

Project: Mustang  
 Site: D Section 02  
 Well: Booth D11-725  
 Wellbore: Booth D11-725  
 Design: Plan #1

# Northern Region - DJ Basin

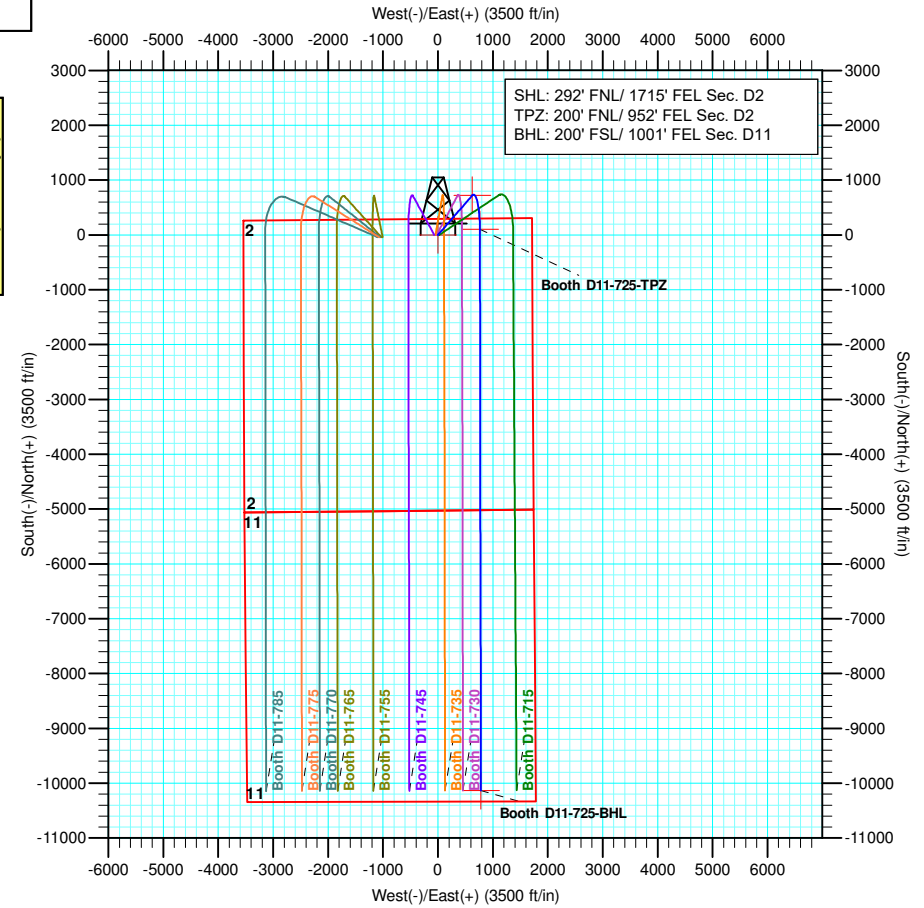
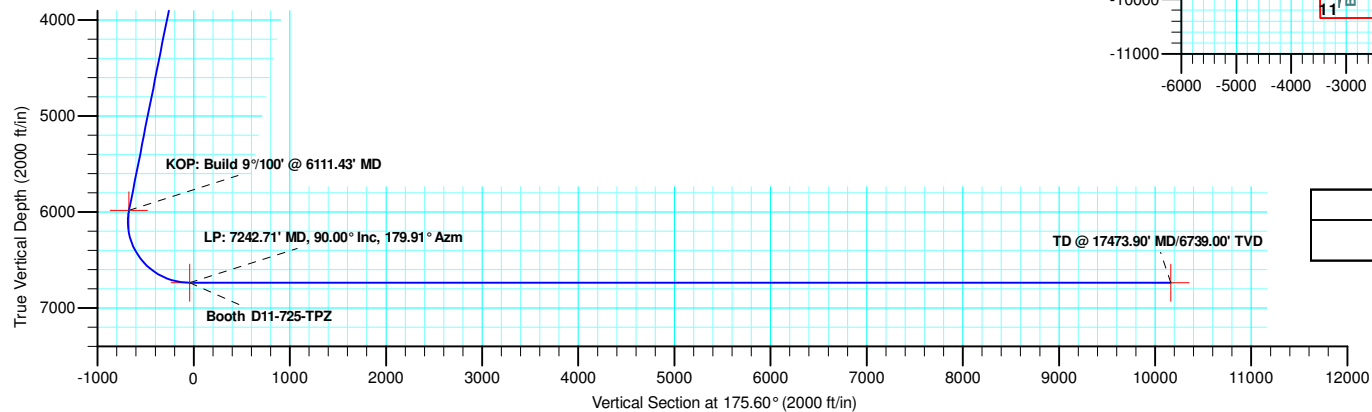
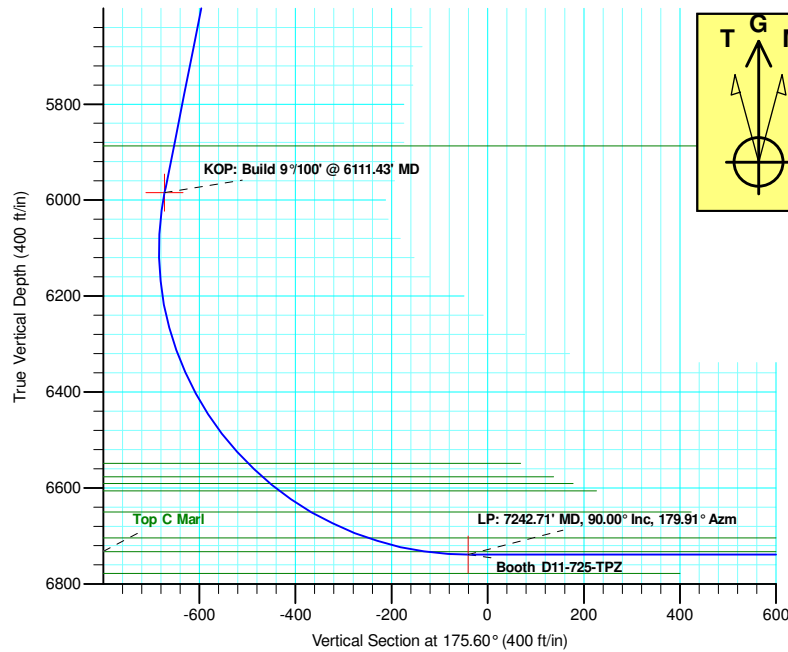
Geodetic System: US State Plane 1983  
 Datum: North American Datum 1983  
 Ellipsoid: GRS 1980  
 Zone: Colorado Northern Zone  
 System Datum: Mean Sea Level

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
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	2985.93	15.72	40.81	2976.10	81.09	70.01	2.00	40.81	-75.47	
4	6111.43	15.72	40.81	5984.72	722.00	623.35	0.00	0.00	-672.01	
5	7242.71	90.00	179.91	6739.00	99.11	763.37	9.00	138.02	-40.20	Booth D11-725-TPZ
6	17473.90	90.00	179.91	6739.00	-10132.06	780.30	0.00	0.00	10162.06	Booth D11-725-BHL

WELL DETAILS: Booth D11-725

+N/-S	+E/-W	Northing	Ground Level: Easting	4722.00 Latitude	Longitude	Slot
0.00	0.00	1339430.28	3274897.00	40.2609440	-104.5149740	



Plan: Plan #1 (Booth D11-725/Booth D11-725)

Created By: Keith Noack Date: 8:15, October 11 2018

# **Northern Region - DJ Basin**

**Mustang**

**D Section 02**

**Booth D11-725**

**Booth D11-725**

**Plan: Plan #1**

## **Standard Planning Report**

**10 October, 2018**

# Noble Energy, Inc.

## Planning Report

<b>Database:</b>	EDMP	<b>Local Co-ordinate Reference:</b>	Well Booth D11-725
<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	Well @ 4752.00ft
<b>Project:</b>	Mustang	<b>MD Reference:</b>	Well @ 4752.00ft
<b>Site:</b>	D Section 02	<b>North Reference:</b>	Grid
<b>Well:</b>	Booth D11-725	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Booth D11-725		
<b>Design:</b>	Plan #1		

<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		

Site		D Section 02			
Site Position:		Northing:	1,334,570.88 usft	Latitude:	40.2476305
From:	Map	Easting:	3,274,069.82 usft	Longitude:	-104.5181305
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.63 °

Well	Booth D11-725					
Well Position	+N/-S	4,859.41 ft	Northing:	1,339,430.28 usft	Latitude:	40.2609440
	+E/-W	827.18 ft	Easting:	3,274,897.00 usft	Longitude:	-104.5149740
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,722.00 ft

<b>Wellbore</b>	Booth D11-725				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2015	10/10/2018	7.93	66.75	52,196.86970508

<b>Design</b>	Plan #1			
<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) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	175.60

<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	
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,985.93	15.72	40.81	2,976.10	81.09	70.01	2.00	2.00	0.00	40.81	
6,111.43	15.72	40.81	5,984.73	722.00	623.35	0.00	0.00	0.00	0.00	
7,242.71	90.00	179.91	6,739.00	99.11	763.37	9.00	6.57	12.30	138.02	Booth D11-725-TP2
17,473.90	90.00	179.91	6,739.00	-10,132.06	780.30	0.00	0.00	0.00	0.00	Booth D11-725-BH1

# Noble Energy, Inc.

## Planning Report

<b>Database:</b>	EDMP	<b>Local Co-ordinate Reference:</b>	Well Booth D11-725
<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	Well @ 4752.00ft
<b>Project:</b>	Mustang	<b>MD Reference:</b>	Well @ 4752.00ft
<b>Site:</b>	D Section 02	<b>North Reference:</b>	Grid
<b>Well:</b>	Booth D11-725	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Booth D11-725		
<b>Design:</b>	Plan #1		

