

Project: Mustang
Site: DD Section 30
Well: Guttersten State DD30-785
Wellbore: Guttersten State DD30-785
Design: Plan #2

Northern Region - DJ Basin

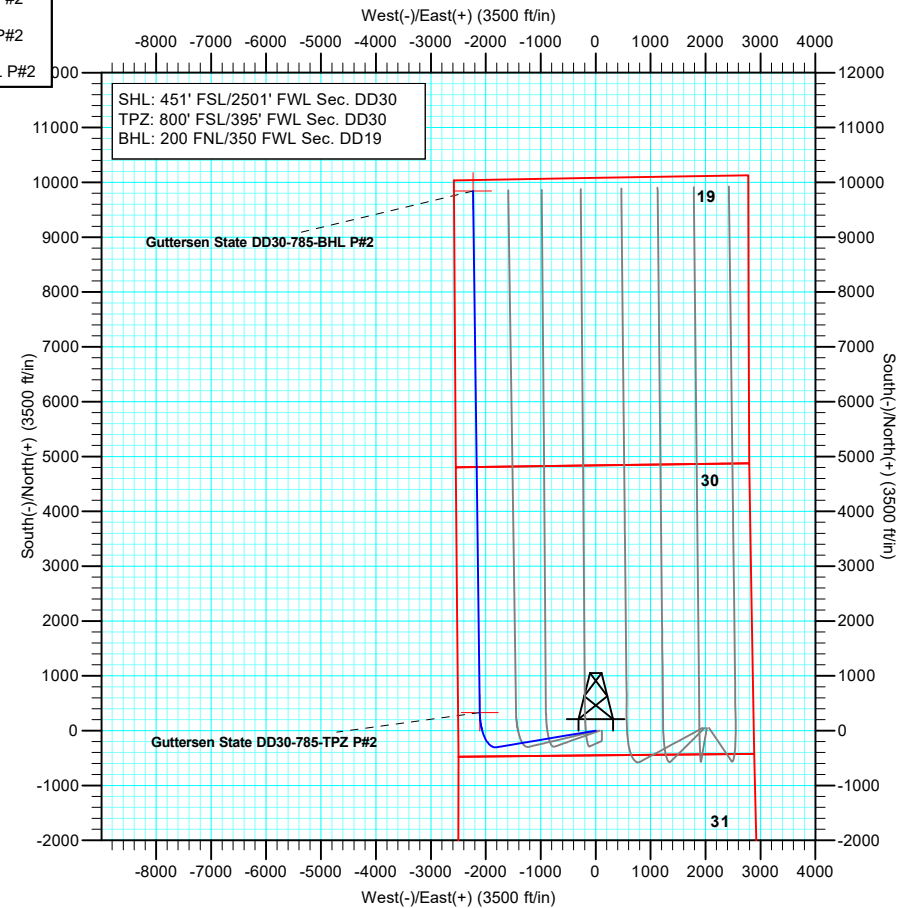
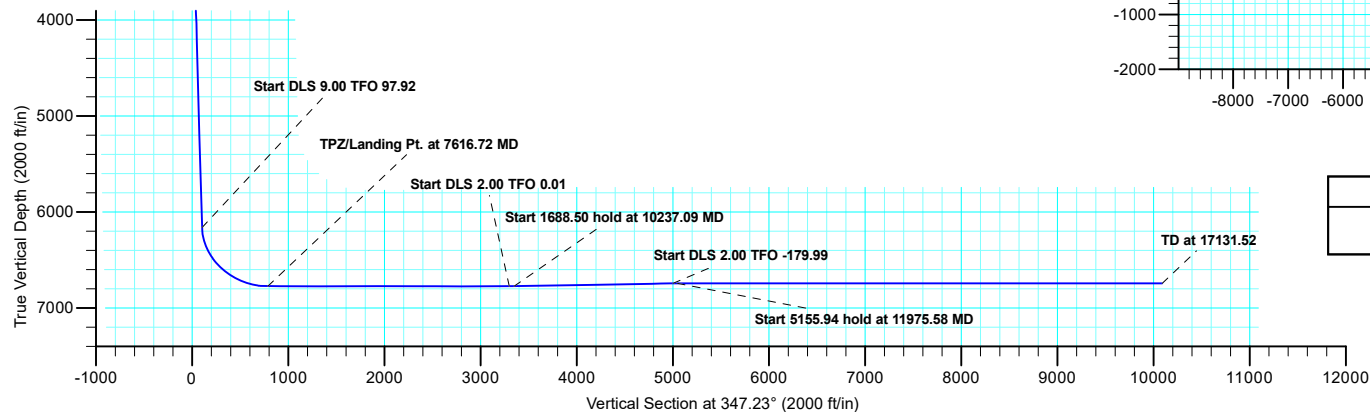
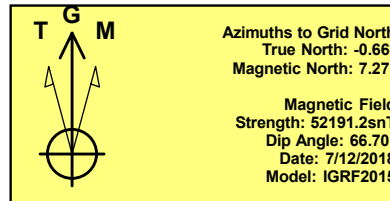
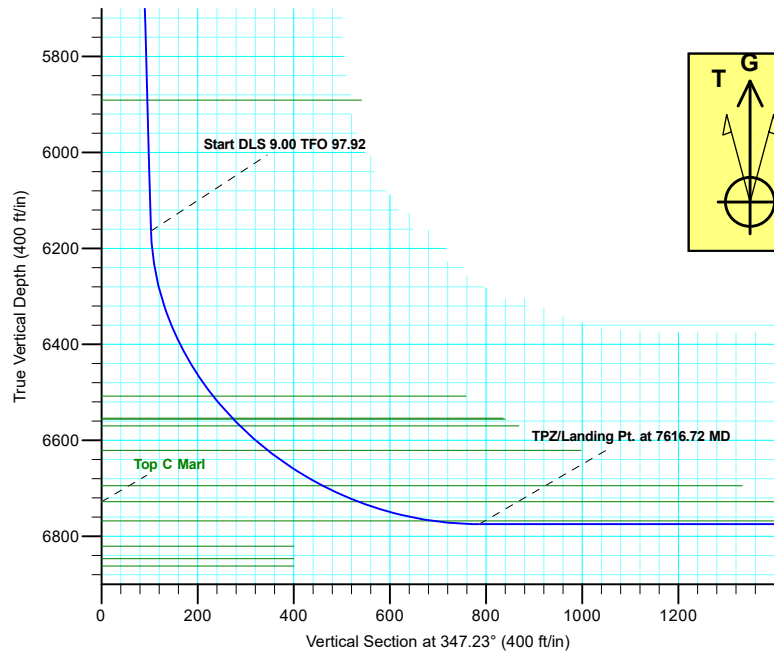
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: Colorado Northern Zone
System Datum: Mean Sea Level

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	2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.00	0.00	
3	2872.92	26.19	260.46	2842.84	-32.50	-193.32	3.00	260.46	11.04	
4	6573.65	26.19	260.46	6163.71	-303.28	-1803.89	0.00	0.00	102.99	
5	7616.72	90.00	359.27	6775.00	328.03	-2109.07	9.00	97.92	786.14	Guttersten State DD30-785-TPZ P#2
6	10187.10	90.00	359.27	6775.00	2898.20	-2141.96	0.00	0.00	3300.00	Guttersten State DD30-785-T1 P#2
7	10237.09	91.00	359.27	6774.56	2948.19	-2142.59	2.00	0.01	3348.89	
8	11925.59	91.00	359.27	6745.10	4636.29	-2164.19	0.00	0.00	5000.00	Guttersten State DD30-785-T2 P#2
9	11975.58	90.00	359.27	6744.66	4686.27	-2164.83	2.00	-179.99	5048.89	
10	17131.52	90.00	359.27	6744.66	9841.79	-2230.80	0.00	0.00	10091.45	Guttersten State DD30-785-BHL P#2

WELL DETAILS: Guttersten State DD30-785

+N/-S	+E/-W	Northing	Ground Level: Easting	4794.00 Latitude	Longitude	Slot
0.00	0.00	1313834.89	3284560.69	40.1903867	-104.4814030	



Plan: Plan #2 (Guttersten State DD30-785/Guttersten State DD30-785)

Created by: Shelly C. Peterkin Date: 9:33, August 12 2019

Northern Region - DJ Basin

Mustang

DD Section 30

Guttersen State DD30-785

Guttersen State DD30-785

Plan: Plan #2

Standard Planning Report

12 August, 2019

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Guttersen State DD30-785
Company:	Northern Region - DJ Basin	TVD Reference:	KB @ 4824.00ft
Project:	Mustang	MD Reference:	KB @ 4824.00ft
Site:	DD Section 30	North Reference:	Grid
Well:	Guttersen State DD30-785	Survey Calculation Method:	Minimum Curvature
Wellbore:	Guttersen State DD30-785		
Design:	Plan #2		

Project	Mustang, Weld County Colorado		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	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 DD30-785			
Well Position	+N/-S	-2,178.24 ft	Northing:	1,313,834.89 usft
	+E/-W	-186.45 ft	Easting:	3,284,560.70 usft
Position Uncertainty		0.00 ft	Wellhead Elevation:	Latitude: 40.1903868
				Longitude: -104.4814030
				Ground Level: 4,794.00 ft

Wellbore	Guttersen State DD30-785				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	7/12/2018	7.93	66.70	52,191.17127615

Design	Plan #2			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(ft)	(ft)	(ft)	(°)
	0.00	0.00	0.00	347.23

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,872.92	26.19	260.46	2,842.84	-32.50	-193.32	3.00	3.00	0.00	260.46	
6,573.65	26.19	260.46	6,163.71	-303.28	-1,803.89	0.00	0.00	0.00	0.00	
7,616.72	90.00	359.27	6,775.00	328.03	-2,109.07	9.00	6.12	9.47	97.92	Guttersen State DD30
10,187.10	90.00	359.27	6,775.00	2,898.20	-2,141.96	0.00	0.00	0.00	0.00	Guttersen State DD30
10,237.09	91.00	359.27	6,774.56	2,948.19	-2,142.59	2.00	2.00	0.00	0.01	
11,925.59	91.00	359.27	6,745.10	4,636.29	-2,164.19	0.00	0.00	0.00	0.00	Guttersen State DD30
11,975.58	90.00	359.27	6,744.66	4,686.27	-2,164.83	2.00	-2.00	0.00	-179.99	
17,131.52	90.00	359.27	6,744.66	9,841.79	-2,230.80	0.00	0.00	0.00	0.00	Guttersen State DD30

Noble Energy, Inc.

