

Project: Mustang  
 Site: C Section 33  
 Well: Gutteresen D09-785  
 Wellbore: Gutteresen D09-785  
 Design: Plan #1

# Northern Region - DJ Basin

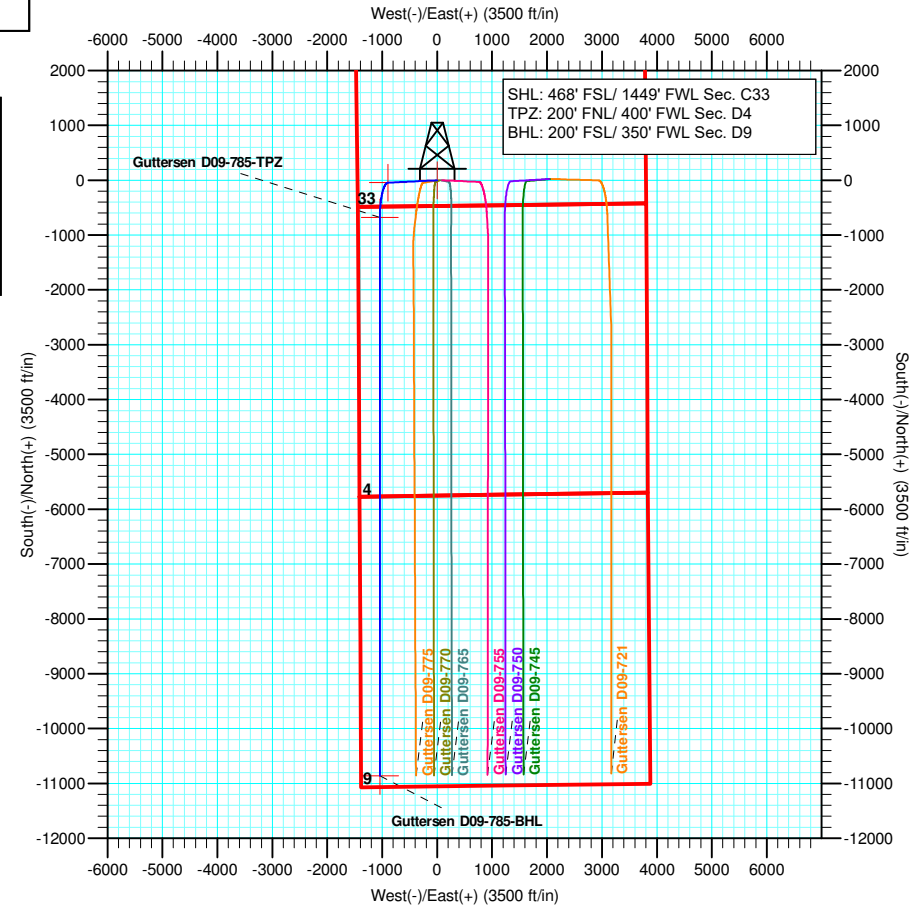
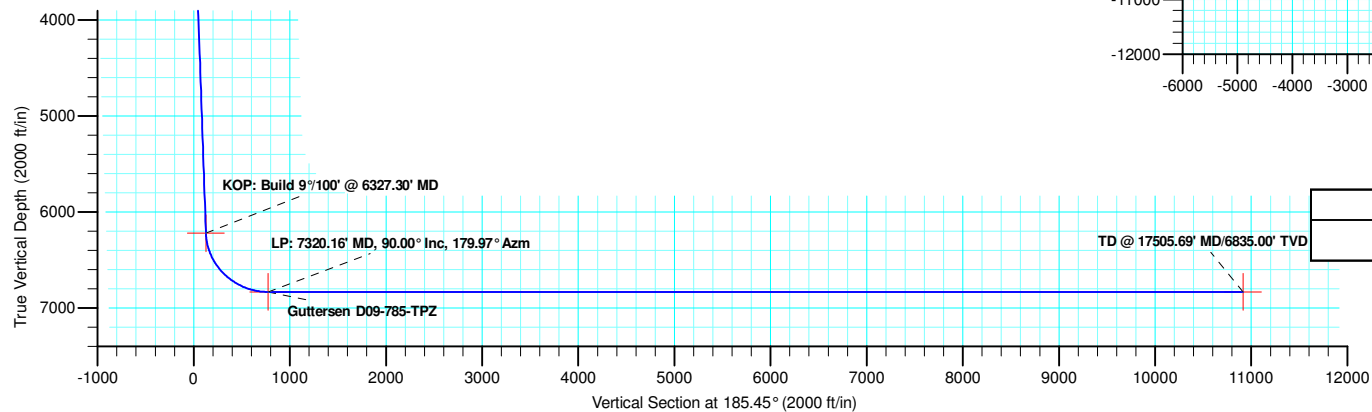
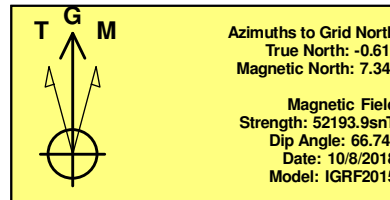
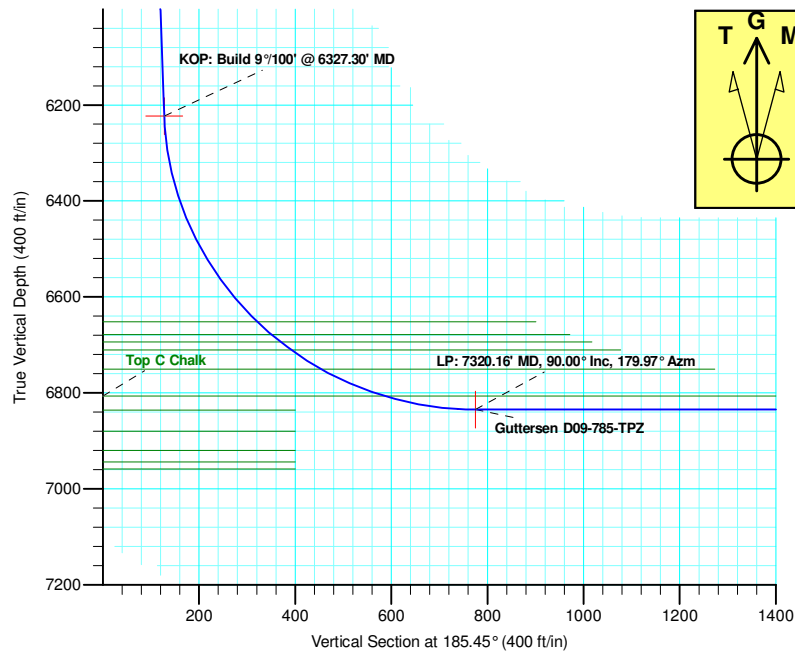
Geodetic System: US State Plane 1983  
 Datum: North American Datum 1983  
 Ellipsoid: GRS 1980  
 Zone: Colorado Northern Zone  
 System Datum: Mean Sea Level

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	2200.00	0.00	0.00	2200.00	0.00	0.00	0.00	0.00	0.00	
3	2883.39	13.67	267.25	2876.92	-3.89	-81.03	2.00	267.25	11.58	
4	6327.30	13.67	267.25	6223.32	-42.94	-893.86	0.00	0.00	127.69	
5	7320.16	90.00	179.97	6835.00	-679.59	-1042.13	9.00	-87.35	775.56	Gutteresen D09-785-TPZ
6	17505.69	90.00	179.97	6835.00	-10865.13	-1037.24	0.00	0.00	10914.53	Gutteresen D09-785-BHL

WELL DETAILS: Gutteresen D09-785

+N/-S	+E/-W	Northing	Ground Level: Easting	4725.00 Latitude	Longitude	Slot
0.00	0.00	1340051.42	3262276.06	40.2630250	-104.5601710	



Plan: Plan #1 (Gutteresen D09-785/Gutteresen D09-785)

Created By: Keith Noack Date: 11:27, October 09 2018

# **Northern Region - DJ Basin**

**Mustang**

**C Section 33**

**Guttersen D09-785**

**Guttersen D09-785**

**Plan: Plan #1**

## **Standard Planning Report**

**09 October, 2018**

# Noble Energy, Inc.

## Planning Report

<b>Database:</b>	EDMP	<b>Local Co-ordinate Reference:</b>	Well Guttersen D09-785
<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	Well @ 4755.00ft
<b>Project:</b>	Mustang	<b>MD Reference:</b>	Well @ 4755.00ft
<b>Site:</b>	C Section 33	<b>North Reference:</b>	Grid
<b>Well:</b>	Guttersen D09-785	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Guttersen D09-785		
<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	C Section 33				
Site Position:		Northing:	1,339,901.69 usft	Latitude:	40.2626140
From:	Lat/Long	Easting:	3,262,275.97 usft	Longitude:	-104.5601770
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.61 °

Well	Guttersen D09-785					
Well Position	+N/-S	149.73 ft	Northing:	1,340,051.42 usft	Latitude:	40.2630250
	+E/-W	0.09 ft	Easting:	3,262,276.06 usft	Longitude:	-104.5601710
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,725.00 ft

<b>Wellbore</b>	Guttersen D09-785				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2015	10/8/2018	7.95	66.74	52,193.87785332

<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	185.45

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,883.39	13.67	267.25	2,876.92	-3.89	-81.03	2.00	2.00	0.00	267.25	
6,327.30	13.67	267.25	6,223.32	-42.94	-893.86	0.00	0.00	0.00	0.00	
7,320.16	90.00	179.97	6,835.00	-679.59	-1,042.13	9.00	7.69	-8.79	-87.35	Guttersen D09-785
17,505.70	90.00	179.97	6,835.00	-10,865.13	-1,037.24	0.00	0.00	0.00	0.00	Guttersen D09-785

# Noble Energy, Inc.

## Planning Report

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<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	Well @ 4755.00ft
<b>Project:</b>	Mustang	<b>MD Reference:</b>	Well @ 4755.00ft
<b>Site:</b>	C Section 33	<b>North Reference:</b>	Grid
<b>Well:</b>	Guttersen D09-785	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Guttersen D09-785		
<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
490.00	0.00	0.00	490.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Pierre</b>									
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
623.00	0.00	0.00	623.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Upper Pierre Aquifer Top</b>									
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,543.00	0.00	0.00	1,543.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Upper Pierre Aquifer Base</b>									
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Build: 2°/100'</b>									
2,300.00	2.00	267.25	2,299.98	-0.08	-1.74	0.25	2.00	2.00	0.00
2,400.00	4.00	267.25	2,399.84	-0.33	-6.97	1.00	2.00	2.00	0.00
2,500.00	6.00	267.25	2,499.45	-0.75	-15.68	2.24	2.00	2.00	0.00
2,600.00	8.00	267.25	2,598.70	-1.34	-27.85	3.98	2.00	2.00	0.00
2,700.00	10.00	267.25	2,697.47	-2.09	-43.47	6.21	2.00	2.00	0.00
2,800.00	12.00	267.25	2,795.62	-3.00	-62.53	8.93	2.00	2.00	0.00
2,883.39	13.67	267.25	2,876.92	-3.89	-81.03	11.58	2.00	2.00	0.00
<b>Hold: 13.67° Inc, 267.25° Azm</b>									
2,900.00	13.67	267.25	2,893.07	-4.08	-84.95	12.14	0.00	0.00	0.00
3,000.00	13.67	267.25	2,990.23	-5.22	-108.55	15.51	0.00	0.00	0.00
3,100.00	13.67	267.25	3,087.40	-6.35	-132.16	18.88	0.00	0.00	0.00
3,200.00	13.67	267.25	3,184.57	-7.48	-155.76	22.25	0.00	0.00	0.00
3,300.00	13.67	267.25	3,281.74	-8.62	-179.36	25.62	0.00	0.00	0.00
3,400.00	13.67	267.25	3,378.91	-9.75	-202.96	28.99	0.00	0.00	0.00
3,500.00	13.67	267.25	3,476.08	-10.88	-226.56	32.37	0.00	0.00	0.00
3,600.00	13.67	267.25	3,573.24	-12.02	-250.16	35.74	0.00	0.00	0.00
3,650.18	13.67	267.25	3,622.00	-12.59	-262.01	37.43	0.00	0.00	0.00
<b>Parkman</b>									
3,700.00	13.67	267.25	3,670.41	-13.15	-273.77	39.11	0.00	0.00	0.00
3,800.00	13.67	267.25	3,767.58	-14.29	-297.37	42.48	0.00	0.00	0.00
3,900.00	13.67	267.25	3,864.75	-15.42	-320.97	45.85	0.00	0.00	0.00
4,000.00	13.67	267.25	3,961.92	-16.55	-344.57	49.22	0.00	0.00	0.00
4,066.98	13.67	267.25	4,027.00	-17.31	-360.38	51.48	0.00	0.00	0.00

# Noble Energy, Inc.

## Planning Report

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<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	Well @ 4755.00ft
<b>Project:</b>	Mustang	<b>MD Reference:</b>	Well @ 4755.00ft
<b>Site:</b>	C Section 33	<b>North Reference:</b>	Grid
<b>Well:</b>	Guttersen D09-785	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Guttersen D09-785		
<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)
<b>Sussex</b>									
4,100.00	13.67	267.25	4,059.09	-17.69	-368.17	52.60	0.00	0.00	0.00
4,200.00	13.67	267.25	4,156.25	-18.82	-391.78	55.97	0.00	0.00	0.00
4,300.00	13.67	267.25	4,253.42	-19.96	-415.38	59.34	0.00	0.00	0.00
4,400.00	13.67	267.25	4,350.59	-21.09	-438.98	62.71	0.00	0.00	0.00
4,500.00	13.67	267.25	4,447.76	-22.22	-462.58	66.08	0.00	0.00	0.00
4,600.00	13.67	267.25	4,544.93	-23.36	-486.18	69.46	0.00	0.00	0.00
4,635.07	13.67	267.25	4,579.00	-23.76	-494.46	70.64	0.00	0.00	0.00
<b>Shannon</b>									
4,700.00	13.67	267.25	4,642.10	-24.49	-509.78	72.83	0.00	0.00	0.00
4,800.00	13.67	267.25	4,739.26	-25.63	-533.39	76.20	0.00	0.00	0.00
4,900.00	13.67	267.25	4,836.43	-26.76	-556.99	79.57	0.00	0.00	0.00
5,000.00	13.67	267.25	4,933.60	-27.89	-580.59	82.94	0.00	0.00	0.00
5,100.00	13.67	267.25	5,030.77	-29.03	-604.19	86.31	0.00	0.00	0.00
5,200.00	13.67	267.25	5,127.94	-30.16	-627.79	89.69	0.00	0.00	0.00
5,300.00	13.67	267.25	5,225.10	-31.29	-651.40	93.06	0.00	0.00	0.00
5,400.00	13.67	267.25	5,322.27	-32.43	-675.00	96.43	0.00	0.00	0.00
5,500.00	13.67	267.25	5,419.44	-33.56	-698.60	99.80	0.00	0.00	0.00
5,600.00	13.67	267.25	5,516.61	-34.70	-722.20	103.17	0.00	0.00	0.00
5,700.00	13.67	267.25	5,613.78	-35.83	-745.80	106.54	0.00	0.00	0.00
5,800.00	13.67	267.25	5,710.95	-36.96	-769.40	109.92	0.00	0.00	0.00
5,900.00	13.67	267.25	5,808.11	-38.10	-793.01	113.29	0.00	0.00	0.00
6,000.00	13.67	267.25	5,905.28	-39.23	-816.61	116.66	0.00	0.00	0.00
6,055.28	13.67	267.25	5,959.00	-39.86	-829.66	118.52	0.00	0.00	0.00
<b>Teepee Buttes</b>									
6,100.00	13.67	267.25	6,002.45	-40.37	-840.21	120.03	0.00	0.00	0.00
6,200.00	13.67	267.25	6,099.62	-41.50	-863.81	123.40	0.00	0.00	0.00
6,300.00	13.67	267.25	6,196.79	-42.63	-887.41	126.77	0.00	0.00	0.00
6,327.30	13.67	267.25	6,223.32	-42.94	-893.86	127.69	0.00	0.00	0.00
<b>KOP: Build 9°/100' @ 6327.30' MD</b>									
6,350.00	13.91	258.73	6,245.36	-43.60	-899.21	128.86	9.00	1.07	-37.53
6,400.00	15.40	241.86	6,293.76	-47.91	-910.97	134.27	9.00	2.97	-33.74
6,450.00	17.90	228.75	6,341.67	-56.11	-922.60	143.54	9.00	5.00	-26.24
6,500.00	21.06	219.09	6,388.82	-68.16	-934.05	156.61	9.00	6.32	-19.31
6,550.00	24.62	211.98	6,434.90	-83.97	-945.23	173.42	9.00	7.13	-14.21
6,600.00	28.43	206.63	6,479.64	-103.46	-956.09	193.85	9.00	7.63	-10.71
6,650.00	32.41	202.46	6,522.75	-126.49	-966.55	217.77	9.00	7.96	-8.32
6,700.00	36.50	199.14	6,563.97	-152.94	-976.55	245.05	9.00	8.18	-6.66
6,750.00	40.67	196.40	6,603.05	-182.63	-986.03	275.51	9.00	8.33	-5.48
6,800.00	44.88	194.09	6,639.74	-215.39	-994.93	308.96	9.00	8.44	-4.62
6,817.53	46.37	193.36	6,652.00	-227.56	-997.90	321.36	9.00	8.50	-4.16
<b>Sharon Springs</b>									
6,850.00	49.14	192.10	6,673.83	-251.01	-1,003.19	345.21	9.00	8.53	-3.88
6,857.96	49.82	191.81	6,679.00	-256.93	-1,004.44	351.22	9.00	8.56	-3.68
<b>Top A Chalk</b>									
6,881.71	51.86	190.97	6,694.00	-274.98	-1,008.08	369.54	9.00	8.57	-3.53
<b>Top A Marl</b>									
6,900.00	53.43	190.35	6,705.09	-289.27	-1,010.76	384.01	9.00	8.59	-3.36
6,910.02	54.29	190.03	6,711.00	-297.23	-1,012.20	392.07	9.00	8.61	-3.26
<b>Top B Chalk</b>									
6,950.00	57.74	188.79	6,733.35	-329.93	-1,017.61	425.15	9.00	8.63	-3.09
6,984.52	60.73	187.80	6,751.00	-359.28	-1,021.88	454.77	9.00	8.65	-2.88
<b>Top B Marl</b>									

