

Project: Mustang
Site: H Section 25
Well: Emmy State H36-787
Wellbore: Wellbore #1
Design: Plan #2

Northern Region - DJ Basin

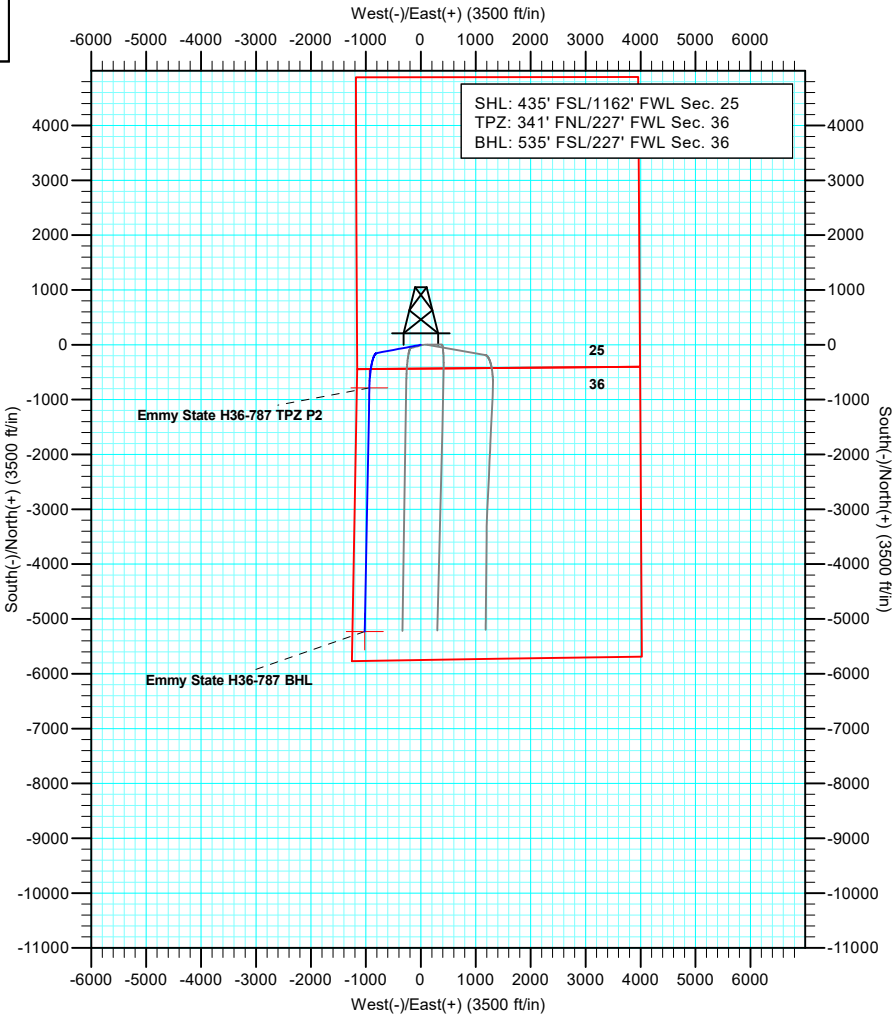
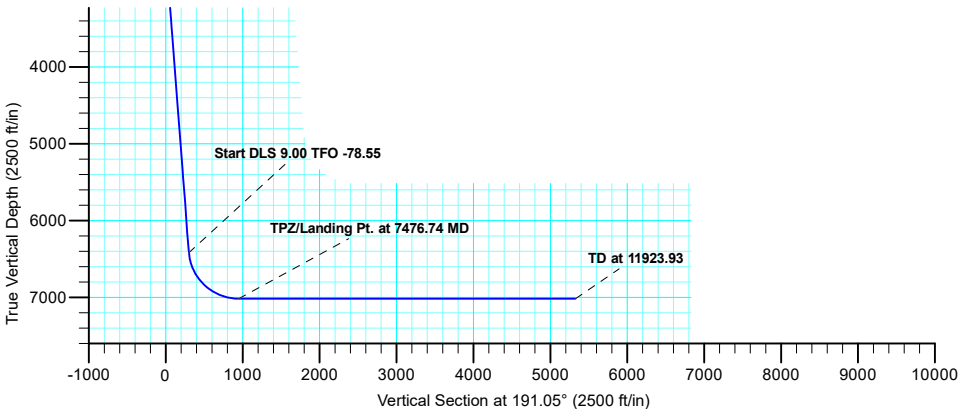
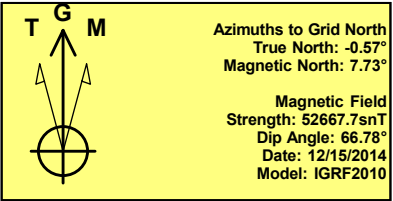
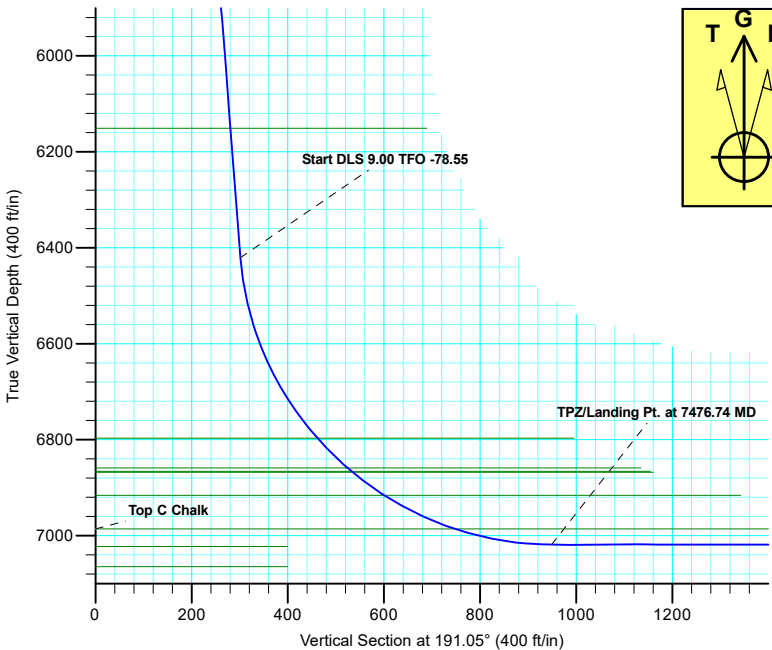
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: Colorado Northern Zone
System Datum: Mean Sea Level

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	2200.00	0.00	0.00	2200.00	0.00	0.00	0.00	0.00	0.00
3	2787.88	11.76	259.39	2783.77	-11.07	-59.08	2.00	259.39	22.18
4	6503.04	11.76	259.39	6420.97	-150.49	-803.18	0.00	0.00	301.57
5	7476.74	90.00	181.08	7019.00	-784.15	-937.05	9.00	-78.55	949.15
6	11923.93	90.00	181.08	7019.00	-5230.56	-1020.99	0.00	0.00	5329.27

WELL DETAILS: Emmy State H36-787

+N/-S	+E/-W	Ground Level: Northing	Ground Level: Easting	Ground Level: Latitude	Ground Level: Longitude	Slot
0.00	0.00	1313320.38	3246659.67	40.1900899	-104.6170800	



Plan: Plan #2 (Emmy State H36-787/Wellbore #1)

Created By: Shelly C. Peterkin Date: 13:15, May 29 2019

Northern Region - DJ Basin

Mustang

H Section 25

Emmy State H36-787

Wellbore #1

Plan: Plan #2

Standard Planning Report

29 May, 2019

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Emmy State H36-787
Company:	Northern Region - DJ Basin	TVD Reference:	WELL @ 4849.00ft (Original Well Elev)
Project:	Mustang	MD Reference:	WELL @ 4849.00ft (Original Well Elev)
Site:	H Section 25	North Reference:	Grid
Well:	Emmy State H36-787	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2		

Project	Mustang, Weld County Colorado		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site	H Section 25			
Site Position:		Northing:	1,313,437.52 usft	Latitude: 40.1904331
From: Map		Easting:	3,245,869.57 usft	Longitude: -104.6199038
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence: 0.57 °

Well	Emmy State H36-787			
Well Position	+N/-S	-117.14 ft	Northing:	1,313,320.38 usft
	+E/-W	790.10 ft	Easting:	3,246,659.67 usft
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft
			Ground Level:	4,819.00 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	12/15/2014	8.30	66.78	52,667.71670142

Design	Plan #2			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	191.05

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,787.88	11.76	259.39	2,783.77	-11.07	-59.08	2.00	2.00	0.00	259.39	
6,503.04	11.76	259.39	6,420.97	-150.49	-803.18	0.00	0.00	0.00	0.00	
7,476.74	90.00	181.08	7,019.00	-784.15	-937.05	9.00	8.04	-8.04	-78.55	Emmy State H36-787
11,923.93	90.00	181.08	7,019.00	-5,230.56	-1,020.99	0.00	0.00	0.00	0.00	Emmy State H36-787

Noble Energy, Inc.

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Project:	Mustang	MD Reference:	WELL @ 4849.00ft (Original Well Elev)
Site:	H Section 25	North Reference:	Grid
Well:	Emmy State H36-787	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
Pierre									
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
752.00	0.00	0.00	752.00	0.00	0.00	0.00	0.00	0.00	0.00
Upper Pierre Aquifer Top									
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,640.00	0.00	0.00	1,640.00	0.00	0.00	0.00	0.00	0.00	0.00
Upper Pierre Aquifer Base									
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
2,300.00	2.00	259.39	2,299.98	-0.32	-1.72	0.64	2.00	2.00	0.00
2,400.00	4.00	259.39	2,399.84	-1.29	-6.86	2.58	2.00	2.00	0.00
2,500.00	6.00	259.39	2,499.45	-2.89	-15.43	5.79	2.00	2.00	0.00
2,600.00	8.00	259.39	2,598.70	-5.13	-27.40	10.29	2.00	2.00	0.00
2,700.00	10.00	259.39	2,697.47	-8.02	-42.78	16.06	2.00	2.00	0.00
2,787.88	11.76	259.39	2,783.77	-11.07	-59.08	22.18	2.00	2.00	0.00
Start 3715.15 hold at 2787.88 MD									
2,800.00	11.76	259.39	2,795.63	-11.52	-61.51	23.09	0.00	0.00	0.00
2,900.00	11.76	259.39	2,893.53	-15.28	-81.54	30.61	0.00	0.00	0.00
3,000.00	11.76	259.39	2,991.43	-19.03	-101.56	38.13	0.00	0.00	0.00
3,100.00	11.76	259.39	3,089.33	-22.78	-121.59	45.66	0.00	0.00	0.00
3,200.00	11.76	259.39	3,187.24	-26.53	-141.62	53.18	0.00	0.00	0.00
3,300.00	11.76	259.39	3,285.14	-30.29	-161.65	60.70	0.00	0.00	0.00
3,400.00	11.76	259.39	3,383.04	-34.04	-181.68	68.22	0.00	0.00	0.00
3,500.00	11.76	259.39	3,480.94	-37.79	-201.71	75.74	0.00	0.00	0.00
3,600.00	11.76	259.39	3,578.84	-41.55	-221.74	83.26	0.00	0.00	0.00
3,700.00	11.76	259.39	3,676.74	-45.30	-241.77	90.78	0.00	0.00	0.00
3,800.00	11.76	259.39	3,774.65	-49.05	-261.79	98.30	0.00	0.00	0.00
3,900.00	11.76	259.39	3,872.55	-52.80	-281.82	105.82	0.00	0.00	0.00
3,935.19	11.76	259.39	3,907.00	-54.12	-288.87	108.46	0.00	0.00	0.00
Parkman									
4,000.00	11.76	259.39	3,970.45	-56.56	-301.85	113.34	0.00	0.00	0.00
4,100.00	11.76	259.39	4,068.35	-60.31	-321.88	120.86	0.00	0.00	0.00
4,200.00	11.76	259.39	4,166.25	-64.06	-341.91	128.38	0.00	0.00	0.00

Noble Energy, Inc.

