Project: Mustang
Site: C Section 33
Well: Guttersen D09-745
Wellbore: Guttersen D09-745
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

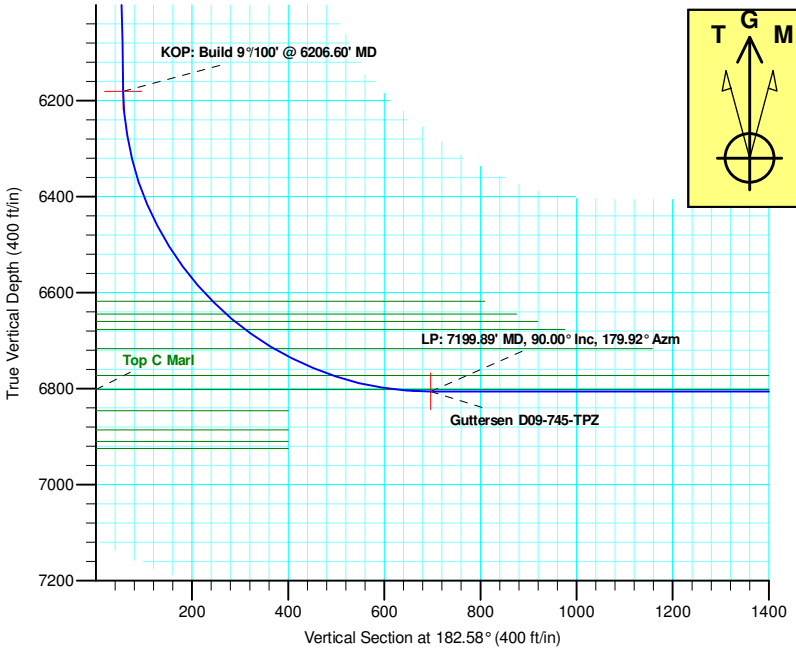
SECTION DETAILS

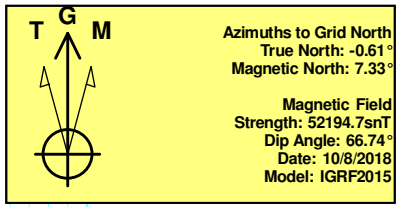
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	2510.00	0.00	0.00	2510.00	0.00	0.00	0.00	0.00	0.00	
3	2860.18	7.00	264.96	2859.31	-1.88	-21.29	2.00	264.96	2.84	
4	6206.60	7.00	264.96	6180.76	-37.72	-427.75	0.00	0.00	56.95	
5	7199.89	90.00	179.92	6806.00	-674.40	-503.42	9.00	-85.07	696.40	Guttersen D09-745-TPZ
6	17384.45	90.00	179.92	6806.00	-10858.95	-489.83	0.00	0.00	10869.99	Guttersen D09-745-BHL

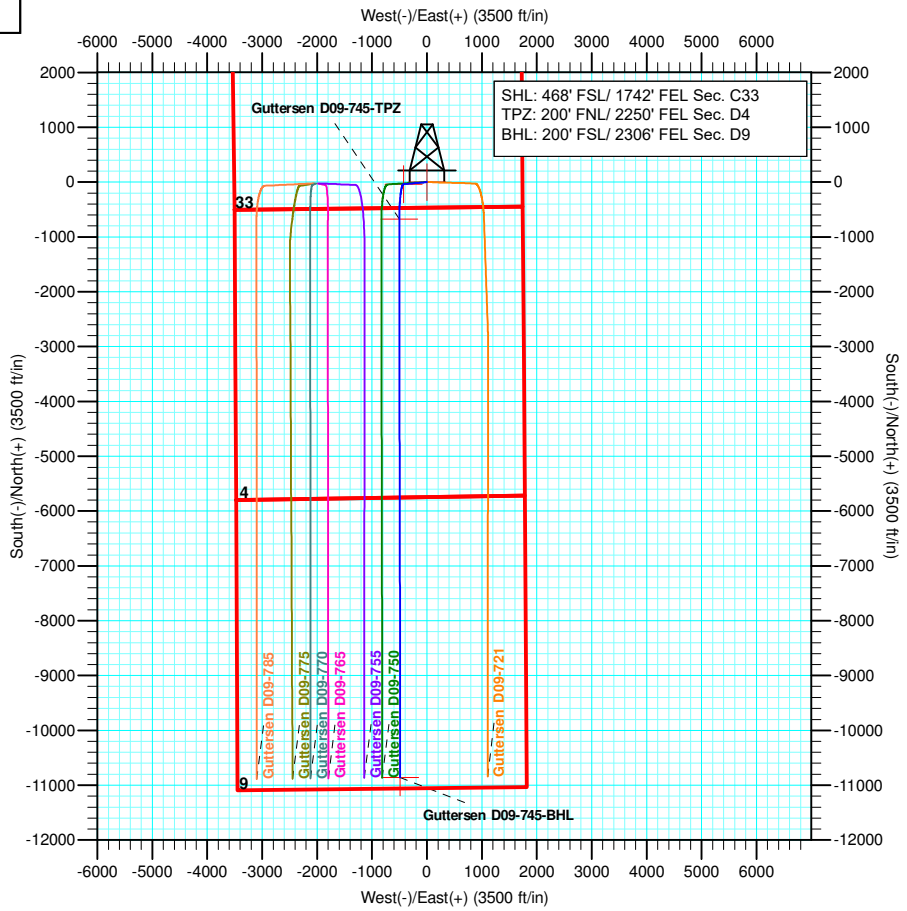
WELL DETAILS: Guttersen D09-745

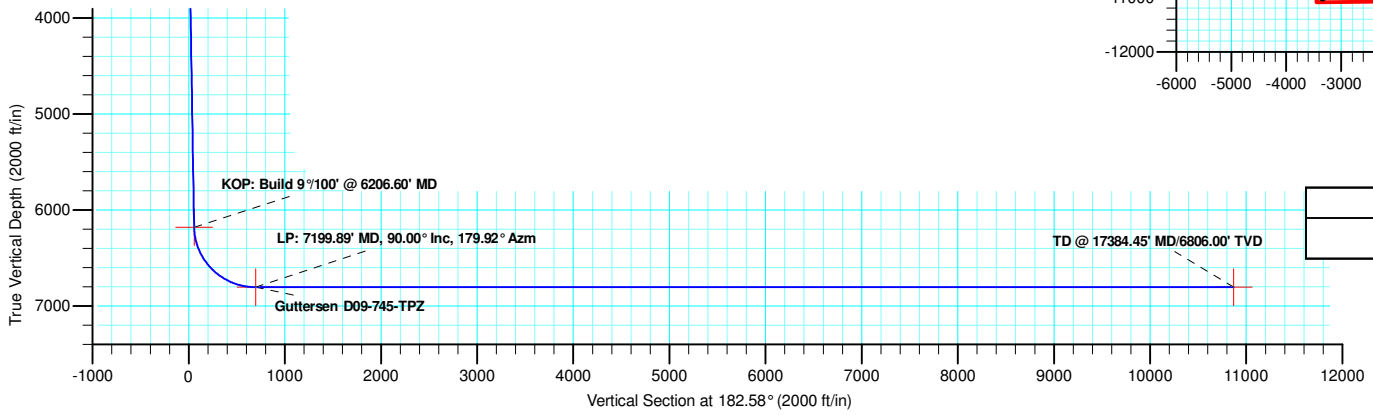
Ground Level: 4720.00

+N/-S	+E/-W	Northing	Easting	Latittude	Longitude	Slot
0.00	0.00	1340074.81	3264337.16	40.2630290	-104.5527850	









Plan: Plan #1 (Guttersen D09-745/Guttersen D09-745)

Created By: Keith Noack Date: 10:09, October 09 2018

Northern Region - DJ Basin

Mustang
C Section 33
Guttersen D09-745

Guttersen D09-745

Plan: Plan #1

Standard Planning Report

09 October, 2018

Database:	EDMP	**Local Co-ordinate Reference:**	Well Guttersen D09-745
Company:	Northern Region - DJ Basin	**TVD Reference:**	Well @ 4750.00ft
Project:	Mustang	**MD Reference:**	Well @ 4750.00ft
Site:	C Section 33	**North Reference:**	Grid
Well:	Guttersen D09-745	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Guttersen D09-745		
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 C Section 33

Site Position:		**Northing:**	1,339,901.69 usft	**Latitude:**	40.2626140
From:	Lat/Long	**Easting:**	3,262,275.97 usft	**Longitude:**	-104.5601770
Position Uncertainty:	0.00 ft	**Slot Radius:**	13.200 in	**Grid Convergence:**	0.61 °

Well Guttersen D09-745

Well Position	**+N/-S**	173.12 ft	**Northing:**	1,340,074.81 usft	**Latitude:**	40.2630290
	+E/-W	2,061.19 ft	**Easting:**	3,264,337.16 usft	**Longitude:**	-104.5527850
Position Uncertainty		0.00 ft	**Wellhead Elevation:**		**Ground Level:**	4,720.00 ft

Wellbore Guttersen D09-745

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	10/8/2018	7.95	66.74	52,194.68419623

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	182.58

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	
2,510.00	0.00	0.00	2,510.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,860.18	7.00	264.96	2,859.31	-1.88	-21.29	2.00	2.00	0.00	264.96	
6,206.60	7.00	264.96	6,180.76	-37.72	-427.75	0.00	0.00	0.00	0.00	
7,199.89	90.00	179.92	6,806.00	-674.40	-503.42	9.00	8.36	-8.56	-85.07	Guttersen D09-745
17,384.45	90.00	179.92	6,806.00	-10,858.95	-489.83	0.00	0.00	0.00	0.00	Guttersen D09-745

Database:	EDMP	**Local Co-ordinate Reference:**	Well Guttersen D09-745
Company:	Northern Region - DJ Basin	**TVD Reference:**	Well @ 4750.00ft
Project:	Mustang	**MD Reference:**	Well @ 4750.00ft
Site:	C Section 33	**North Reference:**	Grid
Well:	Guttersen D09-745	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Guttersen D09-745		
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
456.00	0.00	0.00	456.00	0.00	0.00	0.00	0.00	0.00	0.00
Pierre									
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
589.00	0.00	0.00	589.00	0.00	0.00	0.00	0.00	0.00	0.00
Upper Pierre Aquifer Top									
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
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
1,509.00	0.00	0.00	1,509.00	0.00	0.00	0.00	0.00	0.00	0.00
Upper Pierre Aquifer Base									
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,510.00	0.00	0.00	2,510.00	0.00	0.00	0.00	0.00	0.00	0.00
Build: 2°/100'									
2,600.00	1.80	264.96	2,599.99	-0.12	-1.41	0.19	2.00	2.00	0.00
2,700.00	3.80	264.96	2,699.86	-0.55	-6.27	0.84	2.00	2.00	0.00
2,800.00	5.80	264.96	2,799.51	-1.29	-14.61	1.95	2.00	2.00	0.00
2,860.18	7.00	264.96	2,859.31	-1.88	-21.29	2.84	2.00	2.00	0.00
Hold: 7.00° Inc, 264.96° Azm									
2,900.00	7.00	264.96	2,898.83	-2.30	-26.13	3.48	0.00	0.00	0.00
3,000.00	7.00	264.96	2,998.09	-3.37	-38.28	5.10	0.00	0.00	0.00
3,100.00	7.00	264.96	3,097.34	-4.45	-50.42	6.71	0.00	0.00	0.00
3,200.00	7.00	264.96	3,196.59	-5.52	-62.57	8.33	0.00	0.00	0.00
3,300.00	7.00	264.96	3,295.85	-6.59	-74.71	9.95	0.00	0.00	0.00
3,400.00	7.00	264.96	3,395.10	-7.66	-86.86	11.56	0.00	0.00	0.00
3,500.00	7.00	264.96	3,494.35	-8.73	-99.01	13.18	0.00	0.00	0.00
3,594.35	7.00	264.96	3,588.00	-9.74	-110.47	14.71	0.00	0.00	0.00
Parkman									
3,600.00	7.00	264.96	3,593.61	-9.80	-111.15	14.80	0.00	0.00	0.00
3,700.00	7.00	264.96	3,692.86	-10.87	-123.30	16.42	0.00	0.00	0.00
3,800.00	7.00	264.96	3,792.12	-11.94	-135.44	18.03	0.00	0.00	0.00
3,900.00	7.00	264.96	3,891.37	-13.01	-147.59	19.65	0.00	0.00	0.00
4,000.00	7.00	264.96	3,990.62	-14.08	-159.74	21.27	0.00	0.00	0.00