# Noble Energy, Inc.

## Planning Report

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<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	Well @ 4755.00ft
<b>Project:</b>	Mustang	<b>MD Reference:</b>	Well @ 4755.00ft
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<b>Well:</b>	Guttersen D09-785	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Guttersen D09-785		
<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)
7,000.00	62.07	187.37	6,758.41	-372.75	-1,023.67	468.35	9.00	8.67	-2.76
7,050.00	66.42	186.06	6,780.13	-417.47	-1,028.93	513.36	9.00	8.69	-2.62
7,100.00	70.77	184.83	6,798.38	-463.79	-1,033.34	559.90	9.00	8.71	-2.45
7,127.87	73.20	184.18	6,807.00	-490.22	-1,035.42	586.40	9.00	8.72	-2.35
Top C Chalk									
7,150.00	75.13	183.67	6,813.04	-511.45	-1,036.88	607.68	9.00	8.72	-2.30
7,200.00	79.49	182.55	6,824.02	-560.15	-1,039.52	656.40	9.00	8.73	-2.23
7,250.00	83.86	181.47	6,831.25	-609.58	-1,041.25	705.77	9.00	8.74	-2.17
7,300.00	88.24	180.40	6,834.69	-659.44	-1,042.07	755.49	9.00	8.74	-2.14
7,320.16	90.00	179.97	6,835.00	-679.59	-1,042.13	775.56	9.00	8.75	-2.13
LP: 7320.16' MD, 90.00° Inc, 179.97° Azm									
7,400.00	90.00	179.97	6,835.00	-759.44	-1,042.09	855.03	0.00	0.00	0.00
7,500.00	90.00	179.97	6,835.00	-859.44	-1,042.05	954.58	0.00	0.00	0.00
7,600.00	90.00	179.97	6,835.00	-959.44	-1,042.00	1,054.12	0.00	0.00	0.00
7,700.00	90.00	179.97	6,835.00	-1,059.44	-1,041.95	1,153.66	0.00	0.00	0.00
7,800.00	90.00	179.97	6,835.00	-1,159.44	-1,041.90	1,253.20	0.00	0.00	0.00
7,900.00	90.00	179.97	6,835.00	-1,259.44	-1,041.85	1,352.75	0.00	0.00	0.00
8,000.00	90.00	179.97	6,835.00	-1,359.44	-1,041.81	1,452.29	0.00	0.00	0.00
8,100.00	90.00	179.97	6,835.00	-1,459.44	-1,041.76	1,551.83	0.00	0.00	0.00
8,200.00	90.00	179.97	6,835.00	-1,559.44	-1,041.71	1,651.38	0.00	0.00	0.00
8,300.00	90.00	179.97	6,835.00	-1,659.44	-1,041.66	1,750.92	0.00	0.00	0.00
8,400.00	90.00	179.97	6,835.00	-1,759.44	-1,041.61	1,850.46	0.00	0.00	0.00
8,500.00	90.00	179.97	6,835.00	-1,859.44	-1,041.57	1,950.00	0.00	0.00	0.00
8,600.00	90.00	179.97	6,835.00	-1,959.44	-1,041.52	2,049.55	0.00	0.00	0.00
8,700.00	90.00	179.97	6,835.00	-2,059.44	-1,041.47	2,149.09	0.00	0.00	0.00
8,800.00	90.00	179.97	6,835.00	-2,159.44	-1,041.42	2,248.63	0.00	0.00	0.00
8,900.00	90.00	179.97	6,835.00	-2,259.44	-1,041.37	2,348.18	0.00	0.00	0.00
9,000.00	90.00	179.97	6,835.00	-2,359.44	-1,041.32	2,447.72	0.00	0.00	0.00
9,100.00	90.00	179.97	6,835.00	-2,459.44	-1,041.28	2,547.26	0.00	0.00	0.00
9,200.00	90.00	179.97	6,835.00	-2,559.44	-1,041.23	2,646.80	0.00	0.00	0.00
9,300.00	90.00	179.97	6,835.00	-2,659.44	-1,041.18	2,746.35	0.00	0.00	0.00
9,400.00	90.00	179.97	6,835.00	-2,759.44	-1,041.13	2,845.89	0.00	0.00	0.00
9,500.00	90.00	179.97	6,835.00	-2,859.44	-1,041.08	2,945.43	0.00	0.00	0.00
9,600.00	90.00	179.97	6,835.00	-2,959.44	-1,041.04	3,044.98	0.00	0.00	0.00
9,700.00	90.00	179.97	6,835.00	-3,059.44	-1,040.99	3,144.52	0.00	0.00	0.00
9,800.00	90.00	179.97	6,835.00	-3,159.44	-1,040.94	3,244.06	0.00	0.00	0.00
9,900.00	90.00	179.97	6,835.00	-3,259.44	-1,040.89	3,343.60	0.00	0.00	0.00
10,000.00	90.00	179.97	6,835.00	-3,359.44	-1,040.84	3,443.15	0.00	0.00	0.00
10,100.00	90.00	179.97	6,835.00	-3,459.44	-1,040.80	3,542.69	0.00	0.00	0.00
10,200.00	90.00	179.97	6,835.00	-3,559.44	-1,040.75	3,642.23	0.00	0.00	0.00
10,300.00	90.00	179.97	6,835.00	-3,659.44	-1,040.70	3,741.78	0.00	0.00	0.00
10,400.00	90.00	179.97	6,835.00	-3,759.44	-1,040.65	3,841.32	0.00	0.00	0.00
10,500.00	90.00	179.97	6,835.00	-3,859.44	-1,040.60	3,940.86	0.00	0.00	0.00
10,600.00	90.00	179.97	6,835.00	-3,959.44	-1,040.56	4,040.40	0.00	0.00	0.00
10,700.00	90.00	179.97	6,835.00	-4,059.44	-1,040.51	4,139.95	0.00	0.00	0.00
10,800.00	90.00	179.97	6,835.00	-4,159.44	-1,040.46	4,239.49	0.00	0.00	0.00
10,900.00	90.00	179.97	6,835.00	-4,259.44	-1,040.41	4,339.03	0.00	0.00	0.00
11,000.00	90.00	179.97	6,835.00	-4,359.44	-1,040.36	4,438.58	0.00	0.00	0.00
11,100.00	90.00	179.97	6,835.00	-4,459.44	-1,040.32	4,538.12	0.00	0.00	0.00
11,200.00	90.00	179.97	6,835.00	-4,559.44	-1,040.27	4,637.66	0.00	0.00	0.00
11,300.00	90.00	179.97	6,835.00	-4,659.44	-1,040.22	4,737.20	0.00	0.00	0.00
11,400.00	90.00	179.97	6,835.00	-4,759.44	-1,040.17	4,836.75	0.00	0.00	0.00
11,500.00	90.00	179.97	6,835.00	-4,859.44	-1,040.12	4,936.29	0.00	0.00	0.00
11,600.00	90.00	179.97	6,835.00	-4,959.44	-1,040.08	5,035.83	0.00	0.00	0.00

# Noble Energy, Inc.

## Planning Report

<b>Database:</b>	EDMP	<b>Local Co-ordinate Reference:</b>	Well Guttersen D09-785
<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	Well @ 4755.00ft
<b>Project:</b>	Mustang	<b>MD Reference:</b>	Well @ 4755.00ft
<b>Site:</b>	C Section 33	<b>North Reference:</b>	Grid
<b>Well:</b>	Guttersen D09-785	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Guttersen D09-785		
<b>Design:</b>	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
11,700.00	90.00	179.97	6,835.00	-5,059.44	-1,040.03	5,135.38	0.00	0.00	0.00
11,800.00	90.00	179.97	6,835.00	-5,159.44	-1,039.98	5,234.92	0.00	0.00	0.00
11,900.00	90.00	179.97	6,835.00	-5,259.44	-1,039.93	5,334.46	0.00	0.00	0.00
12,000.00	90.00	179.97	6,835.00	-5,359.44	-1,039.88	5,434.00	0.00	0.00	0.00
12,100.00	90.00	179.97	6,835.00	-5,459.44	-1,039.84	5,533.55	0.00	0.00	0.00
12,200.00	90.00	179.97	6,835.00	-5,559.44	-1,039.79	5,633.09	0.00	0.00	0.00
12,300.00	90.00	179.97	6,835.00	-5,659.44	-1,039.74	5,732.63	0.00	0.00	0.00
12,400.00	90.00	179.97	6,835.00	-5,759.44	-1,039.69	5,832.18	0.00	0.00	0.00
12,500.00	90.00	179.97	6,835.00	-5,859.44	-1,039.64	5,931.72	0.00	0.00	0.00
12,600.00	90.00	179.97	6,835.00	-5,959.44	-1,039.59	6,031.26	0.00	0.00	0.00
12,700.00	90.00	179.97	6,835.00	-6,059.44	-1,039.55	6,130.80	0.00	0.00	0.00
12,800.00	90.00	179.97	6,835.00	-6,159.44	-1,039.50	6,230.35	0.00	0.00	0.00
12,900.00	90.00	179.97	6,835.00	-6,259.44	-1,039.45	6,329.89	0.00	0.00	0.00
13,000.00	90.00	179.97	6,835.00	-6,359.44	-1,039.40	6,429.43	0.00	0.00	0.00
13,100.00	90.00	179.97	6,835.00	-6,459.44	-1,039.35	6,528.97	0.00	0.00	0.00
13,200.00	90.00	179.97	6,835.00	-6,559.44	-1,039.31	6,628.52	0.00	0.00	0.00
13,300.00	90.00	179.97	6,835.00	-6,659.44	-1,039.26	6,728.06	0.00	0.00	0.00
13,400.00	90.00	179.97	6,835.00	-6,759.44	-1,039.21	6,827.60	0.00	0.00	0.00
13,500.00	90.00	179.97	6,835.00	-6,859.44	-1,039.16	6,927.15	0.00	0.00	0.00
13,600.00	90.00	179.97	6,835.00	-6,959.44	-1,039.11	7,026.69	0.00	0.00	0.00
13,700.00	90.00	179.97	6,835.00	-7,059.44	-1,039.07	7,126.23	0.00	0.00	0.00
13,800.00	90.00	179.97	6,835.00	-7,159.44	-1,039.02	7,225.77	0.00	0.00	0.00
13,900.00	90.00	179.97	6,835.00	-7,259.44	-1,038.97	7,325.32	0.00	0.00	0.00
14,000.00	90.00	179.97	6,835.00	-7,359.44	-1,038.92	7,424.86	0.00	0.00	0.00
14,100.00	90.00	179.97	6,835.00	-7,459.44	-1,038.87	7,524.40	0.00	0.00	0.00
14,200.00	90.00	179.97	6,835.00	-7,559.44	-1,038.83	7,623.95	0.00	0.00	0.00
14,300.00	90.00	179.97	6,835.00	-7,659.44	-1,038.78	7,723.49	0.00	0.00	0.00
14,400.00	90.00	179.97	6,835.00	-7,759.44	-1,038.73	7,823.03	0.00	0.00	0.00
14,500.00	90.00	179.97	6,835.00	-7,859.44	-1,038.68	7,922.57	0.00	0.00	0.00
14,600.00	90.00	179.97	6,835.00	-7,959.44	-1,038.63	8,022.12	0.00	0.00	0.00
14,700.00	90.00	179.97	6,835.00	-8,059.44	-1,038.59	8,121.66	0.00	0.00	0.00
14,800.00	90.00	179.97	6,835.00	-8,159.44	-1,038.54	8,221.20	0.00	0.00	0.00
14,900.00	90.00	179.97	6,835.00	-8,259.44	-1,038.49	8,320.75	0.00	0.00	0.00
15,000.00	90.00	179.97	6,835.00	-8,359.44	-1,038.44	8,420.29	0.00	0.00	0.00
15,100.00	90.00	179.97	6,835.00	-8,459.44	-1,038.39	8,519.83	0.00	0.00	0.00
15,200.00	90.00	179.97	6,835.00	-8,559.44	-1,038.35	8,619.37	0.00	0.00	0.00
15,300.00	90.00	179.97	6,835.00	-8,659.44	-1,038.30	8,718.92	0.00	0.00	0.00
15,400.00	90.00	179.97	6,835.00	-8,759.44	-1,038.25	8,818.46	0.00	0.00	0.00
15,500.00	90.00	179.97	6,835.00	-8,859.44	-1,038.20	8,918.00	0.00	0.00	0.00
15,600.00	90.00	179.97	6,835.00	-8,959.44	-1,038.15	9,017.55	0.00	0.00	0.00
15,700.00	90.00	179.97	6,835.00	-9,059.44	-1,038.11	9,117.09	0.00	0.00	0.00
15,800.00	90.00	179.97	6,835.00	-9,159.44	-1,038.06	9,216.63	0.00	0.00	0.00
15,900.00	90.00	179.97	6,835.00	-9,259.44	-1,038.01	9,316.17	0.00	0.00	0.00
16,000.00	90.00	179.97	6,835.00	-9,359.44	-1,037.96	9,415.72	0.00	0.00	0.00
16,100.00	90.00	179.97	6,835.00	-9,459.44	-1,037.91	9,515.26	0.00	0.00	0.00
16,200.00	90.00	179.97	6,835.00	-9,559.44	-1,037.86	9,614.80	0.00	0.00	0.00
16,300.00	90.00	179.97	6,835.00	-9,659.44	-1,037.82	9,714.35	0.00	0.00	0.00
16,400.00	90.00	179.97	6,835.00	-9,759.44	-1,037.77	9,813.89	0.00	0.00	0.00
16,500.00	90.00	179.97	6,835.00	-9,859.44	-1,037.72	9,913.43	0.00	0.00	0.00
16,600.00	90.00	179.97	6,835.00	-9,959.44	-1,037.67	10,012.97	0.00	0.00	0.00
16,700.00	90.00	179.97	6,835.00	-10,059.44	-1,037.62	10,112.52	0.00	0.00	0.00
16,800.00	90.00	179.97	6,835.00	-10,159.44	-1,037.58	10,212.06	0.00	0.00	0.00
16,900.00	90.00	179.97	6,835.00	-10,259.44	-1,037.53	10,311.60	0.00	0.00	0.00
17,000.00	90.00	179.97	6,835.00	-10,359.44	-1,037.48	10,411.15	0.00	0.00	0.00