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Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,300.00	11.76	259.39	4,264.16	-67.81	-361.94	135.90	0.00	0.00	0.00
4,400.00	11.76	259.39	4,362.06	-71.57	-381.97	143.42	0.00	0.00	0.00
4,500.00	11.76	259.39	4,459.96	-75.32	-402.00	150.94	0.00	0.00	0.00
4,538.86	11.76	259.39	4,498.00	-76.78	-409.78	153.86	0.00	0.00	0.00
Sussex									
4,600.00	11.76	259.39	4,557.86	-79.07	-422.02	158.46	0.00	0.00	0.00
4,700.00	11.76	259.39	4,655.76	-82.82	-442.05	165.98	0.00	0.00	0.00
4,800.00	11.76	259.39	4,753.66	-86.58	-462.08	173.50	0.00	0.00	0.00
4,900.00	11.76	259.39	4,851.57	-90.33	-482.11	181.02	0.00	0.00	0.00
5,000.00	11.76	259.39	4,949.47	-94.08	-502.14	188.54	0.00	0.00	0.00
5,100.00	11.76	259.39	5,047.37	-97.84	-522.17	196.06	0.00	0.00	0.00
5,200.00	11.76	259.39	5,145.27	-101.59	-542.20	203.58	0.00	0.00	0.00
5,235.47	11.76	259.39	5,180.00	-102.92	-549.30	206.25	0.00	0.00	0.00
Shannon									
5,300.00	11.76	259.39	5,243.17	-105.34	-562.23	211.10	0.00	0.00	0.00
5,400.00	11.76	259.39	5,341.08	-109.09	-582.25	218.62	0.00	0.00	0.00
5,500.00	11.76	259.39	5,438.98	-112.85	-602.28	226.14	0.00	0.00	0.00
5,600.00	11.76	259.39	5,536.88	-116.60	-622.31	233.66	0.00	0.00	0.00
5,700.00	11.76	259.39	5,634.78	-120.35	-642.34	241.18	0.00	0.00	0.00
5,800.00	11.76	259.39	5,732.68	-124.10	-662.37	248.70	0.00	0.00	0.00
5,900.00	11.76	259.39	5,830.58	-127.86	-682.40	256.22	0.00	0.00	0.00
6,000.00	11.76	259.39	5,928.49	-131.61	-702.43	263.74	0.00	0.00	0.00
6,100.00	11.76	259.39	6,026.39	-135.36	-722.46	271.26	0.00	0.00	0.00
6,200.00	11.76	259.39	6,124.29	-139.11	-742.49	278.78	0.00	0.00	0.00
6,227.28	11.76	259.39	6,151.00	-140.14	-747.95	280.84	0.00	0.00	0.00
Teepee Buttes									
6,300.00	11.76	259.39	6,222.19	-142.87	-762.51	286.30	0.00	0.00	0.00
6,400.00	11.76	259.39	6,320.09	-146.62	-782.54	293.82	0.00	0.00	0.00
6,503.04	11.76	259.39	6,420.97	-150.49	-803.18	301.57	0.00	0.00	0.00
Start DLS 9.00 TFO -78.55									
6,550.00	13.25	241.02	6,466.84	-153.98	-812.60	306.80	9.00	3.18	-39.11
6,600.00	15.94	226.61	6,515.23	-161.47	-822.60	316.08	9.00	5.38	-28.82
6,650.00	19.30	216.67	6,562.89	-172.83	-832.53	329.12	9.00	6.72	-19.88
6,700.00	23.04	209.71	6,609.51	-187.96	-842.32	345.85	9.00	7.48	-13.91
6,750.00	27.01	204.65	6,654.82	-206.79	-851.91	366.17	9.00	7.93	-10.12
6,800.00	31.11	200.82	6,698.52	-229.19	-861.25	389.94	9.00	8.20	-7.66
6,850.00	35.29	197.82	6,740.35	-255.02	-870.26	417.02	9.00	8.38	-6.02
6,900.00	39.54	195.37	6,780.06	-284.14	-878.90	447.25	9.00	8.50	-4.88
6,922.28	41.45	194.42	6,797.00	-298.12	-882.62	461.69	9.00	8.56	-4.26
Sharon Springs									
6,950.00	43.83	193.34	6,817.39	-316.35	-887.12	480.44	9.00	8.60	-3.92
7,000.00	48.16	191.60	6,852.12	-351.46	-894.87	516.39	9.00	8.65	-3.48
7,010.41	49.06	191.26	6,859.00	-359.11	-896.41	524.20	9.00	8.68	-3.19
Top A Chalk									
7,021.20	50.00	190.93	6,866.00	-367.16	-897.99	532.40	9.00	8.68	-3.11
Top A Marl									
7,024.32	50.27	190.83	6,868.00	-369.52	-898.44	534.80	9.00	8.69	-3.05
Top B Chalk									
7,050.00	52.50	190.08	6,884.03	-389.25	-902.08	554.86	9.00	8.70	-2.95
7,100.00	56.87	188.73	6,912.92	-429.49	-908.73	595.63	9.00	8.73	-2.70
7,105.66	57.36	188.58	6,916.00	-434.19	-909.45	600.38	9.00	8.74	-2.55
Top B Marl									
7,150.00	61.24	187.50	6,938.63	-471.93	-914.78	638.45	9.00	8.75	-2.43

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Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
7,200.00	65.63	186.38	6,960.99	-516.32	-920.17	683.04	9.00	8.77	-2.25
7,250.00	70.02	185.33	6,979.85	-562.37	-924.89	729.14	9.00	8.79	-2.10
7,268.74	71.67	184.95	6,986.00	-579.99	-926.47	746.74	9.00	8.80	-2.01
Top C Chalk									
7,300.00	74.42	184.34	6,995.12	-609.80	-928.89	776.46	9.00	8.80	-1.96
7,350.00	78.83	183.39	7,006.68	-658.32	-932.17	824.71	9.00	8.81	-1.90
7,400.00	83.23	182.47	7,014.47	-707.63	-934.69	873.59	9.00	8.81	-1.84
7,450.00	87.64	181.56	7,018.45	-757.43	-936.44	922.80	9.00	8.82	-1.81
7,476.74	90.00	181.08	7,019.00	-784.15	-937.05	949.15	9.00	8.82	-1.80
TPZ/Landing Pt. at 7476.74 MD									
7,500.00	90.00	181.08	7,019.00	-807.41	-937.49	972.06	0.00	0.00	0.00
7,600.00	90.00	181.08	7,019.00	-907.39	-939.38	1,070.55	0.00	0.00	0.00
7,700.00	90.00	181.08	7,019.00	-1,007.37	-941.27	1,169.04	0.00	0.00	0.00
7,800.00	90.00	181.08	7,019.00	-1,107.36	-943.16	1,267.53	0.00	0.00	0.00
7,900.00	90.00	181.08	7,019.00	-1,207.34	-945.04	1,366.03	0.00	0.00	0.00
8,000.00	90.00	181.08	7,019.00	-1,307.32	-946.93	1,464.52	0.00	0.00	0.00
8,100.00	90.00	181.08	7,019.00	-1,407.30	-948.82	1,563.01	0.00	0.00	0.00
8,200.00	90.00	181.08	7,019.00	-1,507.28	-950.70	1,661.50	0.00	0.00	0.00
8,300.00	90.00	181.08	7,019.00	-1,607.27	-952.59	1,759.99	0.00	0.00	0.00
8,400.00	90.00	181.08	7,019.00	-1,707.25	-954.48	1,858.49	0.00	0.00	0.00
8,500.00	90.00	181.08	7,019.00	-1,807.23	-956.37	1,956.98	0.00	0.00	0.00
8,600.00	90.00	181.08	7,019.00	-1,907.21	-958.25	2,055.47	0.00	0.00	0.00
8,700.00	90.00	181.08	7,019.00	-2,007.20	-960.14	2,153.96	0.00	0.00	0.00
8,800.00	90.00	181.08	7,019.00	-2,107.18	-962.03	2,252.45	0.00	0.00	0.00
8,900.00	90.00	181.08	7,019.00	-2,207.16	-963.92	2,350.94	0.00	0.00	0.00
9,000.00	90.00	181.08	7,019.00	-2,307.14	-965.80	2,449.44	0.00	0.00	0.00
9,100.00	90.00	181.08	7,019.00	-2,407.12	-967.69	2,547.93	0.00	0.00	0.00
9,200.00	90.00	181.08	7,019.00	-2,507.11	-969.58	2,646.42	0.00	0.00	0.00
9,300.00	90.00	181.08	7,019.00	-2,607.09	-971.47	2,744.91	0.00	0.00	0.00
9,400.00	90.00	181.08	7,019.00	-2,707.07	-973.35	2,843.40	0.00	0.00	0.00
9,500.00	90.00	181.08	7,019.00	-2,807.05	-975.24	2,941.89	0.00	0.00	0.00
9,600.00	90.00	181.08	7,019.00	-2,907.03	-977.13	3,040.39	0.00	0.00	0.00
9,700.00	90.00	181.08	7,019.00	-3,007.02	-979.02	3,138.88	0.00	0.00	0.00
9,800.00	90.00	181.08	7,019.00	-3,107.00	-980.90	3,237.37	0.00	0.00	0.00
9,900.00	90.00	181.08	7,019.00	-3,206.98	-982.79	3,335.86	0.00	0.00	0.00
10,000.00	90.00	181.08	7,019.00	-3,306.96	-984.68	3,434.35	0.00	0.00	0.00
10,100.00	90.00	181.08	7,019.00	-3,406.95	-986.56	3,532.85	0.00	0.00	0.00
10,200.00	90.00	181.08	7,019.00	-3,506.93	-988.45	3,631.34	0.00	0.00	0.00
10,300.00	90.00	181.08	7,019.00	-3,606.91	-990.34	3,729.83	0.00	0.00	0.00
10,400.00	90.00	181.08	7,019.00	-3,706.89	-992.23	3,828.32	0.00	0.00	0.00
10,500.00	90.00	181.08	7,019.00	-3,806.87	-994.11	3,926.81	0.00	0.00	0.00
10,600.00	90.00	181.08	7,019.00	-3,906.86	-996.00	4,025.30	0.00	0.00	0.00
10,700.00	90.00	181.08	7,019.00	-4,006.84	-997.89	4,123.80	0.00	0.00	0.00
10,800.00	90.00	181.08	7,019.00	-4,106.82	-999.78	4,222.29	0.00	0.00	0.00
10,900.00	90.00	181.08	7,019.00	-4,206.80	-1,001.66	4,320.78	0.00	0.00	0.00
11,000.00	90.00	181.08	7,019.00	-4,306.79	-1,003.55	4,419.27	0.00	0.00	0.00
11,100.00	90.00	181.08	7,019.00	-4,406.77	-1,005.44	4,517.76	0.00	0.00	0.00
11,200.00	90.00	181.08	7,019.00	-4,506.75	-1,007.33	4,616.25	0.00	0.00	0.00
11,300.00	90.00	181.08	7,019.00	-4,606.73	-1,009.21	4,714.75	0.00	0.00	0.00
11,400.00	90.00	181.08	7,019.00	-4,706.71	-1,011.10	4,813.24	0.00	0.00	0.00
11,500.00	90.00	181.08	7,019.00	-4,806.70	-1,012.99	4,911.73	0.00	0.00	0.00
11,600.00	90.00	181.08	7,019.00	-4,906.68	-1,014.88	5,010.22	0.00	0.00	0.00
11,700.00	90.00	181.08	7,019.00	-5,006.66	-1,016.76	5,108.71	0.00	0.00	0.00
11,800.00	90.00	181.08	7,019.00	-5,106.64	-1,018.65	5,207.21	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Emmy State H36-787
Company:	Northern Region - DJ Basin	TVD Reference:	WELL @ 4849.00ft (Original Well Elev)
Project:	Mustang	MD Reference:	WELL @ 4849.00ft (Original Well Elev)
Site:	H Section 25	North Reference:	Grid
Well:	Emmy State H36-787	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
11,900.00	90.00	181.08	7,019.00	-5,206.63	-1,020.54	5,305.70	0.00	0.00	0.00
11,923.93	90.00	181.08	7,019.00	-5,230.56	-1,020.99	5,329.27	0.00	0.00	0.00
TD at 11923.93									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Emmy State H36-787 Bl	0.00	0.00	7,019.00	-5,230.56	-1,020.99	1,308,089.84	3,245,638.68	40.1757600	-104.6209200
- plan hits target center									
- Point									
Emmy State H36-787 Tf	0.00	0.00	7,019.00	-784.15	-937.05	1,312,536.24	3,245,722.62	40.1879631	-104.6204618
- plan hits target center									
- Point									

