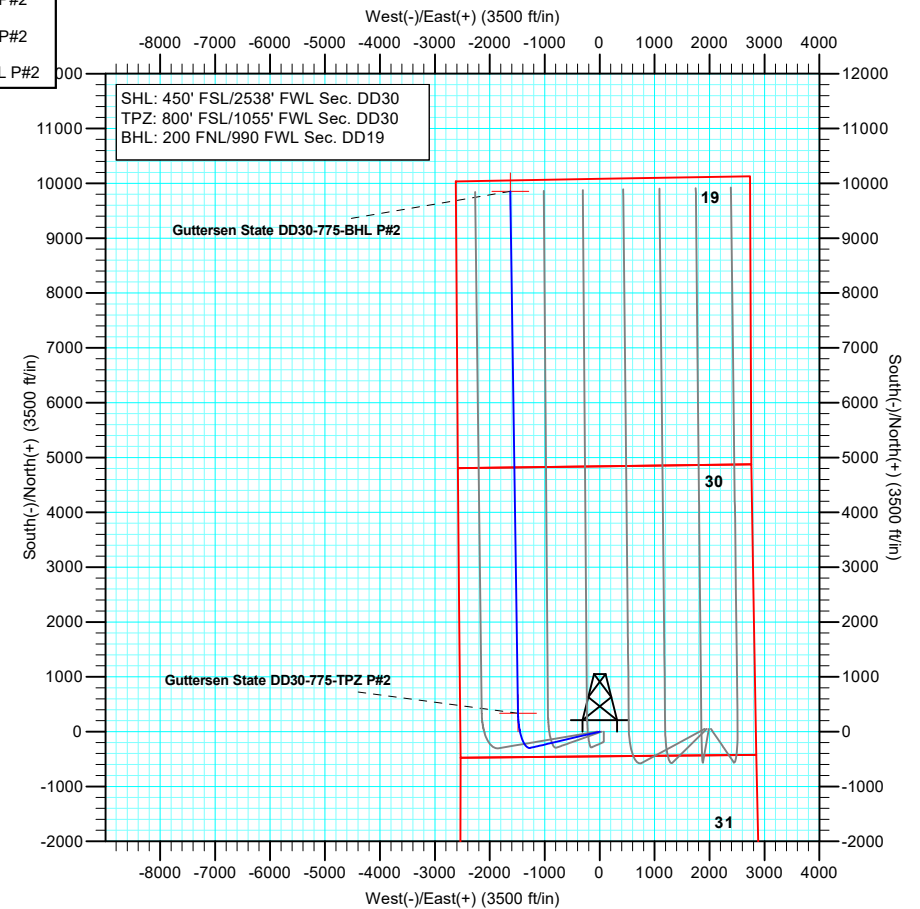
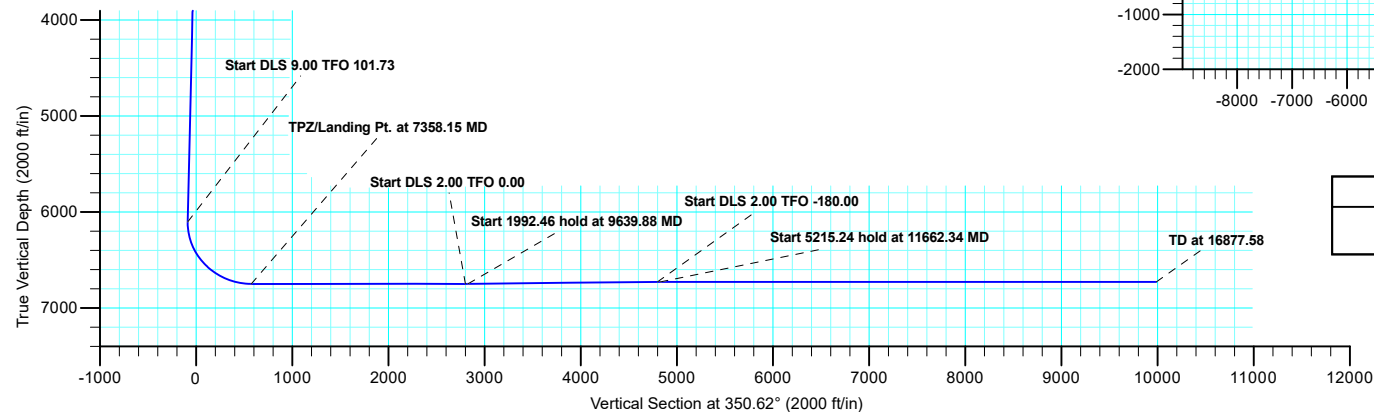


Northern Region - DJ Basin

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

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.00	0.00	
3	2629.47	18.88	256.77	2618.13	-23.52	-100.07	3.00	256.77	-6.90	
4	6313.97	18.88	256.77	6104.32	-296.37	-1260.94	0.00	0.00	-86.88	
5	7358.15	90.00	359.15	6750.00	335.43	-1486.11	9.00	101.73	573.17	Guttersen State DD30-775-TPZ P#2
6	9609.88	90.00	359.15	6750.00	2586.91	-1519.64	0.00	0.00	2800.00	Guttersen State DD30-775-T1 P#2
7	9639.88	90.60	359.15	6749.84	2616.90	-1520.09	2.00	0.00	2829.67	
8	11632.34	90.60	359.15	6728.98	4609.03	-1549.76	0.00	0.00	4800.00	Guttersen State DD30-775-T2 P#2
9	11662.34	90.00	359.15	6728.82	4639.03	-1550.21	2.00	-180.00	4829.66	
10	16877.58	90.00	359.15	6728.82	9853.69	-1627.87	0.00	0.00	9987.25	Guttersen State DD30-775-BHL P#2

+N/-S	+E/-W	Northing	Ground Level:	4794.00		
0.00	0.00	1313834.25	Easting	Latitude	Longitude	Slot
			3284597.70	40.1903838	-104.4812706	



Created by: Shelly C. Peterkin Date: 9:11, August 12 2019

Northern Region - DJ Basin

Mustang

DD Section 30

Guttersen State DD30-775

Guttersen State DD30-775

Plan: Plan #2

Standard Planning Report

12 August, 2019

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Guttersen State DD30-775
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 DD30-775	Survey Calculation Method:	Minimum Curvature
Wellbore:	Guttersen State DD30-775		
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 DD30-775					
Well Position	+N/-S	-2,178.89 ft	Northing:	1,313,834.25 usft	Latitude:	40.1903838
	+E/-W	-149.45 ft	Easting:	3,284,597.71 usft	Longitude:	-104.4812705
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,794.00 ft

Wellbore	Guttersen State DD30-775				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	7/12/2018	7.93	66.70	52,191.18342393

Design	Plan #2			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	350.62

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	
2,629.47	18.88	256.77	2,618.13	-23.52	-100.07	3.00	3.00	0.00	256.77	
6,313.97	18.88	256.77	6,104.32	-296.37	-1,260.94	0.00	0.00	0.00	0.00	
7,358.16	90.00	359.15	6,750.00	335.43	-1,486.11	9.00	6.81	9.80	101.73	Guttersen State DD30
9,609.88	90.00	359.15	6,750.00	2,586.91	-1,519.64	0.00	0.00	0.00	0.00	Guttersen State DD30
9,639.88	90.60	359.15	6,749.84	2,616.90	-1,520.09	2.00	2.00	0.00	0.00	
11,632.34	90.60	359.15	6,728.98	4,609.03	-1,549.76	0.00	0.00	0.00	0.00	Guttersen State DD30
11,662.34	90.00	359.15	6,728.82	4,639.03	-1,550.21	2.00	-2.00	0.00	-180.00	
16,877.58	90.00	359.15	6,728.82	9,853.69	-1,627.87	0.00	0.00	0.00	0.00	Guttersen State DD30

