

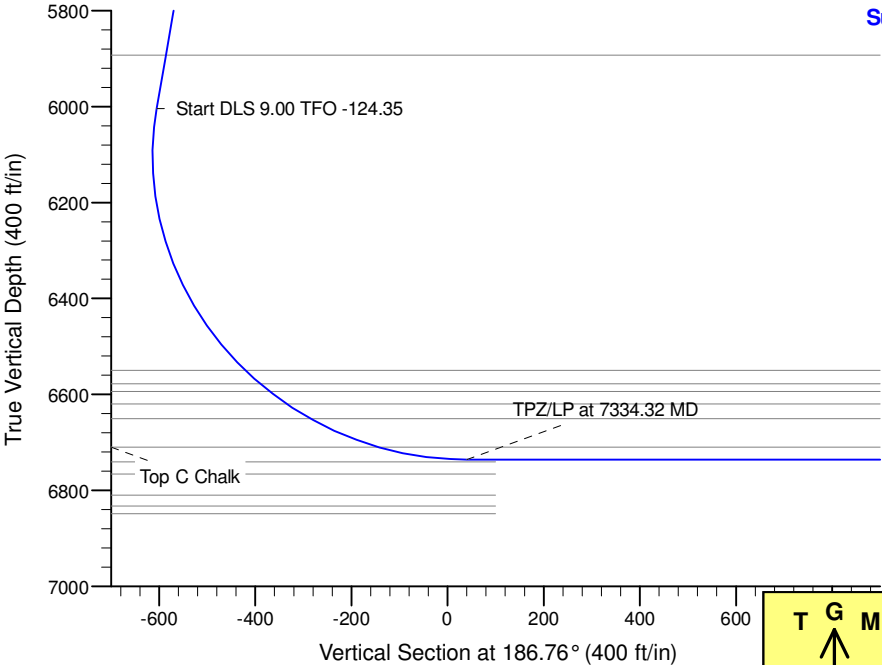
Project: Mustang  
Site: D Section 01  
Well: Gutteresen D12-785  
Wellbore: Wellbore #1  
Design: Plan #1

# 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

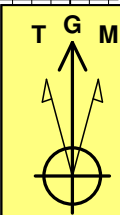
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.00	0.00	
3	2976.01	19.52	305.85	2957.24	96.43	-133.47	2.00	305.85	-80.04	
4	6208.65	19.52	305.85	6004.07	729.00	-1009.02	0.00	0.00	-605.13	
5	7334.32	90.00	179.91	6736.00	104.40	-1218.07	9.00	-124.35	39.74	TPZ Gutteresen D12-785
6	17570.64	90.00	179.91	6736.00	-10131.91	-1201.24	0.00	0.00	10202.87	BHL Gutteresen D12-785



Surface:315' FNL,1617' FWL,  
Sec.1

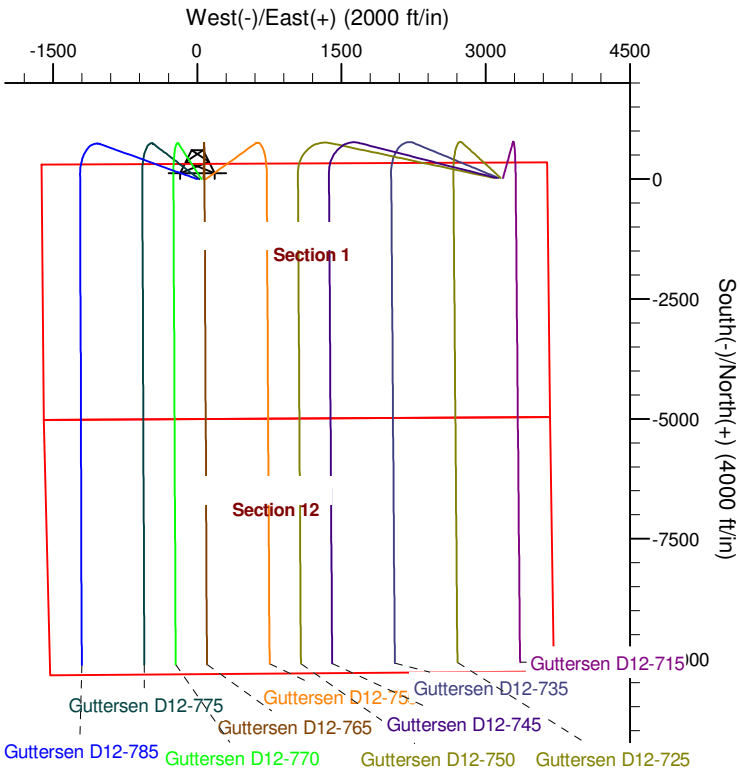
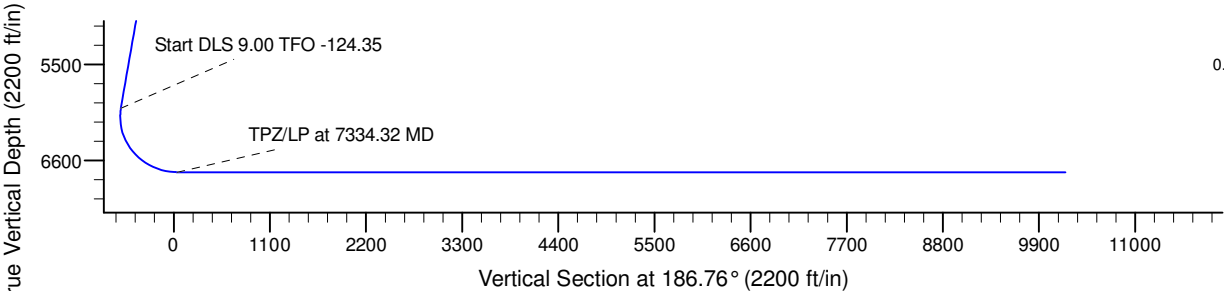
TPZ: 200' FNL,  
400' FWL, Sec.1

BHL: 200' FSL,  
350' FWL, Sec.12



Azimuths to Grid North  
True North: -0.64°  
Magnetic North: 7.28°

Magnetic Field  
Strength: 52197.9snT  
Dip Angle: 66.75°  
Date: 10/10/2018  
Model: IGRF2015



## WELL DETAILS: Gutteresen D12-785

	Northing	Easting	Latitude	Longitude
0.00	0.00	1339437.65	40.2608620	-104.5030320

## Plan: Plan #1 (Gutteresen D12-785/Wellbore #1)

Created By: Colby Baxter	Date: 10:04, October 11 2018
Checked: _____	Date: _____
Reviewed: _____	Date: _____
Approved: _____	Date: _____

# **Northern Region - DJ Basin**

**Mustang**

**D Section 01**

**Guttersen D12-785**

**Wellbore #1**

**Plan: Plan #1**

## **Standard Survey Report**

**11 October, 2018**

# Noble Energy, Inc.

## Survey Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersen D12-785
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4775.00ft
<b>Site:</b>	D Section 01	<b>MD Reference:</b>	KB @ 4775.00ft
<b>Well:</b>	Guttersen D12-785	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan #1	<b>Database:</b>	EDMP

<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 01						
Site Position:		Northing:	1,336,284.99	usft	Latitude:	40.2522405		
From:	Map	Easting:	3,277,182.91	usft	Longitude:	-104.5069099		
Position Uncertainty:	0.00	ft	Slot Radius:	13.200	in	Grid Convergence:	0.64	°

Well	Guttersen D12-785					
Well Position	+N/-S	0.00 ft	Northing:	1,339,437.65 usft	Latitude:	40.2608620
	+E/-W	0.00 ft	Easting:	3,278,229.92 usft	Longitude:	-104.5030320
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	4,745.00 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>
	IGRF2015	10/10/2018	7.92	66.75	52,197.87374829

<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	186.76	

<b>Survey Tool Program</b>	<b>Date</b>	10/11/2018			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
0.00	17,570.41	Plan #1 (Wellbore #1)	2_MWD+IFR1	A005Mb: IFR declination correction only	

<b>Planned Survey</b>										
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Vertical Section (ft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Turn Rate (°/100ft)</b>	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00	
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	

# Noble Energy, Inc.

## Survey Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersen D12-785
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4775.00ft
<b>Site:</b>	D Section 01	<b>MD Reference:</b>	KB @ 4775.00ft
<b>Well:</b>	Guttersen D12-785	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan #1	<b>Database:</b>	EDMP

