

Project: Mustang  
Site: D Section 01  
Well: Guttersen State C36-785  
Wellbore: Wellbore #1  
Design: Plan #1

# Northern Region - DJ Basin

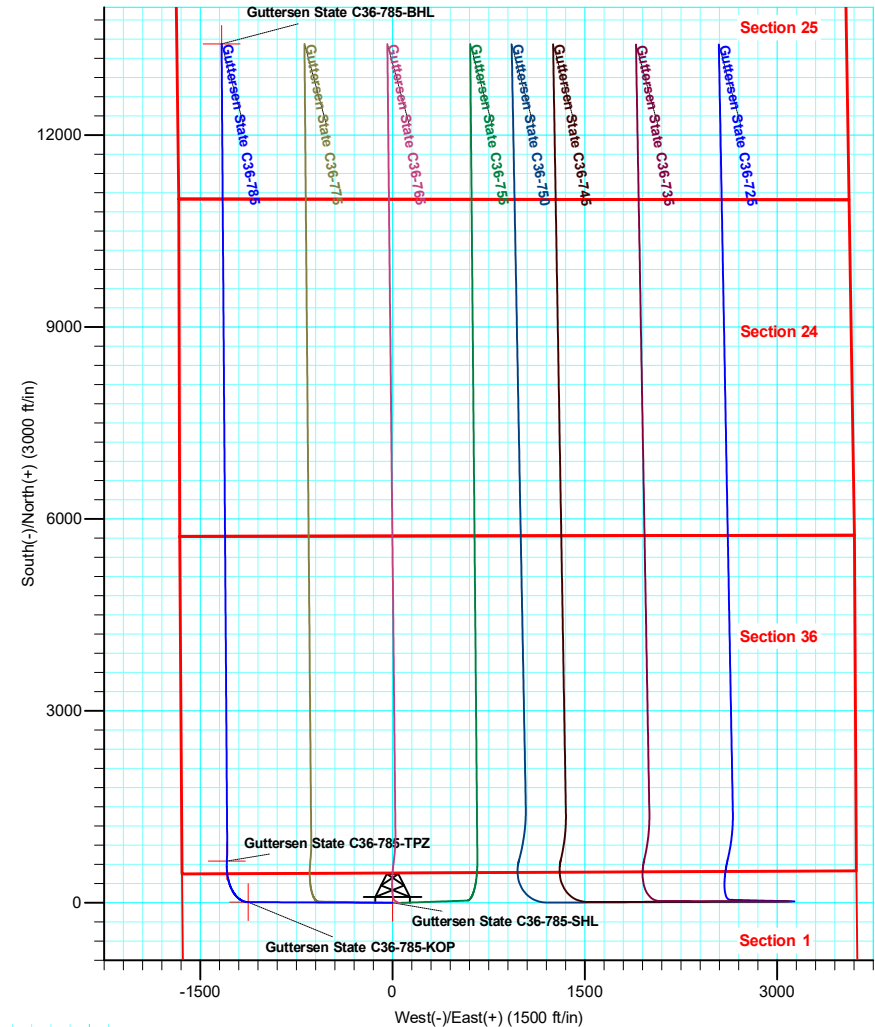
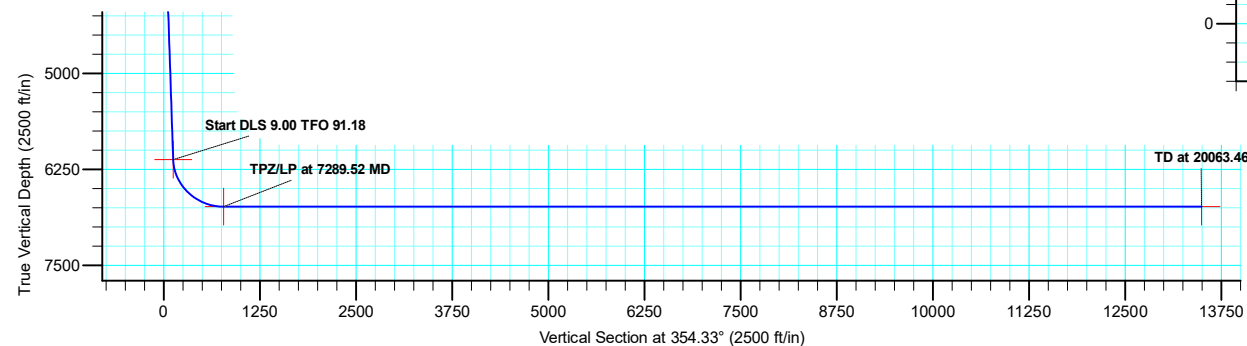
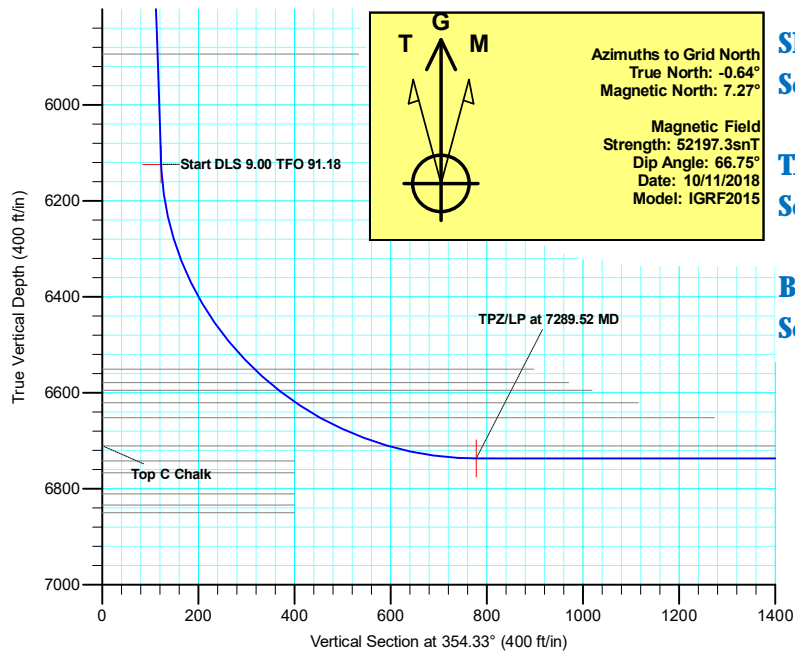
Geodetic System: US State Plane 1983  
Datum: North American Datum 1983  
Ellipsoid: GRS 1980  
Zone: Colorado Northern Zone  
System Datum: Mean Sea Level

## 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	2846.70	16.93	270.59	2834.43	1.28	-124.21	2.00	270.59	13.54	
4	6285.54	16.93	270.59	6124.16	11.57	-1125.79	0.00	0.00	122.74	
5	7289.52	90.00	1.82	6737.00	653.78	-1292.02	9.00	91.18	778.23	Guttersen State C36-785-TPZ
6	7491.56	90.00	359.80	6737.00	855.79	-1289.17	1.00	-90.00	978.97	
7	20063.46	90.00	359.80	6737.00	13427.61	-1333.14	0.00	0.00	13493.62	Guttersen State C36-785-BHL

## WELL DETAILS: Guttersen State C36-785

	North	Ground Level:	4746.00	Longitude
0.00	0.00	Easting	Latitude	-104.5029580
	1339287.81	3278252.26	40.2604500	



Plan: Plan #1 (Guttersen State C36-785/Wellbore #1)

Created By: Chad Stich Date: 11:06, October 12 2018

Checked: \_\_\_\_\_ Date: \_\_\_\_\_

Reviewed: \_\_\_\_\_ Date: \_\_\_\_\_

Approved: \_\_\_\_\_ Date: \_\_\_\_\_

# **Northern Region - DJ Basin**

**Mustang**

**D Section 01**

**Guttersen State C36-785**

**Wellbore #1**

**Plan: Plan #1**

## **Standard Planning Report**

**12 October, 2018**

# Noble Energy, Inc.

## Planning Report

<b>Database:</b>	EDMP	<b>Local Co-ordinate Reference:</b>	Well Guttersen State C36-785
<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	KB @ 4776.00ft
<b>Project:</b>	Mustang	<b>MD Reference:</b>	KB @ 4776.00ft
<b>Site:</b>	D Section 01	<b>North Reference:</b>	Grid
<b>Well:</b>	Guttersen State C36-785	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<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 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 State C36-785					
Well Position	+N/-S	3,002.83 ft	Northing:	1,339,287.81 usft	Latitude:	40.2604500
	+E/-W	1,069.36 ft	Easting:	3,278,252.26 usft	Longitude:	-104.5029580
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,746.00 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	10/11/2018	7.92	66.75	52,197.34547396

<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)</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Direction</b>
	(ft)	(ft)	(ft)	(°)
	0.00	0.00	0.00	354.33

<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	
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,846.70	16.93	270.59	2,834.43	1.28	-124.21	2.00	2.00	0.00	270.59	
6,285.54	16.93	270.59	6,124.16	11.57	-1,125.79	0.00	0.00	0.00	0.00	
7,289.52	90.00	1.82	6,737.00	653.78	-1,292.02	9.00	7.28	9.09	91.18	Guttersen State C36-'
7,491.56	90.00	359.80	6,737.00	855.79	-1,289.17	1.00	0.00	-1.00	-90.00	
20,063.46	90.00	359.80	6,737.00	13,427.61	-1,333.14	0.00	0.00	0.00	0.00	Guttersen State C36-'

