

Project: Mustang
Site: D Section 23
Well: Gutteresen D35-780
Wellbore: Wellbore #1
Design: Plan #1

Northern Region - DJ Basin

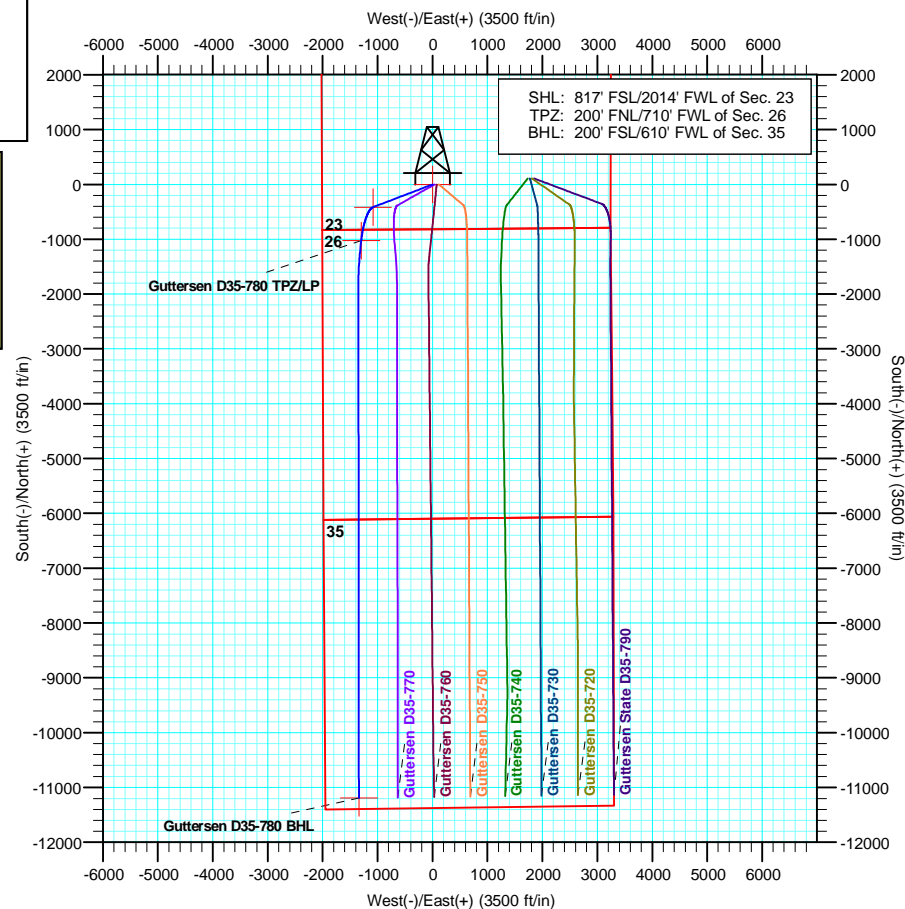
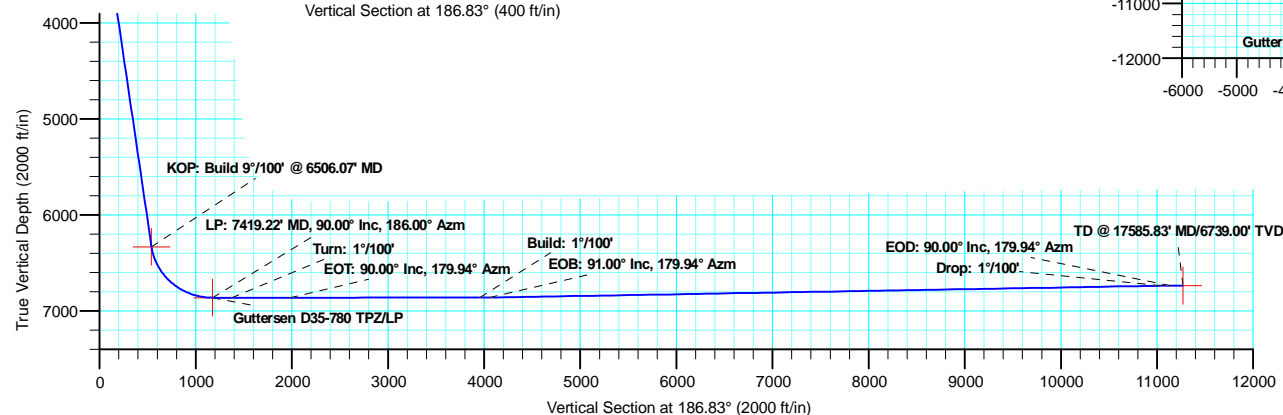
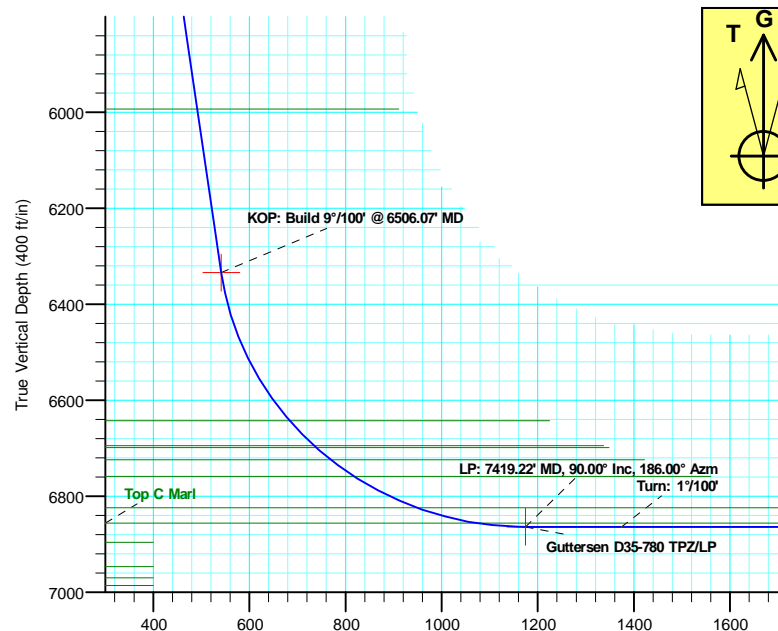
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: Colorado Northern Zone
System Datum: Mean Sea Level

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	2200.00	0.00	0.00	2200.00	0.00	0.00	0.00	0.00	0.00	
3	3073.17	17.46	249.05	3059.71	-47.21	-123.31	2.00	249.05	61.55	
4	6506.07	17.46	249.05	6334.39	-415.54	-1085.42	0.00	0.00	541.75	
5	7419.22	90.00	186.00	6864.00	-1027.26	-1299.05	9.00	-64.13	1174.55	Gutteresen D35-780 TPZ/LP
6	7619.22	90.00	186.00	6864.00	-1226.17	-1319.96	0.00	0.00	1374.53	
7	8225.22	90.00	179.94	6864.00	-1831.07	-1351.34	1.00	-90.00	1978.87	
8	10217.70	90.00	179.94	6864.00	-3823.54	-1349.25	0.00	0.00	3956.93	Gutteresen D35-780 Updip
9	10318.12	91.00	179.94	6863.12	-3923.96	-1349.15	1.00	-0.16	4056.62	
10	17350.41	91.00	179.94	6739.88	-10955.16	-1341.43	0.00	0.00	11036.95	
11	17450.83	90.00	179.94	6739.00	-11055.57	-1341.33	1.00	179.84	11136.63	
12	17585.83	90.00	179.94	6739.00	-11190.57	-1341.19	0.00	0.00	11270.66	Gutteresen D35-780 BHL

WELL DETAILS: Gutteresen D35-780

+N/-S	+E/-W	Northing	Ground Level: Easting	4829.00 Latitude	Longitude	Slot
0.00	0.00	1319345.36	3273502.34	40.2058546	-104.5207657	



Plan: Plan #1 (Gutteresen D35-780/Wellbore #1)

Created By: Keith Noack Date: 14:20, August 15 2018

Northern Region - DJ Basin

Mustang

D Section 23

Guttersen D35-780

Wellbore #1

Plan: Plan #1

Standard Planning Report

15 August, 2018

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Guttersen D35-780
Company:	Northern Region - DJ Basin	TVD Reference:	KB @ 4859.00ft
Project:	Mustang	MD Reference:	KB @ 4859.00ft
Site:	D Section 23	North Reference:	Grid
Well:	Guttersen D35-780	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
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 23			
Site Position:		Northing:	1,319,071.18 usft	Latitude:	40.2050590
From:	Lat/Long	Easting:	3,274,917.86 usft	Longitude:	-104.5157090
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.64 °

Well	Guttersen D35-780					
Well Position	+N/-S	274.18 ft	Northing:	1,319,345.36 usft	Latitude:	40.2058546
	+E/-W	-1,415.52 ft	Easting:	3,273,502.34 usft	Longitude:	-104.5207657
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,829.00 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	4/16/2018	7.98	66.72	52,222.07864739

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	186.83

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	
3,073.17	17.46	249.05	3,059.71	-47.21	-123.31	2.00	2.00	0.00	249.05	
6,506.07	17.46	249.05	6,334.39	-415.54	-1,085.42	0.00	0.00	0.00	0.00	
7,419.22	90.00	186.00	6,864.00	-1,027.26	-1,299.05	9.00	7.94	-6.90	-64.13	Guttersen D35-780
7,619.22	90.00	186.00	6,864.00	-1,226.17	-1,319.96	0.00	0.00	0.00	0.00	
8,225.22	90.00	179.94	6,864.00	-1,831.07	-1,351.34	1.00	0.00	-1.00	-90.00	
10,217.70	90.00	179.94	6,864.00	-3,823.54	-1,349.25	0.00	0.00	0.00	0.00	Guttersen D35-780
10,318.12	91.00	179.94	6,863.12	-3,923.96	-1,349.15	1.00	1.00	0.00	-0.16	
17,350.41	91.00	179.94	6,739.88	-10,955.16	-1,341.43	0.00	0.00	0.00	0.00	
17,450.83	90.00	179.94	6,739.00	-11,055.57	-1,341.33	1.00	-1.00	0.00	179.84	
17,585.83	90.00	179.94	6,739.00	-11,190.57	-1,341.19	0.00	0.00	0.00	0.00	Guttersen D35-780

Noble Energy, Inc.