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Guttersten State DD30-775
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 DD30-775	Survey Calculation Method:	Minimum Curvature
Wellbore:	Guttersten State DD30-775		
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	256.77	2,099.95	-0.60	-2.55	-0.18	3.00	3.00	0.00
2,200.00	6.00	256.77	2,199.63	-2.39	-10.18	-0.70	3.00	3.00	0.00
2,300.00	9.00	256.77	2,298.77	-5.38	-22.89	-1.58	3.00	3.00	0.00
2,400.00	12.00	256.77	2,397.08	-9.55	-40.63	-2.80	3.00	3.00	0.00
2,500.00	15.00	256.77	2,494.31	-14.89	-63.35	-4.37	3.00	3.00	0.00
2,600.00	18.00	256.77	2,590.18	-21.39	-91.00	-6.27	3.00	3.00	0.00
2,629.47	18.88	256.77	2,618.13	-23.52	-100.07	-6.90	3.00	3.00	0.00
Start 3684.50 hold at 2629.47 MD									
2,700.00	18.88	256.77	2,684.87	-28.74	-122.29	-8.43	0.00	0.00	0.00
2,800.00	18.88	256.77	2,779.49	-36.15	-153.80	-10.60	0.00	0.00	0.00
2,900.00	18.88	256.77	2,874.10	-43.55	-185.31	-12.77	0.00	0.00	0.00
3,000.00	18.88	256.77	2,968.72	-50.96	-216.81	-14.94	0.00	0.00	0.00
3,100.00	18.88	256.77	3,063.34	-58.37	-248.32	-17.11	0.00	0.00	0.00
3,200.00	18.88	256.77	3,157.96	-65.77	-279.83	-19.28	0.00	0.00	0.00
3,300.00	18.88	256.77	3,252.57	-73.18	-311.33	-21.45	0.00	0.00	0.00
3,400.00	18.88	256.77	3,347.19	-80.58	-342.84	-23.62	0.00	0.00	0.00
3,500.00	18.88	256.77	3,441.81	-87.99	-374.35	-25.79	0.00	0.00	0.00
3,600.00	18.88	256.77	3,536.43	-95.39	-405.85	-27.96	0.00	0.00	0.00
3,684.10	18.88	256.77	3,616.00	-101.62	-432.35	-29.79	0.00	0.00	0.00
Parkman									
3,700.00	18.88	256.77	3,631.04	-102.80	-437.36	-30.14	0.00	0.00	0.00
3,800.00	18.88	256.77	3,725.66	-110.20	-468.87	-32.31	0.00	0.00	0.00
3,900.00	18.88	256.77	3,820.28	-117.61	-500.37	-34.48	0.00	0.00	0.00
4,000.00	18.88	256.77	3,914.90	-125.01	-531.88	-36.65	0.00	0.00	0.00
4,100.00	18.88	256.77	4,009.51	-132.42	-563.39	-38.82	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Guttersen State DD30-775
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 DD30-775	Survey Calculation Method:	Minimum Curvature
Wellbore:	Guttersen State DD30-775		
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)
4,130.11	18.88	256.77	4,038.00	-134.65	-572.87	-39.47	0.00	0.00	0.00
Sussex									
4,200.00	18.88	256.77	4,104.13	-139.83	-594.90	-40.99	0.00	0.00	0.00
4,300.00	18.88	256.77	4,198.75	-147.23	-626.40	-43.16	0.00	0.00	0.00
4,325.63	18.88	256.77	4,223.00	-149.13	-634.48	-43.72	0.00	0.00	0.00
Shannon									
4,400.00	18.88	256.77	4,293.37	-154.64	-657.91	-45.33	0.00	0.00	0.00
4,500.00	18.88	256.77	4,387.98	-162.04	-689.42	-47.50	0.00	0.00	0.00
4,600.00	18.88	256.77	4,482.60	-169.45	-720.92	-49.67	0.00	0.00	0.00
4,700.00	18.88	256.77	4,577.22	-176.85	-752.43	-51.85	0.00	0.00	0.00
4,800.00	18.88	256.77	4,671.84	-184.26	-783.94	-54.02	0.00	0.00	0.00
4,900.00	18.88	256.77	4,766.45	-191.66	-815.44	-56.19	0.00	0.00	0.00
5,000.00	18.88	256.77	4,861.07	-199.07	-846.95	-58.36	0.00	0.00	0.00
5,100.00	18.88	256.77	4,955.69	-206.47	-878.46	-60.53	0.00	0.00	0.00
5,200.00	18.88	256.77	5,050.31	-213.88	-909.96	-62.70	0.00	0.00	0.00
5,300.00	18.88	256.77	5,144.92	-221.28	-941.47	-64.87	0.00	0.00	0.00
5,400.00	18.88	256.77	5,239.54	-228.69	-972.98	-67.04	0.00	0.00	0.00
5,500.00	18.88	256.77	5,334.16	-236.10	-1,004.48	-69.21	0.00	0.00	0.00
5,600.00	18.88	256.77	5,428.78	-243.50	-1,035.99	-71.38	0.00	0.00	0.00
5,700.00	18.88	256.77	5,523.40	-250.91	-1,067.50	-73.55	0.00	0.00	0.00
5,800.00	18.88	256.77	5,618.01	-258.31	-1,099.01	-75.73	0.00	0.00	0.00
5,900.00	18.88	256.77	5,712.63	-265.72	-1,130.51	-77.90	0.00	0.00	0.00
6,000.00	18.88	256.77	5,807.25	-273.12	-1,162.02	-80.07	0.00	0.00	0.00
6,088.52	18.88	256.77	5,891.00	-279.68	-1,189.91	-81.99	0.00	0.00	0.00
Teepee Buttes									
6,100.00	18.88	256.77	5,901.87	-280.53	-1,193.53	-82.24	0.00	0.00	0.00
6,200.00	18.88	256.77	5,996.48	-287.93	-1,225.03	-84.41	0.00	0.00	0.00
6,300.00	18.88	256.77	6,091.10	-295.34	-1,256.54	-86.58	0.00	0.00	0.00
6,313.97	18.88	256.77	6,104.32	-296.37	-1,260.94	-86.88	0.00	0.00	0.00
Start DLS 9.00 TFO 101.73									
6,350.00	18.49	266.83	6,138.46	-298.02	-1,272.32	-86.66	9.00	-1.09	27.92
6,400.00	18.84	280.88	6,185.85	-296.94	-1,288.18	-83.00	9.00	0.71	28.10
6,450.00	20.18	293.78	6,233.00	-291.93	-1,304.01	-75.48	9.00	2.68	25.79
6,500.00	22.33	304.71	6,279.62	-283.04	-1,319.72	-64.15	9.00	4.30	21.87
6,550.00	25.08	313.59	6,325.41	-270.32	-1,335.21	-49.07	9.00	5.50	17.76
6,600.00	28.26	320.71	6,370.09	-253.85	-1,350.39	-30.35	9.00	6.35	14.23
6,650.00	31.73	326.44	6,413.40	-233.72	-1,365.16	-8.08	9.00	6.95	11.46
6,700.00	35.42	331.12	6,455.06	-210.07	-1,379.43	17.58	9.00	7.37	9.36
6,750.00	39.25	335.01	6,494.82	-183.03	-1,393.12	46.49	9.00	7.67	7.78
6,767.19	40.59	336.20	6,508.00	-172.98	-1,397.67	57.14	9.00	7.83	6.93
Sharon Springs									
6,800.00	43.19	338.30	6,532.42	-152.78	-1,406.13	78.46	9.00	7.92	6.40
6,830.21	45.62	340.06	6,554.00	-133.02	-1,413.64	99.17	9.00	8.02	5.83
Top A Chalk									
6,833.07	45.85	340.22	6,556.00	-131.09	-1,414.34	101.19	9.00	8.07	5.56
Top A Marl									
6,850.00	47.22	341.14	6,567.64	-119.50	-1,418.40	113.29	9.00	8.10	5.42
6,853.48	47.50	341.32	6,570.00	-117.08	-1,419.22	115.81	9.00	8.12	5.27
Top B Chalk									
6,900.00	51.31	343.62	6,600.27	-83.40	-1,429.84	150.77	9.00	8.18	4.95
6,934.22	54.13	345.17	6,621.00	-57.17	-1,437.16	177.84	9.00	8.25	4.51
Top B Marl									
6,950.00	55.44	345.84	6,630.10	-44.69	-1,440.38	190.68	9.00	8.30	4.27