# Noble Energy, Inc.

## Planning Report

<b>Database:</b>	EDMP	<b>Local Co-ordinate Reference:</b>	Well Gutteresen State C36-785
<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	KB @ 4776.00ft
<b>Project:</b>	Mustang	<b>MD Reference:</b>	KB @ 4776.00ft
<b>Site:</b>	D Section 01	<b>North Reference:</b>	Grid
<b>Well:</b>	Gutteresen State C36-785	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<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
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
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	270.59	2,099.98	0.02	-1.75	0.19	2.00	2.00	0.00
2,200.00	4.00	270.59	2,199.84	0.07	-6.98	0.76	2.00	2.00	0.00
2,300.00	6.00	270.59	2,299.45	0.16	-15.69	1.71	2.00	2.00	0.00
2,400.00	8.00	270.59	2,398.70	0.29	-27.88	3.04	2.00	2.00	0.00
2,500.00	10.00	270.59	2,497.47	0.45	-43.52	4.74	2.00	2.00	0.00
2,600.00	12.00	270.59	2,595.62	0.64	-62.60	6.82	2.00	2.00	0.00
2,700.00	14.00	270.59	2,693.06	0.87	-85.09	9.28	2.00	2.00	0.00
2,800.00	16.00	270.59	2,789.64	1.14	-110.97	12.10	2.00	2.00	0.00
2,846.70	16.93	270.59	2,834.43	1.28	-124.21	13.54	2.00	2.00	0.00
2,900.00	16.93	270.59	2,885.42	1.44	-139.73	15.23	0.00	0.00	0.00
3,000.00	16.93	270.59	2,981.08	1.74	-168.86	18.41	0.00	0.00	0.00
3,100.00	16.93	270.59	3,076.74	2.03	-197.98	21.59	0.00	0.00	0.00
3,200.00	16.93	270.59	3,172.41	2.33	-227.11	24.76	0.00	0.00	0.00
3,300.00	16.93	270.59	3,268.07	2.63	-256.23	27.94	0.00	0.00	0.00
3,400.00	16.93	270.59	3,363.74	2.93	-285.36	31.11	0.00	0.00	0.00
3,500.00	16.93	270.59	3,459.40	3.23	-314.49	34.29	0.00	0.00	0.00
3,600.00	16.93	270.59	3,555.06	3.53	-343.61	37.46	0.00	0.00	0.00
3,700.00	16.93	270.59	3,650.73	3.83	-372.74	40.64	0.00	0.00	0.00
3,800.00	16.93	270.59	3,746.39	4.13	-401.86	43.81	0.00	0.00	0.00
3,900.00	16.93	270.59	3,842.06	4.43	-430.99	46.99	0.00	0.00	0.00
4,000.00	16.93	270.59	3,937.72	4.73	-460.11	50.16	0.00	0.00	0.00
4,100.00	16.93	270.59	4,033.38	5.03	-489.24	53.34	0.00	0.00	0.00
4,200.00	16.93	270.59	4,129.05	5.33	-518.36	56.52	0.00	0.00	0.00
4,300.00	16.93	270.59	4,224.71	5.63	-547.49	59.69	0.00	0.00	0.00
4,400.00	16.93	270.59	4,320.38	5.93	-576.61	62.87	0.00	0.00	0.00
4,500.00	16.93	270.59	4,416.04	6.23	-605.74	66.04	0.00	0.00	0.00
4,600.00	16.93	270.59	4,511.71	6.53	-634.87	69.22	0.00	0.00	0.00
4,700.00	16.93	270.59	4,607.37	6.82	-663.99	72.39	0.00	0.00	0.00
4,800.00	16.93	270.59	4,703.03	7.12	-693.12	75.57	0.00	0.00	0.00
4,900.00	16.93	270.59	4,798.70	7.42	-722.24	78.74	0.00	0.00	0.00
5,000.00	16.93	270.59	4,894.36	7.72	-751.37	81.92	0.00	0.00	0.00
5,100.00	16.93	270.59	4,990.03	8.02	-780.49	85.09	0.00	0.00	0.00
5,200.00	16.93	270.59	5,085.69	8.32	-809.62	88.27	0.00	0.00	0.00

# Noble Energy, Inc.

## Planning Report

<b>Database:</b>	EDMP	<b>Local Co-ordinate Reference:</b>	Well Guttersen State C36-785
<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	KB @ 4776.00ft
<b>Project:</b>	Mustang	<b>MD Reference:</b>	KB @ 4776.00ft
<b>Site:</b>	D Section 01	<b>North Reference:</b>	Grid
<b>Well:</b>	Guttersen State C36-785	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<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)
5,300.00	16.93	270.59	5,181.35	8.62	-838.74	91.45	0.00	0.00	0.00
5,400.00	16.93	270.59	5,277.02	8.92	-867.87	94.62	0.00	0.00	0.00
5,500.00	16.93	270.59	5,372.68	9.22	-897.00	97.80	0.00	0.00	0.00
5,600.00	16.93	270.59	5,468.35	9.52	-926.12	100.97	0.00	0.00	0.00
5,700.00	16.93	270.59	5,564.01	9.82	-955.25	104.15	0.00	0.00	0.00
5,800.00	16.93	270.59	5,659.67	10.12	-984.37	107.32	0.00	0.00	0.00
5,900.00	16.93	270.59	5,755.34	10.42	-1,013.50	110.50	0.00	0.00	0.00
6,000.00	16.93	270.59	5,851.00	10.72	-1,042.62	113.67	0.00	0.00	0.00
6,100.00	16.93	270.59	5,946.67	11.02	-1,071.75	116.85	0.00	0.00	0.00
6,200.00	16.93	270.59	6,042.33	11.32	-1,100.87	120.02	0.00	0.00	0.00
6,285.54	16.93	270.59	6,124.16	11.57	-1,125.79	122.74	0.00	0.00	0.00
6,300.00	16.96	275.05	6,137.99	11.78	-1,129.99	123.36	9.00	0.15	30.88
6,350.00	17.76	289.94	6,185.74	15.02	-1,144.43	128.02	9.00	1.61	29.77
6,400.00	19.56	302.87	6,233.13	22.17	-1,158.64	136.53	9.00	3.60	25.86
6,450.00	22.12	313.31	6,279.87	33.17	-1,172.52	148.85	9.00	5.11	20.89
6,500.00	25.20	321.51	6,325.68	47.97	-1,186.00	164.91	9.00	6.16	16.39
6,550.00	28.63	327.94	6,370.26	66.46	-1,199.00	184.59	9.00	6.88	12.86
6,600.00	32.31	333.05	6,413.36	88.54	-1,211.42	207.79	9.00	7.36	10.23
6,650.00	36.16	337.21	6,454.69	114.06	-1,223.20	234.35	9.00	7.70	8.31
6,700.00	40.13	340.65	6,494.01	142.88	-1,234.25	264.12	9.00	7.93	6.89
6,750.00	44.18	343.57	6,531.07	174.81	-1,244.53	296.91	9.00	8.11	5.83
6,800.00	48.30	346.08	6,565.65	209.66	-1,253.95	332.52	9.00	8.23	5.03
6,850.00	52.47	348.29	6,597.53	247.21	-1,262.47	370.73	9.00	8.33	4.42
6,900.00	56.67	350.27	6,626.51	287.23	-1,270.02	411.30	9.00	8.40	3.95
6,950.00	60.90	352.06	6,652.42	329.47	-1,276.57	453.98	9.00	8.46	3.59
7,000.00	65.15	353.72	6,675.10	373.68	-1,282.07	498.52	9.00	8.51	3.30
7,050.00	69.42	355.26	6,694.40	419.58	-1,286.49	544.63	9.00	8.54	3.08
7,100.00	73.70	356.71	6,710.21	466.88	-1,289.80	592.03	9.00	8.57	2.91
7,150.00	78.00	358.11	6,722.43	515.30	-1,291.99	640.43	9.00	8.58	2.79
7,200.00	82.29	359.46	6,730.99	564.54	-1,293.03	689.53	9.00	8.60	2.70
7,250.00	86.60	0.78	6,735.83	614.29	-1,292.92	739.03	9.00	8.61	2.65
7,289.52	90.00	1.82	6,737.00	653.78	-1,292.02	778.23	9.00	8.61	2.62
7,300.00	90.00	1.72	6,737.00	664.25	-1,291.70	788.62	1.00	0.00	-1.00
7,400.00	90.00	0.72	6,737.00	764.23	-1,289.58	887.90	1.00	0.00	-1.00
7,491.56	90.00	359.80	6,737.00	855.79	-1,289.17	978.97	1.00	0.00	-1.00
7,500.00	90.00	359.80	6,737.00	864.23	-1,289.20	987.37	0.00	0.00	0.00
7,600.00	90.00	359.80	6,737.00	964.23	-1,289.55	1,086.92	0.00	0.00	0.00
7,700.00	90.00	359.80	6,737.00	1,064.23	-1,289.90	1,186.46	0.00	0.00	0.00
7,800.00	90.00	359.80	6,737.00	1,164.23	-1,290.25	1,286.00	0.00	0.00	0.00
7,900.00	90.00	359.80	6,737.00	1,264.23	-1,290.60	1,385.55	0.00	0.00	0.00
8,000.00	90.00	359.80	6,737.00	1,364.23	-1,290.95	1,485.09	0.00	0.00	0.00
8,100.00	90.00	359.80	6,737.00	1,464.22	-1,291.30	1,584.64	0.00	0.00	0.00
8,200.00	90.00	359.80	6,737.00	1,564.22	-1,291.65	1,684.18	0.00	0.00	0.00
8,300.00	90.00	359.80	6,737.00	1,664.22	-1,292.00	1,783.73	0.00	0.00	0.00
8,400.00	90.00	359.80	6,737.00	1,764.22	-1,292.35	1,883.27	0.00	0.00	0.00
8,500.00	90.00	359.80	6,737.00	1,864.22	-1,292.70	1,982.82	0.00	0.00	0.00
8,600.00	90.00	359.80	6,737.00	1,964.22	-1,293.05	2,082.36	0.00	0.00	0.00
8,700.00	90.00	359.80	6,737.00	2,064.22	-1,293.40	2,181.91	0.00	0.00	0.00
8,800.00	90.00	359.80	6,737.00	2,164.22	-1,293.75	2,281.45	0.00	0.00	0.00
8,900.00	90.00	359.80	6,737.00	2,264.22	-1,294.10	2,381.00	0.00	0.00	0.00
9,000.00	90.00	359.80	6,737.00	2,364.22	-1,294.45	2,480.54	0.00	0.00	0.00
9,100.00	90.00	359.80	6,737.00	2,464.22	-1,294.80	2,580.09	0.00	0.00	0.00
9,200.00	90.00	359.80	6,737.00	2,564.22	-1,295.14	2,679.63	0.00	0.00	0.00
9,300.00	90.00	359.80	6,737.00	2,664.22	-1,295.49	2,779.18	0.00	0.00	0.00

