

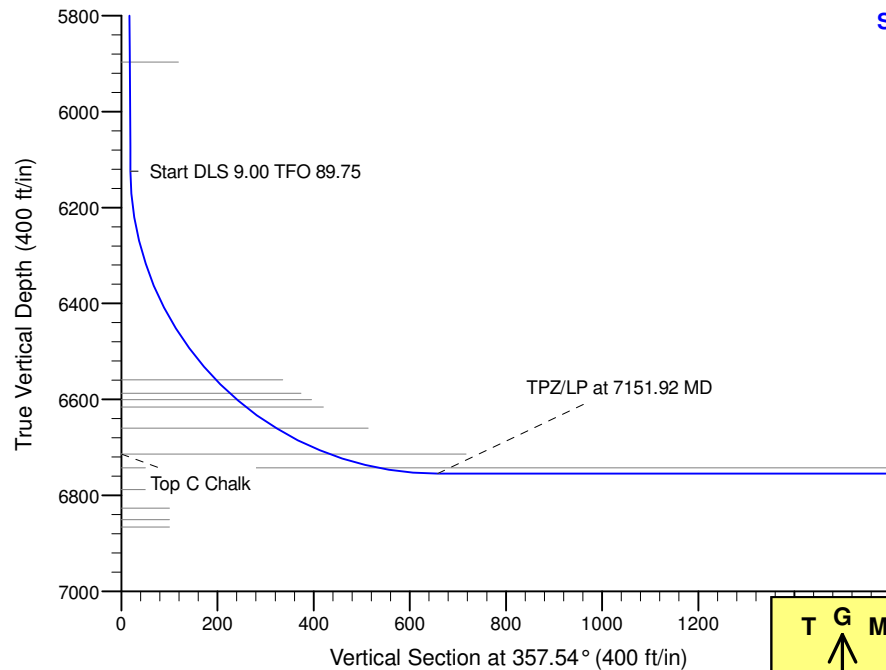
Project: Mustang
Site: C Section 35
Well: Booth C35-745
Wellbore: Wellbore #1
Design: Plan #1

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

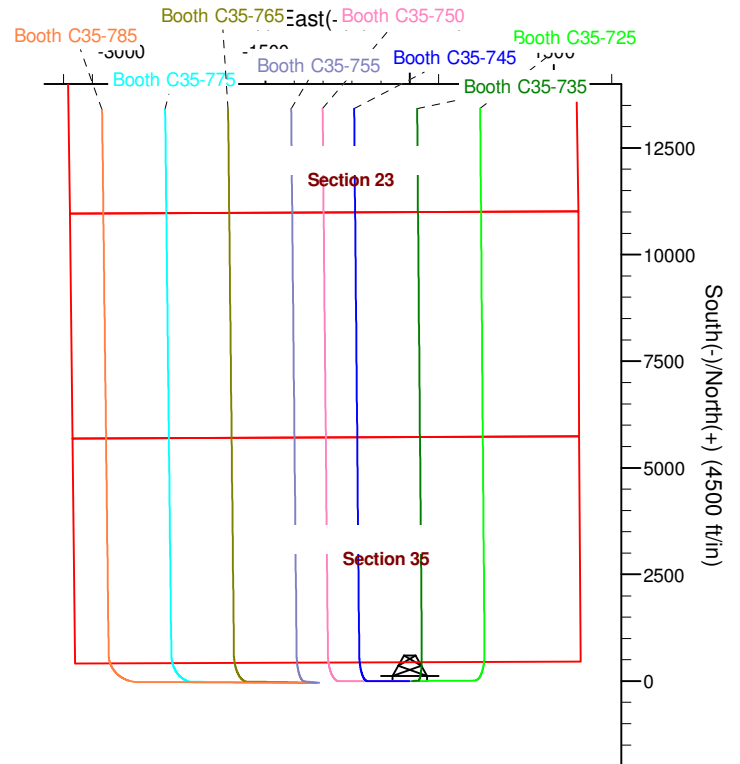
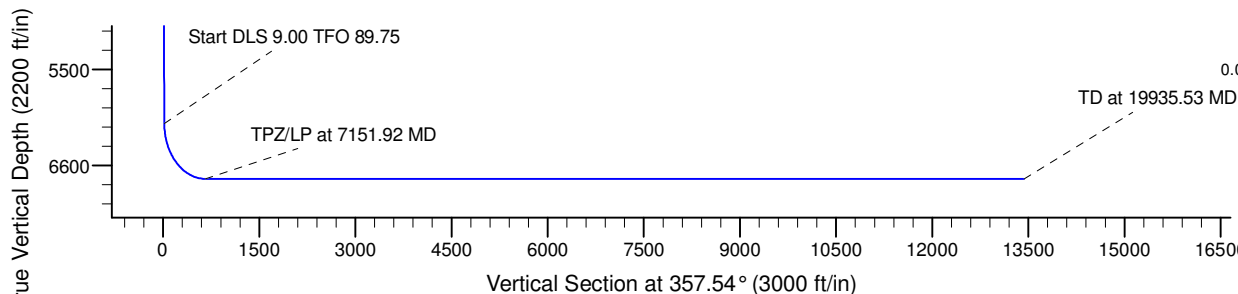
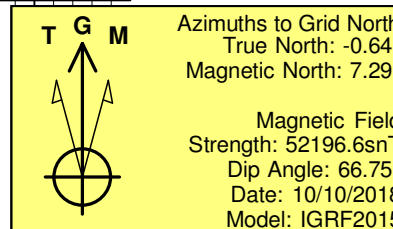
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	2600.00	0.00	0.00	2600.00	0.00	0.00	0.00	0.00	0.00	
3	2974.13	7.48	270.02	2973.07	0.01	-24.39	2.00	270.02	1.06	
4	6152.29	7.48	270.02	6124.17	0.15	-438.27	0.00	0.00	18.96	
5	7151.92	90.00	359.76	6755.00	636.42	-523.75	9.00	89.75	658.31	TPZ Booth C35-745
6	19935.53	90.00	359.76	6755.00	13419.92	-576.59	0.00	0.00	13432.30	BHL Booth C35-745



Surface: 441' FNL, 1784' FEL,
Sec. 2

TPZ: 200' FSL,
2305' FEL,
Sec. 35

BHL: 2433' FSL,
2316' FEL, Sec. 23



WELL DETAILS: Booth C35-745

Northing	Easting	Latitude	Longitude
0.00	0.00	4721.00	40.2605340
1339280.15	3274829.45	40.2605340	-104.5152220

Plan: Plan #1 (Booth C35-745/Wellbore #1)

Created By: Colby Baxter Date: 12:40, October 10 2018

Checked: _____ Date: _____

Reviewed: _____ Date: _____

Approved: _____ Date: _____

Northern Region - DJ Basin

Mustang

C Section 35

Booth C35-745

Wellbore #1

Plan: Plan #1

Standard Survey Report

10 October, 2018

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Booth C35-745
Project:	Mustang	TVD Reference:	KB @ 4751.00ft
Site:	C Section 35	MD Reference:	KB @ 4751.00ft
Well:	Booth C35-745	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDMP

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 35				
Site Position:		Northing:	1,344,449.62 usft	Latitude:	40.2746900
From:	Lat/Long	Easting:	3,275,933.42 usft	Longitude:	-104.5110600
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.64 °

Well		Booth C35-745				
Well Position	+N/-S	0.00 ft	Northing:	1,339,280.15 usft	Latitude:	40.2605340
	+E/-W	0.00 ft	Easting:	3,274,829.46 usft	Longitude:	-104.5152220
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	4,721.00 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	10/10/2018	7.93	66.75	52,196.63944171

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	357.54	

Survey Tool Program	Date	10/10/2018			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.00	19,935.53	Plan #1 (Wellbore #1)	2_MWD+IFR1	A005Mb: IFR declination correction only	

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00	
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	

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Booth C35-745
Project:	Mustang	TVD Reference:	KB @ 4751.00ft
Site:	C Section 35	MD Reference:	KB @ 4751.00ft
Well:	Booth C35-745	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDMP

