

Project: Mustang
 Site: C Section 22
 Well: Borys C22-765
 Wellbore: Wellbore #1
 Design: APD-Rev 0

Northern Region - DJ Basin

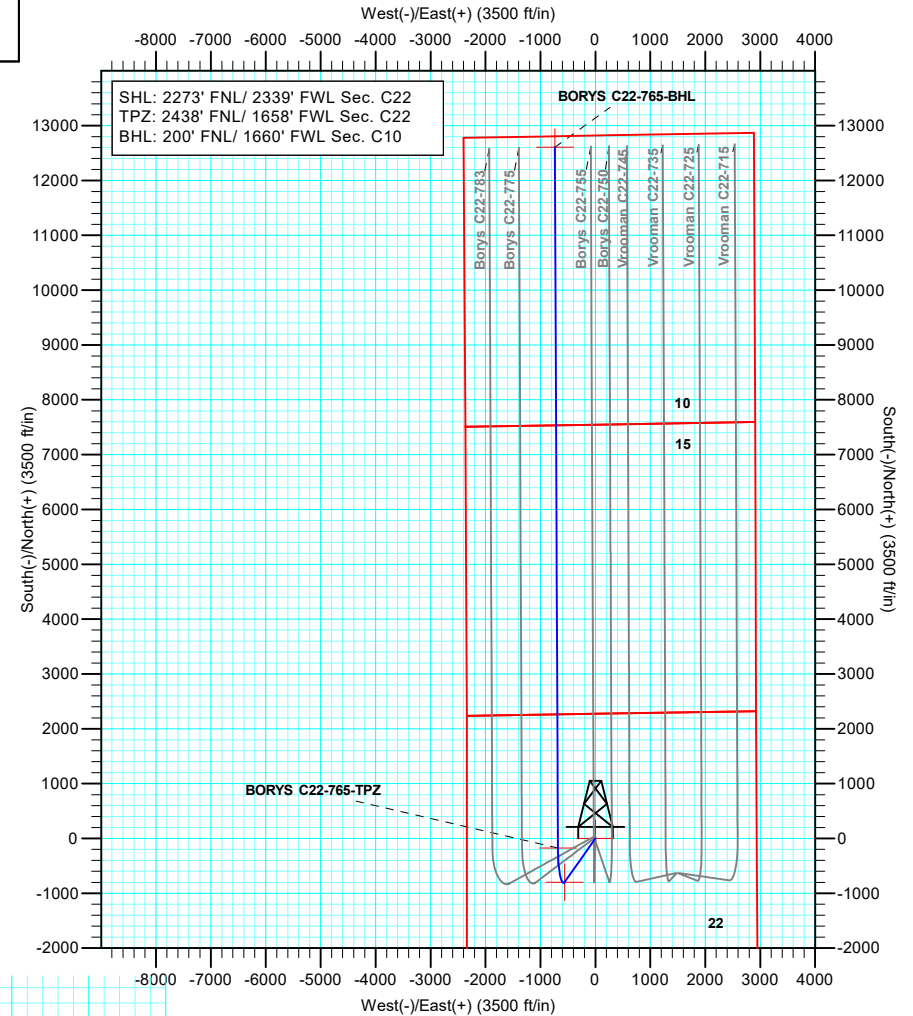
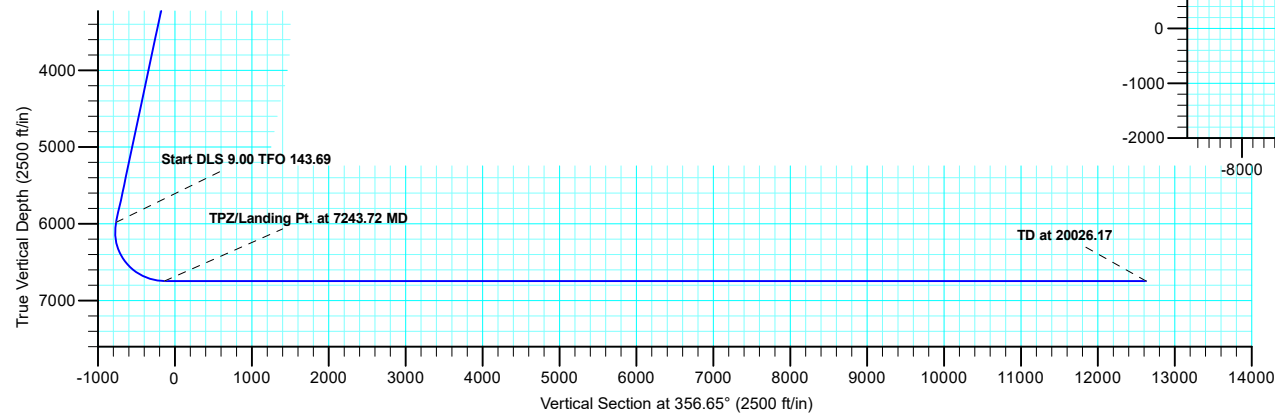
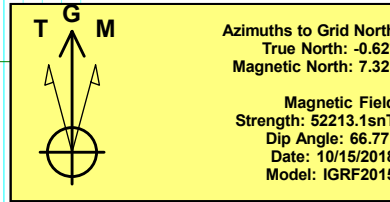
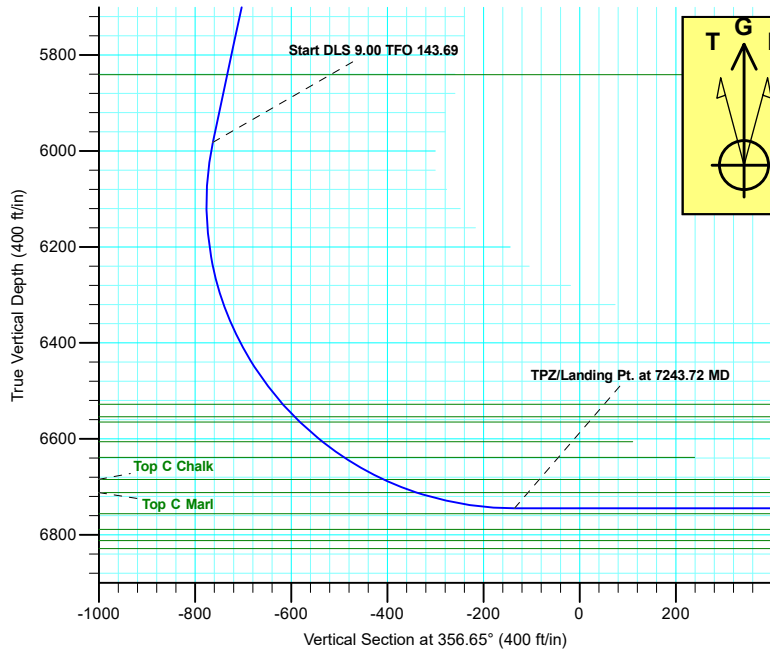
Geodetic System: US State Plane 1983
 Datum: North American Datum 1983
 Ellipsoid: GRS 1980
 Zone: Colorado Northern Zone
 System Datum: Mean Sea Level

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
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	2756.84	15.14	215.10	2748.07	-81.32	-57.15	2.00	215.10	-77.84
4	6107.08	15.14	215.10	5982.07	-797.07	-560.18	0.00	0.00	-762.99
5	7243.72	90.00	359.75	6745.00	-175.58	-682.27	9.00	143.69	-135.43
6	20026.17	90.00	359.75	6745.00	12606.75	-737.61	0.00	0.00	12628.31

WELL DETAILS: Borys C22-765

+N/-S	+E/-W	Northing	Ground Level: Easting	4662.00 Latitude	Longitude	Slot
0.00	0.00	1353200.62	3268340.62	40.2989400	-104.5379300	



Plan: APD-Rev 0 (Borys C22-765/Wellbore #1)
 Created By: Shelly C. Peterkin Date: 9:10, October 16 2018

Northern Region - DJ Basin

Mustang

C Section 22

Borys C22-765

Wellbore #1

Plan: APD-Rev 0

Standard Planning Report

16 October, 2018

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Borys C22-765
Company:	Northern Region - DJ Basin	TVD Reference:	KB @ 4692.00ft
Project:	Mustang	MD Reference:	KB @ 4692.00ft
Site:	C Section 22	North Reference:	Grid
Well:	Borys C22-765	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	APD-Rev 0		

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	C Section 22				
Site Position:		Northing:	1,354,832.90 usft	Latitude:	40.3033470
From:	Lat/Long	Easting:	3,270,796.13 usft	Longitude:	-104.5290630
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.63 °

Well	Borys C22-765					
Well Position	+N/-S	-1,632.29 ft	Northing:	1,353,200.62 usft	Latitude:	40.2989400
	+E/-W	-2,455.51 ft	Easting:	3,268,340.62 usft	Longitude:	-104.5379300
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,662.00 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	10/15/2018	7.94	66.77	52,213.12219908

Design	APD-Rev 0			
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	356.65

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	
2,756.84	15.14	215.10	2,748.07	-81.32	-57.15	2.00	2.00	0.00	215.10	
6,107.09	15.14	215.10	5,982.07	-797.07	-560.18	0.00	0.00	0.00	0.00	
7,243.72	90.00	359.75	6,745.00	-175.58	-682.27	9.00	6.59	12.73	143.69	BORYS C22-765-TPZ
20,026.17	90.00	359.75	6,745.00	12,606.75	-737.61	0.00	0.00	0.00	0.00	BORYS C22-765-BHL

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Borys C22-765
Company:	Northern Region - DJ Basin	TVD Reference:	KB @ 4692.00ft
Project:	Mustang	MD Reference:	KB @ 4692.00ft
Site:	C Section 22	North Reference:	Grid
Well:	Borys C22-765	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	APD-Rev 0		