# Noble Energy, Inc.

## Planning Report

<b>Database:</b>	EDMP	<b>Local Co-ordinate Reference:</b>	Well Guttersten State C36-785
<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	KB @ 4776.00ft
<b>Project:</b>	Mustang	<b>MD Reference:</b>	KB @ 4776.00ft
<b>Site:</b>	D Section 01	<b>North Reference:</b>	Grid
<b>Well:</b>	Guttersten State C36-785	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<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)
9,400.00	90.00	359.80	6,737.00	2,764.22	-1,295.84	2,878.72	0.00	0.00	0.00
9,500.00	90.00	359.80	6,737.00	2,864.22	-1,296.19	2,978.26	0.00	0.00	0.00
9,600.00	90.00	359.80	6,737.00	2,964.22	-1,296.54	3,077.81	0.00	0.00	0.00
9,700.00	90.00	359.80	6,737.00	3,064.22	-1,296.89	3,177.35	0.00	0.00	0.00
9,800.00	90.00	359.80	6,737.00	3,164.21	-1,297.24	3,276.90	0.00	0.00	0.00
9,900.00	90.00	359.80	6,737.00	3,264.21	-1,297.59	3,376.44	0.00	0.00	0.00
10,000.00	90.00	359.80	6,737.00	3,364.21	-1,297.94	3,475.99	0.00	0.00	0.00
10,100.00	90.00	359.80	6,737.00	3,464.21	-1,298.29	3,575.53	0.00	0.00	0.00
10,200.00	90.00	359.80	6,737.00	3,564.21	-1,298.64	3,675.08	0.00	0.00	0.00
10,300.00	90.00	359.80	6,737.00	3,664.21	-1,298.99	3,774.62	0.00	0.00	0.00
10,400.00	90.00	359.80	6,737.00	3,764.21	-1,299.34	3,874.17	0.00	0.00	0.00
10,500.00	90.00	359.80	6,737.00	3,864.21	-1,299.69	3,973.71	0.00	0.00	0.00
10,600.00	90.00	359.80	6,737.00	3,964.21	-1,300.04	4,073.26	0.00	0.00	0.00
10,700.00	90.00	359.80	6,737.00	4,064.21	-1,300.39	4,172.80	0.00	0.00	0.00
10,800.00	90.00	359.80	6,737.00	4,164.21	-1,300.74	4,272.35	0.00	0.00	0.00
10,900.00	90.00	359.80	6,737.00	4,264.21	-1,301.09	4,371.89	0.00	0.00	0.00
11,000.00	90.00	359.80	6,737.00	4,364.21	-1,301.44	4,471.43	0.00	0.00	0.00
11,100.00	90.00	359.80	6,737.00	4,464.21	-1,301.79	4,570.98	0.00	0.00	0.00
11,200.00	90.00	359.80	6,737.00	4,564.21	-1,302.14	4,670.52	0.00	0.00	0.00
11,300.00	90.00	359.80	6,737.00	4,664.21	-1,302.49	4,770.07	0.00	0.00	0.00
11,400.00	90.00	359.80	6,737.00	4,764.20	-1,302.84	4,869.61	0.00	0.00	0.00
11,500.00	90.00	359.80	6,737.00	4,864.20	-1,303.19	4,969.16	0.00	0.00	0.00
11,600.00	90.00	359.80	6,737.00	4,964.20	-1,303.54	5,068.70	0.00	0.00	0.00
11,700.00	90.00	359.80	6,737.00	5,064.20	-1,303.89	5,168.25	0.00	0.00	0.00
11,800.00	90.00	359.80	6,737.00	5,164.20	-1,304.24	5,267.79	0.00	0.00	0.00
11,900.00	90.00	359.80	6,737.00	5,264.20	-1,304.59	5,367.34	0.00	0.00	0.00
12,000.00	90.00	359.80	6,737.00	5,364.20	-1,304.94	5,466.88	0.00	0.00	0.00
12,100.00	90.00	359.80	6,737.00	5,464.20	-1,305.29	5,566.43	0.00	0.00	0.00
12,200.00	90.00	359.80	6,737.00	5,564.20	-1,305.64	5,665.97	0.00	0.00	0.00
12,300.00	90.00	359.80	6,737.00	5,664.20	-1,305.99	5,765.52	0.00	0.00	0.00
12,400.00	90.00	359.80	6,737.00	5,764.20	-1,306.34	5,865.06	0.00	0.00	0.00
12,500.00	90.00	359.80	6,737.00	5,864.20	-1,306.69	5,964.61	0.00	0.00	0.00
12,600.00	90.00	359.80	6,737.00	5,964.20	-1,307.04	6,064.15	0.00	0.00	0.00
12,700.00	90.00	359.80	6,737.00	6,064.20	-1,307.39	6,163.69	0.00	0.00	0.00
12,800.00	90.00	359.80	6,737.00	6,164.20	-1,307.74	6,263.24	0.00	0.00	0.00
12,900.00	90.00	359.80	6,737.00	6,264.20	-1,308.09	6,362.78	0.00	0.00	0.00
13,000.00	90.00	359.80	6,737.00	6,364.19	-1,308.44	6,462.33	0.00	0.00	0.00
13,100.00	90.00	359.80	6,737.00	6,464.19	-1,308.79	6,561.87	0.00	0.00	0.00
13,200.00	90.00	359.80	6,737.00	6,564.19	-1,309.14	6,661.42	0.00	0.00	0.00
13,300.00	90.00	359.80	6,737.00	6,664.19	-1,309.49	6,760.96	0.00	0.00	0.00
13,400.00	90.00	359.80	6,737.00	6,764.19	-1,309.83	6,860.51	0.00	0.00	0.00
13,500.00	90.00	359.80	6,737.00	6,864.19	-1,310.18	6,960.05	0.00	0.00	0.00
13,600.00	90.00	359.80	6,737.00	6,964.19	-1,310.53	7,059.60	0.00	0.00	0.00
13,700.00	90.00	359.80	6,737.00	7,064.19	-1,310.88	7,159.14	0.00	0.00	0.00
13,800.00	90.00	359.80	6,737.00	7,164.19	-1,311.23	7,258.69	0.00	0.00	0.00
13,900.00	90.00	359.80	6,737.00	7,264.19	-1,311.58	7,358.23	0.00	0.00	0.00
14,000.00	90.00	359.80	6,737.00	7,364.19	-1,311.93	7,457.78	0.00	0.00	0.00
14,100.00	90.00	359.80	6,737.00	7,464.19	-1,312.28	7,557.32	0.00	0.00	0.00
14,200.00	90.00	359.80	6,737.00	7,564.19	-1,312.63	7,656.87	0.00	0.00	0.00
14,300.00	90.00	359.80	6,737.00	7,664.19	-1,312.98	7,756.41	0.00	0.00	0.00
14,400.00	90.00	359.80	6,737.00	7,764.19	-1,313.33	7,855.95	0.00	0.00	0.00
14,500.00	90.00	359.80	6,737.00	7,864.19	-1,313.68	7,955.50	0.00	0.00	0.00
14,600.00	90.00	359.80	6,737.00	7,964.19	-1,314.03	8,055.04	0.00	0.00	0.00
14,700.00	90.00	359.80	6,737.00	8,064.18	-1,314.38	8,154.59	0.00	0.00	0.00

# Noble Energy, Inc.

## Planning Report

<b>Database:</b>	EDMP	<b>Local Co-ordinate Reference:</b>	Well Guttersen State C36-785
<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	KB @ 4776.00ft
<b>Project:</b>	Mustang	<b>MD Reference:</b>	KB @ 4776.00ft
<b>Site:</b>	D Section 01	<b>North Reference:</b>	Grid
<b>Well:</b>	Guttersen State C36-785	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<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)
14,800.00	90.00	359.80	6,737.00	8,164.18	-1,314.73	8,254.13	0.00	0.00	0.00
14,900.00	90.00	359.80	6,737.00	8,264.18	-1,315.08	8,353.68	0.00	0.00	0.00
15,000.00	90.00	359.80	6,737.00	8,364.18	-1,315.43	8,453.22	0.00	0.00	0.00
15,100.00	90.00	359.80	6,737.00	8,464.18	-1,315.78	8,552.77	0.00	0.00	0.00
15,200.00	90.00	359.80	6,737.00	8,564.18	-1,316.13	8,652.31	0.00	0.00	0.00
15,300.00	90.00	359.80	6,737.00	8,664.18	-1,316.48	8,751.86	0.00	0.00	0.00
15,400.00	90.00	359.80	6,737.00	8,764.18	-1,316.83	8,851.40	0.00	0.00	0.00
15,500.00	90.00	359.80	6,737.00	8,864.18	-1,317.18	8,950.95	0.00	0.00	0.00
15,600.00	90.00	359.80	6,737.00	8,964.18	-1,317.53	9,050.49	0.00	0.00	0.00
15,700.00	90.00	359.80	6,737.00	9,064.18	-1,317.88	9,150.04	0.00	0.00	0.00
15,800.00	90.00	359.80	6,737.00	9,164.18	-1,318.23	9,249.58	0.00	0.00	0.00
15,900.00	90.00	359.80	6,737.00	9,264.18	-1,318.58	9,349.13	0.00	0.00	0.00
16,000.00	90.00	359.80	6,737.00	9,364.18	-1,318.93	9,448.67	0.00	0.00	0.00
16,100.00	90.00	359.80	6,737.00	9,464.18	-1,319.28	9,548.21	0.00	0.00	0.00
16,200.00	90.00	359.80	6,737.00	9,564.18	-1,319.63	9,647.76	0.00	0.00	0.00
16,300.00	90.00	359.80	6,737.00	9,664.17	-1,319.98	9,747.30	0.00	0.00	0.00
16,400.00	90.00	359.80	6,737.00	9,764.17	-1,320.33	9,846.85	0.00	0.00	0.00
16,500.00	90.00	359.80	6,737.00	9,864.17	-1,320.68	9,946.39	0.00	0.00	0.00
16,600.00	90.00	359.80	6,737.00	9,964.17	-1,321.03	10,045.94	0.00	0.00	0.00
16,700.00	90.00	359.80	6,737.00	10,064.17	-1,321.38	10,145.48	0.00	0.00	0.00
16,800.00	90.00	359.80	6,737.00	10,164.17	-1,321.73	10,245.03	0.00	0.00	0.00
16,900.00	90.00	359.80	6,737.00	10,264.17	-1,322.08	10,344.57	0.00	0.00	0.00
17,000.00	90.00	359.80	6,737.00	10,364.17	-1,322.43	10,444.12	0.00	0.00	0.00
17,100.00	90.00	359.80	6,737.00	10,464.17	-1,322.78	10,543.66	0.00	0.00	0.00
17,200.00	90.00	359.80	6,737.00	10,564.17	-1,323.13	10,643.21	0.00	0.00	0.00
17,300.00	90.00	359.80	6,737.00	10,664.17	-1,323.48	10,742.75	0.00	0.00	0.00
17,400.00	90.00	359.80	6,737.00	10,764.17	-1,323.83	10,842.30	0.00	0.00	0.00
17,500.00	90.00	359.80	6,737.00	10,864.17	-1,324.18	10,941.84	0.00	0.00	0.00
17,600.00	90.00	359.80	6,737.00	10,964.17	-1,324.52	11,041.39	0.00	0.00	0.00
17,700.00	90.00	359.80	6,737.00	11,064.17	-1,324.87	11,140.93	0.00	0.00	0.00
17,800.00	90.00	359.80	6,737.00	11,164.17	-1,325.22	11,240.47	0.00	0.00	0.00
17,900.00	90.00	359.80	6,737.00	11,264.17	-1,325.57	11,340.02	0.00	0.00	0.00
18,000.00	90.00	359.80	6,737.00	11,364.16	-1,325.92	11,439.56	0.00	0.00	0.00
18,100.00	90.00	359.80	6,737.00	11,464.16	-1,326.27	11,539.11	0.00	0.00	0.00
18,200.00	90.00	359.80	6,737.00	11,564.16	-1,326.62	11,638.65	0.00	0.00	0.00
18,300.00	90.00	359.80	6,737.00	11,664.16	-1,326.97	11,738.20	0.00	0.00	0.00
18,400.00	90.00	359.80	6,737.00	11,764.16	-1,327.32	11,837.74	0.00	0.00	0.00
18,500.00	90.00	359.80	6,737.00	11,864.16	-1,327.67	11,937.29	0.00	0.00	0.00
18,600.00	90.00	359.80	6,737.00	11,964.16	-1,328.02	12,036.83	0.00	0.00	0.00
18,700.00	90.00	359.80	6,737.00	12,064.16	-1,328.37	12,136.38	0.00	0.00	0.00
18,800.00	90.00	359.80	6,737.00	12,164.16	-1,328.72	12,235.92	0.00	0.00	0.00
18,900.00	90.00	359.80	6,737.00	12,264.16	-1,329.07	12,335.47	0.00	0.00	0.00
19,000.00	90.00	359.80	6,737.00	12,364.16	-1,329.42	12,435.01	0.00	0.00	0.00
19,100.00	90.00	359.80	6,737.00	12,464.16	-1,329.77	12,534.56	0.00	0.00	0.00
19,200.00	90.00	359.80	6,737.00	12,564.16	-1,330.12	12,634.10	0.00	0.00	0.00
19,300.00	90.00	359.80	6,737.00	12,664.16	-1,330.47	12,733.65	0.00	0.00	0.00
19,400.00	90.00	359.80	6,737.00	12,764.16	-1,330.82	12,833.19	0.00	0.00	0.00
19,500.00	90.00	359.80	6,737.00	12,864.16	-1,331.17	12,932.73	0.00	0.00	0.00
19,600.00	90.00	359.80	6,737.00	12,964.15	-1,331.52	13,032.28	0.00	0.00	0.00
19,700.00	90.00	359.80	6,737.00	13,064.15	-1,331.87	13,131.82	0.00	0.00	0.00
19,800.00	90.00	359.80	6,737.00	13,164.15	-1,332.22	13,231.37	0.00	0.00	0.00
19,900.00	90.00	359.80	6,737.00	13,264.15	-1,332.57	13,330.91	0.00	0.00	0.00
20,000.00	90.00	359.80	6,737.00	13,364.15	-1,332.92	13,430.46	0.00	0.00	0.00
20,063.46	90.00	359.80	6,737.00	13,427.61	-1,333.14	13,493.62	0.00	0.00	0.00

