

Project: Mustang  
Site: DD Section 30  
Well: Gutteresen State DD30-755  
Wellbore: Gutteresen State DD30-755  
Design: Plan #2

# Northern Region - DJ Basin

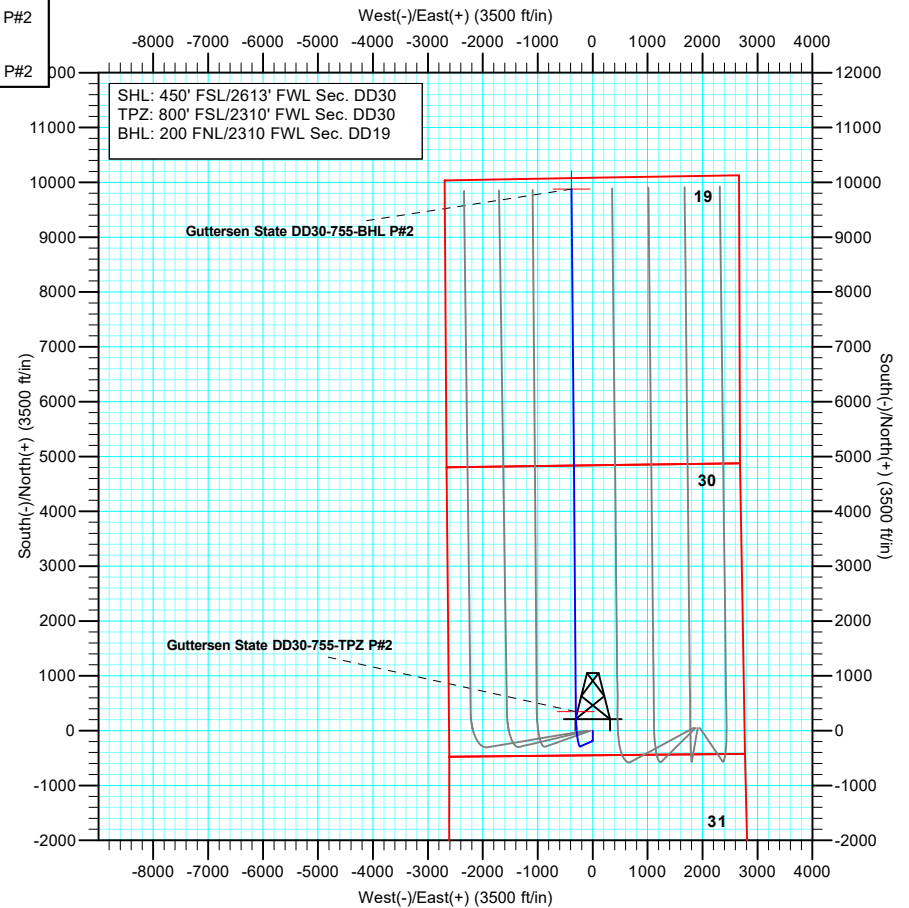
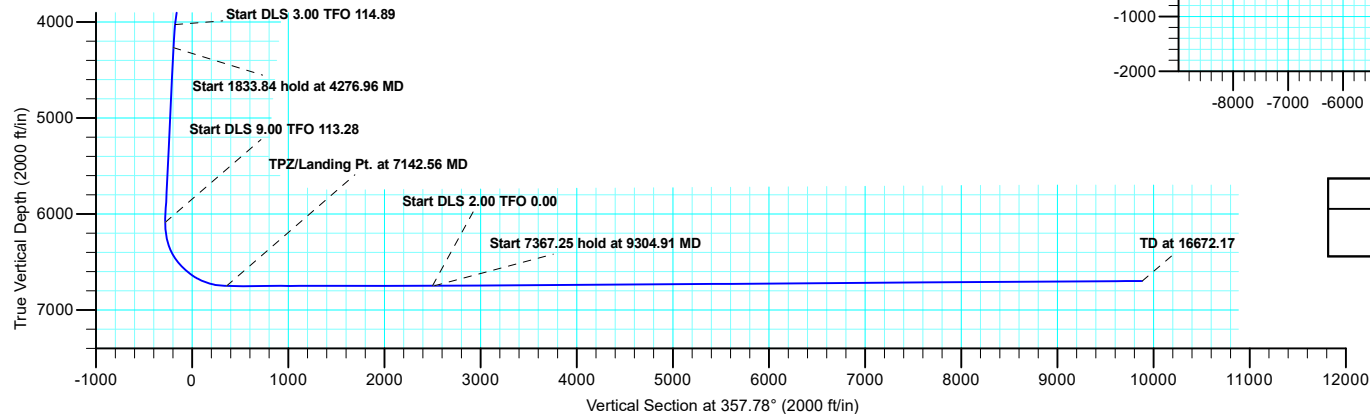
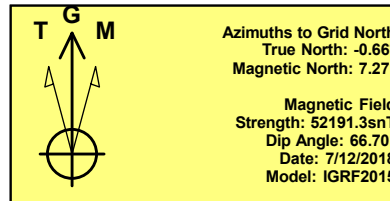
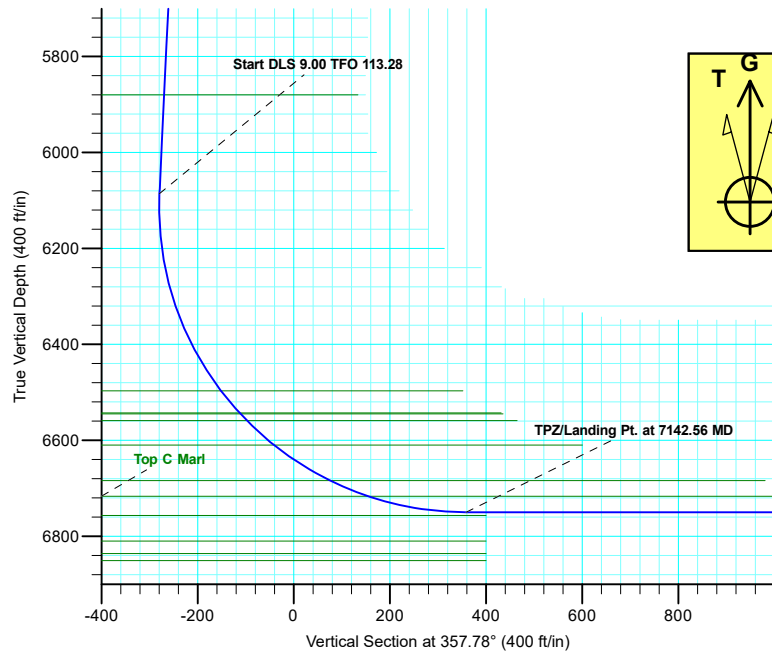
Geodetic System: US State Plane 1983  
Datum: North American Datum 1983  
Ellipsoid: GRS 1980  
Zone: Colorado Northern Zone  
System Datum: Mean Sea Level

## SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	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	2500.00	6.00	180.00	2499.45	-15.69	0.00	2.00	180.00	-15.68	
4	4035.00	6.00	180.00	4026.04	-176.14	0.00	0.00	0.00	-176.01	
5	4276.96	7.20	246.09	4266.70	-194.96	-13.88	3.00	114.89	-194.28	
6	6110.79	7.20	246.09	6086.07	-288.13	-224.07	0.00	0.00	-279.23	
7	7142.56	90.00	359.54	6750.00	347.05	-306.17	9.00	113.28	358.66	Gutteresen State DD30-755-TPZ P#2
8	9284.91	90.00	359.54	6750.00	2489.34	-323.44	0.00	0.00	2500.00	
9	9304.91	90.40	359.54	6749.93	2509.33	-323.60	2.00	0.00	2519.99	
10	16672.17	90.40	359.54	6698.50	9876.17	-383.00	0.00	0.00	9883.59	Gutteresen State DD30-755-BHL P#2

## WELL DETAILS: Gutteresen State DD30-755

+N/-S	+E/-W	Northing	Ground Level: Easting	4793.00 Latitude	Longitude	Slot
0.00	0.00	1313834.98	3284672.70	40.1903834	-104.4810021	



Plan: Plan #2 (Gutteresen State DD30-755/Gutteresen State DD30-755)

Created by: Shelly C. Peterkin Date: 8:51, August 12 2019

# **Northern Region - DJ Basin**

**Mustang**

**DD Section 30**

**Guttersen State DD30-755**

**Guttersen State DD30-755**

**Plan: Plan #2**

## **Standard Planning Report**

**12 August, 2019**

# Noble Energy, Inc.

## Planning Report

<b>Database:</b>	EDMP	<b>Local Co-ordinate Reference:</b>	Well Guttersen State DD30-755
<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	KB @ 4823.00ft
<b>Project:</b>	Mustang	<b>MD Reference:</b>	KB @ 4823.00ft
<b>Site:</b>	DD Section 30	<b>North Reference:</b>	Grid
<b>Well:</b>	Guttersen State DD30-755	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Guttersen State DD30-755		
<b>Design:</b>	Plan #2		

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

Site	DD Section 30				
Site Position:		Northing:	1,316,013.13 usft	Latitude:	40.1963600
From:	Lat/Long	Easting:	3,284,747.15 usft	Longitude:	-104.4806460
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.66 °

Well	Guttersen State DD30-755					
Well Position	+N/-S	-2,178.16 ft	Northing:	1,313,834.97 usft	Latitude:	40.1903835
	+E/-W	-74.45 ft	Easting:	3,284,672.70 usft	Longitude:	-104.4810021
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,793.00 ft

<b>Wellbore</b>	Guttersen State DD30-755				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2015	7/12/2018	7.93	66.70	52,191.29137626

<b>Design</b>	Plan #2			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	357.78

<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	
2,500.00	6.00	180.00	2,499.45	-15.69	0.00	2.00	2.00	0.00	180.00	
4,035.00	6.00	180.00	4,026.04	-176.14	0.00	0.00	0.00	0.00	0.00	
4,276.96	7.20	246.09	4,266.70	-194.96	-13.88	3.00	0.50	27.32	114.89	
6,110.79	7.20	246.09	6,086.07	-288.13	-224.07	0.00	0.00	0.00	0.00	
7,142.56	90.00	359.54	6,750.00	347.06	-306.17	9.00	8.02	11.00	113.28	Guttersen State DD30
9,284.91	90.00	359.54	6,750.00	2,489.34	-323.44	0.00	0.00	0.00	0.00	
9,304.91	90.40	359.54	6,749.93	2,509.33	-323.60	2.00	2.00	0.00	0.00	
16,672.17	90.40	359.54	6,698.50	9,876.17	-383.00	0.00	0.00	0.00	0.00	Guttersen State DD30