### 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)
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
1,700.00	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	2.00	305.85	2,099.98	1.02	-1.41	-0.85	2.00	2.00	0.00
2,200.00	4.00	305.85	2,199.84	4.09	-5.66	-3.39	2.00	2.00	0.00
2,300.00	6.00	305.85	2,299.45	9.19	-12.72	-7.63	2.00	2.00	0.00
2,400.00	8.00	305.85	2,398.70	16.33	-22.60	-13.55	2.00	2.00	0.00
2,500.00	10.00	305.85	2,497.47	25.49	-35.28	-21.16	2.00	2.00	0.00
2,600.00	12.00	305.85	2,595.62	36.66	-50.74	-30.43	2.00	2.00	0.00
2,700.00	14.00	305.85	2,693.06	49.83	-68.98	-41.37	2.00	2.00	0.00
2,800.00	16.00	305.85	2,789.64	64.99	-89.96	-53.95	2.00	2.00	0.00
2,900.00	18.00	305.85	2,885.27	82.11	-113.65	-68.16	2.00	2.00	0.00
2,976.01	19.52	305.85	2,957.24	96.43	-133.47	-80.04	2.00	2.00	0.00
3,000.00	19.52	305.85	2,979.85	101.12	-139.97	-83.94	0.00	0.00	0.00
3,100.00	19.52	305.85	3,074.10	120.69	-167.05	-100.18	0.00	0.00	0.00
3,200.00	19.52	305.85	3,168.35	140.26	-194.14	-116.43	0.00	0.00	0.00
3,300.00	19.52	305.85	3,262.61	159.83	-221.22	-132.67	0.00	0.00	0.00
3,400.00	19.52	305.85	3,356.86	179.40	-248.30	-148.91	0.00	0.00	0.00
3,500.00	19.52	305.85	3,451.11	198.96	-275.39	-165.16	0.00	0.00	0.00
3,600.00	19.52	305.85	3,545.36	218.53	-302.47	-181.40	0.00	0.00	0.00
3,700.00	19.52	305.85	3,639.62	238.10	-329.56	-197.64	0.00	0.00	0.00
3,800.00	19.52	305.85	3,733.87	257.67	-356.64	-213.89	0.00	0.00	0.00
3,900.00	19.52	305.85	3,828.12	277.24	-383.73	-230.13	0.00	0.00	0.00
4,000.00	19.52	305.85	3,922.37	296.80	-410.81	-246.37	0.00	0.00	0.00
4,100.00	19.52	305.85	4,016.62	316.37	-437.90	-262.62	0.00	0.00	0.00
4,200.00	19.52	305.85	4,110.88	335.94	-464.98	-278.86	0.00	0.00	0.00
4,300.00	19.52	305.85	4,205.13	355.51	-492.07	-295.10	0.00	0.00	0.00
4,400.00	19.52	305.85	4,299.38	375.08	-519.15	-311.35	0.00	0.00	0.00
4,500.00	19.52	305.85	4,393.63	394.65	-546.24	-327.59	0.00	0.00	0.00
4,600.00	19.52	305.85	4,487.89	414.21	-573.32	-343.83	0.00	0.00	0.00
4,700.00	19.52	305.85	4,582.14	433.78	-600.41	-360.08	0.00	0.00	0.00
4,800.00	19.52	305.85	4,676.39	453.35	-627.49	-376.32	0.00	0.00	0.00
4,900.00	19.52	305.85	4,770.64	472.92	-654.58	-392.56	0.00	0.00	0.00
5,000.00	19.52	305.85	4,864.90	492.49	-681.66	-408.81	0.00	0.00	0.00
5,100.00	19.52	305.85	4,959.15	512.06	-708.75	-425.05	0.00	0.00	0.00
5,200.00	19.52	305.85	5,053.40	531.62	-735.83	-441.29	0.00	0.00	0.00

# Noble Energy, Inc.

## Survey Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersen D12-785
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4775.00ft
<b>Site:</b>	D Section 01	<b>MD Reference:</b>	KB @ 4775.00ft
<b>Well:</b>	Guttersen D12-785	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan #1	<b>Database:</b>	EDMP

### 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)
5,300.00	19.52	305.85	5,147.65	551.19	-762.92	-457.54	0.00	0.00	0.00
5,400.00	19.52	305.85	5,241.91	570.76	-790.00	-473.78	0.00	0.00	0.00
5,500.00	19.52	305.85	5,336.16	590.33	-817.08	-490.02	0.00	0.00	0.00
5,600.00	19.52	305.85	5,430.41	609.90	-844.17	-506.27	0.00	0.00	0.00
5,700.00	19.52	305.85	5,524.66	629.46	-871.25	-522.51	0.00	0.00	0.00
5,800.00	19.52	305.85	5,618.91	649.03	-898.34	-538.75	0.00	0.00	0.00
5,900.00	19.52	305.85	5,713.17	668.60	-925.42	-555.00	0.00	0.00	0.00
6,000.00	19.52	305.85	5,807.42	688.17	-952.51	-571.24	0.00	0.00	0.00
6,100.00	19.52	305.85	5,901.67	707.74	-979.59	-587.48	0.00	0.00	0.00
6,200.00	19.52	305.85	5,995.92	727.31	-1,006.68	-603.73	0.00	0.00	0.00
6,208.65	19.52	305.85	6,004.07	729.00	-1,009.02	-605.13	0.00	0.00	0.00
6,300.00	16.30	280.97	6,091.11	740.40	-1,034.02	-613.51	9.00	-3.52	-27.23
6,400.00	17.04	249.34	6,187.11	737.89	-1,061.57	-607.77	9.00	0.74	-31.64
6,500.00	21.75	225.92	6,281.54	719.79	-1,088.65	-586.62	9.00	4.70	-23.42
6,600.00	28.51	211.80	6,372.11	686.55	-1,114.58	-550.55	9.00	6.77	-14.12
6,700.00	36.20	202.99	6,456.56	638.98	-1,138.75	-500.47	9.00	7.69	-8.80
6,800.00	44.33	196.99	6,532.83	578.25	-1,160.54	-437.60	9.00	8.13	-6.00
6,900.00	52.70	192.54	6,599.04	505.87	-1,179.42	-363.49	9.00	8.36	-4.45
7,000.00	61.19	188.99	6,653.54	423.60	-1,194.93	-279.97	9.00	8.50	-3.55
7,100.00	69.77	185.98	6,695.02	333.48	-1,206.69	-189.09	9.00	8.57	-3.01
7,200.00	78.39	183.29	6,722.43	237.73	-1,214.40	-93.10	9.00	8.62	-2.69
7,300.00	87.03	180.76	6,735.11	138.70	-1,217.87	5.65	9.00	8.64	-2.53
7,334.32	90.00	179.91	6,736.00	104.40	-1,218.07	39.74	9.00	8.65	-2.49
7,400.00	90.00	179.91	6,736.00	38.72	-1,217.96	104.95	0.00	0.00	0.00
7,500.00	90.00	179.91	6,736.00	-61.28	-1,217.80	204.23	0.00	0.00	0.00
7,600.00	90.00	179.91	6,736.00	-161.28	-1,217.64	303.52	0.00	0.00	0.00
7,700.00	90.00	179.91	6,736.00	-261.28	-1,217.47	402.80	0.00	0.00	0.00
7,800.00	90.00	179.91	6,736.00	-361.28	-1,217.31	502.09	0.00	0.00	0.00
7,900.00	90.00	179.91	6,736.00	-461.28	-1,217.14	601.37	0.00	0.00	0.00
8,000.00	90.00	179.91	6,736.00	-561.28	-1,216.98	700.66	0.00	0.00	0.00
8,100.00	90.00	179.91	6,736.00	-661.28	-1,216.81	799.94	0.00	0.00	0.00
8,200.00	90.00	179.91	6,736.00	-761.28	-1,216.65	899.23	0.00	0.00	0.00
8,300.00	90.00	179.91	6,736.00	-861.28	-1,216.48	998.51	0.00	0.00	0.00
8,400.00	90.00	179.91	6,736.00	-961.28	-1,216.32	1,097.80	0.00	0.00	0.00
8,500.00	90.00	179.91	6,736.00	-1,061.28	-1,216.16	1,197.08	0.00	0.00	0.00
8,600.00	90.00	179.91	6,736.00	-1,161.28	-1,215.99	1,296.37	0.00	0.00	0.00
8,700.00	90.00	179.91	6,736.00	-1,261.28	-1,215.83	1,395.65	0.00	0.00	0.00
8,800.00	90.00	179.91	6,736.00	-1,361.28	-1,215.66	1,494.94	0.00	0.00	0.00
8,900.00	90.00	179.91	6,736.00	-1,461.28	-1,215.50	1,594.22	0.00	0.00	0.00
9,000.00	90.00	179.91	6,736.00	-1,561.28	-1,215.33	1,693.51	0.00	0.00	0.00
9,100.00	90.00	179.91	6,736.00	-1,661.28	-1,215.17	1,792.79	0.00	0.00	0.00
9,200.00	90.00	179.91	6,736.00	-1,761.28	-1,215.00	1,892.08	0.00	0.00	0.00
9,300.00	90.00	179.91	6,736.00	-1,861.28	-1,214.84	1,991.36	0.00	0.00	0.00

# Noble Energy, Inc.

## Survey Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersen D12-785
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4775.00ft
<b>Site:</b>	D Section 01	<b>MD Reference:</b>	KB @ 4775.00ft
<b>Well:</b>	Guttersen D12-785	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan #1	<b>Database:</b>	EDMP