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
600.00	600.00	Pierre				
752.00	752.00	Upper Pierre Aquifer Top				
1,640.00	1,640.00	Upper Pierre Aquifer Base				
3,935.19	3,907.00	Parkman				
4,538.86	4,498.00	Sussex				
5,235.47	5,180.00	Shannon				
6,227.28	6,151.00	Teepee Buttes				
6,922.28	6,797.00	Sharon Springs				
7,010.41	6,859.00	Top A Chalk				
7,021.20	6,866.00	Top A Marl				
7,024.32	6,868.00	Top B Chalk				
7,105.66	6,916.00	Top B Marl				
7,268.74	6,986.00	Top C Chalk				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
2,200.00	2,200.00	0.00	0.00	Start Build 2.00	
2,787.88	2,783.77	-11.07	-59.08	Start 3715.15 hold at 2787.88 MD	
6,503.04	6,420.97	-150.49	-803.18	Start DLS 9.00 TFO -78.55	
7,476.74	7,019.00	-784.15	-937.05	TPZ/Landing Pt. at 7476.74 MD	
11,923.93	7,019.00	-5,230.56	-1,020.99	TD at 11923.93	

Northern Region - DJ Basin

Mustang

H Section 25

Emmy State H36-787

Wellbore #1

Plan #2

Anticollision Summary Report

29 May, 2019

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Emmy State H36-787
Project:	Mustang	TVD Reference:	WELL @ 4849.00ft (Original Well Elev)
Reference Site:	H Section 25	MD Reference:	WELL @ 4849.00ft (Original Well Elev)
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Emmy State H36-787	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Reference	Plan #2		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD + Stations Interval 100.00ft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.00 ft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program	Date	5/29/2019		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	11,923.93	Plan #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
Offset Well - Wellbore - Design						
D Section 31						
Dechant 1-31A (PR) - Wellbore #1 - Gyro Surveys	11,269.19	6,700.00	6,056.94	5,986.72	86.248	CC
Dechant 1-31A (PR) - Wellbore #1 - Gyro Surveys	11,300.00	6,700.00	6,057.02	5,986.55	85.953	ES
Dechant 1-31A (PR) - Wellbore #1 - Gyro Surveys	11,923.93	6,676.86	6,092.15	6,017.10	81.172	SF
Dechant D 31-22D (PR) - Wellbore #1 - Gyro Surveys	3,193.01	4,736.17	8,500.82	8,474.78	326.523	CC
Dechant D 31-22D (PR) - Wellbore #1 - Gyro Surveys	3,200.00	4,737.75	8,500.83	8,474.77	326.227	ES
Dechant D 31-22D (PR) - Wellbore #1 - Gyro Surveys	11,923.93	7,033.81	8,964.89	8,885.63	113.107	SF
Dechant D31-18D (PR) - Wellbore #1 - As Drilled	3,859.16	5,466.84	7,019.10	6,979.44	176.978	CC
Dechant D31-18D (PR) - Wellbore #1 - As Drilled	3,900.00	5,483.79	7,019.17	6,979.29	175.985	ES
Dechant D31-18D (PR) - Wellbore #1 - As Drilled	11,923.93	7,361.36	8,158.27	8,071.27	93.768	SF
Dechant D31-21D (PR) - Wellbore #1 - As Drilled	2,767.49	4,028.00	7,396.24	7,374.36	337.997	CC, ES
Dechant D31-21D (PR) - Wellbore #1 - As Drilled	11,923.93	7,048.55	7,991.48	7,915.24	104.821	SF
Dechant D31-24D (PR) - Wellbore #1 - Gyro Surveys	10,782.14	7,284.35	7,555.56	7,485.26	107.471	CC
Dechant D31-24D (PR) - Wellbore #1 - Gyro Surveys	10,800.00	7,285.29	7,555.58	7,485.12	107.233	ES
Dechant D31-24D (PR) - Wellbore #1 - Gyro Surveys	11,923.93	7,344.64	7,641.11	7,561.22	95.649	SF
Dechant D31-31D (SI) - Dechant D31-31D Gyros - As-Dr	4,022.14	4,900.00	4,870.90	4,835.88	139.093	CC, ES
Dechant D31-31D (SI) - Dechant D31-31D Gyros - As-Dr	10,400.00	7,000.00	5,390.44	5,316.97	73.367	SF
Dechant D31-31D (SI) - Dechant D31-31D OH - As-Drille	4,022.12	4,913.00	4,870.92	4,835.90	139.093	CC, ES
Dechant D31-31D (SI) - Dechant D31-31D OH - As-Drille	10,400.00	7,143.00	5,389.46	5,315.71	73.079	SF
Dechant State D31-32 (SI) - Wellbore #1 - As-Drilled	169.54	134.54	5,209.28	5,208.75	9,747.176	CC
Dechant State D31-32 (SI) - Wellbore #1 - As-Drilled	200.00	154.50	5,209.31	5,208.64	7,744.228	ES
Dechant State D31-32 (SI) - Wellbore #1 - As-Drilled	11,700.00	7,037.75	5,825.19	5,755.81	83.963	SF
Dechant Y 06-27D (PR) - Wellbore #1 - As Drilled	837.02	823.02	8,547.65	8,544.34	2,585.538	CC
Dechant Y 06-27D (PR) - Wellbore #1 - As Drilled	900.00	852.00	8,547.89	8,544.34	2,409.715	ES
Dechant Y 06-27D (PR) - Wellbore #1 - As Drilled	11,923.93	6,982.60	8,826.40	8,745.57	109.194	SF
Dechant Y 06-28D (PR) - Wellbore #1 - As Drilled	11,923.93	7,063.24	7,620.68	7,538.93	93.227	CC, ES, SF
Riva Blue 31-15 (PR) - Wellbore #1 - Gyro Surveys	11,210.10	6,914.46	8,162.19	8,091.52	115.504	CC
Riva Blue 31-15 (PR) - Wellbore #1 - Gyro Surveys	11,300.00	6,914.35	8,162.68	8,091.28	114.320	ES
Riva Blue 31-15 (PR) - Wellbore #1 - Gyro Surveys	11,923.93	6,913.57	8,193.34	8,116.95	107.254	SF
Riva Blue 31-16 (PR) - Wellbore #1 - Gyro Surveys	11,414.29	6,968.13	9,204.41	9,131.67	126.545	CC
Riva Blue 31-16 (PR) - Wellbore #1 - Gyro Surveys	11,500.00	6,967.72	9,204.81	9,131.36	125.320	ES
Riva Blue 31-16 (PR) - Wellbore #1 - Gyro Surveys	11,923.93	6,965.73	9,218.51	9,141.57	119.817	SF
Riva Blue 31-9 (PR) - Wellbore #1 - Gyro Surveys	685.89	650.93	9,008.53	9,005.03	2,572.547	CC
Riva Blue 31-9 (PR) - Wellbore #1 - Gyro Surveys	2,205.26	2,183.98	9,010.57	8,998.31	734.850	ES
Riva Blue 31-9 (PR) - Wellbore #1 - Gyro Surveys	11,923.93	6,863.38	9,385.56	9,310.80	125.541	SF
Riva Blue D 31-04J (PR) - Wellbore #1 - Gyro Surveys	10,509.43	6,800.00	8,452.31	8,388.44	132.343	CC
Riva Blue D 31-04J (PR) - Wellbore #1 - Gyro Surveys	10,600.00	6,800.00	8,452.80	8,388.20	130.859	ES
Riva Blue D 31-04J (PR) - Wellbore #1 - Gyro Surveys	11,923.93	6,840.14	8,569.69	8,494.66	114.218	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 - DJ Basin	Local Co-ordinate Reference:	Well Emmy State H36-787
Project:	Mustang	TVD Reference:	WELL @ 4849.00ft (Original Well Elev)
Reference Site:	H Section 25	MD Reference:	WELL @ 4849.00ft (Original Well Elev)
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Emmy State H36-787	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan #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 31						
Riva Blue D 31-11 (PR) - Wellbore #1 - Gyro Surveys	2,048.56	2,007.56	6,977.29	6,965.99	617.463	CC
Riva Blue D 31-11 (PR) - Wellbore #1 - Gyro Surveys	2,200.00	2,114.33	6,977.76	6,965.75	580.916	ES
Riva Blue D 31-11 (PR) - Wellbore #1 - Gyro Surveys	11,923.93	6,881.87	7,356.32	7,281.12	97.820	SF
Riva Blue D 31-12 (SI) - Wellbore #1 - Gyro Surveys	10,223.56	7,000.05	5,484.71	5,422.53	88.210	CC
Riva Blue D 31-12 (SI) - Wellbore #1 - Gyro Surveys	10,300.00	7,003.00	5,485.24	5,422.48	87.399	ES
Riva Blue D 31-12 (SI) - Wellbore #1 - Gyro Surveys	11,000.00	11,000.00	5,539.37	5,457.73	67.853	SF
Riva Blue D31-14 (PR) - Wellbore #1 - Gyro Surveys	11,849.41	6,931.93	6,993.81	6,917.16	91.250	CC
Riva Blue D31-14 (PR) - Wellbore #1 - Gyro Surveys	11,900.00	6,930.91	6,993.99	6,916.94	90.769	ES
Riva Blue D31-14 (PR) - Wellbore #1 - Gyro Surveys	11,923.93	6,930.43	6,994.21	6,916.96	90.546	SF
Riva D 31-10 (PR) - Wellbore #1 - As-Drilled	1,422.51	1,380.54	7,824.38	7,816.68	1,016.014	CC
Riva D 31-10 (PR) - Wellbore #1 - As-Drilled	1,700.00	1,624.50	7,824.78	7,815.60	852.648	ES
Riva D 31-10 (PR) - Wellbore #1 - As-Drilled	11,923.93	7,142.31	8,120.17	8,044.92	107.903	SF
Riva Red D 31-2J (PA) - Wellbore #1 - Gyro Surveys	2,243.93	2,273.24	5,403.23	5,390.55	426.169	CC, ES
Riva Red D 31-2J (PA) - Wellbore #1 - Gyro Surveys	11,600.00	6,947.38	6,859.22	6,793.52	104.400	SF
Riva Red D 31-3 (PA) - Wellbore #1 - Gyro Surveys	100.00	34.91	6,028.50	6,028.36	10,000.000	CC
Riva Red D 31-3 (PA) - Wellbore #1 - Gyro Surveys	1,600.00	1,521.26	6,033.18	6,024.59	701.867	ES
Riva Red D 31-3 (PA) - Wellbore #1 - Gyro Surveys	11,900.00	7,168.22	8,274.70	8,209.14	126.221	SF
Riva Red D 31-6 (PA) - Wellbore #1 - No Surveys	2,200.00	2,159.00	6,468.84	6,379.68	72.554	CC
Riva Red D 31-6 (PA) - Wellbore #1 - No Surveys	2,300.00	2,258.98	6,470.30	6,376.93	69.301	ES
Riva Red D 31-6 (PA) - Wellbore #1 - No Surveys	10,100.00	7,022.00	7,026.52	6,712.24	22.358	SF
Riva Red D31-06X (SI) - Wellbore #1 - Gyro Surveys	2,221.94	2,223.92	6,282.96	6,270.51	504.870	CC, ES
Riva Red D31-06X (SI) - Wellbore #1 - Gyro Surveys	11,923.93	6,865.32	7,513.48	7,443.71	107.699	SF
Riva White D 31-1 (PR) - Wellbore #1 - Gyro Surveys	2,202.61	2,162.00	8,422.82	8,410.63	690.579	CC, ES
Riva White D 31-1 (PR) - Wellbore #1 - Gyro Surveys	11,200.00	6,800.21	9,996.40	9,931.83	154.834	SF
Riva White D 31-7 (PR) - Wellbore #1 - Gyro Surveys	2,221.02	2,223.30	7,586.10	7,573.67	609.870	CC, ES
Riva White D 31-7 (PR) - Wellbore #1 - Gyro Surveys	11,923.93	7,019.81	8,798.41	8,727.04	123.288	SF
Riva White D 31-8 (PA) - Wellbore #1 - Gyro Surveys	2,208.10	2,181.81	8,594.70	8,582.42	700.140	CC, ES
Riva White D 31-8 (PA) - Wellbore #1 - Gyro Surveys	11,923.93	7,210.00	9,711.56	9,638.10	132.192	SF
River Red D 31-4 (PA) - Wellbore #1 - Gyro Surveys	503.31	457.31	4,475.98	4,473.57	1,857.036	CC
River Red D 31-4 (PA) - Wellbore #1 - Gyro Surveys	2,208.36	2,174.52	4,482.32	4,470.08	366.237	ES
