

Project: Mustang
 Site: D Section 02
 Well: Booth D11-775
 Wellbore: Booth D11-775
 Design: Plan #1

Northern Region - DJ Basin

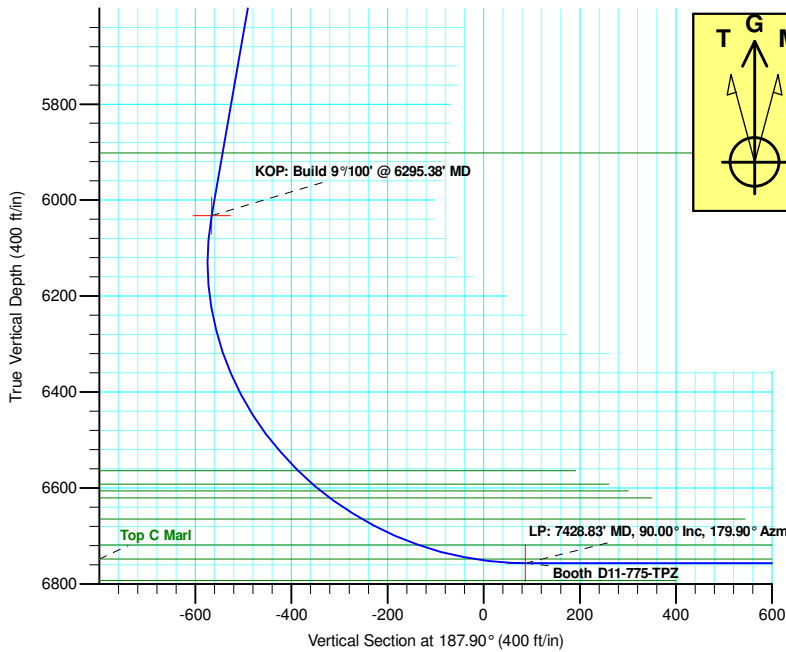
Geodetic System: US State Plane 1983
 Datum: North American Datum 1983
 Ellipsoid: GRS 1980
 Zone: Colorado Northern Zone
 System Datum: Mean Sea Level

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	2200.00	0.00	0.00	2200.00	0.00	0.00	0.00	0.00	0.00	
3	3344.87	22.90	302.23	3314.63	120.40	-190.95	2.00	302.23	-93.00	
4	6295.38	22.90	302.23	6032.66	732.69	-1162.02	0.00	0.00	-565.95	
5	7428.83	90.00	179.90	6757.00	109.56	-1419.46	9.00	-120.24	86.66	Booth D11-775-TPZ
6	17638.00	90.00	179.90	6757.00	-10099.59	-1402.04	0.00	0.00	10196.44	Booth D11-775-BHL

WELL DETAILS: Booth D11-775

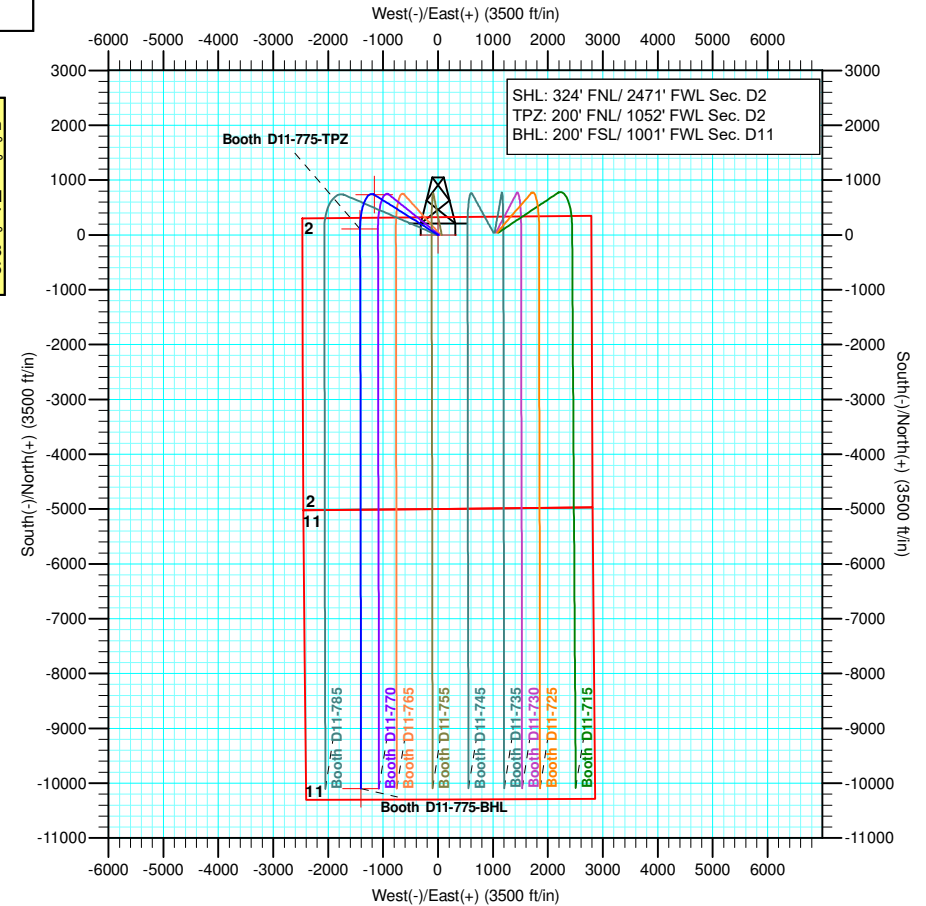
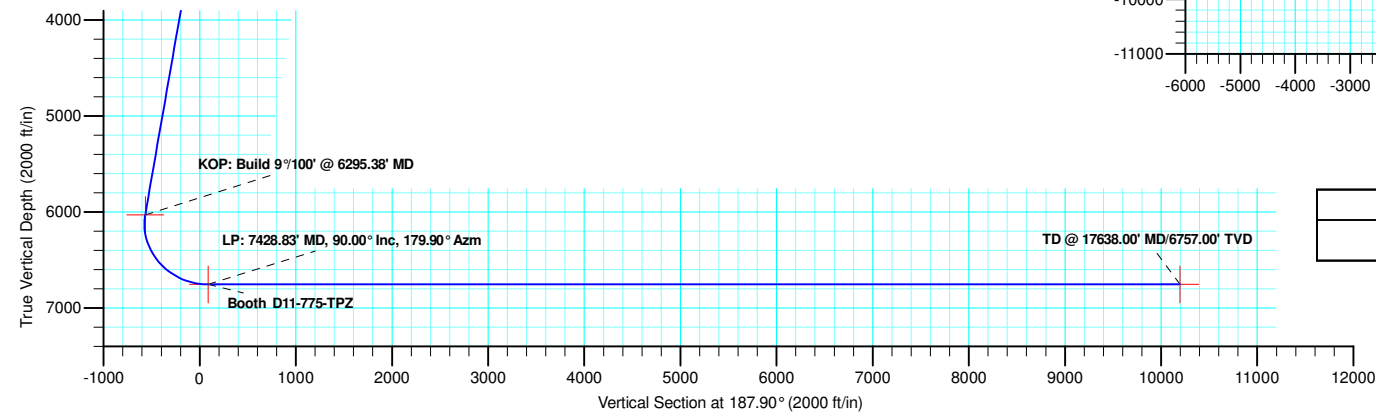
+N/-S	+E/-W	Northing	Ground Level: Easting	4700.00 Latitude	Longitude	Slot
0.00	0.00	1339388.49	3273822.37	40.2608620	-104.5188260	



T G M

Azimuths to Grid North
 True North: -0.63°
 Magnetic North: 7.29°

Magnetic Field
 Strength: 52196.6snT
 Dip Angle: 66.75°
 Date: 10/10/2018
 Model: IGRF2015



Plan: Plan #1 (Booth D11-775/Booth D11-775)
 Created By: Keith Noack Date: 8:20, October 11 2018

Northern Region - DJ Basin

Mustang

D Section 02

Booth D11-775

Booth D11-775

Plan: Plan #1

Standard Planning Report

11 October, 2018

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Booth D11-775
Company:	Northern Region - DJ Basin	TVD Reference:	Well @ 4730.00ft
Project:	Mustang	MD Reference:	Well @ 4730.00ft
Site:	D Section 02	North Reference:	Grid
Well:	Booth D11-775	Survey Calculation Method:	Minimum Curvature
Wellbore:	Booth D11-775		
Design:	Plan #1		

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	D Section 02		
Site Position:		Northing:	1,334,570.88 usft
From:	Map	Easting:	3,274,069.82 usft
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in
		Latitude:	40.2476305
		Longitude:	-104.5181305
		Grid Convergence:	0.63 °

Well	Booth D11-775					
Well Position	+N/-S	4,817.62 ft	Northing:	1,339,388.49 usft	Latitude:	40.2608620
	+E/-W	-247.44 ft	Easting:	3,273,822.38 usft	Longitude:	-104.5188260
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,700.00 ft

Wellbore	Booth D11-775				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	10/10/2018	7.93	66.75	52,196.60664490

Design	Plan #1			
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	187.90

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	
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,344.87	22.90	302.23	3,314.63	120.40	-190.95	2.00	2.00	0.00	302.23	
6,295.38	22.90	302.23	6,032.66	732.69	-1,162.02	0.00	0.00	0.00	0.00	
7,428.83	90.00	179.90	6,757.00	109.56	-1,419.46	9.00	5.92	-10.79	-120.24	Booth D11-775-TP2
17,638.00	90.00	179.90	6,757.00	-10,099.59	-1,402.04	0.00	0.00	0.00	0.00	Booth D11-775-BH1

Noble Energy, Inc.
Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Booth D11-775
Company:	Northern Region - DJ Basin	TVD Reference:	Well @ 4730.00ft
Project:	Mustang	MD Reference:	Well @ 4730.00ft
Site:	D Section 02	North Reference:	Grid
Well:	Booth D11-775	Survey Calculation Method:	Minimum Curvature
Wellbore:	Booth D11-775		
Design:	Plan #1		

