ES, SF
Dechant D30-33D - Original Drilling - Original Drilling - As	8,456.7	7,060.2	2,635.6	2,589.3	56.903	CC, ES
Dechant D30-33D - Original Drilling - Original Drilling - As	10,200.0	10,200.0	3,160.0	3,089.6	44.912	SF
Dechant D31-30D - Original Drilling - Original Drilling - As	7,450.0	7,080.9	2,545.4	2,499.1	54.986	SF
Dechant D31-30D - Original Drilling - Original Drilling - As	7,490.0	7,084.4	2,544.8	2,498.5	54.994	CC, ES
Dechant H25-64-1HN - Original Drilling - Original Drilling	8,700.0	9,117.9	64.1	7.9	1.141	Level 2, ES, SF
Dechant H25-64-1HN - Original Drilling - Original Drilling	8,743.4	9,118.3	47.3	11.4	1.316	Level 3, CC
Dechant H25-65HN - Original Drilling - Original Drilling	9,600.0	9,163.7	49.6	-12.0	0.805	Level 1, ES, SF
Dechant H25-65HN - Original Drilling - Original Drilling	9,634.2	9,165.0	35.9	-6.2	0.853	Level 1, CC
HSR Cohn 03-25 - Original Drilling - Original Drilling - As	11,699.8	7,013.6	707.0	636.0	9.962	CC, ES, SF
HSR Crowe 06-25 - Original Drilling - Original Drilling - A	10,349.0	7,000.1	625.6	566.7	10.615	CC, ES, SF
HSR Dechant 04-25 - Original Drilling - Original Drilling -	11,756.2	7,496.6	1,777.6	1,683.4	18.876	CC, ES
HSR Dechant 04-25 - Original Drilling - Original Drilling -	11,900.0	7,499.3	1,783.4	1,688.1	18.718	SF
HSR Dechant 05-25 - Original Drilling - Original Drilling -	10,237.4	6,988.1	1,630.4	1,572.5	28.178	CC, ES
HSR Dechant 05-25 - Original Drilling - Original Drilling -	10,400.0	6,989.5	1,638.5	1,579.9	27.995	SF
KY Blue D30-32 - Original Drilling - Original Drilling - As D	9,697.3	6,953.4	2,550.7	2,497.2	47.686	CC
KY Blue D30-32 - Original Drilling - Original Drilling - As D	9,700.0	6,953.5	2,550.7	2,497.2	47.662	ES
KY Blue D30-32 - Original Drilling - Original Drilling - As D	10,500.0	6,957.5	2,674.0	2,613.4	44.070	SF
KY Blue H25-04J - Original Drilling - Original Drilling - As	8,175.1	6,970.0	1,753.3	1,721.8	55.602	CC, ES
KY Blue H25-04J - Original Drilling - Original Drilling - As	8,800.0	6,970.0	1,861.3	1,825.5	51.974	SF
KY Blue H25-09 - Original Drilling - Original Drilling - As D	9,171.5	6,957.8	2,040.7	1,991.2	41.208	CC
KY Blue H25-09 - Original Drilling - Original Drilling - As D	9,200.0	6,957.7	2,040.9	1,991.1	40.990	ES
KY Blue H25-09 - Original Drilling - Original Drilling - As D	9,800.0	6,957.7	2,135.3	2,080.3	38.792	SF
KY Blue H25-10 - Original Drilling - Original Drilling - As D	9,313.3	6,981.9	599.6	549.0	11.859	CC, ES
KY Blue H25-10 - Original Drilling - Original Drilling - As D	9,400.0	6,982.0	605.8	554.0	11.705	SF
KY Blue H25-11 - Original Drilling - Original Drilling - As D	9,115.9	6,980.1	571.3	492.0	7.206	CC, ES, SF
KY Blue H25-12 - Original Drilling - Original Drilling - As D	1,421.9	1,418.2	1,924.7	1,916.3	229.984	CC
KY Blue H25-12 - Original Drilling - Original Drilling - As D	1,500.0	1,490.2	1,924.8	1,916.0	218.477	ES
KY Blue H25-12 - Original Drilling - Original Drilling - As D	9,400.0	7,064.2	2,039.1	1,988.3	40.108	SF
KY Blue H25-14 - Original Drilling - Original Drilling - As D	7,632.2	7,015.7	471.4	429.5	11.250	CC, ES, SF
KY Blue H25-15 - Original Drilling - Original Drilling - As D	7,827.3	6,969.6	586.2	544.0	13.867	CC, ES
KY Blue H25-15 - Original Drilling - Original Drilling - As D	7,900.0	6,969.3	590.7	548.0	13.844	SF
KY H25-24 - Original Drilling - Original Drilling - As Drilled	8,467.3	6,980.1	171.9	127.0	3.823	CC, ES, SF
Moore UPRC H25-01 - Original Drilling - Original Drilling	11,865.7	6,950.6	2,147.9	2,075.7	29.749	CC
Moore UPRC H25-01 - Original Drilling - Original Drilling	11,900.0	6,950.7	2,148.2	2,075.6	29.583	ES
Moore UPRC H25-01 - Original Drilling - Original Drilling	12,300.0	6,951.5	2,191.4	2,114.8	28.604	SF
Moore UPRC H25-02 - Original Drilling - Original Drilling	11,724.4	6,976.4	766.3	695.3	10.790	CC, ES
Moore UPRC H25-02 - Original Drilling - Original Drilling	11,800.0	6,977.0	770.0	697.8	10.672	SF
Moser 25-32 - Original Drilling - Original Drilling - As Drill	10,281.9	6,982.2	490.8	432.5	8.418	CC
Moser 25-32 - Original Drilling - Original Drilling - As Drill	10,300.0	6,982.0	491.1	432.4	8.373	ES, SF
Moser 25-42 - Original Drilling - Original Drilling - As Drill	10,545.1	6,958.3	2,159.5	2,099.0	35.684	CC, ES
Moser 25-42 - Original Drilling - Original Drilling - As Drill	11,100.0	6,957.7	2,229.6	2,163.7	33.841	SF
UPRR 53 Pan Am T#2 - Original Drilling - Original Drilling	11,005.1	7,052.8	925.8	860.8	14.232	CC, ES, SF
UPRR 53 Pan Am UT T#1 - Original Drilling - Original Dr	10,886.9	6,963.0	1,460.4	1,281.9	8.178	CC
UPRR 53 Pan Am UT T#1 - Original Drilling - Original Dr	10,900.0	6,963.0	1,460.5	1,281.8	8.171	ES
