

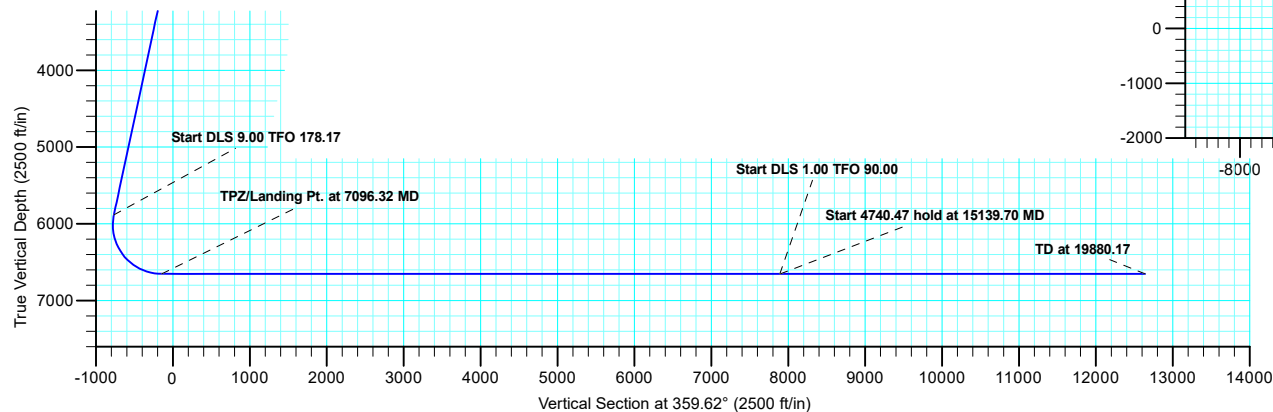
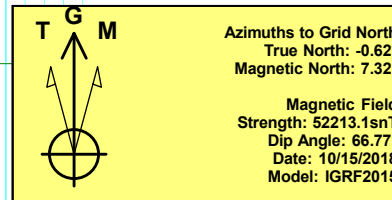
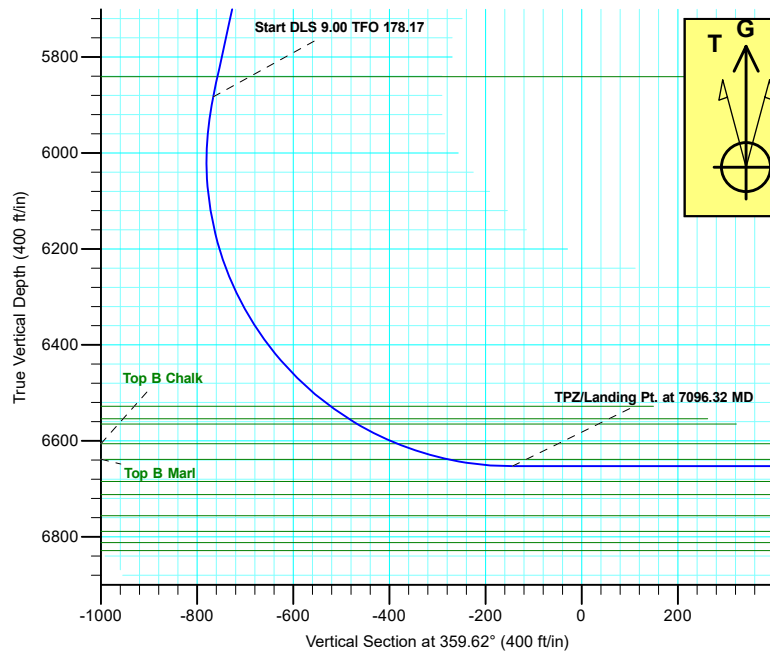
Project: Mustang
Site: C Section 22
Well: Borys C22-755
Wellbore: Wellbore #1
Design: APD-Rev 0

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

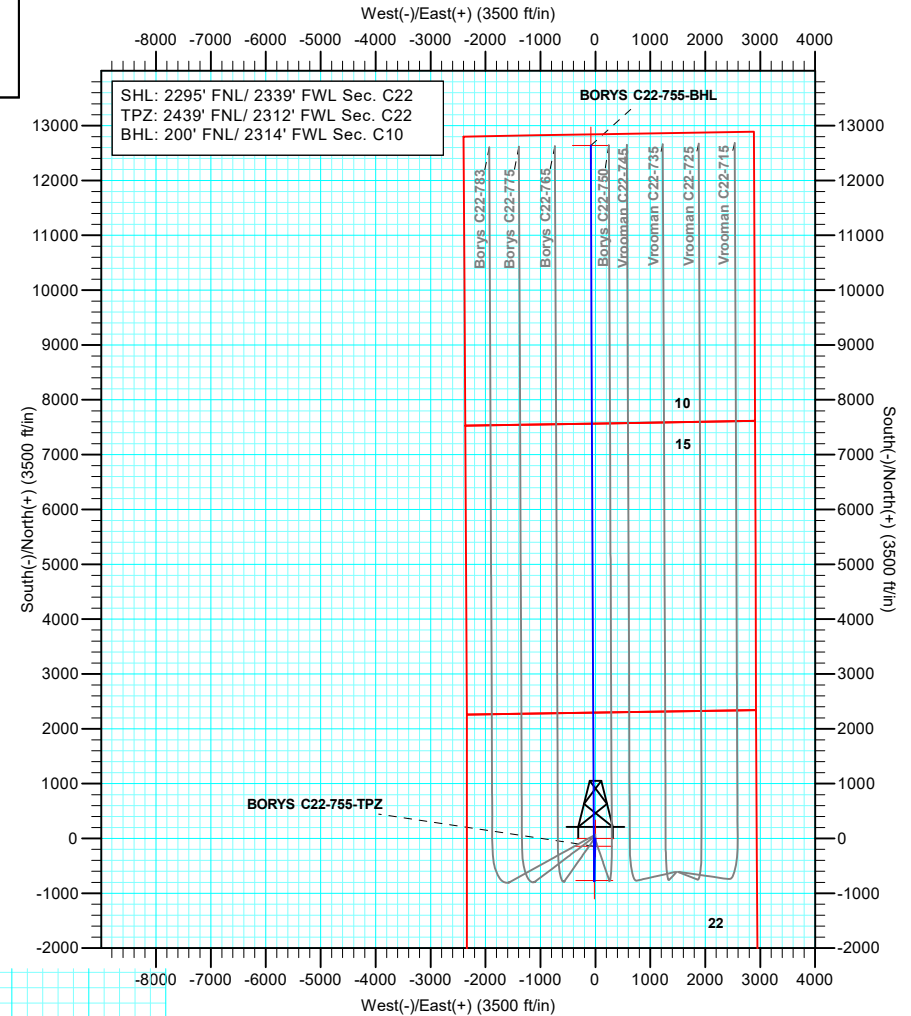
SECTION DETAILS

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	2604.43	12.09	181.52	2599.96	-63.51	-1.68	2.00	181.52	-63.49
4	5962.07	12.09	181.52	5883.14	-766.43	-20.30	0.00	0.00	-766.28
5	7096.32	90.00	359.73	6653.00	-143.95	-28.43	9.00	178.17	-143.76
6	15131.88	90.00	359.73	6653.00	7891.52	-66.86	0.00	0.00	7891.79
7	15139.70	90.00	359.80	6653.00	7899.34	-66.89	1.00	90.00	7899.61
8	19880.17	90.00	359.80	6653.00	12639.78	-83.09	0.00	0.00	12640.05



WELL DETAILS: Borys C22-755

+N/-S	+E/-W	Northing	Ground Level: Easting	4662.00 Latitude	Longitude	Slot
0.00	0.00	1353178.76	3268340.86	40.2988800	-104.5379300	



Plan: APD-Rev 0 (Borys C22-755/Wellbore #1)

Created By: Shelly C. Peterkin Date: 9:16, October 16 2018

Northern Region - DJ Basin

Mustang

C Section 22

Borys C22-755

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 C22-755
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 C22-755	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 C22-755					
Well Position	+N/-S	-1,654.15 ft	Northing:	1,353,178.76 usft	Latitude:	40.2988800
	+E/-W	-2,455.28 ft	Easting:	3,268,340.86 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	52,213.09109852

Design	APD-Rev 0			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(ft)	(ft)	(ft)	(°)
	0.00	0.00	0.00	359.62

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	
2,604.43	12.09	181.52	2,599.96	-63.51	-1.68	2.00	2.00	0.00	181.52	
5,962.07	12.09	181.52	5,883.14	-766.43	-20.30	0.00	0.00	0.00	0.00	
7,096.32	90.00	359.73	6,653.00	-143.95	-28.43	9.00	6.87	15.71	178.17	BORYS C22-755-TPZ
15,131.88	90.00	359.73	6,653.00	7,891.52	-66.86	0.00	0.00	0.00	0.00	BORYS C22-755-IP
15,139.70	90.00	359.80	6,653.00	7,899.34	-66.89	1.00	0.00	1.00	90.00	
19,880.17	90.00	359.80	6,653.00	12,639.78	-83.09	0.00	0.00	0.00	0.00	BORYS C22-755-BHI