# Noble Energy, Inc.

## Planning Report

<b>Database:</b>	EDMP	<b>Local Co-ordinate Reference:</b>	Well Guttersen State DD30-755
<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	KB @ 4823.00ft
<b>Project:</b>	Mustang	<b>MD Reference:</b>	KB @ 4823.00ft
<b>Site:</b>	DD Section 30	<b>North Reference:</b>	Grid
<b>Well:</b>	Guttersen State DD30-755	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Guttersen State DD30-755		
<b>Design:</b>	Plan #2		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
602.00	0.00	0.00	602.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Pierre</b>									
686.00	0.00	0.00	686.00	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
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,623.00	0.00	0.00	1,623.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Upper Pierre Aquifer Base</b>									
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>Start Build 2.00</b>									
2,300.00	2.00	180.00	2,299.98	-1.75	0.00	-1.74	2.00	2.00	0.00
2,400.00	4.00	180.00	2,399.84	-6.98	0.00	-6.97	2.00	2.00	0.00
2,500.00	6.00	180.00	2,499.45	-15.69	0.00	-15.68	2.00	2.00	0.00
<b>Start 1535.00 hold at 2500.00 MD</b>									
2,600.00	6.00	180.00	2,598.90	-26.15	0.00	-26.13	0.00	0.00	0.00
2,700.00	6.00	180.00	2,698.36	-36.60	0.00	-36.57	0.00	0.00	0.00
2,800.00	6.00	180.00	2,797.81	-47.05	0.00	-47.02	0.00	0.00	0.00
2,900.00	6.00	180.00	2,897.26	-57.51	0.00	-57.46	0.00	0.00	0.00
3,000.00	6.00	180.00	2,996.71	-67.96	0.00	-67.91	0.00	0.00	0.00
3,100.00	6.00	180.00	3,096.17	-78.41	0.00	-78.35	0.00	0.00	0.00
3,200.00	6.00	180.00	3,195.62	-88.86	0.00	-88.80	0.00	0.00	0.00
3,300.00	6.00	180.00	3,295.07	-99.32	0.00	-99.24	0.00	0.00	0.00
3,400.00	6.00	180.00	3,394.52	-109.77	0.00	-109.69	0.00	0.00	0.00
3,500.00	6.00	180.00	3,493.97	-120.22	0.00	-120.13	0.00	0.00	0.00
3,600.00	6.00	180.00	3,593.43	-130.67	0.00	-130.58	0.00	0.00	0.00
3,611.64	6.00	180.00	3,605.00	-131.89	0.00	-131.79	0.00	0.00	0.00
<b>Parkman</b>									
3,700.00	6.00	180.00	3,692.88	-141.13	0.00	-141.02	0.00	0.00	0.00
3,800.00	6.00	180.00	3,792.33	-151.58	0.00	-151.47	0.00	0.00	0.00
3,900.00	6.00	180.00	3,891.78	-162.03	0.00	-161.91	0.00	0.00	0.00
4,000.00	6.00	180.00	3,991.23	-172.49	0.00	-172.36	0.00	0.00	0.00
4,035.00	6.00	180.00	4,026.04	-176.14	0.00	-176.01	0.00	0.00	0.00
<b>Start DLS 3.00 TFO 114.89</b>									

# Noble Energy, Inc.

## Planning Report

<b>Database:</b>	EDMP	<b>Local Co-ordinate Reference:</b>	Well Guttersen State DD30-755
<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	KB @ 4823.00ft
<b>Project:</b>	Mustang	<b>MD Reference:</b>	KB @ 4823.00ft
<b>Site:</b>	DD Section 30	<b>North Reference:</b>	Grid
<b>Well:</b>	Guttersen State DD30-755	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Guttersen State DD30-755		
<b>Design:</b>	Plan #2		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,035.96	5.99	180.25	4,027.00	-176.25	0.00	-176.11	3.00	-1.26	26.09
<b>Sussex</b>									
4,100.00	5.47	198.89	4,090.72	-182.47	-1.00	-182.30	3.00	-0.81	29.10
4,200.00	5.95	229.01	4,190.25	-190.39	-6.46	-190.00	3.00	0.48	30.12
4,221.88	6.25	234.53	4,212.00	-191.82	-8.29	-191.36	3.00	1.35	25.25
<b>Shannon</b>									
4,276.96	7.20	246.09	4,266.70	-194.96	-13.88	-194.28	3.00	1.73	20.99
<b>Start 1833.84 hold at 4276.96 MD</b>									
4,300.00	7.20	246.09	4,289.57	-196.13	-16.53	-195.35	0.00	0.00	0.00
4,400.00	7.20	246.09	4,388.78	-201.21	-27.99	-199.98	0.00	0.00	0.00
4,500.00	7.20	246.09	4,487.99	-206.29	-39.45	-204.61	0.00	0.00	0.00
4,600.00	7.20	246.09	4,587.20	-211.37	-50.91	-209.24	0.00	0.00	0.00
4,700.00	7.20	246.09	4,686.41	-216.45	-62.37	-213.88	0.00	0.00	0.00
4,800.00	7.20	246.09	4,785.62	-221.54	-73.83	-218.51	0.00	0.00	0.00
4,900.00	7.20	246.09	4,884.83	-226.62	-85.29	-223.14	0.00	0.00	0.00
5,000.00	7.20	246.09	4,984.04	-231.70	-96.76	-227.77	0.00	0.00	0.00
5,100.00	7.20	246.09	5,083.25	-236.78	-108.22	-232.41	0.00	0.00	0.00
5,200.00	7.20	246.09	5,182.47	-241.86	-119.68	-237.04	0.00	0.00	0.00
5,300.00	7.20	246.09	5,281.68	-246.94	-131.14	-241.67	0.00	0.00	0.00
5,400.00	7.20	246.09	5,380.89	-252.02	-142.60	-246.30	0.00	0.00	0.00
5,500.00	7.20	246.09	5,480.10	-257.10	-154.06	-250.94	0.00	0.00	0.00
5,600.00	7.20	246.09	5,579.31	-262.18	-165.52	-255.57	0.00	0.00	0.00
5,700.00	7.20	246.09	5,678.52	-267.26	-176.99	-260.20	0.00	0.00	0.00
5,800.00	7.20	246.09	5,777.73	-272.34	-188.45	-264.83	0.00	0.00	0.00
5,900.00	7.20	246.09	5,876.94	-277.42	-199.91	-269.47	0.00	0.00	0.00
5,903.08	7.20	246.09	5,880.00	-277.58	-200.26	-269.61	0.00	0.00	0.00
<b>Teepee Buttes</b>									
6,000.00	7.20	246.09	5,976.15	-282.50	-211.37	-274.10	0.00	0.00	0.00
6,100.00	7.20	246.09	6,075.36	-287.58	-222.83	-278.73	0.00	0.00	0.00
6,110.79	7.20	246.09	6,086.07	-288.13	-224.07	-279.23	0.00	0.00	0.00
<b>Start DLS 9.00 TFO 113.28</b>									
6,150.00	6.65	275.33	6,125.00	-288.92	-228.58	-279.84	9.00	-1.42	74.58
6,200.00	8.39	307.69	6,174.60	-286.42	-234.35	-277.12	9.00	3.48	64.72
6,250.00	11.70	325.48	6,223.83	-280.01	-240.11	-270.49	9.00	6.62	35.59
6,300.00	15.61	335.02	6,272.42	-269.73	-245.82	-260.00	9.00	7.82	19.07
6,350.00	19.77	340.72	6,320.05	-255.64	-251.46	-245.71	9.00	8.32	11.40
6,400.00	24.04	344.48	6,366.43	-237.84	-256.98	-227.70	9.00	8.56	7.52
6,450.00	28.39	347.15	6,411.28	-216.43	-262.35	-206.10	9.00	8.69	5.35
6,500.00	32.77	349.16	6,454.31	-191.54	-267.54	-181.02	9.00	8.77	4.02
6,550.00	37.18	350.75	6,495.27	-163.32	-272.52	-152.64	9.00	8.82	3.17
6,552.17	37.37	350.81	6,497.00	-162.02	-272.73	-151.33	9.00	8.84	2.83
<b>Sharon Springs</b>									
6,600.00	41.60	352.04	6,533.91	-131.95	-277.25	-121.11	9.00	8.85	2.57
6,612.26	42.69	352.32	6,543.00	-123.80	-278.37	-112.92	9.00	8.87	2.30
<b>Top A Chalk</b>									
6,614.99	42.93	352.38	6,545.00	-121.96	-278.62	-111.08	9.00	8.87	2.24
<b>Top A Marl</b>									
6,634.39	44.65	352.80	6,559.00	-108.65	-280.35	-97.71	9.00	8.87	2.16
<b>Top B Chalk</b>									
6,650.00	46.04	353.12	6,569.97	-97.63	-281.71	-86.64	9.00	8.88	2.05
6,700.00	50.49	354.05	6,603.25	-60.56	-285.86	-49.44	9.00	8.89	1.86
6,710.72	51.44	354.24	6,610.00	-52.28	-286.71	-41.13	9.00	8.90	1.72
<b>Top B Marl</b>									

# Noble Energy, Inc.

## Planning Report

<b>Database:</b>	EDMP	<b>Local Co-ordinate Reference:</b>	Well Guttersen State DD30-755
<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	KB @ 4823.00ft
<b>Project:</b>	Mustang	<b>MD Reference:</b>	KB @ 4823.00ft
<b>Site:</b>	DD Section 30	<b>North Reference:</b>	Grid
<b>Well:</b>	Guttersen State DD30-755	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Guttersen State DD30-755		
<b>Design:</b>	Plan #2		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
6,750.00	54.94	354.87	6,633.53	-20.98	-289.69	-9.73	9.00	8.91	1.62
6,800.00	59.40	355.61	6,660.64	20.88	-293.17	32.23	9.00	8.91	1.47
6,849.12	63.78	356.26	6,684.00	63.96	-296.23	75.39	9.00	8.92	1.34
Top C Chalk									
6,850.00	63.86	356.28	6,684.39	64.75	-296.28	76.19	9.00	8.93	1.29
6,900.00	68.32	356.90	6,704.65	110.37	-299.00	121.87	9.00	8.93	1.24
6,935.99	71.54	357.32	6,717.00	144.13	-300.70	155.67	9.00	8.93	1.18
Top C Marl									
6,950.00	72.79	357.48	6,721.29	157.45	-301.31	169.01	9.00	8.93	1.14
7,000.00	77.26	358.04	6,734.21	205.70	-303.19	217.30	9.00	8.94	1.11
7,050.00	81.73	358.57	6,743.33	254.83	-304.65	266.44	9.00	8.94	1.07
7,100.00	86.19	359.10	6,748.59	304.53	-305.66	316.14	9.00	8.94	1.05
7,142.56	90.00	359.54	6,750.00	347.06	-306.17	358.66	9.00	8.94	1.04
TPZ/Landing Pt. at 7142.56 MD									
7,200.00	90.00	359.54	6,750.00	404.49	-306.63	416.07	0.00	0.00	0.00
7,300.00	90.00	359.54	6,750.00	504.49	-307.43	516.02	0.00	0.00	0.00
7,400.00	90.00	359.54	6,750.00	604.49	-308.24	615.98	0.00	0.00	0.00
7,500.00	90.00	359.54	6,750.00	704.48	-309.05	715.93	0.00	0.00	0.00
7,600.00	90.00	359.54	6,750.00	804.48	-309.85	815.88	0.00	0.00	0.00
7,700.00	90.00	359.54	6,750.00	904.48	-310.66	915.83	0.00	0.00	0.00
7,800.00	90.00	359.54	6,750.00	1,004.47	-311.47	1,015.79	0.00	0.00	0.00
7,900.00	90.00	359.54	6,750.00	1,104.47	-312.27	1,115.74	0.00	0.00	0.00
8,000.00	90.00	359.54	6,750.00	1,204.47	-313.08	1,215.69	0.00	0.00	0.00
8,100.00	90.00	359.54	6,750.00	1,304.46	-313.88	1,315.65	0.00	0.00	0.00
8,200.00	90.00	359.54	6,750.00	1,404.46	-314.69	1,415.60	0.00	0.00	0.00
8,300.00	90.00	359.54	6,750.00	1,504.46	-315.50	1,515.55	0.00	0.00	0.00
8,400.00	90.00	359.54	6,750.00	1,604.45	-316.30	1,615.50	0.00	0.00	0.00
8,500.00	90.00	359.54	6,750.00	1,704.45	-317.11	1,715.46	0.00	0.00	0.00
8,600.00	90.00	359.54	6,750.00	1,804.45	-317.92	1,815.41	0.00	0.00	0.00
8,700.00	90.00	359.54	6,750.00	1,904.44	-318.72	1,915.36	0.00	0.00	0.00
8,800.00	90.00	359.54	6,750.00	2,004.44	-319.53	2,015.32	0.00	0.00	0.00
8,900.00	90.00	359.54	6,750.00	2,104.44	-320.33	2,115.27	0.00	0.00	0.00
9,000.00	90.00	359.54	6,750.00	2,204.43	-321.14	2,215.22	0.00	0.00	0.00
9,100.00	90.00	359.54	6,750.00	2,304.43	-321.95	2,315.17	0.00	0.00	0.00
9,200.00	90.00	359.54	6,750.00	2,404.43	-322.75	2,415.13	0.00	0.00	0.00
9,284.91	90.00	359.54	6,750.00	2,489.34	-323.44	2,500.00	0.00	0.00	0.00
Start DLS 2.00 TFO 0.00									
9,304.91	90.40	359.54	6,749.93	2,509.33	-323.60	2,519.99	2.00	2.00	0.00
Start 7367.25 hold at 9304.91 MD									
9,400.00	90.40	359.54	6,749.27	2,604.42	-324.37	2,615.03	0.00	0.00	0.00
9,500.00	90.40	359.54	6,748.57	2,704.41	-325.17	2,714.98	0.00	0.00	0.00
9,600.00	90.40	359.54	6,747.87	2,804.41	-325.98	2,814.93	0.00	0.00	0.00
9,700.00	90.40	359.54	6,747.17	2,904.40	-326.78	2,914.88	0.00	0.00	0.00
9,800.00	90.40	359.54	6,746.47	3,004.39	-327.59	3,014.83	0.00	0.00	0.00
9,900.00	90.40	359.54	6,745.78	3,104.39	-328.40	3,114.78	0.00	0.00	0.00
10,000.00	90.40	359.54	6,745.08	3,204.38	-329.20	3,214.73	0.00	0.00	0.00
10,100.00	90.40	359.54	6,744.38	3,304.38	-330.01	3,314.68	0.00	0.00	0.00
10,200.00	90.40	359.54	6,743.68	3,404.37	-330.82	3,414.63	0.00	0.00	0.00
10,300.00	90.40	359.54	6,742.98	3,504.37	-331.62	3,514.59	0.00	0.00	0.00
10,400.00	90.40	359.54	6,742.29	3,604.36	-332.43	3,614.54	0.00	0.00	0.00
10,500.00	90.40	359.54	6,741.59	3,704.36	-333.23	3,714.49	0.00	0.00	0.00
10,600.00	90.40	359.54	6,740.89	3,804.35	-334.04	3,814.44	0.00	0.00	0.00
10,700.00	90.40	359.54	6,740.19	3,904.34	-334.85	3,914.39	0.00	0.00	0.00