Planning Report

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Company:	Northern Region - DJ Basin	TVD Reference:	KB @ 4824.00ft
Project:	Mustang	MD Reference:	KB @ 4824.00ft
Site:	DD Section 30	North Reference:	Grid
Well:	Guttersten State DD30-785	Survey Calculation Method:	Minimum Curvature
Wellbore:	Guttersten State DD30-785		
Design:	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
613.00	0.00	0.00	613.00	0.00	0.00	0.00	0.00	0.00	0.00
Pierre									
687.00	0.00	0.00	687.00	0.00	0.00	0.00	0.00	0.00	0.00
Upper Pierre Aquifer Top									
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
1,624.00	0.00	0.00	1,624.00	0.00	0.00	0.00	0.00	0.00	0.00
Upper Pierre Aquifer Base									
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
Start Build 3.00									
2,100.00	3.00	260.46	2,099.95	-0.43	-2.58	0.15	3.00	3.00	0.00
2,200.00	6.00	260.46	2,199.63	-1.73	-10.32	0.59	3.00	3.00	0.00
2,300.00	9.00	260.46	2,298.77	-3.90	-23.19	1.32	3.00	3.00	0.00
2,400.00	12.00	260.46	2,397.08	-6.92	-41.16	2.35	3.00	3.00	0.00
2,500.00	15.00	260.46	2,494.31	-10.79	-64.18	3.66	3.00	3.00	0.00
2,600.00	18.00	260.46	2,590.18	-15.50	-92.18	5.26	3.00	3.00	0.00
2,700.00	21.00	260.46	2,684.43	-21.03	-125.10	7.14	3.00	3.00	0.00
2,800.00	24.00	260.46	2,776.81	-27.38	-162.83	9.30	3.00	3.00	0.00
2,872.92	26.19	260.46	2,842.84	-32.50	-193.32	11.04	3.00	3.00	0.00
Start 3700.74 hold at 2872.92 MD									
2,900.00	26.19	260.46	2,867.14	-34.48	-205.11	11.71	0.00	0.00	0.00
3,000.00	26.19	260.46	2,956.88	-41.80	-248.63	14.19	0.00	0.00	0.00
3,100.00	26.19	260.46	3,046.61	-49.12	-292.15	16.68	0.00	0.00	0.00
3,200.00	26.19	260.46	3,136.35	-56.44	-335.67	19.16	0.00	0.00	0.00
3,300.00	26.19	260.46	3,226.09	-63.75	-379.19	21.65	0.00	0.00	0.00
3,400.00	26.19	260.46	3,315.82	-71.07	-422.71	24.13	0.00	0.00	0.00
3,500.00	26.19	260.46	3,405.56	-78.39	-466.23	26.62	0.00	0.00	0.00
3,600.00	26.19	260.46	3,495.29	-85.70	-509.75	29.10	0.00	0.00	0.00
3,700.00	26.19	260.46	3,585.03	-93.02	-553.27	31.59	0.00	0.00	0.00
3,734.52	26.19	260.46	3,616.00	-95.55	-568.29	32.44	0.00	0.00	0.00
Parkman									
3,800.00	26.19	260.46	3,674.76	-100.34	-596.79	34.07	0.00	0.00	0.00
3,900.00	26.19	260.46	3,764.50	-107.65	-640.31	36.56	0.00	0.00	0.00
4,000.00	26.19	260.46	3,854.23	-114.97	-683.83	39.04	0.00	0.00	0.00
4,100.00	26.19	260.46	3,943.97	-122.29	-727.35	41.53	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Guttarsen State DD30-785
Company:	Northern Region - DJ Basin	TVD Reference:	KB @ 4824.00ft
Project:	Mustang	MD Reference:	KB @ 4824.00ft
Site:	DD Section 30	North Reference:	Grid
Well:	Guttarsen State DD30-785	Survey Calculation Method:	Minimum Curvature
Wellbore:	Guttarsen State DD30-785		
Design:	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)
4,200.00	26.19	260.46	4,033.71	-129.60	-770.87	44.01	0.00	0.00	0.00
4,204.79	26.19	260.46	4,038.00	-129.95	-772.96	44.13	0.00	0.00	0.00
Sussex									
4,300.00	26.19	260.46	4,123.44	-136.92	-814.39	46.49	0.00	0.00	0.00
4,400.00	26.19	260.46	4,213.18	-144.24	-857.91	48.98	0.00	0.00	0.00
4,410.95	26.19	260.46	4,223.00	-145.04	-862.68	49.25	0.00	0.00	0.00
Shannon									
4,500.00	26.19	260.46	4,302.91	-151.56	-901.43	51.46	0.00	0.00	0.00
4,600.00	26.19	260.46	4,392.65	-158.87	-944.95	53.95	0.00	0.00	0.00
4,700.00	26.19	260.46	4,482.38	-166.19	-988.47	56.43	0.00	0.00	0.00
4,800.00	26.19	260.46	4,572.12	-173.51	-1,031.99	58.92	0.00	0.00	0.00
4,900.00	26.19	260.46	4,661.85	-180.82	-1,075.51	61.40	0.00	0.00	0.00
5,000.00	26.19	260.46	4,751.59	-188.14	-1,119.03	63.89	0.00	0.00	0.00
5,100.00	26.19	260.46	4,841.32	-195.46	-1,162.55	66.37	0.00	0.00	0.00
5,200.00	26.19	260.46	4,931.06	-202.77	-1,206.07	68.86	0.00	0.00	0.00
5,300.00	26.19	260.46	5,020.80	-210.09	-1,249.60	71.34	0.00	0.00	0.00
5,400.00	26.19	260.46	5,110.53	-217.41	-1,293.12	73.82	0.00	0.00	0.00
5,500.00	26.19	260.46	5,200.27	-224.72	-1,336.64	76.31	0.00	0.00	0.00
5,600.00	26.19	260.46	5,290.00	-232.04	-1,380.16	78.79	0.00	0.00	0.00
5,700.00	26.19	260.46	5,379.74	-239.36	-1,423.68	81.28	0.00	0.00	0.00
5,800.00	26.19	260.46	5,469.47	-246.68	-1,467.20	83.76	0.00	0.00	0.00
5,900.00	26.19	260.46	5,559.21	-253.99	-1,510.72	86.25	0.00	0.00	0.00
6,000.00	26.19	260.46	5,648.94	-261.31	-1,554.24	88.73	0.00	0.00	0.00
6,100.00	26.19	260.46	5,738.68	-268.63	-1,597.76	91.22	0.00	0.00	0.00
6,200.00	26.19	260.46	5,828.42	-275.94	-1,641.28	93.70	0.00	0.00	0.00
6,269.74	26.19	260.46	5,891.00	-281.05	-1,671.63	95.43	0.00	0.00	0.00
Teepee Buttes									
6,300.00	26.19	260.46	5,918.15	-283.26	-1,684.80	96.19	0.00	0.00	0.00
6,400.00	26.19	260.46	6,007.89	-290.58	-1,728.32	98.67	0.00	0.00	0.00
6,500.00	26.19	260.46	6,097.62	-297.89	-1,771.84	101.16	0.00	0.00	0.00
6,573.65	26.19	260.46	6,163.71	-303.28	-1,803.89	102.99	0.00	0.00	0.00
Start DLS 9.00 TFO 97.92									
6,600.00	25.96	265.83	6,187.38	-304.67	-1,815.38	104.18	9.00	-0.86	20.39
6,650.00	26.08	276.09	6,232.34	-304.30	-1,837.23	109.37	9.00	0.24	20.53
6,700.00	26.91	286.02	6,277.11	-300.00	-1,859.05	118.38	9.00	1.66	19.85
6,750.00	28.39	295.19	6,321.42	-291.82	-1,880.69	131.14	9.00	2.95	18.34
6,800.00	30.41	303.38	6,365.00	-279.79	-1,902.02	147.59	9.00	4.06	16.39
6,850.00	32.89	310.55	6,407.57	-263.99	-1,922.91	167.61	9.00	4.96	14.33
6,900.00	35.73	316.76	6,448.88	-244.52	-1,943.24	191.10	9.00	5.67	12.42
6,950.00	38.84	322.13	6,488.67	-221.50	-1,962.87	217.89	9.00	6.22	10.75
6,975.11	40.48	324.56	6,508.00	-208.64	-1,972.43	232.54	9.00	6.56	9.66
Sharon Springs									
7,000.00	42.16	326.81	6,526.69	-195.07	-1,981.69	247.83	9.00	6.74	9.03
7,037.62	44.77	329.94	6,554.00	-173.03	-1,995.25	272.32	9.00	6.95	8.32
Top A Chalk									
7,040.44	44.97	330.16	6,556.00	-171.30	-1,996.24	274.22	9.00	7.06	7.90
Top A Marl									
7,050.00	45.65	330.90	6,562.72	-165.39	-1,999.58	280.73	9.00	7.10	7.78
7,060.48	46.40	331.70	6,570.00	-158.77	-2,003.21	287.98	9.00	7.15	7.60
Top B Chalk									
7,100.00	49.27	334.53	6,596.52	-132.65	-2,016.43	316.38	9.00	7.27	7.17
7,138.65	52.14	337.07	6,621.00	-105.36	-2,028.68	345.70	9.00	7.43	6.57
Top B Marl									