Planning Report

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Company:	Northern Region - DJ Basin	TVD Reference:	KB @ 4859.00ft
Project:	Mustang	MD Reference:	KB @ 4859.00ft
Site:	D Section 23	North Reference:	Grid
Well:	Guttersen D35-780	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
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
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
593.00	0.00	0.00	593.00	0.00	0.00	0.00	0.00	0.00	0.00
Pierre									
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
795.00	0.00	0.00	795.00	0.00	0.00	0.00	0.00	0.00	0.00
Upper Pierre Aquifer Top									
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,683.00	0.00	0.00	1,683.00	0.00	0.00	0.00	0.00	0.00	0.00
Upper Pierre Aquifer Base									
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
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	249.05	2,299.98	-0.62	-1.63	0.81	2.00	2.00	0.00
2,400.00	4.00	249.05	2,399.84	-2.50	-6.52	3.25	2.00	2.00	0.00
2,500.00	6.00	249.05	2,499.45	-5.61	-14.66	7.32	2.00	2.00	0.00
2,600.00	8.00	249.05	2,598.70	-9.97	-26.04	13.00	2.00	2.00	0.00
2,700.00	10.00	249.05	2,697.47	-15.56	-40.65	20.29	2.00	2.00	0.00
2,800.00	12.00	249.05	2,795.62	-22.38	-58.46	29.18	2.00	2.00	0.00
2,900.00	14.00	249.05	2,893.06	-30.42	-79.47	39.67	2.00	2.00	0.00
3,000.00	16.00	249.05	2,989.64	-39.68	-103.64	51.73	2.00	2.00	0.00
3,073.17	17.46	249.05	3,059.71	-47.21	-123.31	61.55	2.00	2.00	0.00
Hold: 17.46° Inc, 249.05° Azm									
3,100.00	17.46	249.05	3,085.31	-50.09	-130.83	65.30	0.00	0.00	0.00
3,200.00	17.46	249.05	3,180.70	-60.82	-158.86	79.29	0.00	0.00	0.00
3,300.00	17.46	249.05	3,276.09	-71.55	-186.89	93.28	0.00	0.00	0.00
3,400.00	17.46	249.05	3,371.48	-82.28	-214.91	107.26	0.00	0.00	0.00
3,500.00	17.46	249.05	3,466.87	-93.00	-242.94	121.25	0.00	0.00	0.00
3,600.00	17.46	249.05	3,562.26	-103.73	-270.96	135.24	0.00	0.00	0.00
3,700.00	17.46	249.05	3,657.65	-114.46	-298.99	149.23	0.00	0.00	0.00
3,800.00	17.46	249.05	3,753.04	-125.19	-327.01	163.22	0.00	0.00	0.00
3,827.21	17.46	249.05	3,779.00	-128.11	-334.64	167.02	0.00	0.00	0.00
Parkman									
3,900.00	17.46	249.05	3,848.43	-135.92	-355.04	177.21	0.00	0.00	0.00
4,000.00	17.46	249.05	3,943.82	-146.65	-383.07	191.19	0.00	0.00	0.00
4,100.00	17.46	249.05	4,039.22	-157.38	-411.09	205.18	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

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Company:	Northern Region - DJ Basin	TVD Reference:	KB @ 4859.00ft
Project:	Mustang	MD Reference:	KB @ 4859.00ft
Site:	D Section 23	North Reference:	Grid
Well:	Guttersen D35-780	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
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	17.46	249.05	4,134.61	-168.11	-439.12	219.17	0.00	0.00	0.00
4,244.44	17.46	249.05	4,177.00	-172.88	-451.57	225.39	0.00	0.00	0.00
Sussex									
4,300.00	17.46	249.05	4,230.00	-178.84	-467.14	233.16	0.00	0.00	0.00
4,400.00	17.46	249.05	4,325.39	-189.57	-495.17	247.15	0.00	0.00	0.00
4,500.00	17.46	249.05	4,420.78	-200.30	-523.20	261.13	0.00	0.00	0.00
4,600.00	17.46	249.05	4,516.17	-211.03	-551.22	275.12	0.00	0.00	0.00
4,700.00	17.46	249.05	4,611.56	-221.76	-579.25	289.11	0.00	0.00	0.00
4,800.00	17.46	249.05	4,706.95	-232.49	-607.27	303.10	0.00	0.00	0.00
4,900.00	17.46	249.05	4,802.34	-243.22	-635.30	317.09	0.00	0.00	0.00
5,000.00	17.46	249.05	4,897.73	-253.94	-663.33	331.07	0.00	0.00	0.00
5,029.63	17.46	249.05	4,926.00	-257.12	-671.63	335.22	0.00	0.00	0.00
Shannon									
5,100.00	17.46	249.05	4,993.13	-264.67	-691.35	345.06	0.00	0.00	0.00
5,200.00	17.46	249.05	5,088.52	-275.40	-719.38	359.05	0.00	0.00	0.00
5,300.00	17.46	249.05	5,183.91	-286.13	-747.40	373.04	0.00	0.00	0.00
5,400.00	17.46	249.05	5,279.30	-296.86	-775.43	387.03	0.00	0.00	0.00
5,500.00	17.46	249.05	5,374.69	-307.59	-803.46	401.02	0.00	0.00	0.00
5,600.00	17.46	249.05	5,470.08	-318.32	-831.48	415.00	0.00	0.00	0.00
5,700.00	17.46	249.05	5,565.47	-329.05	-859.51	428.99	0.00	0.00	0.00
5,800.00	17.46	249.05	5,660.86	-339.78	-887.53	442.98	0.00	0.00	0.00
5,900.00	17.46	249.05	5,756.25	-350.51	-915.56	456.97	0.00	0.00	0.00
6,000.00	17.46	249.05	5,851.64	-361.24	-943.59	470.96	0.00	0.00	0.00
6,100.00	17.46	249.05	5,947.03	-371.97	-971.61	484.94	0.00	0.00	0.00
6,148.19	17.46	249.05	5,993.00	-377.14	-985.12	491.68	0.00	0.00	0.00
Teepee Buttes									
6,200.00	17.46	249.05	6,042.43	-382.70	-999.64	498.93	0.00	0.00	0.00
6,300.00	17.46	249.05	6,137.82	-393.43	-1,027.66	512.92	0.00	0.00	0.00
6,400.00	17.46	249.05	6,233.21	-404.15	-1,055.69	526.91	0.00	0.00	0.00
6,506.07	17.46	249.05	6,334.39	-415.54	-1,085.42	541.75	0.00	0.00	0.00
KOP: Build 9°/100' @ 6506.07' MD									
6,550.00	19.51	238.34	6,376.06	-421.74	-1,097.82	549.39	9.00	4.65	-24.38
6,600.00	22.44	228.77	6,422.76	-432.42	-1,112.11	561.68	9.00	5.86	-19.14
6,650.00	25.80	221.45	6,468.40	-446.87	-1,126.50	577.75	9.00	6.73	-14.65
6,700.00	29.46	215.77	6,512.69	-465.01	-1,140.90	597.47	9.00	7.31	-11.36
6,750.00	33.30	211.27	6,555.38	-486.73	-1,155.21	620.74	9.00	7.69	-9.00
6,800.00	37.28	207.62	6,596.19	-511.89	-1,169.37	647.41	9.00	7.95	-7.30
6,850.00	41.35	204.58	6,634.87	-540.34	-1,183.26	677.31	9.00	8.14	-6.07
6,860.91	42.25	203.99	6,643.00	-546.97	-1,186.25	684.25	9.00	8.23	-5.47
Sharon Springs									
6,900.00	45.49	202.00	6,671.18	-571.91	-1,196.82	710.26	9.00	8.29	-5.07
6,934.89	48.40	200.42	6,695.00	-595.68	-1,206.04	734.96	9.00	8.36	-4.56
Top A Chalk									
6,940.95	48.91	200.15	6,699.00	-599.94	-1,207.61	739.38	9.00	8.40	-4.31
Top A Marl									
6,950.00	49.67	199.77	6,704.90	-606.39	-1,209.95	746.06	9.00	8.41	-4.23
6,980.32	52.23	198.55	6,724.00	-628.63	-1,217.68	769.06	9.00	8.44	-4.03
Top B Chalk									
7,000.00	53.90	197.80	6,735.83	-643.58	-1,222.58	784.49	9.00	8.47	-3.80
7,041.07	57.39	196.34	6,759.00	-675.98	-1,232.52	817.85	9.00	8.50	-3.57
Top B Marl									
7,050.00	58.15	196.03	6,763.76	-683.24	-1,234.63	825.30	9.00	8.53	-3.40
7,100.00	62.43	194.42	6,788.54	-725.14	-1,246.02	868.26	9.00	8.55	-3.22

