

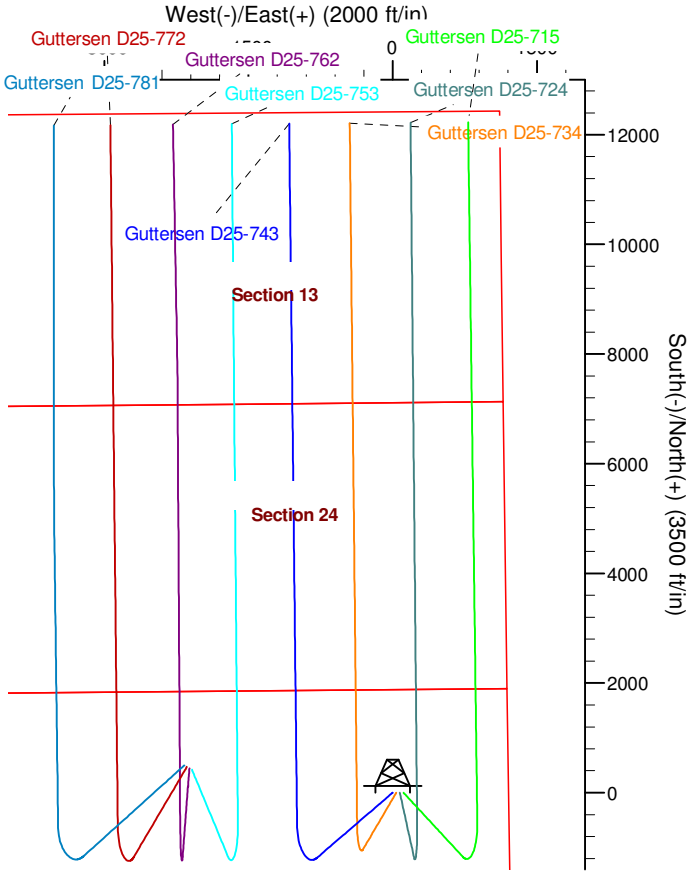
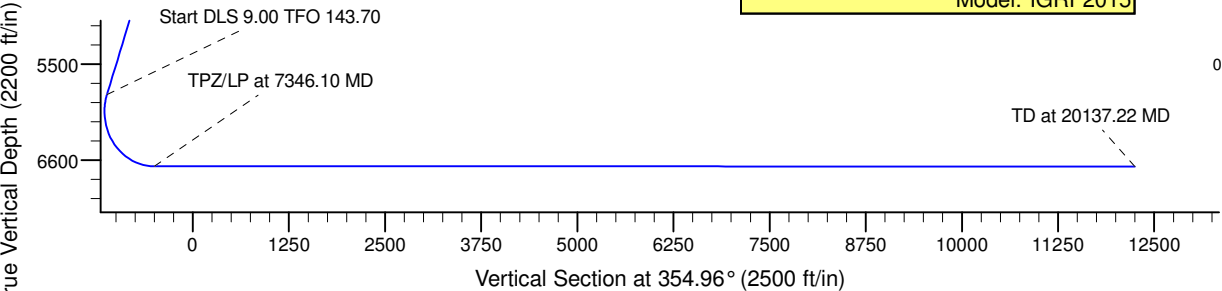
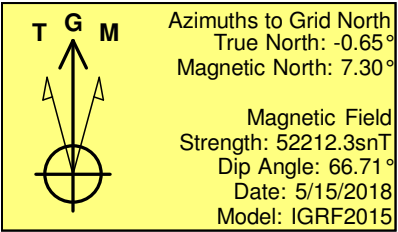
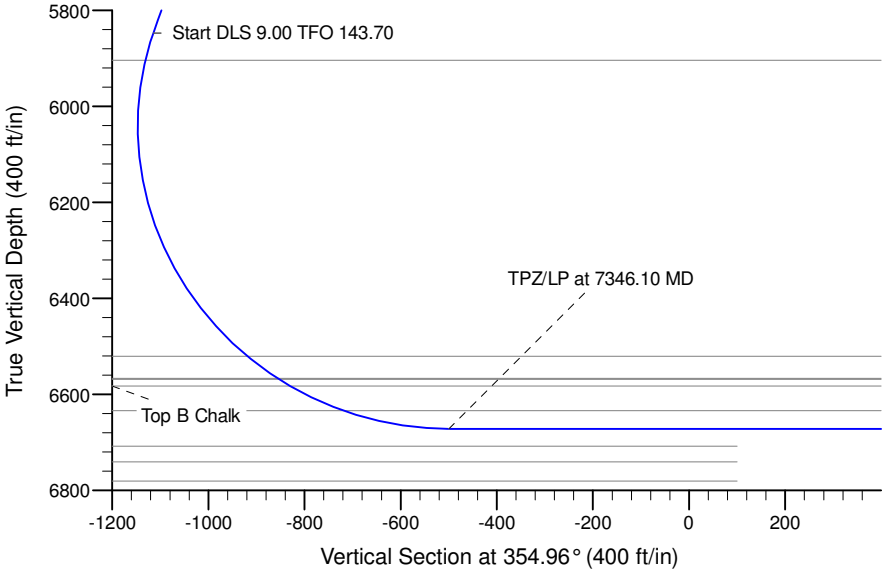
Project: Mustang
Site: D Section 25
Well: Guttersen D25-743
Wellbore: Wellbore #1
Design: Plan #1

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	VSect	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	3185.74	23.71	213.56	3152.17	-201.58	-133.73	2.00	213.56	-189.06	
4	6129.48	23.71	213.56	5847.34	-1188.15	-788.23	0.00	0.00	-1114.37	
5	7346.10	90.00	359.64	6672.00	-589.32	-994.20	9.00	143.70	-499.77	Guttersen D25-743 TPZ/LP
6	20137.22	90.00	359.64	6672.00	12201.55	-1075.24	0.00	0.00	12248.83	Guttersen D25-743 BHL



WELL DETAILS: Guttersen D25-743				
0.00	0.00	1316739.75	3280827.19	-104.4946482
Plan: Plan #1 (Guttersen D25-743/Wellbore #1)				
Created By: Colby Baxter		Date: 10/23, August 15 2018		
Checked: _____		Date: _____		
Reviewed: _____		Date: _____		
Approved: _____		Date: _____		

Northern Region - DJ Basin

Mustang

D Section 25

Guttersen D25-743

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 D25-743
Project:	Mustang	TVD Reference:	KB @ 4802.00ft
Site:	D Section 25	MD Reference:	KB @ 4802.00ft
Well:	Guttersen D25-743	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 D25-743					
Well Position	+N/-S	0.00 ft	Northing:	1,316,739.75 usft	Latitude:	40.1984774
	+E/-W	0.00 ft	Easting:	3,280,827.19 usft	Longitude:	-104.4946482
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	52,212.34673057