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Guttersen State DD30-785
Company:	Northern Region - DJ Basin	TVD Reference:	KB @ 4824.00ft
Project:	Mustang	MD Reference:	KB @ 4824.00ft
Site:	DD Section 30	North Reference:	Grid
Well:	Guttersen State DD30-785	Survey Calculation Method:	Minimum Curvature
Wellbore:	Guttersen State DD30-785		
Design:	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)
7,150.00	53.00	337.78	6,627.90	-97.04	-2,032.14	354.58	9.00	7.51	6.24
7,200.00	56.80	340.72	6,656.65	-58.79	-2,046.60	395.08	9.00	7.61	5.88
7,250.00	60.67	343.42	6,682.60	-18.14	-2,059.73	437.63	9.00	7.73	5.39
7,276.14	62.71	344.74	6,695.00	3.99	-2,066.04	460.61	9.00	7.81	5.08
Top C Chalk									
7,300.00	64.58	345.91	6,705.59	24.67	-2,071.45	481.97	9.00	7.86	4.90
7,350.00	68.54	348.25	6,725.48	69.38	-2,081.69	527.83	9.00	7.91	4.68
7,356.98	69.09	348.57	6,728.00	75.75	-2,083.00	534.34	9.00	7.95	4.52
Top C Marl									
7,400.00	72.52	350.47	6,742.14	115.69	-2,090.38	574.93	9.00	7.98	4.41
7,450.00	76.53	352.58	6,755.48	163.35	-2,097.47	622.97	9.00	8.02	4.24
7,500.00	80.56	354.63	6,765.40	212.03	-2,102.92	671.66	9.00	8.05	4.10
7,517.07	81.94	355.32	6,768.00	228.84	-2,104.40	688.37	9.00	8.07	4.03
Top D Chalk									
7,550.00	84.60	356.63	6,771.86	261.46	-2,106.69	720.69	9.00	8.08	3.99
7,600.00	88.65	358.61	6,774.80	311.32	-2,108.76	769.77	9.00	8.09	3.95
7,616.72	90.00	359.27	6,775.00	328.03	-2,109.07	786.14	9.00	8.09	3.93
TPZ/Landing Pt. at 7616.72 MD									
7,700.00	90.00	359.27	6,775.00	411.30	-2,110.13	867.59	0.00	0.00	0.00
7,800.00	90.00	359.27	6,775.00	511.30	-2,111.41	965.39	0.00	0.00	0.00
7,900.00	90.00	359.27	6,775.00	611.29	-2,112.69	1,063.19	0.00	0.00	0.00
8,000.00	90.00	359.27	6,775.00	711.28	-2,113.97	1,161.00	0.00	0.00	0.00
8,100.00	90.00	359.27	6,775.00	811.27	-2,115.25	1,258.80	0.00	0.00	0.00
8,200.00	90.00	359.27	6,775.00	911.26	-2,116.53	1,356.60	0.00	0.00	0.00
8,300.00	90.00	359.27	6,775.00	1,011.26	-2,117.81	1,454.40	0.00	0.00	0.00
8,400.00	90.00	359.27	6,775.00	1,111.25	-2,119.09	1,552.20	0.00	0.00	0.00
8,500.00	90.00	359.27	6,775.00	1,211.24	-2,120.37	1,650.00	0.00	0.00	0.00
8,600.00	90.00	359.27	6,775.00	1,311.23	-2,121.65	1,747.80	0.00	0.00	0.00
8,700.00	90.00	359.27	6,775.00	1,411.22	-2,122.93	1,845.60	0.00	0.00	0.00
8,800.00	90.00	359.27	6,775.00	1,511.21	-2,124.21	1,943.40	0.00	0.00	0.00
8,900.00	90.00	359.27	6,775.00	1,611.21	-2,125.49	2,041.20	0.00	0.00	0.00
9,000.00	90.00	359.27	6,775.00	1,711.20	-2,126.77	2,139.00	0.00	0.00	0.00
9,100.00	90.00	359.27	6,775.00	1,811.19	-2,128.05	2,236.81	0.00	0.00	0.00
9,200.00	90.00	359.27	6,775.00	1,911.18	-2,129.33	2,334.61	0.00	0.00	0.00
9,300.00	90.00	359.27	6,775.00	2,011.17	-2,130.61	2,432.41	0.00	0.00	0.00
9,400.00	90.00	359.27	6,775.00	2,111.17	-2,131.88	2,530.21	0.00	0.00	0.00
9,500.00	90.00	359.27	6,775.00	2,211.16	-2,133.16	2,628.01	0.00	0.00	0.00
9,600.00	90.00	359.27	6,775.00	2,311.15	-2,134.44	2,725.81	0.00	0.00	0.00
9,700.00	90.00	359.27	6,775.00	2,411.14	-2,135.72	2,823.61	0.00	0.00	0.00
9,800.00	90.00	359.27	6,775.00	2,511.13	-2,137.00	2,921.41	0.00	0.00	0.00
9,900.00	90.00	359.27	6,775.00	2,611.12	-2,138.28	3,019.21	0.00	0.00	0.00
10,000.00	90.00	359.27	6,775.00	2,711.12	-2,139.56	3,117.01	0.00	0.00	0.00
10,100.00	90.00	359.27	6,775.00	2,811.11	-2,140.84	3,214.81	0.00	0.00	0.00
10,187.10	90.00	359.27	6,775.00	2,898.20	-2,141.96	3,300.00	0.00	0.00	0.00
Start DLS 2.00 TFO 0.01									
10,200.00	90.26	359.27	6,774.97	2,911.10	-2,142.12	3,312.62	2.00	2.00	0.00
10,237.09	91.00	359.27	6,774.56	2,948.19	-2,142.59	3,348.89	2.00	2.00	0.00
Start 1688.50 hold at 10237.09 MD									
10,300.00	91.00	359.27	6,773.47	3,011.08	-2,143.40	3,410.40	0.00	0.00	0.00
10,400.00	91.00	359.27	6,771.72	3,111.06	-2,144.68	3,508.19	0.00	0.00	0.00
10,500.00	91.00	359.27	6,769.98	3,211.03	-2,145.96	3,605.98	0.00	0.00	0.00
10,600.00	91.00	359.27	6,768.23	3,311.01	-2,147.24	3,703.76	0.00	0.00	0.00
10,700.00	91.00	359.27	6,766.49	3,410.99	-2,148.52	3,801.55	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Guttersen State DD30-785
Company:	Northern Region - DJ Basin	TVD Reference:	KB @ 4824.00ft
Project:	Mustang	MD Reference:	KB @ 4824.00ft
Site:	DD Section 30	North Reference:	Grid
Well:	Guttersen State DD30-785	Survey Calculation Method:	Minimum Curvature
Wellbore:	Guttersen State DD30-785		
Design:	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	91.00	359.27	6,764.74	3,510.96	-2,149.79	3,899.33	0.00	0.00	0.00
10,900.00	91.00	359.27	6,763.00	3,610.94	-2,151.07	3,997.12	0.00	0.00	0.00
11,000.00	91.00	359.27	6,761.25	3,710.92	-2,152.35	4,094.91	0.00	0.00	0.00
11,100.00	91.00	359.27	6,759.51	3,810.89	-2,153.63	4,192.69	0.00	0.00	0.00
11,200.00	91.00	359.27	6,757.76	3,910.87	-2,154.91	4,290.48	0.00	0.00	0.00
11,300.00	91.00	359.27	6,756.02	4,010.85	-2,156.19	4,388.26	0.00	0.00	0.00
11,400.00	91.00	359.27	6,754.27	4,110.82	-2,157.47	4,486.05	0.00	0.00	0.00
11,500.00	91.00	359.27	6,752.53	4,210.80	-2,158.75	4,583.84	0.00	0.00	0.00
11,600.00	91.00	359.27	6,750.78	4,310.78	-2,160.03	4,681.62	0.00	0.00	0.00
11,700.00	91.00	359.27	6,749.04	4,410.75	-2,161.30	4,779.41	0.00	0.00	0.00
11,800.00	91.00	359.27	6,747.29	4,510.73	-2,162.58	4,877.19	0.00	0.00	0.00
11,900.00	91.00	359.27	6,745.55	4,610.71	-2,163.86	4,974.98	0.00	0.00	0.00
11,925.59	91.00	359.27	6,745.10	4,636.29	-2,164.19	5,000.00	0.00	0.00	0.00
Start DLS 2.00 TFO -179.99									
11,975.58	90.00	359.27	6,744.66	4,686.27	-2,164.83	5,048.89	2.00	-2.00	0.00
Start 5155.94 hold at 11975.58 MD									
12,000.00	90.00	359.27	6,744.66	4,710.69	-2,165.14	5,072.77	0.00	0.00	0.00
12,100.00	90.00	359.27	6,744.66	4,810.68	-2,166.42	5,170.57	0.00	0.00	0.00
12,200.00	90.00	359.27	6,744.66	4,910.67	-2,167.70	5,268.38	0.00	0.00	0.00
12,300.00	90.00	359.27	6,744.66	5,010.67	-2,168.98	5,366.18	0.00	0.00	0.00
12,400.00	90.00	359.27	6,744.66	5,110.66	-2,170.26	5,463.98	0.00	0.00	0.00
12,500.00	90.00	359.27	6,744.66	5,210.65	-2,171.54	5,561.78	0.00	0.00	0.00
12,600.00	90.00	359.27	6,744.66	5,310.64	-2,172.82	5,659.58	0.00	0.00	0.00
12,700.00	90.00	359.27	6,744.66	5,410.63	-2,174.10	5,757.38	0.00	0.00	0.00
12,800.00	90.00	359.27	6,744.66	5,510.63	-2,175.38	5,855.18	0.00	0.00	0.00
12,900.00	90.00	359.27	6,744.66	5,610.62	-2,176.66	5,952.98	0.00	0.00	0.00
13,000.00	90.00	359.27	6,744.66	5,710.61	-2,177.94	6,050.78	0.00	0.00	0.00
13,100.00	90.00	359.27	6,744.66	5,810.60	-2,179.22	6,148.58	0.00	0.00	0.00
13,200.00	90.00	359.27	6,744.66	5,910.59	-2,180.50	6,246.39	0.00	0.00	0.00
13,300.00	90.00	359.27	6,744.66	6,010.58	-2,181.78	6,344.19	0.00	0.00	0.00
13,400.00	90.00	359.27	6,744.66	6,110.58	-2,183.06	6,441.99	0.00	0.00	0.00
13,500.00	90.00	359.27	6,744.66	6,210.57	-2,184.33	6,539.79	0.00	0.00	0.00
13,600.00	90.00	359.27	6,744.66	6,310.56	-2,185.61	6,637.59	0.00	0.00	0.00
13,700.00	90.00	359.27	6,744.66	6,410.55	-2,186.89	6,735.39	0.00	0.00	0.00
13,800.00	90.00	359.27	6,744.66	6,510.54	-2,188.17	6,833.19	0.00	0.00	0.00
13,900.00	90.00	359.27	6,744.66	6,610.54	-2,189.45	6,930.99	0.00	0.00	0.00
14,000.00	90.00	359.27	6,744.66	6,710.53	-2,190.73	7,028.79	0.00	0.00	0.00
14,100.00	90.00	359.27	6,744.66	6,810.52	-2,192.01	7,126.59	0.00	0.00	0.00
14,200.00	90.00	359.27	6,744.66	6,910.51	-2,193.29	7,224.39	0.00	0.00	0.00
14,300.00	90.00	359.27	6,744.66	7,010.50	-2,194.57	7,322.20	0.00	0.00	0.00
14,400.00	90.00	359.27	6,744.66	7,110.49	-2,195.85	7,420.00	0.00	0.00	0.00
14,500.00	90.00	359.27	6,744.66	7,210.49	-2,197.13	7,517.80	0.00	0.00	0.00
14,600.00	90.00	359.27	6,744.66	7,310.48	-2,198.41	7,615.60	0.00	0.00	0.00
14,700.00	90.00	359.27	6,744.66	7,410.47	-2,199.69	7,713.40	0.00	0.00	0.00
14,800.00	90.00	359.27	6,744.66	7,510.46	-2,200.97	7,811.20	0.00	0.00	0.00
14,900.00	90.00	359.27	6,744.66	7,610.45	-2,202.25	7,909.00	0.00	0.00	0.00
15,000.00	90.00	359.27	6,744.66	7,710.45	-2,203.53	8,006.80	0.00	0.00	0.00
15,100.00	90.00	359.27	6,744.66	7,810.44	-2,204.81	8,104.60	0.00	0.00	0.00
15,200.00	90.00	359.27	6,744.66	7,910.43	-2,206.09	8,202.40	0.00	0.00	0.00
15,300.00	90.00	359.27	6,744.66	8,010.42	-2,207.37	8,300.20	0.00	0.00	0.00
15,400.00	90.00	359.27	6,744.66	8,110.41	-2,208.65	8,398.01	0.00	0.00	0.00
15,500.00	90.00	359.27	6,744.66	8,210.40	-2,209.92	8,495.81	0.00	0.00	0.00
15,600.00	90.00	359.27	6,744.66	8,310.40	-2,211.20	8,593.61	0.00	0.00	0.00
15,700.00	90.00	359.27	6,744.66	8,410.39	-2,212.48	8,691.41	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Guttersen State DD30-785
Company:	Northern Region - DJ Basin	TVD Reference:	KB @ 4824.00ft
Project:	Mustang	MD Reference:	KB @ 4824.00ft
Site:	DD Section 30	North Reference:	Grid
Well:	Guttersen State DD30-785	Survey Calculation Method:	Minimum Curvature
Wellbore:	Guttersen State DD30-785		
Design:	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)
15,800.00	90.00	359.27	6,744.66	8,510.38	-2,213.76	8,789.21	0.00	0.00	0.00
15,900.00	90.00	359.27	6,744.66	8,610.37	-2,215.04	8,887.01	0.00	0.00	0.00
16,000.00	90.00	359.27	6,744.66	8,710.36	-2,216.32	8,984.81	0.00	0.00	0.00
16,100.00	90.00	359.27	6,744.66	8,810.36	-2,217.60	9,082.61	0.00	0.00	0.00
16,200.00	90.00	359.27	6,744.66	8,910.35	-2,218.88	9,180.41	0.00	0.00	0.00
16,300.00	90.00	359.27	6,744.66	9,010.34	-2,220.16	9,278.21	0.00	0.00	0.00
16,400.00	90.00	359.27	6,744.66	9,110.33	-2,221.44	9,376.01	0.00	0.00	0.00
16,500.00	90.00	359.27	6,744.66	9,210.32	-2,222.72	9,473.82	0.00	0.00	0.00
16,600.00	90.00	359.27	6,744.66	9,310.31	-2,224.00	9,571.62	0.00	0.00	0.00
16,700.00	90.00	359.27	6,744.66	9,410.31	-2,225.28	9,669.42	0.00	0.00	0.00
16,800.00	90.00	359.27	6,744.66	9,510.30	-2,226.56	9,767.22	0.00	0.00	0.00
16,900.00	90.00	359.27	6,744.66	9,610.29	-2,227.84	9,865.02	0.00	0.00	0.00
17,000.00	90.00	359.27	6,744.66	9,710.28	-2,229.12	9,962.82	0.00	0.00	0.00
17,100.00	90.00	359.27	6,744.66	9,810.27	-2,230.40	10,060.62	0.00	0.00	0.00
17,131.52	90.00	359.27	6,744.66	9,841.79	-2,230.80	10,091.45	0.00	0.00	0.00
TD at 17131.52									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Guttersen State DD30-7	0.00	0.00	6,744.66	9,841.79	-2,230.80	1,323,676.67	3,282,329.90	40.2174719	-104.4889859
- plan hits target center									
- Point									
Guttersen State DD30-7	0.00	0.01	6,775.00	328.03	-2,109.07	1,314,162.92	3,282,451.63	40.1913534	-104.4889384
- plan hits target center									
- Point									