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
435.00	0.00	0.00	435.00	0.00	0.00	0.00	0.00	0.00	0.00
Pierre									
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
618.00	0.00	0.00	618.00	0.00	0.00	0.00	0.00	0.00	0.00
Upper Pierre Aquifer Top									
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,522.00	0.00	0.00	1,522.00	0.00	0.00	0.00	0.00	0.00	0.00
Upper Pierre Aquifer Base									
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
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
Build: 2°/100'									
2,300.00	2.00	302.23	2,299.98	0.93	-1.48	-0.72	2.00	2.00	0.00
2,400.00	4.00	302.23	2,399.84	3.72	-5.90	-2.87	2.00	2.00	0.00
2,500.00	6.00	302.23	2,499.45	8.37	-13.28	-6.47	2.00	2.00	0.00
2,600.00	8.00	302.23	2,598.70	14.87	-23.58	-11.49	2.00	2.00	0.00
2,700.00	10.00	302.23	2,697.47	23.21	-36.82	-17.93	2.00	2.00	0.00
2,800.00	12.00	302.23	2,795.62	33.39	-52.95	-25.79	2.00	2.00	0.00
2,900.00	14.00	302.23	2,893.06	45.39	-71.98	-35.06	2.00	2.00	0.00
3,000.00	16.00	302.23	2,989.64	59.19	-93.87	-45.72	2.00	2.00	0.00
3,100.00	18.00	302.23	3,085.27	74.78	-118.60	-57.76	2.00	2.00	0.00
3,200.00	20.00	302.23	3,179.82	92.15	-146.14	-71.18	2.00	2.00	0.00
3,300.00	22.00	302.23	3,273.17	111.26	-176.45	-85.94	2.00	2.00	0.00
3,344.87	22.90	302.23	3,314.63	120.40	-190.95	-93.00	2.00	2.00	0.00
Hold: 22.90° Inc, 302.23° Azm									
3,400.00	22.90	302.23	3,365.42	131.84	-209.09	-101.84	0.00	0.00	0.00
3,500.00	22.90	302.23	3,457.54	152.59	-242.00	-117.87	0.00	0.00	0.00
3,600.00	22.90	302.23	3,549.67	173.34	-274.92	-133.89	0.00	0.00	0.00
3,698.06	22.90	302.23	3,640.00	193.69	-307.19	-149.61	0.00	0.00	0.00
Parkman									
3,700.00	22.90	302.23	3,641.79	194.10	-307.83	-149.92	0.00	0.00	0.00
3,800.00	22.90	302.23	3,733.91	214.85	-340.74	-165.95	0.00	0.00	0.00
3,900.00	22.90	302.23	3,826.03	235.60	-373.65	-181.98	0.00	0.00	0.00
4,000.00	22.90	302.23	3,918.15	256.35	-406.56	-198.01	0.00	0.00	0.00
4,100.00	22.90	302.23	4,010.27	277.10	-439.48	-214.04	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Booth D11-775
Company:	Northern Region - DJ Basin	TVD Reference:	Well @ 4730.00ft
Project:	Mustang	MD Reference:	Well @ 4730.00ft
Site:	D Section 02	North Reference:	Grid
Well:	Booth D11-775	Survey Calculation Method:	Minimum Curvature
Wellbore:	Booth D11-775		
Design:	Plan #1		

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	22.90	302.23	4,102.39	297.86	-472.39	-230.07	0.00	0.00	0.00	
4,300.00	22.90	302.23	4,194.51	318.61	-505.30	-246.10	0.00	0.00	0.00	
4,400.00	22.90	302.23	4,286.63	339.36	-538.21	-262.13	0.00	0.00	0.00	
4,429.71	22.90	302.23	4,314.00	345.53	-547.99	-266.89	0.00	0.00	0.00	
Sussex										
4,500.00	22.90	302.23	4,378.75	360.11	-571.12	-278.16	0.00	0.00	0.00	
4,600.00	22.90	302.23	4,470.87	380.86	-604.04	-294.19	0.00	0.00	0.00	
4,700.00	22.90	302.23	4,562.99	401.62	-636.95	-310.22	0.00	0.00	0.00	
4,800.00	22.90	302.23	4,655.11	422.37	-669.86	-326.25	0.00	0.00	0.00	
4,900.00	22.90	302.23	4,747.23	443.12	-702.77	-342.28	0.00	0.00	0.00	
5,000.00	22.90	302.23	4,839.35	463.87	-735.68	-358.31	0.00	0.00	0.00	
5,005.05	22.90	302.23	4,844.00	464.92	-737.34	-359.12	0.00	0.00	0.00	
Shannon										
5,100.00	22.90	302.23	4,931.47	484.62	-768.59	-374.34	0.00	0.00	0.00	
5,200.00	22.90	302.23	5,023.59	505.37	-801.51	-390.36	0.00	0.00	0.00	
5,300.00	22.90	302.23	5,115.71	526.13	-834.42	-406.39	0.00	0.00	0.00	
5,400.00	22.90	302.23	5,207.83	546.88	-867.33	-422.42	0.00	0.00	0.00	
5,500.00	22.90	302.23	5,299.95	567.63	-900.24	-438.45	0.00	0.00	0.00	
5,600.00	22.90	302.23	5,392.07	588.38	-933.15	-454.48	0.00	0.00	0.00	
5,700.00	22.90	302.23	5,484.19	609.13	-966.07	-470.51	0.00	0.00	0.00	
5,800.00	22.90	302.23	5,576.31	629.89	-998.98	-486.54	0.00	0.00	0.00	
5,900.00	22.90	302.23	5,668.43	650.64	-1,031.89	-502.57	0.00	0.00	0.00	
6,000.00	22.90	302.23	5,760.55	671.39	-1,064.80	-518.60	0.00	0.00	0.00	
6,100.00	22.90	302.23	5,852.67	692.14	-1,097.71	-534.63	0.00	0.00	0.00	
6,153.55	22.90	302.23	5,902.00	703.25	-1,115.34	-543.21	0.00	0.00	0.00	
Teepee Buttes										
6,200.00	22.90	302.23	5,944.79	712.89	-1,130.63	-550.66	0.00	0.00	0.00	
6,295.38	22.90	302.23	6,032.66	732.69	-1,162.02	-565.95	0.00	0.00	0.00	
KOP: Build 9°/100' @ 6295.38' MD										
6,300.00	22.69	301.30	6,036.92	733.63	-1,163.54	-566.67	9.00	-4.47	-20.16	
6,350.00	20.84	290.22	6,083.37	741.72	-1,180.13	-572.40	9.00	-3.71	-22.16	
6,400.00	19.80	277.58	6,130.28	745.91	-1,196.88	-574.25	9.00	-2.06	-25.28	
6,450.00	19.73	264.25	6,177.36	746.18	-1,213.68	-572.21	9.00	-0.15	-26.66	
6,500.00	20.62	251.43	6,224.32	742.53	-1,230.43	-566.29	9.00	1.78	-25.63	
6,550.00	22.36	240.08	6,270.86	734.98	-1,247.03	-556.53	9.00	3.48	-22.70	
6,600.00	24.77	230.56	6,316.70	723.58	-1,263.37	-542.99	9.00	4.82	-19.05	
6,650.00	27.68	222.77	6,361.56	708.39	-1,279.36	-525.74	9.00	5.82	-15.57	
6,700.00	30.95	216.43	6,405.17	689.51	-1,294.89	-504.91	9.00	6.53	-12.68	
6,750.00	34.46	211.23	6,447.24	667.06	-1,309.86	-480.61	9.00	7.04	-10.40	
6,800.00	38.17	206.91	6,487.53	641.17	-1,324.20	-453.00	9.00	7.40	-8.65	
6,850.00	42.00	203.25	6,525.78	612.01	-1,337.80	-422.25	9.00	7.67	-7.31	
6,900.00	45.94	200.11	6,561.76	579.76	-1,350.59	-388.54	9.00	7.87	-6.29	
6,903.22	46.19	199.92	6,564.00	577.58	-1,351.38	-386.27	9.00	7.96	-5.83	
Sharon Springs										
6,944.96	49.54	197.62	6,592.00	548.27	-1,361.32	-355.87	9.00	8.02	-5.51	
Top A Chalk										
6,950.00	49.95	197.36	6,595.25	544.60	-1,362.48	-352.08	9.00	8.08	-5.19	
6,966.94	51.32	196.50	6,606.00	532.07	-1,366.29	-339.15	9.00	8.10	-5.06	
Top A Marl										
6,991.49	53.32	195.32	6,621.00	513.39	-1,371.61	-319.91	9.00	8.15	-4.83	
Top B Chalk										
7,000.00	54.02	194.92	6,626.04	506.77	-1,373.40	-313.11	9.00	8.18	-4.66	
7,050.00	58.13	192.72	6,653.94	466.49	-1,383.29	-271.85	9.00	8.23	-4.40	