# Noble Energy, Inc.

## Planning Report

<b>Database:</b>	EDMP	<b>Local Co-ordinate Reference:</b>	Well Gutttersen State C36-785
<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	KB @ 4776.00ft
<b>Project:</b>	Mustang	<b>MD Reference:</b>	KB @ 4776.00ft
<b>Site:</b>	D Section 01	<b>North Reference:</b>	Grid
<b>Well:</b>	Gutttersen State C36-785	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<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)

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
Gutttersen State C36-78! - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	1,339,287.81	3,278,252.26	40.2604500	-104.5029580
Gutttersen State C36-78! - plan hits target center - Point	0.00	0.00	6,124.16	11.57	-1,125.79	1,339,299.38	3,277,126.48	40.2605165	-104.5069911
Gutttersen State C36-78! - plan hits target center - Point	0.00	0.00	6,737.00	13,427.61	-1,333.14	1,352,715.39	3,276,919.12	40.2973485	-104.5071959
Gutttersen State C36-78! - plan hits target center - Point	0.00	0.00	6,737.00	653.78	-1,292.02	1,339,941.59	3,276,960.24	40.2622844	-104.5075610

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
337.00	337.00	Pierre				
611.00	611.00	Upper Pierre Aquifer Top				
1,545.00	1,545.00	Upper Pierre Aquifer Base				
2,672.15	2,666.00	Parkman				
4,029.56	3,966.00	Sussex				
4,905.54	4,804.00	Shannon				
6,044.95	5,894.00	Teepee Buttes				
6,778.36	6,551.00	Sharon Springs				
6,820.41	6,579.00	Top A Chalk				
6,845.87	6,595.00	Top A Marl				
6,890.08	6,621.00	Top B Chalk				
6,949.14	6,652.00	Top B Marl				
7,102.83	6,711.00	Top C Chalk				

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
2,000.00	2,000.00	0.00	0.00	Start Build 2.00
6,285.54	6,124.16	11.57	-1,125.79	Start DLS 9.00 TFO 91.18
7,289.52	6,737.00	653.78	-1,292.02	TPZ/LP at 7289.52 MD
20,063.46	6,737.00	13,427.61	-1,333.14	TD at 20063.46



# **Northern Region - DJ Basin**

**Mustang**

**D Section 01**

**Guttersen State C36-785**

**Wellbore #1**

**Plan #1**

## **Anticollision Summary Report**

**12 October, 2018**

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

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersten State C36-785
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4776.00ft
<b>Reference Site:</b>	D Section 01	<b>MD Reference:</b>	KB @ 4776.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersten State C36-785	<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>	MD Interval 100.00ft	<b>Error Model:</b>	ISCWSA
<b>Depth Range:</b>	Unlimited	<b>Scan Method:</b>	Closest Approach 3D
<b>Results Limited by:</b>	Maximum center-center distance of 10,000.00 ft	<b>Error Surface:</b>	Pedal Curve
<b>Warning Levels Evaluated at:</b>	2.00 Sigma	<b>Casing Method:</b>	Not applied