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
420.00	0.00	0.00	420.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Pierre</b>									
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
603.00	0.00	0.00	603.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Upper Pierre Aquifer Top</b>									
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
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
1,507.00	0.00	0.00	1,507.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Upper Pierre Aquifer Base</b>									
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
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
<b>Build: 2°/100'</b>									
2,300.00	2.00	40.81	2,299.98	1.32	1.14	-1.23	2.00	2.00	0.00
2,400.00	4.00	40.81	2,399.84	5.28	4.56	-4.92	2.00	2.00	0.00
2,500.00	6.00	40.81	2,499.45	11.88	10.26	-11.06	2.00	2.00	0.00
2,600.00	8.00	40.81	2,598.70	21.10	18.22	-19.64	2.00	2.00	0.00
2,700.00	10.00	40.81	2,697.47	32.94	28.44	-30.66	2.00	2.00	0.00
2,800.00	12.00	40.81	2,795.62	47.39	40.91	-44.10	2.00	2.00	0.00
2,900.00	14.00	40.81	2,893.06	64.41	55.61	-59.95	2.00	2.00	0.00
2,985.93	15.72	40.81	2,976.10	81.09	70.01	-75.47	2.00	2.00	0.00
<b>Hold: 15.72° Inc, 40.81° Azm</b>									
3,000.00	15.72	40.81	2,989.65	83.98	72.50	-78.16	0.00	0.00	0.00
3,100.00	15.72	40.81	3,085.91	104.48	90.21	-97.25	0.00	0.00	0.00
3,200.00	15.72	40.81	3,182.17	124.99	107.91	-116.33	0.00	0.00	0.00
3,300.00	15.72	40.81	3,278.43	145.49	125.61	-135.42	0.00	0.00	0.00
3,400.00	15.72	40.81	3,374.69	166.00	143.32	-154.51	0.00	0.00	0.00
3,500.00	15.72	40.81	3,470.95	186.51	161.02	-173.59	0.00	0.00	0.00
3,600.00	15.72	40.81	3,567.21	207.01	178.73	-192.68	0.00	0.00	0.00
3,660.03	15.72	40.81	3,625.00	219.32	189.35	-204.13	0.00	0.00	0.00
<b>Parkman</b>									
3,700.00	15.72	40.81	3,663.48	227.52	196.43	-211.76	0.00	0.00	0.00
3,800.00	15.72	40.81	3,759.74	248.02	214.13	-230.85	0.00	0.00	0.00
3,900.00	15.72	40.81	3,856.00	268.53	231.84	-249.94	0.00	0.00	0.00
4,000.00	15.72	40.81	3,952.26	289.04	249.54	-269.02	0.00	0.00	0.00
4,100.00	15.72	40.81	4,048.52	309.54	267.25	-288.11	0.00	0.00	0.00

# Noble Energy, Inc.

## Planning Report

<b>Database:</b>	EDMP	<b>Local Co-ordinate Reference:</b>	Well Booth D11-725
<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	Well @ 4752.00ft
<b>Project:</b>	Mustang	<b>MD Reference:</b>	Well @ 4752.00ft
<b>Site:</b>	D Section 02	<b>North Reference:</b>	Grid
<b>Well:</b>	Booth D11-725	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Booth D11-725		
<b>Design:</b>	Plan #1		

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)
4,200.00	15.72	40.81	4,144.78	330.05	284.95	-307.19	0.00	0.00	0.00
4,300.00	15.72	40.81	4,241.04	350.55	302.66	-326.28	0.00	0.00	0.00
4,360.21	15.72	40.81	4,299.00	362.90	313.32	-337.77	0.00	0.00	0.00
<b>Sussex</b>									
4,400.00	15.72	40.81	4,337.30	371.06	320.36	-345.37	0.00	0.00	0.00
4,500.00	15.72	40.81	4,433.56	391.57	338.06	-364.45	0.00	0.00	0.00
4,600.00	15.72	40.81	4,529.82	412.07	355.77	-383.54	0.00	0.00	0.00
4,700.00	15.72	40.81	4,626.08	432.58	373.47	-402.62	0.00	0.00	0.00
4,800.00	15.72	40.81	4,722.34	453.08	391.18	-421.71	0.00	0.00	0.00
4,900.00	15.72	40.81	4,818.60	473.59	408.88	-440.80	0.00	0.00	0.00
4,910.80	15.72	40.81	4,829.00	475.81	410.79	-442.86	0.00	0.00	0.00
<b>Shannon</b>									
5,000.00	15.72	40.81	4,914.86	494.10	426.58	-459.88	0.00	0.00	0.00
5,100.00	15.72	40.81	5,011.12	514.60	444.29	-478.97	0.00	0.00	0.00
5,200.00	15.72	40.81	5,107.38	535.11	461.99	-498.05	0.00	0.00	0.00
5,300.00	15.72	40.81	5,203.64	555.61	479.70	-517.14	0.00	0.00	0.00
5,400.00	15.72	40.81	5,299.90	576.12	497.40	-536.23	0.00	0.00	0.00
5,500.00	15.72	40.81	5,396.16	596.63	515.10	-555.31	0.00	0.00	0.00
5,600.00	15.72	40.81	5,492.42	617.13	532.81	-574.40	0.00	0.00	0.00
5,700.00	15.72	40.81	5,588.68	637.64	550.51	-593.48	0.00	0.00	0.00
5,800.00	15.72	40.81	5,684.94	658.14	568.22	-612.57	0.00	0.00	0.00
5,900.00	15.72	40.81	5,781.20	678.65	585.92	-631.66	0.00	0.00	0.00
6,000.00	15.72	40.81	5,877.47	699.16	603.62	-650.74	0.00	0.00	0.00
6,009.91	15.72	40.81	5,887.00	701.19	605.38	-652.63	0.00	0.00	0.00
<b>Teepee Buttes</b>									
6,100.00	15.72	40.81	5,973.73	719.66	621.33	-669.83	0.00	0.00	0.00
6,111.43	15.72	40.81	5,984.73	722.00	623.35	-672.01	0.00	0.00	0.00
<b>KOP: Build 9°/100' @ 6111.43' MD</b>									
6,150.00	13.34	50.92	6,022.07	728.77	630.22	-678.22	9.00	-6.18	26.22
6,200.00	11.12	69.56	6,070.95	734.09	639.22	-682.84	9.00	-4.44	37.28
6,250.00	10.46	93.52	6,120.09	735.49	648.27	-683.54	9.00	-1.32	47.92
6,300.00	11.63	116.37	6,169.19	732.97	657.32	-680.34	9.00	2.34	45.71
6,350.00	14.18	133.10	6,217.94	726.55	666.32	-673.24	9.00	5.11	33.45
6,400.00	17.53	144.21	6,266.04	716.25	675.20	-662.29	9.00	6.68	22.22
6,450.00	21.29	151.68	6,313.20	702.14	683.91	-647.56	9.00	7.52	14.95
6,500.00	25.28	156.94	6,359.12	684.32	692.40	-629.13	9.00	7.99	10.52
6,550.00	29.41	160.83	6,403.52	662.89	700.62	-607.13	9.00	8.27	7.77
6,600.00	33.63	163.82	6,446.14	637.98	708.52	-581.69	9.00	8.44	5.99
6,650.00	37.91	166.22	6,486.70	609.75	716.04	-552.97	9.00	8.56	4.79
6,700.00	42.23	168.19	6,524.95	578.37	723.14	-521.13	9.00	8.64	3.95
6,733.25	45.12	169.33	6,549.00	555.85	727.61	-498.34	9.00	8.68	3.42
<b>Sharon Springs</b>									
6,750.00	46.58	169.86	6,560.67	544.03	729.78	-486.38	9.00	8.71	3.17
6,774.24	48.69	170.59	6,577.00	526.38	732.81	-468.56	9.00	8.72	2.99
<b>Top A Chalk</b>									
6,795.86	50.58	171.19	6,591.00	510.12	735.42	-452.14	9.00	8.74	2.81
<b>Top A Marl</b>									
6,800.00	50.94	171.31	6,593.62	506.94	735.91	-448.94	9.00	8.75	2.72
6,820.03	52.70	171.83	6,606.00	491.37	738.22	-433.24	9.00	8.76	2.64
<b>Top B Chalk</b>									
6,850.00	55.33	172.58	6,623.61	467.35	741.50	-409.03	9.00	8.77	2.49
6,899.10	59.64	173.71	6,650.00	426.25	746.43	-367.67	9.00	8.79	2.30
<b>Top B Marl</b>									

# Noble Energy, Inc.

## Planning Report

<b>Database:</b>	EDMP	<b>Local Co-ordinate Reference:</b>	Well Booth D11-725
<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	Well @ 4752.00ft
<b>Project:</b>	Mustang	<b>MD Reference:</b>	Well @ 4752.00ft
<b>Site:</b>	D Section 02	<b>North Reference:</b>	Grid
<b>Well:</b>	Booth D11-725	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Booth D11-725		
<b>Design:</b>	Plan #1		