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Booth D11-775
Company:	Northern Region - DJ Basin	TVD Reference:	Well @ 4730.00ft
Project:	Mustang	MD Reference:	Well @ 4730.00ft
Site:	D Section 02	North Reference:	Grid
Well:	Booth D11-775	Survey Calculation Method:	Minimum Curvature
Wellbore:	Booth D11-775		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
7,071.48	59.91	191.84	6,665.00	448.49	-1,387.21	-253.49	9.00	8.28	-4.12
Top B Marl									
7,100.00	62.28	190.71	6,678.78	424.01	-1,392.08	-228.57	9.00	8.31	-3.95
7,150.00	66.46	188.85	6,700.41	379.60	-1,399.73	-183.52	9.00	8.35	-3.72
7,200.00	70.65	187.10	6,718.69	333.52	-1,406.17	-137.00	9.00	8.39	-3.49
7,200.95	70.73	187.07	6,719.00	332.63	-1,406.28	-136.10	9.00	8.41	-3.40
Top C Chalk									
7,250.00	74.87	185.44	6,733.50	286.06	-1,411.38	-89.28	9.00	8.42	-3.32
7,300.00	79.09	183.85	6,744.77	237.52	-1,415.31	-40.65	9.00	8.45	-3.19
7,318.36	80.64	183.27	6,748.00	219.48	-1,416.44	-22.63	9.00	8.46	-3.12
Top C Marl									
7,350.00	83.32	182.30	6,752.41	188.19	-1,417.96	8.57	9.00	8.47	-3.09
7,400.00	87.56	180.77	6,756.39	138.38	-1,419.29	58.09	9.00	8.47	-3.05
7,428.83	90.00	179.90	6,757.00	109.56	-1,419.46	86.66	9.00	8.48	-3.03
LP: 7428.83' MD, 90.00° Inc, 179.90° Azm									
7,500.00	90.00	179.90	6,757.00	38.39	-1,419.34	157.14	0.00	0.00	0.00
7,600.00	90.00	179.90	6,757.00	-61.61	-1,419.17	256.16	0.00	0.00	0.00
7,700.00	90.00	179.90	6,757.00	-161.61	-1,419.00	355.19	0.00	0.00	0.00
7,800.00	90.00	179.90	6,757.00	-261.61	-1,418.83	454.22	0.00	0.00	0.00
7,900.00	90.00	179.90	6,757.00	-361.61	-1,418.66	553.24	0.00	0.00	0.00
8,000.00	90.00	179.90	6,757.00	-461.61	-1,418.49	652.27	0.00	0.00	0.00
8,100.00	90.00	179.90	6,757.00	-561.61	-1,418.32	751.30	0.00	0.00	0.00
8,200.00	90.00	179.90	6,757.00	-661.61	-1,418.15	850.32	0.00	0.00	0.00
8,300.00	90.00	179.90	6,757.00	-761.61	-1,417.98	949.35	0.00	0.00	0.00
8,400.00	90.00	179.90	6,757.00	-861.61	-1,417.81	1,048.38	0.00	0.00	0.00
8,500.00	90.00	179.90	6,757.00	-961.61	-1,417.64	1,147.40	0.00	0.00	0.00
8,600.00	90.00	179.90	6,757.00	-1,061.61	-1,417.46	1,246.43	0.00	0.00	0.00
8,700.00	90.00	179.90	6,757.00	-1,161.61	-1,417.29	1,345.46	0.00	0.00	0.00
8,800.00	90.00	179.90	6,757.00	-1,261.61	-1,417.12	1,444.48	0.00	0.00	0.00
8,900.00	90.00	179.90	6,757.00	-1,361.61	-1,416.95	1,543.51	0.00	0.00	0.00
9,000.00	90.00	179.90	6,757.00	-1,461.61	-1,416.78	1,642.54	0.00	0.00	0.00
9,100.00	90.00	179.90	6,757.00	-1,561.61	-1,416.61	1,741.56	0.00	0.00	0.00
9,200.00	90.00	179.90	6,757.00	-1,661.61	-1,416.44	1,840.59	0.00	0.00	0.00
9,300.00	90.00	179.90	6,757.00	-1,761.61	-1,416.27	1,939.61	0.00	0.00	0.00
9,400.00	90.00	179.90	6,757.00	-1,861.61	-1,416.10	2,038.64	0.00	0.00	0.00
9,500.00	90.00	179.90	6,757.00	-1,961.61	-1,415.93	2,137.67	0.00	0.00	0.00
9,600.00	90.00	179.90	6,757.00	-2,061.61	-1,415.76	2,236.69	0.00	0.00	0.00
9,700.00	90.00	179.90	6,757.00	-2,161.61	-1,415.59	2,335.72	0.00	0.00	0.00
9,800.00	90.00	179.90	6,757.00	-2,261.61	-1,415.42	2,434.75	0.00	0.00	0.00
9,900.00	90.00	179.90	6,757.00	-2,361.61	-1,415.25	2,533.77	0.00	0.00	0.00
10,000.00	90.00	179.90	6,757.00	-2,461.61	-1,415.08	2,632.80	0.00	0.00	0.00
10,100.00	90.00	179.90	6,757.00	-2,561.61	-1,414.91	2,731.83	0.00	0.00	0.00
10,200.00	90.00	179.90	6,757.00	-2,661.61	-1,414.73	2,830.85	0.00	0.00	0.00
10,300.00	90.00	179.90	6,757.00	-2,761.60	-1,414.56	2,929.88	0.00	0.00	0.00
10,400.00	90.00	179.90	6,757.00	-2,861.60	-1,414.39	3,028.91	0.00	0.00	0.00
10,500.00	90.00	179.90	6,757.00	-2,961.60	-1,414.22	3,127.93	0.00	0.00	0.00
10,600.00	90.00	179.90	6,757.00	-3,061.60	-1,414.05	3,226.96	0.00	0.00	0.00
10,700.00	90.00	179.90	6,757.00	-3,161.60	-1,413.88	3,325.99	0.00	0.00	0.00
10,800.00	90.00	179.90	6,757.00	-3,261.60	-1,413.71	3,425.01	0.00	0.00	0.00
10,900.00	90.00	179.90	6,757.00	-3,361.60	-1,413.54	3,524.04	0.00	0.00	0.00
11,000.00	90.00	179.90	6,757.00	-3,461.60	-1,413.37	3,623.07	0.00	0.00	0.00
11,100.00	90.00	179.90	6,757.00	-3,561.60	-1,413.20	3,722.09	0.00	0.00	0.00
11,200.00	90.00	179.90	6,757.00	-3,661.60	-1,413.03	3,821.12	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Booth D11-775
Company:	Northern Region - DJ Basin	TVD Reference:	Well @ 4730.00ft
Project:	Mustang	MD Reference:	Well @ 4730.00ft
Site:	D Section 02	North Reference:	Grid
Well:	Booth D11-775	Survey Calculation Method:	Minimum Curvature
Wellbore:	Booth D11-775		
Design:	Plan #1		

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)	
11,300.00	90.00	179.90	6,757.00	-3,761.60	-1,412.86	3,920.15	0.00	0.00	0.00	
11,400.00	90.00	179.90	6,757.00	-3,861.60	-1,412.69	4,019.17	0.00	0.00	0.00	
11,500.00	90.00	179.90	6,757.00	-3,961.60	-1,412.52	4,118.20	0.00	0.00	0.00	
11,600.00	90.00	179.90	6,757.00	-4,061.60	-1,412.35	4,217.23	0.00	0.00	0.00	
11,700.00	90.00	179.90	6,757.00	-4,161.60	-1,412.17	4,316.25	0.00	0.00	0.00	
11,800.00	90.00	179.90	6,757.00	-4,261.60	-1,412.00	4,415.28	0.00	0.00	0.00	
11,900.00	90.00	179.90	6,757.00	-4,361.60	-1,411.83	4,514.30	0.00	0.00	0.00	
12,000.00	90.00	179.90	6,757.00	-4,461.60	-1,411.66	4,613.33	0.00	0.00	0.00	
12,100.00	90.00	179.90	6,757.00	-4,561.60	-1,411.49	4,712.36	0.00	0.00	0.00	
12,200.00	90.00	179.90	6,757.00	-4,661.60	-1,411.32	4,811.38	0.00	0.00	0.00	
12,300.00	90.00	179.90	6,757.00	-4,761.60	-1,411.15	4,910.41	0.00	0.00	0.00	
12,400.00	90.00	179.90	6,757.00	-4,861.60	-1,410.98	5,009.44	0.00	0.00	0.00	
12,500.00	90.00	179.90	6,757.00	-4,961.60	-1,410.81	5,108.46	0.00	0.00	0.00	
12,600.00	90.00	179.90	6,757.00	-5,061.60	-1,410.64	5,207.49	0.00	0.00	0.00	
12,700.00	90.00	179.90	6,757.00	-5,161.60	-1,410.47	5,306.52	0.00	0.00	0.00	
12,800.00	90.00	179.90	6,757.00	-5,261.60	-1,410.30	5,405.54	0.00	0.00	0.00	
12,900.00	90.00	179.90	6,757.00	-5,361.60	-1,410.13	5,504.57	0.00	0.00	0.00	
13,000.00	90.00	179.90	6,757.00	-5,461.60	-1,409.96	5,603.60	0.00	0.00	0.00	
13,100.00	90.00	179.90	6,757.00	-5,561.60	-1,409.79	5,702.62	0.00	0.00	0.00	
13,200.00	90.00	179.90	6,757.00	-5,661.60	-1,409.62	5,801.65	0.00	0.00	0.00	
13,300.00	90.00	179.90	6,757.00	-5,761.60	-1,409.44	5,900.68	0.00	0.00	0.00	
13,400.00	90.00	179.90	6,757.00	-5,861.60	-1,409.27	5,999.70	0.00	0.00	0.00	
13,500.00	90.00	179.90	6,757.00	-5,961.60	-1,409.10	6,098.73	0.00	0.00	0.00	
13,600.00	90.00	179.90	6,757.00	-6,061.60	-1,408.93	6,197.76	0.00	0.00	0.00	
13,700.00	90.00	179.90	6,757.00	-6,161.60	-1,408.76	6,296.78	0.00	0.00	0.00	
13,800.00	90.00	179.90	6,757.00	-6,261.60	-1,408.59	6,395.81	0.00	0.00	0.00	
13,900.00	90.00	179.90	6,757.00	-6,361.60	-1,408.42	6,494.84	0.00	0.00	0.00	
14,000.00	90.00	179.90	6,757.00	-6,461.60	-1,408.25	6,593.86	0.00	0.00	0.00	
14,100.00	90.00	179.90	6,757.00	-6,561.60	-1,408.08	6,692.89	0.00	0.00	0.00	
14,200.00	90.00	179.90	6,757.00	-6,661.60	-1,407.91	6,791.91	0.00	0.00	0.00	
14,300.00	90.00	179.90	6,757.00	-6,761.60	-1,407.74	6,890.94	0.00	0.00	0.00	
14,400.00	90.00	179.90	6,757.00	-6,861.60	-1,407.57	6,989.97	0.00	0.00	0.00	
14,500.00	90.00	179.90	6,757.00	-6,961.60	-1,407.40	7,088.99	0.00	0.00	0.00	
14,600.00	90.00	179.90	6,757.00	-7,061.60	-1,407.23	7,188.02	0.00	0.00	0.00	
14,700.00	90.00	179.90	6,757.00	-7,161.60	-1,407.06	7,287.05	0.00	0.00	0.00	
14,800.00	90.00	179.90	6,757.00	-7,261.60	-1,406.89	7,386.07	0.00	0.00	0.00	
14,900.00	90.00	179.90	6,757.00	-7,361.60	-1,406.71	7,485.10	0.00	0.00	0.00	
15,000.00	90.00	179.90	6,757.00	-7,461.60	-1,406.54	7,584.13	0.00	0.00	0.00	
15,100.00	90.00	179.90	6,757.00	-7,561.60	-1,406.37	7,683.15	0.00	0.00	0.00	
15,200.00	90.00	179.90	6,757.00	-7,661.60	-1,406.20	7,782.18	0.00	0.00	0.00	
15,300.00	90.00	179.90	6,757.00	-7,761.60	-1,406.03	7,881.21	0.00	0.00	0.00	
15,400.00	90.00	179.90	6,757.00	-7,861.60	-1,405.86	7,980.23	0.00	0.00	0.00	
15,500.00	90.00	179.90	6,757.00	-7,961.60	-1,405.69	8,079.26	0.00	0.00	0.00	
15,600.00	90.00	179.90	6,757.00	-8,061.60	-1,405.52	8,178.29	0.00	0.00	0.00	
15,700.00	90.00	179.90	6,757.00	-8,161.60	-1,405.35	8,277.31	0.00	0.00	0.00	
15,800.00	90.00	179.90	6,757.00	-8,261.60	-1,405.18	8,376.34	0.00	0.00	0.00	
15,900.00	90.00	179.90	6,757.00	-8,361.60	-1,405.01	8,475.37	0.00	0.00	0.00	
16,000.00	90.00	179.90	6,757.00	-8,461.60	-1,404.84	8,574.39	0.00	0.00	0.00	
16,100.00	90.00	179.90	6,757.00	-8,561.60	-1,404.67	8,673.42	0.00	0.00	0.00	
16,200.00	90.00	179.90	6,757.00	-8,661.60	-1,404.50	8,772.45	0.00	0.00	0.00	
16,300.00	90.00	179.90	6,757.00	-8,761.60	-1,404.33	8,871.47	0.00	0.00	0.00	
16,400.00	90.00	179.90	6,757.00	-8,861.60	-1,404.15	8,970.50	0.00	0.00	0.00	
16,500.00	90.00	179.90	6,757.00	-8,961.60	-1,403.98	9,069.53	0.00	0.00	0.00	
16,600.00	90.00	179.90	6,757.00	-9,061.60	-1,403.81	9,168.55	0.00	0.00	0.00	