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Borys C22-755
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 C22-755	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
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
438.00	0.00	0.00	438.00	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
Upper Pierre Aquifer Top									
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
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
1,413.00	0.00	0.00	1,413.00	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
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
2,100.00	2.00	181.52	2,099.98	-1.74	-0.05	-1.74	2.00	2.00	0.00
2,200.00	4.00	181.52	2,199.84	-6.98	-0.18	-6.97	2.00	2.00	0.00
2,300.00	6.00	181.52	2,299.45	-15.69	-0.42	-15.69	2.00	2.00	0.00
2,400.00	8.00	181.52	2,398.70	-27.87	-0.74	-27.86	2.00	2.00	0.00
2,500.00	10.00	181.52	2,497.47	-43.51	-1.15	-43.50	2.00	2.00	0.00
2,604.43	12.09	181.52	2,599.96	-63.51	-1.68	-63.49	2.00	2.00	0.00
Start 3357.64 hold at 2604.43 MD									
2,700.00	12.09	181.52	2,693.41	-83.51	-2.21	-83.50	0.00	0.00	0.00
2,800.00	12.09	181.52	2,791.19	-104.45	-2.77	-104.43	0.00	0.00	0.00
2,900.00	12.09	181.52	2,888.97	-125.38	-3.32	-125.36	0.00	0.00	0.00
3,000.00	12.09	181.52	2,986.75	-146.32	-3.88	-146.29	0.00	0.00	0.00
3,100.00	12.09	181.52	3,084.54	-167.25	-4.43	-167.22	0.00	0.00	0.00
3,200.00	12.09	181.52	3,182.32	-188.19	-4.98	-188.15	0.00	0.00	0.00
3,300.00	12.09	181.52	3,280.10	-209.12	-5.54	-209.08	0.00	0.00	0.00
3,400.00	12.09	181.52	3,377.88	-230.06	-6.09	-230.01	0.00	0.00	0.00
3,499.32	12.09	181.52	3,475.00	-250.85	-6.64	-250.80	0.00	0.00	0.00
Parkman									
3,500.00	12.09	181.52	3,475.67	-250.99	-6.65	-250.94	0.00	0.00	0.00
3,600.00	12.09	181.52	3,573.45	-271.93	-7.20	-271.88	0.00	0.00	0.00
3,700.00	12.09	181.52	3,671.23	-292.86	-7.76	-292.81	0.00	0.00	0.00
3,800.00	12.09	181.52	3,769.01	-313.80	-8.31	-313.74	0.00	0.00	0.00
3,900.00	12.09	181.52	3,866.80	-334.73	-8.87	-334.67	0.00	0.00	0.00
4,000.00	12.09	181.52	3,964.58	-355.67	-9.42	-355.60	0.00	0.00	0.00
4,100.00	12.09	181.52	4,062.36	-376.60	-9.98	-376.53	0.00	0.00	0.00
4,199.85	12.09	181.52	4,160.00	-397.51	-10.53	-397.43	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Borys C22-755
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 C22-755	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)
Sussex									
4,200.00	12.09	181.52	4,160.14	-397.54	-10.53	-397.46	0.00	0.00	0.00
4,300.00	12.09	181.52	4,257.93	-418.47	-11.08	-418.39	0.00	0.00	0.00
4,400.00	12.09	181.52	4,355.71	-439.41	-11.64	-439.32	0.00	0.00	0.00
4,500.00	12.09	181.52	4,453.49	-460.34	-12.19	-460.25	0.00	0.00	0.00
4,600.00	12.09	181.52	4,551.27	-481.28	-12.75	-481.19	0.00	0.00	0.00
4,700.00	12.09	181.52	4,649.06	-502.22	-13.30	-502.12	0.00	0.00	0.00
4,798.12	12.09	181.52	4,745.00	-522.76	-13.85	-522.65	0.00	0.00	0.00
Shannon									
4,800.00	12.09	181.52	4,746.84	-523.15	-13.86	-523.05	0.00	0.00	0.00
4,900.00	12.09	181.52	4,844.62	-544.09	-14.41	-543.98	0.00	0.00	0.00
5,000.00	12.09	181.52	4,942.40	-565.02	-14.97	-564.91	0.00	0.00	0.00
5,100.00	12.09	181.52	5,040.19	-585.96	-15.52	-585.84	0.00	0.00	0.00
5,200.00	12.09	181.52	5,137.97	-606.89	-16.08	-606.77	0.00	0.00	0.00
5,300.00	12.09	181.52	5,235.75	-627.83	-16.63	-627.70	0.00	0.00	0.00
5,400.00	12.09	181.52	5,333.53	-648.76	-17.18	-648.63	0.00	0.00	0.00
5,500.00	12.09	181.52	5,431.32	-669.70	-17.74	-669.57	0.00	0.00	0.00
5,600.00	12.09	181.52	5,529.10	-690.63	-18.29	-690.50	0.00	0.00	0.00
5,700.00	12.09	181.52	5,626.88	-711.57	-18.85	-711.43	0.00	0.00	0.00
5,800.00	12.09	181.52	5,724.66	-732.50	-19.40	-732.36	0.00	0.00	0.00
5,900.00	12.09	181.52	5,822.45	-753.44	-19.96	-753.29	0.00	0.00	0.00
5,918.98	12.09	181.52	5,841.00	-757.41	-20.06	-757.26	0.00	0.00	0.00
Teepee Buttes									
5,962.07	12.09	181.52	5,883.14	-766.43	-20.30	-766.28	0.00	0.00	0.00
Start DLS 9.00 TFO 178.17									
6,000.00	8.68	182.24	5,920.44	-773.26	-20.52	-773.11	9.00	-8.99	1.91
6,050.00	4.19	184.97	5,970.12	-778.85	-20.82	-778.70	9.00	-8.98	5.47
6,100.00	0.51	310.53	6,020.07	-780.53	-21.15	-780.37	9.00	-7.36	251.10
6,150.00	4.85	355.20	6,070.01	-778.28	-21.50	-778.12	9.00	8.68	89.34
6,200.00	9.34	357.39	6,119.61	-772.12	-21.86	-771.96	9.00	8.99	4.39
6,250.00	13.84	358.17	6,168.58	-762.08	-22.23	-761.92	9.00	8.99	1.55
6,300.00	18.33	358.57	6,216.61	-748.24	-22.62	-748.08	9.00	9.00	0.80
6,350.00	22.83	358.82	6,263.41	-730.67	-23.02	-730.50	9.00	9.00	0.49
6,400.00	27.33	358.98	6,308.68	-709.48	-23.42	-709.31	9.00	9.00	0.34
6,450.00	31.83	359.11	6,352.15	-684.81	-23.83	-684.64	9.00	9.00	0.25
6,500.00	36.33	359.20	6,393.55	-656.80	-24.24	-656.62	9.00	9.00	0.19
6,550.00	40.83	359.28	6,432.63	-625.63	-24.65	-625.45	9.00	9.00	0.16
6,600.00	45.33	359.35	6,469.14	-591.49	-25.06	-591.31	9.00	9.00	0.13
6,650.00	49.83	359.40	6,502.85	-554.58	-25.46	-554.41	9.00	9.00	0.11
6,690.54	53.48	359.44	6,528.00	-522.80	-25.78	-522.61	9.00	9.00	0.10
Sharon Springs									
6,700.00	54.33	359.45	6,533.57	-515.15	-25.86	-514.97	9.00	9.00	0.09
6,736.51	57.62	359.48	6,554.00	-484.90	-26.14	-484.71	9.00	9.00	0.09
Top A Chalk									
6,750.00	58.83	359.49	6,561.10	-473.43	-26.24	-473.25	9.00	9.00	0.08
6,757.61	59.52	359.50	6,565.00	-466.90	-26.30	-466.72	9.00	9.00	0.08
Top A Marl									
6,800.00	63.33	359.53	6,585.27	-429.68	-26.61	-429.49	9.00	9.00	0.08
6,850.00	67.83	359.57	6,605.94	-384.16	-26.97	-383.98	9.00	9.00	0.07
6,850.16	67.83	359.57	6,606.00	-384.01	-26.97	-383.83	0.00	0.00	0.00
Top B Chalk									
6,900.00	72.33	359.60	6,622.97	-337.17	-27.31	-336.98	9.03	9.03	0.07
6,950.00	76.83	359.64	6,636.26	-288.98	-27.63	-288.79	9.00	9.00	0.06