<b>Survey Tool Program</b>	<b>Date</b>	10/11/2018		
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.00	20,063.46	Plan #1 (Wellbore #1)	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
C Section 23						
Sater C24-79HN - Original Drilling - Original Drilling	19,040.02	7,255.54	293.46	159.73	2.194	CC
Sater C24-79HN - Original Drilling - Original Drilling	19,200.00	7,411.43	294.51	158.05	2.158	ES
Sater C24-79HN - Original Drilling - Original Drilling	20,063.46	8,282.23	315.80	162.01	2.053	SF
Sater C25-69HN - Original Drilling - Original Drilling	17,774.68	6,764.01	1,016.77	917.03	10.194	CC, ES
Sater C25-69HN - Original Drilling - Original Drilling	17,800.00	6,764.01	1,017.09	917.23	10.185	SF
Sater C25-79HN - Original Drilling - Original Drilling	12,247.21	12,586.03	455.77	300.57	2.937	ES, SF
Sater C25-79HN - Original Drilling - Original Drilling	14,053.49	10,775.96	442.24	304.74	3.216	CC
C Section 24						
Elise State C24-08 (TA) - Wellbore #1 - No Surveys	20,063.46	6,658.00	4,432.74	4,055.78	11.759	CC, ES, SF
Elise State C24-11 (PR) - Wellbore #1 - No Surveys	19,724.33	6,654.00	1,772.76	1,398.49	4.737	CC, ES, SF
Elise State C24-18 (SI) - Wellbore #1 - No Surveys	20,063.46	6,638.00	2,719.68	2,360.26	7.567	CC, ES, SF
Elise State C24-19 (SI) - Wellbore #1 - Gyro Surveys	20,063.46	6,644.60	1,785.64	1,689.75	18.621	CC, ES, SF
Elise State C24-20 (PR) - Wellbore #1 - No Surveys	20,063.46	6,674.00	963.81	588.59	2.569	CC, ES, SF
Elise State C24-21 (SI) - Wellbore #1 - No Surveys	20,063.46	6,651.00	2,388.57	2,011.88	6.341	CC, ES, SF
Elise State C24-22 (PR) - Wellbore #1 - No Surveys	20,063.46	6,669.00	3,632.70	3,254.91	9.616	CC, ES, SF
Elise State C24-23 (PR) - Wellbore #1 - No Surveys	18,940.47	6,679.00	3,561.37	3,192.36	9.651	CC, ES
Elise State C24-15 (PR) - Wellbore #1 - No Surveys	19,100.00	6,679.00	3,564.94	3,195.04	9.638	SF
Elise State C24-24 (SI) - Wellbore #1 - No Surveys	18,925.63	6,671.00	2,128.50	1,760.19	5.779	CC, ES
Elise State C24-24 (SI) - Wellbore #1 - No Surveys	19,000.00	6,671.00	2,129.80	1,761.17	5.778	SF
Spike ST GWS C24-05 (PR) - Wellbore #1 - Gyro Survey	20,063.46	6,653.13	926.49	847.24	11.690	CC, ES, SF
Spike ST GWS C24-07 (SI) - Wellbore #1 - Gyro Surveys	20,063.46	6,690.07	3,160.03	3,025.63	23.512	CC, ES, SF
Spike ST GWS C24-13 (PA) - Wellbore #1 - Gyro Survey	18,326.36	6,666.10	287.65	165.46	2.354	CC, ES, SF
Spike ST GWS C24-14 (SI) - Wellbore #1 - Gyro Surveys	18,282.36	6,693.52	1,519.52	1,397.61	12.463	CC, ES
Spike ST GWS C24-14 (SI) - Wellbore #1 - Gyro Surveys	18,300.00	6,693.78	1,519.63	1,397.64	12.458	SF
Spike ST GWS C24-15 (PR) - Wellbore #1 - Gyro Survey	18,413.43	6,678.91	2,794.56	2,671.69	22.744	CC, ES
Spike ST GWS C24-15 (PR) - Wellbore #1 - Gyro Survey	18,600.00	6,682.82	2,800.78	2,677.02	22.631	SF
Spike ST GWS C24-16 (SI) - Wellbore #1 - Gyro Surveys	18,316.40	6,621.38	4,189.11	4,067.46	34.437	CC, ES
Spike ST GWS C24-16 (SI) - Wellbore #1 - Gyro Surveys	18,900.00	6,646.44	4,229.49	4,104.81	33.924	SF
Spike State GWS C24-01 (PA) - Wellbore #1 - No Survey	20,063.46	6,658.00	4,715.41	4,346.58	12.785	CC, ES, SF
Spike State GWS C24-02 (SI) - Wellbore #1 - No Survey	20,063.46	6,648.00	3,626.37	3,265.66	10.053	CC, ES, SF
Spike State GWS C24-03 (SI) - Wellbore #1 - No Survey	20,063.46	6,620.00	2,680.85	2,340.53	7.877	CC, ES, SF
Spike State GWS C24-04 (SI) - Wellbore #1 - No Survey	20,063.46	6,618.00	2,158.44	1,856.04	7.138	CC, ES, SF
Spike State GWS C24-06 (PA) - Wellbore #1 - No Survey	20,063.46	6,642.00	1,844.26	1,476.34	5.013	CC, ES, SF
Spike State GWS C24-09 (SI) - Wellbore #1 - No Survey	19,509.73	6,676.00	4,053.71	3,680.27	10.855	CC, ES
Spike State GWS C24-09 (SI) - Wellbore #1 - No Survey	19,700.00	6,676.00	4,058.17	3,683.62	10.835	SF
Spike State GWS C24-10 (PR) - Wellbore #1 - No Surve	19,602.10	6,661.00	2,917.39	2,543.82	7.809	CC, 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 Guttersten State C36-785
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4776.00ft
<b>Reference Site:</b>	D Section 01	<b>MD Reference:</b>	KB @ 4776.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersten State C36-785	<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 24						
Spike State GWS C24-10 (PR) - Wellbore #1 - No Surve	19,700.00	6,661.00	2,919.03	2,544.94	7.803	SF
Spike State GWS C24-11J (PA) - Wellbore #1 - No Surveys	18,952.94	6,683.00	953.05	583.78	2.581	CC, ES, SF
Spike State GWS C24-12 (SI) - Wellbore #1 - No Survey	19,622.52	6,666.00	387.19	13.25	1.035	Level 2, CC, ES, SF
Spike State GWS C24-8J (PA) - Wellbore #1 - No Survey	20,063.46	6,638.00	3,828.09	3,457.32	10.325	CC, ES, SF
State C24-28 (PR) - Wellbore #1 - No Surveys	20,063.46	6,619.00	3,513.56	3,168.46	10.181	CC, ES, SF
State C24-99HZ - Wellbore #1 - Original Drilling	20,063.46	6,546.03	1,210.06	1,147.41	19.315	CC, ES, SF
C Section 25						
Booth 14-25 (SI) - Wellbore #1 - No Surveys	12,996.00	6,703.00	1,530.67	1,207.17	4.732	CC
Booth 14-25 (SI) - Wellbore #1 - No Surveys	13,000.00	6,703.00	1,530.68	1,207.16	4.731	ES, SF
Booth 9-25 (SI) - Wellbore #1 - No Surveys	14,340.65	6,723.00	4,237.20	3,902.77	12.670	CC, ES
Booth 9-25 (SI) - Wellbore #1 - No Surveys	14,600.00	6,723.00	4,245.13	3,909.19	12.636	SF
Booth C 25-19 (PR) - Wellbore #1 - No Surveys	16,411.00	6,674.00	973.00	624.51	2.792	CC, ES, SF
UNI UPR C 25-5 (SI) - Wellbore #1 - Gyro Surveys	15,623.45	6,666.46	225.39	124.43	2.233	CC, ES, SF
UNI UPR C 25-6 (PR) - Wellbore #1 - No Surveys	15,752.06	6,676.00	1,594.38	1,492.62	15.667	CC, ES
UNI UPR C 25-6 (PR) - Wellbore #1 - No Surveys	15,800.00	6,676.00	1,595.11	1,493.18	15.650	SF
UNI-UPR C 25-3 (PR) - Wellbore #1 - Gyro Surveys	17,016.51	6,682.64	1,506.53	1,394.64	13.465	CC, ES, SF
UNI-UPRR 4-25 (PR) - Wellbore #1 - Gyro Surveys	16,900.00	6,654.49	181.39	70.44	1.635	SF
UNI-UPRR 4-25 (PR) - Wellbore #1 - Gyro Surveys	16,906.80	6,654.51	181.26	70.44	1.636	CC, ES
UPRR 66 Amoco 1 (SI) - Wellbore #1 - No Surveys	13,354.84	6,710.00	3,911.25	3,584.80	11.981	CC
UPRR 66 Amoco 1 (SI) - Wellbore #1 - No Surveys	13,400.00	6,710.00	3,911.51	3,584.79	11.972	ES
UPRR 66 Amoco 1 (SI) - Wellbore #1 - No Surveys	13,600.00	6,710.00	3,918.93	3,591.10	11.954	SF
UPV 25-114 (PA) - Wellbore #1 - Gyro Surveys	16,988.19	6,861.11	4,200.61	4,088.22	37.377	CC
UPV 25-114 (PA) - Wellbore #1 - Gyro Surveys	17,000.00	6,861.05	4,200.62	4,088.16	37.352	ES
UPV 25-114 (PA) - Wellbore #1 - Gyro Surveys	17,600.00	6,858.25	4,244.93	4,129.49	36.774	SF
UPV 25-214 (PR) - Wellbore #1 - Gyro Surveys	17,208.68	6,719.96	2,777.02	2,663.50	24.463	CC, ES
UPV 25-214 (PR) - Wellbore #1 - Gyro Surveys	17,400.00	6,721.11	2,783.60	2,669.18	24.328	SF
UPV 25-714 (PR) - Wellbore #1 - No Surveys	15,985.03	6,722.00	3,439.47	3,092.34	9.908	CC
UPV 25-714 (PR) - Wellbore #1 - No Surveys	16,000.00	6,722.00	3,439.51	3,092.28	9.906	ES
UPV 25-714 (PR) - Wellbore #1 - No Surveys	16,200.00	6,722.00	3,446.18	3,097.89	9.895	SF
UPV 25-814 (PA) - Wellbore #1 - Gyro Surveys	15,675.41	6,570.64	4,499.08	4,398.62	44.787	CC
UPV 25-814 (PA) - Wellbore #1 - Gyro Surveys	15,700.00	6,570.80	4,499.14	4,398.53	44.717	ES
UPV 25-814 (PA) - Wellbore #1 - Gyro Surveys	16,400.00	6,575.41	4,557.05	4,452.82	43.722	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 Guttersten State C36-785