# Noble Energy, Inc.

## Planning Report

<b>Database:</b>	EDMP	<b>Local Co-ordinate Reference:</b>	Well Guttersen D09-785
<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	Well @ 4755.00ft
<b>Project:</b>	Mustang	<b>MD Reference:</b>	Well @ 4755.00ft
<b>Site:</b>	C Section 33	<b>North Reference:</b>	Grid
<b>Well:</b>	Guttersen D09-785	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Guttersen D09-785		
<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)
17,100.00	90.00	179.97	6,835.00	-10,459.44	-1,037.43	10,510.69	0.00	0.00	0.00
17,200.00	90.00	179.97	6,835.00	-10,559.44	-1,037.38	10,610.23	0.00	0.00	0.00
17,300.00	90.00	179.97	6,835.00	-10,659.44	-1,037.34	10,709.77	0.00	0.00	0.00
17,400.00	90.00	179.97	6,835.00	-10,759.44	-1,037.29	10,809.32	0.00	0.00	0.00
17,505.70	90.00	179.97	6,835.00	-10,865.13	-1,037.24	10,914.53	0.00	0.00	0.00
TD @ 17505.69' MD/6835.00' TVD									

Design Targets									
Target Name	- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	
- Shape									Latitude Longitude
Guttersen D09-785-SI	- plan hits target center	0.00	0.00	0.00	0.00	0.00	1,340,051.42	3,262,276.06	40.2630250 -104.5601710
- Point									
Guttersen D09-785-KI	- plan hits target center	0.00	0.00	6,223.31	-42.94	-893.86	1,340,008.47	3,261,382.20	40.2629331 -104.5633754
- Point									
Guttersen D09-785-BI	- plan hits target center	0.00	0.00	6,835.00	-10,865.13	-1,037.24	1,329,186.31	3,261,238.82	40.2332310 -104.5642983
- Point									
Guttersen D09-785-TI	- plan hits target center	0.00	0.00	6,835.00	-679.59	-1,042.13	1,339,371.82	3,261,233.93	40.2611898 -104.5639307
- Point									

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
490.00	490.00	Pierre				
623.00	623.00	Upper Pierre Aquifer Top				
1,543.00	1,543.00	Upper Pierre Aquifer Base				
3,650.18	3,622.00	Parkman				
4,066.98	4,027.00	Sussex				
4,635.07	4,579.00	Shannon				
6,055.28	5,959.00	Teepee Buttes				
6,817.53	6,652.00	Sharon Springs				
6,857.96	6,679.00	Top A Chalk				
6,881.71	6,694.00	Top A Marl				
6,910.02	6,711.00	Top B Chalk				
6,984.52	6,751.00	Top B Marl				
7,127.87	6,807.00	Top C Chalk				



# Noble Energy, Inc.

## Planning Report

<b>Database:</b>	EDMP	<b>Local Co-ordinate Reference:</b>	Well Guttersen D09-785
<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	Well @ 4755.00ft
<b>Project:</b>	Mustang	<b>MD Reference:</b>	Well @ 4755.00ft
<b>Site:</b>	C Section 33	<b>North Reference:</b>	Grid
<b>Well:</b>	Guttersen D09-785	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Guttersen D09-785		
<b>Design:</b>	Plan #1		

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
2,200.00	2,200.00	0.00	0.00	Build: 2°/100'	
2,883.39	2,876.92	-3.89	-81.03	Hold: 13.67° Inc, 267.25° Azm	
6,327.30	6,223.32	-42.94	-893.86	KOP: Build 9°/100' @ 6327.30' MD	
7,320.16	6,835.00	-679.59	-1,042.13	LP: 7320.16' MD, 90.00° Inc, 179.97° Azm	
17,505.70	6,835.00	-10,865.13	-1,037.24	TD @ 17505.69' MD/6835.00' TVD	

# **Northern Region - DJ Basin**

**Mustang**

**C Section 33**

**Guttersen D09-785**

**Guttersen D09-785**

**Plan #1**

## **Anticollision Summary Report**

**08 October, 2018**

# Noble Energy, Inc.

## Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersen D09-785
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4755.00ft
<b>Reference Site:</b>	C Section 33	<b>MD Reference:</b>	Well @ 4755.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersen D09-785	<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>	Guttersen D09-785	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

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

Survey Tool Program		Date	10/8/2018		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.00	17,505.70	Plan #1 (Guttersen D09-785)	2_MWD+IFR1+MS	A008Mb: IFR dec & multi-station analysis	

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
C Section 32						
HENNINGTON C #32-10(PR) - Wellbore #1 - No Surveys	6,548.71	6,448.73	2,930.99	2,850.98	36.629	CC
HENNINGTON C #32-10(PR) - Wellbore #1 - No Surveys	6,550.00	6,449.90	2,930.99	2,850.96	36.622	ES
HENNINGTON C #32-10(PR) - Wellbore #1 - No Surveys	6,850.00	6,688.83	2,975.81	2,892.65	35.787	SF
HENNINGTON C #32-2(PR) - Wellbore #1 - No Surveys	6,409.47	6,318.88	5,004.20	4,925.57	63.642	CC, ES
HENNINGTON C #32-2(PR) - Wellbore #1 - No Surveys	6,800.00	6,655.74	5,107.17	5,024.24	61.588	SF
HENNINGTON C #32-7(PA) - Wellbore #1 - Gyro Survey	6,440.30	6,269.66	3,987.97	3,942.70	88.081	CC, ES
HENNINGTON C #32-7(PA) - Wellbore #1 - Gyro Survey	6,800.00	6,528.82	4,067.54	4,020.07	85.704	SF
HOWELL #1(SI) - Wellbore #1 - No Surveys	6,909.11	6,755.47	4,589.35	4,505.75	54.899	CC, ES
HOWELL #1(SI) - Wellbore #1 - No Surveys	7,200.00	6,869.02	4,615.93	4,530.57	54.075	SF
HOWELL #32-1(SI) - Wellbore #1 - No Surveys	6,533.38	6,448.71	4,642.86	4,562.88	58.047	CC
HOWELL #32-1(SI) - Wellbore #1 - No Surveys	6,550.00	6,463.90	4,643.00	4,562.82	57.907	ES
HOWELL #32-1(SI) - Wellbore #1 - No Surveys	6,950.00	6,762.35	4,727.70	4,643.60	56.216	SF
HOWELL #32-2(SI) - Wellbore #1 - No Surveys	6,461.61	6,375.70	5,509.92	5,430.71	69.556	CC, ES
HOWELL #32-2(SI) - Wellbore #1 - No Surveys	6,900.00	6,728.09	5,621.73	5,537.97	67.115	SF
HOWELL #32-23(PR) - Wellbore #1 - No Surveys	6,566.60	6,505.91	5,792.73	5,712.18	71.910	CC, ES
HOWELL #32-23(PR) - Wellbore #1 - No Surveys	7,050.00	6,836.13	5,896.24	5,811.28	69.395	SF
HOWELL #C 32-12(SI) - Wellbore #1 - No Surveys	6,756.27	6,677.79	5,326.97	5,244.43	64.543	CC, ES
HOWELL #C 32-12(SI) - Wellbore #1 - No Surveys	7,150.00	6,883.04	5,379.12	5,293.66	62.943	SF
MCGUIRK-HOWELL C #32-11(SI) - Wellbore #1 - No Su	6,641.96	6,543.94	4,151.55	4,070.48	51.210	CC
MCGUIRK-HOWELL C #32-11(SI) - Wellbore #1 - No Su	6,650.00	6,550.75	4,151.58	4,070.42	51.155	ES
MCGUIRK-HOWELL C #32-11(SI) - Wellbore #1 - No Su	7,050.00	6,808.13	4,218.63	4,133.98	49.834	SF
MCGUIRK-HOWELL C #32-14(TA) - Wellbore #1 - No Si	6,998.64	6,791.77	3,891.57	3,807.45	46.262	CC
MCGUIRK-HOWELL C #32-14(TA) - Wellbore #1 - No Si	7,000.00	6,792.41	3,891.57	3,807.44	46.257	ES
MCGUIRK-HOWELL C #32-14(TA) - Wellbore #1 - No Si	7,250.00	6,865.25	3,911.94	3,826.54	45.808	SF
MCGUIRK-HOWELL C #32-4(SI) - Wellbore #1 - No Sur	6,494.63	6,454.80	6,633.77	6,553.80	82.961	CC
MCGUIRK-HOWELL C #32-4(SI) - Wellbore #1 - No Sur	6,500.00	6,459.82	6,633.78	6,553.76	82.894	ES
MCGUIRK-HOWELL C #32-4(SI) - Wellbore #1 - No Sur	7,000.00	6,829.41	6,767.20	6,682.33	79.741	SF
NELSON #32-25(PR) - Wellbore #1 - No Surveys	6,509.21	6,457.40	5,701.35	5,621.33	71.256	CC, ES
NELSON #32-25(PR) - Wellbore #1 - No Surveys	7,000.00	6,818.41	5,823.67	5,738.92	68.714	SF
PLUSS #32-43(PA) - Wellbore #1 - Gyro Surveys	6,957.66	6,632.57	2,726.01	2,678.07	56.870	CC, ES
PLUSS #32-43(PA) - Wellbore #1 - Gyro Surveys	7,250.00	6,700.00	2,755.04	2,706.06	56.241	SF
PTF #C 32-1(SI) - Wellbore #1 - No Surveys	6,367.15	6,269.99	4,205.75	4,127.66	53.853	CC, ES
PTF #C 32-1(SI) - Wellbore #1 - No Surveys	6,700.00	6,571.97	4,288.36	4,206.43	52.346	SF
PTF #C 32-16(SI) - Wellbore #1 - No Surveys	6,776.98	6,632.16	1,177.28	1,095.09	14.324	CC, ES
PTF #C 32-16(SI) - Wellbore #1 - No Surveys	6,900.00	6,714.09	1,184.91	1,101.59	14.220	SF
PTF #C 32-8(SI) - Wellbore #1 - No Surveys	6,389.98	6,282.08	2,915.62	2,837.36	37.252	CC
PTF #C 32-8(SI) - Wellbore #1 - No Surveys	6,400.00	6,291.76	2,915.70	2,837.31	37.194	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 D09-785
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4755.00ft
<b>Reference Site:</b>	C Section 33	<b>MD Reference:</b>	Well @ 4755.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersen D09-785	<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>	Guttersen D09-785	<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
C Section 32						
PTF #C 32-8(SI) - Wellbore #1 - No Surveys	6,650.00	6,520.75	2,964.62	2,883.32	36.463	SF
PTF #C 32-9(SI) - Wellbore #1 - No Surveys	6,455.91	6,347.29	1,751.53	1,672.57	22.183	CC, ES
PTF #C 32-9(SI) - Wellbore #1 - No Surveys	6,650.00	6,522.75	1,775.38	1,694.16	21.859	SF

