

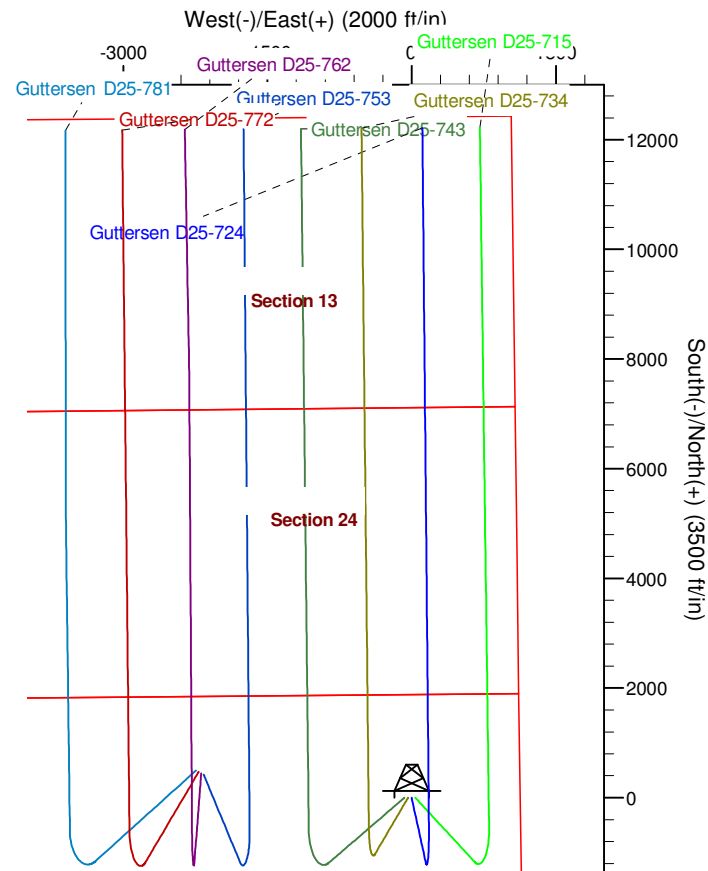
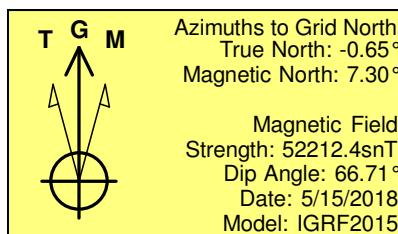
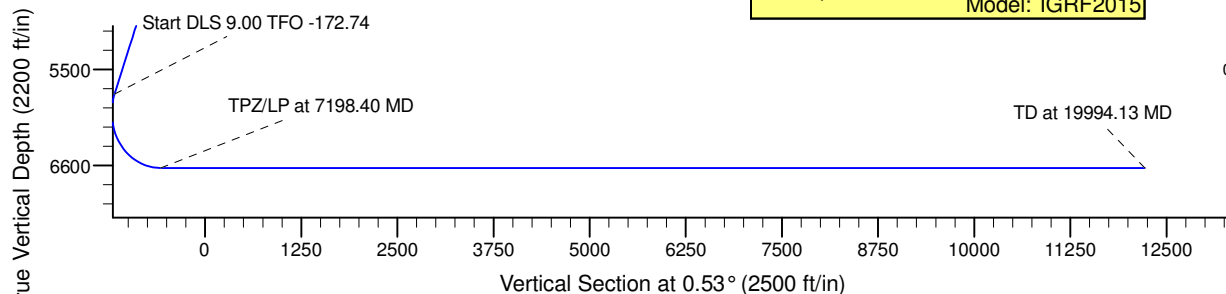
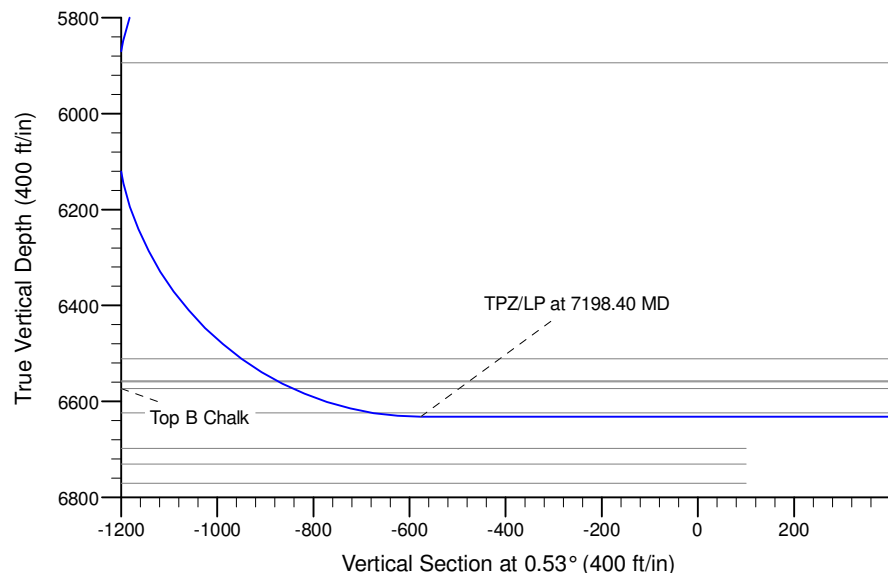
Project: Mustang
 Site: D Section 25
 Well: Guttersen D25-724
 Wellbore: Wellbore #1
 Design: Plan #1

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	2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.00	0.00	
3	2994.59	19.89	172.86	2974.73	-169.60	21.23	2.00	172.86	-169.40	
4	5979.02	19.89	172.86	5781.10	-1177.17	147.36	0.00	0.00	-1175.77	
5	7198.40	90.00	359.69	6632.00	-577.79	180.74	9.00	-172.74	-576.11	Guttersen D25-724 TPZ/LP
6	19994.13	90.00	359.69	6632.00	12217.76	111.99	0.00	0.00	12218.27	Guttersen D25-724 BHL



WELL DETAILS: Guttersen D25-724

0.00	0.00	1316740.73	3280902.19	4772.00 Latitude	-104.4943797 Longitude
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Plan: Plan #1 (Guttersen D25-724/Wellbore #1)

Created By: Colby Baxter Date: 9:57, August 15 2018

Checked: _____ Date: _____

Reviewed: _____ Date: _____

Approved: _____ Date: _____

Northern Region - DJ Basin

Mustang

D Section 25

Guttersen D25-724

Wellbore #1

Plan: Plan #1

Standard Survey Report

15 August, 2018

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen D25-724
Project:	Mustang	TVD Reference:	KB @ 4802.00ft
Site:	D Section 25	MD Reference:	KB @ 4802.00ft
Well:	Guttersen D25-724	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		D Section 25			
Site Position:		Northing:	1,316,029.45 usft	Latitude:	40.1965730
From:	Lat/Long	Easting:	3,279,365.57 usft	Longitude:	-104.4999090
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.65 °

Well		Guttersen D25-724				
Well Position	+N/-S	0.00 ft	Northing:	1,316,740.73 usft	Latitude:	40.1984777
	+E/-W	0.00 ft	Easting:	3,280,902.19 usft	Longitude:	-104.4943797
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	4,772.00 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	5/15/2018	7.95	66.71	52,212.37467233

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	0.53	

Survey Tool Program	Date	8/15/2018			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.00	19,994.13	Plan #1 (Wellbore #1)	2_MWD+IFR1+MS	A008Mb: IFR dec & multi-station analysis	