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	0.00
100.00	0.00	0.00	100.00	0.00	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	0.00
300.00	0.00	0.00	300.00	0.00	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	0.00
438.00	0.00	0.00	438.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pierre										
448.00	0.00	0.00	448.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Upper Pierre Aquifer Top										
500.00	0.00	0.00	500.00	0.00	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	0.00
700.00	0.00	0.00	700.00	0.00	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	0.00
900.00	0.00	0.00	900.00	0.00	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	0.00
1,100.00	0.00	0.00	1,100.00	0.00	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	0.00
1,300.00	0.00	0.00	1,300.00	0.00	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	0.00
1,413.00	0.00	0.00	1,413.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Upper Pierre Aquifer Base										
1,500.00	0.00	0.00	1,500.00	0.00	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	0.00
1,700.00	0.00	0.00	1,700.00	0.00	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	0.00
1,900.00	0.00	0.00	1,900.00	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	0.00
Start Build 2.00										
2,100.00	2.00	215.10	2,099.98	-1.43	-1.00	-1.37	2.00	2.00	0.00	0.00
2,200.00	4.00	215.10	2,199.84	-5.71	-4.01	-5.47	2.00	2.00	0.00	0.00
2,300.00	6.00	215.10	2,299.45	-12.84	-9.02	-12.29	2.00	2.00	0.00	0.00
2,400.00	8.00	215.10	2,398.70	-22.81	-16.03	-21.83	2.00	2.00	0.00	0.00
2,500.00	10.00	215.10	2,497.47	-35.61	-25.03	-34.09	2.00	2.00	0.00	0.00
2,600.00	12.00	215.10	2,595.62	-51.22	-36.00	-49.03	2.00	2.00	0.00	0.00
2,700.00	14.00	215.10	2,693.06	-69.62	-48.93	-66.64	2.00	2.00	0.00	0.00
2,756.84	15.14	215.10	2,748.07	-81.32	-57.15	-77.84	2.00	2.00	0.00	0.00
Start 3350.24 hold at 2756.84 MD										
2,800.00	15.14	215.10	2,789.73	-90.54	-63.63	-86.67	0.00	0.00	0.00	0.00
2,900.00	15.14	215.10	2,886.26	-111.90	-78.65	-107.12	0.00	0.00	0.00	0.00
3,000.00	15.14	215.10	2,982.79	-133.27	-93.66	-127.57	0.00	0.00	0.00	0.00
3,100.00	15.14	215.10	3,079.32	-154.63	-108.68	-148.02	0.00	0.00	0.00	0.00
3,200.00	15.14	215.10	3,175.85	-176.00	-123.69	-168.47	0.00	0.00	0.00	0.00
3,300.00	15.14	215.10	3,272.38	-197.36	-138.71	-188.92	0.00	0.00	0.00	0.00
3,400.00	15.14	215.10	3,368.91	-218.72	-153.72	-209.37	0.00	0.00	0.00	0.00
3,500.00	15.14	215.10	3,465.44	-240.09	-168.74	-229.82	0.00	0.00	0.00	0.00
3,509.90	15.14	215.10	3,475.00	-242.20	-170.22	-231.85	0.00	0.00	0.00	0.00
Parkman										
3,600.00	15.14	215.10	3,561.97	-261.45	-183.75	-250.27	0.00	0.00	0.00	0.00
3,700.00	15.14	215.10	3,658.50	-282.82	-198.77	-270.72	0.00	0.00	0.00	0.00
3,800.00	15.14	215.10	3,755.03	-304.18	-213.78	-291.17	0.00	0.00	0.00	0.00
3,900.00	15.14	215.10	3,851.56	-325.54	-228.79	-311.62	0.00	0.00	0.00	0.00
4,000.00	15.14	215.10	3,948.10	-346.91	-243.81	-332.07	0.00	0.00	0.00	0.00
4,100.00	15.14	215.10	4,044.63	-368.27	-258.82	-352.53	0.00	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

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Company:	Northern Region - DJ Basin	TVD Reference:	KB @ 4692.00ft
Project:	Mustang	MD Reference:	KB @ 4692.00ft
Site:	C Section 22	North Reference:	Grid
Well:	Borys C22-765	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	APD-Rev 0		

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	15.14	215.10	4,141.16	-389.64	-273.84	-372.98	0.00	0.00	0.00	
4,219.52	15.14	215.10	4,160.00	-393.81	-276.77	-376.97	0.00	0.00	0.00	
Sussex										
4,300.00	15.14	215.10	4,237.69	-411.00	-288.85	-393.43	0.00	0.00	0.00	
4,400.00	15.14	215.10	4,334.22	-432.36	-303.87	-413.88	0.00	0.00	0.00	
4,500.00	15.14	215.10	4,430.75	-453.73	-318.88	-434.33	0.00	0.00	0.00	
4,600.00	15.14	215.10	4,527.28	-475.09	-333.90	-454.78	0.00	0.00	0.00	
4,700.00	15.14	215.10	4,623.81	-496.46	-348.91	-475.23	0.00	0.00	0.00	
4,800.00	15.14	215.10	4,720.34	-517.82	-363.93	-495.68	0.00	0.00	0.00	
4,825.55	15.14	215.10	4,745.00	-523.28	-367.76	-500.90	0.00	0.00	0.00	
Shannon										
4,900.00	15.14	215.10	4,816.87	-539.18	-378.94	-516.13	0.00	0.00	0.00	
5,000.00	15.14	215.10	4,913.40	-560.55	-393.96	-536.58	0.00	0.00	0.00	
5,100.00	15.14	215.10	5,009.93	-581.91	-408.97	-557.03	0.00	0.00	0.00	
5,200.00	15.14	215.10	5,106.46	-603.28	-423.99	-577.48	0.00	0.00	0.00	
5,300.00	15.14	215.10	5,202.99	-624.64	-439.00	-597.93	0.00	0.00	0.00	
5,400.00	15.14	215.10	5,299.52	-646.00	-454.02	-618.38	0.00	0.00	0.00	
5,500.00	15.14	215.10	5,396.05	-667.37	-469.03	-638.83	0.00	0.00	0.00	
5,600.00	15.14	215.10	5,492.58	-688.73	-484.05	-659.28	0.00	0.00	0.00	
5,700.00	15.14	215.10	5,589.11	-710.10	-499.06	-679.73	0.00	0.00	0.00	
5,800.00	15.14	215.10	5,685.64	-731.46	-514.08	-700.18	0.00	0.00	0.00	
5,900.00	15.14	215.10	5,782.17	-752.82	-529.09	-720.64	0.00	0.00	0.00	
5,960.94	15.14	215.10	5,841.00	-765.84	-538.24	-733.10	0.00	0.00	0.00	
Teepee Buttes										
6,000.00	15.14	215.10	5,878.70	-774.19	-544.11	-741.09	0.00	0.00	0.00	
6,107.09	15.14	215.10	5,982.07	-797.07	-560.18	-762.99	0.00	0.00	0.00	
Start DLS 9.00 TFO 143.69										
6,150.00	12.23	225.95	6,023.77	-804.81	-566.68	-770.34	9.00	-6.76	25.28	
6,200.00	9.72	245.77	6,072.87	-810.23	-574.34	-775.30	9.00	-5.03	39.64	
6,250.00	8.91	273.40	6,122.24	-811.74	-582.06	-776.35	9.00	-1.61	55.26	
6,300.00	10.23	299.57	6,171.56	-809.32	-589.79	-773.49	9.00	2.63	52.35	
6,350.00	13.03	317.21	6,220.55	-802.98	-597.48	-766.72	9.00	5.62	35.28	
6,400.00	16.59	328.07	6,268.89	-792.78	-605.09	-756.09	9.00	7.12	21.72	
6,450.00	20.52	335.03	6,316.28	-778.77	-612.57	-741.66	9.00	7.85	13.92	
6,500.00	24.63	339.80	6,362.45	-761.04	-619.87	-723.54	9.00	8.23	9.53	
6,550.00	28.86	343.25	6,407.09	-739.70	-626.95	-701.82	9.00	8.45	6.91	
6,600.00	33.15	345.89	6,449.94	-714.87	-633.76	-676.64	9.00	8.58	5.27	
6,650.00	37.48	347.98	6,490.73	-686.72	-640.27	-648.15	9.00	8.67	4.18	
6,698.38	41.71	349.64	6,528.00	-656.48	-646.23	-617.61	9.00	8.73	3.43	
Sharon Springs										
6,700.00	41.85	349.69	6,529.21	-655.42	-646.43	-616.54	9.00	8.75	3.13	
6,734.09	44.84	350.70	6,554.00	-632.36	-650.41	-593.29	9.00	8.77	2.96	
Top A Chalk										
6,749.79	46.22	351.13	6,565.00	-621.30	-652.17	-582.14	9.00	8.79	2.73	
Top A Marl										
6,750.00	46.24	351.13	6,565.14	-621.15	-652.20	-581.99	9.00	8.79	2.67	
6,800.00	50.64	352.38	6,598.31	-584.13	-657.55	-544.73	9.00	8.81	2.49	
6,812.27	51.72	352.66	6,606.00	-574.65	-658.79	-535.19	9.00	8.82	2.29	
Top B Chalk										
6,850.00	55.05	353.47	6,628.50	-544.59	-662.44	-504.97	9.00	8.83	2.16	
6,868.72	56.71	353.85	6,639.00	-529.19	-664.15	-489.49	9.00	8.84	2.03	
Top B Marl										
6,900.00	59.48	354.46	6,655.53	-502.78	-666.86	-462.97	9.00	8.85	1.93	

Noble Energy, Inc.