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
613.00	613.00	Pierre				
687.00	687.00	Upper Pierre Aquifer Top				
1,624.00	1,624.00	Upper Pierre Aquifer Base				
3,734.52	3,616.00	Parkman				
4,204.79	4,038.00	Sussex				
4,410.95	4,223.00	Shannon				
6,269.74	5,891.00	Teepee Buttes				
6,975.11	6,508.00	Sharon Springs				
7,037.62	6,554.00	Top A Chalk				
7,040.44	6,556.00	Top A Marl				
7,060.48	6,570.00	Top B Chalk				
7,138.65	6,621.00	Top B Marl				
7,276.14	6,695.00	Top C Chalk				
7,356.98	6,728.00	Top C Marl				
7,517.07	6,768.00	Top D Chalk				

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Guttersen State DD30-785
Company:	Northern Region - DJ Basin	TVD Reference:	KB @ 4824.00ft
Project:	Mustang	MD Reference:	KB @ 4824.00ft
Site:	DD Section 30	North Reference:	Grid
Well:	Guttersen State DD30-785	Survey Calculation Method:	Minimum Curvature
Wellbore:	Guttersen State DD30-785		
Design:	Plan #2		

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
2,000.00	2,000.00	0.00	0.00	Start Build 3.00
2,872.92	2,842.84	-32.50	-193.32	Start 3700.74 hold at 2872.92 MD
6,573.65	6,163.71	-303.28	-1,803.89	Start DLS 9.00 TFO 97.92
7,616.72	6,775.00	328.03	-2,109.07	TPZ/Landing Pt. at 7616.72 MD
10,187.10	6,775.00	2,898.20	-2,141.96	Start DLS 2.00 TFO 0.01
10,237.09	6,774.56	2,948.19	-2,142.59	Start 1688.50 hold at 10237.09 MD
11,925.59	6,745.10	4,636.29	-2,164.19	Start DLS 2.00 TFO -179.99
11,975.58	6,744.66	4,686.27	-2,164.83	Start 5155.94 hold at 11975.58 MD
17,131.52	6,744.66	9,841.79	-2,230.80	TD at 17131.52

Northern Region - DJ Basin

Mustang

DD Section 30

Guttersen State DD30-785

Guttersen State DD30-785

Plan #2

Anticollision Summary Report

12 August, 2019

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersten State DD30-785
Project:	Mustang	TVD Reference:	KB @ 4824.00ft
Reference Site:	DD Section 30	MD Reference:	KB @ 4824.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersten State DD30-785	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Guttersten State DD30-785	Database:	EDMP
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Reference	Plan #2		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD + Stations Interval 100.00ft	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	8/12/2019		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	17,131.52	Plan #2 (Guttersten State DD30-785)	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						
D Section 13						
Dalbey D 13-11 (SI) - Wellbore #1 - Gyro Surveys	17,131.52	6,707.09	4,152.70	4,060.26	44.924	CC, ES, SF
Dalbey D 13-12 (PR) - Wellbore #1 - Gyro Surveys	17,131.52	6,690.36	4,979.92	4,879.03	49.359	CC, ES, SF
Dalbey D 13-13 (SI) - Wellbore #1 - As-Drilled	17,131.52	6,751.13	4,993.14	4,886.66	46.893	CC, ES, SF
Dalbey D 13-14 (PA) - Wellbore #1 - Gyro Surveys	17,131.52	6,656.19	3,839.87	3,734.63	36.487	CC, ES, SF
Guttersten 12-13 (SI) - Wellbore #1 - Gyro Surveys	17,131.52	6,955.24	6,073.70	5,982.99	66.959	CC, ES, SF
Guttersten 13C (PR) - Wellbore #1 - Gyro Surveys	17,131.52	6,758.04	4,471.95	4,411.95	74.530	CC, ES, SF
Guttersten 13D (PR) - Wellbore #1 - Gyro Surveys	17,131.52	6,666.39	2,276.29	2,193.75	27.578	CC, ES, SF
Guttersten 13N (PR) - Wellbore #1 - Gyro Surveys	17,131.52	6,852.12	5,233.80	5,160.12	71.041	CC, ES, SF
Guttersten 13S (PR) - Wellbore #1 - Gyro Surveys	17,131.52	6,688.68	3,342.66	3,276.20	50.296	CC, ES, SF
Guttersten 13T (PR) - Wellbore #1 - Gyro Surveys	17,131.52	6,694.53	1,796.89	1,691.17	16.997	CC, ES, SF
Guttersten 21-13 (SI) - Wellbore #1 - Gyro Surveys	17,131.52	6,813.99	6,064.07	5,989.76	81.597	CC, ES, SF
Guttersten 22-13 (SI) - Wellbore #1 - Gyro Surveys	17,131.52	6,717.79	5,030.78	4,949.08	61.573	CC, ES, SF
Guttersten 31-13 (PR) - Wellbore #1 - Gyro Surveys	17,131.52	6,667.67	5,351.22	5,287.63	84.150	CC, ES, SF
Guttersten 32-13 (PR) - Wellbore #1 - Gyro Surveys	17,131.52	6,700.63	4,268.38	4,199.51	61.971	CC, ES, SF
Guttersten 34-13 (PR) - Wellbore #1 - Gyro Surveys	17,131.52	6,674.35	2,545.90	2,444.58	25.127	CC, ES, SF
Guttersten 41-13 (PR) - Wellbore #1 - Gyro Surveys	17,131.52	6,656.13	4,829.71	4,774.29	87.144	CC, ES, SF
Guttersten 42-13 (PR) - Wellbore #1 - Gyro Surveys	17,131.52	6,602.96	3,575.73	3,519.62	63.728	CC, ES, SF
Guttersten 43-13 - Wellbore #1 - Wellbore #1 - As Drilled	17,131.52	6,665.79	2,405.98	2,343.76	38.671	CC, ES, SF
Guttersten 44-13 - Wellbore #1 - Wellbore #1 - As Drilled	17,131.52	6,694.88	1,351.85	1,260.34	14.772	CC, ES, SF
L F Ranch 1-13 (PR) - Wellbore #1 - Gyro Surveys	17,131.52	6,710.26	3,071.93	2,984.32	35.066	CC, ES, SF
L. F. Ranch 13-4 (SI) - Wellbore #1 - Gyro Surveys	17,131.52	7,301.07	6,388.29	6,300.79	73.008	CC, ES, SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen State DD30-785
Project:	Mustang	TVD Reference:	KB @ 4824.00ft
Reference Site:	DD Section 30	MD Reference:	KB @ 4824.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersen State DD30-785	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Guttersen State DD30-785	Database:	EDMP
Reference Design:	Plan #2	Offset TVD Reference:	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 24						
Dalbey D 24-10 (PR) - Wellbore #1 - Gyro Surveys	13,693.91	6,696.22	1,989.69	1,906.71	23.980	CC
Dalbey D 24-10 (PR) - Wellbore #1 - Gyro Surveys	13,700.00	6,696.22	1,989.70	1,906.65	23.958	ES
Dalbey D 24-10 (PR) - Wellbore #1 - Gyro Surveys	14,100.00	6,696.38	2,030.71	1,943.74	23.351	SF
Dalbey D 24-15 (SI) - Wellbore #1 - Gyro Surveys	12,737.39	6,669.10	2,466.81	2,390.69	32.406	CC, ES
Dalbey D 24-15 (SI) - Wellbore #1 - Gyro Surveys	13,300.00	6,672.68	2,530.15	2,448.92	31.149	SF
Glazier 2-24 (PR) - Wellbore #1 - Gyro Surveys	15,901.73	6,689.98	1,327.34	1,227.71	13.323	CC, ES
Glazier 2-24 (PR) - Wellbore #1 - Gyro Surveys	16,100.00	6,688.95	1,342.07	1,240.09	13.160	SF
Guttersen 11-24 (SI) - Wellbore #1 - Gyro Surveys	16,708.54	6,774.15	5,000.69	4,894.91	47.271	CC
Guttersen 11-24 (SI) - Wellbore #1 - Gyro Surveys	16,800.00	6,774.16	5,001.53	4,894.85	46.884	ES
Guttersen 11-24 (SI) - Wellbore #1 - Gyro Surveys	17,131.52	6,774.17	5,018.55	4,908.84	45.744	SF
Guttersen 12-24 (SI) - Wellbore #1 - Gyro Surveys	15,411.75	6,727.52	5,026.11	4,930.24	52.427	CC
Guttersen 12-24 (SI) - Wellbore #1 - Gyro Surveys	15,500.00	6,727.35	5,026.89	4,930.17	51.976	ES
Guttersen 12-24 (SI) - Wellbore #1 - Gyro Surveys	16,900.00	6,724.65	5,241.82	5,134.43	48.811	SF
Guttersen 21-24 (SI) - Wellbore #1 - Gyro Surveys	16,711.96	6,742.64	3,682.29	3,576.05	34.662	CC, ES
Guttersen 21-24 (SI) - Wellbore #1 - Gyro Surveys	17,131.52	6,741.30	3,706.11	3,595.91	33.630	SF
Guttersen 22-24 (PR) - Wellbore #1 - Gyro Surveys	15,482.97	6,720.78	3,640.88	3,544.34	37.713	CC
Guttersen 22-24 (PR) - Wellbore #1 - Gyro Surveys	15,500.00	6,720.77	3,640.92	3,544.20	37.645	ES
Guttersen 22-24 (PR) - Wellbore #1 - Gyro Surveys	16,300.00	6,719.99	3,731.42	3,627.96	36.065	SF
Guttersen 24A (SI) - Wellbore #1 - Gyro Surveys	16,042.87	6,713.56	4,314.80	4,214.09	42.846	CC
Guttersen 24A (SI) - Wellbore #1 - Gyro Surveys	16,100.00	6,714.08	4,315.18	4,213.90	42.608	ES
Guttersen 24A (SI) - Wellbore #1 - Gyro Surveys	17,100.00	6,723.17	4,442.40	4,333.12	40.650	SF
Guttersen 24J (PR) - Wellbore #1 - Gyro Surveys	17,131.52	6,691.96	4,221.26	4,112.66	38.872	CC, ES, SF
Guttersen 24N (SI) - Wellbore #1 - MWD Surveys	16,071.62	6,645.69	3,086.12	2,986.18	30.879	CC
Guttersen 24N (SI) - Wellbore #1 - MWD Surveys	16,100.00	6,645.56	3,086.25	2,986.00	30.784	ES
Guttersen 24N (SI) - Wellbore #1 - MWD Surveys	16,700.00	6,642.69	3,149.44	3,043.98	29.862	SF
Guttersen 24S (PR) - Wellbore #1 - As-Drilled	14,572.93	6,700.67	1,634.56	1,545.91	18.437	CC
Guttersen 24S (PR) - Wellbore #1 - As-Drilled	14,600.00	6,700.49	1,634.79	1,545.77	18.365	ES
Guttersen 24S (PR) - Wellbore #1 - As-Drilled	14,800.00	6,699.10	1,650.26	1,559.05	18.093	SF
Guttersen 43-24 (PR) - Wellbore #1 - Gyro Surveys	13,945.28	6,677.92	1,096.99	1,011.98	12.904	CC, ES
Guttersen 43-24 (PR) - Wellbore #1 - Gyro Surveys	14,100.00	6,677.25	1,107.85	1,020.78	12.724	SF
Guttersen 44-24 (PR) - Wellbore #1 - Gyro Surveys	12,706.81	6,711.29	1,032.95	957.07	13.613	CC, ES
Guttersen 44-24 (PR) - Wellbore #1 - Gyro Surveys	12,900.00	6,710.93	1,050.86	972.53	13.417	SF
Karch Blue D 24-12 (PA) - Wellbore #1 - Gyro Surveys	14,233.03	6,703.79	4,979.95	4,893.04	57.294	CC
Karch Blue D 24-12 (PA) - Wellbore #1 - Gyro Surveys	14,300.00	6,703.81	4,980.40	4,892.86	56.888	ES
Karch Blue D 24-12 (PA) - Wellbore #1 - Gyro Surveys	15,800.00	6,704.32	5,220.67	5,121.68	52.742	SF
Karch Blue D 24-14 (PR) - Wellbore #1 - No Surveys	12,695.21	6,685.66	3,426.10	3,239.72	18.382	CC
Karch Blue D 24-14 (PR) - Wellbore #1 - No Surveys	12,700.00	6,685.66	3,426.11	3,239.68	18.378	ES
Karch Blue D 24-14 (PR) - Wellbore #1 - No Surveys	13,200.00	6,685.66	3,463.09	3,272.15	18.137	SF
Karch Blue D24-11 (PA) - Wellbore #1 - Gyro Surveys	14,220.61	6,638.85	3,563.35	3,469.92	38.140	CC, ES
Karch Blue D24-11 (PA) - Wellbore #1 - Gyro Surveys	15,100.00	6,647.64	3,670.25	3,569.42	36.401	SF
Koerner 31-24 (SI) - Wellbore #1 - Gyro Surveys	16,752.47	6,654.65	2,358.95	2,252.64	22.189	CC
Koerner 31-24 (SI) - Wellbore #1 - Gyro Surveys	16,800.00	6,654.99	2,359.43	2,252.56	22.077	ES
Koerner 31-24 (SI) - Wellbore #1 - Gyro Surveys	17,131.52	6,657.29	2,389.21	2,279.24	21.725	SF
Koerner 32-24 (SI) - Wellbore #1 - Gyro Surveys	15,318.10	6,753.10	2,356.74	2,261.78	24.817	CC, ES
Koerner 32-24 (SI) - Wellbore #1 - Gyro Surveys	15,700.00	6,747.19	2,387.48	2,288.77	24.186	SF
Koerner 42-24 (SI) - Wellbore #1 - Gyro Surveys	15,296.63	6,682.23	1,051.69	956.64	11.065	CC
Koerner 42-24 (SI) - Wellbore #1 - Gyro Surveys	15,300.00	6,682.19	1,051.69	956.59	11.059	ES
Koerner 42-24 (SI) - Wellbore #1 - Gyro Surveys	15,400.00	6,681.07	1,056.75	960.19	10.944	SF
LF Ranch 1-24 (SI) - Wellbore #1 - Gyro Surveys	13,124.08	6,816.48	4,645.80	4,566.84	58.833	CC
LF Ranch 1-24 (SI) - Wellbore #1 - Gyro Surveys	13,200.00	6,817.18	4,646.42	4,566.76	58.325	ES
LF Ranch 1-24 (SI) - Wellbore #1 - Gyro Surveys	14,700.00	6,830.58	4,905.79	4,814.77	53.895	SF