UPRR 53 Pan Am UT T#1 - Original Drilling - Original Dr	11,000.0	6,963.0	1,464.8	1,284.9	8.140	SF
Von Feldt 1-25B - Original Drilling - Original Drilling - As D	2,168.9	2,148.0	755.1	743.0	62.620	CC
Von Feldt 1-25B - Original Drilling - Original Drilling - As D	2,200.0	2,176.6	755.2	742.9	61.755	ES
Von Feldt 1-25B - Original Drilling - Original Drilling - As D	8,200.0	7,024.3	1,448.1	1,404.5	33.230	SF

CC - Min centre to center distance or covergent 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 H25-751
Project:	Conceptual Wells	**TVD Reference:**	WELL @ 4846.0ft (Original Well Elev)
Reference Site:	DP 408	**MD Reference:**	WELL @ 4846.0ft (Original Well Elev)
Site Error:	0.0 ft	**North Reference:**	Grid
Reference Well:	Emmy State H25-751	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMP
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
H Section 26						
Bullard 31-26 - Original Drilling - Original Drilling - As Dril	11,912.1	6,922.9	4,571.4	4,499.0	63.145	CC, ES
Bullard 31-26 - Original Drilling - Original Drilling - As Dril	16,000.0	16,000.0	6,128.7	6,019.1	55.941	SF
Bullard 32-26 - Original Drilling - Original Drilling - As Dril	815.3	821.3	4,338.1	4,333.7	987.905	CC
Bullard 32-26 - Original Drilling - Original Drilling - As Dril	10,231.4	7,017.9	4,386.4	4,328.4	75.598	ES
Bullard 32-26 - Original Drilling - Original Drilling - As Dril	11,700.0	7,027.8	4,625.7	4,558.9	69.177	SF
Bullard 41-26 - Original Drilling - Original Drilling - As Dril	11,412.9	6,945.3	3,604.5	3,536.5	53.019	CC, ES
Bullard 41-26 - Original Drilling - Original Drilling - As Dril	12,300.0	6,949.9	3,712.0	3,638.9	50.722	SF
Dechant H25-29D - Original Drilling - Original Drilling - As	12,300.0	7,499.0	996.9	909.4	11.391	SF
Dechant H25-29D - Original Drilling - Original Drilling - As	12,464.0	7,500.5	983.4	897.7	11.477	CC, ES
Dechant H25-33D - Original Drilling - Original Drilling - As	8,575.7	7,931.9	2,396.1	2,314.7	29.461	CC
Dechant H25-33D - Original Drilling - Original Drilling - As	8,600.0	7,927.7	2,396.2	2,314.7	29.407	ES
Dechant H25-33D - Original Drilling - Original Drilling - As	8,900.0	7,877.9	2,417.0	2,333.9	29.107	SF
Harsh H26-09D - Original Drilling - Original Drilling - As D	317.8	326.8	2,576.2	2,574.7	1,672.412	CC
Harsh H26-09D - Original Drilling - Original Drilling - As D	400.0	386.1	2,576.6	2,574.6	1,332.401	ES
Harsh H26-09D - Original Drilling - Original Drilling - As D	9,900.0	7,033.3	3,098.5	3,045.1	58.005	SF
Harsh H26-10 - Original Drilling - Original Drilling - As Dr	508.6	519.6	3,652.1	3,649.5	1,385.024	CC
Harsh H26-10 - Original Drilling - Original Drilling - As Dr	1,500.0	1,496.8	3,656.8	3,648.6	441.655	ES
Harsh H26-10 - Original Drilling - Original Drilling - As Dr	10,900.0	7,023.3	4,597.0	4,537.4	77.183	SF
Harsh H26-15 - Original Drilling - Original Drilling - As Dr	1,141.2	1,156.3	3,280.5	3,274.2	521.294	CC
Harsh H26-15 - Original Drilling - Original Drilling - As Dr	1,400.0	1,393.1	3,281.2	3,273.5	426.002	ES
Harsh H26-15 - Original Drilling - Original Drilling - As Dr	9,500.0	7,114.3	4,650.4	4,599.6	91.484	SF
Harsh H26-16 - Original Drilling - Original Drilling - As Dr	0.0	3.6	2,202.2			
Harsh H26-16 - Original Drilling - Original Drilling - As Dr	1,200.0	1,187.8	2,205.0	2,198.4	337.791	ES
Harsh H26-16 - Original Drilling - Original Drilling - As Dr	8,600.0	7,061.5	3,377.7	3,332.6	74.834	SF
Harsh H26-23D - Original Drilling - Original Drilling - As D	2,812.9	3,595.1	3,306.3	3,288.2	182.618	CC, ES
Harsh H26-23D - Original Drilling - Original Drilling - As D	9,800.0	7,181.6	3,899.6	3,843.8	69.925	SF
HSR Moser 04-26 - Original Drilling - Original Drilling - As	11,952.9	6,655.6	7,215.7	7,144.0	100.671	CC
HSR Moser 04-26 - Original Drilling - Original Drilling - As	12,000.0	6,656.4	7,215.8	7,143.8	100.129	ES
HSR Moser 04-26 - Original Drilling - Original Drilling - As	16,100.0	7,154.6	8,320.9	8,222.2	84.349	SF
HSR Moser 06-26 - Original Drilling - Original Drilling - As	0.0	0.0	5,306.4			
HSR Moser 06-26 - Original Drilling - Original Drilling - As	2,205.9	2,204.8	5,311.6	5,299.2	430.585	ES
HSR Moser 06-26 - Original Drilling - Original Drilling - As	12,600.0	7,064.4	5,999.2	5,926.2	82.138	SF
HSR Regalia 05-26 - Original Drilling - Original Drilling - A	2,213.1	2,215.1	6,555.2	6,542.8	528.657	CC, ES
HSR Regalia 05-26 - Original Drilling - Original Drilling - A	13,800.0	7,049.4	7,274.1	7,191.8	88.328	SF
HSR-Moser 03-26A - Original Drilling - Original Drilling - A	11,862.5	6,768.3	5,531.9	5,460.7	77.641	CC
HSR-Moser 03-26A - Original Drilling - Original Drilling - A	11,900.0	6,769.3	5,532.1	5,460.5	77.317	ES