# Noble Energy, Inc.

## Planning Report

<b>Database:</b>	EDMP	<b>Local Co-ordinate Reference:</b>	Well Guttersten State DD30-755
<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	KB @ 4823.00ft
<b>Project:</b>	Mustang	<b>MD Reference:</b>	KB @ 4823.00ft
<b>Site:</b>	DD Section 30	<b>North Reference:</b>	Grid
<b>Well:</b>	Guttersten State DD30-755	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Guttersten State DD30-755		
<b>Design:</b>	Plan #2		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
10,800.00	90.40	359.54	6,739.49	4,004.34	-335.65	4,014.34	0.00	0.00	0.00
10,900.00	90.40	359.54	6,738.80	4,104.33	-336.46	4,114.29	0.00	0.00	0.00
11,000.00	90.40	359.54	6,738.10	4,204.33	-337.27	4,214.24	0.00	0.00	0.00
11,100.00	90.40	359.54	6,737.40	4,304.32	-338.07	4,314.19	0.00	0.00	0.00
11,200.00	90.40	359.54	6,736.70	4,404.32	-338.88	4,414.14	0.00	0.00	0.00
11,300.00	90.40	359.54	6,736.00	4,504.31	-339.68	4,514.09	0.00	0.00	0.00
11,400.00	90.40	359.54	6,735.30	4,604.30	-340.49	4,614.04	0.00	0.00	0.00
11,500.00	90.40	359.54	6,734.61	4,704.30	-341.30	4,713.99	0.00	0.00	0.00
11,600.00	90.40	359.54	6,733.91	4,804.29	-342.10	4,813.94	0.00	0.00	0.00
11,700.00	90.40	359.54	6,733.21	4,904.29	-342.91	4,913.89	0.00	0.00	0.00
11,800.00	90.40	359.54	6,732.51	5,004.28	-343.72	5,013.84	0.00	0.00	0.00
11,900.00	90.40	359.54	6,731.81	5,104.28	-344.52	5,113.79	0.00	0.00	0.00
12,000.00	90.40	359.54	6,731.12	5,204.27	-345.33	5,213.74	0.00	0.00	0.00
12,100.00	90.40	359.54	6,730.42	5,304.26	-346.13	5,313.69	0.00	0.00	0.00
12,200.00	90.40	359.54	6,729.72	5,404.26	-346.94	5,413.64	0.00	0.00	0.00
12,300.00	90.40	359.54	6,729.02	5,504.25	-347.75	5,513.59	0.00	0.00	0.00
12,400.00	90.40	359.54	6,728.32	5,604.25	-348.55	5,613.54	0.00	0.00	0.00
12,500.00	90.40	359.54	6,727.63	5,704.24	-349.36	5,713.49	0.00	0.00	0.00
12,600.00	90.40	359.54	6,726.93	5,804.24	-350.16	5,813.45	0.00	0.00	0.00
12,700.00	90.40	359.54	6,726.23	5,904.23	-350.97	5,913.40	0.00	0.00	0.00
12,800.00	90.40	359.54	6,725.53	6,004.22	-351.78	6,013.35	0.00	0.00	0.00
12,900.00	90.40	359.54	6,724.83	6,104.22	-352.58	6,113.30	0.00	0.00	0.00
13,000.00	90.40	359.54	6,724.14	6,204.21	-353.39	6,213.25	0.00	0.00	0.00
13,100.00	90.40	359.54	6,723.44	6,304.21	-354.20	6,313.20	0.00	0.00	0.00
13,200.00	90.40	359.54	6,722.74	6,404.20	-355.00	6,413.15	0.00	0.00	0.00
13,300.00	90.40	359.54	6,722.04	6,504.20	-355.81	6,513.10	0.00	0.00	0.00
13,400.00	90.40	359.54	6,721.34	6,604.19	-356.61	6,613.05	0.00	0.00	0.00
13,500.00	90.40	359.54	6,720.64	6,704.18	-357.42	6,713.00	0.00	0.00	0.00
13,600.00	90.40	359.54	6,719.95	6,804.18	-358.23	6,812.95	0.00	0.00	0.00
13,700.00	90.40	359.54	6,719.25	6,904.17	-359.03	6,912.90	0.00	0.00	0.00
13,800.00	90.40	359.54	6,718.55	7,004.17	-359.84	7,012.85	0.00	0.00	0.00
13,900.00	90.40	359.54	6,717.85	7,104.16	-360.65	7,112.80	0.00	0.00	0.00
14,000.00	90.40	359.54	6,717.15	7,204.16	-361.45	7,212.75	0.00	0.00	0.00
14,100.00	90.40	359.54	6,716.46	7,304.15	-362.26	7,312.70	0.00	0.00	0.00
14,200.00	90.40	359.54	6,715.76	7,404.14	-363.06	7,412.65	0.00	0.00	0.00
14,300.00	90.40	359.54	6,715.06	7,504.14	-363.87	7,512.60	0.00	0.00	0.00
14,400.00	90.40	359.54	6,714.36	7,604.13	-364.68	7,612.55	0.00	0.00	0.00
14,500.00	90.40	359.54	6,713.66	7,704.13	-365.48	7,712.50	0.00	0.00	0.00
14,600.00	90.40	359.54	6,712.97	7,804.12	-366.29	7,812.45	0.00	0.00	0.00
14,700.00	90.40	359.54	6,712.27	7,904.12	-367.10	7,912.40	0.00	0.00	0.00
14,800.00	90.40	359.54	6,711.57	8,004.11	-367.90	8,012.36	0.00	0.00	0.00
14,900.00	90.40	359.54	6,710.87	8,104.11	-368.71	8,112.31	0.00	0.00	0.00
15,000.00	90.40	359.54	6,710.17	8,204.10	-369.51	8,212.26	0.00	0.00	0.00
15,100.00	90.40	359.54	6,709.48	8,304.09	-370.32	8,312.21	0.00	0.00	0.00
15,200.00	90.40	359.54	6,708.78	8,404.09	-371.13	8,412.16	0.00	0.00	0.00
15,300.00	90.40	359.54	6,708.08	8,504.08	-371.93	8,512.11	0.00	0.00	0.00
15,400.00	90.40	359.54	6,707.38	8,604.08	-372.74	8,612.06	0.00	0.00	0.00
15,500.00	90.40	359.54	6,706.68	8,704.07	-373.55	8,712.01	0.00	0.00	0.00
15,600.00	90.40	359.54	6,705.98	8,804.07	-374.35	8,811.96	0.00	0.00	0.00
15,700.00	90.40	359.54	6,705.29	8,904.06	-375.16	8,911.91	0.00	0.00	0.00
15,800.00	90.40	359.54	6,704.59	9,004.05	-375.96	9,011.86	0.00	0.00	0.00
15,900.00	90.40	359.54	6,703.89	9,104.05	-376.77	9,111.81	0.00	0.00	0.00
16,000.00	90.40	359.54	6,703.19	9,204.04	-377.58	9,211.76	0.00	0.00	0.00
16,100.00	90.40	359.54	6,702.49	9,304.04	-378.38	9,311.71	0.00	0.00	0.00

# Noble Energy, Inc.

## Planning Report

<b>Database:</b>	EDMP	<b>Local Co-ordinate Reference:</b>	Well Guttersten State DD30-755
<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	KB @ 4823.00ft
<b>Project:</b>	Mustang	<b>MD Reference:</b>	KB @ 4823.00ft
<b>Site:</b>	DD Section 30	<b>North Reference:</b>	Grid
<b>Well:</b>	Guttersten State DD30-755	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Guttersten State DD30-755		
<b>Design:</b>	Plan #2		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
16,200.00	90.40	359.54	6,701.80	9,404.03	-379.19	9,411.66	0.00	0.00	0.00
16,300.00	90.40	359.54	6,701.10	9,504.03	-380.00	9,511.61	0.00	0.00	0.00
16,400.00	90.40	359.54	6,700.40	9,604.02	-380.80	9,611.56	0.00	0.00	0.00
16,500.00	90.40	359.54	6,699.70	9,704.01	-381.61	9,711.51	0.00	0.00	0.00
16,600.00	90.40	359.54	6,699.00	9,804.01	-382.41	9,811.46	0.00	0.00	0.00
16,672.17	90.40	359.54	6,698.50	9,876.17	-383.00	9,883.59	0.00	0.00	0.00
TD at 16672.17									

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
Guttersten State DD30-7 - plan hits target center - Point	0.00	0.01	6,698.50	9,876.17	-383.00	1,323,711.12	3,284,289.71	40.2175049	-104.4819671
Guttersten State DD30-7 - plan hits target center - Point	0.00	0.01	6,750.00	347.06	-306.17	1,314,182.03	3,284,366.54	40.1913458	-104.4820836

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
602.00	602.00	Pierre				
686.00	686.00	Upper Pierre Aquifer Top				
1,623.00	1,623.00	Upper Pierre Aquifer Base				
3,611.64	3,605.00	Parkman				
4,035.96	4,027.00	Sussex				
4,221.88	4,212.00	Shannon				
5,903.08	5,880.00	Teepee Buttes				
6,552.17	6,497.00	Sharon Springs				
6,612.26	6,543.00	Top A Chalk				
6,614.99	6,545.00	Top A Marl				
6,634.39	6,559.00	Top B Chalk				
6,710.72	6,610.00	Top B Marl				
6,849.12	6,684.00	Top C Chalk				
6,935.99	6,717.00	Top C Marl				



# Noble Energy, Inc.

## Planning Report

<b>Database:</b>	EDMP	<b>Local Co-ordinate Reference:</b>	Well Guttersen State DD30-755
<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	KB @ 4823.00ft
<b>Project:</b>	Mustang	<b>MD Reference:</b>	KB @ 4823.00ft
<b>Site:</b>	DD Section 30	<b>North Reference:</b>	Grid
<b>Well:</b>	Guttersen State DD30-755	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Guttersen State DD30-755		
<b>Design:</b>	Plan #2		