### 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)
9,400.00	90.00	179.91	6,736.00	-1,961.28	-1,214.68	2,090.65	0.00	0.00	0.00
9,500.00	90.00	179.91	6,736.00	-2,061.28	-1,214.51	2,189.93	0.00	0.00	0.00
9,600.00	90.00	179.91	6,736.00	-2,161.28	-1,214.35	2,289.22	0.00	0.00	0.00
9,700.00	90.00	179.91	6,736.00	-2,261.28	-1,214.18	2,388.50	0.00	0.00	0.00
9,800.00	90.00	179.91	6,736.00	-2,361.28	-1,214.02	2,487.79	0.00	0.00	0.00
9,900.00	90.00	179.91	6,736.00	-2,461.28	-1,213.85	2,587.07	0.00	0.00	0.00
10,000.00	90.00	179.91	6,736.00	-2,561.28	-1,213.69	2,686.36	0.00	0.00	0.00
10,100.00	90.00	179.91	6,736.00	-2,661.28	-1,213.52	2,785.64	0.00	0.00	0.00
10,200.00	90.00	179.91	6,736.00	-2,761.28	-1,213.36	2,884.93	0.00	0.00	0.00
10,300.00	90.00	179.91	6,736.00	-2,861.28	-1,213.20	2,984.21	0.00	0.00	0.00
10,400.00	90.00	179.91	6,736.00	-2,961.28	-1,213.03	3,083.50	0.00	0.00	0.00
10,500.00	90.00	179.91	6,736.00	-3,061.28	-1,212.87	3,182.78	0.00	0.00	0.00
10,600.00	90.00	179.91	6,736.00	-3,161.28	-1,212.70	3,282.07	0.00	0.00	0.00
10,700.00	90.00	179.91	6,736.00	-3,261.28	-1,212.54	3,381.35	0.00	0.00	0.00
10,800.00	90.00	179.91	6,736.00	-3,361.28	-1,212.37	3,480.64	0.00	0.00	0.00
10,900.00	90.00	179.91	6,736.00	-3,461.28	-1,212.21	3,579.92	0.00	0.00	0.00
11,000.00	90.00	179.91	6,736.00	-3,561.28	-1,212.04	3,679.21	0.00	0.00	0.00
11,100.00	90.00	179.91	6,736.00	-3,661.28	-1,211.88	3,778.49	0.00	0.00	0.00
11,200.00	90.00	179.91	6,736.00	-3,761.28	-1,211.71	3,877.78	0.00	0.00	0.00
11,300.00	90.00	179.91	6,736.00	-3,861.28	-1,211.55	3,977.06	0.00	0.00	0.00
11,400.00	90.00	179.91	6,736.00	-3,961.28	-1,211.39	4,076.35	0.00	0.00	0.00
11,500.00	90.00	179.91	6,736.00	-4,061.28	-1,211.22	4,175.63	0.00	0.00	0.00
11,600.00	90.00	179.91	6,736.00	-4,161.28	-1,211.06	4,274.92	0.00	0.00	0.00
11,700.00	90.00	179.91	6,736.00	-4,261.28	-1,210.89	4,374.20	0.00	0.00	0.00
11,800.00	90.00	179.91	6,736.00	-4,361.28	-1,210.73	4,473.49	0.00	0.00	0.00
11,900.00	90.00	179.91	6,736.00	-4,461.28	-1,210.56	4,572.77	0.00	0.00	0.00
12,000.00	90.00	179.91	6,736.00	-4,561.28	-1,210.40	4,672.06	0.00	0.00	0.00
12,100.00	90.00	179.91	6,736.00	-4,661.28	-1,210.23	4,771.34	0.00	0.00	0.00
12,200.00	90.00	179.91	6,736.00	-4,761.28	-1,210.07	4,870.63	0.00	0.00	0.00
12,300.00	90.00	179.91	6,736.00	-4,861.28	-1,209.91	4,969.91	0.00	0.00	0.00
12,400.00	90.00	179.91	6,736.00	-4,961.28	-1,209.74	5,069.20	0.00	0.00	0.00
12,500.00	90.00	179.91	6,736.00	-5,061.27	-1,209.58	5,168.48	0.00	0.00	0.00
12,600.00	90.00	179.91	6,736.00	-5,161.27	-1,209.41	5,267.77	0.00	0.00	0.00
12,700.00	90.00	179.91	6,736.00	-5,261.27	-1,209.25	5,367.05	0.00	0.00	0.00
12,800.00	90.00	179.91	6,736.00	-5,361.27	-1,209.08	5,466.34	0.00	0.00	0.00
12,900.00	90.00	179.91	6,736.00	-5,461.27	-1,208.92	5,565.62	0.00	0.00	0.00
13,000.00	90.00	179.91	6,736.00	-5,561.27	-1,208.75	5,664.91	0.00	0.00	0.00
13,100.00	90.00	179.91	6,736.00	-5,661.27	-1,208.59	5,764.19	0.00	0.00	0.00
13,200.00	90.00	179.91	6,736.00	-5,761.27	-1,208.43	5,863.48	0.00	0.00	0.00
13,300.00	90.00	179.91	6,736.00	-5,861.27	-1,208.26	5,962.76	0.00	0.00	0.00
13,400.00	90.00	179.91	6,736.00	-5,961.27	-1,208.10	6,062.05	0.00	0.00	0.00
13,500.00	90.00	179.91	6,736.00	-6,061.27	-1,207.93	6,161.33	0.00	0.00	0.00
13,600.00	90.00	179.91	6,736.00	-6,161.27	-1,207.77	6,260.62	0.00	0.00	0.00

# Noble Energy, Inc.

## Survey Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersen D12-785
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4775.00ft
<b>Site:</b>	D Section 01	<b>MD Reference:</b>	KB @ 4775.00ft
<b>Well:</b>	Guttersen D12-785	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan #1	<b>Database:</b>	EDMP

### 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)
13,700.00	90.00	179.91	6,736.00	-6,261.27	-1,207.60	6,359.90	0.00	0.00	0.00
13,800.00	90.00	179.91	6,736.00	-6,361.27	-1,207.44	6,459.19	0.00	0.00	0.00
13,900.00	90.00	179.91	6,736.00	-6,461.27	-1,207.27	6,558.47	0.00	0.00	0.00
14,000.00	90.00	179.91	6,736.00	-6,561.27	-1,207.11	6,657.76	0.00	0.00	0.00
14,100.00	90.00	179.91	6,736.00	-6,661.27	-1,206.95	6,757.04	0.00	0.00	0.00
14,200.00	90.00	179.91	6,736.00	-6,761.27	-1,206.78	6,856.33	0.00	0.00	0.00
14,300.00	90.00	179.91	6,736.00	-6,861.27	-1,206.62	6,955.61	0.00	0.00	0.00
14,400.00	90.00	179.91	6,736.00	-6,961.27	-1,206.45	7,054.90	0.00	0.00	0.00
14,500.00	90.00	179.91	6,736.00	-7,061.27	-1,206.29	7,154.18	0.00	0.00	0.00
14,600.00	90.00	179.91	6,736.00	-7,161.27	-1,206.12	7,253.47	0.00	0.00	0.00
14,700.00	90.00	179.91	6,736.00	-7,261.27	-1,205.96	7,352.75	0.00	0.00	0.00
14,800.00	90.00	179.91	6,736.00	-7,361.27	-1,205.79	7,452.04	0.00	0.00	0.00
14,900.00	90.00	179.91	6,736.00	-7,461.27	-1,205.63	7,551.32	0.00	0.00	0.00
15,000.00	90.00	179.91	6,736.00	-7,561.27	-1,205.47	7,650.61	0.00	0.00	0.00
15,100.00	90.00	179.91	6,736.00	-7,661.27	-1,205.30	7,749.89	0.00	0.00	0.00
15,200.00	90.00	179.91	6,736.00	-7,761.27	-1,205.14	7,849.18	0.00	0.00	0.00
15,300.00	90.00	179.91	6,736.00	-7,861.27	-1,204.97	7,948.46	0.00	0.00	0.00
15,400.00	90.00	179.91	6,736.00	-7,961.27	-1,204.81	8,047.75	0.00	0.00	0.00
15,500.00	90.00	179.91	6,736.00	-8,061.27	-1,204.64	8,147.03	0.00	0.00	0.00
15,600.00	90.00	179.91	6,736.00	-8,161.27	-1,204.48	8,246.32	0.00	0.00	0.00
15,700.00	90.00	179.91	6,736.00	-8,261.27	-1,204.31	8,345.60	0.00	0.00	0.00
15,800.00	90.00	179.91	6,736.00	-8,361.27	-1,204.15	8,444.89	0.00	0.00	0.00
15,900.00	90.00	179.91	6,736.00	-8,461.27	-1,203.99	8,544.17	0.00	0.00	0.00
16,000.00	90.00	179.91	6,736.00	-8,561.27	-1,203.82	8,643.46	0.00	0.00	0.00
16,100.00	90.00	179.91	6,736.00	-8,661.27	-1,203.66	8,742.74	0.00	0.00	0.00
16,200.00	90.00	179.91	6,736.00	-8,761.27	-1,203.49	8,842.03	0.00	0.00	0.00
16,300.00	90.00	179.91	6,736.00	-8,861.27	-1,203.33	8,941.31	0.00	0.00	0.00
16,400.00	90.00	179.91	6,736.00	-8,961.27	-1,203.16	9,040.60	0.00	0.00	0.00
16,500.00	90.00	179.91	6,736.00	-9,061.27	-1,203.00	9,139.88	0.00	0.00	0.00
16,600.00	90.00	179.91	6,736.00	-9,161.27	-1,202.83	9,239.17	0.00	0.00	0.00
16,700.00	90.00	179.91	6,736.00	-9,261.27	-1,202.67	9,338.45	0.00	0.00	0.00
16,800.00	90.00	179.91	6,736.00	-9,361.27	-1,202.51	9,437.74	0.00	0.00	0.00
16,900.00	90.00	179.91	6,736.00	-9,461.27	-1,202.34	9,537.02	0.00	0.00	0.00
17,000.00	90.00	179.91	6,736.00	-9,561.27	-1,202.18	9,636.31	0.00	0.00	0.00
17,100.00	90.00	179.91	6,736.00	-9,661.27	-1,202.01	9,735.59	0.00	0.00	0.00
17,200.00	90.00	179.91	6,736.00	-9,761.27	-1,201.85	9,834.88	0.00	0.00	0.00
17,300.00	90.00	179.91	6,736.00	-9,861.27	-1,201.68	9,934.16	0.00	0.00	0.00
17,400.00	90.00	179.91	6,736.00	-9,961.27	-1,201.52	10,033.45	0.00	0.00	0.00
17,500.00	90.00	179.91	6,736.00	-10,061.27	-1,201.35	10,132.73	0.00	0.00	0.00
17,570.64	90.00	179.91	6,736.00	-10,131.91	-1,201.24	10,202.87	0.00	0.00	0.00