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Guttersen State DD30-775
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 DD30-775	Survey Calculation Method:	Minimum Curvature
Wellbore:	Guttersen State DD30-775		
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)
7,000.00	59.61	347.85	6,656.94	-3.63	-1,449.96	232.76	9.00	8.34	4.01
7,050.00	63.81	349.69	6,680.63	39.55	-1,458.52	276.75	9.00	8.40	3.68
7,084.33	66.70	350.87	6,695.00	70.27	-1,463.78	307.92	9.00	8.43	3.46
Top C Chalk									
7,100.00	68.03	351.40	6,701.03	84.56	-1,466.01	322.39	9.00	8.45	3.35
7,150.00	72.26	353.01	6,718.01	131.15	-1,472.38	369.38	9.00	8.47	3.23
7,185.78	75.30	354.12	6,728.00	165.28	-1,476.22	403.68	9.00	8.50	3.09
Top C Marl									
7,200.00	76.51	354.55	6,731.46	179.01	-1,477.59	417.45	9.00	8.51	3.03
7,250.00	80.77	356.04	6,741.31	227.85	-1,481.60	466.30	9.00	8.52	2.97
7,300.00	85.04	357.48	6,747.48	277.38	-1,484.40	515.62	9.00	8.53	2.90
7,350.00	89.30	358.91	6,749.95	327.28	-1,485.97	565.11	9.00	8.53	2.86
7,358.16	90.00	359.15	6,750.00	335.43	-1,486.11	573.17	9.00	8.54	2.85
TPZ/Landing Pt. at 7358.15 MD									
7,400.00	90.00	359.15	6,750.00	377.27	-1,486.73	614.56	0.00	0.00	0.00
7,500.00	90.00	359.15	6,750.00	477.26	-1,488.22	713.45	0.00	0.00	0.00
7,600.00	90.00	359.15	6,750.00	577.25	-1,489.71	812.34	0.00	0.00	0.00
7,700.00	90.00	359.15	6,750.00	677.24	-1,491.20	911.24	0.00	0.00	0.00
7,800.00	90.00	359.15	6,750.00	777.23	-1,492.69	1,010.13	0.00	0.00	0.00
7,900.00	90.00	359.15	6,750.00	877.22	-1,494.18	1,109.03	0.00	0.00	0.00
8,000.00	90.00	359.15	6,750.00	977.20	-1,495.67	1,207.92	0.00	0.00	0.00
8,100.00	90.00	359.15	6,750.00	1,077.19	-1,497.16	1,306.82	0.00	0.00	0.00
8,200.00	90.00	359.15	6,750.00	1,177.18	-1,498.65	1,405.71	0.00	0.00	0.00
8,300.00	90.00	359.15	6,750.00	1,277.17	-1,500.14	1,504.61	0.00	0.00	0.00
8,400.00	90.00	359.15	6,750.00	1,377.16	-1,501.62	1,603.50	0.00	0.00	0.00
8,500.00	90.00	359.15	6,750.00	1,477.15	-1,503.11	1,702.39	0.00	0.00	0.00
8,600.00	90.00	359.15	6,750.00	1,577.14	-1,504.60	1,801.29	0.00	0.00	0.00
8,700.00	90.00	359.15	6,750.00	1,677.13	-1,506.09	1,900.18	0.00	0.00	0.00
8,800.00	90.00	359.15	6,750.00	1,777.12	-1,507.58	1,999.08	0.00	0.00	0.00
8,900.00	90.00	359.15	6,750.00	1,877.10	-1,509.07	2,097.97	0.00	0.00	0.00
9,000.00	90.00	359.15	6,750.00	1,977.09	-1,510.56	2,196.87	0.00	0.00	0.00
9,100.00	90.00	359.15	6,750.00	2,077.08	-1,512.05	2,295.76	0.00	0.00	0.00
9,200.00	90.00	359.15	6,750.00	2,177.07	-1,513.54	2,394.66	0.00	0.00	0.00
9,300.00	90.00	359.15	6,750.00	2,277.06	-1,515.03	2,493.55	0.00	0.00	0.00
9,400.00	90.00	359.15	6,750.00	2,377.05	-1,516.52	2,592.44	0.00	0.00	0.00
9,500.00	90.00	359.15	6,750.00	2,477.04	-1,518.01	2,691.34	0.00	0.00	0.00
9,609.88	90.00	359.15	6,750.00	2,586.91	-1,519.64	2,800.00	0.00	0.00	0.00
Start DLS 2.00 TFO 0.00									
9,639.88	90.60	359.15	6,749.84	2,616.90	-1,520.09	2,829.67	2.00	2.00	0.00
Start 1992.46 hold at 9639.88 MD									
9,700.00	90.60	359.15	6,749.21	2,677.01	-1,520.98	2,889.12	0.00	0.00	0.00
9,800.00	90.60	359.15	6,748.17	2,777.00	-1,522.47	2,988.01	0.00	0.00	0.00
9,900.00	90.60	359.15	6,747.12	2,876.98	-1,523.96	3,086.90	0.00	0.00	0.00
10,000.00	90.60	359.15	6,746.07	2,976.96	-1,525.45	3,185.79	0.00	0.00	0.00
10,100.00	90.60	359.15	6,745.02	3,076.95	-1,526.94	3,284.68	0.00	0.00	0.00
10,200.00	90.60	359.15	6,743.98	3,176.93	-1,528.43	3,383.57	0.00	0.00	0.00
10,300.00	90.60	359.15	6,742.93	3,276.91	-1,529.92	3,482.46	0.00	0.00	0.00
10,400.00	90.60	359.15	6,741.88	3,376.90	-1,531.41	3,581.35	0.00	0.00	0.00
10,500.00	90.60	359.15	6,740.84	3,476.88	-1,532.90	3,680.24	0.00	0.00	0.00
10,600.00	90.60	359.15	6,739.79	3,576.86	-1,534.39	3,779.13	0.00	0.00	0.00
10,700.00	90.60	359.15	6,738.74	3,676.85	-1,535.88	3,878.01	0.00	0.00	0.00
10,800.00	90.60	359.15	6,737.69	3,776.83	-1,537.36	3,976.90	0.00	0.00	0.00
10,900.00	90.60	359.15	6,736.65	3,876.81	-1,538.85	4,075.79	0.00	0.00	0.00
11,000.00	90.60	359.15	6,735.60	3,976.80	-1,540.34	4,174.68	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Guttersen State DD30-775
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 DD30-775	Survey Calculation Method:	Minimum Curvature
Wellbore:	Guttersen State DD30-775		
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)
11,100.00	90.60	359.15	6,734.55	4,076.78	-1,541.83	4,273.57	0.00	0.00	0.00
11,200.00	90.60	359.15	6,733.51	4,176.76	-1,543.32	4,372.46	0.00	0.00	0.00
11,300.00	90.60	359.15	6,732.46	4,276.75	-1,544.81	4,471.35	0.00	0.00	0.00
11,400.00	90.60	359.15	6,731.41	4,376.73	-1,546.30	4,570.24	0.00	0.00	0.00
11,500.00	90.60	359.15	6,730.36	4,476.71	-1,547.79	4,669.13	0.00	0.00	0.00
11,600.00	90.60	359.15	6,729.32	4,576.70	-1,549.28	4,768.02	0.00	0.00	0.00
11,632.34	90.60	359.15	6,728.98	4,609.03	-1,549.76	4,800.00	0.00	0.00	0.00
Start DLS 2.00 TFO -180.00									
11,662.34	90.00	359.15	6,728.82	4,639.03	-1,550.21	4,829.66	2.00	-2.00	0.00
Start 5215.24 hold at 11662.34 MD									
11,700.00	90.00	359.15	6,728.82	4,676.68	-1,550.77	4,866.91	0.00	0.00	0.00
11,800.00	90.00	359.15	6,728.82	4,776.67	-1,552.26	4,965.80	0.00	0.00	0.00
11,900.00	90.00	359.15	6,728.82	4,876.66	-1,553.74	5,064.70	0.00	0.00	0.00
12,000.00	90.00	359.15	6,728.82	4,976.65	-1,555.23	5,163.59	0.00	0.00	0.00
12,100.00	90.00	359.15	6,728.82	5,076.64	-1,556.72	5,262.49	0.00	0.00	0.00
12,200.00	90.00	359.15	6,728.82	5,176.63	-1,558.21	5,361.38	0.00	0.00	0.00
12,300.00	90.00	359.15	6,728.82	5,276.62	-1,559.70	5,460.28	0.00	0.00	0.00
12,400.00	90.00	359.15	6,728.82	5,376.61	-1,561.19	5,559.17	0.00	0.00	0.00
12,500.00	90.00	359.15	6,728.82	5,476.59	-1,562.68	5,658.06	0.00	0.00	0.00
12,600.00	90.00	359.15	6,728.82	5,576.58	-1,564.17	5,756.96	0.00	0.00	0.00
12,700.00	90.00	359.15	6,728.82	5,676.57	-1,565.66	5,855.85	0.00	0.00	0.00
12,800.00	90.00	359.15	6,728.82	5,776.56	-1,567.15	5,954.75	0.00	0.00	0.00
12,900.00	90.00	359.15	6,728.82	5,876.55	-1,568.64	6,053.64	0.00	0.00	0.00
13,000.00	90.00	359.15	6,728.82	5,976.54	-1,570.13	6,152.54	0.00	0.00	0.00
13,100.00	90.00	359.15	6,728.82	6,076.53	-1,571.61	6,251.43	0.00	0.00	0.00
13,200.00	90.00	359.15	6,728.82	6,176.52	-1,573.10	6,350.33	0.00	0.00	0.00
13,300.00	90.00	359.15	6,728.82	6,276.51	-1,574.59	6,449.22	0.00	0.00	0.00
13,400.00	90.00	359.15	6,728.82	6,376.50	-1,576.08	6,548.11	0.00	0.00	0.00
13,500.00	90.00	359.15	6,728.82	6,476.48	-1,577.57	6,647.01	0.00	0.00	0.00
13,600.00	90.00	359.15	6,728.82	6,576.47	-1,579.06	6,745.90	0.00	0.00	0.00
13,700.00	90.00	359.15	6,728.82	6,676.46	-1,580.55	6,844.80	0.00	0.00	0.00
13,800.00	90.00	359.15	6,728.82	6,776.45	-1,582.04	6,943.69	0.00	0.00	0.00
13,900.00	90.00	359.15	6,728.82	6,876.44	-1,583.53	7,042.59	0.00	0.00	0.00
14,000.00	90.00	359.15	6,728.82	6,976.43	-1,585.02	7,141.48	0.00	0.00	0.00
14,100.00	90.00	359.15	6,728.82	7,076.42	-1,586.51	7,240.38	0.00	0.00	0.00
14,200.00	90.00	359.15	6,728.82	7,176.41	-1,588.00	7,339.27	0.00	0.00	0.00
14,300.00	90.00	359.15	6,728.82	7,276.40	-1,589.48	7,438.17	0.00	0.00	0.00
14,400.00	90.00	359.15	6,728.82	7,376.38	-1,590.97	7,537.06	0.00	0.00	0.00
14,500.00	90.00	359.15	6,728.82	7,476.37	-1,592.46	7,635.95	0.00	0.00	0.00
14,600.00	90.00	359.15	6,728.82	7,576.36	-1,593.95	7,734.85	0.00	0.00	0.00
14,700.00	90.00	359.15	6,728.82	7,676.35	-1,595.44	7,833.74	0.00	0.00	0.00
14,800.00	90.00	359.15	6,728.82	7,776.34	-1,596.93	7,932.64	0.00	0.00	0.00
14,900.00	90.00	359.15	6,728.82	7,876.33	-1,598.42	8,031.53	0.00	0.00	0.00
15,000.00	90.00	359.15	6,728.82	7,976.32	-1,599.91	8,130.43	0.00	0.00	0.00
15,100.00	90.00	359.15	6,728.82	8,076.31	-1,601.40	8,229.32	0.00	0.00	0.00
15,200.00	90.00	359.15	6,728.82	8,176.30	-1,602.89	8,328.22	0.00	0.00	0.00
15,300.00	90.00	359.15	6,728.82	8,276.28	-1,604.38	8,427.11	0.00	0.00	0.00
15,400.00	90.00	359.15	6,728.82	8,376.27	-1,605.87	8,526.00	0.00	0.00	0.00
15,500.00	90.00	359.15	6,728.82	8,476.26	-1,607.35	8,624.90	0.00	0.00	0.00
15,600.00	90.00	359.15	6,728.82	8,576.25	-1,608.84	8,723.79	0.00	0.00	0.00
15,700.00	90.00	359.15	6,728.82	8,676.24	-1,610.33	8,822.69	0.00	0.00	0.00
15,800.00	90.00	359.15	6,728.82	8,776.23	-1,611.82	8,921.58	0.00	0.00	0.00
15,900.00	90.00	359.15	6,728.82	8,876.22	-1,613.31	9,020.48	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Guttersten State DD30-775
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 DD30-775	Survey Calculation Method:	Minimum Curvature
Wellbore:	Guttersten State DD30-775		
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)
16,000.00	90.00	359.15	6,728.82	8,976.21	-1,614.80	9,119.37	0.00	0.00	0.00
16,100.00	90.00	359.15	6,728.82	9,076.20	-1,616.29	9,218.27	0.00	0.00	0.00
16,200.00	90.00	359.15	6,728.82	9,176.18	-1,617.78	9,317.16	0.00	0.00	0.00
16,300.00	90.00	359.15	6,728.82	9,276.17	-1,619.27	9,416.05	0.00	0.00	0.00
16,400.00	90.00	359.15	6,728.82	9,376.16	-1,620.76	9,514.95	0.00	0.00	0.00
16,500.00	90.00	359.15	6,728.82	9,476.15	-1,622.25	9,613.84	0.00	0.00	0.00
16,600.00	90.00	359.15	6,728.82	9,576.14	-1,623.74	9,712.74	0.00	0.00	0.00
16,700.00	90.00	359.15	6,728.82	9,676.13	-1,625.22	9,811.63	0.00	0.00	0.00
16,800.00	90.00	359.15	6,728.82	9,776.12	-1,626.71	9,910.53	0.00	0.00	0.00
16,877.58	90.00	359.15	6,728.82	9,853.69	-1,627.87	9,987.25	0.00	0.00	0.00
TD at 16877.58									

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									
Guttersten State DD30-7	0.00	0.00	6,728.82	9,853.69	-1,627.87	1,323,687.92	3,282,969.84	40.2174827	-104.4866940
- plan hits target center									
- Point									
Guttersten State DD30-7	0.00	0.00	6,750.00	335.43	-1,486.11	1,314,169.68	3,283,111.60	40.1913513	-104.4865759
- 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				
3,684.10	3,616.00	Parkman				
4,130.11	4,038.00	Sussex				
4,325.63	4,223.00	Shannon				
6,088.52	5,891.00	Teepee Buttes				
6,767.19	6,508.00	Sharon Springs				
6,830.21	6,554.00	Top A Chalk				
6,833.07	6,556.00	Top A Marl				
6,853.48	6,570.00	Top B Chalk				
6,934.22	6,621.00	Top B Marl				
7,084.33	6,695.00	Top C Chalk				
7,185.78	6,728.00	Top C Marl				

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Guttersen State DD30-775
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 DD30-775	Survey Calculation Method:	Minimum Curvature
Wellbore:	Guttersen State DD30-775		
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
2,629.47	2,618.13	-23.52	-100.07	Start 3684.50 hold at 2629.47 MD
6,313.97	6,104.32	-296.37	-1,260.94	Start DLS 9.00 TFO 101.73
7,358.16	6,750.00	335.43	-1,486.11	TPZ/Landing Pt. at 7358.15 MD
9,609.88	6,750.00	2,586.91	-1,519.64	Start DLS 2.00 TFO 0.00
9,639.88	6,749.84	2,616.90	-1,520.09	Start 1992.46 hold at 9639.88 MD
11,632.34	6,728.98	4,609.03	-1,549.76	Start DLS 2.00 TFO -180.00
11,662.34	6,728.82	4,639.03	-1,550.21	Start 5215.24 hold at 11662.34 MD
16,877.58	6,728.82	9,853.69	-1,627.87	TD at 16877.58