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Site:	C Section 33	**North Reference:**	Grid
Well:	Guttersen D09-745	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Guttersen D09-745		
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)
4,002.39	7.00	264.96	3,993.00	-14.11	-160.03	21.31	0.00	0.00	0.00
Sussex									
4,100.00	7.00	264.96	4,089.88	-15.16	-171.88	22.89	0.00	0.00	0.00
4,200.00	7.00	264.96	4,189.13	-16.23	-184.03	24.50	0.00	0.00	0.00
4,300.00	7.00	264.96	4,288.39	-17.30	-196.17	26.12	0.00	0.00	0.00
4,400.00	7.00	264.96	4,387.64	-18.37	-208.32	27.74	0.00	0.00	0.00
4,500.00	7.00	264.96	4,486.89	-19.44	-220.47	29.35	0.00	0.00	0.00
4,558.54	7.00	264.96	4,545.00	-20.07	-227.58	30.30	0.00	0.00	0.00
Shannon									
4,600.00	7.00	264.96	4,586.15	-20.51	-232.61	30.97	0.00	0.00	0.00
4,700.00	7.00	264.96	4,685.40	-21.58	-244.76	32.59	0.00	0.00	0.00
4,800.00	7.00	264.96	4,784.65	-22.65	-256.90	34.21	0.00	0.00	0.00
4,900.00	7.00	264.96	4,883.91	-23.72	-269.05	35.82	0.00	0.00	0.00
5,000.00	7.00	264.96	4,983.16	-24.79	-281.20	37.44	0.00	0.00	0.00
5,100.00	7.00	264.96	5,082.42	-25.86	-293.34	39.06	0.00	0.00	0.00
5,200.00	7.00	264.96	5,181.67	-26.94	-305.49	40.67	0.00	0.00	0.00
5,300.00	7.00	264.96	5,280.92	-28.01	-317.63	42.29	0.00	0.00	0.00
5,400.00	7.00	264.96	5,380.18	-29.08	-329.78	43.91	0.00	0.00	0.00
5,500.00	7.00	264.96	5,479.43	-30.15	-341.93	45.53	0.00	0.00	0.00
5,600.00	7.00	264.96	5,578.69	-31.22	-354.07	47.14	0.00	0.00	0.00
5,700.00	7.00	264.96	5,677.94	-32.29	-366.22	48.76	0.00	0.00	0.00
5,800.00	7.00	264.96	5,777.19	-33.36	-378.36	50.38	0.00	0.00	0.00
5,900.00	7.00	264.96	5,876.45	-34.43	-390.51	51.99	0.00	0.00	0.00
5,948.92	7.00	264.96	5,925.00	-34.96	-396.45	52.79	0.00	0.00	0.00
Teepee Buttes									
6,000.00	7.00	264.96	5,975.70	-35.50	-402.66	53.61	0.00	0.00	0.00
6,100.00	7.00	264.96	6,074.96	-36.57	-414.80	55.23	0.00	0.00	0.00
6,206.60	7.00	264.96	6,180.76	-37.72	-427.75	56.95	0.00	0.00	0.00
KOP: Build 9°/100' @ 6206.60' MD									
6,250.00	8.30	236.93	6,223.79	-39.66	-433.01	59.13	9.00	2.99	-64.60
6,300.00	11.38	217.38	6,273.06	-45.55	-439.04	65.29	9.00	6.15	-39.10
6,350.00	15.18	206.75	6,321.72	-55.32	-444.98	75.31	9.00	7.59	-21.27
6,400.00	19.27	200.41	6,369.47	-68.90	-450.80	89.15	9.00	8.19	-12.67
6,450.00	23.51	196.26	6,416.02	-86.22	-456.48	106.70	9.00	8.48	-8.30
6,500.00	27.83	193.33	6,461.08	-107.16	-461.96	127.87	9.00	8.64	-5.87
6,550.00	32.20	191.13	6,504.36	-131.60	-467.23	152.52	9.00	8.73	-4.39
6,600.00	36.59	189.41	6,545.61	-159.39	-472.24	180.51	9.00	8.79	-3.44
6,650.00	41.00	188.02	6,584.57	-190.35	-476.97	211.65	9.00	8.83	-2.79
6,695.74	45.05	186.94	6,618.00	-221.29	-481.02	242.74	9.00	8.86	-2.35
Sharon Springs									
6,700.00	45.43	186.85	6,621.00	-224.29	-481.38	245.76	9.00	8.87	-2.17
6,735.19	48.56	186.13	6,645.00	-249.86	-484.28	271.43	9.00	8.87	-2.05
Top A Chalk									
6,750.00	49.87	185.84	6,654.67	-261.01	-485.45	282.62	9.00	8.88	-1.91
6,758.33	50.61	185.69	6,660.00	-267.38	-486.10	289.01	9.00	8.89	-1.85
Top A Marl									
6,785.84	53.06	185.20	6,677.00	-288.91	-488.15	310.61	9.00	8.89	-1.77
Top B Chalk									
6,800.00	54.32	184.97	6,685.39	-300.28	-489.16	322.01	9.00	8.90	-1.68
6,850.00	58.77	184.18	6,712.94	-341.85	-492.48	363.69	9.00	8.90	-1.57
6,857.90	59.47	184.06	6,717.00	-348.61	-492.96	370.47	9.00	8.91	-1.48
Top B Marl									
6,900.00	63.23	183.46	6,737.18	-385.47	-495.38	407.40	9.00	8.91	-1.42

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Site:	C Section 33	**North Reference:**	Grid
Well:	Guttersen D09-745	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Guttersen D09-745		
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)
6,950.00	67.69	182.80	6,757.95	-430.87	-497.86	452.87	9.00	8.92	-1.32
6,993.23	71.54	182.26	6,773.00	-471.34	-499.65	493.38	9.00	8.92	-1.24
Top C Chalk									
7,000.00	72.15	182.18	6,775.11	-477.77	-499.90	499.82	9.00	8.93	-1.21
7,050.00	76.61	181.59	6,788.57	-525.89	-501.49	547.95	9.00	8.93	-1.18
7,100.00	81.08	181.02	6,798.24	-574.92	-502.60	596.98	9.00	8.93	-1.14
7,128.18	83.59	180.71	6,802.00	-602.85	-503.03	624.90	9.00	8.93	-1.11
Top C Marl									
7,150.00	85.54	180.47	6,804.06	-624.56	-503.25	646.61	9.00	8.93	-1.10
7,199.89	90.00	179.92	6,806.00	-674.40	-503.42	696.40	9.00	8.93	-1.10
LP: 7199.89' MD, 90.00° Inc, 179.92° Azm									
7,300.00	90.00	179.92	6,806.00	-774.51	-503.29	796.40	0.00	0.00	0.00
7,400.00	90.00	179.92	6,806.00	-874.51	-503.15	896.30	0.00	0.00	0.00
7,500.00	90.00	179.92	6,806.00	-974.51	-503.02	996.19	0.00	0.00	0.00
7,600.00	90.00	179.92	6,806.00	-1,074.51	-502.89	1,096.08	0.00	0.00	0.00
7,700.00	90.00	179.92	6,806.00	-1,174.51	-502.75	1,195.97	0.00	0.00	0.00
7,800.00	90.00	179.92	6,806.00	-1,274.51	-502.62	1,295.87	0.00	0.00	0.00
7,900.00	90.00	179.92	6,806.00	-1,374.51	-502.49	1,395.76	0.00	0.00	0.00
8,000.00	90.00	179.92	6,806.00	-1,474.51	-502.35	1,495.65	0.00	0.00	0.00
8,100.00	90.00	179.92	6,806.00	-1,574.51	-502.22	1,595.54	0.00	0.00	0.00
8,200.00	90.00	179.92	6,806.00	-1,674.51	-502.09	1,695.43	0.00	0.00	0.00
8,300.00	90.00	179.92	6,806.00	-1,774.51	-501.95	1,795.33	0.00	0.00	0.00
8,400.00	90.00	179.92	6,806.00	-1,874.51	-501.82	1,895.22	0.00	0.00	0.00
8,500.00	90.00	179.92	6,806.00	-1,974.51	-501.69	1,995.11	0.00	0.00	0.00
8,600.00	90.00	179.92	6,806.00	-2,074.51	-501.55	2,095.00	0.00	0.00	0.00
8,700.00	90.00	179.92	6,806.00	-2,174.51	-501.42	2,194.90	0.00	0.00	0.00
8,800.00	90.00	179.92	6,806.00	-2,274.51	-501.29	2,294.79	0.00	0.00	0.00
8,900.00	90.00	179.92	6,806.00	-2,374.51	-501.15	2,394.68	0.00	0.00	0.00
9,000.00	90.00	179.92	6,806.00	-2,474.51	-501.02	2,494.57	0.00	0.00	0.00
9,100.00	90.00	179.92	6,806.00	-2,574.51	-500.89	2,594.47	0.00	0.00	0.00
9,200.00	90.00	179.92	6,806.00	-2,674.51	-500.75	2,694.36	0.00	0.00	0.00
9,300.00	90.00	179.92	6,806.00	-2,774.51	-500.62	2,794.25	0.00	0.00	0.00
9,400.00	90.00	179.92	6,806.00	-2,874.51	-500.49	2,894.14	0.00	0.00	0.00
9,500.00	90.00	179.92	6,806.00	-2,974.51	-500.35	2,994.03	0.00	0.00	0.00
9,600.00	90.00	179.92	6,806.00	-3,074.51	-500.22	3,093.93	0.00	0.00	0.00
9,700.00	90.00	179.92	6,806.00	-3,174.51	-500.09	3,193.82	0.00	0.00	0.00
9,800.00	90.00	179.92	6,806.00	-3,274.51	-499.95	3,293.71	0.00	0.00	0.00
9,900.00	90.00	179.92	6,806.00	-3,374.51	-499.82	3,393.60	0.00	0.00	0.00
10,000.00	90.00	179.92	6,806.00	-3,474.51	-499.69	3,493.50	0.00	0.00	0.00
10,100.00	90.00	179.92	6,806.00	-3,574.51	-499.55	3,593.39	0.00	0.00	0.00
10,200.00	90.00	179.92	6,806.00	-3,674.51	-499.42	3,693.28	0.00	0.00	0.00
10,300.00	90.00	179.92	6,806.00	-3,774.51	-499.28	3,793.17	0.00	0.00	0.00
10,400.00	90.00	179.92	6,806.00	-3,874.51	-499.15	3,893.07	0.00	0.00	0.00
10,500.00	90.00	179.92	6,806.00	-3,974.51	-499.02	3,992.96	0.00	0.00	0.00
10,600.00	90.00	179.92	6,806.00	-4,074.51	-498.88	4,092.85	0.00	0.00	0.00
10,700.00	90.00	179.92	6,806.00	-4,174.51	-498.75	4,192.74	0.00	0.00	0.00
10,800.00	90.00	179.92	6,806.00	-4,274.51	-498.62	4,292.63	0.00	0.00	0.00
10,900.00	90.00	179.92	6,806.00	-4,374.51	-498.48	4,392.53	0.00	0.00	0.00
11,000.00	90.00	179.92	6,806.00	-4,474.51	-498.35	4,492.42	0.00	0.00	0.00
11,100.00	90.00	179.92	6,806.00	-4,574.51	-498.22	4,592.31	0.00	0.00	0.00
11,200.00	90.00	179.92	6,806.00	-4,674.51	-498.08	4,692.20	0.00	0.00	0.00
11,300.00	90.00	179.92	6,806.00	-4,774.51	-497.95	4,792.10	0.00	0.00	0.00
11,400.00	90.00	179.92	6,806.00	-4,874.51	-497.82	4,891.99	0.00	0.00	0.00