# Noble Energy, Inc.

## Survey Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersen D12-785
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4775.00ft
<b>Site:</b>	D Section 01	<b>MD Reference:</b>	KB @ 4775.00ft
<b>Well:</b>	Guttersen D12-785	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan #1	<b>Database:</b>	EDMP

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SHL Guttersen D12-785 - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	1,339,437.65	3,278,229.92	40.2608620	-104.5030320
KOP Guttersen D12-785 - plan hits target center - Point	0.00	0.00	6,004.08	729.00	-1,009.02	1,340,166.64	3,277,220.91	40.2628941	-104.5066180
TPZ Guttersen D12-785 - plan hits target center - Point	0.00	0.00	6,736.00	104.40	-1,218.07	1,339,542.04	3,277,011.85	40.2611861	-104.5073921
BHL Guttersen D12-785 - plan hits target center - Point	0.00	0.00	6,736.00	-10,131.91	-1,201.24	1,329,305.76	3,277,028.69	40.2330877	-104.5077422

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
336.00	336.00	Pierre				
610.00	610.00	Upper Pierre Aquifer Top				
1,544.00	1,544.00	Upper Pierre Aquifer Base				
2,671.12	2,665.00	Parkman				
4,045.23	3,965.00	Sussex				
4,934.33	4,803.00	Shannon				
6,090.80	5,893.00	Teepee Buttes				
6,824.43	6,550.00	Sharon Springs				
6,866.37	6,578.00	Top A Chalk				
6,891.76	6,594.00	Top A Marl				
6,935.85	6,620.00	Top B Chalk				
6,994.76	6,651.00	Top B Marl				
7,148.07	6,710.00	Top C Chalk				

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
2000	2000	0	0	Start Build 2.00
6209	6004	729	-1009	Start DLS 9.00 TFO -124.35
7334	6736	104	-1218	TPZ/LP at 7334.32 MD
17,571	6736	-10,132	-1201	TD at 17570.64 MD

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_



# **Northern Region - DJ Basin**

**Mustang**

**D Section 01**

**Guttersen D12-785**

**Wellbore #1**

**Plan #1**

## **Anticollision Summary Report**

**11 October, 2018**

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

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersten D12-785
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4775.00ft
<b>Reference Site:</b>	D Section 01	<b>MD Reference:</b>	KB @ 4775.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersten D12-785	<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 #1	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	Plan #1		
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
<b>Interpolation Method:</b>	Stations	<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>	10/11/2018		
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.00	17,570.41	Plan #1 (Wellbore #1)	2_MWD+IFR1	A005Mb: IFR declination correction only