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4776.00ft
<b>Reference Site:</b>	D Section 01	<b>MD Reference:</b>	KB @ 4776.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersten State C36-785	<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						
Ava State C36-18 (SI) - Wellbore #1 - No Surveys	11,090.00	6,703.00	2,328.45	2,018.30	7.508	CC
Ava State C36-18 (SI) - Wellbore #1 - No Surveys	11,100.00	6,703.00	2,328.48	2,018.28	7.506	ES
Ava State C36-18 (SI) - Wellbore #1 - No Surveys	11,200.00	6,703.00	2,331.05	2,020.43	7.504	SF
Ava State C36-20 (PR) - Wellbore #1 - No Surveys	9,536.84	6,687.00	947.49	647.71	3.161	CC, ES, SF
Ava State C36-21 (SI) - Wellbore #1 - No Surveys	9,843.25	6,708.00	2,173.80	1,871.42	7.189	CC, ES
Ava State C36-21 (SI) - Wellbore #1 - No Surveys	9,900.00	6,708.00	2,174.54	1,871.94	7.186	SF
Ava State C36-22 (SI) - Wellbore #1 - No Surveys	9,686.80	6,713.00	3,505.29	3,203.62	11.620	CC
Ava State C36-22 (SI) - Wellbore #1 - No Surveys	9,700.00	6,713.00	3,505.32	3,203.59	11.617	ES
Ava State C36-22 (SI) - Wellbore #1 - No Surveys	9,900.00	6,713.00	3,511.77	3,209.14	11.604	SF
Ava State C36-24 (PR) - Wellbore #1 - No Surveys	2,000.00	1,965.00	2,033.02	1,949.49	24.337	CC
Ava State C36-24 (PR) - Wellbore #1 - No Surveys	2,200.00	2,164.84	2,036.52	1,944.29	22.082	ES
Ava State C36-24 (PR) - Wellbore #1 - No Surveys	8,400.00	6,702.00	2,325.68	2,030.90	7.890	SF
Ava State C36-31 (PR) - Wellbore #1 - No Surveys	10,967.34	6,677.00	200.40	-107.88	0.650	Level 1, CC, ES, SF
Booth CC31-68-1HN (PR) - Original Drilling - Original Dri	11,386.40	6,085.15	4,851.20	4,785.10	73.388	CC
Booth CC31-68-1HN (PR) - Original Drilling - Original Dri	11,400.00	6,085.11	4,851.22	4,785.04	73.305	ES
Booth CC31-68-1HN (PR) - Original Drilling - Original Dri	12,700.00	6,081.74	5,025.89	4,953.71	69.630	SF
Booth State C36-69HN (PR) - Original Drilling - Original D	12,200.00	10,910.00	202.11	97.25	1.928	ES, SF
Booth State C36-69HN (PR) - Original Drilling - Original D	12,284.50	10,910.00	183.60	104.11	2.310	CC
Booth State CC30-79HN (PR) - Original Drilling - Original	16,200.00	16,200.00	4,966.70	4,710.72	19.403	ES, SF
Booth State CC30-79HN (PR) - Original Drilling - Original	17,074.14	11,026.00	4,954.52	4,778.10	28.085	CC
Booth State CC31-69HN (PR) - Original Drilling - Original	12,302.92	6,080.71	5,124.66	5,054.20	72.738	CC, ES
Booth State CC31-69HN (PR) - Original Drilling - Original	13,800.00	6,084.15	5,338.85	5,260.59	68.219	SF
State 36-0414 (PR) - Wellbore #1 - No Surveys	11,140.51	6,685.00	714.92	405.15	2.308	CC, ES, SF
State 36-0714 (SI) - Wellbore #1 - No Surveys	10,362.44	6,705.00	2,788.70	2,483.24	9.130	CC, ES
State 36-0714 (SI) - Wellbore #1 - No Surveys	10,500.00	6,705.00	2,792.09	2,486.02	9.122	SF
State 36-1014 (SI) - Wellbore #1 - No Surveys	9,076.02	6,701.00	2,731.77	2,433.90	9.171	CC, ES
State 36-1014 (SI) - Wellbore #1 - No Surveys	9,200.00	6,701.00	2,734.58	2,436.26	9.167	SF
State 36-1114 (PR) - Wellbore #1 - No Surveys	8,883.74	6,710.00	1,617.55	1,320.29	5.441	CC, ES
State 36-1114 (PR) - Wellbore #1 - No Surveys	8,900.00	6,710.00	1,617.64	1,320.32	5.441	SF
State 36-1214 (PR) - Wellbore #1 - No Surveys	9,027.08	6,705.00	131.26	-166.30	0.441	Level 1, CC, ES, SF
State 36-1414 (PR) - Wellbore #1 - No Surveys	2,000.00	1,955.00	1,000.62	917.48	12.036	CC
State 36-1414 (PR) - Wellbore #1 - No Surveys	2,400.00	2,353.70	1,010.04	909.57	10.053	ES
State 36-1414 (PR) - Wellbore #1 - No Surveys	7,572.69	6,708.00	1,625.22	1,332.84	5.559	SF
State 36-1514 (PR) - Wellbore #1 - No Surveys	2,000.00	1,955.00	2,465.52	2,382.38	29.656	CC
State 36-1514 (PR) - Wellbore #1 - No Surveys	2,200.00	2,154.84	2,471.03	2,379.21	26.911	ES
State 36-1514 (PR) - Wellbore #1 - No Surveys	8,200.00	6,708.00	3,253.77	2,959.56	11.060	SF
State 36-1614 (PR) - Wellbore #1 - No Surveys	2,000.00	2,002.00	2,900.81	2,815.79	34.121	CC
State 36-1614 (PR) - Wellbore #1 - No Surveys	2,100.00	2,102.02	2,902.45	2,813.08	32.478	ES
State 36-1614 (PR) - Wellbore #1 - No Surveys	7,700.00	6,735.00	4,025.89	3,732.17	13.706	SF
State 36-214 (SI) - Wellbore #1 - No Surveys	11,576.68	6,707.00	2,932.69	2,619.03	9.350	CC
State 36-214 (SI) - Wellbore #1 - No Surveys	11,600.00	6,707.00	2,932.78	2,619.00	9.347	ES
State 36-214 (SI) - Wellbore #1 - No Surveys	11,700.00	6,707.00	2,935.28	2,621.01	9.340	SF
State 36-314 (SI) - Wellbore #1 - No Surveys	11,602.27	6,683.00	1,634.96	1,322.09	5.226	CC, ES, SF
State 36-614 (PR) - Wellbore #1 - No Surveys	10,593.85	6,679.00	1,628.84	1,322.94	5.325	CC
State 36-614 (PR) - Wellbore #1 - No Surveys	10,600.00	6,679.00	1,628.85	1,322.93	5.324	ES, SF
State 36-814 (SI) - Wellbore #1 - No Surveys	10,603.83	6,724.00	4,257.67	3,949.91	13.834	CC, ES
State 36-814 (SI) - Wellbore #1 - No Surveys	10,900.00	6,724.00	4,267.96	3,958.66	13.799	SF
State 36-914 (PR) - Wellbore #1 - No Surveys	2,000.00	2,005.00	3,569.40	3,484.26	41.926	CC
State 36-914 (PR) - Wellbore #1 - No Surveys	2,200.00	2,205.16	3,574.74	3,480.90	38.096	ES
State 36-914 (PR) - Wellbore #1 - No Surveys	9,100.00	6,732.00	4,052.30	3,753.27	13.552	SF
State B14-36 (PA) - Wellbore #1 - No Surveys	8,144.79	6,701.00	562.24	268.46	1.914	CC, ES, SF
State B41-36 (SI) - Wellbore #1 - No Surveys	11,338.26	6,715.00	3,933.79	3,621.47	12.595	CC, ES
State B41-36 (SI) - Wellbore #1 - No Surveys	11,600.00	6,715.00	3,942.49	3,628.77	12.567	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 Guttersten State C36-785
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4776.00ft
<b>Reference Site:</b>	D Section 01	<b>MD Reference:</b>	KB @ 4776.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersten State C36-785	<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 C36-01 (SI) - Wellbore #1 - No Surveys	11,901.77	6,715.00	4,436.93	4,120.66	14.029	CC, ES
State C36-01 (SI) - Wellbore #1 - No Surveys	12,200.00	6,715.00	4,446.94	4,128.99	13.986	SF
State C36-04 (PR) - Wellbore #1 - No Surveys	11,736.92	6,686.00	107.60	-206.34	0.343	Level 1, CC, ES, SF
State C36-13 (SI) - Wellbore #1 - No Surveys	7,576.61	6,714.00	106.14	-186.48	0.363	Level 1, CC, ES, SF
State C36-15 (PR) - Wellbore #1 - No Surveys	2,000.00	1,976.00	1,733.95	1,649.98	20.648	CC
State C36-15 (PR) - Wellbore #1 - No Surveys	2,100.00	2,075.98	1,735.40	1,647.08	19.648	ES
State C36-15 (PR) - Wellbore #1 - No Surveys	7,600.00	6,713.00	2,740.80	2,448.18	9.366	SF
State C36-32D (SI) - Wellbore #1 - As Drilled	9,656.18	6,874.53	300.85	238.07	4.792	CC, ES
State C36-32D (SI) - Wellbore #1 - As Drilled	9,700.00	6,874.85	304.03	239.95	4.745	SF
State C36-33D (SI) - Wellbore #1 - Original Drilling	8,396.26	6,767.28	279.37	227.45	5.381	CC
State C36-33D (SI) - Wellbore #1 - Original Drilling	8,400.00	6,767.26	279.39	227.45	5.379	ES, SF
State C36-99HZ (PR) - Wellbore #1 - As Drilled	8,700.00	6,426.75	525.77	486.11	13.256	SF
State C36-99HZ (PR) - Wellbore #1 - As Drilled	8,746.75	6,424.83	523.70	484.37	13.316	CC, ES
State D01-30D (SI) - Wellbore #1 - Original Drilling	7,000.00	7,045.25	424.76	362.76	6.850	SF
State D01-30D (SI) - Wellbore #1 - Original Drilling	7,034.86	7,059.24	423.25	361.83	6.891	CC, ES