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Guttersen D35-780
Company:	Northern Region - DJ Basin	TVD Reference:	KB @ 4859.00ft
Project:	Mustang	MD Reference:	KB @ 4859.00ft
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Well:	Guttersen D35-780	Survey Calculation Method:	Minimum Curvature
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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)
7,150.00	66.72	192.93	6,810.00	-769.00	-1,256.68	913.08	9.00	8.59	-2.98
7,187.97	69.99	191.86	6,824.00	-803.47	-1,264.25	948.20	9.00	8.61	-2.81
Top C Chalk									
7,200.00	71.03	191.53	6,828.01	-814.58	-1,266.55	959.50	9.00	8.62	-2.73
7,250.00	75.35	190.20	6,842.47	-861.57	-1,275.57	1,007.24	9.00	8.63	-2.65
7,300.00	79.67	188.93	6,853.28	-909.70	-1,283.67	1,055.99	9.00	8.65	-2.55
7,316.26	81.08	188.52	6,856.00	-925.54	-1,286.10	1,072.01	9.00	8.66	-2.50
Top C Marl									
7,350.00	84.00	187.69	6,860.38	-958.66	-1,290.82	1,105.45	9.00	8.66	-2.47
7,400.00	88.33	186.47	6,863.72	-1,008.15	-1,296.96	1,155.33	9.00	8.66	-2.44
7,419.22	90.00	186.00	6,864.00	-1,027.26	-1,299.05	1,174.55	9.00	8.67	-2.43
LP: 7419.22' MD, 90.00° Inc, 186.00° Azm									
7,500.00	90.00	186.00	6,864.00	-1,107.59	-1,307.49	1,255.31	0.00	0.00	0.00
7,600.00	90.00	186.00	6,864.00	-1,207.05	-1,317.95	1,355.30	0.00	0.00	0.00
7,619.22	90.00	186.00	6,864.00	-1,226.17	-1,319.96	1,374.53	0.00	0.00	0.00
Turn: 1°/100'									
7,700.00	90.00	185.19	6,864.00	-1,306.56	-1,327.83	1,455.28	1.00	0.00	-1.00
7,800.00	90.00	184.19	6,864.00	-1,406.22	-1,336.01	1,555.21	1.00	0.00	-1.00
7,900.00	90.00	183.19	6,864.00	-1,506.01	-1,342.45	1,655.06	1.00	0.00	-1.00
8,000.00	90.00	182.19	6,864.00	-1,605.90	-1,347.15	1,754.80	1.00	0.00	-1.00
8,100.00	90.00	181.19	6,864.00	-1,705.85	-1,350.10	1,854.39	1.00	0.00	-1.00
8,200.00	90.00	180.19	6,864.00	-1,805.85	-1,351.31	1,953.82	1.00	0.00	-1.00
8,225.22	90.00	179.94	6,864.00	-1,831.07	-1,351.34	1,978.87	1.00	0.00	-1.00
EOT: 90.00° Inc, 179.94° Azm									
8,300.00	90.00	179.94	6,864.00	-1,905.85	-1,351.26	2,053.10	0.00	0.00	0.00
8,400.00	90.00	179.94	6,864.00	-2,005.85	-1,351.16	2,152.38	0.00	0.00	0.00
8,500.00	90.00	179.94	6,864.00	-2,105.85	-1,351.05	2,251.65	0.00	0.00	0.00
8,600.00	90.00	179.94	6,864.00	-2,205.84	-1,350.95	2,350.93	0.00	0.00	0.00
8,700.00	90.00	179.94	6,864.00	-2,305.84	-1,350.84	2,450.21	0.00	0.00	0.00
8,800.00	90.00	179.94	6,864.00	-2,405.84	-1,350.74	2,549.49	0.00	0.00	0.00
8,900.00	90.00	179.94	6,864.00	-2,505.84	-1,350.63	2,648.76	0.00	0.00	0.00
9,000.00	90.00	179.94	6,864.00	-2,605.84	-1,350.53	2,748.04	0.00	0.00	0.00
9,100.00	90.00	179.94	6,864.00	-2,705.84	-1,350.43	2,847.32	0.00	0.00	0.00
9,200.00	90.00	179.94	6,864.00	-2,805.84	-1,350.32	2,946.59	0.00	0.00	0.00
9,300.00	90.00	179.94	6,864.00	-2,905.84	-1,350.22	3,045.87	0.00	0.00	0.00
9,400.00	90.00	179.94	6,864.00	-3,005.84	-1,350.11	3,145.15	0.00	0.00	0.00
9,500.00	90.00	179.94	6,864.00	-3,105.84	-1,350.01	3,244.42	0.00	0.00	0.00
9,600.00	90.00	179.94	6,864.00	-3,205.84	-1,349.90	3,343.70	0.00	0.00	0.00
9,700.00	90.00	179.94	6,864.00	-3,305.84	-1,349.80	3,442.98	0.00	0.00	0.00
9,800.00	90.00	179.94	6,864.00	-3,405.84	-1,349.69	3,542.25	0.00	0.00	0.00
9,900.00	90.00	179.94	6,864.00	-3,505.84	-1,349.59	3,641.53	0.00	0.00	0.00
10,000.00	90.00	179.94	6,864.00	-3,605.84	-1,349.48	3,740.81	0.00	0.00	0.00
10,100.00	90.00	179.94	6,864.00	-3,705.84	-1,349.38	3,840.09	0.00	0.00	0.00
10,200.00	90.00	179.94	6,864.00	-3,805.84	-1,349.27	3,939.36	0.00	0.00	0.00
10,217.70	90.00	179.94	6,864.00	-3,823.54	-1,349.25	3,956.94	0.00	0.00	0.00
Build: 1°/100'									
10,300.00	90.82	179.94	6,863.41	-3,905.84	-1,349.17	4,038.64	1.00	1.00	0.00
10,318.12	91.00	179.94	6,863.12	-3,923.96	-1,349.15	4,056.62	1.00	1.00	0.00
EOB: 91.00° Inc, 179.94° Azm									
10,400.00	91.00	179.94	6,861.69	-4,005.83	-1,349.06	4,137.90	0.00	0.00	0.00
10,500.00	91.00	179.94	6,859.93	-4,105.81	-1,348.95	4,237.16	0.00	0.00	0.00
10,600.00	91.00	179.94	6,858.18	-4,205.80	-1,348.84	4,336.42	0.00	0.00	0.00
10,700.00	91.00	179.94	6,856.43	-4,305.78	-1,348.73	4,435.68	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Guttersen D35-780
Company:	Northern Region - DJ Basin	TVD Reference:	KB @ 4859.00ft
Project:	Mustang	MD Reference:	KB @ 4859.00ft
Site:	D Section 23	North Reference:	Grid
Well:	Guttersen D35-780	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
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)
10,800.00	91.00	179.94	6,854.68	-4,405.76	-1,348.62	4,534.94	0.00	0.00	0.00
10,900.00	91.00	179.94	6,852.92	-4,505.75	-1,348.51	4,634.20	0.00	0.00	0.00
11,000.00	91.00	179.94	6,851.17	-4,605.73	-1,348.40	4,733.46	0.00	0.00	0.00
11,100.00	91.00	179.94	6,849.42	-4,705.72	-1,348.29	4,832.73	0.00	0.00	0.00
11,200.00	91.00	179.94	6,847.67	-4,805.70	-1,348.18	4,931.99	0.00	0.00	0.00
11,300.00	91.00	179.94	6,845.91	-4,905.69	-1,348.07	5,031.25	0.00	0.00	0.00
11,400.00	91.00	179.94	6,844.16	-5,005.67	-1,347.96	5,130.51	0.00	0.00	0.00
11,500.00	91.00	179.94	6,842.41	-5,105.66	-1,347.85	5,229.77	0.00	0.00	0.00
11,600.00	91.00	179.94	6,840.66	-5,205.64	-1,347.74	5,329.03	0.00	0.00	0.00
11,700.00	91.00	179.94	6,838.90	-5,305.63	-1,347.63	5,428.29	0.00	0.00	0.00
11,800.00	91.00	179.94	6,837.15	-5,405.61	-1,347.52	5,527.55	0.00	0.00	0.00
11,900.00	91.00	179.94	6,835.40	-5,505.60	-1,347.41	5,626.81	0.00	0.00	0.00
12,000.00	91.00	179.94	6,833.65	-5,605.58	-1,347.30	5,726.08	0.00	0.00	0.00
12,100.00	91.00	179.94	6,831.89	-5,705.56	-1,347.19	5,825.34	0.00	0.00	0.00
12,200.00	91.00	179.94	6,830.14	-5,805.55	-1,347.08	5,924.60	0.00	0.00	0.00
12,300.00	91.00	179.94	6,828.39	-5,905.53	-1,346.97	6,023.86	0.00	0.00	0.00
12,400.00	91.00	179.94	6,826.64	-6,005.52	-1,346.86	6,123.12	0.00	0.00	0.00
12,500.00	91.00	179.94	6,824.88	-6,105.50	-1,346.75	6,222.38	0.00	0.00	0.00
12,600.00	91.00	179.94	6,823.13	-6,205.49	-1,346.64	6,321.64	0.00	0.00	0.00
12,700.00	91.00	179.94	6,821.38	-6,305.47	-1,346.53	6,420.90	0.00	0.00	0.00
12,800.00	91.00	179.94	6,819.63	-6,405.46	-1,346.43	6,520.16	0.00	0.00	0.00
12,900.00	91.00	179.94	6,817.87	-6,505.44	-1,346.32	6,619.43	0.00	0.00	0.00
13,000.00	91.00	179.94	6,816.12	-6,605.43	-1,346.21	6,718.69	0.00	0.00	0.00
13,100.00	91.00	179.94	6,814.37	-6,705.41	-1,346.10	6,817.95	0.00	0.00	0.00
13,200.00	91.00	179.94	6,812.62	-6,805.39	-1,345.99	6,917.21	0.00	0.00	0.00
13,300.00	91.00	179.94	6,810.86	-6,905.38	-1,345.88	7,016.47	0.00	0.00	0.00
13,400.00	91.00	179.94	6,809.11	-7,005.36	-1,345.77	7,115.73	0.00	0.00	0.00
13,500.00	91.00	179.94	6,807.36	-7,105.35	-1,345.66	7,214.99	0.00	0.00	0.00
13,600.00	91.00	179.94	6,805.61	-7,205.33	-1,345.55	7,314.25	0.00	0.00	0.00
13,700.00	91.00	179.94	6,803.85	-7,305.32	-1,345.44	7,413.51	0.00	0.00	0.00
13,800.00	91.00	179.94	6,802.10	-7,405.30	-1,345.33	7,512.78	0.00	0.00	0.00
13,900.00	91.00	179.94	6,800.35	-7,505.29	-1,345.22	7,612.04	0.00	0.00	0.00
14,000.00	91.00	179.94	6,798.60	-7,605.27	-1,345.11	7,711.30	0.00	0.00	0.00
14,100.00	91.00	179.94	6,796.84	-7,705.26	-1,345.00	7,810.56	0.00	0.00	0.00
14,200.00	91.00	179.94	6,795.09	-7,805.24	-1,344.89	7,909.82	0.00	0.00	0.00
14,300.00	91.00	179.94	6,793.34	-7,905.23	-1,344.78	8,009.08	0.00	0.00	0.00
14,400.00	91.00	179.94	6,791.59	-8,005.21	-1,344.67	8,108.34	0.00	0.00	0.00
14,500.00	91.00	179.94	6,789.83	-8,105.19	-1,344.56	8,207.60	0.00	0.00	0.00
14,600.00	91.00	179.94	6,788.08	-8,205.18	-1,344.45	8,306.86	0.00	0.00	0.00
14,700.00	91.00	179.94	6,786.33	-8,305.16	-1,344.34	8,406.12	0.00	0.00	0.00
14,800.00	91.00	179.94	6,784.58	-8,405.15	-1,344.23	8,505.39	0.00	0.00	0.00
14,900.00	91.00	179.94	6,782.82	-8,505.13	-1,344.12	8,604.65	0.00	0.00	0.00
15,000.00	91.00	179.94	6,781.07	-8,605.12	-1,344.01	8,703.91	0.00	0.00	0.00
15,100.00	91.00	179.94	6,779.32	-8,705.10	-1,343.90	8,803.17	0.00	0.00	0.00
15,200.00	91.00	179.94	6,777.57	-8,805.09	-1,343.79	8,902.43	0.00	0.00	0.00
15,300.00	91.00	179.94	6,775.81	-8,905.07	-1,343.68	9,001.69	0.00	0.00	0.00
15,400.00	91.00	179.94	6,774.06	-9,005.06	-1,343.57	9,100.95	0.00	0.00	0.00
15,500.00	91.00	179.94	6,772.31	-9,105.04	-1,343.46	9,200.21	0.00	0.00	0.00
15,600.00	91.00	179.94	6,770.56	-9,205.02	-1,343.35	9,299.47	0.00	0.00	0.00
15,700.00	91.00	179.94	6,768.80	-9,305.01	-1,343.24	9,398.74	0.00	0.00	0.00
15,800.00	91.00	179.94	6,767.05	-9,404.99	-1,343.14	9,498.00	0.00	0.00	0.00
15,900.00	91.00	179.94	6,765.30	-9,504.98	-1,343.03	9,597.26	0.00	0.00	0.00
16,000.00	91.00	179.94	6,763.55	-9,604.96	-1,342.92	9,696.52	0.00	0.00	0.00
16,100.00	91.00	179.94	6,761.79	-9,704.95	-1,342.81	9,795.78	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Guttersen D35-780
Company:	Northern Region - DJ Basin	TVD Reference:	KB @ 4859.00ft
Project:	Mustang	MD Reference:	KB @ 4859.00ft
Site:	D Section 23	North Reference:	Grid
Well:	Guttersen D35-780	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
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)	
16,200.00	91.00	179.94	6,760.04	-9,804.93	-1,342.70	9,895.04	0.00	0.00	0.00	
16,300.00	91.00	179.94	6,758.29	-9,904.92	-1,342.59	9,994.30	0.00	0.00	0.00	
16,400.00	91.00	179.94	6,756.54	-10,004.90	-1,342.48	10,093.56	0.00	0.00	0.00	
16,500.00	91.00	179.94	6,754.78	-10,104.89	-1,342.37	10,192.82	0.00	0.00	0.00	
16,600.00	91.00	179.94	6,753.03	-10,204.87	-1,342.26	10,292.09	0.00	0.00	0.00	
16,700.00	91.00	179.94	6,751.28	-10,304.86	-1,342.15	10,391.35	0.00	0.00	0.00	
16,800.00	91.00	179.94	6,749.53	-10,404.84	-1,342.04	10,490.61	0.00	0.00	0.00	
16,900.00	91.00	179.94	6,747.77	-10,504.82	-1,341.93	10,589.87	0.00	0.00	0.00	
17,000.00	91.00	179.94	6,746.02	-10,604.81	-1,341.82	10,689.13	0.00	0.00	0.00	
17,100.00	91.00	179.94	6,744.27	-10,704.79	-1,341.71	10,788.39	0.00	0.00	0.00	
17,200.00	91.00	179.94	6,742.52	-10,804.78	-1,341.60	10,887.65	0.00	0.00	0.00	
17,300.00	91.00	179.94	6,740.76	-10,904.76	-1,341.49	10,986.91	0.00	0.00	0.00	
17,350.41	91.00	179.94	6,739.88	-10,955.16	-1,341.43	11,036.95	0.00	0.00	0.00	
Drop: 1°/100'										
17,400.00	90.51	179.94	6,739.23	-11,004.75	-1,341.38	11,086.18	1.00	-1.00	0.00	
17,450.83	90.00	179.94	6,739.00	-11,055.57	-1,341.33	11,136.63	1.00	-1.00	0.00	
EOD: 90.00° Inc, 179.94° Azm										
17,500.00	90.00	179.94	6,739.00	-11,104.75	-1,341.28	11,185.45	0.00	0.00	0.00	
17,585.83	90.00	179.94	6,739.00	-11,190.57	-1,341.19	11,270.66	0.00	0.00	0.00	
TD @ 17585.83' MD/6739.00' TVD										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
- hit/miss target										
- Shape										
Guttersen D35-780 SI	0.00	0.00	0.00	0.00	0.00	1,319,345.36	3,273,502.34	40.2058546	-104.5207657	
- plan hits target center										
- Point										
Guttersen D35-780 KI	0.00	0.00	6,334.39	-415.54	-1,085.42	1,318,929.82	3,272,416.93	40.2047469	-104.5246679	
- plan hits target center										
- Point										
Guttersen D35-780 BI	0.00	0.00	6,739.00	-11,190.57	-1,341.19	1,308,154.81	3,272,161.16	40.1751776	-104.5260073	
- plan hits target center										
- Point										
Guttersen D35-780 TI	0.00	0.00	6,864.00	-1,027.26	-1,299.05	1,318,318.10	3,272,203.29	40.2030742	-104.5254568	
- plan hits target center										
- Point										