# Noble Energy, Inc.

## Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersen D09-785
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4755.00ft
<b>Reference Site:</b>	C Section 33	<b>MD Reference:</b>	Well @ 4755.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersen D09-785	<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>	Guttersen D09-785	<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 33						
GUTTERSEN C #33-31D - GUTTERSEN C #33-31D OH	715.81	749.15	2,352.09	2,348.44	644.390	CC, ES
GUTTERSEN C #33-31D - GUTTERSEN C #33-31D OH	6,650.00	6,731.72	3,653.10	3,604.46	75.097	SF
GUTTERSEN C #33-32 - Wellbore #1 - No Surveys	6,346.62	6,251.08	2,078.27	1,807.24	7.668	CC
GUTTERSEN C #33-32 - Wellbore #1 - No Surveys	6,350.00	6,254.36	2,078.28	1,807.11	7.664	ES
GUTTERSEN C #33-32 - Wellbore #1 - No Surveys	6,550.00	6,443.90	2,110.69	1,831.19	7.552	SF
GUTTERSEN C #33-33D - GUTTERSEN C #33-33D OH	6,422.18	6,492.00	1,096.62	1,045.67	21.523	CC, ES
GUTTERSEN C #33-33D - GUTTERSEN C #33-33D OH	6,500.00	6,568.00	1,100.78	1,049.47	21.455	SF
Guttersen C28-715 - Guttersen C28-715 - Plan #1	2,200.00	2,193.00	2,132.34	2,117.06	139.536	CC, ES
Guttersen C28-715 - Guttersen C28-715 - Plan #1	9,300.00	6,081.89	4,681.77	4,630.41	91.151	SF
Guttersen C28-725 - Guttersen C28-725 - Plan #1	2,200.00	2,191.00	2,110.05	2,094.77	138.142	CC, ES
Guttersen C28-725 - Guttersen C28-725 - Plan #1	8,300.00	6,337.27	3,865.99	3,816.53	78.154	SF
Guttersen C28-735 - Guttersen C28-735 - Plan #1	2,200.00	2,190.00	2,087.47	2,072.20	136.696	CC, ES
Guttersen C28-735 - Guttersen C28-735 - Plan #1	6,800.00	7,371.97	3,155.00	3,106.04	64.446	SF
Guttersen C28-745 - Guttersen C28-745 - Plan #1	2,200.00	2,189.00	2,064.93	2,049.66	135.252	CC
Guttersen C28-745 - Guttersen C28-745 - Plan #1	2,300.00	2,333.48	2,065.70	2,049.60	128.286	ES
Guttersen C28-745 - Guttersen C28-745 - Plan #1	6,550.00	7,409.48	2,467.28	2,418.88	50.978	SF
Guttersen C28-750 - Guttersen C28-750 - Plan #1	2,701.92	3,051.98	2,038.78	2,019.11	103.641	CC, ES
Guttersen C28-750 - Guttersen C28-750 - Plan #1	6,750.00	7,508.40	2,186.74	2,136.72	43.713	SF
Guttersen C28-755 - Guttersen C28-755 - Plan #1	2,200.00	2,198.00	174.71	159.41	11.419	CC, ES
Guttersen C28-755 - Guttersen C28-755 - Plan #1	2,300.00	2,292.33	177.11	161.14	11.093	SF
Guttersen C28-765 - Guttersen C28-765 - Plan #1	2,200.00	2,198.00	164.24	148.94	10.735	CC, ES
Guttersen C28-765 - Guttersen C28-765 - Plan #1	2,300.00	2,292.81	166.41	150.44	10.423	SF
Guttersen C28-770 - Guttersen C28-770 - Plan #1	2,200.00	2,198.00	156.55	141.25	10.232	CC, ES
Guttersen C28-770 - Guttersen C28-770 - Plan #1	2,400.00	2,388.46	164.08	147.48	9.883	SF
Guttersen C28-775 - Guttersen C28-775 - Plan #1	2,200.00	2,199.00	151.54	136.24	9.902	CC, ES
Guttersen C28-775 - Guttersen C28-775 - Plan #1	2,400.00	2,390.58	157.65	141.04	9.488	SF
Guttersen C28-785 - Guttersen C28-785 - Plan #1	7,012.66	7,229.30	69.93	19.31	1.382	Level 3, CC, ES, SF
GUTTERSEN D #03-30D - Wellbore #1 - No Surveys	2,200.00	2,159.00	560.08	468.07	6.087	CC
GUTTERSEN D #03-30D - Wellbore #1 - No Surveys	2,300.00	2,258.98	561.75	465.38	5.830	ES
GUTTERSEN D #03-30D - Wellbore #1 - No Surveys	2,883.39	2,835.92	637.94	516.51	5.253	SF
Guttersen D09-721 - Guttersen D09-721 - Plan #1	2,200.00	2,197.00	2,083.84	2,068.55	136.235	CC, ES
Guttersen D09-721 - Guttersen D09-721 - Plan #1	17,505.70	17,566.03	4,205.89	4,020.99	22.747	SF
Guttersen D09-745 - Guttersen D09-745 - Plan #1	2,200.00	2,205.00	2,061.24	2,045.91	134.505	CC, ES
Guttersen D09-745 - Guttersen D09-745 - Plan #1	17,505.70	17,384.45	2,608.79	2,424.51	14.156	SF
Guttersen D09-750 - Guttersen D09-750 - Plan #1	2,711.08	3,067.69	2,007.23	1,987.40	101.221	CC, ES
Guttersen D09-750 - Guttersen D09-750 - Plan #1	17,505.70	17,553.90	2,285.01	2,099.81	12.338	SF
Guttersen D09-755 - Guttersen D09-755 - Plan #1	2,200.00	2,199.00	89.86	74.56	5.872	CC, ES
Guttersen D09-755 - Guttersen D09-755 - Plan #1	2,300.00	2,295.88	93.26	77.28	5.835	SF
Guttersen D09-765 - Guttersen D09-765 - Plan #1	2,200.00	2,200.00	67.54	52.23	4.412	CC, ES
Guttersen D09-765 - Guttersen D09-765 - Plan #1	2,300.00	2,300.02	69.28	53.27	4.326	SF
Guttersen D09-770 - Guttersen D09-770 - Plan #1	2,200.00	2,200.00	44.93	29.63	2.935	CC, ES
Guttersen D09-770 - Guttersen D09-770 - Plan #1	2,300.00	2,300.02	46.68	30.66	2.915	SF
Guttersen D09-775 - Guttersen D09-775 - Plan #1	2,200.00	2,200.00	22.33	7.02	1.459	Level 3, CC, ES, SF
LINDSAY #33-1 - LINDSAY #33-1 OH - As-Drilled	1,129.30	1,092.33	1,827.83	1,820.36	244.817	CC
LINDSAY #33-1 - LINDSAY #33-1 OH - As-Drilled	2,200.00	2,155.35	1,831.54	1,816.53	122.053	ES
LINDSAY #33-1 - LINDSAY #33-1 OH - As-Drilled	6,850.00	6,643.88	2,830.31	2,782.95	59.760	SF
LINDSAY #33-3 - Wellbore #1 - No Surveys	2,200.00	2,166.00	2,883.13	2,790.84	31.239	CC
LINDSAY #33-3 - Wellbore #1 - No Surveys	2,700.00	2,663.47	2,892.88	2,778.95	25.393	ES
LINDSAY #33-3 - Wellbore #1 - No Surveys	6,600.00	6,445.64	3,280.34	3,000.56	11.725	SF
LINDSAY #33-4 - Wellbore #1 - No Surveys	2,200.00	2,166.00	3,392.38	3,300.08	36.756	CC
LINDSAY #33-4 - Wellbore #1 - No Surveys	2,400.00	2,365.84	3,396.41	3,295.43	33.635	ES
LINDSAY #33-4 - Wellbore #1 - No Surveys	6,650.00	6,488.75	4,086.70	3,805.24	14.520	SF
LINDSAY #33-5 - Wellbore #1 - No Surveys	2,200.00	2,151.00	2,390.82	2,299.13	26.074	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 D09-785
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4755.00ft
<b>Reference Site:</b>	C Section 33	<b>MD Reference:</b>	Well @ 4755.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersten D09-785	<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>	Guttersten D09-785	<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
C Section 33						
LINDSAY #33-5 - Wellbore #1 - No Surveys	2,400.00	2,350.84	2,396.38	2,296.00	23.874	ES
LINDSAY #33-5 - Wellbore #1 - No Surveys	6,650.00	6,473.75	3,255.06	2,974.35	11.596	SF
LINDSAY #33-6 - Wellbore #1 - No Surveys	2,200.00	1,774.00	1,604.58	1,527.96	20.944	CC
LINDSAY #33-6 - Wellbore #1 - No Surveys	2,500.00	2,073.45	1,610.30	1,520.67	17.967	ES
LINDSAY #33-6 - Wellbore #1 - No Surveys	6,500.00	5,962.82	2,145.83	1,885.89	8.255	SF
LINDSAY #33-7 - Wellbore #1 - No Surveys	2,200.00	2,174.00	4,187.03	4,094.42	45.210	CC
LINDSAY #33-7 - Wellbore #1 - No Surveys	2,883.39	2,850.92	4,200.86	4,078.78	34.413	ES
LINDSAY #33-7 - Wellbore #1 - No Surveys	6,650.00	6,503.25	4,522.44	4,240.12	16.019	SF
LINDSAY #33-8 - Wellbore #1 - No Surveys	2,200.00	2,177.00	4,538.00	4,445.27	48.936	CC
LINDSAY #33-8 - Wellbore #1 - No Surveys	2,500.00	2,476.45	4,544.90	4,439.15	42.979	ES
LINDSAY #33-8 - Wellbore #1 - No Surveys	6,750.00	6,580.05	5,162.47	4,876.97	18.082	SF
LINDSAY #C33-10 - Wellbore #1 - No Surveys	5,438.67	5,349.85	4,223.35	3,991.64	18.226	CC
LINDSAY #C33-10 - Wellbore #1 - No Surveys	6,350.00	6,235.36	4,229.24	3,958.55	15.623	ES
LINDSAY #C33-10 - Wellbore #1 - No Surveys	6,750.00	6,606.95	4,369.38	4,082.46	15.228	SF
LINDSAY #C33-11 - LINDSAY #C33-11 OH - As-Drilled	4,481.86	4,338.81	2,916.42	2,885.42	94.054	CC
LINDSAY #C33-11 - LINDSAY #C33-11 OH - As-Drilled	4,700.00	4,538.10	2,917.58	2,885.03	89.629	ES
LINDSAY #C33-11 - LINDSAY #C33-11 OH - As-Drilled	6,550.00	6,432.46	2,980.02	2,933.62	64.230	SF
LINDSAY #C33-12 - Wellbore #1 - No Surveys	5,638.02	5,530.56	1,549.37	1,309.64	6.463	CC
LINDSAY #C33-12 - Wellbore #1 - No Surveys	6,327.30	6,200.32	1,557.90	1,288.71	5.787	ES
LINDSAY #C33-12 - Wellbore #1 - No Surveys	6,450.00	6,318.67	1,572.93	1,298.54	5.732	SF
LINDSAY #C33-13 - LINDSAY #C33-13 OH - As-Drilled	5,973.42	5,857.85	241.12	198.97	5.722	CC
LINDSAY #C33-13 - LINDSAY #C33-13 OH - As-Drilled	6,000.00	5,883.72	241.19	198.86	5.698	ES
LINDSAY #C33-13 - LINDSAY #C33-13 OH - As-Drilled	6,200.00	6,081.01	245.77	202.01	5.617	SF
LINDSAY #C33-14 - Wellbore #1 - No Surveys	2,200.00	2,176.00	5,203.60	5,110.91	56.138	CC
LINDSAY #C33-14 - Wellbore #1 - No Surveys	2,400.00	2,375.84	5,208.03	5,106.65	51.372	ES
LINDSAY #C33-14 - Wellbore #1 - No Surveys	6,800.00	6,615.74	6,007.85	5,720.92	20.938	SF
LINDSAY #C33-15 - Wellbore #1 - No Surveys	2,200.00	2,162.00	4,234.26	4,142.32	46.058	CC
LINDSAY #C33-15 - Wellbore #1 - No Surveys	2,400.00	2,361.84	4,239.63	4,139.01	42.136	ES
LINDSAY #C33-15 - Wellbore #1 - No Surveys	6,800.00	6,601.74	5,139.15	4,853.07	17.964	SF
LINDSAY #C33-16 - Wellbore #1 - No Surveys	2,200.00	2,149.00	3,154.19	3,062.57	34.429	CC
LINDSAY #C33-16 - Wellbore #1 - No Surveys	2,300.00	2,248.98	3,155.93	3,059.97	32.887	ES
LINDSAY #C33-16 - Wellbore #1 - No Surveys	7,050.00	6,729.13	4,227.69	3,935.74	14.481	SF
LINDSAY #C33-9 - Wellbore #1 - No Surveys	2,200.00	2,144.00	3,510.65	3,419.24	38.404	CC
LINDSAY #C33-9 - Wellbore #1 - No Surveys	2,300.00	2,243.98	3,512.24	3,416.48	36.677	ES
LINDSAY #C33-9 - Wellbore #1 - No Surveys	6,850.00	6,617.83	4,524.77	4,237.78	15.766	SF
LINDSAY C #33-17 - Wellbore #1 - No Surveys	2,200.00	2,175.00	4,194.92	4,102.27	45.275	CC
LINDSAY C #33-17 - Wellbore #1 - No Surveys	2,400.00	2,374.84	4,199.02	4,097.68	41.436	ES
LINDSAY C #33-17 - Wellbore #1 - No Surveys	6,750.00	6,578.05	4,940.76	4,655.44	17.317	SF
LINDSAY C #33-18 - Wellbore #1 - As-Drilled	1,173.84	1,159.89	3,421.63	3,406.26	222.564	CC
LINDSAY C #33-18 - Wellbore #1 - As-Drilled	1,300.00	1,241.00	3,422.45	3,405.55	202.508	ES
LINDSAY C #33-18 - Wellbore #1 - As-Drilled	6,600.00	6,562.84	4,166.35	4,046.95	34.896	SF
LINDSAY C #33-19 - Wellbore #1 - No Surveys	2,973.77	2,947.75	3,446.94	3,320.67	27.298	CC
LINDSAY C #33-19 - Wellbore #1 - No Surveys	5,800.00	5,706.05	3,511.03	3,263.71	14.196	ES
LINDSAY C #33-19 - Wellbore #1 - No Surveys	6,600.00	6,462.64	3,607.77	3,327.15	12.856	SF
LINDSAY C #33-20 - Wellbore #1 - No Surveys	2,783.34	2,758.32	1,992.61	1,874.60	16.885	CC
LINDSAY C #33-20 - Wellbore #1 - No Surveys	4,300.00	4,232.42	2,024.28	1,841.69	11.086	ES
LINDSAY C #33-20 - Wellbore #1 - No Surveys	6,500.00	6,367.82	2,198.39	1,922.01	7.954	SF
LINDSAY C #33-21 - Wellbore #1 - No Surveys	2,200.00	2,162.00	2,329.24	2,237.11	25.281	CC
LINDSAY C #33-21 - Wellbore #1 - No Surveys	2,400.00	2,361.84	2,333.02	2,232.20	23.141	ES
LINDSAY C #33-21 - Wellbore #1 - No Surveys	6,550.00	6,403.10	2,976.72	2,699.03	10.720	SF
LINDSAY C #33-22 - Wellbore #1 - No Surveys	2,200.00	2,159.00	3,200.10	3,108.09	34.779	CC
LINDSAY C #33-22 - Wellbore #1 - No Surveys	2,400.00	2,358.84	3,205.69	3,104.99	31.835	ES
LINDSAY C #33-22 - Wellbore #1 - No Surveys	6,750.00	6,562.05	4,105.18	3,820.64	14.427	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 D09-785
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4755.00ft
<b>Reference Site:</b>	C Section 33	<b>MD Reference:</b>	Well @ 4755.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersen D09-785	<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>	Guttersen D09-785	<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
C Section 33						
LINDSAY C #33-23 - Wellbore #1 - No Surveys	2,200.00	2,148.00	2,598.29	2,506.72	28.374	CC
LINDSAY C #33-23 - Wellbore #1 - No Surveys	2,300.00	2,247.98	2,599.96	2,504.04	27.105	ES
LINDSAY C #33-23 - Wellbore #1 - No Surveys	6,850.00	6,621.83	3,629.10	3,341.94	12.638	SF
LINDSAY C #33-24 - Wellbore #1 - No Surveys	2,200.00	2,159.00	1,422.98	1,330.96	15.465	CC
LINDSAY C #33-24 - Wellbore #1 - No Surveys	2,300.00	2,258.98	1,424.43	1,328.07	14.782	ES
LINDSAY C #33-24 - Wellbore #1 - No Surveys	6,550.00	6,406.10	2,286.72	2,009.08	8.236	SF
LINDSAY C #33-25 - Wellbore #1 - No Surveys	2,763.39	2,730.76	770.52	653.67	6.595	CC
LINDSAY C #33-25 - Wellbore #1 - No Surveys	3,400.00	3,349.91	784.60	640.69	5.452	ES
LINDSAY C #33-25 - Wellbore #1 - No Surveys	6,327.30	6,205.68	1,139.62	870.64	4.237	SF
D Section 03						
Becca D03-32D - Wellbore #1 - Wellbore #1- As Drilled	9,730.13	6,915.11	4,786.95	4,726.90	79.713	CC, ES
Becca D03-32D - Wellbore #1 - Wellbore #1- As Drilled	12,300.00	6,895.18	5,433.12	5,353.61	68.339	SF