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)
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	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
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	2.00	270.02	2,699.98	0.00	-1.75	0.08	2.00	2.00	0.00
2,800.00	4.00	270.02	2,799.84	0.00	-6.98	0.30	2.00	2.00	0.00
2,900.00	6.00	270.02	2,899.45	0.01	-15.69	0.68	2.00	2.00	0.00
2,974.13	7.48	270.02	2,973.07	0.01	-24.39	1.06	2.00	2.00	0.00
3,000.00	7.48	270.02	2,998.72	0.01	-27.76	1.20	0.00	0.00	0.00
3,100.00	7.48	270.02	3,097.87	0.01	-40.79	1.76	0.00	0.00	0.00
3,200.00	7.48	270.02	3,197.01	0.02	-53.81	2.33	0.00	0.00	0.00
3,300.00	7.48	270.02	3,296.16	0.02	-66.83	2.89	0.00	0.00	0.00
3,400.00	7.48	270.02	3,395.31	0.03	-79.85	3.45	0.00	0.00	0.00
3,500.00	7.48	270.02	3,494.46	0.03	-92.88	4.02	0.00	0.00	0.00
3,600.00	7.48	270.02	3,593.61	0.04	-105.90	4.58	0.00	0.00	0.00
3,700.00	7.48	270.02	3,692.76	0.04	-118.92	5.14	0.00	0.00	0.00
3,800.00	7.48	270.02	3,791.90	0.04	-131.94	5.71	0.00	0.00	0.00
3,900.00	7.48	270.02	3,891.05	0.05	-144.97	6.27	0.00	0.00	0.00
4,000.00	7.48	270.02	3,990.20	0.05	-157.99	6.83	0.00	0.00	0.00
4,100.00	7.48	270.02	4,089.35	0.06	-171.01	7.40	0.00	0.00	0.00
4,200.00	7.48	270.02	4,188.50	0.06	-184.03	7.96	0.00	0.00	0.00
4,300.00	7.48	270.02	4,287.65	0.07	-197.06	8.52	0.00	0.00	0.00
4,400.00	7.48	270.02	4,386.80	0.07	-210.08	9.09	0.00	0.00	0.00
4,500.00	7.48	270.02	4,485.94	0.07	-223.10	9.65	0.00	0.00	0.00
4,600.00	7.48	270.02	4,585.09	0.08	-236.12	10.21	0.00	0.00	0.00
4,700.00	7.48	270.02	4,684.24	0.08	-249.15	10.78	0.00	0.00	0.00
4,800.00	7.48	270.02	4,783.39	0.09	-262.17	11.34	0.00	0.00	0.00
4,900.00	7.48	270.02	4,882.54	0.09	-275.19	11.90	0.00	0.00	0.00
5,000.00	7.48	270.02	4,981.69	0.10	-288.21	12.47	0.00	0.00	0.00
5,100.00	7.48	270.02	5,080.83	0.10	-301.24	13.03	0.00	0.00	0.00
5,200.00	7.48	270.02	5,179.98	0.10	-314.26	13.59	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Booth C35-745
Project:	Mustang	TVD Reference:	KB @ 4751.00ft
Site:	C Section 35	MD Reference:	KB @ 4751.00ft
Well:	Booth C35-745	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDMP

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)
5,300.00	7.48	270.02	5,279.13	0.11	-327.28	14.16	0.00	0.00	0.00
5,400.00	7.48	270.02	5,378.28	0.11	-340.30	14.72	0.00	0.00	0.00
5,500.00	7.48	270.02	5,477.43	0.12	-353.33	15.28	0.00	0.00	0.00
5,600.00	7.48	270.02	5,576.58	0.12	-366.35	15.85	0.00	0.00	0.00
5,700.00	7.48	270.02	5,675.73	0.13	-379.37	16.41	0.00	0.00	0.00
5,800.00	7.48	270.02	5,774.87	0.13	-392.39	16.97	0.00	0.00	0.00
5,900.00	7.48	270.02	5,874.02	0.13	-405.41	17.54	0.00	0.00	0.00
6,000.00	7.48	270.02	5,973.17	0.14	-418.44	18.10	0.00	0.00	0.00
6,100.00	7.48	270.02	6,072.32	0.14	-431.46	18.66	0.00	0.00	0.00
6,152.29	7.48	270.02	6,124.17	0.15	-438.27	18.96	0.00	0.00	0.00
6,200.00	8.64	299.92	6,171.42	1.93	-444.48	21.01	9.00	2.42	62.68
6,300.00	15.25	330.96	6,269.30	17.21	-457.40	36.83	9.00	6.61	31.04
6,400.00	23.49	342.17	6,363.59	47.74	-469.91	67.87	9.00	8.24	11.21
6,500.00	32.12	347.69	6,451.97	92.78	-481.71	113.37	9.00	8.63	5.52
6,600.00	40.90	351.04	6,532.28	151.21	-492.50	172.21	9.00	8.78	3.35
6,700.00	49.74	353.38	6,602.53	221.59	-502.01	242.94	9.00	8.85	2.34
6,800.00	58.63	355.17	6,660.99	302.20	-510.03	323.81	9.00	8.88	1.79
6,900.00	67.53	356.65	6,706.22	391.05	-516.33	412.85	9.00	8.90	1.48
7,000.00	76.45	357.95	6,737.11	485.94	-520.78	507.85	9.00	8.91	1.30
7,100.00	85.37	359.15	6,752.90	584.55	-523.26	606.47	9.00	8.92	1.20
7,151.92	90.00	359.76	6,755.00	636.42	-523.75	658.31	9.00	8.92	1.17
7,200.00	90.00	359.76	6,755.00	684.49	-523.95	706.35	0.00	0.00	0.00
7,300.00	90.00	359.76	6,755.00	784.49	-524.37	806.28	0.00	0.00	0.00
7,400.00	90.00	359.76	6,755.00	884.49	-524.78	906.20	0.00	0.00	0.00
7,500.00	90.00	359.76	6,755.00	984.49	-525.19	1,006.13	0.00	0.00	0.00
7,600.00	90.00	359.76	6,755.00	1,084.49	-525.61	1,106.05	0.00	0.00	0.00
7,700.00	90.00	359.76	6,755.00	1,184.49	-526.02	1,205.98	0.00	0.00	0.00
7,800.00	90.00	359.76	6,755.00	1,284.49	-526.43	1,305.90	0.00	0.00	0.00
7,900.00	90.00	359.76	6,755.00	1,384.49	-526.85	1,405.83	0.00	0.00	0.00
8,000.00	90.00	359.76	6,755.00	1,484.49	-527.26	1,505.75	0.00	0.00	0.00
8,100.00	90.00	359.76	6,755.00	1,584.49	-527.67	1,605.68	0.00	0.00	0.00
8,200.00	90.00	359.76	6,755.00	1,684.48	-528.09	1,705.60	0.00	0.00	0.00
8,300.00	90.00	359.76	6,755.00	1,784.48	-528.50	1,805.52	0.00	0.00	0.00
8,400.00	90.00	359.76	6,755.00	1,884.48	-528.91	1,905.45	0.00	0.00	0.00
8,500.00	90.00	359.76	6,755.00	1,984.48	-529.33	2,005.37	0.00	0.00	0.00
8,600.00	90.00	359.76	6,755.00	2,084.48	-529.74	2,105.30	0.00	0.00	0.00
8,700.00	90.00	359.76	6,755.00	2,184.48	-530.15	2,205.22	0.00	0.00	0.00
8,800.00	90.00	359.76	6,755.00	2,284.48	-530.57	2,305.15	0.00	0.00	0.00
8,900.00	90.00	359.76	6,755.00	2,384.48	-530.98	2,405.07	0.00	0.00	0.00
9,000.00	90.00	359.76	6,755.00	2,484.48	-531.39	2,505.00	0.00	0.00	0.00
9,100.00	90.00	359.76	6,755.00	2,584.48	-531.81	2,604.92	0.00	0.00	0.00
9,200.00	90.00	359.76	6,755.00	2,684.48	-532.22	2,704.85	0.00	0.00	0.00
9,300.00	90.00	359.76	6,755.00	2,784.47	-532.63	2,804.77	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Booth C35-745
Project:	Mustang	TVD Reference:	KB @ 4751.00ft
Site:	C Section 35	MD Reference:	KB @ 4751.00ft
Well:	Booth C35-745	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDMP

