

Project: Mustang  
Site: H Section 25  
Well: Emmy State H36-773  
Wellbore: Wellbore #1  
Design: Plan #2

# Northern Region - DJ Basin

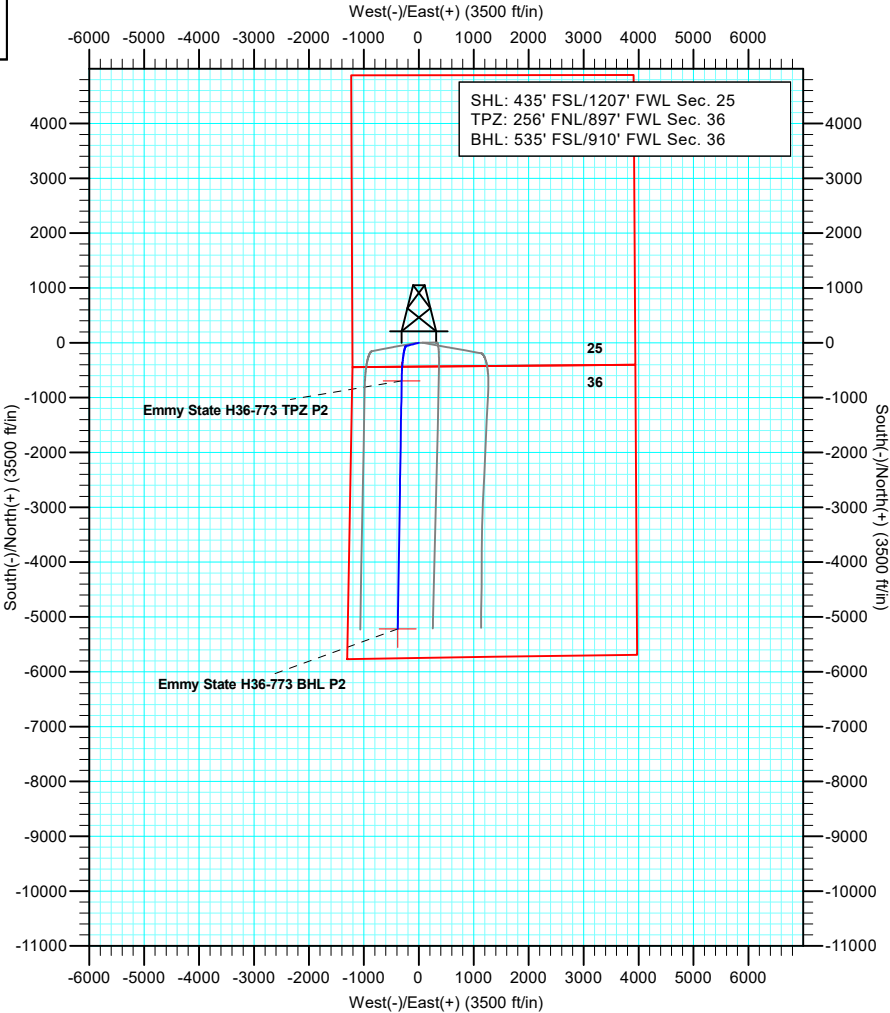
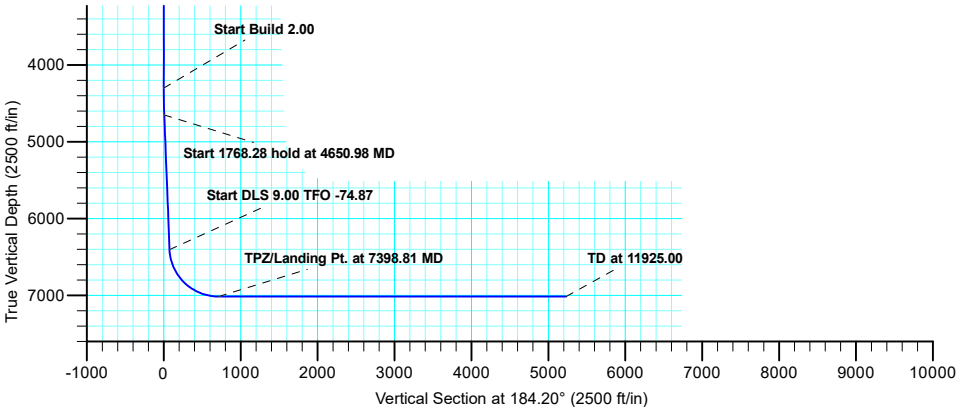
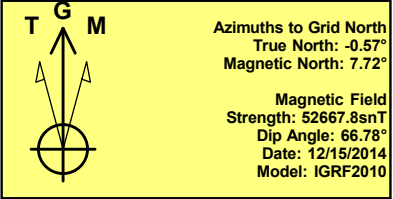
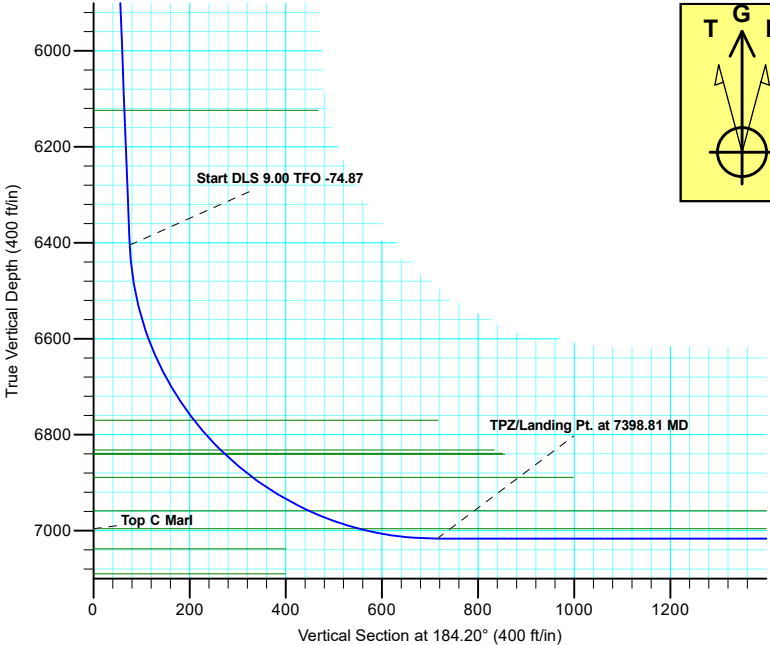
Geodetic System: US State Plane 1983  
Datum: North American Datum 1983  
Ellipsoid: GRS 1980  
Zone: Colorado Northern Zone  
System Datum: Mean Sea Level

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	4300.00	0.00	0.00	4300.00	0.00	0.00	0.00	0.00	0.00
3	4650.98	7.02	255.66	4650.11	-5.32	-20.80	2.00	255.66	6.83
4	6419.26	7.02	255.66	6405.13	-58.85	-230.17	0.00	0.00	75.55
5	7398.81	90.00	180.89	7017.00	-693.93	-312.76	9.00	-74.87	714.97
6	11925.00	90.00	180.89	7017.00	-5219.57	-383.19	0.00	0.00	5233.62

WELL DETAILS: Emmy State H36-773

+N/-S	+E/-W	Ground Level: Northing	Ground Level: Easting	Ground Level: Latitude	Ground Level: Longitude	Slot
0.00	0.00	1313320.86	3246707.16	40.1900899	-104.6169100	



Plan: Plan #2 (Emmy State H36-773/Wellbore #1)

Created By: Shelly C. Peterkin Date: 13:30, May 29 2019

# **Northern Region - DJ Basin**

**Mustang**

**H Section 25**

**Emmy State H36-773**

**Wellbore #1**

**Plan: Plan #2**

## **Standard Planning Report**

**29 May, 2019**

# Noble Energy, Inc.

## Planning Report

<b>Database:</b>	EDMP	<b>Local Co-ordinate Reference:</b>	Well Emmy State H36-773
<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	WELL @ 4847.00ft (Original Well Elev)
<b>Project:</b>	Mustang	<b>MD Reference:</b>	WELL @ 4847.00ft (Original Well Elev)
<b>Site:</b>	H Section 25	<b>North Reference:</b>	Grid
<b>Well:</b>	Emmy State H36-773	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2		

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

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

<b>Well</b>	Emmy State H36-773			
<b>Well Position</b>	<b>+N/-S</b>	-116.67 ft	<b>Northing:</b>	1,313,320.86 usft
	<b>+E/-W</b>	837.59 ft	<b>Easting:</b>	3,246,707.16 usft
<b>Position Uncertainty</b>		0.00 ft	<b>Wellhead Elevation:</b>	0.00 ft
			<b>Ground Level:</b>	4,817.00 ft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	12/15/2014	8.30	66.78	52,667.75059670

<b>Design</b>	Plan #2			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD)</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Direction</b>
	(ft)	(ft)	(ft)	(°)
	0.00	0.00	0.00	184.20

<b>Plan Sections</b>										
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	
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,650.98	7.02	255.66	4,650.11	-5.32	-20.80	2.00	2.00	0.00	255.66	
6,419.26	7.02	255.66	6,405.13	-58.85	-230.17	0.00	0.00	0.00	0.00	
7,398.81	90.00	180.89	7,017.00	-693.93	-312.76	9.00	8.47	-7.63	-74.87	Emmy State H36-773
11,925.00	90.00	180.89	7,017.00	-5,219.57	-383.19	0.00	0.00	0.00	0.00	Emmy State H36-773

# Noble Energy, Inc.

## Planning Report

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<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	WELL @ 4847.00ft (Original Well Elev)
<b>Project:</b>	Mustang	<b>MD Reference:</b>	WELL @ 4847.00ft (Original Well Elev)
<b>Site:</b>	H Section 25	<b>North Reference:</b>	Grid
<b>Well:</b>	Emmy State H36-773	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	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
573.00	0.00	0.00	573.00	0.00	0.00	0.00	0.00	0.00	0.00
Pierre									
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
725.00	0.00	0.00	725.00	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
1,613.00	0.00	0.00	1,613.00	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
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,880.00	0.00	0.00	3,880.00	0.00	0.00	0.00	0.00	0.00	0.00
Parkman									
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
4,400.00	2.00	255.66	4,399.98	-0.43	-1.69	0.55	2.00	2.00	0.00