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)
6,900.00	59.72	173.73	6,650.45	425.48	746.52	-366.90	9.00	8.80	2.19
6,950.00	64.12	174.78	6,673.98	381.59	750.93	-322.81	9.00	8.81	2.10
7,000.00	68.54	175.75	6,694.05	335.97	754.70	-277.03	9.00	8.82	1.95
7,028.83	71.08	176.28	6,704.00	308.98	756.58	-249.97	9.00	8.83	1.85
Top C Chalk									
7,050.00	72.95	176.67	6,710.54	288.88	757.81	-229.84	9.00	8.84	1.80
7,100.00	77.37	177.54	6,723.34	240.62	760.25	-181.53	9.00	8.84	1.75
7,150.00	81.79	178.38	6,732.38	191.49	762.00	-132.41	9.00	8.85	1.69
7,154.48	82.19	178.46	6,733.00	187.06	762.12	-127.98	9.00	8.85	1.66
Top C Marl									
7,200.00	86.22	179.21	6,737.60	141.79	763.04	-82.78	9.00	8.85	1.65
7,242.71	90.00	179.91	6,739.00	99.11	763.37	-40.20	9.00	8.85	1.63
LP: 7242.71' MD, 90.00° Inc, 179.91° Azm									
7,300.00	90.00	179.91	6,739.00	41.82	763.47	16.93	0.00	0.00	0.00
7,400.00	90.00	179.91	6,739.00	-58.18	763.63	116.65	0.00	0.00	0.00
7,500.00	90.00	179.91	6,739.00	-158.18	763.80	216.36	0.00	0.00	0.00
7,600.00	90.00	179.91	6,739.00	-258.18	763.97	316.08	0.00	0.00	0.00
7,700.00	90.00	179.91	6,739.00	-358.18	764.13	415.80	0.00	0.00	0.00
7,800.00	90.00	179.91	6,739.00	-458.18	764.30	515.51	0.00	0.00	0.00
7,900.00	90.00	179.91	6,739.00	-558.18	764.46	615.23	0.00	0.00	0.00
8,000.00	90.00	179.91	6,739.00	-658.18	764.63	714.95	0.00	0.00	0.00
8,100.00	90.00	179.91	6,739.00	-758.18	764.79	814.67	0.00	0.00	0.00
8,200.00	90.00	179.91	6,739.00	-858.18	764.96	914.38	0.00	0.00	0.00
8,300.00	90.00	179.91	6,739.00	-958.18	765.12	1,014.10	0.00	0.00	0.00
8,400.00	90.00	179.91	6,739.00	-1,058.18	765.29	1,113.82	0.00	0.00	0.00
8,500.00	90.00	179.91	6,739.00	-1,158.18	765.45	1,213.54	0.00	0.00	0.00
8,600.00	90.00	179.91	6,739.00	-1,258.18	765.62	1,313.25	0.00	0.00	0.00
8,700.00	90.00	179.91	6,739.00	-1,358.18	765.79	1,412.97	0.00	0.00	0.00
8,800.00	90.00	179.91	6,739.00	-1,458.18	765.95	1,512.69	0.00	0.00	0.00
8,900.00	90.00	179.91	6,739.00	-1,558.18	766.12	1,612.41	0.00	0.00	0.00
9,000.00	90.00	179.91	6,739.00	-1,658.18	766.28	1,712.12	0.00	0.00	0.00
9,100.00	90.00	179.91	6,739.00	-1,758.18	766.45	1,811.84	0.00	0.00	0.00
9,200.00	90.00	179.91	6,739.00	-1,858.18	766.61	1,911.56	0.00	0.00	0.00
9,300.00	90.00	179.91	6,739.00	-1,958.18	766.78	2,011.27	0.00	0.00	0.00
9,400.00	90.00	179.91	6,739.00	-2,058.18	766.94	2,110.99	0.00	0.00	0.00
9,500.00	90.00	179.91	6,739.00	-2,158.18	767.11	2,210.71	0.00	0.00	0.00
9,600.00	90.00	179.91	6,739.00	-2,258.18	767.28	2,310.43	0.00	0.00	0.00
9,700.00	90.00	179.91	6,739.00	-2,358.18	767.44	2,410.14	0.00	0.00	0.00
9,800.00	90.00	179.91	6,739.00	-2,458.18	767.61	2,509.86	0.00	0.00	0.00
9,900.00	90.00	179.91	6,739.00	-2,558.18	767.77	2,609.58	0.00	0.00	0.00
10,000.00	90.00	179.91	6,739.00	-2,658.18	767.94	2,709.30	0.00	0.00	0.00
10,100.00	90.00	179.91	6,739.00	-2,758.18	768.10	2,809.01	0.00	0.00	0.00
10,200.00	90.00	179.91	6,739.00	-2,858.18	768.27	2,908.73	0.00	0.00	0.00
10,300.00	90.00	179.91	6,739.00	-2,958.18	768.43	3,008.45	0.00	0.00	0.00
10,400.00	90.00	179.91	6,739.00	-3,058.18	768.60	3,108.17	0.00	0.00	0.00
10,500.00	90.00	179.91	6,739.00	-3,158.18	768.76	3,207.88	0.00	0.00	0.00
10,600.00	90.00	179.91	6,739.00	-3,258.18	768.93	3,307.60	0.00	0.00	0.00
10,700.00	90.00	179.91	6,739.00	-3,358.18	769.10	3,407.32	0.00	0.00	0.00
10,800.00	90.00	179.91	6,739.00	-3,458.18	769.26	3,507.03	0.00	0.00	0.00
10,900.00	90.00	179.91	6,739.00	-3,558.18	769.43	3,606.75	0.00	0.00	0.00
11,000.00	90.00	179.91	6,739.00	-3,658.18	769.59	3,706.47	0.00	0.00	0.00
11,100.00	90.00	179.91	6,739.00	-3,758.18	769.76	3,806.19	0.00	0.00	0.00
11,200.00	90.00	179.91	6,739.00	-3,858.18	769.92	3,905.90	0.00	0.00	0.00

# Noble Energy, Inc.

## Planning Report

<b>Database:</b>	EDMP	<b>Local Co-ordinate Reference:</b>	Well Booth D11-725
<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	Well @ 4752.00ft
<b>Project:</b>	Mustang	<b>MD Reference:</b>	Well @ 4752.00ft
<b>Site:</b>	D Section 02	<b>North Reference:</b>	Grid
<b>Well:</b>	Booth D11-725	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Booth D11-725		
<b>Design:</b>	Plan #1		

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)
11,300.00	90.00	179.91	6,739.00	-3,958.18	770.09	4,005.62	0.00	0.00	0.00
11,400.00	90.00	179.91	6,739.00	-4,058.18	770.25	4,105.34	0.00	0.00	0.00
11,500.00	90.00	179.91	6,739.00	-4,158.18	770.42	4,205.06	0.00	0.00	0.00
11,600.00	90.00	179.91	6,739.00	-4,258.18	770.58	4,304.77	0.00	0.00	0.00
11,700.00	90.00	179.91	6,739.00	-4,358.17	770.75	4,404.49	0.00	0.00	0.00
11,800.00	90.00	179.91	6,739.00	-4,458.17	770.92	4,504.21	0.00	0.00	0.00
11,900.00	90.00	179.91	6,739.00	-4,558.17	771.08	4,603.93	0.00	0.00	0.00
12,000.00	90.00	179.91	6,739.00	-4,658.17	771.25	4,703.64	0.00	0.00	0.00
12,100.00	90.00	179.91	6,739.00	-4,758.17	771.41	4,803.36	0.00	0.00	0.00
12,200.00	90.00	179.91	6,739.00	-4,858.17	771.58	4,903.08	0.00	0.00	0.00
12,300.00	90.00	179.91	6,739.00	-4,958.17	771.74	5,002.79	0.00	0.00	0.00
12,400.00	90.00	179.91	6,739.00	-5,058.17	771.91	5,102.51	0.00	0.00	0.00
12,500.00	90.00	179.91	6,739.00	-5,158.17	772.07	5,202.23	0.00	0.00	0.00
12,600.00	90.00	179.91	6,739.00	-5,258.17	772.24	5,301.95	0.00	0.00	0.00
12,700.00	90.00	179.91	6,739.00	-5,358.17	772.40	5,401.66	0.00	0.00	0.00
12,800.00	90.00	179.91	6,739.00	-5,458.17	772.57	5,501.38	0.00	0.00	0.00
12,900.00	90.00	179.91	6,739.00	-5,558.17	772.74	5,601.10	0.00	0.00	0.00
13,000.00	90.00	179.91	6,739.00	-5,658.17	772.90	5,700.82	0.00	0.00	0.00
13,100.00	90.00	179.91	6,739.00	-5,758.17	773.07	5,800.53	0.00	0.00	0.00
13,200.00	90.00	179.91	6,739.00	-5,858.17	773.23	5,900.25	0.00	0.00	0.00
13,300.00	90.00	179.91	6,739.00	-5,958.17	773.40	5,999.97	0.00	0.00	0.00
13,400.00	90.00	179.91	6,739.00	-6,058.17	773.56	6,099.69	0.00	0.00	0.00
13,500.00	90.00	179.91	6,739.00	-6,158.17	773.73	6,199.40	0.00	0.00	0.00
13,600.00	90.00	179.91	6,739.00	-6,258.17	773.89	6,299.12	0.00	0.00	0.00
13,700.00	90.00	179.91	6,739.00	-6,358.17	774.06	6,398.84	0.00	0.00	0.00
13,800.00	90.00	179.91	6,739.00	-6,458.17	774.22	6,498.55	0.00	0.00	0.00
13,900.00	90.00	179.91	6,739.00	-6,558.17	774.39	6,598.27	0.00	0.00	0.00
14,000.00	90.00	179.91	6,739.00	-6,658.17	774.56	6,697.99	0.00	0.00	0.00
14,100.00	90.00	179.91	6,739.00	-6,758.17	774.72	6,797.71	0.00	0.00	0.00
14,200.00	90.00	179.91	6,739.00	-6,858.17	774.89	6,897.42	0.00	0.00	0.00
14,300.00	90.00	179.91	6,739.00	-6,958.17	775.05	6,997.14	0.00	0.00	0.00
14,400.00	90.00	179.91	6,739.00	-7,058.17	775.22	7,096.86	0.00	0.00	0.00
14,500.00	90.00	179.91	6,739.00	-7,158.17	775.38	7,196.58	0.00	0.00	0.00
14,600.00	90.00	179.91	6,739.00	-7,258.17	775.55	7,296.29	0.00	0.00	0.00
14,700.00	90.00	179.91	6,739.00	-7,358.17	775.71	7,396.01	0.00	0.00	0.00
14,800.00	90.00	179.91	6,739.00	-7,458.17	775.88	7,495.73	0.00	0.00	0.00
14,900.00	90.00	179.91	6,739.00	-7,558.17	776.04	7,595.45	0.00	0.00	0.00
15,000.00	90.00	179.91	6,739.00	-7,658.17	776.21	7,695.16	0.00	0.00	0.00
15,100.00	90.00	179.91	6,739.00	-7,758.17	776.38	7,794.88	0.00	0.00	0.00
15,200.00	90.00	179.91	6,739.00	-7,858.17	776.54	7,894.60	0.00	0.00	0.00
15,300.00	90.00	179.91	6,739.00	-7,958.17	776.71	7,994.31	0.00	0.00	0.00
15,400.00	90.00	179.91	6,739.00	-8,058.17	776.87	8,094.03	0.00	0.00	0.00
15,500.00	90.00	179.91	6,739.00	-8,158.17	777.04	8,193.75	0.00	0.00	0.00
15,600.00	90.00	179.91	6,739.00	-8,258.17	777.20	8,293.47	0.00	0.00	0.00
15,700.00	90.00	179.91	6,739.00	-8,358.17	777.37	8,393.18	0.00	0.00	0.00
15,800.00	90.00	179.91	6,739.00	-8,458.17	777.53	8,492.90	0.00	0.00	0.00
15,900.00	90.00	179.91	6,739.00	-8,558.17	777.70	8,592.62	0.00	0.00	0.00
16,000.00	90.00	179.91	6,739.00	-8,658.17	777.86	8,692.34	0.00	0.00	0.00
16,100.00	90.00	179.91	6,739.00	-8,758.17	778.03	8,792.05	0.00	0.00	0.00
16,200.00	90.00	179.91	6,739.00	-8,858.17	778.20	8,891.77	0.00	0.00	0.00
16,300.00	90.00	179.91	6,739.00	-8,958.17	778.36	8,991.49	0.00	0.00	0.00
16,400.00	90.00	179.91	6,739.00	-9,058.17	778.53	9,091.21	0.00	0.00	0.00
16,500.00	90.00	179.91	6,739.00	-9,158.17	778.69	9,190.92	0.00	0.00	0.00
16,600.00	90.00	179.91	6,739.00	-9,258.17	778.86	9,290.64	0.00	0.00	0.00