River Red D 31-4 (PA) - Wellbore #1 - Gyro Surveys	8,500.00	7,405.23	5,145.43	5,026.71	43.341	SF
UPRR 53 Pan Am UT R 1 (PA) - Wellbore #1 - No Survey	2,200.00	2,152.00	7,926.81	7,837.93	89.187	CC
UPRR 53 Pan Am UT R 1 (PA) - Wellbore #1 - No Survey	2,300.00	2,251.98	7,928.42	7,835.33	85.173	ES
UPRR 53 Pan Am UT R 1 (PA) - Wellbore #1 - No Survey	10,000.00	6,971.00	8,886.71	8,575.93	28.595	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 - DJ Basin	Local Co-ordinate Reference:	Well Emmy State H36-787
Project:	Mustang	TVD Reference:	WELL @ 4849.00ft (Original Well Elev)
Reference Site:	H Section 25	MD Reference:	WELL @ 4849.00ft (Original Well Elev)
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Emmy State H36-787	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan #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 Dr	575.67	556.68	3,008.35	3,005.43	1,030.321	CC
Dechant 21-25 - Original Drilling - Original Drilling - As Dr	1,400.00	1,370.17	3,010.41	3,002.80	395.638	ES
Dechant 21-25 - Original Drilling - Original Drilling - As Dr	7,050.00	7,146.12	4,540.02	4,495.33	101.598	SF
Dechant D30-33D - Original Drilling - Original Drilling - As	100.00	49.91	3,083.50	3,083.34	10,000.000	CC, ES
Dechant D30-33D - Original Drilling - Original Drilling - As	9,400.00	9,400.00	6,051.37	5,994.60	106.598	SF
Dechant D31-30D - Original Drilling - Original Drilling - As	100.00	55.16	3,075.24	3,075.08	10,000.000	CC
Dechant D31-30D - Original Drilling - Original Drilling - As	300.00	241.67	3,076.18	3,074.95	2,500.095	ES
Dechant D31-30D - Original Drilling - Original Drilling - As	9,100.00	7,109.61	5,274.70	5,219.60	95.724	SF
Dechant H25-64-1HN - Original Drilling - Original Drilling	6,581.09	6,802.00	1,345.95	1,307.69	35.179	CC, ES
Dechant H25-64-1HN - Original Drilling - Original Drilling	6,650.00	6,818.34	1,351.26	1,312.73	35.070	SF
Dechant H25-65HN - Original Drilling - Original Drilling	910.95	911.99	1,794.51	1,792.14	756.344	CC
Dechant H25-65HN - Original Drilling - Original Drilling	1,700.00	1,691.74	1,795.41	1,788.55	261.683	ES
Dechant H25-65HN - Original Drilling - Original Drilling	6,700.00	6,987.00	2,250.65	2,211.62	57.673	SF
Emmy H25-711 - Emmy H25-711 OH - As-Drilled	826.57	812.58	2,297.63	2,293.28	527.941	CC
Emmy H25-711 - Emmy H25-711 OH - As-Drilled	2,014.06	1,997.28	2,298.73	2,287.72	208.832	ES
Emmy H25-711 - Emmy H25-711 OH - As-Drilled	6,200.00	6,200.00	4,080.73	4,048.65	127.176	SF
Emmy State H25-718 - Emmy State H25-718 OH - As-Dr	2,051.64	2,037.66	2,276.19	2,265.10	205.253	CC
Emmy State H25-718 - Emmy State H25-718 OH - As-Dr	2,200.00	2,184.28	2,276.36	2,264.90	198.537	ES
Emmy State H25-718 - Emmy State H25-718 OH - As-Dr	6,550.00	6,550.00	3,991.93	3,958.29	118.657	SF
Emmy State H25-724 - Emmy State H25-724 OH - As-Dr	2,080.49	2,066.58	2,240.96	2,229.73	199.618	CC
Emmy State H25-724 - Emmy State H25-724 OH - As-Dr	2,202.04	2,189.69	2,240.96	2,229.42	194.259	ES
Emmy State H25-724 - Emmy State H25-724 OH - As-Dr	7,476.74	7,476.74	3,839.39	3,800.94	99.860	SF
Emmy State H25-731 - Emmy State H25-731 OH - As-Dr	2,201.70	2,189.01	2,224.35	2,212.71	191.116	CC, ES
Emmy State H25-731 - Emmy State H25-731 OH - As-Dr	8,300.00	8,300.00	3,732.45	3,690.13	88.211	SF
Emmy State H25-738 - Emmy State H25-738 OH - As-Dr	2,204.73	2,194.30	2,207.04	2,195.55	192.107	CC, ES
Emmy State H25-738 - Emmy State H25-738 OH - As-Dr	6,950.00	6,994.00	3,023.53	2,988.70	86.816	SF
Emmy State H25-744 - Emmy State H25-744 OH - As-Dr	345.76	331.76	2,187.09	2,185.51	1,378.540	CC
Emmy State H25-744 - Emmy State H25-744 OH - As-Dr	2,202.74	2,190.81	2,191.65	2,180.15	190.615	ES
Emmy State H25-744 - Emmy State H25-744 OH - As-Dr	6,750.00	6,759.41	2,563.70	2,529.44	74.851	SF
Emmy State H25-751 - Emmy State H25-751 OH - As-Dr	1,922.59	1,919.66	189.04	180.84	23.064	CC, ES
Emmy State H25-751 - Emmy State H25-751 OH - As-Dr	2,300.00	2,290.13	193.74	184.53	21.028	SF
Emmy State H25-757 - Emmy State H25-757 OH - As-Dr	2,209.12	2,206.35	175.58	164.04	15.214	CC, ES
Emmy State H25-757 - Emmy State H25-757 OH - As-Dr	2,400.00	2,395.13	178.23	166.19	14.800	SF
Emmy State H25-764 - Emmy State H25-764 OH - As-Dr	2,208.02	2,205.20	158.25	146.73	13.738	CC, ES
Emmy State H25-764 - Emmy State H25-764 OH - As-Dr	2,500.00	2,496.17	162.60	150.29	13.204	SF
Emmy State H25-771 - Emmy State H25-771 OH - As-Dr	0.00	0.00	160.23			
Emmy State H25-771 - Emmy State H25-771 OH - As-Dr	2,300.00	2,297.03	160.83	148.91	13.495	ES
Emmy State H25-771 - Emmy State H25-771 OH - As-Dr	2,400.00	2,394.59	161.87	149.70	13.300	SF
Emmy State H25-777 - Emmy State H25-777 OH - As-Dr	1,973.44	1,971.48	148.64	137.69	13.581	CC
Emmy State H25-777 - Emmy State H25-777 OH - As-Dr	2,200.00	2,196.96	148.99	137.47	12.935	ES
Emmy State H25-777 - Emmy State H25-777 OH - As-Dr	2,300.00	2,293.24	150.79	139.01	12.808	SF
Emmy State H25-785 - Emmy State H25-785 OH - As-Dr	6,949.62	7,028.12	107.85	71.56	2.971	CC, ES, SF
Emmy State H36-753 - Wellbore #1 - Plan #2	2,200.00	2,197.00	114.54	104.95	11.943	CC, ES
Emmy State H36-753 - Wellbore #1 - Plan #2	2,300.00	2,293.23	117.81	107.82	11.785	SF
Emmy State H36-766 - Wellbore #1 - Plan #2	2,200.00	2,198.00	69.84	60.25	7.281	CC, ES, SF
Emmy State H36-773 - Wellbore #1 - Plan #2	2,200.00	2,202.00	47.49	37.89	4.946	CC, ES
Emmy State H36-773 - Wellbore #1 - Plan #2	2,300.00	2,302.02	49.21	39.18	4.904	SF
HSR Cohn 03-25 - Original Drilling - Original Drilling - As	2,245.54	2,244.94	4,230.46	4,217.88	336.345	CC
HSR Cohn 03-25 - Original Drilling - Original Drilling - As	2,300.00	2,306.46	4,230.58	4,217.67	327.785	ES
HSR Cohn 03-25 - Original Drilling - Original Drilling - As	6,800.00	6,644.35	4,640.39	4,600.77	117.112	SF
HSR Crowe 06-25 - Original Drilling - Original Drilling - As	2,237.80	2,234.10	2,957.00	2,944.49	236.348	CC
HSR Crowe 06-25 - Original Drilling - Original Drilling - As	2,300.00	2,301.68	2,957.21	2,944.33	229.644	ES
HSR Crowe 06-25 - Original Drilling - Original Drilling - As	6,850.00	6,800.09	3,450.05	3,409.95	86.045	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 - DJ Basin	Local Co-ordinate Reference:	Well Emmy State H36-787
Project:	Mustang	TVD Reference:	WELL @ 4849.00ft (Original Well Elev)
Reference Site:	H Section 25	MD Reference:	WELL @ 4849.00ft (Original Well Elev)
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Emmy State H36-787	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan #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
H Section 25						
HSR Dechant 04-25 - Original Drilling - Original Drilling -	1,543.16	1,535.28	2,697.71	2,689.19	316.459	CC, ES
HSR Dechant 04-25 - Original Drilling - Original Drilling -	6,800.00	7,124.66	4,500.27	4,456.76	103.446	SF
HSR Dechant 05-25 - Original Drilling - Original Drilling -	1,066.46	1,059.48	2,719.44	2,713.65	470.106	CC
HSR Dechant 05-25 - Original Drilling - Original Drilling -	2,200.00	2,178.13	2,720.43	2,708.19	222.400	ES
HSR Dechant 05-25 - Original Drilling - Original Drilling -	6,750.00	6,643.82	2,984.23	2,944.55	75.199	SF
KY Blue D30-32 - Original Drilling - Original Drilling - As D	2,237.69	2,236.33	4,289.60	4,277.09	342.929	CC, ES
KY Blue D30-32 - Original Drilling - Original Drilling - As D	7,100.00	6,818.44	5,378.34	5,338.49	134.944	SF
KY Blue H25-04J - Original Drilling - Original Drilling - As	6,591.61	7,400.00	4,047.18	4,032.01	266.753	CC
KY Blue H25-04J - Original Drilling - Original Drilling - As	6,600.00	7,400.00	4,047.20	4,032.01	266.373	ES
KY Blue H25-04J - Original Drilling - Original Drilling - As	9,400.00	7,400.00	5,234.41	5,211.85	232.080	SF
KY Blue H25-09 - Original Drilling - Original Drilling - As D	100.00	47.05	3,657.60	3,657.44	10,000.000	CC
KY Blue H25-09 - Original Drilling - Original Drilling - As D	2,200.00	2,127.70	3,660.56	3,648.51	303.665	ES
KY Blue H25-09 - Original Drilling - Original Drilling - As D	7,050.00	6,797.45	4,657.05	4,617.35	117.330	SF
KY Blue H25-10 - Original Drilling - Original Drilling - As D	100.00	45.07	2,475.97	2,475.81	10,000.000	CC, ES
KY Blue H25-10 - Original Drilling - Original Drilling - As D	6,850.00	6,706.92	3,408.45	3,369.26	86.975	SF
KY Blue H25-11 - Original Drilling - Original Drilling - As D	100.00	63.23	1,703.93	1,703.74	8,962.695	CC
KY Blue H25-11 - Original Drilling - Original Drilling - As D	600.00	557.46	1,705.81	1,702.84	572.622	ES
KY Blue H25-11 - Original Drilling - Original Drilling - As D	6,850.00	6,702.74	2,422.86	2,356.62	36.582	SF
KY Blue H25-12 - Original Drilling - Original Drilling - As D	4,621.17	4,559.78	1,707.15	1,680.37	63.752	CC, ES
KY Blue H25-12 - Original Drilling - Original Drilling - As D	6,650.00	6,573.36	1,788.56	1,749.15	45.388	SF
KY Blue H25-14 - Original Drilling - Original Drilling - As D	100.00	59.92	795.54	795.35	4,307.352	CC
KY Blue H25-14 - Original Drilling - Original Drilling - As D	2,200.00	2,160.79	797.51	785.35	65.538	ES