Database:	EDMP	**Local Co-ordinate Reference:**	Well Guttersen D09-745
Company:	Northern Region - DJ Basin	**TVD Reference:**	Well @ 4750.00ft
Project:	Mustang	**MD Reference:**	Well @ 4750.00ft
Site:	C Section 33	**North Reference:**	Grid
Well:	Guttersen D09-745	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Guttersen D09-745		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
11,500.00	90.00	179.92	6,806.00	-4,974.51	-497.68	4,991.88	0.00	0.00	0.00
11,600.00	90.00	179.92	6,806.00	-5,074.51	-497.55	5,091.77	0.00	0.00	0.00
11,700.00	90.00	179.92	6,806.00	-5,174.51	-497.42	5,191.67	0.00	0.00	0.00
11,800.00	90.00	179.92	6,806.00	-5,274.51	-497.28	5,291.56	0.00	0.00	0.00
11,900.00	90.00	179.92	6,806.00	-5,374.51	-497.15	5,391.45	0.00	0.00	0.00
12,000.00	90.00	179.92	6,806.00	-5,474.51	-497.02	5,491.34	0.00	0.00	0.00
12,100.00	90.00	179.92	6,806.00	-5,574.51	-496.88	5,591.24	0.00	0.00	0.00
12,200.00	90.00	179.92	6,806.00	-5,674.51	-496.75	5,691.13	0.00	0.00	0.00
12,300.00	90.00	179.92	6,806.00	-5,774.51	-496.62	5,791.02	0.00	0.00	0.00
12,400.00	90.00	179.92	6,806.00	-5,874.51	-496.48	5,890.91	0.00	0.00	0.00
12,500.00	90.00	179.92	6,806.00	-5,974.51	-496.35	5,990.80	0.00	0.00	0.00
12,600.00	90.00	179.92	6,806.00	-6,074.51	-496.22	6,090.70	0.00	0.00	0.00
12,700.00	90.00	179.92	6,806.00	-6,174.51	-496.08	6,190.59	0.00	0.00	0.00
12,800.00	90.00	179.92	6,806.00	-6,274.51	-495.95	6,290.48	0.00	0.00	0.00
12,900.00	90.00	179.92	6,806.00	-6,374.51	-495.82	6,390.37	0.00	0.00	0.00
13,000.00	90.00	179.92	6,806.00	-6,474.51	-495.68	6,490.27	0.00	0.00	0.00
13,100.00	90.00	179.92	6,806.00	-6,574.51	-495.55	6,590.16	0.00	0.00	0.00
13,200.00	90.00	179.92	6,806.00	-6,674.51	-495.42	6,690.05	0.00	0.00	0.00
13,300.00	90.00	179.92	6,806.00	-6,774.51	-495.28	6,789.94	0.00	0.00	0.00
13,400.00	90.00	179.92	6,806.00	-6,874.51	-495.15	6,889.84	0.00	0.00	0.00
13,500.00	90.00	179.92	6,806.00	-6,974.51	-495.01	6,989.73	0.00	0.00	0.00
13,600.00	90.00	179.92	6,806.00	-7,074.51	-494.88	7,089.62	0.00	0.00	0.00
13,700.00	90.00	179.92	6,806.00	-7,174.51	-494.75	7,189.51	0.00	0.00	0.00
13,800.00	90.00	179.92	6,806.00	-7,274.51	-494.61	7,289.40	0.00	0.00	0.00
13,900.00	90.00	179.92	6,806.00	-7,374.51	-494.48	7,389.30	0.00	0.00	0.00
14,000.00	90.00	179.92	6,806.00	-7,474.51	-494.35	7,489.19	0.00	0.00	0.00
14,100.00	90.00	179.92	6,806.00	-7,574.51	-494.21	7,589.08	0.00	0.00	0.00
14,200.00	90.00	179.92	6,806.00	-7,674.51	-494.08	7,688.97	0.00	0.00	0.00
14,300.00	90.00	179.92	6,806.00	-7,774.51	-493.95	7,788.87	0.00	0.00	0.00
14,400.00	90.00	179.92	6,806.00	-7,874.50	-493.81	7,888.76	0.00	0.00	0.00
14,500.00	90.00	179.92	6,806.00	-7,974.50	-493.68	7,988.65	0.00	0.00	0.00
14,600.00	90.00	179.92	6,806.00	-8,074.50	-493.55	8,088.54	0.00	0.00	0.00
14,700.00	90.00	179.92	6,806.00	-8,174.50	-493.41	8,188.44	0.00	0.00	0.00
14,800.00	90.00	179.92	6,806.00	-8,274.50	-493.28	8,288.33	0.00	0.00	0.00
14,900.00	90.00	179.92	6,806.00	-8,374.50	-493.15	8,388.22	0.00	0.00	0.00
15,000.00	90.00	179.92	6,806.00	-8,474.50	-493.01	8,488.11	0.00	0.00	0.00
15,100.00	90.00	179.92	6,806.00	-8,574.50	-492.88	8,588.00	0.00	0.00	0.00
15,200.00	90.00	179.92	6,806.00	-8,674.50	-492.75	8,687.90	0.00	0.00	0.00
15,300.00	90.00	179.92	6,806.00	-8,774.50	-492.61	8,787.79	0.00	0.00	0.00
15,400.00	90.00	179.92	6,806.00	-8,874.50	-492.48	8,887.68	0.00	0.00	0.00
15,500.00	90.00	179.92	6,806.00	-8,974.50	-492.35	8,987.57	0.00	0.00	0.00
15,600.00	90.00	179.92	6,806.00	-9,074.50	-492.21	9,087.47	0.00	0.00	0.00
15,700.00	90.00	179.92	6,806.00	-9,174.50	-492.08	9,187.36	0.00	0.00	0.00
15,800.00	90.00	179.92	6,806.00	-9,274.50	-491.95	9,287.25	0.00	0.00	0.00
15,900.00	90.00	179.92	6,806.00	-9,374.50	-491.81	9,387.14	0.00	0.00	0.00
16,000.00	90.00	179.92	6,806.00	-9,474.50	-491.68	9,487.04	0.00	0.00	0.00
16,100.00	90.00	179.92	6,806.00	-9,574.50	-491.55	9,586.93	0.00	0.00	0.00
16,200.00	90.00	179.92	6,806.00	-9,674.50	-491.41	9,686.82	0.00	0.00	0.00
16,300.00	90.00	179.92	6,806.00	-9,774.50	-491.28	9,786.71	0.00	0.00	0.00
16,400.00	90.00	179.92	6,806.00	-9,874.50	-491.14	9,886.60	0.00	0.00	0.00
16,500.00	90.00	179.92	6,806.00	-9,974.50	-491.01	9,986.50	0.00	0.00	0.00
16,600.00	90.00	179.92	6,806.00	-10,074.50	-490.88	10,086.39	0.00	0.00	0.00
16,700.00	90.00	179.92	6,806.00	-10,174.50	-490.74	10,186.28	0.00	0.00	0.00
16,800.00	90.00	179.92	6,806.00	-10,274.50	-490.61	10,286.17	0.00	0.00	0.00

Database:	EDMP	**Local Co-ordinate Reference:**	Well Guttersen D09-745
Company:	Northern Region - DJ Basin	**TVD Reference:**	Well @ 4750.00ft
Project:	Mustang	**MD Reference:**	Well @ 4750.00ft
Site:	C Section 33	**North Reference:**	Grid
Well:	Guttersen D09-745	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Guttersen D09-745		
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)
16,900.00	90.00	179.92	6,806.00	-10,374.50	-490.48	10,386.07	0.00	0.00	0.00
17,000.00	90.00	179.92	6,806.00	-10,474.50	-490.34	10,485.96	0.00	0.00	0.00
17,100.00	90.00	179.92	6,806.00	-10,574.50	-490.21	10,585.85	0.00	0.00	0.00
17,200.00	90.00	179.92	6,806.00	-10,674.50	-490.08	10,685.74	0.00	0.00	0.00
17,300.00	90.00	179.92	6,806.00	-10,774.50	-489.94	10,785.64	0.00	0.00	0.00
17,384.45	90.00	179.92	6,806.00	-10,858.95	-489.83	10,869.99	0.00	0.00	0.00
TD @ 17384.45' MD/6806.00' TVD									

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 D09-745-Sl - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	1,340,074.81	3,264,337.16	40.2630290	-104.5527850
Guttersen D09-745-K - plan hits target center - Point	0.00	0.00	6,180.76	-37.72	-427.75	1,340,037.09	3,263,909.41	40.2629380	-104.5543191
Guttersen D09-745-Bl - plan hits target center - Point	0.00	0.00	6,806.00	-10,858.95	-489.83	1,329,215.88	3,263,847.33	40.2332363	-104.5549548
Guttersen D09-745-Tl - plan hits target center - Point	0.00	0.00	6,806.00	-674.40	-503.42	1,339,400.41	3,263,833.74	40.2611926	-104.5546145

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
456.00	456.00	Pierre			
589.00	589.00	Upper Pierre Aquifer Top			
1,509.00	1,509.00	Upper Pierre Aquifer Base			
3,594.35	3,588.00	Parkman			
4,002.39	3,993.00	Sussex			
4,558.54	4,545.00	Shannon			
5,948.92	5,925.00	Teepee Buttes			
6,695.74	6,618.00	Sharon Springs			
6,735.19	6,645.00	Top A Chalk			
6,758.33	6,660.00	Top A Marl			
6,785.84	6,677.00	Top B Chalk			
6,857.90	6,717.00	Top B Marl			
6,993.23	6,773.00	Top C Chalk			
7,128.18	6,802.00	Top C Marl			