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

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersten State C36-785
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4776.00ft
<b>Reference Site:</b>	D Section 01	<b>MD Reference:</b>	KB @ 4776.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersten State C36-785	<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
D Section 01						
Abbey D 1-3 (PR) - Wellbore #1 - No Surveys	2,000.00	1,969.00	377.06	293.36	4.505	CC
Abbey D 1-3 (PR) - Wellbore #1 - No Surveys	2,100.00	2,068.98	378.58	290.53	4.300	ES
Abbey D 1-3 (PR) - Wellbore #1 - No Surveys	2,500.00	2,466.47	415.51	310.19	3.945	SF
Abbey D 1-4 (PR) - Wellbore #1 - No Surveys	5,853.87	5,668.21	211.36	-35.28	0.857	Level 1, CC
Abbey D 1-4 (PR) - Wellbore #1 - No Surveys	5,900.00	5,712.34	211.79	-36.82	0.852	Level 1, SF
Abbey D 1-4 (PR) - Wellbore #1 - No Surveys	6,000.00	5,808.00	215.60	-37.25	0.853	Level 1, ES
Abbey D 1-5 (PR) - Wellbore #1 - No Surveys	5,930.08	5,739.11	1,556.00	1,306.21	6.229	CC
Abbey D 1-5 (PR) - Wellbore #1 - No Surveys	6,300.00	6,107.01	1,559.88	1,293.83	5.863	ES
Abbey D 1-5 (PR) - Wellbore #1 - No Surveys	6,400.00	6,188.13	1,572.19	1,302.47	5.829	SF
Abbey D 1-6 (PR) - Wellbore #1 - No Surveys	2,000.00	1,985.00	1,663.55	1,579.21	19.725	CC
Abbey D 1-6 (PR) - Wellbore #1 - No Surveys	2,500.00	2,482.47	1,674.76	1,568.79	15.804	ES
Abbey D 1-6 (PR) - Wellbore #1 - No Surveys	6,400.00	6,218.13	2,256.01	1,985.43	8.338	SF
Abbey D 1-7Jl (SI) - Wellbore #1 - No Surveys	2,000.00	1,981.00	2,226.05	2,141.88	26.445	CC
Abbey D 1-7Jl (SI) - Wellbore #1 - No Surveys	2,200.00	2,180.84	2,231.25	2,138.39	24.027	ES
Abbey D 1-7Jl (SI) - Wellbore #1 - No Surveys	6,600.00	6,405.64	3,266.88	2,988.43	11.732	SF
Abbey D01-08J1 - Abbey D01-08J1 OH - As-Drilled	1,873.24	1,866.42	3,236.52	3,223.69	252.159	CC
Abbey D01-08J1 - Abbey D01-08J1 OH - As-Drilled	2,000.00	1,977.62	3,236.93	3,223.26	236.660	ES
Abbey D01-08J1 - Abbey D01-08J1 OH - As-Drilled	6,800.00	6,485.14	4,454.35	4,407.31	94.680	SF
Abbey D01-08J1 (PR) - Wellbore #1 - No Surveys	2,000.00	2,009.00	3,235.30	3,150.01	37.930	CC
Abbey D01-08J1 (PR) - Wellbore #1 - No Surveys	2,100.00	2,109.02	3,236.91	3,147.26	36.107	ES
Abbey D01-08J1 (PR) - Wellbore #1 - No Surveys	6,900.00	6,617.51	4,520.70	4,233.13	15.721	SF
Abbey D01-18 (SI) - Wellbore #1 - No Surveys	2,000.00	1,974.00	1,240.84	1,156.94	14.790	CC
Abbey D01-18 (SI) - Wellbore #1 - No Surveys	2,200.00	2,173.84	1,245.90	1,153.31	13.457	ES
Abbey D01-18 (SI) - Wellbore #1 - No Surveys	6,400.00	6,207.13	2,231.94	1,962.22	8.275	SF
Abbey D01-19 (TA) - Wellbore #1 - No Surveys	3,325.44	3,264.41	1,135.23	994.94	8.092	CC
Abbey D01-19 (TA) - Wellbore #1 - No Surveys	3,900.00	3,814.06	1,147.50	982.97	6.974	ES
Abbey D01-19 (TA) - Wellbore #1 - No Surveys	6,300.00	6,109.99	1,428.21	1,162.25	5.370	SF
Abbey D01-23 (PR) - Wellbore #1 - No Surveys	2,000.00	2,024.00	4,159.90	4,074.01	48.429	CC
Abbey D01-23 (PR) - Wellbore #1 - No Surveys	2,200.00	2,223.84	4,163.94	4,069.35	44.024	ES
Abbey D01-23 (PR) - Wellbore #1 - No Surveys	6,700.00	6,518.01	5,066.85	4,783.31	17.870	SF
Abbey D01-27 (SI) - Wellbore #1 - No Surveys	2,000.00	1,986.00	2,261.29	2,176.91	26.800	CC
Abbey D01-27 (SI) - Wellbore #1 - No Surveys	2,100.00	2,085.98	2,263.02	2,174.30	25.506	ES
Abbey D01-27 (SI) - Wellbore #1 - No Surveys	7,100.00	6,703.79	3,543.16	3,251.85	12.163	SF
Abbey D01-28 (SI) - Wellbore #1 - No Surveys	2,000.00	1,968.00	1,157.80	1,074.14	13.840	CC
Abbey D01-28 (SI) - Wellbore #1 - No Surveys	2,100.00	2,067.98	1,159.52	1,071.51	13.176	ES
Abbey D01-28 (SI) - Wellbore #1 - No Surveys	6,900.00	6,605.49	2,414.18	2,127.23	8.413	SF
Abbey D01-29 (SI) - Wellbore #1 - No Surveys	3,574.58	3,501.75	291.54	140.79	1.934	CC
Abbey D01-29 (SI) - Wellbore #1 - No Surveys	3,700.00	3,621.73	293.82	137.79	1.883	ES
Abbey D01-29 (SI) - Wellbore #1 - No Surveys	3,900.00	3,813.06	306.56	142.13	1.864	SF
Abbey D01-32D - Wellbore #1 - Wellbore #1 - As Drilled	362.24	355.28	1,848.52	1,846.45	893.324	CC
Abbey D01-32D - Wellbore #1 - Wellbore #1 - As Drilled	800.00	782.04	1,850.04	1,844.93	362.095	ES
Abbey D01-32D - Wellbore #1 - Wellbore #1 - As Drilled	6,500.00	6,406.04	2,177.57	2,129.88	45.659	SF
Guttersten D01-31D (PR) - Guttersten D01-31D OH - As-D	6,420.39	6,369.05	1,050.87	1,000.43	20.836	CC, ES
Guttersten D01-31D (PR) - Guttersten D01-31D OH - As-D	6,500.00	6,453.69	1,055.31	1,004.36	20.713	SF
Guttersten D12-715 - Wellbore #1 - Plan #1	2,000.00	2,016.00	3,163.54	3,149.61	227.099	CC, ES
Guttersten D12-715 - Wellbore #1 - Plan #1	6,500.00	7,404.97	4,493.40	4,443.68	90.366	SF
Guttersten D12-725 - Wellbore #1 - Plan #1	2,000.00	2,016.00	3,140.96	3,127.03	225.478	CC, ES
Guttersten D12-725 - Wellbore #1 - Plan #1	6,400.00	7,386.12	3,824.60	3,774.89	76.941	SF
Guttersten D12-735 - Wellbore #1 - Plan #1	2,000.00	2,016.00	3,118.67	3,104.74	223.878	CC, ES
Guttersten D12-735 - Wellbore #1 - Plan #1	6,400.00	7,606.25	3,191.62	3,140.59	62.545	SF
Guttersten D12-745 - Wellbore #1 - Plan #1	6,130.94	7,782.61	2,539.89	2,487.99	48.938	CC, ES
Guttersten D12-745 - Wellbore #1 - Plan #1	6,400.00	7,771.29	2,553.69	2,500.98	48.447	SF
Guttersten D12-750 - Wellbore #1 - Plan #1	6,344.20	7,984.40	2,264.28	2,210.08	41.776	CC, 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 Guttersten State C36-785
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4776.00ft
<b>Reference Site:</b>	D Section 01	<b>MD Reference:</b>	KB @ 4776.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersten State C36-785	<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						
Guttersten D12-750 - Wellbore #1 - Plan #1	6,500.00	7,950.75	2,268.72	2,214.23	41.632	SF
Guttersten D12-755 - Wellbore #1 - Plan #1	2,000.00	2,001.00	164.28	150.40	11.839	CC, ES
Guttersten D12-755 - Wellbore #1 - Plan #1	2,300.00	2,292.89	172.78	156.82	10.830	SF
Guttersten D12-765 - Wellbore #1 - Plan #1	2,000.00	2,001.00	156.54	142.66	11.281	CC
Guttersten D12-765 - Wellbore #1 - Plan #1	2,100.00	2,101.02	157.03	142.45	10.767	ES
Guttersten D12-765 - Wellbore #1 - Plan #1	2,400.00	2,402.30	166.48	149.78	9.968	SF
Guttersten D12-770 - Wellbore #1 - Plan #1	2,000.00	2,001.00	151.66	137.79	10.930	CC
Guttersten D12-770 - Wellbore #1 - Plan #1	2,100.00	2,101.02	151.92	137.33	10.416	ES
Guttersten D12-770 - Wellbore #1 - Plan #1	2,400.00	2,397.70	157.97	141.28	9.467	SF
Guttersten D12-775 - Wellbore #1 - Plan #1	2,094.15	2,106.87	149.72	135.13	10.265	CC
Guttersten D12-775 - Wellbore #1 - Plan #1	2,300.00	2,301.55	150.38	134.39	9.403	ES
Guttersten D12-775 - Wellbore #1 - Plan #1	2,500.00	2,493.14	156.52	139.14	9.009	SF
Guttersten D12-785 - Wellbore #1 - Plan #1	7,064.50	7,153.55	55.48	3.31	1.063	Level 2, CC, ES, SF
Guttersten State C36-725 - Wellbore #1 - Plan #1	2,000.00	2,016.00	3,136.38	3,122.45	225.150	CC, ES
Guttersten State C36-725 - Wellbore #1 - Plan #1	20,063.46	19,866.28	3,879.25	3,654.39	17.252	SF
Guttersten State C36-735 - Wellbore #1 - Plan #1	5,369.55	6,309.19	3,063.11	3,021.09	72.895	CC
Guttersten State C36-735 - Wellbore #1 - Plan #1	20,063.46	20,021.33	3,232.69	3,007.51	14.356	ES, SF
Guttersten State C36-745 - Wellbore #1 - Plan #1	5,922.33	6,923.13	2,490.03	2,442.35	52.224	CC
Guttersten State C36-745 - Wellbore #1 - Plan #1	20,047.50	20,241.03	2,586.16	2,360.72	11.472	ES
Guttersten State C36-745 - Wellbore #1 - Plan #1	20,063.46	20,241.03	2,586.21	2,360.74	11.471	SF
Guttersten State C36-750 - Wellbore #1 - Plan #1	6,146.82	7,166.31	2,212.46	2,162.22	44.041	CC
Guttersten State C36-750 - Wellbore #1 - Plan #1	20,043.32	20,475.07	2,264.85	2,037.83	9.976	ES, SF
Guttersten State C36-755 - Wellbore #1 - Plan #1	2,000.00	2,000.00	67.54	53.67	4.869	CC, ES, SF
Guttersten State C36-765 - Wellbore #1 - Plan #1	2,000.00	2,000.00	45.22	31.34	3.259	CC, ES
Guttersten State C36-765 - Wellbore #1 - Plan #1	2,100.00	2,100.02	46.96	32.38	3.221	SF
Guttersten State C36-775 - Wellbore #1 - Plan #1	2,436.14	2,439.60	22.37	5.63	1.337	Level 3, CC, ES, SF
HSR-Guttersten 11-1 (PR) - Wellbore #1 - No Surveys	2,000.00	2,002.00	2,817.50	2,732.48	33.141	CC
HSR-Guttersten 11-1 (PR) - Wellbore #1 - No Surveys	2,700.00	2,708.94	2,829.66	2,713.92	24.447	ES
HSR-Guttersten 11-1 (PR) - Wellbore #1 - No Surveys	6,500.00	6,323.68	3,225.52	2,950.11	11.712	SF
HSR-Guttersten 12-1 (PR) - Wellbore #1 - No Surveys	5,720.83	5,531.94	2,833.63	2,592.99	11.775	CC
HSR-Guttersten 12-1 (PR) - Wellbore #1 - No Surveys	6,300.00	6,085.99	2,838.81	2,573.60	10.704	ES
HSR-Guttersten 12-1 (PR) - Wellbore #1 - No Surveys	6,500.00	6,273.68	2,878.22	2,604.69	10.523	SF
HSR-Guttersten 14-1 (SI) - Wellbore #1 - No Surveys	2,000.00	1,978.00	4,154.94	4,070.89	49.430	CC
HSR-Guttersten 14-1 (SI) - Wellbore #1 - No Surveys	3,200.00	3,150.41	4,181.17	4,045.91	30.913	ES
HSR-Guttersten 14-1 (SI) - Wellbore #1 - No Surveys	6,600.00	6,408.64	4,501.14	4,221.90	16.119	SF
HSR-Guttersten 15-1 (SI) - Wellbore #1 - Wellbore #1	2,000.00	2,016.00	4,691.98	4,606.40	54.828	CC
HSR-Guttersten 15-1 (SI) - Wellbore #1 - Wellbore #1	2,300.00	2,315.45	4,698.26	4,599.67	47.653	ES
HSR-Guttersten 15-1 (SI) - Wellbore #1 - Wellbore #1	6,700.00	6,510.01	5,413.10	5,129.69	19.100	SF
HSR-Guttersten 16-1 (SI) - Wellbore #1 - No Surveys	2,000.00	2,030.00	5,341.45	5,255.31	62.012	CC
HSR-Guttersten 16-1 (SI) - Wellbore #1 - No Surveys	2,200.00	2,229.84	5,345.63	5,250.80	56.375	ES
HSR-Guttersten 16-1 (SI) - Wellbore #1 - No Surveys	6,800.00	6,604.35	6,313.06	6,025.80	21.977	SF
Keisha White D01-01 - Wellbore #1 - Wellbore #1 - As D	843.23	841.26	2,965.06	2,959.52	535.927	CC
Keisha White D01-01 - Wellbore #1 - Wellbore #1 - As D	2,000.00	1,986.13	2,968.78	2,955.11	217.210	ES
Keisha White D01-01 - Wellbore #1 - Wellbore #1 - As D	7,200.00	6,723.37	4,259.63	4,211.04	87.666	SF
Keisha White D01-07 (PR) - Wellbore #1 - No Surveys	2,000.00	1,983.00	2,742.13	2,657.87	32.545	CC
Keisha White D01-07 (PR) - Wellbore #1 - No Surveys	2,200.00	2,182.84	2,746.39	2,653.45	29.549	ES
Keisha White D01-07 (PR) - Wellbore #1 - No Surveys	6,600.00	6,403.64	3,658.32	3,379.76	13.133	SF
Keisha White D01-08 (PR) - Wellbore #1 - No Surveys	2,000.00	2,000.00	3,662.89	3,577.95	43.125	CC
Keisha White D01-08 (PR) - Wellbore #1 - No Surveys	2,200.00	2,200.16	3,668.42	3,574.78	39.178	ES
Keisha White D01-08 (PR) - Wellbore #1 - No Surveys	6,700.00	6,505.99	4,765.67	4,482.88	16.853	SF
UPV 1-2J4 (PR) - Wellbore #1 - No Surveys	2,000.00	1,983.00	2,052.07	1,967.81	24.355	CC
UPV 1-2J4 (PR) - Wellbore #1 - No Surveys	2,100.00	2,082.98	2,053.76	1,965.16	23.179	ES
UPV 1-2J4 (PR) - Wellbore #1 - No Surveys	6,800.00	6,548.65	3,320.45	3,035.96	11.672	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 State C36-785
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4776.00ft
<b>Reference Site:</b>	D Section 01	<b>MD Reference:</b>	KB @ 4776.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Gutteresen State C36-785	<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						
D Section 01						
Woody D01-09 - Wellbore #1 - Wellbore #1 - As Drilled	2,059.64	2,156.51	4,334.93	4,320.45	299.337	CC
Woody D01-09 - Wellbore #1 - Wellbore #1 - As Drilled	2,100.00	2,196.03	4,335.14	4,320.38	293.683	ES
Woody D01-09 - Wellbore #1 - Wellbore #1 - As Drilled	6,700.00	6,550.62	5,346.51	5,299.16	112.917	SF
Woody D01-10 (PR) - Wellbore #1 - No Surveys	2,000.00	2,016.00	3,141.12	3,055.54	36.705	CC
Woody D01-10 (PR) - Wellbore #1 - No Surveys	2,300.00	2,315.45	3,148.61	3,050.02	31.935	ES
Woody D01-10 (PR) - Wellbore #1 - No Surveys	6,600.00	6,429.36	3,922.22	3,642.48	14.021	SF
D Section 02						
KERN D #2-1(SI) - KERN D #2-1 - No Surveys	6,703.48	6,434.67	931.65	778.73	6.092	CC, ES
KERN D #2-1(SI) - KERN D #2-1 - No Surveys	6,800.00	6,503.65	937.35	782.71	6.061	SF