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Borys C22-755
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 C22-755	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)
6,962.56	77.96	359.64	6,639.00	-276.72	-27.70	-276.53	9.00	9.00	0.06
Top B Marl									
7,000.00	81.33	359.67	6,645.73	-239.90	-27.92	-239.71	9.00	9.00	0.06
7,050.00	85.83	359.70	6,651.32	-190.23	-28.20	-190.04	9.00	9.00	0.06
7,096.32	90.00	359.73	6,653.00	-143.95	-28.43	-143.76	9.00	9.00	0.06
TPZ/Landing Pt. at 7096.32 MD									
7,100.00	90.00	359.73	6,653.00	-140.27	-28.45	-140.08	0.00	0.00	0.00
7,200.00	90.00	359.73	6,653.00	-40.27	-28.93	-40.08	0.00	0.00	0.00
7,300.00	90.00	359.73	6,653.00	59.73	-29.41	59.92	0.00	0.00	0.00
7,400.00	90.00	359.73	6,653.00	159.73	-29.88	159.92	0.00	0.00	0.00
7,500.00	90.00	359.73	6,653.00	259.73	-30.36	259.92	0.00	0.00	0.00
7,600.00	90.00	359.73	6,653.00	359.73	-30.84	359.92	0.00	0.00	0.00
7,700.00	90.00	359.73	6,653.00	459.73	-31.32	459.92	0.00	0.00	0.00
7,800.00	90.00	359.73	6,653.00	559.72	-31.80	559.92	0.00	0.00	0.00
7,900.00	90.00	359.73	6,653.00	659.72	-32.27	659.92	0.00	0.00	0.00
8,000.00	90.00	359.73	6,653.00	759.72	-32.75	759.92	0.00	0.00	0.00
8,100.00	90.00	359.73	6,653.00	859.72	-33.23	859.92	0.00	0.00	0.00
8,200.00	90.00	359.73	6,653.00	959.72	-33.71	959.92	0.00	0.00	0.00
8,300.00	90.00	359.73	6,653.00	1,059.72	-34.19	1,059.92	0.00	0.00	0.00
8,400.00	90.00	359.73	6,653.00	1,159.72	-34.67	1,159.92	0.00	0.00	0.00
8,500.00	90.00	359.73	6,653.00	1,259.72	-35.14	1,259.92	0.00	0.00	0.00
8,600.00	90.00	359.73	6,653.00	1,359.71	-35.62	1,359.92	0.00	0.00	0.00
8,700.00	90.00	359.73	6,653.00	1,459.71	-36.10	1,459.92	0.00	0.00	0.00
8,800.00	90.00	359.73	6,653.00	1,559.71	-36.58	1,559.92	0.00	0.00	0.00
8,900.00	90.00	359.73	6,653.00	1,659.71	-37.06	1,659.92	0.00	0.00	0.00
9,000.00	90.00	359.73	6,653.00	1,759.71	-37.53	1,759.92	0.00	0.00	0.00
9,100.00	90.00	359.73	6,653.00	1,859.71	-38.01	1,859.92	0.00	0.00	0.00
9,200.00	90.00	359.73	6,653.00	1,959.71	-38.49	1,959.92	0.00	0.00	0.00
9,300.00	90.00	359.73	6,653.00	2,059.71	-38.97	2,059.92	0.00	0.00	0.00
9,400.00	90.00	359.73	6,653.00	2,159.71	-39.45	2,159.92	0.00	0.00	0.00
9,500.00	90.00	359.73	6,653.00	2,259.70	-39.93	2,259.92	0.00	0.00	0.00
9,600.00	90.00	359.73	6,653.00	2,359.70	-40.40	2,359.92	0.00	0.00	0.00
9,700.00	90.00	359.73	6,653.00	2,459.70	-40.88	2,459.92	0.00	0.00	0.00
9,800.00	90.00	359.73	6,653.00	2,559.70	-41.36	2,559.92	0.00	0.00	0.00
9,900.00	90.00	359.73	6,653.00	2,659.70	-41.84	2,659.92	0.00	0.00	0.00
10,000.00	90.00	359.73	6,653.00	2,759.70	-42.32	2,759.92	0.00	0.00	0.00
10,100.00	90.00	359.73	6,653.00	2,859.70	-42.79	2,859.92	0.00	0.00	0.00
10,200.00	90.00	359.73	6,653.00	2,959.70	-43.27	2,959.92	0.00	0.00	0.00
10,300.00	90.00	359.73	6,653.00	3,059.70	-43.75	3,059.92	0.00	0.00	0.00
10,400.00	90.00	359.73	6,653.00	3,159.69	-44.23	3,159.92	0.00	0.00	0.00
10,500.00	90.00	359.73	6,653.00	3,259.69	-44.71	3,259.92	0.00	0.00	0.00
10,600.00	90.00	359.73	6,653.00	3,359.69	-45.19	3,359.92	0.00	0.00	0.00
10,700.00	90.00	359.73	6,653.00	3,459.69	-45.66	3,459.92	0.00	0.00	0.00
10,800.00	90.00	359.73	6,653.00	3,559.69	-46.14	3,559.92	0.00	0.00	0.00
10,900.00	90.00	359.73	6,653.00	3,659.69	-46.62	3,659.92	0.00	0.00	0.00
11,000.00	90.00	359.73	6,653.00	3,759.69	-47.10	3,759.92	0.00	0.00	0.00
11,100.00	90.00	359.73	6,653.00	3,859.69	-47.58	3,859.92	0.00	0.00	0.00
11,200.00	90.00	359.73	6,653.00	3,959.69	-48.05	3,959.92	0.00	0.00	0.00
11,300.00	90.00	359.73	6,653.00	4,059.68	-48.53	4,059.92	0.00	0.00	0.00
11,400.00	90.00	359.73	6,653.00	4,159.68	-49.01	4,159.92	0.00	0.00	0.00
11,500.00	90.00	359.73	6,653.00	4,259.68	-49.49	4,259.92	0.00	0.00	0.00
11,600.00	90.00	359.73	6,653.00	4,359.68	-49.97	4,359.92	0.00	0.00	0.00
11,700.00	90.00	359.73	6,653.00	4,459.68	-50.45	4,459.91	0.00	0.00	0.00
11,800.00	90.00	359.73	6,653.00	4,559.68	-50.92	4,559.91	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Borys C22-755
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 C22-755	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)
11,900.00	90.00	359.73	6,653.00	4,659.68	-51.40	4,659.91	0.00	0.00	0.00
12,000.00	90.00	359.73	6,653.00	4,759.68	-51.88	4,759.91	0.00	0.00	0.00
12,100.00	90.00	359.73	6,653.00	4,859.68	-52.36	4,859.91	0.00	0.00	0.00
12,200.00	90.00	359.73	6,653.00	4,959.67	-52.84	4,959.91	0.00	0.00	0.00
12,300.00	90.00	359.73	6,653.00	5,059.67	-53.32	5,059.91	0.00	0.00	0.00
12,400.00	90.00	359.73	6,653.00	5,159.67	-53.79	5,159.91	0.00	0.00	0.00
12,500.00	90.00	359.73	6,653.00	5,259.67	-54.27	5,259.91	0.00	0.00	0.00
12,600.00	90.00	359.73	6,653.00	5,359.67	-54.75	5,359.91	0.00	0.00	0.00
12,700.00	90.00	359.73	6,653.00	5,459.67	-55.23	5,459.91	0.00	0.00	0.00
12,800.00	90.00	359.73	6,653.00	5,559.67	-55.71	5,559.91	0.00	0.00	0.00
12,900.00	90.00	359.73	6,653.00	5,659.67	-56.18	5,659.91	0.00	0.00	0.00
13,000.00	90.00	359.73	6,653.00	5,759.66	-56.66	5,759.91	0.00	0.00	0.00
13,100.00	90.00	359.73	6,653.00	5,859.66	-57.14	5,859.91	0.00	0.00	0.00
13,200.00	90.00	359.73	6,653.00	5,959.66	-57.62	5,959.91	0.00	0.00	0.00
13,300.00	90.00	359.73	6,653.00	6,059.66	-58.10	6,059.91	0.00	0.00	0.00
13,400.00	90.00	359.73	6,653.00	6,159.66	-58.58	6,159.91	0.00	0.00	0.00
13,500.00	90.00	359.73	6,653.00	6,259.66	-59.05	6,259.91	0.00	0.00	0.00
13,600.00	90.00	359.73	6,653.00	6,359.66	-59.53	6,359.91	0.00	0.00	0.00
13,700.00	90.00	359.73	6,653.00	6,459.66	-60.01	6,459.91	0.00	0.00	0.00
13,800.00	90.00	359.73	6,653.00	6,559.66	-60.49	6,559.91	0.00	0.00	0.00
13,900.00	90.00	359.73	6,653.00	6,659.65	-60.97	6,659.91	0.00	0.00	0.00
14,000.00	90.00	359.73	6,653.00	6,759.65	-61.44	6,759.91	0.00	0.00	0.00
14,100.00	90.00	359.73	6,653.00	6,859.65	-61.92	6,859.91	0.00	0.00	0.00
14,200.00	90.00	359.73	6,653.00	6,959.65	-62.40	6,959.91	0.00	0.00	0.00
14,300.00	90.00	359.73	6,653.00	7,059.65	-62.88	7,059.91	0.00	0.00	0.00
14,400.00	90.00	359.73	6,653.00	7,159.65	-63.36	7,159.91	0.00	0.00	0.00
14,500.00	90.00	359.73	6,653.00	7,259.65	-63.84	7,259.91	0.00	0.00	0.00
14,600.00	90.00	359.73	6,653.00	7,359.65	-64.31	7,359.91	0.00	0.00	0.00
14,700.00	90.00	359.73	6,653.00	7,459.65	-64.79	7,459.91	0.00	0.00	0.00
14,800.00	90.00	359.73	6,653.00	7,559.64	-65.27	7,559.91	0.00	0.00	0.00
14,900.00	90.00	359.73	6,653.00	7,659.64	-65.75	7,659.91	0.00	0.00	0.00
15,000.00	90.00	359.73	6,653.00	7,759.64	-66.23	7,759.91	0.00	0.00	0.00
15,100.00	90.00	359.73	6,653.00	7,859.64	-66.70	7,859.91	0.00	0.00	0.00
15,131.88	90.00	359.73	6,653.00	7,891.52	-66.86	7,891.79	0.00	0.00	0.00
Start DLS 1.00 TFO 90.00									
15,139.70	90.00	359.80	6,653.00	7,899.34	-66.89	7,899.61	1.00	0.00	1.00
Start 4740.47 hold at 15139.70 MD									
15,200.00	90.00	359.80	6,653.00	7,959.64	-67.09	7,959.91	0.00	0.00	0.00
15,300.00	90.00	359.80	6,653.00	8,059.64	-67.44	8,059.91	0.00	0.00	0.00
15,400.00	90.00	359.80	6,653.00	8,159.64	-67.78	8,159.91	0.00	0.00	0.00
15,500.00	90.00	359.80	6,653.00	8,259.64	-68.12	8,259.91	0.00	0.00	0.00
15,600.00	90.00	359.80	6,653.00	8,359.64	-68.46	8,359.91	0.00	0.00	0.00
15,700.00	90.00	359.80	6,653.00	8,459.64	-68.80	8,459.91	0.00	0.00	0.00
15,800.00	90.00	359.80	6,653.00	8,559.64	-69.15	8,559.91	0.00	0.00	0.00
15,900.00	90.00	359.80	6,653.00	8,659.64	-69.49	8,659.91	0.00	0.00	0.00
16,000.00	90.00	359.80	6,653.00	8,759.64	-69.83	8,759.91	0.00	0.00	0.00
16,100.00	90.00	359.80	6,653.00	8,859.63	-70.17	8,859.90	0.00	0.00	0.00
16,200.00	90.00	359.80	6,653.00	8,959.63	-70.51	8,959.90	0.00	0.00	0.00
16,300.00	90.00	359.80	6,653.00	9,059.63	-70.85	9,059.90	0.00	0.00	0.00
16,400.00	90.00	359.80	6,653.00	9,159.63	-71.20	9,159.90	0.00	0.00	0.00
16,500.00	90.00	359.80	6,653.00	9,259.63	-71.54	9,259.90	0.00	0.00	0.00
16,600.00	90.00	359.80	6,653.00	9,359.63	-71.88	9,359.90	0.00	0.00	0.00
16,700.00	90.00	359.80	6,653.00	9,459.63	-72.22	9,459.90	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Borys C22-755
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 C22-755	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	359.80	6,653.00	9,559.63	-72.56	9,559.90	0.00	0.00	0.00
16,900.00	90.00	359.80	6,653.00	9,659.63	-72.90	9,659.90	0.00	0.00	0.00
17,000.00	90.00	359.80	6,653.00	9,759.63	-73.25	9,759.90	0.00	0.00	0.00
17,100.00	90.00	359.80	6,653.00	9,859.63	-73.59	9,859.90	0.00	0.00	0.00
17,200.00	90.00	359.80	6,653.00	9,959.63	-73.93	9,959.90	0.00	0.00	0.00
17,300.00	90.00	359.80	6,653.00	10,059.63	-74.27	10,059.90	0.00	0.00	0.00
17,400.00	90.00	359.80	6,653.00	10,159.63	-74.61	10,159.90	0.00	0.00	0.00
17,500.00	90.00	359.80	6,653.00	10,259.63	-74.95	10,259.90	0.00	0.00	0.00
17,600.00	90.00	359.80	6,653.00	10,359.63	-75.30	10,359.90	0.00	0.00	0.00
17,700.00	90.00	359.80	6,653.00	10,459.63	-75.64	10,459.90	0.00	0.00	0.00
17,800.00	90.00	359.80	6,653.00	10,559.62	-75.98	10,559.90	0.00	0.00	0.00
17,900.00	90.00	359.80	6,653.00	10,659.62	-76.32	10,659.90	0.00	0.00	0.00
18,000.00	90.00	359.80	6,653.00	10,759.62	-76.66	10,759.90	0.00	0.00	0.00
18,100.00	90.00	359.80	6,653.00	10,859.62	-77.00	10,859.89	0.00	0.00	0.00
18,200.00	90.00	359.80	6,653.00	10,959.62	-77.35	10,959.89	0.00	0.00	0.00
18,300.00	90.00	359.80	6,653.00	11,059.62	-77.69	11,059.89	0.00	0.00	0.00
18,400.00	90.00	359.80	6,653.00	11,159.62	-78.03	11,159.89	0.00	0.00	0.00
18,500.00	90.00	359.80	6,653.00	11,259.62	-78.37	11,259.89	0.00	0.00	0.00
18,600.00	90.00	359.80	6,653.00	11,359.62	-78.71	11,359.89	0.00	0.00	0.00
18,700.00	90.00	359.80	6,653.00	11,459.62	-79.06	11,459.89	0.00	0.00	0.00
18,800.00	90.00	359.80	6,653.00	11,559.62	-79.40	11,559.89	0.00	0.00	0.00
18,900.00	90.00	359.80	6,653.00	11,659.62	-79.74	11,659.89	0.00	0.00	0.00
19,000.00	90.00	359.80	6,653.00	11,759.62	-80.08	11,759.89	0.00	0.00	0.00
19,100.00	90.00	359.80	6,653.00	11,859.62	-80.42	11,859.89	0.00	0.00	0.00
19,200.00	90.00	359.80	6,653.00	11,959.62	-80.76	11,959.89	0.00	0.00	0.00
19,300.00	90.00	359.80	6,653.00	12,059.62	-81.11	12,059.89	0.00	0.00	0.00
19,400.00	90.00	359.80	6,653.00	12,159.62	-81.45	12,159.89	0.00	0.00	0.00
19,500.00	90.00	359.80	6,653.00	12,259.62	-81.79	12,259.89	0.00	0.00	0.00
19,600.00	90.00	359.80	6,653.00	12,359.61	-82.13	12,359.89	0.00	0.00	0.00
19,700.00	90.00	359.80	6,653.00	12,459.61	-82.47	12,459.89	0.00	0.00	0.00
19,800.00	90.00	359.80	6,653.00	12,559.61	-82.81	12,559.89	0.00	0.00	0.00
19,880.17	90.00	359.80	6,653.00	12,639.78	-83.09	12,640.05	0.00	0.00	0.00
TD at 19880.17									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
BORYS C22-755-SHL - hit/miss target - Shape	0.00	0.00	0.00	0.00	0.00	1,353,178.76	3,268,340.86	40.2988800	-104.5379300
BORYS C22-755-KOP - plan hits target center - Point	0.00	0.00	5,883.14	-766.43	-20.30	1,352,412.33	3,268,320.56	40.2967768	-104.5380326
BORYS C22-755-TPZ - plan hits target center - Point	0.00	0.00	6,653.00	-143.95	-28.43	1,353,034.82	3,268,312.43	40.2984857	-104.5380375
BORYS C22-755-BHL - plan hits target center - Point	0.00	0.00	6,653.00	12,639.78	-83.09	1,365,818.52	3,268,257.77	40.3335773	-104.5377361