Northern Region - DJ Basin

Mustang

DD Section 30

Guttersen State DD30-775

Guttersen State DD30-775

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 DD30-775
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 DD30-775	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Guttersten State DD30-775	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	16,877.58	Plan #2 (Guttersten State DD30-775)	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	16,877.58	6,716.91	4,704.93	4,608.03	48.557	CC, ES, SF
Dalbey D 13-12 (PR) - Wellbore #1 - Gyro Surveys	16,877.58	6,678.41	5,582.92	5,479.94	54.213	CC, ES, SF
Dalbey D 13-13 (SI) - Wellbore #1 - As-Drilled	16,877.58	6,754.51	5,624.88	5,517.67	52.467	CC, ES, SF
Dalbey D 13-14 (PA) - Wellbore #1 - Gyro Surveys	16,877.58	6,636.43	4,466.53	4,360.26	42.028	CC, ES, SF
Guttersten 12-13 (SI) - Wellbore #1 - Gyro Surveys	16,877.58	6,970.94	6,610.58	6,515.81	69.752	CC, ES, SF
Guttersten 13C (PR) - Wellbore #1 - Gyro Surveys	16,877.58	6,757.22	4,737.74	4,671.03	71.022	CC, ES, SF
Guttersten 13D (PR) - Wellbore #1 - Gyro Surveys	16,877.58	6,654.71	2,773.23	2,681.21	30.137	CC, ES, SF
Guttersten 13N (PR) - Wellbore #1 - Gyro Surveys	16,877.58	6,850.57	5,642.62	5,562.35	70.288	CC, ES, SF
Guttersten 13S (PR) - Wellbore #1 - Gyro Surveys	16,877.58	6,686.13	3,696.19	3,620.20	48.641	CC, ES, SF
Guttersten 13T (PR) - Wellbore #1 - Gyro Surveys	16,877.58	6,684.10	2,427.66	2,320.53	22.661	CC, ES, SF
Guttersten 21-13 (SI) - Wellbore #1 - Gyro Surveys	16,877.58	6,811.95	6,475.57	6,395.37	80.742	CC, ES, SF
Guttersten 22-13 (SI) - Wellbore #1 - Gyro Surveys	16,877.58	6,715.42	5,504.22	5,416.67	62.868	CC, ES, SF
Guttersten 31-13 (PR) - Wellbore #1 - Gyro Surveys	16,877.58	6,643.24	5,658.60	5,588.74	81.004	CC, ES, SF
Guttersten 32-13 (PR) - Wellbore #1 - Gyro Surveys	16,877.58	6,689.02	4,636.77	4,560.09	60.466	CC, ES, SF
Guttersten 34-13 (PR) - Wellbore #1 - Gyro Surveys	16,877.58	6,659.95	3,154.80	3,050.68	30.299	CC, ES, SF
Guttersten 41-13 (PR) - Wellbore #1 - Gyro Surveys	16,877.58	6,673.86	4,992.38	4,934.12	85.692	CC, ES, SF
Guttersten 42-13 (PR) - Wellbore #1 - Gyro Surveys	16,877.58	6,615.14	3,780.13	3,718.00	60.834	CC, ES, SF
Guttersten 43-13 - Wellbore #1 - Wellbore #1 - As Drilled	16,877.58	6,656.91	2,728.27	2,653.74	36.607	CC, ES, SF
Guttersten 44-13 - Wellbore #1 - Wellbore #1 - As Drilled	16,877.58	6,677.01	1,892.61	1,790.52	18.540	CC, ES, SF
L F Ranch 1-13 (PR) - Wellbore #1 - Gyro Surveys	16,877.58	6,719.74	3,595.00	3,500.70	38.125	CC, ES, SF
L. F. Ranch 13-4 (SI) - Wellbore #1 - Gyro Surveys	16,877.58	7,338.50	6,860.28	6,767.04	73.572	CC, ES, SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersten State DD30-775
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 DD30-775	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Guttersten State DD30-775	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)	Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
D Section 24						
Dalbey D 24-10 (PR) - Wellbore #1 - Gyro Surveys	13,442.43	6,684.94	2,637.03	2,554.54	31.971	CC, ES
Dalbey D 24-10 (PR) - Wellbore #1 - Gyro Surveys	14,000.00	6,684.66	2,695.33	2,608.46	31.028	SF
Dalbey D 24-15 (SI) - Wellbore #1 - Gyro Surveys	12,486.80	6,649.03	3,116.00	3,040.53	41.287	CC
Dalbey D 24-15 (SI) - Wellbore #1 - Gyro Surveys	12,500.00	6,649.11	3,116.03	3,040.44	41.222	ES
Dalbey D 24-15 (SI) - Wellbore #1 - Gyro Surveys	13,200.00	6,653.42	3,196.58	3,115.64	39.494	SF
Glazier 2-24 (PR) - Wellbore #1 - Gyro Surveys	15,648.90	6,678.68	1,970.05	1,870.77	19.842	CC, ES
Glazier 2-24 (PR) - Wellbore #1 - Gyro Surveys	15,900.00	6,677.40	1,985.99	1,884.44	19.557	SF
Guttersten 11-24 (SI) - Wellbore #1 - Gyro Surveys	16,463.36	6,769.95	5,641.79	5,536.16	53.412	CC
Guttersten 11-24 (SI) - Wellbore #1 - Gyro Surveys	16,500.00	6,769.95	5,641.91	5,535.95	53.247	ES
Guttersten 11-24 (SI) - Wellbore #1 - Gyro Surveys	16,877.58	6,769.95	5,656.97	5,547.80	51.816	SF
Guttersten 12-24 (SI) - Wellbore #1 - Gyro Surveys	15,166.65	6,717.25	5,669.86	5,574.26	59.310	CC
Guttersten 12-24 (SI) - Wellbore #1 - Gyro Surveys	15,200.00	6,717.18	5,669.96	5,574.06	59.129	ES
Guttersten 12-24 (SI) - Wellbore #1 - Gyro Surveys	16,877.58	6,713.91	5,922.38	5,814.68	54.992	SF
Guttersten 21-24 (SI) - Wellbore #1 - Gyro Surveys	16,463.96	6,761.10	4,323.13	4,217.12	40.781	CC
Guttersten 21-24 (SI) - Wellbore #1 - Gyro Surveys	16,500.00	6,760.99	4,323.28	4,216.93	40.654	ES
Guttersten 21-24 (SI) - Wellbore #1 - Gyro Surveys	16,877.58	6,759.78	4,342.87	4,233.32	39.644	SF
Guttersten 22-24 (PR) - Wellbore #1 - Gyro Surveys	15,234.92	6,666.20	4,284.40	4,188.32	44.593	CC
Guttersten 22-24 (PR) - Wellbore #1 - Gyro Surveys	15,300.00	6,666.30	4,284.89	4,188.22	44.324	ES
Guttersten 22-24 (PR) - Wellbore #1 - Gyro Surveys	16,300.00	6,667.68	4,414.80	4,310.91	42.495	SF
Guttersten 24A (SI) - Wellbore #1 - Gyro Surveys	15,796.16	6,704.17	4,957.23	4,856.78	49.349	CC
Guttersten 24A (SI) - Wellbore #1 - Gyro Surveys	15,800.00	6,704.21	4,957.23	4,856.74	49.332	ES
Guttersten 24A (SI) - Wellbore #1 - Gyro Surveys	16,877.58	6,713.83	5,073.80	4,965.18	46.712	SF
Guttersten 24J (PR) - Wellbore #1 - Gyro Surveys	16,877.58	6,677.70	4,860.53	4,752.01	44.791	CC, ES, SF
Guttersten 24N (SI) - Wellbore #1 - MWD Surveys	15,822.53	6,625.99	3,728.22	3,628.69	37.458	CC, ES
Guttersten 24N (SI) - Wellbore #1 - MWD Surveys	16,600.00	6,622.01	3,808.42	3,702.99	36.122	SF
Guttersten 24S (PR) - Wellbore #1 - As-Drilled	14,320.76	6,691.24	2,280.07	2,191.84	25.840	CC, ES
Guttersten 24S (PR) - Wellbore #1 - As-Drilled	14,700.00	6,688.69	2,311.40	2,220.01	25.292	SF
Guttersten 43-24 (PR) - Wellbore #1 - Gyro Surveys	13,692.00	6,656.99	1,743.60	1,659.15	20.648	CC
Guttersten 43-24 (PR) - Wellbore #1 - Gyro Surveys	13,700.00	6,656.95	1,743.62	1,659.08	20.626	ES
Guttersten 43-24 (PR) - Wellbore #1 - Gyro Surveys	13,900.00	6,656.13	1,755.96	1,669.55	20.321	SF
Guttersten 44-24 (PR) - Wellbore #1 - Gyro Surveys	12,453.30	6,722.75	1,682.35	1,607.03	22.336	CC, ES
Guttersten 44-24 (PR) - Wellbore #1 - Gyro Surveys	12,700.00	6,722.30	1,700.34	1,622.79	21.924	SF
Karch Blue D 24-12 (PA) - Wellbore #1 - Gyro Surveys	13,987.81	6,689.62	5,626.10	5,539.57	65.025	CC
Karch Blue D 24-12 (PA) - Wellbore #1 - Gyro Surveys	14,000.00	6,689.63	5,626.11	5,539.48	64.946	ES
Karch Blue D 24-12 (PA) - Wellbore #1 - Gyro Surveys	15,800.00	6,690.23	5,910.75	5,811.48	59.542	SF
Karch Blue D 24-14 (PR) - Wellbore #1 - No Surveys	12,446.74	6,669.82	4,075.43	3,889.94	21.971	CC
Karch Blue D 24-14 (PR) - Wellbore #1 - No Surveys	12,500.00	6,669.82	4,075.78	3,889.83	21.918	ES
Karch Blue D 24-14 (PR) - Wellbore #1 - No Surveys	13,100.00	6,669.82	4,127.46	3,936.78	21.646	SF
Karch Blue D24-11 (PA) - Wellbore #1 - Gyro Surveys	13,972.21	6,617.45	4,209.32	4,116.49	45.344	CC
Karch Blue D24-11 (PA) - Wellbore #1 - Gyro Surveys	14,000.00	6,617.73	4,209.41	4,116.33	45.222	ES
Karch Blue D24-11 (PA) - Wellbore #1 - Gyro Surveys	15,000.00	6,627.74	4,332.97	4,232.42	43.092	SF
Koerner 31-24 (SI) - Wellbore #1 - Gyro Surveys	16,501.57	6,632.87	2,999.64	2,893.71	28.317	CC, ES
Koerner 31-24 (SI) - Wellbore #1 - Gyro Surveys	16,877.58	6,636.39	3,023.12	2,913.99	27.702	SF
Koerner 32-24 (SI) - Wellbore #1 - Gyro Surveys	15,067.39	6,751.40	3,000.75	2,906.01	31.673	CC
Koerner 32-24 (SI) - Wellbore #1 - Gyro Surveys	15,100.00	6,751.43	3,000.93	2,905.87	31.569	ES
Koerner 32-24 (SI) - Wellbore #1 - Gyro Surveys	15,600.00	6,752.00	3,047.65	2,948.63	30.777	SF