Database:	EDMP	**Local Co-ordinate Reference:**	Well Guttersen D09-745
Company:	Northern Region - DJ Basin	**TVD Reference:**	Well @ 4750.00ft
Project:	Mustang	**MD Reference:**	Well @ 4750.00ft
Site:	C Section 33	**North Reference:**	Grid
Well:	Guttersen D09-745	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Guttersen D09-745		
Design:	Plan #1		

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
2,510.00	2,510.00	0.00	0.00	Build: 2°/100'
2,860.18	2,859.31	-1.88	-21.29	Hold: 7.00° Inc, 264.96° Azm
6,206.60	6,180.76	-37.72	-427.75	KOP: Build 9°/100' @ 6206.60' MD
7,199.89	6,806.00	-674.40	-503.42	LP: 7199.89' MD, 90.00° Inc, 179.92° Azm
17,384.45	6,806.00	-10,858.95	-489.83	TD @ 17384.45' MD/6806.00' TVD

Northern Region - DJ Basin

Mustang
C Section 33
Guttersen D09-745

Guttersen D09-745
Plan #1

Anticollision Summary Report

08 October, 2018

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen D09-745
Project:	Mustang	**TVD Reference:**	Well @ 4750.00ft
Reference Site:	C Section 33	**MD Reference:**	Well @ 4750.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen D09-745	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen D09-745	**Database:**	EDMP
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Reference	Plan #1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	**Error Model:**	ISCWSA
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.00 ft	**Error Surface:**	Pedal Curve
Warning Levels Evaluated at:	2.00 **Sigma**	**Casing Method:**	Not applied

Survey Tool Program **Date** 10/8/2018

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	17,384.45	Plan #1 (Guttersen D09-745)	2_MWD+IFR1+MS	A008Mb: IFR dec & multi-station analysis

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
C Section 32						
HENNINGTON C #32-10(PR) - Wellbore #1 - No Surveys	6,440.15	6,426.96	5,261.35	5,182.58	66.796	CC
HENNINGTON C #32-10(PR) - Wellbore #1 - No Surveys	6,450.00	6,436.02	5,261.37	5,182.49	66.702	ES
HENNINGTON C #32-10(PR) - Wellbore #1 - No Surveys	7,000.00	6,795.11	5,348.38	5,264.81	63.999	SF
HENNINGTON C #32-2(PR) - Wellbore #1 - No Surveys	6,291.62	6,285.83	6,653.98	6,576.88	86.296	CC
HENNINGTON C #32-2(PR) - Wellbore #1 - No Surveys	6,300.00	6,294.06	6,654.02	6,576.81	86.183	ES
HENNINGTON C #32-2(PR) - Wellbore #1 - No Surveys	6,850.00	6,733.94	6,808.00	6,725.29	82.314	SF
HENNINGTON C #32-7(PA) - Wellbore #1 - Gyro Survey	6,311.41	6,181.79	5,984.66	5,940.94	136.873	CC, ES
HENNINGTON C #32-7(PA) - Wellbore #1 - Gyro Survey	6,950.00	6,520.94	6,146.91	6,100.11	131.348	SF
HOWELL #1(SI) - Wellbore #1 - No Surveys	6,745.21	6,701.57	7,145.24	7,063.19	87.084	CC
HOWELL #1(SI) - Wellbore #1 - No Surveys	6,750.00	6,704.67	7,145.25	7,063.16	87.041	ES
HOWELL #1(SI) - Wellbore #1 - No Surveys	9,000.00	6,856.00	7,682.45	7,591.49	84.465	SF
HOWELL #32-1(SI) - Wellbore #1 - No Surveys	6,386.34	6,390.53	6,893.11	6,814.83	88.051	CC
HOWELL #32-1(SI) - Wellbore #1 - No Surveys	6,400.00	6,403.47	6,893.17	6,814.73	87.872	ES
HOWELL #32-1(SI) - Wellbore #1 - No Surveys	7,050.00	6,822.57	7,030.58	6,946.65	83.767	SF
HOWELL #32-2(SI) - Wellbore #1 - NoSurveys	6,322.55	6,323.10	7,481.74	7,404.22	96.522	CC
HOWELL #32-2(SI) - Wellbore #1 - NoSurveys	6,350.00	6,349.72	7,482.06	7,404.22	96.119	ES
HOWELL #32-2(SI) - Wellbore #1 - NoSurveys	6,950.00	6,785.95	7,643.39	7,560.00	91.656	SF
HOWELL #32-23(PR) - Wellbore #1 - No Surveys	6,397.63	6,428.23	8,094.12	8,015.48	102.914	CC
HOWELL #32-23(PR) - Wellbore #1 - No Surveys	6,400.00	6,430.47	8,094.13	8,015.45	102.878	ES
HOWELL #32-23(PR) - Wellbore #1 - No Surveys	7,050.00	6,849.57	8,220.01	8,135.84	97.667	SF
HOWELL #C 32-12(SI) - Wellbore #1 - No Surveys	6,570.74	6,596.73	7,825.20	7,744.55	97.035	CC
HOWELL #C 32-12(SI) - Wellbore #1 - No Surveys	6,600.00	6,620.61	7,825.36	7,744.42	96.679	ES
HOWELL #C 32-12(SI) - Wellbore #1 - No Surveys	7,150.00	6,879.06	7,893.20	7,808.59	93.298	SF
MCGUIRK-HOWELL C #32-11(SI) - Wellbore #1 - No Su	6,488.52	6,483.88	6,578.11	6,498.70	82.836	CC
MCGUIRK-HOWELL C #32-11(SI) - Wellbore #1 - No Su	6,500.00	6,494.08	6,578.14	6,498.60	82.705	ES
MCGUIRK-HOWELL C #32-11(SI) - Wellbore #1 - No Su	7,100.00	6,831.24	6,667.77	6,583.67	79.286	SF
MCGUIRK-HOWELL C #32-14(TA) - Wellbore #1 - No Su	6,858.98	6,756.55	6,466.81	6,383.99	78.083	CC, ES
MCGUIRK-HOWELL C #32-14(TA) - Wellbore #1 - No Su	8,700.00	6,845.00	6,834.28	6,744.73	76.319	SF
MCGUIRK-HOWELL C #32-4(SI) - Wellbore #1 - No Sur	6,337.00	6,385.14	8,724.58	8,646.49	111.718	CC
MCGUIRK-HOWELL C #32-4(SI) - Wellbore #1 - No Sur	6,350.00	6,397.72	8,724.65	8,646.40	111.497	ES
MCGUIRK-HOWELL C #32-4(SI) - Wellbore #1 - No Sur	7,000.00	6,851.11	8,890.18	8,806.10	105.745	SF
NELSON #32-25(PR) - Wellbore #1 - No Surveys	6,355.00	6,391.54	7,861.47	7,783.27	100.527	CC, ES
NELSON #32-25(PR) - Wellbore #1 - No Surveys	7,000.00	6,840.11	8,007.20	7,923.23	95.352	SF
PLUSS #32-43(PA) - Wellbore #1 - Gyro Surveys	6,830.76	6,540.75	5,299.59	5,253.03	113.817	CC
PLUSS #32-43(PA) - Wellbore #1 - Gyro Surveys	6,850.00	6,547.73	5,299.65	5,253.01	113.633	ES
PLUSS #32-43(PA) - Wellbore #1 - Gyro Surveys	9,200.00	6,554.51	5,908.55	5,853.82	107.944	SF
PTF #C 32-1(SI) - Wellbore #1 - No Surveys	6,272.85	6,259.36	5,499.19	5,422.36	71.578	CC, ES

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 Guttersen D09-745
Project:	Mustang	**TVD Reference:**	Well @ 4750.00ft
Reference Site:	C Section 33	**MD Reference:**	Well @ 4750.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen D09-745	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen D09-745	**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
C Section 32						
PTF #C 32-1(SI) - Wellbore #1 - No Surveys	6,750.00	6,667.67	5,626.95	5,545.06	68.716	SF
PTF #C 32-16(SI) - Wellbore #1 - No Surveys	6,767.56	6,679.81	3,719.08	3,637.16	45.400	CC
PTF #C 32-16(SI) - Wellbore #1 - No Surveys	6,800.00	6,699.39	3,719.30	3,637.12	45.259	ES
PTF #C 32-16(SI) - Wellbore #1 - No Surveys	7,100.00	6,812.24	3,744.34	3,660.45	44.631	SF
PTF #C 32-8(SI) - Wellbore #1 - No Surveys	6,309.62	6,285.48	4,584.84	4,507.69	59.428	CC, ES
PTF #C 32-8(SI) - Wellbore #1 - No Surveys	6,800.00	6,688.39	4,695.15	4,612.97	57.130	SF
PTF #C 32-9(SI) - Wellbore #1 - No Surveys	6,414.49	6,388.10	3,932.44	3,854.09	50.191	CC
PTF #C 32-9(SI) - Wellbore #1 - No Surveys	6,450.00	6,421.02	3,932.81	3,854.05	49.936	ES
PTF #C 32-9(SI) - Wellbore #1 - No Surveys	6,900.00	6,742.18	4,005.56	3,922.68	48.332	SF