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Borys C22-755
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 C22-755	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	APD-Rev 0		

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				
3,499.32	3,475.00	Parkman				
4,199.85	4,160.00	Sussex				
4,798.12	4,745.00	Shannon				
5,918.98	5,841.00	Teepee Buttes				
6,690.54	6,528.00	Sharon Springs				
6,736.51	6,554.00	Top A Chalk				
6,757.61	6,565.00	Top A Marl				
6,850.16	6,606.00	Top B Chalk				
6,962.56	6,639.00	Top B Marl				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
2,000.00	2,000.00	0.00	0.00	Start Build 2.00	
2,604.43	2,599.96	-63.51	-1.68	Start 3357.64 hold at 2604.43 MD	
5,962.07	5,883.14	-766.43	-20.30	Start DLS 9.00 TFO 178.17	
7,096.32	6,653.00	-143.95	-28.43	TPZ/Landing Pt. at 7096.32 MD	
15,131.88	6,653.00	7,891.52	-66.86	Start DLS 1.00 TFO 90.00	
15,139.70	6,653.00	7,899.34	-66.89	Start 4740.47 hold at 15139.70 MD	
19,880.17	6,653.00	12,639.78	-83.09	TD at 19880.17	

Northern Region - DJ Basin

Mustang

C Section 22

Borys C22-755

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 C22-755
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 C22-755	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	19,880.16	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	15,830.31	6,602.00	1,978.10	1,637.59	5.809	CC, ES
Adler 44-10 (PA) - Wellbore #1 - No Surveys	15,900.00	6,602.00	1,979.33	1,638.32	5.804	SF
Barton C10-24D (PR) - Barton C10-24D OH - As-Drilled	16,143.49	6,746.07	206.59	101.90	1.973	CC, ES, SF
Barton C15-28D (PR) - Barton C15-28D OH - As-Drilled	15,131.88	6,731.76	30.00	-68.09	0.306	Level 1, CC, ES, SF
Barton C15-29 (PR) - Wellbore #1 - No Surveys	15,097.54	6,601.00	1,014.58	679.83	3.031	CC
Barton C15-29 (PR) - Wellbore #1 - No Surveys	15,100.00	6,601.00	1,014.58	679.81	3.031	ES
Barton C15-29 (PR) - Wellbore #1 - No Surveys	15,131.88	6,601.00	1,015.16	680.18	3.030	SF
Embree 01 (PA) - Wellbore #1 - No Surveys	18,100.78	6,620.00	344.73	-14.47	0.960	Level 1, CC, ES, SF
Embree 10-03 (PA) - Wellbore #1 - No Surveys	19,559.46	6,622.00	145.62	-225.33	0.393	Level 1, CC, ES, SF
Embree C10-18 (SI) - Wellbore #1 - No Surveys	18,842.17	6,616.00	199.01	-165.95	0.545	Level 1, CC, ES, SF
Embree C10-20D (SI) - Embree C10-20D OH - As-Drilled	17,573.82	6,736.59	919.19	809.80	8.403	CC, ES
Embree C10-20D (SI) - Embree C10-20D OH - As-Drilled	17,600.00	6,735.52	919.56	810.13	8.403	SF
Embrick C10-19 (SI) - Wellbore #1 - No Surveys	18,692.34	6,631.00	1,140.92	776.56	3.131	CC
Embrick C10-19 (SI) - Wellbore #1 - No Surveys	18,700.00	6,631.00	1,140.95	776.52	3.131	ES, SF
Hoff 31-10 (PA) - Wellbore #1 - No Surveys	19,436.75	6,606.00	986.37	617.04	2.671	CC, ES, SF
Lockman 10-1014 (PR) - Wellbore #1 - No Surveys	16,625.91	6,606.00	1,196.98	850.04	3.450	CC, ES, SF
Lockman 10-1514 (PR) - Wellbore #1 - No Surveys	15,569.26	6,609.00	1,174.22	835.46	3.466	CC, ES
Lockman 10-1514 (PR) - Wellbore #1 - No Surveys	15,600.00	6,609.00	1,174.62	835.65	3.465	SF
Lockman 10-914 (PR) - Wellbore #1 - No Surveys	16,793.16	6,854.00	2,124.22	1,766.04	5.931	CC
Lockman 10-914 (PR) - Wellbore #1 - No Surveys	16,800.00	6,854.00	2,124.23	1,766.00	5.930	ES
Lockman 10-914 (PR) - Wellbore #1 - No Surveys	16,900.00	6,854.00	2,126.91	1,767.99	5.926	SF
Lockman C10-21 (PR) - Wellbore #1 - No Surveys	17,223.74	6,607.00	515.81	164.10	1.467	Level 3, CC, ES, SF
Lockman C11-33 (PR) - Wellbore #1 - No Surveys	16,168.15	6,604.00	2,770.52	2,427.27	8.071	CC
Lockman C11-33 (PR) - Wellbore #1 - No Surveys	16,200.00	6,604.00	2,770.70	2,427.21	8.066	ES
Lockman C11-33 (PR) - Wellbore #1 - No Surveys	16,300.00	6,604.00	2,773.65	2,429.46	8.058	SF
Lockman C14-30 (PR) - Wellbore #1 - No Surveys	15,191.47	6,603.00	2,723.79	2,388.23	8.117	CC
Lockman C14-30 (PR) - Wellbore #1 - No Surveys	15,200.00	6,603.00	2,723.81	2,388.18	8.115	ES
Lockman C14-30 (PR) - Wellbore #1 - No Surveys	15,300.00	6,603.00	2,725.95	2,389.60	8.104	SF
Lockman C15-27 (PR) - Lockman C15-27 OH - As-Drilled	15,032.24	6,662.26	1,887.88	1,787.88	18.878	CC, ES
Lockman C15-27 (PR) - Lockman C15-27 OH - As-Drilled	15,200.00	6,663.08	1,895.24	1,794.17	18.752	SF
Reinick 10-05 (SI) - Wellbore #1 - No Surveys	17,939.33	6,629.00	1,782.76	1,424.49	4.976	CC, ES
Reinick 10-05 (SI) - Wellbore #1 - No Surveys	18,000.00	6,629.00	1,783.80	1,425.08	4.973	SF
Reinick 1-10-4-64 (SI) - Wellbore #1 - No Surveys	19,443.11	6,637.00	1,691.52	1,320.90	4.564	CC, ES
Reinick 1-10-4-64 (SI) - Wellbore #1 - No Surveys	19,500.00	6,637.00	1,692.47	1,321.45	4.562	SF
Richardson 10-11 (PR) - Wellbore #1 - No Surveys	16,646.67	6,610.00	516.57	169.31	1.488	Level 3, CC, ES, SF
Richardson 10-12 (PR) - Wellbore #1 - No Surveys	16,567.95	6,624.00	1,456.76	1,109.56	4.196	CC, ES
Richardson 10-12 (PR) - Wellbore #1 - No Surveys	16,600.00	6,624.00	1,457.11	1,109.67	4.194	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 C22-755
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 C22-755	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 10						
Richardson 10-13 (PR) - Wellbore #1 - No Surveys	15,629.08	6,606.00	1,564.44	1,225.33	4.613	CC, ES
Richardson 10-13 (PR) - Wellbore #1 - No Surveys	15,700.00	6,606.00	1,566.04	1,226.45	4.612	SF
Richardson 24-10 (PR) - Wellbore #1 - No Surveys	15,785.13	6,600.00	659.36	319.28	1.939	CC, ES
Richardson 24-10 (PR) - Wellbore #1 - No Surveys	15,800.00	6,600.00	659.53	319.35	1.939	SF
Roskop 10-01 (SI) - Wellbore #1 - No Surveys	19,453.97	6,588.00	2,310.52	1,941.78	6.266	CC, ES
Roskop 10-01 (SI) - Wellbore #1 - No Surveys	19,500.00	6,588.00	2,310.98	1,941.89	6.261	SF
Roskop 10-07 (SI) - Wellbore #1 - No Surveys	17,938.39	6,603.00	987.81	630.58	2.765	CC, ES, SF
Roskop 10-08 (SI) - Wellbore #1 - No Surveys	18,324.57	6,589.00	2,302.30	1,942.55	6.400	CC, ES
Roskop 10-08 (SI) - Wellbore #1 - No Surveys	18,400.00	6,589.00	2,303.53	1,943.24	6.393	SF
Roskop C10-17 (SI) - Wellbore #1 - No Surveys	18,705.11	6,610.00	1,651.77	1,288.14	4.542	CC, ES, SF
Roskop C11-31D (SI) - Roskop C11-31D OH - As-Drilled	18,833.46	6,755.20	2,899.97	2,772.61	22.769	CC, ES
Roskop C11-31D (SI) - Roskop C11-31D OH - As-Drilled	19,100.00	6,759.99	2,912.19	2,783.46	22.622	SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Borys C22-755