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)
9,400.00	90.00	359.76	6,755.00	2,884.47	-533.05	2,904.70	0.00	0.00	0.00
9,500.00	90.00	359.76	6,755.00	2,984.47	-533.46	3,004.62	0.00	0.00	0.00
9,600.00	90.00	359.76	6,755.00	3,084.47	-533.87	3,104.55	0.00	0.00	0.00
9,700.00	90.00	359.76	6,755.00	3,184.47	-534.29	3,204.47	0.00	0.00	0.00
9,800.00	90.00	359.76	6,755.00	3,284.47	-534.70	3,304.40	0.00	0.00	0.00
9,900.00	90.00	359.76	6,755.00	3,384.47	-535.11	3,404.32	0.00	0.00	0.00
10,000.00	90.00	359.76	6,755.00	3,484.47	-535.53	3,504.24	0.00	0.00	0.00
10,100.00	90.00	359.76	6,755.00	3,584.47	-535.94	3,604.17	0.00	0.00	0.00
10,200.00	90.00	359.76	6,755.00	3,684.47	-536.35	3,704.09	0.00	0.00	0.00
10,300.00	90.00	359.76	6,755.00	3,784.47	-536.76	3,804.02	0.00	0.00	0.00
10,400.00	90.00	359.76	6,755.00	3,884.47	-537.18	3,903.94	0.00	0.00	0.00
10,500.00	90.00	359.76	6,755.00	3,984.46	-537.59	4,003.87	0.00	0.00	0.00
10,600.00	90.00	359.76	6,755.00	4,084.46	-538.00	4,103.79	0.00	0.00	0.00
10,700.00	90.00	359.76	6,755.00	4,184.46	-538.42	4,203.72	0.00	0.00	0.00
10,800.00	90.00	359.76	6,755.00	4,284.46	-538.83	4,303.64	0.00	0.00	0.00
10,900.00	90.00	359.76	6,755.00	4,384.46	-539.24	4,403.57	0.00	0.00	0.00
11,000.00	90.00	359.76	6,755.00	4,484.46	-539.66	4,503.49	0.00	0.00	0.00
11,100.00	90.00	359.76	6,755.00	4,584.46	-540.07	4,603.42	0.00	0.00	0.00
11,200.00	90.00	359.76	6,755.00	4,684.46	-540.48	4,703.34	0.00	0.00	0.00
11,300.00	90.00	359.76	6,755.00	4,784.46	-540.90	4,803.27	0.00	0.00	0.00
11,400.00	90.00	359.76	6,755.00	4,884.46	-541.31	4,903.19	0.00	0.00	0.00
11,500.00	90.00	359.76	6,755.00	4,984.46	-541.72	5,003.12	0.00	0.00	0.00
11,600.00	90.00	359.76	6,755.00	5,084.46	-542.14	5,103.04	0.00	0.00	0.00
11,700.00	90.00	359.76	6,755.00	5,184.45	-542.55	5,202.97	0.00	0.00	0.00
11,800.00	90.00	359.76	6,755.00	5,284.45	-542.96	5,302.89	0.00	0.00	0.00
11,900.00	90.00	359.76	6,755.00	5,384.45	-543.38	5,402.81	0.00	0.00	0.00
12,000.00	90.00	359.76	6,755.00	5,484.45	-543.79	5,502.74	0.00	0.00	0.00
12,100.00	90.00	359.76	6,755.00	5,584.45	-544.20	5,602.66	0.00	0.00	0.00
12,200.00	90.00	359.76	6,755.00	5,684.45	-544.62	5,702.59	0.00	0.00	0.00
12,300.00	90.00	359.76	6,755.00	5,784.45	-545.03	5,802.51	0.00	0.00	0.00
12,400.00	90.00	359.76	6,755.00	5,884.45	-545.44	5,902.44	0.00	0.00	0.00
12,500.00	90.00	359.76	6,755.00	5,984.45	-545.86	6,002.36	0.00	0.00	0.00
12,600.00	90.00	359.76	6,755.00	6,084.45	-546.27	6,102.29	0.00	0.00	0.00
12,700.00	90.00	359.76	6,755.00	6,184.45	-546.68	6,202.21	0.00	0.00	0.00
12,800.00	90.00	359.76	6,755.00	6,284.45	-547.10	6,302.14	0.00	0.00	0.00
12,900.00	90.00	359.76	6,755.00	6,384.44	-547.51	6,402.06	0.00	0.00	0.00
13,000.00	90.00	359.76	6,755.00	6,484.44	-547.92	6,501.99	0.00	0.00	0.00
13,100.00	90.00	359.76	6,755.00	6,584.44	-548.34	6,601.91	0.00	0.00	0.00
13,200.00	90.00	359.76	6,755.00	6,684.44	-548.75	6,701.84	0.00	0.00	0.00
13,300.00	90.00	359.76	6,755.00	6,784.44	-549.16	6,801.76	0.00	0.00	0.00
13,400.00	90.00	359.76	6,755.00	6,884.44	-549.58	6,901.69	0.00	0.00	0.00
13,500.00	90.00	359.76	6,755.00	6,984.44	-549.99	7,001.61	0.00	0.00	0.00
13,600.00	90.00	359.76	6,755.00	7,084.44	-550.40	7,101.53	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Booth C35-745
Project:	Mustang	TVD Reference:	KB @ 4751.00ft
Site:	C Section 35	MD Reference:	KB @ 4751.00ft
Well:	Booth C35-745	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDMP

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)
13,700.00	90.00	359.76	6,755.00	7,184.44	-550.82	7,201.46	0.00	0.00	0.00
13,800.00	90.00	359.76	6,755.00	7,284.44	-551.23	7,301.38	0.00	0.00	0.00
13,900.00	90.00	359.76	6,755.00	7,384.44	-551.64	7,401.31	0.00	0.00	0.00
14,000.00	90.00	359.76	6,755.00	7,484.43	-552.06	7,501.23	0.00	0.00	0.00
14,100.00	90.00	359.76	6,755.00	7,584.43	-552.47	7,601.16	0.00	0.00	0.00
14,200.00	90.00	359.76	6,755.00	7,684.43	-552.88	7,701.08	0.00	0.00	0.00
14,300.00	90.00	359.76	6,755.00	7,784.43	-553.30	7,801.01	0.00	0.00	0.00
14,400.00	90.00	359.76	6,755.00	7,884.43	-553.71	7,900.93	0.00	0.00	0.00
14,500.00	90.00	359.76	6,755.00	7,984.43	-554.12	8,000.86	0.00	0.00	0.00
14,600.00	90.00	359.76	6,755.00	8,084.43	-554.54	8,100.78	0.00	0.00	0.00
14,700.00	90.00	359.76	6,755.00	8,184.43	-554.95	8,200.71	0.00	0.00	0.00
14,800.00	90.00	359.76	6,755.00	8,284.43	-555.36	8,300.63	0.00	0.00	0.00
14,900.00	90.00	359.76	6,755.00	8,384.43	-555.78	8,400.56	0.00	0.00	0.00
15,000.00	90.00	359.76	6,755.00	8,484.43	-556.19	8,500.48	0.00	0.00	0.00
15,100.00	90.00	359.76	6,755.00	8,584.43	-556.60	8,600.41	0.00	0.00	0.00
15,200.00	90.00	359.76	6,755.00	8,684.42	-557.02	8,700.33	0.00	0.00	0.00
15,300.00	90.00	359.76	6,755.00	8,784.42	-557.43	8,800.25	0.00	0.00	0.00
15,400.00	90.00	359.76	6,755.00	8,884.42	-557.84	8,900.18	0.00	0.00	0.00
15,500.00	90.00	359.76	6,755.00	8,984.42	-558.26	9,000.10	0.00	0.00	0.00
15,600.00	90.00	359.76	6,755.00	9,084.42	-558.67	9,100.03	0.00	0.00	0.00
15,700.00	90.00	359.76	6,755.00	9,184.42	-559.08	9,199.95	0.00	0.00	0.00
15,800.00	90.00	359.76	6,755.00	9,284.42	-559.50	9,299.88	0.00	0.00	0.00
15,900.00	90.00	359.76	6,755.00	9,384.42	-559.91	9,399.80	0.00	0.00	0.00
16,000.00	90.00	359.76	6,755.00	9,484.42	-560.32	9,499.73	0.00	0.00	0.00
16,100.00	90.00	359.76	6,755.00	9,584.42	-560.74	9,599.65	0.00	0.00	0.00
16,200.00	90.00	359.76	6,755.00	9,684.42	-561.15	9,699.58	0.00	0.00	0.00
16,300.00	90.00	359.76	6,755.00	9,784.42	-561.56	9,799.50	0.00	0.00	0.00
16,400.00	90.00	359.76	6,755.00	9,884.41	-561.98	9,899.43	0.00	0.00	0.00
16,500.00	90.00	359.76	6,755.00	9,984.41	-562.39	9,999.35	0.00	0.00	0.00
16,600.00	90.00	359.76	6,755.00	10,084.41	-562.80	10,099.28	0.00	0.00	0.00
16,700.00	90.00	359.76	6,755.00	10,184.41	-563.22	10,199.20	0.00	0.00	0.00
16,800.00	90.00	359.76	6,755.00	10,284.41	-563.63	10,299.13	0.00	0.00	0.00
16,900.00	90.00	359.76	6,755.00	10,384.41	-564.04	10,399.05	0.00	0.00	0.00
17,000.00	90.00	359.76	6,755.00	10,484.41	-564.46	10,498.98	0.00	0.00	0.00
17,100.00	90.00	359.76	6,755.00	10,584.41	-564.87	10,598.90	0.00	0.00	0.00
17,200.00	90.00	359.76	6,755.00	10,684.41	-565.28	10,698.82	0.00	0.00	0.00
17,300.00	90.00	359.76	6,755.00	10,784.41	-565.69	10,798.75	0.00	0.00	0.00
17,400.00	90.00	359.76	6,755.00	10,884.41	-566.11	10,898.67	0.00	0.00	0.00
17,500.00	90.00	359.76	6,755.00	10,984.41	-566.52	10,998.60	0.00	0.00	0.00
17,600.00	90.00	359.76	6,755.00	11,084.40	-566.93	11,098.52	0.00	0.00	0.00
17,700.00	90.00	359.76	6,755.00	11,184.40	-567.35	11,198.45	0.00	0.00	0.00
17,800.00	90.00	359.76	6,755.00	11,284.40	-567.76	11,298.37	0.00	0.00	0.00
17,900.00	90.00	359.76	6,755.00	11,384.40	-568.17	11,398.30	0.00	0.00	0.00
18,000.00	90.00	359.76	6,755.00	11,484.40	-568.59	11,498.22	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Booth C35-745
Project:	Mustang	TVD Reference:	KB @ 4751.00ft
Site:	C Section 35	MD Reference:	KB @ 4751.00ft
Well:	Booth C35-745	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDMP