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen D09-745
Project:	Mustang	**TVD Reference:**	Well @ 4750.00ft
Reference Site:	C Section 33	**MD Reference:**	Well @ 4750.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen D09-745	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen D09-745	**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
C Section 33						
GUTTERSEN C #33-31D - GUTTERSEN C #33-31D OH	700.00	751.50	3,846.00	3,842.41	1,068.766	CC, ES
GUTTERSEN C #33-31D - GUTTERSEN C #33-31D OH	6,650.00	6,836.45	4,824.62	4,774.43	96.140	SF
GUTTERSEN C #33-32 - Wellbore #1 - No Surveys	6,308.46	6,304.66	3,522.48	3,250.32	12.943	CC
GUTTERSEN C #33-32 - Wellbore #1 - No Surveys	6,350.00	6,335.72	3,523.29	3,249.74	12.880	ES
GUTTERSEN C #33-32 - Wellbore #1 - No Surveys	6,700.00	6,635.00	3,594.69	3,308.06	12.541	SF
GUTTERSEN C #33-33D - GUTTERSEN C #33-33D OH	6,444.31	6,581.17	3,287.76	3,234.73	61.996	CC
GUTTERSEN C #33-33D - GUTTERSEN C #33-33D OH	6,450.00	6,588.07	3,287.77	3,234.70	61.954	ES
GUTTERSEN C #33-33D - GUTTERSEN C #33-33D OH	6,850.00	6,911.13	3,333.10	3,278.03	60.526	SF
Guttersen C28-715 - Guttersen C28-715 - Plan #1	2,200.00	2,198.00	164.57	149.27	10.756	CC, ES
Guttersen C28-715 - Guttersen C28-715 - Plan #1	2,400.00	2,388.55	170.12	153.48	10.223	SF
Guttersen C28-725 - Guttersen C28-725 - Plan #1	2,200.00	2,196.00	156.62	141.33	10.242	CC, ES
Guttersen C28-725 - Guttersen C28-725 - Plan #1	2,400.00	2,386.09	162.67	146.05	9.786	SF
Guttersen C28-735 - Guttersen C28-735 - Plan #1	2,200.00	2,195.00	151.54	136.25	9.912	CC, ES
Guttersen C28-735 - Guttersen C28-735 - Plan #1	2,400.00	2,384.97	157.82	141.21	9.501	SF
Guttersen C28-745 - Guttersen C28-745 - Plan #1	6,891.89	7,100.31	60.22	11.88	1.246	Level 3, CC, ES, SF
Guttersen C28-750 - Guttersen C28-750 - Plan #1	2,200.00	2,194.00	151.63	136.35	9.920	CC, ES
Guttersen C28-750 - Guttersen C28-750 - Plan #1	7,240.09	6,938.20	348.01	298.51	7.031	SF
Guttersen C28-755 - Guttersen C28-755 - Plan #1	7,057.36	7,192.28	707.16	657.92	14.360	CC, ES, SF
Guttersen C28-765 - Guttersen C28-765 - Plan #1	7,023.52	6,995.18	1,357.61	1,309.41	28.167	CC, ES
Guttersen C28-765 - Guttersen C28-765 - Plan #1	7,050.00	6,976.54	1,357.75	1,309.53	28.156	SF
Guttersen C28-770 - Guttersen C28-770 - Plan #1	7,268.02	6,861.66	1,669.64	1,620.81	34.197	CC, ES
Guttersen C28-770 - Guttersen C28-770 - Plan #1	7,400.00	6,782.62	1,672.65	1,623.68	34.153	SF
Guttersen C28-775 - Guttersen C28-775 - Plan #1	7,320.90	6,714.37	1,986.04	1,937.33	40.773	CC, ES
Guttersen C28-775 - Guttersen C28-775 - Plan #1	7,500.00	6,626.52	1,991.67	1,942.75	40.707	SF
Guttersen C28-785 - Guttersen C28-785 - Plan #1	2,200.00	2,204.00	2,068.45	2,053.13	135.007	CC, ES
Guttersen C28-785 - Guttersen C28-785 - Plan #1	8,000.00	6,335.03	2,628.30	2,577.95	52.194	SF
GUTTERSEN D #03-30D - Wellbore #1 - No Surveys	6,485.01	6,411.74	1,108.52	831.23	3.998	CC
GUTTERSEN D #03-30D - Wellbore #1 - No Surveys	6,550.00	6,468.36	1,109.88	830.11	3.967	ES
GUTTERSEN D #03-30D - Wellbore #1 - No Surveys	6,650.00	6,548.57	1,118.03	834.74	3.947	SF
Guttersen D09-721 - Guttersen D09-721 - Plan #1	2,200.00	2,202.00	22.60	7.29	1.476	Level 3, CC, ES, SF
Guttersen D09-750 - Guttersen D09-750 - Plan #1	2,200.00	2,200.00	22.61	7.30	1.477	Level 3, CC, ES, SF
Guttersen D09-755 - Guttersen D09-755 - Plan #1	7,698.28	7,646.10	638.67	587.62	12.512	CC
Guttersen D09-755 - Guttersen D09-755 - Plan #1	17,384.45	17,330.96	658.30	474.59	3.583	ES, SF
Guttersen D09-765 - Guttersen D09-765 - Plan #1	7,154.06	7,114.15	1,299.21	1,250.57	26.708	CC
Guttersen D09-765 - Guttersen D09-765 - Plan #1	17,384.45	17,355.97	1,304.28	1,120.42	7.094	ES, SF
Guttersen D09-770 - Guttersen D09-770 - Plan #1	6,910.19	6,853.30	1,627.78	1,580.11	34.146	CC
Guttersen D09-770 - Guttersen D09-770 - Plan #1	17,384.45	17,465.40	1,634.67	1,451.19	8.909	ES, SF
Guttersen D09-775 - Guttersen D09-775 - Plan #1	6,480.33	6,244.85	1,885.37	1,840.76	42.259	CC
Guttersen D09-775 - Guttersen D09-775 - Plan #1	17,384.45	17,300.73	1,957.58	1,773.48	10.633	ES, SF
Guttersen D09-785 - Guttersen D09-785 - Plan #1	2,200.00	2,205.00	2,061.24	2,045.91	134.505	CC, ES
Guttersen D09-785 - Guttersen D09-785 - Plan #1	17,384.45	17,477.38	2,608.64	2,424.46	14.164	SF
LINDSAY #33-1 - LINDSAY #33-1 OH - As-Drilled	4,609.61	4,562.30	195.66	163.68	6.119	CC
LINDSAY #33-1 - LINDSAY #33-1 OH - As-Drilled	4,700.00	4,651.13	196.21	163.60	6.016	ES
LINDSAY #33-1 - LINDSAY #33-1 OH - As-Drilled	5,200.00	5,149.04	207.71	171.56	5.746	SF
LINDSAY #33-3 - Wellbore #1 - No Surverys	6,230.65	6,175.62	3,075.91	2,808.79	11.515	CC
LINDSAY #33-3 - Wellbore #1 - No Surverys	6,250.00	6,205.21	3,076.18	2,807.81	11.463	ES
LINDSAY #33-3 - Wellbore #1 - No Surverys	6,550.00	6,475.36	3,149.61	2,869.44	11.242	SF
LINDSAY #33-4 - Wellbore #1 - No Surveys	2,510.00	2,481.00	2,849.60	2,743.60	26.882	CC
LINDSAY #33-4 - Wellbore #1 - No Surveys	6,250.00	6,205.21	2,885.44	2,617.10	10.753	ES
LINDSAY #33-4 - Wellbore #1 - No Surveys	6,450.00	6,387.02	2,933.53	2,657.24	10.617	SF
LINDSAY #33-5 - Wellbore #1 - No Surveys	3,470.92	3,421.50	1,527.75	1,380.78	10.395	CC
LINDSAY #33-5 - Wellbore #1 - No Surveys	6,206.60	6,136.76	1,563.74	1,298.30	5.891	ES
LINDSAY #33-5 - Wellbore #1 - No Surveys	6,350.00	6,277.72	1,583.46	1,311.87	5.830	SF

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen D09-745
Project:	Mustang	**TVD Reference:**	Well @ 4750.00ft
Reference Site:	C Section 33	**MD Reference:**	Well @ 4750.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen D09-745	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen D09-745	**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
C Section 33						
LINDSAY #33-6 - Wellbore #1 - No Surveys	6,255.92	5,808.64	1,904.58	1,652.07	7.543	CC
LINDSAY #33-6 - Wellbore #1 - No Surveys	6,300.00	5,852.06	1,905.83	1,651.43	7.491	ES
LINDSAY #33-6 - Wellbore #1 - No Surveys	6,450.00	6,004.98	1,928.96	1,667.93	7.390	SF
LINDSAY #33-7 - Wellbore #1 - No Surveys	6,221.19	6,174.24	4,331.82	4,064.80	16.223	CC
LINDSAY #33-7 - Wellbore #1 - No Surveys	6,250.00	6,202.79	4,332.45	4,064.18	16.149	ES
LINDSAY #33-7 - Wellbore #1 - No Surveys	6,600.00	6,524.61	4,437.97	4,155.69	15.722	SF
LINDSAY #33-8 - Wellbore #1 - No Surveys	2,510.00	2,508.00	4,155.82	4,048.74	38.809	CC
LINDSAY #33-8 - Wellbore #1 - No Surveys	6,206.60	6,162.76	4,187.55	3,921.06	15.714	ES
LINDSAY #33-8 - Wellbore #1 - No Surveys	6,550.00	6,486.36	4,283.00	4,002.42	15.265	SF
LINDSAY #C33-10 - Wellbore #1 - No Surveys	6,245.97	6,214.80	4,896.98	4,628.25	18.223	CC
LINDSAY #C33-10 - Wellbore #1 - No Surveys	6,300.00	6,268.06	4,898.96	4,627.91	18.074	ES
LINDSAY #C33-10 - Wellbore #1 - No Surveys	6,700.00	6,616.00	5,032.42	4,746.21	17.583	SF
LINDSAY #C33-11 - LINDSAY #C33-11 OH - As-Drilled	6,281.79	6,316.21	3,871.84	3,827.73	87.773	CC, ES
LINDSAY #C33-11 - LINDSAY #C33-11 OH - As-Drilled	6,650.00	6,569.32	3,955.38	3,909.16	85.592	SF
LINDSAY #C33-12 - Wellbore #1 - No Surveys	6,320.03	6,274.64	2,871.80	2,600.49	10.585	CC
LINDSAY #C33-12 - Wellbore #1 - No Surveys	6,350.00	6,303.72	2,872.20	2,599.62	10.537	ES
LINDSAY #C33-12 - Wellbore #1 - No Surveys	6,700.00	6,603.00	2,936.84	2,651.17	10.281	SF
LINDSAY #C33-13 - LINDSAY #C33-13 OH - As-Drilled	6,632.01	6,551.09	2,446.78	2,400.77	53.179	CC
LINDSAY #C33-13 - LINDSAY #C33-13 OH - As-Drilled	6,650.00	6,564.01	2,446.86	2,400.75	53.065	ES
LINDSAY #C33-13 - LINDSAY #C33-13 OH - As-Drilled	6,950.00	6,729.31	2,474.52	2,427.01	52.083	SF
LINDSAY #C33-14 - Wellbore #1 - No Surveys	2,510.00	2,509.00	4,280.56	4,173.44	39.959	CC
LINDSAY #C33-14 - Wellbore #1 - No Surveys	3,700.00	3,673.86	4,322.81	4,164.94	27.382	ES
LINDSAY #C33-14 - Wellbore #1 - No Surveys	6,600.00	6,526.61	4,569.75	4,287.49	16.190	SF
LINDSAY #C33-15 - Wellbore #1 - No Surveys	2,510.00	2,477.00	3,028.40	2,922.75	28.666	CC
LINDSAY #C33-15 - Wellbore #1 - No Surveys	2,800.00	2,766.51	3,034.75	2,916.53	25.670	ES
LINDSAY #C33-15 - Wellbore #1 - No Surveys	6,500.00	6,428.08	3,314.34	3,036.53	11.930	SF
LINDSAY #C33-16 - Wellbore #1 - No Surveys	2,510.00	2,464.00	1,109.06	1,003.73	10.530	CC
LINDSAY #C33-16 - Wellbore #1 - No Surveys	2,600.00	2,553.99	1,110.46	1,001.22	10.165	ES
LINDSAY #C33-16 - Wellbore #1 - No Surveys	6,550.00	6,458.36	1,594.01	1,314.73	5.707	SF
LINDSAY #C33-9 - Wellbore #1 - No Surveys	2,510.00	2,459.00	1,894.96	1,789.84	18.026	CC
LINDSAY #C33-9 - Wellbore #1 - No Surveys	2,700.00	2,648.86	1,898.97	1,785.59	16.750	ES
LINDSAY #C33-9 - Wellbore #1 - No Surveys	6,400.00	6,318.47	2,231.44	1,958.18	8.166	SF
LINDSAY C #33-17 - Wellbore #1 - No Surveys	2,510.00	2,510.00	3,496.02	3,388.85	32.623	CC
LINDSAY C #33-17 - Wellbore #1 - No Surveys	6,206.60	6,160.76	3,587.42	3,321.03	13.467	ES
LINDSAY C #33-17 - Wellbore #1 - No Surveys	6,450.00	6,403.98	3,640.44	3,363.49	13.145	SF
LINDSAY C #33-18 - Wellbore #1 - As-Drilled	1,100.33	1,091.36	2,895.13	2,880.92	203.833	CC
LINDSAY C #33-18 - Wellbore #1 - As-Drilled	1,200.00	1,147.00	2,895.94	2,880.64	189.318	ES
LINDSAY C #33-18 - Wellbore #1 - As-Drilled	6,500.00	6,516.67	3,620.81	3,510.22	32.740	SF
LINDSAY C #33-19 - Wellbore #1 - No Surveys	6,242.17	6,204.03	3,940.34	3,672.05	14.687	CC
LINDSAY C #33-19 - Wellbore #1 - No Surveys	6,250.00	6,211.79	3,940.38	3,671.76	14.669	ES
LINDSAY C #33-19 - Wellbore #1 - No Surveys	6,550.00	6,507.64	4,005.21	3,723.75	14.230	SF
LINDSAY C #33-20 - Wellbore #1 - No Surveys	6,268.11	6,225.69	2,681.87	2,412.65	9.962	CC
LINDSAY C #33-20 - Wellbore #1 - No Surveys	6,300.00	6,257.06	2,682.48	2,411.89	9.913	ES
LINDSAY C #33-20 - Wellbore #1 - No Surveys	6,550.00	6,488.36	2,729.39	2,448.71	9.724	SF
LINDSAY C #33-21 - Wellbore #1 - No Surveys	6,217.67	6,158.74	2,087.19	1,820.80	7.835	CC
LINDSAY C #33-21 - Wellbore #1 - No Surveys	6,250.00	6,209.21	2,088.00	1,819.47	7.776	ES
LINDSAY C #33-21 - Wellbore #1 - No Surveys	6,400.00	6,336.47	2,112.66	1,838.52	7.706	SF
LINDSAY C #33-22 - Wellbore #1 - No Surveys	2,510.00	2,474.00	2,057.48	1,951.76	19.461	CC
LINDSAY C #33-22 - Wellbore #1 - No Surveys	4,100.00	4,053.88	2,112.57	1,938.08	12.107	ES
LINDSAY C #33-22 - Wellbore #1 - No Surveys	6,400.00	6,333.47	2,254.61	1,980.67	8.231	SF
LINDSAY C #33-23 - Wellbore #1 - No Surveys	2,510.00	2,463.00	927.75	822.47	8.812	CC
LINDSAY C #33-23 - Wellbore #1 - No Surveys	2,800.00	2,752.51	935.13	817.27	7.934	ES
LINDSAY C #33-23 - Wellbore #1 - No Surveys	6,300.00	6,226.06	1,213.92	944.69	4.509	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 Guttersen D09-745
Project:	Mustang	**TVD Reference:**	Well @ 4750.00ft
Reference Site:	C Section 33	**MD Reference:**	Well @ 4750.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen D09-745	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen D09-745	**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
C Section 33						
LINDSAY C #33-24 - Wellbore #1 - No Surveys	6,243.21	6,181.06	990.14	722.77	3.703	CC
LINDSAY C #33-24 - Wellbore #1 - No Surveys	6,250.00	6,187.79	990.17	722.51	3.699	ES
LINDSAY C #33-24 - Wellbore #1 - No Surveys	6,350.00	6,285.72	998.14	726.20	3.670	SF
LINDSAY C #33-25 - Wellbore #1 - No Surveys	6,360.54	6,307.87	1,885.80	1,613.05	6.914	CC
LINDSAY C #33-25 - Wellbore #1 - No Surveys	6,450.00	6,407.98	1,888.80	1,611.74	6.817	ES
LINDSAY C #33-25 - Wellbore #1 - No Surveys	6,650.00	6,560.57	1,918.89	1,635.08	6.761	SF