Koerner 42-24 (SI) - Wellbore #1 - Gyro Surveys	15,043.35	6,666.38	1,695.58	1,600.96	17.921	CC, ES
Koerner 42-24 (SI) - Wellbore #1 - Gyro Surveys	15,300.00	6,663.54	1,714.89	1,617.99	17.698	SF
LF Ranch 1-24 (SI) - Wellbore #1 - Gyro Surveys	12,878.16	6,816.52	5,294.42	5,215.85	67.381	CC
LF Ranch 1-24 (SI) - Wellbore #1 - Gyro Surveys	12,900.00	6,816.72	5,294.47	5,215.71	67.223	ES
LF Ranch 1-24 (SI) - Wellbore #1 - Gyro Surveys	14,700.00	6,832.59	5,599.08	5,507.80	61.337	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 DD30-775
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 DD30-775	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Guttersten State DD30-775	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	8,555.03	6,837.21	5,651.67	5,591.95	94.636	CC
Coors Energy 13-25D (PR) - Wellbore #1 - MWD Surveys	8,600.00	6,837.31	5,651.85	5,591.87	94.229	ES
Coors Energy 13-25D (PR) - Wellbore #1 - MWD Surveys	11,400.00	6,828.67	6,327.02	6,249.05	81.137	SF
Coors Energy 14-25D (PR) - Wellbore #1 - MWD Surveys	7,336.40	6,974.10	5,678.03	5,628.87	115.490	CC, ES
Coors Energy 14-25D (PR) - Wellbore #1 - MWD Surveys	10,700.00	6,987.32	6,632.66	6,569.07	104.308	SF
Coors Energy 14-25H (PR) - Wellbore #1 - MWD Surveys	7,900.00	11,093.00	1,577.33	1,526.94	31.306	ES
Coors Energy 14-25H (PR) - Wellbore #1 - MWD Surveys	7,902.86	11,093.00	1,577.32	1,526.97	31.324	CC
Coors Energy 14-25H (PR) - Wellbore #1 - MWD Surveys	9,300.00	11,093.00	2,107.12	1,992.44	18.373	SF
Coors Energy 23-25D (PR) - Wellbore #1 - MWD Surveys	8,548.06	6,887.81	4,326.30	4,268.47	74.804	CC, ES
Coors Energy 23-25D (PR) - Wellbore #1 - MWD Surveys	9,900.00	6,885.90	4,532.61	4,469.07	71.332	SF
Coors Energy 24-25 (PR) - Wellbore #1 - Gyro Surveys	7,236.15	6,758.59	4,206.91	4,157.94	85.916	CC, ES
Coors Energy 24-25 (PR) - Wellbore #1 - Gyro Surveys	8,500.00	6,770.16	4,463.83	4,411.25	84.882	SF
Coors Energy 25HD (PR) - Wellbore #1 - MWD Surveys	7,910.01	7,008.04	6,134.84	6,081.34	114.672	CC, ES
Coors Energy 25HD (PR) - Wellbore #1 - MWD Surveys	11,700.00	6,967.28	7,211.14	7,133.90	93.360	SF
Coors Energy 25LD (PR) - Wellbore #1 - MWD Surveys	7,201.83	6,974.49	5,014.77	4,964.26	99.275	CC, ES
Coors Energy 25LD (PR) - Wellbore #1 - MWD Surveys	8,900.00	7,027.69	5,426.59	5,371.50	98.496	SF
Coors Energy 25TD (PR) - Wellbore #1 - MWD Surveys	7,033.41	6,690.86	2,346.98	2,297.83	47.746	CC, ES
Coors Energy 25TD (PR) - Wellbore #1 - MWD Surveys	7,200.00	6,751.66	2,359.76	2,310.09	47.501	SF
Coors Energy 25XD (PR) - Wellbore #1 - MWD Surveys	7,700.00	6,969.83	1,171.91	1,118.29	21.854	SF
Coors Energy 25XD (PR) - Wellbore #1 - MWD Surveys	7,869.09	6,967.77	1,159.65	1,106.85	21.959	CC, ES
Coors Energy 25YD (PR) - Wellbore #1 - MWD Surveys	6,921.40	6,801.52	1,224.67	1,171.25	22.926	CC, ES
Coors Energy 25YD (PR) - Wellbore #1 - MWD Surveys	7,100.00	6,894.59	1,243.75	1,188.45	22.491	SF
Coors Energy 33-25D (PR) - Wellbore #1 - MWD Surveys	8,525.96	6,893.10	3,015.48	2,955.12	49.959	CC, ES
Coors Energy 33-25D (PR) - Wellbore #1 - MWD Surveys	9,400.00	6,895.22	3,139.60	3,073.50	47.501	SF
Coors Energy 34-25 (PR) - Wellbore #1 - Gyro Surveys	7,202.65	6,701.44	3,214.53	3,165.78	65.940	CC, ES
Coors Energy 34-25 (PR) - Wellbore #1 - Gyro Surveys	7,350.00	6,718.76	3,223.32	3,174.28	65.734	SF
Coors Energy 43-25D (PR) - Wellbore #1 - MWD Surveys	8,529.49	6,953.58	1,720.77	1,660.95	28.765	CC, ES
Coors Energy 43-25D (PR) - Wellbore #1 - MWD Surveys	8,600.00	6,954.16	1,722.22	1,662.32	28.754	SF
Coors Energy 44-25D (PR) - Wellbore #1 - MWD Surveys	7,285.15	6,800.10	1,708.08	1,659.48	35.148	CC, ES
Coors Energy 44-25D (PR) - Wellbore #1 - MWD Surveys	7,350.00	6,803.73	1,710.37	1,661.65	35.102	SF
Dalbey D 25-03 (SI) - Wellbore #1 - Gyro Surveys	10,799.59	6,882.01	4,635.35	4,571.14	72.193	CC
Dalbey D 25-03 (SI) - Wellbore #1 - Gyro Surveys	10,800.00	6,882.00	4,635.35	4,571.14	72.190	ES
Dalbey D 25-03 (SI) - Wellbore #1 - Gyro Surveys	12,500.00	6,822.71	4,936.47	4,860.89	65.320	SF
Dalbey D 25-05 (SI) - Wellbore #1 - Gyro Surveys	9,869.73	6,999.40	5,836.07	5,776.43	97.847	CC
Dalbey D 25-05 (SI) - Wellbore #1 - Gyro Surveys	9,900.00	6,996.01	5,836.15	5,776.33	97.560	ES
Dalbey D 25-05 (SI) - Wellbore #1 - Gyro Surveys	12,600.00	6,737.62	6,436.19	6,360.74	85.299	SF
Guttersten 11-25 (PR) - Wellbore #1 - MWD Surveys	11,237.59	6,796.48	5,631.44	5,565.48	85.379	CC
Guttersten 11-25 (PR) - Wellbore #1 - MWD Surveys	11,300.00	6,795.16	5,631.79	5,565.35	84.773	ES
Guttersten 11-25 (PR) - Wellbore #1 - MWD Surveys	13,500.00	6,770.32	6,068.56	5,987.55	74.907	SF
Guttersten 22-25 (PA) - Wellbore #1 - MWD Surveys	9,959.61	6,762.93	4,216.01	4,158.22	72.966	CC
Guttersten 22-25 (PA) - Wellbore #1 - MWD Surveys	10,000.00	6,760.92	4,216.20	4,158.14	72.625	ES
Guttersten 22-25 (PA) - Wellbore #1 - MWD Surveys	11,500.00	6,683.29	4,487.90	4,420.28	66.372	SF
Guttersten 25E (PR) - Wellbore #1 - MWD Surveys	11,837.92	6,702.01	6,030.34	5,960.16	85.920	CC
Guttersten 25E (PR) - Wellbore #1 - MWD Surveys	11,900.00	6,701.07	6,030.66	5,959.99	85.329	ES
Guttersten 25E (PR) - Wellbore #1 - MWD Surveys	14,300.00	6,663.95	6,513.50	6,426.88	75.195	SF
Guttersten 25KD (PR) - Wellbore #1 - MWD Surveys	9,352.68	7,046.06	4,975.65	4,919.27	88.250	CC
Guttersten 25KD (PR) - Wellbore #1 - MWD Surveys	9,400.00	7,046.73	4,975.88	4,919.24	87.858	ES
Guttersten 25KD (PR) - Wellbore #1 - MWD Surveys	11,800.00	7,062.59	5,545.45	5,473.69	77.277	SF
Guttersten 25O (PR) - Wellbore #1 - MWD Surveys	9,474.27	6,702.73	3,781.40	3,726.11	68.383	CC
Guttersten 25O (PR) - Wellbore #1 - MWD Surveys	9,500.00	6,702.75	3,781.49	3,726.03	68.186	ES
Guttersten 25O (PR) - Wellbore #1 - MWD Surveys	10,800.00	6,690.83	4,007.02	3,943.52	63.106	SF
Guttersten D 25-17 (SI) - Wellbore #1 - Gyro Surveys	10,549.56	6,608.23	2,538.22	2,475.75	40.629	CC, ES
Guttersten D 25-17 (SI) - Wellbore #1 - Gyro Surveys	11,200.00	6,593.59	2,620.19	2,553.01	39.000	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 DD30-775
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 DD30-775	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Guttersten State DD30-775	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 D25-715 - Wellbore #1 - Plan #3	16,877.58	12,537.63	1,330.61	1,185.14	9.147	CC, ES, SF
Guttersten D25-724 - Wellbore #1 - Plan #3	16,877.58	12,418.63	1,931.83	1,786.04	13.250	CC, ES, SF
Guttersten D25-734 - Wellbore #1 - Plan #5	16,877.58	12,441.16	2,560.63	2,414.93	17.574	CC, ES, SF
Guttersten D25-743 - Wellbore #1 - Plan #3	10,963.22	6,203.12	3,160.90	3,093.70	47.037	CC
Guttersten D25-743 - Wellbore #1 - Plan #3	16,877.58	12,556.38	3,183.37	3,036.86	21.727	ES, SF
Guttersten D25-753 - Wellbore #1 - Plan #3	16,877.58	12,508.53	3,790.40	3,647.54	26.532	CC, ES, SF
Guttersten D25-762 - Wellbore #1 - Plan #3	16,877.58	12,353.31	4,424.21	4,281.70	31.046	CC, ES, SF
Guttersten D25-772 - Wellbore #1 - Plan #3	10,970.99	5,999.60	5,032.88	4,967.80	77.333	CC
Guttersten D25-772 - Wellbore #1 - Plan #3	16,877.58	12,545.36	5,035.51	4,892.91	35.312	ES, SF
Guttersten D25-781 - Wellbore #1 - Plan #3	10,873.73	5,250.82	5,468.82	5,405.92	86.939	CC
Guttersten D25-781 - Wellbore #1 - Plan #3	10,900.00	5,254.00	5,468.89	5,405.78	86.655	ES
Guttersten D25-781 - Wellbore #1 - Plan #3	16,877.58	12,647.26	5,678.67	5,535.41	39.638	SF
Guttersten State D36-714 - Wellbore #1 - Plan #1	7,200.00	8,968.66	1,357.27	1,298.14	22.952	SF
Guttersten State D36-714 - Wellbore #1 - Plan #1	9,055.77	7,131.34	1,325.14	1,268.62	23.446	CC, ES
Guttersten State D36-724 - Wellbore #1 - Plan #1	9,185.22	6,930.80	1,948.29	1,892.06	34.648	CC