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 C22-755	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 15						
Bockius 15-01 (PR) - Wellbore #1 - No Surveys	14,308.37	6,602.00	2,492.55	2,163.86	7.583	CC, ES
Bockius 15-01 (PR) - Wellbore #1 - No Surveys	14,400.00	6,602.00	2,494.24	2,164.88	7.573	SF
Bockius 15-07 (PR) - Wellbore #1 - No Surveys	12,658.29	6,604.00	802.18	485.88	2.536	CC, ES, SF
Bockius 15-08 (PR) - Wellbore #1 - No Surveys	13,040.14	6,601.00	2,475.84	2,156.81	7.761	CC, ES
Bockius 15-08 (PR) - Wellbore #1 - No Surveys	13,200.00	6,601.00	2,480.99	2,160.87	7.750	SF
Clemons 13-15 (PA) - Wellbore #1 - No Surveys	11,543.24	6,627.00	1,656.34	1,347.19	5.358	CC, ES
Clemons 13-15 (PA) - Wellbore #1 - No Surveys	11,600.00	6,627.00	1,657.31	1,347.78	5.354	SF
Eckas 15-1014 (PR) - Wellbore #1 - No Surveys	11,943.00	6,610.00	594.60	283.27	1.910	CC, ES, SF
Eckas 15-1614 (PR) - Wellbore #1 - No Surveys	9,825.10	6,604.00	2,635.40	2,338.50	8.876	CC, ES
Eckas 15-1614 (PR) - Wellbore #1 - No Surveys	10,000.00	6,604.00	2,641.20	2,343.28	8.866	SF
Eckas 2 - Original Drilling - Original Drilling - As Drilled	11,519.16	6,507.11	2,328.00	2,259.58	34.025	CC, ES
Eckas 2 - Original Drilling - Original Drilling - As Drilled	11,900.00	6,497.71	2,358.92	2,288.28	33.392	SF
Eckas C15-23 (PR) - Wellbore #1 - No Surveys	11,249.79	6,611.00	1,616.75	1,310.29	5.275	CC, ES
Eckas C15-23 (PR) - Wellbore #1 - No Surveys	11,300.00	6,611.00	1,617.53	1,310.74	5.272	SF
Hagen 31-15 (PR) - Wellbore #1 - No Surveys	14,164.31	6,600.00	1,043.96	716.46	3.188	CC, ES
Hagen 31-15 (PR) - Wellbore #1 - No Surveys	14,200.00	6,600.00	1,044.57	716.83	3.187	SF
Lang 1 (PA) - Wellbore #1 - No Surveys	11,514.72	6,611.00	342.63	34.32	1.111	Level 2, CC, ES, SF
Lang 15-14 (SI) - Wellbore #1 - No Surveys	10,231.88	6,615.00	426.90	127.05	1.424	Level 3, CC, ES, SF
Millage C14-33 (PR) - Wellbore #1 - No Surveys	10,885.76	6,608.00	2,783.91	2,480.06	9.162	CC
Millage C14-33 (PR) - Wellbore #1 - No Surveys	10,900.00	6,608.00	2,783.95	2,480.00	9.159	ES
Millage C14-33 (PR) - Wellbore #1 - No Surveys	11,000.00	6,608.00	2,786.26	2,481.65	9.147	SF
Millage C15-24 (SI) - Wellbore #1 - No Surveys	10,864.38	6,613.00	484.87	180.96	1.595	CC, ES, SF
PFann C15-17 (PR) - Wellbore #1 - No Surveys	13,513.42	6,601.00	1,834.33	1,511.74	5.686	CC, ES
PFann C15-17 (PR) - Wellbore #1 - No Surveys	13,600.00	6,601.00	1,836.37	1,513.19	5.682	SF
PFannebecker C14-32D (PR) - PFannebecker C14-32D O	12,309.22	6,647.99	2,873.46	2,796.03	37.108	CC, ES
PFannebecker C14-32D (PR) - PFannebecker C14-32D O	12,700.00	6,644.86	2,899.91	2,820.40	36.469	SF
PFannebecker C15-18 (PR) - Wellbore #1 - No Surveys	13,584.25	6,603.00	490.06	166.86	1.516	CC, ES, SF
PFannebecker C15-23 (PR) - Wellbore #1 - No Surveys	12,431.18	6,616.00	1,789.94	1,474.83	5.680	CC, ES
PFannebecker C15-23 (PR) - Wellbore #1 - No Surveys	12,500.00	6,616.00	1,791.26	1,475.68	5.676	SF
Rohr 1 (SI) - Wellbore #1 - No Surveys	14,134.18	6,602.00	316.66	-10.70	0.967	Level 1, CC, ES, SF
Rohr 15-06 (SI) - Wellbore #1 - No Surveys	12,836.09	6,606.00	512.37	194.67	1.613	CC, ES, SF
Rohr 15-414 (PR) - Wellbore #1 - No Surveys	14,312.18	6,603.00	1,608.82	1,280.06	4.894	CC, ES
Rohr 15-414 (PR) - Wellbore #1 - No Surveys	14,400.00	6,603.00	1,611.22	1,281.86	4.892	SF
Rohr C15-19 (PR) - Wellbore #1 - No Surveys	13,542.09	6,605.00	1,118.98	796.02	3.465	CC, ES, SF
Sater C15-20 (SI) - Wellbore #1 - No Surveys	11,993.43	6,612.00	942.61	630.84	3.023	CC
Sater C15-20 (SI) - Wellbore #1 - No Surveys	12,000.00	6,612.00	942.63	630.82	3.023	ES, SF
Stockley C15-25 (SI) - Wellbore #1 - No Surveys	10,851.47	6,621.00	982.85	678.71	3.232	CC, ES, SF
Stockley C15-79HN (PR) - Original Drilling - Original Drill	10,138.85	6,618.01	2,023.92	1,965.41	34.590	CC
Stockley C15-79HN (PR) - Original Drilling - Original Drill	10,400.00	10,400.00	2,033.55	1,946.99	23.493	ES
Stockley C15-79HN (PR) - Original Drilling - Original Drill	17,400.00	13,772.03	2,244.98	2,023.12	10.119	SF
Stockley C22-79HN (PR) - Wellbore #1 - Original Drilling	6,500.00	9,339.44	2,241.45	2,158.80	27.118	SF
Stockley C22-79HN (PR) - Wellbore #1 - Original Drilling	6,950.00	9,021.39	2,215.04	2,136.25	28.112	ES
Stockley C22-79HN (PR) - Wellbore #1 - Original Drilling	6,981.06	9,004.54	2,214.92	2,136.38	28.200	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 C22-755
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 C22-755	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	7,049.56	6,625.28	819.36	737.66	10.029	CC
BORYS C #22-20(PR) - Wellbore #1 - No Surveys	7,050.00	6,625.32	819.36	737.66	10.029	ES, SF
Borys C22-750 - Wellbore #1 - APD-Rev 0	2,314.24	2,312.95	21.24	5.36	1.338	Level 3, CC
Borys C22-750 - Wellbore #1 - APD-Rev 0	2,400.00	2,397.99	21.56	5.18	1.316	Level 3, ES, SF
Borys C22-765 - Wellbore #1 - APD-Rev 0	2,000.00	2,000.00	21.86	7.98	1.576	CC
Borys C22-765 - Wellbore #1 - APD-Rev 0	2,100.00	2,100.61	22.20	7.64	1.525	ES, SF
Borys C22-775 - Wellbore #1 - APD-Rev 0	2,000.00	2,000.00	43.71	29.84	3.151	CC, ES
Borys C22-775 - Wellbore #1 - APD-Rev 0	2,100.00	2,100.89	44.43	29.87	3.052	SF
Borys C22-783 - Wellbore #1 - APD-Rev 0	2,000.00	2,000.00	69.22	55.34	4.989	CC, ES
Borys C22-783 - Wellbore #1 - APD-Rev 0	2,200.00	2,202.54	72.38	57.16	4.755	SF
CANTRELL #1(PR) - Wellbore #1 - No Surveys	6,101.50	5,992.57	443.57	369.57	5.994	CC, ES
CANTRELL #1(PR) - Wellbore #1 - No Surveys	6,150.00	6,041.01	444.75	370.17	5.964	SF
CANTRELL #22-10(SI) - Wellbore #1 - No Surveys	6,074.18	5,959.26	1,099.33	1,025.55	14.900	CC
CANTRELL #22-10(SI) - Wellbore #1 - No Surveys	6,100.00	5,985.07	1,099.43	1,025.33	14.838	ES
CANTRELL #22-10(SI) - Wellbore #1 - No Surveys	6,450.00	6,317.15	1,123.57	1,045.60	14.411	SF
CANTRELL #22-12(SI) - Wellbore #1 - No Surveys	6,199.52	6,096.14	1,484.18	1,408.80	19.690	CC
CANTRELL #22-12(SI) - Wellbore #1 - No Surveys	6,300.00	6,193.61	1,484.70	1,408.18	19.403	ES
CANTRELL #22-12(SI) - Wellbore #1 - No Surveys	6,650.00	6,479.85	1,506.30	1,426.49	18.873	SF
COLEMAN #22-114(PR) - Wellbore #1 - No Surveys	8,909.04	6,611.00	2,481.79	2,394.41	28.402	CC, ES
COLEMAN #22-114(PR) - Wellbore #1 - No Surveys	9,200.00	6,611.00	2,498.79	2,410.02	28.147	SF
COLEMAN #22-714(PA) - Wellbore #1 - Gyro Surveys	557.00	520.01	1,120.13	1,116.72	328.758	CC