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

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersen D09-785
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4755.00ft
<b>Reference Site:</b>	C Section 33	<b>MD Reference:</b>	Well @ 4755.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersen D09-785	<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>	Guttersen D09-785	<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 04						
Burghart D04-22 - Wellbore #1 - Wellbore #1- As Drilled	9,578.42	6,792.56	3,557.07	3,499.12	61.377	CC
Burghart D04-22 - Wellbore #1 - Wellbore #1- As Drilled	9,600.00	6,792.27	3,557.14	3,499.09	61.279	ES
Burghart D04-22 - Wellbore #1 - Wellbore #1- As Drilled	10,300.00	6,782.63	3,629.51	3,568.66	59.647	SF
Gittlein Blue D04-08 - Wellbore #1 - Wellbore #1- As Drill	1,908.73	1,861.77	3,953.56	3,940.62	305.445	CC
Gittlein Blue D04-08 - Wellbore #1 - Wellbore #1- As Drill	2,000.00	1,933.93	3,953.77	3,940.25	292.392	ES
Gittlein Blue D04-08 - Wellbore #1 - Wellbore #1- As Drill	10,200.00	6,749.04	4,279.06	4,219.44	71.779	SF
GITTLEIN D #04-24(PR) - GITTLEIN D #04-24 - No Surv	11,122.56	6,799.00	2,140.16	1,960.04	11.882	CC, ES
GITTLEIN D #04-24(PR) - GITTLEIN D #04-24 - No Surv	11,200.00	6,799.00	2,141.56	1,961.12	11.869	SF
Gittlein D #04-33(PR) - Gittlein D #04-33 - No Surveys	11,114.07	6,803.00	154.17	-25.97	0.856	Level 1, CC, ES, SF
GUTTERSEN D #04-32(PR) - GUTTERSEN D #04-32 -	9,606.86	6,825.00	217.91	46.84	1.274	Level 3, CC, ES, SF
Guttersen D 04-18(PR) - Guttersen D 04-18 - Wellbore #	8,425.16	6,783.28	1,945.58	1,904.20	47.018	CC, ES
Guttersen D 04-18(PR) - Guttersen D 04-18 - Wellbore #	8,600.00	6,783.01	1,953.42	1,911.63	46.743	SF
Guttersen D 04-21(SI) - Guttersen D 04-21 - Wellbore #1	9,890.32	6,799.18	2,418.35	2,368.87	48.877	CC
Guttersen D 04-21(SI) - Guttersen D 04-21 - Wellbore #1	9,900.00	6,799.01	2,418.37	2,368.86	48.840	ES
Guttersen D 04-21(SI) - Guttersen D 04-21 - Wellbore #1	10,200.00	6,793.75	2,438.09	2,387.53	48.219	SF
Guttersen D03-33D - Wellbore #1 - Wellbore #1- As Drill	10,922.47	6,839.31	4,674.75	4,604.90	66.930	CC, ES
Guttersen D03-33D - Wellbore #1 - Wellbore #1- As Drill	12,000.00	6,844.85	4,797.33	4,723.07	64.603	SF
Guttersen D04-30D - Plan B - Plan B	7,097.58	6,848.31	487.50	439.23	10.099	CC, ES
Guttersen D04-30D - Plan B - Plan B	7,100.00	6,849.10	487.51	439.23	10.098	SF
Guttersen D04-31D - Plan B - Plan B	8,465.73	7,022.28	469.09	411.01	8.077	CC, ES
Guttersen D04-31D - Plan B - Plan B	8,500.00	7,021.12	470.34	411.65	8.014	SF
Guttersen D04-69HN - Original Drilling - Original Drilling	6,800.00	6,655.06	193.19	148.41	4.315	SF
Guttersen D04-69HN - Original Drilling - Original Drilling	6,894.41	6,682.69	177.79	139.07	4.592	CC, ES
Karch Blue D04-02 - Wellbore #1 - Wellbore #1- As Drille	449.99	408.20	2,216.47	2,213.84	841.412	CC
Karch Blue D04-02 - Wellbore #1 - Wellbore #1- As Drille	500.00	442.86	2,216.63	2,213.69	755.300	ES
Karch Blue D04-02 - Wellbore #1 - Wellbore #1- As Drille	8,300.00	6,652.52	3,035.10	2,984.58	60.075	SF
Karch Blue D04-07 - Wellbore #1 - Wellbore #1- As Drille	9,186.32	6,741.21	2,856.14	2,800.62	51.441	CC
Karch Blue D04-07 - Wellbore #1 - Wellbore #1- As Drille	9,200.00	6,741.08	2,856.18	2,800.60	51.395	ES
Karch Blue D04-07 - Wellbore #1 - Wellbore #1- As Drille	9,600.00	6,737.27	2,885.94	2,828.98	50.663	SF
Karch D04-17 - Wellbore #1 - Wellbore #1- As Drilled	2,010.06	1,962.10	3,092.92	3,079.27	226.552	CC
Karch D04-17 - Wellbore #1 - Wellbore #1- As Drilled	2,201.50	2,154.81	3,092.93	3,077.92	206.048	ES
Karch D04-17 - Wellbore #1 - Wellbore #1- As Drilled	9,200.00	6,803.14	3,619.32	3,564.45	65.967	SF
MARIE #D4-11(PR) - MARIE #D4-11 - No Surveys	10,385.55	6,793.00	1,783.76	1,608.61	10.185	CC, ES
MARIE #D4-11(PR) - MARIE #D4-11 - No Surveys	10,400.00	6,793.00	1,783.81	1,608.62	10.182	SF
MARIE D #04-20(PR) - MARIE D #04-20 - No Surveys	9,715.14	6,803.00	928.70	757.45	5.423	CC, ES, SF
MARIE D #4-12(PR) - MARIE D #4-12 - No Surveys	10,413.15	6,805.00	352.38	176.82	2.007	CC, ES, SF
MARIE D #4-13 (PR) - MARIE D #4-13 - No Surveys	11,750.40	6,799.00	471.94	287.47	2.558	CC, ES, SF
MARIE D #4-14(PR) - MARIE D #4-14 - No Surveys	11,737.34	6,797.00	1,619.10	1,434.76	8.783	CC, ES
MARIE D #4-14(PR) - MARIE D #4-14 - No Surveys	11,800.00	6,797.00	1,620.31	1,435.77	8.780	SF
MARIE D #4-19 (SI) - MARIE D #4-19 - No Surveys	8,397.62	6,813.00	1,163.78	998.95	7.060	CC
MARIE D #4-19 (SI) - MARIE D #4-19 - No Surveys	8,400.00	6,813.00	1,163.78	998.95	7.060	ES, SF
MARIE D #4-25(PR) - MARIE D #4-25 - No Surveys	10,949.28	6,798.00	1,013.76	834.83	5.666	CC, ES, SF
MARIE D #4-3(SI) - MARIE D #4-3 - No Surveys	2,200.00	2,160.00	1,269.40	1,218.55	24.962	CC
MARIE D #4-3(SI) - MARIE D #4-3 - No Surveys	2,400.00	2,359.84	1,272.15	1,216.60	22.904	ES
MARIE D #4-3(SI) - MARIE D #4-3 - No Surveys	7,800.00	6,795.00	1,593.05	1,430.66	9.810	SF
MARIE D #4-4(SI) - MARIE D #4-4 - No Surveys	7,798.71	6,815.00	225.52	62.72	1.385	Level 3, CC, ES, SF
MARIE D #4-5(SI) - MARIE D #4-5 - No Surveys	9,098.29	6,810.00	251.47	83.46	1.497	Level 3, CC, ES, SF
MARIE D #4-6(SI) - MARIE D #4-6 - No Surveys	9,202.11	6,794.00	1,585.02	1,416.79	9.422	CC, ES, SF
Marie D04-09 - Wellbore #1 - Wellbore #1- As Drilled	10,351.23	6,829.56	4,191.20	4,128.38	66.727	CC, ES
Marie D04-09 - Wellbore #1 - Wellbore #1- As Drilled	15,300.00	15,300.00	6,485.05	6,383.00	63.548	SF
Marie D04-10 - Wellbore #1 - Wellbore #1- As Drilled	10,522.04	6,785.97	2,958.88	2,895.22	46.484	CC, ES
Marie D04-10 - Wellbore #1 - Wellbore #1- As Drilled	11,000.00	6,783.84	2,997.23	2,931.62	45.684	SF
Marie D04-15 - Wellbore #1 - Wellbore #1- As Drilled	11,711.90	6,818.97	2,918.53	2,846.71	40.640	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 Guttersen D09-785
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4755.00ft
<b>Reference Site:</b>	C Section 33	<b>MD Reference:</b>	Well @ 4755.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersen D09-785	<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>	Guttersen D09-785	<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 04						
Marie D04-15 - Wellbore #1 - Wellbore #1- As Drilled	12,100.00	6,815.27	2,944.22	2,870.71	40.052	SF
Marie D04-16 - Wellbore #1 - Wellbore #1- As Drilled	11,630.91	6,759.31	4,176.66	4,105.64	58.811	CC, ES
Marie D04-16 - Wellbore #1 - Wellbore #1- As Drilled	12,600.00	6,763.76	4,287.61	4,211.98	56.689	SF
Marie D04-23 - Wellbore #1 - Wellbore #1-As Drilled	11,038.59	6,770.11	3,563.63	3,496.65	53.207	CC, ES
Marie D04-23 - Wellbore #1 - Wellbore #1-As Drilled	11,700.00	6,771.08	3,624.49	3,554.51	51.793	SF
Marie D04-72-1HN - Original Drilling - Original Drilling - A	7,400.00	11,395.00	4,527.04	4,415.36	40.536	SF
Marie D04-72-1HN - Original Drilling - Original Drilling - A	12,233.93	5,817.00	4,408.04	4,338.53	63.419	CC, ES
Marie D04-73-1HN - Original Drilling - Original Drilling - A	5,974.31	11,120.00	3,700.84	3,597.50	35.810	CC
Marie D04-73-1HN - Original Drilling - Original Drilling - A	6,000.00	11,120.00	3,700.93	3,597.36	35.732	ES
Marie D04-73-1HN - Original Drilling - Original Drilling - A	7,613.57	11,120.00	3,716.15	3,605.76	33.662	SF
Marie D04-74-1HN - Original Drilling - Original Drilling - P	12,285.83	6,822.25	3,233.81	3,160.10	43.876	CC
Marie D04-74-1HN - Original Drilling - Original Drilling - P	12,300.00	6,822.27	3,233.84	3,160.06	43.830	ES
Marie D04-74-1HN - Original Drilling - Original Drilling - P	12,800.00	6,822.72	3,274.43	3,198.39	43.064	SF
Marie D04-74-1HN - Original Drilling - ST01 - ST-01- As	7,963.03	10,872.99	3,195.42	3,130.10	48.914	CC, ES
Marie D04-74-1HN - Original Drilling - ST01 - ST-01- As	13,000.00	13,000.00	3,373.04	3,298.54	45.278	SF
Two E Ranch 01-04 - Wellbore #1 - Wellbore #1- As Drill	1,832.62	1,781.70	3,064.49	3,052.10	247.252	CC
Two E Ranch 01-04 - Wellbore #1 - Wellbore #1- As Drill	2,200.00	2,138.03	3,065.49	3,050.53	204.990	ES
Two E Ranch 01-04 - Wellbore #1 - Wellbore #1- As Drill	8,600.00	6,797.54	3,959.63	3,907.43	75.849	SF