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						
C Section 36						
Ava State C36-18 (SI) - Wellbore #1 - No Surveys	6,233.47	5,988.55	4,132.01	3,868.55	15.683	CC
Ava State C36-18 (SI) - Wellbore #1 - No Surveys	6,250.00	6,004.28	4,132.20	3,868.03	15.642	ES
Ava State C36-18 (SI) - Wellbore #1 - No Surveys	6,650.00	6,376.23	4,247.68	3,967.32	15.150	SF
Ava State C36-20 (PR) - Wellbore #1 - No Surveys	6,273.19	6,016.42	2,134.24	1,869.61	8.065	CC
Ava State C36-20 (PR) - Wellbore #1 - No Surveys	6,300.00	6,042.11	2,134.79	1,869.00	8.032	ES
Ava State C36-20 (PR) - Wellbore #1 - No Surveys	6,500.00	6,232.54	2,172.79	1,898.61	7.925	SF
Ava State C36-21 (SI) - Wellbore #1 - No Surveys	5,675.28	5,457.37	3,010.94	2,771.53	12.577	CC
Ava State C36-21 (SI) - Wellbore #1 - No Surveys	6,208.65	5,960.07	3,016.21	2,754.06	11.506	ES
Ava State C36-21 (SI) - Wellbore #1 - No Surveys	6,450.00	6,209.33	3,057.15	2,784.05	11.194	SF
Ava State C36-22 (SI) - Wellbore #1 - No Surveys	2,000.00	1,977.00	3,669.39	3,585.37	43.675	CC
Ava State C36-22 (SI) - Wellbore #1 - No Surveys	3,600.00	3,522.36	3,698.62	3,546.61	24.330	ES
Ava State C36-22 (SI) - Wellbore #1 - No Surveys	6,650.00	6,407.77	4,041.27	3,760.26	14.381	SF
Ava State C36-24 (PR) - Wellbore #1 - No Surveys	2,686.79	2,646.23	1,915.96	1,802.72	16.920	CC
Ava State C36-24 (PR) - Wellbore #1 - No Surveys	3,500.00	3,417.11	1,933.22	1,785.86	13.119	ES
Ava State C36-24 (PR) - Wellbore #1 - No Surveys	6,550.00	6,306.55	2,336.08	2,059.90	8.458	SF
Ava State C36-31 (PR) - Wellbore #1 - No Surveys	6,355.97	6,085.89	3,466.84	3,200.14	12.999	CC
Ava State C36-31 (PR) - Wellbore #1 - No Surveys	6,400.00	6,128.11	3,468.37	3,199.79	12.914	ES
Ava State C36-31 (PR) - Wellbore #1 - No Surveys	6,700.00	6,402.44	3,558.37	3,277.84	12.685	SF
Booth CC31-68-1HN (PR) - Original Drilling - Original Dri	4,225.27	4,454.11	5,863.27	5,831.36	183.743	CC
Booth CC31-68-1HN (PR) - Original Drilling - Original Dri	4,300.00	4,503.91	5,863.46	5,830.99	180.575	ES
Booth CC31-68-1HN (PR) - Original Drilling - Original Dri	6,400.00	6,033.00	6,001.81	5,954.49	126.825	SF
Booth State C36-69HN (PR) - Original Drilling - Original D	6,404.72	10,838.24	4,794.69	4,659.98	35.591	CC, ES
Booth State C36-69HN (PR) - Original Drilling - Original D	6,650.00	10,878.69	4,847.01	4,709.79	35.323	SF
Booth State CC30-79HN (PR) - Original Drilling - Original	979.98	976.99	6,255.14	6,250.82	1,447.656	CC
Booth State CC30-79HN (PR) - Original Drilling - Original	1,500.00	1,453.92	6,256.80	6,248.97	798.361	ES
Booth State CC30-79HN (PR) - Original Drilling - Original	6,550.00	6,031.00	6,922.64	6,876.84	151.164	SF
Booth State CC31-69HN (PR) - Original Drilling - Original	1,158.15	1,154.18	6,284.83	6,279.28	1,131.107	CC
Booth State CC31-69HN (PR) - Original Drilling - Original	1,200.96	1,197.00	6,285.10	6,279.25	1,073.259	ES
Booth State CC31-69HN (PR) - Original Drilling - Original	6,550.00	6,033.00	6,880.49	6,834.64	150.079	SF
State 36-0414 (PR) - Wellbore #1 - No Surveys	6,311.09	6,050.77	3,647.20	3,381.40	13.721	CC
State 36-0414 (PR) - Wellbore #1 - No Surveys	6,350.00	6,088.16	3,648.40	3,380.92	13.640	ES
State 36-0414 (PR) - Wellbore #1 - No Surveys	6,650.00	6,364.23	3,735.44	3,455.93	13.364	SF
State 36-0714 (SI) - Wellbore #1 - No Surveys	5,101.76	4,929.81	3,792.56	3,577.09	17.602	CC
State 36-0714 (SI) - Wellbore #1 - No Surveys	6,208.65	5,973.07	3,810.55	3,547.91	14.509	ES
State 36-0714 (SI) - Wellbore #1 - No Surveys	6,650.00	6,384.23	3,937.19	3,656.65	14.034	SF
State 36-1014 (SI) - Wellbore #1 - No Surveys	2,973.98	2,920.32	2,718.95	2,593.65	21.700	CC
State 36-1014 (SI) - Wellbore #1 - No Surveys	3,900.00	3,806.88	2,736.50	2,571.74	16.609	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 Guttersen D12-785
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4775.00ft
<b>Reference Site:</b>	D Section 01	<b>MD Reference:</b>	KB @ 4775.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersen D12-785	<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 #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
<b>Offset Well - Wellbore - Design</b>						
C Section 36						
State 36-1014 (SI) - Wellbore #1 - No Surveys	6,550.00	6,307.55	3,017.19	2,740.48	10.904	SF
State 36-1114 (PR) - Wellbore #1 - No Surveys	5,331.42	5,131.27	1,907.81	1,683.16	8.492	CC
State 36-1114 (PR) - Wellbore #1 - No Surveys	6,100.00	5,855.67	1,925.02	1,667.66	7.480	ES
State 36-1114 (PR) - Wellbore #1 - No Surveys	6,350.00	6,106.84	1,949.14	1,680.61	7.258	SF
State 36-1214 (PR) - Wellbore #1 - No Surveys	6,345.09	6,103.44	1,503.68	1,236.35	5.625	CC
State 36-1214 (PR) - Wellbore #1 - No Surveys	6,350.00	6,108.16	1,503.70	1,236.16	5.621	ES
State 36-1214 (PR) - Wellbore #1 - No Surveys	6,500.00	6,250.54	1,523.02	1,249.14	5.561	SF
State 36-1414 (PR) - Wellbore #1 - No Surveys	3,003.98	2,939.60	852.31	726.12	6.754	CC
State 36-1414 (PR) - Wellbore #1 - No Surveys	3,300.00	3,218.61	858.03	719.47	6.192	ES
State 36-1414 (PR) - Wellbore #1 - No Surveys	5,100.00	4,915.15	1,103.15	889.22	5.157	SF
State 36-1514 (PR) - Wellbore #1 - No Surveys	2,000.00	1,956.00	2,396.18	2,313.00	28.808	CC
State 36-1514 (PR) - Wellbore #1 - No Surveys	2,400.00	2,354.70	2,405.87	2,305.33	23.931	ES
State 36-1514 (PR) - Wellbore #1 - No Surveys	6,800.00	6,488.83	3,236.16	2,952.66	11.415	SF
State 36-1614 (PR) - Wellbore #1 - No Surveys	2,000.00	2,001.00	2,875.76	2,790.78	33.842	CC
State 36-1614 (PR) - Wellbore #1 - No Surveys	2,200.00	2,201.16	2,880.03	2,786.34	30.740	ES
State 36-1614 (PR) - Wellbore #1 - No Surveys	7,100.00	6,705.98	3,993.27	3,700.86	13.656	SF
State 36-214 (SI) - Wellbore #1 - No Surveys	6,220.20	5,971.98	4,864.30	4,601.56	18.514	CC
State 36-214 (SI) - Wellbore #1 - No Surveys	6,250.00	6,000.28	4,864.90	4,600.89	18.427	ES
State 36-214 (SI) - Wellbore #1 - No Surveys	6,700.00	6,413.56	5,011.06	4,729.12	17.774	SF
State 36-314 (SI) - Wellbore #1 - No Surveys	6,274.79	6,013.95	4,310.93	4,046.40	16.297	CC
State 36-314 (SI) - Wellbore #1 - No Surveys	6,300.00	6,038.11	4,311.41	4,045.80	16.232	ES
State 36-314 (SI) - Wellbore #1 - No Surveys	6,650.00	6,362.23	4,413.64	4,133.92	15.779	SF
State 36-614 (PR) - Wellbore #1 - No Surveys	6,256.01	6,008.00	3,369.81	3,105.51	12.750	CC, ES
State 36-614 (PR) - Wellbore #1 - No Surveys	6,600.00	6,315.11	3,453.81	3,176.00	12.433	SF
State 36-814 (SI) - Wellbore #1 - No Surveys	2,000.00	1,988.00	4,855.16	4,770.70	57.487	CC
State 36-814 (SI) - Wellbore #1 - No Surveys	3,800.00	3,721.87	4,890.44	4,729.54	30.395	ES
State 36-814 (SI) - Wellbore #1 - No Surveys	6,800.00	6,520.83	5,266.63	4,980.68	18.418	SF
State 36-914 (PR) - Wellbore #1 - No Surveys	2,000.00	2,004.00	3,493.66	3,408.57	41.055	CC
State 36-914 (PR) - Wellbore #1 - No Surveys	2,400.00	2,405.30	3,501.80	3,399.24	34.144	ES
State 36-914 (PR) - Wellbore #1 - No Surveys	6,750.00	6,508.16	4,206.38	3,921.81	14.781	SF
State B14-36 (PA) - Wellbore #1 - No Surveys	6,246.80	6,003.23	699.50	435.41	2.649	CC
State B14-36 (PA) - Wellbore #1 - No Surveys	6,250.00	6,006.28	699.51	435.28	2.647	ES
State B14-36 (PA) - Wellbore #1 - No Surveys	6,300.00	6,054.11	701.68	435.29	2.634	SF
State B41-36 (SI) - Wellbore #1 - No Surveys	4,049.48	3,948.01	5,255.37	5,084.24	30.710	CC
State B41-36 (SI) - Wellbore #1 - No Surveys	5,900.00	5,707.83	5,291.62	5,041.16	21.127	ES
State B41-36 (SI) - Wellbore #1 - No Surveys	6,750.00	6,474.84	5,487.97	5,203.69	19.304	SF
State C36-01 (SI) - Wellbore #1 - No Surveys	3,824.45	3,735.91	6,007.06	5,845.46	37.172	CC
State C36-01 (SI) - Wellbore #1 - No Surveys	5,900.00	5,707.83	6,046.97	5,796.50	24.143	ES
State C36-01 (SI) - Wellbore #1 - No Surveys	6,800.00	6,511.83	6,273.30	5,987.45	21.946	SF
State C36-04 (PR) - Wellbore #1 - No Surveys	6,339.42	6,078.99	4,212.36	3,945.72	15.798	CC
State C36-04 (PR) - Wellbore #1 - No Surveys	6,350.00	6,089.16	4,212.45	3,945.36	15.772	ES
State C36-04 (PR) - Wellbore #1 - No Surveys	6,700.00	6,406.56	4,312.82	4,031.89	15.352	SF
State C36-13 (SI) - Wellbore #1 - No Surveys	6,503.14	6,262.46	101.75	-170.67	0.374	Level 1, CC, ES, SF
State C36-15 (PR) - Wellbore #1 - No Surveys	2,000.00	1,977.00	1,676.30	1,592.29	19.952	CC
State C36-15 (PR) - Wellbore #1 - No Surveys	2,300.00	2,276.45	1,683.16	1,586.11	17.343	ES
State C36-15 (PR) - Wellbore #1 - No Surveys	6,900.00	6,576.04	2,669.13	2,382.34	9.307	SF
State C36-32D (SI) - Wellbore #1 - As Drilled	100.00	83.89	2,180.13	2,179.86	8,034.895	CC
State C36-32D (SI) - Wellbore #1 - As Drilled	6,386.06	6,342.45	2,193.23	2,145.94	46.386	ES
State C36-32D (SI) - Wellbore #1 - As Drilled	6,550.00	6,480.37	2,214.83	2,166.34	45.679	SF
State C36-33D (SI) - Wellbore #1 - Original Drilling	6,434.91	6,256.81	1,004.35	956.74	21.098	CC, ES
State C36-33D (SI) - Wellbore #1 - Original Drilling	6,550.00	6,373.46	1,013.90	965.47	20.939	SF
State C36-99HZ (PR) - Wellbore #1 - As Drilled	6,330.80	6,112.19	1,232.26	1,186.75	27.078	CC, ES
State C36-99HZ (PR) - Wellbore #1 - As Drilled	6,450.00	6,215.37	1,244.87	1,198.35	26.758	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 Guttersen D12-785
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4775.00ft
<b>Reference Site:</b>	D Section 01	<b>MD Reference:</b>	KB @ 4775.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersen D12-785	<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 #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						
C Section 36						
State D01-30D (SI) - Wellbore #1 - Original Drilling	7,241.12	7,100.91	467.99	404.28	7.345	CC
State D01-30D (SI) - Wellbore #1 - Original Drilling	7,250.00	7,102.06	468.09	404.26	7.333	ES, SF