# Noble Energy, Inc.

## Planning Report

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<b>Site:</b>	H Section 25	<b>North Reference:</b>	Grid
<b>Well:</b>	Emmy State H36-773	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	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)
4,471.10	3.42	255.66	4,471.00	-1.27	-4.95	1.62	2.00	2.00	0.00
<b>Sussex</b>									
4,500.00	4.00	255.66	4,499.84	-1.73	-6.76	2.22	2.00	2.00	0.00
4,600.00	6.00	255.66	4,599.45	-3.89	-15.20	4.99	2.00	2.00	0.00
4,650.98	7.02	255.66	4,650.11	-5.32	-20.80	6.83	2.00	2.00	0.00
<b>Start 1768.28 hold at 4650.98 MD</b>									
4,700.00	7.02	255.66	4,698.76	-6.80	-26.61	8.73	0.00	0.00	0.00
4,800.00	7.02	255.66	4,798.01	-9.83	-38.45	12.62	0.00	0.00	0.00
4,900.00	7.02	255.66	4,897.26	-12.86	-50.29	16.51	0.00	0.00	0.00
5,000.00	7.02	255.66	4,996.51	-15.89	-62.13	20.39	0.00	0.00	0.00
5,100.00	7.02	255.66	5,095.76	-18.91	-73.97	24.28	0.00	0.00	0.00
5,157.68	7.02	255.66	5,153.00	-20.66	-80.80	26.52	0.00	0.00	0.00
<b>Shannon</b>									
5,200.00	7.02	255.66	5,195.01	-21.94	-85.81	28.16	0.00	0.00	0.00
5,300.00	7.02	255.66	5,294.26	-24.97	-97.65	32.05	0.00	0.00	0.00
5,400.00	7.02	255.66	5,393.51	-27.99	-109.49	35.94	0.00	0.00	0.00
5,500.00	7.02	255.66	5,492.76	-31.02	-121.33	39.82	0.00	0.00	0.00
5,600.00	7.02	255.66	5,592.01	-34.05	-133.17	43.71	0.00	0.00	0.00
5,700.00	7.02	255.66	5,691.26	-37.08	-145.01	47.59	0.00	0.00	0.00
5,800.00	7.02	255.66	5,790.51	-40.10	-156.85	51.48	0.00	0.00	0.00
5,900.00	7.02	255.66	5,889.76	-43.13	-168.69	55.37	0.00	0.00	0.00
6,000.00	7.02	255.66	5,989.01	-46.16	-180.53	59.25	0.00	0.00	0.00
6,100.00	7.02	255.66	6,088.26	-49.19	-192.37	63.14	0.00	0.00	0.00
6,136.01	7.02	255.66	6,124.00	-50.28	-196.63	64.54	0.00	0.00	0.00
<b>Teepee Buttes</b>									
6,200.00	7.02	255.66	6,187.51	-52.21	-204.21	67.02	0.00	0.00	0.00
6,300.00	7.02	255.66	6,286.76	-55.24	-216.05	70.91	0.00	0.00	0.00
6,400.00	7.02	255.66	6,386.01	-58.27	-227.89	74.80	0.00	0.00	0.00
6,419.26	7.02	255.66	6,405.13	-58.85	-230.17	75.55	0.00	0.00	0.00
<b>Start DLS 9.00 TFO -74.87</b>									
6,450.00	8.19	236.56	6,435.60	-60.52	-233.82	77.48	9.00	3.80	-62.13
6,500.00	11.33	217.24	6,484.89	-66.40	-239.76	83.78	9.00	6.29	-38.63
6,550.00	15.17	206.88	6,533.55	-76.15	-245.70	93.94	9.00	7.68	-20.74
6,600.00	19.29	200.73	6,581.30	-89.72	-251.58	107.90	9.00	8.24	-12.29
6,650.00	23.55	196.71	6,627.84	-107.02	-257.38	125.58	9.00	8.51	-8.04
6,700.00	27.88	193.87	6,672.88	-127.95	-263.06	146.86	9.00	8.66	-5.68
6,750.00	32.25	191.74	6,716.14	-152.37	-268.58	171.63	9.00	8.75	-4.25
6,800.00	36.65	190.08	6,757.36	-180.14	-273.91	199.71	9.00	8.80	-3.33
6,815.90	38.06	189.62	6,770.00	-189.64	-275.56	209.31	9.00	8.83	-2.89
<b>Sharon Springs</b>									
6,850.00	41.07	188.73	6,796.29	-211.08	-279.02	230.95	9.00	8.84	-2.62
6,899.04	45.42	187.62	6,832.00	-244.33	-283.78	264.45	9.00	8.87	-2.27
<b>Top A Chalk</b>									
6,900.00	45.50	187.60	6,832.67	-245.01	-283.87	265.14	9.00	8.88	-2.09
6,909.09	46.31	187.41	6,839.00	-251.49	-284.72	271.66	9.00	8.88	-2.06
<b>Top A Marl</b>									
6,911.99	46.57	187.35	6,841.00	-253.57	-284.99	273.76	9.00	8.88	-2.02
<b>Top B Chalk</b>									
6,950.00	49.95	186.62	6,866.30	-281.72	-288.44	302.08	9.00	8.89	-1.91
6,986.53	53.20	185.99	6,889.00	-310.15	-291.58	330.67	9.00	8.90	-1.73
<b>Top B Marl</b>									
7,000.00	54.40	185.77	6,896.96	-320.97	-292.69	341.54	9.00	8.90	-1.63

# Noble Energy, Inc.

## Planning Report

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<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	WELL @ 4847.00ft (Original Well Elev)
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<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	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)
7,050.00	58.85	185.01	6,924.46	-362.53	-296.60	383.27	9.00	8.91	-1.52
7,100.00	63.31	184.32	6,948.63	-406.14	-300.15	427.02	9.00	8.92	-1.39
7,123.98	65.45	184.00	6,959.00	-427.70	-301.72	448.64	9.00	8.92	-1.31
Top C Chalk									
7,150.00	67.77	183.67	6,969.33	-451.53	-303.32	472.52	9.00	8.93	-1.26
7,200.00	72.24	183.07	6,986.42	-498.42	-306.08	519.49	9.00	8.93	-1.20
7,234.26	75.30	182.68	6,996.00	-531.27	-307.73	552.37	9.00	8.93	-1.15
Top C Marl									
7,250.00	76.70	182.50	6,999.81	-546.52	-308.42	567.64	9.00	8.93	-1.13
7,300.00	81.17	181.95	7,009.40	-595.54	-310.32	616.67	9.00	8.93	-1.10
7,350.00	85.64	181.41	7,015.14	-645.18	-311.78	666.28	9.00	8.94	-1.08
7,398.81	90.00	180.89	7,017.00	-693.93	-312.76	714.97	9.00	8.94	-1.06
TPZ/Landing Pt. at 7398.81 MD									
7,400.00	90.00	180.89	7,017.00	-695.12	-312.78	716.16	0.00	0.00	0.00
7,500.00	90.00	180.89	7,017.00	-795.11	-314.33	815.99	0.00	0.00	0.00
7,600.00	90.00	180.89	7,017.00	-895.10	-315.89	915.82	0.00	0.00	0.00
7,700.00	90.00	180.89	7,017.00	-995.09	-317.44	1,015.66	0.00	0.00	0.00
7,800.00	90.00	180.89	7,017.00	-1,095.07	-319.00	1,115.49	0.00	0.00	0.00
7,900.00	90.00	180.89	7,017.00	-1,195.06	-320.56	1,215.32	0.00	0.00	0.00
8,000.00	90.00	180.89	7,017.00	-1,295.05	-322.11	1,315.16	0.00	0.00	0.00
8,100.00	90.00	180.89	7,017.00	-1,395.04	-323.67	1,414.99	0.00	0.00	0.00
8,200.00	90.00	180.89	7,017.00	-1,495.03	-325.23	1,514.82	0.00	0.00	0.00
8,300.00	90.00	180.89	7,017.00	-1,595.01	-326.78	1,614.66	0.00	0.00	0.00
8,400.00	90.00	180.89	7,017.00	-1,695.00	-328.34	1,714.49	0.00	0.00	0.00
8,500.00	90.00	180.89	7,017.00	-1,794.99	-329.89	1,814.33	0.00	0.00	0.00
8,600.00	90.00	180.89	7,017.00	-1,894.98	-331.45	1,914.16	0.00	0.00	0.00
8,700.00	90.00	180.89	7,017.00	-1,994.96	-333.01	2,013.99	0.00	0.00	0.00
8,800.00	90.00	180.89	7,017.00	-2,094.95	-334.56	2,113.83	0.00	0.00	0.00
8,900.00	90.00	180.89	7,017.00	-2,194.94	-336.12	2,213.66	0.00	0.00	0.00
9,000.00	90.00	180.89	7,017.00	-2,294.93	-337.68	2,313.49	0.00	0.00	0.00
9,100.00	90.00	180.89	7,017.00	-2,394.92	-339.23	2,413.33	0.00	0.00	0.00
9,200.00	90.00	180.89	7,017.00	-2,494.90	-340.79	2,513.16	0.00	0.00	0.00
9,300.00	90.00	180.89	7,017.00	-2,594.89	-342.34	2,612.99	0.00	0.00	0.00
9,400.00	90.00	180.89	7,017.00	-2,694.88	-343.90	2,712.83	0.00	0.00	0.00
9,500.00	90.00	180.89	7,017.00	-2,794.87	-345.46	2,812.66	0.00	0.00	0.00
9,600.00	90.00	180.89	7,017.00	-2,894.86	-347.01	2,912.49	0.00	0.00	0.00
9,700.00	90.00	180.89	7,017.00	-2,994.84	-348.57	3,012.33	0.00	0.00	0.00
9,800.00	90.00	180.89	7,017.00	-3,094.83	-350.13	3,112.16	0.00	0.00	0.00
9,900.00	90.00	180.89	7,017.00	-3,194.82	-351.68	3,211.99	0.00	0.00	0.00
10,000.00	90.00	180.89	7,017.00	-3,294.81	-353.24	3,311.83	0.00	0.00	0.00
10,100.00	90.00	180.89	7,017.00	-3,394.80	-354.79	3,411.66	0.00	0.00	0.00
10,200.00	90.00	180.89	7,017.00	-3,494.78	-356.35	3,511.49	0.00	0.00	0.00
10,300.00	90.00	180.89	7,017.00	-3,594.77	-357.91	3,611.33	0.00	0.00	0.00
10,400.00	90.00	180.89	7,017.00	-3,694.76	-359.46	3,711.16	0.00	0.00	0.00
10,500.00	90.00	180.89	7,017.00	-3,794.75	-361.02	3,810.99	0.00	0.00	0.00
10,600.00	90.00	180.89	7,017.00	-3,894.73	-362.57	3,910.83	0.00	0.00	0.00
10,700.00	90.00	180.89	7,017.00	-3,994.72	-364.13	4,010.66	0.00	0.00	0.00
10,800.00	90.00	180.89	7,017.00	-4,094.71	-365.69	4,110.50	0.00	0.00	0.00
10,900.00	90.00	180.89	7,017.00	-4,194.70	-367.24	4,210.33	0.00	0.00	0.00
11,000.00	90.00	180.89	7,017.00	-4,294.69	-368.80	4,310.16	0.00	0.00	0.00
11,100.00	90.00	180.89	7,017.00	-4,394.67	-370.36	4,410.00	0.00	0.00	0.00
11,200.00	90.00	180.89	7,017.00	-4,494.66	-371.91	4,509.83	0.00	0.00	0.00
11,300.00	90.00	180.89	7,017.00	-4,594.65	-373.47	4,609.66	0.00	0.00	0.00

# Noble Energy, Inc.

## Planning Report

<b>Database:</b>	EDMP	<b>Local Co-ordinate Reference:</b>	Well Emmy State H36-773
<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	WELL @ 4847.00ft (Original Well Elev)
<b>Project:</b>	Mustang	<b>MD Reference:</b>	WELL @ 4847.00ft (Original Well Elev)
<b>Site:</b>	H Section 25	<b>North Reference:</b>	Grid
<b>Well:</b>	Emmy State H36-773	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	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)
11,400.00	90.00	180.89	7,017.00	-4,694.64	-375.02	4,709.50	0.00	0.00	0.00
11,500.00	90.00	180.89	7,017.00	-4,794.63	-376.58	4,809.33	0.00	0.00	0.00
11,600.00	90.00	180.89	7,017.00	-4,894.61	-378.14	4,909.16	0.00	0.00	0.00
11,700.00	90.00	180.89	7,017.00	-4,994.60	-379.69	5,009.00	0.00	0.00	0.00
11,800.00	90.00	180.89	7,017.00	-5,094.59	-381.25	5,108.83	0.00	0.00	0.00
11,900.00	90.00	180.89	7,017.00	-5,194.58	-382.81	5,208.66	0.00	0.00	0.00
11,925.00	90.00	180.89	7,017.00	-5,219.57	-383.19	5,233.62	0.00	0.00	0.00
TD at 11925.00									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Emmy State H36-773 TF	0.00	0.00	7,017.00	-693.93	-312.76	1,312,626.92	3,246,394.40	40.1881937	-104.6180541
- plan hits target center									
- Point									
Emmy State H36-773 Bl	0.00	0.00	7,017.00	-5,219.57	-383.19	1,308,101.30	3,246,323.97	40.1757728	-104.6184673
- plan hits target center									
- Point									

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
573.00	573.00	Pierre				
725.00	725.00	Upper Pierre Aquifer Top				
1,613.00	1,613.00	Upper Pierre Aquifer Base				
3,880.00	3,880.00	Parkman				
4,471.10	4,471.00	Sussex				
5,157.68	5,153.00	Shannon				
6,136.01	6,124.00	Teepee Buttes				
6,815.90	6,770.00	Sharon Springs				
6,899.04	6,832.00	Top A Chalk				
6,909.09	6,839.00	Top A Marl				
6,911.99	6,841.00	Top B Chalk				
6,986.53	6,889.00	Top B Marl				
7,123.98	6,959.00	Top C Chalk				
7,234.26	6,996.00	Top C Marl				

# Noble Energy, Inc.

## Planning Report

<b>Database:</b>	EDMP	<b>Local Co-ordinate Reference:</b>	Well Emmy State H36-773
<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	WELL @ 4847.00ft (Original Well Elev)
<b>Project:</b>	Mustang	<b>MD Reference:</b>	WELL @ 4847.00ft (Original Well Elev)
<b>Site:</b>	H Section 25	<b>North Reference:</b>	Grid
<b>Well:</b>	Emmy State H36-773	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2		