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	Start Build 2.00
2,500.00	2,499.45	-15.69	0.00	Start 1535.00 hold at 2500.00 MD
4,035.00	4,026.04	-176.14	0.00	Start DLS 3.00 TFO 114.89
4,276.96	4,266.70	-194.96	-13.88	Start 1833.84 hold at 4276.96 MD
6,110.79	6,086.07	-288.13	-224.07	Start DLS 9.00 TFO 113.28
7,142.56	6,750.00	347.06	-306.17	TPZ/Landing Pt. at 7142.56 MD
9,284.91	6,750.00	2,489.34	-323.44	Start DLS 2.00 TFO 0.00
9,304.91	6,749.93	2,509.33	-323.60	Start 7367.25 hold at 9304.91 MD
16,672.17	6,698.50	9,876.17	-383.00	TD at 16672.17

# **Northern Region - DJ Basin**

**Mustang**

**DD Section 30**

**Guttersen State DD30-755**

**Guttersen State DD30-755**

**Plan #2**

## **Anticollision Summary Report**

**12 August, 2019**

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

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersten State DD30-755
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4823.00ft
<b>Reference Site:</b>	DD Section 30	<b>MD Reference:</b>	KB @ 4823.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersten State DD30-755	<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 State DD30-755	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

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

<b>Survey Tool Program</b>	<b>Date</b>	8/12/2019		
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.00	16,672.17	Plan #2 (Guttersten State DD30-755)	2_MWD+IFR1+MS	A008Mb: IFR dec & multi-station analysis

<b>Summary</b>						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
<b>Offset Well - Wellbore - Design</b>						
D Section 13						
Dalbey D 13-11 (SI) - Wellbore #1 - Gyro Surveys	16,672.17	6,667.82	5,900.26	5,797.14	57.217	CC, ES, SF
Dalbey D 13-12 (PR) - Wellbore #1 - Gyro Surveys	16,672.17	6,654.75	6,847.92	6,741.65	64.438	CC, ES, SF
Dalbey D 13-13 (SI) - Wellbore #1 - As-Drilled	16,672.17	6,762.79	6,932.68	6,823.96	63.768	CC, ES, SF
Dalbey D 13-14 (PA) - Wellbore #1 - Gyro Surveys	16,672.17	6,594.80	5,768.26	5,660.36	53.460	CC, ES, SF
Guttersten 12-13 (SI) - Wellbore #1 - Gyro Surveys	16,672.17	7,006.65	7,767.25	7,665.70	76.487	CC, ES, SF
Guttersten 13C (PR) - Wellbore #1 - Gyro Surveys	16,672.17	6,758.89	5,484.80	5,402.20	66.405	CC, ES, SF
Guttersten 13D (PR) - Wellbore #1 - Gyro Surveys	16,672.17	6,637.68	3,931.21	3,828.90	38.421	CC, ES, SF
Guttersten 13N (PR) - Wellbore #1 - Gyro Surveys	16,672.17	6,850.74	6,602.86	6,510.98	71.861	CC, ES, SF
Guttersten 13S (PR) - Wellbore #1 - Gyro Surveys	16,672.17	6,684.35	4,624.16	4,532.41	50.401	CC, ES, SF
Guttersten 13T (PR) - Wellbore #1 - Gyro Surveys	16,672.17	6,662.74	3,738.67	3,630.02	34.413	CC, ES, SF
Guttersten 21-13 (SI) - Wellbore #1 - Gyro Surveys	16,672.17	6,811.11	7,427.21	7,336.27	81.671	CC, ES, SF
Guttersten 22-13 (SI) - Wellbore #1 - Gyro Surveys	16,672.17	6,710.01	6,570.55	6,473.62	67.793	CC, ES, SF
Guttersten 31-13 (PR) - Wellbore #1 - Gyro Surveys	16,672.17	6,596.58	6,448.61	6,365.34	77.439	CC, ES, SF
Guttersten 32-13 (PR) - Wellbore #1 - Gyro Surveys	16,672.17	6,669.12	5,554.61	5,464.27	61.483	CC, ES, SF
Guttersten 34-13 (PR) - Wellbore #1 - Gyro Surveys	16,672.17	6,632.74	4,438.43	4,331.13	41.366	CC, ES, SF
Guttersten 41-13 (PR) - Wellbore #1 - Gyro Surveys	16,672.17	6,723.27	5,550.18	5,476.57	75.401	CC, ES, SF
Guttersten 42-13 (PR) - Wellbore #1 - Gyro Surveys	16,672.17	6,644.19	4,469.72	4,388.73	55.192	CC, ES, SF
Guttersten 43-13 - Wellbore #1 - Wellbore #1 - As Drilled	16,672.17	6,637.39	3,666.72	3,573.28	39.242	CC, ES, SF
Guttersten 44-13 - Wellbore #1 - Wellbore #1 - As Drilled	16,672.17	6,643.51	3,128.52	3,019.36	28.660	CC, ES, SF
L F Ranch 1-13 (PR) - Wellbore #1 - Gyro Surveys	16,672.17	6,735.96	4,764.95	4,662.22	46.385	CC, ES, SF
L. F. Ranch 13-4 (SI) - Wellbore #1 - Gyro Surveys	16,672.17	7,419.04	7,907.95	7,804.41	76.373	CC, ES, SF

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

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersten State DD30-755
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4823.00ft
<b>Reference Site:</b>	DD Section 30	<b>MD Reference:</b>	KB @ 4823.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersten State DD30-755	<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 State DD30-755	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