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 Guttersen D25-724
Project:	Mustang	TVD Reference:	KB @ 4802.00ft
Site:	D Section 25	MD Reference:	KB @ 4802.00ft
Well:	Guttersen D25-724	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	2.00	172.86	2,099.98	-1.73	0.22	-1.73	2.00	2.00	0.00
2,200.00	4.00	172.86	2,199.84	-6.92	0.87	-6.92	2.00	2.00	0.00
2,300.00	6.00	172.86	2,299.45	-15.57	1.95	-15.55	2.00	2.00	0.00
2,400.00	8.00	172.86	2,398.70	-27.66	3.46	-27.63	2.00	2.00	0.00
2,500.00	10.00	172.86	2,497.47	-43.19	5.41	-43.13	2.00	2.00	0.00
2,600.00	12.00	172.86	2,595.62	-62.12	7.78	-62.04	2.00	2.00	0.00
2,700.00	14.00	172.86	2,693.06	-84.44	10.57	-84.34	2.00	2.00	0.00
2,800.00	16.00	172.86	2,789.64	-110.12	13.78	-109.99	2.00	2.00	0.00
2,900.00	18.00	172.86	2,885.27	-139.13	17.42	-138.96	2.00	2.00	0.00
2,994.59	19.89	172.86	2,974.73	-169.60	21.23	-169.40	2.00	2.00	0.00
3,000.00	19.89	172.86	2,979.82	-171.43	21.46	-171.22	0.00	0.00	0.00
3,100.00	19.89	172.86	3,073.85	-205.19	25.69	-204.94	0.00	0.00	0.00
3,200.00	19.89	172.86	3,167.88	-238.95	29.91	-238.66	0.00	0.00	0.00
3,300.00	19.89	172.86	3,261.92	-272.71	34.14	-272.38	0.00	0.00	0.00
3,400.00	19.89	172.86	3,355.95	-306.47	38.36	-306.10	0.00	0.00	0.00
3,500.00	19.89	172.86	3,449.99	-340.23	42.59	-339.82	0.00	0.00	0.00
3,600.00	19.89	172.86	3,544.02	-373.99	46.82	-373.55	0.00	0.00	0.00
3,700.00	19.89	172.86	3,638.05	-407.75	51.04	-407.27	0.00	0.00	0.00
3,800.00	19.89	172.86	3,732.09	-441.51	55.27	-440.99	0.00	0.00	0.00
3,900.00	19.89	172.86	3,826.12	-475.27	59.50	-474.71	0.00	0.00	0.00
4,000.00	19.89	172.86	3,920.15	-509.03	63.72	-508.43	0.00	0.00	0.00
4,100.00	19.89	172.86	4,014.19	-542.79	67.95	-542.15	0.00	0.00	0.00
4,200.00	19.89	172.86	4,108.22	-576.56	72.18	-575.87	0.00	0.00	0.00
4,300.00	19.89	172.86	4,202.26	-610.32	76.40	-609.59	0.00	0.00	0.00
4,400.00	19.89	172.86	4,296.29	-644.08	80.63	-643.31	0.00	0.00	0.00
4,500.00	19.89	172.86	4,390.32	-677.84	84.85	-677.03	0.00	0.00	0.00
4,600.00	19.89	172.86	4,484.36	-711.60	89.08	-710.75	0.00	0.00	0.00
4,700.00	19.89	172.86	4,578.39	-745.36	93.31	-744.47	0.00	0.00	0.00
4,800.00	19.89	172.86	4,672.42	-779.12	97.53	-778.19	0.00	0.00	0.00
4,900.00	19.89	172.86	4,766.46	-812.88	101.76	-811.91	0.00	0.00	0.00
5,000.00	19.89	172.86	4,860.49	-846.64	105.99	-845.64	0.00	0.00	0.00
5,100.00	19.89	172.86	4,954.53	-880.40	110.21	-879.36	0.00	0.00	0.00
5,200.00	19.89	172.86	5,048.56	-914.16	114.44	-913.08	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen D25-724
Project:	Mustang	TVD Reference:	KB @ 4802.00ft
Site:	D Section 25	MD Reference:	KB @ 4802.00ft
Well:	Guttersen D25-724	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	19.89	172.86	5,142.59	-947.92	118.66	-946.80	0.00	0.00	0.00
5,400.00	19.89	172.86	5,236.63	-981.69	122.89	-980.52	0.00	0.00	0.00
5,500.00	19.89	172.86	5,330.66	-1,015.45	127.12	-1,014.24	0.00	0.00	0.00
5,600.00	19.89	172.86	5,424.69	-1,049.21	131.34	-1,047.96	0.00	0.00	0.00
5,700.00	19.89	172.86	5,518.73	-1,082.97	135.57	-1,081.68	0.00	0.00	0.00
5,800.00	19.89	172.86	5,612.76	-1,116.73	139.80	-1,115.40	0.00	0.00	0.00
5,900.00	19.89	172.86	5,706.80	-1,150.49	144.02	-1,149.12	0.00	0.00	0.00
5,979.02	19.89	172.86	5,781.10	-1,177.17	147.36	-1,175.77	0.00	0.00	0.00
6,000.00	18.02	172.09	5,800.94	-1,183.92	148.25	-1,182.52	9.00	-8.92	-3.67
6,100.00	9.19	164.27	5,898.05	-1,206.98	152.55	-1,205.53	9.00	-8.83	-7.82
6,200.00	2.47	86.35	5,997.56	-1,214.54	156.87	-1,213.05	9.00	-6.72	-77.92
6,300.00	9.47	14.64	6,097.04	-1,206.43	161.11	-1,204.90	9.00	7.00	-71.71
6,400.00	18.30	7.16	6,194.03	-1,182.85	165.16	-1,181.28	9.00	8.84	-7.48
6,500.00	27.25	4.48	6,286.14	-1,144.36	168.91	-1,142.77	9.00	8.94	-2.68
6,600.00	36.22	3.06	6,371.11	-1,091.94	172.28	-1,090.31	9.00	8.97	-1.42
6,700.00	45.20	2.14	6,446.84	-1,026.85	175.19	-1,025.20	9.00	8.98	-0.92
6,800.00	54.18	1.47	6,511.47	-950.71	177.56	-949.04	9.00	8.99	-0.67
6,900.00	63.17	0.94	6,563.40	-865.39	179.34	-863.71	9.00	8.99	-0.53
7,000.00	72.16	0.49	6,601.36	-773.00	180.47	-771.31	9.00	8.99	-0.45
7,100.00	81.15	0.08	6,624.42	-675.80	180.94	-674.11	9.00	8.99	-0.41
7,198.40	90.00	359.69	6,632.00	-577.79	180.74	-576.11	9.00	8.99	-0.39
7,200.00	90.00	359.69	6,632.00	-576.19	180.73	-574.51	0.00	0.00	0.00
7,300.00	90.00	359.69	6,632.00	-476.19	180.20	-474.52	0.00	0.00	0.00
7,400.00	90.00	359.69	6,632.00	-376.19	179.66	-374.53	0.00	0.00	0.00
7,500.00	90.00	359.69	6,632.00	-276.19	179.12	-274.54	0.00	0.00	0.00
7,600.00	90.00	359.69	6,632.00	-176.20	178.59	-174.55	0.00	0.00	0.00
7,700.00	90.00	359.69	6,632.00	-76.20	178.05	-74.56	0.00	0.00	0.00
7,800.00	90.00	359.69	6,632.00	23.80	177.51	25.43	0.00	0.00	0.00
7,900.00	90.00	359.69	6,632.00	123.80	176.97	125.42	0.00	0.00	0.00
8,000.00	90.00	359.69	6,632.00	223.80	176.44	225.41	0.00	0.00	0.00
8,100.00	90.00	359.69	6,632.00	323.80	175.90	325.40	0.00	0.00	0.00
8,200.00	90.00	359.69	6,632.00	423.80	175.36	425.39	0.00	0.00	0.00