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

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersten State DD30-785
Project:	Mustang	TVD Reference:	KB @ 4824.00ft
Reference Site:	DD Section 30	MD Reference:	KB @ 4824.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersten State DD30-785	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Guttersten State DD30-785	Database:	EDMP
Reference Design:	Plan #2	Offset TVD Reference:	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 25						
Coors Energy 13-25D (PR) - Wellbore #1 - MWD Surveys	8,800.17	6,865.39	4,994.73	4,933.63	81.755	CC, ES
Coors Energy 13-25D (PR) - Wellbore #1 - MWD Surveys	11,200.00	6,861.23	5,541.01	5,463.33	71.329	SF
Coors Energy 14-25D (PR) - Wellbore #1 - MWD Surveys	7,594.82	6,985.44	5,017.76	4,967.17	99.175	CC, ES
Coors Energy 14-25D (PR) - Wellbore #1 - MWD Surveys	10,400.00	7,002.01	5,786.66	5,723.55	91.692	SF
Coors Energy 14-25H (PR) - Wellbore #1 - MWD Surveys	7,450.00	11,093.00	1,169.67	1,059.44	10.611	SF
Coors Energy 14-25H (PR) - Wellbore #1 - MWD Surveys	8,100.00	11,093.00	929.47	874.00	16.756	ES
Coors Energy 14-25H (PR) - Wellbore #1 - MWD Surveys	8,156.44	11,093.00	927.76	874.42	17.394	CC
Coors Energy 23-25D (PR) - Wellbore #1 - MWD Surveys	8,795.87	6,913.52	3,668.88	3,609.72	62.020	CC
Coors Energy 23-25D (PR) - Wellbore #1 - MWD Surveys	8,800.00	6,913.52	3,668.88	3,609.71	62.004	ES
Coors Energy 23-25D (PR) - Wellbore #1 - MWD Surveys	9,900.00	6,913.92	3,831.42	3,767.32	59.778	SF
Coors Energy 24-25 (PR) - Wellbore #1 - Gyro Surveys	7,503.26	6,779.18	3,549.64	3,499.11	70.252	CC, ES
Coors Energy 24-25 (PR) - Wellbore #1 - Gyro Surveys	8,200.00	6,788.15	3,666.77	3,614.38	69.987	SF
Coors Energy 25HD (PR) - Wellbore #1 - MWD Surveys	8,153.95	7,025.62	5,475.82	5,420.95	99.808	CC, ES
Coors Energy 25HD (PR) - Wellbore #1 - MWD Surveys	11,500.00	6,990.59	6,417.21	6,340.01	83.130	SF
Coors Energy 25LD (PR) - Wellbore #1 - MWD Surveys	7,473.84	6,979.97	4,359.38	4,307.48	83.996	CC, ES
Coors Energy 25LD (PR) - Wellbore #1 - MWD Surveys	7,600.00	6,993.86	4,367.13	4,315.04	83.848	SF
Coors Energy 25TD (PR) - Wellbore #1 - MWD Surveys	7,288.35	6,720.67	1,710.47	1,659.63	33.649	CC, ES
Coors Energy 25TD (PR) - Wellbore #1 - MWD Surveys	7,400.00	6,763.58	1,718.30	1,667.01	33.499	SF
Coors Energy 25XD (PR) - Wellbore #1 - MWD Surveys	8,100.00	6,986.00	501.04	446.56	9.197	SF
Coors Energy 25XD (PR) - Wellbore #1 - MWD Surveys	8,123.32	6,985.74	500.49	446.28	9.231	CC, ES
Coors Energy 25YD (PR) - Wellbore #1 - MWD Surveys	7,105.56	6,790.39	619.68	562.95	10.922	CC, ES
Coors Energy 25YD (PR) - Wellbore #1 - MWD Surveys	7,200.00	6,851.00	627.99	569.50	10.736	SF
Coors Energy 33-25D (PR) - Wellbore #1 - MWD Surveys	8,776.56	6,919.79	2,358.04	2,296.36	38.226	CC
Coors Energy 33-25D (PR) - Wellbore #1 - MWD Surveys	8,800.00	6,919.83	2,358.16	2,296.29	38.117	ES
Coors Energy 33-25D (PR) - Wellbore #1 - MWD Surveys	9,400.00	6,920.89	2,439.06	2,372.52	36.654	SF
Coors Energy 34-25 (PR) - Wellbore #1 - Gyro Surveys	7,466.94	6,729.58	2,559.37	2,509.00	50.812	CC, ES
Coors Energy 34-25 (PR) - Wellbore #1 - Gyro Surveys	7,550.00	6,741.73	2,563.09	2,512.52	50.683	SF
Coors Energy 43-25D (PR) - Wellbore #1 - MWD Surveys	8,782.94	6,979.13	1,063.21	1,002.06	17.387	CC, ES, SF
Coors Energy 44-25D (PR) - Wellbore #1 - MWD Surveys	7,534.81	6,819.78	1,049.16	999.03	20.930	CC, ES
Coors Energy 44-25D (PR) - Wellbore #1 - MWD Surveys	7,600.00	6,824.06	1,052.65	1,002.32	20.912	SF
Dalbey D 25-03 (SI) - Wellbore #1 - Gyro Surveys	11,046.03	6,880.90	3,982.17	3,917.38	61.463	CC
Dalbey D 25-03 (SI) - Wellbore #1 - Gyro Surveys	11,100.00	6,878.41	3,982.53	3,917.30	61.049	ES
Dalbey D 25-03 (SI) - Wellbore #1 - Gyro Surveys	12,500.00	6,822.07	4,238.29	4,162.69	56.061	SF
Dalbey D 25-05 (SI) - Wellbore #1 - Gyro Surveys	10,117.16	6,998.64	5,180.75	5,120.38	85.808	CC, ES
Dalbey D 25-05 (SI) - Wellbore #1 - Gyro Surveys	12,500.00	6,750.33	5,697.35	5,621.98	75.596	SF
Guttersten 11-25 (PR) - Wellbore #1 - MWD Surveys	11,482.21	6,806.51	4,979.35	4,912.73	74.750	CC
Guttersten 11-25 (PR) - Wellbore #1 - MWD Surveys	11,500.00	6,806.00	4,979.38	4,912.62	74.588	ES
Guttersten 11-25 (PR) - Wellbore #1 - MWD Surveys	13,500.00	6,778.35	5,372.17	5,291.03	66.215	SF
Guttersten 22-25 (PA) - Wellbore #1 - MWD Surveys	10,207.01	6,783.51	3,561.17	3,502.45	60.651	CC
Guttersten 22-25 (PA) - Wellbore #1 - MWD Surveys	10,237.09	6,781.96	3,561.29	3,502.35	60.421	ES
Guttersten 22-25 (PA) - Wellbore #1 - MWD Surveys	11,500.00	6,708.53	3,788.04	3,720.07	55.728	SF
Guttersten 25E (PR) - Wellbore #1 - MWD Surveys	12,082.05	6,721.74	5,379.74	5,308.88	75.924	CC
Guttersten 25E (PR) - Wellbore #1 - MWD Surveys	12,100.00	6,721.47	5,379.77	5,308.76	75.762	ES
Guttersten 25E (PR) - Wellbore #1 - MWD Surveys	14,200.00	6,690.27	5,781.56	5,695.32	67.038	SF
Guttersten 25KD (PR) - Wellbore #1 - MWD Surveys	9,599.21	7,051.10	4,319.38	4,262.06	75.344	CC
Guttersten 25KD (PR) - Wellbore #1 - MWD Surveys	9,600.00	7,051.11	4,319.38	4,262.05	75.338	ES
Guttersten 25KD (PR) - Wellbore #1 - MWD Surveys	11,700.00	7,059.77	4,803.79	4,732.11	67.021	SF
Guttersten 25O (PR) - Wellbore #1 - MWD Surveys	9,723.22	6,730.19	3,125.90	3,069.46	55.386	CC, ES
Guttersten 25O (PR) - Wellbore #1 - MWD Surveys	10,800.00	6,720.25	3,306.11	3,242.18	51.715	SF
Guttersten D 25-17 (SI) - Wellbore #1 - Gyro Surveys	10,800.72	6,653.11	1,885.99	1,822.47	29.690	CC, ES
Guttersten D 25-17 (SI) - Wellbore #1 - Gyro Surveys	11,200.00	6,640.67	1,927.76	1,860.54	28.678	SF
Guttersten D25-715 - Wellbore #1 - Plan #3	17,131.52	12,532.24	690.45	544.71	4.737	CC, ES, SF
Guttersten D25-724 - Wellbore #1 - Plan #3	17,131.52	12,411.94	1,293.01	1,146.51	8.826	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