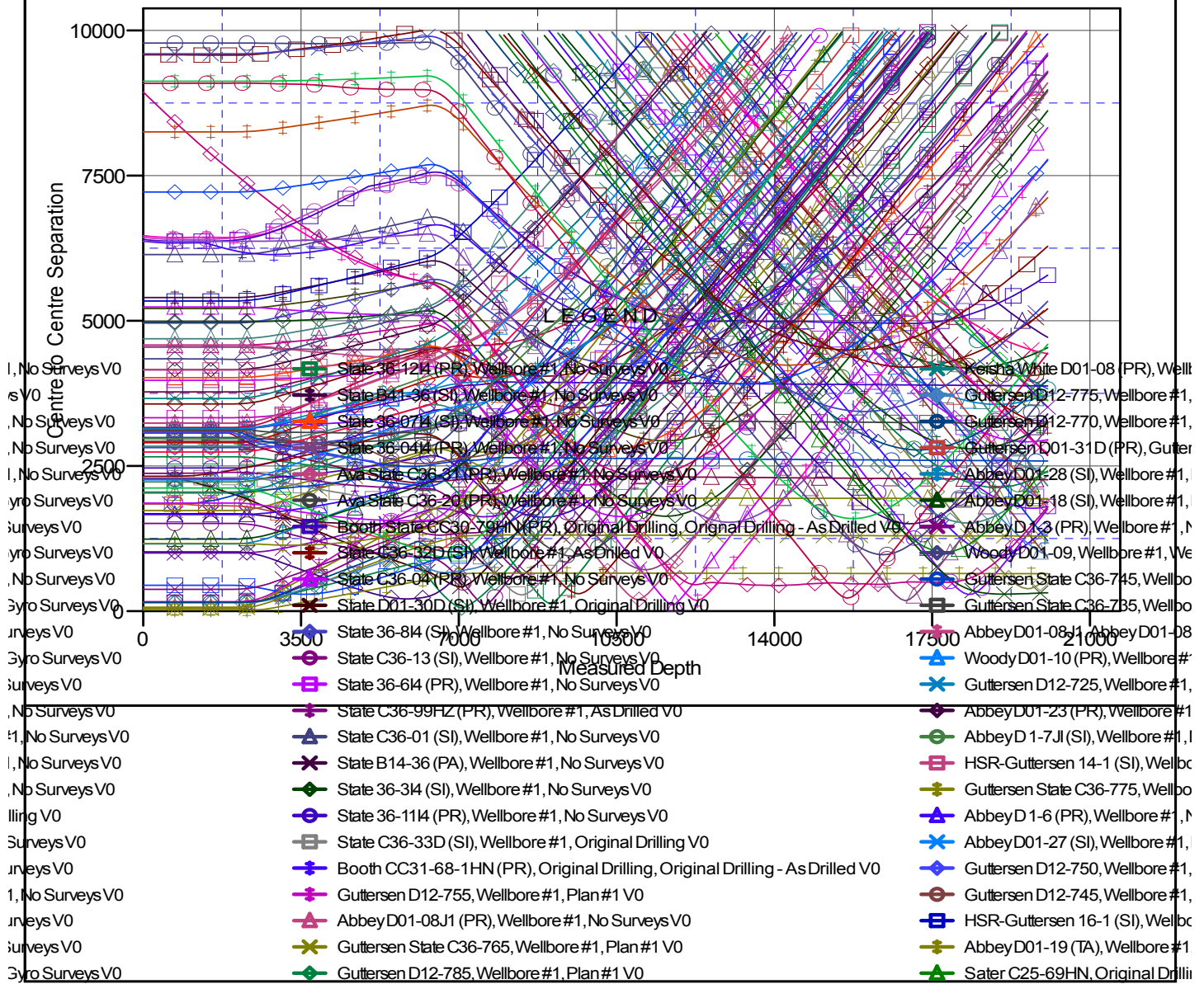
**Noble Energy, Inc.**  
**Anticollision Summary Report**

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersen State C36-785
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4776.00ft
<b>Reference Site:</b>	D Section 01	<b>MD Reference:</b>	KB @ 4776.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersen State C36-785	<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 @ 4776.00ft  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.5000000

Coordinates are relative to: Guttersen State C36-785  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 0.64°

## Ladder Plot



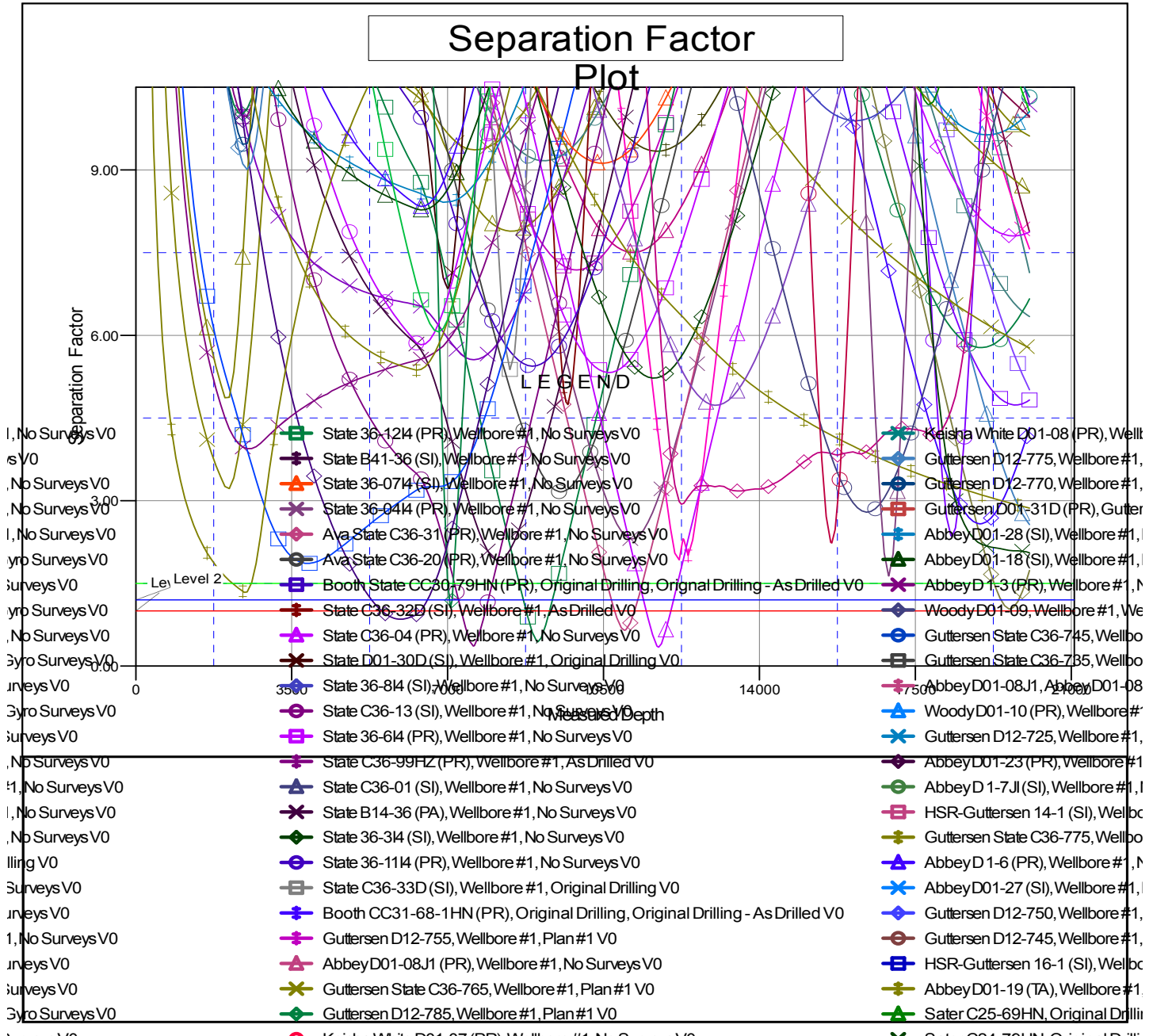
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

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

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersen State C36-785
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4776.00ft
<b>Reference Site:</b>	D Section 01	<b>MD Reference:</b>	KB @ 4776.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersen State C36-785	<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 @ 4776.00ft  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.5000000

Coordinates are relative to: Guttersen State C36-785  
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