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Booth D11-775
Company:	Northern Region - DJ Basin	TVD Reference:	Well @ 4730.00ft
Project:	Mustang	MD Reference:	Well @ 4730.00ft
Site:	D Section 02	North Reference:	Grid
Well:	Booth D11-775	Survey Calculation Method:	Minimum Curvature
Wellbore:	Booth D11-775		
Design:	Plan #1		

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)
16,700.00	90.00	179.90	6,757.00	-9,161.60	-1,403.64	9,267.58	0.00	0.00	0.00
16,800.00	90.00	179.90	6,757.00	-9,261.60	-1,403.47	9,366.60	0.00	0.00	0.00
16,900.00	90.00	179.90	6,757.00	-9,361.60	-1,403.30	9,465.63	0.00	0.00	0.00
17,000.00	90.00	179.90	6,757.00	-9,461.60	-1,403.13	9,564.66	0.00	0.00	0.00
17,100.00	90.00	179.90	6,757.00	-9,561.60	-1,402.96	9,663.68	0.00	0.00	0.00
17,200.00	90.00	179.90	6,757.00	-9,661.59	-1,402.79	9,762.71	0.00	0.00	0.00
17,300.00	90.00	179.90	6,757.00	-9,761.59	-1,402.62	9,861.74	0.00	0.00	0.00
17,400.00	90.00	179.90	6,757.00	-9,861.59	-1,402.45	9,960.76	0.00	0.00	0.00
17,500.00	90.00	179.90	6,757.00	-9,961.59	-1,402.28	10,059.79	0.00	0.00	0.00
17,600.00	90.00	179.90	6,757.00	-10,061.59	-1,402.11	10,158.82	0.00	0.00	0.00
17,638.00	90.00	179.90	6,757.00	-10,099.59	-1,402.04	10,196.44	0.00	0.00	0.00
TD @ 17638.00' MD/6757.00' TVD									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Booth D11-775-SHL - hit/miss target - Shape - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	1,339,388.49	3,273,822.38	40.2608620	-104.5188260
Booth D11-775-KOP - plan hits target center - Point	0.00	0.00	6,032.66	732.69	-1,162.02	1,340,121.18	3,272,660.36	40.2629084	-104.5229605
Booth D11-775-BHL - plan hits target center - Point	0.00	0.00	6,757.00	-10,099.59	-1,402.04	1,329,288.92	3,272,420.34	40.2331819	-104.5242476
Booth D11-775-TPZ - plan hits target center - Point	0.00	0.00	6,757.00	109.56	-1,419.46	1,339,498.05	3,272,402.92	40.2612058	-104.5239075

Noble Energy, Inc.
Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Booth D11-775
Company:	Northern Region - DJ Basin	TVD Reference:	Well @ 4730.00ft
Project:	Mustang	MD Reference:	Well @ 4730.00ft
Site:	D Section 02	North Reference:	Grid
Well:	Booth D11-775	Survey Calculation Method:	Minimum Curvature
Wellbore:	Booth D11-775		
Design:	Plan #1		

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
435.00	435.00	Pierre			
618.00	618.00	Upper Pierre Aquifer Top			
1,522.00	1,522.00	Upper Pierre Aquifer Base			
3,698.06	3,640.00	Parkman			
4,429.71	4,314.00	Sussex			
5,005.05	4,844.00	Shannon			
6,153.55	5,902.00	Teepee Buttes			
6,903.22	6,564.00	Sharon Springs			
6,944.96	6,592.00	Top A Chalk			
6,966.94	6,606.00	Top A Marl			
6,991.49	6,621.00	Top B Chalk			
7,071.48	6,665.00	Top B Marl			
7,200.95	6,719.00	Top C Chalk			
7,318.36	6,748.00	Top C Marl			

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
2,200.00	2,200.00	0.00	0.00	Build: 2°/100'
3,344.87	3,314.63	120.40	-190.95	Hold: 22.90° Inc, 302.23° Azm
6,295.38	6,032.66	732.69	-1,162.02	KOP: Build 9°/100' @ 6295.38' MD
7,428.83	6,757.00	109.56	-1,419.46	LP: 7428.83' MD, 90.00° Inc, 179.90° Azm
17,638.00	6,757.00	-10,099.59	-1,402.04	TD @ 17638.00' MD/6757.00' TVD

Northern Region - DJ Basin

**Mustang
D Section 02
Booth D11-775**

**Booth D11-775
Plan #1**

Anticollision Summary Report

10 October, 2018

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Booth D11-775
Project:	Mustang	TVD Reference:	Well @ 4730.00ft
Reference Site:	D Section 02	MD Reference:	Well @ 4730.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Booth D11-775	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Booth D11-775	Database:	EDMP
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference	Plan #1		
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	10/10/2018		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	17,638.00	Plan #1 (Booth D11-775)	2_MWD+IFR1+MS	A008Mb: IFR dec & multi-station analysis

Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 01						
Abbey D 1-3 (PR) - Wellbore #1 - No Surveys	2,200.00	2,215.00	4,765.13	4,670.88	50.557	CC
Abbey D 1-3 (PR) - Wellbore #1 - No Surveys	2,300.00	2,314.98	4,766.66	4,668.05	48.340	ES
Abbey D 1-3 (PR) - Wellbore #1 - No Surveys	8,100.00	6,772.00	6,180.65	5,885.48	20.940	SF
Abbey D 1-4 (PR) - Wellbore #1 - No Surveys	2,200.00	2,203.00	3,440.92	3,347.14	36.694	CC
Abbey D 1-4 (PR) - Wellbore #1 - No Surveys	2,300.00	2,302.98	3,442.47	3,344.34	35.082	ES
Abbey D 1-4 (PR) - Wellbore #1 - No Surveys	8,000.00	6,760.00	4,848.78	4,554.28	16.464	SF
Abbey D 1-5 (PR) - Wellbore #1 - No Surveys	2,200.00	2,201.00	3,769.99	3,676.30	40.238	CC
Abbey D 1-5 (PR) - Wellbore #1 - No Surveys	2,300.00	2,300.98	3,771.73	3,673.68	38.469	ES
Abbey D 1-5 (PR) - Wellbore #1 - No Surveys	9,500.00	6,758.00	4,817.91	4,518.47	16.090	SF
Abbey D 1-6 (PR) - Wellbore #1 - No Surveys	2,200.00	2,231.00	5,118.29	5,023.40	53.937	CC
Abbey D 1-6 (PR) - Wellbore #1 - No Surveys	2,300.00	2,330.98	5,120.00	5,020.75	51.589	ES
Abbey D 1-6 (PR) - Wellbore #1 - No Surveys	9,800.00	6,788.00	6,260.64	5,958.63	20.729	SF
Abbey D 1-7JI (SI) - Wellbore #1 - No Surveys	2,200.00	2,227.00	6,279.31	6,184.58	66.284	CC
Abbey D 1-7JI (SI) - Wellbore #1 - No Surveys	2,300.00	2,326.98	6,280.97	6,181.89	63.389	ES
Abbey D 1-7JI (SI) - Wellbore #1 - No Surveys	10,000.00	6,784.00	7,534.65	7,231.90	24.887	SF
Abbey D01-08J1 - Abbey D01-08J1 OH - As-Drilled	2,233.67	2,355.24	7,518.65	7,502.81	474.828	CC, ES
Abbey D01-08J1 - Abbey D01-08J1 OH - As-Drilled	13,500.00	6,649.40	9,958.55	9,886.02	137.302	SF
Abbey D01-08J1 (PR) - Wellbore #1 - No Surveys	2,200.00	2,237.00	7,524.97	7,429.84	79.099	CC
Abbey D01-08J1 (PR) - Wellbore #1 - No Surveys	2,300.00	2,336.98	7,526.60	7,427.11	75.654	ES
Abbey D01-08J1 (PR) - Wellbore #1 - No Surveys	10,200.00	6,806.00	8,899.23	8,594.70	29.222	SF
Abbey D01-18 (SI) - Wellbore #1 - No Surveys	2,200.00	2,220.00	5,406.13	5,311.68	57.236	CC
Abbey D01-18 (SI) - Wellbore #1 - No Surveys	2,300.00	2,319.98	5,407.75	5,308.94	54.731	ES
Abbey D01-18 (SI) - Wellbore #1 - No Surveys	9,000.00	6,777.00	6,754.09	6,456.07	22.664	SF
Abbey D01-19 (TA) - Wellbore #1 - No Surveys	2,200.00	2,218.00	4,333.73	4,239.35	45.921	CC
Abbey D01-19 (TA) - Wellbore #1 - No Surveys	2,300.00	2,317.98	4,335.41	4,236.68	43.913	ES
Abbey D01-19 (TA) - Wellbore #1 - No Surveys	9,200.00	6,775.00	5,587.47	5,288.74	18.704	SF
Abbey D01-23 (PR) - Wellbore #1 - No Surveys	2,200.00	2,270.00	7,655.96	7,559.51	79.375	CC
Abbey D01-23 (PR) - Wellbore #1 - No Surveys	2,300.00	2,369.98	7,657.70	7,556.90	75.964	ES
Abbey D01-23 (PR) - Wellbore #1 - No Surveys	12,300.00	6,827.00	8,303.07	7,984.61	26.072	SF
Abbey D01-27 (SI) - Wellbore #1 - No Surveys	2,200.00	2,232.00	6,678.62	6,583.69	70.351	CC
Abbey D01-27 (SI) - Wellbore #1 - No Surveys	2,300.00	2,331.98	6,680.07	6,580.79	67.281	ES
Abbey D01-27 (SI) - Wellbore #1 - No Surveys	7,600.00	6,789.00	8,098.88	7,803.75	27.441	SF
Abbey D01-28 (SI) - Wellbore #1 - No Surveys	2,200.00	2,214.00	5,572.78	5,478.57	59.151	CC
Abbey D01-28 (SI) - Wellbore #1 - No Surveys	2,300.00	2,313.98	5,574.24	5,475.68	56.553	ES
Abbey D01-28 (SI) - Wellbore #1 - No Surveys	7,600.00	6,771.00	6,992.86	6,698.45	23.752	SF
Abbey D01-29 (SI) - Wellbore #1 - No Surveys	2,200.00	2,217.00	4,101.29	4,006.95	43.477	CC
Abbey D01-29 (SI) - Wellbore #1 - No Surveys	2,400.00	2,416.84	4,107.01	4,003.98	39.862	ES