KY Blue H25-14 - Original Drilling - Original Drilling - As D	6,650.00	6,537.89	1,623.24	1,585.29	42.777	SF
KY Blue H25-15 - Original Drilling - Original Drilling - As D	870.04	826.06	1,837.43	1,832.90	406.244	CC
KY Blue H25-15 - Original Drilling - Original Drilling - As D	2,200.00	2,146.11	1,839.58	1,827.46	151.738	ES
KY Blue H25-15 - Original Drilling - Original Drilling - As D	7,000.00	6,782.62	2,796.23	2,756.66	70.668	SF
KY H25-24 - Original Drilling - Original Drilling - As Drilled	100.00	56.11	1,663.59	1,663.41	9,387.447	CC
KY H25-24 - Original Drilling - Original Drilling - As Drilled	2,200.00	2,151.08	1,667.19	1,655.04	137.211	ES
KY H25-24 - Original Drilling - Original Drilling - As Drilled	6,750.00	6,641.77	2,550.41	2,511.79	66.054	SF
Moore UPRC H25-01 - Original Drilling - Original Drilling	2,234.91	2,219.15	5,467.05	5,454.58	438.340	CC, ES
Moore UPRC H25-01 - Original Drilling - Original Drilling	6,950.00	6,746.71	6,339.55	6,299.93	159.996	SF
Moore UPRC H25-02 - Original Drilling - Original Drilling	1,260.88	1,221.89	4,618.32	4,611.54	681.184	CC
Moore UPRC H25-02 - Original Drilling - Original Drilling	2,200.00	2,142.98	4,620.36	4,608.25	381.658	ES
Moore UPRC H25-02 - Original Drilling - Original Drilling	6,850.00	6,672.30	5,322.82	5,283.38	134.973	SF
Moser 25-32 - Original Drilling - Original Drilling - As Drille	100.00	50.26	3,207.24	3,207.08	10,000.000	CC
Moser 25-32 - Original Drilling - Original Drilling - As Drille	900.00	842.47	3,211.14	3,206.49	690.987	ES
Moser 25-32 - Original Drilling - Original Drilling - As Drille	6,850.00	6,725.06	4,001.04	3,961.61	101.453	SF
Moser 25-42 - Original Drilling - Original Drilling - As Drille	630.86	573.86	4,451.05	4,447.95	1,435.227	CC
Moser 25-42 - Original Drilling - Original Drilling - As Drille	1,900.00	1,819.23	4,457.56	4,447.26	432.423	ES
Moser 25-42 - Original Drilling - Original Drilling - As Drille	6,950.00	6,762.10	5,445.25	5,405.71	137.713	SF
UPRR 53 Pan Am T#2 - Original Drilling - Original Drilling	1,059.52	1,051.53	3,490.60	3,484.87	608.795	CC
UPRR 53 Pan Am T#2 - Original Drilling - Original Drilling	2,300.00	2,308.75	3,492.66	3,479.77	270.772	ES
UPRR 53 Pan Am T#2 - Original Drilling - Original Drilling	6,750.00	6,511.36	3,874.78	3,835.77	99.326	SF
UPRR 53 Pan Am UT T#1 - Original Drilling - Original Dri	100.00	29.96	4,341.13	4,340.99	10,000.000	CC
UPRR 53 Pan Am UT T#1 - Original Drilling - Original Dri	800.00	710.34	4,344.30	4,340.34	1,096.171	ES
UPRR 53 Pan Am UT T#1 - Original Drilling - Original Dri	6,950.00	6,807.28	5,231.18	5,191.31	131.202	SF
Von Feldt 1-25B - Original Drilling - Original Drilling - As D	2,749.20	2,715.98	571.92	556.67	37.510	CC
Von Feldt 1-25B - Original Drilling - Original Drilling - As D	2,800.00	2,765.06	572.01	556.48	36.828	ES
Von Feldt 1-25B - Original Drilling - Original Drilling - As D	5,800.00	5,708.45	821.64	788.27	24.623	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 - DJ Basin	Local Co-ordinate Reference:	Well Emmy State H36-787
Project:	Mustang	TVD Reference:	WELL @ 4849.00ft (Original Well Elev)
Reference Site:	H Section 25	MD Reference:	WELL @ 4849.00ft (Original Well Elev)
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Emmy State H36-787	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan #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
H Section 26						
Bullard 31-26 - Original Drilling - Original Drilling - As Dril	6,517.06	6,202.75	5,198.92	5,161.13	137.555	CC, ES
Bullard 31-26 - Original Drilling - Original Drilling - As Dril	7,050.00	6,691.10	5,384.31	5,343.24	131.109	SF
Bullard 32-26 - Original Drilling - Original Drilling - As Dril	6,579.22	6,499.04	3,718.36	3,679.51	95.715	CC, ES
Bullard 32-26 - Original Drilling - Original Drilling - As Dril	7,000.00	6,848.06	3,828.20	3,786.84	92.558	SF
Bullard 41-26 - Original Drilling - Original Drilling - As Dril	6,134.75	5,900.01	4,319.27	4,283.64	121.255	CC
Bullard 41-26 - Original Drilling - Original Drilling - As Dril	6,200.00	5,933.47	4,319.37	4,283.45	120.235	ES
Bullard 41-26 - Original Drilling - Original Drilling - As Dril	6,950.00	6,950.00	4,485.13	4,443.50	107.753	SF
Dechant H25-29D - Original Drilling - Original Drilling - As	0.00	0.00	4,458.87			
Dechant H25-29D - Original Drilling - Original Drilling - As	1,300.00	1,307.47	4,466.75	4,458.62	549.383	ES
Dechant H25-29D - Original Drilling - Original Drilling - As	6,700.00	7,078.39	5,271.89	5,213.70	90.598	SF
Dechant H25-33D - Original Drilling - Original Drilling - As	6,672.97	7,698.99	1,407.05	1,357.06	28.146	CC, ES
Dechant H25-33D - Original Drilling - Original Drilling - As	6,750.00	7,747.72	1,412.17	1,361.88	28.081	SF
Harsh H26-09D - Original Drilling - Original Drilling - As D	6,567.90	6,561.97	2,051.59	2,012.42	52.380	CC, ES
Harsh H26-09D - Original Drilling - Original Drilling - As D	6,800.00	6,780.10	2,089.61	2,049.03	51.492	SF
Harsh H26-10 - Original Drilling - Original Drilling - As Dri	6,618.86	6,529.83	2,949.64	2,910.76	75.863	CC, ES
Harsh H26-10 - Original Drilling - Original Drilling - As Dri	7,000.00	6,856.30	3,027.74	2,986.49	73.394	SF
Harsh H26-15 - Original Drilling - Original Drilling - As Dri	6,890.65	6,785.54	2,306.67	2,266.79	57.846	CC
Harsh H26-15 - Original Drilling - Original Drilling - As Dri	6,900.00	6,793.05	2,306.70	2,266.76	57.763	ES
Harsh H26-15 - Original Drilling - Original Drilling - As Dri	7,400.00	7,104.47	2,401.90	2,357.77	54.436	SF
Harsh H26-16 - Original Drilling - Original Drilling - As Dri	6,782.07	6,697.49	1,277.40	1,237.96	32.389	CC, ES
Harsh H26-16 - Original Drilling - Original Drilling - As Dri	7,000.00	6,869.72	1,299.62	1,258.74	31.790	SF
Harsh H26-23D - Original Drilling - Original Drilling - As D	6,645.98	6,673.32	1,935.27	1,895.97	49.247	CC
Harsh H26-23D - Original Drilling - Original Drilling - As D	6,650.00	6,676.04	1,935.28	1,895.96	49.226	ES
Harsh H26-23D - Original Drilling - Original Drilling - As D	6,850.00	6,812.02	1,958.63	1,918.43	48.723	SF
HSR Moser 04-26 - Original Drilling - Original Drilling - As	6,594.04	6,300.01	6,910.13	6,871.98	181.145	CC, ES
HSR Moser 04-26 - Original Drilling - Original Drilling - As	7,400.00	6,635.87	7,230.89	7,188.76	171.651	SF
HSR Moser 06-26 - Original Drilling - Original Drilling - As	6,630.54	6,556.45	4,548.22	4,509.22	116.617	CC, ES
HSR Moser 06-26 - Original Drilling - Original Drilling - As	7,250.00	6,886.49	4,752.40	4,710.09	112.321	SF
HSR Regalia 05-26 - Original Drilling - Original Drilling - A	6,656.27	6,628.72	5,747.06	5,707.79	146.341	CC, ES
HSR Regalia 05-26 - Original Drilling - Original Drilling - A	7,400.00	7,043.16	6,008.43	5,965.01	138.372	SF
HSR-Moser 03-26A - Original Drilling - Original Drilling - A	6,567.76	6,400.01	5,690.98	5,652.49	147.849	CC, ES
HSR-Moser 03-26A - Original Drilling - Original Drilling - A	7,050.00	6,600.01	5,841.27	5,800.60	143.628	SF
Hurley H26-712 - Hurley H26-712 OH - As-Drilled	6,495.97	6,519.00	2,315.67	2,280.90	66.609	CC
Hurley H26-712 - Hurley H26-712 OH - As-Drilled	6,500.00	6,519.00	2,315.67	2,280.90	66.593	ES
Hurley H26-712 - Hurley H26-712 OH - As-Drilled	6,550.00	6,519.00	2,317.96	2,283.10	66.486	SF
Hurley H26-717 - Hurley H26-717 OH - As-Drilled	6,505.63	6,473.95	2,365.06	2,330.72	68.866	CC, ES
Hurley H26-717 - Hurley H26-717 OH - As-Drilled	6,600.00	6,517.00	2,373.29	2,338.61	68.433	SF
Hurley H26-724 - Hurley H26-724 OH - As-Drilled	6,550.00	6,458.85	2,576.60	2,542.60	75.788	CC, ES
Hurley H26-724 - Hurley H26-724 OH - As-Drilled	6,700.00	6,517.00	2,600.50	2,565.98	75.343	SF
Hurley H26-730 - Hurley H26-730 OH - As-Drilled	6,529.05	6,365.08	2,967.20	2,933.74	88.686	CC, ES
Hurley H26-730 - Hurley H26-730 OH - As-Drilled	6,650.00	6,423.00	2,979.47	2,945.53	87.783	SF
Hurley H26-736 - Hurley H26-736 OH - As-Drilled	6,549.14	6,423.00	3,093.17	3,058.81	90.022	CC
Hurley H26-736 - Hurley H26-736 OH - As-Drilled	6,550.00	6,423.00	3,093.17	3,058.81	90.016	ES
Hurley H26-736 - Hurley H26-736 OH - As-Drilled	6,800.00	6,518.00	3,137.55	3,102.17	88.683	SF
Hurley H26-743 - Hurley H26-743 OH - As-Drilled	6,300.76	6,003.39	3,282.56	3,249.45	99.140	CC, ES
Hurley H26-743 - Hurley H26-743 OH - As-Drilled	7,100.00	7,100.00	3,491.54	3,451.87	88.024	SF
Hurley H26-750 - Hurley H26-750 OH - As-Drilled	6,657.04	6,745.90	3,823.11	3,787.54	107.470	CC, ES
Hurley H26-750 - Hurley H26-750 OH - As-Drilled	6,950.00	6,801.00	3,870.90	3,834.41	106.080	SF
Hurley H26-756 - Hurley H26-756 OH - As-Drilled	6,673.05	6,707.00	4,068.52	4,033.44	115.980	CC, ES
Hurley H26-756 - Hurley H26-756 OH - As-Drilled	7,100.00	6,748.01	4,162.63	4,126.18	114.208	SF
Hurley H26-762 - Hurley H26-762 OH - As-Drilled	6,685.68	6,612.00	4,412.79	4,378.37	128.180	CC, ES
Hurley H26-762 - Hurley H26-762 OH - As-Drilled	7,400.00	6,707.00	4,637.10	4,599.83	124.414	SF
Hurley H26-768 - Hurley H26-768 OH - As-Drilled	6,677.93	6,473.91	4,659.27	4,625.38	137.494	CC, ES