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
4,300.00	4,300.00	0.00	0.00	Start Build 2.00
4,650.98	4,650.11	-5.32	-20.80	Start 1768.28 hold at 4650.98 MD
6,419.26	6,405.13	-58.85	-230.17	Start DLS 9.00 TFO -74.87
7,398.81	7,017.00	-693.93	-312.76	TPZ/Landing Pt. at 7398.81 MD
11,925.00	7,017.00	-5,219.57	-383.19	TD at 11925.00



# **Northern Region - DJ Basin**

**Mustang**

**H Section 25**

**Emmy State H36-773**

**Wellbore #1**

**Plan #2**

## **Anticollision Summary Report**

**29 May, 2019**

**Noble Energy, Inc.**  
Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Emmy State H36-773
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	WELL @ 4847.00ft (Original Well Elev)
<b>Reference Site:</b>	H Section 25	<b>MD Reference:</b>	WELL @ 4847.00ft (Original Well Elev)
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Emmy State H36-773	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

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

<b>Survey Tool Program</b>	<b>Date</b>	5/29/2019		
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.00	11,924.28	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	11,312.41	6,700.00	5,374.92	5,304.96	76.831	CC
Dechant 1-31A (PR) - Wellbore #1 - Gyro Surveys	11,400.00	6,700.00	5,375.63	5,304.91	76.017	ES
Dechant 1-31A (PR) - Wellbore #1 - Gyro Surveys	11,925.00	6,700.00	5,409.71	5,334.68	72.097	SF
Dechant D 31-22D (PR) - Wellbore #1 - Gyro Surveys	9,516.35	7,029.93	7,944.06	7,884.98	134.473	CC
Dechant D 31-22D (PR) - Wellbore #1 - Gyro Surveys	9,600.00	7,030.19	7,944.50	7,884.67	132.787	ES
Dechant D 31-22D (PR) - Wellbore #1 - Gyro Surveys	11,925.00	7,036.98	8,301.17	8,221.44	104.117	SF
Dechant D31-18D (PR) - Wellbore #1 - As Drilled	4,874.32	5,934.65	6,617.18	6,572.97	149.664	CC
Dechant D31-18D (PR) - Wellbore #1 - As Drilled	8,400.00	7,203.33	6,622.51	6,561.06	107.766	ES
Dechant D31-18D (PR) - Wellbore #1 - As Drilled	11,800.00	7,371.77	7,481.21	7,394.25	86.030	SF
Dechant D31-21D (PR) - Wellbore #1 - As Drilled	9,466.66	7,012.86	6,911.86	6,854.79	121.117	CC
Dechant D31-21D (PR) - Wellbore #1 - As Drilled	9,500.00	7,013.44	6,911.94	6,854.58	120.511	ES
Dechant D31-21D (PR) - Wellbore #1 - As Drilled	11,925.00	7,053.24	7,335.92	7,259.21	95.634	SF
Dechant D31-24D (PR) - Wellbore #1 - Gyro Surveys	10,829.34	7,265.35	6,874.58	6,804.87	98.621	CC
Dechant D31-24D (PR) - Wellbore #1 - Gyro Surveys	10,900.00	7,269.07	6,874.94	6,804.57	97.693	ES
Dechant D31-24D (PR) - Wellbore #1 - Gyro Surveys	11,925.00	7,323.10	6,961.10	6,881.51	87.462	SF
Dechant D31-31D (SI) - Dechant D31-31D Gyros - As-Dr	8,479.43	7,000.00	4,347.99	4,288.10	72.600	CC
Dechant D31-31D (SI) - Dechant D31-31D Gyros - As-Dr	8,500.00	7,000.00	4,348.04	4,287.97	72.387	ES
Dechant D31-31D (SI) - Dechant D31-31D Gyros - As-Dr	10,100.00	7,000.00	4,640.18	4,568.13	64.402	SF
Dechant D31-31D (SI) - Dechant D31-31D OH - As-Drille	8,479.61	7,122.29	4,346.86	4,286.78	72.358	CC
Dechant D31-31D (SI) - Dechant D31-31D OH - As-Drille	8,500.00	7,122.46	4,346.91	4,286.66	72.148	ES
Dechant D31-31D (SI) - Dechant D31-31D OH - As-Drille	10,100.00	7,137.90	4,639.04	4,566.79	64.216	SF
Dechant State D31-32 (SI) - Wellbore #1 - As-Drilled	9,468.47	7,019.65	4,686.88	4,631.96	85.351	CC
Dechant State D31-32 (SI) - Wellbore #1 - As-Drilled	9,500.00	7,020.29	4,686.98	4,631.82	84.962	ES
Dechant State D31-32 (SI) - Wellbore #1 - As-Drilled	11,400.00	7,031.93	5,069.29	5,001.20	74.454	SF
Dechant Y 06-27D (PR) - Wellbore #1 - As Drilled	11,925.00	6,996.53	8,142.13	8,062.05	101.664	CC, ES, SF
Dechant Y 06-28D (PR) - Wellbore #1 - As Drilled	11,925.00	7,063.81	6,937.03	6,856.14	85.759	CC, ES, SF
Riva Blue 31-15 (PR) - Wellbore #1 - Gyro Surveys	11,260.31	6,917.56	7,479.51	7,409.15	106.300	CC
Riva Blue 31-15 (PR) - Wellbore #1 - Gyro Surveys	11,300.00	6,917.51	7,479.62	7,408.90	105.774	ES
Riva Blue 31-15 (PR) - Wellbore #1 - Gyro Surveys	11,925.00	6,916.76	7,508.99	7,432.88	98.664	SF
Riva Blue 31-16 (PR) - Wellbore #1 - Gyro Surveys	11,467.95	6,969.58	8,521.02	8,448.57	117.608	CC
Riva Blue 31-16 (PR) - Wellbore #1 - Gyro Surveys	11,500.00	6,969.43	8,521.08	8,448.34	117.146	ES
Riva Blue 31-16 (PR) - Wellbore #1 - Gyro Surveys	11,925.00	6,967.43	8,533.27	8,456.79	111.567	SF
Riva Blue 31-9 (PR) - Wellbore #1 - Gyro Surveys	10,215.34	6,859.98	8,539.45	8,478.80	140.806	CC
Riva Blue 31-9 (PR) - Wellbore #1 - Gyro Surveys	10,300.00	6,860.46	8,539.87	8,478.49	139.138	ES
Riva Blue 31-9 (PR) - Wellbore #1 - Gyro Surveys	11,925.00	6,869.18	8,708.90	8,634.00	116.273	SF
Riva Blue D 31-04J (PR) - Wellbore #1 - Gyro Surveys	10,560.61	6,800.00	7,772.10	7,708.58	122.350	CC
Riva Blue D 31-04J (PR) - Wellbore #1 - Gyro Surveys	10,600.00	6,817.33	7,772.17	7,708.23	121.570	ES

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

**Noble Energy, Inc.**  
Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Emmy State H36-773
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	WELL @ 4847.00ft (Original Well Elev)
<b>Reference Site:</b>	H Section 25	<b>MD Reference:</b>	WELL @ 4847.00ft (Original Well Elev)
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Emmy State H36-773	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	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 31-04J (PR) - Wellbore #1 - Gyro Surveys	11,925.00	6,849.39	7,890.69	7,815.59	105.071	SF
Riva Blue D 31-11 (PR) - Wellbore #1 - Gyro Surveys	10,091.60	6,917.62	6,433.56	6,372.13	104.724	CC
Riva Blue D 31-11 (PR) - Wellbore #1 - Gyro Surveys	10,100.00	6,917.49	6,433.57	6,372.06	104.605	ES
Riva Blue D 31-11 (PR) - Wellbore #1 - Gyro Surveys	11,925.00	6,889.04	6,689.63	6,614.13	88.601	SF
Riva Blue D 31-12 (SI) - Wellbore #1 - Gyro Surveys	10,264.87	6,997.78	4,805.29	4,743.66	77.969	CC
Riva Blue D 31-12 (SI) - Wellbore #1 - Gyro Surveys	10,300.00	6,998.94	4,805.41	4,743.49	77.596	ES
Riva Blue D 31-12 (SI) - Wellbore #1 - Gyro Surveys	11,100.00	11,100.00	4,877.29	4,794.82	59.142	SF
Riva Blue D31-14 (PR) - Wellbore #1 - Gyro Surveys	11,895.65	6,937.02	6,309.01	6,232.65	82.622	CC
Riva Blue D31-14 (PR) - Wellbore #1 - Gyro Surveys	11,925.00	6,936.44	6,309.08	6,232.46	82.345	ES, SF
Riva D 31-10 (PR) - Wellbore #1 - As-Drilled	10,125.87	7,089.72	7,228.52	7,167.75	118.956	CC
Riva D 31-10 (PR) - Wellbore #1 - As-Drilled	10,200.00	7,091.44	7,228.90	7,167.50	117.731	ES
Riva D 31-10 (PR) - Wellbore #1 - As-Drilled	11,925.00	7,131.35	7,448.93	7,373.62	98.899	SF
Riva Red D 31-2J (PA) - Wellbore #1 - Gyro Surveys	4,412.91	4,548.76	5,337.46	5,311.95	209.159	CC, ES
Riva Red D 31-2J (PA) - Wellbore #1 - Gyro Surveys	11,300.00	6,950.08	6,103.80	6,039.04	94.257	SF
Riva Red D 31-3 (PA) - Wellbore #1 - Gyro Surveys	4,486.73	4,809.94	5,975.02	5,948.50	225.298	CC, ES
Riva Red D 31-3 (PA) - Wellbore #1 - Gyro Surveys	11,500.00	7,150.16	7,470.25	7,405.90	116.084	SF
Riva Red D 31-6 (PA) - Wellbore #1 - No Surveys	9,080.73	7,022.00	6,269.77	5,963.72	20.486	CC
Riva Red D 31-6 (PA) - Wellbore #1 - No Surveys	9,100.00	7,022.00	6,269.80	5,963.60	20.476	ES
Riva Red D 31-6 (PA) - Wellbore #1 - No Surveys	10,100.00	7,022.00	6,352.08	6,038.10	20.231	SF
Riva Red D31-06X (SI) - Wellbore #1 - Gyro Surveys	8,868.66	6,837.49	6,169.10	6,119.96	125.531	CC
Riva Red D31-06X (SI) - Wellbore #1 - Gyro Surveys	8,900.00	6,837.84	6,169.18	6,119.80	124.933	ES
Riva Red D31-06X (SI) - Wellbore #1 - Gyro Surveys	11,925.00	6,876.58	6,884.52	6,814.15	97.843	SF
Riva White D 31-1 (PR) - Wellbore #1 - Gyro Surveys	4,301.98	4,261.55	8,367.39	8,343.15	345.082	CC, ES
Riva White D 31-1 (PR) - Wellbore #1 - Gyro Surveys	11,925.00	6,796.55	9,662.94	9,593.13	138.410	SF
Riva White D 31-7 (PR) - Wellbore #1 - Gyro Surveys	3,611.64	3,567.10	7,524.08	7,503.80	371.073	CC
Riva White D 31-7 (PR) - Wellbore #1 - Gyro Surveys	8,900.00	6,948.84	7,540.64	7,491.07	152.095	ES
Riva White D 31-7 (PR) - Wellbore #1 - Gyro Surveys	11,925.00	7,021.63	8,153.18	8,081.30	113.428	SF
Riva White D 31-8 (PA) - Wellbore #1 - Gyro Surveys	2,926.54	2,880.83	8,548.88	8,532.54	523.177	CC
Riva White D 31-8 (PA) - Wellbore #1 - Gyro Surveys	9,100.00	7,210.00	8,569.31	8,517.35	164.941	ES
Riva White D 31-8 (PA) - Wellbore #1 - Gyro Surveys	11,925.00	7,210.00	9,054.29	8,980.45	122.626	SF
River Red D 31-4 (PA) - Wellbore #1 - Gyro Surveys	7,478.93	7,366.36	4,367.03	4,255.65	39.209	CC
River Red D 31-4 (PA) - Wellbore #1 - Gyro Surveys	7,500.00	7,365.96	4,367.08	4,255.63	39.185	ES
River Red D 31-4 (PA) - Wellbore #1 - Gyro Surveys	8,400.00	7,348.92	4,463.07	4,347.27	38.543	SF
UPRR 53 Pan Am UT R 1 (PA) - Wellbore #1 - No Survey	4,300.00	4,254.00	7,880.48	7,702.81	44.352	CC
UPRR 53 Pan Am UT R 1 (PA) - Wellbore #1 - No Survey	4,400.00	4,353.98	7,882.05	7,700.16	43.335	ES
UPRR 53 Pan Am UT R 1 (PA) - Wellbore #1 - No Survey	9,900.00	6,971.00	8,197.14	7,887.22	26.450	SF