COLEMAN #22-714(PA) - Wellbore #1 - Gyro Surveys	7,592.30	6,607.14	1,139.76	1,092.09	23.909	ES
COLEMAN #22-714(PA) - Wellbore #1 - Gyro Surveys	7,700.00	6,608.12	1,144.84	1,096.91	23.889	SF
COLEMAN #22-814(PR) - Wellbore #1 - No Surveys	7,775.00	6,617.00	2,307.49	2,224.52	27.812	CC, ES
COLEMAN #22-814(PR) - Wellbore #1 - No Surveys	8,000.00	6,617.00	2,318.43	2,234.81	27.726	SF
Coleman #C22-18D(PR) - Wellbore #1 - MWD Surveys	8,120.60	6,769.47	245.03	191.97	4.617	CC, ES, SF
Coleman #C22-27 (PR) - Wellbore #1 - No Surveys	9,364.58	6,613.00	1,681.03	1,591.24	18.722	CC, ES
Coleman #C22-27 (PR) - Wellbore #1 - No Surveys	9,500.00	6,613.00	1,686.48	1,595.99	18.637	SF
Coleman C #22-17(PR) - Wellbore #1 - No Surveys	8,305.09	6,617.00	1,601.90	1,517.15	18.902	CC, ES
Coleman C #22-17(PR) - Wellbore #1 - No Surveys	8,400.00	6,617.00	1,604.71	1,519.60	18.854	SF
COLEMAN C #23-32(PR) - Wellbore #1 - No Surveys	2,582.45	2,543.44	2,740.12	2,709.07	88.252	CC
COLEMAN C #23-32(PR) - Wellbore #1 - No Surveys	7,096.32	6,618.00	2,766.05	2,684.37	33.863	ES
COLEMAN C #23-32(PR) - Wellbore #1 - No Surveys	7,200.00	6,618.00	2,768.03	2,686.23	33.838	SF
Coleman C22-21D(SI) - Wellbore #1 - MWD Surveys	4,374.55	4,501.99	223.12	184.53	5.781	CC, ES
Coleman C22-21D(SI) - Wellbore #1 - MWD Surveys	6,989.46	6,834.84	248.29	193.39	4.522	SF
CONRAD #1(PR) - Wellbore #1 - No Surveys	8,877.34	6,617.00	321.09	233.81	3.679	CC, ES, SF
DARLENE DINNEL #1(PR) - Wellbore #1 - No Surveys	6,097.29	5,990.36	1,596.82	1,523.05	21.646	CC
DARLENE DINNEL #1(PR) - Wellbore #1 - No Surveys	6,100.00	5,993.07	1,596.82	1,523.02	21.637	ES
DARLENE DINNEL #1(PR) - Wellbore #1 - No Surveys	6,250.00	6,141.58	1,614.60	1,539.05	21.372	SF
DINNEL #22-15(SI) - Wellbore #1 - No Surveys	6,093.21	5,986.28	1,661.48	1,587.62	22.494	CC
DINNEL #22-15(SI) - Wellbore #1 - No Surveys	6,100.00	5,993.07	1,661.51	1,587.57	22.470	ES
DINNEL #22-15(SI) - Wellbore #1 - No Surveys	6,300.00	6,189.61	1,688.45	1,612.21	22.147	SF
DINNEL #C27-28D(SI) - Wellbore #1 - MWD Surveys	6,095.94	6,116.36	2,115.09	2,069.93	46.840	CC
DINNEL #C27-28D(SI) - Wellbore #1 - MWD Surveys	6,100.00	6,120.52	2,115.10	2,069.92	46.813	ES
DINNEL #C27-28D(SI) - Wellbore #1 - MWD Surveys	6,250.00	6,269.16	2,133.17	2,087.08	46.284	SF
DINNEL #C27-29D(PA) - Wellbore #1 - Gyro Surveys	6,100.05	6,104.04	2,311.01	2,260.96	46.176	CC, ES
DINNEL #C27-29D(PA) - Wellbore #1 - Gyro Surveys	6,250.00	6,245.14	2,327.26	2,276.40	45.759	SF
HERBST #1(SI) - Wellbore #1 - Gyro Surveys	6,101.04	6,005.60	2,286.05	2,243.58	53.821	CC, ES
HERBST #1(SI) - Wellbore #1 - Gyro Surveys	6,350.00	6,242.89	2,318.92	2,274.90	52.687	SF
HERBST #1-22-4-64(SI) - Wellbore #1 - No Surveys	6,033.72	5,919.90	2,307.94	2,234.64	31.485	CC
HERBST #1-22-4-64(SI) - Wellbore #1 - No Surveys	6,150.00	6,036.01	2,308.66	2,233.96	30.904	ES
HERBST #1-22-4-64(SI) - Wellbore #1 - No Surveys	6,750.00	6,527.10	2,352.19	2,271.78	29.251	SF
HERBST #22-16(PR) - Wellbore #1 - No Surveys	6,089.86	5,982.94	2,763.91	2,689.96	37.374	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 C22-755
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 C22-755	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 Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Separation Factor	Warning
C Section 22						
HERBST #22-16(PR) - Wellbore #1 - No Surveys	6,100.00	5,993.07	2,763.95	2,689.88	37.313	ES
HERBST #22-16(PR) - Wellbore #1 - No Surveys	6,500.00	6,366.55	2,836.04	2,757.66	36.182	SF
HERBST #22-614(PR) - Wellbore #1 - No Surveys	7,895.36	6,621.00	775.65	738.21	20.717	CC, ES
HERBST #22-614(PR) - Wellbore #1 - No Surveys	7,900.00	6,621.00	775.66	738.21	20.710	SF
Herbst #C22-22D(PR) - Wellbore #1 - MWD Surveys	6,997.43	6,722.07	1,713.72	1,664.10	34.538	CC
Herbst #C22-22D(PR) - Wellbore #1 - MWD Surveys	7,000.00	6,722.47	1,713.72	1,664.09	34.531	ES
Herbst #C22-22D(PR) - Wellbore #1 - MWD Surveys	7,200.00	6,730.56	1,725.24	1,674.86	34.245	SF
HERBST C #22-24(SI) - Wellbore #1 - No Surveys	6,095.05	5,991.13	812.65	738.85	11.011	CC
HERBST C #22-24(SI) - Wellbore #1 - No Surveys	6,100.00	5,996.07	812.67	738.81	11.003	ES
HERBST C #22-24(SI) - Wellbore #1 - No Surveys	6,200.00	6,095.61	820.93	745.89	10.940	SF
HERBST C #22-25(SI0 - Wellbore #1 - No Surveys	6,100.47	6,000.54	1,482.58	1,408.56	20.029	CC, ES
HERBST C #22-25(SI0 - Wellbore #1 - No Surveys	6,300.00	6,196.61	1,505.00	1,428.68	19.721	SF
JOHNSTON #22-4(SI) - Wellbore #1 - Gyro Surveys	8,660.09	6,614.04	1,553.78	1,502.36	30.215	CC, ES
JOHNSTON #22-4(SI) - Wellbore #1 - Gyro Surveys	8,800.00	6,612.80	1,560.07	1,508.04	29.986	SF
Lang #C22-28D(PR) - Wellbore #1 - MWD Surveys	9,600.00	6,759.33	225.74	166.20	3.792	ES, SF
Lang #C22-28D(PR) - Wellbore #1 - MWD Surveys	9,606.08	6,759.35	225.65	166.23	3.797	CC
LYMAN #1(SI) - Wellbore #1 - Gyro Surveys	7,515.21	6,598.60	1,687.78	1,640.31	35.559	CC, ES
LYMAN #1(SI) - Wellbore #1 - Gyro Surveys	7,700.00	6,599.89	1,697.86	1,649.98	35.464	SF
VOLKENS #31-22(PR) - Wellbore #1 - No Surveys	8,896.41	6,614.00	1,017.58	930.23	11.650	CC
VOLKENS #31-22(PR) - Wellbore #1 - No Surveys	8,900.00	6,614.00	1,017.58	930.22	11.648	ES, SF
VROOMAN C #22-23(SI) - Wellbore #1 - No Surveys	6,088.38	5,981.45	1,908.73	1,834.77	25.807	CC
VROOMAN C #22-23(SI) - Wellbore #1 - No Surveys	6,100.00	5,993.07	1,908.78	1,834.68	25.758	ES
VROOMAN C #22-23(SI) - Wellbore #1 - No Surveys	6,400.00	6,281.68	1,945.05	1,867.59	25.109	SF
Vrooman C22-715 - Wellbore #1 - APD-Rev 0	2,000.00	2,000.00	1,641.66	1,627.78	118.336	CC
Vrooman C22-715 - Wellbore #1 - APD-Rev 0	2,100.00	2,064.20	1,642.14	1,627.71	113.775	ES
Vrooman C22-715 - Wellbore #1 - APD-Rev 0	19,880.17	19,900.77	2,619.18	2,396.82	11.779	SF
Vrooman C22-725 - Wellbore #1 - APD-Rev 0	3,031.72	2,928.15	1,580.93	1,560.33	76.751	CC, ES
Vrooman C22-725 - Wellbore #1 - APD-Rev 0	19,880.17	19,901.58	1,966.54	1,744.39	8.852	SF
Vrooman C22-735 - Wellbore #1 - APD-Rev 0	7,103.93	7,037.35	1,308.24	1,260.77	27.564	CC
Vrooman C22-735 - Wellbore #1 - APD-Rev 0	19,880.17	19,800.61	1,309.59	1,087.38	5.893	ES, SF
Vrooman C22-745 - Wellbore #1 - APD-Rev 0	7,095.97	7,179.11	660.56	611.95	13.589	CC
Vrooman C22-745 - Wellbore #1 - APD-Rev 0	19,880.17	19,962.98	661.23	438.02	2.962	ES, SF