8,300.00	90.00	359.69	6,632.00	523.79	174.82	525.38	0.00	0.00	0.00
8,400.00	90.00	359.69	6,632.00	623.79	174.29	625.36	0.00	0.00	0.00
8,500.00	90.00	359.69	6,632.00	723.79	173.75	725.35	0.00	0.00	0.00
8,600.00	90.00	359.69	6,632.00	823.79	173.21	825.34	0.00	0.00	0.00
8,700.00	90.00	359.69	6,632.00	923.79	172.68	925.33	0.00	0.00	0.00
8,800.00	90.00	359.69	6,632.00	1,023.79	172.14	1,025.32	0.00	0.00	0.00
8,900.00	90.00	359.69	6,632.00	1,123.79	171.60	1,125.31	0.00	0.00	0.00
9,000.00	90.00	359.69	6,632.00	1,223.78	171.06	1,225.30	0.00	0.00	0.00
9,100.00	90.00	359.69	6,632.00	1,323.78	170.53	1,325.29	0.00	0.00	0.00
9,200.00	90.00	359.69	6,632.00	1,423.78	169.99	1,425.28	0.00	0.00	0.00
9,300.00	90.00	359.69	6,632.00	1,523.78	169.45	1,525.27	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen D25-724
Project:	Mustang	TVD Reference:	KB @ 4802.00ft
Site:	D Section 25	MD Reference:	KB @ 4802.00ft
Well:	Guttersen D25-724	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	359.69	6,632.00	1,623.78	168.91	1,625.26	0.00	0.00	0.00
9,500.00	90.00	359.69	6,632.00	1,723.78	168.38	1,725.25	0.00	0.00	0.00
9,600.00	90.00	359.69	6,632.00	1,823.78	167.84	1,825.24	0.00	0.00	0.00
9,700.00	90.00	359.69	6,632.00	1,923.77	167.30	1,925.23	0.00	0.00	0.00
9,800.00	90.00	359.69	6,632.00	2,023.77	166.76	2,025.22	0.00	0.00	0.00
9,900.00	90.00	359.69	6,632.00	2,123.77	166.23	2,125.21	0.00	0.00	0.00
10,000.00	90.00	359.69	6,632.00	2,223.77	165.69	2,225.20	0.00	0.00	0.00
10,100.00	90.00	359.69	6,632.00	2,323.77	165.15	2,325.18	0.00	0.00	0.00
10,200.00	90.00	359.69	6,632.00	2,423.77	164.62	2,425.17	0.00	0.00	0.00
10,300.00	90.00	359.69	6,632.00	2,523.77	164.08	2,525.16	0.00	0.00	0.00
10,400.00	90.00	359.69	6,632.00	2,623.76	163.54	2,625.15	0.00	0.00	0.00
10,500.00	90.00	359.69	6,632.00	2,723.76	163.00	2,725.14	0.00	0.00	0.00
10,600.00	90.00	359.69	6,632.00	2,823.76	162.47	2,825.13	0.00	0.00	0.00
10,700.00	90.00	359.69	6,632.00	2,923.76	161.93	2,925.12	0.00	0.00	0.00
10,800.00	90.00	359.69	6,632.00	3,023.76	161.39	3,025.11	0.00	0.00	0.00
10,900.00	90.00	359.69	6,632.00	3,123.76	160.85	3,125.10	0.00	0.00	0.00
11,000.00	90.00	359.69	6,632.00	3,223.76	160.32	3,225.09	0.00	0.00	0.00
11,100.00	90.00	359.69	6,632.00	3,323.75	159.78	3,325.08	0.00	0.00	0.00
11,200.00	90.00	359.69	6,632.00	3,423.75	159.24	3,425.07	0.00	0.00	0.00
11,300.00	90.00	359.69	6,632.00	3,523.75	158.70	3,525.06	0.00	0.00	0.00
11,400.00	90.00	359.69	6,632.00	3,623.75	158.17	3,625.05	0.00	0.00	0.00
11,500.00	90.00	359.69	6,632.00	3,723.75	157.63	3,725.04	0.00	0.00	0.00
11,600.00	90.00	359.69	6,632.00	3,823.75	157.09	3,825.03	0.00	0.00	0.00
11,700.00	90.00	359.69	6,632.00	3,923.75	156.56	3,925.02	0.00	0.00	0.00
11,800.00	90.00	359.69	6,632.00	4,023.74	156.02	4,025.01	0.00	0.00	0.00
11,900.00	90.00	359.69	6,632.00	4,123.74	155.48	4,124.99	0.00	0.00	0.00
12,000.00	90.00	359.69	6,632.00	4,223.74	154.94	4,224.98	0.00	0.00	0.00
12,100.00	90.00	359.69	6,632.00	4,323.74	154.41	4,324.97	0.00	0.00	0.00
12,200.00	90.00	359.69	6,632.00	4,423.74	153.87	4,424.96	0.00	0.00	0.00
12,300.00	90.00	359.69	6,632.00	4,523.74	153.33	4,524.95	0.00	0.00	0.00
12,400.00	90.00	359.69	6,632.00	4,623.74	152.79	4,624.94	0.00	0.00	0.00
12,500.00	90.00	359.69	6,632.00	4,723.73	152.26	4,724.93	0.00	0.00	0.00
12,600.00	90.00	359.69	6,632.00	4,823.73	151.72	4,824.92	0.00	0.00	0.00
12,700.00	90.00	359.69	6,632.00	4,923.73	151.18	4,924.91	0.00	0.00	0.00
12,800.00	90.00	359.69	6,632.00	5,023.73	150.64	5,024.90	0.00	0.00	0.00
12,900.00	90.00	359.69	6,632.00	5,123.73	150.11	5,124.89	0.00	0.00	0.00
13,000.00	90.00	359.69	6,632.00	5,223.73	149.57	5,224.88	0.00	0.00	0.00
13,100.00	90.00	359.69	6,632.00	5,323.73	149.03	5,324.87	0.00	0.00	0.00
13,200.00	90.00	359.69	6,632.00	5,423.72	148.50	5,424.86	0.00	0.00	0.00
13,300.00	90.00	359.69	6,632.00	5,523.72	147.96	5,524.85	0.00	0.00	0.00
13,400.00	90.00	359.69	6,632.00	5,623.72	147.42	5,624.84	0.00	0.00	0.00
13,500.00	90.00	359.69	6,632.00	5,723.72	146.88	5,724.83	0.00	0.00	0.00
13,600.00	90.00	359.69	6,632.00	5,823.72	146.35	5,824.81	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen D25-724
Project:	Mustang	TVD Reference:	KB @ 4802.00ft
Site:	D Section 25	MD Reference:	KB @ 4802.00ft
Well:	Guttersen D25-724	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	359.69	6,632.00	5,923.72	145.81	5,924.80	0.00	0.00	0.00
13,800.00	90.00	359.69	6,632.00	6,023.72	145.27	6,024.79	0.00	0.00	0.00
13,900.00	90.00	359.69	6,632.00	6,123.71	144.73	6,124.78	0.00	0.00	0.00
14,000.00	90.00	359.69	6,632.00	6,223.71	144.20	6,224.77	0.00	0.00	0.00
14,100.00	90.00	359.69	6,632.00	6,323.71	143.66	6,324.76	0.00	0.00	0.00
14,200.00	90.00	359.69	6,632.00	6,423.71	143.12	6,424.75	0.00	0.00	0.00
14,300.00	90.00	359.69	6,632.00	6,523.71	142.59	6,524.74	0.00	0.00	0.00
14,400.00	90.00	359.69	6,632.00	6,623.71	142.05	6,624.73	0.00	0.00	0.00
14,500.00	90.00	359.69	6,632.00	6,723.71	141.51	6,724.72	0.00	0.00	0.00