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

**Noble Energy, Inc.**  
Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Emmy State H36-773
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	WELL @ 4847.00ft (Original Well Elev)
<b>Reference Site:</b>	H Section 25	<b>MD Reference:</b>	WELL @ 4847.00ft (Original Well Elev)
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Emmy State H36-773	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

**Summary**

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Separation Factor	Warning
H Section 25						
Dechant 21-25 - Original Drilling - Original Drilling - As Dr	573.70	556.71	2,998.18	2,995.27	1,028.351	CC
Dechant 21-25 - Original Drilling - Original Drilling - As Dr	1,400.00	1,372.13	3,000.24	2,992.63	393.946	ES
Dechant 21-25 - Original Drilling - Original Drilling - As Dr	6,700.00	6,838.65	3,983.19	3,940.46	93.218	SF
Dechant D30-33D - Original Drilling - Original Drilling - As	100.00	51.67	3,037.18	3,037.02	10,000.000	CC, ES
Dechant D30-33D - Original Drilling - Original Drilling - As	9,200.00	9,200.00	5,383.85	5,328.09	96.550	SF
Dechant D31-30D - Original Drilling - Original Drilling - As	100.00	57.05	3,028.83	3,028.67	10,000.000	CC
Dechant D31-30D - Original Drilling - Original Drilling - As	200.00	150.78	3,029.22	3,028.54	4,456.370	ES
Dechant D31-30D - Original Drilling - Original Drilling - As	8,800.00	7,111.37	4,525.90	4,472.14	84.184	SF
Dechant H25-64-1HN - Original Drilling - Original Drilling	6,594.45	7,665.10	1,323.04	1,280.95	31.434	CC
Dechant H25-64-1HN - Original Drilling - Original Drilling	6,600.00	7,664.59	1,323.08	1,280.95	31.406	ES
Dechant H25-64-1HN - Original Drilling - Original Drilling	6,650.00	7,660.22	1,326.61	1,284.15	31.243	SF
Dechant H25-65HN - Original Drilling - Original Drilling	908.97	911.99	1,814.53	1,812.16	766.199	CC
Dechant H25-65HN - Original Drilling - Original Drilling	1,700.00	1,692.69	1,815.36	1,808.50	264.467	ES
Dechant H25-65HN - Original Drilling - Original Drilling	6,650.00	7,609.90	2,213.56	2,171.99	53.250	SF
Emmy H25-711 - Emmy H25-711 OH - As-Drilled	824.50	812.50	2,250.25	2,245.90	517.639	CC
Emmy H25-711 - Emmy H25-711 OH - As-Drilled	2,011.40	1,997.03	2,251.34	2,240.34	204.638	ES
Emmy H25-711 - Emmy H25-711 OH - As-Drilled	6,850.00	6,850.00	3,820.93	3,785.47	107.746	SF
Emmy State H25-718 - Emmy State H25-718 OH - As-Dr	2,370.46	2,367.40	2,228.69	2,216.74	186.444	CC
Emmy State H25-718 - Emmy State H25-718 OH - As-Dr	2,400.00	2,378.34	2,228.75	2,216.72	185.250	ES
Emmy State H25-718 - Emmy State H25-718 OH - As-Dr	10,800.00	10,800.00	5,213.69	5,148.04	79.427	SF
Emmy State H25-724 - Emmy State H25-724 OH - As-Dr	2,375.96	2,365.23	2,193.35	2,181.33	182.409	CC, ES
Emmy State H25-724 - Emmy State H25-724 OH - As-Dr	8,500.00	6,462.49	3,430.32	3,391.55	88.479	SF
Emmy State H25-731 - Emmy State H25-731 OH - As-Dr	2,381.61	2,369.64	2,176.67	2,164.54	179.417	CC
Emmy State H25-731 - Emmy State H25-731 OH - As-Dr	2,400.00	2,381.16	2,176.70	2,164.52	178.693	ES
Emmy State H25-731 - Emmy State H25-731 OH - As-Dr	8,300.00	8,300.00	3,099.62	3,057.56	73.685	SF
Emmy State H25-738 - Emmy State H25-738 OH - As-Dr	3,796.25	3,794.62	2,129.39	2,111.67	120.169	CC
Emmy State H25-738 - Emmy State H25-738 OH - As-Dr	3,800.00	3,796.65	2,129.39	2,111.66	120.076	ES
Emmy State H25-738 - Emmy State H25-738 OH - As-Dr	7,050.00	6,994.00	2,389.48	2,355.69	70.706	SF
Emmy State H25-744 - Emmy State H25-744 OH - As-Dr	6,519.32	6,753.12	1,931.39	1,898.75	59.174	CC
Emmy State H25-744 - Emmy State H25-744 OH - As-Dr	6,550.00	6,765.89	1,931.47	1,898.74	59.014	ES
Emmy State H25-744 - Emmy State H25-744 OH - As-Dr	6,800.00	6,823.40	1,941.06	1,907.82	58.402	SF
Emmy State H25-751 - Emmy State H25-751 OH - As-Dr	0.00	0.00	167.04			
Emmy State H25-751 - Emmy State H25-751 OH - As-Dr	1,926.97	1,926.12	167.56	159.35	20.403	ES
Emmy State H25-751 - Emmy State H25-751 OH - As-Dr	2,500.00	2,486.36	181.61	171.69	18.307	SF
Emmy State H25-757 - Emmy State H25-757 OH - As-Dr	2,255.42	2,254.46	157.63	145.96	13.509	CC
Emmy State H25-757 - Emmy State H25-757 OH - As-Dr	2,400.00	2,397.80	157.81	145.72	13.052	ES
Emmy State H25-757 - Emmy State H25-757 OH - As-Dr	2,500.00	2,493.39	159.74	147.34	12.888	SF
Emmy State H25-764 - Emmy State H25-764 OH - As-Dr	2,283.99	2,283.07	146.75	135.02	12.509	CC
Emmy State H25-764 - Emmy State H25-764 OH - As-Dr	2,500.00	2,498.82	146.99	134.60	11.870	ES
Emmy State H25-764 - Emmy State H25-764 OH - As-Dr	2,800.00	2,792.00	152.63	139.24	11.392	SF
Emmy State H25-771 - Emmy State H25-771 OH - As-Dr	0.00	0.00	153.00			
Emmy State H25-771 - Emmy State H25-771 OH - As-Dr	2,300.04	2,299.07	153.60	141.66	12.868	ES
Emmy State H25-771 - Emmy State H25-771 OH - As-Dr	6,861.63	6,979.64	372.64	339.16	11.133	SF
Emmy State H25-777 - Emmy State H25-777 OH - As-Dr	7,032.48	7,026.35	93.19	58.76	2.706	CC, ES, SF
Emmy State H25-785 - Emmy State H25-785 OH - As-Dr	0.00	0.00	160.20			
Emmy State H25-785 - Emmy State H25-785 OH - As-Dr	2,008.78	2,008.89	164.44	153.40	14.890	ES
Emmy State H25-785 - Emmy State H25-785 OH - As-Dr	2,100.00	2,094.50	166.05	154.79	14.748	SF
Emmy State H36-753 - Wellbore #1 - Plan #2	2,200.00	2,199.00	67.05	57.45	6.988	CC, ES
Emmy State H36-753 - Wellbore #1 - Plan #2	2,300.00	2,296.74	68.69	58.67	6.855	SF
Emmy State H36-766 - Wellbore #1 - Plan #2	2,200.00	2,200.00	22.35	12.75	2.329	CC, ES, SF
Emmy State H36-787 - Wellbore #1 - Plan #2	2,200.00	2,202.00	47.49	37.89	4.946	CC, ES
Emmy State H36-787 - Wellbore #1 - Plan #2	2,300.00	2,300.32	49.25	39.23	4.912	SF
HSR Cohn 03-25 - Original Drilling - Original Drilling - As	4,372.03	4,390.80	4,211.77	4,186.91	169.453	CC

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

**Noble Energy, Inc.**  
Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Emmy State H36-773
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	WELL @ 4847.00ft (Original Well Elev)
<b>Reference Site:</b>	H Section 25	<b>MD Reference:</b>	WELL @ 4847.00ft (Original Well Elev)
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Emmy State H36-773	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	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						
HSR Cohn 03-25 - Original Drilling - Original Drilling - As	4,400.00	4,418.32	4,211.82	4,186.81	168.409	ES
HSR Cohn 03-25 - Original Drilling - Original Drilling - As	6,700.00	6,631.31	4,382.83	4,345.26	116.659	SF
HSR Crowe 06-25 - Original Drilling - Original Drilling - As	4,424.42	4,462.96	2,919.63	2,894.43	115.827	CC, ES
HSR Crowe 06-25 - Original Drilling - Original Drilling - As	6,800.00	6,814.80	3,146.19	3,107.80	81.957	SF
HSR Dechant 04-25 - Original Drilling - Original Drilling -	1,543.34	1,537.48	2,701.45	2,692.91	316.582	CC, ES
HSR Dechant 04-25 - Original Drilling - Original Drilling -	6,750.00	7,145.91	4,416.39	4,376.76	111.451	SF
HSR Dechant 05-25 - Original Drilling - Original Drilling -	1,063.65	1,058.66	2,725.79	2,720.02	471.954	CC
HSR Dechant 05-25 - Original Drilling - Original Drilling -	2,200.00	2,179.79	2,726.88	2,714.64	222.824	ES
HSR Dechant 05-25 - Original Drilling - Original Drilling -	6,650.00	6,611.88	2,846.09	2,808.66	76.045	SF
KY Blue D30-32 - Original Drilling - Original Drilling - As D	2,442.78	2,389.84	4,246.11	4,232.60	314.238	CC
KY Blue D30-32 - Original Drilling - Original Drilling - As D	2,500.00	2,430.23	4,246.23	4,232.45	308.103	ES
KY Blue D30-32 - Original Drilling - Original Drilling - As D	6,950.00	6,776.50	4,724.59	4,686.26	123.251	SF
KY Blue H25-04J - Original Drilling - Original Drilling - As	6,690.27	7,400.00	3,426.33	3,412.14	241.438	CC, ES
KY Blue H25-04J - Original Drilling - Original Drilling - As	9,000.00	7,400.00	4,450.23	4,429.09	210.550	SF
KY Blue H25-09 - Original Drilling - Original Drilling - As D	4,149.39	4,100.00	3,610.76	3,587.44	154.791	CC
KY Blue H25-09 - Original Drilling - Original Drilling - As D	4,200.00	4,139.95	3,610.84	3,587.26	153.132	ES
KY Blue H25-09 - Original Drilling - Original Drilling - As D	6,950.00	6,786.89	4,018.67	3,980.30	104.736	SF
KY Blue H25-10 - Original Drilling - Original Drilling - As D	100.00	46.80	2,441.36	2,441.20	10,000.000	CC, ES
KY Blue H25-10 - Original Drilling - Original Drilling - As D	6,700.00	6,627.65	2,822.73	2,785.26	75.334	SF
KY Blue H25-11 - Original Drilling - Original Drilling - As D	100.00	65.03	1,684.00	1,683.81	8,712.356	CC
KY Blue H25-11 - Original Drilling - Original Drilling - As D	4,100.00	4,064.35	1,700.19	1,677.10	73.610	ES
KY Blue H25-11 - Original Drilling - Original Drilling - As D	6,700.00	6,629.92	1,949.13	1,885.68	30.715	SF
KY Blue H25-12 - Original Drilling - Original Drilling - As D	1,411.27	1,406.75	1,757.86	1,749.55	211.656	CC
KY Blue H25-12 - Original Drilling - Original Drilling - As D	6,439.75	6,459.42	1,777.50	1,740.89	48.562	ES
KY Blue H25-12 - Original Drilling - Original Drilling - As D	6,600.00	6,608.22	1,796.78	1,759.33	47.981	SF
KY Blue H25-14 - Original Drilling - Original Drilling - As D	4,260.77	4,226.81	745.66	721.65	31.054	CC
KY Blue H25-14 - Original Drilling - Original Drilling - As D	4,300.00	4,265.47	745.68	721.44	30.769	ES
KY Blue H25-14 - Original Drilling - Original Drilling - As D	6,500.00	6,458.88	974.89	938.52	26.811	SF
KY Blue H25-15 - Original Drilling - Original Drilling - As D	868.81	826.83	1,790.32	1,785.79	395.833	CC
KY Blue H25-15 - Original Drilling - Original Drilling - As D	4,334.35	4,314.63	1,797.41	1,772.91	73.361	ES
KY Blue H25-15 - Original Drilling - Original Drilling - As D	6,850.00	6,734.26	2,117.93	2,079.94	55.762	SF
KY H25-24 - Original Drilling - Original Drilling - As Drilled	100.00	58.03	1,623.18	1,623.00	8,988.426	CC
KY H25-24 - Original Drilling - Original Drilling - As Drilled	2,300.00	2,252.88	1,626.90	1,614.17	127.793	ES
KY H25-24 - Original Drilling - Original Drilling - As Drilled	6,650.00	6,619.05	1,943.50	1,906.23	52.140	SF
Moore UPRC H25-01 - Original Drilling - Original Drilling	4,041.70	3,977.82	5,430.47	5,407.78	239.330	CC
Moore UPRC H25-01 - Original Drilling - Original Drilling	4,100.00	4,022.02	5,430.52	5,407.55	236.369	ES
Moore UPRC H25-01 - Original Drilling - Original Drilling	6,900.00	6,763.08	5,858.77	5,820.53	153.217	SF
Moore UPRC H25-02 - Original Drilling - Original Drilling	1,258.23	1,221.24	4,597.68	4,590.91	678.962	CC
Moore UPRC H25-02 - Original Drilling - Original Drilling	3,700.00	3,643.39	4,601.33	4,580.62	222.121	ES
Moore UPRC H25-02 - Original Drilling - Original Drilling	6,750.00	6,654.70	4,904.04	4,866.36	130.153	SF
Moser 25-32 - Original Drilling - Original Drilling - As Drille	100.00	52.05	3,181.52	3,181.35	10,000.000	CC
Moser 25-32 - Original Drilling - Original Drilling - As Drille	3,300.00	3,250.98	3,182.76	3,164.30	172.480	ES
Moser 25-32 - Original Drilling - Original Drilling - As Drille	6,750.00	6,711.85	3,522.02	3,484.17	93.057	SF
Moser 25-42 - Original Drilling - Original Drilling - As Drille	628.00	573.01	4,414.86	4,411.77	1,427.895	CC
Moser 25-42 - Original Drilling - Original Drilling - As Drille	1,700.00	1,626.43	4,420.29	4,411.11	481.278	ES
Moser 25-42 - Original Drilling - Original Drilling - As Drille	6,800.00	6,718.19	4,846.96	4,809.03	127.810	SF
UPRR 53 Pan Am T#2 - Original Drilling - Original Drilling	3,183.89	3,178.11	3,483.88	3,465.94	194.204	CC
UPRR 53 Pan Am T#2 - Original Drilling - Original Drilling	4,411.46	4,449.77	3,488.20	3,463.09	138.897	ES
UPRR 53 Pan Am T#2 - Original Drilling - Original Drilling	6,650.00	6,497.74	3,628.48	3,591.49	98.108	SF
UPRR 53 Pan Am UT T#1 - Original Drilling - Original Dri	3,228.01	3,168.31	4,310.86	4,292.84	239.293	CC
UPRR 53 Pan Am UT T#1 - Original Drilling - Original Dri	3,300.00	3,218.37	4,311.04	4,292.68	234.899	ES
UPRR 53 Pan Am UT T#1 - Original Drilling - Original Dri	6,850.00	6,784.21	4,712.57	4,674.27	123.057	SF
Von Feldt 1-25B - Original Drilling - Original Drilling - As D	2,170.65	2,148.72	588.09	576.02	48.743	CC