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)
18,100.00	90.00	359.76	6,755.00	11,584.40	-569.00	11,598.15	0.00	0.00	0.00
18,200.00	90.00	359.76	6,755.00	11,684.40	-569.41	11,698.07	0.00	0.00	0.00
18,300.00	90.00	359.76	6,755.00	11,784.40	-569.83	11,798.00	0.00	0.00	0.00
18,400.00	90.00	359.76	6,755.00	11,884.40	-570.24	11,897.92	0.00	0.00	0.00
18,500.00	90.00	359.76	6,755.00	11,984.40	-570.65	11,997.85	0.00	0.00	0.00
18,600.00	90.00	359.76	6,755.00	12,084.40	-571.07	12,097.77	0.00	0.00	0.00
18,700.00	90.00	359.76	6,755.00	12,184.39	-571.48	12,197.70	0.00	0.00	0.00
18,800.00	90.00	359.76	6,755.00	12,284.39	-571.89	12,297.62	0.00	0.00	0.00
18,900.00	90.00	359.76	6,755.00	12,384.39	-572.31	12,397.54	0.00	0.00	0.00
19,000.00	90.00	359.76	6,755.00	12,484.39	-572.72	12,497.47	0.00	0.00	0.00
19,100.00	90.00	359.76	6,755.00	12,584.39	-573.13	12,597.39	0.00	0.00	0.00
19,200.00	90.00	359.76	6,755.00	12,684.39	-573.55	12,697.32	0.00	0.00	0.00
19,300.00	90.00	359.76	6,755.00	12,784.39	-573.96	12,797.24	0.00	0.00	0.00
19,400.00	90.00	359.76	6,755.00	12,884.39	-574.37	12,897.17	0.00	0.00	0.00
19,500.00	90.00	359.76	6,755.00	12,984.39	-574.79	12,997.09	0.00	0.00	0.00
19,600.00	90.00	359.76	6,755.00	13,084.39	-575.20	13,097.02	0.00	0.00	0.00
19,700.00	90.00	359.76	6,755.00	13,184.39	-575.61	13,196.94	0.00	0.00	0.00
19,800.00	90.00	359.76	6,755.00	13,284.39	-576.03	13,296.87	0.00	0.00	0.00
19,900.00	90.00	359.76	6,755.00	13,384.38	-576.44	13,396.79	0.00	0.00	0.00
19,935.53	90.00	359.76	6,755.00	13,419.92	-576.59	13,432.30	0.00	0.00	0.00

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SHL Booth C35-745 - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	1,339,280.15	3,274,829.46	40.2605340	-104.5152220
KOP Booth C35-745 - plan hits target center - Point	0.00	0.00	6,124.16	0.15	-438.27	1,339,280.30	3,274,391.19	40.2605477	-104.5167923
BHL Booth C35-745 - plan hits target center - Point	0.00	0.00	6,755.00	13,419.92	-576.59	1,352,700.04	3,274,252.87	40.2973880	-104.5167547
TPZ Booth C35-745 - plan hits target center - Point	0.00	0.00	6,755.00	636.42	-523.75	1,339,916.57	3,274,305.70	40.2622969	-104.5170733

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Booth C35-745
Project:	Mustang	TVD Reference:	KB @ 4751.00ft
Site:	C Section 35	MD Reference:	KB @ 4751.00ft
Well:	Booth C35-745	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDMP

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
430.00	430.00	Pierre				
613.00	613.00	Upper Pierre Aquifer Top				
1,517.00	1,517.00	Upper Pierre Aquifer Base				
3,641.75	3,635.00	Parkman				
4,321.54	4,309.00	Sussex				
4,856.09	4,839.00	Shannon				
5,923.18	5,897.00	Teepee Buttes				
6,636.25	6,559.00	Sharon Springs				
6,676.47	6,587.00	Top A Chalk				
6,697.64	6,601.00	Top A Marl				
6,721.27	6,616.00	Top B Chalk				
6,798.11	6,660.00	Top B Marl				
6,921.20	6,714.00	Top C Chalk				
7,027.59	6,743.00	Top C Marl				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
2600	2600	0	0	Start Build 2.00	
6152	6124	0	-438	Start DLS 9.00 TFO 89.75	
7152	6755	636	-524	TPZ/LP at 7151.92 MD	
19,936	6755	13,420	-577	TD at 19935.53 MD	

Checked By: _____	Approved By: _____	Date: _____
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Northern Region - DJ Basin

Mustang

C Section 35

Booth C35-745

Wellbore #1

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 C35-745
Project:	Mustang	TVD Reference:	KB @ 4751.00ft
Reference Site:	C Section 35	MD Reference:	KB @ 4751.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Booth C35-745	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:	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	19,935.53	Plan #1 (Wellbore #1)	2_MWD+IFR1	A005Mb: IFR declination correction only

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
C Section 23						
BOOTH #23-12I4(PR) - Wellbore #1 - No Surveys	19,879.05	6,660.00	2,483.65	2,278.40	12.101	CC
BOOTH #23-12I4(PR) - Wellbore #1 - No Surveys	19,900.00	6,660.00	2,483.74	2,278.25	12.087	ES
BOOTH #23-12I4(PR) - Wellbore #1 - No Surveys	19,935.53	6,660.00	2,484.29	2,278.42	12.067	SF
BOOTH C #23-20(PR) - Wellbore #1 - No Surveys	19,935.53	6,662.00	1,673.72	1,467.92	8.133	CC, ES, SF
COLEMAN #23-6I4(PR) - Wellbore #1 - No Surveys	19,935.53	6,659.00	1,396.26	1,227.76	8.286	CC, ES, SF
COLEMAN #C23-31D(PR) - Wellbore #1 - MWD	19,935.53	6,809.21	3,287.79	3,133.24	21.274	CC, ES, SF
Coleman C #23-04(PR) - Wellbore #1 - No Surveys	19,935.53	6,656.00	3,182.83	3,016.50	19.136	CC, ES, SF
COLEMAN C #23-19(PR) - Wellbore #1 - No Surveys	19,935.53	6,658.00	2,244.31	2,081.42	13.777	CC, ES, SF
COLEMAN C #23-21(PR) - Wellbore #1 - No Surveys	19,935.53	6,661.00	623.35	443.70	3.470	CC, ES, SF
Coleman C #23-29D(SI) - Wellbore #1 - MWD Surveys	19,935.53	6,860.71	3,237.02	3,131.23	30.597	CC, ES, SF
KISSLER #1(SI) - Wellbore #1 - Gyro	18,153.17	2,019.86	2,326.35	2,190.88	17.173	CC
KISSLER #1(SI) - Wellbore #1 - Gyro	18,200.00	2,019.37	2,326.82	2,190.83	17.110	ES
KISSLER #1(SI) - Wellbore #1 - Gyro	18,400.00	2,017.29	2,339.41	2,201.76	16.995	SF
KISSLER #2(PR) - Wellbore #1 - No Surveys	19,455.75	6,666.00	999.55	798.80	4.979	CC, ES
KISSLER #2(PR) - Wellbore #1 - No Surveys	19,500.00	6,666.00	1,000.53	799.34	4.973	SF
KISSLER #3(DA) - Wellbore #1 - No Surveys	18,135.86	6,669.00	1,005.21	818.60	5.387	CC, ES
KISSLER #3(DA) - Wellbore #1 - No Surveys	18,200.00	6,669.00	1,007.25	820.06	5.381	SF
KISSLER #3X(SI) - Wellbore #1 - Gyro	18,011.41	6,681.53	1,050.65	900.39	6.992	CC, ES
KISSLER #3X(SI) - Wellbore #1 - Gyro	18,100.00	6,681.85	1,054.37	903.41	6.984	SF
SATER C #23-15(PA) - Wellbore #1 - Gyro	17,961.13	6,683.10	171.46	21.58	1.144	Level 2, CC, ES, SF
SATER C #23-17(PR) - Wellbore #1 - No Surveys	19,935.53	6,656.00	1,817.67	1,666.91	12.057	CC, ES, SF
SATER C #23-22(PR) - Wellbore #1 - No Surveys	19,935.53	6,664.00	931.73	731.52	4.654	CC, ES, SF
SATER C #23-24(PR) - Wellbore #1 - Gyro	18,607.69	6,665.92	222.75	66.14	1.422	Level 3, CC, ES, SF
SATER C #23-28D(PR) - Wellbore #1 - MWD Surveys	19,935.53	6,806.60	2,785.71	2,723.66	44.895	CC, ES, SF
Sater C24-79HN - Original Drilling - Original Drilling	18,600.00	18,600.00	2,385.51	2,116.17	8.857	ES, SF
Sater C24-79HN - Original Drilling - Original Drilling	19,906.11	8,245.57	2,361.82	2,174.86	12.633	CC
Sater C25-69HN - Original Drilling - Original Drilling	17,645.64	6,243.01	2,930.45	2,797.06	21.970	CC, ES
Sater C25-69HN - Original Drilling - Original Drilling	18,000.00	6,243.01	2,951.79	2,815.98	21.735	SF
Sater C25-79HN - Original Drilling - Original Drilling	16,918.85	7,783.14	2,160.96	2,017.23	15.035	CC
Sater C25-79HN - Original Drilling - Original Drilling	17,000.00	17,000.00	2,161.76	1,938.01	9.662	ES, SF
Sater C26-69HN - Original Drilling - Original Drilling	17,641.92	8,463.47	21.13	-81.53	0.206	Level 1, CC, ES, SF
UPRC #23-2I4(PR) - Wellbore #1 - No Surveys	19,935.53	6,653.00	2,126.42	2,018.72	19.744	CC, ES, SF
UPV #23-10I4(PR) - Wellbore #1 - No Surveys	19,634.89	6,664.00	141.48	-61.18	0.698	Level 1, CC, ES, SF
UPV #23-15I4(PA) - Wellbore #1 - Gyro	18,559.38	6,715.25	830.92	674.65	5.317	CC, ES, SF
UPV #23-16I4(PR) - Wellbore #1 - Gyro	18,044.94	6,641.32	1,754.60	1,604.18	11.665	CC, ES
UPV #23-16I4(PR) - Wellbore #1 - Gyro	18,100.00	6,639.67	1,755.46	1,604.59	11.636	SF
UPV #23-1I4(SI) - Wellbore #1 - Gyro Surveys	19,935.53	6,661.09	2,878.24	2,763.18	25.015	CC, ES, SF