HSR-Moser 03-26A - Original Drilling - Original Drilling - A	13,800.0	6,820.8	5,860.9	5,777.0	69.865	SF
John 03-26 - Original Drilling - Original Drilling - As Drille	11,609.0	6,761.0	5,670.8	5,601.9	82.306	CC, ES
John 03-26 - Original Drilling - Original Drilling - As Drille	13,700.0	6,800.0	6,043.8	5,961.3	73.321	SF
Lamp H25-31 - Original Drilling - Original Drilling - As Dri	11,029.5	6,970.6	2,602.2	2,537.6	40.295	CC, ES
Lamp H25-31 - Original Drilling - Original Drilling - As Dri	11,500.0	6,966.6	2,644.4	2,577.4	39.457	SF
Lamp H26-01 - Original Drilling - Original Drilling - As Dri	11,815.3	7,133.2	2,985.9	2,910.0	39.326	CC, ES
Lamp H26-01 - Original Drilling - Original Drilling - As Dri	12,400.0	7,137.3	3,042.6	2,963.0	38.195	SF
Lamp H26-08 - Original Drilling - Original Drilling - As Dri	10,479.6	7,100.9	3,055.4	2,993.2	49.073	CC
Lamp H26-08 - Original Drilling - Original Drilling - As Dri	10,500.0	7,100.5	3,055.5	2,993.1	48.978	ES
Lamp H26-08 - Original Drilling - Original Drilling - As Dri	11,100.0	7,087.1	3,117.7	3,052.3	47.650	SF
Lamp H26-22 - Original Drilling - Original Drilling - As Dri	2,490.9	2,848.6	3,676.5	3,659.8	220.043	CC
Lamp H26-22 - Original Drilling - Original Drilling - As Dri	2,500.0	2,857.3	3,676.5	3,659.7	219.008	ES
Lamp H26-22 - Original Drilling - Original Drilling - As Dri	10,500.0	7,021.2	3,863.2	3,800.9	62.050	SF
Moser 05-26 - Original Drilling - Original Drilling - As Drill	2,214.9	2,223.9	6,745.9	6,733.4	543.229	CC, ES
Moser 05-26 - Original Drilling - Original Drilling - As Drill	13,800.0	7,121.4	8,029.1	7,947.5	98.301	SF
Moser 41-27 - Original Drilling - Original Drilling - As Drill	881.7	855.5	6,752.6	6,748.0	1,449.481	CC
Moser 41-27 - Original Drilling - Original Drilling - As Drill	900.0	866.1	6,752.6	6,747.9	1,425.560	ES

CC - Min centre to center distance or covergent 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 H25-751
Project:	Conceptual Wells	**TVD Reference:**	WELL @ 4846.0ft (Original Well Elev)
Reference Site:	DP 408	**MD Reference:**	WELL @ 4846.0ft (Original Well Elev)
Site Error:	0.0 ft	**North Reference:**	Grid
Reference Well:	Emmy State H25-751	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMP
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
H Section 26						
Moser 41-27 - Original Drilling - Original Drilling - As Drill	12,800.0	12,800.0	8,049.8	7,956.5	86.207	SF
Moser H26-11 - Original Drilling - Original Drilling - As Dr	397.5	381.5	5,161.0	5,159.1	2,703.931	CC
Moser H26-11 - Original Drilling - Original Drilling - As Dr	1,000.0	954.9	5,162.8	5,157.5	981.052	ES
Moser H26-11 - Original Drilling - Original Drilling - As Dr	12,200.0	7,117.8	6,630.6	6,562.3	97.048	SF
Moser H26-12 - Wellbore #1 - Wellbore #1 - As Drilled	0.0	0.0	6,183.0			
Moser H26-12 - Wellbore #1 - Wellbore #1 - As Drilled	2,200.0	2,146.7	6,188.8	6,176.6	510.398	ES
Moser H26-12 - Wellbore #1 - Wellbore #1 - As Drilled	13,100.0	6,950.2	8,175.7	8,102.7	112.007	SF
Moser H26-13 - Wellbore #1 - Wellbore #1 - As Drilled	0.0	0.0	5,927.9			
Moser H26-13 - Wellbore #1 - Wellbore #1 - As Drilled	1,200.0	1,152.4	5,933.0	5,926.6	925.392	ES
Moser H26-13 - Wellbore #1 - Wellbore #1 - As Drilled	12,500.0	6,811.3	8,571.4	8,505.7	130.552	SF
Moser H26-14 - Original Drilling - Original Drilling - As Dr	571.7	565.8	4,420.6	4,417.6	1,501.481	CC
Moser H26-14 - Original Drilling - Original Drilling - As Dr	2,203.1	2,201.6	4,425.7	4,413.4	359.259	ES
Moser H26-14 - Original Drilling - Original Drilling - As Dr	10,800.0	6,881.0	6,453.2	6,398.1	117.044	SF
Moser H26-18D - Original Drilling - Original Drilling - As D	0.0	0.0	4,606.2			
Moser H26-18D - Original Drilling - Original Drilling - As D	12,800.0	7,451.2	5,327.9	5,248.5	67.104	SF
Moser H26-24 - Original Drilling - Original Drilling - As Dr	248.3	254.3	4,260.2	4,259.1	3,778.513	CC
Moser H26-24 - Original Drilling - Original Drilling - As Dr	1,400.0	1,386.3	4,264.7	4,257.0	555.271	ES
Moser H26-24 - Original Drilling - Original Drilling - As Dr	16,300.0	16,300.0	9,385.4	9,280.8	89.670	SF
Moser H26-25 - Original Drilling - Original Drilling - As Dr	0.0	0.0	5,007.7			
Moser H26-25 - Original Drilling - Original Drilling - As Dr	1,800.0	1,763.9	5,013.0	5,003.1	506.679	ES
Moser H26-25 - Original Drilling - Original Drilling - As Dr	11,800.0	7,100.4	6,986.3	6,922.6	109.753	SF
Moser H26-27D - Original Drilling - Original Drilling - As D	12,262.9	7,137.0	3,744.7	3,665.4	47.231	CC
Moser H26-27D - Original Drilling - Original Drilling - As D	12,300.0	7,136.8	3,744.9	3,665.3	47.045	ES
Moser H26-27D - Original Drilling - Original Drilling - As D	13,200.0	7,132.2	3,860.2	3,774.4	44.982	SF