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

**Noble Energy, Inc.**  
Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Emmy State H36-773
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	WELL @ 4847.00ft (Original Well Elev)
<b>Reference Site:</b>	H Section 25	<b>MD Reference:</b>	WELL @ 4847.00ft (Original Well Elev)
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Emmy State H36-773	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	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						
Von Feldt 1-25B - Original Drilling - Original Drilling - As D	2,300.00	2,274.68	588.68	575.89	46.006	ES
Von Feldt 1-25B - Original Drilling - Original Drilling - As D	6,450.00	6,418.00	621.26	584.93	17.101	SF



**Noble Energy, Inc.**  
Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Emmy State H36-773
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	WELL @ 4847.00ft (Original Well Elev)
<b>Reference Site:</b>	H Section 25	<b>MD Reference:</b>	WELL @ 4847.00ft (Original Well Elev)
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Emmy State H36-773	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
H Section 26						
Bullard 31-26 - Original Drilling - Original Drilling - As Dril	6,420.81	6,182.62	5,443.91	5,408.44	153.486	CC, ES
Bullard 31-26 - Original Drilling - Original Drilling - As Dril	6,950.00	6,677.81	5,615.19	5,576.84	146.422	SF
Bullard 32-26 - Original Drilling - Original Drilling - As Dril	6,476.52	6,460.51	4,069.50	4,032.99	111.468	CC, ES
Bullard 32-26 - Original Drilling - Original Drilling - As Dril	6,950.00	6,861.68	4,189.91	4,150.96	107.581	SF
Bullard 41-26 - Original Drilling - Original Drilling - As Dril	6,041.26	5,900.01	4,486.81	4,453.20	133.500	CC, ES
Bullard 41-26 - Original Drilling - Original Drilling - As Dril	6,650.00	6,650.00	4,549.06	4,511.57	121.347	SF
Dechant H25-29D - Original Drilling - Original Drilling - As	0.00	0.00	4,476.68			
Dechant H25-29D - Original Drilling - Original Drilling - As	1,300.00	1,318.75	4,482.85	4,474.65	546.730	ES
Dechant H25-29D - Original Drilling - Original Drilling - As	6,600.00	7,058.18	5,071.86	5,014.03	87.692	SF
Dechant H25-33D - Original Drilling - Original Drilling - As	6,628.47	7,712.12	1,596.57	1,542.42	29.484	CC, ES
Dechant H25-33D - Original Drilling - Original Drilling - As	6,750.00	7,847.45	1,607.42	1,552.86	29.465	SF
Harsh H26-09D - Original Drilling - Original Drilling - As D	6,496.19	6,569.55	2,333.30	2,296.36	63.168	CC
Harsh H26-09D - Original Drilling - Original Drilling - As D	6,500.00	6,573.78	2,333.30	2,296.34	63.130	ES
Harsh H26-09D - Original Drilling - Original Drilling - As D	6,750.00	6,801.17	2,371.31	2,333.03	61.947	SF
Harsh H26-10 - Original Drilling - Original Drilling - As Dri	6,508.22	6,481.41	3,393.98	3,357.36	92.700	CC, ES
Harsh H26-10 - Original Drilling - Original Drilling - As Dri	7,000.00	6,898.68	3,498.37	3,459.19	89.291	SF
Harsh H26-15 - Original Drilling - Original Drilling - As Dri	6,790.66	6,763.65	2,918.91	2,880.87	76.731	CC
Harsh H26-15 - Original Drilling - Original Drilling - As Dri	6,800.00	6,771.57	2,918.93	2,880.84	76.636	ES
Harsh H26-15 - Original Drilling - Original Drilling - As Dri	7,400.00	7,126.11	3,012.84	2,970.33	70.860	SF
Harsh H26-16 - Original Drilling - Original Drilling - As Dri	6,737.21	6,727.93	1,862.75	1,824.92	49.251	CC
Harsh H26-16 - Original Drilling - Original Drilling - As Dri	6,750.00	6,739.27	1,862.79	1,824.90	49.166	ES
Harsh H26-16 - Original Drilling - Original Drilling - As Dri	7,100.00	6,977.98	1,905.06	1,865.43	48.075	SF
Harsh H26-23D - Original Drilling - Original Drilling - As D	6,553.27	6,657.55	2,435.59	2,397.66	64.200	CC, ES
Harsh H26-23D - Original Drilling - Original Drilling - As D	7,000.00	7,032.16	2,516.45	2,476.74	63.381	SF
HSR Moser 04-26 - Original Drilling - Original Drilling - As	6,470.42	6,254.20	7,324.74	7,288.87	204.226	CC, ES
HSR Moser 04-26 - Original Drilling - Original Drilling - As	9,300.00	6,600.01	9,075.61	9,029.01	194.752	SF
HSR Moser 06-26 - Original Drilling - Original Drilling - As	6,517.40	6,539.79	4,986.45	4,949.59	135.306	CC, ES
HSR Moser 06-26 - Original Drilling - Original Drilling - As	7,150.00	6,878.20	5,172.36	5,132.82	130.811	SF
HSR Regalia 05-26 - Original Drilling - Original Drilling - A	6,526.04	6,551.06	6,204.46	6,167.53	168.015	CC, ES
HSR Regalia 05-26 - Original Drilling - Original Drilling - A	7,300.00	7,046.04	6,448.43	6,407.83	158.829	SF
HSR-Moser 03-26A - Original Drilling - Original Drilling - A	6,462.45	6,375.60	6,018.17	5,981.98	166.301	CC, ES
HSR-Moser 03-26A - Original Drilling - Original Drilling - A	7,000.00	6,600.01	6,187.28	6,149.13	162.210	SF
Hurley H26-712 - Hurley H26-712 OH - As-Drilled	6,430.95	6,519.00	2,462.85	2,430.39	75.868	CC, ES
Hurley H26-712 - Hurley H26-712 OH - As-Drilled	6,450.00	6,519.00	2,463.17	2,430.69	75.829	SF
Hurley H26-717 - Hurley H26-717 OH - As-Drilled	6,441.22	6,517.00	2,555.75	2,523.49	79.227	CC, ES
Hurley H26-717 - Hurley H26-717 OH - As-Drilled	6,500.00	6,517.00	2,558.69	2,526.36	79.161	SF
Hurley H26-724 - Hurley H26-724 OH - As-Drilled	6,442.29	6,423.00	2,866.22	2,834.57	90.549	CC, ES
Hurley H26-724 - Hurley H26-724 OH - As-Drilled	6,600.00	6,517.00	2,882.78	2,850.57	89.507	SF
Hurley H26-730 - Hurley H26-730 OH - As-Drilled	6,431.68	6,329.00	3,291.38	3,260.23	105.661	CC, ES
Hurley H26-730 - Hurley H26-730 OH - As-Drilled	6,600.00	6,423.00	3,308.98	3,277.23	104.211	SF
Hurley H26-736 - Hurley H26-736 OH - As-Drilled	6,201.26	6,045.00	3,457.38	3,427.09	114.128	CC, ES
Hurley H26-736 - Hurley H26-736 OH - As-Drilled	6,550.00	6,550.00	3,469.13	3,436.28	105.630	SF
Hurley H26-743 - Hurley H26-743 OH - As-Drilled	1,289.74	1,328.18	3,491.60	3,484.41	485.835	CC
Hurley H26-743 - Hurley H26-743 OH - As-Drilled	1,600.00	1,617.27	3,492.83	3,483.94	392.683	ES
Hurley H26-743 - Hurley H26-743 OH - As-Drilled	6,900.00	6,282.31	3,835.61	3,801.98	114.052	SF
Hurley H26-750 - Hurley H26-750 OH - As-Drilled	6,553.98	6,801.00	4,314.71	4,280.86	127.469	CC, ES
Hurley H26-750 - Hurley H26-750 OH - As-Drilled	6,750.00	6,801.00	4,333.50	4,299.41	127.099	SF
Hurley H26-756 - Hurley H26-756 OH - As-Drilled	6,555.98	6,707.00	4,571.65	4,538.48	137.812	CC, ES
Hurley H26-756 - Hurley H26-756 OH - As-Drilled	6,850.00	6,801.00	4,609.94	4,576.02	135.922	SF
Hurley H26-762 - Hurley H26-762 OH - As-Drilled	6,569.43	6,650.32	4,932.67	4,900.00	150.987	CC, ES
Hurley H26-762 - Hurley H26-762 OH - As-Drilled	8,400.00	6,707.00	5,759.75	5,720.65	147.311	SF
Hurley H26-768 - Hurley H26-768 OH - As-Drilled	6,543.58	6,463.09	5,192.30	5,160.32	162.355	CC, ES
Hurley H26-768 - Hurley H26-768 OH - As-Drilled	9,300.00	6,519.00	6,553.67	6,510.72	152.582	SF