Planning Report

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Company:	Northern Region - DJ Basin	TVD Reference:	KB @ 4692.00ft
Project:	Mustang	MD Reference:	KB @ 4692.00ft
Site:	C Section 22	North Reference:	Grid
Well:	Borys C22-765	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	APD-Rev 0		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
6,950.00	63.91	355.36	6,679.23	-458.94	-670.76	-418.98	9.00	8.86	1.80
6,963.39	65.09	355.58	6,685.00	-446.89	-671.71	-406.90	9.00	8.87	1.71
Top C Chalk									
7,000.00	68.34	356.19	6,699.47	-413.36	-674.12	-373.28	9.00	8.87	1.65
7,036.59	71.59	356.77	6,712.00	-379.05	-676.23	-338.91	9.00	8.88	1.58
Top C Marl									
7,050.00	72.78	356.97	6,716.10	-366.30	-676.93	-326.14	9.00	8.88	1.54
7,100.00	77.22	357.72	6,729.04	-318.07	-679.16	-277.86	9.00	8.88	1.49
7,150.00	81.67	358.44	6,738.20	-268.96	-680.81	-228.73	9.00	8.89	1.44
7,200.00	86.11	359.14	6,743.52	-219.26	-681.85	-179.06	9.00	8.89	1.41
7,243.72	90.00	359.75	6,745.00	-175.58	-682.27	-135.43	9.00	8.89	1.39
TPZ/Landing Pt. at 7243.72 MD									
7,300.00	90.00	359.75	6,745.00	-119.30	-682.52	-79.23	0.00	0.00	0.00
7,400.00	90.00	359.75	6,745.00	-19.30	-682.95	20.62	0.00	0.00	0.00
7,500.00	90.00	359.75	6,745.00	80.70	-683.38	120.48	0.00	0.00	0.00
7,600.00	90.00	359.75	6,745.00	180.70	-683.82	220.33	0.00	0.00	0.00
7,700.00	90.00	359.75	6,745.00	280.70	-684.25	320.18	0.00	0.00	0.00
7,800.00	90.00	359.75	6,745.00	380.69	-684.68	420.04	0.00	0.00	0.00
7,900.00	90.00	359.75	6,745.00	480.69	-685.12	519.89	0.00	0.00	0.00
8,000.00	90.00	359.75	6,745.00	580.69	-685.55	619.74	0.00	0.00	0.00
8,100.00	90.00	359.75	6,745.00	680.69	-685.98	719.60	0.00	0.00	0.00
8,200.00	90.00	359.75	6,745.00	780.69	-686.41	819.45	0.00	0.00	0.00
8,300.00	90.00	359.75	6,745.00	880.69	-686.85	919.30	0.00	0.00	0.00
8,400.00	90.00	359.75	6,745.00	980.69	-687.28	1,019.16	0.00	0.00	0.00
8,500.00	90.00	359.75	6,745.00	1,080.69	-687.71	1,119.01	0.00	0.00	0.00
8,600.00	90.00	359.75	6,745.00	1,180.69	-688.15	1,218.87	0.00	0.00	0.00
8,700.00	90.00	359.75	6,745.00	1,280.69	-688.58	1,318.72	0.00	0.00	0.00
8,800.00	90.00	359.75	6,745.00	1,380.69	-689.01	1,418.57	0.00	0.00	0.00
8,900.00	90.00	359.75	6,745.00	1,480.68	-689.44	1,518.43	0.00	0.00	0.00
9,000.00	90.00	359.75	6,745.00	1,580.68	-689.88	1,618.28	0.00	0.00	0.00
9,100.00	90.00	359.75	6,745.00	1,680.68	-690.31	1,718.13	0.00	0.00	0.00
9,200.00	90.00	359.75	6,745.00	1,780.68	-690.74	1,817.99	0.00	0.00	0.00
9,300.00	90.00	359.75	6,745.00	1,880.68	-691.18	1,917.84	0.00	0.00	0.00
9,400.00	90.00	359.75	6,745.00	1,980.68	-691.61	2,017.69	0.00	0.00	0.00
9,500.00	90.00	359.75	6,745.00	2,080.68	-692.04	2,117.55	0.00	0.00	0.00
9,600.00	90.00	359.75	6,745.00	2,180.68	-692.47	2,217.40	0.00	0.00	0.00
9,700.00	90.00	359.75	6,745.00	2,280.68	-692.91	2,317.26	0.00	0.00	0.00
9,800.00	90.00	359.75	6,745.00	2,380.68	-693.34	2,417.11	0.00	0.00	0.00
9,900.00	90.00	359.75	6,745.00	2,480.67	-693.77	2,516.96	0.00	0.00	0.00
10,000.00	90.00	359.75	6,745.00	2,580.67	-694.21	2,616.82	0.00	0.00	0.00
10,100.00	90.00	359.75	6,745.00	2,680.67	-694.64	2,716.67	0.00	0.00	0.00
10,200.00	90.00	359.75	6,745.00	2,780.67	-695.07	2,816.52	0.00	0.00	0.00
10,300.00	90.00	359.75	6,745.00	2,880.67	-695.50	2,916.38	0.00	0.00	0.00
10,400.00	90.00	359.75	6,745.00	2,980.67	-695.94	3,016.23	0.00	0.00	0.00
10,500.00	90.00	359.75	6,745.00	3,080.67	-696.37	3,116.08	0.00	0.00	0.00
10,600.00	90.00	359.75	6,745.00	3,180.67	-696.80	3,215.94	0.00	0.00	0.00
10,700.00	90.00	359.75	6,745.00	3,280.67	-697.24	3,315.79	0.00	0.00	0.00
10,800.00	90.00	359.75	6,745.00	3,380.67	-697.67	3,415.64	0.00	0.00	0.00
10,900.00	90.00	359.75	6,745.00	3,480.67	-698.10	3,515.50	0.00	0.00	0.00
11,000.00	90.00	359.75	6,745.00	3,580.66	-698.53	3,615.35	0.00	0.00	0.00
11,100.00	90.00	359.75	6,745.00	3,680.66	-698.97	3,715.21	0.00	0.00	0.00
11,200.00	90.00	359.75	6,745.00	3,780.66	-699.40	3,815.06	0.00	0.00	0.00
11,300.00	90.00	359.75	6,745.00	3,880.66	-699.83	3,914.91	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Borys C22-765
Company:	Northern Region - DJ Basin	TVD Reference:	KB @ 4692.00ft
Project:	Mustang	MD Reference:	KB @ 4692.00ft
Site:	C Section 22	North Reference:	Grid
Well:	Borys C22-765	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	APD-Rev 0		

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)
11,400.00	90.00	359.75	6,745.00	3,980.66	-700.27	4,014.77	0.00	0.00	0.00
11,500.00	90.00	359.75	6,745.00	4,080.66	-700.70	4,114.62	0.00	0.00	0.00
11,600.00	90.00	359.75	6,745.00	4,180.66	-701.13	4,214.47	0.00	0.00	0.00
11,700.00	90.00	359.75	6,745.00	4,280.66	-701.56	4,314.33	0.00	0.00	0.00
11,800.00	90.00	359.75	6,745.00	4,380.66	-702.00	4,414.18	0.00	0.00	0.00
11,900.00	90.00	359.75	6,745.00	4,480.66	-702.43	4,514.03	0.00	0.00	0.00
12,000.00	90.00	359.75	6,745.00	4,580.66	-702.86	4,613.89	0.00	0.00	0.00
12,100.00	90.00	359.75	6,745.00	4,680.65	-703.30	4,713.74	0.00	0.00	0.00
12,200.00	90.00	359.75	6,745.00	4,780.65	-703.73	4,813.60	0.00	0.00	0.00
12,300.00	90.00	359.75	6,745.00	4,880.65	-704.16	4,913.45	0.00	0.00	0.00
12,400.00	90.00	359.75	6,745.00	4,980.65	-704.59	5,013.30	0.00	0.00	0.00
12,500.00	90.00	359.75	6,745.00	5,080.65	-705.03	5,113.16	0.00	0.00	0.00
12,600.00	90.00	359.75	6,745.00	5,180.65	-705.46	5,213.01	0.00	0.00	0.00
12,700.00	90.00	359.75	6,745.00	5,280.65	-705.89	5,312.86	0.00	0.00	0.00
12,800.00	90.00	359.75	6,745.00	5,380.65	-706.33	5,412.72	0.00	0.00	0.00
12,900.00	90.00	359.75	6,745.00	5,480.65	-706.76	5,512.57	0.00	0.00	0.00
13,000.00	90.00	359.75	6,745.00	5,580.65	-707.19	5,612.42	0.00	0.00	0.00
13,100.00	90.00	359.75	6,745.00	5,680.65	-707.62	5,712.28	0.00	0.00	0.00
13,200.00	90.00	359.75	6,745.00	5,780.64	-708.06	5,812.13	0.00	0.00	0.00
13,300.00	90.00	359.75	6,745.00	5,880.64	-708.49	5,911.99	0.00	0.00	0.00
13,400.00	90.00	359.75	6,745.00	5,980.64	-708.92	6,011.84	0.00	0.00	0.00
13,500.00	90.00	359.75	6,745.00	6,080.64	-709.36	6,111.69	0.00	0.00	0.00
13,600.00	90.00	359.75	6,745.00	6,180.64	-709.79	6,211.55	0.00	0.00	0.00
13,700.00	90.00	359.75	6,745.00	6,280.64	-710.22	6,311.40	0.00	0.00	0.00
13,800.00	90.00	359.75	6,745.00	6,380.64	-710.65	6,411.25	0.00	0.00	0.00
13,900.00	90.00	359.75	6,745.00	6,480.64	-711.09	6,511.11	0.00	0.00	0.00
14,000.00	90.00	359.75	6,745.00	6,580.64	-711.52	6,610.96	0.00	0.00	0.00
14,100.00	90.00	359.75	6,745.00	6,680.64	-711.95	6,710.81	0.00	0.00	0.00
14,200.00	90.00	359.75	6,745.00	6,780.63	-712.39	6,810.67	0.00	0.00	0.00
14,300.00	90.00	359.75	6,745.00	6,880.63	-712.82	6,910.52	0.00	0.00	0.00
14,400.00	90.00	359.75	6,745.00	6,980.63	-713.25	7,010.38	0.00	0.00	0.00
14,500.00	90.00	359.75	6,745.00	7,080.63	-713.68	7,110.23	0.00	0.00	0.00
14,600.00	90.00	359.75	6,745.00	7,180.63	-714.12	7,210.08	0.00	0.00	0.00
14,700.00	90.00	359.75	6,745.00	7,280.63	-714.55	7,309.94	0.00	0.00	0.00
14,800.00	90.00	359.75	6,745.00	7,380.63	-714.98	7,409.79	0.00	0.00	0.00
14,900.00	90.00	359.75	6,745.00	7,480.63	-715.42	7,509.64	0.00	0.00	0.00
15,000.00	90.00	359.75	6,745.00	7,580.63	-715.85	7,609.50	0.00	0.00	0.00
15,100.00	90.00	359.75	6,745.00	7,680.63	-716.28	7,709.35	0.00	0.00	0.00
15,200.00	90.00	359.75	6,745.00	7,780.63	-716.72	7,809.20	0.00	0.00	0.00
15,300.00	90.00	359.75	6,745.00	7,880.62	-717.15	7,909.06	0.00	0.00	0.00
15,400.00	90.00	359.75	6,745.00	7,980.62	-717.58	8,008.91	0.00	0.00	0.00
15,500.00	90.00	359.75	6,745.00	8,080.62	-718.01	8,108.77	0.00	0.00	0.00
15,600.00	90.00	359.75	6,745.00	8,180.62	-718.45	8,208.62	0.00	0.00	0.00
15,700.00	90.00	359.75	6,745.00	8,280.62	-718.88	8,308.47	0.00	0.00	0.00
15,800.00	90.00	359.75	6,745.00	8,380.62	-719.31	8,408.33	0.00	0.00	0.00
15,900.00	90.00	359.75	6,745.00	8,480.62	-719.75	8,508.18	0.00	0.00	0.00
16,000.00	90.00	359.75	6,745.00	8,580.62	-720.18	8,608.03	0.00	0.00	0.00
16,100.00	90.00	359.75	6,745.00	8,680.62	-720.61	8,707.89	0.00	0.00	0.00
16,200.00	90.00	359.75	6,745.00	8,780.62	-721.04	8,807.74	0.00	0.00	0.00
16,300.00	90.00	359.75	6,745.00	8,880.62	-721.48	8,907.59	0.00	0.00	0.00
16,400.00	90.00	359.75	6,745.00	8,980.61	-721.91	9,007.45	0.00	0.00	0.00
16,500.00	90.00	359.75	6,745.00	9,080.61	-722.34	9,107.30	0.00	0.00	0.00
16,600.00	90.00	359.75	6,745.00	9,180.61	-722.78	9,207.16	0.00	0.00	0.00
16,700.00	90.00	359.75	6,745.00	9,280.61	-723.21	9,307.01	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Borys C22-765
Company:	Northern Region - DJ Basin	TVD Reference:	KB @ 4692.00ft
Project:	Mustang	MD Reference:	KB @ 4692.00ft
Site:	C Section 22	North Reference:	Grid
Well:	Borys C22-765	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	APD-Rev 0		