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	354.96	

Survey Tool Program	Date	8/15/2018			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.00	20,137.22	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 D25-743
Project:	Mustang	TVD Reference:	KB @ 4802.00ft
Site:	D Section 25	MD Reference:	KB @ 4802.00ft
Well:	Guttersen D25-743	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	213.56	2,099.98	-1.45	-0.96	-1.36	2.00	2.00	0.00
2,200.00	4.00	213.56	2,199.84	-5.82	-3.86	-5.45	2.00	2.00	0.00
2,300.00	6.00	213.56	2,299.45	-13.08	-8.68	-12.27	2.00	2.00	0.00
2,400.00	8.00	213.56	2,398.70	-23.23	-15.41	-21.79	2.00	2.00	0.00
2,500.00	10.00	213.56	2,497.47	-36.27	-24.06	-34.02	2.00	2.00	0.00
2,600.00	12.00	213.56	2,595.62	-52.17	-34.61	-48.93	2.00	2.00	0.00
2,700.00	14.00	213.56	2,693.06	-70.91	-47.04	-66.51	2.00	2.00	0.00
2,800.00	16.00	213.56	2,789.64	-92.48	-61.35	-86.73	2.00	2.00	0.00
2,900.00	18.00	213.56	2,885.27	-116.84	-77.51	-109.58	2.00	2.00	0.00
3,000.00	20.00	213.56	2,979.82	-143.97	-95.51	-135.03	2.00	2.00	0.00
3,100.00	22.00	213.56	3,073.17	-173.83	-115.32	-163.03	2.00	2.00	0.00
3,185.74	23.71	213.56	3,152.17	-201.58	-133.73	-189.06	2.00	2.00	0.00
3,200.00	23.71	213.56	3,165.23	-206.36	-136.90	-193.55	0.00	0.00	0.00
3,300.00	23.71	213.56	3,256.78	-239.87	-159.13	-224.98	0.00	0.00	0.00
3,400.00	23.71	213.56	3,348.34	-273.39	-181.37	-256.41	0.00	0.00	0.00
3,500.00	23.71	213.56	3,439.90	-306.90	-203.60	-287.84	0.00	0.00	0.00
3,600.00	23.71	213.56	3,531.45	-340.42	-225.84	-319.28	0.00	0.00	0.00
3,700.00	23.71	213.56	3,623.01	-373.93	-248.07	-350.71	0.00	0.00	0.00
3,800.00	23.71	213.56	3,714.56	-407.44	-270.30	-382.14	0.00	0.00	0.00
3,900.00	23.71	213.56	3,806.12	-440.96	-292.54	-413.58	0.00	0.00	0.00
4,000.00	23.71	213.56	3,897.68	-474.47	-314.77	-445.01	0.00	0.00	0.00
4,100.00	23.71	213.56	3,989.23	-507.99	-337.00	-476.44	0.00	0.00	0.00
4,200.00	23.71	213.56	4,080.79	-541.50	-359.24	-507.87	0.00	0.00	0.00
4,300.00	23.71	213.56	4,172.34	-575.01	-381.47	-539.31	0.00	0.00	0.00
4,400.00	23.71	213.56	4,263.90	-608.53	-403.70	-570.74	0.00	0.00	0.00
4,500.00	23.71	213.56	4,355.46	-642.04	-425.94	-602.17	0.00	0.00	0.00
4,600.00	23.71	213.56	4,447.01	-675.56	-448.17	-633.61	0.00	0.00	0.00
4,700.00	23.71	213.56	4,538.57	-709.07	-470.40	-665.04	0.00	0.00	0.00
4,800.00	23.71	213.56	4,630.12	-742.58	-492.64	-696.47	0.00	0.00	0.00
4,900.00	23.71	213.56	4,721.68	-776.10	-514.87	-727.91	0.00	0.00	0.00
5,000.00	23.71	213.56	4,813.23	-809.61	-537.11	-759.34	0.00	0.00	0.00
5,100.00	23.71	213.56	4,904.79	-843.13	-559.34	-790.77	0.00	0.00	0.00
5,200.00	23.71	213.56	4,996.35	-876.64	-581.57	-822.20	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen D25-743
Project:	Mustang	TVD Reference:	KB @ 4802.00ft
Site:	D Section 25	MD Reference:	KB @ 4802.00ft
Well:	Guttersen D25-743	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	23.71	213.56	5,087.90	-910.15	-603.81	-853.64	0.00	0.00	0.00
5,400.00	23.71	213.56	5,179.46	-943.67	-626.04	-885.07	0.00	0.00	0.00
5,500.00	23.71	213.56	5,271.01	-977.18	-648.27	-916.50	0.00	0.00	0.00
5,600.00	23.71	213.56	5,362.57	-1,010.70	-670.51	-947.94	0.00	0.00	0.00
5,700.00	23.71	213.56	5,454.13	-1,044.21	-692.74	-979.37	0.00	0.00	0.00
5,800.00	23.71	213.56	5,545.68	-1,077.72	-714.97	-1,010.80	0.00	0.00	0.00
5,900.00	23.71	213.56	5,637.24	-1,111.24	-737.21	-1,042.23	0.00	0.00	0.00
6,000.00	23.71	213.56	5,728.79	-1,144.75	-759.44	-1,073.67	0.00	0.00	0.00
6,100.00	23.71	213.56	5,820.35	-1,178.27	-781.67	-1,105.10	0.00	0.00	0.00
6,129.48	23.71	213.56	5,847.34	-1,188.15	-788.23	-1,114.37	0.00	0.00	0.00
6,200.00	18.95	225.18	5,913.04	-1,208.06	-804.21	-1,132.80	9.00	-6.75	16.48
6,300.00	14.37	252.69	6,008.96	-1,223.23	-827.63	-1,145.85	9.00	-4.58	27.51
6,400.00	14.59	289.26	6,105.98	-1,222.77	-851.42	-1,143.30	9.00	0.21	36.56
6,500.00	19.44	315.64	6,201.72	-1,206.68	-874.99	-1,125.21	9.00	4.85	26.38
6,600.00	26.49	330.17	6,293.81	-1,175.37	-897.77	-1,092.03	9.00	7.05	14.53
6,700.00	34.41	338.67	6,379.98	-1,129.61	-919.18	-1,044.56	9.00	7.92	8.50
6,800.00	42.72	344.24	6,458.13	-1,070.52	-938.71	-983.99	9.00	8.31	5.57
6,900.00	51.23	348.28	6,526.31	-999.56	-955.88	-911.79	9.00	8.51	4.04
7,000.00	59.84	351.45	6,582.86	-918.47	-970.26	-829.75	9.00	8.61	3.17
7,100.00	68.52	354.10	6,626.37	-829.25	-981.49	-739.90	9.00	8.68	2.65
7,200.00	77.24	356.45	6,655.79	-734.11	-989.31	-644.43	9.00	8.72	2.35
7,300.00	85.97	358.65	6,670.38	-635.37	-993.51	-545.70	9.00	8.73	2.19
7,346.10	90.00	359.64	6,672.00	-589.32	-994.20	-499.77	9.00	8.74	2.15
7,400.00	90.00	359.64	6,672.00	-535.42	-994.54	-446.04	0.00	0.00	0.00
7,500.00	90.00	359.64	6,672.00	-435.42	-995.17	-346.38	0.00	0.00	0.00
7,600.00	90.00	359.64	6,672.00	-335.42	-995.81	-246.71	0.00	0.00	0.00
7,700.00	90.00	359.64	6,672.00	-235.42	-996.44	-147.04	0.00	0.00	0.00
7,800.00	90.00	359.64	6,672.00	-135.42	-997.07	-47.37	0.00	0.00	0.00
7,900.00	90.00	359.64	6,672.00	-35.43	-997.71	52.29	0.00	0.00	0.00
8,000.00	90.00	359.64	6,672.00	64.57	-998.34	151.96	0.00	0.00	0.00
8,100.00	90.00	359.64	6,672.00	164.57	-998.97	251.63	0.00	0.00	0.00
8,200.00	90.00	359.64	6,672.00	264.57	-999.61	351.30	0.00	0.00	0.00
8,300.00	90.00	359.64	6,672.00	364.57	-1,000.24	450.96	0.00	0.00	0.00
8,400.00	90.00	359.64	6,672.00	464.56	-1,000.87	550.63	0.00	0.00	0.00
8,500.00	90.00	359.64	6,672.00	564.56	-1,001.51	650.30	0.00	0.00	0.00
8,600.00	90.00	359.64	6,672.00	664.56	-1,002.14	749.97	0.00	0.00	0.00
8,700.00	90.00	359.64	6,672.00	764.56	-1,002.78	849.63	0.00	0.00	0.00
8,800.00	90.00	359.64	6,672.00	864.56	-1,003.41	949.30	0.00	0.00	0.00
8,900.00	90.00	359.64	6,672.00	964.55	-1,004.04	1,048.97	0.00	0.00	0.00
9,000.00	90.00	359.64	6,672.00	1,064.55	-1,004.68	1,148.64	0.00	0.00	0.00
9,100.00	90.00	359.64	6,672.00	1,164.55	-1,005.31	1,248.30	0.00	0.00	0.00
9,200.00	90.00	359.64	6,672.00	1,264.55	-1,005.94	1,347.97	0.00	0.00	0.00
9,300.00	90.00	359.64	6,672.00	1,364.55	-1,006.58	1,447.64	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen D25-743
Project:	Mustang	TVD Reference:	KB @ 4802.00ft
Site:	D Section 25	MD Reference:	KB @ 4802.00ft
Well:	Guttersen D25-743	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	359.64	6,672.00	1,464.54	-1,007.21	1,547.31	0.00	0.00	0.00
9,500.00	90.00	359.64	6,672.00	1,564.54	-1,007.84	1,646.97	0.00	0.00	0.00
9,600.00	90.00	359.64	6,672.00	1,664.54	-1,008.48	1,746.64	0.00	0.00	0.00
9,700.00	90.00	359.64	6,672.00	1,764.54	-1,009.11	1,846.31	0.00	0.00	0.00
9,800.00	90.00	359.64	6,672.00	1,864.54	-1,009.74	1,945.98	0.00	0.00	0.00
9,900.00	90.00	359.64	6,672.00	1,964.53	-1,010.38	2,045.64	0.00	0.00	0.00
10,000.00	90.00	359.64	6,672.00	2,064.53	-1,011.01	2,145.31	0.00	0.00	0.00
10,100.00	90.00	359.64	6,672.00	2,164.53	-1,011.65	2,244.98	0.00	0.00	0.00
10,200.00	90.00	359.64	6,672.00	2,264.53	-1,012.28	2,344.65	0.00	0.00	0.00
10,300.00	90.00	359.64	6,672.00	2,364.53	-1,012.91	2,444.32	0.00	0.00	0.00
10,400.00	90.00	359.64	6,672.00	2,464.52	-1,013.55	2,543.98	0.00	0.00	0.00
10,500.00	90.00	359.64	6,672.00	2,564.52	-1,014.18	2,643.65	0.00	0.00	0.00
10,600.00	90.00	359.64	6,672.00	2,664.52	-1,014.81	2,743.32	0.00	0.00	0.00
10,700.00	90.00	359.64	6,672.00	2,764.52	-1,015.45	2,842.99	0.00	0.00	0.00
10,800.00	90.00	359.64	6,672.00	2,864.52	-1,016.08	2,942.65	0.00	0.00	0.00
10,900.00	90.00	359.64	6,672.00	2,964.51	-1,016.71	3,042.32	0.00	0.00	0.00
11,000.00	90.00	359.64	6,672.00	3,064.51	-1,017.35	3,141.99	0.00	0.00	0.00