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

**Noble Energy, Inc.**  
Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Emmy State H36-773
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	WELL @ 4847.00ft (Original Well Elev)
<b>Reference Site:</b>	H Section 25	<b>MD Reference:</b>	WELL @ 4847.00ft (Original Well Elev)
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Emmy State H36-773	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	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						
Hurley H26-776 - Hurley H26-776 OH - As-Drilled	6,545.20	6,423.00	5,680.90	5,648.96	177.862	CC
Hurley H26-776 - Hurley H26-776 OH - As-Drilled	6,550.00	6,423.00	5,680.91	5,648.96	177.811	ES
Hurley H26-776 - Hurley H26-776 OH - As-Drilled	10,000.00	6,517.00	7,433.85	7,386.87	158.255	SF
Hurley H26-783 - Hurley H26-783 OH - As-drilled	0.00	0.00	5,824.79			
Hurley H26-783 - Hurley H26-783 OH - As-drilled	1,900.00	1,882.19	5,830.64	5,820.14	555.142	ES
Hurley H26-783 - Hurley H26-783 OH - As-drilled	10,300.00	6,423.00	7,835.52	7,786.71	160.501	SF
Hurley H35-727 - Wellbore #1 - Plan #2	11,377.82	13,953.50	1,980.55	1,867.65	17.542	CC
Hurley H35-727 - Wellbore #1 - Plan #2	11,400.00	13,966.61	1,980.61	1,867.39	17.493	ES
Hurley H35-727 - Wellbore #1 - Plan #2	11,925.00	14,449.86	1,992.96	1,871.16	16.362	SF
Hurley H35-733 - Wellbore #1 - Plan #2	11,925.00	14,900.21	2,630.54	2,507.86	21.443	CC, ES, SF
Hurley H35-746 - Wellbore #1 - Plan #2	11,925.00	14,702.47	3,327.44	3,205.03	27.185	CC, ES, SF
Hurley H35-755 - Wellbore #1 - Plan #2	11,925.00	14,921.02	3,832.98	3,710.39	31.267	CC, ES, SF
Hurley H35-768 - Wellbore #1 - Plan #2	11,925.00	14,522.91	4,526.67	4,404.98	37.199	CC, ES, SF
Hurley H35-774 - Wellbore #1 - Plan #2	11,925.00	14,875.26	5,180.75	5,037.16	36.082	CC, ES, SF
Hurley H35-787 - Wellbore #1 - Plan #2	11,925.00	14,658.07	5,846.37	5,724.39	47.928	CC, ES, SF
Hurley State H35-713 - Wellbore #1 - Plan #2	11,925.00	14,684.94	1,323.09	1,201.06	10.843	CC, ES, SF
John 03-26 - Original Drilling - Original Drilling - As Drilled	6,468.74	6,388.51	5,937.88	5,901.63	163.809	CC, ES
John 03-26 - Original Drilling - Original Drilling - As Drilled	7,000.00	6,642.65	6,095.05	6,056.75	159.136	SF
Lamp H25-31 - Original Drilling - Original Drilling - As Dril	6,424.31	6,426.99	3,774.03	3,737.71	103.919	CC, ES
Lamp H25-31 - Original Drilling - Original Drilling - As Dril	6,800.00	6,733.90	3,879.47	3,841.30	101.626	SF
Lamp H26-01 - Original Drilling - Original Drilling - As Dril	1,432.54	1,444.70	3,821.83	3,813.87	480.427	CC, ES
Lamp H26-01 - Original Drilling - Original Drilling - As Dril	6,800.00	6,879.10	4,745.41	4,706.38	121.584	SF
Lamp H26-08 - Original Drilling - Original Drilling - As Dril	6,476.94	6,652.61	3,475.16	3,437.98	93.462	CC, ES
Lamp H26-08 - Original Drilling - Original Drilling - As Dril	7,200.00	7,111.47	3,815.27	3,773.07	90.409	SF
Lamp H26-22 - Original Drilling - Original Drilling - As Dril	6,470.21	6,566.34	3,251.13	3,205.20	70.793	CC, ES
Lamp H26-22 - Original Drilling - Original Drilling - As Dril	6,750.00	6,827.51	3,294.15	3,247.02	69.901	SF
Moser 05-26 - Original Drilling - Original Drilling - As Drille	6,583.02	6,675.34	6,351.98	6,314.59	169.889	CC
Moser 05-26 - Original Drilling - Original Drilling - As Drille	6,600.00	6,702.45	6,352.07	6,314.55	169.314	ES
Moser 05-26 - Original Drilling - Original Drilling - As Drille	9,600.00	7,003.68	7,930.75	7,879.75	155.510	SF
Moser 41-27 - Original Drilling - Original Drilling - As Drille	885.10	858.14	6,625.97	6,621.30	1,417.183	CC
Moser 41-27 - Original Drilling - Original Drilling - As Drille	900.00	866.88	6,625.98	6,621.24	1,397.991	ES
Moser 41-27 - Original Drilling - Original Drilling - As Drille	10,300.00	7,057.04	9,467.63	9,412.95	173.132	SF
Moser H26-11 - Original Drilling - Original Drilling - As Dri	6,589.16	6,576.51	4,839.88	4,802.87	130.755	CC
Moser H26-11 - Original Drilling - Original Drilling - As Dri	6,600.00	6,582.78	4,839.92	4,802.86	130.603	ES
Moser H26-11 - Original Drilling - Original Drilling - As Dri	7,350.00	6,969.76	5,029.66	4,989.21	124.364	SF
Moser H26-12 - Wellbore #1 - Wellbore #1 - As Drilled	6,712.82	6,863.53	5,848.55	5,810.32	152.974	CC, ES
Moser H26-12 - Wellbore #1 - Wellbore #1 - As Drilled	10,100.00	7,175.32	7,397.88	7,342.41	133.361	SF
Moser H26-13 - Wellbore #1 - Wellbore #1 - As Drilled	6,975.38	6,795.02	5,631.14	5,592.57	145.996	CC
Moser H26-13 - Wellbore #1 - Wellbore #1 - As Drilled	7,000.00	6,816.89	5,631.23	5,592.52	145.477	ES
Moser H26-13 - Wellbore #1 - Wellbore #1 - As Drilled	10,700.00	7,206.09	6,965.48	6,904.43	114.106	SF
Moser H26-14 - Original Drilling - Original Drilling - As Dr	6,989.91	6,807.86	4,080.77	4,042.15	105.679	CC
Moser H26-14 - Original Drilling - Original Drilling - As Dr	7,000.00	6,812.17	4,080.78	4,042.13	105.568	ES
Moser H26-14 - Original Drilling - Original Drilling - As Dr	9,200.00	6,900.01	4,757.90	4,707.44	94.287	SF
Moser H26-18D - Original Drilling - Original Drilling - As D	0.00	0.00	4,438.93			
Moser H26-18D - Original Drilling - Original Drilling - As D	6,900.00	7,230.99	5,152.86	5,095.37	89.632	SF
Moser H26-24 - Original Drilling - Original Drilling - As Dr	6,666.89	6,666.89	3,978.58	3,941.10	106.155	CC
Moser H26-24 - Original Drilling - Original Drilling - As Dr	6,700.00	6,739.39	3,978.88	3,941.09	105.278	ES
Moser H26-24 - Original Drilling - Original Drilling - As Dr	10,900.00	10,900.00	6,423.48	6,355.20	94.075	SF
Moser H26-25 - Original Drilling - Original Drilling - As Dr	6,778.78	6,843.94	4,698.72	4,660.42	122.678	CC, ES
Moser H26-25 - Original Drilling - Original Drilling - As Dr	9,200.00	7,060.22	5,622.72	5,572.34	111.609	SF
Moser H26-27D - Original Drilling - Original Drilling - As D	0.00	14.69	4,462.60			
Moser H26-27D - Original Drilling - Original Drilling - As D	6,900.00	7,023.34	5,500.62	5,459.70	134.438	SF
Moser H26-28D - Original Drilling - Original Drilling - As D	0.00	15.94	4,455.72			

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



**Noble Energy, Inc.**  
Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Emmy State H36-773
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	WELL @ 4847.00ft (Original Well Elev)
<b>Reference Site:</b>	H Section 25	<b>MD Reference:</b>	WELL @ 4847.00ft (Original Well Elev)
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Emmy State H36-773	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	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 H26-28D - Original Drilling - Original Drilling - As D	11,000.00	11,000.00	9,867.81	9,761.96	93.231	SF
Moser H26-29D - Original Drilling - Original Drilling - As D	0.00	19.54	4,448.93			
Moser H26-29D - Original Drilling - Original Drilling - As D	200.00	196.00	4,449.49	4,448.71	5,654.440	ES
Moser H26-29D - Original Drilling - Original Drilling - As D	8,500.00	8,500.00	7,878.59	7,788.15	87.107	SF
Moser, Wesley E. G. U. B1 (PA) - Original Drilling - Origin	6,858.51	6,787.67	5,276.62	5,126.15	35.067	CC
Moser, Wesley E. G. U. B1 (PA) - Original Drilling - Origin	6,900.00	6,817.67	5,276.94	5,125.77	34.908	ES
Moser, Wesley E. G. U. B1 (PA) - Original Drilling - Origin	7,350.00	7,000.14	5,325.82	5,169.61	34.093	SF

**Noble Energy, Inc.**  
Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Emmy State H36-773
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	WELL @ 4847.00ft (Original Well Elev)
<b>Reference Site:</b>	H Section 25	<b>MD Reference:</b>	WELL @ 4847.00ft (Original Well Elev)
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Emmy State H36-773	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