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 Booth D11-775
Project:	Mustang	TVD Reference:	Well @ 4730.00ft
Reference Site:	D Section 02	MD Reference:	Well @ 4730.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Booth D11-775	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Booth D11-775	Database:	EDMP
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
D Section 01						
Abbey D01-29 (SI) - Wellbore #1 - No Surveys	7,428.83	6,774.00	5,516.80	5,222.36	18.737	SF
Abbey D01-32D - Wellbore #1 - Wellbore #1 - As Drilled	2,311.67	2,311.67	3,665.32	3,648.31	215.403	CC
Abbey D01-32D - Wellbore #1 - Wellbore #1 - As Drilled	2,400.00	2,639.41	3,666.18	3,647.18	192.986	ES
Abbey D01-32D - Wellbore #1 - Wellbore #1 - As Drilled	10,800.00	6,681.66	4,461.71	4,400.71	73.138	SF
Guttersen D01-31D (PR) - Guttersen D01-31D OH - As-C	2,981.40	3,934.40	3,220.56	3,195.19	126.938	CC
Guttersen D01-31D (PR) - Guttersen D01-31D OH - As-C	3,000.00	3,944.37	3,220.65	3,195.16	126.353	ES
Guttersen D01-31D (PR) - Guttersen D01-31D OH - As-C	9,700.00	6,832.33	4,306.00	4,247.98	74.206	SF
HSR-Guttersen 11-1 (PR) - Wellbore #1 - No Surveys	2,200.00	2,244.00	5,574.98	5,479.57	58.430	CC
HSR-Guttersen 11-1 (PR) - Wellbore #1 - No Surveys	2,300.00	2,343.98	5,576.73	5,476.96	55.898	ES
HSR-Guttersen 11-1 (PR) - Wellbore #1 - No Surveys	11,100.00	6,801.00	6,210.96	5,901.07	20.043	SF
HSR-Guttersen 12-1 (PR) - Wellbore #1 - No Surveys	2,200.00	2,206.00	4,514.56	4,420.67	48.082	CC
HSR-Guttersen 12-1 (PR) - Wellbore #1 - No Surveys	2,300.00	2,306.02	4,516.29	4,418.04	45.968	ES
HSR-Guttersen 12-1 (PR) - Wellbore #1 - No Surveys	10,800.00	6,751.00	4,864.88	4,558.60	15.884	SF
HSR-Guttersen 14-1 (SI) - Wellbore #1 - No Surveys	11,791.80	6,781.00	6,167.09	5,852.78	19.621	CC
HSR-Guttersen 14-1 (SI) - Wellbore #1 - No Surveys	11,800.00	6,781.00	6,167.09	5,852.74	19.618	ES
HSR-Guttersen 14-1 (SI) - Wellbore #1 - No Surveys	12,500.00	6,781.00	6,207.62	5,889.27	19.499	SF
HSR-Guttersen 15-1 (SI) - Wellbore #1 - Wellbore #1	2,200.00	2,262.00	7,661.53	7,565.40	79.697	CC
HSR-Guttersen 15-1 (SI) - Wellbore #1 - Wellbore #1	12,000.00	6,819.00	7,667.89	7,350.66	24.172	ES
HSR-Guttersen 15-1 (SI) - Wellbore #1 - Wellbore #1	13,000.00	6,819.00	7,736.16	7,412.95	23.936	SF
HSR-Guttersen 16-1 (SI) - Wellbore #1 - No Surveys	2,200.00	2,276.00	8,771.33	8,674.64	90.713	CC
HSR-Guttersen 16-1 (SI) - Wellbore #1 - No Surveys	2,300.00	2,375.98	8,773.07	8,672.03	86.822	ES
HSR-Guttersen 16-1 (SI) - Wellbore #1 - No Surveys	13,400.00	6,833.00	9,104.16	8,777.82	27.898	SF
Keisha White D01-01 - Wellbore #1 - Wellbore #1 - As D	798.80	842.82	7,395.07	7,389.69	1,374.852	CC
Keisha White D01-01 - Wellbore #1 - Wellbore #1 - As D	2,226.99	2,331.34	7,397.28	7,381.59	471.591	ES
Keisha White D01-01 - Wellbore #1 - Wellbore #1 - As D	12,600.00	6,823.52	9,999.63	9,932.31	148.528	SF
Keisha White D01-07 (PR) - Wellbore #1 - No Surveys	2,200.00	2,229.00	6,498.07	6,403.26	68.535	CC
Keisha White D01-07 (PR) - Wellbore #1 - No Surveys	2,300.00	2,328.98	6,499.78	6,400.61	65.544	ES
Keisha White D01-07 (PR) - Wellbore #1 - No Surveys	10,800.00	6,786.00	7,557.71	7,250.43	24.596	SF
Keisha White D01-08 (PR) - Wellbore #1 - No Surveys	2,200.00	2,246.00	7,681.29	7,585.80	80.438	CC
Keisha White D01-08 (PR) - Wellbore #1 - No Surveys	2,300.00	2,345.98	7,682.98	7,583.13	76.948	ES
Keisha White D01-08 (PR) - Wellbore #1 - No Surveys	11,300.00	6,803.00	8,831.18	8,520.36	28.413	SF
UPV 1-2J4 (PR) - Wellbore #1 - No Surveys	2,200.00	2,229.00	6,446.06	6,351.25	67.987	CC
UPV 1-2J4 (PR) - Wellbore #1 - No Surveys	2,300.00	2,328.98	6,447.62	6,348.45	65.018	ES
UPV 1-2J4 (PR) - Wellbore #1 - No Surveys	8,800.00	6,786.00	7,860.63	7,563.03	26.413	SF
Woody D01-09 - Wellbore #1 - Wellbore #1 - As Drilled	2,224.02	2,368.61	8,166.38	8,150.56	516.208	CC, ES
Woody D01-09 - Wellbore #1 - Wellbore #1 - As Drilled	15,000.00	6,566.00	9,993.73	9,911.14	121.014	SF
Woody D01-10 (PR) - Wellbore #1 - No Surveys	2,200.00	2,262.00	6,560.57	6,464.44	68.245	CC
Woody D01-10 (PR) - Wellbore #1 - No Surveys	2,300.00	2,361.98	6,562.31	6,461.82	65.305	ES
Woody D01-10 (PR) - Wellbore #1 - No Surveys	11,400.00	6,819.00	7,373.47	7,061.17	23.610	SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Booth D11-775
Project:	Mustang	TVD Reference:	Well @ 4730.00ft
Reference Site:	D Section 02	MD Reference:	Well @ 4730.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Booth D11-775	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Booth D11-775	Database:	EDMP
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Summary						
Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 02						
BOOTH D #02-31 - BOOTH D #02-31 - No Surveys	8,558.10	6,737.00	865.74	703.43	5.334	CC, ES
BOOTH D #02-31 - BOOTH D #02-31 - No Surveys	8,600.00	6,737.00	866.75	704.21	5.333	SF
Booth D11-715 - Booth D11-715 - Plan #1	2,107.81	2,128.81	1,098.03	1,083.31	74.589	CC
Booth D11-715 - Booth D11-715 - Plan #1	2,200.00	2,215.83	1,098.08	1,082.71	71.477	ES
Booth D11-715 - Booth D11-715 - Plan #1	17,638.00	17,517.38	3,910.66	3,732.78	21.986	SF
Booth D11-725 - Booth D11-725 - Plan #1	2,107.27	2,129.27	1,075.44	1,060.72	73.056	CC
Booth D11-725 - Booth D11-725 - Plan #1	2,200.00	2,217.51	1,075.49	1,060.12	69.978	ES
Booth D11-725 - Booth D11-725 - Plan #1	17,638.00	17,477.82	3,257.23	3,079.34	18.311	SF
Booth D11-730 - Booth D11-730 - Plan #1	2,107.27	2,129.27	1,052.85	1,038.13	71.522	CC
Booth D11-730 - Booth D11-730 - Plan #1	2,200.00	2,218.58	1,052.89	1,037.52	68.490	ES
Booth D11-730 - Booth D11-730 - Plan #1	17,638.00	17,547.63	2,932.35	2,754.16	16.456	SF
Booth D11-735 - Booth D11-735 - Plan #1	2,107.27	2,129.27	1,030.54	1,015.82	70.006	CC
Booth D11-735 - Booth D11-735 - Plan #1	2,200.00	2,220.43	1,030.55	1,015.17	67.007	ES
Booth D11-735 - Booth D11-735 - Plan #1	17,638.00	17,344.40	2,607.66	2,430.17	14.692	SF
Booth D11-745 - Booth D11-745 - Plan #1	2,240.29	2,274.96	1,007.82	992.10	64.127	CC
Booth D11-745 - Booth D11-745 - Plan #1	2,300.00	2,345.64	1,008.01	991.83	62.315	ES
Booth D11-745 - Booth D11-745 - Plan #1	17,638.00	17,441.26	1,954.33	1,776.58	10.995	SF
Booth D11-755 - Booth D11-755 - Plan #1	2,200.31	2,201.32	67.54	52.23	4.411	CC, ES
Booth D11-755 - Booth D11-755 - Plan #1	2,300.00	2,301.46	68.67	52.64	4.285	SF
Booth D11-765 - Booth D11-765 - Plan #1	2,200.00	2,200.00	45.22	29.91	2.954	CC
Booth D11-765 - Booth D11-765 - Plan #1	2,300.00	2,301.07	45.51	29.50	2.842	ES
Booth D11-765 - Booth D11-765 - Plan #1	2,500.00	2,503.15	47.99	30.58	2.758	SF
Booth D11-770 - Booth D11-770 - Plan #1	2,200.00	2,200.00	22.61	7.30	1.477	Level 3, CC
Booth D11-770 - Booth D11-770 - Plan #1	2,500.00	2,501.85	23.60	6.22	1.358	Level 3, ES
Booth D11-770 - Booth D11-770 - Plan #1	2,600.00	2,602.46	24.43	6.38	1.353	Level 3, SF
Booth D11-785 - Booth D11-785 - Plan #1	2,200.00	2,199.00	22.33	7.03	1.459	Level 3, CC
Booth D11-785 - Booth D11-785 - Plan #1	2,500.00	2,496.86	23.35	6.01	1.347	Level 3, ES, SF
DONOVAN D #2-19(PR) - DONOVAN D #2-19 - No Surv	8,463.96	6,734.00	170.82	8.87	1.055	Level 2, CC, ES, SF
DONOVAN D #2-3JI(PR) - DONOVAN D #2-3JI - No Sur	3,348.83	3,299.29	555.40	477.64	7.142	CC
DONOVAN D #2-3JI(PR) - DONOVAN D #2-3JI - No Sur	3,400.00	3,346.42	555.76	476.85	7.043	ES
DONOVAN D #2-3JI(PR) - DONOVAN D #2-3JI - No Sur	7,888.57	6,738.00	930.20	769.50	5.788	SF
DONOVAN D #2-4JI(SI) - DONOVAN D #2-4JI - No Surv	7,744.01	6,725.00	368.95	208.71	2.303	CC, ES, SF
DONOVAN D #2-5JI - DONOVAN D #2-5JI - No Surveys	9,205.08	6,735.00	391.67	226.95	2.378	CC, ES, SF
DONOVAN D #2-6JI(PR) - DONOVAN D #2-6JI - No Sur	9,371.36	6,738.00	921.72	756.19	5.569	CC, ES, SF
GUTTERSEN #D02-25(PR) - GUTTERSEN #D02-25 - N	10,921.44	6,727.00	338.85	164.94	1.948	CC, ES, SF
GUTTERSEN #D02-33D(PR) - GUTTERSEN #D02-33D	11,205.18	6,932.16	961.40	894.52	14.376	CC, ES
GUTTERSEN #D02-33D(PR) - GUTTERSEN #D02-33D	11,400.00	6,933.26	980.94	911.06	14.039	SF
GUTTERSEN #D11-29D(PR) - GUTTERSEN #D11-29D	12,466.77	7,008.46	278.58	192.61	3.240	CC, ES, SF
GUTTERSEN D #02-20(SI) - GUTTERSEN D #02-20 - W	10,137.12	6,700.01	437.25	390.54	9.361	CC, ES, SF
Guttersen D02-75HN - Original Drilling - Original Drilling	7,742.05	11,143.00	1,610.36	1,502.65	14.950	SF
Guttersen D02-75HN - Original Drilling - Original Drilling	12,038.99	6,839.29	1,485.88	1,417.21	21.639	CC, ES
HSR-BOOTH #7-2(SI) - HSR-BOOTH #7-2 - No Surveys	2,200.00	2,172.00	1,871.83	1,820.73	36.635	CC
HSR-BOOTH #7-2(SI) - HSR-BOOTH #7-2 - No Surveys	2,300.00	2,271.98	1,873.35	1,819.90	35.050	ES
HSR-BOOTH #7-2(SI) - HSR-BOOTH #7-2 - No Surveys	9,300.00	6,729.00	2,312.74	2,147.89	14.030	SF
HSR-BOOTH #8-2(SI) - HSR-BOOTH #8-2 - No Surveys	2,200.00	2,207.00	2,646.44	2,594.65	51.096	CC
HSR-BOOTH #8-2(SI) - HSR-BOOTH #8-2 - No Surveys	2,300.00	2,306.98	2,648.17	2,594.03	48.907	ES