# Noble Energy, Inc.

## Planning Report

<b>Database:</b>	EDMP	<b>Local Co-ordinate Reference:</b>	Well Booth D11-725
<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	Well @ 4752.00ft
<b>Project:</b>	Mustang	<b>MD Reference:</b>	Well @ 4752.00ft
<b>Site:</b>	D Section 02	<b>North Reference:</b>	Grid
<b>Well:</b>	Booth D11-725	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Booth D11-725		
<b>Design:</b>	Plan #1		

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)	
16,700.00	90.00	179.91	6,739.00	-9,358.17	779.02	9,390.36	0.00	0.00	0.00	
16,800.00	90.00	179.91	6,739.00	-9,458.17	779.19	9,490.07	0.00	0.00	0.00	
16,900.00	90.00	179.91	6,739.00	-9,558.17	779.35	9,589.79	0.00	0.00	0.00	
17,000.00	90.00	179.91	6,739.00	-9,658.17	779.52	9,689.51	0.00	0.00	0.00	
17,100.00	90.00	179.91	6,739.00	-9,758.17	779.68	9,789.23	0.00	0.00	0.00	
17,200.00	90.00	179.91	6,739.00	-9,858.17	779.85	9,888.94	0.00	0.00	0.00	
17,300.00	90.00	179.91	6,739.00	-9,958.17	780.02	9,988.66	0.00	0.00	0.00	
17,400.00	90.00	179.91	6,739.00	-10,058.17	780.18	10,088.38	0.00	0.00	0.00	
17,473.90	90.00	179.91	6,739.00	-10,132.06	780.30	10,162.07	0.00	0.00	0.00	
TD @ 17473.90' MD/6739.00' TVD										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
Booth D11-725-SHL - hit/miss target - Shape - Point	0.00	0.00	0.00	0.00	0.00	1,339,430.28	3,274,897.00	40.2609440	-104.5149740	
Booth D11-725-BHL - plan hits target center - Point	0.00	0.00	6,739.00	-10,132.06	780.30	1,329,298.23	3,275,677.31	40.2331085	-104.5125824	
Booth D11-725-TPZ - plan hits target center - Point	0.00	0.00	6,739.00	99.11	763.37	1,339,529.38	3,275,660.38	40.2611927	-104.5122349	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
420.00	420.00	Pierre				
603.00	603.00	Upper Pierre Aquifer Top				
1,507.00	1,507.00	Upper Pierre Aquifer Base				
3,660.03	3,625.00	Parkman				
4,360.21	4,299.00	Sussex				
4,910.80	4,829.00	Shannon				
6,009.91	5,887.00	Teepee Buttes				
6,733.25	6,549.00	Sharon Springs				
6,774.24	6,577.00	Top A Chalk				
6,795.86	6,591.00	Top A Marl				
6,820.03	6,606.00	Top B Chalk				
6,899.10	6,650.00	Top B Marl				
7,028.83	6,704.00	Top C Chalk				
7,154.48	6,733.00	Top C Marl				



# Noble Energy, Inc.

## Planning Report

<b>Database:</b>	EDMP	<b>Local Co-ordinate Reference:</b>	Well Booth D11-725
<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	Well @ 4752.00ft
<b>Project:</b>	Mustang	<b>MD Reference:</b>	Well @ 4752.00ft
<b>Site:</b>	D Section 02	<b>North Reference:</b>	Grid
<b>Well:</b>	Booth D11-725	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Booth D11-725		
<b>Design:</b>	Plan #1		

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
2,200.00	2,200.00	0.00	0.00	Build: 2°/100'	
2,985.93	2,976.10	81.09	70.01	Hold: 15.72° Inc, 40.81° Azm	
6,111.43	5,984.73	722.00	623.35	KOP: Build 9°/100' @ 6111.43' MD	
7,242.71	6,739.00	99.11	763.37	LP: 7242.71' MD, 90.00° Inc, 179.91° Azm	
17,473.90	6,739.00	-10,132.06	780.30	TD @ 17473.90' MD/6739.00' TVD	

# **Northern Region - DJ Basin**

**Mustang**

**D Section 02**

**Booth D11-725**

**Booth D11-725**

**Plan #1**

## **Anticollision Summary Report**

**10 October, 2018**

# Noble Energy, Inc.

## Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Booth D11-725
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4752.00ft
<b>Reference Site:</b>	D Section 02	<b>MD Reference:</b>	Well @ 4752.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Booth D11-725	<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>	Booth D11-725	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Reference	Plan #1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.00 ft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program		Date	10/10/2018		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.00	17,473.90	Plan #1 (Booth D11-725)	2_MWD+IFR1+MS	A008Mb: IFR dec & multi-station analysis	