11,100.00	90.00	359.64	6,672.00	3,164.51	-1,017.98	3,241.66	0.00	0.00	0.00
11,200.00	90.00	359.64	6,672.00	3,264.51	-1,018.61	3,341.32	0.00	0.00	0.00
11,300.00	90.00	359.64	6,672.00	3,364.51	-1,019.25	3,440.99	0.00	0.00	0.00
11,400.00	90.00	359.64	6,672.00	3,464.50	-1,019.88	3,540.66	0.00	0.00	0.00
11,500.00	90.00	359.64	6,672.00	3,564.50	-1,020.52	3,640.33	0.00	0.00	0.00
11,600.00	90.00	359.64	6,672.00	3,664.50	-1,021.15	3,739.99	0.00	0.00	0.00
11,700.00	90.00	359.64	6,672.00	3,764.50	-1,021.78	3,839.66	0.00	0.00	0.00
11,800.00	90.00	359.64	6,672.00	3,864.50	-1,022.42	3,939.33	0.00	0.00	0.00
11,900.00	90.00	359.64	6,672.00	3,964.49	-1,023.05	4,039.00	0.00	0.00	0.00
12,000.00	90.00	359.64	6,672.00	4,064.49	-1,023.68	4,138.66	0.00	0.00	0.00
12,100.00	90.00	359.64	6,672.00	4,164.49	-1,024.32	4,238.33	0.00	0.00	0.00
12,200.00	90.00	359.64	6,672.00	4,264.49	-1,024.95	4,338.00	0.00	0.00	0.00
12,300.00	90.00	359.64	6,672.00	4,364.49	-1,025.58	4,437.67	0.00	0.00	0.00
12,400.00	90.00	359.64	6,672.00	4,464.48	-1,026.22	4,537.33	0.00	0.00	0.00
12,500.00	90.00	359.64	6,672.00	4,564.48	-1,026.85	4,637.00	0.00	0.00	0.00
12,600.00	90.00	359.64	6,672.00	4,664.48	-1,027.48	4,736.67	0.00	0.00	0.00
12,700.00	90.00	359.64	6,672.00	4,764.48	-1,028.12	4,836.34	0.00	0.00	0.00
12,800.00	90.00	359.64	6,672.00	4,864.48	-1,028.75	4,936.00	0.00	0.00	0.00
12,900.00	90.00	359.64	6,672.00	4,964.47	-1,029.39	5,035.67	0.00	0.00	0.00
13,000.00	90.00	359.64	6,672.00	5,064.47	-1,030.02	5,135.34	0.00	0.00	0.00
13,100.00	90.00	359.64	6,672.00	5,164.47	-1,030.65	5,235.01	0.00	0.00	0.00
13,200.00	90.00	359.64	6,672.00	5,264.47	-1,031.29	5,334.68	0.00	0.00	0.00
13,300.00	90.00	359.64	6,672.00	5,364.47	-1,031.92	5,434.34	0.00	0.00	0.00
13,400.00	90.00	359.64	6,672.00	5,464.46	-1,032.55	5,534.01	0.00	0.00	0.00
13,500.00	90.00	359.64	6,672.00	5,564.46	-1,033.19	5,633.68	0.00	0.00	0.00
13,600.00	90.00	359.64	6,672.00	5,664.46	-1,033.82	5,733.35	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen D25-743
Project:	Mustang	TVD Reference:	KB @ 4802.00ft
Site:	D Section 25	MD Reference:	KB @ 4802.00ft
Well:	Guttersen D25-743	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	359.64	6,672.00	5,764.46	-1,034.45	5,833.01	0.00	0.00	0.00
13,800.00	90.00	359.64	6,672.00	5,864.46	-1,035.09	5,932.68	0.00	0.00	0.00
13,900.00	90.00	359.64	6,672.00	5,964.45	-1,035.72	6,032.35	0.00	0.00	0.00
14,000.00	90.00	359.64	6,672.00	6,064.45	-1,036.36	6,132.02	0.00	0.00	0.00
14,100.00	90.00	359.64	6,672.00	6,164.45	-1,036.99	6,231.68	0.00	0.00	0.00
14,200.00	90.00	359.64	6,672.00	6,264.45	-1,037.62	6,331.35	0.00	0.00	0.00
14,300.00	90.00	359.64	6,672.00	6,364.45	-1,038.26	6,431.02	0.00	0.00	0.00
14,400.00	90.00	359.64	6,672.00	6,464.44	-1,038.89	6,530.69	0.00	0.00	0.00
14,500.00	90.00	359.64	6,672.00	6,564.44	-1,039.52	6,630.35	0.00	0.00	0.00
14,600.00	90.00	359.64	6,672.00	6,664.44	-1,040.16	6,730.02	0.00	0.00	0.00
14,700.00	90.00	359.64	6,672.00	6,764.44	-1,040.79	6,829.69	0.00	0.00	0.00
14,800.00	90.00	359.64	6,672.00	6,864.44	-1,041.42	6,929.36	0.00	0.00	0.00
14,900.00	90.00	359.64	6,672.00	6,964.43	-1,042.06	7,029.02	0.00	0.00	0.00
15,000.00	90.00	359.64	6,672.00	7,064.43	-1,042.69	7,128.69	0.00	0.00	0.00
15,100.00	90.00	359.64	6,672.00	7,164.43	-1,043.32	7,228.36	0.00	0.00	0.00
15,200.00	90.00	359.64	6,672.00	7,264.43	-1,043.96	7,328.03	0.00	0.00	0.00
15,300.00	90.00	359.64	6,672.00	7,364.43	-1,044.59	7,427.69	0.00	0.00	0.00
15,400.00	90.00	359.64	6,672.00	7,464.42	-1,045.23	7,527.36	0.00	0.00	0.00
15,500.00	90.00	359.64	6,672.00	7,564.42	-1,045.86	7,627.03	0.00	0.00	0.00
15,600.00	90.00	359.64	6,672.00	7,664.42	-1,046.49	7,726.70	0.00	0.00	0.00
15,700.00	90.00	359.64	6,672.00	7,764.42	-1,047.13	7,826.36	0.00	0.00	0.00
15,800.00	90.00	359.64	6,672.00	7,864.42	-1,047.76	7,926.03	0.00	0.00	0.00
15,900.00	90.00	359.64	6,672.00	7,964.41	-1,048.39	8,025.70	0.00	0.00	0.00
16,000.00	90.00	359.64	6,672.00	8,064.41	-1,049.03	8,125.37	0.00	0.00	0.00
16,100.00	90.00	359.64	6,672.00	8,164.41	-1,049.66	8,225.04	0.00	0.00	0.00
16,200.00	90.00	359.64	6,672.00	8,264.41	-1,050.29	8,324.70	0.00	0.00	0.00
16,300.00	90.00	359.64	6,672.00	8,364.41	-1,050.93	8,424.37	0.00	0.00	0.00
16,400.00	90.00	359.64	6,672.00	8,464.40	-1,051.56	8,524.04	0.00	0.00	0.00
16,500.00	90.00	359.64	6,672.00	8,564.40	-1,052.19	8,623.71	0.00	0.00	0.00
16,600.00	90.00	359.64	6,672.00	8,664.40	-1,052.83	8,723.37	0.00	0.00	0.00
16,700.00	90.00	359.64	6,672.00	8,764.40	-1,053.46	8,823.04	0.00	0.00	0.00
16,800.00	90.00	359.64	6,672.00	8,864.40	-1,054.10	8,922.71	0.00	0.00	0.00
16,900.00	90.00	359.64	6,672.00	8,964.39	-1,054.73	9,022.38	0.00	0.00	0.00
17,000.00	90.00	359.64	6,672.00	9,064.39	-1,055.36	9,122.04	0.00	0.00	0.00
17,100.00	90.00	359.64	6,672.00	9,164.39	-1,056.00	9,221.71	0.00	0.00	0.00
17,200.00	90.00	359.64	6,672.00	9,264.39	-1,056.63	9,321.38	0.00	0.00	0.00
17,300.00	90.00	359.64	6,672.00	9,364.39	-1,057.26	9,421.05	0.00	0.00	0.00
17,400.00	90.00	359.64	6,672.00	9,464.38	-1,057.90	9,520.71	0.00	0.00	0.00
17,500.00	90.00	359.64	6,672.00	9,564.38	-1,058.53	9,620.38	0.00	0.00	0.00
17,600.00	90.00	359.64	6,672.00	9,664.38	-1,059.16	9,720.05	0.00	0.00	0.00
17,700.00	90.00	359.64	6,672.00	9,764.38	-1,059.80	9,819.72	0.00	0.00	0.00
17,800.00	90.00	359.64	6,672.00	9,864.38	-1,060.43	9,919.38	0.00	0.00	0.00
17,900.00	90.00	359.64	6,672.00	9,964.37	-1,061.06	10,019.05	0.00	0.00	0.00
18,000.00	90.00	359.64	6,672.00	10,064.37	-1,061.70	10,118.72	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen D25-743
Project:	Mustang	TVD Reference:	KB @ 4802.00ft
Site:	D Section 25	MD Reference:	KB @ 4802.00ft
Well:	Guttersen D25-743	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	359.64	6,672.00	10,164.37	-1,062.33	10,218.39	0.00	0.00	0.00
18,200.00	90.00	359.64	6,672.00	10,264.37	-1,062.97	10,318.05	0.00	0.00	0.00
18,300.00	90.00	359.64	6,672.00	10,364.37	-1,063.60	10,417.72	0.00	0.00	0.00
18,400.00	90.00	359.64	6,672.00	10,464.36	-1,064.23	10,517.39	0.00	0.00	0.00
18,500.00	90.00	359.64	6,672.00	10,564.36	-1,064.87	10,617.06	0.00	0.00	0.00
18,600.00	90.00	359.64	6,672.00	10,664.36	-1,065.50	10,716.72	0.00	0.00	0.00
18,700.00	90.00	359.64	6,672.00	10,764.36	-1,066.13	10,816.39	0.00	0.00	0.00
18,800.00	90.00	359.64	6,672.00	10,864.36	-1,066.77	10,916.06	0.00	0.00	0.00
18,900.00	90.00	359.64	6,672.00	10,964.35	-1,067.40	11,015.73	0.00	0.00	0.00
19,000.00	90.00	359.64	6,672.00	11,064.35	-1,068.03	11,115.40	0.00	0.00	0.00
19,100.00	90.00	359.64	6,672.00	11,164.35	-1,068.67	11,215.06	0.00	0.00	0.00
19,200.00	90.00	359.64	6,672.00	11,264.35	-1,069.30	11,314.73	0.00	0.00	0.00
19,300.00	90.00	359.64	6,672.00	11,364.35	-1,069.94	11,414.40	0.00	0.00	0.00
19,400.00	90.00	359.64	6,672.00	11,464.34	-1,070.57	11,514.07	0.00	0.00	0.00
19,500.00	90.00	359.64	6,672.00	11,564.34	-1,071.20	11,613.73	0.00	0.00	0.00
19,600.00	90.00	359.64	6,672.00	11,664.34	-1,071.84	11,713.40	0.00	0.00	0.00
19,700.00	90.00	359.64	6,672.00	11,764.34	-1,072.47	11,813.07	0.00	0.00	0.00
19,800.00	90.00	359.64	6,672.00	11,864.34	-1,073.10	11,912.74	0.00	0.00	0.00
19,900.00	90.00	359.64	6,672.00	11,964.33	-1,073.74	12,012.40	0.00	0.00	0.00
20,000.00	90.00	359.64	6,672.00	12,064.33	-1,074.37	12,112.07	0.00	0.00	0.00
20,100.00	90.00	359.64	6,672.00	12,164.33	-1,075.00	12,211.74	0.00	0.00	0.00
20,137.22	90.00	359.64	6,672.00	12,201.55	-1,075.24	12,248.83	0.00	0.00	0.00