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Gutttersen D35-780
Company:	Northern Region - DJ Basin	TVD Reference:	KB @ 4859.00ft
Project:	Mustang	MD Reference:	KB @ 4859.00ft
Site:	D Section 23	North Reference:	Grid
Well:	Gutttersen D35-780	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
593.00	593.00	Pierre				
795.00	795.00	Upper Pierre Aquifer Top				
1,683.00	1,683.00	Upper Pierre Aquifer Base				
3,827.21	3,779.00	Parkman				
4,244.44	4,177.00	Sussex				
5,029.63	4,926.00	Shannon				
6,148.19	5,993.00	Teepee Buttes				
6,860.91	6,643.00	Sharon Springs				
6,934.89	6,695.00	Top A Chalk				
6,940.95	6,699.00	Top A Marl				
6,980.32	6,724.00	Top B Chalk				
7,041.07	6,759.00	Top B Marl				
7,187.97	6,824.00	Top C Chalk				
7,316.26	6,856.00	Top C Marl				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
2,200.00	2,200.00	0.00	0.00	Build: 2°/100'	
3,073.17	3,059.71	-47.21	-123.31	Hold: 17.46° Inc, 249.05° Azm	
6,506.07	6,334.39	-415.54	-1,085.42	KOP: Build 9°/100' @ 6506.07' MD	
7,419.22	6,864.00	-1,027.26	-1,299.05	LP: 7419.22' MD, 90.00° Inc, 186.00° Azm	
7,619.22	6,864.00	-1,226.17	-1,319.96	Turn: 1°/100'	
8,225.22	6,864.00	-1,831.07	-1,351.34	EOT: 90.00° Inc, 179.94° Azm	
10,217.70	6,864.00	-3,823.54	-1,349.25	Build: 1°/100'	
10,318.12	6,863.12	-3,923.96	-1,349.15	EOB: 91.00° Inc, 179.94° Azm	
17,350.41	6,739.88	-10,955.16	-1,341.43	Drop: 1°/100'	
17,450.83	6,739.00	-11,055.57	-1,341.33	EOD: 90.00° Inc, 179.94° Azm	
17,585.83	6,739.00	-11,190.57	-1,341.19	TD @ 17585.83' MD/6739.00' TVD	

Northern Region - DJ Basin

Mustang

D Section 23

Guttersen D35-780

Wellbore #1

Plan #1

Anticollision Summary Report

15 August, 2018

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Gutttersen D35-780
Project:	Mustang	TVD Reference:	KB @ 4859.00ft
Reference Site:	D Section 23	MD Reference:	KB @ 4859.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Gutttersen D35-780	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	7/31/2018		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.00	17,585.82	Plan #1 (Wellbore #1)	2_MWD+IFR1+MS	A008Mb: IFR dec & multi-station analysis	