Moser H26-28D - Original Drilling - Original Drilling - As D	0.0	16.4	4,622.9			
Moser H26-28D - Original Drilling - Original Drilling - As D	14,700.0	7,577.0	5,712.1	5,603.3	52.495	SF
Moser H26-29D - Original Drilling - Original Drilling - As D	0.0	20.3	4,616.2			
Moser H26-29D - Original Drilling - Original Drilling - As D	200.0	196.0	4,616.7	4,615.9	5,866.960	ES
Moser H26-29D - Original Drilling - Original Drilling - As D	14,100.0	14,100.0	6,132.9	5,973.9	38.574	SF
Moser, Wesley E. G. U. B1 (PA) - Original Drilling - Origin	2,200.0	2,186.0	5,613.1	5,564.6	115.689	CC
Moser, Wesley E. G. U. B1 (PA) - Original Drilling - Origin	2,300.0	2,286.0	5,614.8	5,564.0	110.696	ES
Moser, Wesley E. G. U. B1 (PA) - Original Drilling - Origin	9,700.0	7,002.0	6,905.5	6,738.0	41.220	SF
H Section 27						
HSR Moser 1-27 - Original Drilling - Original Drilling - As	11,836.4	6,925.0	8,299.1	8,227.3	115.549	CC
HSR Moser 1-27 - Original Drilling - Original Drilling - As	11,900.0	6,925.2	8,299.4	8,227.0	114.710	ES
HSR Moser 1-27 - Original Drilling - Original Drilling - As	15,800.0	6,935.5	9,197.1	9,098.8	93.608	SF
HSR Moser 16-27 - Original Drilling - Original Drilling - As	0.0	0.0	7,055.7			
HSR Moser 16-27 - Original Drilling - Original Drilling - As	2,200.0	2,160.8	7,059.5	7,047.4	579.849	ES
HSR Moser 16-27 - Original Drilling - Original Drilling - As	13,200.0	7,011.7	9,973.5	9,902.2	139.952	SF
Moser 09-27X (PA) - Original Drilling - Original Drilling - A	0.0	0.0	7,334.0			
Moser 09-27X (PA) - Original Drilling - Original Drilling - A	100.0	46.6	7,334.1	7,334.0	10,000.000	ES
Moser 09-27X (PA) - Original Drilling - Original Drilling - A	14,300.0	7,090.6	9,857.3	9,772.2	115.885	SF
Moser 24-27 - Original Drilling - Original Drilling - As Drill	826.0	800.0	7,342.4	7,338.0	1,696.208	CC, ES
Moser 24-27 - Original Drilling - Original Drilling - As Drill	13,900.0	6,920.4	9,983.9	9,897.7	115.842	SF
UPRR 53 Pan Am Unit "O" 1 - Original Drilling - Original	572.7	541.8	8,558.0	8,555.1	2,979.370	CC
UPRR 53 Pan Am Unit "O" 1 - Original Drilling - Original	700.0	600.0	8,558.3	8,554.9	2,539.372	ES
UPRR 53 Pan Am Unit "O" 1 - Original Drilling - Original	14,100.0	14,100.0	9,658.6	9,547.2	86.735	SF

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region Drilling - Sandbox	**Local Co-ordinate Reference:**	Well Emmy State H25-751
Project:	Conceptual Wells	**TVD Reference:**	WELL @ 4846.0ft (Original Well Elev)
Reference Site:	DP 408	**MD Reference:**	WELL @ 4846.0ft (Original Well Elev)
Site Error:	0.0 ft	**North Reference:**	Grid
Reference Well:	Emmy State H25-751	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMP
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
H Section 34						
Moser H34-09 - Wellbore #1 - Wellbore #1 - As Drilled	1,799.6	1,786.6	8,003.0	7,993.0	803.269	CC
Moser H34-09 - Wellbore #1 - Wellbore #1 - As Drilled	2,200.0	2,164.0	8,004.2	7,992.0	657.211	ES
Moser H34-09 - Wellbore #1 - Wellbore #1 - As Drilled	7,100.0	7,000.0	8,853.0	8,811.2	211.484	SF
Moser H34-16 - Wellbore #1 - Wellbore #1 - As Drilled	2,286.0	2,400.0	8,579.3	8,566.1	650.744	CC
Moser H34-16 - Wellbore #1 - Wellbore #1 - As Drilled	2,300.0	2,407.8	8,579.3	8,566.1	647.996	ES
Moser H34-16 - Wellbore #1 - Wellbore #1 - As Drilled	7,050.0	6,740.9	9,367.8	9,326.6	227.729	SF
Moser H34-31 - Wellbore #1 - Wellbore #1 - As Drilled						Out of range

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region Drilling - Sandbox	**Local Co-ordinate Reference:**	Well Emmy State H25-751
Project:	Conceptual Wells	**TVD Reference:**	WELL @ 4846.0ft (Original Well Elev)
Reference Site:	DP 408	**MD Reference:**	WELL @ 4846.0ft (Original Well Elev)
Site Error:	0.0 ft	**North Reference:**	Grid
Reference Well:	Emmy State H25-751	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMP
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
H Section 35						
Cannon Farms 01-35C - Original Drilling - Original Drillin	0.0	0.0	5,157.0			
Cannon Farms 01-35C - Original Drilling - Original Drillin	2,900.0	2,920.8	5,160.6	5,144.3	317.397	ES
Cannon Farms 01-35C - Original Drilling - Original Drillin	7,000.0	7,000.0	5,454.3	5,411.7	128.043	SF
Cannon H35-03D - Original Drilling - Original Drilling - As	0.0	1.7	6,272.5			
Cannon H35-03D - Original Drilling - Original Drilling - As	2,200.0	2,173.1	6,274.2	6,262.0	513.755	ES
Cannon H35-03D - Original Drilling - Original Drilling - As	6,950.0	6,645.6	6,948.7	6,907.9	170.312	SF
Cannon H35-09 - Original Drilling - Original Drilling - As D	2,812.8	2,859.8	4,136.4	4,120.6	260.757	CC