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Guttersen D25-743 SHL - hit/miss target - Shape - Point	0.00	0.00	0.00	0.00	0.00	1,316,739.75	3,280,827.19	40.1984774	-104.4946482
Guttersen D25-743 KOP - plan hits target center - Point	0.00	0.00	5,847.34	-1,188.15	-788.23	1,315,551.61	3,280,038.97	40.1952405	-104.4975178
Guttersen D25-743 TPZ - plan hits target center - Point	0.00	0.00	6,672.00	-589.32	-994.20	1,316,150.43	3,279,833.00	40.1968906	-104.4982309
Guttersen D25-743 BHL - plan misses target center by 9.19ft at 20137.22ft MD (6672.00 TVD, 12201.55 N, -1075.24 E) - Point	0.00	0.00	6,672.00	12,202.36	-1,066.08	1,328,942.08	3,279,761.11	40.2320051	-104.4979708

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen D25-743
Project:	Mustang	TVD Reference:	KB @ 4802.00ft
Site:	D Section 25	MD Reference:	KB @ 4802.00ft
Well:	Guttersen D25-743	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			
678.00	678.00	Pierre			
1,602.00	1,602.00	Upper Pierre Aquifer Base			
3,706.54	3,629.00	Parkman			
4,167.46	4,051.00	Sussex			
4,369.53	4,236.00	Shannon			
6,190.43	5,904.00	Teepee Buttes			
6,891.59	6,521.00	Sharon Springs			
6,969.62	6,567.00	Top A Chalk			
6,973.33	6,569.00	Top A Marl			
7,000.28	6,583.00	Top B Chalk			
7,121.74	6,634.00	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	
6129	5847	-202	-134	Start DLS 9.00 TFO 143.70	
7346	6672	-1188	-788	TPZ/LP at 7346.10 MD	
20,137	6672	-589	-994	TD at 20137.22 MD	