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
D Section 15						
Cally Blue D 15-12 (PR) - Wellbore #1 - Gyro Surveys	6,597.60	6,443.45	8,992.61	8,945.53	191.002	CC
Cally Blue D 15-12 (PR) - Wellbore #1 - Gyro Surveys	6,600.00	6,445.09	8,992.61	8,945.52	190.937	ES
Cally Blue D 15-12 (PR) - Wellbore #1 - Gyro Surveys	7,300.00	6,875.27	9,260.97	9,209.84	181.122	SF
Cally Blue D 15-14 (PR) - Wellbore #1 - Gyro Surveys	6,576.09	6,324.61	6,792.70	6,746.08	145.722	CC, ES
Cally Blue D 15-14 (PR) - Wellbore #1 - Gyro Surveys	7,150.00	6,763.21	6,980.01	6,929.60	138.462	SF
Cally Blue D15-04J - Wellbore #1 - Wellbore #1- As Drille	4,273.73	4,032.27	6,180.70	6,151.52	211.809	CC
Cally Blue D15-04J - Wellbore #1 - Wellbore #1- As Drille	6,400.00	6,220.34	6,187.15	6,141.62	135.895	ES
Cally Blue D15-04J - Wellbore #1 - Wellbore #1- As Drille	6,950.00	6,950.00	6,332.46	6,282.18	125.949	SF
Cally Blue D15-09 - Wellbore #1 - Wellbore #1- As Drille	1,574.94	1,527.00	6,904.09	6,893.51	652.987	CC
Cally Blue D15-09 - Wellbore #1 - Wellbore #1- As Drille	4,200.00	4,062.65	6,907.60	6,878.61	238.214	ES
Cally Blue D15-09 - Wellbore #1 - Wellbore #1- As Drille	7,050.00	6,800.01	7,199.82	7,149.78	143.886	SF
Cally Blue D15-10 - Wellbore #1 - Wellbore #1- As Drille	6,507.65	6,193.75	7,485.35	7,439.42	162.951	CC, ES
Cally Blue D15-10 - Wellbore #1 - Wellbore #1- As Drille	7,100.00	6,719.45	7,711.59	7,661.56	154.122	SF
Cally Blue D15-11 (PA) - Wellbore #1 - Gyro Surveys	6,554.41	6,412.51	8,163.49	8,116.64	174.253	CC, ES
Cally Blue D15-11 (PA) - Wellbore #1 - Gyro Surveys	7,150.00	6,815.06	8,382.53	8,331.97	165.811	SF
Cally Blue D15-15 - Wellbore #1 - Wellbore #1- As Drille	6,529.57	6,278.74	6,287.04	6,240.74	135.799	CC, ES
Cally Blue D15-15 - Wellbore #1 - Wellbore #1- As Drille	7,100.00	6,719.94	6,495.01	6,444.96	129.772	SF
Cally D15-02 - Wellbore #1 - Wellbore #1-As Drilled	4,716.16	4,600.01	9,913.43	9,880.45	300.541	CC
Cally D15-02 - Wellbore #1 - Wellbore #1-As Drilled	4,800.00	4,641.71	9,913.56	9,880.09	296.188	ES
Cally D15-02 - Wellbore #1 - Wellbore #1-As Drilled	6,750.00	6,513.30	9,989.75	9,941.72	207.984	SF
Cally White D15-01 - Wellbore #1 - Wellbore #1- As Drille	2,375.91	2,351.70	9,472.20	9,455.90	580.980	CC
Cally White D15-01 - Wellbore #1 - Wellbore #1- As Drille	2,500.00	2,448.02	9,472.63	9,455.57	555.232	ES
Cally White D15-01 - Wellbore #1 - Wellbore #1- As Drille	7,100.00	6,814.79	9,869.84	9,819.67	196.733	SF
Cally White D15-07 - Wellbore #1 - Wellbore #1- As Drille	6,509.24	6,345.18	8,748.27	8,701.82	188.337	CC, ES
Cally White D15-07 - Wellbore #1 - Wellbore #1- As Drille	6,850.00	6,850.00	8,829.24	8,779.63	177.983	SF
Cally White D15-08 - Wellbore #1 - Wellbore #1- As Drille	3,085.31	3,124.97	8,194.63	8,173.15	381.363	CC
Cally White D15-08 - Wellbore #1 - Wellbore #1- As Drille	3,200.00	3,200.01	8,195.08	8,172.91	369.658	ES
Cally White D15-08 - Wellbore #1 - Wellbore #1- As Drille	7,100.00	6,824.37	8,600.31	8,550.12	171.356	SF
Chandler State D15-72-1HN - Original Drilling - Original I	6,547.82	11,640.00	5,142.45	5,089.86	97.785	CC
Chandler State D15-72-1HN - Original Drilling - Original I	6,550.00	11,640.00	5,142.46	5,089.86	97.772	ES
Chandler State D15-72-1HN - Original Drilling - Original I	6,750.00	11,640.00	5,176.56	5,123.30	97.197	SF
Chandler State D15-73-1HN - Original Drilling - Original I	6,557.87	11,629.00	5,283.94	5,229.14	96.427	CC, ES
Chandler State D15-73-1HN - Original Drilling - Original I	6,750.00	11,629.00	5,313.68	5,258.27	95.895	SF
Chandler State D15-74-1HN - Original Drilling - Original I	6,589.46	11,785.00	5,591.00	5,505.67	65.525	CC, ES
Chandler State D15-74-1HN - Original Drilling - Original I	6,650.00	11,785.00	5,593.80	5,508.40	65.500	SF
Chandler State D23-79HN - Original Drilling - Original Dr	6,950.00	12,200.02	817.05	708.44	7.523	SF
Chandler State D23-79HN - Original Drilling - Original Dr	6,988.82	12,200.02	815.53	707.73	7.565	CC, 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 Gutttersen D35-780
Project:	Mustang	TVD Reference:	KB @ 4859.00ft
Reference Site:	D Section 23	MD Reference:	KB @ 4859.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Gutttersen D35-780	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 15						
Duff D15-5 (PR) - Wellbore #1 - Gyro Surveys	6,590.46	6,707.10	9,919.28	9,871.46	207.432	CC
Duff D15-5 (PR) - Wellbore #1 - Gyro Surveys	6,600.00	6,722.30	9,919.33	9,871.42	207.036	ES
Duff D15-5 (PR) - Wellbore #1 - Gyro Surveys	6,950.00	7,028.45	9,998.06	9,948.17	200.430	SF
Gutttersen D 15-21 (PR) - Wellbore #1 - Gyro Surveys	6,525.81	6,325.20	8,213.15	8,166.71	176.854	CC, ES
Gutttersen D 15-21 (PR) - Wellbore #1 - Gyro Surveys	7,100.00	6,732.06	8,427.31	8,377.24	168.295	SF
Gutttersen D 15-24 (PR) - Wellbore #1 - Gyro Surveys	6,545.54	6,338.55	7,177.43	7,130.87	154.145	CC
Gutttersen D 15-24 (PR) - Wellbore #1 - Gyro Surveys	6,550.00	6,342.51	7,177.45	7,130.85	154.038	ES
Gutttersen D 15-24 (PR) - Wellbore #1 - Gyro Surveys	7,150.00	6,743.76	7,404.13	7,353.83	147.183	SF
Gutttersen D 15-29 (SI) - Wellbore #1 - Gyro Surveys						Out of range
Gutttersen D 22-28 (PR) - Wellbore #1 - Gyro Surveys	6,572.58	6,342.99	6,209.87	6,163.18	132.998	CC, ES
Gutttersen D 22-28 (PR) - Wellbore #1 - Gyro Surveys	7,100.00	6,754.20	6,372.13	6,321.90	126.860	SF
Gutttersen D14-32 - Wellbore #1 - Wellbore #1- As Drillec	506.98	446.00	7,528.04	7,525.07	2,532.228	CC
Gutttersen D14-32 - Wellbore #1 - Wellbore #1- As Drillec	2,800.00	2,767.25	7,540.25	7,521.04	392.500	ES
Gutttersen D14-32 - Wellbore #1 - Wellbore #1- As Drillec	6,950.00	6,600.01	7,873.74	7,824.77	160.783	SF
Gutttersen D15-17 - Wellbore #1 - Wellbore #1- As Drillec	2,514.88	2,434.65	9,124.63	9,107.58	534.965	CC
Gutttersen D15-17 - Wellbore #1 - Wellbore #1- As Drillec	2,700.00	2,549.46	9,125.39	9,107.30	504.361	ES
Gutttersen D15-17 - Wellbore #1 - Wellbore #1- As Drillec	7,000.00	6,700.01	9,375.81	9,326.27	189.255	SF
Gutttersen D15-18 (SI) - Wellbore #1 - Gyro Surveys	6,339.15	6,112.93	9,662.32	9,617.41	215.148	CC
Gutttersen D15-18 (SI) - Wellbore #1 - Gyro Surveys	6,506.07	6,250.76	9,662.64	9,616.55	209.658	ES
Gutttersen D15-18 (SI) - Wellbore #1 - Gyro Surveys	7,150.00	6,681.57	9,938.80	9,888.82	198.865	SF
Gutttersen D15-20 (PR) - Wellbore #1 - Gyro Surveys	6,564.51	6,408.82	9,077.64	9,030.77	193.697	CC, ES
Gutttersen D15-20 (PR) - Wellbore #1 - Gyro Surveys	7,300.00	6,870.44	9,389.58	9,338.45	183.659	SF
Gutttersen D15-22 - Wellbore #1 - Wellbore #1- As Drillec	4,695.53	4,521.31	7,620.00	7,587.39	233.681	CC
Gutttersen D15-22 - Wellbore #1 - Wellbore #1- As Drillec	4,800.00	4,568.90	7,620.44	7,587.25	229.554	ES
Gutttersen D15-22 - Wellbore #1 - Wellbore #1- As Drillec	7,050.00	6,714.36	7,869.57	7,819.79	158.088	SF
Gutttersen D15-28 (SI) - Wellbore #1 - Gyro Surveys						Out of range
Gutttersen D15-30 (SI) - Wellbore #1 - Gyro Surveys						Out of range
Gutttersen D22-27 - Wellbore #1 - Wellbore #1- As Drillec	6,506.39	6,187.62	5,574.60	5,528.64	121.284	CC, ES
Gutttersen D22-27 - Wellbore #1 - Wellbore #1- As Drillec	7,200.00	7,200.00	5,879.07	5,827.04	112.976	SF
Gutttersen D23-69HN - Plan A - Plan A	6,395.88	7,920.95	4,815.44	4,751.08	74.816	CC
Gutttersen D23-69HN - Plan A - Plan A	6,400.00	7,920.44	4,815.44	4,751.07	74.802	ES
Gutttersen D23-69HN - Plan A - Plan A	6,550.00	7,901.80	4,819.33	4,754.54	74.383	SF
HSR Gutttersen 03-15 (SI) - Wellbore #1 - Gyro Surveys						Out of range
HSR Gutttersen 6-15 (SI) - Wellbore #1 - Gyro Surveys	6,533.94	6,362.85	9,017.69	8,971.08	193.484	CC, ES
HSR Gutttersen 6-15 (SI) - Wellbore #1 - Gyro Surveys	7,200.00	6,872.81	9,294.79	9,244.00	183.005	SF
Mills UPRC D 15-04 (SI) - Wellbore #1 - Gyro Surveys						Out of range
Two E Ranch 1-15B (SI) - Wellbore #1 - Gyro Surveys	6,601.77	6,338.41	7,833.40	7,786.81	168.124	CC, ES
Two E Ranch 1-15B (SI) - Wellbore #1 - Gyro Surveys	7,250.00	6,757.40	8,055.38	8,004.91	159.610	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 Gutttersen D35-780
Project:	Mustang	TVD Reference:	KB @ 4859.00ft
Reference Site:	D Section 23	MD Reference:	KB @ 4859.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Gutttersen D35-780	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