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)
16,800.00	90.00	359.75	6,745.00	9,380.61	-723.64	9,406.86	0.00	0.00	0.00
16,900.00	90.00	359.75	6,745.00	9,480.61	-724.07	9,506.72	0.00	0.00	0.00
17,000.00	90.00	359.75	6,745.00	9,580.61	-724.51	9,606.57	0.00	0.00	0.00
17,100.00	90.00	359.75	6,745.00	9,680.61	-724.94	9,706.42	0.00	0.00	0.00
17,200.00	90.00	359.75	6,745.00	9,780.61	-725.37	9,806.28	0.00	0.00	0.00
17,300.00	90.00	359.75	6,745.00	9,880.61	-725.81	9,906.13	0.00	0.00	0.00
17,400.00	90.00	359.75	6,745.00	9,980.60	-726.24	10,005.98	0.00	0.00	0.00
17,500.00	90.00	359.75	6,745.00	10,080.60	-726.67	10,105.84	0.00	0.00	0.00
17,600.00	90.00	359.75	6,745.00	10,180.60	-727.10	10,205.69	0.00	0.00	0.00
17,700.00	90.00	359.75	6,745.00	10,280.60	-727.54	10,305.55	0.00	0.00	0.00
17,800.00	90.00	359.75	6,745.00	10,380.60	-727.97	10,405.40	0.00	0.00	0.00
17,900.00	90.00	359.75	6,745.00	10,480.60	-728.40	10,505.25	0.00	0.00	0.00
18,000.00	90.00	359.75	6,745.00	10,580.60	-728.84	10,605.11	0.00	0.00	0.00
18,100.00	90.00	359.75	6,745.00	10,680.60	-729.27	10,704.96	0.00	0.00	0.00
18,200.00	90.00	359.75	6,745.00	10,780.60	-729.70	10,804.81	0.00	0.00	0.00
18,300.00	90.00	359.75	6,745.00	10,880.60	-730.13	10,904.67	0.00	0.00	0.00
18,400.00	90.00	359.75	6,745.00	10,980.60	-730.57	11,004.52	0.00	0.00	0.00
18,500.00	90.00	359.75	6,745.00	11,080.59	-731.00	11,104.37	0.00	0.00	0.00
18,600.00	90.00	359.75	6,745.00	11,180.59	-731.43	11,204.23	0.00	0.00	0.00
18,700.00	90.00	359.75	6,745.00	11,280.59	-731.87	11,304.08	0.00	0.00	0.00
18,800.00	90.00	359.75	6,745.00	11,380.59	-732.30	11,403.93	0.00	0.00	0.00
18,900.00	90.00	359.75	6,745.00	11,480.59	-732.73	11,503.79	0.00	0.00	0.00
19,000.00	90.00	359.75	6,745.00	11,580.59	-733.16	11,603.64	0.00	0.00	0.00
19,100.00	90.00	359.75	6,745.00	11,680.59	-733.60	11,703.50	0.00	0.00	0.00
19,200.00	90.00	359.75	6,745.00	11,780.59	-734.03	11,803.35	0.00	0.00	0.00
19,300.00	90.00	359.75	6,745.00	11,880.59	-734.46	11,903.20	0.00	0.00	0.00
19,400.00	90.00	359.75	6,745.00	11,980.59	-734.90	12,003.06	0.00	0.00	0.00
19,500.00	90.00	359.75	6,745.00	12,080.59	-735.33	12,102.91	0.00	0.00	0.00
19,600.00	90.00	359.75	6,745.00	12,180.58	-735.76	12,202.76	0.00	0.00	0.00
19,700.00	90.00	359.75	6,745.00	12,280.58	-736.19	12,302.62	0.00	0.00	0.00
19,800.00	90.00	359.75	6,745.00	12,380.58	-736.63	12,402.47	0.00	0.00	0.00
19,900.00	90.00	359.75	6,745.00	12,480.58	-737.06	12,502.32	0.00	0.00	0.00
20,000.00	90.00	359.75	6,745.00	12,580.58	-737.49	12,602.18	0.00	0.00	0.00
20,026.17	90.00	359.75	6,745.00	12,606.75	-737.61	12,628.31	0.00	0.00	0.00
TD at 20026.17									

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Borys C22-765
Company:	Northern Region - DJ Basin	TVD Reference:	KB @ 4692.00ft
Project:	Mustang	MD Reference:	KB @ 4692.00ft
Site:	C Section 22	North Reference:	Grid
Well:	Borys C22-765	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	APD-Rev 0		

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
BORYS C22-765-SHL - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	1,353,200.62	3,268,340.62	40.2989400	-104.5379300
BORYS C22-765-KOP - plan hits target center - Point	0.00	0.00	5,982.07	-797.06	-560.18	1,352,403.55	3,267,780.44	40.2967688	-104.5399692
BORYS C22-765-BHL - plan hits target center - Point	0.00	0.00	6,745.00	12,606.75	-737.61	1,365,807.34	3,267,603.02	40.3335661	-104.5400850
BORYS C22-765-TPZ - plan hits target center - Point	0.00	0.00	6,745.00	-175.58	-682.27	1,353,025.04	3,267,658.35	40.2984784	-104.5403827

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
438.00	438.00	Pierre				
448.00	448.00	Upper Pierre Aquifer Top				
1,413.00	1,413.00	Upper Pierre Aquifer Base				
3,509.90	3,475.00	Parkman				
4,219.52	4,160.00	Sussex				
4,825.55	4,745.00	Shannon				
5,960.94	5,841.00	Teepee Buttes				
6,698.38	6,528.00	Sharon Springs				
6,734.09	6,554.00	Top A Chalk				
6,749.79	6,565.00	Top A Marl				
6,812.27	6,606.00	Top B Chalk				
6,868.72	6,639.00	Top B Marl				
6,963.39	6,685.00	Top C Chalk				
7,036.59	6,712.00	Top C Marl				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
2,000.00	2,000.00	0.00	0.00	Start Build 2.00	
2,756.84	2,748.07	-81.32	-57.15	Start 3350.24 hold at 2756.84 MD	
6,107.09	5,982.07	-797.07	-560.18	Start DLS 9.00 TFO 143.69	
7,243.72	6,745.00	-175.58	-682.27	TPZ/Landing Pt. at 7243.72 MD	
20,026.17	6,745.00	12,606.75	-737.61	TD at 20026.17	

Northern Region - DJ Basin

Mustang

C Section 22

Borys C22-765

Wellbore #1

APD-Rev 0

Anticollision Summary Report

15 October, 2018

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Borys C22-765
Project:	Mustang	TVD Reference:	KB @ 4692.00ft
Reference Site:	C Section 22	MD Reference:	KB @ 4692.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Borys C22-765	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	APD-Rev 0	Offset TVD Reference:	Offset Datum

Reference	APD-Rev 0		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.00 ft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program	Date	10/15/2018		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	20,026.17	APD-Rev 0 (Wellbore #1)	2_MWD+IFR1+MS	A008Mb: IFR dec & multi-station analysis