Guttersten State D36-724 - Wellbore #1 - Plan #1	9,200.00	6,919.45	1,948.31	1,892.02	34.614	ES
Guttersten State D36-724 - Wellbore #1 - Plan #1	9,900.00	6,550.00	2,010.65	1,950.59	33.477	SF
Guttersten State D36-733 - Wellbore #1 - Plan #1	9,493.21	6,554.52	2,555.79	2,498.55	44.654	CC
Guttersten State D36-733 - Wellbore #1 - Plan #1	9,500.00	6,550.91	2,555.79	2,498.52	44.625	ES
Guttersten State D36-733 - Wellbore #1 - Plan #1	10,200.00	6,350.00	2,634.36	2,572.84	42.820	SF
Guttersten State D36-743 - Wellbore #1 - Plan #1	9,644.49	6,150.96	3,112.81	3,054.79	53.652	CC, ES
Guttersten State D36-743 - Wellbore #1 - Plan #1	10,500.00	6,028.88	3,225.92	3,162.67	51.001	SF
Guttersten State D36-752 - Wellbore #1 - Plan #1	9,078.45	7,150.00	3,815.22	3,757.73	66.361	CC
Guttersten State D36-752 - Wellbore #1 - Plan #1	9,100.00	7,137.68	3,815.25	3,757.69	66.288	ES
Guttersten State D36-752 - Wellbore #1 - Plan #1	10,900.00	6,550.00	4,083.71	4,017.24	61.438	SF
Guttersten State D36-762 - Wellbore #1 - Plan #1	9,541.12	6,592.92	4,400.23	4,342.35	76.018	CC, ES
Guttersten State D36-762 - Wellbore #1 - Plan #1	11,200.00	6,285.55	4,681.13	4,613.62	69.343	SF
Guttersten State D36-771 - Wellbore #1 - Plan #1	9,738.39	5,989.59	4,947.98	4,890.05	85.406	CC, ES
Guttersten State D36-771 - Wellbore #1 - Plan #1	11,632.34	5,505.82	5,274.86	5,206.36	77.009	SF
Guttersten State D36-781 - Wellbore #1 - Plan #1	9,963.89	5,255.10	5,380.75	5,323.22	93.527	CC
Guttersten State D36-781 - Wellbore #1 - Plan #1	10,000.00	5,246.02	5,380.86	5,323.12	93.192	ES
Guttersten State D36-781 - Wellbore #1 - Plan #1	12,200.00	4,701.56	5,801.91	5,732.24	83.285	SF
Karch Blue D 25-02 (DA) - Wellbore #1 - No Surveys	11,156.21	6,670.96	3,007.78	2,831.22	17.036	CC
Karch Blue D 25-02 (DA) - Wellbore #1 - No Surveys	11,200.00	6,670.51	3,008.10	2,831.18	17.003	ES
Karch Blue D 25-02 (DA) - Wellbore #1 - No Surveys	11,500.00	6,667.36	3,027.36	2,848.10	16.888	SF
Karch Blue D 25-08 (SI) - Wellbore #1 - Gyro Surveys	9,875.27	6,658.78	1,727.87	1,669.41	29.557	CC
Karch Blue D 25-08 (SI) - Wellbore #1 - Gyro Surveys	9,900.00	6,657.96	1,728.05	1,669.38	29.457	ES
Karch Blue D 25-08 (SI) - Wellbore #1 - Gyro Surveys	10,200.00	6,647.54	1,758.08	1,697.15	28.853	SF
Karch Blue D25-07 (SI) - Wellbore #1 - Gyro Surveys	9,883.18	6,692.33	3,051.82	2,993.40	52.245	CC
Karch Blue D25-07 (SI) - Wellbore #1 - Gyro Surveys	9,900.00	6,692.13	3,051.86	2,993.33	52.139	ES
Karch Blue D25-07 (SI) - Wellbore #1 - Gyro Surveys	10,800.00	6,680.34	3,186.53	3,122.05	49.419	SF
L F Ranch 2-25 (PR) - Wellbore #1 - Gyro Surveys	11,111.43	6,653.02	1,730.52	1,664.48	26.205	CC, ES
L F Ranch 2-25 (PR) - Wellbore #1 - Gyro Surveys	11,400.00	6,642.60	1,754.38	1,685.88	25.610	SF
LF Ranches 1 (PA) - Wellbore #1 - No Surveys	10,821.17	6,678.47	2,020.15	1,845.64	11.576	CC, ES
LF Ranches 1 (PA) - Wellbore #1 - No Surveys	11,000.00	6,676.60	2,028.05	1,852.04	11.522	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 DD30-775
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 DD30-775	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Guttersten State DD30-775	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	6,695.46	6,424.45	2,062.75	2,016.13	44.252	CC
Kanga State D 36-1JI (SI) - Wellbore #1 - Gyro Surveys	6,700.00	6,427.90	2,062.76	2,016.12	44.226	ES
Kanga State D 36-1JI (SI) - Wellbore #1 - Gyro Surveys	6,900.00	6,582.53	2,085.34	2,037.55	43.638	SF
Kanga State D 36-2JI - Wellbore #1 - Gyro Surveys	6,948.42	6,650.34	3,285.98	3,237.89	68.319	CC
Kanga State D 36-2JI - Wellbore #1 - Gyro Surveys	6,950.00	6,651.15	3,285.98	3,237.88	68.310	ES
Kanga State D 36-2JI - Wellbore #1 - Gyro Surveys	7,200.00	6,758.40	3,313.07	3,264.08	67.619	SF
Kanga State D36-07JI (SI) - Wellbore #1 - Gyro Surveys	6,585.71	6,282.49	5,705.40	5,618.98	66.019	CC
Kanga State D36-11JI (PR) - Wellbore #1 - Gyro Surveys	6,600.00	6,295.19	5,705.51	5,618.89	65.871	ES
Kanga State D36-11JI (PR) - Wellbore #1 - Gyro Surveys	7,050.00	6,606.61	5,821.22	5,729.74	63.632	SF
Rhoo State D36-07JI (SI) - Wellbore #1 - Gyro Surveys	6,684.70	6,571.68	3,852.66	3,805.66	81.972	CC, ES
Rhoo State D36-07JI (SI) - Wellbore #1 - Gyro Surveys	7,000.00	6,733.84	3,906.84	3,858.26	80.424	SF
Spike State D 36-04 (SI) - Gyro Surveys - Wellbore #1	7,030.84	6,816.89	5,839.34	5,790.65	119.921	CC, ES
Spike State D 36-04 (SI) - Gyro Surveys - Wellbore #1	9,300.00	6,897.62	6,613.16	6,556.94	117.631	SF
Spike State D 36-3 (SI) - Wellbore #1 - No Surveys	6,920.48	6,613.83	4,711.69	4,554.50	29.974	CC
Spike State D 36-3 (SI) - Wellbore #1 - No Surveys	6,950.00	6,631.10	4,712.02	4,554.41	29.897	ES
Spike State D 36-3 (SI) - Wellbore #1 - No Surveys	7,200.00	6,732.46	4,742.22	4,582.04	29.605	SF
Spike State D36-05 (SI) - Wellbore #1 - Gyro Surveys	6,804.30	6,804.30	6,321.50	6,273.22	130.938	CC, ES
Spike State D36-05 (SI) - Wellbore #1 - Gyro Surveys	6,950.00	6,950.00	6,329.55	6,280.48	128.989	SF
Spike State D36-06 (PA) - Wellbore #1 - Gyro Surveys	6,731.15	6,526.52	5,171.53	5,124.42	109.789	CC, ES
Spike State D36-06 (PA) - Wellbore #1 - Gyro Surveys	7,400.00	7,400.00	5,364.68	5,313.00	103.813	SF
State 09 (SI) - Wellbore #1 - Gyro Surveys	6,651.27	6,338.39	2,923.69	2,877.41	63.180	CC, ES
State 09 (SI) - Wellbore #1 - Gyro Surveys	6,900.00	6,900.00	2,955.91	2,906.94	60.355	SF
State 30 (SI) - Wellbore #1 - Gyro Surveys	6,579.50	6,314.34	6,444.46	6,398.38	139.836	CC, ES
State 30 (SI) - Wellbore #1 - Gyro Surveys	7,100.00	6,668.09	6,591.45	6,542.49	134.627	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	16,877.58	17,440.37	4,039.81	3,860.97	22.590	CC, ES, SF
Guttersten DD18-725 - Guttersten DD18-725 - Plan #1	16,877.58	17,276.88	3,379.81	3,202.43	19.054	CC, ES, SF
Guttersten DD18-730 - Guttersten DD18-730 - Plan #1	16,877.58	17,467.47	3,050.87	2,873.44	17.194	CC, ES, SF
Guttersten DD18-735 - Guttersten DD18-735 - Plan #1	16,877.58	17,393.03	2,719.28	2,542.48	15.381	CC, ES, SF
Guttersten DD18-746 - Guttersten DD18-746 - Plan #1	16,877.58	17,388.93	2,064.74	1,890.11	11.824	CC, ES, SF
Guttersten DD18-750 - Guttersten DD18-750 - Plan #1	16,877.58	17,652.14	1,743.38	1,567.98	9.939	CC, ES, SF
Guttersten DD18-754 - Guttersten DD18-754 - Plan #1	16,877.58	17,462.94	1,417.28	1,241.72	8.073	CC, ES, SF
Guttersten DD18-765 - Guttersten DD18-765 - Plan #1	16,877.58	17,287.24	803.94	643.61	5.014	CC, ES, SF
Guttersten DD18-770 - Guttersten DD18-770 - Plan #1	16,877.58	17,473.14	553.01	417.27	4.074	CC, ES, SF
Guttersten DD18-775 - Guttersten DD18-775 - Plan #1	16,877.58	17,369.80	401.74	339.01	6.405	CC, ES, SF
Guttersten DD18-785 - Guttersten DD18-785 - Plan #1	16,877.58	17,360.03	754.03	598.54	4.849	CC, ES, SF
DD Section 17						
Guttersten 23-17 - Wellbore #1 - Wellbore #1 - As Drilled	16,877.58	6,750.47	6,673.63	6,566.89	62.524	CC, ES, SF
Guttersten State DD17-78HN - Original Drilling - Original D	16,877.58	6,759.18	5,032.52	4,925.23	46.907	CC, ES, SF
Guttersten State DD17-78HN - Original Drilling - ST01 - S	16,877.58	6,439.30	5,056.51	4,953.43	49.053	CC, ES, SF
Guttersten State DD17-79-1HN - Original Drilling - Origina	16,100.00	16,100.00	4,869.02	4,747.43	40.044	SF
Guttersten State DD17-79-1HN - Original Drilling - Origina	16,877.58	6,501.02	4,741.55	4,636.49	45.131	CC, ES
Guttersten State DD17-79HN - Original Drilling - Original D	16,877.58	6,370.62	4,478.21	4,373.75	42.869	CC, ES, SF
Guttersten USX DD17-19 - Original Drilling - Original Dri	16,877.58	6,693.74	7,084.31	6,987.07	72.854	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 DD30-775