HSR-BOOTH #8-2(SI) - HSR-BOOTH #8-2 - No Surveys	9,500.00	6,764.00	3,456.13	3,289.78	20.776	SF
KERN #1(PA) - KERN #1 - No Surveys	2,200.00	2,185.00	1,817.16	1,765.80	35.385	CC
KERN #1(PA) - KERN #1 - No Surveys	2,300.00	2,284.98	1,818.86	1,765.15	33.866	ES
KERN #1(PA) - KERN #1 - No Surveys	8,300.00	6,742.00	3,132.55	2,970.97	19.387	SF
KERN D #2-1(SI) - KERN D #2-1 - No Surveys	2,200.00	2,184.00	2,329.37	2,278.03	45.377	CC
KERN D #2-1(SI) - KERN D #2-1 - No Surveys	2,300.00	2,283.98	2,330.94	2,277.25	43.417	ES
KERN D #2-1(SI) - KERN D #2-1 - No Surveys	7,900.00	6,741.00	3,734.71	3,573.95	23.232	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 Booth D11-775
Project:	Mustang	TVD Reference:	Well @ 4730.00ft
Reference Site:	D Section 02	MD Reference:	Well @ 4730.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Booth D11-775	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Booth D11-775	Database:	EDMP
Reference Design:	Plan #1	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
D Section 02						
KERN D #2-2JI(PR) - KERN D #2-2JI - No Surveys	2,200.00	2,183.00	762.44	711.13	14.859	CC
KERN D #2-2JI(PR) - KERN D #2-2JI - No Surveys	2,300.00	2,282.98	764.13	710.46	14.238	ES
KERN D #2-2JI(PR) - KERN D #2-2JI - No Surveys	3,000.00	2,972.64	870.24	800.33	12.449	SF
L F RANCH #2-2(SI) - L F RANCH #2-2 - No Surveys	11,551.72	6,727.00	57.24	-120.74	0.322	Level 1, CC, ES, SF
TANIA #D11-27D(PR) - TANIA #D11-27D - Wellbore #1 -	12,489.82	6,882.96	2,890.95	2,817.45	39.329	CC
TANIA #D11-27D(PR) - TANIA #D11-27D - Wellbore #1 -	12,500.00	6,883.20	2,890.97	2,817.40	39.296	ES
TANIA #D11-27D(PR) - TANIA #D11-27D - Wellbore #1 -	13,000.00	6,895.14	2,935.60	2,859.28	38.465	SF
TANIA #D11-28(PR) - TANIA #D11-28 - No Surveys	12,358.85	6,736.00	1,678.19	1,494.49	9.135	CC, ES
TANIA #D11-28(PR) - TANIA #D11-28 - No Surveys	12,400.00	6,736.00	1,678.70	1,494.85	9.131	SF
TANIA BLUE #D 2-11(PR) - TANIA BLUE #D 2-11 - No S	10,532.37	6,732.00	1,080.22	908.60	6.294	CC, ES, SF
TANIA BLUE #D 2-12(PA) - TANIA BLUE #D 2-12 - No S	10,477.88	6,720.00	422.56	251.50	2.470	CC, ES
TANIA BLUE #D 2-12(PA) - TANIA BLUE #D 2-12 - No S	10,500.00	6,720.00	423.14	251.73	2.469	SF
TANIA BLUE #D 2-14(PR) - TANIA BLUE #D 2-14 - No S	12,004.18	6,730.00	1,038.42	857.31	5.734	CC, ES, SF
TANIA BLUE #D2-10(SI) - TANIA BLUE #D2-10 - No Sur	10,461.25	6,742.00	2,410.71	2,239.31	14.065	CC, ES
TANIA BLUE #D2-10(SI) - TANIA BLUE #D2-10 - No Sur	10,600.00	6,742.00	2,414.70	2,242.77	14.045	SF
TANIA BLUE #D2-16(PR) - TANIA BLUE #D2-16 - No St	11,912.35	6,744.00	3,446.58	3,265.81	19.067	CC, ES
TANIA BLUE #D2-16(PR) - TANIA BLUE #D2-16 - No St	12,200.00	6,744.00	3,458.56	3,276.38	18.984	SF
TANIA BLUE D #2-15(SI) - TANIA BLUE D #2-15 - No St	11,824.98	6,733.00	2,278.93	2,098.98	12.664	CC, ES
TANIA BLUE D #2-15(SI) - TANIA BLUE D #2-15 - No St	11,900.00	6,733.00	2,280.17	2,099.90	12.649	SF
TANIA BLUE D #2-9(SI) - TANIA BLUE D #2-9 - No Surv	10,486.77	6,757.00	3,684.62	3,512.77	21.441	CC
TANIA BLUE D #2-9(SI) - TANIA BLUE D #2-9 - No Surv	10,500.00	6,757.00	3,684.64	3,512.73	21.433	ES
TANIA BLUE D #2-9(SI) - TANIA BLUE D #2-9 - No Surv	10,800.00	6,757.00	3,697.91	3,524.64	21.342	SF
TANIA D #2-23(SI) - TANIA D #2-23 - No Surveys	11,104.26	6,744.00	2,989.54	2,814.14	17.044	CC, ES
TANIA D #2-23(SI) - TANIA D #2-23 - No Surveys	11,300.00	6,744.00	2,995.94	2,819.66	16.995	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 Booth D11-775
Project:	Mustang	TVD Reference:	Well @ 4730.00ft
Reference Site:	D Section 02	MD Reference:	Well @ 4730.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Booth D11-775	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Booth D11-775	Database:	EDMP
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
D Section 03						
Becca D 3-11 (PR) - Wellbore #1 - No Surveys	10,669.35	6,750.00	4,324.96	4,019.35	14.152	CC
Becca D 3-11 (PR) - Wellbore #1 - No Surveys	10,700.00	6,750.00	4,325.07	4,019.24	14.142	ES
Becca D 3-11 (PR) - Wellbore #1 - No Surveys	11,100.00	6,750.00	4,346.35	4,037.67	14.081	SF
Becca D 3-12 (PR) - Wellbore #1 - No Surveys	10,717.84	6,746.00	5,650.38	5,344.64	18.481	CC, ES
Becca D 3-12 (PR) - Wellbore #1 - No Surveys	11,400.00	6,746.00	5,691.41	5,380.90	18.329	SF
Becca D 3-13 (PR) - Wellbore #1 - No Surveys	11,962.64	6,758.00	5,527.43	5,213.08	17.584	CC
Becca D 3-13 (PR) - Wellbore #1 - No Surveys	12,000.00	6,758.00	5,527.56	5,212.92	17.568	ES
Becca D 3-13 (PR) - Wellbore #1 - No Surveys	12,700.00	6,758.00	5,576.40	5,256.46	17.430	SF
Becca D 3-14 (PR) - Wellbore #1 - No Surveys	11,827.69	6,748.00	4,308.81	3,995.78	13.765	CC, ES
Becca D 3-14 (PR) - Wellbore #1 - No Surveys	12,300.00	6,748.00	4,334.62	4,017.93	13.687	SF
Becca D03-24 (PR) - Wellbore #1 - No Surveys	11,232.23	6,752.00	3,730.85	3,421.68	12.067	CC, ES
Becca D03-24 (PR) - Wellbore #1 - No Surveys	11,600.00	6,752.00	3,748.93	3,436.96	12.017	SF
Becca D03-32D - Wellbore #1 - Wellbore #1- As Drilled	9,950.75	7,092.95	6,383.71	6,324.87	108.491	CC
Becca D03-32D - Wellbore #1 - Wellbore #1- As Drilled	10,000.00	7,092.65	6,383.90	6,324.79	108.001	ES
Becca D03-32D - Wellbore #1 - Wellbore #1- As Drilled	14,300.00	7,067.06	7,724.44	7,631.60	83.194	SF
Cody D #03-28(SI) - Wellbore #1 - No Surveys	7,396.47	6,725.23	3,535.64	3,451.50	42.020	CC, ES
Cody D #03-28(SI) - Wellbore #1 - No Surveys	7,428.83	6,726.00	3,536.07	3,451.90	42.015	SF
Cody D 03-28 (SI) - Wellbore #1 - No Surveys	7,396.47	6,741.23	3,535.64	3,242.86	12.076	CC
Cody D 03-28 (SI) - Wellbore #1 - No Surveys	7,400.00	6,741.39	3,535.65	3,242.86	12.076	ES
Cody D 03-28 (SI) - Wellbore #1 - No Surveys	7,428.83	6,742.00	3,536.07	3,243.24	12.076	SF
Cody D 3-20 (PR) - Wellbore #1 - No Surveys	10,005.12	6,748.00	4,992.54	4,690.91	16.552	CC, ES
Cody D 3-20 (PR) - Wellbore #1 - No Surveys	10,500.00	6,748.00	5,017.01	4,712.19	16.459	SF
Cody D 3-7 (PR) - Wellbore #1 - No Surveys	9,393.22	6,732.00	3,013.60	2,715.66	10.115	CC
Cody D 3-7 (PR) - Wellbore #1 - No Surveys	9,400.00	6,732.00	3,013.61	2,715.63	10.113	ES
Cody D 3-7 (PR) - Wellbore #1 - No Surveys	9,600.00	6,732.00	3,020.69	2,721.52	10.097	SF
CODY WHITE #D 3-2(PR) - Wellbore #1 - No Surveys	7,914.30	6,722.00	3,029.97	2,945.32	35.796	CC, ES
CODY WHITE #D 3-2(PR) - Wellbore #1 - No Surveys	8,300.00	6,722.00	3,054.42	2,968.74	35.649	SF
Cody White D 3-1 (PR) - Wellbore #1 - No Surveys	7,902.15	6,731.00	1,709.95	1,416.94	5.836	CC, ES, SF
Cody White D 3-2 (PR) - Wellbore #1 - No Surveys	7,914.31	6,732.00	3,029.97	2,736.90	10.339	CC, ES
Cody White D 3-2 (PR) - Wellbore #1 - No Surveys	8,000.00	6,732.00	3,031.18	2,737.93	10.337	SF
Cody White D 3-8 (PR) - Wellbore #1 - No Surveys	9,224.51	6,733.00	1,703.32	1,406.10	5.731	CC, ES
Cody White D 3-8 (PR) - Wellbore #1 - No Surveys	9,300.00	6,733.00	1,704.99	1,407.30	5.727	SF
Guttersen D 02-32D (PR) - Wellbore #1 - As Drilled Surv	9,987.29	6,870.84	976.49	915.70	16.063	CC, ES
Guttersen D 02-32D (PR) - Wellbore #1 - As Drilled Surv	10,000.00	6,870.82	976.57	915.73	16.052	SF
Guttersen D 03-17 (PR) - Wellbore #1 - No Surveys	8,629.51	6,739.00	2,404.07	2,109.01	8.148	CC, ES
Guttersen D 03-17 (PR) - Wellbore #1 - No Surveys	8,700.00	6,739.00	2,405.10	2,109.74	8.143	SF
Guttersen D 03-25 (PR) - Wellbore #1 - No Surveys	11,123.45	6,750.00	4,984.04	4,675.69	16.164	CC, ES
Guttersen D 03-25 (PR) - Wellbore #1 - No Surveys	11,700.00	6,750.00	5,017.27	4,704.71	16.052	SF
Guttersen D 10-29 (PR) - Wellbore #1 - No Surveys	12,489.46	6,759.00	4,850.18	4,532.22	15.254	CC
Guttersen D 10-29 (PR) - Wellbore #1 - No Surveys	12,500.00	6,759.00	4,850.19	4,532.14	15.250	ES
Guttersen D 10-29 (PR) - Wellbore #1 - No Surveys	13,000.00	6,759.00	4,876.98	4,554.98	15.146	SF
HSR-Gittlein, D 4-3 (PR) - Wellbore #1 - No Surveys	7,746.85	6,739.00	5,839.21	5,546.11	19.922	CC, ES
HSR-Gittlein, D 4-3 (PR) - Wellbore #1 - No Surveys	8,000.00	6,739.00	5,844.69	5,551.15	19.911	SF
HSR-Gittlein, D 5-3 (PR) - Wellbore #1 - No Surveys	9,240.42	6,746.00	5,831.25	5,533.44	19.580	CC, ES
HSR-Gittlein, D 5-3 (PR) - Wellbore #1 - No Surveys	9,900.00	6,746.00	5,868.44	5,567.02	19.470	SF
HSR-Gittlein, L 3-3 (PR) - Wellbore #1 - No Surveys	7,922.82	6,736.00	4,358.40	4,065.15	14.863	CC, ES
HSR-Gittlein, L 3-3 (PR) - Wellbore #1 - No Surveys	8,100.00	6,736.00	4,362.00	4,068.36	14.855	SF
HSR-Gittlein, L 6-3 (PR) - Wellbore #1 - No Surveys	9,237.84	6,740.00	4,346.40	4,048.84	14.607	CC, ES
HSR-Gittlein, L 6-3 (PR) - Wellbore #1 - No Surveys	9,600.00	6,740.00	4,361.46	4,061.93	14.561	SF
HSR-Guttersen "A" 16-3 (SI) - Wellbore #1 - Gyro Survey	11,902.50	6,745.42	1,751.20	1,682.04	25.320	CC, ES
HSR-Guttersen "A" 16-3 (SI) - Wellbore #1 - Gyro Survey	12,200.00	6,747.07	1,776.29	1,704.63	24.788	SF
HSR-Guttersen "A" 9-3 (SI) - Wellbore #1 - Gyro Surveys	10,783.98	6,724.26	1,913.49	1,851.60	30.918	CC
HSR-Guttersen "A" 9-3 (SI) - Wellbore #1 - Gyro Surveys	10,800.00	6,724.31	1,913.55	1,851.53	30.851	ES