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Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Borys C22-755
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 C22-755	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 Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Separation Factor	Warning
C Section 23						
BOOTH #23-1214(PR) - Wellbore #1 - No Surveys	4,471.29	4,389.41	3,441.87	3,387.89	63.762	CC
BOOTH #23-1214(PR) - Wellbore #1 - No Surveys	6,650.00	6,466.85	3,454.10	3,374.37	43.322	ES
BOOTH #23-1214(PR) - Wellbore #1 - No Surveys	7,000.00	6,609.73	3,470.03	3,388.53	42.574	SF
BOOTH C #23-20(PR) - Wellbore #1 - No Surveys	3,924.65	3,856.90	4,249.00	4,201.71	89.855	CC
BOOTH C #23-20(PR) - Wellbore #1 - No Surveys	6,750.00	6,527.10	4,264.80	4,184.37	53.021	ES
BOOTH C #23-20(PR) - Wellbore #1 - No Surveys	7,050.00	6,617.32	4,274.75	4,193.12	52.367	SF
COLEMAN #23-614(PR) - Wellbore #1 - No Surveys	2,000.00	1,963.00	4,890.93	4,866.86	203.222	CC
COLEMAN #23-614(PR) - Wellbore #1 - No Surveys	7,667.61	6,616.00	4,901.33	4,818.66	59.283	ES
COLEMAN #23-614(PR) - Wellbore #1 - No Surveys	8,900.00	6,616.00	5,053.89	4,966.88	58.079	SF
COLEMAN #C23-31D(PR) - Wellbore #1 - MWD	8,265.96	6,732.93	3,029.85	2,977.07	57.408	CC, ES
COLEMAN #C23-31D(PR) - Wellbore #1 - MWD	8,700.00	6,732.36	3,060.78	3,006.93	56.836	SF
Coleman C #23-04(PR) - Wellbore #1 - No Surveys	8,916.10	6,613.00	3,622.50	3,535.07	41.432	CC, ES
Coleman C #23-04(PR) - Wellbore #1 - No Surveys	9,600.00	6,613.00	3,686.50	3,595.69	40.595	SF
COLEMAN C #23-19(PR) - Wellbore #1 - No Surveys	8,329.08	6,615.00	4,360.83	4,276.00	51.410	CC, ES
COLEMAN C #23-19(PR) - Wellbore #1 - No Surveys	9,300.00	6,615.00	4,467.61	4,378.52	50.149	SF
COLEMAN C #23-21(PR) - Wellbore #1 - No Surveys	2,000.00	1,965.00	5,399.58	5,375.50	224.194	CC
COLEMAN C #23-21(PR) - Wellbore #1 - No Surveys	7,096.32	6,618.00	5,426.57	5,344.89	66.433	ES
COLEMAN C #23-21(PR) - Wellbore #1 - No Surveys	8,400.00	6,618.00	5,582.83	5,497.92	65.756	SF
Coleman C #23-29D(SI) - Wellbore #1 - MWD Surveys	1,252.28	1,225.32	3,984.15	3,976.60	527.593	CC
Coleman C #23-29D(SI) - Wellbore #1 - MWD Surveys	1,300.00	1,251.30	3,984.28	3,976.46	509.925	ES
Coleman C #23-29D(SI) - Wellbore #1 - MWD Surveys	11,000.00	6,710.72	4,526.25	4,459.79	68.106	SF
KISSLER #1(SI) - Wellbore #1 - Gyro	6,114.86	1,411.24	3,914.05	3,887.43	147.008	CC, ES
KISSLER #1(SI) - Wellbore #1 - Gyro	6,700.00	1,838.14	4,020.91	3,991.38	136.193	SF
KISSLER #2(PR) - Wellbore #1 - No Surveys	5,998.47	5,888.93	4,938.61	4,865.71	67.743	CC
KISSLER #2(PR) - Wellbore #1 - No Surveys	6,150.00	6,040.01	4,939.40	4,864.66	66.088	ES
KISSLER #2(PR) - Wellbore #1 - No Surveys	7,000.00	6,615.73	4,994.95	4,913.40	61.254	SF
KISSLER #3(DA) - Wellbore #1 - No Surveys	6,082.56	5,975.63	5,158.83	5,084.89	69.773	CC
KISSLER #3(DA) - Wellbore #1 - No Surveys	6,100.00	5,993.07	5,158.90	5,084.75	69.575	ES
KISSLER #3(DA) - Wellbore #1 - No Surveys	6,800.00	6,558.27	5,276.86	5,196.17	65.392	SF
KISSLER #3X(SI) - Wellbore #1 - Gyro	6,106.65	6,069.94	5,157.25	5,114.35	120.226	CC, ES
KISSLER #3X(SI) - Wellbore #1 - Gyro	6,800.00	6,578.38	5,280.32	5,234.05	114.131	SF
SATER C #23-15(PA) - Wellbore #1 - Gyro	6,201.29	6,425.31	6,363.52	6,319.02	143.013	CC, ES
SATER C #23-15(PA) - Wellbore #1 - Gyro	6,900.00	6,792.19	6,473.59	6,426.33	136.997	SF
SATER C #23-17(PR) - Wellbore #1 - No Surveys	8,198.97	6,613.00	7,013.62	6,929.32	83.191	CC
SATER C #23-17(PR) - Wellbore #1 - No Surveys	8,200.00	6,613.00	7,013.62	6,929.31	83.188	ES
SATER C #23-17(PR) - Wellbore #1 - No Surveys	11,000.00	6,613.00	7,552.26	7,454.33	77.112	SF
SATER C #23-22(PR) - Wellbore #1 - No Surveys	2,324.71	2,292.02	6,803.49	6,775.49	242.935	CC
SATER C #23-22(PR) - Wellbore #1 - No Surveys	7,001.92	6,614.01	6,828.67	6,747.12	83.736	ES
SATER C #23-22(PR) - Wellbore #1 - No Surveys	9,700.00	6,621.00	7,339.78	7,249.27	81.098	SF
SATER C #23-24(PR) - Wellbore #1 - Gyro	6,107.83	6,058.53	5,814.14	5,771.27	135.610	CC
SATER C #23-24(PR) - Wellbore #1 - Gyro	6,150.00	6,099.91	5,814.40	5,771.24	134.740	ES
SATER C #23-24(PR) - Wellbore #1 - Gyro	7,000.00	6,745.27	5,933.45	5,886.31	125.878	SF
SATER C #23-28D(PR) - Wellbore #1 - MWD Surveys	9,503.32	6,964.90	5,643.04	5,582.73	93.557	CC, ES
SATER C #23-28D(PR) - Wellbore #1 - MWD Surveys	15,400.00	15,400.00	8,161.22	8,053.12	75.498	SF
Sater C24-79HN - Original Drilling - Original Drilling	6,677.55	8,247.19	8,297.06	8,233.93	131.417	CC
Sater C24-79HN - Original Drilling - Original Drilling	9,800.00	11,256.02	8,304.30	8,181.51	67.628	ES
Sater C24-79HN - Original Drilling - Original Drilling	11,900.00	11,256.02	8,587.34	8,453.76	64.288	SF
Sater C25-69HN - Original Drilling - Original Drilling	206.93	1,068.00	8,465.60	8,464.38	6,959.947	CC
Sater C25-69HN - Original Drilling - Original Drilling	300.00	1,129.33	8,465.82	8,464.05	4,779.990	ES
Sater C25-69HN - Original Drilling - Original Drilling	9,500.00	5,981.00	9,957.38	9,908.48	203.621	SF
Sater C25-79HN - Original Drilling - Original Drilling	6,050.83	5,971.57	8,191.48	8,148.75	191.708	CC, ES
Sater C25-79HN - Original Drilling - Original Drilling	10,900.00	6,052.01	9,960.07	9,902.59	173.274	SF
Sater C26-69HN - Original Drilling - Original Drilling	6,244.02	11,535.02	3,596.75	3,491.24	34.089	CC