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
C Section 10						
Adler 44-10 (PA) - Wellbore #1 - No Surveys	15,982.85	6,706.00	2,629.21	2,284.81	7.634	CC
Adler 44-10 (PA) - Wellbore #1 - No Surveys	16,000.00	6,706.00	2,629.26	2,284.75	7.632	ES
Adler 44-10 (PA) - Wellbore #1 - No Surveys	16,100.00	6,706.00	2,631.82	2,286.66	7.625	SF
Barton C10-24D (PR) - Barton C10-24D OH - As-Drilled	16,297.04	6,841.59	857.31	752.58	8.186	CC
Barton C10-24D (PR) - Barton C10-24D OH - As-Drilled	16,300.00	6,841.57	857.32	752.55	8.183	ES, SF
Barton C15-28D (PR) - Barton C15-28D OH - As-Drilled	15,286.22	6,829.42	679.73	581.56	6.924	CC, ES, SF
Barton C15-29 (PR) - Wellbore #1 - No Surveys	15,251.43	6,707.00	364.09	25.34	1.075	Level 2, CC, ES, SF
Embree 01 (PA) - Wellbore #1 - No Surveys	18,255.44	6,712.00	308.45	-54.13	0.851	Level 1, CC, ES, SF
Embree 10-03 (PA) - Wellbore #1 - No Surveys	19,713.94	6,714.00	508.89	134.59	1.360	Level 3, CC, ES, SF
Embree C10-18 (SI) - Wellbore #1 - No Surveys	18,996.33	6,708.00	852.86	484.55	2.316	CC
Embree C10-18 (SI) - Wellbore #1 - No Surveys	19,000.00	6,708.00	852.87	484.53	2.315	ES, SF
Embree C10-20D (SI) - Embree C10-20D OH - As-Drilled	17,725.51	6,821.32	265.02	155.90	2.429	CC, ES, SF
Embrick C10-19 (SI) - Wellbore #1 - No Surveys	18,847.72	6,723.00	487.21	119.48	1.325	Level 3, CC, ES, SF
Hoff 31-10 (PA) - Wellbore #1 - No Surveys	19,590.20	6,702.00	1,640.76	1,267.94	4.401	CC
Hoff 31-10 (PA) - Wellbore #1 - No Surveys	19,600.00	6,702.00	1,640.79	1,267.90	4.400	ES, SF
Lockman 10-1014 (PR) - Wellbore #1 - No Surveys	16,779.16	6,702.00	1,848.81	1,498.33	5.275	CC
Lockman 10-1014 (PR) - Wellbore #1 - No Surveys	16,800.00	6,702.00	1,848.93	1,498.31	5.273	ES, SF
Lockman 10-1514 (PR) - Wellbore #1 - No Surveys	15,722.54	6,683.00	1,825.08	1,483.63	5.345	CC, ES
Lockman 10-1514 (PR) - Wellbore #1 - No Surveys	15,800.00	6,683.00	1,826.73	1,484.82	5.343	SF
Lockman 10-914 (PR) - Wellbore #1 - No Surveys	16,945.57	6,946.00	2,776.21	2,414.65	7.678	CC, ES
Lockman 10-914 (PR) - Wellbore #1 - No Surveys	17,100.00	6,946.00	2,780.50	2,417.96	7.669	SF
Lockman C10-21 (PR) - Wellbore #1 - No Surveys	17,377.62	6,701.00	1,168.18	813.02	3.289	CC, ES
Lockman C10-21 (PR) - Wellbore #1 - No Surveys	17,400.00	6,701.00	1,168.40	813.11	3.289	SF
Lockman C11-33 (PR) - Wellbore #1 - No Surveys	16,319.97	6,688.00	3,421.93	3,075.61	9.881	CC, ES
Lockman C11-33 (PR) - Wellbore #1 - No Surveys	16,500.00	6,688.00	3,426.66	3,079.14	9.860	SF
Lockman C14-30 (PR) - Wellbore #1 - No Surveys	15,343.33	6,689.00	3,374.32	3,035.57	9.961	CC, ES
Lockman C14-30 (PR) - Wellbore #1 - No Surveys	15,500.00	6,689.00	3,377.95	3,038.15	9.941	SF
Lockman C15-27 (PR) - Lockman C15-27 OH - As-Drilled	15,187.77	6,743.84	2,539.43	2,439.52	25.416	CC
Lockman C15-27 (PR) - Lockman C15-27 OH - As-Drilled	15,200.00	6,743.88	2,539.46	2,439.46	25.394	ES
Lockman C15-27 (PR) - Lockman C15-27 OH - As-Drilled	15,500.00	6,744.81	2,558.56	2,456.93	25.177	SF
Reinick 10-05 (SI) - Wellbore #1 - No Surveys	18,095.30	6,721.00	1,129.74	768.08	3.124	CC
Reinick 10-05 (SI) - Wellbore #1 - No Surveys	18,100.00	6,721.00	1,129.75	768.04	3.123	ES, SF
Reinick 1-10-4-64 (SI) - Wellbore #1 - No Surveys	19,599.00	6,729.00	1,037.12	663.14	2.773	CC
Reinick 1-10-4-64 (SI) - Wellbore #1 - No Surveys	19,600.00	6,729.00	1,037.12	663.13	2.773	ES, SF
Richardson 10-11 (PR) - Wellbore #1 - No Surveys	16,801.48	6,702.00	135.28	-215.38	0.386	Level 1, CC, ES, SF
Richardson 10-12 (PR) - Wellbore #1 - No Surveys	16,723.62	6,716.00	804.98	454.37	2.296	CC, ES, SF
Richardson 10-13 (PR) - Wellbore #1 - No Surveys	15,784.85	6,702.00	913.51	570.82	2.666	CC

CC - Min centre to center distance or covergent 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 Borys C22-765
Project:	Mustang	TVD Reference:	KB @ 4692.00ft
Reference Site:	C Section 22	MD Reference:	KB @ 4692.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Borys C22-765	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	APD-Rev 0	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
C Section 10						
Richardson 10-13 (PR) - Wellbore #1 - No Surveys	15,800.00	6,702.00	913.64	570.80	2.665	ES, SF
Richardson 24-10 (PR) - Wellbore #1 - No Surveys	15,940.07	6,708.00	8.30	-335.84	0.024	Level 1, CC, ES, SF
Roskop 10-01 (SI) - Wellbore #1 - No Surveys	19,606.21	6,680.00	2,964.93	2,592.86	7.969	CC, ES
Roskop 10-01 (SI) - Wellbore #1 - No Surveys	19,700.00	6,680.00	2,966.42	2,593.71	7.959	SF
Roskop 10-07 (SI) - Wellbore #1 - No Surveys	18,091.83	6,705.00	1,640.84	1,279.85	4.545	CC
Roskop 10-07 (SI) - Wellbore #1 - No Surveys	18,100.00	6,705.00	1,640.86	1,279.81	4.545	ES, SF
Roskop 10-08 (SI) - Wellbore #1 - No Surveys	18,476.82	6,681.00	2,955.68	2,592.58	8.140	CC
Roskop 10-08 (SI) - Wellbore #1 - No Surveys	18,500.00	6,681.00	2,955.77	2,592.51	8.137	ES
Roskop 10-08 (SI) - Wellbore #1 - No Surveys	18,600.00	6,681.00	2,958.24	2,594.33	8.129	SF
Roskop C10-17 (SI) - Wellbore #1 - No Surveys	18,857.95	6,682.00	2,305.49	1,939.32	6.296	CC, ES
Roskop C10-17 (SI) - Wellbore #1 - No Surveys	18,900.00	6,682.00	2,305.88	1,939.42	6.292	SF
Roskop C11-31D (SI) - Roskop C11-31D OH - As-Drilled	18,986.83	6,840.22	3,551.89	3,424.51	27.886	CC
Roskop C11-31D (SI) - Roskop C11-31D OH - As-Drilled	19,000.00	6,840.40	3,551.91	3,424.46	27.868	ES
Roskop C11-31D (SI) - Roskop C11-31D OH - As-Drilled	19,300.00	6,844.27	3,565.66	3,436.67	27.642	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 Borys C22-765
Project:	Mustang	TVD Reference:	KB @ 4692.00ft
Reference Site:	C Section 22	MD Reference:	KB @ 4692.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Borys C22-765	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	APD-Rev 0	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
C Section 15						
Bockius 15-01 (PR) - Wellbore #1 - No Surveys	14,463.84	6,710.00	3,143.40	2,810.59	9.445	CC
Bockius 15-01 (PR) - Wellbore #1 - No Surveys	14,500.00	6,710.00	3,143.61	2,810.55	9.439	ES
Bockius 15-01 (PR) - Wellbore #1 - No Surveys	14,600.00	6,710.00	3,146.35	2,812.64	9.428	SF
Bockius 15-07 (PR) - Wellbore #1 - No Surveys	12,812.99	6,704.00	1,453.78	1,133.60	4.540	CC, ES, SF
Bockius 15-08 (PR) - Wellbore #1 - No Surveys	13,195.60	6,707.00	3,127.26	2,804.14	9.678	CC
Bockius 15-08 (PR) - Wellbore #1 - No Surveys	13,200.00	6,707.00	3,127.26	2,804.11	9.677	ES
Bockius 15-08 (PR) - Wellbore #1 - No Surveys	13,400.00	6,707.00	3,133.93	2,809.51	9.660	SF
Clemons 13-15 (PA) - Wellbore #1 - No Surveys	11,696.83	6,719.00	1,004.24	691.45	3.211	CC
Clemons 13-15 (PA) - Wellbore #1 - No Surveys	11,700.00	6,719.00	1,004.25	691.43	3.210	ES, SF
Eckas 15-1014 (PR) - Wellbore #1 - No Surveys	12,097.61	6,702.00	1,246.52	931.59	3.958	CC
Eckas 15-1014 (PR) - Wellbore #1 - No Surveys	12,100.00	6,702.00	1,246.52	931.58	3.958	ES, SF
Eckas 15-1614 (PR) - Wellbore #1 - No Surveys	9,980.64	6,704.00	3,288.28	2,987.22	10.922	CC
Eckas 15-1614 (PR) - Wellbore #1 - No Surveys	10,000.00	6,704.00	3,288.33	2,987.17	10.919	ES
Eckas 15-1614 (PR) - Wellbore #1 - No Surveys	10,200.00	6,704.00	3,295.59	2,993.35	10.904	SF
Eckas 2 - Original Drilling - Original Drilling - As Drilled	11,673.07	6,577.71	2,983.40	2,914.99	43.607	CC
Eckas 2 - Original Drilling - Original Drilling - As Drilled	11,700.00	6,577.11	2,983.52	2,914.94	43.501	ES
Eckas 2 - Original Drilling - Original Drilling - As Drilled	12,200.00	6,565.75	3,029.56	2,958.30	42.517	SF
Eckas C15-23 (PR) - Wellbore #1 - No Surveys	11,404.87	6,703.00	2,268.99	1,958.85	7.316	CC, ES
Eckas C15-23 (PR) - Wellbore #1 - No Surveys	11,500.00	6,703.00	2,270.98	1,960.29	7.309	SF
Hagen 31-15 (PR) - Wellbore #1 - No Surveys	14,319.13	6,708.00	1,694.87	1,363.25	5.111	CC, ES
Hagen 31-15 (PR) - Wellbore #1 - No Surveys	14,400.00	6,708.00	1,696.80	1,364.72	5.110	SF
Lang 1 (PA) - Wellbore #1 - No Surveys	11,668.91	6,703.00	309.48	-2.47	0.992	Level 1, CC, ES, SF
Lang 15-14 (SI) - Wellbore #1 - No Surveys	10,386.03	6,707.00	225.79	-77.83	0.744	Level 1, CC, ES, SF
Millage C14-33 (PR) - Wellbore #1 - No Surveys	11,041.37	6,700.00	3,436.31	3,128.75	11.173	CC, ES
Millage C14-33 (PR) - Wellbore #1 - No Surveys	11,300.00	6,700.00	3,446.03	3,136.93	11.149	SF
Millage C15-24 (SI) - Wellbore #1 - No Surveys	11,018.94	6,705.00	1,137.28	829.66	3.697	CC, ES, SF
PFann C15-17 (PR) - Wellbore #1 - No Surveys	13,668.60	6,707.00	2,485.53	2,158.88	7.609	CC
PFann C15-17 (PR) - Wellbore #1 - No Surveys	13,700.00	6,707.00	2,485.73	2,158.87	7.605	ES
PFann C15-17 (PR) - Wellbore #1 - No Surveys	13,800.00	6,707.00	2,489.01	2,161.53	7.601	SF
PFannebecker C14-32D (PR) - PFannebecker C14-32D O	12,464.23	6,728.45	3,526.60	3,449.10	45.502	CC
PFannebecker C14-32D (PR) - PFannebecker C14-32D O	12,500.00	6,728.17	3,526.78	3,449.07	45.380	ES
PFannebecker C14-32D (PR) - PFannebecker C14-32D O	13,100.00	6,723.55	3,583.45	3,502.85	44.460	SF
PFannebecker C15-18 (PR) - Wellbore #1 - No Surveys	13,738.82	6,705.00	1,141.24	814.14	3.489	CC, ES, SF
PFannebecker C15-23 (PR) - Wellbore #1 - No Surveys	12,586.34	6,708.00	2,441.64	2,122.95	7.662	CC
PFannebecker C15-23 (PR) - Wellbore #1 - No Surveys	12,600.00	6,708.00	2,441.68	2,122.90	7.660	ES
PFannebecker C15-23 (PR) - Wellbore #1 - No Surveys	12,700.00	6,708.00	2,444.28	2,124.90	7.653	SF
Rohr 1 (SI) - Wellbore #1 - No Surveys	14,288.38	6,706.00	334.27	2.96	1.009	Level 2, CC, ES, SF
Rohr 15-06 (SI) - Wellbore #1 - No Surveys	12,990.21	6,702.00	139.14	-182.26	0.433	Level 1, CC, ES, SF
Rohr 15-414 (PR) - Wellbore #1 - No Surveys	14,465.80	6,705.00	957.98	625.35	2.880	CC, ES
Rohr 15-414 (PR) - Wellbore #1 - No Surveys	14,500.00	6,705.00	958.59	625.67	2.879	SF
Rohr C15-19 (PR) - Wellbore #1 - No Surveys	13,695.92	6,703.00	467.79	141.08	1.432	Level 3, CC
Rohr C15-19 (PR) - Wellbore #1 - No Surveys	13,700.00	6,703.00	467.80	141.06	1.432	Level 3, ES, SF
Sater C15-20 (SI) - Wellbore #1 - No Surveys	12,147.34	6,704.00	290.71	-24.65	0.922	Level 1, CC, ES, SF
Stockley C15-25 (SI) - Wellbore #1 - No Surveys	11,005.37	6,713.00	330.44	22.59	1.073	Level 2, CC, ES, SF
Stockley C15-79HN (PR) - Original Drilling - Original Drill	10,372.03	6,714.97	1,383.51	1,323.34	22.991	CC
Stockley C15-79HN (PR) - Original Drilling - Original Drill	10,400.00	6,734.33	1,383.63	1,323.15	22.878	ES
Stockley C15-79HN (PR) - Original Drilling - Original Drill	17,500.00	13,771.95	1,592.48	1,371.04	7.192	SF
Stockley C22-79HN (PR) - Wellbore #1 - Original Drilling	6,750.00	9,284.17	1,598.56	1,515.45	19.235	SF
Stockley C22-79HN (PR) - Wellbore #1 - Original Drilling	7,150.00	8,994.90	1,563.41	1,484.16	19.729	ES
Stockley C22-79HN (PR) - Wellbore #1 - Original Drilling	7,169.42	8,982.61	1,563.33	1,484.28	19.777	CC