D Section 23						
Gutttersen 23-20 (SI) - Wellbore #1 - Gyro Surveys	1,991.95	1,979.12	2,088.16	2,074.49	152.797	CC
Gutttersen 23-20 (SI) - Wellbore #1 - Gyro Surveys	2,200.00	2,171.70	2,089.23	2,074.15	138.545	ES
Gutttersen 23-20 (SI) - Wellbore #1 - Gyro Surveys	6,650.00	6,494.97	2,437.78	2,390.56	51.629	SF
Gutttersen 23-32 (SI) - Wellbore #1 - Gyro Surveys	100.00	25.08	2,917.06	2,916.89	10,000.000	CC
Gutttersen 23-32 (SI) - Wellbore #1 - Gyro Surveys	2,200.00	2,128.85	2,923.89	2,908.96	195.873	ES
Gutttersen 23-32 (SI) - Wellbore #1 - Gyro Surveys	6,700.00	6,456.56	3,900.58	3,853.89	83.548	SF
Gutttersen 23-41 (PR) - Wellbore #1 - Gyro Surveys	100.00	12.07	4,595.65	4,595.50	10,000.000	CC
Gutttersen 23-41 (PR) - Wellbore #1 - Gyro Surveys	2,300.00	2,280.50	4,607.30	4,591.49	291.512	ES
Gutttersen 23-41 (PR) - Wellbore #1 - Gyro Surveys	6,850.00	6,542.85	5,734.85	5,687.38	120.819	SF
Gutttersen 31-23 (PR) - Wellbore #1 - Gyro Surveys	0.00	0.00	4,004.83			
Gutttersen 31-23 (PR) - Wellbore #1 - Gyro Surveys	2,200.00	2,177.63	4,005.26	3,990.18	265.516	ES
Gutttersen 31-23 (PR) - Wellbore #1 - Gyro Surveys	6,900.00	6,673.96	4,979.99	4,931.68	103.089	SF
Gutttersen 42-23 (PR) - Wellbore #1 - Gyro Surveys	100.00	42.54	3,603.68	3,603.48	10,000.000	CC
Gutttersen 42-23 (PR) - Wellbore #1 - Gyro Surveys	2,203.87	2,157.44	3,612.57	3,597.54	240.329	ES
Gutttersen 42-23 (PR) - Wellbore #1 - Gyro Surveys	6,900.00	6,598.39	4,821.71	4,774.02	101.114	SF
Gutttersen D23-711 - Wellbore #1 - Plan #1	2,200.00	2,181.00	1,844.62	1,829.38	121.049	CC, ES
Gutttersen D23-711 - Wellbore #1 - Plan #1	9,200.00	6,345.29	4,609.87	4,556.15	85.813	SF
Gutttersen D35-720 - Wellbore #1 - Plan #1	2,200.00	2,182.00	1,810.48	1,795.24	118.781	CC, ES
Gutttersen D35-720 - Wellbore #1 - Plan #1	17,585.83	17,404.37	3,983.24	3,793.46	20.990	SF
Gutttersen D35-730 - Wellbore #1 - Plan #1	2,200.00	2,180.00	1,773.03	1,757.79	116.378	CC, ES
Gutttersen D35-730 - Wellbore #1 - Plan #1	17,585.83	17,346.12	3,324.23	3,133.92	17.468	SF
Gutttersen D35-740 - Wellbore #1 - Plan #1	2,518.26	2,682.76	1,735.33	1,717.42	96.905	CC, ES
Gutttersen D35-740 - Wellbore #1 - Plan #1	17,585.83	17,381.84	2,663.14	2,473.24	14.024	SF
Gutttersen D35-750 - Wellbore #1 - Plan #1	2,200.00	2,201.00	112.50	97.19	7.348	CC, ES
Gutttersen D35-750 - Wellbore #1 - Plan #1	2,300.00	2,297.98	115.45	99.46	7.222	SF
Gutttersen D35-760 - Wellbore #1 - Plan #1	2,200.00	2,200.00	75.00	59.69	4.900	CC, ES
Gutttersen D35-760 - Wellbore #1 - Plan #1	2,300.00	2,300.02	76.64	60.63	4.786	SF
Gutttersen D35-770 - Wellbore #1 - Plan #1	2,200.00	2,200.00	37.50	22.19	2.450	CC, ES
Gutttersen D35-770 - Wellbore #1 - Plan #1	2,300.00	2,300.02	39.14	23.13	2.444	SF
Gutttersen State D23-721 - Wellbore #1 - Plan #1	2,200.00	2,180.00	1,807.13	1,791.90	118.617	CC, ES
Gutttersen State D23-721 - Wellbore #1 - Plan #1	8,225.22	6,380.90	3,848.01	3,797.45	76.109	SF
Gutttersen State D23-731 - Wellbore #1 - Plan #1	2,200.00	2,180.00	1,769.64	1,754.40	116.156	CC, ES
Gutttersen State D23-731 - Wellbore #1 - Plan #1	6,850.00	7,481.16	3,064.87	3,014.40	60.722	SF
Gutttersen State D23-741 - Wellbore #1 - Plan #1	2,200.00	2,181.00	1,732.15	1,716.92	113.669	CC, ES
Gutttersen State D23-741 - Wellbore #1 - Plan #1	6,700.00	7,652.22	2,380.40	2,330.12	47.340	SF
Gutttersen State D23-751 - Wellbore #1 - Plan #1	2,200.00	2,200.00	187.19	171.88	12.229	CC, ES
Gutttersen State D23-751 - Wellbore #1 - Plan #1	2,400.00	2,387.87	195.43	178.84	11.781	SF
Gutttersen State D23-761 - Wellbore #1 - Plan #1	2,200.00	2,201.00	167.48	152.17	10.939	CC
Gutttersen State D23-761 - Wellbore #1 - Plan #1	2,400.00	2,401.16	168.32	151.61	10.073	ES
Gutttersen State D23-761 - Wellbore #1 - Plan #1	2,700.00	2,692.54	178.27	159.51	9.505	SF
Gutttersen State D23-771 - Wellbore #1 - Plan #1	2,424.81	2,421.83	153.76	136.89	9.117	CC, ES
Gutttersen State D23-771 - Wellbore #1 - Plan #1	2,700.00	2,687.34	162.78	144.11	8.721	SF
Gutttersen State D23-781 - Wellbore #1 - Plan #1	7,100.00	7,404.68	54.25	1.24	1.023	Level 2, ES, SF
Gutttersen State D23-781 - Wellbore #1 - Plan #1	7,110.08	7,396.97	53.87	1.46	1.028	Level 2, CC
Gutttersen State D35-790 - Wellbore #1 - Plan #1	2,200.00	2,184.00	1,847.92	1,832.67	121.180	CC, ES
Gutttersen State D35-790 - Wellbore #1 - Plan #1	17,585.83	17,573.53	4,644.15	4,454.37	24.471	SF
Gutttersen USX D 23-17 (PR) - Wellbore #1 - Gyro Surve	2,036.65	1,993.90	3,650.63	3,636.75	263.019	CC
Gutttersen USX D 23-17 (PR) - Wellbore #1 - Gyro Surve	2,200.00	2,143.55	3,651.31	3,636.32	243.615	ES
Gutttersen USX D 23-17 (PR) - Wellbore #1 - Gyro Surve	7,000.00	7,000.00	4,854.15	4,804.75	98.272	SF
Parker Blue D 23-09 (SI) - Wellbore #1 - Gyro Surveys	2,204.93	2,129.57	2,984.99	2,970.03	199.568	CC, ES
Parker Blue D 23-09 (SI) - Wellbore #1 - Gyro Surveys	6,950.00	6,642.73	4,281.90	4,233.82	89.068	SF
Parker Blue D 23-10 (SI) - Wellbore #1 - Gyro Surveys	2,217.95	2,176.63	1,894.40	1,879.25	125.045	CC, ES
Parker Blue D 23-10 (SI) - Wellbore #1 - Gyro Surveys	6,650.00	6,407.25	3,045.76	2,999.61	66.007	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 Gutttersen D35-780
Project:	Mustang	TVD Reference:	KB @ 4859.00ft
Reference Site:	D Section 23	MD Reference:	KB @ 4859.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Gutttersen D35-780	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
D Section 23						
Parker Blue D 23-11 (SI) - Wellbore #1 - Gyro Surveys	653.30	630.31	1,411.05	1,406.92	341.068	CC
Parker Blue D 23-11 (SI) - Wellbore #1 - Gyro Surveys	1,200.00	1,166.49	1,412.65	1,404.68	177.294	ES
Parker Blue D 23-11 (SI) - Wellbore #1 - Gyro Surveys	6,600.00	6,407.95	2,183.14	2,136.90	47.214	SF
Parker Blue D 23-13 (SI) - Wellbore #1 - Gyro Surveys	6,540.44	6,352.63	700.88	654.28	15.042	CC
Parker Blue D 23-13 (SI) - Wellbore #1 - Gyro Surveys	6,550.00	6,361.08	700.95	654.28	15.021	ES
Parker Blue D 23-13 (SI) - Wellbore #1 - Gyro Surveys	6,600.00	6,405.18	703.63	656.59	14.959	SF
Parker Blue D 23-14 (SI) - Wellbore #1 - Gyro Surveys	2,234.20	2,204.73	142.21	126.91	9.297	CC, ES
Parker Blue D 23-14 (SI) - Wellbore #1 - Gyro Surveys	2,400.00	2,370.26	146.38	129.94	8.904	SF
Parker Blue D 23-15 (SI) - Wellbore #1 - Gyro Surveys	100.00	42.31	1,441.62	1,441.42	7,191.796	CC
Parker Blue D 23-15 (SI) - Wellbore #1 - Gyro Surveys	2,239.67	2,206.78	1,447.42	1,432.09	94.424	ES
Parker Blue D 23-15 (SI) - Wellbore #1 - Gyro Surveys	6,900.00	6,633.93	2,556.60	2,508.56	53.211	SF
Parker Blue D 23-3J (SI) - Wellbore #1 - Gyro Surveys	4,083.35	4,005.60	1,456.35	1,428.01	51.377	CC
Parker Blue D 23-3J (SI) - Wellbore #1 - Gyro Surveys	4,100.00	4,018.53	1,456.38	1,427.92	51.179	ES
Parker Blue D 23-3J (SI) - Wellbore #1 - Gyro Surveys	6,600.00	6,400.28	1,654.16	1,604.96	33.623	SF
Parker Red D 23-05 (PR) - Wellbore #1 - Gyro Surveys	3,961.88	3,897.22	2,736.55	2,709.05	99.497	CC
Parker Red D 23-05 (PR) - Wellbore #1 - Gyro Surveys	4,700.00	4,666.28	2,739.07	2,705.93	82.650	ES
Parker Red D 23-05 (PR) - Wellbore #1 - Gyro Surveys	6,750.00	6,542.58	2,918.77	2,870.76	60.795	SF
Parker Red D 23-2J (SI) - Wellbore #1 - Gyro Surveys	695.30	682.31	2,820.34	2,815.87	631.116	CC
Parker Red D 23-2J (SI) - Wellbore #1 - Gyro Surveys	2,100.00	2,065.88	2,823.10	2,808.76	196.927	ES
Parker Red D 23-2J (SI) - Wellbore #1 - Gyro Surveys	6,700.00	6,482.66	3,305.22	3,257.92	69.885	SF
Parker Red D 23-3 (PR) - Wellbore #1 - Gyro Surveys	1,985.68	1,950.02	3,793.49	3,779.95	280.062	CC
Parker Red D 23-3 (PR) - Wellbore #1 - Gyro Surveys	2,000.00	1,958.05	3,793.50	3,779.88	278.431	ES
Parker Red D 23-3 (PR) - Wellbore #1 - Gyro Surveys	6,800.00	6,674.45	4,432.74	4,384.32	91.549	SF
Parker Red D 23-4 (SI) - Wellbore #1 - Gyro Surveys	477.40	451.40	3,985.98	3,983.10	1,383.457	CC
Parker Red D 23-4 (SI) - Wellbore #1 - Gyro Surveys	5,300.00	5,400.00	4,015.08	3,977.00	105.435	ES
Parker Red D 23-4 (SI) - Wellbore #1 - Gyro Surveys	6,800.00	6,558.87	4,199.49	4,151.25	87.053	SF
Two E Ranch 1-23 (SI) - Wellbore #1 - Gyro Surveys	2,227.31	2,197.29	2,368.11	2,352.85	155.176	CC, ES
Two E Ranch 1-23 (SI) - Wellbore #1 - Gyro Surveys	6,950.00	6,640.67	3,662.35	3,614.28	76.186	SF