**Summary**

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Separation Factor	Warning
D Section 24						
Dalbey D 24-10 (PR) - Wellbore #1 - Gyro Surveys	13,206.23	6,689.50	3,933.52	3,851.37	47.883	CC, ES
Dalbey D 24-10 (PR) - Wellbore #1 - Gyro Surveys	14,100.00	6,682.49	4,033.78	3,946.00	45.954	SF
Dalbey D 24-15 (SI) - Wellbore #1 - Gyro Surveys	12,247.62	6,645.43	4,405.96	4,331.09	58.850	CC
Dalbey D 24-15 (SI) - Wellbore #1 - Gyro Surveys	12,300.00	6,645.31	4,406.27	4,331.01	58.547	ES
Dalbey D 24-15 (SI) - Wellbore #1 - Gyro Surveys	13,400.00	6,642.82	4,554.17	4,472.06	55.468	SF
Glazier 2-24 (PR) - Wellbore #1 - Gyro Surveys	15,417.36	6,667.46	3,281.75	3,182.62	33.106	CC, ES
Glazier 2-24 (PR) - Wellbore #1 - Gyro Surveys	15,900.00	6,661.54	3,317.04	3,214.74	32.423	SF
Guttersten 11-24 (SI) - Wellbore #1 - Gyro Surveys	16,205.97	6,767.79	6,959.10	6,853.65	65.996	CC
Guttersten 11-24 (SI) - Wellbore #1 - Gyro Surveys	16,300.00	6,767.15	6,959.73	6,853.54	65.536	ES
Guttersten 11-24 (SI) - Wellbore #1 - Gyro Surveys	16,672.17	6,764.60	6,974.70	6,865.67	63.971	SF
Guttersten 12-24 (SI) - Wellbore #1 - Gyro Surveys	14,909.53	6,711.69	6,978.15	6,882.90	73.258	CC
Guttersten 12-24 (SI) - Wellbore #1 - Gyro Surveys	15,000.00	6,710.89	6,978.74	6,882.77	72.720	ES
Guttersten 12-24 (SI) - Wellbore #1 - Gyro Surveys	16,672.17	6,703.95	7,197.31	7,090.28	67.244	SF
Guttersten 21-24 (SI) - Wellbore #1 - Gyro Surveys	16,216.48	6,631.46	5,640.29	5,535.00	53.566	CC
Guttersten 21-24 (SI) - Wellbore #1 - Gyro Surveys	16,300.00	6,631.12	5,640.91	5,534.95	53.236	ES
Guttersten 21-24 (SI) - Wellbore #1 - Gyro Surveys	16,672.17	6,629.62	5,658.67	5,549.95	52.046	SF
Guttersten 22-24 (PR) - Wellbore #1 - Gyro Surveys	14,987.55	6,652.66	5,593.14	5,497.42	58.436	CC
Guttersten 22-24 (PR) - Wellbore #1 - Gyro Surveys	15,000.00	6,652.59	5,593.15	5,497.34	58.376	ES
Guttersten 22-24 (PR) - Wellbore #1 - Gyro Surveys	16,500.00	6,645.20	5,794.02	5,688.79	55.062	SF
Guttersten 24A (SI) - Wellbore #1 - Gyro Surveys	15,543.82	6,694.61	6,269.89	6,169.72	62.594	CC
Guttersten 24A (SI) - Wellbore #1 - Gyro Surveys	15,600.00	6,694.73	6,270.14	6,169.53	62.318	ES
Guttersten 24A (SI) - Wellbore #1 - Gyro Surveys	16,672.17	6,697.11	6,370.61	6,262.57	58.965	SF
Guttersten 24J (PR) - Wellbore #1 - Gyro Surveys	16,672.17	6,651.09	6,179.54	6,070.67	56.759	CC, ES, SF
Guttersten 24N (SI) - Wellbore #1 - MWD Surveys	15,579.52	6,597.14	5,040.74	4,941.65	50.871	CC
Guttersten 24N (SI) - Wellbore #1 - MWD Surveys	15,600.00	6,596.90	5,040.78	4,941.52	50.787	ES
Guttersten 24N (SI) - Wellbore #1 - MWD Surveys	16,672.17	6,583.96	5,157.78	5,051.65	48.597	SF
Guttersten 24S (PR) - Wellbore #1 - As-Drilled	14,086.98	6,691.78	3,582.62	3,494.61	40.705	CC
Guttersten 24S (PR) - Wellbore #1 - As-Drilled	14,100.00	6,691.62	3,582.65	3,494.53	40.658	ES
Guttersten 24S (PR) - Wellbore #1 - As-Drilled	14,800.00	6,682.92	3,652.87	3,560.40	39.503	SF
Guttersten 43-24 (PR) - Wellbore #1 - Gyro Surveys	13,462.33	6,639.68	3,041.74	2,957.75	36.216	CC
Guttersten 43-24 (PR) - Wellbore #1 - Gyro Surveys	13,500.00	6,639.22	3,041.97	2,957.69	36.093	ES
Guttersten 43-24 (PR) - Wellbore #1 - Gyro Surveys	14,000.00	6,633.21	3,088.89	3,001.47	35.333	SF
Guttersten 44-24 (PR) - Wellbore #1 - Gyro Surveys	12,223.71	6,712.38	2,972.07	2,897.20	39.694	CC, ES
Guttersten 44-24 (PR) - Wellbore #1 - Gyro Surveys	12,800.00	6,715.31	3,027.43	2,948.91	38.559	SF
Karch Blue D 24-12 (PA) - Wellbore #1 - Gyro Surveys	13,731.27	6,684.18	6,926.26	6,840.23	80.512	CC
Karch Blue D 24-12 (PA) - Wellbore #1 - Gyro Surveys	13,800.00	6,683.72	6,926.60	6,840.04	80.021	ES
Karch Blue D 24-12 (PA) - Wellbore #1 - Gyro Surveys	16,100.00	6,668.47	7,320.09	7,219.19	72.547	SF
Karch Blue D 24-14 (PR) - Wellbore #1 - No Surveys	12,200.92	6,671.71	5,365.09	5,180.17	29.013	CC, ES
Karch Blue D 24-14 (PR) - Wellbore #1 - No Surveys	13,100.00	6,665.44	5,439.90	5,248.91	28.482	SF
Karch Blue D24-11 (PA) - Wellbore #1 - Gyro Surveys	13,725.61	6,597.00	5,509.27	5,417.08	59.765	CC
Karch Blue D24-11 (PA) - Wellbore #1 - Gyro Surveys	13,800.00	6,597.22	5,509.77	5,417.01	59.398	ES
Karch Blue D24-11 (PA) - Wellbore #1 - Gyro Surveys	15,300.00	6,601.67	5,729.81	5,627.65	56.088	SF
Koerner 31-24 (SI) - Wellbore #1 - Gyro Surveys	16,262.93	6,593.99	4,316.76	4,211.23	40.903	CC
Koerner 31-24 (SI) - Wellbore #1 - Gyro Surveys	16,300.00	6,594.16	4,316.92	4,211.09	40.789	ES
Koerner 31-24 (SI) - Wellbore #1 - Gyro Surveys	16,672.17	6,595.91	4,336.12	4,227.59	39.953	SF
Koerner 32-24 (SI) - Wellbore #1 - Gyro Surveys	14,828.00	6,776.21	4,308.20	4,213.39	45.440	CC, ES
Koerner 32-24 (SI) - Wellbore #1 - Gyro Surveys	15,700.00	6,771.13	4,395.56	4,295.12	43.763	SF
Koerner 42-24 (SI) - Wellbore #1 - Gyro Surveys	14,813.96	6,650.07	3,003.03	2,908.68	31.829	CC, ES
Koerner 42-24 (SI) - Wellbore #1 - Gyro Surveys	15,300.00	6,641.17	3,042.10	2,944.65	31.218	SF
LF Ranch 1-24 (SI) - Wellbore #1 - Gyro Surveys	12,623.20	6,912.06	6,586.65	6,508.16	83.923	CC
LF Ranch 1-24 (SI) - Wellbore #1 - Gyro Surveys	12,700.00	6,911.96	6,587.09	6,508.03	83.314	ES
LF Ranch 1-24 (SI) - Wellbore #1 - Gyro Surveys	15,000.00	6,908.85	7,002.36	6,909.12	75.103	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 DD30-755
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4823.00ft
<b>Reference Site:</b>	DD Section 30	<b>MD Reference:</b>	KB @ 4823.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersten State DD30-755	<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 State DD30-755	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
D Section 25						
Coors Energy 13-25D (PR) - Wellbore #1 - MWD Surveys	0.00	0.00	6,330.99			
Coors Energy 13-25D (PR) - Wellbore #1 - MWD Surveys	193.18	190.28	6,331.01	6,330.03	6,467.474	ES
Coors Energy 13-25D (PR) - Wellbore #1 - MWD Surveys	12,000.00	6,811.93	7,842.65	7,762.93	98.374	SF
Coors Energy 14-25D (PR) - Wellbore #1 - MWD Surveys	0.00	0.00	6,313.31			
Coors Energy 14-25D (PR) - Wellbore #1 - MWD Surveys	900.00	835.24	6,314.40	6,309.84	1,387.071	ES
Coors Energy 14-25D (PR) - Wellbore #1 - MWD Surveys	11,600.00	7,012.55	8,311.03	8,244.58	125.082	SF
Coors Energy 14-25H (PR) - Wellbore #1 - MWD Surveys	7,674.29	11,093.00	2,832.98	2,784.82	58.823	CC, ES
Coors Energy 14-25H (PR) - Wellbore #1 - MWD Surveys	10,200.00	11,093.00	3,795.13	3,680.40	33.077	SF
Coors Energy 23-25D (PR) - Wellbore #1 - MWD Surveys	8,300.66	6,885.54	5,589.33	5,533.03	99.273	CC, ES
Coors Energy 23-25D (PR) - Wellbore #1 - MWD Surveys	10,400.00	6,880.10	5,970.55	5,905.61	91.932	SF
Coors Energy 24-25 (PR) - Wellbore #1 - Gyro Surveys	6,941.07	6,748.38	5,455.32	5,408.36	116.178	CC
Coors Energy 24-25 (PR) - Wellbore #1 - Gyro Surveys	6,950.00	6,750.67	5,455.34	5,408.35	116.117	ES
Coors Energy 24-25 (PR) - Wellbore #1 - Gyro Surveys	9,400.00	6,777.69	6,067.40	6,012.48	110.480	SF
Coors Energy 25HD (PR) - Wellbore #1 - MWD Surveys	0.00	0.00	6,305.38			
Coors Energy 25HD (PR) - Wellbore #1 - MWD Surveys	12,500.00	6,972.89	8,842.14	8,762.38	110.853	SF
Coors Energy 25LD (PR) - Wellbore #1 - MWD Surveys	6,892.82	6,982.14	6,258.04	6,209.30	128.385	CC
Coors Energy 25LD (PR) - Wellbore #1 - MWD Surveys	6,900.00	6,984.21	6,258.05	6,209.29	128.337	ES
Coors Energy 25LD (PR) - Wellbore #1 - MWD Surveys	9,900.00	7,080.84	7,098.67	7,040.52	122.079	SF
Coors Energy 25TD (PR) - Wellbore #1 - MWD Surveys	6,703.19	6,620.55	3,567.64	3,520.89	76.311	CC, ES
Coors Energy 25TD (PR) - Wellbore #1 - MWD Surveys	7,050.00	6,762.05	3,594.69	3,546.79	75.043	SF
Coors Energy 25XD (PR) - Wellbore #1 - MWD Surveys	7,500.00	6,984.02	2,422.27	2,370.83	47.096	SF
Coors Energy 25XD (PR) - Wellbore #1 - MWD Surveys	7,643.16	6,982.39	2,418.03	2,366.74	47.139	CC, ES
Coors Energy 25YD (PR) - Wellbore #1 - MWD Surveys	6,640.36	6,742.99	2,425.96	2,376.26	48.815	CC
Coors Energy 25YD (PR) - Wellbore #1 - MWD Surveys	6,650.00	6,749.72	2,425.98	2,376.22	48.749	ES
Coors Energy 25YD (PR) - Wellbore #1 - MWD Surveys	7,100.00	6,931.29	2,484.09	2,431.40	47.141	SF
Coors Energy 33-25D (PR) - Wellbore #1 - MWD Surveys	100.00	59.68	3,991.33	3,991.10	10,000.000	CC
Coors Energy 33-25D (PR) - Wellbore #1 - MWD Surveys	200.00	148.75	3,991.65	3,990.90	5,315.267	ES
Coors Energy 33-25D (PR) - Wellbore #1 - MWD Surveys	9,800.00	6,889.43	4,537.85	4,470.66	67.539	SF
Coors Energy 34-25 (PR) - Wellbore #1 - Gyro Surveys	6,904.93	6,675.19	4,460.21	4,413.59	95.668	CC, ES
Coors Energy 34-25 (PR) - Wellbore #1 - Gyro Surveys	8,200.00	6,716.38	4,692.62	4,642.73	94.058	SF
Coors Energy 43-25D (PR) - Wellbore #1 - MWD Surveys	8,299.90	6,954.87	2,983.73	2,925.32	51.079	CC
Coors Energy 43-25D (PR) - Wellbore #1 - MWD Surveys	8,300.00	6,954.87	2,983.73	2,925.32	51.079	ES
Coors Energy 43-25D (PR) - Wellbore #1 - MWD Surveys	8,600.00	6,957.36	2,998.79	2,939.80	50.836	SF
Coors Energy 44-25D (PR) - Wellbore #1 - MWD Surveys	7,046.54	6,805.43	2,960.93	2,914.18	63.342	CC
Coors Energy 44-25D (PR) - Wellbore #1 - MWD Surveys	7,050.00	6,805.90	2,960.93	2,914.18	63.331	ES
Coors Energy 44-25D (PR) - Wellbore #1 - MWD Surveys	7,500.00	6,811.26	3,002.77	2,955.04	62.918	SF
Dalbey D 25-03 (SI) - Wellbore #1 - Gyro Surveys	10,549.58	6,900.00	5,912.77	5,849.06	92.815	CC
Dalbey D 25-03 (SI) - Wellbore #1 - Gyro Surveys	10,600.00	6,900.00	5,912.98	5,848.94	92.323	ES
Dalbey D 25-03 (SI) - Wellbore #1 - Gyro Surveys	16,500.00	16,500.00	8,385.04	8,262.86	68.626	SF
Dalbey D 25-05 (SI) - Wellbore #1 - Gyro Surveys	9,606.10	7,062.62	7,106.74	7,047.49	119.939	CC, ES
Dalbey D 25-05 (SI) - Wellbore #1 - Gyro Surveys	13,100.00	6,731.54	7,910.48	7,833.25	102.423	SF
Guttersten 11-25 (PR) - Wellbore #1 - MWD Surveys	10,981.05	6,823.16	6,912.57	6,847.27	105.866	CC
Guttersten 11-25 (PR) - Wellbore #1 - MWD Surveys	11,000.00	6,822.81	6,912.59	6,847.17	105.654	ES
Guttersten 11-25 (PR) - Wellbore #1 - MWD Surveys	14,000.00	6,772.53	7,542.87	7,459.66	90.644	SF
Guttersten 22-25 (PA) - Wellbore #1 - MWD Surveys	9,712.28	6,780.40	5,488.57	5,431.73	96.565	CC, ES
Guttersten 22-25 (PA) - Wellbore #1 - MWD Surveys	12,000.00	6,670.37	5,945.26	5,875.80	85.585	SF
Guttersten 25E (PR) - Wellbore #1 - MWD Surveys	11,578.67	6,709.82	7,315.80	7,246.40	105.419	CC
Guttersten 25E (PR) - Wellbore #1 - MWD Surveys	11,600.00	6,709.29	7,315.83	7,246.28	105.187	ES
Guttersten 25E (PR) - Wellbore #1 - MWD Surveys	14,700.00	6,629.76	7,953.54	7,865.38	90.212	SF
Guttersten 25KD (PR) - Wellbore #1 - MWD Surveys	100.00	52.89	5,802.55	5,802.33	10,000.000	CC
Guttersten 25KD (PR) - Wellbore #1 - MWD Surveys	200.00	138.21	5,802.84	5,802.10	7,925.380	ES
Guttersten 25KD (PR) - Wellbore #1 - MWD Surveys	12,400.00	7,097.39	7,061.94	6,987.74	95.172	SF
Guttersten 25O (PR) - Wellbore #1 - MWD Surveys	9,230.56	6,700.19	5,050.77	4,996.72	93.452	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 State DD30-755
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4823.00ft
<b>Reference Site:</b>	DD Section 30	<b>MD Reference:</b>	KB @ 4823.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersten State DD30-755	<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 State DD30-755	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