CC - Min centre to center distance or covergent 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 Borys C22-765
Project:	Mustang	TVD Reference:	KB @ 4692.00ft
Reference Site:	C Section 22	MD Reference:	KB @ 4692.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Borys C22-765	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	APD-Rev 0	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						
C Section 22						
BORYS C #22-20(PR) - Wellbore #1 - No Surveys	7,204.71	6,717.82	165.41	82.17	1.987	CC, ES, SF
Borys C22-750 - Wellbore #1 - APD-Rev 0	2,000.00	2,001.00	43.80	29.93	3.157	CC
Borys C22-750 - Wellbore #1 - APD-Rev 0	2,100.00	2,099.56	43.98	29.43	3.023	ES
Borys C22-750 - Wellbore #1 - APD-Rev 0	2,200.00	2,197.99	44.78	29.60	2.951	SF
Borys C22-755 - Wellbore #1 - APD-Rev 0	2,000.00	2,000.00	21.86	7.98	1.576	CC
Borys C22-755 - Wellbore #1 - APD-Rev 0	2,100.00	2,099.23	22.19	7.65	1.526	ES, SF
Borys C22-775 - Wellbore #1 - APD-Rev 0	2,000.00	2,000.00	21.86	7.98	1.576	CC
Borys C22-775 - Wellbore #1 - APD-Rev 0	2,100.00	2,100.45	22.23	7.68	1.527	ES, SF
Borys C22-783 - Wellbore #1 - APD-Rev 0	2,000.00	2,000.00	47.36	33.49	3.414	CC
Borys C22-783 - Wellbore #1 - APD-Rev 0	2,100.00	2,100.98	47.74	33.17	3.278	ES
Borys C22-783 - Wellbore #1 - APD-Rev 0	2,200.00	2,201.86	48.97	33.75	3.217	SF
CANTRELL #1(PR) - Wellbore #1 - No Surveys	6,171.18	6,015.52	347.42	272.35	4.628	CC, ES
CANTRELL #1(PR) - Wellbore #1 - No Surveys	6,200.00	6,043.87	347.98	272.55	4.613	SF
CANTRELL #22-10(SI) - Wellbore #1 - No Surveys	3,190.01	3,131.21	1,444.67	1,406.33	37.680	CC
CANTRELL #22-10(SI) - Wellbore #1 - No Surveys	3,400.00	3,333.91	1,445.71	1,404.83	35.364	ES
CANTRELL #22-10(SI) - Wellbore #1 - No Surveys	6,550.00	6,372.09	1,707.38	1,628.08	21.531	SF
CANTRELL #22-12(SI) - Wellbore #1 - No Surveys	6,657.35	6,473.54	881.52	801.32	10.992	CC, ES
CANTRELL #22-12(SI) - Wellbore #1 - No Surveys	6,750.00	6,542.14	885.39	804.47	10.941	SF
COLEMAN #22-114(PR) - Wellbore #1 - No Surveys	2,000.00	1,958.00	2,954.49	2,930.47	122.984	CC, ES
COLEMAN #22-114(PR) - Wellbore #1 - No Surveys	9,500.00	6,703.00	3,165.19	3,074.76	35.002	SF
COLEMAN #22-714(PA) - Wellbore #1 - Gyro Surveys	556.37	519.38	1,113.88	1,110.48	327.352	CC
COLEMAN #22-714(PA) - Wellbore #1 - Gyro Surveys	2,015.09	1,982.75	1,119.13	1,105.40	81.463	ES
COLEMAN #22-714(PA) - Wellbore #1 - Gyro Surveys	7,900.00	6,712.95	1,801.00	1,752.06	36.803	SF
COLEMAN #22-814(PR) - Wellbore #1 - No Surveys	2,000.00	1,964.00	2,335.54	2,311.46	97.008	CC, ES
COLEMAN #22-814(PR) - Wellbore #1 - No Surveys	8,200.00	6,709.00	2,973.54	2,888.48	34.959	SF
Coleman #C22-18D(PR) - Wellbore #1 - MWD Surveys	8,275.88	6,856.81	899.32	845.56	16.727	CC, ES
Coleman #C22-18D(PR) - Wellbore #1 - MWD Surveys	8,400.00	6,857.95	907.85	853.02	16.557	SF
Coleman #C22-27 (PR) - Wellbore #1 - No Surveys	9,519.69	6,705.00	2,334.12	2,243.29	25.698	CC, ES
Coleman #C22-27 (PR) - Wellbore #1 - No Surveys	9,800.00	6,705.00	2,350.89	2,258.77	25.520	SF
Coleman C #22-17(PR) - Wellbore #1 - No Surveys	2,000.00	1,964.00	1,887.36	1,863.28	78.393	CC, ES
Coleman C #22-17(PR) - Wellbore #1 - No Surveys	8,700.00	6,709.00	2,268.19	2,181.36	26.123	SF
COLEMAN C #23-32(PR) - Wellbore #1 - No Surveys	2,000.00	1,965.00	2,742.13	2,718.04	113.855	CC
COLEMAN C #23-32(PR) - Wellbore #1 - No Surveys	2,100.00	2,064.98	2,743.05	2,717.75	108.428	ES
COLEMAN C #23-32(PR) - Wellbore #1 - No Surveys	7,400.00	6,710.00	3,423.41	3,340.05	41.066	SF
Coleman C22-21D(SI) - Wellbore #1 - MWD Surveys	4,157.38	4,303.92	499.69	463.50	13.806	CC, ES
Coleman C22-21D(SI) - Wellbore #1 - MWD Surveys	4,400.00	4,510.27	516.47	477.63	13.298	SF
CONRAD #1(PR) - Wellbore #1 - No Surveys	9,031.54	6,709.00	332.22	243.82	3.758	CC, ES, SF
DARLENE DINNELL #1(PR) - Wellbore #1 - No Surveys	6,230.73	6,076.20	1,563.81	1,488.29	20.708	CC, ES
DARLENE DINNELL #1(PR) - Wellbore #1 - No Surveys	6,400.00	6,241.89	1,586.17	1,508.65	20.462	SF
DINNELL #22-15(SI) - Wellbore #1 - No Surveys	6,133.16	5,980.35	2,031.93	1,957.26	27.212	CC
DINNELL #22-15(SI) - Wellbore #1 - No Surveys	6,150.00	5,996.77	2,032.08	1,957.20	27.137	ES
DINNELL #22-15(SI) - Wellbore #1 - No Surveys	6,400.00	6,241.89	2,069.02	1,991.15	26.570	SF
DINNELL #C27-28D(SI) - Wellbore #1 - MWD Surveys	6,196.67	6,167.59	2,288.00	2,242.80	50.626	CC
DINNELL #C27-28D(SI) - Wellbore #1 - MWD Surveys	6,200.00	6,170.96	2,288.01	2,242.79	50.602	ES
DINNELL #C27-28D(SI) - Wellbore #1 - MWD Surveys	6,400.00	6,362.28	2,317.35	2,270.90	49.887	SF
DINNELL #C27-29D(PA) - Wellbore #1 - Gyro Surveys	6,263.57	6,211.94	2,123.29	2,072.90	42.135	CC, ES
DINNELL #C27-29D(PA) - Wellbore #1 - Gyro Surveys	6,400.00	6,344.45	2,137.61	2,086.49	41.813	SF
HERBST #1(SI) - Wellbore #1 - Gyro Surveys	6,313.32	6,166.82	1,903.05	1,859.22	43.418	CC, ES
HERBST #1(SI) - Wellbore #1 - Gyro Surveys	6,500.00	6,341.36	1,926.19	1,881.22	42.838	SF
HERBST #1-22-4-64(SI) - Wellbore #1 - No Surveys	2,000.00	1,966.00	2,470.58	2,446.49	102.543	CC
HERBST #1-22-4-64(SI) - Wellbore #1 - No Surveys	2,200.00	2,165.84	2,472.11	2,445.61	93.270	ES
HERBST #1-22-4-64(SI) - Wellbore #1 - No Surveys	6,900.00	6,621.53	2,982.64	2,900.50	36.313	SF
HERBST #22-16(PR) - Wellbore #1 - No Surveys	4,576.55	4,477.65	3,206.62	3,151.25	57.910	CC