**Summary**

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
H Section 35						
Cannon Farms 01-35C - Original Drilling - Original Drilling	11,360.49	7,002.65	2,011.33	1,939.70	28.079	CC
Cannon Farms 01-35C - Original Drilling - Original Drilling	11,400.00	7,001.68	2,011.72	1,939.68	27.927	ES
Cannon Farms 01-35C - Original Drilling - Original Drilling	11,700.00	7,005.71	2,039.77	1,965.14	27.332	SF
Cannon H35-03D - Original Drilling - Original Drilling - As	10,894.64	6,881.23	4,447.41	4,380.51	66.475	CC
Cannon H35-03D - Original Drilling - Original Drilling - As	10,900.00	6,881.33	4,447.41	4,380.46	66.423	ES
Cannon H35-03D - Original Drilling - Original Drilling - As	11,925.00	6,900.01	4,565.15	4,489.26	60.158	SF
Cannon H35-09 - Original Drilling - Original Drilling - As D	10,423.37	6,972.75	1,652.22	1,585.11	24.618	CC, ES
Cannon H35-09 - Original Drilling - Original Drilling - As D	10,700.00	6,966.88	1,675.21	1,605.76	24.120	SF
Cannon H35-10 - Original Drilling - Original Drilling - As D	10,559.67	7,058.41	2,890.12	2,825.69	44.857	CC
Cannon H35-10 - Original Drilling - Original Drilling - As D	10,600.00	7,058.54	2,890.40	2,825.58	44.586	ES
Cannon H35-10 - Original Drilling - Original Drilling - As D	11,400.00	7,061.19	3,009.81	2,938.59	42.262	SF
Cannon H35-11 - Original Drilling - Original Drilling - As D	10,465.42	6,917.14	3,960.68	3,897.53	62.719	CC
Cannon H35-11 - Original Drilling - Original Drilling - As D	10,500.00	6,917.46	3,960.83	3,897.35	62.392	ES
Cannon H35-11 - Original Drilling - Original Drilling - As D	11,900.00	6,932.18	4,212.45	4,137.94	56.533	SF
Cannon H35-12 - Original Drilling - Original Drilling - As D	10,602.86	7,048.89	5,424.58	5,359.78	83.709	CC
Cannon H35-12 - Original Drilling - Original Drilling - As D	10,700.00	7,049.63	5,425.45	5,359.73	82.546	ES
Cannon H35-12 - Original Drilling - Original Drilling - As D	11,925.00	7,058.69	5,583.37	5,507.06	73.162	SF
Cannon H35-13 - Wellbore #1 - Wellbore #1 - As Drilled	11,793.91	7,064.79	5,459.67	5,383.85	72.005	CC
Cannon H35-13 - Wellbore #1 - Wellbore #1 - As Drilled	11,800.00	7,064.65	5,459.68	5,383.80	71.949	ES
Cannon H35-13 - Wellbore #1 - Wellbore #1 - As Drilled	11,925.00	7,061.70	5,461.25	5,384.16	70.846	SF
Cannon H35-14 - Original Drilling - Original Drilling - As D	11,797.46	7,024.27	4,066.16	3,983.44	49.150	CC
Cannon H35-14 - Original Drilling - Original Drilling - As D	11,800.00	7,024.25	4,066.17	3,983.41	49.135	ES
Cannon H35-14 - Original Drilling - Original Drilling - As D	11,925.00	7,023.47	4,068.16	3,984.20	48.453	SF
Cannon H35-15 (PA) - Original Drilling - Original Drilling -	11,806.51	7,014.00	2,849.30	2,657.58	14.861	CC, ES
Cannon H35-15 (PA) - Original Drilling - Original Drilling -	11,925.00	7,014.00	2,851.77	2,658.86	14.783	SF
Cannon H35-20 - Original Drilling - Original Drilling - As D	9,986.34	6,878.12	4,835.49	4,776.72	82.270	CC
Cannon H35-20 - Original Drilling - Original Drilling - As D	10,000.00	6,878.24	4,835.51	4,776.61	82.093	ES
Cannon H35-20 - Original Drilling - Original Drilling - As D	11,925.00	6,900.01	5,209.60	5,135.43	70.240	SF
Cannon H35-21 - Original Drilling - Original Drilling - As D	10,038.82	7,053.19	3,416.41	3,356.65	57.162	CC
Cannon H35-21 - Original Drilling - Original Drilling - As D	10,100.00	7,053.33	3,416.96	3,356.61	56.621	ES
Cannon H35-21 - Original Drilling - Original Drilling - As D	11,200.00	7,055.50	3,608.35	3,539.33	52.277	SF
Cannon H35-22 - Original Drilling - Original Drilling - As D	9,934.06	7,030.48	2,486.92	2,428.20	42.357	CC, ES
Cannon H35-22 - Original Drilling - Original Drilling - As D	10,600.00	7,020.15	2,574.50	2,510.40	40.161	SF
Cannon H35-24 - Original Drilling - Original Drilling - As D	11,228.09	6,867.77	3,590.93	3,521.01	51.358	CC, ES
Cannon H35-24 - Original Drilling - Original Drilling - As D	11,925.00	6,875.40	3,657.92	3,581.86	48.094	SF
Cannon X02-27 - Original Drilling - Original Drilling - As D	11,925.00	7,014.17	2,443.66	2,367.70	32.169	CC, ES, SF
Cannon X02-28 - Original Drilling - Original Drilling - As D	11,925.00	6,946.49	3,609.01	3,532.50	47.168	CC, ES, SF
Cannon X02-29 - Original Drilling - Original Drilling - As D	11,925.00	7,161.88	4,935.15	4,857.69	63.715	CC, ES, SF
Foster 18-35 - Original Drilling - Original Drilling - As Drill	8,327.39	6,923.44	5,001.26	4,955.77	109.931	CC
Foster 18-35 - Original Drilling - Original Drilling - As Drill	8,400.00	6,923.88	5,001.79	4,955.76	108.658	ES
Foster 18-35 - Original Drilling - Original Drilling - As Drill	11,100.00	6,939.73	5,718.35	5,652.89	87.358	SF
Foster UPRR 31-35 #1 (PA) - Original Drilling - Original D	7,703.21	7,026.01	2,886.43	2,728.53	18.280	CC, ES
Foster UPRR 31-35 #1 (PA) - Original Drilling - Original D	8,100.00	7,026.01	2,913.58	2,753.22	18.169	SF
Foster UPRR 32-35 - Original Drilling - Original Drilling - A	9,039.45	7,031.55	2,988.78	2,937.56	58.352	CC, ES
Foster UPRR 32-35 - Original Drilling - Original Drilling - A	10,100.00	7,035.56	3,171.37	3,111.90	53.332	SF
Foster UPRR 41-35 - Original Drilling - Original Drilling - A	7,894.92	7,015.84	1,554.02	1,501.28	29.466	CC
Foster UPRR 41-35 - Original Drilling - Original Drilling - A	7,900.00	7,015.87	1,554.03	1,501.26	29.447	ES
Foster UPRR 41-35 - Original Drilling - Original Drilling - A	8,200.00	7,017.51	1,583.69	1,528.83	28.867	SF
Foster UPRR 42-35 #2 - Original Drilling - Original Drilling	8,990.18	7,066.92	1,574.70	1,523.80	30.937	CC
Foster UPRR 42-35 #2 - Original Drilling - Original Drilling	9,000.00	7,067.16	1,574.73	1,523.74	30.882	ES
Foster UPRR 42-35 #2 - Original Drilling - Original Drilling	9,300.00	7,074.44	1,604.87	1,551.35	29.985	SF
HSR Foster 03-35 - Original Drilling - Original Drilling - As	7,944.11	7,066.62	4,121.93	4,078.49	94.877	CC, ES
HSR Foster 03-35 - Original Drilling - Original Drilling - As	11,600.00	11,600.00	5,508.56	5,427.71	68.138	SF

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

**Noble Energy, Inc.**  
Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Emmy State H36-773
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	WELL @ 4847.00ft (Original Well Elev)
<b>Reference Site:</b>	H Section 25	<b>MD Reference:</b>	WELL @ 4847.00ft (Original Well Elev)
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Emmy State H36-773	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
H Section 35						
HSR Foster 04-35 - Wellbore #1 - Wellbore #1 - As Drille	7,680.56	6,763.94	5,793.21	5,752.22	141.346	CC
HSR Foster 04-35 - Wellbore #1 - Wellbore #1 - As Drille	7,700.00	6,763.91	5,793.24	5,752.15	141.003	ES
HSR Foster 04-35 - Wellbore #1 - Wellbore #1 - As Drille	11,400.00	6,758.77	6,884.43	6,818.42	104.282	SF
HSR Foster 05-35 - Wellbore #1 - Wellbore #1 - As Drille	9,264.30	6,722.56	5,549.67	5,497.63	106.642	CC
HSR Foster 05-35 - Wellbore #1 - Wellbore #1 - As Drille	9,300.00	6,722.65	5,549.78	5,497.43	106.011	ES
HSR Foster 05-35 - Wellbore #1 - Wellbore #1 - As Drille	11,925.00	6,729.67	6,154.52	6,082.04	84.919	SF
HSR Foster 06-35 - Original Drilling - Original Drilling - As	9,128.05	7,010.28	4,186.75	4,134.89	80.728	CC
HSR Foster 06-35 - Original Drilling - Original Drilling - As	9,200.00	7,009.51	4,187.37	4,134.88	79.780	ES
HSR Foster 06-35 - Original Drilling - Original Drilling - As	11,000.00	7,009.96	4,586.14	4,520.04	69.380	SF
UPRR 53 Pan Am Unit P1 - Original Drilling - Original Dri	8,492.74	7,012.63	2,096.76	2,049.83	44.678	CC
UPRR 53 Pan Am Unit P1 - Original Drilling - Original Dri	8,500.00	7,012.60	2,096.77	2,049.78	44.622	ES
UPRR 53 Pan Am Unit P1 - Original Drilling - Original Dri	9,100.00	7,010.09	2,182.92	2,131.38	42.354	SF
UPRR 53 Pan Am UT P2 - Original Drilling - Original Drill	8,175.58	6,859.44	4,582.11	4,537.90	103.652	CC
UPRR 53 Pan Am UT P2 - Original Drilling - Original Drill	8,200.00	6,859.46	4,582.17	4,537.80	103.258	ES
UPRR 53 Pan Am UT P2 - Original Drilling - Original Drill	10,600.00	6,860.87	5,183.97	5,122.51	84.344	SF

**Noble Energy, Inc.**  
Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Emmy State H36-773
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	WELL @ 4847.00ft (Original Well Elev)
<b>Reference Site:</b>	H Section 25	<b>MD Reference:</b>	WELL @ 4847.00ft (Original Well Elev)
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Emmy State H36-773	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	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	9,303.74	6,946.02	2,109.90	2,056.85	39.773	CC, ES
Dechant 07-36 - Original Drilling - Original Drilling - As Dr	9,700.00	6,947.89	2,146.79	2,091.23	38.640	SF
Dechant 13N-1HZ - Production Hole - Production Hole - A	11,925.00	6,758.00	750.68	693.68	13.170	CC, ES, SF
Dechant 13N-1HZ - Surface Hole - Surface Hole - As Dril	563.17	543.20	5,494.52	5,491.67	1,928.771	CC
Dechant 13N-1HZ - Surface Hole - Surface Hole - As Dril	600.00	574.06	5,494.54	5,491.50	1,808.158	ES
Dechant 13N-1HZ - Surface Hole - Surface Hole - As Dril	11,925.00	600.00	6,415.76	6,374.76	156.455	SF
Dechant 14C-1HZ - Production Hole - Production Hole - A	11,925.00	6,788.98	1,055.80	985.29	14.973	CC, ES, SF
Dechant 14C-1HZ - Surface Hole - Surface Hole - As Dril	251.07	234.09	5,498.36	5,497.28	5,123.364	CC
Dechant 14C-1HZ - Surface Hole - Surface Hole - As Dril	612.55	595.57	5,498.75	5,495.61	1,749.337	ES
Dechant 14C-1HZ - Surface Hole - Surface Hole - As Dril	11,925.00	610.00	6,415.12	6,374.11	156.403	SF
Dechant 15-36 - Original Drilling - Original Drilling - As Dr	11,756.70	6,983.58	2,153.49	2,060.45	23.147	CC, ES
Dechant 15-36 - Original Drilling - Original Drilling - As Dr	11,925.00	6,984.29	2,160.05	2,065.78	22.914	SF
Dechant 24-36 - Original Drilling - Original Drilling - As Dr	9,623.56	7,106.25	2,806.07	2,747.65	48.032	CC, ES
Dechant 24-36 - Original Drilling - Original Drilling - As Dr	10,600.00	7,106.73	2,971.11	2,903.58	44.003	SF
Dechant 35N-E1HZ - Production Hole - Production Hole -	11,925.00	6,744.61	842.83	777.08	12.818	CC, ES, SF
Dechant 35N-E1HZ - Surface Hole - Surface Hole - As D	575.13	557.13	5,497.34	5,494.42	1,882.569	CC
Dechant 35N-E1HZ - Surface Hole - Surface Hole - As D	600.00	578.18	5,497.35	5,494.30	1,802.744	ES
Dechant 35N-E1HZ - Surface Hole - Surface Hole - As D	11,925.00	612.00	6,410.15	6,369.13	156.288	SF
Dechant 35N-W1HZ - Original Drilling - Original Drilling -	11,925.00	6,703.10	623.96	572.11	12.032	CC, ES, SF
Dechant 36N-W1HZ - Original Drilling - Original Drilling -	11,925.00	6,659.30	1,411.95	1,337.83	19.049	CC, ES, SF
Dechant 37N-E1HZ - Production Hole - Production Hole -	11,925.00	6,770.00	3,400.07	3,324.09	44.745	CC, ES, SF
Dechant 37N-E1HZ - Surface Hole - Surface Hole - As D	100.00	79.51	5,639.71	5,639.50	10,000.000	CC
Dechant 37N-E1HZ - Surface Hole - Surface Hole - As D	600.00	547.93	5,642.02	5,639.07	1,915.660	ES
Dechant 37N-E1HZ - Surface Hole - Surface Hole - As D	11,925.00	648.00	6,605.27	6,563.48	158.058	SF
Dechant 37N-W1HZ - Production Hole - Production Hole	11,925.00	7,231.78	2,688.62	2,611.86	35.029	CC, ES, SF
Dechant 37N-W1HZ - Surface Hole - Surface Hole - As D	0.00	0.00	5,665.51			
Dechant 37N-W1HZ - Surface Hole - Surface Hole - As D	700.00	655.00	5,665.83	5,662.29	1,600.808	ES
Dechant 37N-W1HZ - Surface Hole - Surface Hole - As D	11,925.00	655.00	6,605.35	6,563.53	157.944	SF
Dechant State 15C-1HZ - Wellbore #1 - As Drilled	148.80	135.19	1,805.31	1,804.74	3,149.561	CC
Dechant State 15C-1HZ - Wellbore #1 - As Drilled	2,456.88	2,442.99	1,805.47	1,793.56	151.500	ES
Dechant State 15C-1HZ - Wellbore #1 - As Drilled	11,925.00	11,479.62	2,293.33	2,185.16	21.202	SF
Dechant State 16C-1HZ - Original Drilling - Original Drillin	4,307.52	4,301.91	3,179.09	3,154.00	126.679	CC, ES
Dechant State 16C-1HZ - Original Drilling - Original Drillin	11,925.00	11,843.46	3,563.73	3,421.22	25.006	SF
Dechant State 36N-E1HZ - Wellbore #1 - Wellbore #1	4,188.33	4,179.89	1,674.50	1,652.81	77.216	CC
Dechant State 36N-E1HZ - Wellbore #1 - Wellbore #1	4,200.00	4,188.79	1,674.51	1,652.77	77.018	ES
Dechant State 36N-E1HZ - Wellbore #1 - Wellbore #1	11,925.00	11,272.00	1,944.09	1,837.08	18.167	SF
Dechant State 37N-E36HZ - Wellbore #1 - As Drilled	4,638.69	4,980.15	2,954.83	2,928.64	112.833	CC
Dechant State 37N-E36HZ - Wellbore #1 - As Drilled	4,650.98	4,990.66	2,954.86	2,928.61	112.570	ES
Dechant State 37N-E36HZ - Wellbore #1 - As Drilled	11,925.00	11,466.00	3,293.86	3,185.29	30.338	SF
Dechant State 37N-W36HZ - Wellbore #1 - As Drilled	677.64	663.65	1,823.26	1,819.87	536.783	CC
Dechant State 37N-W36HZ - Wellbore #1 - As Drilled	800.00	776.48	1,823.60	1,819.73	470.644	ES
Dechant State 37N-W36HZ - Wellbore #1 - As Drilled	11,925.00	11,490.00	2,753.30	2,644.26	25.250	SF
Dechant State 38N-1HZ - Wellbore #1 - As Drilled	505.28	478.28	3,567.08	3,564.62	1,451.123	CC
Dechant State 38N-1HZ - Wellbore #1 - As Drilled	900.00	866.97	3,567.96	3,563.75	846.113	ES
Dechant State 38N-1HZ - Wellbore #1 - As Drilled	11,925.00	11,376.54	4,025.09	3,916.71	37.138	SF
Dechant State H36-11D - Original Drilling - Original Drillin	10,517.90	6,972.74	969.81	906.05	15.211	CC, ES
Dechant State H36-11D - Original Drilling - Original Drillin	10,600.00	6,971.11	973.28	909.12	15.171	SF
Dechant State H36-18D - Dechant State H36-18D Gyros	8,456.10	7,164.66	1,481.24	1,432.44	30.348	CC
Dechant State H36-18D - Dechant State H36-18D Gyros	8,500.00	7,166.60	1,481.89	1,432.08	29.751	ES
Dechant State H36-18D - Dechant State H36-18D Gyros	9,300.00	7,201.97	1,704.41	1,633.04	23.882	SF
Dechant State H36-18D - Dechant State H36-18D OH - A	8,456.06	7,177.66	1,481.28	1,432.47	30.349	CC
Dechant State H36-18D - Dechant State H36-18D OH - A	8,500.00	7,179.60	1,481.93	1,432.12	29.751	ES
Dechant State H36-18D - Dechant State H36-18D OH - A	9,300.00	7,214.97	1,704.46	1,633.10	23.883	SF