Checked By: _____ Approved By: _____ Date: _____

Northern Region - DJ Basin

Mustang

D Section 25

Guttersen D25-743

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 D25-743
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 D25-743	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	20,137.22	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	17,051.04	6,620.78	981.43	874.13	9.147	CC, ES
Dalbey D 13-11 (SI) - Wellbore #1 - Gyro Surveys	17,100.00	6,620.86	982.65	874.91	9.121	SF
Dalbey D 13-12 (PR) - Wellbore #1 - Gyro Surveys	16,572.21	6,628.81	2,130.68	2,027.02	20.554	CC
Dalbey D 13-12 (PR) - Wellbore #1 - Gyro Surveys	16,600.00	6,629.09	2,130.86	2,026.95	20.507	ES
Dalbey D 13-12 (PR) - Wellbore #1 - Gyro Surveys	16,800.00	6,631.09	2,142.82	2,037.47	20.339	SF
Dalbey D 13-13 (PR) - Wellbore #1 - No Surveys	15,650.82	6,616.00	2,392.28	2,186.40	11.620	CC, ES
Dalbey D 13-13 (PR) - Wellbore #1 - No Surveys	15,800.00	6,616.00	2,396.92	2,189.83	11.574	SF
Dalbey D 13-14 (PA) - Wellbore #1 - Gyro Surveys	15,654.81	6,611.17	1,211.25	1,114.71	12.546	CC, ES
Dalbey D 13-14 (PA) - Wellbore #1 - Gyro Surveys	15,700.00	6,611.60	1,212.09	1,115.13	12.501	SF
Guttersten 12-13 (SI) - Wellbore #1 - Gyro Surveys	18,249.54	6,717.56	2,500.62	2,383.80	21.407	CC, ES
Guttersten 12-13 (SI) - Wellbore #1 - Gyro Surveys	18,500.00	6,712.72	2,513.13	2,394.47	21.181	SF
Guttersten 13C (PR) - Wellbore #1 - Gyro Surveys	19,018.76	6,600.93	904.29	781.61	7.371	CC, ES, SF
Guttersten 13D (PR) - Wellbore #1 - Gyro Surveys	16,415.70	6,612.22	886.29	783.94	8.660	CC, ES, SF
Guttersten 13N (PR) - Wellbore #1 - Gyro Surveys	19,002.66	6,623.47	656.30	533.62	5.350	CC, ES, SF
Guttersten 13S (PR) - Wellbore #1 - Gyro Surveys	17,759.30	6,601.27	886.77	774.05	7.867	CC, ES, SF
Guttersten 13T (PR) - Wellbore #1 - Gyro Surveys	15,193.58	6,616.90	779.00	686.00	8.376	CC, ES
Guttersten 13T (PR) - Wellbore #1 - Gyro Surveys	15,200.00	6,616.89	779.03	686.01	8.375	SF
Guttersten 21-13 (SI) - Wellbore #1 - Gyro Surveys	19,613.64	6,636.68	1,220.32	1,092.73	9.565	CC, ES
Guttersten 21-13 (SI) - Wellbore #1 - Gyro Surveys	19,700.00	6,635.21	1,223.37	1,095.11	9.538	SF
Guttersten 22-13 (SI) - Wellbore #1 - Gyro Surveys	18,354.80	6,631.41	1,071.71	954.17	9.117	CC, ES
Guttersten 22-13 (SI) - Wellbore #1 - Gyro Surveys	18,400.00	6,631.67	1,072.67	954.71	9.094	SF
Guttersten 31-13 (PR) - Wellbore #1 - Gyro Surveys	19,650.80	6,614.13	167.58	39.47	1.308	Level 3, CC, ES, SF
Guttersten 32-13 (PR) - Wellbore #1 - Gyro Surveys	18,463.40	6,619.22	261.39	142.88	2.206	CC, ES, SF
Guttersten 34-13 (PR) - Wellbore #1 - Gyro Surveys	15,700.00	6,620.96	143.21	46.31	1.478	Level 3, ES, SF
Guttersten 34-13 (PR) - Wellbore #1 - Gyro Surveys	15,702.10	6,620.98	143.19	46.31	1.478	Level 3, CC
Guttersten 41-13 (PR) - Wellbore #1 - Gyro Surveys	19,583.97	6,528.66	1,556.96	1,430.30	12.292	CC
Guttersten 41-13 (PR) - Wellbore #1 - Gyro Surveys	19,600.00	6,528.67	1,557.04	1,430.29	12.284	ES
Guttersten 41-13 (PR) - Wellbore #1 - Gyro Surveys	19,700.00	6,528.75	1,561.28	1,434.16	12.282	SF
Guttersten 42-13 (PR) - Wellbore #1 - Gyro Surveys	18,316.00	6,551.45	1,648.57	1,531.73	14.110	CC, ES
Guttersten 42-13 (PR) - Wellbore #1 - Gyro Surveys	18,400.00	6,553.60	1,650.70	1,533.44	14.077	SF
Guttersten 43-13 - Wellbore #1 - Wellbore #1 - As Drilled	17,044.90	6,637.61	1,546.36	1,439.05	14.409	CC, ES
Guttersten 43-13 - Wellbore #1 - Wellbore #1 - As Drilled	17,100.00	6,638.31	1,547.35	1,439.75	14.381	SF
Guttersten 44-13 - Wellbore #1 - Wellbore #1 - As Drilled	15,695.18	6,651.39	1,484.51	1,384.11	14.786	CC
Guttersten 44-13 - Wellbore #1 - Wellbore #1 - As Drilled	15,700.00	6,651.39	1,484.52	1,384.09	14.783	ES
Guttersten 44-13 - Wellbore #1 - Wellbore #1 - As Drilled	15,800.00	6,651.29	1,488.21	1,387.38	14.761	SF
L F Ranch 1-13 (PR) - Wellbore #1 - Gyro Surveys	16,741.42	6,628.27	118.73	13.66	1.130	Level 2, CC, ES, SF
L. F. Ranch 13-4 (SI) - Wellbore #1 - Gyro Surveys	19,273.08	6,774.83	2,106.06	1,981.21	16.868	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 D25-743
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 D25-743	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 13						
L. F. Ranch 13-4 (SI) - Wellbore #1 - Gyro Surveys	19,300.00	6,773.11	2,106.23	1,981.14	16.837	ES
L. F. Ranch 13-4 (SI) - Wellbore #1 - Gyro Surveys	19,500.00	6,761.02	2,118.21	1,991.79	16.755	SF
D Section 24						
Dalbey D 24-10 (PR) - Wellbore #1 - Gyro Surveys	11,406.13	6,626.77	576.67	511.16	8.803	CC, ES, SF
Dalbey D 24-15 (SI) - Wellbore #1 - Gyro Surveys	10,446.17	6,625.19	106.33	46.76	1.785	CC, ES, SF
Glazier 2-24 (SI) - Wellbore #1 - Gyro Surveys	13,618.36	6,621.11	1,224.75	1,143.65	15.102	CC, ES
Glazier 2-24 (SI) - Wellbore #1 - Gyro Surveys	13,700.00	6,620.76	1,227.47	1,146.06	15.078	SF
Guttersen 11-24 (PR) - Wellbore #1 - Gyro Surveys	14,401.08	6,674.30	2,454.64	2,367.61	28.205	CC, ES
Guttersen 11-24 (PR) - Wellbore #1 - Gyro Surveys	14,800.00	6,674.78	2,486.84	2,397.07	27.701	SF
Guttersen 12-24 (PR) - Wellbore #1 - Gyro Surveys	13,104.30	6,656.02	2,470.90	2,393.50	31.920	CC, ES
Guttersen 12-24 (PR) - Wellbore #1 - Gyro Surveys	13,500.00	6,655.52	2,502.39	2,422.23	31.216	SF
Guttersen 21-24 (PR) - Wellbore #1 - Gyro Surveys	14,413.00	6,622.75	1,134.97	1,047.88	13.033	CC, ES
Guttersen 21-24 (PR) - Wellbore #1 - Gyro Surveys	14,500.00	6,622.86	1,138.30	1,050.49	12.964	SF
Guttersen 22-24 (PR) - Wellbore #1 - Gyro Surveys	13,184.24	6,623.60	1,085.75	1,007.82	13.932	CC
Guttersen 22-24 (PR) - Wellbore #1 - Gyro Surveys	13,200.00	6,623.64	1,085.87	1,007.78	13.906	ES