Cannon H35-09 - Original Drilling - Original Drilling - As D	2,900.0	2,928.9	4,136.8	4,120.5	253.731	ES
Cannon H35-09 - Original Drilling - Original Drilling - As D	7,300.0	6,982.0	4,717.8	4,671.0	100.835	SF
Cannon H35-10 - Original Drilling - Original Drilling - As D	2,294.9	2,338.6	4,958.1	4,945.1	381.765	CC
Cannon H35-10 - Original Drilling - Original Drilling - As D	2,300.0	2,343.3	4,958.1	4,945.1	380.979	ES
Cannon H35-10 - Original Drilling - Original Drilling - As D	6,900.0	6,718.5	5,464.4	5,423.2	132.647	SF
Cannon H35-11 - Original Drilling - Original Drilling - As D	463.6	467.7	5,626.9	5,624.5	2,371.251	CC
Cannon H35-11 - Original Drilling - Original Drilling - As D	600.0	571.9	5,627.3	5,624.3	1,846.730	ES
Cannon H35-11 - Original Drilling - Original Drilling - As D	6,750.0	6,600.0	6,222.1	6,181.7	153.995	SF
Cannon H35-12 - Original Drilling - Original Drilling - As D	0.0	0.0	6,875.3			
Cannon H35-12 - Original Drilling - Original Drilling - As D	600.0	549.6	6,878.1	6,875.2	2,329.251	ES
Cannon H35-12 - Original Drilling - Original Drilling - As D	7,100.0	6,895.6	7,735.5	7,693.9	185.863	SF
Cannon H35-13 - Wellbore #1 - Wellbore #1 - As Drilled	0.0	0.0	7,666.0			
Cannon H35-13 - Wellbore #1 - Wellbore #1 - As Drilled	1,000.0	957.3	7,670.8	7,665.5	1,453.450	ES
Cannon H35-13 - Wellbore #1 - Wellbore #1 - As Drilled	7,050.0	7,018.8	8,350.9	8,308.6	197.524	SF
Cannon H35-14 - Original Drilling - Original Drilling - As D	0.0	0.0	6,695.4			
Cannon H35-14 - Original Drilling - Original Drilling - As D	1,900.0	1,863.8	6,701.2	6,690.8	640.259	ES
Cannon H35-14 - Original Drilling - Original Drilling - As D	7,400.0	7,042.3	7,471.2	7,421.3	149.772	SF
Cannon H35-15 (PA) - Original Drilling - Original Drilling -	2,200.0	2,198.0	5,910.9	5,862.2	121.228	CC
Cannon H35-15 (PA) - Original Drilling - Original Drilling -	2,600.0	2,596.7	5,914.8	5,857.3	102.835	ES
Cannon H35-15 (PA) - Original Drilling - Original Drilling -	7,000.0	6,806.5	6,337.7	6,183.4	41.057	SF
Cannon H35-20 - Original Drilling - Original Drilling - As D	2,100.0	2,100.0	6,082.9	6,071.1	514.648	CC
Cannon H35-20 - Original Drilling - Original Drilling - As D	2,200.0	2,164.4	6,083.2	6,070.9	495.984	ES
Cannon H35-20 - Original Drilling - Original Drilling - As D	6,900.0	6,680.6	6,841.0	6,800.4	168.378	SF
Cannon H35-21 - Original Drilling - Original Drilling - As D	947.2	951.3	4,978.9	4,973.7	968.222	CC
Cannon H35-21 - Original Drilling - Original Drilling - As D	1,200.0	1,181.1	4,979.5	4,973.0	764.443	ES
Cannon H35-21 - Original Drilling - Original Drilling - As D	7,000.0	6,887.1	5,655.9	5,614.3	135.760	SF
Cannon H35-22 - Original Drilling - Original Drilling - As D	107.0	0.0	4,135.5	4,135.4	10,000.000	CC
Cannon H35-22 - Original Drilling - Original Drilling - As D	200.0	70.4	4,135.8	4,135.3	9,666.921	ES
Cannon H35-22 - Original Drilling - Original Drilling - As D	7,050.0	7,050.0	4,851.4	4,808.8	113.715	SF
Cannon H35-24 - Original Drilling - Original Drilling - As D	1,905.4	1,907.8	5,888.6	5,878.0	553.670	CC
Cannon H35-24 - Original Drilling - Original Drilling - As D	2,200.0	2,166.7	5,889.3	5,877.1	482.712	ES
Cannon H35-24 - Original Drilling - Original Drilling - As D	6,900.0	6,578.6	6,417.7	6,377.0	157.610	SF
Cannon X02-27 - Original Drilling - Original Drilling - As D	524.8	515.8	6,099.4	6,096.7	2,288.399	CC
Cannon X02-27 - Original Drilling - Original Drilling - As D	600.0	560.1	6,099.6	6,096.6	2,040.489	ES
Cannon X02-27 - Original Drilling - Original Drilling - As D	6,900.0	6,748.7	6,367.7	6,326.0	152.837	SF
Cannon X02-28 - Original Drilling - Original Drilling - As D	2,359.0	2,440.7	6,653.6	6,640.1	493.168	CC
Cannon X02-28 - Original Drilling - Original Drilling - As D	2,400.0	2,472.2	6,653.7	6,640.0	486.421	ES
Cannon X02-28 - Original Drilling - Original Drilling - As D	6,900.0	6,681.3	6,997.3	6,956.1	169.680	SF
Cannon X02-29 - Original Drilling - Original Drilling - As D	2,315.0	2,419.4	7,475.4	7,461.8	551.222	CC, ES
Cannon X02-29 - Original Drilling - Original Drilling - As D	7,150.0	7,150.0	8,212.8	8,169.4	189.312	SF
Foster 18-35 - Original Drilling - Original Drilling - As Drill	662.4	652.4	5,525.1	5,521.6	1,602.637	CC
Foster 18-35 - Original Drilling - Original Drilling - As Drill	1,200.0	1,153.9	5,527.5	5,521.1	862.771	ES
Foster 18-35 - Original Drilling - Original Drilling - As Drill	11,100.0	6,900.0	8,325.2	8,270.9	153.286	SF
Foster UPRR 31-35 #1 (PA) - Original Drilling - Original D	2,200.0	2,210.0	3,368.9	3,320.0	68.857	CC
Foster UPRR 31-35 #1 (PA) - Original Drilling - Original D	2,300.0	2,310.0	3,370.3	3,319.1	65.920	ES
Foster UPRR 31-35 #1 (PA) - Original Drilling - Original D	7,250.0	6,964.2	4,427.4	4,271.2	28.334	SF