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 01						
Abbey D 1-3 (PR) - Wellbore #1 - No Surveys	7,677.82	6,732.00	2,917.62	2,625.50	9.988	CC, ES
Abbey D 1-3 (PR) - Wellbore #1 - No Surveys	7,700.00	6,732.00	2,917.70	2,625.55	9.987	SF
Abbey D 1-4 (PR) - Wellbore #1 - No Surveys	7,687.99	6,720.00	1,588.92	1,297.27	5.448	CC, ES
Abbey D 1-4 (PR) - Wellbore #1 - No Surveys	7,700.00	6,720.00	1,588.97	1,297.29	5.448	SF
Abbey D 1-5 (PR) - Wellbore #1 - No Surveys	9,032.26	6,718.00	1,550.68	1,254.76	5.240	CC, ES
Abbey D 1-5 (PR) - Wellbore #1 - No Surveys	9,100.00	6,718.00	1,552.16	1,255.84	5.238	SF
Abbey D 1-6 (PR) - Wellbore #1 - No Surveys	9,106.01	6,748.00	2,980.45	2,683.00	10.020	CC, ES
Abbey D 1-6 (PR) - Wellbore #1 - No Surveys	9,300.00	6,748.00	2,986.76	2,688.24	10.005	SF
Abbey D 1-7JI (SI) - Wellbore #1 - No Surveys	8,995.61	6,744.00	4,229.83	3,933.04	14.252	CC
Abbey D 1-7JI (SI) - Wellbore #1 - No Surveys	9,000.00	6,744.00	4,229.83	3,933.02	14.251	ES
Abbey D 1-7JI (SI) - Wellbore #1 - No Surveys	9,300.00	6,744.00	4,240.76	3,942.39	14.213	SF
Abbey D01-08J1 - Abbey D01-08J1 OH - As-Drilled	8,709.81	6,641.43	5,559.43	5,508.45	109.057	CC, ES
Abbey D01-08J1 - Abbey D01-08J1 OH - As-Drilled	11,400.00	6,657.54	6,176.08	6,111.17	95.152	SF
Abbey D01-08J1 (PR) - Wellbore #1 - No Surveys	8,789.71	6,754.00	5,553.62	5,257.32	18.743	CC
Abbey D01-08J1 (PR) - Wellbore #1 - No Surveys	8,800.00	6,754.00	5,553.63	5,257.28	18.740	ES
Abbey D01-08J1 (PR) - Wellbore #1 - No Surveys	9,300.00	6,754.00	5,577.02	5,278.21	18.665	SF
Abbey D01-18 (SI) - Wellbore #1 - No Surveys	8,355.48	6,737.00	3,479.27	3,185.26	11.834	CC, ES
Abbey D01-18 (SI) - Wellbore #1 - No Surveys	8,500.00	6,737.00	3,482.27	3,187.70	11.822	SF
Abbey D01-19 (TA) - Wellbore #1 - No Surveys	8,620.58	6,735.00	2,314.30	2,019.43	7.849	CC, ES
Abbey D01-19 (TA) - Wellbore #1 - No Surveys	8,700.00	6,735.00	2,315.66	2,020.42	7.843	SF
Abbey D01-23 (PR) - Wellbore #1 - No Surveys	10,912.13	6,787.00	4,954.54	4,645.18	16.015	CC, ES
Abbey D01-23 (PR) - Wellbore #1 - No Surveys	11,500.00	6,787.00	4,989.30	4,675.82	15.916	SF
Abbey D01-27 (SI) - Wellbore #1 - No Surveys	7,240.79	6,749.00	4,838.87	4,546.55	16.553	CC
Abbey D01-27 (SI) - Wellbore #1 - No Surveys	7,242.71	6,749.00	4,838.87	4,546.55	16.553	ES
Abbey D01-27 (SI) - Wellbore #1 - No Surveys	7,300.00	6,749.00	4,839.26	4,546.91	16.553	SF
Abbey D01-28 (SI) - Wellbore #1 - No Surveys	7,300.92	6,731.00	3,733.98	3,442.35	12.804	CC, ES, SF
Abbey D01-29 (SI) - Wellbore #1 - No Surveys	7,212.49	6,733.30	2,258.98	1,967.30	7.745	CC, ES
Abbey D01-29 (SI) - Wellbore #1 - No Surveys	7,242.71	6,734.00	2,259.31	1,967.59	7.745	SF
Abbey D01-32D - Wellbore #1 - Wellbore #1 - As Drilled	9,585.75	6,790.57	1,079.89	1,022.08	18.683	CC, ES
Abbey D01-32D - Wellbore #1 - Wellbore #1 - As Drilled	9,700.00	6,789.46	1,085.91	1,027.60	18.622	SF
Guttersen D01-31D (PR) - Guttersen D01-31D OH - As-D	8,335.52	6,839.45	876.56	823.92	16.651	CC, ES
Guttersen D01-31D (PR) - Guttersen D01-31D OH - As-D	8,500.00	6,834.32	891.84	837.66	16.460	SF
HSR-Guttersen 11-1 (PR) - Wellbore #1 - No Surveys	10,286.95	6,761.00	2,919.22	2,614.84	9.591	CC
HSR-Guttersen 11-1 (PR) - Wellbore #1 - No Surveys	10,300.00	6,761.00	2,919.25	2,614.77	9.588	ES
HSR-Guttersen 11-1 (PR) - Wellbore #1 - No Surveys	10,500.00	6,761.00	2,926.99	2,621.13	9.570	SF
HSR-Guttersen 12-1 (PR) - Wellbore #1 - No Surveys	10,310.53	6,711.00	1,596.38	1,293.85	5.277	CC, ES
HSR-Guttersen 12-1 (PR) - Wellbore #1 - No Surveys	10,400.00	6,711.00	1,598.88	1,295.67	5.273	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 Booth D11-725
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4752.00ft
<b>Reference Site:</b>	D Section 02	<b>MD Reference:</b>	Well @ 4752.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Booth D11-725	<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>	Booth D11-725	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #1	<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 01						
HSR-Guttersen 14-1 (SI) - Wellbore #1 - No Surveys	11,631.31	6,741.00	2,909.80	2,597.44	9.316	CC, ES
HSR-Guttersen 14-1 (SI) - Wellbore #1 - No Surveys	11,800.00	6,741.00	2,914.69	2,601.02	9.292	SF
HSR-Guttersen 15-1 (SI) - Wellbore #1 - Wellbore #1	11,813.58	6,779.00	4,410.56	4,095.42	13.996	CC, ES
HSR-Guttersen 15-1 (SI) - Wellbore #1 - Wellbore #1	12,300.00	6,779.00	4,437.31	4,118.57	13.921	SF
HSR-Guttersen 16-1 (SI) - Wellbore #1 - No Surveys	11,808.05	6,807.00	5,733.66	5,417.44	18.132	CC, ES
HSR-Guttersen 16-1 (SI) - Wellbore #1 - No Surveys	12,500.00	6,807.00	5,775.27	5,453.99	17.976	SF
Keisha White D01-01 - Wellbore #1 - Wellbore #1 - As D	7,616.09	6,758.41	5,502.13	5,453.98	114.278	CC, ES
Keisha White D01-01 - Wellbore #1 - Wellbore #1 - As D	10,500.00	6,774.71	6,212.09	6,152.42	104.103	SF
Keisha White D01-07 (PR) - Wellbore #1 - No Surveys	9,680.43	6,746.00	4,239.23	3,938.94	14.117	CC
Keisha White D01-07 (PR) - Wellbore #1 - No Surveys	9,700.00	6,746.00	4,239.27	3,938.87	14.112	ES
Keisha White D01-07 (PR) - Wellbore #1 - No Surveys	10,000.00	6,746.00	4,251.26	3,949.01	14.065	SF
Keisha White D01-08 (PR) - Wellbore #1 - No Surveys	9,759.63	6,763.00	5,465.34	5,163.94	18.133	CC
Keisha White D01-08 (PR) - Wellbore #1 - No Surveys	9,800.00	6,763.00	5,465.49	5,163.84	18.119	ES
Keisha White D01-08 (PR) - Wellbore #1 - No Surveys	10,400.00	6,763.00	5,502.73	5,197.37	18.020	SF
UPV 1-2J4 (PR) - Wellbore #1 - No Surveys	8,004.99	6,746.00	4,577.51	4,284.16	15.604	CC, ES
UPV 1-2J4 (PR) - Wellbore #1 - No Surveys	8,200.00	6,746.00	4,581.67	4,287.73	15.587	SF
Woody D01-09 - Wellbore #1 - Wellbore #1 - As Drilled	10,440.98	6,651.95	5,717.25	5,657.18	95.184	CC
Woody D01-09 - Wellbore #1 - Wellbore #1 - As Drilled	10,500.00	6,650.72	5,717.55	5,657.09	94.570	ES
Woody D01-09 - Wellbore #1 - Wellbore #1 - As Drilled	12,900.00	6,600.01	6,223.36	6,148.49	83.128	SF
Woody D01-10 (PR) - Wellbore #1 - No Surveys	10,269.48	6,779.00	4,052.04	3,747.04	13.285	CC
Woody D01-10 (PR) - Wellbore #1 - No Surveys	10,300.00	6,779.00	4,052.15	3,746.95	13.277	ES
Woody D01-10 (PR) - Wellbore #1 - No Surveys	10,600.00	6,779.00	4,065.50	3,758.28	13.233	SF