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 DD30-775	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Guttersten State DD30-775	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	16,877.58	6,680.13	3,307.32	3,204.42	32.142	CC, ES, SF
Guttersten 24-18 - Wellbore #1 - Wellbore #1 - As Drilled	16,877.58	6,697.09	1,364.12	1,267.56	14.127	CC, ES, SF
Guttersten 33-18 - Wellbore #1 - Wellbore #1 - As Drilled	16,877.58	6,720.17	3,262.40	3,169.00	34.930	CC, ES, SF
Guttersten 34-18 - Wellbore #1 - Wellbore #1 - As Drilled	16,877.58	6,700.83	2,425.15	2,319.33	22.918	CC, ES, SF
Guttersten 43-18 - Wellbore #1 - Wellbore #1 - As Drilled	16,877.58	6,725.50	4,209.05	4,105.40	40.611	CC, ES, SF
Guttersten 44-18 - Wellbore #1 - Wellbore #1 - As Drilled	16,877.58	6,692.62	3,733.70	3,626.47	34.820	CC, ES, SF
Karch Blue DD18-03J - Wellbore #1 - Wellbore #1 - As D	16,877.58	6,711.72	2,015.65	1,947.00	29.363	CC, ES, SF
Karch Blue DD18-12 - Original Drilling - Original Drilling -	16,877.58	6,670.94	2,324.21	2,265.79	39.786	CC, ES, SF
Karch Blue DD18-13 - Wellbore #1 - Wellbore #1 - As Dri	16,877.58	6,698.84	939.19	868.42	13.272	CC, ES, SF
SPIKE STATE GWS DD #18-1J(PA) - SPIKE STATE GW	16,877.58	6,721.82	5,142.21	4,947.18	26.367	CC, ES, SF
DD Section 19						
Champlin 366 Amoco B1 (PR) - Wellbore #1 - Gyro Surv	15,382.22	6,652.96	3,275.47	3,178.53	33.790	CC
Champlin 366 Amoco B1 (PR) - Wellbore #1 - Gyro Surv	15,400.00	6,652.23	3,275.51	3,178.48	33.757	ES
Champlin 366 Amoco B1 (PR) - Wellbore #1 - Gyro Surv	15,700.00	6,640.40	3,290.82	3,192.46	33.457	SF
Champlin 366 Amoco D1 (PA) - Wellbore #1 - No Survey	12,793.65	6,689.82	634.69	446.29	3.369	CC, ES, SF
Guttersten 31-19 (PR) - Wellbore #1 - Gyro Surveys	16,382.57	6,685.06	2,359.13	2,254.12	22.466	CC
Guttersten 31-19 (PR) - Wellbore #1 - Gyro Surveys	16,400.00	6,684.77	2,359.19	2,254.10	22.449	ES
Guttersten 31-19 (PR) - Wellbore #1 - Gyro Surveys	16,500.00	6,683.08	2,362.05	2,256.56	22.392	SF
Guttersten 44-19 (SI) - Wellbore #1 - No Surveys	12,513.13	6,734.82	3,664.81	3,477.54	19.569	CC, ES
Guttersten 44-19 (SI) - Wellbore #1 - No Surveys	12,800.00	6,734.82	3,676.02	3,487.28	19.476	SF
DD Section 20						
Spike State DD 20-02J (PR) - Wellbore #1 - Gyro Survey	16,183.66	6,751.62	5,226.03	5,122.40	50.430	CC
Spike State DD 20-02J (PR) - Wellbore #1 - Gyro Survey	16,200.00	6,751.40	5,226.05	5,122.32	50.379	ES
Spike State DD 20-02J (PR) - Wellbore #1 - Gyro Survey	16,877.58	6,742.20	5,271.89	5,164.38	49.039	SF
Spike State DD 20-03J (PR) - Wellbore #1 - Gyro Survey	13,071.06	6,707.60	5,605.21	5,525.41	70.237	CC
Spike State DD 20-03J (PR) - Wellbore #1 - Gyro Survey	13,100.00	6,707.84	5,605.29	5,525.30	70.078	ES
Spike State DD 20-03J (PR) - Wellbore #1 - Gyro Survey	14,600.00	6,719.37	5,809.98	5,722.32	66.276	SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersten State DD30-775
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 DD30-775	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Guttersten State DD30-775	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	2,014.14	2,101.53	7,568.85	7,554.68	534.049	CC, ES
Champlin 366 Amoco C UT 1 (PR) - Wellbore #1 - Gyro S	11,800.00	11,800.00	7,994.13	7,906.09	90.800	SF
Champlin Amoco 1 (PA) - Wellbore #1 - No Surveys	2,000.00	2,038.01	4,248.68	4,200.99	89.077	CC, ES
Champlin Amoco 1 (PA) - Wellbore #1 - No Surveys	8,400.00	6,788.01	5,674.47	5,510.78	34.667	SF
Guttersten 42-29 (PR) - Wellbore #1 - Gyro Surveys	2,016.14	2,114.59	8,070.96	8,056.74	567.839	CC, ES
Guttersten 42-29 (PR) - Wellbore #1 - Gyro Surveys	13,300.00	7,004.41	9,502.31	9,394.18	87.882	SF
Guttersten Federal YY5-715 - Guttersten Federal YY5-715	2,000.00	2,067.00	6,896.63	6,882.51	488.671	CC, ES
Guttersten Federal YY5-715 - Guttersten Federal YY5-715	11,200.00	4,865.06	9,982.99	9,929.39	186.247	SF
Guttersten Federal YY5-725 - Guttersten Federal YY5-725	2,000.00	2,068.00	6,860.31	6,846.20	485.975	CC, ES
Guttersten Federal YY5-725 - Guttersten Federal YY5-725	12,100.00	5,603.57	9,956.06	9,895.92	165.560	SF
Guttersten Federal YY5-735 - Guttersten Federal YY5-735	2,000.00	2,070.00	6,821.21	6,807.09	482.959	CC, ES
Guttersten Federal YY5-735 - Guttersten Federal YY5-735	12,300.00	6,300.00	9,708.35	9,644.89	152.987	SF
Guttersten Federal YY5-745 - Guttersten Federal YY5-745	2,407.38	3,908.73	6,684.63	6,662.93	308.101	CC, ES
Guttersten Federal YY5-745 - Guttersten Federal YY5-745	11,400.00	6,500.00	8,689.45	8,628.52	142.609	SF
Guttersten Federal YY5-755 - Guttersten Federal YY5-755	2,000.00	2,068.00	5,045.31	5,031.19	357.402	CC, ES
Guttersten Federal YY5-755 - Guttersten Federal YY5-755	10,100.00	6,006.88	7,382.51	7,329.86	140.225	SF
Guttersten Federal YY5-765 - Guttersten Federal YY5-765	2,000.00	2,069.00	5,006.21	4,992.09	354.543	CC, ES
Guttersten Federal YY5-765 - Guttersten Federal YY5-765	6,650.00	6,850.00	5,958.07	5,909.87	123.601	SF
Guttersten Federal YY5-775 - Guttersten Federal YY5-775	2,473.27	3,746.65	4,885.07	4,863.84	230.121	CC
Guttersten Federal YY5-775 - Guttersten Federal YY5-775	2,500.00	3,773.38	4,885.25	4,863.83	228.082	ES
Guttersten Federal YY5-775 - Guttersten Federal YY5-775	6,600.00	7,100.00	5,301.20	5,251.50	106.651	SF
Guttersten Federal YY5-785 - Guttersten Federal YY5-785	5,323.18	7,111.56	4,480.77	4,434.63	97.105	CC, ES
Guttersten Federal YY5-785 - Guttersten Federal YY5-785	6,400.00	7,270.34	4,599.81	4,549.23	90.943	SF
Guttersten State DD29-715 - Wellbore #1 - Plan #1	1,908.27	1,954.27	6,893.64	6,880.26	515.216	CC
Guttersten State DD29-715 - Wellbore #1 - Plan #1	2,000.00	2,000.00	6,893.80	6,879.93	496.936	ES
Guttersten State DD29-715 - Wellbore #1 - Plan #1	16,877.58	17,359.10	9,340.11	9,165.85	53.598	SF
Guttersten State DD29-725 - Wellbore #1 - Plan #1	1,904.25	1,960.25	6,855.64	6,842.26	512.109	CC
Guttersten State DD29-725 - Wellbore #1 - Plan #1	2,000.00	2,031.53	6,855.74	6,841.76	490.396	ES
Guttersten State DD29-725 - Wellbore #1 - Plan #1	16,877.58	17,166.97	8,681.51	8,507.20	49.806	SF
Guttersten State DD29-735 - Wellbore #1 - Plan #1	2,149.81	2,743.52	6,814.02	6,797.20	405.229	CC, ES
Guttersten State DD29-735 - Wellbore #1 - Plan #1	16,877.58	17,318.42	8,020.29	7,845.59	45.910	SF
Guttersten State DD29-745 - Wellbore #1 - Plan #1	2,409.88	3,909.70	6,666.89	6,645.08	305.661	CC, ES
Guttersten State DD29-745 - Wellbore #1 - Plan #1	16,877.58	17,315.95	7,361.36	7,187.49	42.338	SF
Guttersten State DD29-755 - Wellbore #1 - Plan #1	1,902.06	1,968.06	5,040.06	5,026.65	375.920	CC
Guttersten State DD29-755 - Wellbore #1 - Plan #1	2,000.00	2,055.73	5,040.12	5,026.06	358.419	ES
Guttersten State DD29-755 - Wellbore #1 - Plan #1	16,877.58	17,328.64	6,677.57	6,502.82	38.212	SF
Guttersten State DD29-765 - Wellbore #1 - Plan #1	2,218.53	2,850.12	4,993.40	4,976.03	287.372	CC, ES
Guttersten State DD29-765 - Wellbore #1 - Plan #1	16,877.58	17,359.91	6,017.55	5,843.02	34.478	SF
Guttersten State DD29-775 - Wellbore #1 - Plan #1	2,488.60	3,802.83	4,855.24	4,833.66	224.998	CC
Guttersten State DD29-775 - Wellbore #1 - Plan #1	2,500.00	3,808.38	4,855.28	4,833.64	224.357	ES
Guttersten State DD29-775 - Wellbore #1 - Plan #1	16,877.58	17,471.18	5,357.55	5,183.51	30.783	SF
Guttersten State DD29-785 - Wellbore #1 - Plan #1	5,482.24	7,598.10	4,401.52	4,353.30	91.280	CC
Guttersten State DD29-785 - Wellbore #1 - Plan #1	5,500.00	7,603.15	4,401.56	4,353.26	91.123	ES
Guttersten State DD29-785 - Wellbore #1 - Plan #1	16,877.58	17,692.66	4,697.39	4,523.46	27.007	SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen State DD30-775