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersten D35-780
Project:	Mustang	TVD Reference:	KB @ 4859.00ft
Reference Site:	D Section 23	MD Reference:	KB @ 4859.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersten D35-780	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 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 26						
Adam Red D 26-11 (PR) - Wellbore #1 - Gyro Surveys	10,494.58	6,839.95	1,167.95	1,102.91	17.957	CC, ES
Adam Red D 26-11 (PR) - Wellbore #1 - Gyro Surveys	10,500.00	6,839.85	1,167.96	1,102.92	17.957	SF
Adam Red D 26-12 (PR) - Wellbore #1 - Gyro Surveys	10,491.26	6,868.43	35.05	-37.55	0.483	Level 1, CC, ES, SF
Adam Red D 26-13 (PR) - Wellbore #1 - Gyro Surveys	11,637.17	6,870.64	149.73	76.54	2.046	CC, ES, SF
Adam Red D 26-14 (PR) - Wellbore #1 - Gyro Surveys	11,645.17	6,835.56	1,513.87	1,436.24	19.501	CC, ES
Adam Red D 26-14 (PR) - Wellbore #1 - Gyro Surveys	11,700.00	6,835.23	1,514.86	1,437.15	19.492	SF
Coors Energy 14-25H (PR) - Wellbore #1 - MWD Survey	11,321.30	5,983.76	4,743.95	4,679.71	73.845	CC, ES
Coors Energy 14-25H (PR) - Wellbore #1 - MWD Survey	12,500.00	5,982.16	4,888.19	4,818.85	70.502	SF
Heyde 1-26 (PR) - Wellbore #1 - Gyro Surveys	158.04	110.48	2,884.22	2,883.70	5,458.863	CC
Heyde 1-26 (PR) - Wellbore #1 - Gyro Surveys	2,100.00	2,029.16	2,888.34	2,874.13	203.295	ES
Heyde 1-26 (PR) - Wellbore #1 - Gyro Surveys	8,800.00	6,875.05	3,696.80	3,642.29	67.829	SF
Heyde 26ND (PR) - Wellbore #1 - MWD Surveys	100.00	77.10	1,742.79	1,742.52	6,602.930	CC
Heyde 26ND (PR) - Wellbore #1 - MWD Surveys	500.00	474.95	1,744.83	1,742.02	620.821	ES
Heyde 26ND (PR) - Wellbore #1 - MWD Surveys	8,900.00	6,958.64	2,111.68	2,053.54	36.321	SF
Heyde 26RD (PR) - Wellbore #1 - MWD Surveys	2,890.36	3,287.45	2,457.50	2,435.54	111.884	CC
Heyde 26RD (PR) - Wellbore #1 - MWD Surveys	2,900.00	3,297.23	2,457.52	2,435.47	111.496	ES
Heyde 26RD (PR) - Wellbore #1 - MWD Surveys	7,350.00	6,861.29	3,278.93	3,226.53	62.573	SF
Heyde 26VD (PR) - Wellbore #1 - MWD Surveys	100.00	54.21	2,714.11	2,713.88	10,000.000	CC
Heyde 26VD (PR) - Wellbore #1 - MWD Surveys	500.00	441.39	2,715.32	2,712.96	1,153.165	ES
Heyde 26VD (PR) - Wellbore #1 - MWD Surveys	10,100.00	7,055.36	4,818.39	4,753.85	74.664	SF
Heyde 31-26 (PR) - Wellbore #1 - No Surveys	2,209.01	2,171.69	1,806.42	1,791.30	119.478	CC
Heyde 31-26 (PR) - Wellbore #1 - No Surveys	2,300.00	2,258.79	1,806.90	1,791.16	114.815	ES
Heyde 31-26 (PR) - Wellbore #1 - No Surveys	8,000.00	6,818.48	2,380.28	2,328.45	45.920	SF
Heyde 32-26 (SI) - Wellbore #1 - Gyro Surveys	9,174.10	6,788.05	2,550.30	2,493.28	44.726	CC, ES
Heyde 32-26 (SI) - Wellbore #1 - Gyro Surveys	9,500.00	6,790.70	2,571.04	2,513.13	44.397	SF
Heyde 41-26 (PR) - Wellbore #1 - Gyro Surveys	2,252.85	2,243.07	3,017.44	3,001.94	194.629	CC
Heyde 41-26 (PR) - Wellbore #1 - Gyro Surveys	2,300.00	2,288.49	3,017.73	3,001.90	190.686	ES
Heyde 41-26 (PR) - Wellbore #1 - Gyro Surveys	8,500.00	6,846.67	4,100.76	4,047.60	77.138	SF
Heyde 42-26 (PR) - Wellbore #1 - Gyro Surveys	2,385.54	2,441.11	3,817.85	3,801.21	229.356	CC
Heyde 42-26 (PR) - Wellbore #1 - Gyro Surveys	2,400.00	2,455.80	3,817.87	3,801.12	227.987	ES
Heyde 42-26 (PR) - Wellbore #1 - Gyro Surveys	13,300.00	13,300.00	5,751.94	5,664.28	65.619	SF
HSR-Waste Services 10-26 (SI) - Wellbore #1 - No Surve	10,699.19	6,843.44	2,875.73	2,696.01	16.001	CC
HSR-Waste Services 10-26 (SI) - Wellbore #1 - No Surve	10,700.00	6,843.43	2,875.73	2,696.01	16.001	ES
HSR-Waste Services 10-26 (SI) - Wellbore #1 - No Surve	10,800.00	6,841.68	2,877.50	2,697.42	15.979	SF
HSR-Waste Services 15-26 (SI) - Wellbore #1 - No Surve	11,696.33	6,841.97	2,631.47	2,444.97	14.110	CC
HSR-Waste Services 15-26 (SI) - Wellbore #1 - No Surve	11,700.00	6,841.90	2,631.47	2,444.96	14.109	ES
HSR-Waste Services 15-26 (SI) - Wellbore #1 - No Surve	11,800.00	6,840.15	2,633.51	2,446.64	14.093	SF
HSR-Waste Services 16-26 (SI) - Wellbore #1 - Gyro Su	11,700.91	6,883.26	3,882.17	3,808.56	52.741	CC, ES
HSR-Waste Services 16-26 (SI) - Wellbore #1 - Gyro Su	12,400.00	6,867.63	3,944.58	3,868.03	51.532	SF
HSR-Waste Services 9-26 (PA) - Wellbore #1 - Gyro Sur	10,446.36	6,801.81	4,053.40	3,988.68	62.627	CC, ES
HSR-Waste Services 9-26 (PA) - Wellbore #1 - Gyro Sur	11,300.00	6,808.78	4,142.30	4,074.08	60.716	SF
Waste Management 11-26 (PR) - Wellbore #1 - Gyro Sur	7,984.09	6,855.75	51.45	-1.00	0.981	Level 1, CC, ES, SF
Waste Management 12-26 (PR) - Wellbore #1 - Gyro Sur	9,281.57	6,864.94	91.91	33.71	1.579	CC, ES, SF
Waste Management 12-26A (PR) - Wellbore #1 - Gyro S	8,700.00	6,854.15	549.68	494.46	9.955	SF
Waste Management 12-26A (PR) - Wellbore #1 - Gyro S	8,719.07	6,855.62	549.35	494.19	9.959	CC, ES
Waste Management 21-26 (PR) - Wellbore #1 - Gyro Sur	4,155.86	4,080.01	1,301.23	1,272.34	45.053	CC
Waste Management 21-26 (PR) - Wellbore #1 - Gyro Sur	4,200.00	4,120.28	1,301.32	1,272.12	44.570	ES
Waste Management 21-26 (PR) - Wellbore #1 - Gyro Sur	7,619.22	6,823.32	1,399.76	1,348.83	27.485	SF
Waste Management 22-26 (PR) - Wellbore #1 - Gyro Sur	9,213.31	6,835.60	1,314.80	1,257.46	22.930	CC, ES, SF
Waste Management 26FD (PR) - Wellbore #1 - MWD Su	8,563.65	6,998.08	590.07	534.43	10.604	CC, ES
Waste Management 26FD (PR) - Wellbore #1 - MWD Su	8,600.00	6,997.71	591.19	535.15	10.550	SF
Waste Management 26KD (PR) - Wellbore #1 - MWD Su	9,816.80	7,006.10	644.60	576.42	9.455	CC, ES, SF
Waste Management D 26-25 (SI) - Wellbore #1 - Gyro S	11,160.38	6,840.72	844.71	775.29	12.169	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 Gutttersen D35-780
Project:	Mustang	TVD Reference:	KB @ 4859.00ft
Reference Site:	D Section 23	MD Reference:	KB @ 4859.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Gutttersen D35-780	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 26						
Waste Mangement 26JD (PR) - Wellbore #1 - MWD Surv	7,129.58	6,893.82	583.75	531.08	11.083	CC, ES
Waste Mangement 26JD (PR) - Wellbore #1 - MWD Surv	7,200.00	6,919.87	586.28	533.09	11.023	SF
D Section 35						
UPRR 1 (DA) - Wellbore #1 - No Surveys	13,169.50	6,859.15	22.08	-175.46	0.112	Level 1, CC, ES, SF
Waste Management 22-35 (SI) - Wellbore #1 - Gyro Surv	14,551.82	6,836.37	1,420.60	1,326.01	15.018	CC, ES, SF
Waste Management 31-35 (SI) - Wellbore #1 - Gyro Surv	13,025.67	6,853.18	2,429.50	2,346.64	29.319	CC, ES
Waste Management 31-35 (SI) - Wellbore #1 - Gyro Surv	13,200.00	6,848.91	2,435.75	2,352.31	29.192	SF
Waste Management 41-35 (SI) - Wellbore #1 - Gyro Surv	13,129.11	6,833.51	3,998.95	3,915.09	47.688	CC, ES
Waste Management 41-35 (SI) - Wellbore #1 - Gyro Surv	13,800.00	6,818.11	4,054.80	3,968.08	46.758	SF
Waste Management D 35-15 (PR) - Wellbore #1 - Gyro S	17,215.65	6,747.89	2,600.14	2,485.28	22.637	CC, ES
Waste Management D 35-15 (PR) - Wellbore #1 - Gyro S	17,350.41	6,743.65	2,603.62	2,488.29	22.574	SF
Waste Management USX D 35-11 (SI) - Wellbore #1 - Gy	15,878.99	6,794.92	1,328.50	1,223.95	12.707	CC, ES
Waste Management USX D 35-11 (SI) - Wellbore #1 - Gy	15,900.00	6,795.51	1,328.67	1,224.09	12.705	SF
Waste Management USX D 35-14 (SI) - Wellbore #1 - Nc	16,925.38	6,781.33	1,446.37	1,221.50	6.432	CC, ES, SF
Waste Management USX D 35-7 (PR) - Wellbore #1 - Gy	14,387.01	6,791.90	2,625.15	2,532.09	28.210	CC
Waste Management USX D 35-7 (PR) - Wellbore #1 - Gy	14,400.00	6,791.54	2,625.18	2,532.07	28.194	ES
Waste Management USX D 35-7 (PR) - Wellbore #1 - Gy	14,600.00	6,785.96	2,633.77	2,539.99	28.086	SF
Waste Management USX D 35-9 (SI) - Wellbore #1 - No	15,881.89	7,559.00	4,417.40	4,204.88	20.786	CC
Waste Management USX D 35-9 (SI) - Wellbore #1 - No	15,900.00	7,559.00	4,417.44	4,204.81	20.775	ES
Waste Management USX D 35-9 (SI) - Wellbore #1 - No	16,300.00	7,559.00	4,437.14	4,222.34	20.657	SF
Waste Services 21-35 (PR) - Wellbore #1 - Gyro Surveys	12,961.74	6,840.37	1,464.61	1,382.07	17.745	CC, ES
Waste Services 21-35 (PR) - Wellbore #1 - Gyro Surveys	13,000.00	6,839.39	1,465.11	1,382.52	17.741	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 Guttersten D35-780
Project:	Mustang	TVD Reference:	KB @ 4859.00ft
Reference Site:	D Section 23	MD Reference:	KB @ 4859.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersten D35-780	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 @ 4859.00ft