# Noble Energy, Inc.

## Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Booth D11-725
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4752.00ft
<b>Reference Site:</b>	D Section 02	<b>MD Reference:</b>	Well @ 4752.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Booth D11-725	<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>	Booth D11-725	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #1	<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
D Section 02						
Offset Well - Wellbore - Design						
BOOTH D #02-31 - BOOTH D #02-31 - No Surveys	2,200.00	2,158.00	3,522.13	3,471.32	69.315	CC
BOOTH D #02-31 - BOOTH D #02-31 - No Surveys	2,300.00	2,257.98	3,523.62	3,470.45	66.272	ES
BOOTH D #02-31 - BOOTH D #02-31 - No Surveys	8,800.00	6,697.00	4,142.74	3,980.85	25.590	SF
Booth D11-715 - Booth D11-715 - Plan #1	2,200.00	2,199.00	22.61	7.31	1.477	Level 3, CC
Booth D11-715 - Booth D11-715 - Plan #1	2,300.00	2,298.36	22.89	6.88	1.430	Level 3, ES
Booth D11-715 - Booth D11-715 - Plan #1	2,400.00	2,397.69	23.81	7.12	1.426	Level 3, SF
Booth D11-730 - Booth D11-730 - Plan #1	2,200.00	2,200.00	22.61	7.30	1.477	Level 3, CC
Booth D11-730 - Booth D11-730 - Plan #1	2,300.00	2,300.36	22.94	6.92	1.432	Level 3, ES
Booth D11-730 - Booth D11-730 - Plan #1	2,400.00	2,400.72	23.93	7.21	1.431	Level 3, SF
Booth D11-735 - Booth D11-735 - Plan #1	2,200.00	2,200.00	44.93	29.63	2.936	CC, ES
Booth D11-735 - Booth D11-735 - Plan #1	2,300.00	2,300.27	45.77	29.75	2.857	SF
Booth D11-745 - Booth D11-745 - Plan #1	2,200.00	2,201.00	67.54	52.23	4.412	CC, ES
Booth D11-745 - Booth D11-745 - Plan #1	2,300.00	2,299.83	69.53	53.51	4.341	SF
Booth D11-755 - Booth D11-755 - Plan #1	2,200.00	2,179.00	1,007.95	992.72	66.176	CC, ES
Booth D11-755 - Booth D11-755 - Plan #1	17,473.90	17,397.27	1,954.27	1,776.56	10.997	SF
Booth D11-765 - Booth D11-765 - Plan #1	2,200.00	2,178.00	1,030.27	1,015.04	67.657	CC, ES
Booth D11-765 - Booth D11-765 - Plan #1	17,473.90	17,471.64	2,605.73	2,428.01	14.662	SF
Booth D11-770 - Booth D11-770 - Plan #1	2,200.00	2,178.00	1,052.85	1,037.63	69.140	CC, ES
Booth D11-770 - Booth D11-770 - Plan #1	17,473.90	17,647.97	2,934.87	2,757.11	16.510	SF
Booth D11-775 - Booth D11-775 - Plan #1	2,200.00	2,178.00	1,075.44	1,060.21	70.623	CC, ES
Booth D11-775 - Booth D11-775 - Plan #1	17,473.90	17,634.24	3,257.23	3,079.40	18.317	SF
Booth D11-785 - Booth D11-785 - Plan #1	2,200.00	2,177.00	1,097.75	1,082.52	72.105	CC, ES
Booth D11-785 - Booth D11-785 - Plan #1	17,473.90	17,814.01	3,908.54	3,730.40	21.941	SF
DONOVAN D #2-19(PR) - DONOVAN D #2-19 - No Surv	2,200.00	2,155.00	2,514.87	2,464.12	49.551	CC
DONOVAN D #2-19(PR) - DONOVAN D #2-19 - No Surv	2,300.00	2,254.98	2,516.43	2,463.32	47.382	ES
DONOVAN D #2-19(PR) - DONOVAN D #2-19 - No Surv	8,500.00	6,694.00	3,092.87	2,932.09	19.237	SF
DONOVAN D #2-3JI(PR) - DONOVAN D #2-3JI - No Sur	2,200.00	2,159.00	1,611.12	1,560.29	31.694	CC
DONOVAN D #2-3JI(PR) - DONOVAN D #2-3JI - No Sur	2,300.00	2,258.98	1,612.55	1,559.36	30.317	ES
DONOVAN D #2-3JI(PR) - DONOVAN D #2-3JI - No Sur	7,800.00	6,698.00	2,328.39	2,169.41	14.646	SF
DONOVAN D #2-4JI(SI) - DONOVAN D #2-4JI - No Surv	2,200.00	2,146.00	2,873.23	2,822.66	56.813	CC
DONOVAN D #2-4JI(SI) - DONOVAN D #2-4JI - No Surv	2,300.00	2,245.98	2,874.48	2,821.55	54.308	ES
DONOVAN D #2-4JI(SI) - DONOVAN D #2-4JI - No Surv	7,700.00	6,685.00	3,628.31	3,469.77	22.886	SF
DONOVAN D #2-5JI - DONOVAN D #2-5JI - No Surveys	2,200.00	2,156.00	3,351.31	3,300.54	66.005	CC
DONOVAN D #2-5JI - DONOVAN D #2-5JI - No Surveys	2,300.00	2,255.98	3,352.97	3,299.84	63.110	ES
DONOVAN D #2-5JI - DONOVAN D #2-5JI - No Surveys	9,400.00	6,695.00	3,666.32	3,501.75	22.278	SF
DONOVAN D #2-6JI(PR) - DONOVAN D #2-6JI - No Sur	9,211.14	6,698.00	2,335.70	2,171.70	14.242	CC, ES
DONOVAN D #2-6JI(PR) - DONOVAN D #2-6JI - No Sur	9,300.00	6,698.00	2,337.39	2,173.06	14.224	SF
GUTTERSEN #D02-25(PR) - GUTTERSEN #D02-25 - N	10,761.25	6,687.00	2,918.48	2,745.84	16.904	CC, ES
GUTTERSEN #D02-25(PR) - GUTTERSEN #D02-25 - N	11,000.00	6,687.00	2,928.23	2,754.38	16.843	SF
GUTTERSEN #D02-33D(PR) - GUTTERSEN #D02-33D	100.00	39.98	4,041.46	4,041.27	10,000.000	CC
GUTTERSEN #D02-33D(PR) - GUTTERSEN #D02-33D	1,000.00	935.96	4,044.78	4,038.41	634.937	ES
GUTTERSEN #D02-33D(PR) - GUTTERSEN #D02-33D	12,400.00	6,918.94	4,431.16	4,356.00	58.956	SF
GUTTERSEN #D11-29D(PR) - GUTTERSEN #D11-29D	12,306.58	6,992.90	2,978.89	2,893.10	34.722	CC, ES
GUTTERSEN #D11-29D(PR) - GUTTERSEN #D11-29D	12,700.00	6,992.91	3,004.76	2,917.02	34.249	SF
GUTTERSEN D #02-20(SI) - GUTTERSEN D #02-20 - V	9,976.93	6,700.01	2,821.37	2,774.37	60.036	CC
GUTTERSEN D #02-20(SI) - GUTTERSEN D #02-20 - V	10,000.00	6,700.01	2,821.46	2,774.36	59.899	ES
GUTTERSEN D #02-20(SI) - GUTTERSEN D #02-20 - V	10,600.00	6,700.01	2,889.35	2,839.76	58.271	SF
Guttersen D02-75HN - Original Drilling - Original Drilling	7,500.00	11,143.00	1,657.08	1,550.01	15.478	SF
Guttersen D02-75HN - Original Drilling - Original Drilling	8,000.00	10,709.52	1,648.09	1,547.36	16.363	ES
Guttersen D02-75HN - Original Drilling - Original Drilling	8,062.27	10,662.02	1,647.81	1,547.74	16.467	CC
HSR-BOOTH #7-2(SI) - HSR-BOOTH #7-2 - No Surveys	9,026.84	6,689.00	947.44	784.49	5.814	CC, ES, SF
HSR-BOOTH #8-2(SI) - HSR-BOOTH #8-2 - No Surveys	9,081.65	6,724.00	189.07	25.17	1.154	Level 2, CC, ES, SF
KERN #1(PA) - KERN #1 - No Surveys	7,995.40	6,702.00	128.25	-31.28	0.804	Level 1, 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 Booth D11-725
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4752.00ft
<b>Reference Site:</b>	D Section 02	<b>MD Reference:</b>	Well @ 4752.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Booth D11-725	<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>	Booth D11-725	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #1	<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 02						
KERN D #2-1(SI) - KERN D #2-1 - No Surveys	7,645.39	6,701.00	476.03	317.23	2.998	CC, ES, SF
KERN D #2-2JI(PR) - KERN D #2-2JI - No Surveys	2,200.00	2,161.00	440.87	390.00	8.666	CC
KERN D #2-2JI(PR) - KERN D #2-2JI - No Surveys	2,300.00	2,260.98	442.59	389.36	8.315	ES
KERN D #2-2JI(PR) - KERN D #2-2JI - No Surveys	7,611.25	6,700.00	1,111.53	952.80	7.003	SF
L F RANCH #2-2(SI) - L F RANCH #2-2 - No Surveys	11,391.56	6,687.00	3,314.54	3,137.73	18.746	CC
L F RANCH #2-2(SI) - L F RANCH #2-2 - No Surveys	11,400.00	6,687.00	3,314.55	3,137.69	18.741	ES
L F RANCH #2-2(SI) - L F RANCH #2-2 - No Surveys	11,700.00	6,687.00	3,328.86	3,150.38	18.651	SF
TANIA #D11-27D(PR) - TANIA #D11-27D - Wellbore #1	12,330.67	6,930.97	366.18	292.31	4.957	CC, ES, SF
TANIA #D11-28(PR) - TANIA #D11-28 - No Surveys	12,198.59	6,696.00	1,579.06	1,396.45	8.647	CC
TANIA #D11-28(PR) - TANIA #D11-28 - No Surveys	12,200.00	6,696.00	1,579.07	1,396.44	8.647	ES
TANIA #D11-28(PR) - TANIA #D11-28 - No Surveys	12,300.00	6,696.00	1,582.32	1,399.28	8.645	SF
TANIA BLUE #D 2-11(PR) - TANIA BLUE #D 2-11 - No S	10,372.14	6,692.00	2,177.13	2,006.83	12.784	CC, ES
TANIA BLUE #D 2-11(PR) - TANIA BLUE #D 2-11 - No S	10,500.00	6,692.00	2,180.89	2,010.01	12.763	SF
TANIA BLUE #D 2-12(PA) - TANIA BLUE #D 2-12 - No S	10,317.73	6,680.00	3,679.91	3,510.18	21.681	CC, ES
TANIA BLUE #D 2-12(PA) - TANIA BLUE #D 2-12 - No S	10,700.00	6,680.00	3,699.71	3,528.04	21.551	SF
TANIA BLUE #D 2-14(PR) - TANIA BLUE #D 2-14 - No S	11,843.95	6,690.00	2,218.86	2,038.86	12.328	CC, ES
TANIA BLUE #D 2-14(PR) - TANIA BLUE #D 2-14 - No S	12,000.00	6,690.00	2,224.34	2,043.57	12.305	SF
TANIA BLUE #D2-10(SI) - TANIA BLUE #D2-10 - No Sur	10,300.95	6,702.00	846.64	676.57	4.978	CC, ES, SF
TANIA BLUE #D2-16(PR) - TANIA BLUE #D2-16 - No St	11,752.00	6,704.00	189.30	9.66	1.054	Level 2, CC, ES, SF
TANIA BLUE D #2-15(SI) - TANIA BLUE D #2-15 - No Si	11,664.69	6,693.00	978.35	799.55	5.472	CC, ES, SF
TANIA BLUE D #2-9(SI) - TANIA BLUE D #2-9 - No Surv	10,326.40	6,717.00	427.26	256.73	2.506	CC, ES, SF
TANIA D #2-23(SI) - TANIA D #2-23 - No Surveys	10,943.93	6,704.00	267.78	93.61	1.537	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 Booth D11-725
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4752.00ft