**Summary**

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 25						
Guttersten 25O (PR) - Wellbore #1 - MWD Surveys	9,284.91	6,700.22	5,051.06	4,996.70	92.928	ES
Guttersten 25O (PR) - Wellbore #1 - MWD Surveys	11,300.00	6,686.83	5,458.23	5,392.97	83.637	SF
Guttersten D 25-17 (SI) - Wellbore #1 - Gyro Surveys	10,314.69	6,577.28	3,814.46	3,753.25	62.313	CC, ES
Guttersten D 25-17 (SI) - Wellbore #1 - Gyro Surveys	11,400.00	6,559.64	3,965.81	3,898.25	58.702	SF
Guttersten D25-715 - Wellbore #1 - Plan #3	11,406.59	7,288.12	2,644.75	2,571.90	36.303	CC
Guttersten D25-715 - Wellbore #1 - Plan #3	16,672.17	12,548.75	2,650.95	2,505.11	18.178	ES, SF
Guttersten D25-724 - Wellbore #1 - Plan #3	16,672.17	12,432.44	3,251.13	3,105.35	22.302	CC, ES, SF
Guttersten D25-734 - Wellbore #1 - Plan #5	16,672.17	12,457.34	3,880.87	3,734.82	26.572	CC, ES, SF
Guttersten D25-743 - Wellbore #1 - Plan #3	10,640.43	5,908.85	4,406.01	4,343.55	70.539	CC
Guttersten D25-743 - Wellbore #1 - Plan #3	10,700.00	5,906.68	4,406.38	4,343.51	70.079	ES
Guttersten D25-743 - Wellbore #1 - Plan #3	16,672.17	12,573.20	4,503.01	4,356.44	30.722	SF
Guttersten D25-753 - Wellbore #1 - Plan #3	16,672.17	12,510.48	5,110.60	4,967.46	35.702	CC, ES, SF
Guttersten D25-762 - Wellbore #1 - Plan #3	11,044.94	6,724.90	5,734.56	5,667.29	85.256	CC
Guttersten D25-762 - Wellbore #1 - Plan #3	16,672.17	12,363.76	5,744.11	5,601.48	40.274	ES, SF
Guttersten D25-772 - Wellbore #1 - Plan #3	10,690.02	5,808.42	6,296.44	6,234.65	101.905	CC
Guttersten D25-772 - Wellbore #1 - Plan #3	16,672.17	12,565.55	6,355.71	6,212.68	44.437	ES, SF
Guttersten D25-781 - Wellbore #1 - Plan #3	10,567.58	4,867.41	6,691.34	6,633.96	116.606	CC
Guttersten D25-781 - Wellbore #1 - Plan #3	10,600.00	4,871.38	6,691.42	6,633.80	116.119	ES
Guttersten D25-781 - Wellbore #1 - Plan #3	16,672.17	12,673.42	6,998.55	6,854.94	48.732	SF
Guttersten State D36-714 - Wellbore #1 - Plan #1	8,500.00	8,500.00	2,595.86	2,537.82	44.728	SF
Guttersten State D36-714 - Wellbore #1 - Plan #1	8,810.30	7,150.00	2,591.63	2,536.40	46.925	CC, ES
Guttersten State D36-724 - Wellbore #1 - Plan #1	6,750.00	9,104.83	3,246.80	3,188.92	56.093	SF
Guttersten State D36-724 - Wellbore #1 - Plan #1	8,917.63	6,968.89	3,215.58	3,160.76	58.658	CC, ES
Guttersten State D36-733 - Wellbore #1 - Plan #1	9,315.74	6,449.87	3,820.26	3,765.08	69.242	CC, ES
Guttersten State D36-733 - Wellbore #1 - Plan #1	10,600.00	6,250.00	4,015.44	3,953.99	65.342	SF
Guttersten State D36-743 - Wellbore #1 - Plan #1	9,443.03	5,870.07	4,351.79	4,297.70	80.453	CC, ES
Guttersten State D36-743 - Wellbore #1 - Plan #1	10,900.00	5,664.88	4,584.62	4,523.20	74.651	SF
Guttersten State D36-752 - Wellbore #1 - Plan #1	8,784.78	7,200.00	5,081.72	5,025.62	90.579	CC
Guttersten State D36-752 - Wellbore #1 - Plan #1	8,800.00	7,189.31	5,081.72	5,025.59	90.526	ES
Guttersten State D36-752 - Wellbore #1 - Plan #1	11,400.00	6,500.00	5,530.91	5,463.40	81.926	SF
Guttersten State D36-762 - Wellbore #1 - Plan #1	9,311.49	6,559.29	5,667.97	5,611.90	101.077	CC, ES
Guttersten State D36-762 - Wellbore #1 - Plan #1	11,600.00	6,106.54	6,087.67	6,020.30	90.366	SF
Guttersten State D36-771 - Wellbore #1 - Plan #1	9,543.31	5,761.51	6,198.11	6,143.54	113.589	CC
Guttersten State D36-771 - Wellbore #1 - Plan #1	9,600.00	5,746.80	6,198.35	6,143.51	113.019	ES
Guttersten State D36-771 - Wellbore #1 - Plan #1	12,500.00	5,005.65	6,824.22	6,755.87	99.843	SF
Guttersten State D36-781 - Wellbore #1 - Plan #1	9,804.18	4,859.54	6,591.02	6,538.46	125.395	CC, ES
Guttersten State D36-781 - Wellbore #1 - Plan #1	12,900.00	4,085.07	7,240.57	7,173.29	107.621	SF
Karch Blue D 25-02 (DA) - Wellbore #1 - No Surveys	10,917.71	6,676.67	4,288.65	4,112.76	24.382	CC, ES
Karch Blue D 25-02 (DA) - Wellbore #1 - No Surveys	11,500.00	6,672.61	4,328.00	4,148.30	24.085	SF
Karch Blue D 25-08 (SI) - Wellbore #1 - Gyro Surveys	9,646.17	6,636.83	2,999.82	2,942.62	52.446	CC, ES
Karch Blue D 25-08 (SI) - Wellbore #1 - Gyro Surveys	10,400.00	6,611.27	3,092.97	3,031.62	50.412	SF
Karch Blue D25-07 (SI) - Wellbore #1 - Gyro Surveys	9,644.44	6,693.24	4,323.99	4,266.65	75.407	CC, ES
Karch Blue D25-07 (SI) - Wellbore #1 - Gyro Surveys	11,100.00	6,679.22	4,562.39	4,496.89	69.659	SF
L F Ranch 2-25 (PR) - Wellbore #1 - Gyro Surveys	10,881.97	6,641.50	3,011.08	2,945.92	46.215	CC
L F Ranch 2-25 (PR) - Wellbore #1 - Gyro Surveys	10,900.00	6,640.88	3,011.13	2,945.85	46.126	ES
L F Ranch 2-25 (PR) - Wellbore #1 - Gyro Surveys	11,500.00	6,619.94	3,073.78	3,004.88	44.610	SF
LF Ranches 1 (PA) - Wellbore #1 - No Surveys	10,589.43	6,682.96	3,298.75	3,124.96	18.981	CC
LF Ranches 1 (PA) - Wellbore #1 - No Surveys	10,600.00	6,682.89	3,298.77	3,124.91	18.973	ES
LF Ranches 1 (PA) - Wellbore #1 - No Surveys	11,000.00	6,680.10	3,324.21	3,147.79	18.843	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 DD30-755
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4823.00ft
<b>Reference Site:</b>	DD Section 30	<b>MD Reference:</b>	KB @ 4823.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersten State DD30-755	<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 State DD30-755	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
<b>Offset Well - Wellbore - Design</b>						
D Section 36						
Kanga State D 36-1JI (SI) - Wellbore #1 - Gyro Surveys	6,360.59	6,291.81	3,150.23	3,106.37	71.821	CC, ES
Kanga State D 36-1JI (SI) - Wellbore #1 - Gyro Surveys	6,850.00	6,679.05	3,222.35	3,175.91	69.390	SF
Kanga State D 36-2JI - Wellbore #1 - Gyro Surveys	6,573.32	6,554.21	4,480.69	4,435.17	98.446	CC, ES
Kanga State D 36-2JI - Wellbore #1 - Gyro Surveys	7,050.00	6,781.51	4,532.55	4,485.26	95.837	SF
Kanga State D36-11JI (PR) - Wellbore #1 - Gyro Surveys	6,239.18	6,120.22	6,645.01	6,562.96	80.983	CC
Kanga State D36-11JI (PR) - Wellbore #1 - Gyro Surveys	6,250.00	6,130.84	6,645.06	6,562.85	80.829	ES
Kanga State D36-11JI (PR) - Wellbore #1 - Gyro Surveys	6,850.00	6,591.29	6,799.80	6,710.85	76.444	SF
Rhoo State D36-07JI (SI) - Wellbore #1 - Gyro Surveys	6,337.99	6,442.51	4,888.21	4,843.93	110.400	CC
Rhoo State D36-07JI (SI) - Wellbore #1 - Gyro Surveys	6,350.00	6,458.51	4,888.26	4,843.89	110.170	ES
Rhoo State D36-07JI (SI) - Wellbore #1 - Gyro Surveys	6,850.00	6,738.86	4,984.62	4,937.98	106.870	SF
Spike State D 36-04 (SI) - Gyro Surveys - Wellbore #1	6,627.24	6,692.78	7,049.97	7,003.96	153.248	CC
Spike State D 36-04 (SI) - Gyro Surveys - Wellbore #1	6,650.00	6,707.86	7,050.06	7,003.95	152.883	ES
Spike State D 36-04 (SI) - Gyro Surveys - Wellbore #1	10,500.00	6,931.50	8,446.41	8,386.72	141.498	SF
Spike State D 36-3 (SI) - Wellbore #1 - No Surveys	6,494.37	6,451.57	5,893.00	5,741.50	38.897	CC
Spike State D 36-3 (SI) - Wellbore #1 - No Surveys	6,550.00	6,497.27	5,893.61	5,741.04	38.629	ES
Spike State D 36-3 (SI) - Wellbore #1 - No Surveys	7,000.00	6,736.21	5,947.53	5,789.19	37.563	SF
Spike State D36-05 (SI) - Wellbore #1 - Gyro Surveys	6,310.99	6,077.14	7,440.29	7,397.25	172.865	CC, ES
Spike State D36-05 (SI) - Wellbore #1 - Gyro Surveys	7,050.00	6,945.93	7,561.45	7,513.69	158.324	SF
Spike State D36-06 (PA) - Wellbore #1 - Gyro Surveys	6,330.20	6,319.23	6,253.69	6,209.77	142.369	CC, ES
Spike State D36-06 (PA) - Wellbore #1 - Gyro Surveys	7,300.00	7,300.00	6,514.96	6,465.64	132.077	SF
State 09 (SI) - Wellbore #1 - Gyro Surveys	6,309.34	6,229.23	3,973.39	3,929.92	91.405	CC, ES
State 09 (SI) - Wellbore #1 - Gyro Surveys	6,900.00	6,839.82	4,087.17	4,039.89	86.461	SF
State 30 (SI) - Wellbore #1 - Gyro Surveys	6,244.77	6,207.97	7,361.35	7,318.16	170.442	CC
State 30 (SI) - Wellbore #1 - Gyro Surveys	6,250.00	6,215.38	7,361.36	7,318.13	170.272	ES
State 30 (SI) - Wellbore #1 - Gyro Surveys	6,900.00	6,652.28	7,549.40	7,502.90	162.360	SF
DD Section 06						
Guttersten 06D - Wellbore #1 - Wellbore #1 - As Drilled						Out of range
Guttersten 23-06 - Wellbore #1 - Wellbore #1 - As Drilled						Out of range
Guttersten 24-06 - Wellbore #1 - Wellbore #1 - As Drilled						Out of range
Guttersten 33-06 - Wellbore #1 - Wellbore #1 - As Drilled						Out of range
Guttersten 34-06 - Wellbore #1 - Wellbore #1 - As Drilled						Out of range
Guttersten 43-06 - Wellbore #1 - Wellbore #1 - As Drilled						Out of range
Guttersten 44-06 - Wellbore #1 - Wellbore #1 - As Drilled						Out of range
Guttersten DD18-715 - Guttersten DD18-715 - Plan #1	16,672.17	17,440.37	2,729.43	2,551.84	15.370	CC, ES, SF
Guttersten DD18-725 - Guttersten DD18-725 - Plan #1	16,672.17	17,276.88	2,074.61	1,899.41	11.841	CC, ES, SF
Guttersten DD18-730 - Guttersten DD18-730 - Plan #1	16,672.17	17,467.47	1,754.69	1,581.13	10.110	CC, ES, SF
Guttersten DD18-735 - Guttersten DD18-735 - Plan #1	16,672.17	17,393.03	1,427.62	1,256.56	8.346	CC, ES, SF
Guttersten DD18-746 - Guttersten DD18-746 - Plan #1	16,672.17	17,388.93	810.92	656.71	5.258	CC, ES, SF
Guttersten DD18-750 - Guttersten DD18-750 - Plan #1	16,672.17	17,652.14	568.47	437.37	4.336	CC, ES, SF
Guttersten DD18-754 - Guttersten DD18-754 - Plan #1	16,672.17	17,462.94	405.35	339.97	6.200	CC, ES, SF
Guttersten DD18-765 - Guttersten DD18-765 - Plan #1	16,672.17	17,287.24	743.50	591.56	4.893	CC, ES, SF
Guttersten DD18-770 - Guttersten DD18-770 - Plan #1	16,672.17	17,473.14	1,049.42	883.86	6.339	CC, ES, SF
Guttersten DD18-775 - Guttersten DD18-775 - Plan #1	16,672.17	17,369.80	1,352.42	1,181.05	7.892	CC, ES, SF
Guttersten DD18-785 - Guttersten DD18-785 - Plan #1	16,672.17	17,360.03	1,996.77	1,820.36	11.319	CC, ES, SF
DD Section 17						
Guttersten 23-17 - Wellbore #1 - Wellbore #1 - As Drilled	16,672.17	6,732.49	5,455.43	5,353.36	53.452	CC, ES, SF
Guttersten State DD17-78HN - Original Drilling - Original D	16,672.17	6,735.76	3,714.91	3,607.99	34.746	CC, ES, SF
Guttersten State DD17-78HN - Original Drilling - ST01 - S	16,672.17	6,429.65	3,745.56	3,642.61	36.383	CC, ES, SF
Guttersten State DD17-79-1HN - Original Drilling - Origina	16,672.17	6,434.52	3,432.97	3,328.49	32.856	CC, ES, SF
Guttersten State DD17-79HN - Original Drilling - Original D	16,672.17	6,383.98	3,169.08	3,064.64	30.344	CC, ES, SF
Guttersten USX DD17-19 - Original Drilling - Original Dri	16,672.17	6,673.67	6,096.02	6,009.29	70.292	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 Guttersten State DD30-755
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4823.00ft
<b>Reference Site:</b>	DD Section 30	<b>MD Reference:</b>	KB @ 4823.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersten State DD30-755	<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 State DD30-755	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
<b>Offset Well - Wellbore - Design</b>						
DD Section 18						
Guttersten 18D - Wellbore #1 - Wellbore #1 - As Drilled	16,672.17	6,677.54	2,202.11	2,113.08	24.735	CC, ES, SF
Guttersten 24-18 - Wellbore #1 - Wellbore #1 - As Drilled	16,672.17	6,683.13	866.97	809.26	15.023	CC, ES, SF
Guttersten 33-18 - Wellbore #1 - Wellbore #1 - As Drilled	16,672.17	6,695.26	2,471.44	2,403.53	36.391	CC, ES, SF
Guttersten 34-18 - Wellbore #1 - Wellbore #1 - As Drilled	16,672.17	6,676.69	1,254.00	1,163.01	13.783	CC, ES, SF
Guttersten 43-18 - Wellbore #1 - Wellbore #1 - As Drilled	16,672.17	6,702.56	3,165.33	3,075.39	35.192	CC, ES, SF
Guttersten 44-18 - Wellbore #1 - Wellbore #1 - As Drilled	16,672.17	6,674.98	2,466.73	2,363.51	23.899	CC, ES, SF
Karch Blue DD18-03J - Wellbore #1 - Wellbore #1 - As D	16,672.17	6,667.98	1,993.56	1,933.13	32.990	CC, ES, SF
Karch Blue DD18-12 - Original Drilling - Original Drilling -	16,672.17	6,653.08	2,882.31	2,798.39	34.345	CC, ES, SF
Karch Blue DD18-13 - Wellbore #1 - Wellbore #1 - As Dri	16,672.17	6,713.49	1,987.85	1,885.28	19.380	CC, ES, SF
SPIKE STATE GWS DD #18-1J(PA) - SPIKE STATE GW	16,672.17	6,692.50	4,499.01	4,323.74	25.668	CC, ES, SF
DD Section 19						
Champlin 366 Amoco B1 (PR) - Wellbore #1 - Gyro Surv	15,186.53	6,663.18	1,965.49	1,868.25	20.212	CC
Champlin 366 Amoco B1 (PR) - Wellbore #1 - Gyro Surv	15,200.00	6,662.54	1,965.54	1,868.20	20.193	ES
Champlin 366 Amoco B1 (PR) - Wellbore #1 - Gyro Surv	15,400.00	6,653.28	1,977.03	1,878.66	20.099	SF
Champlin 366 Amoco D1 (PA) - Wellbore #1 - No Survey	12,580.00	6,689.07	657.45	469.39	3.496	CC, ES
Champlin 366 Amoco D1 (PA) - Wellbore #1 - No Survey	12,600.00	6,688.93	657.75	469.54	3.495	SF
Guttersten 31-19 (PR) - Wellbore #1 - Gyro Surveys	16,181.04	6,668.83	1,042.28	937.17	9.916	CC, ES
Guttersten 31-19 (PR) - Wellbore #1 - Gyro Surveys	16,200.00	6,668.37	1,042.45	937.23	9.907	SF
Guttersten 44-19 (SI) - Wellbore #1 - No Surveys	12,320.17	6,735.88	2,374.52	2,187.44	12.693	CC, ES
Guttersten 44-19 (SI) - Wellbore #1 - No Surveys	12,500.00	6,734.63	2,381.32	2,193.14	12.654	SF
DD Section 20						
Spike State DD 20-02J (PR) - Wellbore #1 - Gyro Survey	16,001.68	6,721.09	3,910.74	3,806.91	37.664	CC, ES
Spike State DD 20-02J (PR) - Wellbore #1 - Gyro Survey	16,672.17	6,707.28	3,967.78	3,859.94	36.794	SF
Spike State DD 20-03J (PR) - Wellbore #1 - Gyro Survey	12,891.61	6,713.43	4,311.07	4,231.22	53.989	CC
Spike State DD 20-03J (PR) - Wellbore #1 - Gyro Survey	12,900.00	6,713.44	4,311.08	4,231.17	53.948	ES
Spike State DD 20-03J (PR) - Wellbore #1 - Gyro Survey	13,900.00	6,714.74	4,427.44	4,341.59	51.572	SF