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

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersten D12-785
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4775.00ft
<b>Reference Site:</b>	D Section 01	<b>MD Reference:</b>	KB @ 4775.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersten D12-785	<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 #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 01						
Abbey D 1-3 (PR) - Wellbore #1 - No Surveys	2,000.00	1,970.00	486.06	402.33	5.805	CC
Abbey D 1-3 (PR) - Wellbore #1 - No Surveys	2,100.00	2,069.98	487.79	399.70	5.537	ES
Abbey D 1-3 (PR) - Wellbore #1 - No Surveys	2,600.00	2,565.62	548.08	438.41	4.997	SF
Abbey D 1-4 (PR) - Wellbore #1 - No Surveys	7,790.02	6,706.00	237.43	-56.71	0.807	Level 1, CC, ES, SF
Abbey D 1-5 (PR) - Wellbore #1 - No Surveys	9,134.29	6,708.00	199.20	-103.27	0.659	Level 1, CC, ES, SF
Abbey D 1-6 (PR) - Wellbore #1 - No Surveys	9,208.03	6,722.00	1,628.97	1,325.37	5.366	CC, ES
Abbey D 1-6 (PR) - Wellbore #1 - No Surveys	9,300.00	6,722.00	1,631.57	1,327.25	5.361	SF
Abbey D 1-7JI (SI) - Wellbore #1 - No Surveys	2,000.00	1,982.00	2,345.71	2,261.50	27.853	CC
Abbey D 1-7JI (SI) - Wellbore #1 - No Surveys	2,100.00	2,081.98	2,347.44	2,258.87	26.504	ES
Abbey D 1-7JI (SI) - Wellbore #1 - No Surveys	9,300.00	6,718.00	2,885.45	2,581.30	9.487	SF
Abbey D01-08J1 - Abbey D01-08J1 OH - As-Drilled	1,868.35	1,862.52	3,320.28	3,307.48	259.314	CC
Abbey D01-08J1 - Abbey D01-08J1 OH - As-Drilled	2,000.00	1,976.17	3,320.75	3,307.08	242.878	ES
Abbey D01-08J1 - Abbey D01-08J1 OH - As-Drilled	10,500.00	6,654.68	4,533.70	4,465.21	66.195	SF
Abbey D01-08J1 (PR) - Wellbore #1 - No Surveys	2,000.00	2,008.00	3,318.29	3,233.03	38.921	CC
Abbey D01-08J1 (PR) - Wellbore #1 - No Surveys	2,100.00	2,108.02	3,320.00	3,230.39	37.049	ES
Abbey D01-08J1 (PR) - Wellbore #1 - No Surveys	9,300.00	6,728.00	4,221.93	3,917.40	13.864	SF
Abbey D01-18 (SI) - Wellbore #1 - No Surveys	2,000.00	1,975.00	1,364.44	1,280.51	16.256	CC
Abbey D01-18 (SI) - Wellbore #1 - No Surveys	2,100.00	2,074.98	1,366.15	1,277.86	15.473	ES
Abbey D01-18 (SI) - Wellbore #1 - No Surveys	8,600.00	6,711.00	2,132.55	1,833.72	7.136	SF
Abbey D01-19 (TA) - Wellbore #1 - No Surveys	8,722.61	6,709.00	962.82	663.30	3.215	CC, ES, SF
Abbey D01-23 (PR) - Wellbore #1 - No Surveys	11,014.13	6,761.00	3,603.08	3,282.06	11.224	CC, ES
Abbey D01-23 (PR) - Wellbore #1 - No Surveys	11,400.00	6,761.00	3,623.69	3,299.24	11.169	SF
Abbey D01-27 (SI) - Wellbore #1 - No Surveys	2,000.00	1,987.00	2,271.70	2,187.28	26.911	CC
Abbey D01-27 (SI) - Wellbore #1 - No Surveys	2,200.00	2,186.84	2,277.16	2,184.05	24.455	ES
Abbey D01-27 (SI) - Wellbore #1 - No Surveys	7,500.00	6,723.00	3,491.03	3,197.17	11.880	SF
Abbey D01-28 (SI) - Wellbore #1 - No Surveys	2,000.00	1,969.00	1,165.19	1,081.50	13.922	CC
Abbey D01-28 (SI) - Wellbore #1 - No Surveys	2,200.00	2,168.84	1,170.72	1,078.32	12.671	ES
Abbey D01-28 (SI) - Wellbore #1 - No Surveys	7,500.00	6,705.00	2,384.46	2,091.33	8.134	SF
Abbey D01-29 (SI) - Wellbore #1 - No Surveys	3,491.75	3,415.33	64.41	-82.87	0.437	Level 1, CC
Abbey D01-29 (SI) - Wellbore #1 - No Surveys	3,500.00	3,423.11	64.47	-83.17	0.437	Level 1, ES, SF
Abbey D01-32D - Wellbore #1 - Wellbore #1 - As Drilled	9,687.42	6,828.89	271.28	205.36	4.115	CC, ES
Abbey D01-32D - Wellbore #1 - Wellbore #1 - As Drilled	9,700.00	6,828.75	271.57	205.45	4.107	SF
Guttersten D01-31D (PR) - Guttersten D01-31D OH - As-D	8,438.22	6,817.85	475.01	417.63	8.279	CC, ES, SF
Guttersten D12-715 - Wellbore #1 - Plan #1	2,000.00	2,017.00	3,181.29	3,167.36	228.315	CC, ES
Guttersten D12-715 - Wellbore #1 - Plan #1	17,570.64	17,394.65	4,559.77	4,319.55	18.981	SF
Guttersten D12-725 - Wellbore #1 - Plan #1	2,000.00	2,017.00	3,158.69	3,144.76	226.693	CC, ES
Guttersten D12-725 - Wellbore #1 - Plan #1	17,570.64	17,354.05	3,909.35	3,669.38	16.291	SF
Guttersten D12-735 - Wellbore #1 - Plan #1	5,835.37	6,821.14	3,108.95	3,061.73	65.849	CC
Guttersten D12-735 - Wellbore #1 - Plan #1	17,570.64	17,566.38	3,256.99	3,016.96	13.570	ES, SF
Guttersten D12-745 - Wellbore #1 - Plan #1	6,078.41	7,139.26	2,508.05	2,457.87	49.975	CC
Guttersten D12-745 - Wellbore #1 - Plan #1	17,570.64	17,749.15	2,605.64	2,365.73	10.861	ES, SF
Guttersten D12-750 - Wellbore #1 - Plan #1	6,326.71	7,350.00	2,238.24	2,185.70	42.604	CC
Guttersten D12-750 - Wellbore #1 - Plan #1	17,570.64	17,957.30	2,281.86	2,041.03	9.475	ES, SF
Guttersten D12-755 - Wellbore #1 - Plan #1	2,000.00	2,000.00	89.87	76.00	6.478	CC, ES
Guttersten D12-755 - Wellbore #1 - Plan #1	2,200.00	2,199.84	95.62	80.32	6.252	SF
Guttersten D12-765 - Wellbore #1 - Plan #1	2,000.00	2,000.00	67.54	53.67	4.869	CC, ES
Guttersten D12-765 - Wellbore #1 - Plan #1	2,100.00	2,100.02	68.96	54.38	4.728	SF
Guttersten D12-770 - Wellbore #1 - Plan #1	2,000.00	2,000.00	44.93	31.06	3.239	CC, ES
Guttersten D12-770 - Wellbore #1 - Plan #1	2,100.00	2,100.02	46.36	31.77	3.178	SF
Guttersten D12-775 - Wellbore #1 - Plan #1	2,000.00	2,000.00	22.33	8.46	1.610	CC, ES, SF
Guttersten State C36-725 - Wellbore #1 - Plan #1	2,000.00	2,017.00	3,161.24	3,147.31	226.876	CC, ES
Guttersten State C36-725 - Wellbore #1 - Plan #1	9,000.00	6,450.00	4,207.09	4,150.63	74.517	SF
Guttersten State C36-735 - Wellbore #1 - Plan #1	2,859.01	3,666.13	3,014.74	2,992.34	134.603	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 Guttersten D12-785
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4775.00ft
<b>Reference Site:</b>	D Section 01	<b>MD Reference:</b>	KB @ 4775.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersten D12-785	<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 #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
<b>Offset Well - Wellbore - Design</b>						
D Section 01						
Guttersten State C36-735 - Wellbore #1 - Plan #1	2,900.00	3,706.52	3,015.00	2,992.30	132.835	ES
Guttersten State C36-735 - Wellbore #1 - Plan #1	6,450.00	7,456.99	3,099.82	3,048.89	60.857	SF
Guttersten State C36-745 - Wellbore #1 - Plan #1	6,246.86	7,662.20	2,449.19	2,396.90	46.832	CC
Guttersten State C36-745 - Wellbore #1 - Plan #1	6,250.00	7,662.62	2,449.19	2,396.88	46.819	ES
Guttersten State C36-745 - Wellbore #1 - Plan #1	6,400.00	7,664.94	2,454.01	2,401.22	46.492	SF
Guttersten State C36-750 - Wellbore #1 - Plan #1	6,447.93	7,907.22	2,168.44	2,113.90	39.757	CC
Guttersten State C36-765 - Wellbore #1 - Plan #1	6,450.00	7,907.59	2,168.44	2,113.89	39.753	ES
Guttersten State C36-750 - Wellbore #1 - Plan #1	6,500.00	7,881.49	2,169.04	2,114.47	39.744	SF
Guttersten State C36-755 - Wellbore #1 - Plan #1	2,000.00	2,001.00	174.70	160.83	12.590	CC, ES
Guttersten State C36-755 - Wellbore #1 - Plan #1	2,200.00	2,194.75	184.44	169.19	12.095	SF
Guttersten State C36-765 - Wellbore #1 - Plan #1	2,029.29	2,032.03	164.53	150.44	11.677	CC, ES
Guttersten State C36-765 - Wellbore #1 - Plan #1	2,300.00	2,302.14	175.60	159.60	10.972	SF
Guttersten State C36-775 - Wellbore #1 - Plan #1	2,000.72	2,001.75	156.54	142.66	11.277	CC, ES
Guttersten State C36-775 - Wellbore #1 - Plan #1	2,400.00	2,407.58	169.66	152.97	10.161	SF
Guttersten State C36-785 - Wellbore #1 - Plan #1	7,150.00	7,059.76	48.27	-3.92	0.925	Level 1, ES, SF
Guttersten State C36-785 - Wellbore #1 - Plan #1	7,153.73	7,056.77	48.22	-3.87	0.926	Level 1, CC
HSR-Guttersten 11-1 (PR) - Wellbore #1 - No Surveys	10,388.96	6,735.00	1,567.75	1,253.59	4.990	CC
HSR-Guttersten 11-1 (PR) - Wellbore #1 - No Surveys	10,400.00	6,735.00	1,567.79	1,253.53	4.989	ES