Guttersen 22-24 (PR) - Wellbore #1 - Gyro Surveys	13,300.00	6,623.85	1,091.91	1,013.09	13.853	SF
Guttersen 24A (PR) - Wellbore #1 - Gyro Surveys	13,739.22	6,637.33	1,763.72	1,681.73	21.512	CC, ES
Guttersen 24A (PR) - Wellbore #1 - Gyro Surveys	14,000.00	6,639.42	1,782.89	1,699.09	21.275	SF
Guttersen 24J (PR) - Wellbore #1 - Gyro Surveys	15,039.69	6,627.84	1,672.95	1,581.14	18.220	CC, ES
Guttersen 24J (PR) - Wellbore #1 - Gyro Surveys	15,200.00	6,626.26	1,680.62	1,587.56	18.060	SF
Guttersen 24N (PR) - Wellbore #1 - MWD Surveys	13,776.72	6,616.99	534.34	453.06	6.574	CC, ES
Guttersen 24N (PR) - Wellbore #1 - MWD Surveys	13,800.00	6,616.86	534.84	453.31	6.560	SF
Guttersen 24S (PR) - Wellbore #1 - MWD Surveys	12,287.91	6,610.47	925.73	855.22	13.130	CC, ES
Guttersen 24S (PR) - Wellbore #1 - MWD Surveys	12,300.00	6,610.39	925.80	855.25	13.122	SF
Guttersen 43-24 (PR) - Wellbore #1 - Gyro Surveys	11,663.25	6,643.54	1,468.42	1,400.99	21.777	CC, ES
Guttersen 43-24 (PR) - Wellbore #1 - Gyro Surveys	11,800.00	6,643.06	1,474.78	1,406.79	21.692	SF
Guttersen 44-24 (PR) - Wellbore #1 - Gyro Surveys	10,424.99	6,617.34	1,539.71	1,480.39	25.956	CC, ES
Guttersen 44-24 (PR) - Wellbore #1 - Gyro Surveys	10,600.00	6,617.49	1,549.63	1,489.60	25.818	SF
Karch Blue D 24-12 (PA) - Wellbore #1 - Gyro Surveys	11,925.75	6,646.24	2,416.72	2,347.63	34.979	CC, ES
Karch Blue D 24-12 (PA) - Wellbore #1 - Gyro Surveys	12,400.00	6,646.52	2,462.82	2,390.62	34.115	SF
Karch Blue D 24-14 (PR) - Wellbore #1 - No Surveys	10,398.02	6,635.00	852.83	683.84	5.046	CC
Karch Blue D 24-14 (PR) - Wellbore #1 - No Surveys	10,400.00	6,635.00	852.83	683.82	5.046	ES, SF
Karch Blue D24-11 (PA) - Wellbore #1 - Gyro Surveys	11,922.22	6,610.53	999.58	924.12	13.246	CC, ES
Karch Blue D24-11 (PA) - Wellbore #1 - Gyro Surveys	12,000.00	6,611.30	1,002.60	926.51	13.177	SF
Koerner 31-24 (SI) - Wellbore #1 - Gyro Surveys	14,461.82	6,622.48	188.40	100.89	2.153	CC, ES, SF
Koerner 32-24 (SI) - Wellbore #1 - Gyro Surveys	13,028.05	6,613.90	196.32	119.87	2.568	CC, ES, SF
Koerner 42-24 (SI) - Wellbore #1 - Gyro Surveys	13,015.28	6,630.87	1,504.71	1,427.97	19.606	CC, ES
Koerner 42-24 (SI) - Wellbore #1 - Gyro Surveys	13,100.00	6,630.01	1,507.10	1,429.96	19.539	SF
LF Ranch 1-24 (SI) - Wellbore #1 - Gyro Surveys	10,817.88	6,714.23	2,077.53	2,015.67	33.586	CC, ES
LF Ranch 1-24 (SI) - Wellbore #1 - Gyro Surveys	11,200.00	6,718.48	2,112.37	2,048.18	32.907	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 D25-743
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 D25-743	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)	Between Ellipses (ft)	Separation Factor	Warning
D Section 25						
Coors Energy 13-25D (PR) - Wellbore #1 - MWD Survey	6,908.53	6,707.40	2,468.78	2,411.92	43.416	CC, ES
Coors Energy 13-25D (PR) - Wellbore #1 - MWD Survey	7,100.00	6,797.11	2,482.56	2,424.94	43.084	SF
Coors Energy 14-25D (PR) - Wellbore #1 - MWD Survey	6,587.04	6,437.22	2,952.01	2,905.50	63.470	CC, ES
Coors Energy 14-25D (PR) - Wellbore #1 - MWD Survey	6,850.00	6,686.24	2,985.83	2,938.06	62.503	SF
Coors Energy 23-25D (PR) - Wellbore #1 - MWD Survey	6,750.00	6,586.87	1,180.55	1,128.99	22.900	SF
Coors Energy 23-25D (PR) - Wellbore #1 - MWD Survey	6,762.50	6,596.96	1,180.48	1,128.93	22.901	CC, ES
Coors Energy 25LD (PR) - Wellbore #1 - MWD Surveys	6,436.24	6,160.77	2,081.03	2,036.45	46.672	CC, ES
Coors Energy 24-25 (PR) - Wellbore #1 - Gyro Surveys	6,600.00	6,308.70	2,100.02	2,054.48	46.115	SF
Coors Energy 25HD (PR) - Wellbore #1 - MWD Surveys	6,757.21	6,707.91	3,100.43	3,046.91	57.931	CC, ES
Coors Energy 25HD (PR) - Wellbore #1 - MWD Surveys	7,050.00	6,861.15	3,135.81	3,080.85	57.058	SF
Coors Energy 25LD (PR) - Wellbore #1 - MWD Surveys	6,488.23	6,293.29	2,745.01	2,700.28	61.367	CC, ES
Coors Energy 25LD (PR) - Wellbore #1 - MWD Surveys	6,700.00	6,539.63	2,772.91	2,727.15	60.603	SF
Coors Energy 25TD (PR) - Wellbore #1 - MWD Surveys	6,292.26	6,061.55	2,265.23	2,221.37	51.647	CC
Coors Energy 25TD (PR) - Wellbore #1 - MWD Surveys	6,300.00	6,069.17	2,265.27	2,221.36	51.582	ES
Coors Energy 25TD (PR) - Wellbore #1 - MWD Surveys	6,500.00	6,256.72	2,297.11	2,251.89	50.800	SF
Coors Energy 25XD (PR) - Wellbore #1 - MWD Surveys	4,842.33	4,635.34	1,997.02	1,955.18	47.726	CC, ES
Coors Energy 25XD (PR) - Wellbore #1 - MWD Surveys	6,350.00	6,294.95	2,132.62	2,079.41	40.082	SF
Coors Energy 25YD (PR) - Wellbore #1 - MWD Surveys	4,503.65	3,838.90	2,699.35	2,667.18	83.929	CC, ES
Coors Energy 25YD (PR) - Wellbore #1 - MWD Surveys	6,250.00	6,250.00	2,867.86	2,819.28	59.026	SF
Coors Energy 33-25D (PR) - Wellbore #1 - MWD Survey	6,304.89	6,197.11	248.06	201.01	5.272	CC, ES, SF
Coors Energy 34-25 (PR) - Wellbore #1 - Gyro Surveys	6,349.90	6,047.59	1,798.07	1,753.64	40.474	CC
Coors Energy 34-25 (PR) - Wellbore #1 - Gyro Surveys	6,350.00	6,047.69	1,798.07	1,753.64	40.473	ES
Coors Energy 34-25 (PR) - Wellbore #1 - Gyro Surveys	6,500.00	6,193.33	1,815.97	1,770.55	39.982	SF
Coors Energy 43-25D (PR) - Wellbore #1 - MWD Survey	5,093.64	5,098.58	1,274.87	1,228.79	27.668	CC
Coors Energy 43-25D (PR) - Wellbore #1 - MWD Survey	5,100.00	5,103.88	1,274.88	1,228.74	27.632	ES
Coors Energy 43-25D (PR) - Wellbore #1 - MWD Survey	6,100.00	6,062.14	1,360.28	1,306.76	25.417	SF
Coors Energy 44-25D (PR) - Wellbore #1 - MWD Survey	6,215.45	6,002.35	2,058.98	2,013.07	44.840	CC, ES
Coors Energy 44-25D (PR) - Wellbore #1 - MWD Survey	6,450.00	6,224.69	2,092.22	2,044.80	44.120	SF
Dalbey D 25-03 (SI) - Wellbore #1 - Gyro Surveys	8,755.57	6,728.13	1,403.97	1,352.68	27.372	CC, ES
Dalbey D 25-03 (SI) - Wellbore #1 - Gyro Surveys	8,900.00	6,722.00	1,411.37	1,359.53	27.228	SF