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

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersten State DD30-755
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4823.00ft
<b>Reference Site:</b>	DD Section 30	<b>MD Reference:</b>	KB @ 4823.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersten State DD30-755	<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 State DD30-755	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

**Summary**

Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
DD Section 29						
Champlin 366 Amoco C UT 1 (PR) - Wellbore #1 - Gyro S	10,613.70	6,977.73	6,650.37	6,585.75	102.912	CC
Champlin 366 Amoco C UT 1 (PR) - Wellbore #1 - Gyro S	10,700.00	6,979.38	6,650.93	6,585.74	102.020	ES
Champlin 366 Amoco C UT 1 (PR) - Wellbore #1 - Gyro S	14,200.00	14,200.00	7,555.61	7,446.70	69.375	SF
Champlin Amoco 1 (PA) - Wellbore #1 - No Surveys	2,200.00	2,239.01	4,175.26	4,122.82	79.629	CC
Champlin Amoco 1 (PA) - Wellbore #1 - No Surveys	2,600.00	2,637.91	4,180.95	4,119.23	67.736	ES
Champlin Amoco 1 (PA) - Wellbore #1 - No Surveys	8,100.00	6,789.01	4,410.30	4,248.19	27.206	SF
Guttersten 42-29 (PR) - Wellbore #1 - Gyro Surveys	9,692.66	7,078.51	7,583.00	7,492.70	83.975	CC
Guttersten 42-29 (PR) - Wellbore #1 - Gyro Surveys	9,700.00	7,078.23	7,583.00	7,492.66	83.939	ES
Guttersten 42-29 (PR) - Wellbore #1 - Gyro Surveys	12,500.00	6,971.89	8,085.27	7,980.17	76.931	SF
Guttersten Federal YY5-715 - Guttersten Federal YY5-715	2,100.00	2,168.00	6,821.65	6,806.81	459.879	CC
Guttersten Federal YY5-715 - Guttersten Federal YY5-715	2,200.00	2,200.00	6,821.98	6,806.68	445.703	ES
Guttersten Federal YY5-715 - Guttersten Federal YY5-715	12,400.00	5,072.49	9,597.15	9,534.69	153.645	SF
Guttersten Federal YY5-725 - Guttersten Federal YY5-725	2,200.00	2,269.00	6,785.33	6,769.78	436.241	CC
Guttersten Federal YY5-725 - Guttersten Federal YY5-725	3,900.00	3,960.78	6,792.69	6,765.30	248.053	ES
Guttersten Federal YY5-725 - Guttersten Federal YY5-725	11,500.00	5,759.16	8,669.41	8,608.85	143.155	SF
Guttersten Federal YY5-735 - Guttersten Federal YY5-735	5,938.62	7,144.24	6,719.88	6,675.06	149.927	CC, ES
Guttersten Federal YY5-735 - Guttersten Federal YY5-735	11,100.00	6,300.00	8,096.94	8,036.49	133.948	SF
Guttersten Federal YY5-745 - Guttersten Federal YY5-745	5,994.72	7,034.70	6,069.40	6,023.64	132.625	CC
Guttersten Federal YY5-745 - Guttersten Federal YY5-745	6,000.00	7,035.60	6,069.41	6,023.62	132.563	ES
Guttersten Federal YY5-745 - Guttersten Federal YY5-745	9,800.00	6,550.00	6,905.55	6,849.43	123.054	SF
Guttersten Federal YY5-755 - Guttersten Federal YY5-755	2,200.00	2,269.00	4,970.35	4,954.79	319.553	CC
Guttersten Federal YY5-755 - Guttersten Federal YY5-755	3,500.00	3,562.97	4,977.04	4,952.48	202.662	ES
Guttersten Federal YY5-755 - Guttersten Federal YY5-755	9,200.00	6,165.59	5,950.87	5,899.61	116.104	SF
Guttersten Federal YY5-765 - Guttersten Federal YY5-765	4,266.13	4,877.49	4,759.95	4,728.37	150.742	CC
Guttersten Federal YY5-765 - Guttersten Federal YY5-765	6,000.00	6,698.64	4,761.20	4,717.05	107.842	ES
Guttersten Federal YY5-765 - Guttersten Federal YY5-765	6,850.00	6,750.00	4,829.27	4,782.52	103.310	SF
Guttersten Federal YY5-775 - Guttersten Federal YY5-775	6,195.68	7,050.00	4,130.78	4,084.00	88.296	CC
Guttersten Federal YY5-775 - Guttersten Federal YY5-775	6,200.00	7,050.00	4,130.78	4,083.98	88.267	ES
Guttersten Federal YY5-775 - Guttersten Federal YY5-775	6,600.00	7,050.00	4,154.45	4,106.54	86.708	SF
Guttersten Federal YY5-785 - Guttersten Federal YY5-785	6,211.73	7,250.00	3,480.67	3,432.23	71.864	CC, ES
Guttersten Federal YY5-785 - Guttersten Federal YY5-785	6,400.00	7,250.00	3,487.54	3,438.65	71.339	SF
Guttersten State DD29-715 - Wellbore #1 - Plan #1	1,907.11	1,954.11	6,818.64	6,805.27	509.792	CC
Guttersten State DD29-715 - Wellbore #1 - Plan #1	2,000.00	2,000.00	6,818.81	6,804.93	491.531	ES
Guttersten State DD29-715 - Wellbore #1 - Plan #1	16,672.17	17,367.84	8,019.96	7,845.47	45.964	SF
Guttersten State DD29-725 - Wellbore #1 - Plan #1	1,902.48	1,959.48	6,780.64	6,767.27	506.849	CC
Guttersten State DD29-725 - Wellbore #1 - Plan #1	2,000.00	2,032.24	6,780.75	6,766.77	484.946	ES
Guttersten State DD29-725 - Wellbore #1 - Plan #1	16,672.17	17,177.18	7,361.16	7,186.47	42.139	SF
Guttersten State DD29-735 - Wellbore #1 - Plan #1	4,181.74	4,744.93	6,589.78	6,558.60	211.352	CC
Guttersten State DD29-735 - Wellbore #1 - Plan #1	16,672.17	17,324.21	6,700.08	6,525.15	38.302	ES, SF
Guttersten State DD29-745 - Wellbore #1 - Plan #1	5,914.50	7,200.00	6,016.72	5,971.18	132.116	CC
Guttersten State DD29-745 - Wellbore #1 - Plan #1	16,672.17	17,323.86	6,041.00	5,866.77	34.673	ES, SF
Guttersten State DD29-755 - Wellbore #1 - Plan #1	1,900.00	1,967.00	4,965.06	4,951.66	370.635	CC
Guttersten State DD29-755 - Wellbore #1 - Plan #1	2,100.00	2,141.25	4,965.49	4,950.79	337.698	ES
Guttersten State DD29-755 - Wellbore #1 - Plan #1	16,672.17	17,337.92	5,357.46	5,182.47	30.615	SF
Guttersten State DD29-765 - Wellbore #1 - Plan #1	6,177.45	7,204.06	4,684.78	4,638.61	101.463	CC
Guttersten State DD29-765 - Wellbore #1 - Plan #1	16,672.17	17,369.18	4,697.42	4,522.61	26.872	ES, SF
Guttersten State DD29-775 - Wellbore #1 - Plan #1	6,254.73	7,340.36	4,028.67	3,981.15	84.771	CC
Guttersten State DD29-775 - Wellbore #1 - Plan #1	16,672.17	17,480.45	4,037.38	3,863.02	23.155	ES, SF
Guttersten State DD29-785 - Wellbore #1 - Plan #1	6,354.37	7,575.37	3,375.49	3,326.05	68.265	CC
Guttersten State DD29-785 - Wellbore #1 - Plan #1	16,672.17	17,701.91	3,377.33	3,203.07	19.380	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 State DD30-755
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4823.00ft
<b>Reference Site:</b>	DD Section 30	<b>MD Reference:</b>	KB @ 4823.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersen State DD30-755	<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 State DD30-755	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