CC - Min centre to center distance or covergent 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 H25-751
Project:	Conceptual Wells	**TVD Reference:**	WELL @ 4846.0ft (Original Well Elev)
Reference Site:	DP 408	**MD Reference:**	WELL @ 4846.0ft (Original Well Elev)
Site Error:	0.0 ft	**North Reference:**	Grid
Reference Well:	Emmy State H25-751	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMP
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
H Section 35						
Foster UPRR 32-35 - Original Drilling - Original Drilling -	0.0	0.0	4,048.5			
Foster UPRR 32-35 - Original Drilling - Original Drilling -	1,600.0	1,593.7	4,051.9	4,043.1	458.027	ES
Foster UPRR 32-35 - Original Drilling - Original Drilling -	6,750.0	6,750.0	4,721.7	4,681.1	116.314	SF
Foster UPRR 41-35 - Original Drilling - Original Drilling -	594.7	590.7	2,230.3	2,227.2	722.724	CC
Foster UPRR 41-35 - Original Drilling - Original Drilling -	2,100.0	2,086.2	2,231.5	2,219.9	190.898	ES
Foster UPRR 41-35 - Original Drilling - Original Drilling -	7,350.0	6,986.5	3,213.2	3,162.3	63.120	SF
Foster UPRR 42-35 #2 - Original Drilling - Original Drillin	0.0	0.0	2,969.7			
Foster UPRR 42-35 #2 - Original Drilling - Original Drillin	2,200.0	2,186.0	2,980.5	2,968.2	242.639	ES
Foster UPRR 42-35 #2 - Original Drilling - Original Drillin	6,850.0	6,850.0	3,472.7	3,431.3	83.828	SF
HSR Foster 03-35 - Original Drilling - Original Drilling - A	0.0	0.0	4,659.8			
HSR Foster 03-35 - Original Drilling - Original Drilling - A	1,900.0	1,866.8	4,670.1	4,659.6	445.801	ES
HSR Foster 03-35 - Original Drilling - Original Drilling - A	10,000.0	7,195.1	6,738.4	6,687.9	133.445	SF
HSR Foster 04-35 - Wellbore #1 - Wellbore #1 - As Drille	162.6	142.6	6,166.3	6,165.8	10,000.000	CC
HSR Foster 04-35 - Wellbore #1 - Wellbore #1 - As Drille	1,200.0	1,150.2	6,168.7	6,162.3	964.515	ES
HSR Foster 04-35 - Wellbore #1 - Wellbore #1 - As Drille	12,400.0	6,741.5	9,348.0	9,285.8	150.394	SF
HSR Foster 05-35 - Wellbore #1 - Wellbore #1 - As Drille	347.8	336.8	6,327.7	6,326.0	3,862.761	CC
HSR Foster 05-35 - Wellbore #1 - Wellbore #1 - As Drille	2,000.0	1,946.0	6,333.1	6,322.1	576.692	ES
HSR Foster 05-35 - Wellbore #1 - Wellbore #1 - As Drille	11,600.0	6,653.5	9,682.9	9,628.5	178.115	SF
HSR Foster 06-35 - Original Drilling - Original Drilling - A	523.1	525.1	5,094.4	5,091.7	1,891.790	CC
HSR Foster 06-35 - Original Drilling - Original Drilling - A	700.0	683.8	5,094.8	5,091.1	1,398.863	ES
HSR Foster 06-35 - Original Drilling - Original Drilling - A	7,050.0	6,820.8	5,984.7	5,943.6	145.815	SF
UPRR 53 Pan Am Unit P1 - Original Drilling - Original Dri	279.1	277.1	3,038.6	3,037.3	2,376.307	CC
UPRR 53 Pan Am Unit P1 - Original Drilling - Original Dri	2,207.4	2,209.5	3,043.8	3,031.4	246.167	ES
UPRR 53 Pan Am Unit P1 - Original Drilling - Original Dri	6,850.0	6,675.5	3,724.7	3,684.3	92.200	SF
UPRR 53 Pan Am UT P2 - Original Drilling - Original Drill	0.0	0.0	5,123.3			
UPRR 53 Pan Am UT P2 - Original Drilling - Original Drill	1,700.0	1,663.3	5,124.8	5,115.5	550.595	ES
UPRR 53 Pan Am UT P2 - Original Drilling - Original Drill	12,700.0	12,700.0	9,012.2	8,932.6	113.291	SF

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region Drilling - Sandbox	**Local Co-ordinate Reference:**	Well Emmy State H25-751
Project:	Conceptual Wells	**TVD Reference:**	WELL @ 4846.0ft (Original Well Elev)
Reference Site:	DP 408	**MD Reference:**	WELL @ 4846.0ft (Original Well Elev)
Site Error:	0.0 ft	**North Reference:**	Grid
Reference Well:	Emmy State H25-751	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMP
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
H Section 36						
Dechant 07-36 - Original Drilling - Original Drilling - As D	6,594.4	6,392.8	2,143.7	2,105.0	55.416	CC
Dechant 07-36 - Original Drilling - Original Drilling - As D	6,600.0	6,398.6	2,143.7	2,105.0	55.365	ES
Dechant 07-36 - Original Drilling - Original Drilling - As D	6,800.0	6,587.0	2,175.7	2,135.8	54.495	SF
Dechant 13N-1HZ - Original Drilling - Original Drilling - A	5,970.0	5,651.2	5,186.5	5,148.3	135.922	CC
Dechant 13N-1HZ - Original Drilling - Original Drilling - A	6,200.0	5,862.7	5,187.3	5,147.4	130.321	ES
Dechant 13N-1HZ - Original Drilling - Original Drilling - A	6,700.0	6,294.7	5,233.6	5,190.5	121.468	SF
Dechant 14C-1HZ - Original Drilling - Original Drilling - A	6,533.4	6,405.5	4,899.9	4,858.4	118.170	CC, ES
Dechant 14C-1HZ - Original Drilling - Original Drilling - A	6,750.0	6,450.0	4,940.5	4,898.3	117.098	SF
Dechant 15-36 - Original Drilling - Original Drilling - As D	6,569.2	6,385.6	4,531.7	4,488.6	105.008	CC