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 Borys C22-765
Project:	Mustang	TVD Reference:	KB @ 4692.00ft
Reference Site:	C Section 22	MD Reference:	KB @ 4692.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Borys C22-765	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	APD-Rev 0	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
C Section 22						
HERBST #22-16(PR) - Wellbore #1 - No Surveys	5,200.00	5,079.46	3,210.75	3,147.67	50.896	ES
HERBST #22-16(PR) - Wellbore #1 - No Surveys	6,600.00	6,422.94	3,335.20	3,255.24	41.710	SF
HERBST #22-614(PR) - Wellbore #1 - No Surveys	8,049.35	6,713.00	121.89	83.75	3.196	CC, ES, SF
Herbst #C22-22D(PR) - Wellbore #1 - MWD Surveys	2,743.45	3,116.67	2,024.33	2,002.90	94.448	CC
Herbst #C22-22D(PR) - Wellbore #1 - MWD Surveys	2,756.84	3,124.59	2,024.37	2,002.85	94.064	ES
Herbst #C22-22D(PR) - Wellbore #1 - MWD Surveys	7,500.00	6,816.17	2,393.41	2,341.81	46.382	SF
HERBST C #22-25(SI) - Wellbore #1 - No Surveys	6,146.34	5,996.20	1,100.60	1,025.75	14.704	CC
HERBST C #22-24(SI) - Wellbore #1 - No Surveys	6,150.00	5,999.77	1,100.61	1,025.71	14.695	ES
HERBST C #22-24(SI) - Wellbore #1 - No Surveys	6,300.00	6,147.56	1,114.01	1,037.27	14.518	SF
HERBST C #22-25(SI) - Wellbore #1 - No Surveys	6,287.05	6,138.81	1,155.99	1,080.01	15.215	CC
HERBST C #22-25(SI) - Wellbore #1 - No Surveys	6,300.00	6,151.56	1,156.12	1,079.98	15.185	ES
HERBST C #22-25(SI) - Wellbore #1 - No Surveys	6,400.00	6,248.89	1,165.38	1,088.09	15.078	SF
JOHNSTON #22-4(SI) - Wellbore #1 - Gyro Surveys	8,812.82	6,712.61	900.80	848.65	17.275	CC, ES
JOHNSTON #22-4(SI) - Wellbore #1 - Gyro Surveys	8,900.00	6,711.74	905.01	852.45	17.220	SF
Lang #C22-28D(PR) - Wellbore #1 - MWD Surveys	9,760.74	6,850.19	878.92	819.04	14.678	CC, ES, SF
LYMAN #1(SI) - Wellbore #1 - Gyro Surveys	7,669.94	6,715.66	1,034.83	986.31	21.330	CC, ES
LYMAN #1(SI) - Wellbore #1 - Gyro Surveys	7,700.00	6,716.08	1,035.26	986.70	21.316	SF
VOLKENS #31-22(PR) - Wellbore #1 - No Surveys	9,051.21	6,706.00	1,670.88	1,582.41	18.886	CC, ES
VOLKENS #31-22(PR) - Wellbore #1 - No Surveys	9,200.00	6,706.00	1,677.49	1,588.43	18.835	SF
VROOMAN C #22-23(SI) - Wellbore #1 - No Surveys	4,025.00	3,945.23	2,338.15	2,289.57	48.127	CC
VROOMAN C #22-23(SI) - Wellbore #1 - No Surveys	4,400.00	4,307.22	2,340.20	2,287.01	43.994	ES
VROOMAN C #22-23(SI) - Wellbore #1 - No Surveys	6,550.00	6,380.09	2,484.09	2,404.63	31.263	SF
Vrooman C22-715 - Wellbore #1 - APD-Rev 0	2,000.00	2,000.00	1,650.12	1,636.25	118.946	CC, ES
Vrooman C22-715 - Wellbore #1 - APD-Rev 0	20,026.17	19,892.26	3,275.27	3,053.30	14.755	SF
Vrooman C22-725 - Wellbore #1 - APD-Rev 0	2,000.00	2,000.00	1,629.63	1,615.75	117.469	CC
Vrooman C22-725 - Wellbore #1 - APD-Rev 0	2,100.00	2,100.02	1,630.00	1,615.43	111.852	ES
Vrooman C22-725 - Wellbore #1 - APD-Rev 0	20,026.17	19,889.94	2,619.18	2,397.34	11.806	SF
Vrooman C22-735 - Wellbore #1 - APD-Rev 0	2,000.00	2,000.00	1,609.18	1,595.31	115.995	CC
Vrooman C22-735 - Wellbore #1 - APD-Rev 0	2,100.00	2,100.02	1,609.54	1,594.97	110.448	ES
Vrooman C22-735 - Wellbore #1 - APD-Rev 0	20,026.17	19,792.17	1,966.54	1,745.11	8.881	SF
Vrooman C22-745 - Wellbore #1 - APD-Rev 0	6,431.79	6,566.49	1,304.16	1,257.39	27.886	CC
Vrooman C22-745 - Wellbore #1 - APD-Rev 0	20,026.17	19,954.57	1,309.59	1,087.46	5.896	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 Borys C22-765
Project:	Mustang	TVD Reference:	KB @ 4692.00ft
Reference Site:	C Section 22	MD Reference:	KB @ 4692.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Borys C22-765	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	APD-Rev 0	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
C Section 23						
BOOTH #23-1214(PR) - Wellbore #1 - No Surveys	2,000.00	1,964.00	3,475.48	3,451.40	144.356	CC
BOOTH #23-1214(PR) - Wellbore #1 - No Surveys	2,100.00	2,063.98	3,476.24	3,450.95	137.457	ES
BOOTH #23-1214(PR) - Wellbore #1 - No Surveys	7,150.00	6,702.20	4,120.49	4,037.40	49.591	SF
BOOTH C #23-20(PR) - Wellbore #1 - No Surveys	2,000.00	1,966.00	4,265.19	4,241.10	177.029	CC
BOOTH C #23-20(PR) - Wellbore #1 - No Surveys	2,100.00	2,065.98	4,266.03	4,240.73	168.571	ES
BOOTH C #23-20(PR) - Wellbore #1 - No Surveys	7,200.00	6,709.52	4,927.20	4,844.02	59.231	SF
COLEMAN #23-614(PR) - Wellbore #1 - No Surveys	2,000.00	1,963.00	4,889.20	4,865.13	203.150	CC
COLEMAN #23-614(PR) - Wellbore #1 - No Surveys	2,100.00	2,062.98	4,890.33	4,865.05	193.439	ES
COLEMAN #23-614(PR) - Wellbore #1 - No Surveys	9,300.00	6,708.00	5,747.89	5,658.84	64.547	SF
COLEMAN #C23-31D(PR) - Wellbore #1 - MWD	2,510.31	2,981.89	3,415.01	3,394.97	170.389	CC, ES
COLEMAN #C23-31D(PR) - Wellbore #1 - MWD	9,100.00	6,822.25	3,745.82	3,690.65	67.896	SF
Coleman C #23-04(PR) - Wellbore #1 - No Surveys	2,000.00	1,960.00	3,955.94	3,931.90	164.551	CC, ES
Coleman C #23-04(PR) - Wellbore #1 - No Surveys	10,000.00	6,705.00	4,375.32	4,282.47	47.119	SF
COLEMAN C #23-19(PR) - Wellbore #1 - No Surveys	2,000.00	1,962.00	4,461.34	4,437.28	185.439	CC, ES
COLEMAN C #23-19(PR) - Wellbore #1 - No Surveys	9,800.00	6,707.00	5,183.84	5,092.28	56.615	SF
COLEMAN C #23-21(PR) - Wellbore #1 - No Surveys	2,000.00	1,965.00	5,400.37	5,376.29	224.227	CC
COLEMAN C #23-21(PR) - Wellbore #1 - No Surveys	2,100.00	2,064.98	5,401.34	5,376.04	213.506	ES
COLEMAN C #23-21(PR) - Wellbore #1 - No Surveys	8,900.00	6,710.00	6,301.83	6,214.55	72.199	SF
Coleman C #23-29D(SI) - Wellbore #1 - MWD Surveys	1,252.50	1,225.54	3,975.03	3,967.48	526.278	CC
Coleman C #23-29D(SI) - Wellbore #1 - MWD Surveys	1,300.00	1,251.46	3,975.16	3,967.35	508.723	ES
Coleman C #23-29D(SI) - Wellbore #1 - MWD Surveys	11,500.00	6,771.69	5,257.94	5,189.78	77.142	SF
KISSLER #1(SI) - Wellbore #1 - Gyro	4,555.87	0.00	4,346.48	4,330.28	268.248	CC, ES
KISSLER #1(SI) - Wellbore #1 - Gyro	6,900.00	1,923.94	4,620.17	4,589.21	149.264	SF
KISSLER #2(PR) - Wellbore #1 - No Surveys	2,000.00	1,970.00	5,012.33	4,988.20	207.739	CC