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Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Emmy State H36-787
Project:	Mustang	TVD Reference:	WELL @ 4849.00ft (Original Well Elev)
Reference Site:	H Section 25	MD Reference:	WELL @ 4849.00ft (Original Well Elev)
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Reference Well:	Emmy State H36-787	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan #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
H Section 26						
Hurley H26-768 - Hurley H26-768 OH - As-Drilled	8,400.00	6,519.00	5,469.73	5,428.03	131.157	SF
Hurley H26-776 - Hurley H26-776 OH - As-Drilled	6,695.42	6,471.96	5,136.42	5,102.40	150.982	CC
Hurley H26-776 - Hurley H26-776 OH - As-Drilled	6,700.00	6,472.59	5,136.43	5,102.40	150.914	ES
Hurley H26-776 - Hurley H26-776 OH - As-Drilled	9,100.00	6,517.00	6,341.79	6,295.99	138.446	SF
Hurley H26-783 - Hurley H26-783 OH - As-drilled	6,657.60	6,260.10	5,373.97	5,340.43	160.226	CC, ES
Hurley H26-783 - Hurley H26-783 OH - As-drilled	9,500.00	6,423.00	6,812.18	6,764.04	141.490	SF
Hurley H35-727 - Wellbore #1 - Plan #2	11,368.42	13,962.98	1,297.51	1,183.75	11.405	CC
Hurley H35-727 - Wellbore #1 - Plan #2	11,400.00	13,984.72	1,297.63	1,183.36	11.356	ES
Hurley H35-727 - Wellbore #1 - Plan #2	11,923.93	14,489.49	1,308.85	1,185.81	10.638	SF
Hurley H35-733 - Wellbore #1 - Plan #2	11,923.93	14,916.31	1,945.36	1,821.88	15.755	CC, ES, SF
Hurley H35-746 - Wellbore #1 - Plan #2	11,923.93	14,716.59	2,642.32	2,519.11	21.446	CC, ES, SF
Hurley H35-755 - Wellbore #1 - Plan #2	11,923.93	14,925.85	3,147.64	3,024.41	25.541	CC, ES, SF
Hurley H35-768 - Wellbore #1 - Plan #2	11,923.93	14,524.55	3,841.30	3,719.01	31.410	CC, ES, SF
Hurley H35-774 - Wellbore #1 - Plan #2	11,923.93	14,884.05	4,495.42	4,351.13	31.154	CC, ES, SF
Hurley H35-787 - Wellbore #1 - Plan #2	11,923.93	14,663.08	5,161.01	5,038.39	42.091	CC, ES, SF
Hurley State H35-713 - Wellbore #1 - Plan #2	11,923.93	14,705.22	638.37	515.45	5.193	CC, ES, SF
John 03-26 - Original Drilling - Original Drilling - As Drilled	6,577.12	6,417.12	5,586.44	5,547.89	144.941	CC, ES
John 03-26 - Original Drilling - Original Drilling - As Drilled	7,200.00	6,700.01	5,818.35	5,776.83	140.120	SF
Lamp H25-31 - Original Drilling - Original Drilling - As Dril	5,346.33	5,281.59	3,726.14	3,694.97	119.563	CC
Lamp H25-31 - Original Drilling - Original Drilling - As Dril	6,400.00	6,348.11	3,726.56	3,688.62	98.217	ES
Lamp H25-31 - Original Drilling - Original Drilling - As Dril	6,850.00	6,728.01	3,824.57	3,784.08	94.465	SF
Lamp H26-01 - Original Drilling - Original Drilling - As Dril	1,435.00	1,445.16	3,805.12	3,797.16	477.902	CC, ES
Lamp H26-01 - Original Drilling - Original Drilling - As Dril	6,900.00	6,889.87	4,688.09	4,646.29	112.155	SF
Lamp H26-08 - Original Drilling - Original Drilling - As Dril	6,549.09	6,625.59	3,320.71	3,281.37	84.402	CC
Lamp H26-08 - Original Drilling - Original Drilling - As Dril	6,550.00	6,626.66	3,320.71	3,281.36	84.389	ES
Lamp H26-08 - Original Drilling - Original Drilling - As Dril	6,850.00	6,880.57	3,388.32	3,347.25	82.502	SF
Lamp H26-22 - Original Drilling - Original Drilling - As Dril	6,565.49	6,597.75	2,915.47	2,867.67	60.998	CC, ES
Lamp H26-22 - Original Drilling - Original Drilling - As Dril	6,800.00	6,822.92	2,950.80	2,901.86	60.287	SF
Moser 05-26 - Original Drilling - Original Drilling - As Drille	6,719.97	6,720.84	5,835.31	5,795.79	147.676	CC, ES
Moser 05-26 - Original Drilling - Original Drilling - As Drille	8,700.00	7,004.56	6,837.56	6,787.86	137.577	SF
Moser 41-27 - Original Drilling - Original Drilling - As Drille	886.57	857.60	6,582.96	6,578.29	1,407.556	CC
Moser 41-27 - Original Drilling - Original Drilling - As Drille	900.00	865.49	6,582.97	6,578.23	1,390.352	ES
Moser 41-27 - Original Drilling - Original Drilling - As Drille	9,400.00	7,061.94	8,363.95	8,310.23	155.678	SF
Moser H26-11 - Original Drilling - Original Drilling - As Dri	6,722.70	6,613.20	4,301.83	4,262.77	110.110	CC, ES
Moser H26-11 - Original Drilling - Original Drilling - As Dri	7,400.00	6,957.68	4,488.65	4,445.73	104.590	SF
Moser H26-12 - Wellbore #1 - Wellbore #1 - As Drilled	6,856.14	6,900.01	5,265.83	5,225.60	130.894	CC, ES
Moser H26-12 - Wellbore #1 - Wellbore #1 - As Drilled	9,400.00	7,151.14	6,443.73	6,389.08	117.901	SF
Moser H26-13 - Wellbore #1 - Wellbore #1 - As Drilled	7,119.14	6,870.60	4,985.31	4,944.60	122.454	CC, ES
Moser H26-13 - Wellbore #1 - Wellbore #1 - As Drilled	10,100.00	7,177.91	6,077.23	6,016.98	100.854	SF
Moser H26-14 - Original Drilling - Original Drilling - As Dr	7,096.35	6,830.58	3,434.59	3,394.11	84.845	CC
Moser H26-14 - Original Drilling - Original Drilling - As Dr	7,100.00	6,832.10	3,434.60	3,394.10	84.806	ES
Moser H26-14 - Original Drilling - Original Drilling - As Dr	8,600.00	6,908.89	3,884.64	3,835.00	78.255	SF
Moser H26-18D - Original Drilling - Original Drilling - As D	0.00	0.00	4,420.07			
Moser H26-18D - Original Drilling - Original Drilling - As D	6,950.00	7,216.59	4,792.80	4,731.66	78.390	SF
Moser H26-24 - Original Drilling - Original Drilling - As Dr	6,798.26	6,757.15	3,406.28	3,366.62	85.898	CC
Moser H26-24 - Original Drilling - Original Drilling - As Dr	6,800.00	6,758.66	3,406.28	3,366.61	85.875	ES
Moser H26-24 - Original Drilling - Original Drilling - As Dr	7,400.00	7,098.64	3,546.19	3,502.92	81.956	SF
Moser H26-25 - Original Drilling - Original Drilling - As Dr	6,910.49	6,868.61	4,092.84	4,052.63	101.778	CC, ES
Moser H26-25 - Original Drilling - Original Drilling - As Dr	8,500.00	7,053.65	4,683.12	4,633.86	95.063	SF
Moser H26-27D - Original Drilling - Original Drilling - As D	0.00	13.44	4,444.38			
Moser H26-27D - Original Drilling - Original Drilling - As D	7,000.00	7,047.31	5,372.45	5,328.36	121.848	SF
Moser H26-28D - Original Drilling - Original Drilling - As D	0.00	14.61	4,437.29			
Moser H26-28D - Original Drilling - Original Drilling - As D	11,000.00	11,000.00	9,714.28	9,599.81	84.868	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 - DJ Basin	Local Co-ordinate Reference:	Well Emmy State H36-787
Project:	Mustang	TVD Reference:	WELL @ 4849.00ft (Original Well Elev)
Reference Site:	H Section 25	MD Reference:	WELL @ 4849.00ft (Original Well Elev)
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Emmy State H36-787	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
H Section 26						
Moser H26-29D - Original Drilling - Original Drilling - As D	0.00	17.74	4,430.30			
Moser H26-29D - Original Drilling - Original Drilling - As D	200.00	200.33	4,430.85	4,430.05	5,525.454	ES
Moser H26-29D - Original Drilling - Original Drilling - As D	8,700.00	8,700.00	7,800.10	7,698.96	77.126	SF
Moser, Wesley E. G. U. B1 (PA) - Original Drilling - Origin	7,005.22	6,838.58	4,647.27	4,493.92	30.306	CC
Moser, Wesley E. G. U. B1 (PA) - Original Drilling - Origin	7,050.00	6,867.03	4,647.82	4,493.75	30.167	ES
Moser, Wesley E. G. U. B1 (PA) - Original Drilling - Origin	7,400.00	6,997.47	4,692.13	4,533.96	29.665	SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Emmy State H36-787
Project:	Mustang	TVD Reference:	WELL @ 4849.00ft (Original Well Elev)
Reference Site:	H Section 25	MD Reference:	WELL @ 4849.00ft (Original Well Elev)
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Emmy State H36-787	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
H Section 35						
Cannon Farms 01-35C - Original Drilling - Original Drilling	11,341.65	7,004.93	1,328.25	1,255.97	18.376	CC, ES
Cannon Farms 01-35C - Original Drilling - Original Drilling	11,600.00	7,001.44	1,353.12	1,277.84	17.975	SF
Cannon H35-03D - Original Drilling - Original Drilling - As	10,884.45	6,900.01	3,766.20	3,698.39	55.540	CC
Cannon H35-03D - Original Drilling - Original Drilling - As	10,900.00	6,900.01	3,766.23	3,698.25	55.401	ES
Cannon H35-03D - Original Drilling - Original Drilling - As	11,923.93	6,934.44	3,906.92	3,829.18	50.261	SF
Cannon H35-09 - Original Drilling - Original Drilling - As D	10,403.17	6,983.35	972.33	904.26	14.285	CC, ES
Cannon H35-09 - Original Drilling - Original Drilling - As D	10,600.00	6,979.19	992.04	921.53	14.069	SF
Cannon H35-10 - Original Drilling - Original Drilling - As D	10,543.77	7,048.11	2,209.76	2,144.69	33.961	CC, ES
Cannon H35-10 - Original Drilling - Original Drilling - As D	11,100.00	7,049.92	2,278.69	2,207.97	32.220	SF
Cannon H35-11 - Original Drilling - Original Drilling - As D	10,453.28	6,933.74	3,280.79	3,216.73	51.215	CC
Cannon H35-11 - Original Drilling - Original Drilling - As D	10,500.00	6,934.26	3,281.12	3,216.55	50.812	ES
Cannon H35-11 - Original Drilling - Original Drilling - As D	11,600.00	6,947.48	3,475.39	3,400.90	46.651	SF
Cannon H35-12 - Original Drilling - Original Drilling - As D	10,595.34	7,044.67	4,744.01	4,678.45	72.366	CC
Cannon H35-12 - Original Drilling - Original Drilling - As D	10,600.00	7,044.71	4,744.01	4,678.40	72.312	ES
Cannon H35-12 - Original Drilling - Original Drilling - As D	11,923.93	7,054.84	4,926.52	4,848.51	63.153	SF
Cannon H35-13 - Wellbore #1 - Wellbore #1 - As Drilled	11,786.68	7,059.07	4,775.16	4,698.70	62.447	CC
Cannon H35-13 - Wellbore #1 - Wellbore #1 - As Drilled	11,800.00	7,058.71	4,775.18	4,698.57	62.331	ES