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 DD30-775	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Guttersen State DD30-775	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	11,194.66	6,682.56	392.48	325.98	5.902	CC
Guttersen 11-30 (PR) - Wellbore #1 - Gyro Surveys	11,200.00	6,682.44	392.52	325.91	5.893	ES, SF
Guttersen 12-30 (PR) - Wellbore #1 - Gyro Surveys	9,775.96	6,693.24	483.32	425.43	8.349	CC, ES
Guttersen 12-30 (PR) - Wellbore #1 - Gyro Surveys	9,800.00	6,691.77	483.92	425.67	8.308	SF
Guttersen 22-30 (PR) - Wellbore #1 - Gyro Surveys	9,840.88	6,691.16	928.37	870.49	16.038	CC, ES, SF
Guttersen 30 A (PR) - Wellbore #1 - Gyro Surveys	10,472.32	6,688.53	331.33	269.54	5.362	CC, ES, SF
Guttersen State DD30-715 - Guttersen State DD30-715 -	2,000.00	2,029.00	2,025.08	2,011.10	144.888	CC, ES
Guttersen State DD30-715 - Guttersen State DD30-715 -	16,877.58	16,997.01	4,017.77	3,844.87	23.238	SF
Guttersen State DD30-725 - Guttersen State DD30-725 -	2,000.00	2,029.00	1,988.08	1,974.10	142.241	CC, ES
Guttersen State DD30-725 - Guttersen State DD30-725 -	16,877.58	16,968.54	3,377.61	3,204.59	19.521	SF
Guttersen State DD30-735 - Guttersen State DD30-735 -	2,000.00	2,029.00	1,950.09	1,936.12	139.523	CC, ES
Guttersen State DD30-735 - Guttersen State DD30-735 -	16,877.58	17,051.17	2,717.22	2,544.52	15.734	SF
Guttersen State DD30-745 - Guttersen State DD30-745 -	2,610.74	3,240.23	1,881.93	1,862.33	96.045	CC
Guttersen State DD30-745 - Guttersen State DD30-745 -	6,253.89	7,042.37	1,904.24	1,855.24	38.868	ES
Guttersen State DD30-745 - Guttersen State DD30-745 -	16,877.58	17,216.63	2,057.42	1,885.19	11.945	SF
Guttersen State DD30-755 - Guttersen State DD30-755 -	2,000.00	2,001.00	75.00	61.12	5.405	CC, ES
Guttersen State DD30-755 - Guttersen State DD30-755 -	2,100.00	2,101.05	77.56	62.97	5.319	SF
Guttersen State DD30-766 - Guttersen State DD30-766 -	2,000.00	2,001.00	38.00	24.12	2.738	CC, ES, SF
Guttersen State DD30-785 - Guttersen State DD30-785 -	2,388.69	2,381.45	36.92	20.66	2.271	CC
Guttersen State DD30-785 - Guttersen State DD30-785 -	2,629.47	2,617.83	37.16	19.61	2.118	ES, SF
Guttersen YY06-756 - Guttersen YY06-756 - Plan #1	2,000.00	2,004.00	168.46	154.58	12.131	CC, ES
Guttersen YY06-756 - Guttersen YY06-756 - Plan #1	2,200.00	2,204.37	175.35	160.06	11.466	SF
Guttersen YY06-766 - Guttersen YY06-766 - Plan #1	2,000.00	2,004.00	154.99	141.11	11.161	CC, ES
Guttersen YY06-766 - Guttersen YY06-766 - Plan #1	2,300.00	2,305.23	167.07	151.07	10.443	SF
Guttersen YY06-775 - Guttersen YY06-775 - Plan #1	6,714.40	6,722.27	100.11	49.89	1.994	CC, ES, SF
Guttersen YY06-785 - Guttersen YY06-785 - Plan #1	2,000.00	1,997.00	155.23	141.37	11.198	CC
Guttersen YY06-785 - Guttersen YY06-785 - Plan #1	2,100.00	2,096.25	155.44	140.88	10.678	ES
Guttersen YY06-785 - Guttersen YY06-785 - Plan #1	3,500.00	3,506.49	206.18	181.23	8.264	SF
Karch Blue DD 30-12 (PA) - Wellbore #1 - No Surveys	8,655.67	6,702.00	536.07	372.89	3.285	CC, ES, SF
Karch Blue DD 30-14 (PA) - Wellbore #1 - No Surveys	3,756.11	3,642.13	252.08	165.73	2.919	CC
Karch Blue DD 30-14 (PA) - Wellbore #1 - No Surveys	3,800.00	3,683.66	252.48	165.13	2.890	ES
Karch Blue DD 30-14 (PA) - Wellbore #1 - No Surveys	3,900.00	3,778.28	256.35	166.71	2.860	SF
Karch Blue DD 30-3 J (PA) - Wellbore #1 - No Surveys	8,095.00	6,707.00	629.98	468.65	3.905	CC, ES, SF
L F Ranch 2-30 (PR) - Wellbore #1 - Gyro Surveys	10,840.34	6,739.40	917.84	853.03	14.163	CC, ES, SF
State 19 (PA) - Wellbore #1 - NO Surveys	10,471.88	6,749.13	3,140.72	2,967.01	18.081	CC, ES
State 19 (PA) - Wellbore #1 - NO Surveys	10,700.00	6,746.74	3,148.99	2,974.33	18.029	SF
DD Section 31						
Guttersen 31Q-221 (PR) - Wellbore #1 - MWD Surveys	6,221.60	10,956.00	2,167.23	2,064.43	21.081	CC, ES
Guttersen 31Q-221 (PR) - Wellbore #1 - MWD Surveys	6,450.00	10,956.00	2,183.74	2,078.13	20.678	SF
Guttersen 31Q-401 (PR) - Wellbore #1 - MWD Surveys	6,414.48	11,132.00	1,972.76	1,871.44	19.471	CC, ES
Guttersen 31Q-401 (PR) - Wellbore #1 - MWD Surveys	6,550.00	11,132.00	1,982.30	1,879.29	19.244	SF
Guttersen 31T-301 (PR) - Wellbore #1 - MWD Surveys	6,098.50	11,048.00	2,788.67	2,684.01	26.646	CC
Guttersen 31T-301 (PR) - Wellbore #1 - MWD Surveys	6,100.00	11,048.00	2,788.67	2,683.99	26.641	ES
Guttersen 31T-301 (PR) - Wellbore #1 - MWD Surveys	6,500.00	11,048.00	2,823.89	2,714.93	25.915	SF
Guttersen 31T-441 (PR) - Wellbore #1 - MWD Surveys	6,312.95	11,127.00	2,511.93	2,407.28	24.001	CC
Guttersen 31T-441 (PR) - Wellbore #1 - MWD Surveys	6,313.97	11,127.00	2,511.93	2,407.26	23.998	ES
Guttersen 31T-441 (PR) - Wellbore #1 - MWD Surveys	6,550.00	11,127.00	2,534.64	2,427.40	23.635	SF
Guttersen 33-31 (PR) - Wellbore #1 - Gyro Surveys	0.00	0.00	3,845.38			
Guttersen 33-31 (PR) - Wellbore #1 - Gyro Surveys	4,400.00	4,500.00	3,871.96	3,840.28	122.210	ES
Guttersen 33-31 (PR) - Wellbore #1 - Gyro Surveys	6,600.00	6,340.72	4,059.17	4,011.83	85.748	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 DD30-775
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 DD30-775	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Guttersten State DD30-775	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
Guttersten #6D South (PA) - Wellbore #1 - As-Drilled	5,193.23	5,217.75	9,763.81	9,726.20	259.582	CC
Guttersten #6D South (PA) - Wellbore #1 - As-Drilled	5,400.00	5,362.17	9,764.63	9,725.62	250.332	ES
Guttersten #6D South (PA) - Wellbore #1 - As-Drilled	6,850.00	6,784.73	9,986.48	9,936.68	200.534	SF
Guttersten 6M-303 (PR) - Wellbore #1 - Wellbore #1	5,322.35	5,227.42	5,722.31	5,683.36	146.918	CC
Guttersten 6M-303 (PR) - Wellbore #1 - Wellbore #1	5,400.00	5,273.88	5,722.55	5,683.11	145.108	ES
Guttersten 6M-303 (PR) - Wellbore #1 - Wellbore #1	6,500.00	5,913.00	5,784.89	5,738.75	125.370	SF
Guttersten 6M-423 (PR) - Wellbore #1 - MWD Surveys	4,012.34	3,935.91	5,802.85	5,774.65	205.757	CC
Guttersten 6M-423 (PR) - Wellbore #1 - MWD Surveys	4,100.00	3,978.19	5,803.28	5,774.57	202.121	ES
Guttersten 6M-423 (PR) - Wellbore #1 - MWD Surveys	6,300.00	6,300.00	5,864.79	5,818.66	127.129	SF
Guttersten 6R-243 (PR) - Wellbore #1 - Gyro Surveys	853.99	853.02	5,844.42	5,838.68	1,016.971	CC
Guttersten 6R-243 (PR) - Wellbore #1 - Gyro Surveys	1,000.00	961.06	5,844.76	5,838.12	880.214	ES
Guttersten 6R-243 (PR) - Wellbore #1 - Gyro Surveys	6,500.00	5,946.00	6,024.26	5,977.80	129.663	SF
Guttersten 6R-403 (PR) - Wellbore #1 - MWD Surveys	239.96	252.00	5,853.07	5,851.65	4,147.739	CC
Guttersten 6R-403 (PR) - Wellbore #1 - MWD Surveys	300.00	288.20	5,853.16	5,851.40	3,332.529	ES
Guttersten 6R-403 (PR) - Wellbore #1 - MWD Surveys	6,600.00	5,993.78	6,211.03	6,162.57	128.162	SF
Guttersten 31-6 (SI) - Wellbore #1 - Gyro Surveys	1,954.62	1,960.75	6,461.65	6,448.19	480.135	CC
Guttersten 31-6 (SI) - Wellbore #1 - Gyro Surveys	2,629.47	2,447.62	6,462.89	6,445.39	369.353	ES
Guttersten 31-6 (SI) - Wellbore #1 - Gyro Surveys	6,750.00	6,473.95	6,667.67	6,619.33	137.907	SF
Guttersten 32-6 (SI) - Wellbore #1 - Gyro Surveys	5,846.89	5,808.66	7,730.31	7,687.87	182.178	CC
Guttersten 32-6 (SI) - Wellbore #1 - Gyro Surveys	6,100.00	6,039.46	7,730.98	7,686.65	174.390	ES
Guttersten 32-6 (SI) - Wellbore #1 - Gyro Surveys	7,050.00	6,868.46	8,106.55	8,055.46	158.665	SF
J.H. Cuykendall 1 (PA) - Wellbore #1 - Gyro Surveys	6,349.69	5,940.56	9,717.32	9,672.40	216.322	CC
J.H. Cuykendall 1 (PA) - Wellbore #1 - Gyro Surveys	6,350.00	5,940.75	9,717.32	9,672.40	216.312	ES
J.H. Cuykendall 1 (PA) - Wellbore #1 - Gyro Surveys	6,950.00	6,913.73	9,970.01	9,919.78	198.476	SF