HSR-Guttersten 11-1 (PR) - Wellbore #1 - No Surveys	10,500.00	6,735.00	1,571.68	1,256.59	4.988	SF
HSR-Guttersten 12-1 (PR) - Wellbore #1 - No Surveys	10,412.56	6,685.00	244.91	-67.47	0.784	Level 1, CC, ES, SF
HSR-Guttersten 14-1 (SI) - Wellbore #1 - No Surveys	11,733.32	6,715.00	1,558.34	1,232.21	4.778	CC, ES
HSR-Guttersten 14-1 (SI) - Wellbore #1 - No Surveys	11,800.00	6,715.00	1,559.77	1,233.04	4.774	SF
HSR-Guttersten 15-1 (SI) - Wellbore #1 - Wellbore #1	11,915.58	6,753.00	3,059.11	2,729.66	9.286	CC, ES
HSR-Guttersten 15-1 (SI) - Wellbore #1 - Wellbore #1	12,200.00	6,753.00	3,072.30	2,740.30	9.254	SF
HSR-Guttersten 16-1 (SI) - Wellbore #1 - No Surveys	11,910.03	6,767.00	4,382.21	4,052.26	13.281	CC, ES
HSR-Guttersten 16-1 (SI) - Wellbore #1 - No Surveys	12,400.00	6,767.00	4,409.52	4,075.08	13.185	SF
Keisha White D01-01 - Wellbore #1 - Wellbore #1 - As D	838.23	837.26	2,999.53	2,994.03	545.315	CC
Keisha White D01-01 - Wellbore #1 - Wellbore #1 - As D	2,000.00	1,987.65	3,003.40	2,989.73	219.658	ES
Keisha White D01-01 - Wellbore #1 - Wellbore #1 - As D	9,600.00	6,743.95	4,557.37	4,495.83	74.051	SF
Keisha White D01-07 (PR) - Wellbore #1 - No Surveys	2,000.00	1,984.00	2,876.11	2,791.82	34.119	CC
Keisha White D01-07 (PR) - Wellbore #1 - No Surveys	9,800.00	6,720.00	2,887.81	2,579.45	9.365	ES
Keisha White D01-07 (PR) - Wellbore #1 - No Surveys	10,000.00	6,720.00	2,895.94	2,585.91	9.341	SF
Keisha White D01-08 (PR) - Wellbore #1 - No Surveys	2,000.00	2,001.00	3,774.57	3,689.60	44.419	CC
Keisha White D01-08 (PR) - Wellbore #1 - No Surveys	2,100.00	2,100.98	3,776.32	3,686.98	42.274	ES
Keisha White D01-08 (PR) - Wellbore #1 - No Surveys	10,300.00	6,737.00	4,137.16	3,823.88	13.206	SF
UPV 1-2J4 (PR) - Wellbore #1 - No Surveys	2,000.00	1,984.00	2,115.77	2,031.47	25.099	CC
UPV 1-2J4 (PR) - Wellbore #1 - No Surveys	2,100.00	2,083.98	2,117.43	2,028.78	23.885	ES
UPV 1-2J4 (PR) - Wellbore #1 - No Surveys	8,300.00	6,720.00	3,231.79	2,934.45	10.869	SF
Woody D01-09 - Wellbore #1 - Wellbore #1 - As Drilled	10,542.79	6,658.22	4,365.55	4,294.53	61.464	CC
Woody D01-09 - Wellbore #1 - Wellbore #1 - As Drilled	10,600.00	6,656.97	4,365.93	4,294.38	61.025	ES
Woody D01-09 - Wellbore #1 - Wellbore #1 - As Drilled	12,000.00	6,625.63	4,602.20	4,519.99	55.983	SF
Woody D01-10 (PR) - Wellbore #1 - No Surveys	10,371.49	6,753.00	2,700.57	2,385.84	8.581	CC
Woody D01-10 (PR) - Wellbore #1 - No Surveys	10,400.00	6,753.00	2,700.72	2,385.74	8.574	ES
Woody D01-10 (PR) - Wellbore #1 - No Surveys	10,600.00	6,753.00	2,710.22	2,393.53	8.558	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 Guttersen D12-785
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4775.00ft
<b>Reference Site:</b>	D Section 01	<b>MD Reference:</b>	KB @ 4775.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersen D12-785	<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 #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)	Between Ellipses (ft)	Separation Factor	Warning
D Section 12						
GUTTERERSEN STATE D #12-7JI(SI) - Wellbore #1 - N	14,282.79	6,717.00	2,760.96	2,616.93	19.169	CC
GUTTERERSEN STATE D #12-7JI(SI) - Wellbore #1 - N	14,300.00	6,717.00	2,761.01	2,616.81	19.147	ES
GUTTERERSEN STATE D #12-7JI(SI) - Wellbore #1 - N	14,600.00	6,717.00	2,779.12	2,632.41	18.943	SF
GUTTERSEN #12D(PR) - Wellbore #1 - No Surveys	16,405.91	6,711.00	3,593.92	3,427.68	21.618	CC, ES
GUTTERSEN #12D(PR) - Wellbore #1 - No Surveys	16,900.00	6,711.00	3,627.73	3,457.37	21.295	SF
Guttersen #33-12(PR) - Wellbore #1 - No Surveys	15,753.12	6,701.00	2,911.96	2,752.69	18.283	CC
Guttersen #33-12(PR) - Wellbore #1 - No Surveys	15,800.00	6,701.00	2,912.34	2,752.60	18.232	ES
Guttersen #33-12(PR) - Wellbore #1 - No Surveys	16,100.00	6,701.00	2,932.55	2,770.41	18.087	SF
GUTTERSEN #34-12(PR) - Wellbore #1 - No Surveys	17,067.83	6,701.00	2,955.38	2,782.20	17.066	CC
GUTTERSEN #34-12(PR) - Wellbore #1 - No Surveys	17,100.00	6,701.00	2,955.55	2,782.06	17.035	ES
GUTTERSEN #34-12(PR) - Wellbore #1 - No Surveys	17,400.00	6,701.00	2,973.99	2,798.10	16.909	SF
Guttersen #43-12(PR) - Wellbore #1 - Gyro	15,636.82	6,716.01	4,231.66	4,108.82	34.448	CC
Guttersen #43-12(PR) - Wellbore #1 - Gyro	15,700.00	6,714.88	4,232.13	4,108.65	34.274	ES
Guttersen #43-12(PR) - Wellbore #1 - Gyro	16,500.00	6,699.12	4,318.76	4,189.11	33.312	SF
GUTTERSEN #44-12(PR) - Wellbore #1 - Gyro	17,016.76	6,500.00	4,237.62	4,101.38	31.103	CC
GUTTERSEN #44-12(PR) - Wellbore #1 - Gyro	17,100.00	6,500.00	4,238.44	4,101.35	30.917	ES
GUTTERSEN #44-12(PR) - Wellbore #1 - Gyro	17,570.64	6,500.00	4,273.67	4,132.60	30.295	SF
GUTTERSEN D #12-20(PR) - Wellbore #1 - No Surveys	15,077.21	6,701.00	842.28	690.10	5.535	CC, ES
GUTTERSEN D #12-20(PR) - Wellbore #1 - No Surveys	15,100.00	6,701.00	842.58	690.23	5.530	SF
GUTTERSEN D #12-25(PR) - Wellbore #1 - No Surveys	16,325.44	6,708.00	1,019.80	854.43	6.167	CC, ES
GUTTERSEN D #12-25(PR) - Wellbore #1 - No Surveys	16,400.00	6,708.00	1,022.52	856.70	6.166	SF
GUTTERSEN STATE D #12-19(PR) - Wellbore #1 - No S	13,717.12	6,708.00	971.62	833.52	7.036	CC, ES
GUTTERSEN STATE D #12-19(PR) - Wellbore #1 - No S	13,800.00	6,708.00	975.15	836.52	7.034	SF
GUTTERSEN STATE D #12-2JI(SI) - Wellbore #1 - No S	13,082.70	6,741.00	2,919.65	2,787.77	22.138	CC
GUTTERSEN STATE D #12-2JI(SI) - Wellbore #1 - No S	13,100.00	6,741.00	2,919.70	2,787.65	22.110	ES
GUTTERSEN STATE D #12-2JI(SI) - Wellbore #1 - No S	13,500.00	6,741.00	2,949.32	2,813.95	21.786	SF
Guttersen State D12-01JI - Wellbore #1 - Wellbore #1 - A	13,118.34	6,662.71	4,176.01	4,079.74	43.377	CC
Guttersen State D12-01JI - Wellbore #1 - Wellbore #1 - A	13,200.00	6,667.17	4,176.80	4,079.70	43.012	ES
Guttersen State D12-01JI - Wellbore #1 - Wellbore #1 - A	14,200.00	6,738.45	4,313.16	4,207.88	40.967	SF
Guttersen State D12-08JI - Wellbore #1 - Wellbore #1 - A	14,608.54	6,763.81	4,327.32	4,215.06	38.545	CC, ES
Guttersen State D12-08JI - Wellbore #1 - Wellbore #1 - A	15,600.00	6,769.30	4,439.45	4,319.26	36.939	SF
KARCH BLUE D #12-11(PR) - Wellbore #1 - No Surveys	15,702.79	6,692.00	1,707.89	1,549.23	10.764	CC, ES
KARCH BLUE D #12-11(PR) - Wellbore #1 - No Surveys	15,800.00	6,692.00	1,710.65	1,551.17	10.726	SF
KARCH BLUE D #12-12(PR) - Wellbore #1 - No Surveys	15,730.08	6,689.00	382.28	223.36	2.405	CC, ES, SF
KARCH BLUE D #12-14(PR) - Wellbore #1 - No Surveys	17,086.16	6,695.00	1,620.96	1,447.64	9.353	CC
KARCH BLUE D #12-14(PR) - Wellbore #1 - No Surveys	17,100.00	6,695.00	1,621.02	1,447.57	9.346	ES
KARCH BLUE D #12-14(PR) - Wellbore #1 - No Surveys	17,200.00	6,695.00	1,624.95	1,450.77	9.329	SF
L F RANCH #2-12(SI) - Wellbore #1 - No Surveys	16,754.94	6,686.00	640.57	470.85	3.774	CC, ES, SF
SPIKE STATE #D 12-3(PR) - Wellbore #1 - No Surveys	13,102.71	6,700.00	1,599.42	1,467.69	12.142	CC, ES
SPIKE STATE #D 12-3(PR) - Wellbore #1 - No Surveys	13,200.00	6,700.00	1,602.38	1,469.81	12.088	SF
SPIKE STATE #D 12-4(PR) - Wellbore #1 - No Surveys	13,218.38	6,691.00	174.02	41.19	1.310	Level 3, CC, ES, SF
SPIKE STATE #D 12-5(PR) - Wellbore #1 - No Surveys	14,434.00	6,688.00	294.52	149.17	2.026	CC, ES, SF
SPIKE STATE #D 12-6(PA) - Wellbore #1 - Gyro	14,464.37	6,680.35	1,597.39	1,487.00	14.471	CC, ES
SPIKE STATE #D 12-6(PA) - Wellbore #1 - Gyro	14,600.00	6,682.01	1,603.14	1,491.68	14.383	SF
STATE #10(TA) - Wellbore #1 - No Surveys	13,638.83	6,755.00	3,614.01	3,476.31	26.245	CC
STATE #10(TA) - Wellbore #1 - No Surveys	13,700.00	6,755.00	3,614.53	3,476.22	26.134	ES
STATE #10(TA) - Wellbore #1 - No Surveys	14,300.00	6,755.00	3,673.99	3,530.84	25.665	SF