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersten State DD30-785
Project:	Mustang	TVD Reference:	KB @ 4824.00ft
Reference Site:	DD Section 30	MD Reference:	KB @ 4824.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersten State DD30-785	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Guttersten State DD30-785	Database:	EDMP
Reference Design:	Plan #2	Offset TVD Reference:	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						
Guttersten D25-734 - Wellbore #1 - Plan #5	17,131.52	12,433.32	1,920.54	1,774.58	13.158	CC, ES, SF
Guttersten D25-743 - Wellbore #1 - Plan #3	11,263.99	6,380.86	2,531.28	2,461.10	36.070	CC
Guttersten D25-743 - Wellbore #1 - Plan #3	17,131.52	12,548.21	2,543.83	2,396.82	17.304	ES, SF
Guttersten D25-753 - Wellbore #1 - Plan #3	17,131.52	12,482.24	3,150.31	3,007.39	22.043	CC, ES, SF
Guttersten D25-762 - Wellbore #1 - Plan #3	17,131.52	12,348.25	3,784.39	3,641.52	26.487	CC, ES, SF
Guttersten D25-772 - Wellbore #1 - Plan #3	11,238.27	6,125.73	4,392.35	4,325.13	65.345	CC
Guttersten D25-772 - Wellbore #1 - Plan #3	17,131.52	12,535.58	4,395.40	4,252.63	30.787	ES, SF
Guttersten D25-781 - Wellbore #1 - Plan #3	11,155.94	5,466.51	4,851.98	4,785.77	73.282	CC
Guttersten D25-781 - Wellbore #1 - Plan #3	11,200.00	5,471.52	4,852.18	4,785.61	72.887	ES
Guttersten D25-781 - Wellbore #1 - Plan #3	17,131.52	12,634.58	5,038.79	4,895.29	35.115	SF
Guttersten State D36-714 - Wellbore #1 - Plan #1	9,293.14	7,148.16	668.99	611.02	11.540	CC
Guttersten State D36-714 - Wellbore #1 - Plan #1	9,300.00	7,142.64	669.00	610.99	11.533	ES
Guttersten State D36-714 - Wellbore #1 - Plan #1	9,500.00	6,988.88	676.29	616.88	11.383	SF
Guttersten State D36-724 - Wellbore #1 - Plan #1	9,390.37	6,980.49	1,292.70	1,235.14	22.462	CC
Guttersten State D36-724 - Wellbore #1 - Plan #1	9,400.00	6,972.59	1,292.70	1,235.11	22.444	ES
Guttersten State D36-724 - Wellbore #1 - Plan #1	9,900.00	6,650.00	1,328.68	1,267.54	21.732	SF
Guttersten State D36-733 - Wellbore #1 - Plan #1	9,675.07	6,659.87	1,905.85	1,847.03	32.398	CC
Guttersten State D36-733 - Wellbore #1 - Plan #1	9,700.00	6,643.81	1,905.94	1,846.94	32.303	ES
Guttersten State D36-733 - Wellbore #1 - Plan #1	10,237.09	6,431.81	1,963.26	1,900.20	31.133	SF
Guttersten State D36-743 - Wellbore #1 - Plan #1	9,864.62	6,323.75	2,479.54	2,418.99	40.952	CC
Guttersten State D36-743 - Wellbore #1 - Plan #1	9,900.00	6,318.88	2,479.78	2,418.97	40.776	ES
Guttersten State D36-743 - Wellbore #1 - Plan #1	10,500.00	6,235.03	2,556.99	2,491.86	39.259	SF
Guttersten State D36-752 - Wellbore #1 - Plan #1	9,307.27	7,170.20	3,158.87	3,100.18	53.825	CC, ES
Guttersten State D36-752 - Wellbore #1 - Plan #1	10,800.00	6,583.21	3,356.60	3,289.83	50.273	SF
Guttersten State D36-762 - Wellbore #1 - Plan #1	9,763.42	6,640.52	3,747.89	3,688.54	63.147	CC
Guttersten State D36-762 - Wellbore #1 - Plan #1	9,800.00	6,627.67	3,748.04	3,688.47	62.920	ES
Guttersten State D36-762 - Wellbore #1 - Plan #1	11,200.00	6,394.26	3,988.45	3,919.79	58.086	SF
Guttersten State D36-771 - Wellbore #1 - Plan #1	9,936.42	6,144.89	4,308.69	4,248.59	71.698	CC, ES
Guttersten State D36-771 - Wellbore #1 - Plan #1	11,600.00	5,702.68	4,593.32	4,522.99	65.311	SF
Guttersten State D36-781 - Wellbore #1 - Plan #1	10,133.09	5,500.01	4,767.42	4,706.93	78.822	CC
Guttersten State D36-781 - Wellbore #1 - Plan #1	10,187.10	5,486.92	4,767.71	4,706.89	78.390	ES
Guttersten State D36-781 - Wellbore #1 - Plan #1	12,100.00	5,004.51	5,123.72	5,051.64	71.087	SF
Karch Blue D 25-02 (DA) - Wellbore #1 - No Surveys	11,406.86	6,691.15	2,355.74	2,178.04	13.256	CC, ES
Karch Blue D 25-02 (DA) - Wellbore #1 - No Surveys	11,700.00	6,686.04	2,373.91	2,193.51	13.159	SF
Karch Blue D 25-08 (SI) - Wellbore #1 - Gyro Surveys	10,127.36	6,698.56	1,073.79	1,014.14	18.001	CC, ES
Karch Blue D 25-08 (SI) - Wellbore #1 - Gyro Surveys	10,300.00	6,693.96	1,087.54	1,025.97	17.662	SF
Karch Blue D25-07 (SI) - Wellbore #1 - Gyro Surveys	10,133.58	6,719.56	2,397.12	2,337.74	40.371	CC, ES
Karch Blue D25-07 (SI) - Wellbore #1 - Gyro Surveys	10,800.00	6,708.43	2,488.00	2,423.30	38.458	SF
L F Ranch 2-25 (PR) - Wellbore #1 - Gyro Surveys	11,364.07	6,683.06	1,078.68	1,011.73	16.113	CC, ES
L F Ranch 2-25 (PR) - Wellbore #1 - Gyro Surveys	11,500.00	6,677.38	1,087.19	1,018.48	15.822	SF
LF Ranches 1 (PA) - Wellbore #1 - No Surveys	11,073.86	6,700.96	1,367.41	1,191.65	7.780	CC
LF Ranches 1 (PA) - Wellbore #1 - No Surveys	11,100.00	6,700.51	1,367.66	1,191.59	7.768	ES
LF Ranches 1 (PA) - Wellbore #1 - No Surveys	11,200.00	6,698.76	1,373.22	1,196.04	7.750	SF

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

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersten State DD30-785
Project:	Mustang	TVD Reference:	KB @ 4824.00ft
Reference Site:	DD Section 30	MD Reference:	KB @ 4824.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersten State DD30-785	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Guttersten State DD30-785	Database:	EDMP
Reference Design:	Plan #2	Offset TVD Reference:	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 36						
Kanga State D 36-1JI (SI) - Wellbore #1 - Gyro Surveys	6,931.57	6,450.72	1,546.74	1,497.89	31.663	CC, ES
Kanga State D 36-1JI (SI) - Wellbore #1 - Gyro Surveys	7,100.00	6,584.13	1,566.56	1,516.42	31.244	SF
Kanga State D 36-2JI - Wellbore #1 - Gyro Surveys	7,224.53	6,685.18	2,663.59	2,613.72	53.410	CC, ES
Kanga State D 36-2JI - Wellbore #1 - Gyro Surveys	7,400.00	6,766.79	2,680.64	2,629.98	52.917	SF
Kanga State D36-11JI (PR) - Wellbore #1 - Gyro Surveys	6,883.90	6,370.89	5,243.86	5,154.01	58.366	CC
Kanga State D36-11JI (PR) - Wellbore #1 - Gyro Surveys	6,900.00	6,384.13	5,244.02	5,153.95	58.224	ES
Kanga State D36-11JI (PR) - Wellbore #1 - Gyro Surveys	7,300.00	6,642.12	5,350.20	5,255.62	56.570	SF
Rhoo State D36-07JI (SI) - Wellbore #1 - Gyro Surveys	6,964.18	6,619.44	3,342.79	3,293.48	67.786	CC, ES
Rhoo State D36-07JI (SI) - Wellbore #1 - Gyro Surveys	7,250.00	6,763.74	3,395.86	3,344.76	66.453	SF
Spike State D 36-04 (SI) - Gyro Surveys - Wellbore #1	7,326.83	6,819.00	5,200.78	5,150.48	103.407	CC, ES
Spike State D 36-04 (SI) - Gyro Surveys - Wellbore #1	7,600.00	6,881.03	5,235.78	5,184.67	102.426	SF
Spike State D 36-3 (SI) - Wellbore #1 - No Surveys	7,219.17	6,667.94	4,092.25	3,932.24	25.575	CC, ES
Spike State D 36-3 (SI) - Wellbore #1 - No Surveys	7,400.00	6,743.14	4,108.60	3,946.57	25.356	SF
Spike State D36-05 (SI) - Wellbore #1 - Gyro Surveys	7,124.66	6,725.64	5,733.27	5,683.47	115.125	CC, ES
Spike State D36-05 (SI) - Wellbore #1 - Gyro Surveys	7,500.00	6,938.59	5,803.38	5,751.79	112.502	SF
Spike State D36-06 (PA) - Wellbore #1 - Gyro Surveys	7,042.08	6,647.98	4,615.81	4,566.33	93.285	CC
Spike State D36-06 (PA) - Wellbore #1 - Gyro Surveys	7,050.00	6,656.65	4,615.84	4,566.31	93.181	ES
Spike State D36-06 (PA) - Wellbore #1 - Gyro Surveys	7,450.00	7,450.00	4,707.12	4,653.49	87.768	SF
State 09 (SI) - Wellbore #1 - Gyro Surveys	6,919.00	6,389.96	2,416.65	2,367.95	49.620	CC, ES
State 09 (SI) - Wellbore #1 - Gyro Surveys	7,200.00	6,739.35	2,463.29	2,412.50	48.499	SF
State 30 (SI) - Wellbore #1 - Gyro Surveys	6,879.28	6,404.83	5,992.99	5,944.12	122.614	CC, ES
State 30 (SI) - Wellbore #1 - Gyro Surveys	7,350.00	6,703.26	6,128.76	6,076.92	118.226	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	17,131.52	17,440.37	4,677.18	4,497.72	26.062	CC, ES, SF
Guttersten DD18-725 - Guttersten DD18-725 - Plan #1	17,131.52	17,276.88	4,016.26	3,838.14	22.548	CC, ES, SF
Guttersten DD18-730 - Guttersten DD18-730 - Plan #1	17,131.52	17,467.47	3,685.48	3,507.04	20.653	CC, ES, SF
Guttersten DD18-735 - Guttersten DD18-735 - Plan #1	17,131.52	17,393.03	3,353.61	3,175.66	18.846	CC, ES, SF
Guttersten DD18-746 - Guttersten DD18-746 - Plan #1	17,131.52	17,388.93	2,695.69	2,519.07	15.263	CC, ES, SF
Guttersten DD18-750 - Guttersten DD18-750 - Plan #1	17,131.52	17,652.14	2,368.79	2,190.75	13.305	CC, ES, SF
Guttersten DD18-754 - Guttersten DD18-754 - Plan #1	17,131.52	17,462.94	2,039.14	1,860.23	11.398	CC, ES, SF
Guttersten DD18-765 - Guttersten DD18-765 - Plan #1	17,131.52	17,287.24	1,395.38	1,221.07	8.005	CC, ES, SF
Guttersten DD18-770 - Guttersten DD18-770 - Plan #1	17,131.52	17,473.14	1,083.96	911.98	6.303	CC, ES, SF
Guttersten DD18-775 - Guttersten DD18-775 - Plan #1	17,131.52	17,369.80	779.72	619.69	4.872	CC, ES, SF
Guttersten DD18-785 - Guttersten DD18-785 - Plan #1	17,131.52	17,360.03	408.07	338.16	5.837	CC, ES, SF
DD Section 17						
Guttersten 23-17 - Wellbore #1 - Wellbore #1 - As Drilled	17,131.52	6,869.11	7,276.96	7,167.54	66.502	CC, ES, SF
Guttersten State DD17-78HN - Original Drilling - Original D	17,131.52	6,771.48	5,671.79	5,564.02	52.627	CC, ES, SF
Guttersten State DD17-78HN - Original Drilling - ST01 - S	17,131.52	6,448.00	5,693.80	5,590.31	55.022	CC, ES, SF
Guttersten State DD17-79-1HN - Original Drilling - Origina	17,100.00	17,100.00	5,381.20	5,239.47	37.968	ES, SF
Guttersten State DD17-79-1HN - Original Drilling - Origina	17,131.52	6,496.00	5,378.05	5,272.56	50.980	CC
Guttersten State DD17-79HN - Original Drilling - Original D	17,131.52	6,353.00	5,115.19	5,010.50	48.860	CC, ES, SF
Guttersten USX DD17-19 - Original Drilling - Original Dri	17,131.52	6,704.90	7,599.88	7,498.09	74.667	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