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen D09-745
Project:	Mustang	**TVD Reference:**	Well @ 4750.00ft
Reference Site:	C Section 33	**MD Reference:**	Well @ 4750.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen D09-745	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen D09-745	**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
C Section 34						
ALOYSIOUS #C34-11(PA) - Wellbore #1 - Gyro Surveys	165.86	110.66	4,007.68	4,007.12	7,199.119	CC
ALOYSIOUS #C34-11(PA) - Wellbore #1 - Gyro Surveys	2,510.00	2,433.13	4,010.28	3,993.19	234.697	ES
ALOYSIOUS #C34-11(PA) - Wellbore #1 - Gyro Surveys	6,850.00	6,728.32	4,551.25	4,504.16	96.656	SF
ALOYSIOUS #C34-8(PR) - Wellbore #1 - No Surveys	2,510.00	2,453.00	3,708.40	3,678.23	122.912	CC
ALOYSIOUS #C34-8(PR) - Wellbore #1 - No Surveys	2,600.00	2,542.99	3,709.40	3,678.12	118.623	ES
ALOYSIOUS #C34-8(PR) - Wellbore #1 - No Surveys	6,600.00	6,488.61	4,141.35	4,061.60	51.933	SF
ALOYSIOUS #C34-9(SI) - Wellbore #1 - Gyro Surveys	2,535.28	2,531.44	6,513.41	6,495.87	371.317	CC, ES
ALOYSIOUS #C34-9(SI) - Wellbore #1 - Gyro Surveys	7,050.00	6,756.44	7,125.00	7,077.44	149.821	SF
ALOYSIUS #34-1(PR) - Wellbore #1 - No Surveys	2,510.00	2,483.00	4,796.73	4,766.29	157.616	CC
ALOYSIUS #34-1(PR) - Wellbore #1 - No Surveys	2,600.00	2,572.99	4,797.53	4,766.00	152.146	ES
ALOYSIUS #34-1(PR) - Wellbore #1 - No Surveys	6,650.00	6,557.57	5,207.60	5,127.10	64.689	SF
ALOYSIUS #34-2(PR) - Wellbore #1 - No Surveys	2,510.00	2,452.00	6,283.51	6,253.34	208.322	CC, ES
ALOYSIUS #34-2(PR) - Wellbore #1 - No Surveys	7,199.89	6,748.00	6,845.74	6,762.39	82.129	SF
ALOYSIUS #34-3(PR) - Wellbore #1 - No Surveys	2,510.00	2,457.00	5,575.73	5,545.53	184.589	CC
ALOYSIUS #34-3(PR) - Wellbore #1 - No Surveys	2,600.00	2,546.99	5,576.76	5,545.45	178.140	ES
ALOYSIUS #34-3(PR) - Wellbore #1 - No Surveys	6,750.00	6,601.67	6,095.57	6,014.49	75.173	SF
ALOYSIUS #34-4(SI) - Wellbore #1 - No Surveys	2,510.00	2,450.00	4,635.72	4,605.58	153.781	CC, ES
ALOYSIUS #34-4(SI) - Wellbore #1 - No Surveys	6,750.00	6,594.67	5,179.67	5,098.65	63.931	SF
ALOYSIUS #34-5(PA) - Wellbore #1 - Gyro Surveys	2,421.15	2,362.26	5,260.15	5,243.63	318.376	CC
ALOYSIUS #34-5(PA) - Wellbore #1 - Gyro Surveys	2,510.00	2,436.45	5,260.30	5,243.20	307.620	ES
ALOYSIUS #34-5(PA) - Wellbore #1 - Gyro Surveys	6,950.00	6,698.17	5,896.94	5,849.79	125.068	SF
ALOYSIUS #34-6(PR) - Wellbore #1 - Gyro Surveys	1,061.48	1,009.84	3,726.18	3,719.25	538.105	CC
ALOYSIUS #34-6(PR) - Wellbore #1 - Gyro Surveys	2,533.88	2,512.04	3,727.15	3,709.71	213.660	ES
ALOYSIUS #34-6(PR) - Wellbore #1 - Gyro Surveys	7,100.00	6,752.25	4,234.08	4,186.33	88.679	SF
ALOYSIUS #34-7(PR) - Wellbore #1 - Gyro Surveys	2,524.39	2,484.49	2,399.85	2,382.51	138.463	CC, ES
ALOYSIUS #34-7(PR) - Wellbore #1 - Gyro Surveys	6,900.00	6,666.70	2,919.98	2,872.98	62.126	SF
ALOYSIUS #C34-15(PR) - Wellbore #1 - No Surveys	2,510.00	2,453.00	5,036.52	5,006.35	166.931	CC, ES
ALOYSIUS #C34-15(PR) - Wellbore #1 - No Surveys	7,150.00	6,747.06	5,602.04	5,518.79	67.289	SF
Aloysius C #34-18(PA) - Wellbore #1 - Gyro Surveys	1,996.59	1,936.70	5,463.34	5,449.81	404.005	CC
Aloysius C #34-18(PA) - Wellbore #1 - Gyro Surveys	2,534.88	2,514.04	5,467.11	5,449.65	313.010	ES
Aloysius C #34-18(PA) - Wellbore #1 - Gyro Surveys	6,850.00	6,850.00	6,070.21	6,022.79	128.005	SF
ALOYSIUS C #34-19(PR) - Wellbore #1 - No Surveys	2,510.00	2,460.00	4,646.21	4,615.98	153.684	CC
ALOYSIUS C #34-19(PR) - Wellbore #1 - No Surveys	2,600.00	2,549.99	4,647.23	4,615.90	148.324	ES
ALOYSIUS C #34-19(PR) - Wellbore #1 - No Surveys	6,700.00	6,571.00	5,135.02	5,054.31	63.623	SF
Aloysius C #34-20D(PR) - Wellbore #1 - MWD Surveys	3,512.22	3,962.86	3,784.35	3,755.28	130.180	CC, ES
Aloysius C #34-20D(PR) - Wellbore #1 - MWD Surveys	6,700.00	6,717.51	4,158.22	4,109.00	84.475	SF
Aloysius C #34-21D(SI) - Wellbore #1 - MWD Surveys	3,366.55	4,013.36	5,001.87	4,971.23	163.273	CC
Aloysius C #34-21D(SI) - Wellbore #1 - MWD Surveys	3,700.00	4,295.52	5,003.03	4,969.51	149.239	ES
Aloysius C #34-21D(SI) - Wellbore #1 - MWD Surveys	6,750.00	6,764.48	5,370.61	5,319.11	104.286	SF
ALOYSIUS C #34-22D(PR) - Wellbore #1 - MWD Survey	2,796.33	3,454.01	6,336.07	6,310.99	252.558	CC
ALOYSIUS C #34-22D(PR) - Wellbore #1 - MWD Survey	2,800.00	3,455.86	6,336.08	6,310.97	252.329	ES
ALOYSIUS C #34-22D(PR) - Wellbore #1 - MWD Survey	6,900.00	6,857.47	6,812.59	6,761.45	133.210	SF
ALOYSIUS C #34-23(PR) - Wellbore #1 - Gyro Surveys	2,515.91	2,478.01	5,730.86	5,713.57	331.471	CC, ES
ALOYSIUS C #34-23(PR) - Wellbore #1 - Gyro Surveys	7,100.00	6,766.15	6,282.47	6,234.73	131.602	SF
Aloysius C #34-24(SI) - Wellbore #1 - No Surveys	2,510.00	2,455.00	4,600.32	4,570.13	152.386	CC, ES
Aloysius C #34-24(SI) - Wellbore #1 - No Surveys	7,000.00	6,720.11	5,196.06	5,113.36	62.833	SF
ALOYSIUS C #34-27D(PR) - Wellbore #1 - MWD Survey	2,738.09	3,250.00	7,528.98	7,506.31	332.093	CC, ES
ALOYSIUS C #34-27D(PR) - Wellbore #1 - MWD Survey	6,800.00	6,729.92	7,972.74	7,923.07	160.517	SF
ALOYSIUS C #34-28D(PA) - Wellbore #1 - Gyro Surveys	764.50	712.81	5,608.92	5,604.09	1,162.355	CC
ALOYSIUS C #34-28D(PA) - Wellbore #1 - Gyro Surveys	800.00	735.07	5,608.97	5,603.94	1,115.022	ES
ALOYSIUS C #34-28D(PA) - Wellbore #1 - Gyro Surveys	6,750.00	6,694.88	7,093.50	7,045.77	148.636	SF
Aloysius C #34-31(PA) - Wellbore #1 - Gyro Surveys	2,423.62	2,393.73	4,005.16	3,988.52	240.638	CC
Aloysius C #34-31(PA) - Wellbore #1 - Gyro Surveys	2,510.00	2,473.74	4,005.23	3,988.00	232.423	ES