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

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Booth C35-745
Project:	Mustang	TVD Reference:	KB @ 4751.00ft
Reference Site:	C Section 35	MD Reference:	KB @ 4751.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Booth C35-745	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:	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						
C Section 23						
UPV #23-714(PR) - Wellbore #1 - No Surveys	19,935.53	6,660.00	797.51	697.30	7.958	CC, ES, SF
UPV #23-814(PR) - Wellbore #1 - Gyro Surveys	19,935.53	6,704.03	1,877.30	1,721.77	12.071	CC, ES, SF
UPV #23-914(PR) - Wellbore #1 - Gyro Surveys	19,637.94	6,732.66	1,881.98	1,714.07	11.208	CC, ES
UPV #23-914(PR) - Wellbore #1 - Gyro Surveys	19,700.00	6,732.81	1,883.00	1,714.57	11.180	SF
VOLKENS #1(SI) - Wellbore #1 - No Surveys	19,935.53	6,659.00	2,447.97	2,251.05	12.432	CC, ES, SF
VOLKENS #2(SI) - Wellbore #1 - No Surveys	19,935.53	4,650.00	3,118.08	2,999.65	26.329	CC, ES, SF
C Section 26						
BOOTH C #26-12(PR) - Wellbore #1 - No Surveys	14,297.08	6,682.00	2,405.21	2,259.27	16.481	CC
BOOTH C #26-12(PR) - Wellbore #1 - No Surveys	14,300.00	6,682.00	2,405.21	2,259.23	16.477	ES
BOOTH C #26-12(PR) - Wellbore #1 - No Surveys	14,600.00	6,682.00	2,424.21	2,275.46	16.298	SF
DINNEL #1(PR) - Wellbore #1 - No Surveys	15,483.06	6,679.00	2,325.18	2,166.76	14.677	CC
DINNEL #1(PR) - Wellbore #1 - No Surveys	15,500.00	6,679.00	2,325.24	2,166.63	14.660	ES
DINNEL #1(PR) - Wellbore #1 - No Surveys	15,700.00	6,679.00	2,335.28	2,174.77	14.549	SF
DINNEL #2(PA) - Wellbore #1 - Gyro	16,807.91	6,704.72	994.40	857.03	7.239	CC, ES
DINNEL #2(PA) - Wellbore #1 - Gyro	16,900.00	6,704.10	998.65	860.56	7.232	SF
DINNEL #26-4(SI) - Wellbore #1 - Gyro	16,797.40	6,685.27	2,363.97	2,226.71	17.222	CC
DINNEL #26-4(SI) - Wellbore #1 - Gyro	16,800.00	6,685.19	2,363.97	2,226.68	17.218	ES
DINNEL #26-4(SI) - Wellbore #1 - Gyro	17,100.00	6,675.08	2,383.25	2,243.39	17.040	SF
DINNEL #3(PR) - Wellbore #1 - No Surveys	15,492.07	6,677.00	1,016.78	858.28	6.415	CC
DINNEL #3(PR) - Wellbore #1 - No Surveys	15,500.00	6,677.00	1,016.81	858.22	6.411	ES, SF
DINNEL C #26-18(PR) - Wellbore #1 - No Surveys	16,127.59	6,676.00	516.50	351.26	3.126	CC, ES, SF
DINNEL C #26-19(SI) - Wellbore #1 - No Surveys	16,222.53	6,669.00	1,802.98	1,636.80	10.850	CC, ES
DINNEL C #26-19(SI) - Wellbore #1 - No Surveys	16,400.00	6,669.00	1,811.69	1,643.90	10.797	SF
DINNEL C #26-20(PR) - Wellbore #1 - No Surveys	15,023.46	6,679.00	1,667.78	1,514.22	10.861	CC, ES
DINNEL C #26-20(PR) - Wellbore #1 - No Surveys	15,200.00	6,679.00	1,677.10	1,521.94	10.809	SF
DINNEL C #26-21D(PR) - Wellbore #1 - No Surveys	15,462.76	6,678.00	987.56	829.37	6.243	CC, ES
DINNEL C #26-21D(PR) - Wellbore #1 - No Surveys	15,500.00	6,678.00	988.27	829.66	6.231	SF
PROSPECT CO #26-1014(PR) - Wellbore #1 - No Survey	13,849.98	6,678.00	685.36	544.13	4.853	CC, ES, SF
PROSPECT CO #26-1114(PR) - Wellbore #1 - No Survey	14,374.33	6,682.00	974.18	827.43	6.638	CC, ES
PROSPECT CO #26-1114(PR) - Wellbore #1 - No Survey	14,400.00	6,682.00	974.52	827.47	6.627	SF
PROSPECT CO #26-1214(PR) - Wellbore #1 - No Survey	13,671.68	6,682.00	1,913.77	1,774.37	13.728	CC
PROSPECT CO #26-1214(PR) - Wellbore #1 - No Survey	13,700.00	6,682.00	1,913.98	1,774.26	13.699	ES
PROSPECT CO #26-1214(PR) - Wellbore #1 - No Survey	13,900.00	6,682.00	1,927.34	1,785.83	13.620	SF
PROSPECT CO #26-1314(PR) - Wellbore #1 - No Survey	12,870.44	6,684.00	2,413.28	2,282.17	18.406	CC
PROSPECT CO #26-1314(PR) - Wellbore #1 - No Survey	12,900.00	6,684.00	2,413.46	2,282.02	18.361	ES
PROSPECT CO #26-1314(PR) - Wellbore #1 - No Survey	13,200.00	6,684.00	2,435.68	2,301.49	18.151	SF
PROSPECT CO #26-1414(PR) - Wellbore #1 - No Survey	12,868.19	6,706.00	783.52	652.23	5.968	CC, ES
PROSPECT CO #26-1414(PR) - Wellbore #1 - No Survey	12,900.00	6,706.00	784.16	652.52	5.957	SF
PROSPECT CO #26-1514(PR) - Wellbore #1 - No Survey	12,720.49	6,679.00	137.99	8.46	1.065	Level 2, CC, ES, SF
PROSPECT CO #26-1614(PR) - Wellbore #1 - Gyro	12,838.31	6,705.70	1,634.68	1,538.94	17.074	CC, ES
PROSPECT CO #26-1614(PR) - Wellbore #1 - Gyro	13,000.00	6,708.36	1,642.66	1,545.77	16.954	SF
PROSPECT CO #26-114(SI) - Wellbore #1 - Gyro	16,907.27	6,683.56	1,642.59	1,504.13	11.863	CC, ES
PROSPECT CO #26-114(SI) - Wellbore #1 - Gyro	17,000.00	6,681.85	1,645.20	1,506.06	11.824	SF
PROSPECT CO #26-714(PR) - Wellbore #1 - No Surveys	15,489.62	6,676.00	205.21	46.74	1.295	Level 3, CC, ES, SF
PROSPECT CO #26-814(SI) - Wellbore #1 - Gyro	15,756.18	6,737.14	1,274.26	1,147.80	10.077	CC, ES
PROSPECT CO #26-814(SI) - Wellbore #1 - Gyro	15,800.00	6,736.81	1,275.01	1,148.22	10.056	SF
PROSPECT CO #26-914(PR) - Wellbore #1 - Gyro	14,408.80	6,682.86	1,675.02	1,563.06	14.962	CC, ES
PROSPECT CO #26-914(PR) - Wellbore #1 - Gyro	14,500.00	6,683.74	1,677.50	1,564.82	14.887	SF
RASSMUSSEN #1(PA) - Wellbore #1 - Gyro	16,734.91	6,683.28	363.94	227.30	2.664	CC, ES, SF