<b>Reference Site:</b>	D Section 02	<b>MD Reference:</b>	Well @ 4752.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Booth D11-725	<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>	Booth D11-725	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #1	<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 03						
Becca D 3-11 (PR) - Wellbore #1 - No Surveys	2,200.00	2,171.00	7,519.12	7,426.83	81.470	CC
Becca D 3-11 (PR) - Wellbore #1 - No Surveys	10,509.40	6,710.00	7,582.31	7,278.79	24.982	ES
Becca D 3-11 (PR) - Wellbore #1 - No Surveys	11,600.00	6,710.00	7,660.34	7,350.42	24.718	SF
Becca D 3-12 (PR) - Wellbore #1 - No Surveys	2,200.00	2,167.00	8,756.68	8,664.55	95.044	CC
Becca D 3-12 (PR) - Wellbore #1 - No Surveys	10,600.00	6,706.00	8,907.82	8,603.92	29.311	ES
Becca D 3-12 (PR) - Wellbore #1 - No Surveys	12,100.00	6,706.00	9,040.21	8,727.28	28.888	SF
Becca D 3-13 (PR) - Wellbore #1 - No Surveys	11,802.75	6,718.00	8,784.71	8,472.29	28.118	CC
Becca D 3-13 (PR) - Wellbore #1 - No Surveys	11,900.00	6,718.00	8,785.25	8,472.18	28.062	ES
Becca D 3-13 (PR) - Wellbore #1 - No Surveys	13,300.00	6,718.00	8,911.39	8,589.40	27.676	SF
Becca D 3-14 (PR) - Wellbore #1 - No Surveys	11,667.74	6,708.00	7,566.09	7,255.00	24.321	CC
Becca D 3-14 (PR) - Wellbore #1 - No Surveys	11,700.00	6,708.00	7,566.16	7,254.87	24.305	ES
Becca D 3-14 (PR) - Wellbore #1 - No Surveys	12,800.00	6,708.00	7,650.34	7,332.16	24.044	SF
Becca D03-24 (PR) - Wellbore #1 - No Surveys	11,072.25	6,712.00	6,988.16	6,681.01	22.751	CC
Becca D03-24 (PR) - Wellbore #1 - No Surveys	11,100.00	6,712.00	6,988.22	6,680.89	22.739	ES
Becca D03-24 (PR) - Wellbore #1 - No Surveys	12,000.00	6,712.00	7,049.48	6,736.72	22.540	SF
Becca D03-32D - Wellbore #1 - Wellbore #1- As Drilled	751.49	710.68	7,916.36	7,911.59	1,660.422	CC
Becca D03-32D - Wellbore #1 - Wellbore #1- As Drilled	800.00	727.73	7,916.46	7,911.46	1,582.949	ES
Becca D03-32D - Wellbore #1 - Wellbore #1- As Drilled	12,600.00	3,664.84	9,986.53	9,923.95	159.569	SF
Cody D #03-28(SI) - Wellbore #1 - No Surveys	2,200.00	2,147.00	6,031.07	6,004.68	228.540	CC
Cody D #03-28(SI) - Wellbore #1 - No Surveys	2,300.00	2,246.98	6,032.18	6,004.56	218.416	ES
Cody D #03-28(SI) - Wellbore #1 - No Surveys	9,300.00	6,686.00	7,116.70	7,029.09	81.232	SF
Cody D 03-28 (SI) - Wellbore #1 - No Surveys	2,200.00	2,163.00	6,031.07	5,939.22	65.660	CC
Cody D 03-28 (SI) - Wellbore #1 - No Surveys	2,400.00	2,362.84	6,035.50	5,934.94	60.022	ES
Cody D 03-28 (SI) - Wellbore #1 - No Surveys	7,150.00	6,704.62	6,791.19	6,501.02	23.404	SF
Cody D 3-20 (PR) - Wellbore #1 - No Surveys	2,200.00	2,169.00	7,894.25	7,802.10	85.664	CC
Cody D 3-20 (PR) - Wellbore #1 - No Surveys	2,300.00	2,268.98	7,895.75	7,799.24	81.814	ES
Cody D 3-20 (PR) - Wellbore #1 - No Surveys	11,100.00	6,708.00	8,344.80	8,038.40	27.235	SF
Cody D 3-7 (PR) - Wellbore #1 - No Surveys	2,200.00	2,153.00	5,823.61	5,732.03	63.595	CC
Cody D 3-7 (PR) - Wellbore #1 - No Surveys	2,300.00	2,252.98	5,825.12	5,729.19	60.724	ES
Cody D 3-7 (PR) - Wellbore #1 - No Surveys	9,900.00	6,708.00	6,306.36	6,006.95	21.063	SF
CODY WHITE #D 3-2(PR) - Wellbore #1 - No Surveys	2,200.00	2,143.00	5,539.39	5,513.04	210.186	CC, ES
CODY WHITE #D 3-2(PR) - Wellbore #1 - No Surveys	9,700.00	6,682.00	6,581.63	6,492.17	73.570	SF
Cody White D 3-1 (PR) - Wellbore #1 - No Surveys	2,200.00	2,152.00	4,223.03	4,131.49	46.136	CC
Cody White D 3-1 (PR) - Wellbore #1 - No Surveys	2,400.00	2,351.84	4,228.08	4,127.84	42.181	ES
Cody White D 3-1 (PR) - Wellbore #1 - No Surveys	7,900.00	6,709.00	4,969.94	4,678.56	17.056	SF
Cody White D 3-2 (PR) - Wellbore #1 - No Surveys	2,200.00	2,153.00	5,539.39	5,447.82	60.491	CC
Cody White D 3-2 (PR) - Wellbore #1 - No Surveys	2,400.00	2,352.84	5,544.34	5,444.07	55.291	ES
Cody White D 3-2 (PR) - Wellbore #1 - No Surveys	8,100.00	6,708.00	6,296.95	6,005.15	21.580	SF
Cody White D 3-8 (PR) - Wellbore #1 - No Surveys	2,200.00	2,154.00	4,537.43	4,445.81	49.528	CC
Cody White D 3-8 (PR) - Wellbore #1 - No Surveys	2,300.00	2,253.98	4,538.98	4,443.02	47.297	ES
Cody White D 3-8 (PR) - Wellbore #1 - No Surveys	9,400.00	6,707.00	4,972.08	4,675.22	16.749	SF
Guttersen D 02-32D (PR) - Wellbore #1 - As Drilled Surv	9,827.21	6,848.65	4,234.05	4,173.84	70.316	CC, ES
Guttersen D 02-32D (PR) - Wellbore #1 - As Drilled Surv	10,700.00	6,846.68	4,323.07	4,259.86	68.392	SF
Guttersen D 03-17 (PR) - Wellbore #1 - No Surveys	2,200.00	2,160.00	5,026.39	4,934.64	54.782	CC
Guttersen D 03-17 (PR) - Wellbore #1 - No Surveys	2,400.00	2,359.84	5,032.03	4,931.58	50.092	ES
Guttersen D 03-17 (PR) - Wellbore #1 - No Surveys	8,900.00	6,701.00	5,677.86	5,383.70	19.302	SF
Guttersen D 03-25 (PR) - Wellbore #1 - No Surveys	10,963.53	6,710.00	8,241.36	7,935.04	26.904	CC
Guttersen D 03-25 (PR) - Wellbore #1 - No Surveys	11,000.00	6,710.00	8,241.44	7,934.90	26.885	ES
Guttersen D 03-25 (PR) - Wellbore #1 - No Surveys	12,300.00	6,710.00	8,349.02	8,034.53	26.548	SF
Guttersen D 10-29 (PR) - Wellbore #1 - No Surveys	12,329.53	6,719.00	8,107.43	7,791.34	25.649	CC
Guttersen D 10-29 (PR) - Wellbore #1 - No Surveys	12,400.00	6,719.00	8,107.74	7,791.17	25.612	ES
Guttersen D 10-29 (PR) - Wellbore #1 - No Surveys	13,600.00	6,719.00	8,206.37	7,882.09	25.306	SF
HSR-Gittlein, D 4-3 (PR) - Wellbore #1 - No Surveys	2,200.00	2,160.00	8,336.81	8,244.96	90.762	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 Booth D11-725
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4752.00ft
<b>Reference Site:</b>	D Section 02	<b>MD Reference:</b>	Well @ 4752.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Booth D11-725	<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>	Booth D11-725	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #1	<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
D Section 03						
HSR-Gittlein, D 4-3 (PR) - Wellbore #1 - No Surveys	2,400.00	2,359.84	8,341.54	8,240.98	82.955	ES
HSR-Gittlein, D 4-3 (PR) - Wellbore #1 - No Surveys	8,500.00	6,701.00	9,142.41	8,849.75	31.239	SF
HSR-Gittlein, D 5-3 (PR) - Wellbore #1 - No Surveys	2,200.00	2,167.00	8,505.02	8,412.89	92.312	CC
HSR-Gittlein, D 5-3 (PR) - Wellbore #1 - No Surveys	2,400.00	2,366.84	8,510.58	8,409.74	84.400	ES
HSR-Gittlein, D 5-3 (PR) - Wellbore #1 - No Surveys	10,600.00	6,706.00	9,214.81	8,911.69	30.400	SF
HSR-Gittlein, L 3-3 (PR) - Wellbore #1 - No Surveys	2,200.00	2,157.00	6,865.35	6,773.61	74.840	CC
HSR-Gittlein, L 3-3 (PR) - Wellbore #1 - No Surveys	2,400.00	2,356.84	6,870.23	6,769.80	68.404	ES
HSR-Gittlein, L 3-3 (PR) - Wellbore #1 - No Surveys	8,300.00	6,704.00	7,634.80	7,342.62	26.130	SF
HSR-Gittlein, L 6-3 (PR) - Wellbore #1 - No Surveys	2,200.00	2,161.00	7,057.46	6,965.57	76.801	CC
HSR-Gittlein, L 6-3 (PR) - Wellbore #1 - No Surveys	2,400.00	2,360.84	7,063.19	6,962.59	70.213	ES
HSR-Gittlein, L 6-3 (PR) - Wellbore #1 - No Surveys	10,100.00	6,700.00	7,672.20	7,372.11	25.566	SF
HSR-Guttersen "A" 16-3 (SI) - Wellbore #1 - Gyro Survey	11,742.27	6,717.23	5,008.61	4,939.81	72.806	CC
HSR-Guttersen "A" 16-3 (SI) - Wellbore #1 - Gyro Survey	11,800.00	6,717.55	5,008.94	4,939.78	72.430	ES
HSR-Guttersen "A" 16-3 (SI) - Wellbore #1 - Gyro Survey	13,200.00	6,725.32	5,216.42	5,139.87	68.139	SF
HSR-Guttersen "A" 9-3 (SI) - Wellbore #1 - Gyro Surveys	10,623.76	6,652.95	5,170.57	5,109.49	84.649	CC, ES
HSR-Guttersen "A" 9-3 (SI) - Wellbore #1 - Gyro Surveys	12,400.00	6,658.10	5,467.16	5,397.09	78.033	SF
HSR-Guttersen 10-3 (SI) - Wellbore #1 - No Surveys	10,420.73	6,705.00	6,260.05	5,957.29	20.676	CC, ES
HSR-Guttersen 10-3 (SI) - Wellbore #1 - No Surveys	11,100.00	6,705.00	6,296.80	5,990.18	20.536	SF
HSR-Guttersen 15-3 (SI) - Wellbore #1 - Gyro Surveys	11,884.44	6,672.86	6,161.10	6,091.52	88.548	CC
HSR-Guttersen 15-3 (SI) - Wellbore #1 - Gyro Surveys	11,900.00	6,673.06	6,161.12	6,091.44	88.420	ES
HSR-Guttersen 15-3 (SI) - Wellbore #1 - Gyro Surveys	14,100.00	6,701.48	6,547.29	6,465.61	80.162	SF
UPRR 39 PAN AM A 01 (PA) - Wellbore #1 - No Surveys	11,760.08	6,719.00	8,899.55	8,587.42	28.513	CC
UPRR 39 PAN AM A 01 (PA) - Wellbore #1 - No Surveys	11,800.00	6,719.00	8,899.64	8,587.25	28.489	ES
UPRR 39 PAN AM A 01 (PA) - Wellbore #1 - No Surveys	13,300.00	6,719.00	9,031.79	8,709.83	28.052	SF