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Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Borys C22-755
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 C22-755	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 Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Separation Factor	Warning
C Section 23						
Sater C26-69HN - Original Drilling - Original Drilling	6,250.00	11,535.02	3,596.77	3,491.19	34.067	ES
Sater C26-69HN - Original Drilling - Original Drilling	6,800.00	11,535.02	3,770.21	3,656.17	33.061	SF
UPRC #23-214(PR) - Wellbore #1 - No Surveys	8,791.88	6,610.00	6,471.00	6,384.19	74.548	CC
UPRC #23-214(PR) - Wellbore #1 - No Surveys	8,800.00	6,610.00	6,471.00	6,384.16	74.515	ES
UPRC #23-214(PR) - Wellbore #1 - No Surveys	11,200.00	6,610.00	6,904.55	6,805.13	69.447	SF
UPV #23-1014(PR) - Wellbore #1 - No Surveys	5,252.92	5,157.71	6,073.24	6,009.58	95.407	CC
UPV #23-1014(PR) - Wellbore #1 - No Surveys	6,350.00	6,231.41	6,077.95	6,000.96	78.945	ES
UPV #23-1014(PR) - Wellbore #1 - No Surveys	7,050.00	6,619.32	6,111.35	6,029.70	74.855	SF
UPV #23-1514(PA) - Wellbore #1 - Gyro	6,175.64	6,254.02	6,876.11	6,832.36	157.158	CC
UPV #23-1514(PA) - Wellbore #1 - Gyro	6,250.00	6,388.30	6,876.60	6,832.16	154.764	ES
UPV #23-1514(PA) - Wellbore #1 - Gyro	9,600.00	7,055.91	7,981.19	7,926.06	144.765	SF
UPV #23-1614(PR) - Wellbore #1 - Gyro	6,050.00	6,050.00	7,842.61	7,799.93	183.744	ES
UPV #23-1614(PR) - Wellbore #1 - Gyro	6,062.60	5,921.97	7,842.58	7,800.30	185.481	CC
UPV #23-1614(PR) - Wellbore #1 - Gyro	10,900.00	6,400.00	9,786.52	9,728.49	168.645	SF
UPV #23-114(SI) - Wellbore #1 - Gyro Surveys	9,065.83	6,576.46	7,625.36	7,572.08	143.142	CC
UPV #23-114(SI) - Wellbore #1 - Gyro Surveys	9,100.00	6,576.29	7,625.43	7,571.99	142.676	ES
UPV #23-114(SI) - Wellbore #1 - Gyro Surveys	13,300.00	6,559.10	8,722.03	8,646.42	115.364	SF
UPV #23-714(PR) - Wellbore #1 - No Surveys	2,000.00	1,964.00	6,057.45	6,033.37	251.600	CC
UPV #23-714(PR) - Wellbore #1 - No Surveys	7,518.02	6,617.00	6,080.19	5,997.85	73.844	ES
UPV #23-714(PR) - Wellbore #1 - No Surveys	9,600.00	6,617.00	6,426.77	6,336.56	71.240	SF
UPV #23-814(PR) - Wellbore #1 - Gyro Surveys	1,330.84	1,300.92	7,593.18	7,584.26	851.661	CC
UPV #23-814(PR) - Wellbore #1 - Gyro Surveys	7,615.42	6,762.97	7,595.72	7,547.45	157.389	ES
UPV #23-814(PR) - Wellbore #1 - Gyro Surveys	12,300.00	6,773.54	8,924.13	8,855.10	129.278	SF
UPV #23-914(PR) - Wellbore #1 - Gyro Surveys	4,697.69	4,628.27	7,797.81	7,765.29	239.797	CC
UPV #23-914(PR) - Wellbore #1 - Gyro Surveys	4,800.00	4,680.40	7,798.15	7,765.06	235.679	ES
UPV #23-914(PR) - Wellbore #1 - Gyro Surveys	11,900.00	6,853.73	9,540.47	9,474.70	145.062	SF
VOLKENS #1(SI) - Wellbore #1 - No Surveys	2,000.00	1,963.00	3,618.55	3,594.48	150.353	CC
VOLKENS #1(SI) - Wellbore #1 - No Surveys	7,557.34	6,616.00	3,633.74	3,551.32	44.090	ES
VOLKENS #1(SI) - Wellbore #1 - No Surveys	8,100.00	6,616.00	3,674.03	3,590.13	43.786	SF
VOLKENS #2(SI) - Wellbore #1 - No Surveys	2,000.00	1,961.00	5,189.00	5,164.95	215.763	CC
VOLKENS #2(SI) - Wellbore #1 - No Surveys	2,100.00	2,060.98	5,189.61	5,164.35	205.435	ES
VOLKENS #2(SI) - Wellbore #1 - No Surveys	11,100.00	4,650.00	5,756.37	5,677.09	72.608	SF

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