# Noble Energy, Inc.

## Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersten D09-785
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4755.00ft
<b>Reference Site:</b>	C Section 33	<b>MD Reference:</b>	Well @ 4755.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersten D09-785	<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>	Guttersten D09-785	<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 05						
BECKER #15-9I(PR) - Wellbore #1 - Gyro Surveys	10,990.64	6,813.55	3,115.26	3,048.34	46.554	CC
BECKER #15-9I(PR) - Wellbore #1 - Gyro Surveys	11,000.00	6,813.44	3,115.28	3,048.28	46.500	ES
BECKER #15-9I(PR) - Wellbore #1 - Gyro Surveys	11,800.00	6,804.09	3,218.67	3,145.95	44.258	SF
BECKER #5-13(PA) - Wellbore #1 - No Surveys	10,523.76	6,848.00	3,674.65	3,574.72	36.773	CC, ES
BECKER #5-13(PA) - Wellbore #1 - No Surveys	11,400.00	6,848.00	3,777.68	3,671.50	35.579	SF
BECKER #5-14(PA) - Wellbore #1 - Gyro Surveys	11,684.37	6,759.12	4,939.09	4,867.50	68.993	CC
BECKER #5-14(PA) - Wellbore #1 - Gyro Surveys	11,700.00	6,758.59	4,939.11	4,867.40	68.873	ES
BECKER #5-14(PA) - Wellbore #1 - Gyro Surveys	13,400.00	6,683.46	5,228.07	5,144.95	62.900	SF
BECKER #5-16(PA) - Wellbore #1 - Gyro Surveys	10,385.66	6,851.39	1,217.95	1,155.02	19.354	CC
BECKER #5-16(PA) - Wellbore #1 - Gyro Surveys	10,400.00	6,851.58	1,218.03	1,154.96	19.311	ES
BECKER #5-16(PA) - Wellbore #1 - Gyro Surveys	10,600.00	6,854.30	1,236.66	1,171.87	19.087	SF
BECKER #5-2(PA) - Wellbore #1 - Gyro Surveys	11,564.32	6,886.96	3,953.61	3,882.64	55.711	CC
BECKER #5-2(PA) - Wellbore #1 - Gyro Surveys	11,600.00	6,886.69	3,953.77	3,882.51	55.481	ES
BECKER #5-2(PA) - Wellbore #1 - Gyro Surveys	12,700.00	6,878.29	4,113.48	4,034.46	52.056	SF
BECKER #5-5(PA) - Wellbore #1 - Gyro Surveys	11,655.80	6,812.90	1,201.74	1,130.36	16.837	CC, ES
BECKER #5-5(PA) - Wellbore #1 - Gyro Surveys	11,800.00	6,811.61	1,210.36	1,137.56	16.626	SF
BECKER #5-8(PR) - Wellbore #1 - Gyro Surveys	10,840.12	6,900.00	4,818.70	4,752.54	72.839	CC
BECKER #5-8(PR) - Wellbore #1 - Gyro Surveys	10,900.00	6,900.00	4,819.07	4,752.45	72.341	ES
BECKER #5-8(PR) - Wellbore #1 - Gyro Surveys	12,600.00	6,900.00	5,130.01	5,052.09	65.834	SF
BECKER #6(SI) - Wellbore #1 - Gyro Surveys	10,963.05	6,745.85	1,800.61	1,733.77	26.936	CC, ES
BECKER #6(SI) - Wellbore #1 - Gyro Surveys	11,300.00	6,742.71	1,831.87	1,762.30	26.334	SF
Becker 5-1(PA) - Wellbore #1 - Gyro Surveys	10,433.26	6,832.51	2,421.36	2,358.00	38.215	CC, ES
Becker 5-1(PA) - Wellbore #1 - Gyro Surveys	11,000.00	6,826.98	2,486.79	2,419.27	36.828	SF
Becker 5-15(PA) - Wellbore #1 - Gyro Surveys	11,952.14	6,721.73	2,642.99	2,567.18	34.860	CC, ES
Becker 5-15(PA) - Wellbore #1 - Gyro Surveys	12,400.00	6,695.46	2,680.54	2,601.61	33.959	SF
Becker Ranch #5E-223 - Wellbore #1 - As Drilled	11,645.06	11,064.37	5,138.69	5,014.60	41.408	CC
Becker Ranch #5E-223 - Wellbore #1 - As Drilled	11,900.00	11,206.05	5,141.95	5,013.51	40.032	ES
Becker Ranch #5E-223 - Wellbore #1 - As Drilled	13,000.00	11,398.00	5,246.95	5,107.66	37.670	SF
Becker Ranch #5E-403 - As Drilled - As Drilled	10,768.47	10,387.72	5,412.82	5,305.08	50.239	CC
Becker Ranch #5E-403 - As Drilled - As Drilled	11,300.00	11,300.00	5,424.40	5,297.81	42.852	ES
Becker Ranch #5E-403 - As Drilled - As Drilled	13,100.00	11,599.00	5,550.16	5,405.51	38.367	SF
Becker Ranch #5J-103 - Wellbore #1 - As Drilled	8,367.96	7,703.14	4,449.89	4,390.94	75.483	CC
Becker Ranch #5J-103 - Wellbore #1 - As Drilled	8,900.00	8,192.00	4,455.17	4,387.83	66.167	ES
Becker Ranch #5J-103 - Wellbore #1 - As Drilled	10,200.00	8,438.00	4,598.36	4,521.23	59.618	SF
Becker Ranch #5J-203 - Wellbore #1 - Plan #1	11,970.13	11,568.80	4,152.87	4,057.13	43.375	CC
Becker Ranch #5J-203 - Wellbore #1 - Plan #1	12,000.00	11,568.80	4,152.98	4,056.96	43.251	ES
Becker Ranch #5J-203 - Wellbore #1 - Plan #1	12,900.00	11,568.80	4,255.70	4,153.00	41.436	SF
Becker Ranch #5J-303 - Wellbore #1 - As Drilled	11,976.97	11,473.00	4,480.95	4,343.95	32.709	CC
Becker Ranch #5J-303 - Wellbore #1 - As Drilled	12,000.00	11,473.00	4,481.01	4,343.84	32.668	ES
Becker Ranch #5J-303 - Wellbore #1 - As Drilled	12,600.00	11,473.00	4,524.05	4,383.38	32.160	SF
Becker Ranch #5J-323 - Wellbore #1 - As Drilled	11,965.89	11,430.00	3,833.00	3,697.14	28.214	CC
Becker Ranch #5J-323 - Wellbore #1 - As Drilled	12,000.00	11,430.00	3,833.15	3,696.96	28.146	ES
Becker Ranch #5J-323 - Wellbore #1 - As Drilled	12,500.00	11,430.00	3,870.03	3,730.03	27.643	SF
Becker Ranch #5J-323R - Wellbore #1 - Plan #1	11,345.65	10,827.47	3,753.60	3,666.88	43.285	CC
Becker Ranch #5J-323R - Wellbore #1 - Plan #1	11,400.00	10,850.83	3,753.82	3,666.52	42.998	ES
Becker Ranch #5J-323R - Wellbore #1 - Plan #1	12,800.00	11,454.00	3,912.20	3,811.02	38.665	SF
Becker Ranch #5J-343 - Wellbore #1 - As Drilled	11,953.38	11,500.00	4,800.59	4,664.89	35.375	CC
Becker Ranch #5J-343 - Wellbore #1 - As Drilled	12,000.00	11,500.00	4,800.82	4,664.72	35.275	ES
Becker Ranch #5J-343 - Wellbore #1 - As Drilled	12,700.00	11,500.00	4,858.31	4,717.62	34.532	SF
Becker Ranch #5M-203 - Wellbore #1 - Plan #1	11,950.31	11,268.00	2,880.60	2,784.90	30.103	CC
Becker Ranch #5M-203 - Wellbore #1 - Plan #1	12,000.00	11,268.00	2,881.02	2,784.84	29.953	ES
Becker Ranch #5M-203 - Wellbore #1 - Plan #1	12,500.00	11,268.00	2,932.57	2,832.58	29.327	SF
Becker Ranch #5M-243 - Wellbore #1 - Plan #1	11,960.16	11,282.50	3,491.59	3,396.77	36.825	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 D09-785
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4755.00ft
<b>Reference Site:</b>	C Section 33	<b>MD Reference:</b>	Well @ 4755.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersten D09-785	<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>	Guttersten D09-785	<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 05						
Becker Ranch #5M-243 - Wellbore #1 - Plan #1	12,000.00	11,282.50	3,491.81	3,396.65	36.694	ES
Becker Ranch #5M-243 - Wellbore #1 - Plan #1	12,600.00	11,282.50	3,549.74	3,450.45	35.751	SF
Becker Ranch #5M-303 - Wellbore #1 - Plan #1	11,956.67	11,462.20	3,160.57	3,065.62	33.286	CC
Becker Ranch #5M-303 - Wellbore #1 - Plan #1	12,000.00	11,462.20	3,160.87	3,065.56	33.163	ES
Becker Ranch #5M-303 - Wellbore #1 - Plan #1	12,500.00	11,462.20	3,206.93	3,108.36	32.533	SF
Becker Ranch #5M-323 - Wellbore #1 - Plan #1	11,946.25	11,315.70	2,465.63	2,370.66	25.962	CC, ES
Becker Ranch #5M-323 - Wellbore #1 - Plan #1	12,300.00	11,315.70	2,490.88	2,393.08	25.470	SF
Becker Ranch #5M-423 - Wellbore #1 - Plan #1	11,948.18	11,437.50	2,674.70	2,579.96	28.232	CC
Becker Ranch #5M-423 - Wellbore #1 - Plan #1	12,000.00	11,437.50	2,675.20	2,579.95	28.086	ES
Becker Ranch #5M-423 - Wellbore #1 - Plan #1	12,400.00	11,437.50	2,712.60	2,614.26	27.586	SF
Becker Ranch #5R-203 - Wellbore #1 - Plan #1	11,933.28	11,257.60	1,537.73	1,442.18	16.094	CC, ES
Becker Ranch #5R-203 - Wellbore #1 - Plan #1	12,100.00	11,257.60	1,546.74	1,449.61	15.925	SF
Becker Ranch #5R-243 - Wellbore #1 - Plan #1	11,943.88	11,231.80	2,230.82	2,135.92	23.508	CC, ES
Becker Ranch #5R-243 - Wellbore #1 - Plan #1	12,200.00	11,231.80	2,245.47	2,148.54	23.164	SF
Becker Ranch #5R-303 - Wellbore #1 - Plan #1	11,936.23	11,308.90	1,815.69	1,720.72	19.118	CC, ES
Becker Ranch #5R-303 - Wellbore #1 - Plan #1	12,100.00	11,308.90	1,823.06	1,726.85	18.948	SF
Becker Ranch #5R-323 - Wellbore #1 - Plan #1	11,931.34	11,332.80	1,324.20	1,229.34	13.958	CC, ES
Becker Ranch #5R-323 - Wellbore #1 - Plan #1	12,100.00	11,332.80	1,334.93	1,238.60	13.858	SF
Becker Ranch #5R-443 - Wellbore #1 - Plan #1	11,943.20	11,417.20	2,172.62	2,078.21	23.012	CC, ES
Becker Ranch #5R-443 - Wellbore #1 - Plan #1	12,200.00	11,417.20	2,187.74	2,091.32	22.688	SF
Becker Ranch #5U-243 - Wellbore #1 - Plan #1	11,923.54	11,243.60	965.19	870.09	10.149	CC, ES
Becker Ranch #5U-243 - Wellbore #1 - Plan #1	12,000.00	11,243.60	968.21	872.43	10.109	SF
Becker Ranch #5U-303 - Wellbore #1 - Plan #1	11,919.26	11,352.64	546.18	451.04	5.741	CC, ES, SF
Becker Ranch #5U-443 - Wellbore #1 - Plan #1	11,925.07	11,418.40	759.22	665.32	8.085	CC, ES
Becker Ranch #5U-443 - Wellbore #1 - Plan #1	12,000.00	11,407.70	763.32	668.82	8.078	SF
LDS #D08-18D(PR) - Wellbore #1 - MWD Surveys	13,762.36	7,304.08	2,909.70	2,809.00	28.894	CC, ES
LDS #D08-18D(PR) - Wellbore #1 - MWD Surveys	14,000.00	7,302.55	2,919.39	2,817.89	28.764	SF
LDS #D08-29(SI) - Wellbore #1 - Gyro Surveys	12,186.28	6,820.79	4,214.87	4,139.58	55.977	CC
LDS #D08-29(SI) - Wellbore #1 - Gyro Surveys	12,200.00	6,820.72	4,214.90	4,139.48	55.891	ES
LDS #D08-29(SI) - Wellbore #1 - Gyro Surveys	13,400.00	6,815.41	4,386.14	4,302.23	52.269	SF
LDS D08-28D(PR) - Wellbore #1 - MWD Surveys	12,268.08	6,944.81	3,209.93	3,132.79	41.612	CC
LDS D08-28D(PR) - Wellbore #1 - MWD Surveys	12,300.00	6,943.40	3,210.09	3,132.67	41.465	ES
LDS D08-28D(PR) - Wellbore #1 - MWD Surveys	13,100.00	6,917.83	3,315.86	3,232.45	39.754	SF
LDS D08-30D(SI) - Wellbore #1 - MWD Surveys	12,373.37	7,080.14	5,743.36	5,664.80	73.102	CC
LDS D08-30D(SI) - Wellbore #1 - MWD Surveys	12,600.00	12,600.00	5,747.86	5,649.61	58.505	ES
LDS D08-30D(SI) - Wellbore #1 - MWD Surveys	13,400.00	13,400.00	5,834.49	5,727.22	54.391	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 D09-785
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4755.00ft
<b>Reference Site:</b>	C Section 33	<b>MD Reference:</b>	Well @ 4755.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersten D09-785	<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>	Guttersten D09-785	<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 08						
Becker D17-715 - Wellbore #1 - Plan #1	17,505.70	12,451.01	699.80	545.53	4.536	CC, ES, SF
Becker D17-725 - Wellbore #1 - Plan #1	17,505.70	12,279.14	1,350.11	1,195.91	8.755	CC, ES, SF
Becker D17-730 - Wellbore #1 - Plan #1	12,275.39	7,206.55	1,689.26	1,609.58	21.200	CC
Becker D17-730 - Wellbore #1 - Plan #1	17,505.70	12,477.98	1,695.34	1,541.84	11.044	ES, SF
Becker D17-735 - Wellbore #1 - Plan #1	17,505.70	12,402.45	1,995.82	1,842.10	12.984	CC, ES, SF
Becker D17-745 - Wellbore #1 - Plan #1	12,014.76	6,612.36	2,610.67	2,533.57	33.860	CC
Becker D17-745 - Wellbore #1 - Plan #1	17,505.70	12,350.43	2,645.06	2,491.14	17.185	ES, SF
Becker D17-750 - Wellbore #1 - Plan #1	11,830.36	6,368.30	2,814.69	2,739.94	37.654	CC
Becker D17-750 - Wellbore #1 - Plan #1	11,900.00	6,406.17	2,815.44	2,739.91	37.276	ES
Becker D17-750 - Wellbore #1 - Plan #1	17,505.70	12,617.53	2,970.09	2,817.03	19.405	SF
Becker D17-755 - Wellbore #1 - Plan #1	17,505.70	12,609.95	3,291.92	3,138.76	21.493	CC, ES, SF
Becker D17-765 - Wellbore #1 - Plan #1	17,505.70	12,324.79	3,940.43	3,771.72	23.356	CC, ES, SF
Becker D17-770 - Wellbore #1 - Plan #1	17,505.70	12,458.28	4,265.52	4,096.99	25.310	CC, ES, SF
Becker D17-775 - Wellbore #1 - Plan #1	17,505.70	12,312.00	4,588.02	4,419.64	27.247	CC, ES, SF
Becker D17-785 - Wellbore #1 - Plan #1	12,193.46	6,828.72	5,232.75	5,155.07	67.361	CC
Becker D17-785 - Wellbore #1 - Plan #1	17,505.70	12,213.54	5,236.15	5,083.79	34.369	ES, SF
HSR-ALVIN DECHANT #12-8 (SI) - Wellbore #1 - No Su	15,659.84	6,842.00	4,826.69	4,689.15	35.092	CC
HSR-ALVIN DECHANT #12-8 (SI) - Wellbore #1 - No Su	15,700.00	6,842.00	4,826.86	4,688.95	35.001	ES
HSR-ALVIN DECHANT #12-8 (SI) - Wellbore #1 - No Su	16,600.00	6,842.00	4,917.40	4,772.72	33.987	SF
HSR-ALVIN DECHANT #13-8(SI) - Wellbore #1 - No Sur	17,245.29	6,831.00	4,900.38	4,750.48	32.693	CC
HSR-ALVIN DECHANT #13-8(SI) - Wellbore #1 - No Sur	17,300.00	6,831.00	4,900.68	4,750.29	32.587	ES
HSR-ALVIN DECHANT #13-8(SI) - Wellbore #1 - No Sur	17,505.70	6,831.00	4,907.29	4,755.13	32.250	SF
HSR-LDS #14-8(SI) - Wellbore #1 - No Surveys	16,716.72	6,822.00	3,763.67	3,618.02	25.841	CC, ES
HSR-LDS #14-8(SI) - Wellbore #1 - No Surveys	17,300.00	6,822.00	3,808.59	3,658.36	25.351	SF
HSR-LDS #15-8(SI) - Wellbore #1 - No Surveys	16,986.60	6,819.00	2,328.67	2,180.93	15.761	CC
HSR-LDS #15-8(SI) - Wellbore #1 - No Surveys	17,000.00	6,819.00	2,328.71	2,180.83	15.747	ES
HSR-LDS #15-8(SI) - Wellbore #1 - No Surveys	17,200.00	6,819.00	2,338.43	2,188.77	15.625	SF
HSR-LDS #16-8(SI) - Wellbore #1 - No Surveys	17,096.88	6,818.00	970.64	822.03	6.532	CC
HSR-LDS #16-8(SI) - Wellbore #1 - No Surveys	17,100.00	6,818.00	970.64	821.99	6.530	ES
HSR-LDS #16-8(SI) - Wellbore #1 - No Surveys	17,200.00	6,818.00	976.10	826.47	6.524	SF
HSR-LDS #3-8(SI) - Wellbore #1 - No Surveys	13,212.07	6,820.00	3,759.35	3,640.71	31.687	CC, ES
HSR-LDS #3-8(SI) - Wellbore #1 - No Surveys	14,000.00	6,820.00	3,841.03	3,716.39	30.817	SF
HSR-LDS #4-8(SI) - Wellbore 1 - No Surveys	13,369.06	6,845.00	4,896.78	4,776.75	40.796	CC
HSR-LDS #4-8(SI) - Wellbore 1 - No Surveys	13,400.00	6,845.00	4,896.87	4,776.58	40.706	ES
HSR-LDS #4-8(SI) - Wellbore 1 - No Surveys	14,500.00	6,845.00	5,025.68	4,897.22	39.122	SF
HSR-LDS #5-8(SI) - Wellbore #1 - No Surveys	14,521.83	6,838.00	5,055.69	4,926.98	39.279	CC
HSR-LDS #5-8(SI) - Wellbore #1 - No Surveys	14,600.00	6,838.00	5,056.29	4,926.90	39.076	ES
HSR-LDS #5-8(SI) - Wellbore #1 - No Surveys	15,700.00	6,838.00	5,191.15	5,053.72	37.773	SF
HSR-LDS #6-8(SI) - Wellbore #1 - No Surveys	14,456.96	6,818.00	3,654.87	3,526.83	28.545	CC
HSR-LDS #6-8(SI) - Wellbore #1 - No Surveys	14,500.00	6,818.00	3,655.12	3,526.69	28.459	ES
HSR-LDS #6-8(SI) - Wellbore #1 - No Surveys	15,100.00	6,818.00	3,711.01	3,577.93	27.885	SF
HSR-LDS #9-8(SI) - Wellbore #1 - No Surveys	15,538.12	6,813.00	1,016.99	880.64	7.459	CC, ES
HSR-LDS #9-8(SI) - Wellbore #1 - No Surveys	15,600.00	6,813.00	1,018.87	881.80	7.433	SF
HSR-LDS A #10-8(SI) - Wellbore #1 - No Surveys	15,820.03	6,817.00	2,248.18	2,109.61	16.224	CC, ES
HSR-LDS A #10-8(SI) - Wellbore #1 - No Surveys	16,100.00	6,817.00	2,265.55	2,124.58	16.071	SF
HSR-LDS A #11-8(SI) - Wellbore #1 - No Surveys	15,677.90	6,819.00	3,706.97	3,569.48	26.963	CC
HSR-LDS A #11-8(SI) - Wellbore #1 - No Surveys	15,700.00	6,819.00	3,707.03	3,569.34	26.923	ES
HSR-LDS A #11-8(SI) - Wellbore #1 - No Surveys	16,300.00	6,819.00	3,758.80	3,616.45	26.405	SF
LDS #18-8(SI) - Wellbore #1 - No Surveys	13,909.58	6,840.00	4,296.81	4,172.75	34.635	CC, ES
LDS #18-8(SI) - Wellbore #1 - No Surveys	14,800.00	6,840.00	4,388.10	4,257.27	33.542	SF
LDS #20-8(SI) - Wellbore #1 - No Surveys	16,444.52	6,816.00	1,672.38	1,528.93	11.658	CC, ES
LDS #20-8(SI) - Wellbore #1 - No Surveys	16,600.00	6,816.00	1,679.60	1,534.68	11.590	SF
LDS D #09-30(SI) - Wellbore #1 - No Surveys	12,609.16	6,807.00	549.75	435.68	4.819	CC, ES, SF