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

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Booth C35-745
Project:	Mustang	TVD Reference:	KB @ 4751.00ft
Reference Site:	C Section 35	MD Reference:	KB @ 4751.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Booth C35-745	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:	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						
C Section 35						
BOOTH #11-35U(PR) - Wellbore #1 - No Surveys	11,368.95	6,694.00	2,497.86	2,381.87	21.535	CC
BOOTH #11-35U(PR) - Wellbore #1 - No Surveys	11,400.00	6,694.00	2,498.05	2,381.73	21.476	ES
BOOTH #11-35U(PR) - Wellbore #1 - No Surveys	11,800.00	6,694.00	2,534.78	2,414.89	21.142	SF
BOOTH #12-35DU(PR) - Wellbore #1 - No Surveys	10,654.39	6,684.00	1,516.31	1,407.39	13.921	CC, ES
BOOTH #12-35DU(PR) - Wellbore #1 - No Surveys	10,800.00	6,684.00	1,523.29	1,412.96	13.807	SF
BOOTH #21-35U(PR) - Wellbore #1 - No Surveys	11,379.36	6,694.00	985.56	869.47	8.489	CC
BOOTH #21-35U(PR) - Wellbore #1 - No Surveys	11,400.00	6,694.00	985.78	869.45	8.474	ES
BOOTH #21-35U(PR) - Wellbore #1 - No Surveys	11,500.00	6,694.00	992.92	875.73	8.473	SF
BOOTH #22-35U(PR) - Wellbore #1 - No Surveys	11,368.96	2,004.00	2,497.86	2,422.80	33.277	CC
BOOTH #22-35U(PR) - Wellbore #1 - No Surveys	11,400.00	2,004.00	2,498.05	2,422.66	33.134	ES
BOOTH #22-35U(PR) - Wellbore #1 - No Surveys	11,900.00	2,004.00	2,553.69	2,474.03	32.060	SF
BOOTH #35AU(PR) - Wellbore #1 - No Surveys	10,676.25	6,684.00	1,516.46	1,407.33	13.896	CC
BOOTH #35AU(PR) - Wellbore #1 - No Surveys	10,700.00	6,684.00	1,516.65	1,407.27	13.865	ES
BOOTH #35AU(PR) - Wellbore #1 - No Surveys	10,800.00	6,684.00	1,521.50	1,411.15	13.788	SF
BOOTH C #35-01(SI) - Wellbore #1 - No Surveys	11,682.16	6,698.00	1,638.88	1,519.73	13.755	CC
BOOTH C #35-01(SI) - Wellbore #1 - No Surveys	11,700.00	6,698.00	1,638.98	1,519.67	13.738	ES
BOOTH C #35-01(SI) - Wellbore #1 - No Surveys	11,800.00	6,698.00	1,643.11	1,523.05	13.686	SF
BOOTH C #35-07(SI) - Wellbore #1 - No Surveys	10,352.42	6,713.00	327.76	221.46	3.083	CC, ES, SF
BOOTH C #35-08(SI) - Wellbore #1 - No Surveys	10,358.38	6,708.00	1,649.01	1,542.70	15.512	CC, ES
BOOTH C #35-08(SI) - Wellbore #1 - No Surveys	10,500.00	6,708.00	1,655.08	1,547.72	15.417	SF
BOOTH C #35-27(SI) - Wellbore #1 - Gyro	12,223.79	6,672.44	988.13	898.89	11.073	CC, ES
BOOTH C #35-27(SI) - Wellbore #1 - Gyro	12,300.00	6,673.38	991.07	901.37	11.050	SF
Booth C35-725 - Wellbore #1 - Plan #1	2,000.00	2,001.00	44.93	31.06	3.238	CC, ES
Booth C35-725 - Wellbore #1 - Plan #1	2,100.00	2,099.40	46.69	32.11	3.204	SF
Booth C35-735 - Wellbore #1 - Plan #1	2,600.00	2,601.00	22.61	4.43	1.244	Level 3, CC, ES, SF
Booth C35-750 - Wellbore #1 - Plan #1	2,000.00	2,000.00	22.61	8.74	1.630	CC, ES
Booth C35-750 - Wellbore #1 - Plan #1	19,935.53	20,088.38	346.65	60.99	1.214	Level 3, SF
Booth C35-755 - Wellbore #1 - Plan #1	6,413.16	6,296.42	648.94	604.27	14.528	CC
Booth C35-755 - Wellbore #1 - Plan #1	19,935.53	19,909.67	655.55	360.26	2.220	ES, SF
Booth C35-765 - Wellbore #1 - Plan #1	2,400.00	2,379.00	962.78	946.11	57.771	CC, ES
Booth C35-765 - Wellbore #1 - Plan #1	19,935.53	19,915.47	1,312.21	1,016.13	4.432	SF
Booth C35-775 - Wellbore #1 - Plan #1	2,200.00	2,179.00	985.37	970.14	64.693	CC, ES
Booth C35-775 - Wellbore #1 - Plan #1	19,935.53	20,176.38	1,966.58	1,670.35	6.639	SF
Booth C35-785 - Wellbore #1 - Plan #1	2,000.00	1,979.00	1,007.96	994.16	73.053	CC, ES
Booth C35-785 - Wellbore #1 - Plan #1	19,935.53	20,337.37	2,622.28	2,325.17	8.826	SF
UPV #35-214(SI) - Wellbore #1 - No Surveys	11,230.63	6,688.00	678.53	563.96	5.922	CC, ES, SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Booth C35-745
Project:	Mustang	TVD Reference:	KB @ 4751.00ft
Reference Site:	C Section 35	MD Reference:	KB @ 4751.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Booth C35-745	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:	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 02						
BOOTH D #02-31 - BOOTH D #02-31 - No Surveys	6,388.41	6,311.92	2,979.49	2,830.77	20.034	CC
BOOTH D #02-31 - BOOTH D #02-31 - No Surveys	6,400.00	6,322.59	2,979.53	2,830.56	20.000	ES
BOOTH D #02-31 - BOOTH D #02-31 - No Surveys	6,800.00	6,619.99	3,034.23	2,878.04	19.427	SF
DONOVAN D #2-19(PR) - DONOVAN D #2-19 - No Surv	6,326.19	6,250.43	1,980.51	1,833.21	13.445	CC
DONOVAN D #2-19(PR) - DONOVAN D #2-19 - No Surv	6,350.00	6,273.04	1,980.72	1,832.88	13.398	ES
DONOVAN D #2-19(PR) - DONOVAN D #2-19 - No Surv	6,600.00	6,488.28	2,009.98	1,857.01	13.139	SF
DONOVAN D #2-3JI(PR) - DONOVAN D #2-3JI - No Sur	6,423.69	6,345.15	1,065.13	915.64	7.125	CC
DONOVAN D #2-3JI(PR) - DONOVAN D #2-3JI - No Sur	6,450.00	6,368.66	1,065.36	915.31	7.100	ES
DONOVAN D #2-3JI(PR) - DONOVAN D #2-3JI - No Sur	6,600.00	6,492.28	1,076.74	923.72	7.036	SF
DONOVAN D #2-4JI(SI) - DONOVAN D #2-4JI - No Surv	6,666.83	6,527.45	2,314.81	2,160.91	15.041	CC
DONOVAN D #2-4JI(SI) - DONOVAN D #2-4JI - No Surv	6,700.00	6,549.53	2,315.09	2,160.66	14.990	ES
DONOVAN D #2-4JI(SI) - DONOVAN D #2-4JI - No Surv	6,900.00	6,653.22	2,330.49	2,173.37	14.833	SF
DONOVAN D #2-5JI - DONOVAN D #2-5JI - No Surveys	6,276.02	6,203.07	2,835.87	2,689.65	19.395	CC
DONOVAN D #2-5JI - DONOVAN D #2-5JI - No Surveys	6,300.00	6,226.30	2,836.13	2,689.35	19.323	ES
DONOVAN D #2-5JI - DONOVAN D #2-5JI - No Surveys	6,650.00	6,525.78	2,900.62	2,746.70	18.845	SF
DONOVAN D #2-6JI(PR) - DONOVAN D #2-6JI - No Sur	6,203.06	6,134.45	2,023.09	1,878.34	13.977	CC, ES
DONOVAN D #2-6JI(PR) - DONOVAN D #2-6JI - No Sur	6,400.00	6,323.59	2,049.37	1,900.13	13.732	SF
GUTTERSEN #D02-25(PR) - GUTTERSEN #D02-25 - N	6,193.75	6,114.24	3,662.37	3,518.03	25.373	CC
GUTTERSEN #D02-25(PR) - GUTTERSEN #D02-25 - N	6,200.00	6,120.42	3,662.40	3,517.91	25.347	ES
GUTTERSEN #D02-25(PR) - GUTTERSEN #D02-25 - N	6,550.00	6,442.27	3,750.36	3,598.24	24.653	SF