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

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Booth D11-725
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4752.00ft
<b>Reference Site:</b>	D Section 02	<b>MD Reference:</b>	Well @ 4752.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Booth D11-725	<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>	Booth D11-725	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #1	<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
D Section 11						
DALBEY D #11-2(SI) - DALBEY D #11-2 - No Surveys	13,050.00	6,694.00	1,079.73	890.98	5.720	CC, ES, SF
DUNCAN D #11-10(SI) - DUNCAN D #11-10 - No Survey	15,943.10	6,719.00	750.89	539.60	3.554	CC, ES, SF
DUNCAN D #11-11(SI) - DUNCAN D #11-11 - No Survey	15,755.48	6,753.00	2,492.01	2,281.50	11.838	CC, ES
DUNCAN D #11-11(SI) - DUNCAN D #11-11 - No Survey	15,900.00	6,753.00	2,496.20	2,284.89	11.813	SF
DUNCAN D #11-12(SI) - DUNCAN D #11-12 - No Survey	15,588.53	6,757.00	3,727.59	3,518.29	17.810	CC
DUNCAN D #11-12(SI) - DUNCAN D #11-12 - No Survey	15,600.00	6,757.00	3,727.60	3,518.23	17.804	ES
DUNCAN D #11-12(SI) - DUNCAN D #11-12 - No Survey	15,900.00	6,757.00	3,740.58	3,529.41	17.713	SF
DUNCAN D #11-5(SI) - DUNCAN D #11-5 - No Surveys	14,434.08	6,743.00	3,769.07	3,568.94	18.834	CC, ES
DUNCAN D #11-5(SI) - DUNCAN D #11-5 - No Surveys	14,800.00	6,743.00	3,786.79	3,584.49	18.719	SF
DUNCAN D #11-6(SI) - DUNCAN D #11-6 - No Surveys	14,373.38	6,721.00	2,343.06	2,143.84	11.761	CC
DUNCAN D #11-6(SI) - DUNCAN D #11-6 - No Surveys	14,400.00	6,721.00	2,343.21	2,143.83	11.753	ES
DUNCAN D #11-6(SI) - DUNCAN D #11-6 - No Surveys	14,500.00	6,721.00	2,346.48	2,146.57	11.738	SF
DUNCAN D #11-7(SI) - DUNCAN D #11-7 - No Surveys	14,302.56	6,701.00	1,012.07	813.79	5.104	CC, ES, SF
DUNCAN D #11-8(SI) - DUNCAN D #11-8 - No Surveys	14,367.72	6,705.00	186.20	-12.65	0.936	Level 1, CC, ES, SF
Duncan D 11-13 (SI) - Wellbore #1 - No Surveys	17,118.47	6,765.00	3,713.31	3,491.88	16.769	CC, ES
Duncan D 11-13 (SI) - Wellbore #1 - No Surveys	17,400.00	6,765.00	3,723.97	3,500.83	16.689	SF
Duncan D 11-14 (SI) - Wellbore #1 - Gyro Surveys	17,141.31	6,789.67	2,339.00	2,229.01	21.267	CC, ES
Duncan D 11-14 (SI) - Wellbore #1 - Gyro Surveys	17,300.00	6,789.50	2,344.37	2,233.58	21.161	SF
Duncan D 11-15 (SI) - Wellbore #1 - Gyro Surveys	17,043.63	6,747.19	959.50	850.47	8.800	CC, ES, SF
GUTTERSEN #43-11(SI) - GUTTERSEN #43-11 - No Su	15,688.75	6,707.00	332.75	123.68	1.592	CC, ES
GUTTERSEN #43-11(SI) - GUTTERSEN #43-11 - No Su	15,700.00	6,707.00	332.94	123.69	1.591	SF
Guttersen 44-11 (PR) - Wellbore #1 - No Surveys	17,014.56	6,727.00	359.30	139.44	1.634	CC, ES, SF
TWO E RANCH #1-11(SI) - TWO E RANCH #1-11 - No S	12,954.05	6,711.00	3,665.63	3,477.25	19.458	CC
TWO E RANCH #1-11(SI) - TWO E RANCH #1-11 - No S	13,000.00	6,711.00	3,665.92	3,477.25	19.430	ES
TWO E RANCH #1-11(SI) - TWO E RANCH #1-11 - No S	13,300.00	6,711.00	3,681.92	3,491.52	19.338	SF
TWO E RANCH #2-11(PR) - TWO E RANCH #2-11 - No	13,021.99	6,700.00	2,361.33	2,172.66	12.516	CC, ES
TWO E RANCH #2-11(PR) - TWO E RANCH #2-11 - No	13,200.00	6,700.00	2,368.03	2,178.45	12.491	SF
TWO E RANCHES #14-11(PA) - TWO E RANCHES #14	16,620.46	6,756.00	3,322.05	3,104.72	15.285	CC, ES
TWO E RANCHES #14-11(PA) - TWO E RANCHES #14	16,900.00	6,756.00	3,333.79	3,114.85	15.226	SF

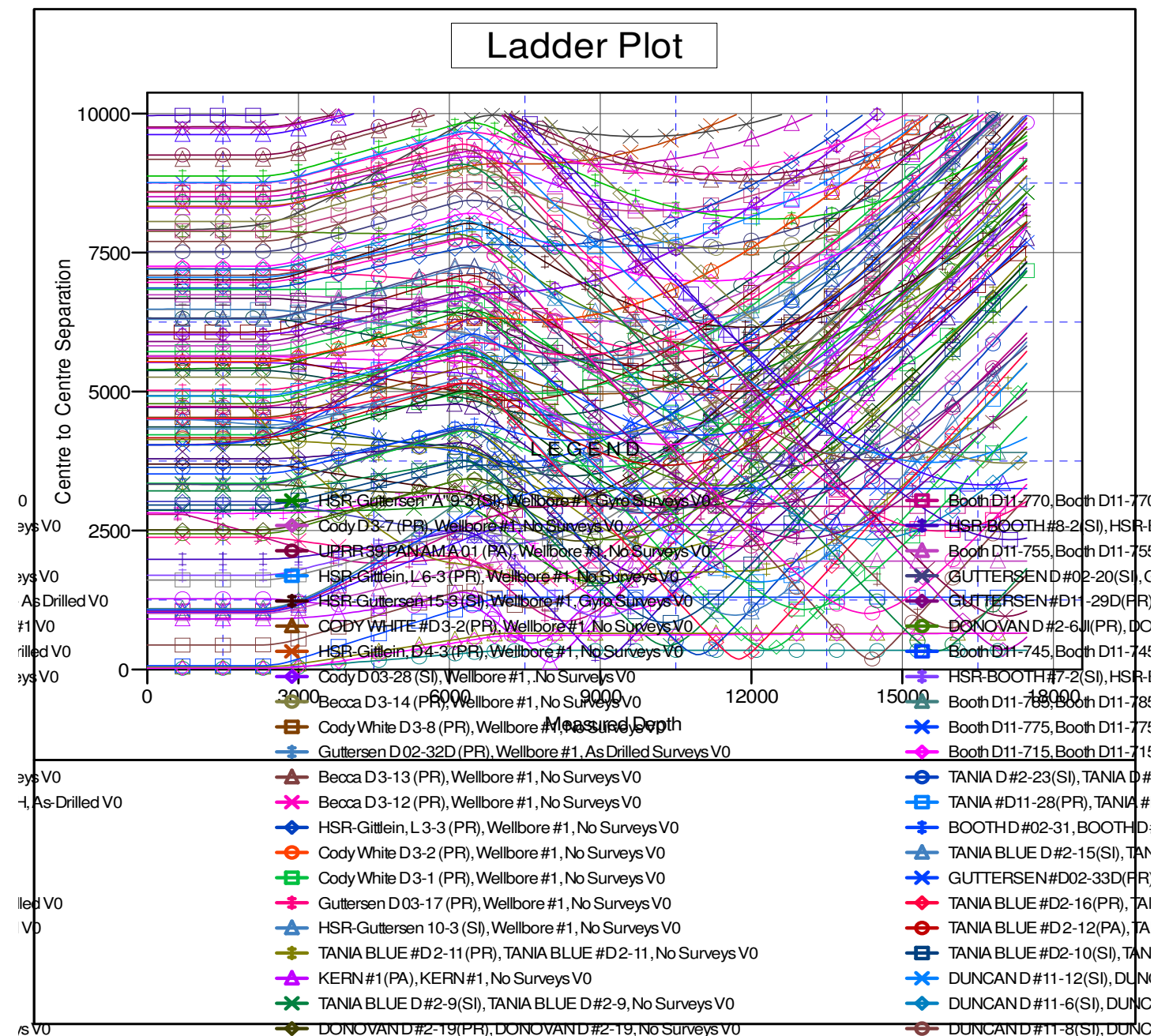
## Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Booth D11-725
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4752.00ft
<b>Reference Site:</b>	D Section 02	<b>MD Reference:</b>	Well @ 4752.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Booth D11-725	<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>	Booth D11-725	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Coordinates are relative to: Booth D11-725

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.64°



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

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Booth D11-725
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4752.00ft
<b>Reference Site:</b>	D Section 02	<b>MD Reference:</b>	Well @ 4752.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Booth D11-725	<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>	Booth D11-725	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to Well @ 4752.00ft  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.5000000

Coordinates are relative to: Booth D11-725  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 0.64°