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

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

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersen D09-785
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4755.00ft
<b>Reference Site:</b>	C Section 33	<b>MD Reference:</b>	Well @ 4755.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersen D09-785	<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>	Guttersen D09-785	<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 08						
LDS D #09-31D(SI) - Wellbore #1 - No Surveys	12,633.58	6,807.00	551.74	437.49	4.829	CC, ES
LDS D #09-31D(SI) - Wellbore #1 - No Surveys	12,700.00	6,807.00	555.72	440.61	4.828	SF
RUBY RED #D #8-1D(PA) - Wellbore #1 - Gyro Surveys	13,436.79	6,786.64	1,397.22	1,312.85	16.560	CC, ES
RUBY RED #D #8-1D(PA) - Wellbore #1 - Gyro Surveys	13,600.00	6,785.48	1,406.72	1,320.78	16.368	SF
RUBY RED #D 8-7(PR) - Wellbore #1 - Gyro Surveys	14,499.14	6,823.29	2,486.78	2,394.26	26.880	CC
RUBY RED #D 8-7(PR) - Wellbore #1 - Gyro Surveys	14,500.00	6,823.28	2,486.78	2,394.25	26.877	ES
RUBY RED #D 8-7(PR) - Wellbore #1 - Gyro Surveys	14,900.00	6,820.56	2,518.88	2,423.10	26.300	SF
RUBY RED #D 8-8(PR) - Wellbore #1 - Gyro Surveys	14,497.46	6,820.50	839.27	746.85	9.081	CC
RUBY RED #D 8-8(PR) - Wellbore #1 - Gyro Surveys	14,500.00	6,820.47	839.27	746.81	9.077	ES
RUBY RED #D 8-8(PR) - Wellbore #1 - Gyro Surveys	14,600.00	6,819.38	845.51	752.00	9.042	SF
RUBY RED D8-2(PA) - Wellbore #1 - Gyro Surveys	12,955.41	6,824.43	2,576.34	2,495.49	31.867	CC
RUBY RED D8-2(PA) - Wellbore #1 - Gyro Surveys	13,000.00	6,824.24	2,576.72	2,495.45	31.706	ES
RUBY RED D8-2(PA) - Wellbore #1 - Gyro Surveys	13,400.00	6,822.59	2,614.41	2,529.98	30.963	SF
TWO E RANCHES #1(PA) - Wellbore #1 - Gyro Surveys	16,113.99	6,800.00	4,613.04	4,508.03	43.928	CC, ES
TWO E RANCHES #1(PA) - Wellbore #1 - Gyro Surveys	17,200.00	6,800.00	4,739.15	4,626.32	42.002	SF



# Noble Energy, Inc.

## Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersen D09-785
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4755.00ft
<b>Reference Site:</b>	C Section 33	<b>MD Reference:</b>	Well @ 4755.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersen D09-785	<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>	Guttersen D09-785	<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 09						
ART RED #D 9-14(PR) - ART RED #D 9-14 - No Surveys	17,102.46	6,821.00	1,726.55	1,500.97	7.654	CC, ES, SF
ART RED #D 9-3J(PA) - ART RED #D 9-3J - No Surveys	16,638.71	6,813.00	609.23	387.47	2.747	CC, ES, SF
ART RED #D 9-4J(PR) - ART RED #D 9-4J - No Surveys	15,950.17	6,811.00	3,836.17	3,619.85	17.734	CC, ES
ART RED #D 9-4J(PR) - ART RED #D 9-4J - No Surveys	16,300.00	6,811.00	3,852.09	3,633.89	17.654	SF
ART RED D #9-10(PR) - ART RED D #9-10 - No Surveys	15,599.66	6,817.00	2,984.41	2,770.70	13.965	CC
ART RED D #9-10(PR) - ART RED D #9-10 - No Surveys	15,600.00	6,817.00	2,984.41	2,770.70	13.965	ES
ART RED D #9-10(PR) - ART RED D #9-10 - No Surveys	15,800.00	6,817.00	2,991.13	2,776.42	13.931	SF
ART RED D #9-11(PR) - ART RED D #9-11 - No Surveys	15,668.27	6,809.00	1,611.49	1,397.41	7.527	CC, ES
ART RED D #9-11(PR) - ART RED D #9-11 - No Surveys	15,700.00	6,809.00	1,611.81	1,397.61	7.525	SF
Art Red D 9-16 (PR) - Wellbore #1 - Gyro Surveys	17,051.27	6,816.45	4,447.32	4,334.95	39.578	CC
Art Red D 9-16 (PR) - Wellbore #1 - Gyro Surveys	17,100.00	6,816.95	4,447.58	4,334.90	39.470	ES
Art Red D 9-16 (PR) - Wellbore #1 - Gyro Surveys	17,505.70	6,821.18	4,470.47	4,355.54	38.898	SF
FRONT RANGE #D09-20D(PR) - FRONT RANGE #D09	15,000.00	7,170.55	982.98	874.56	9.066	SF
FRONT RANGE #D09-20D(PR) - FRONT RANGE #D09	15,100.00	7,171.15	977.24	869.46	9.067	ES
FRONT RANGE #D09-20D(PR) - FRONT RANGE #D09	15,106.18	7,171.18	977.22	869.50	9.072	CC
FRONT RANGE #D09-25D(PR) - FRONT RANGE #D09	16,217.75	7,052.98	1,136.19	1,028.26	10.527	CC, ES, SF
FRONT RANGE #D09-32D(PR) - FRONT RANGE #D09	15,088.64	7,032.80	266.17	159.88	2.504	CC, ES
FRONT RANGE #D09-32D(PR) - FRONT RANGE #D09	15,100.00	7,032.79	266.41	159.89	2.501	SF
FRONT RANGE D #09-28(SI) - FRONT RANGE D #09-2	12,580.30	6,802.00	2,268.59	2,078.09	11.909	CC
FRONT RANGE D #09-28(SI) - FRONT RANGE D #09-2	12,600.00	6,802.00	2,268.67	2,078.08	11.903	ES
FRONT RANGE D #09-28(SI) - FRONT RANGE D #09-2	12,700.00	6,802.00	2,271.74	2,080.73	11.893	SF
FRONT RANGE D #09-33(PR) - FRONT RANGE D #09-	16,385.79	6,818.00	176.47	-43.40	0.803	Level 1, CC, ES, SF
FRONT RANGE D #16-29(SI) - FRONT RANGE D #16-2	17,505.70	6,800.01	869.71	763.74	8.207	CC, ES, SF
FRONT RANGE D #16-30(SI) - FRONT RANGE D #16-3	17,266.33	6,819.00	105.35	-121.48	0.464	Level 1, CC, ES, SF
GITTLEIN #18-9(PR) - GITTLEIN #18-9 - No Surveys	13,922.47	6,924.25	713.10	624.84	8.079	CC, ES, SF
GITTLEIN #D #9-7(PR) - GITTLEIN #D #9-7 - No Survey	14,471.80	6,765.00	2,767.44	2,563.48	13.569	CC
GITTLEIN #D #9-7(PR) - GITTLEIN #D #9-7 - No Survey	14,500.00	6,765.00	2,767.58	2,563.48	13.559	ES
GITTLEIN #D #9-7(PR) - GITTLEIN #D #9-7 - No Survey	14,600.00	6,765.00	2,770.41	2,565.81	13.541	SF
GITTLEIN WHITE #D 9-2(SI) - GITTLEIN WHITE #D 9-2	13,019.68	6,799.00	3,053.03	2,859.35	15.764	CC, ES
GITTLEIN WHITE #D 9-2(SI) - GITTLEIN WHITE #D 9-2	13,200.00	6,799.00	3,058.35	2,863.76	15.717	SF
GITTLEIN-UPRC #9-12(PA) - GITTLEIN-UPRC #9-12 - V	15,695.02	6,815.80	485.52	395.00	5.364	CC, ES, SF
GUTTERSEN #9-15(PR) - GUTTERSEN #9-15 - No Sur	16,973.52	6,812.00	2,942.57	2,718.20	13.114	CC
GUTTERSEN #9-15(PR) - GUTTERSEN #9-15 - No Sur	17,000.00	6,812.00	2,942.69	2,718.17	13.106	ES
GUTTERSEN #9-15(PR) - GUTTERSEN #9-15 - No Sur	17,100.00	6,812.00	2,945.29	2,720.25	13.088	SF
GUTTERSEN D #09-09(PR) - GUTTERSEN D #09-09 -	15,499.06	6,805.00	4,380.16	4,167.48	20.595	CC
GUTTERSEN D #09-09(PR) - GUTTERSEN D #09-09 -	15,500.00	6,805.00	4,380.16	4,167.47	20.594	ES
GUTTERSEN D #09-09(PR) - GUTTERSEN D #09-09 -	15,900.00	6,805.00	4,398.48	4,183.51	20.461	SF
GUTTERSEN D #09-21(PR) - GUTTERSEN D #09-21 -	15,119.67	6,809.00	2,324.27	2,114.45	11.077	CC, ES
GUTTERSEN D #09-21(PR) - GUTTERSEN D #09-21 -	15,200.00	6,809.00	2,325.66	2,115.46	11.064	SF
GUTTERSEN D #09-22(SI) - GUTTERSEN D #09-22 - N	15,030.40	6,812.00	3,576.62	3,367.42	17.097	CC, ES
GUTTERSEN D #09-22(SI) - GUTTERSEN D #09-22 - N	15,300.00	6,812.00	3,586.76	3,376.12	17.028	SF
GUTTERSEN D #09-24(PR) - GUTTERSEN D #09-24 -	16,288.07	6,821.00	2,424.66	2,205.49	11.063	CC
GUTTERSEN D #09-24(PR) - GUTTERSEN D #09-24 -	16,300.00	6,821.00	2,424.69	2,205.46	11.060	ES
GUTTERSEN D #09-24(PR) - GUTTERSEN D #09-24 -	16,400.00	6,821.00	2,427.24	2,207.56	11.049	SF
GUTTERSEN D #16-28(PR) - GUTTERSEN D #16-28 -	17,505.70	6,816.00	2,204.30	1,975.45	9.632	CC, ES, SF
Guttersen D09-27D - Wellbore #1 - Wellbore #1- As Drill	12,264.13	6,899.84	3,577.05	3,495.95	44.111	CC
Guttersen D09-27D - Wellbore #1 - Wellbore #1- As Drill	12,300.00	6,900.03	3,577.23	3,495.85	43.959	ES
Guttersen D09-27D - Wellbore #1 - Wellbore #1- As Drill	13,000.00	6,904.52	3,651.95	3,565.97	42.475	SF
Guttersen D10-30D - Wellbore #1 - Wellbore #1- As Drill	12,425.39	6,838.52	4,828.63	4,749.29	60.855	CC, ES
Guttersen D10-30D - Wellbore #1 - Wellbore #1- As Drill	13,400.00	6,837.23	4,926.01	4,842.38	58.906	SF
HSR TIM GITTLEIN #3-9(SI) - HSR TIM GITTLEIN #3-9	13,038.06	6,802.00	1,604.37	1,410.50	8.276	CC, ES
HSR TIM GITTLEIN #3-9(SI) - HSR TIM GITTLEIN #3-9	13,100.00	6,802.00	1,605.57	1,411.49	8.273	SF
HSR TIM GITTLEIN #4-9(SI) - HSR TIM GITTLEIN #4-9	13,195.62	6,804.00	433.49	238.41	2.222	CC, ES, SF

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

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

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersen D09-785
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4755.00ft
<b>Reference Site:</b>	C Section 33	<b>MD Reference:</b>	Well @ 4755.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersen D09-785	<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>	Guttersen D09-785	<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 09						
HSR TIM GITTLEIN #5-9(SI) - HSR TIM GITTLEIN #5-9	14,232.02	6,806.00	438.64	235.70	2.161	CC, ES, SF
HSR TIM GITTLEIN #6-9(SI) - HSR TIM GITTLEIN #6-9	14,136.30	6,805.00	1,617.46	1,415.27	8.000	CC, ES
HSR TIM GITTLEIN #6-9(SI) - HSR TIM GITTLEIN #6-9	14,200.00	6,805.00	1,618.71	1,416.31	7.998	SF
KARCH WHITE #D 9-1(SI) - KARCH WHITE #D 9-1 - No	13,015.19	6,797.00	4,205.91	4,012.31	21.725	CC, ES
KARCH WHITE #D 9-1(SI) - KARCH WHITE #D 9-1 - No	13,500.00	6,797.00	4,233.76	4,037.54	21.576	SF
KARCH WHITE #D 9-8(PR) - KARCH WHITE #D 9-8 - N	14,547.93	6,800.00	4,158.80	3,953.56	20.263	CC, ES
KARCH WHITE #D 9-8(PR) - KARCH WHITE #D 9-8 - N	15,000.00	6,800.00	4,183.30	3,975.59	20.141	SF
ROADHOUSE D #9-17(SI) - ROADHOUSE D #9-17 - No	13,676.93	6,801.00	3,620.30	3,421.67	18.226	CC
ROADHOUSE D #9-17(SI) - ROADHOUSE D #9-17 - No	13,700.00	6,801.00	3,620.37	3,421.60	18.214	ES
ROADHOUSE D #9-17(SI) - ROADHOUSE D #9-17 - No	14,000.00	6,801.00	3,634.68	3,434.35	18.143	SF