GUTTERSEN #D02-33D(PR) - GUTTERSEN #D02-33D	100.00	41.18	3,878.74	3,878.54	10,000.000	CC
GUTTERSEN #D02-33D(PR) - GUTTERSEN #D02-33D	1,000.00	937.02	3,882.08	3,875.71	609.036	ES
GUTTERSEN #D02-33D(PR) - GUTTERSEN #D02-33D	6,650.00	6,701.97	4,726.69	4,675.24	91.885	SF
GUTTERSEN #D11-29D(PR) - GUTTERSEN #D11-29D	100.00	58.90	3,878.45	3,878.22	10,000.000	CC
GUTTERSEN #D11-29D(PR) - GUTTERSEN #D11-29D	300.00	230.06	3,879.06	3,877.73	2,903.698	ES
GUTTERSEN #D11-29D(PR) - GUTTERSEN #D11-29D	6,550.00	6,739.70	5,209.73	5,160.45	105.710	SF
GUTTERSEN D #02-20(SI) - GUTTERSEN D #02-20 - W	6,200.48	6,113.90	2,929.50	2,895.91	87.236	CC, ES
GUTTERSEN D #02-20(SI) - GUTTERSEN D #02-20 - W	6,550.00	6,445.45	3,010.30	2,974.74	84.656	SF
Guttersen D02-75HN - Original Drilling - Original Drilling	6,573.85	11,143.00	423.56	334.31	4.746	CC, ES, SF
HSR-BOOTH #7-2(SI) - HSR-BOOTH #7-2 - No Surveys	3,654.94	3,599.08	1,536.50	1,451.72	18.123	CC
HSR-BOOTH #7-2(SI) - HSR-BOOTH #7-2 - No Surveys	5,800.00	5,725.87	1,561.69	1,426.46	11.549	ES
HSR-BOOTH #7-2(SI) - HSR-BOOTH #7-2 - No Surveys	6,300.00	6,220.30	1,591.27	1,444.29	10.827	SF
HSR-BOOTH #8-2(SI) - HSR-BOOTH #8-2 - No Surveys	2,600.00	2,586.00	1,890.18	1,829.37	31.085	CC
HSR-BOOTH #8-2(SI) - HSR-BOOTH #8-2 - No Surveys	2,700.00	2,685.98	1,891.13	1,827.97	29.943	ES
HSR-BOOTH #8-2(SI) - HSR-BOOTH #8-2 - No Surveys	6,350.00	6,303.04	2,198.84	2,050.17	14.791	SF
KERN #1(PA) - KERN #1 - No Surveys	2,600.00	2,564.00	865.55	805.18	14.338	CC
KERN #1(PA) - KERN #1 - No Surveys	2,700.00	2,663.98	866.97	804.26	13.824	ES
KERN #1(PA) - KERN #1 - No Surveys	6,300.00	6,233.30	1,272.78	1,125.85	8.662	SF
KERN D #2-1(SI) - KERN D #2-1 - No Surveys	2,600.00	2,563.00	1,316.50	1,256.15	21.815	CC
KERN D #2-1(SI) - KERN D #2-1 - No Surveys	2,700.00	2,662.98	1,318.23	1,255.54	21.026	ES
KERN D #2-1(SI) - KERN D #2-1 - No Surveys	6,600.00	6,495.28	1,825.58	1,672.52	11.927	SF
KERN D #2-2JI(PR) - KERN D #2-2JI - No Surveys	4,936.55	4,880.77	121.24	6.13	1.053	Level 2, CC
KERN D #2-2JI(PR) - KERN D #2-2JI - No Surveys	5,100.00	5,042.83	123.09	4.14	1.035	Level 2, ES, SF
L F RANCH #2-2(SI) - L F RANCH #2-2 - No Surveys	6,195.43	6,115.90	4,403.96	4,259.58	30.504	CC
L F RANCH #2-2(SI) - L F RANCH #2-2 - No Surveys	6,200.00	6,120.42	4,403.97	4,259.49	30.481	ES
L F RANCH #2-2(SI) - L F RANCH #2-2 - No Surveys	6,600.00	6,481.28	4,515.62	4,362.58	29.506	SF
TANIA #D11-27D(PR) - TANIA #D11-27D - Wellbore #1 -	2,534.54	2,579.71	4,740.43	4,720.78	241.287	CC
TANIA #D11-27D(PR) - TANIA #D11-27D - Wellbore #1 -	2,600.00	2,628.00	4,740.60	4,720.35	234.103	ES
TANIA #D11-27D(PR) - TANIA #D11-27D - Wellbore #1 -	6,450.00	6,462.25	4,987.33	4,934.40	94.217	SF
TANIA #D11-28(PR) - TANIA #D11-28 - No Surveys	6,157.57	6,087.40	4,719.03	4,575.25	32.822	CC, ES
TANIA #D11-28(PR) - TANIA #D11-28 - No Surveys	6,550.00	6,451.27	4,836.26	4,683.88	31.737	SF
TANIA BLUE #D 2-11(PR) - TANIA BLUE #D 2-11 - No S	6,178.14	6,103.78	3,021.43	2,877.30	20.963	CC
TANIA BLUE #D 2-11(PR) - TANIA BLUE #D 2-11 - No S	6,200.00	6,125.42	3,021.79	2,877.15	20.891	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 C35-745
Project:	Mustang	TVD Reference:	KB @ 4751.00ft
Reference Site:	C Section 35	MD Reference:	KB @ 4751.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Booth C35-745	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:	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 02						
TANIA BLUE #D 2-11(PR) - TANIA BLUE #D 2-11 - No S	6,450.00	6,362.66	3,076.44	2,926.17	20.473	SF
TANIA BLUE #D 2-12(PA) - TANIA BLUE #D 2-12 - No S	6,222.28	6,135.42	3,712.87	3,568.09	25.645	CC
TANIA BLUE #D 2-12(PA) - TANIA BLUE #D 2-12 - No S	6,250.00	6,162.66	3,713.33	3,567.91	25.534	ES
TANIA BLUE #D 2-12(PA) - TANIA BLUE #D 2-12 - No S	6,600.00	6,474.28	3,798.39	3,645.56	24.854	SF
TANIA BLUE #D 2-14(PR) - TANIA BLUE #D 2-14 - No S	6,170.16	6,093.88	4,456.28	4,312.35	30.962	CC
TANIA BLUE #D 2-14(PR) - TANIA BLUE #D 2-14 - No S	6,200.00	6,123.42	4,456.96	4,312.34	30.817	ES
TANIA BLUE #D 2-14(PR) - TANIA BLUE #D 2-14 - No S	6,550.00	6,445.27	4,564.30	4,412.05	29.980	SF
TANIA BLUE #D2-10(SI) - TANIA BLUE #D2-10 - No Sur	2,836.10	2,799.83	2,810.41	2,744.51	42.645	CC
TANIA BLUE #D2-10(SI) - TANIA BLUE #D2-10 - No Sur	6,152.29	6,088.17	2,842.89	2,699.11	19.772	ES
TANIA BLUE #D2-10(SI) - TANIA BLUE #D2-10 - No Sur	6,400.00	6,327.59	2,894.81	2,745.34	19.368	SF
TANIA BLUE #D2-16(PR) - TANIA BLUE #D2-16 - No Su	2,600.00	2,566.00	4,381.95	4,321.54	72.540	CC
TANIA BLUE #D2-16(PR) - TANIA BLUE #D2-16 - No Su	2,900.00	2,865.45	4,385.66	4,318.22	65.036	ES
TANIA BLUE #D2-16(PR) - TANIA BLUE #D2-16 - No Su	6,550.00	6,459.27	4,634.71	4,482.19	30.387	SF
TANIA BLUE D #2-15(SI) - TANIA BLUE D #2-15 - No Su	3,852.06	3,798.52	4,174.40	4,084.92	46.649	CC
TANIA BLUE D #2-15(SI) - TANIA BLUE D #2-15 - No Su	6,152.29	6,079.17	4,185.14	4,041.53	29.143	ES
TANIA BLUE D #2-15(SI) - TANIA BLUE D #2-15 - No Su	6,500.00	6,406.97	4,280.79	4,129.42	28.281	SF
TANIA BLUE D #2-9(SI) - TANIA BLUE D #2-9 - No Surv	2,600.00	2,579.00	3,102.58	3,041.92	51.141	CC
TANIA BLUE D #2-9(SI) - TANIA BLUE D #2-9 - No Surv	2,800.00	2,778.84	3,105.43	3,040.08	47.515	ES
TANIA BLUE D #2-9(SI) - TANIA BLUE D #2-9 - No Surv	6,450.00	6,387.66	3,383.48	3,232.73	22.444	SF
TANIA D #2-23(SI) - TANIA D #2-23 - No Surveys	2,600.00	2,566.00	3,499.05	3,438.64	57.924	CC
TANIA D #2-23(SI) - TANIA D #2-23 - No Surveys	3,200.00	3,163.01	3,508.22	3,433.78	47.130	ES
TANIA D #2-23(SI) - TANIA D #2-23 - No Surveys	6,450.00	6,374.66	3,672.79	3,522.24	24.396	SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Booth C35-745
Project:	Mustang	TVD Reference:	KB @ 4751.00ft
Reference Site:	C Section 35	MD Reference:	KB @ 4751.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Booth C35-745	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:	Plan #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KB @ 4751.00ft