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 Guttersen D09-745
Project:	Mustang	**TVD Reference:**	Well @ 4750.00ft
Reference Site:	C Section 33	**MD Reference:**	Well @ 4750.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen D09-745	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen D09-745	**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
C Section 34						
Aloysius C #34-31(PA) - Wellbore #1 - Gyro Surveys	6,550.00	6,559.08	4,361.06	4,315.31	95.318	SF
Aloysius C #34-32D(PR) - Wellbore #1 - MWD Surveys	2,798.24	3,088.98	2,845.42	2,822.41	123.659	CC
Aloysius C #34-32D(PR) - Wellbore #1 - MWD Surveys	2,800.00	3,090.60	2,845.42	2,822.39	123.563	ES
Aloysius C #34-32D(PR) - Wellbore #1 - MWD Surveys	6,450.00	6,570.97	3,120.84	3,067.88	58.921	SF
Aloysius C34-33D(PR) - Wellbore #1 - MWD Surveys	2,811.24	3,055.83	2,144.54	2,122.50	97.300	CC, ES
Aloysius C34-33D(PR) - Wellbore #1 - MWD Surveys	6,500.00	6,523.85	2,465.70	2,417.29	50.933	SF
Aloysius C34-99HZ - Original Drilling - Original Drilling - A	6,283.05	10,570.00	2,855.70	2,805.62	57.021	CC, ES
Aloysius C34-99HZ - Original Drilling - Original Drilling - A	8,500.00	10,570.00	3,873.13	3,787.26	45.105	SF
DONOVAN D #02-30(PR) - Wellbore #1 - No Surveys	2,510.00	2,456.00	6,831.47	6,801.27	226.227	CC, ES
DONOVAN D #02-30(PR) - Wellbore #1 - No Surveys	9,600.00	6,752.00	7,861.27	7,769.72	85.874	SF
Gittlein C22-770 - Wellbore #1 - Plan #1	6,515.00	7,605.12	3,562.82	3,512.39	70.653	CC, ES
Gittlein C22-770 - Wellbore #1 - Plan #1	6,900.00	7,400.00	3,574.35	3,523.60	70.434	SF
Gittlein C22-775 - Wellbore #1 - Plan #1	6,419.42	7,638.71	3,222.04	3,171.56	63.831	CC, ES
Gittlein C22-775 - Wellbore #1 - Plan #1	6,550.00	7,582.59	3,224.45	3,173.83	63.699	SF
Gittlein C22-785 - Wellbore #1 - Plan #1	6,438.95	7,708.12	2,683.32	2,631.91	52.190	CC, ES, SF
GUTTERSEN D #03-27(PR) - Wellbore #1 - No Surveys	2,510.00	2,456.00	5,694.77	5,664.57	188.585	CC, ES
GUTTERSEN D #03-27(PR) - Wellbore #1 - No Surveys	8,400.00	6,752.00	6,400.23	6,313.64	73.911	SF
LANE #34-2I4(PR) - Wellbore #1 - No Surveys	2,510.00	2,449.00	6,577.70	6,547.57	218.265	CC, ES
LANE #34-2I4(PR) - Wellbore #1 - No Surveys	6,850.00	6,651.94	7,176.48	7,094.76	87.818	SF
LANE #34-8I4(PR) - Wellbore #1 - No Surveys	2,510.00	2,449.00	7,045.88	7,015.75	233.800	CC, ES
LANE #34-8I4(PR) - Wellbore #1 - No Surveys	6,950.00	6,696.95	7,684.07	7,601.75	93.341	SF
LANE C #34-17(PR) - Wellbore #1 - No Surveys	2,510.00	2,447.00	6,761.41	6,731.29	224.491	CC, ES
LANE C #34-17(PR) - Wellbore #1 - No Surveys	6,900.00	6,674.18	7,385.87	7,303.86	90.055	SF
POLLOCK-HADDIX #2(PA) - Wellbore #1 - Gyro Surveys	2,534.48	2,527.57	7,614.49	7,596.99	434.969	CC, ES
POLLOCK-HADDIX #2(PA) - Wellbore #1 - Gyro Surveys	6,850.00	6,553.25	8,250.72	8,204.36	177.974	SF
POLLOCK-HADDIX #34-1(SI) - Wellbore #1 - No Survey	2,510.00	2,450.00	5,843.93	5,813.78	193.860	CC, ES
POLLOCK-HADDIX #34-1(SI) - Wellbore #1 - No Survey	6,850.00	6,652.94	6,441.13	6,359.39	78.795	SF
TWO E RANCHES #1(PR) - Wellbore #1 - Gyro Surveys	2,249.74	2,194.85	2,983.73	2,968.38	194.412	CC
TWO E RANCHES #1(PR) - Wellbore #1 - Gyro Surveys	2,400.00	2,326.81	2,984.22	2,967.88	182.617	ES
TWO E RANCHES #1(PR) - Wellbore #1 - Gyro Surveys	6,700.00	6,523.79	3,529.89	3,483.95	76.835	SF
D Section 03						
Becca D03-32D - Wellbore #1 - Wellbore #1- As Drilled	9,638.96	6,931.03	2,185.05	2,125.31	36.574	CC, ES
Becca D03-32D - Wellbore #1 - Wellbore #1- As Drilled	10,600.00	6,925.34	2,387.05	2,317.10	34.125	SF