Dechant 15-36 - Original Drilling - Original Drilling - As D	6,600.0	6,415.4	4,532.5	4,488.5	102.951	ES
Dechant 15-36 - Original Drilling - Original Drilling - As D	7,300.0	6,929.2	4,908.0	4,849.1	83.319	SF
Dechant 15C-1HZ - Original Drilling - Original Drilling - A	6,985.4	6,684.4	815.3	775.1	20.268	CC, ES
Dechant 15C-1HZ - Original Drilling - Original Drilling - A	7,000.0	6,689.9	815.4	775.2	20.260	SF
Dechant 24-36 - Original Drilling - Original Drilling - As D	6,649.0	6,612.2	2,751.6	2,709.1	64.770	CC
Dechant 24-36 - Original Drilling - Original Drilling - As D	6,650.0	6,611.8	2,751.6	2,709.1	64.763	ES
Dechant 24-36 - Original Drilling - Original Drilling - As D	6,950.0	6,868.4	2,815.7	2,771.3	63.357	SF
Dechant 35N-E1HZ - Original Drilling - Original Drilling -	6,504.3	6,200.0	4,928.9	4,889.4	124.861	CC, ES
Dechant 35N-E1HZ - Original Drilling - Original Drilling -	6,750.0	6,250.0	4,981.1	4,940.9	123.772	SF
Dechant 35N-W1HZ - Original Drilling - Original Drilling -	6,494.2	6,250.0	5,037.8	4,998.0	126.614	CC, ES
Dechant 35N-W1HZ - Original Drilling - Original Drilling -	6,750.0	6,300.0	5,093.2	5,052.6	125.477	SF
Dechant 36N-W1HZ - Original Drilling - Original Drilling -	6,525.6	6,300.0	4,883.7	4,841.3	114.960	CC, ES
Dechant 36N-W1HZ - Original Drilling - Original Drilling -	6,700.0	6,350.0	4,909.9	4,866.7	113.812	SF
Dechant 37N-E1HZ - Original Drilling - Original Drilling -	6,541.3	6,076.7	5,160.4	5,114.0	111.085	CC
Dechant 37N-E1HZ - Original Drilling - Original Drilling -	6,550.0	6,085.4	5,160.5	5,113.9	110.911	ES
Dechant 37N-E1HZ - Original Drilling - Original Drilling -	6,850.0	6,373.5	5,229.8	5,180.9	106.908	SF
Dechant 37N-W1HZ - Original Drilling - Original Drilling -	6,561.5	6,279.5	5,005.4	4,963.3	119.089	CC, ES
Dechant 37N-W1HZ - Original Drilling - Original Drilling -	6,750.0	6,350.0	5,034.1	4,991.2	117.508	SF
Dechant State 16C-1HZ - Original Drilling - Original Drillin	7,196.2	6,887.2	1,977.3	1,936.3	48.301	CC, ES
Dechant State 16C-1HZ - Original Drilling - Original Drillin	7,250.0	6,884.5	1,978.6	1,937.6	48.264	SF
Dechant State 36N-E1HZ - Original Drilling - Original Dril	6,871.3	6,611.0	578.2	538.6	14.599	CC, ES, SF
Dechant State 37N-E36HZ - Original Drilling - Original Dr	7,101.4	6,785.9	1,773.8	1,733.1	43.640	CC, ES, SF
Dechant State 37N-W36HZ - Original Drilling - Original D	7,050.6	6,668.7	1,140.6	1,100.0	28.088	CC, ES
Dechant State 37N-W36HZ - Original Drilling - Original D	7,100.0	6,676.4	1,141.9	1,101.2	28.087	SF
Dechant State 38N-1HZ - Original Drilling - Original Drillin	7,090.3	6,616.7	2,472.0	2,431.9	61.643	CC, ES
Dechant State 38N-1HZ - Original Drilling - Original Drillin	7,200.0	6,624.4	2,476.4	2,436.2	61.509	SF
Dechant State H36-11D - Original Drilling - Original Drillin	6,525.8	6,362.7	3,245.2	3,205.9	82.651	CC, ES
Dechant State H36-11D - Original Drilling - Original Drillin	6,800.0	6,613.7	3,304.6	3,263.8	80.920	SF
Dechant State H36-18D - Original Drilling - Original Drillin	6,559.5	6,593.3	1,156.3	1,107.6	23.751	CC, ES
Dechant State H36-18D - Original Drilling - Original Drillin	6,650.0	6,676.2	1,163.0	1,113.7	23.612	SF
Dechant State H36-19 - Original Drilling - Original Drilling	4,415.5	4,359.3	1,307.1	1,281.4	50.966	CC
Dechant State H36-19 - Original Drilling - Original Drilling	4,500.0	4,438.3	1,307.4	1,281.2	49.920	ES
Dechant State H36-19 - Original Drilling - Original Drilling	6,500.0	6,302.6	1,460.7	1,421.8	37.546	SF
Dechant State H36-20D - Original Drilling - Original Drillin	6,480.8	6,427.0	2,791.3	2,749.6	66.996	CC, ES
Dechant State H36-20D - Original Drilling - Original Drillin	6,700.0	6,620.9	2,828.1	2,785.4	66.270	SF
Dechant State H36-21D - Original Drilling - Original Drillin	6,554.4	6,471.8	2,578.2	2,537.1	62.715	CC, ES
Dechant State H36-21D - Original Drilling - Original Drillin	6,750.0	6,638.4	2,609.6	2,567.6	62.078	SF
Dechant State H36-24 - Original Drilling - Original Drilling	6,570.2	6,645.3	3,798.8	3,750.9	79.345	CC, ES
Dechant State H36-24 - Original Drilling - Original Drilling	6,800.0	6,820.1	3,843.1	3,794.1	78.416	SF
Dechant State H36-31D - Original Drilling - Original Drillin	1,086.5	1,072.1	1,388.8	1,384.1	295.143	CC
Dechant State H36-31D - Original Drilling - Original Drillin	1,100.0	1,079.6	1,388.8	1,384.0	291.701	ES
Dechant State H36-31D - Original Drilling - Original Drillin	6,700.0	6,717.2	2,602.7	2,562.1	64.074	SF
Dechant State H36-32D - Original Drilling - Original Drillin	4,631.9	4,741.8	3,212.1	3,182.1	107.176	CC
Dechant State H36-32D - Original Drilling - Original Drillin	4,700.0	4,781.0	3,212.4	3,182.1	105.864	ES