Dalbey D 25-05 (SI) - Wellbore #1 - Gyro Surveys	7,828.81	6,802.64	2,597.14	2,547.85	52.700	CC, ES
Dalbey D 25-05 (SI) - Wellbore #1 - Gyro Surveys	8,100.00	6,776.73	2,611.12	2,561.45	52.570	SF
Guttersen 11-25 (PR) - Wellbore #1 - MWD Surveys	9,177.31	6,707.63	2,399.41	2,347.37	46.105	CC, ES
Guttersen 11-25 (PR) - Wellbore #1 - MWD Surveys	9,700.00	6,703.82	2,455.68	2,401.23	45.099	SF
Guttersen 22-25 (PR) - Wellbore #1 - MWD Surveys	7,914.15	6,673.10	973.02	925.04	20.278	CC, ES, SF
Guttersen 25E (PR) - Wellbore #1 - MWD Surveys	9,772.94	6,666.43	2,802.42	2,747.30	50.837	CC
Guttersen 25E (PR) - Wellbore #1 - MWD Surveys	9,800.00	6,666.06	2,802.55	2,747.28	50.699	ES
Guttersen 25E (PR) - Wellbore #1 - MWD Surveys	10,500.00	6,656.38	2,895.19	2,836.19	49.072	SF
Guttersen 25KD (PR) - Wellbore #1 - MWD Surveys	100.00	81.69	1,530.84	1,530.57	5,613.502	CC
Guttersen 25KD (PR) - Wellbore #1 - MWD Surveys	500.00	475.35	1,532.01	1,529.59	634.349	ES
Guttersen 25KD (PR) - Wellbore #1 - MWD Surveys	7,250.00	6,910.96	1,732.66	1,683.30	35.104	SF
Guttersen 25O (PR) - Wellbore #1 - MWD Surveys	7,428.26	6,655.26	533.23	485.50	11.171	CC, ES, SF
Guttersen D 25-17 (SI) - Wellbore #1 - Gyro Surveys	233.62	201.62	615.70	614.57	542.527	CC
Guttersen D 25-17 (SI) - Wellbore #1 - Gyro Surveys	400.00	363.52	616.41	614.11	268.395	ES
Guttersen D 25-17 (SI) - Wellbore #1 - Gyro Surveys	8,512.54	6,663.20	700.43	649.70	13.806	SF
Guttersen D25-715 - Wellbore #1 - Plan #1	2,000.00	2,001.00	112.50	98.62	8.107	CC, ES
Guttersen D25-715 - Wellbore #1 - Plan #1	2,100.00	2,099.19	114.28	99.73	7.854	SF
Guttersen D25-724 - Wellbore #1 - Plan #1	2,000.00	2,000.00	75.01	61.13	5.407	CC, ES
Guttersen D25-724 - Wellbore #1 - Plan #1	2,100.00	2,099.70	76.18	61.63	5.235	SF
Guttersen D25-734 - Wellbore #1 - Plan #1	2,000.00	2,000.00	37.50	23.63	2.703	CC
Guttersen D25-734 - Wellbore #1 - Plan #1	2,100.00	2,100.43	37.91	23.36	2.605	ES
Guttersen D25-734 - Wellbore #1 - Plan #1	2,200.00	2,200.85	39.14	23.94	2.574	SF
Guttersen D25-753 - Wellbore #1 - Plan #1	20,134.83	20,316.32	604.56	387.46	2.785	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 Guttersten D25-743
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 D25-743	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						
Guttersten D25-762 - Wellbore #1 - Plan #1	15,670.90	15,764.04	1,191.39	1,044.26	8.098	CC
Guttersten D25-762 - Wellbore #1 - Plan #1	20,137.22	20,222.65	1,209.34	991.96	5.563	ES, SF
Guttersten D25-772 - Wellbore #1 - Plan #1	6,762.58	6,540.99	1,839.15	1,787.95	35.916	CC
Guttersten D25-772 - Wellbore #1 - Plan #1	20,130.08	20,383.27	1,862.79	1,646.46	8.611	ES
Guttersten D25-772 - Wellbore #1 - Plan #1	20,137.22	20,375.73	1,862.85	1,646.49	8.610	SF
Guttersten D25-781 - Wellbore #1 - Plan #1	1,910.78	1,925.78	2,223.33	2,210.04	167.331	CC
Guttersten D25-781 - Wellbore #1 - Plan #1	3,200.00	2,872.64	2,227.40	2,206.64	107.294	ES
Guttersten D25-781 - Wellbore #1 - Plan #1	20,137.22	20,362.10	2,449.36	2,233.15	11.329	SF
Guttersten State D36-714 - Wellbore #1 - Plan #1	2,000.00	2,000.00	187.50	173.63	13.516	CC, ES
Guttersten State D36-714 - Wellbore #1 - Plan #1	2,200.00	2,199.84	194.47	179.22	12.745	SF
Guttersten State D36-724 - Wellbore #1 - Plan #1	2,000.00	2,001.00	167.71	153.83	12.086	CC, ES
Guttersten State D36-724 - Wellbore #1 - Plan #1	2,300.00	2,304.76	182.08	166.14	11.420	SF
Guttersten State D36-733 - Wellbore #1 - Plan #1	2,000.00	2,000.00	154.62	140.75	11.146	CC, ES
Guttersten State D36-733 - Wellbore #1 - Plan #1	2,700.00	2,724.69	192.70	174.17	10.401	SF
Guttersten State D36-743 - Wellbore #1 - Plan #1	7,205.02	6,956.38	63.32	11.99	1.234	Level 3, CC, ES, SF
Guttersten State D36-752 - Wellbore #1 - Plan #1	7,246.99	6,947.39	571.11	534.43	15.568	CC, ES, SF
Guttersten State D36-762 - Wellbore #1 - Plan #1	7,300.00	6,809.02	1,159.51	1,108.82	22.875	SF
Guttersten State D36-762 - Wellbore #1 - Plan #1	7,397.20	6,747.32	1,156.94	1,106.44	22.909	CC, ES
Guttersten State D36-771 - Wellbore #1 - Plan #1	7,500.00	6,554.47	1,746.00	1,695.59	34.636	SF
Guttersten State D36-771 - Wellbore #1 - Plan #1	7,530.00	6,544.97	1,745.77	1,695.37	34.637	CC, ES
Guttersten State D36-781 - Wellbore #1 - Plan #1	1,910.78	1,925.78	2,148.75	2,135.47	161.718	CC
Guttersten State D36-781 - Wellbore #1 - Plan #1	2,100.00	2,080.93	2,149.15	2,134.66	148.314	ES
Guttersten State D36-781 - Wellbore #1 - Plan #1	7,900.00	6,208.12	2,292.90	2,242.41	45.411	SF
Karch Blue D 25-02 (DA) - Wellbore #1 - No Surveys	9,116.70	6,631.00	225.83	63.46	1.391	Level 3, CC, ES, SF
Karch Blue D 25-08 (SI) - Wellbore #1 - Gyro Surveys	2,020.26	1,987.31	558.58	544.81	40.551	CC, ES
Karch Blue D 25-08 (SI) - Wellbore #1 - Gyro Surveys	7,900.00	6,665.53	1,518.03	1,468.72	30.788	SF
Karch Blue D25-07 (SI) - Wellbore #1 - Gyro Surveys	7,843.72	6,639.39	192.64	143.64	3.931	CC, ES, SF
L F Ranch 2-25 (PR) - Wellbore #1 - Gyro Surveys	1,212.87	1,174.88	1,274.90	1,266.86	158.499	CC
L F Ranch 2-25 (PR) - Wellbore #1 - Gyro Surveys	2,000.00	1,958.26	1,275.55	1,261.96	93.797	ES
L F Ranch 2-25 (PR) - Wellbore #1 - Gyro Surveys	9,200.00	6,650.21	1,508.25	1,455.13	28.395	SF
LF Ranches 1 (PA) - Wellbore #1 - No Surveys	2,000.00	1,963.00	888.30	842.10	19.229	CC
LF Ranches 1 (PA) - Wellbore #1 - No Surveys	2,100.00	2,062.98	889.94	841.40	18.335	ES
LF Ranches 1 (PA) - Wellbore #1 - No Surveys	8,800.00	6,635.00	1,216.33	1,055.13	7.546	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 D25-743
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 D25-743	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