14,600.00	90.00	359.69	6,632.00	6,823.70	140.97	6,824.71	0.00	0.00	0.00
14,700.00	90.00	359.69	6,632.00	6,923.70	140.44	6,924.70	0.00	0.00	0.00
14,800.00	90.00	359.69	6,632.00	7,023.70	139.90	7,024.69	0.00	0.00	0.00
14,900.00	90.00	359.69	6,632.00	7,123.70	139.36	7,124.68	0.00	0.00	0.00
15,000.00	90.00	359.69	6,632.00	7,223.70	138.82	7,224.67	0.00	0.00	0.00
15,100.00	90.00	359.69	6,632.00	7,323.70	138.29	7,324.66	0.00	0.00	0.00
15,200.00	90.00	359.69	6,632.00	7,423.70	137.75	7,424.65	0.00	0.00	0.00
15,300.00	90.00	359.69	6,632.00	7,523.69	137.21	7,524.64	0.00	0.00	0.00
15,400.00	90.00	359.69	6,632.00	7,623.69	136.67	7,624.62	0.00	0.00	0.00
15,500.00	90.00	359.69	6,632.00	7,723.69	136.14	7,724.61	0.00	0.00	0.00
15,600.00	90.00	359.69	6,632.00	7,823.69	135.60	7,824.60	0.00	0.00	0.00
15,700.00	90.00	359.69	6,632.00	7,923.69	135.06	7,924.59	0.00	0.00	0.00
15,800.00	90.00	359.69	6,632.00	8,023.69	134.53	8,024.58	0.00	0.00	0.00
15,900.00	90.00	359.69	6,632.00	8,123.69	133.99	8,124.57	0.00	0.00	0.00
16,000.00	90.00	359.69	6,632.00	8,223.68	133.45	8,224.56	0.00	0.00	0.00
16,100.00	90.00	359.69	6,632.00	8,323.68	132.91	8,324.55	0.00	0.00	0.00
16,200.00	90.00	359.69	6,632.00	8,423.68	132.38	8,424.54	0.00	0.00	0.00
16,300.00	90.00	359.69	6,632.00	8,523.68	131.84	8,524.53	0.00	0.00	0.00
16,400.00	90.00	359.69	6,632.00	8,623.68	131.30	8,624.52	0.00	0.00	0.00
16,500.00	90.00	359.69	6,632.00	8,723.68	130.76	8,724.51	0.00	0.00	0.00
16,600.00	90.00	359.69	6,632.00	8,823.68	130.23	8,824.50	0.00	0.00	0.00
16,700.00	90.00	359.69	6,632.00	8,923.67	129.69	8,924.49	0.00	0.00	0.00
16,800.00	90.00	359.69	6,632.00	9,023.67	129.15	9,024.48	0.00	0.00	0.00
16,900.00	90.00	359.69	6,632.00	9,123.67	128.61	9,124.47	0.00	0.00	0.00
17,000.00	90.00	359.69	6,632.00	9,223.67	128.08	9,224.46	0.00	0.00	0.00
17,100.00	90.00	359.69	6,632.00	9,323.67	127.54	9,324.45	0.00	0.00	0.00
17,200.00	90.00	359.69	6,632.00	9,423.67	127.00	9,424.43	0.00	0.00	0.00
17,300.00	90.00	359.69	6,632.00	9,523.66	126.47	9,524.42	0.00	0.00	0.00
17,400.00	90.00	359.69	6,632.00	9,623.66	125.93	9,624.41	0.00	0.00	0.00
17,500.00	90.00	359.69	6,632.00	9,723.66	125.39	9,724.40	0.00	0.00	0.00
17,600.00	90.00	359.69	6,632.00	9,823.66	124.85	9,824.39	0.00	0.00	0.00
17,700.00	90.00	359.69	6,632.00	9,923.66	124.32	9,924.38	0.00	0.00	0.00
17,800.00	90.00	359.69	6,632.00	10,023.66	123.78	10,024.37	0.00	0.00	0.00
17,900.00	90.00	359.69	6,632.00	10,123.66	123.24	10,124.36	0.00	0.00	0.00
18,000.00	90.00	359.69	6,632.00	10,223.65	122.70	10,224.35	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen D25-724
Project:	Mustang	TVD Reference:	KB @ 4802.00ft
Site:	D Section 25	MD Reference:	KB @ 4802.00ft
Well:	Guttersen D25-724	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	359.69	6,632.00	10,323.65	122.17	10,324.34	0.00	0.00	0.00
18,200.00	90.00	359.69	6,632.00	10,423.65	121.63	10,424.33	0.00	0.00	0.00
18,300.00	90.00	359.69	6,632.00	10,523.65	121.09	10,524.32	0.00	0.00	0.00
18,400.00	90.00	359.69	6,632.00	10,623.65	120.56	10,624.31	0.00	0.00	0.00
18,500.00	90.00	359.69	6,632.00	10,723.65	120.02	10,724.30	0.00	0.00	0.00
18,600.00	90.00	359.69	6,632.00	10,823.65	119.48	10,824.29	0.00	0.00	0.00
18,700.00	90.00	359.69	6,632.00	10,923.64	118.94	10,924.28	0.00	0.00	0.00
18,800.00	90.00	359.69	6,632.00	11,023.64	118.41	11,024.27	0.00	0.00	0.00
18,900.00	90.00	359.69	6,632.00	11,123.64	117.87	11,124.25	0.00	0.00	0.00
19,000.00	90.00	359.69	6,632.00	11,223.64	117.33	11,224.24	0.00	0.00	0.00
19,100.00	90.00	359.69	6,632.00	11,323.64	116.79	11,324.23	0.00	0.00	0.00
19,200.00	90.00	359.69	6,632.00	11,423.64	116.26	11,424.22	0.00	0.00	0.00
19,300.00	90.00	359.69	6,632.00	11,523.64	115.72	11,524.21	0.00	0.00	0.00
19,400.00	90.00	359.69	6,632.00	11,623.63	115.18	11,624.20	0.00	0.00	0.00
19,500.00	90.00	359.69	6,632.00	11,723.63	114.64	11,724.19	0.00	0.00	0.00
19,600.00	90.00	359.69	6,632.00	11,823.63	114.11	11,824.18	0.00	0.00	0.00
19,700.00	90.00	359.69	6,632.00	11,923.63	113.57	11,924.17	0.00	0.00	0.00
19,800.00	90.00	359.69	6,632.00	12,023.63	113.03	12,024.16	0.00	0.00	0.00
19,900.00	90.00	359.69	6,632.00	12,123.63	112.50	12,124.15	0.00	0.00	0.00
19,994.13	90.00	359.69	6,632.00	12,217.76	111.99	12,218.27	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
Guttersen D25-724 SHL - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	1,316,740.73	3,280,902.19	40.1984777	-104.4943797
Guttersen D25-724 KOP - plan hits target center - Point	0.00	0.00	5,781.10	-1,177.17	147.36	1,315,563.56	3,281,049.56	40.1952419	-104.4939000
Guttersen D25-724 TPZ - plan hits target center - Point	0.00	0.00	6,632.00	-577.79	180.74	1,316,162.94	3,281,082.94	40.1968861	-104.4937561
Guttersen D25-724 BHL - plan misses target center by 13.16ft at 19994.13ft MD (6632.00 TVD, 12217.76 N, 111.99 E) - Point	0.00	0.00	6,632.00	12,217.88	98.83	1,328,958.58	3,281,001.03	40.2320119	-104.4935294