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

**Noble Energy, Inc.**  
Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Emmy State H36-773
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	WELL @ 4847.00ft (Original Well Elev)
<b>Reference Site:</b>	H Section 25	<b>MD Reference:</b>	WELL @ 4847.00ft (Original Well Elev)
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Emmy State H36-773	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

**Summary**

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Separation Factor	Warning
H Section 36						
Dechant State H36-19 - Original Drilling - Original Drilling	8,139.87	6,994.80	87.25	42.81	1.963	CC, ES, SF
Dechant State H36-20D - Dechant State H36-20D Gyros	9,900.00	7,124.78	324.92	260.62	5.054	ES, SF
Dechant State H36-20D - Dechant State H36-20D Gyros	9,919.78	7,125.20	324.31	261.02	5.124	CC
Dechant State H36-20D - Dechant State H36-20D OH - A	9,900.00	7,137.78	324.92	260.63	5.054	ES, SF
Dechant State H36-20D - Dechant State H36-20D OH - A	9,919.79	7,138.20	324.32	261.02	5.124	CC
Dechant State H36-21D - Dechant State H36-21D Gyros	9,880.70	7,061.63	1,536.27	1,471.64	23.773	CC, ES, SF
Dechant State H36-21D - Dechant State H36-21D OH - A	9,880.72	7,074.63	1,536.24	1,471.62	23.773	CC, ES, SF
Dechant State H36-24 - Original Drilling - Original Drilling	11,077.16	7,166.71	1,625.46	1,554.83	23.014	CC
Dechant State H36-24 - Original Drilling - Original Drilling	11,100.00	7,166.47	1,625.62	1,554.81	22.957	ES
Dechant State H36-24 - Original Drilling - Original Drilling	11,300.00	7,164.47	1,640.66	1,568.47	22.725	SF
Dechant State H36-31D - Dechant State H36-31D OH - A	8,522.79	7,157.11	913.19	865.43	19.119	CC, ES
Dechant State H36-31D - Dechant State H36-31D OH - A	8,700.00	7,158.22	930.23	880.05	18.538	SF
Dechant State H36-32D - Dechant State H36-32D Gyros	9,766.10	6,950.00	910.71	847.97	14.515	CC, ES
Dechant State H36-32D - Dechant State H36-32D Gyros	9,800.00	6,950.00	911.34	848.50	14.501	SF
Dechant State H36-32D - Dechant State H36-32D OH - A	9,768.13	7,080.51	904.02	841.07	14.363	CC, ES
Dechant State H36-32D - Dechant State H36-32D OH - A	9,800.00	7,081.34	904.58	841.54	14.350	SF
Dechant State H36-33 - Dechant State H36-33D Gyros -	10,981.82	7,139.70	830.07	761.62	12.128	CC, ES
Dechant State H36-33 - Dechant State H36-33D Gyros -	11,300.00	7,138.45	888.96	813.65	11.804	SF
Dechant State H36-33 - Dechant State H36-33D OH - As	10,981.84	7,152.70	830.06	761.61	12.128	CC, ES
Dechant State H36-33 - Dechant State H36-33D OH - As	11,300.00	7,151.45	888.94	813.63	11.804	SF
HSR Dechant State 01-36 - Wellbore #1 - As Drilled	4,525.70	4,741.06	3,559.66	3,533.35	135.293	CC, ES
HSR Dechant State 01-36 - Wellbore #1 - As Drilled	9,300.00	6,938.60	4,133.98	4,083.70	82.218	SF
HSR Dechant State 02-36 - Original Drilling - Original Dri	4,306.44	4,273.50	1,885.98	1,861.67	77.590	CC, ES
HSR Dechant State 02-36 - Original Drilling - Original Dri	8,000.00	6,951.91	2,071.83	2,028.95	48.318	SF
HSR Dechant/State 07-36 (PA) - Original Drilling - Origina	8,730.98	6,979.00	2,636.06	2,472.08	16.075	CC, ES
HSR Dechant/State 07-36 (PA) - Original Drilling - Origina	9,000.00	6,979.00	2,649.75	2,483.97	15.983	SF
Spike State GWS H36-03 - Original Drilling - Original Dril	7,720.97	6,990.95	1,106.39	1,064.41	26.360	CC, ES
Spike State GWS H36-03 - Original Drilling - Original Dril	7,800.00	6,995.48	1,109.20	1,066.90	26.223	SF
Spike State GWS H36-04 - Original Drilling - Original Dril	7,592.82	6,982.55	398.44	348.90	8.043	CC, ES
Spike State GWS H36-04 - Original Drilling - Original Dril	7,600.00	6,982.50	398.50	348.92	8.036	SF
Spike State GWS H36-13 - Original Drilling - Original Dril	11,822.63	7,110.39	354.61	279.94	4.749	CC, ES, SF
Spike State GWS H36-14 - Original Drilling - Original Dril	11,868.06	6,982.21	1,257.64	1,181.40	16.496	CC, ES
Spike State GWS H36-14 - Original Drilling - Original Dril	11,925.00	6,979.25	1,258.93	1,182.34	16.438	SF
Spike State H36-02J - Original Drilling - Original Drilling -	8,795.53	6,979.75	576.53	493.94	6.981	CC
Spike State H36-02J - Original Drilling - Original Drilling -	8,800.00	6,979.83	576.54	493.94	6.979	ES, SF
Spike State H36-05 - Original Drilling - Original Drilling - A	8,994.81	7,016.24	426.19	375.35	8.384	CC
Spike State H36-05 - Original Drilling - Original Drilling - A	9,000.00	7,016.25	426.22	375.32	8.373	ES, SF
Spike State H36-11J - Original Drilling - Original Drilling -	11,135.54	6,994.46	392.72	323.25	5.653	CC, ES, SF
Spike State H36-12 - Original Drilling - Original Drilling - A	10,265.37	7,000.30	508.47	446.86	8.253	CC, ES
Spike State H36-12 - Original Drilling - Original Drilling - A	10,300.00	7,000.01	509.65	447.63	8.218	SF
X Section 01						
Dechant USX X1-6 - Wellbore #1 - As Drilled	11,925.00	7,046.02	2,216.02	2,163.19	41.947	CC, ES, SF
Dechant USX X1-7 - Wellbore #1 - As Drilled	11,925.00	7,026.44	3,343.73	3,283.47	55.495	CC, ES, SF
Dechant X01-02 - Wellbore #1 - As Drilled	11,925.00	7,097.59	2,493.90	2,419.90	33.698	CC, ES, SF
Dechant X01-03 - Wellbore #1 - Wellbore #1	11,925.00	6,983.74	1,624.94	1,561.04	25.432	CC, ES, SF
Dechant X01-04 - Wellbore #1 - As Drilled	11,925.00	7,010.53	1,102.79	1,059.57	25.513	CC, ES, SF
Dechant X01-06 - Wellbore #1 - As Drilled	11,925.00	7,008.73	2,895.04	2,840.15	52.740	CC, ES, SF
Dechant X12-01 - Wellbore #1 - As Drilled	11,925.00	7,055.03	2,413.80	2,371.30	56.794	CC, ES, SF

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

**Noble Energy, Inc.**  
Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Emmy State H36-773
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	WELL @ 4847.00ft (Original Well Elev)
<b>Reference Site:</b>	H Section 25	<b>MD Reference:</b>	WELL @ 4847.00ft (Original Well Elev)
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Emmy State H36-773	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	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	11,925.00	12,178.00	1,689.19	1,582.21	15.789	CC, ES, SF
Greenleaf 1N-2HZ - Original Hole - As-Drilled	11,925.00	11,854.00	2,209.55	2,091.25	18.677	CC, ES, SF
Greenleaf 26N-2HZ - Original Hole - As-Drilled	11,925.00	11,967.00	1,497.44	1,400.17	15.394	CC, ES, SF
Greenleaf 27N-2HZ - Original Hole - As-Drilled	11,925.00	11,754.00	2,939.39	2,812.82	23.224	CC, ES, SF
Greenleaf 28C-2HZ - Original Hole - Original Hole	11,925.00	12,005.00	3,670.38	3,539.43	28.031	CC, ES, SF
Greenleaf 29C-2HZ - Original Hole - Original Hole	11,925.00	12,733.00	4,777.87	4,639.33	34.489	CC, ES, SF
Greenleaf 29N-2HZ - Original Hole - Original Hole	11,925.00	12,533.00	5,015.59	4,877.85	36.413	CC, ES, SF
Greenleaf 2N-2HZ - Original Hole - Original Hole	11,925.00	12,018.00	3,527.48	3,395.81	26.790	CC, ES, SF
Greenleaf 30N-2HZ - Original Hole - Original Hole	11,925.00	11,541.00	6,117.08	5,985.39	46.450	CC, ES, SF
Greenleaf 3N-2HZR - Original Hole - Original Hole	11,925.00	12,432.00	4,058.82	3,924.90	30.308	CC, ES, SF
Greenleaf 4N-2HZ - Original Hole - Original Hole	11,925.00	12,764.00	5,318.32	5,179.33	38.264	CC, ES, SF
Harkis 11-02 - Original Drilling - Original Drilling - As Drille	11,925.00	6,913.55	5,712.23	5,637.13	76.053	CC, ES, SF
Harkis 31-2 - Original Hole - As-Drilled	11,925.00	7,040.81	3,066.29	2,993.31	42.012	CC, ES, SF
Pioneer 1-2 - Original Hole - As-Drilled	11,925.00	7,261.75	1,785.18	1,694.29	19.643	CC, ES, SF
Pioneer 3-2 - Original Hole - Original Hole	11,925.00	7,290.57	4,274.60	4,158.61	36.854	CC, ES, SF
Pioneer 3-2 - Surface Gyros - Surface Gyros	11,925.00	7,273.57	4,274.66	4,157.15	36.375	CC, ES, SF