# Noble Energy, Inc.

## Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersen D09-785
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4755.00ft
<b>Reference Site:</b>	C Section 33	<b>MD Reference:</b>	Well @ 4755.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersen D09-785	<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>	Guttersen D09-785	<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 10						
Duncan D 10-6 (SI) - Wellbore #1 - No Surveys	13,909.42	6,833.00	6,521.02	6,185.54	19.437	CC, ES
Duncan D 10-6 (SI) - Wellbore #1 - No Surveys	14,600.00	6,833.00	6,557.49	6,217.69	19.298	SF
Guttersen State D15-27 - Wellbore #1 - Wellbore #1- As	17,411.06	6,852.25	8,939.64	8,824.26	77.478	CC
Guttersen State D15-27 - Wellbore #1 - Wellbore #1- As	17,505.70	6,852.82	8,940.14	8,824.08	77.027	ES, SF
Karch Blue D 10-07 (SI) - Wellbore #1 - Gyro Surveys	14,386.13	6,855.64	8,074.15	7,982.36	87.965	CC
Karch Blue D 10-07 (SI) - Wellbore #1 - Gyro Surveys	14,400.00	6,855.57	8,074.16	7,982.27	87.874	ES
Karch Blue D 10-07 (SI) - Wellbore #1 - Gyro Surveys	17,100.00	6,842.45	8,518.03	8,411.24	79.764	SF
Karch Blue D 10-08 (SI) - Wellbore #1 - Gyro Surveys	14,584.63	6,833.83	9,374.99	9,094.52	33.426	CC
Karch Blue D 10-08 (SI) - Wellbore #1 - Gyro Surveys	14,700.00	6,834.31	9,375.70	9,094.40	33.330	ES
Karch Blue D 10-08 (SI) - Wellbore #1 - Gyro Surveys	16,400.00	6,851.04	9,549.15	9,256.44	32.624	SF
Karch State D 10-22 (SI) - Wellbore #1 - No Surveys	14,946.22	6,854.00	8,768.00	8,423.79	25.473	CC
Karch State D 10-22 (SI) - Wellbore #1 - No Surveys	15,000.00	6,854.00	8,768.16	8,423.58	25.446	ES
Karch State D 10-22 (SI) - Wellbore #1 - No Surveys	16,300.00	6,854.00	8,871.89	8,518.94	25.136	SF
Spike D 10-10 (SI) - Wellbore #1 - No Surveys	15,737.45	6,858.00	8,282.08	7,931.50	23.624	CC
Spike D 10-10 (SI) - Wellbore #1 - No Surveys	15,800.00	6,858.00	8,282.31	7,931.29	23.595	ES
Spike D 10-10 (SI) - Wellbore #1 - No Surveys	16,900.00	6,858.00	8,363.27	8,005.19	23.355	SF
Spike ST GWS D 10-12 (SI) - Wellbore #1 - No Surveys	15,657.77	6,844.00	5,492.13	5,142.95	15.729	CC
Spike ST GWS D 10-12 (SI) - Wellbore #1 - No Surveys	15,700.00	6,844.00	5,492.29	5,142.83	15.716	ES
Spike ST GWS D 10-12 (SI) - Wellbore #1 - No Surveys	16,100.00	6,844.00	5,509.91	5,157.99	15.657	SF
Spike ST GWS D 10-14 (PR) - Wellbore #1 - Gyro Surve	17,136.21	6,859.76	6,885.05	6,771.92	60.859	CC
Spike ST GWS D 10-14 (PR) - Wellbore #1 - Gyro Surve	17,200.00	6,860.17	6,885.35	6,771.77	60.624	ES
Spike ST GWS D 10-14 (PR) - Wellbore #1 - Gyro Surve	17,505.70	6,862.13	6,894.96	6,779.35	59.644	SF
Spike ST GWS D 10-16 (PA) - Wellbore #1 - No Surveys	16,964.37	6,858.00	9,475.89	9,250.66	42.073	CC
Spike ST GWS D 10-16 (PA) - Wellbore #1 - No Surveys	17,000.00	6,858.00	9,475.96	9,250.47	42.026	ES
Spike ST GWS D 10-16 (PA) - Wellbore #1 - No Surveys	17,505.70	6,858.00	9,491.34	9,262.32	41.445	SF
Spike State D 10-21D (SI) - Wellbore #1 - Wellbore #1	15,183.67	6,974.29	7,616.76	7,518.14	77.231	CC
Spike State D 10-21D (SI) - Wellbore #1 - Wellbore #1	15,200.00	6,974.26	7,616.78	7,518.05	77.149	ES
Spike State D 10-21D (SI) - Wellbore #1 - Wellbore #1	17,505.70	6,970.18	7,962.84	7,851.90	71.779	SF
Spike State D 10-23 (SI) - Wellbore #1 - No Surveys	16,288.76	6,863.00	8,935.56	8,580.48	25.166	CC
Spike State D 10-23 (SI) - Wellbore #1 - No Surveys	16,400.00	6,863.00	8,936.25	8,580.39	25.112	ES
Spike State D 10-23 (SI) - Wellbore #1 - No Surveys	17,505.70	6,863.00	9,018.04	8,654.97	24.838	SF
Spike State GWS D 10-13J (PR) - Wellbore #1 - No Surv	16,182.95	6,852.00	6,142.48	5,788.74	17.364	CC
Spike State GWS D 10-13J (PR) - Wellbore #1 - No Surv	16,200.00	6,852.00	6,142.50	5,788.65	17.359	ES
Spike State GWS D 10-13J (PR) - Wellbore #1 - No Surv	16,800.00	6,852.00	6,173.40	5,815.81	17.264	SF
Spike State GWS D 10-15 (PA) - Wellbore #1 - No Surve	16,829.65	7,106.00	8,538.38	8,315.69	38.341	CC
Spike State GWS D 10-15 (PA) - Wellbore #1 - No Surve	16,900.00	7,106.00	8,538.67	8,315.48	38.256	ES
Spike State GWS D 10-15 (PA) - Wellbore #1 - No Surve	17,505.70	7,106.00	8,565.11	8,337.79	37.680	SF
Two E Ranch 2-10 (PR) - Wellbore #1 - No Surveys	12,927.25	6,809.00	5,673.39	5,346.22	17.341	CC, ES
Two E Ranch 2-10 (PR) - Wellbore #1 - No Surveys	13,500.00	6,809.00	5,702.23	5,371.63	17.248	SF
Two E Ranch 4-10 (SI) - Wellbore #1 - No Surveys	14,390.00	6,826.00	5,668.08	5,329.23	16.727	CC
Two E Ranch 4-10 (SI) - Wellbore #1 - No Surveys	14,400.00	6,826.00	5,668.09	5,329.18	16.724	ES
Two E Ranch 4-10 (SI) - Wellbore #1 - No Surveys	14,900.00	6,826.00	5,690.98	5,349.00	16.641	SF
Volley State D 10-13 (PR) - Wellbore #1 - Gyro Surveys	17,086.56	6,722.24	5,460.44	5,348.28	48.683	CC
Volley State D 10-13 (PR) - Wellbore #1 - Gyro Surveys	17,100.00	6,722.29	5,460.46	5,348.20	48.644	ES
Volley State D 10-13 (PR) - Wellbore #1 - Gyro Surveys	17,505.70	6,723.80	5,476.50	5,361.74	47.720	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 Gutttersen D09-785
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4755.00ft
<b>Reference Site:</b>	C Section 33	<b>MD Reference:</b>	Well @ 4755.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Gutttersen D09-785	<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>	Gutttersen D09-785	<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 16						
Diggen State D16-23 (SI) - Wellbore #1 - Gyro Surveys	17,505.70	6,841.35	5,480.19	5,387.55	59.154	CC, ES, SF
Diggin State D 16-07 (SI) - Wellbore #1 - No Surveys	17,505.70	6,858.00	3,626.82	3,411.02	16.806	CC, ES, SF
Diggin State D 16-19J (PR) - Wellbore #1 - No Surveys	17,505.70	6,817.00	1,815.69	1,620.47	9.301	CC, ES, SF
Diggin State D16-13 (PR) - Wellbore #1 - Gyro Surveys	17,505.70	6,810.03	4,774.65	4,719.08	85.932	CC, ES, SF
Gutttersen ST D 15-32 (SI) - Wellbore #1 - Gyro Surveys	17,505.70	6,858.05	5,629.50	5,521.88	52.307	CC, ES, SF
Gutttersen ST D 16-21 (SI) - Wellbore #1 - Gyro Surveys	17,505.70	6,842.31	3,749.78	3,659.08	41.342	CC, ES, SF
Gutttersen ST D 16-22D (SI) - Wellbore #1 - MWD Surve	17,505.70	6,977.55	4,478.26	4,371.36	41.890	CC, ES, SF
Gutttersen ST D 16-33 (SI) - Wellbore #1 - No Surveys	17,505.70	6,832.00	4,033.26	3,866.88	24.242	CC, ES, SF
Gutttersen State D 15-31 (PR) - Wellbore #1 - Gyro Surve	17,505.70	6,858.28	4,899.04	4,783.91	42.550	CC, ES, SF
Gutttersen State D 15-33 (SI) - Wellbore #1 - Gyro Survey	17,505.70	6,768.12	6,409.86	6,309.28	63.732	CC, ES, SF
Gutttersen State D 16-15X (PR) - Wellbore #1 - Gyro Sur	17,505.70	6,883.99	5,501.12	5,417.46	65.756	CC, ES, SF
Gutttersen State D 16-18 (SI) - Wellbore #1 - No Surveys	17,505.70	6,832.00	2,659.61	2,439.57	12.086	CC, ES, SF
Gutttersen State D 16-20 (SI) - Wellbore #1 - Gyro Survey	17,505.70	6,848.29	3,024.66	2,955.43	43.689	CC, ES, SF
Gutttersen State D 16-24 (SI) - Wellbore #1 - Gyro Survey	17,505.70	6,839.85	4,653.35	4,572.04	57.230	CC, ES, SF
Gutttersen State D 16-27 (PR) - Wellbore #1 - No Survey	17,505.70	6,828.00	3,580.09	3,351.00	15.627	CC, ES, SF
Gutttersen State D 16-31 (PR) - Wellbore #1 - No Survey	17,505.70	6,828.00	1,530.09	1,363.72	9.197	CC, ES, SF
Gutttersen State D 16-32D (SI) - Wellbore #1 - MWD Sur	17,505.70	7,028.44	2,729.57	2,675.03	50.052	CC, ES, SF
Gutttersen State D16-63-1HN - Original Drilling - Original	17,505.70	11,243.02	4,508.33	4,359.46	30.284	CC, ES, SF
Gutttersen State D16-65-1HN - Original Drilling - Original	17,505.70	11,090.02	3,209.71	3,063.15	21.901	CC, ES, SF
Spike ST GWS D 16-01 (SI) - Wellbore #1 - Gyro Survey	17,505.70	6,854.42	4,351.03	4,235.06	37.517	CC, ES, SF
Spike ST GWS D 16-02 (P&A) - Wellbore #1 - Gyro Surv	17,505.70	6,853.52	2,895.11	2,762.54	21.839	CC, ES, SF
Spike ST GWS D 16-03 (PR) - Wellbore #1 - No Surveys	17,505.70	6,826.00	1,818.08	1,595.34	8.162	CC, ES, SF
Spike ST GWS D 16-04 (SI) - Wellbore #1 - No Surveys	17,505.70	6,821.00	895.99	712.21	4.875	CC, ES, SF
Spike ST GWS D 16-05 (PR) - Wellbore #1 - Gyro Survey	17,505.70	6,832.57	2,212.98	2,155.01	38.172	CC, ES, SF
Spike ST GWS D 16-06 (SI) - Wellbore #1 - No Surveys	17,505.70	6,834.00	2,696.49	2,494.45	13.346	CC, ES, SF
Spike ST GWS D 16-08 (PR) - Wellbore #1 - Gyro Survey	17,505.70	6,864.79	4,957.35	4,846.94	44.898	CC, ES, SF
Spike ST GWS D 16-12 (PA) - Wellbore #1 - Gyro Survey	17,505.70	6,813.31	3,315.53	3,260.09	59.812	CC, ES, SF
Spike ST GWS D 16-14 (SI) - Wellbore #1 - No Surveys	17,505.70	6,867.00	5,299.10	5,116.25	28.979	CC, ES, SF
Spike ST GWS D 16-16 (SI) - Wellbore #1 - No Surveys	17,505.70	6,866.00	6,439.24	6,232.05	31.080	CC, ES, SF
Spike State D 16-10 (SI) - Wellbore #1 - Gyro Surveys	17,505.70	6,837.64	4,509.20	4,417.19	49.005	CC, ES, SF
Spike State D 16-11 (SI) - Wellbore #1 - Gyro Surveys	17,505.70	6,827.72	3,778.96	3,701.24	48.623	CC, ES, SF
Spike State D 16-9 (SI) - Wellbore #1 - Gyro Surveys	17,505.70	6,835.71	5,540.69	5,439.14	54.561	CC, ES, SF
Spike State D16-15 (P&A) - Wellbore #1 - Wellbore #1	17,505.70	6,971.26	5,568.12	5,473.24	58.686	CC, ES, SF
Spike State D16-99HZ - Original Drilling - Original Drilling	17,505.70	11,150.02	4,028.02	3,881.01	27.401	CC, ES, SF
Spike State GWS D 16-7J (PR) - Wellbore #1 - No Surve	17,505.70	6,851.00	3,854.68	3,628.64	17.053	CC, ES, SF
Spike State GWS D16-13J (PR) - Wellbore #1 - Gyro Su	17,505.70	6,796.71	4,283.94	4,221.57	68.681	CC, ES, SF

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

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersen D09-785
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4755.00ft
<b>Reference Site:</b>	C Section 33	<b>MD Reference:</b>	Well @ 4755.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersen D09-785	<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>	Guttersen D09-785	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to Well @ 4755.00ft

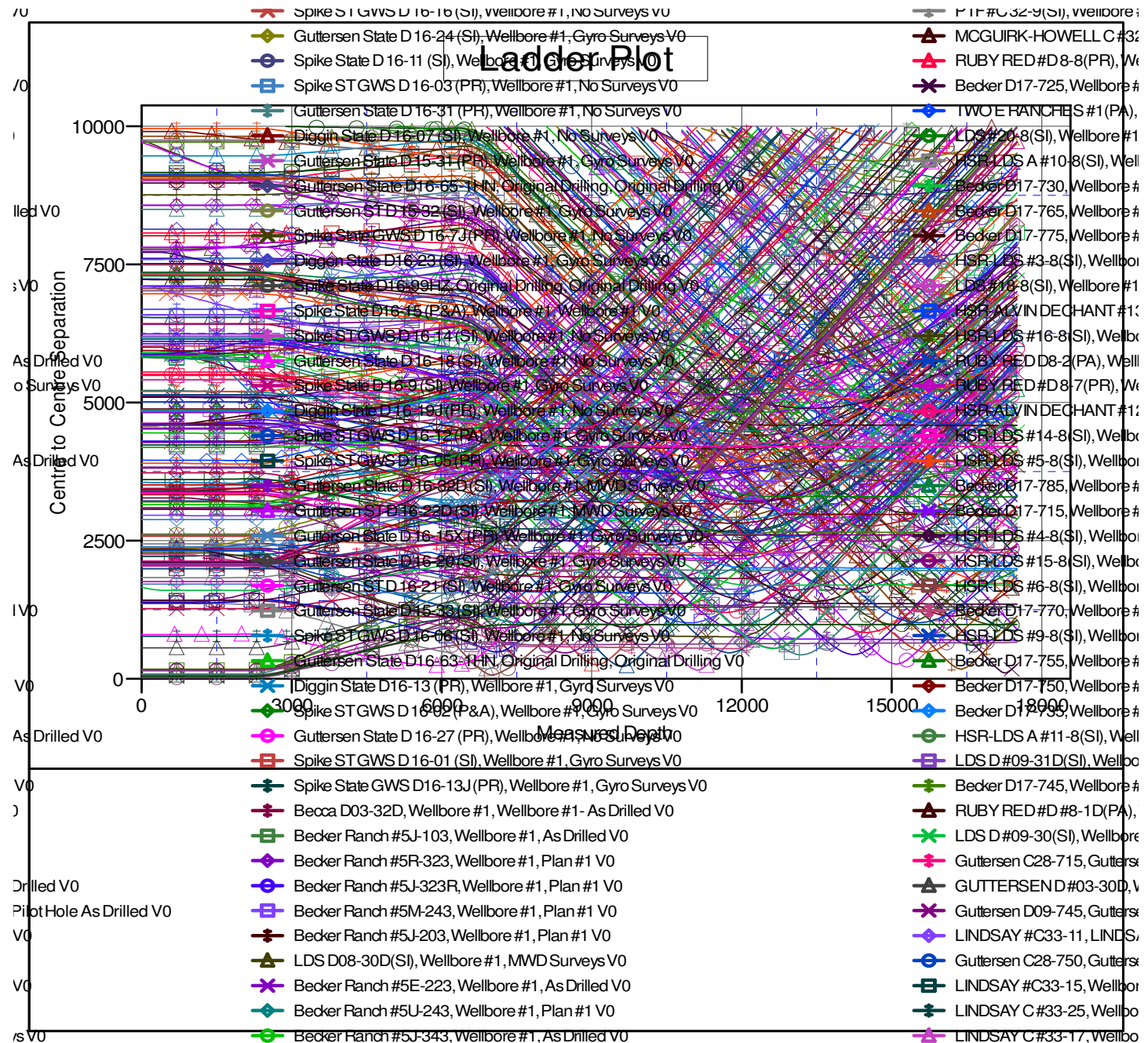
Coordinates are relative to: Guttersen D09-785

Offset Depths are relative to Offset Datum

Coordinate System is US State Plane 1983, Colorado Northern Zone

Central Meridian is -105.5000000

Grid Convergence at Surface is: 0.61°





## Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersen D09-785
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4755.00ft
<b>Reference Site:</b>	C Section 33	<b>MD Reference:</b>	Well @ 4755.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersen D09-785	<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>	Guttersen D09-785	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Coordinates are relative to: Guttersen D09-785

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.61°