KISSLER #2(PR) - Wellbore #1 - No Surveys	2,100.00	2,069.98	5,013.03	4,987.69	197.815	ES
KISSLER #2(PR) - Wellbore #1 - No Surveys	7,150.00	6,708.20	5,641.07	5,557.91	67.835	SF
KISSLER #3(DA) - Wellbore #1 - No Surveys	2,000.00	1,973.00	5,427.93	5,403.78	224.720	CC
KISSLER #3(DA) - Wellbore #1 - No Surveys	2,200.00	2,172.84	5,429.15	5,402.58	204.364	ES
KISSLER #3(DA) - Wellbore #1 - No Surveys	6,950.00	6,652.23	5,882.24	5,799.72	71.288	SF
KISSLER #3X(SI) - Wellbore #1 - Gyro	1,452.93	1,435.94	5,485.22	5,475.40	558.673	CC
KISSLER #3X(SI) - Wellbore #1 - Gyro	2,000.00	1,962.26	5,485.99	5,472.37	402.988	ES
KISSLER #3X(SI) - Wellbore #1 - Gyro	6,900.00	6,641.31	5,861.95	5,814.51	123.560	SF
SATER C #23-15(PA) - Wellbore #1 - Gyro	0.00	0.00	6,684.38			
SATER C #23-15(PA) - Wellbore #1 - Gyro	2,200.00	2,247.17	6,689.69	6,674.12	429.742	ES
SATER C #23-15(PA) - Wellbore #1 - Gyro	7,000.00	6,892.03	7,069.59	7,021.01	145.524	SF
SATER C #23-17(PR) - Wellbore #1 - No Surveys	2,000.00	1,960.00	7,047.20	7,023.16	293.135	CC
SATER C #23-17(PR) - Wellbore #1 - No Surveys	2,100.00	2,059.98	7,048.39	7,023.14	279.092	ES
SATER C #23-17(PR) - Wellbore #1 - No Surveys	11,600.00	6,705.00	8,325.08	8,224.32	82.626	SF
SATER C #23-22(PR) - Wellbore #1 - No Surveys	2,000.00	1,968.00	6,804.43	6,780.32	282.217	CC
SATER C #23-22(PR) - Wellbore #1 - No Surveys	2,100.00	2,067.98	6,805.39	6,780.06	268.727	ES
SATER C #23-22(PR) - Wellbore #1 - No Surveys	10,200.00	6,713.00	8,074.36	7,981.48	86.936	SF
SATER C #23-24(PR) - Wellbore #1 - Gyro	0.00	0.00	6,018.91			
SATER C #23-24(PR) - Wellbore #1 - Gyro	700.00	625.43	6,020.69	6,016.40	1,403.291	ES
SATER C #23-24(PR) - Wellbore #1 - Gyro	7,050.00	6,797.57	6,536.44	6,488.28	135.742	SF
SATER C #23-28D(PR) - Wellbore #1 - MWD Surveys	9,660.67	7,070.00	6,291.96	6,230.92	103.087	CC
SATER C #23-28D(PR) - Wellbore #1 - MWD Surveys	9,700.00	7,070.00	6,292.08	6,230.87	102.797	ES
SATER C #23-28D(PR) - Wellbore #1 - MWD Surveys	12,200.00	7,070.00	6,785.05	6,712.69	93.770	SF
Sater C24-79HN - Original Drilling - Original Drilling	0.00	6.49	8,475.84			
Sater C24-79HN - Original Drilling - Original Drilling	800.00	805.76	8,478.50	8,474.28	2,008.589	ES
Sater C24-79HN - Original Drilling - Original Drilling	12,300.00	11,256.02	9,281.88	9,147.40	69.021	SF
Sater C25-69HN - Original Drilling - Original Drilling	206.92	1,068.00	8,472.39	8,471.17	6,965.706	CC
Sater C25-69HN - Original Drilling - Original Drilling	300.00	1,128.46	8,472.62	8,470.85	4,792.346	ES
Sater C25-69HN - Original Drilling - Original Drilling	6,600.00	5,958.01	9,384.83	9,343.25	225.678	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 Borys C22-765
Project:	Mustang	TVD Reference:	KB @ 4692.00ft
Reference Site:	C Section 22	MD Reference:	KB @ 4692.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Borys C22-765	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	APD-Rev 0	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
C Section 23						
Sater C25-79HN - Original Drilling - Original Drilling	2,427.85	2,869.01	8,408.14	8,390.17	467.929	CC
Sater C25-79HN - Original Drilling - Original Drilling	2,500.00	2,912.57	8,408.50	8,390.09	456.974	ES
Sater C25-79HN - Original Drilling - Original Drilling	10,000.00	6,100.01	9,961.91	9,908.71	187.242	SF
Sater C26-69HN - Original Drilling - Original Drilling	6,250.31	11,535.02	4,050.37	3,952.26	41.285	CC, ES
Sater C26-69HN - Original Drilling - Original Drilling	7,400.00	11,535.02	4,550.94	4,437.42	40.089	SF
UPRC #23-214(PR) - Wellbore #1 - No Surveys	2,000.00	1,957.00	6,621.18	6,597.17	275.715	CC, ES
UPRC #23-214(PR) - Wellbore #1 - No Surveys	11,700.00	6,702.00	7,636.97	7,535.20	75.037	SF
UPV #23-1014(PR) - Wellbore #1 - No Surveys	2,000.00	1,968.00	6,107.68	6,083.57	253.319	CC
UPV #23-1014(PR) - Wellbore #1 - No Surveys	2,100.00	2,067.98	6,108.49	6,083.16	241.209	ES
UPV #23-1014(PR) - Wellbore #1 - No Surveys	7,200.00	6,711.52	6,761.87	6,678.66	81.258	SF
UPV #23-1514(PA) - Wellbore #1 - Gyro	0.00	0.00	7,059.48			
UPV #23-1514(PA) - Wellbore #1 - Gyro	2,100.00	2,114.48	7,069.62	7,055.11	487.455	ES
UPV #23-1514(PA) - Wellbore #1 - Gyro	10,300.00	7,191.13	8,818.95	8,760.98	152.135	SF
UPV #23-1614(PR) - Wellbore #1 - Gyro	2,323.50	2,575.37	8,064.32	8,047.43	477.610	CC
UPV #23-1614(PR) - Wellbore #1 - Gyro	2,400.00	2,638.47	8,064.70	8,047.34	464.568	ES
UPV #23-1614(PR) - Wellbore #1 - Gyro	6,850.00	6,850.00	8,533.65	8,485.65	177.775	SF
UPV #23-114(SI) - Wellbore #1 - Gyro Surveys	2,026.93	2,040.16	7,791.94	7,777.96	557.491	CC, ES
UPV #23-114(SI) - Wellbore #1 - Gyro Surveys	13,900.00	6,630.31	9,508.74	9,431.13	122.532	SF
UPV #23-714(PR) - Wellbore #1 - No Surveys	2,000.00	1,964.00	6,056.61	6,032.54	251.565	CC
UPV #23-714(PR) - Wellbore #1 - No Surveys	2,100.00	2,063.98	6,057.68	6,032.39	239.532	ES
UPV #23-714(PR) - Wellbore #1 - No Surveys	10,100.00	6,709.00	7,157.40	7,064.78	77.277	SF
UPV #23-814(PR) - Wellbore #1 - Gyro Surveys	1,330.20	1,300.27	7,592.39	7,583.48	852.011	CC
UPV #23-814(PR) - Wellbore #1 - Gyro Surveys	1,700.00	1,620.98	7,593.00	7,581.65	668.837	ES
UPV #23-814(PR) - Wellbore #1 - Gyro Surveys	13,000.00	6,878.60	9,764.38	9,692.73	136.275	SF
UPV #23-914(PR) - Wellbore #1 - Gyro Surveys	0.00	0.00	7,820.05			
UPV #23-914(PR) - Wellbore #1 - Gyro Surveys	1,700.00	1,653.09	7,830.90	7,819.42	682.483	ES
UPV #23-914(PR) - Wellbore #1 - Gyro Surveys	11,900.00	6,933.00	9,996.95	9,931.43	152.584	SF
VOLKENS #1(SI) - Wellbore #1 - No Surveys	2,000.00	1,963.00	3,616.83	3,592.76	150.282	CC
VOLKENS #1(SI) - Wellbore #1 - No Surveys	2,100.00	2,062.98	3,617.95	3,592.67	143.110	ES
VOLKENS #1(SI) - Wellbore #1 - No Surveys	8,400.00	6,708.00	4,342.28	4,256.66	50.713	SF
VOLKENS #2(SI) - Wellbore #1 - No Surveys	2,000.00	1,961.00	5,182.17	5,158.12	215.479	CC, ES
VOLKENS #2(SI) - Wellbore #1 - No Surveys	11,600.00	4,650.00	6,482.31	6,402.54	81.266	SF

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