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen D25-724
Project:	Mustang	TVD Reference:	KB @ 4802.00ft
Site:	D Section 25	MD Reference:	KB @ 4802.00ft
Well:	Guttersen D25-724	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 (°)	
665.00	665.00	Upper Pierre Aquifer Top				
668.00	668.00	Pierre				
1,602.00	1,602.00	Upper Pierre Aquifer Base				
3,679.74	3,619.00	Parkman				
4,128.51	4,041.00	Sussex				
4,325.25	4,226.00	Shannon				
6,095.90	5,894.00	Teepee Buttes				
6,799.21	6,511.00	Sharon Springs				
6,886.12	6,557.00	Top A Chalk				
6,890.39	6,559.00	Top A Marl				
6,922.03	6,573.00	Top B Chalk				
7,097.32	6,624.00	Top B Marl				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
2000	2000	0	0	Start Build 2.00	
5979	5781	-1177	147	Start DLS 9.00 TFO -172.74	
7198	6632	-578	181	TPZ/LP at 7198.40 MD	
19,994	6632	12,218	112	TD at 19994.13 MD	

Checked By: _____ Approved By: _____ Date: _____

Northern Region - DJ Basin

Mustang

D Section 25

Guttersen D25-724

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 Guttersten D25-724
Project:	Mustang	TVD Reference:	KB @ 4802.00ft
Reference Site:	D Section 25	MD Reference:	KB @ 4802.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersten D25-724	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	8/15/2018		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.00	19,994.13	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
D Section 13						
Dalbey D 13-11 (SI) - Wellbore #1 - Gyro Surveys	16,896.55	6,594.82	2,241.12	2,133.36	20.798	CC
Dalbey D 13-11 (SI) - Wellbore #1 - Gyro Surveys	16,900.00	6,594.83	2,241.12	2,133.34	20.793	ES
Dalbey D 13-11 (SI) - Wellbore #1 - Gyro Surveys	17,100.00	6,595.31	2,250.33	2,141.35	20.648	SF
Dalbey D 13-12 (PR) - Wellbore #1 - Gyro Surveys	16,416.37	6,591.08	3,389.74	3,285.73	32.589	CC, ES
Dalbey D 13-12 (PR) - Wellbore #1 - Gyro Surveys	16,900.00	6,594.90	3,424.07	3,317.08	32.005	SF
Dalbey D 13-13 (PR) - Wellbore #1 - No Surveys	15,495.03	6,576.00	3,650.26	3,444.79	17.765	CC
Dalbey D 13-13 (PR) - Wellbore #1 - No Surveys	15,500.00	6,576.00	3,650.26	3,444.75	17.762	ES
Dalbey D 13-13 (PR) - Wellbore #1 - No Surveys	15,900.00	6,576.00	3,672.66	3,464.51	17.644	SF
Dalbey D 13-14 (PA) - Wellbore #1 - Gyro Surveys	15,499.73	6,561.86	2,469.09	2,372.34	25.520	CC
Dalbey D 13-14 (PA) - Wellbore #1 - Gyro Surveys	15,500.00	6,561.86	2,469.09	2,372.34	25.520	ES
Dalbey D 13-14 (PA) - Wellbore #1 - Gyro Surveys	15,800.00	6,564.69	2,487.28	2,388.72	25.238	SF
Guttersten 12-13 (SI) - Wellbore #1 - Gyro Surveys	18,093.35	6,737.89	3,761.62	3,643.85	31.941	CC
Guttersten 12-13 (SI) - Wellbore #1 - Gyro Surveys	18,100.00	6,737.76	3,761.62	3,643.80	31.927	ES
Guttersten 12-13 (SI) - Wellbore #1 - Gyro Surveys	18,600.00	6,728.34	3,795.57	3,674.74	31.412	SF
Guttersten 13C (PR) - Wellbore #1 - Gyro Surveys	18,866.23	6,589.39	357.51	234.15	2.898	CC, ES, SF
Guttersten 13D (PR) - Wellbore #1 - Gyro Surveys	16,262.85	6,584.39	372.78	269.99	3.627	CC, ES, SF
Guttersten 13N (PR) - Wellbore #1 - Gyro Surveys	18,848.81	6,599.56	1,917.98	1,794.74	15.563	CC, ES
Guttersten 13N (PR) - Wellbore #1 - Gyro Surveys	19,000.00	6,597.95	1,923.93	1,799.83	15.503	SF
Guttersten 13S (PR) - Wellbore #1 - Gyro Surveys	17,606.57	6,589.58	373.83	260.46	3.298	CC, ES, SF
Guttersten 13T (PR) - Wellbore #1 - Gyro Surveys	15,040.87	6,582.99	478.71	385.37	5.129	CC, ES, SF
Guttersten 21-13 (SI) - Wellbore #1 - Gyro Surveys	19,459.23	6,621.19	2,482.67	2,354.45	19.363	CC, ES
Guttersten 21-13 (SI) - Wellbore #1 - Gyro Surveys	19,700.00	6,616.82	2,494.31	2,364.70	19.245	SF
Guttersten 22-13 (SI) - Wellbore #1 - Gyro Surveys	18,200.18	6,616.13	2,332.84	2,214.69	19.745	CC, ES
Guttersten 22-13 (SI) - Wellbore #1 - Gyro Surveys	18,400.00	6,617.40	2,341.38	2,222.02	19.616	SF
Guttersten 31-13 (PR) - Wellbore #1 - Gyro Surveys	19,498.23	6,551.72	1,093.33	965.08	8.525	CC
Guttersten 31-13 (PR) - Wellbore #1 - Gyro Surveys	19,500.00	6,551.70	1,093.33	965.07	8.524	ES, SF
Guttersten 32-13 (PR) - Wellbore #1 - Gyro Surveys	18,310.33	6,587.79	999.56	880.61	8.403	CC, ES, SF
Guttersten 34-13 (PR) - Wellbore #1 - Gyro Surveys	15,548.48	6,584.08	1,114.93	1,017.74	11.472	CC, ES
Guttersten 34-13 (PR) - Wellbore #1 - Gyro Surveys	15,600.00	6,584.45	1,116.12	1,018.62	11.448	SF
Guttersten 41-13 (PR) - Wellbore #1 - Gyro Surveys	19,432.08	6,562.54	295.11	167.28	2.309	CC, ES, SF
Guttersten 42-13 (PR) - Wellbore #1 - Gyro Surveys	18,164.47	6,564.69	387.46	269.69	3.290	CC, ES, SF
Guttersten 43-13 - Wellbore #1 - Wellbore #1 - As Drilled	16,892.49	6,606.60	286.88	179.15	2.663	CC, ES
Guttersten 43-13 - Wellbore #1 - Wellbore #1 - As Drilled	16,900.00	6,606.67	286.98	179.21	2.663	SF
Guttersten 44-13 - Wellbore #1 - Wellbore #1 - As Drilled	15,543.16	6,607.42	226.62	126.99	2.275	CC, ES, SF
L F Ranch 1-13 (PR) - Wellbore #1 - Gyro Surveys	16,587.88	6,600.22	1,140.63	1,035.12	10.811	CC
L F Ranch 1-13 (PR) - Wellbore #1 - Gyro Surveys	16,600.00	6,600.29	1,140.69	1,035.10	10.803	ES, SF
L. F. Ranch 13-4 (SI) - Wellbore #1 - Gyro Surveys	19,113.49	6,847.35	3,366.48	3,239.99	26.614	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 Guttersten D25-724
Project:	Mustang	TVD Reference:	KB @ 4802.00ft
Reference Site:	D Section 25	MD Reference:	KB @ 4802.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersten D25-724	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 13						
L. F. Ranch 13-4 (SI) - Wellbore #1 - Gyro Surveys	19,500.00	6,824.93	3,388.52	3,259.99	26.363	SF
D Section 24						
Dalbey D 24-10 (PR) - Wellbore #1 - Gyro Surveys	11,253.38	6,595.15	677.47	611.87	10.327	CC, ES
Dalbey D 24-10 (PR) - Wellbore #1 - Gyro Surveys	11,300.00	6,594.83	679.07	613.26	10.319	SF
Dalbey D 24-15 (SI) - Wellbore #1 - Gyro Surveys	10,292.59	6,578.45	1,146.42	1,087.05	19.312	CC
Dalbey D 24-15 (SI) - Wellbore #1 - Gyro Surveys	10,300.00	6,578.47	1,146.44	1,087.04	19.299	ES
Dalbey D 24-15 (SI) - Wellbore #1 - Gyro Surveys	10,400.00	6,578.78	1,151.44	1,091.54	19.224	SF
Glazier 2-24 (SI) - Wellbore #1 - Gyro Surveys	13,466.18	6,589.55	31.52	-49.86	0.387	Level 1, CC, ES, SF
Guttersten 11-24 (PR) - Wellbore #1 - Gyro Surveys	14,245.19	6,651.64	3,711.91	3,624.45	42.444	CC, ES
Guttersten 11-24 (PR) - Wellbore #1 - Gyro Surveys	14,900.00	6,653.11	3,769.22	3,677.77	41.217	SF
Guttersten 12-24 (PR) - Wellbore #1 - Gyro Surveys	12,948.46	6,628.87	3,726.76	3,649.08	47.980	CC
Guttersten 12-24 (PR) - Wellbore #1 - Gyro Surveys	13,000.00	6,628.83	3,727.11	3,649.07	47.759	ES
Guttersten 12-24 (PR) - Wellbore #1 - Gyro Surveys	13,700.00	6,628.20	3,801.78	3,719.62	46.270	SF
Guttersten 21-24 (PR) - Wellbore #1 - Gyro Surveys	14,258.38	6,586.44	2,391.82	2,304.50	27.390	CC, ES
Guttersten 21-24 (PR) - Wellbore #1 - Gyro Surveys	14,600.00	6,586.96	2,416.10	2,326.82	27.062	SF
Guttersten 22-24 (PR) - Wellbore #1 - Gyro Surveys	13,029.62	6,587.50	2,341.48	2,263.36	29.972	CC, ES
Guttersten 22-24 (PR) - Wellbore #1 - Gyro Surveys	13,300.00	6,588.21	2,357.04	2,277.28	29.552	SF
Guttersten 24A (PR) - Wellbore #1 - Gyro Surveys	13,583.81	6,608.55	3,020.17	2,937.88	36.702	CC
Guttersten 24A (PR) - Wellbore #1 - Gyro Surveys	13,600.00	6,608.68	3,020.22	2,937.81	36.650	ES
Guttersten 24A (PR) - Wellbore #1 - Gyro Surveys	14,100.00	6,612.68	3,063.96	2,978.63	35.903	SF
Guttersten 24J (PR) - Wellbore #1 - Gyro Surveys	14,884.94	6,590.83	2,930.46	2,838.36	31.818	CC
Guttersten 24J (PR) - Wellbore #1 - Gyro Surveys	14,900.00	6,590.69	2,930.50	2,838.29	31.780	ES