Cannon H35-13 - Wellbore #1 - Wellbore #1 - As Drilled	11,923.93	7,055.36	4,777.13	4,699.21	61.303	SF
Cannon H35-14 - Original Drilling - Original Drilling - As D	11,785.48	7,023.83	3,381.62	3,298.25	40.562	CC
Cannon H35-14 - Original Drilling - Original Drilling - As D	11,800.00	7,023.73	3,381.65	3,298.12	40.483	ES
Cannon H35-14 - Original Drilling - Original Drilling - As D	11,923.93	7,022.95	3,384.45	3,299.55	39.864	SF
Cannon H35-15 (PA) - Original Drilling - Original Drilling -	11,790.50	7,014.00	2,164.73	1,972.39	11.255	CC
Cannon H35-15 (PA) - Original Drilling - Original Drilling -	11,800.00	7,014.00	2,164.75	1,972.29	11.248	ES
Cannon H35-15 (PA) - Original Drilling - Original Drilling -	11,923.93	7,014.00	2,168.84	1,974.89	11.182	SF
Cannon H35-20 - Original Drilling - Original Drilling - As D	9,977.24	6,900.01	4,157.25	4,097.46	69.533	CC
Cannon H35-20 - Original Drilling - Original Drilling - As D	10,000.00	6,900.01	4,157.32	4,097.29	69.262	ES
Cannon H35-20 - Original Drilling - Original Drilling - As D	11,700.00	6,900.01	4,500.07	4,425.34	60.216	SF
Cannon H35-21 - Original Drilling - Original Drilling - As D	10,024.68	7,046.44	2,737.72	2,677.21	45.240	CC, ES
Cannon H35-21 - Original Drilling - Original Drilling - As D	10,900.00	7,048.51	2,874.25	2,805.46	41.782	SF
Cannon H35-22 - Original Drilling - Original Drilling - As D	9,917.16	7,016.03	1,809.23	1,749.97	30.532	CC, ES
Cannon H35-22 - Original Drilling - Original Drilling - As D	10,400.00	7,000.55	1,872.50	1,808.27	29.154	SF
Cannon H35-24 - Original Drilling - Original Drilling - As D	11,214.86	6,889.54	2,908.92	2,838.10	41.074	CC, ES
Cannon H35-24 - Original Drilling - Original Drilling - As D	11,923.93	6,900.01	2,994.08	2,916.28	38.482	SF
Cannon X02-27 - Original Drilling - Original Drilling - As D	11,923.93	7,013.02	1,764.42	1,689.16	23.444	CC, ES, SF
Cannon X02-28 - Original Drilling - Original Drilling - As D	11,923.93	6,959.77	2,923.82	2,846.71	37.913	CC, ES, SF
Cannon X02-29 - Original Drilling - Original Drilling - As D	11,923.93	7,146.86	4,250.19	4,172.46	54.682	CC, ES, SF
Foster 18-35 - Original Drilling - Original Drilling - As Drill	8,318.59	6,930.19	4,328.30	4,281.60	92.671	CC, ES
Foster 18-35 - Original Drilling - Original Drilling - As Drill	10,600.00	6,944.34	4,892.72	4,827.90	75.486	SF
Foster UPRR 31-35 #1 (PA) - Original Drilling - Original D	7,687.34	7,026.01	2,215.45	2,056.31	13.922	CC
Foster UPRR 31-35 #1 (PA) - Original Drilling - Original D	7,700.00	7,026.01	2,215.49	2,056.27	13.915	ES
Foster UPRR 31-35 #1 (PA) - Original Drilling - Original D	7,900.00	7,026.01	2,225.63	2,065.00	13.855	SF
Foster UPRR 32-35 - Original Drilling - Original Drilling - A	9,023.90	7,029.76	2,313.38	2,261.23	44.360	CC, ES
Foster UPRR 32-35 - Original Drilling - Original Drilling - A	9,800.00	7,032.69	2,440.09	2,380.68	41.071	SF
Foster UPRR 41-35 - Original Drilling - Original Drilling - A	7,874.63	7,014.59	882.42	828.54	16.377	CC, ES
Foster UPRR 41-35 - Original Drilling - Original Drilling - A	8,000.00	7,015.27	891.28	836.11	16.154	SF
Foster UPRR 42-35 #2 - Original Drilling - Original Drilling	8,969.43	7,044.92	899.83	848.18	17.424	CC, ES
Foster UPRR 42-35 #2 - Original Drilling - Original Drilling	9,100.00	7,048.07	909.24	855.86	17.031	SF
HSR Foster 03-35 - Original Drilling - Original Drilling - As	7,932.59	7,057.98	3,450.20	3,405.60	77.366	CC, ES
HSR Foster 03-35 - Original Drilling - Original Drilling - As	11,300.00	11,300.00	4,820.11	4,739.55	59.834	SF
HSR Foster 04-35 - Wellbore #1 - Wellbore #1 - As Drille	7,674.28	6,781.01	5,122.85	5,080.44	120.773	CC
HSR Foster 04-35 - Wellbore #1 - Wellbore #1 - As Drille	7,700.00	6,780.99	5,122.92	5,080.36	120.372	ES
HSR Foster 04-35 - Wellbore #1 - Wellbore #1 - As Drille	10,900.00	6,778.56	6,053.83	5,988.07	92.055	SF
HSR Foster 05-35 - Wellbore #1 - Wellbore #1 - As Drille	9,257.32	6,748.36	4,874.42	4,821.16	91.523	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 - DJ Basin	Local Co-ordinate Reference:	Well Emmy State H36-787
Project:	Mustang	TVD Reference:	WELL @ 4849.00ft (Original Well Elev)
Reference Site:	H Section 25	MD Reference:	WELL @ 4849.00ft (Original Well Elev)
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Emmy State H36-787	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan #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	9,300.00	6,748.50	4,874.61	4,820.95	90.839	ES
HSR Foster 05-35 - Wellbore #1 - Wellbore #1 - As Drille	11,700.00	6,756.81	5,452.21	5,378.80	74.274	SF
HSR Foster 06-35 - Original Drilling - Original Drilling - As	9,116.53	7,005.26	3,511.06	3,458.24	66.464	CC, ES
HSR Foster 06-35 - Original Drilling - Original Drilling - As	10,600.00	7,010.70	3,811.56	3,745.89	58.042	SF
UPRR 53 Pan Am Unit P1 - Original Drilling - Original Dri	8,474.26	7,011.75	1,423.17	1,375.20	29.665	CC
UPRR 53 Pan Am Unit P1 - Original Drilling - Original Dri	8,500.00	7,013.56	1,423.40	1,375.14	29.498	ES
UPRR 53 Pan Am Unit P1 - Original Drilling - Original Dri	8,800.00	7,012.31	1,459.97	1,408.66	28.455	SF
UPRR 53 Pan Am UT P2 - Original Drilling - Original Drill	8,165.33	6,877.85	3,909.94	3,864.42	85.894	CC
UPRR 53 Pan Am UT P2 - Original Drilling - Original Drill	8,200.00	6,877.85	3,910.09	3,864.31	85.402	ES
UPRR 53 Pan Am UT P2 - Original Drilling - Original Drill	10,200.00	6,877.94	4,407.67	4,346.19	71.695	SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Emmy State H36-787
Project:	Mustang	TVD Reference:	WELL @ 4849.00ft (Original Well Elev)
Reference Site:	H Section 25	MD Reference:	WELL @ 4849.00ft (Original Well Elev)
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Emmy State H36-787	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan #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 Dr	9,271.26	6,932.50	2,786.03	2,732.33	51.878	CC
Dechant 07-36 - Original Drilling - Original Drilling - As Dr	9,300.00	6,932.63	2,786.18	2,732.31	51.721	ES
Dechant 07-36 - Original Drilling - Original Drilling - As Dr	9,900.00	6,935.33	2,856.10	2,799.26	50.249	SF
Dechant 13N-1HZ - Production Hole - Production Hole - A	11,923.93	6,758.34	683.07	624.20	11.603	CC, ES, SF
Dechant 13N-1HZ - Surface Hole - Surface Hole - As Dril	565.88	543.91	5,494.45	5,491.59	1,923.024	CC
Dechant 13N-1HZ - Surface Hole - Surface Hole - As Dril	600.00	572.39	5,494.46	5,491.43	1,811.604	ES
Dechant 13N-1HZ - Surface Hole - Surface Hole - As Dril	11,923.93	600.00	6,494.71	6,453.63	158.127	SF
Dechant 14C-1HZ - Production Hole - Production Hole - A	11,923.93	6,779.21	1,693.40	1,619.28	22.847	CC, ES, SF
Dechant 14C-1HZ - Surface Hole - Surface Hole - As Dril	254.98	235.98	5,499.06	5,497.97	5,051.794	CC
Dechant 14C-1HZ - Surface Hole - Surface Hole - As Dril	615.69	596.71	5,499.44	5,496.29	1,743.455	ES
Dechant 14C-1HZ - Surface Hole - Surface Hole - As Dril	11,923.93	610.00	6,503.41	6,462.34	158.325	SF
Dechant 15-36 - Original Drilling - Original Drilling - As Dr	11,724.10	6,979.71	2,837.85	2,744.47	30.391	CC, ES
Dechant 15-36 - Original Drilling - Original Drilling - As Dr	11,923.93	6,980.54	2,844.88	2,750.28	30.073	SF
Dechant 24-36 - Original Drilling - Original Drilling - As Dr	933.67	906.18	3,191.61	3,186.66	644.327	CC, ES
Dechant 24-36 - Original Drilling - Original Drilling - As Dr	10,800.00	7,109.76	3,687.93	3,619.41	53.826	SF
Dechant 35N-E1HZ - Production Hole - Production Hole -	11,923.93	6,750.00	1,440.16	1,367.50	19.820	CC, ES, SF
Dechant 35N-E1HZ - Surface Hole - Surface Hole - As D	576.94	556.93	5,497.81	5,494.88	1,880.562	CC
Dechant 35N-E1HZ - Surface Hole - Surface Hole - As D	600.00	576.44	5,497.81	5,494.77	1,806.494	ES
Dechant 35N-E1HZ - Surface Hole - Surface Hole - As D	11,923.93	612.00	6,495.79	6,454.71	158.139	SF
Dechant 35N-W1HZ - Original Drilling - Original Drilling -	11,923.93	6,702.97	1,077.90	1,008.18	15.460	CC, ES, SF
Dechant 36N-W1HZ - Original Drilling - Original Drilling -	11,923.93	6,600.01	2,057.58	1,981.60	27.080	CC, ES, SF
Dechant 37N-E1HZ - Production Hole - Production Hole -	11,923.93	6,770.00	4,073.08	3,996.18	52.965	CC, ES, SF
Dechant 37N-E1HZ - Surface Hole - Surface Hole - As D	100.00	77.49	5,651.43	5,651.21	10,000.000	CC
Dechant 37N-E1HZ - Surface Hole - Surface Hole - As D	600.00	545.92	5,653.71	5,650.78	1,924.233	ES
Dechant 37N-E1HZ - Surface Hole - Surface Hole - As D	11,923.93	648.00	6,824.16	6,782.43	163.536	SF
Dechant 37N-W1HZ - Production Hole - Production Hole	11,923.93	7,244.00	3,372.28	3,294.91	43.587	CC, ES, SF
Dechant 37N-W1HZ - Surface Hole - Surface Hole - As D	0.00	0.00	5,677.36			
Dechant 37N-W1HZ - Surface Hole - Surface Hole - As D	700.00	655.00	5,677.66	5,674.12	1,604.155	ES
Dechant 37N-W1HZ - Surface Hole - Surface Hole - As D	11,923.93	655.00	6,826.44	6,784.67	163.433	SF
Dechant State 15C-1HZ - Wellbore #1 - As Drilled	149.47	133.91	1,850.15	1,849.58	3,244.671	CC
Dechant State 15C-1HZ - Wellbore #1 - As Drilled	2,221.82	2,218.21	1,852.53	1,841.87	173.865	ES
Dechant State 15C-1HZ - Wellbore #1 - As Drilled	11,923.93	11,508.57	2,978.11	2,868.85	27.255	SF
Dechant State 16C-1HZ - Original Drilling - Original Drillin	2,594.85	2,594.85	3,350.98	3,336.06	224.619	CC