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 Booth D11-775
Project:	Mustang	TVD Reference:	Well @ 4730.00ft
Reference Site:	D Section 02	MD Reference:	Well @ 4730.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Booth D11-775	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Booth D11-775	Database:	EDMP
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
D Section 03						
HSR-Guttersen "A" 9-3 (SI) - Wellbore #1 - Gyro Surveys	11,200.00	6,725.39	1,958.19	1,893.17	30.116	SF
HSR-Guttersen 10-3 (SI) - Wellbore #1 - No Surveys	10,580.75	6,745.00	3,002.70	2,697.83	9.849	CC
HSR-Guttersen 10-3 (SI) - Wellbore #1 - No Surveys	10,600.00	6,745.00	3,002.76	2,697.75	9.845	ES
HSR-Guttersen 10-3 (SI) - Wellbore #1 - No Surveys	10,800.00	6,745.00	3,010.70	2,704.19	9.823	SF
HSR-Guttersen 15-3 (SI) - Wellbore #1 - Gyro Surveys	12,045.14	6,724.93	2,903.99	2,833.85	41.398	CC, ES
HSR-Guttersen 15-3 (SI) - Wellbore #1 - Gyro Surveys	12,700.00	6,733.39	2,976.90	2,901.83	39.652	SF
UPRR 39 PAN AM A 01 (PA) - Wellbore #1 - No Surveys	11,919.97	6,759.00	5,642.27	5,328.21	17.966	CC
UPRR 39 PAN AM A 01 (PA) - Wellbore #1 - No Surveys	12,000.00	6,759.00	5,642.83	5,328.15	17.932	ES
UPRR 39 PAN AM A 01 (PA) - Wellbore #1 - No Surveys	12,700.00	6,759.00	5,695.93	5,375.99	17.803	SF
D Section 11						
DALBEY D #11-2(SI) - DALBEY D #11-2 - No Surveys	13,210.28	6,734.00	2,177.49	1,987.73	11.475	CC, ES
DALBEY D #11-2(SI) - DALBEY D #11-2 - No Surveys	13,300.00	6,734.00	2,179.34	1,989.19	11.462	SF
DUNCAN D #11-10(SI) - DUNCAN D #11-10 - No Survey	16,103.40	6,759.00	2,506.17	2,294.03	11.813	CC, ES
DUNCAN D #11-10(SI) - DUNCAN D #11-10 - No Survey	16,200.00	6,759.00	2,508.03	2,295.43	11.797	SF
DUNCAN D #11-11(SI) - DUNCAN D #11-11 - No Survey	15,915.70	6,793.00	765.06	553.69	3.620	CC, ES, SF
DUNCAN D #11-12(SI) - DUNCAN D #11-12 - No Survey	15,748.68	6,797.00	470.50	260.34	2.239	CC, ES, SF
DUNCAN D #11-5(SI) - DUNCAN D #11-5 - No Surveys	14,594.23	6,783.00	511.93	310.88	2.546	CC
DUNCAN D #11-5(SI) - DUNCAN D #11-5 - No Surveys	14,600.00	6,783.00	511.96	310.80	2.545	ES, SF
DUNCAN D #11-6(SI) - DUNCAN D #11-6 - No Surveys	14,533.60	6,761.00	914.09	713.94	4.567	CC, ES, SF
DUNCAN D #11-7(SI) - DUNCAN D #11-7 - No Surveys	14,462.85	6,741.00	2,245.08	2,045.87	11.270	CC, ES
DUNCAN D #11-7(SI) - DUNCAN D #11-7 - No Surveys	14,600.00	6,741.00	2,249.27	2,049.49	11.259	SF
DUNCAN D #11-8(SI) - DUNCAN D #11-8 - No Surveys	14,528.07	6,745.00	3,443.35	3,243.56	17.235	CC, ES
DUNCAN D #11-8(SI) - DUNCAN D #11-8 - No Surveys	14,800.00	6,745.00	3,454.07	3,252.87	17.168	SF
Duncan D 11-13 (SI) - Wellbore #1 - No Surveys	17,278.62	6,805.00	456.31	234.06	2.053	CC, ES
Duncan D 11-13 (SI) - Wellbore #1 - No Surveys	17,300.00	6,805.00	456.81	234.18	2.052	SF
Duncan D 11-14 (SI) - Wellbore #1 - Gyro Surveys	17,301.56	6,765.74	918.16	808.58	8.379	CC, ES, SF
Duncan D 11-15 (SI) - Wellbore #1 - Gyro Surveys	17,203.96	6,742.30	2,297.75	2,188.96	21.121	CC, ES
Duncan D 11-15 (SI) - Wellbore #1 - Gyro Surveys	17,300.00	6,741.51	2,299.76	2,190.55	21.058	SF
GUTTERSEN #43-11(SI) - GUTTERSEN #43-11 - No Su	15,849.11	6,747.00	3,589.83	3,379.89	17.100	CC, ES
GUTTERSEN #43-11(SI) - GUTTERSEN #43-11 - No Su	16,100.00	6,747.00	3,598.58	3,387.30	17.032	SF
Guttersen 44-11 (PR) - Wellbore #1 - No Surveys	17,174.92	6,767.00	3,616.31	3,395.64	16.388	CC
Guttersen 44-11 (PR) - Wellbore #1 - No Surveys	17,200.00	6,767.00	3,616.40	3,395.58	16.377	ES
Guttersen 44-11 (PR) - Wellbore #1 - No Surveys	17,400.00	6,767.00	3,623.31	3,401.41	16.329	SF
TWO E RANCH #1-11(SI) - TWO E RANCH #1-11 - No S	13,114.20	6,751.00	408.41	219.01	2.156	CC, ES, SF
TWO E RANCH #2-11(PR) - TWO E RANCH #2-11 - No	13,182.21	6,740.00	895.89	706.21	4.723	CC, ES, SF
TWO E RANCHES #14-11(PA) - TWO E RANCHES #14	16,780.63	6,796.00	65.02	-153.14	0.298	Level 1, CC, ES, SF