Guttersten 24J (PR) - Wellbore #1 - Gyro Surveys	15,300.00	6,586.96	2,959.71	2,865.11	31.289	SF
Guttersten 24N (PR) - Wellbore #1 - MWD Surveys	13,623.02	6,569.11	1,790.19	1,708.83	22.002	CC, ES
Guttersten 24N (PR) - Wellbore #1 - MWD Surveys	13,800.00	6,567.95	1,798.92	1,716.52	21.832	SF
Guttersten 24S (PR) - Wellbore #1 - MWD Surveys	12,135.48	6,586.31	329.43	258.66	4.655	CC, ES, SF
Guttersten 43-24 (PR) - Wellbore #1 - Gyro Surveys	11,511.33	6,595.19	214.63	147.27	3.186	CC, ES, SF
Guttersten 44-24 (PR) - Wellbore #1 - Gyro Surveys	10,272.97	6,588.48	286.44	227.14	4.830	CC, ES, SF
Karch Blue D 24-12 (PA) - Wellbore #1 - Gyro Surveys	11,769.86	6,605.56	3,671.20	3,602.05	53.096	CC
Karch Blue D 24-12 (PA) - Wellbore #1 - Gyro Surveys	11,800.00	6,605.66	3,671.32	3,601.97	52.941	ES
Karch Blue D 24-12 (PA) - Wellbore #1 - Gyro Surveys	12,600.00	6,608.13	3,763.88	3,689.93	50.898	SF
Karch Blue D 24-14 (PR) - Wellbore #1 - No Surveys	10,243.71	6,595.00	2,105.76	1,937.58	12.521	CC, ES
Karch Blue D 24-14 (PR) - Wellbore #1 - No Surveys	10,400.00	6,595.00	2,111.55	1,942.51	12.491	SF
Karch Blue D24-11 (PA) - Wellbore #1 - Gyro Surveys	11,767.26	6,559.46	2,253.57	2,178.35	29.957	CC, ES
Karch Blue D24-11 (PA) - Wellbore #1 - Gyro Surveys	12,100.00	6,562.77	2,278.00	2,200.86	29.530	SF
Koerner 31-24 (SI) - Wellbore #1 - Gyro Surveys	14,307.92	6,573.04	1,068.08	980.45	12.189	CC, ES
Koerner 31-24 (SI) - Wellbore #1 - Gyro Surveys	14,400.00	6,574.15	1,072.04	983.95	12.170	SF
Koerner 32-24 (SI) - Wellbore #1 - Gyro Surveys	12,874.75	6,623.23	1,059.74	982.59	13.736	CC, ES
Koerner 32-24 (SI) - Wellbore #1 - Gyro Surveys	12,900.00	6,623.22	1,060.04	982.74	13.713	SF
Koerner 42-24 (SI) - Wellbore #1 - Gyro Surveys	12,863.64	6,590.95	249.28	172.38	3.242	CC, ES, SF
LF Ranch 1-24 (SI) - Wellbore #1 - Gyro Surveys	10,662.43	6,716.51	3,331.48	3,269.30	53.575	CC
LF Ranch 1-24 (SI) - Wellbore #1 - Gyro Surveys	10,700.00	6,717.10	3,331.69	3,269.28	53.379	ES
LF Ranch 1-24 (SI) - Wellbore #1 - Gyro Surveys	11,400.00	6,719.48	3,412.17	3,345.99	51.559	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 Guttersen D25-724
Project:	Mustang	TVD Reference:	KB @ 4802.00ft
Reference Site:	D Section 25	MD Reference:	KB @ 4802.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersen D25-724	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 25						
Coors Energy 13-25D (PR) - Wellbore #1 - MWD Survey	4,201.14	3,953.02	3,470.51	3,434.97	97.673	CC, ES
Coors Energy 13-25D (PR) - Wellbore #1 - MWD Survey	7,050.00	6,769.34	3,711.95	3,655.25	65.471	SF
Coors Energy 14-25D (PR) - Wellbore #1 - MWD Survey	0.00	12.91	3,631.40			
Coors Energy 14-25D (PR) - Wellbore #1 - MWD Survey	900.00	895.00	3,632.28	3,627.52	762.482	ES
Coors Energy 14-25D (PR) - Wellbore #1 - MWD Survey	6,750.00	6,697.38	4,048.60	4,001.38	85.750	SF
Coors Energy 23-25D (PR) - Wellbore #1 - MWD Survey	5,867.13	5,839.32	2,294.61	2,246.94	48.132	CC
Coors Energy 23-25D (PR) - Wellbore #1 - MWD Survey	5,900.00	5,861.04	2,294.70	2,246.81	47.910	ES
Coors Energy 23-25D (PR) - Wellbore #1 - MWD Survey	6,550.00	6,490.58	2,326.74	2,275.22	45.154	SF
Coors Energy 24-25 (PR) - Wellbore #1 - Gyro Surveys	6,167.25	5,985.63	2,797.38	2,753.88	64.314	CC, ES
Coors Energy 24-25 (PR) - Wellbore #1 - Gyro Surveys	6,450.00	6,261.60	2,837.09	2,791.89	62.765	SF
Coors Energy 25HD (PR) - Wellbore #1 - MWD Surveys	217.31	231.77	3,620.28	3,619.32	3,755.023	CC
Coors Energy 25HD (PR) - Wellbore #1 - MWD Surveys	300.00	278.24	3,620.77	3,619.30	2,464.329	ES
Coors Energy 25HD (PR) - Wellbore #1 - MWD Surveys	6,950.00	6,853.31	4,311.63	4,257.99	80.380	SF
Coors Energy 25LD (PR) - Wellbore #1 - MWD Surveys	6,198.70	6,207.07	3,581.68	3,537.25	80.613	CC
Coors Energy 25LD (PR) - Wellbore #1 - MWD Surveys	6,200.00	6,207.93	3,581.68	3,537.24	80.600	ES
Coors Energy 25LD (PR) - Wellbore #1 - MWD Surveys	6,600.00	6,559.54	3,658.73	3,612.30	78.796	SF
Coors Energy 25TD (PR) - Wellbore #1 - MWD Surveys	6,200.94	6,059.86	2,126.45	2,083.95	50.043	CC, ES
Coors Energy 25TD (PR) - Wellbore #1 - MWD Surveys	6,350.00	6,207.08	2,143.72	2,100.34	49.416	SF
Coors Energy 25XD (PR) - Wellbore #1 - MWD Surveys	6,234.27	6,270.30	1,234.61	1,180.33	22.746	CC, ES
Coors Energy 25XD (PR) - Wellbore #1 - MWD Surveys	6,350.00	6,386.01	1,242.00	1,187.09	22.618	SF
Coors Energy 25YD (PR) - Wellbore #1 - MWD Surveys	6,184.94	6,105.40	2,285.98	2,236.39	46.097	CC, ES
Coors Energy 25YD (PR) - Wellbore #1 - MWD Surveys	6,350.00	6,332.81	2,302.94	2,252.40	45.570	SF
Coors Energy 33-25D (PR) - Wellbore #1 - MWD Survey	6,081.62	6,052.85	999.89	946.63	18.774	CC
Coors Energy 33-25D (PR) - Wellbore #1 - MWD Survey	6,100.00	6,071.50	999.96	946.59	18.736	ES
Coors Energy 33-25D (PR) - Wellbore #1 - MWD Survey	6,350.00	6,316.60	1,014.31	959.50	18.507	SF
Coors Energy 34-25 (PR) - Wellbore #1 - Gyro Surveys	6,180.57	5,977.15	2,139.55	2,096.30	49.468	CC, ES
Coors Energy 34-25 (PR) - Wellbore #1 - Gyro Surveys	6,400.00	6,189.84	2,171.14	2,126.55	48.698	SF
Coors Energy 43-25D (PR) - Wellbore #1 - MWD Survey	6,264.74	6,297.45	388.39	333.98	7.138	CC, ES
Coors Energy 43-25D (PR) - Wellbore #1 - MWD Survey	6,300.00	6,331.87	389.02	334.44	7.128	SF
Coors Energy 44-25D (PR) - Wellbore #1 - MWD Survey	6,208.81	6,082.27	1,558.96	1,513.17	34.047	CC, ES
Coors Energy 44-25D (PR) - Wellbore #1 - MWD Survey	6,350.00	6,218.55	1,574.39	1,527.79	33.784	SF
Dalbey D 25-03 (SI) - Wellbore #1 - Gyro Surveys	1,641.37	1,629.38	2,601.04	2,589.86	232.638	CC
Dalbey D 25-03 (SI) - Wellbore #1 - Gyro Surveys	2,000.00	1,981.46	2,601.32	2,587.63	189.992	ES
Dalbey D 25-03 (SI) - Wellbore #1 - Gyro Surveys	9,100.00	6,727.31	2,702.39	2,649.25	50.851	SF
Dalbey D 25-05 (SI) - Wellbore #1 - Gyro Surveys	482.44	493.44	3,681.75	3,678.70	1,208.207	CC
Dalbey D 25-05 (SI) - Wellbore #1 - Gyro Surveys	2,100.00	2,093.15	3,683.07	3,668.66	255.598	ES
Dalbey D 25-05 (SI) - Wellbore #1 - Gyro Surveys	8,500.00	6,745.53	3,935.57	3,884.80	77.518	SF
Guttersen 11-25 (PR) - Wellbore #1 - MWD Surveys	0.00	0.00	3,612.89			
Guttersen 11-25 (PR) - Wellbore #1 - MWD Surveys	9,021.66	6,686.30	3,651.62	3,599.80	70.459	ES
Guttersen 11-25 (PR) - Wellbore #1 - MWD Surveys	10,100.00	6,679.29	3,807.51	3,750.94	67.311	SF
Guttersen 22-25 (PR) - Wellbore #1 - MWD Surveys	100.00	87.78	2,019.72	2,019.43	7,138.252	CC
Guttersen 22-25 (PR) - Wellbore #1 - MWD Surveys	2,000.00	1,973.49	2,023.78	2,011.32	162.440	ES
Guttersen 22-25 (PR) - Wellbore #1 - MWD Surveys	8,000.00	6,639.14	2,236.78	2,188.93	46.745	SF
Guttersen 25E (PR) - Wellbore #1 - MWD Surveys	9,617.36	6,618.30	4,054.65	3,999.84	73.982	CC, ES
Guttersen 25E (PR) - Wellbore #1 - MWD Surveys	10,900.00	6,599.16	4,252.65	4,191.53	69.583	SF
Guttersen 25KD (PR) - Wellbore #1 - MWD Surveys	100.00	81.57	1,601.99	1,601.72	5,879.311	CC
Guttersen 25KD (PR) - Wellbore #1 - MWD Surveys	500.00	474.64	1,603.21	1,600.80	664.197	ES
Guttersen 25KD (PR) - Wellbore #1 - MWD Surveys	7,137.65	6,921.94	2,980.65	2,931.91	61.156	SF
Guttersen 25O (PR) - Wellbore #1 - MWD Surveys	3,338.32	3,262.15	1,560.52	1,538.91	72.210	CC
Guttersen 25O (PR) - Wellbore #1 - MWD Surveys	3,400.00	3,316.77	1,560.73	1,538.70	70.834	ES
Guttersen 25O (PR) - Wellbore #1 - MWD Surveys	7,300.00	6,612.95	1,783.31	1,736.46	38.066	SF
Guttersen D 25-17 (SI) - Wellbore #1 - Gyro Surveys	8,360.82	6,584.71	548.83	498.91	10.994	CC, ES, SF
Guttersen D25-715 - Wellbore #1 - Plan #1	2,000.00	2,001.00	37.49	23.62	2.702	CC