Dechant State 16C-1HZ - Original Drilling - Original Drillin	2,700.00	3,104.55	3,352.77	3,335.71	196.550	ES
Dechant State 16C-1HZ - Original Drilling - Original Drillin	11,923.93	11,933.39	4,246.34	4,101.26	29.269	SF
Dechant State 36N-E1HZ - Wellbore #1 - Wellbore #1	2,232.71	2,234.86	1,827.26	1,816.61	171.648	CC, ES
Dechant State 36N-E1HZ - Wellbore #1 - Wellbore #1	11,923.93	11,272.00	2,629.27	2,521.77	24.456	SF
Dechant State 37N-E36HZ - Wellbore #1 - As Drilled	2,730.02	3,300.50	3,295.85	3,280.12	209.555	CC, ES
Dechant State 37N-E36HZ - Wellbore #1 - As Drilled	11,923.93	11,466.00	3,978.61	3,869.49	36.461	SF
Dechant State 37N-W36HZ - Wellbore #1 - As Drilled	679.88	663.88	1,868.29	1,864.88	549.150	CC
Dechant State 37N-W36HZ - Wellbore #1 - As Drilled	800.00	774.14	1,868.61	1,864.74	482.440	ES
Dechant State 37N-W36HZ - Wellbore #1 - As Drilled	11,923.93	11,490.00	3,438.52	3,328.90	31.367	SF
Dechant State 38N-1HZ - Wellbore #1 - As Drilled	506.80	477.80	3,613.56	3,611.10	1,468.976	CC
Dechant State 38N-1HZ - Wellbore #1 - As Drilled	900.00	865.38	3,614.44	3,610.23	857.383	ES
Dechant State 38N-1HZ - Wellbore #1 - As Drilled	11,923.93	11,378.87	4,710.39	4,601.44	43.234	SF
Dechant State H36-11D - Original Drilling - Original Drillin	10,489.49	6,962.49	1,649.97	1,585.69	25.666	CC
Dechant State H36-11D - Original Drilling - Original Drillin	10,500.00	6,962.30	1,650.01	1,585.68	25.649	ES
Dechant State H36-11D - Original Drilling - Original Drillin	10,600.00	6,960.46	1,653.67	1,588.97	25.560	SF
Dechant State H36-18D - Dechant State H36-18D Gyros	387.83	354.83	1,526.18	1,524.39	851.038	CC
Dechant State H36-18D - Dechant State H36-18D Gyros	1,300.00	1,253.63	1,528.02	1,520.95	216.017	ES
Dechant State H36-18D - Dechant State H36-18D Gyros	9,700.00	7,215.07	2,502.83	2,429.40	34.083	SF
Dechant State H36-18D - Dechant State H36-18D OH - A	387.82	367.83	1,526.14	1,524.35	851.035	CC
Dechant State H36-18D - Dechant State H36-18D OH - A	1,300.00	1,266.63	1,527.98	1,520.91	216.012	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 - DJ Basin	Local Co-ordinate Reference:	Well Emmy State H36-787
Project:	Mustang	TVD Reference:	WELL @ 4849.00ft (Original Well Elev)
Reference Site:	H Section 25	MD Reference:	WELL @ 4849.00ft (Original Well Elev)
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Emmy State H36-787	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
H Section 36						
Dechant State H36-18D - Dechant State H36-18D OH - A	9,700.00	7,228.07	2,502.88	2,429.45	34.084	SF
Dechant State H36-19 - Original Drilling - Original Drilling	8,114.99	7,038.67	758.20	712.37	16.544	CC, ES, SF
Dechant State H36-20D - Dechant State H36-20D Gyros	9,700.00	7,147.87	1,020.69	953.84	15.267	SF
Dechant State H36-20D - Dechant State H36-20D Gyros	9,893.86	7,152.54	1,002.13	937.86	15.593	CC, ES
Dechant State H36-20D - Dechant State H36-20D OH - A	9,700.00	7,160.87	1,020.70	953.84	15.267	SF
Dechant State H36-20D - Dechant State H36-20D OH - A	9,893.87	7,165.54	1,002.13	937.86	15.593	CC, ES
Dechant State H36-21D - Dechant State H36-21D Gyros	9,850.18	7,060.08	2,214.43	2,149.11	33.897	CC, ES, SF
Dechant State H36-21D - Dechant State H36-21D OH - A	9,850.20	7,073.08	2,214.41	2,149.08	33.897	CC, ES, SF
Dechant State H36-24 - Original Drilling - Original Drilling	11,046.28	7,172.23	2,307.57	2,236.37	32.408	CC, ES
Dechant State H36-24 - Original Drilling - Original Drilling	11,400.00	7,168.58	2,334.52	2,261.42	31.935	SF
Dechant State H36-31D - Dechant State H36-31D OH - A	8,500.34	7,150.19	239.55	190.82	4.916	CC, ES
Dechant State H36-31D - Dechant State H36-31D OH - A	8,600.00	7,150.85	259.45	206.63	4.912	SF
Dechant State H36-32D - Dechant State H36-32D Gyros	9,743.65	6,950.00	254.35	193.24	4.162	CC, ES, SF
Dechant State H36-32D - Dechant State H36-32D OH - A	9,745.70	7,081.09	226.21	162.52	3.552	CC, ES, SF
Dechant State H36-33 - Dechant State H36-33D Gyros -	10,959.03	7,168.30	148.81	79.55	2.148	CC, ES
Dechant State H36-33 - Dechant State H36-33D Gyros -	11,000.00	7,168.17	154.35	81.13	2.108	SF
Dechant State H36-33 - Dechant State H36-33D OH - As	10,959.05	7,181.30	148.80	79.54	2.148	CC, ES
Dechant State H36-33 - Dechant State H36-33D OH - As	11,000.00	7,181.17	154.34	81.12	2.108	SF
HSR Dechant State 01-36 - Wellbore #1 - As Drilled	2,259.49	2,293.70	3,620.23	3,607.46	283.664	CC, ES
HSR Dechant State 01-36 - Wellbore #1 - As Drilled	9,500.00	6,932.27	4,842.26	4,791.12	94.674	SF
HSR Dechant State 02-36 - Original Drilling - Original Dri	2,362.53	2,412.50	1,979.64	1,966.25	147.862	CC
HSR Dechant State 02-36 - Original Drilling - Original Dri	2,400.00	2,450.57	1,979.83	1,966.23	145.642	ES
HSR Dechant State 02-36 - Original Drilling - Original Dri	8,100.00	6,943.04	2,754.98	2,710.91	62.512	SF
HSR Dechant/State 07-36 (PA) - Original Drilling - Origina	2,200.00	2,160.00	3,129.16	3,081.16	65.192	CC
HSR Dechant/State 07-36 (PA) - Original Drilling - Origina	2,300.00	2,259.98	3,130.24	3,080.03	62.347	ES
HSR Dechant/State 07-36 (PA) - Original Drilling - Origina	9,100.00	6,979.00	3,334.88	3,167.80	19.960	SF
Spike State GWS H36-03 - Original Drilling - Original Dril	339.90	299.91	1,284.87	1,283.38	860.380	CC
Spike State GWS H36-03 - Original Drilling - Original Dril	2,000.00	1,954.34	1,288.63	1,277.63	117.146	ES
Spike State GWS H36-03 - Original Drilling - Original Dril	7,900.00	7,011.88	1,789.44	1,745.58	40.804	SF
Spike State GWS H36-04 - Original Drilling - Original Dril	7,568.62	6,996.33	272.02	221.07	5.339	CC, ES, SF
Spike State GWS H36-13 - Original Drilling - Original Dril	11,844.78	6,936.45	308.74	234.14	4.139	CC, ES, SF
Spike State GWS H36-14 - Original Drilling - Original Dril	11,838.98	6,971.94	1,942.31	1,865.67	25.343	CC, ES
Spike State GWS H36-14 - Original Drilling - Original Dril	11,923.93	6,967.52	1,944.16	1,867.14	25.240	SF
Spike State H36-02J - Original Drilling - Original Drilling -	8,768.06	6,972.26	1,251.06	1,167.84	15.033	CC, ES
Spike State H36-02J - Original Drilling - Original Drilling -	8,800.00	6,972.80	1,251.47	1,168.14	15.019	SF
Spike State H36-05 - Original Drilling - Original Drilling - A	8,970.73	7,008.04	248.63	196.83	4.800	CC, ES, SF
Spike State H36-11J - Original Drilling - Original Drilling -	11,108.85	6,990.66	1,075.04	1,005.03	15.355	CC, ES, SF
Spike State H36-12 - Original Drilling - Original Drilling - A	10,241.60	7,000.44	170.98	108.68	2.745	CC, ES, SF
X Section 01						
Dechant USX X1-6 - Wellbore #1 - As Drilled	11,923.93	6,976.83	2,549.16	2,483.58	38.873	CC, ES, SF
Dechant USX X1-7 - Wellbore #1 - As Drilled	11,923.93	7,008.56	3,770.65	3,701.50	54.529	CC, ES, SF
Dechant X01-02 - Wellbore #1 - As Drilled	11,923.93	7,100.00	3,121.49	3,043.56	40.054	CC, ES, SF
Dechant X01-03 - Wellbore #1 - Wellbore #1	11,923.93	6,960.62	2,136.57	2,062.73	28.934	CC, ES, SF
Dechant X01-04 - Wellbore #1 - As Drilled	11,923.93	7,011.67	1,151.38	1,094.12	20.108	CC, ES, SF
Dechant X01-06 - Wellbore #1 - As Drilled	11,923.93	7,003.09	3,248.34	3,182.47	49.313	CC, ES, SF
Dechant X12-01 - Wellbore #1 - As Drilled	11,923.93	7,000.00	2,385.15	2,337.48	50.028	CC, ES, SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Emmy State H36-787
Project:	Mustang	TVD Reference:	WELL @ 4849.00ft (Original Well Elev)
Reference Site:	H Section 25	MD Reference:	WELL @ 4849.00ft (Original Well Elev)
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Emmy State H36-787	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan #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						
X Section 02						
Greenleaf 1C-2HZ - Original Hole - As-Drilled	11,923.93	12,178.00	1,191.76	1,115.71	15.671	CC, ES, SF
Greenleaf 1N-2HZ - Original Hole - As-Drilled	11,923.93	11,854.00	1,623.02	1,519.93	15.745	CC, ES, SF
Greenleaf 26N-2HZ - Original Hole - As-Drilled	11,923.93	11,967.00	1,067.46	1,006.69	17.566	CC, ES, SF
Greenleaf 27N-2HZ - Original Hole - As-Drilled	11,923.93	11,754.00	2,305.91	2,185.91	19.215	CC, ES, SF
Greenleaf 28C-2HZ - Original Hole - Original Hole	11,923.93	12,005.00	3,017.29	2,889.72	23.653	CC, ES, SF
Greenleaf 29C-2HZ - Original Hole - Original Hole	11,923.93	12,733.00	4,108.12	3,971.27	30.020	CC, ES, SF
Greenleaf 29N-2HZ - Original Hole - Original Hole	11,923.93	12,533.00	4,344.30	4,207.92	31.855	CC, ES, SF
Greenleaf 2N-2HZ - Original Hole - Original Hole	11,923.93	12,018.00	2,877.19	2,749.12	22.464	CC, ES, SF
Greenleaf 30N-2HZ - Original Hole - Original Hole	11,923.93	11,541.00	5,441.06	5,309.81	41.455	CC, ES, SF
Greenleaf 3N-2HZR - Original Hole - Original Hole	11,923.93	12,432.00	3,395.62	3,264.40	25.878	CC, ES, SF
Greenleaf 4N-2HZ - Original Hole - Original Hole	11,923.93	12,764.00	4,645.42	4,507.54	33.691	CC, ES, SF
Harkis 11-02 - Original Drilling - Original Drilling - As Drille	11,923.93	6,922.13	5,037.48	4,962.93	67.570	CC, ES, SF
Harkis 31-2 - Original Hole - As-Drilled	11,923.93	7,035.36	2,429.35	2,359.85	34.955	CC, ES, SF
Pioneer 1-2 - Original Hole - As-Drilled	11,923.93	7,269.43	1,275.91	1,208.98	19.062	CC, ES, SF
Pioneer 3-2 - Original Hole - Original Hole	11,923.93	7,290.42	3,610.86	3,496.78	31.653	CC, ES, SF
Pioneer 3-2 - Surface Gyros - Surface Gyros	11,923.93	7,273.42	3,610.93	3,495.44	31.268	CC, ES, SF