Offset Depths are relative to Offset Datum

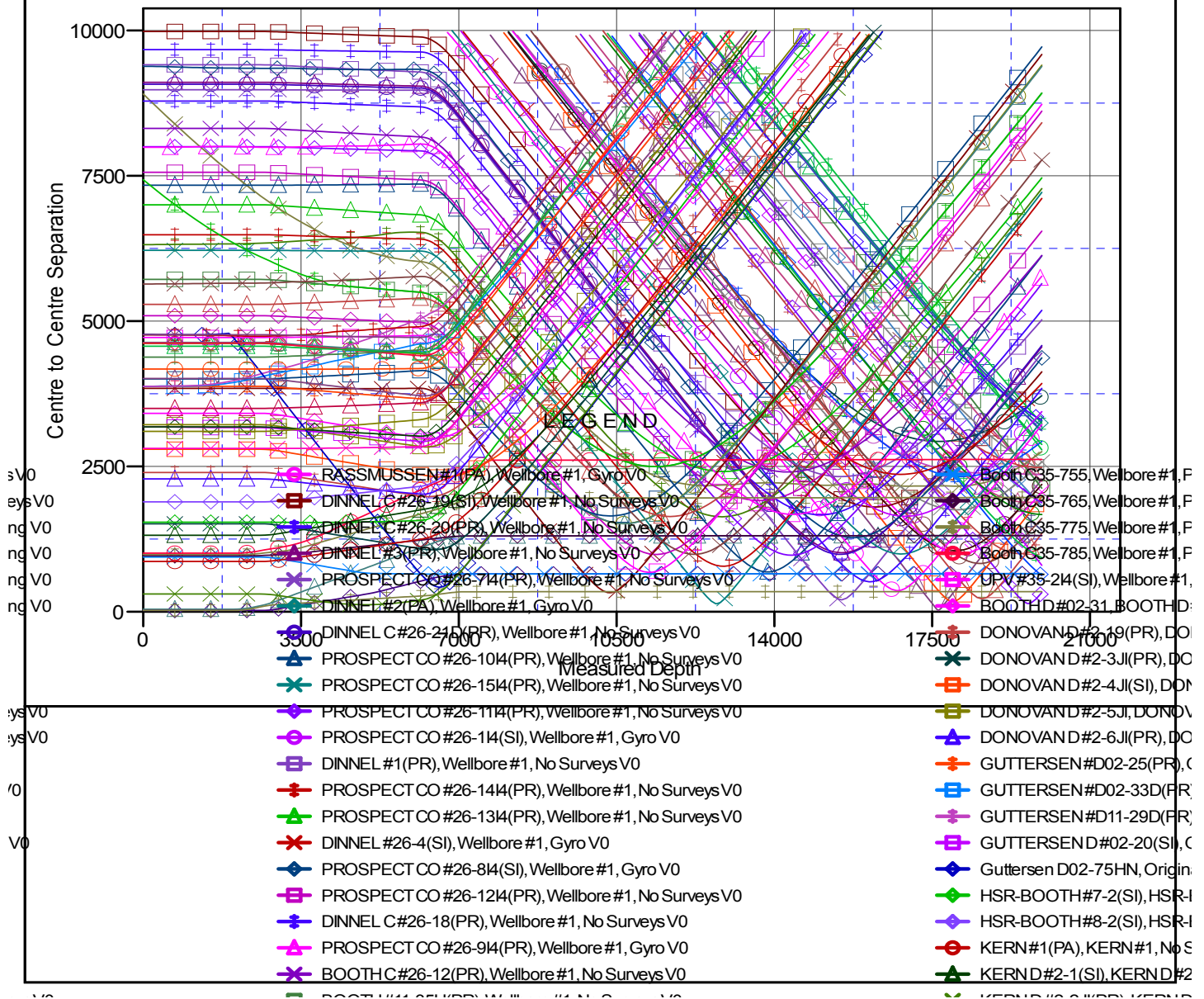
Central Meridian is -105.5000000

Coordinates are relative to: Booth C35-745

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.64°

Ladder Plot



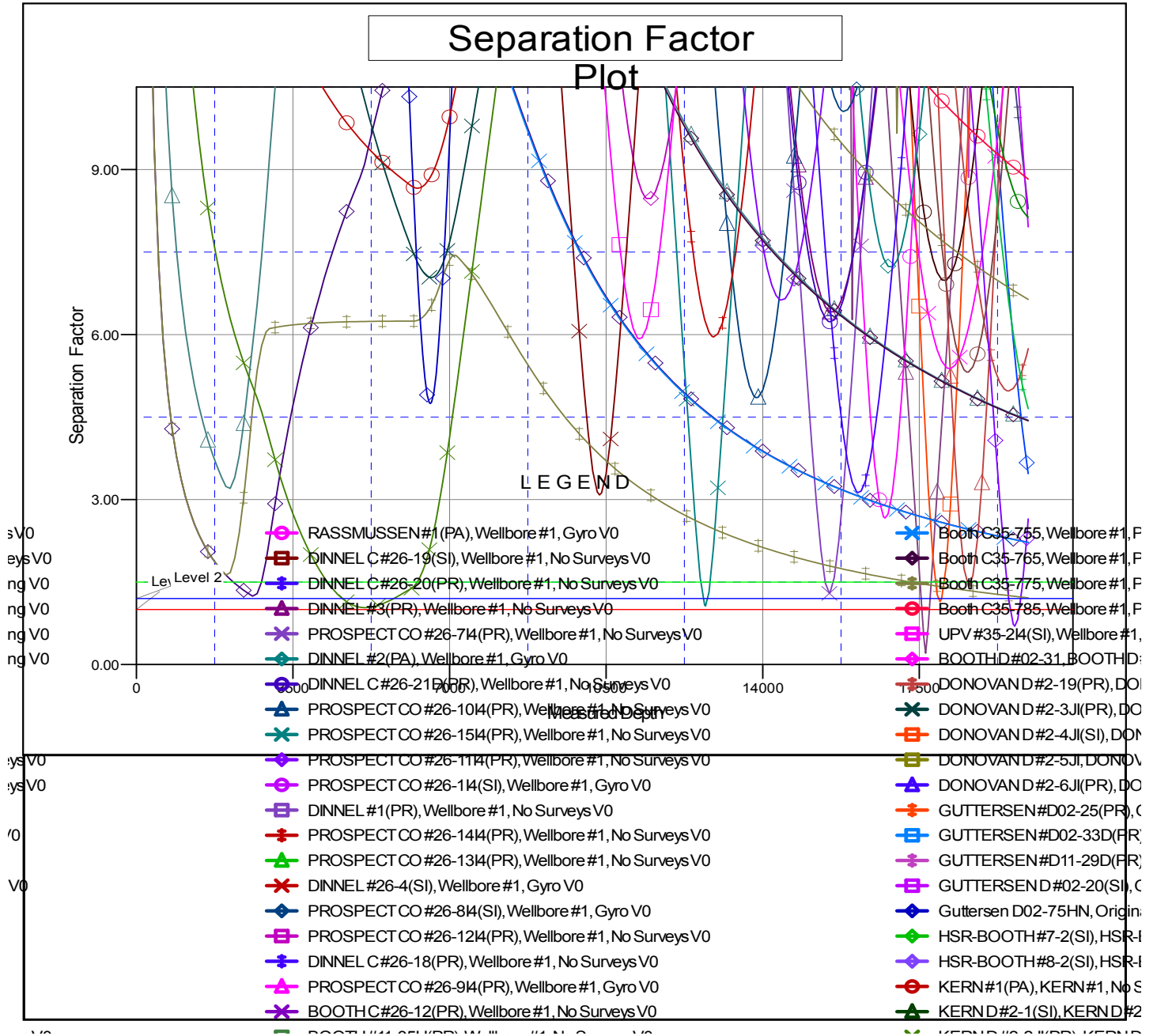
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Booth C35-745
Project:	Mustang	TVD Reference:	KB @ 4751.00ft
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Offset Depths are relative to Offset Datum
Central Meridian is -105.5000000

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Coordinate System is US State Plane 1983, Colorado Northern Zone
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