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

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen D25-724
Project:	Mustang	TVD Reference:	KB @ 4802.00ft
Reference Site:	D Section 25	MD Reference:	KB @ 4802.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersen D25-724	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 25						
Guttersen D25-715 - Wellbore #1 - Plan #1	2,100.00	2,100.40	38.11	23.55	2.618	ES, SF
Guttersen D25-734 - Wellbore #1 - Plan #1	2,000.00	2,000.00	37.50	23.63	2.703	CC, ES
Guttersen D25-734 - Wellbore #1 - Plan #1	2,100.00	2,099.57	38.27	23.72	2.630	SF
Guttersen D25-743 - Wellbore #1 - Plan #1	2,000.00	2,000.00	75.01	61.13	5.407	CC, ES
Guttersen D25-743 - Wellbore #1 - Plan #1	2,100.00	2,098.53	76.17	61.62	5.236	SF
Guttersen D25-753 - Wellbore #1 - Plan #1	19,980.85	20,316.32	1,864.67	1,646.21	8.535	CC
Guttersen D25-753 - Wellbore #1 - Plan #1	19,994.13	20,314.84	1,864.72	1,646.20	8.533	ES, SF
Guttersen D25-762 - Wellbore #1 - Plan #1	2,018.76	2,038.42	2,232.97	2,218.91	158.738	CC
Guttersen D25-762 - Wellbore #1 - Plan #1	2,200.00	2,244.61	2,233.79	2,218.44	145.608	ES
Guttersen D25-762 - Wellbore #1 - Plan #1	19,994.13	20,222.65	2,472.01	2,254.04	11.341	SF
Guttersen D25-772 - Wellbore #1 - Plan #1	1,911.24	1,925.24	2,264.54	2,251.25	170.437	CC
Guttersen D25-772 - Wellbore #1 - Plan #1	2,000.00	2,012.84	2,264.54	2,250.63	162.723	ES
Guttersen D25-772 - Wellbore #1 - Plan #1	19,994.13	20,375.73	3,125.65	2,908.21	14.375	SF
Guttersen D25-781 - Wellbore #1 - Plan #1	1,910.78	1,925.78	2,296.27	2,282.99	172.821	CC
Guttersen D25-781 - Wellbore #1 - Plan #1	2,000.00	2,010.65	2,296.29	2,282.38	165.092	ES
Guttersen D25-781 - Wellbore #1 - Plan #1	19,994.13	20,362.10	3,711.81	3,495.15	17.132	SF
Guttersen State D36-714 - Wellbore #1 - Plan #1	2,000.00	2,000.00	154.62	140.75	11.145	CC, ES
Guttersen State D36-714 - Wellbore #1 - Plan #1	2,200.00	2,199.84	161.18	145.92	10.566	SF
Guttersen State D36-724 - Wellbore #1 - Plan #1	7,152.88	6,762.91	50.52	1.72	1.035	Level 2, CC, ES, SF
Guttersen State D36-733 - Wellbore #1 - Plan #1	2,000.00	2,000.00	154.62	140.75	11.146	CC, ES
Guttersen State D36-733 - Wellbore #1 - Plan #1	2,200.00	2,199.84	161.54	146.28	10.589	SF
Guttersen State D36-743 - Wellbore #1 - Plan #1	2,000.00	2,000.00	167.71	153.84	12.089	CC, ES
Guttersen State D36-743 - Wellbore #1 - Plan #1	2,200.00	2,199.84	174.28	159.02	11.425	SF
Guttersen State D36-752 - Wellbore #1 - Plan #1	6,700.00	7,271.57	1,828.44	1,791.04	48.886	SF
Guttersen State D36-752 - Wellbore #1 - Plan #1	6,980.34	7,054.38	1,817.23	1,780.67	49.698	CC, ES
Guttersen State D36-762 - Wellbore #1 - Plan #1	2,000.00	2,015.00	2,155.05	2,141.12	154.743	CC
Guttersen State D36-762 - Wellbore #1 - Plan #1	2,100.00	2,114.98	2,155.70	2,141.08	147.401	ES
Guttersen State D36-762 - Wellbore #1 - Plan #1	6,950.00	6,818.76	2,416.81	2,367.24	48.755	SF
Guttersen State D36-771 - Wellbore #1 - Plan #1	2,000.00	2,015.00	2,187.72	2,173.79	157.089	CC
Guttersen State D36-771 - Wellbore #1 - Plan #1	2,100.00	2,114.98	2,188.39	2,173.76	149.636	ES
Guttersen State D36-771 - Wellbore #1 - Plan #1	7,400.00	6,308.19	2,968.34	2,920.66	62.263	SF
Guttersen State D36-781 - Wellbore #1 - Plan #1	1,910.78	1,925.78	2,220.55	2,207.27	167.122	CC
Guttersen State D36-781 - Wellbore #1 - Plan #1	2,000.00	2,010.41	2,220.57	2,206.66	159.655	ES
Guttersen State D36-781 - Wellbore #1 - Plan #1	8,100.00	5,706.22	3,490.56	3,444.15	75.218	SF
Karch Blue D 25-02 (DA) - Wellbore #1 - No Surveys	8,963.43	6,591.00	1,025.87	864.58	6.360	CC, ES
Karch Blue D 25-02 (DA) - Wellbore #1 - No Surveys	9,000.00	6,591.00	1,026.52	865.08	6.359	SF
Karch Blue D 25-08 (SI) - Wellbore #1 - Gyro Surveys	7,695.98	6,603.02	267.57	219.31	5.545	CC, ES, SF
Karch Blue D25-07 (SI) - Wellbore #1 - Gyro Surveys	100.00	66.37	829.09	828.85	3,430.103	CC
Karch Blue D25-07 (SI) - Wellbore #1 - Gyro Surveys	1,800.00	1,760.35	834.96	822.76	68.440	ES
Karch Blue D25-07 (SI) - Wellbore #1 - Gyro Surveys	7,700.00	6,602.90	1,057.95	1,009.67	21.913	SF
L F Ranch 2-25 (PR) - Wellbore #1 - Gyro Surveys	8,931.89	6,597.84	252.67	200.49	4.843	CC, ES, SF
LF Ranches 1 (PA) - Wellbore #1 - No Surveys	8,637.82	6,595.00	35.09	-124.91	0.219	Level 1, CC, ES, SF