CC - Min centre to center distance or covergent 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 H25-751
Project:	Conceptual Wells	**TVD Reference:**	WELL @ 4846.0ft (Original Well Elev)
Reference Site:	DP 408	**MD Reference:**	WELL @ 4846.0ft (Original Well Elev)
Site Error:	0.0 ft	**North Reference:**	Grid
Reference Well:	Emmy State H25-751	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMP
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
H Section 36						
Dechant State H36-32D - Original Drilling - Original Drillin	6,700.0	6,609.2	3,367.6	3,325.3	79.497	SF
Dechant State H36-33 - Original Drilling - Original Drilling	4,005.5	3,863.0	4,150.1	4,121.3	144.215	CC, ES
Dechant State H36-33 - Original Drilling - Original Drilling	6,750.0	6,776.2	4,323.9	4,274.7	87.827	SF
HSR Dechant State 02-36 - Original Drilling - Original Dri	6,817.3	6,616.9	691.1	652.1	17.727	CC, ES
HSR Dechant State 02-36 - Original Drilling - Original Dri	6,900.0	6,681.5	695.1	655.7	17.650	SF
HSR Dechant/State 07-36 (PA) - Original Drilling - Origin	6,681.0	6,499.2	1,927.0	1,781.0	13.196	CC
HSR Dechant/State 07-36 (PA) - Original Drilling - Origin	6,700.0	6,517.1	1,927.2	1,780.8	13.160	ES
HSR Dechant/State 07-36 (PA) - Original Drilling - Origin	6,850.0	6,652.3	1,945.5	1,796.0	13.011	SF
Spike State GWS H36-03 - Original Drilling - Original Dri	6,310.7	6,135.8	432.6	394.5	11.367	CC, ES
Spike State GWS H36-03 - Original Drilling - Original Dri	6,500.0	6,307.7	438.2	398.9	11.155	SF
Spike State GWS H36-04 - Original Drilling - Original Dri	100.0	65.0	1,062.7	1,062.5	5,446.464	CC
Spike State GWS H36-04 - Original Drilling - Original Dri	2,320.6	2,311.4	1,069.3	1,056.4	82.627	ES
Spike State GWS H36-04 - Original Drilling - Original Dri	7,050.0	6,783.8	1,905.0	1,857.6	40.139	SF
Spike State GWS H36-13 - Original Drilling - Original Dri	6,615.0	7,444.0	4,807.8	4,764.5	110.935	CC, ES
Spike State GWS H36-13 - Original Drilling - Original Dri	6,800.0	7,444.0	4,836.2	4,792.2	110.089	SF
Spike State GWS H36-14 - Original Drilling - Original Dri	6,571.8	6,654.4	4,597.0	4,556.7	114.258	CC, ES
Spike State GWS H36-14 - Original Drilling - Original Dri	6,850.0	6,980.8	4,656.8	4,614.7	110.748	SF
Spike State H36-02J - Original Drilling - Original Drilling -	6,033.8	5,863.9	1,663.7	1,625.5	43.561	CC
Spike State H36-02J - Original Drilling - Original Drilling -	6,500.0	6,315.1	1,668.2	1,614.1	30.855	ES
Spike State H36-02J - Original Drilling - Original Drilling -	7,000.0	6,759.9	1,865.1	1,796.0	26.977	SF
Spike State H36-05 - Original Drilling - Original Drilling - A	4,084.6	4,084.8	2,317.4	2,293.7	97.932	CC
Spike State H36-05 - Original Drilling - Original Drilling - A	4,100.0	4,100.0	2,317.4	2,293.6	97.518	ES
Spike State H36-05 - Original Drilling - Original Drilling - A	6,650.0	6,456.1	2,460.9	2,420.9	61.482	SF
Spike State H36-11J - Original Drilling - Original Drilling -	6,521.1	6,470.3	3,963.9	3,924.1	99.652	CC, ES
Spike State H36-11J - Original Drilling - Original Drilling -	6,850.0	6,755.5	4,046.9	4,005.4	97.394	SF
Spike State H36-12 - Original Drilling - Original Drilling - A	5,447.9	5,362.4	3,476.7	3,444.2	107.006	CC
Spike State H36-12 - Original Drilling - Original Drilling - A	5,800.0	5,726.8	3,477.1	3,442.1	99.525	ES
Spike State H36-12 - Original Drilling - Original Drilling - A	6,750.0	6,590.1	3,549.9	3,509.1	86.830	SF

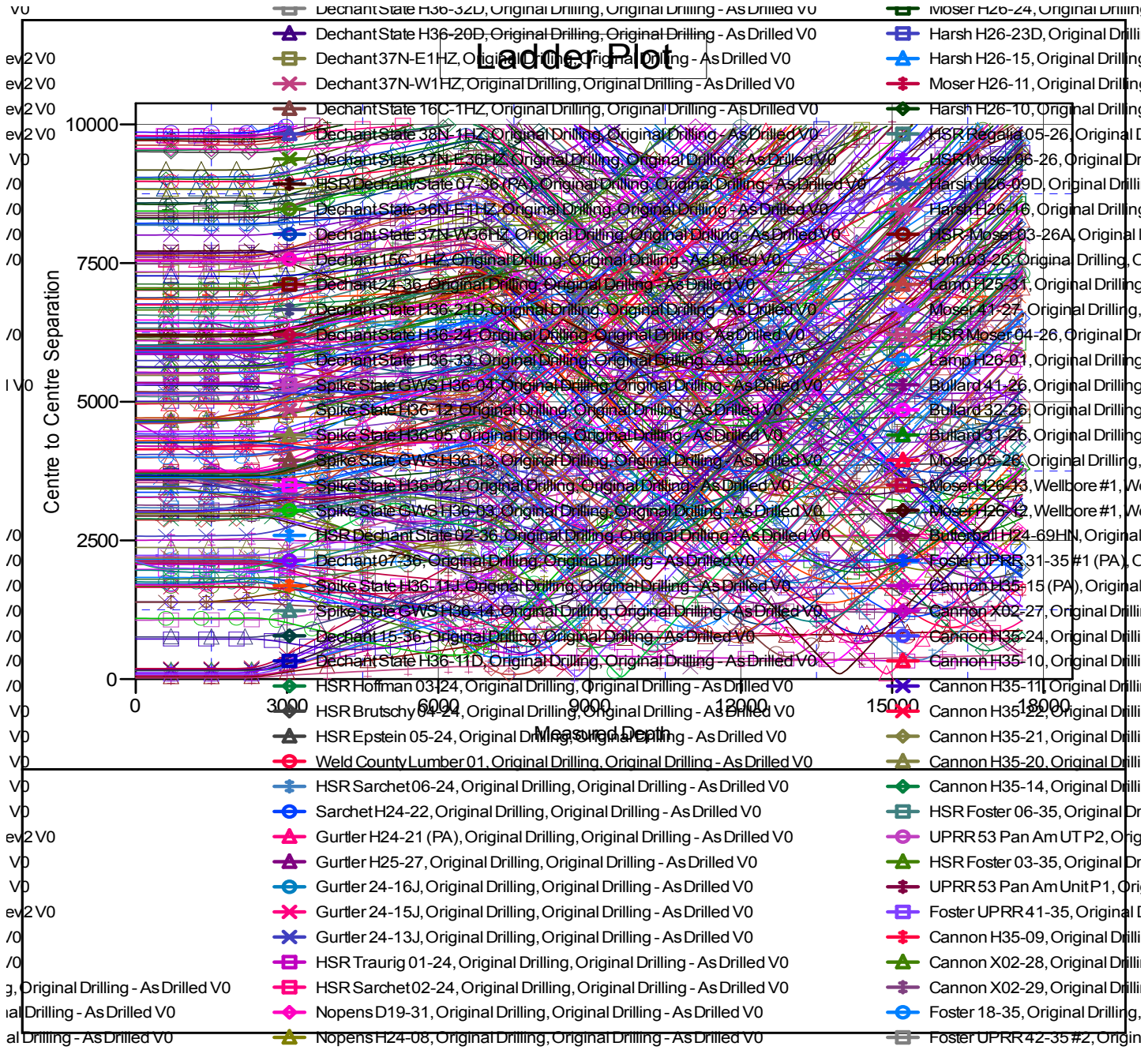
Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region Drilling - Sandbox	**Local Co-ordinate Reference:**	Well Emmy State H25-751
Project:	Conceptual Wells	**TVD Reference:**	WELL @ 4846.0ft (Original Well Elev)
Reference Site:	DP 408	**MD Reference:**	WELL @ 4846.0ft (Original Well Elev)
Site Error:	0.0 ft	**North Reference:**	Grid
Reference Well:	Emmy State H25-751	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMP
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

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

Coordinates are relative to: Emmy State H25-751
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.57°



CC - Min centre to center distance or covergent 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 H25-751
Project:	Conceptual Wells	**TVD Reference:**	WELL @ 4846.0ft (Original Well Elev)
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Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMP
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 4846.0ft (Original Well Elev)
Offset Depths are relative to Offset Datum
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Coordinates are relative to: Emmy State H25-751
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.57°