**Summary**

Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
<b>Offset Well - Wellbore - Design</b>						
DD Section 30						
Guttersen 11-30 (PR) - Wellbore #1 - Gyro Surveys	10,973.82	6,695.25	1,673.63	1,607.69	25.381	CC, ES
Guttersen 11-30 (PR) - Wellbore #1 - Gyro Surveys	11,200.00	6,690.78	1,688.84	1,621.50	25.080	SF
Guttersen 12-30 (PR) - Wellbore #1 - Gyro Surveys	9,555.10	6,687.71	1,754.81	1,697.99	30.885	CC, ES
Guttersen 12-30 (PR) - Wellbore #1 - Gyro Surveys	9,800.00	6,675.23	1,771.76	1,713.58	30.451	SF
Guttersen 22-30 (PR) - Wellbore #1 - Gyro Surveys	9,628.30	6,725.79	343.10	285.82	5.989	CC, ES, SF
Guttersen 30 A (PR) - Wellbore #1 - Gyro Surveys	10,256.59	6,709.51	944.78	883.59	15.438	CC, ES
Guttersen 30 A (PR) - Wellbore #1 - Gyro Surveys	10,300.00	6,709.35	945.78	884.29	15.381	SF
Guttersen State DD30-715 - Guttersen State DD30-715 -	2,102.38	2,132.38	1,950.09	1,935.37	132.529	CC
Guttersen State DD30-715 - Guttersen State DD30-715 -	2,200.00	2,219.32	1,950.17	1,934.79	126.861	ES
Guttersen State DD30-715 - Guttersen State DD30-715 -	16,672.17	17,004.36	2,697.45	2,524.25	15.575	SF
Guttersen State DD30-725 - Guttersen State DD30-725 -	4,090.69	4,179.52	1,862.28	1,833.71	65.190	CC
Guttersen State DD30-725 - Guttersen State DD30-725 -	4,100.00	4,188.81	1,862.30	1,833.67	65.039	ES
Guttersen State DD30-725 - Guttersen State DD30-725 -	16,672.17	16,978.56	2,057.31	1,883.94	11.866	SF
Guttersen State DD30-735 - Guttersen State DD30-735 -	16,672.17	17,060.54	1,397.37	1,224.31	8.074	CC, ES, SF
Guttersen State DD30-745 - Guttersen State DD30-745 -	16,672.17	17,226.31	737.13	564.41	4.268	CC, ES, SF
Guttersen State DD30-766 - Guttersen State DD30-766 -	2,100.00	2,100.00	37.00	22.41	2.536	CC, ES, SF
Guttersen State DD30-775 - Guttersen State DD30-775 -	2,000.00	2,001.00	75.00	61.12	5.405	CC, ES
Guttersen State DD30-775 - Guttersen State DD30-775 -	2,100.00	2,097.19	77.51	62.96	5.326	SF
Guttersen State DD30-785 - Guttersen State DD30-785 -	2,000.00	2,001.00	112.01	98.13	8.072	CC, ES
Guttersen State DD30-785 - Guttersen State DD30-785 -	2,100.00	2,095.40	114.49	99.95	7.870	SF
Guttersen YY06-756 - Guttersen YY06-756 - Plan #1	6,482.53	6,512.54	89.63	44.72	1.996	CC, ES, SF
Guttersen YY06-766 - Guttersen YY06-766 - Plan #1	2,200.00	2,203.00	154.26	138.94	10.071	CC, ES
Guttersen YY06-766 - Guttersen YY06-766 - Plan #1	2,400.00	2,396.84	161.03	144.36	9.656	SF
Guttersen YY06-775 - Guttersen YY06-775 - Plan #1	2,100.00	2,098.00	167.71	153.13	11.501	CC
Guttersen YY06-775 - Guttersen YY06-775 - Plan #1	2,200.00	2,196.44	168.16	152.88	11.003	ES
Guttersen YY06-775 - Guttersen YY06-775 - Plan #1	2,300.00	2,294.63	171.18	155.23	10.729	SF
Guttersen YY06-785 - Guttersen YY06-785 - Plan #1	2,000.00	1,998.00	187.40	173.53	13.515	CC, ES
Guttersen YY06-785 - Guttersen YY06-785 - Plan #1	2,300.00	2,287.24	196.91	181.01	12.386	SF
Karch Blue DD 30-12 (PA) - Wellbore #1 - No Surveys	8,434.15	6,703.00	1,799.92	1,638.10	11.123	CC, ES
Karch Blue DD 30-12 (PA) - Wellbore #1 - No Surveys	8,500.00	6,703.00	1,801.13	1,639.00	11.109	SF
Karch Blue DD 30-14 (PA) - Wellbore #1 - No Surveys	6,942.95	6,678.17	287.00	129.90	1.827	CC, ES
Karch Blue DD 30-14 (PA) - Wellbore #1 - No Surveys	6,950.00	6,680.29	287.08	129.93	1.827	SF
Karch Blue DD 30-3 J (PA) - Wellbore #1 - No Surveys	7,881.46	6,708.00	630.06	470.27	3.943	CC, ES, SF
L F Ranch 2-30 (PR) - Wellbore #1 - Gyro Surveys	10,629.54	6,701.06	360.41	296.71	5.658	CC, ES, SF
State 19 (PA) - Wellbore #1 - NO Surveys	10,275.41	6,752.16	1,864.38	1,691.26	10.770	CC, ES
State 19 (PA) - Wellbore #1 - NO Surveys	10,400.00	6,751.29	1,868.53	1,694.74	10.751	SF
DD Section 31						
Guttersen 31Q-221 (PR) - Wellbore #1 - MWD Surveys	6,331.60	10,956.00	1,188.82	1,098.93	13.225	CC, ES
Guttersen 31Q-221 (PR) - Wellbore #1 - MWD Surveys	6,400.00	10,956.00	1,193.01	1,102.60	13.195	SF
Guttersen 31Q-401 (PR) - Wellbore #1 - MWD Surveys	6,438.62	11,132.00	1,062.53	986.25	13.930	CC, ES
Guttersen 31Q-401 (PR) - Wellbore #1 - MWD Surveys	6,450.00	11,132.00	1,062.67	986.30	13.914	SF
Guttersen 31T-301 (PR) - Wellbore #1 - MWD Surveys	6,336.47	11,048.00	1,756.12	1,654.39	17.262	CC
Guttersen 31T-301 (PR) - Wellbore #1 - MWD Surveys	6,350.00	11,048.00	1,756.24	1,654.35	17.238	ES
Guttersen 31T-301 (PR) - Wellbore #1 - MWD Surveys	6,450.00	11,048.00	1,763.96	1,661.30	17.182	SF
Guttersen 31T-441 (PR) - Wellbore #1 - MWD Surveys	6,402.38	11,127.00	1,497.39	1,401.75	15.655	CC, ES
Guttersen 31T-441 (PR) - Wellbore #1 - MWD Surveys	6,450.00	11,127.00	1,499.08	1,402.98	15.600	SF
Guttersen 33-31 (PR) - Wellbore #1 - Gyro Surveys	6,121.28	6,087.09	3,515.76	3,473.37	82.947	CC, ES
Guttersen 33-31 (PR) - Wellbore #1 - Gyro Surveys	6,400.00	6,338.90	3,574.13	3,529.95	80.901	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 DD30-755
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4823.00ft
<b>Reference Site:</b>	DD Section 30	<b>MD Reference:</b>	KB @ 4823.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersten State DD30-755	<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 State DD30-755	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
YY Section 06						
Cuykendall #2-6 (PA) - Wellbore #1 - No Surveys						Out of range
Guttersten #6D South (PA) - Wellbore #1 - As-Drilled	6,138.38	6,313.10	9,511.00	9,467.72	219.723	CC
Guttersten #6D South (PA) - Wellbore #1 - As-Drilled	6,150.00	6,331.84	9,511.10	9,467.71	219.185	ES
Guttersten #6D South (PA) - Wellbore #1 - As-Drilled	6,700.00	6,837.76	9,737.56	9,690.91	208.729	SF
Guttersten 6M-303 (PR) - Wellbore #1 - Wellbore #1	6,096.55	5,881.00	5,516.33	5,474.02	130.374	CC
Guttersten 6M-303 (PR) - Wellbore #1 - Wellbore #1	6,110.79	5,881.00	5,516.35	5,473.98	130.223	ES
Guttersten 6M-303 (PR) - Wellbore #1 - Wellbore #1	6,300.00	5,913.00	5,547.08	5,504.00	128.770	SF
Guttersten 6M-423 (PR) - Wellbore #1 - MWD Surveys	6,113.28	6,113.28	5,574.16	5,531.65	131.128	CC, ES
Guttersten 6M-423 (PR) - Wellbore #1 - MWD Surveys	6,350.00	6,010.00	5,620.49	5,577.57	130.947	SF
Guttersten 6R-243 (PR) - Wellbore #1 - Gyro Surveys	6,032.41	5,896.97	5,630.54	5,588.16	132.868	CC, ES
Guttersten 6R-243 (PR) - Wellbore #1 - Gyro Surveys	6,350.00	5,946.00	5,681.24	5,637.66	130.369	SF
Guttersten 6R-403 (PR) - Wellbore #1 - MWD Surveys	5,750.89	5,682.33	5,711.00	5,668.55	134.535	CC
Guttersten 6R-403 (PR) - Wellbore #1 - MWD Surveys	5,800.00	5,725.00	5,711.20	5,668.45	133.597	ES
Guttersten 6R-403 (PR) - Wellbore #1 - MWD Surveys	6,400.00	6,010.00	5,790.75	5,745.08	126.798	SF
Guttersten 31-6 (SI) - Wellbore #1 - Gyro Surveys	6,133.31	6,151.43	6,231.62	6,188.98	146.164	CC, ES
Guttersten 31-6 (SI) - Wellbore #1 - Gyro Surveys	6,550.00	6,478.85	6,362.53	6,317.50	141.279	SF
Guttersten 32-6 (SI) - Wellbore #1 - Gyro Surveys	6,134.41	6,166.18	7,494.97	7,452.27	175.531	CC, ES
Guttersten 32-6 (SI) - Wellbore #1 - Gyro Surveys	6,850.00	6,948.48	7,845.89	7,797.44	161.933	SF
J.H. Cuykendall 1 (PA) - Wellbore #1 - Gyro Surveys	6,138.36	5,926.61	9,805.87	9,763.98	234.123	CC, ES
J.H. Cuykendall 1 (PA) - Wellbore #1 - Gyro Surveys	6,650.00	6,932.85	9,990.33	9,943.56	213.603	SF