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersten State DD30-785
Project:	Mustang	TVD Reference:	KB @ 4824.00ft
Reference Site:	DD Section 30	MD Reference:	KB @ 4824.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersten State DD30-785	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Guttersten State DD30-785	Database:	EDMP
Reference Design:	Plan #2	Offset TVD Reference:	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 18						
Guttersten 18D - Wellbore #1 - Wellbore #1 - As Drilled	17,131.52	6,683.01	3,891.78	3,785.41	36.585	CC, ES, SF
Guttersten 24-18 - Wellbore #1 - Wellbore #1 - As Drilled	17,131.52	6,705.31	1,911.47	1,806.05	18.132	CC, ES, SF
Guttersten 33-18 - Wellbore #1 - Wellbore #1 - As Drilled	17,131.52	6,733.78	3,754.58	3,653.58	37.175	CC, ES, SF
Guttersten 34-18 - Wellbore #1 - Wellbore #1 - As Drilled	17,131.52	6,715.10	3,037.32	2,929.09	28.063	CC, ES, SF
Guttersten 43-18 - Wellbore #1 - Wellbore #1 - As Drilled	17,131.52	6,738.25	4,764.73	4,656.67	44.095	CC, ES, SF
Guttersten 44-18 - Wellbore #1 - Wellbore #1 - As Drilled	17,131.52	6,702.59	4,359.41	4,250.83	40.150	CC, ES, SF
Karch Blue DD18-03J - Wellbore #1 - Wellbore #1 - As D	17,131.52	6,734.69	2,315.06	2,227.94	26.575	CC, ES, SF
Karch Blue DD18-12 - Original Drilling - Original Drilling -	17,131.52	6,681.23	2,290.87	2,226.69	35.698	CC, ES, SF
Karch Blue DD18-13 - Wellbore #1 - Wellbore #1 - As Dri	17,131.52	6,694.92	805.57	742.36	12.744	CC, ES, SF
SPIKE STATE GWS DD #18-1J(PA) - SPIKE STATE GW	17,131.52	6,737.66	5,541.07	5,337.58	27.229	CC, ES, SF
DD Section 19						
Champlin 366 Amoco B1 (PR) - Wellbore #1 - Gyro Surv	14,300.00	14,300.00	4,143.18	4,028.61	36.161	SF
Champlin 366 Amoco B1 (PR) - Wellbore #1 - Gyro Surv	15,646.04	6,654.42	3,918.82	3,821.54	40.284	CC, ES
Champlin 366 Amoco D1 (PA) - Wellbore #1 - No Survey	13,052.00	6,705.66	1,283.28	1,093.96	6.778	CC, ES, SF
Guttersten 31-19 (PR) - Wellbore #1 - Gyro Surveys	16,644.34	6,695.97	3,000.29	2,894.91	28.471	CC, ES
Guttersten 31-19 (PR) - Wellbore #1 - Gyro Surveys	16,900.00	6,691.74	3,011.16	2,904.97	28.357	SF
Guttersten 44-19 (SI) - Wellbore #1 - No Surveys	12,777.83	6,750.66	4,313.99	4,125.72	22.914	CC
Guttersten 44-19 (SI) - Wellbore #1 - No Surveys	12,800.00	6,750.66	4,314.04	4,125.67	22.902	ES
Guttersten 44-19 (SI) - Wellbore #1 - No Surveys	13,200.00	6,750.66	4,334.59	4,144.42	22.793	SF
DD Section 20						
Spike State DD 20-02J (PR) - Wellbore #1 - Gyro Survey	16,451.38	6,769.99	5,867.43	5,763.36	56.380	CC
Spike State DD 20-02J (PR) - Wellbore #1 - Gyro Survey	16,500.00	6,769.33	5,867.63	5,763.27	56.227	ES
Spike State DD 20-02J (PR) - Wellbore #1 - Gyro Survey	17,131.52	6,760.75	5,906.71	5,799.06	54.870	SF
Spike State DD 20-03J (PR) - Wellbore #1 - Gyro Survey	13,339.92	6,718.50	6,253.30	6,172.84	77.720	CC
Spike State DD 20-03J (PR) - Wellbore #1 - Gyro Survey	13,400.00	6,718.96	6,253.59	6,172.79	77.392	ES
Spike State DD 20-03J (PR) - Wellbore #1 - Gyro Survey	15,100.00	6,731.27	6,496.27	6,407.46	73.146	SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersten State DD30-785
Project:	Mustang	TVD Reference:	KB @ 4824.00ft
Reference Site:	DD Section 30	MD Reference:	KB @ 4824.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersten State DD30-785	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Guttersten State DD30-785	Database:	EDMP
Reference Design:	Plan #2	Offset TVD Reference:	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	2,014.47	2,102.18	7,600.27	7,586.09	536.132	CC, ES
Champlin 366 Amoco C UT 1 (PR) - Wellbore #1 - Gyro S	14,900.00	7,055.37	9,403.36	9,318.32	110.571	SF
Champlin Amoco 1 (PA) - Wellbore #1 - No Surveys	2,000.00	2,038.01	4,284.73	4,237.03	89.833	CC, ES
Champlin Amoco 1 (PA) - Wellbore #1 - No Surveys	8,700.00	6,813.01	6,333.39	6,167.86	38.262	SF
Guttersten 42-29 (PR) - Wellbore #1 - Gyro Surveys	2,016.33	2,115.01	8,104.95	8,090.73	570.141	CC, ES
Guttersten 42-29 (PR) - Wellbore #1 - Gyro Surveys	13,200.00	7,056.50	9,992.86	9,885.37	92.962	SF
Guttersten Federal YY5-715 - Guttersten Federal YY5-715	2,000.00	2,067.00	6,933.59	6,919.48	491.290	CC, ES
Guttersten Federal YY5-715 - Guttersten Federal YY5-715	9,600.00	4,838.62	9,994.30	9,948.77	219.477	SF
Guttersten Federal YY5-725 - Guttersten Federal YY5-725	2,000.00	2,068.00	6,897.28	6,883.16	488.593	CC, ES
Guttersten Federal YY5-725 - Guttersten Federal YY5-725	11,100.00	5,647.80	9,976.81	9,921.71	181.050	SF
Guttersten Federal YY5-735 - Guttersten Federal YY5-735	2,000.00	2,070.00	6,858.18	6,844.05	485.577	CC, ES
Guttersten Federal YY5-735 - Guttersten Federal YY5-735	11,925.59	6,321.92	9,944.82	9,883.50	162.181	SF
Guttersten Federal YY5-745 - Guttersten Federal YY5-745	2,403.00	3,905.49	6,721.26	6,699.58	310.116	CC, ES
Guttersten Federal YY5-745 - Guttersten Federal YY5-745	12,000.00	6,500.00	9,424.57	9,362.24	151.208	SF
Guttersten Federal YY5-755 - Guttersten Federal YY5-755	2,000.00	2,068.00	5,082.25	5,068.14	360.019	CC, ES
Guttersten Federal YY5-755 - Guttersten Federal YY5-755	10,700.00	5,929.69	8,118.16	8,064.52	151.331	SF
Guttersten Federal YY5-765 - Guttersten Federal YY5-765	2,000.00	2,069.00	5,043.16	5,029.04	357.159	CC, ES
Guttersten Federal YY5-765 - Guttersten Federal YY5-765	6,750.00	6,864.03	6,512.14	6,462.80	131.986	SF
Guttersten Federal YY5-775 - Guttersten Federal YY5-775	2,468.49	3,750.69	4,921.53	4,900.30	231.804	CC, ES
Guttersten Federal YY5-775 - Guttersten Federal YY5-775	6,700.00	7,114.93	5,849.83	5,798.94	114.958	SF
Guttersten Federal YY5-785 - Guttersten Federal YY5-785	2,770.39	4,803.02	4,701.95	4,676.09	181.768	CC, ES
Guttersten Federal YY5-785 - Guttersten Federal YY5-785	6,400.00	7,268.33	5,093.06	5,041.67	99.099	SF
Guttersten State DD29-715 - Wellbore #1 - Plan #1	1,908.27	1,954.27	6,930.64	6,917.26	517.981	CC
Guttersten State DD29-715 - Wellbore #1 - Plan #1	2,000.00	2,000.00	6,930.80	6,916.92	499.603	ES
Guttersten State DD29-715 - Wellbore #1 - Plan #1	17,131.52	17,354.87	9,980.22	9,805.74	57.198	SF
Guttersten State DD29-725 - Wellbore #1 - Plan #1	1,904.25	1,960.25	6,892.64	6,879.26	514.872	CC
Guttersten State DD29-725 - Wellbore #1 - Plan #1	2,000.00	2,031.45	6,892.74	6,878.76	493.052	ES
Guttersten State DD29-725 - Wellbore #1 - Plan #1	17,131.52	17,162.01	9,321.72	9,147.25	53.430	SF
Guttersten State DD29-735 - Wellbore #1 - Plan #1	2,147.81	2,744.10	6,850.99	6,834.18	407.515	CC, ES
Guttersten State DD29-735 - Wellbore #1 - Plan #1	17,131.52	17,315.61	8,660.42	8,485.50	49.511	SF
Guttersten State DD29-745 - Wellbore #1 - Plan #1	2,403.58	3,910.56	6,703.75	6,681.95	307.546	CC, ES
Guttersten State DD29-745 - Wellbore #1 - Plan #1	17,131.52	17,312.12	8,001.58	7,827.54	45.975	SF
Guttersten State DD29-755 - Wellbore #1 - Plan #1	1,902.06	1,968.06	5,077.05	5,063.65	378.680	CC
Guttersten State DD29-755 - Wellbore #1 - Plan #1	2,000.00	2,055.65	5,077.12	5,063.06	361.057	ES
Guttersten State DD29-755 - Wellbore #1 - Plan #1	17,131.52	17,324.14	7,317.67	7,142.71	41.825	SF
Guttersten State DD29-765 - Wellbore #1 - Plan #1	2,215.51	2,850.91	5,030.35	5,012.98	289.590	CC, ES
Guttersten State DD29-765 - Wellbore #1 - Plan #1	17,131.52	17,355.41	6,657.67	6,482.94	38.104	SF
Guttersten State DD29-775 - Wellbore #1 - Plan #1	2,480.79	3,802.20	4,892.06	4,870.50	226.958	CC
Guttersten State DD29-775 - Wellbore #1 - Plan #1	2,500.00	3,816.62	4,892.15	4,870.47	225.660	ES
Guttersten State DD29-775 - Wellbore #1 - Plan #1	17,131.52	17,466.69	5,997.69	5,823.46	34.425	SF
Guttersten State DD29-785 - Wellbore #1 - Plan #1	2,749.27	4,717.78	4,675.00	4,648.97	179.602	CC, ES
Guttersten State DD29-785 - Wellbore #1 - Plan #1	17,131.52	17,688.17	5,337.49	5,163.39	30.658	SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen State DD30-785
Project:	Mustang	TVD Reference:	KB @ 4824.00ft
Reference Site:	DD Section 30	MD Reference:	KB @ 4824.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersen State DD30-785	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Guttersen State DD30-785	Database:	EDMP
Reference Design:	Plan #2	Offset TVD Reference:	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 30						
Guttersen 11-30 (PR) - Wellbore #1 - Gyro Surveys	11,450.65	6,698.95	259.56	192.25	3.856	CC, ES, SF
Guttersen 12-30 (PR) - Wellbore #1 - Gyro Surveys	10,000.00	6,725.99	174.01	114.00	2.900	SF
Guttersen 12-30 (PR) - Wellbore #1 - Gyro Surveys	10,030.11	6,724.38	171.39	112.32	2.902	CC, ES
Guttersen 22-30 (PR) - Wellbore #1 - Gyro Surveys	10,099.23	6,700.24	1,583.65	1,524.86	26.936	CC
Guttersen 22-30 (PR) - Wellbore #1 - Gyro Surveys	10,100.00	6,700.23	1,583.65	1,524.86	26.936	ES, SF
Guttersen 30 A (PR) - Wellbore #1 - Gyro Surveys	10,700.00	6,704.35	985.53	922.83	15.719	SF
Guttersen 30 A (PR) - Wellbore #1 - Gyro Surveys	10,730.16	6,703.93	985.07	922.41	15.721	CC, ES
Guttersen State DD30-715 - Guttersen State DD30-715 -	2,000.00	2,029.00	2,062.06	2,048.08	147.534	CC, ES
Guttersen State DD30-715 - Guttersen State DD30-715 -	17,131.52	16,993.43	4,657.96	4,484.87	26.911	SF
Guttersen State DD30-725 - Guttersen State DD30-725 -	2,000.00	2,029.00	2,025.06	2,011.08	144.887	CC, ES
Guttersen State DD30-725 - Guttersen State DD30-725 -	17,131.52	16,963.65	4,017.80	3,844.62	23.200	SF
Guttersen State DD30-735 - Guttersen State DD30-735 -	2,000.00	2,029.00	1,987.07	1,973.09	142.169	CC, ES
Guttersen State DD30-735 - Guttersen State DD30-735 -	17,131.52	17,046.63	3,357.30	3,184.45	19.423	SF
Guttersen State DD30-745 - Guttersen State DD30-745 -	2,601.69	3,241.78	1,918.48	1,898.90	97.999	CC, ES
Guttersen State DD30-745 - Guttersen State DD30-745 -	17,131.52	17,211.92	2,697.62	2,525.25	15.651	SF
Guttersen State DD30-755 - Guttersen State DD30-755 -	2,000.00	2,001.00	112.01	98.13	8.072	CC, ES
Guttersen State DD30-755 - Guttersen State DD30-755 -	2,100.00	2,101.05	114.59	100.00	7.858	SF
Guttersen State DD30-766 - Guttersen State DD30-766 -	2,000.00	2,001.00	75.01	61.13	5.405	CC, ES
Guttersen State DD30-766 - Guttersen State DD30-766 -	2,100.00	2,098.95	77.59	63.01	5.323	SF
Guttersen State DD30-775 - Guttersen State DD30-775 -	2,381.45	2,388.69	36.92	20.66	2.271	CC
Guttersen State DD30-775 - Guttersen State DD30-775 -	2,600.00	2,611.23	37.12	19.66	2.126	ES, SF
Guttersen YY06-756 - Guttersen YY06-756 - Plan #1	2,000.00	2,004.00	187.48	173.59	13.500	CC, ES
Guttersen YY06-756 - Guttersen YY06-756 - Plan #1	2,200.00	2,204.37	195.20	179.90	12.762	SF
Guttersen YY06-766 - Guttersen YY06-766 - Plan #1	2,000.00	2,004.00	167.27	153.38	12.045	CC, ES
Guttersen YY06-766 - Guttersen YY06-766 - Plan #1	2,200.00	2,204.37	173.63	158.34	11.352	SF
Guttersen YY06-775 - Guttersen YY06-775 - Plan #1	2,000.00	2,003.00	154.99	141.11	11.164	CC, ES
Guttersen YY06-775 - Guttersen YY06-775 - Plan #1	6,800.00	6,836.39	458.15	405.83	8.756	SF
Guttersen YY06-785 - Guttersen YY06-785 - Plan #1	7,034.89	7,045.07	70.28	15.28	1.278	Level 3, CC, ES, SF
Karch Blue DD 30-12 (PA) - Wellbore #1 - No Surveys	8,911.42	6,727.00	121.21	-43.71	0.735	Level 1, CC, ES, SF
Karch Blue DD 30-14 (PA) - Wellbore #1 - No Surveys	3,439.95	3,309.67	214.76	136.17	2.733	CC, ES
Karch Blue DD 30-14 (PA) - Wellbore #1 - No Surveys	3,500.00	3,363.56	216.39	136.47	2.708	SF
Karch Blue DD 30-3 J (PA) - Wellbore #1 - No Surveys	3,877.68	3,701.47	1,203.61	1,115.22	13.616	CC
Karch Blue DD 30-3 J (PA) - Wellbore #1 - No Surveys	4,000.00	3,811.23	1,204.82	1,113.67	13.218	ES
Karch Blue DD 30-3 J (PA) - Wellbore #1 - No Surveys	8,353.20	6,732.00	1,288.44	1,125.25	7.895	SF
L F Ranch 2-30 (PR) - Wellbore #1 - Gyro Surveys	11,098.05	6,786.26	1,569.36	1,503.37	23.784	CC
L F Ranch 2-30 (PR) - Wellbore #1 - Gyro Surveys	11,100.00	6,786.20	1,569.36	1,503.37	23.783	ES, SF
State 19 (PA) - Wellbore #1 - NO Surveys	10,735.39	6,773.87	3,794.17	3,619.05	21.666	CC, ES
State 19 (PA) - Wellbore #1 - NO Surveys	11,000.00	6,769.25	3,803.39	3,627.32	21.602	SF
DD Section 31						
Guttersen 31Q-221 (PR) - Wellbore #1 - MWD Surveys	5,908.56	10,956.00	2,618.59	2,518.58	26.185	CC, ES
Guttersen 31Q-221 (PR) - Wellbore #1 - MWD Surveys	6,500.00	10,956.00	2,684.55	2,576.62	24.874	SF
Guttersen 31Q-401 (PR) - Wellbore #1 - MWD Surveys	6,230.99	11,132.00	2,455.71	2,354.49	24.260	CC
Guttersen 31Q-401 (PR) - Wellbore #1 - MWD Surveys	6,300.00	11,132.00	2,456.68	2,354.27	23.989	ES
Guttersen 31Q-401 (PR) - Wellbore #1 - MWD Surveys	6,700.00	11,132.00	2,503.45	2,395.62	23.217	SF
Guttersen 31T-301 (PR) - Wellbore #1 - MWD Surveys	5,703.16	11,048.00	3,225.33	3,124.94	32.128	CC, ES
Guttersen 31T-301 (PR) - Wellbore #1 - MWD Surveys	6,500.00	11,048.00	3,322.31	3,212.37	30.220	SF
Guttersen 31T-441 (PR) - Wellbore #1 - MWD Surveys	5,952.27	11,127.00	2,976.35	2,875.32	29.459	CC
Guttersen 31T-441 (PR) - Wellbore #1 - MWD Surveys	6,000.00	11,127.00	2,976.74	2,874.96	29.246	ES
Guttersen 31T-441 (PR) - Wellbore #1 - MWD Surveys	6,650.00	11,127.00	3,058.08	2,948.35	27.868	SF
Guttersen 33-31 (PR) - Wellbore #1 - Gyro Surveys	0.00	0.00	3,855.08			
Guttersen 33-31 (PR) - Wellbore #1 - Gyro Surveys	1,600.00	1,569.10	3,862.10	3,851.29	357.245	ES
Guttersen 33-31 (PR) - Wellbore #1 - Gyro Surveys	6,850.00	6,372.27	4,414.58	4,364.35	87.877	SF