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

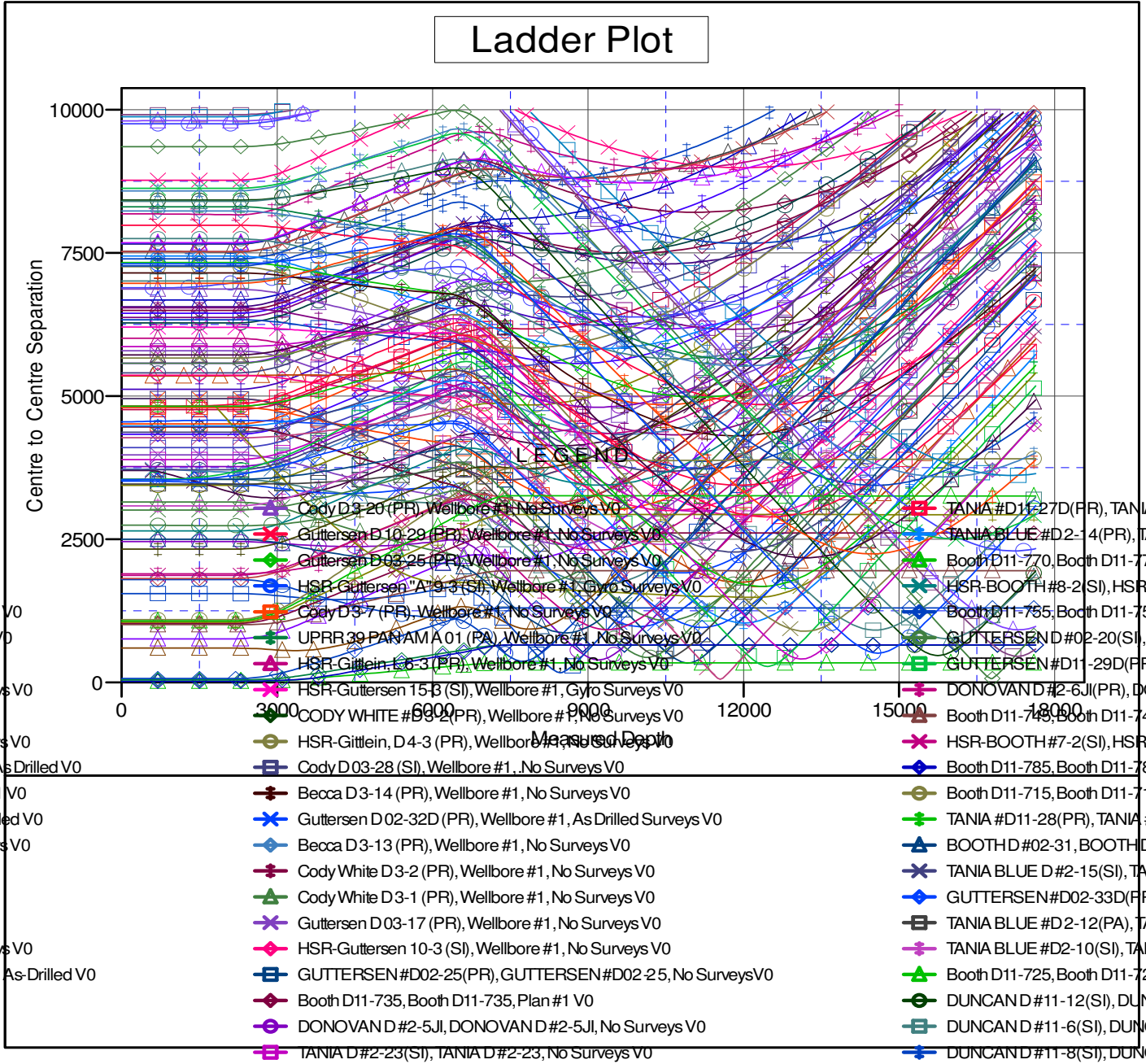
Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Booth D11-775
Project:	Mustang	TVD Reference:	Well @ 4730.00ft
Reference Site:	D Section 02	MD Reference:	Well @ 4730.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Booth D11-775	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Booth D11-775	Database:	EDMP
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to Well @ 4730.00ft
 Offset Depths are relative to Offset Datum
 Central Meridian is -105.5000000

Coordinates are relative to: Booth D11-775
 Coordinate System is US State Plane 1983, Colorado Northern Zone
 Grid Convergence at Surface is: 0.63°



Noble Energy, Inc.

Anticollision Summary Report

Company: Northern Region - DJ Basin	Local Co-ordinate Reference: Well Booth D11-775
Project: Mustang	TVD Reference: Well @ 4730.00ft
Reference Site: D Section 02	MD Reference: Well @ 4730.00ft
Site Error: 0.00 ft	North Reference: Grid
Reference Well: Booth D11-775	Survey Calculation Method: Minimum Curvature
Well Error: 0.00 ft	Output errors are at: 2.00 sigma
Reference Wellbore: Booth D11-775	Database: EDMP
Reference Design: Plan #1	Offset TVD Reference: Offset Datum

Reference Depths are relative to Well @ 4730.00ft
 Offset Depths are relative to Offset Datum
 Central Meridian is -105.5000000

Coordinates are relative to: Booth D11-775
 Coordinate System is US State Plane 1983, Colorado Northern Zone
 Grid Convergence at Surface is: 0.63°