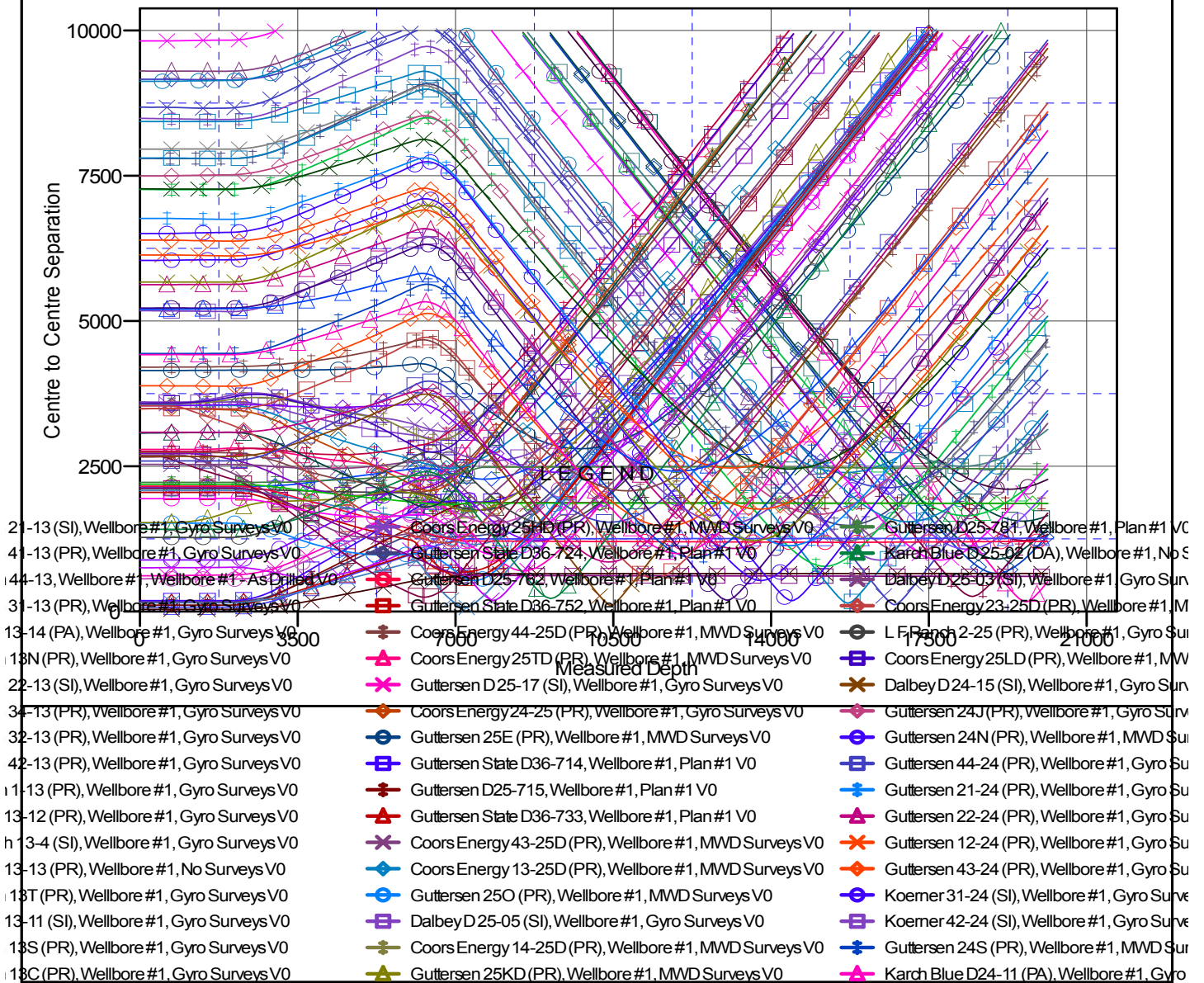
Central Meridian is -105.5000000

Coordinates are relative to: Guttersen D25-743

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.65°

Ladder Plot



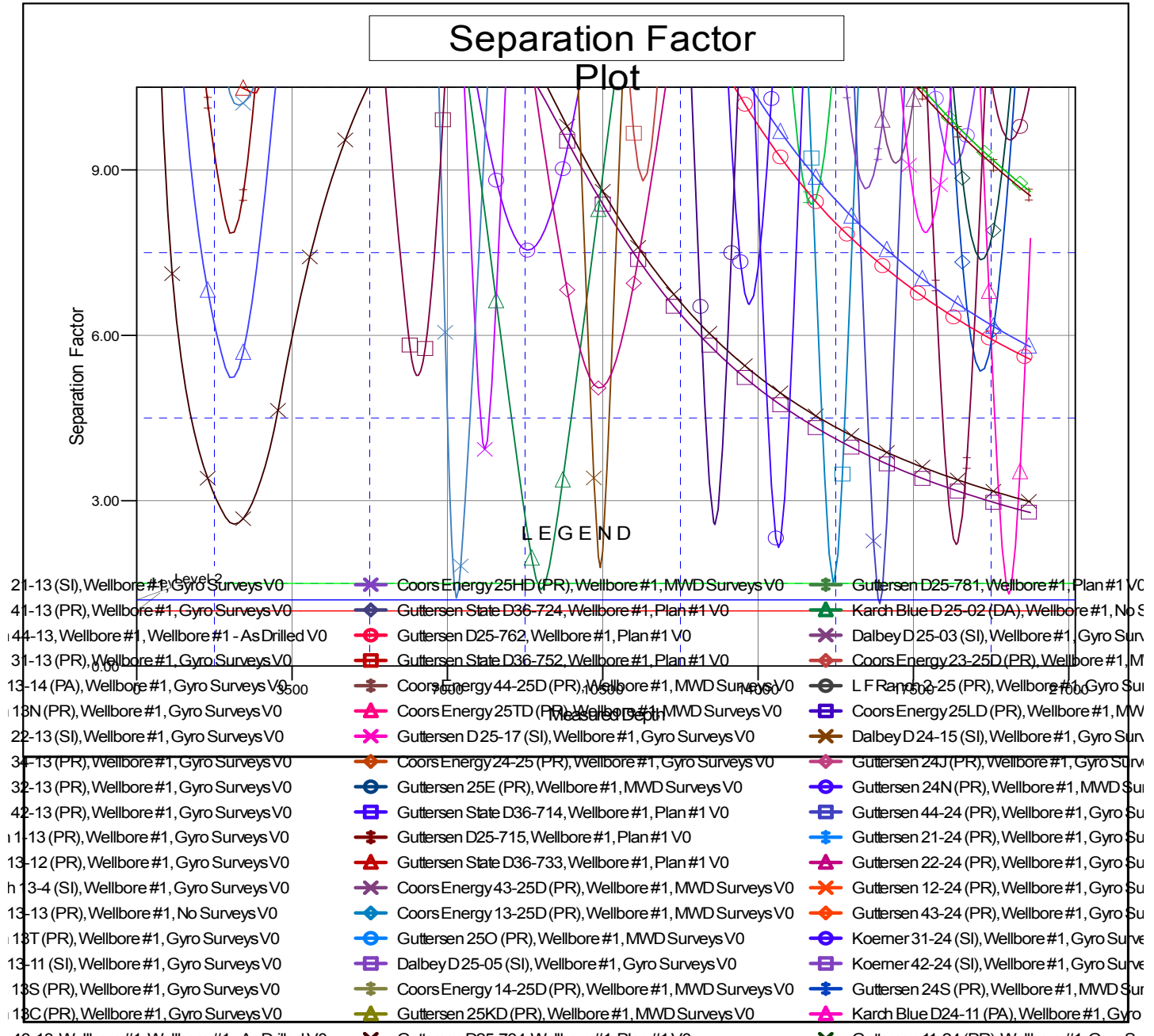
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen D25-743
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 D25-743	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 D25-743
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.65°



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