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

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Gutttersen State DD30-785
Project:	Mustang	TVD Reference:	KB @ 4824.00ft
Reference Site:	DD Section 30	MD Reference:	KB @ 4824.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Gutttersen State DD30-785	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Gutttersen State DD30-785	Database:	EDMP
Reference Design:	Plan #2	Offset TVD Reference:	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
Gutttersen #6D South (PA) - Wellbore #1 - As-Drilled	2,358.99	2,430.04	9,819.49	9,802.99	595.112	CC
Gutttersen #6D South (PA) - Wellbore #1 - As-Drilled	2,500.00	2,522.69	9,819.92	9,802.61	567.080	ES
Gutttersen #6D South (PA) - Wellbore #1 - As-Drilled	6,750.00	6,528.70	9,996.05	9,944.94	195.593	SF
Gutttersen 6M-303 (PR) - Wellbore #1 - Wellbore #1	3,403.50	3,344.00	5,788.77	5,764.05	234.130	CC
Gutttersen 6M-303 (PR) - Wellbore #1 - Wellbore #1	3,900.00	3,866.30	5,791.00	5,762.05	200.051	ES
Gutttersen 6M-303 (PR) - Wellbore #1 - Wellbore #1	6,750.00	5,913.00	5,994.53	5,945.33	121.843	SF
Gutttersen 6M-423 (PR) - Wellbore #1 - MWD Surveys	1,523.77	1,522.90	5,843.01	5,832.56	559.270	CC
Gutttersen 6M-423 (PR) - Wellbore #1 - MWD Surveys	3,400.00	3,418.56	5,846.43	5,822.38	243.157	ES
Gutttersen 6M-423 (PR) - Wellbore #1 - MWD Surveys	6,750.00	6,010.00	6,144.27	6,095.30	125.480	SF
Gutttersen 6R-243 (PR) - Wellbore #1 - Gyro Surveys	853.87	852.91	5,850.41	5,844.66	1,018.159	CC
Gutttersen 6R-243 (PR) - Wellbore #1 - Gyro Surveys	1,000.00	960.98	5,850.75	5,844.11	881.150	ES
Gutttersen 6R-243 (PR) - Wellbore #1 - Gyro Surveys	6,750.00	5,946.00	6,289.12	6,239.72	127.326	SF
Gutttersen 6R-403 (PR) - Wellbore #1 - MWD Surveys	239.96	252.00	5,859.24	5,857.83	4,152.135	CC
Gutttersen 6R-403 (PR) - Wellbore #1 - MWD Surveys	300.00	287.76	5,859.34	5,857.59	3,339.108	ES
Gutttersen 6R-403 (PR) - Wellbore #1 - MWD Surveys	6,750.00	5,979.00	6,453.63	6,402.75	126.849	SF
Gutterson 31-6 (SI) - Wellbore #1 - Gyro Surveys	1,955.61	1,961.74	6,468.06	6,454.59	480.358	CC
Gutterson 31-6 (SI) - Wellbore #1 - Gyro Surveys	2,100.00	2,072.12	6,468.52	6,454.16	450.529	ES
Gutterson 31-6 (SI) - Wellbore #1 - Gyro Surveys	7,000.00	6,500.00	6,904.46	6,852.75	133.518	SF
Gutterson 32-6 (SI) - Wellbore #1 - Gyro Surveys	3,212.19	3,221.39	7,780.01	7,757.51	345.863	CC
Gutterson 32-6 (SI) - Wellbore #1 - Gyro Surveys	3,300.00	3,273.81	7,780.24	7,757.19	337.525	ES
Gutterson 32-6 (SI) - Wellbore #1 - Gyro Surveys	6,800.00	6,800.00	7,973.07	7,920.93	152.921	SF
J.H. Cuykendall 1 (PA) - Wellbore #1 - Gyro Surveys	6,593.03	5,966.29	9,721.96	9,673.75	201.646	CC
J.H. Cuykendall 1 (PA) - Wellbore #1 - Gyro Surveys	6,600.00	5,970.11	9,722.00	9,673.74	201.444	ES
J.H. Cuykendall 1 (PA) - Wellbore #1 - Gyro Surveys	7,050.00	7,050.00	9,872.15	9,818.18	182.914	SF