Offset Depths are relative to Offset Datum

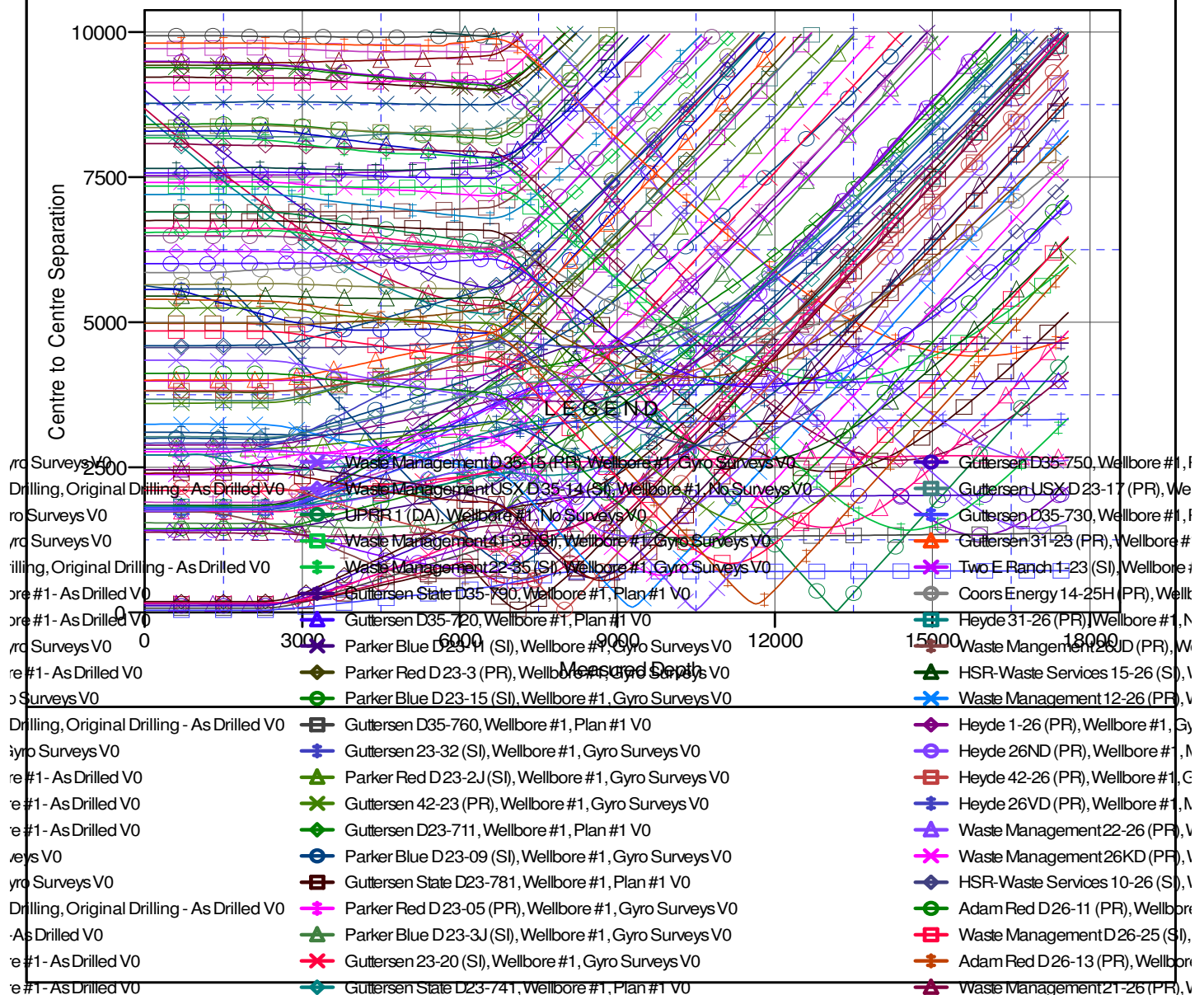
Central Meridian is -105.5000000

Coordinates are relative to: Guttersten D35-780

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.63°

Ladder Plot



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

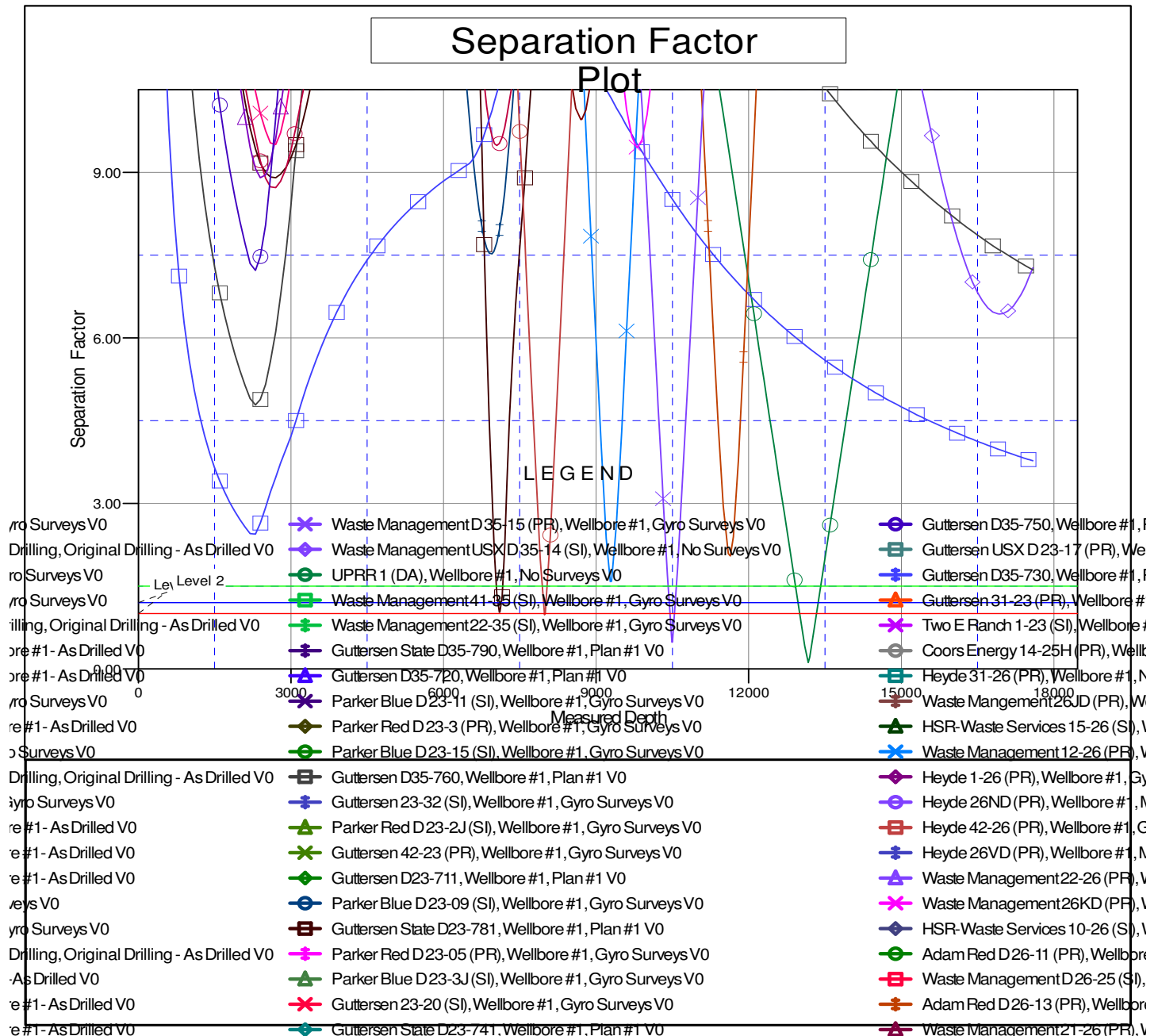
Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen D35-780
Project:	Mustang	TVD Reference:	KB @ 4859.00ft
Reference Site:	D Section 23	MD Reference:	KB @ 4859.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersen D35-780	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 @ 4859.00ft
Offset Depths are relative to Offset Datum
Central Meridian is -105.5000000

Coordinates are relative to: Guttersen D35-780
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.63°



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