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

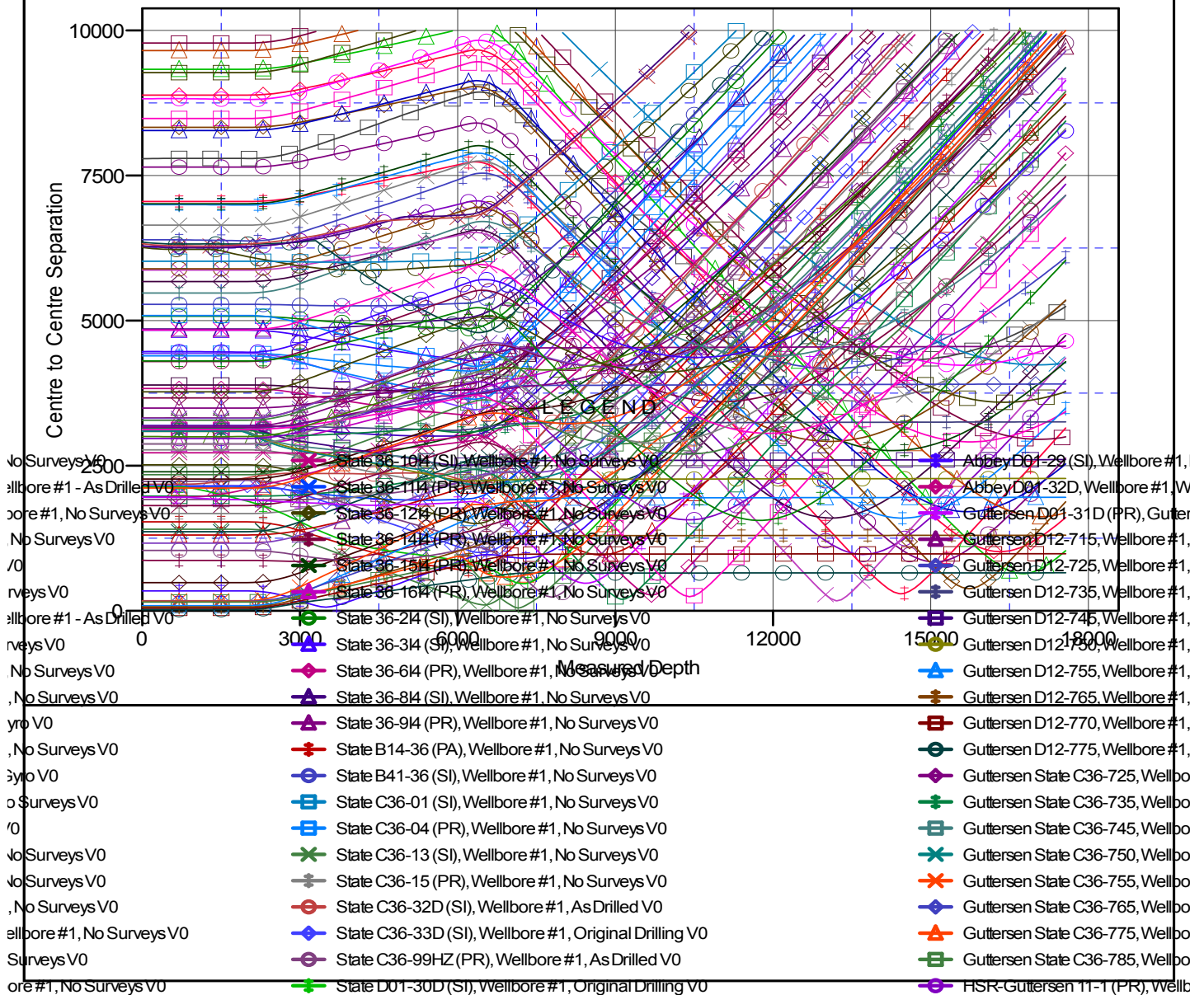
**Noble Energy, Inc.**  
**Anticollision Summary Report**

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Gutteresen D12-785
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4775.00ft
<b>Reference Site:</b>	D Section 01	<b>MD Reference:</b>	KB @ 4775.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Gutteresen D12-785	<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 #1	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to KB @ 4775.00ft  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.5000000

Coordinates are relative to: Gutteresen D12-785  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 0.64°

## Ladder Plot



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

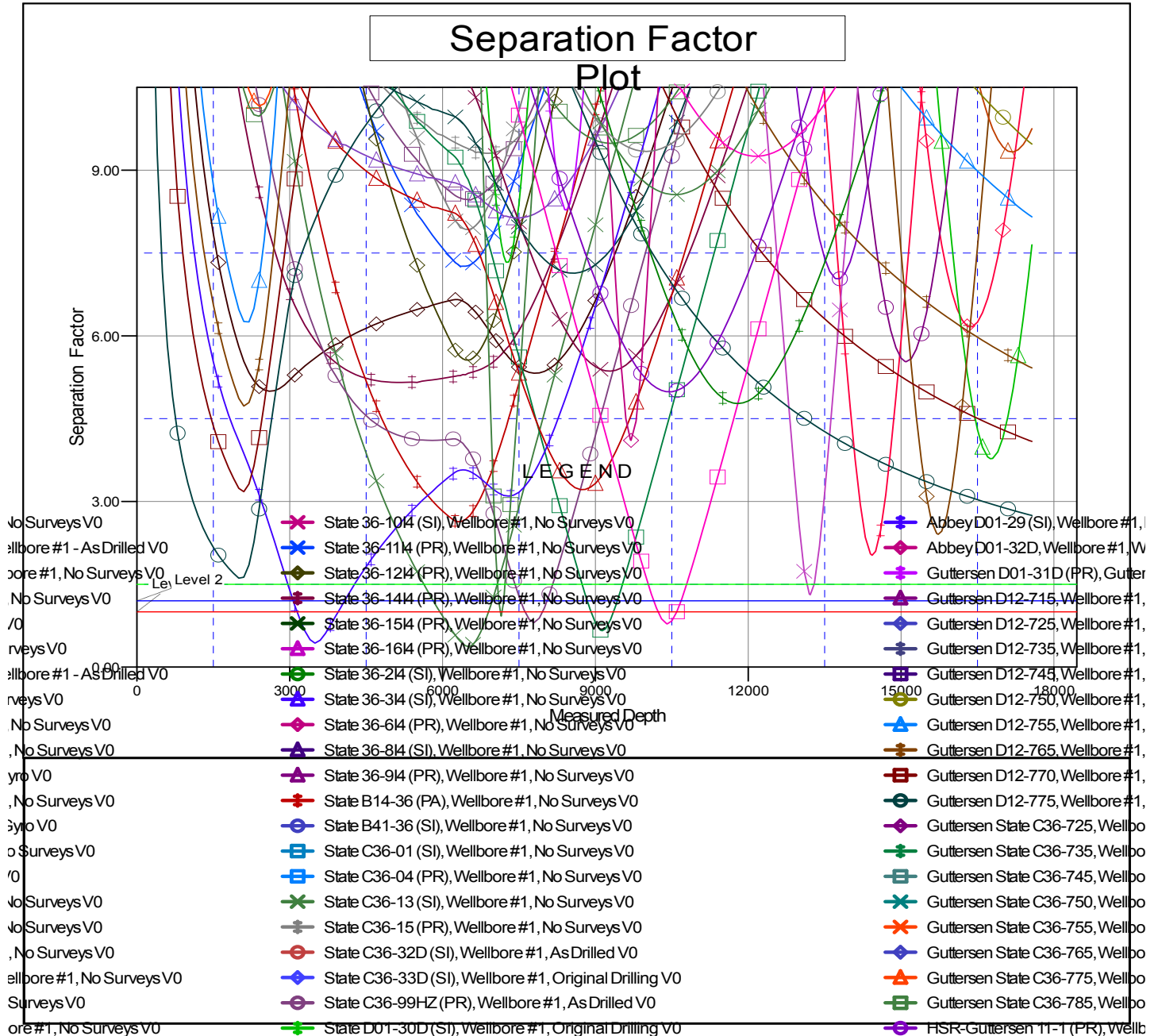


**Noble Energy, Inc.**  
**Anticollision Summary Report**

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersten D12-785
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4775.00ft
<b>Reference Site:</b>	D Section 01	<b>MD Reference:</b>	KB @ 4775.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersten D12-785	<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 #1	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to KB @ 4775.00ft  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.5000000

Coordinates are relative to: Guttersten D12-785  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 0.64°



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