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

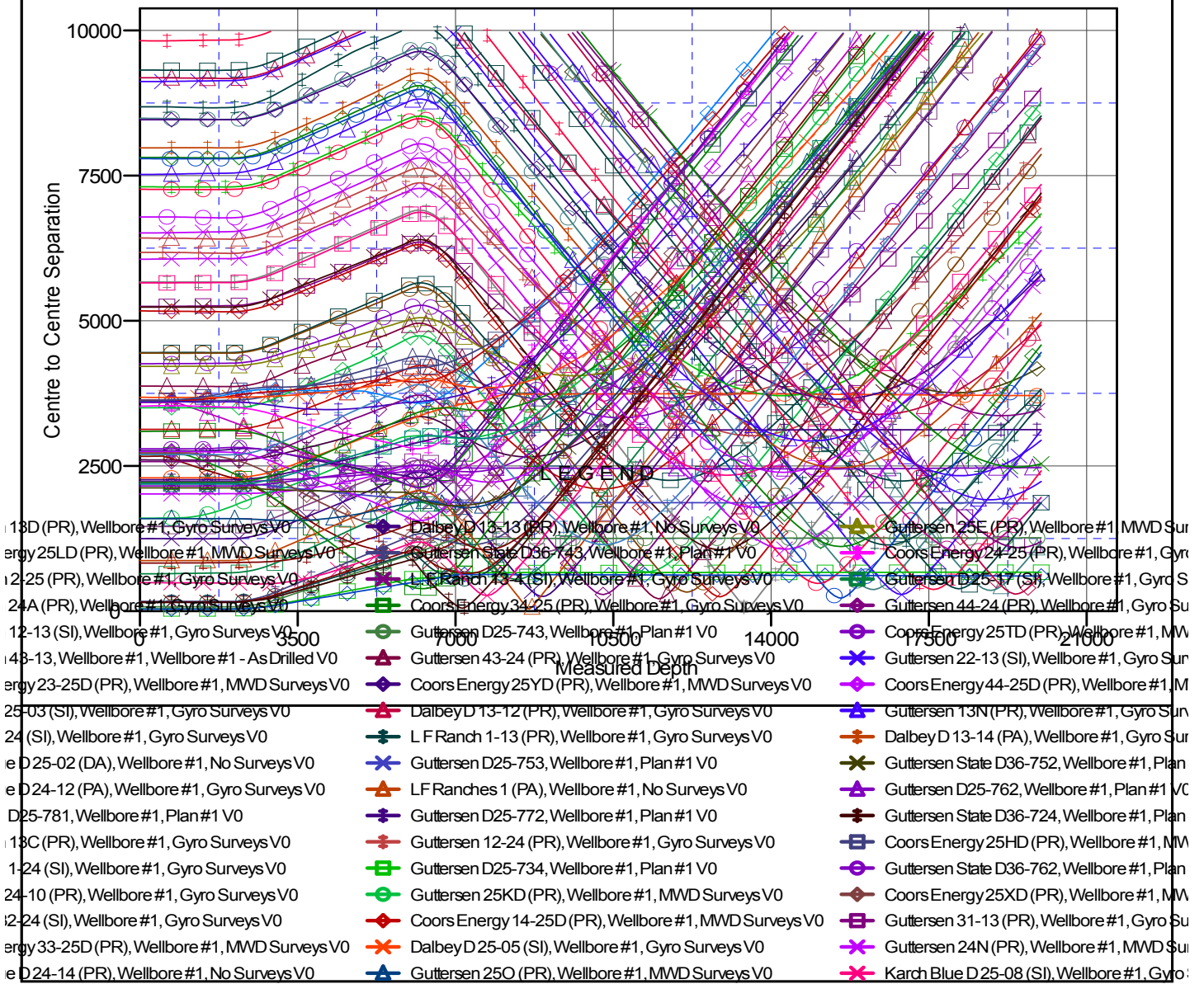
Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen D25-724
Project:	Mustang	TVD Reference:	KB @ 4802.00ft
Reference Site:	D Section 25	MD Reference:	KB @ 4802.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersen D25-724	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 @ 4802.00ft
Offset Depths are relative to Offset Datum
Central Meridian is -105.5000000

Coordinates are relative to: Guttersen D25-724
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.65°

Ladder Plot



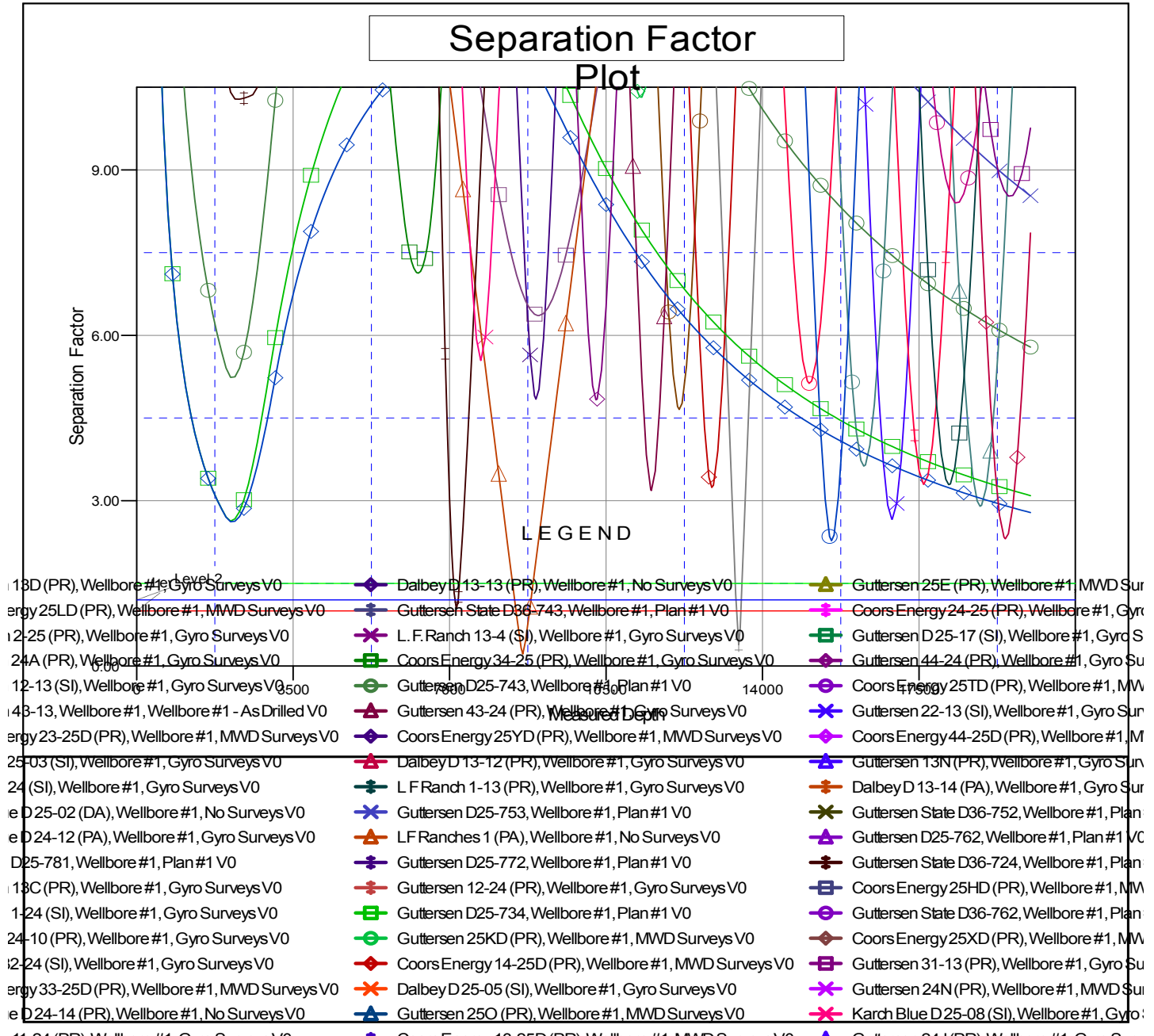
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen D25-724
Project:	Mustang	TVD Reference:	KB @ 4802.00ft
Reference Site:	D Section 25	MD Reference:	KB @ 4802.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersen D25-724	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 @ 4802.00ft
Offset Depths are relative to Offset Datum
Central Meridian is -105.5000000

Coordinates are relative to: Guttersen D25-724
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.65°



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