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen D09-745
Project:	Mustang	**TVD Reference:**	Well @ 4750.00ft
Reference Site:	C Section 33	**MD Reference:**	Well @ 4750.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen D09-745	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen D09-745	**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 04						
Burghart D04-22 - Wellbore #1 - Wellbore #1- As Drilled	9,486.61	6,769.26	955.28	897.84	16.630	CC, ES
Burghart D04-22 - Wellbore #1 - Wellbore #1- As Drilled	9,500.00	6,769.08	955.37	897.89	16.620	SF
Gittlein Blue D04-08 - Wellbore #1 - Wellbore #1- As Dril	9,038.55	6,753.80	1,541.66	1,486.78	28.095	CC, ES
Gittlein Blue D04-08 - Wellbore #1 - Wellbore #1- As Dril	9,200.00	6,752.30	1,550.09	1,494.66	27.966	SF
GITTLEIN D #04-24(PR) - GITTLEIN D #04-24 - No Surv	11,029.24	6,775.00	462.94	283.57	2.581	CC, ES, SF
Gittlein D #04-33(PR) - Gittlein D #04-33 - No Surveys	11,018.79	6,779.00	2,757.26	2,577.87	15.371	CC, ES
Gittlein D #04-33(PR) - Gittlein D #04-33 - No Surveys	11,300.00	6,779.00	2,771.56	2,590.09	15.273	SF
GUTTERSEN D #04-32(PR) - GUTTERSEN D #04-32 -	9,511.51	6,801.00	2,819.71	2,649.58	16.573	CC, ES
GUTTERSEN D #04-32(PR) - GUTTERSEN D #04-32 -	9,800.00	6,801.00	2,834.43	2,662.41	16.477	SF
Guttersen D 04-18(PR) - Guttersen D 04-18 - Wellbore #	8,331.67	6,779.51	655.32	614.55	16.071	CC, ES
Guttersen D 04-18(PR) - Guttersen D 04-18 - Wellbore #	8,400.00	6,779.41	658.87	617.66	15.988	SF
Guttersen D 04-21(SI) - Guttersen D 04-21 - Wellbore #1	9,797.77	6,770.02	183.63	134.61	3.747	CC
Guttersen D 04-21(SI) - Guttersen D 04-21 - Wellbore #1	9,800.00	6,769.98	183.64	134.58	3.743	ES, SF
Guttersen D03-33D - Wellbore #1 - Wellbore #1- As Drill	10,831.32	6,842.09	2,071.71	2,002.09	29.755	CC, ES
Guttersen D03-33D - Wellbore #1 - Wellbore #1- As Drill	11,000.00	6,843.11	2,078.57	2,008.43	29.637	SF
Guttersen D04-30D - Plan B - Plan B	7,050.94	6,836.99	3,079.61	3,032.08	64.790	CC, ES
Guttersen D04-30D - Plan B - Plan B	7,400.00	6,852.82	3,106.89	3,058.68	64.442	SF
Guttersen D04-31D - Plan B - Plan B	8,368.34	7,075.52	3,069.51	3,011.86	53.243	CC
Guttersen D04-31D - Plan B - Plan B	8,400.00	7,074.36	3,069.67	3,011.83	53.071	ES
Guttersen D04-31D - Plan B - Plan B	9,200.00	7,045.86	3,180.04	3,117.60	50.925	SF
Guttersen D04-69HN - Original Drilling - Original Drilling	6,938.33	9,210.91	43.55	-2.19	0.952	Level 1, CC
Guttersen D04-69HN - Original Drilling - Original Drilling	6,950.00	9,210.06	45.18	-16.28	0.735	Level 1, ES, SF
Karch Blue D04-02 - Wellbore #1 - Wellbore #1- As Drille	7,762.06	6,757.76	403.77	354.44	8.185	CC, ES, SF
Karch Blue D04-07 - Wellbore #1 - Wellbore #1- As Drille	9,093.39	6,763.29	254.68	199.51	4.617	CC, ES, SF
Karch D04-17 - Wellbore #1 - Wellbore #1- As Drilled	8,357.44	6,770.24	939.97	888.30	18.191	CC, ES
Karch D04-17 - Wellbore #1 - Wellbore #1- As Drilled	8,400.00	6,769.84	940.94	889.17	18.178	SF
MARIE #D4-11(PR) - MARIE #D4-11 - No Surveys	10,291.92	6,769.00	818.71	644.39	4.697	CC
MARIE #D4-11(PR) - MARIE #D4-11 - No Surveys	10,300.00	6,769.00	818.75	644.35	4.695	ES, SF
MARIE D #04-20(PR) - MARIE D #04-20 - No Surveys	9,620.78	6,779.00	1,673.20	1,502.85	9.822	CC, ES
MARIE D #04-20(PR) - MARIE D #04-20 - No Surveys	9,700.00	6,779.00	1,675.07	1,504.16	9.801	SF
MARIE D #4-12(PR) - MARIE D #4-12 - No Surveys	10,318.29	6,781.00	2,250.12	2,075.38	12.877	CC, ES
MARIE D #4-12(PR) - MARIE D #4-12 - No Surveys	10,500.00	6,781.00	2,257.44	2,081.38	12.822	SF
MARIE D #4-13 (PR) - MARIE D #4-13 - No Surveys	11,655.64	6,775.00	2,131.69	1,947.92	11.600	CC, ES
MARIE D #4-13 (PR) - MARIE D #4-13 - No Surveys	11,800.00	6,775.00	2,136.58	1,951.65	11.554	SF
MARIE D #4-14(PR) - MARIE D #4-14 - No Surveys	11,643.56	6,773.00	984.53	800.88	5.361	CC, ES
MARIE D #4-14(PR) - MARIE D #4-14 - No Surveys	11,700.00	6,773.00	986.14	801.98	5.355	SF
MARIE D #4-19 (SI) - MARIE D #4-19 - No Surveys	8,303.46	6,789.00	1,436.99	1,273.27	8.777	CC, ES
MARIE D #4-19 (SI) - MARIE D #4-19 - No Surveys	8,400.00	6,789.00	1,440.23	1,275.99	8.769	SF
MARIE D #4-25(PR) - MARIE D #4-25 - No Surveys	10,854.99	6,774.00	1,589.20	1,411.03	8.920	CC, ES
MARIE D #4-25(PR) - MARIE D #4-25 - No Surveys	11,000.00	6,774.00	1,595.80	1,416.50	8.900	SF
MARIE D #4-3(SI) - MARIE D #4-3 - No Surveys	7,691.09	6,771.00	1,007.27	846.13	6.251	CC, ES
MARIE D #4-3(SI) - MARIE D #4-3 - No Surveys	7,700.00	6,771.00	1,007.31	846.13	6.250	SF
MARIE D #4-4(SI) - MARIE D #4-4 - No Surveys	7,703.74	6,791.00	2,374.74	2,213.15	14.697	CC, ES
MARIE D #4-4(SI) - MARIE D #4-4 - No Surveys	7,800.00	6,791.00	2,376.69	2,214.76	14.677	SF
MARIE D #4-5(SI) - MARIE D #4-5 - No Surveys	9,003.35	6,786.00	2,349.90	2,182.90	14.071	CC, ES
MARIE D #4-5(SI) - MARIE D #4-5 - No Surveys	9,200.00	6,786.00	2,358.12	2,189.91	14.019	SF
MARIE D #4-6(SI) - MARIE D #4-6 - No Surveys	9,108.31	6,770.00	1,016.44	849.19	6.077	CC, ES, SF
Marie D04-09 - Wellbore #1 - Wellbore #1- As Drilled	10,259.71	6,781.45	1,589.03	1,526.75	25.516	CC, ES
Marie D04-09 - Wellbore #1 - Wellbore #1- As Drilled	10,400.00	6,781.42	1,595.21	1,532.35	25.380	SF
Marie D04-10 - Wellbore #1 - Wellbore #1- As Drilled	10,429.46	6,772.54	356.21	292.91	5.627	CC, ES, SF
Marie D04-15 - Wellbore #1 - Wellbore #1- As Drilled	11,619.16	6,770.37	314.86	243.40	4.406	CC, ES, SF
Marie D04-16 - Wellbore #1 - Wellbore #1- As Drilled	11,539.31	6,756.91	1,573.02	1,502.18	22.206	CC, ES
Marie D04-16 - Wellbore #1 - Wellbore #1- As Drilled	11,700.00	6,757.70	1,581.20	1,509.71	22.117	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 Guttersen D09-745
Project:	Mustang	**TVD Reference:**	Well @ 4750.00ft
Reference Site:	C Section 33	**MD Reference:**	Well @ 4750.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen D09-745	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen D09-745	**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 04						
Marie D04-23 - Wellbore #1 - Wellbore #1-As Drilled	10,946.47	6,765.89	960.49	893.76	14.393	CC, ES
Marie D04-23 - Wellbore #1 - Wellbore #1-As Drilled	11,000.00	6,765.97	961.98	895.09	14.382	SF
Marie D04-72-1HN - Original Drilling - Original Drilling - A	7,400.00	11,395.00	1,925.66	1,814.41	17.309	SF
Marie D04-72-1HN - Original Drilling - Original Drilling - A	12,144.65	6,479.00	1,880.98	1,807.98	25.769	CC, ES
Marie D04-73-1HN - Original Drilling - Original Drilling - A	7,500.00	11,120.00	1,118.43	1,008.99	10.220	SF
Marie D04-73-1HN - Original Drilling - Original Drilling - A	7,521.56	11,120.00	1,118.22	1,008.87	10.226	ES
Marie D04-73-1HN - Original Drilling - Original Drilling - A	9,378.06	9,262.76	1,109.82	1,024.86	13.063	CC
Marie D04-74-1HN - Original Drilling - Original Drilling - P	12,193.43	6,813.44	629.62	556.09	8.562	CC, ES
Marie D04-74-1HN - Original Drilling - Original Drilling - P	12,200.00	6,813.45	629.66	556.11	8.561	SF
Marie D04-74-1HN - Original Drilling - ST01 - ST-01- As	7,500.00	11,217.00	603.21	537.29	9.152	SF
Marie D04-74-1HN - Original Drilling - ST01 - ST-01- As	7,877.96	10,865.62	594.99	530.39	9.211	CC, ES
Two E Ranch 01-04 - Wellbore #1 - Wellbore #1- As Drill	7,707.53	6,765.27	1,277.65	1,228.41	25.948	CC, ES
Two E Ranch 01-04 - Wellbore #1 - Wellbore #1- As Drill	7,800.00	6,764.38	1,280.99	1,231.57	25.919	SF

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen D09-745
Project:	Mustang	**TVD Reference:**	Well @ 4750.00ft
Reference Site:	C Section 33	**MD Reference:**	Well @ 4750.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen D09-745	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen D09-745	**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 05						
BECKER #15-9I(PR) - Wellbore #1 - Gyro Surveys	10,893.23	6,778.87	5,718.13	5,651.65	86.016	CC
BECKER #15-9I(PR) - Wellbore #1 - Gyro Surveys	10,900.00	6,778.79	5,718.13	5,651.60	85.953	ES
BECKER #15-9I(PR) - Wellbore #1 - Gyro Surveys	13,100.00	6,753.06	6,129.12	6,048.85	76.349	SF
BECKER #5-13(PA) - Wellbore #1 - No Surveys	10,425.46	6,824.00	6,277.24	6,177.87	63.174	CC
BECKER #5-13(PA) - Wellbore #1 - No Surveys	10,500.00	6,824.00	6,277.68	6,177.79	62.849	ES
BECKER #5-13(PA) - Wellbore #1 - No Surveys	12,500.00	6,824.00	6,611.16	6,498.35	58.609	SF
BECKER #5-14(PA) - Wellbore #1 - Gyro Surveys	11,588.64	11,588.64	7,541.92	7,453.68	85.476	CC
BECKER #5-14(PA) - Wellbore #1 - Gyro Surveys	11,600.00	11,600.00	7,541.92	7,453.56	85.355	ES, SF
BECKER #5-16(PA) - Wellbore #1 - Gyro Surveys	10,289.79	6,875.04	3,820.42	3,757.69	60.904	CC
BECKER #5-16(PA) - Wellbore #1 - Gyro Surveys	10,300.00	6,875.18	3,820.43	3,757.63	60.833	ES
BECKER #5-16(PA) - Wellbore #1 - Gyro Surveys	11,500.00	6,891.49	4,007.49	3,937.17	56.991	SF
BECKER #5-2(PA) - Wellbore #1 - Gyro Surveys	11,465.72	6,896.62	6,557.18	6,486.39	92.626	CC
BECKER #5-2(PA) - Wellbore #1 - Gyro Surveys	11,500.00	6,896.36	6,557.27	6,486.22	92.293	ES
BECKER #5-2(PA) - Wellbore #1 - Gyro Surveys	14,100.00	6,876.52	7,066.52	6,979.03	80.773	SF
BECKER #5-5(PA) - Wellbore #1 - Gyro Surveys	11,559.67	6,806.44	3,805.40	3,734.25	53.485	CC
BECKER #5-5(PA) - Wellbore #1 - Gyro Surveys	11,600.00	6,806.02	3,805.61	3,734.15	53.252	ES
BECKER #5-5(PA) - Wellbore #1 - Gyro Surveys	12,600.00	6,796.35	3,945.03	3,867.04	50.587	SF
BECKER #5-8(PR) - Wellbore #1 - Gyro Surveys	10,740.85	6,900.00	7,421.66	7,355.81	112.703	CC
BECKER #5-8(PR) - Wellbore #1 - Gyro Surveys	10,800.00	6,900.00	7,421.90	7,355.62	111.991	ES
BECKER #5-8(PR) - Wellbore #1 - Gyro Surveys	14,300.00	6,900.00	8,230.95	8,143.22	93.814	SF
BECKER #6(SI) - Wellbore #1 - Gyro Surveys	10,867.71	6,601.92	4,399.70	4,333.83	66.795	CC
BECKER #6(SI) - Wellbore #1 - Gyro Surveys	10,900.00	6,601.62	4,399.82	4,333.71	66.555	ES
BECKER #6(SI) - Wellbore #1 - Gyro Surveys	12,300.00	6,600.00	4,626.96	4,551.99	61.719	SF
Becker 5-1(PA) - Wellbore #1 - Gyro Surveys	10,336.44	6,791.61	5,023.66	4,960.82	79.947	CC
Becker 5-1(PA) - Wellbore #1 - Gyro Surveys	10,400.00	6,790.99	5,024.06	4,960.78	79.390	ES
Becker 5-1(PA) - Wellbore #1 - Gyro Surveys	12,200.00	6,773.40	5,358.14	5,283.78	72.060	SF
Becker 5-15(PA) - Wellbore #1 - Gyro Surveys	11,861.66	6,603.50	5,244.23	5,169.26	69.951	CC
Becker 5-15(PA) - Wellbore #1 - Gyro Surveys	11,900.00	6,601.25	5,244.37	5,169.12	69.699	ES
Becker 5-15(PA) - Wellbore #1 - Gyro Surveys	13,500.00	6,507.37	5,493.34	5,408.65	64.865	SF
Becker Ranch #5E-223 - Wellbore #1 - As Drilled	11,418.15	10,937.00	7,741.77	7,621.03	64.120	CC
Becker Ranch #5E-223 - Wellbore #1 - As Drilled	11,500.00	11,500.00	7,741.88	7,611.26	59.272	ES
Becker Ranch #5E-223 - Wellbore #1 - As Drilled	13,900.00	11,398.00	8,009.11	7,864.35	55.327	SF
Becker Ranch #5E-403 - As Drilled - As Drilled	0.00	52.32	7,926.64			
Becker Ranch #5E-403 - As Drilled - As Drilled	11,900.00	11,599.00	8,039.62	7,903.33	58.988	ES
Becker Ranch #5E-403 - As Drilled - As Drilled	14,000.00	11,599.00	8,314.58	8,164.12	55.262	SF
Becker Ranch #5J-103 - Wellbore #1 - As Drilled	8,291.60	7,709.15	7,049.85	6,991.49	120.791	CC
Becker Ranch #5J-103 - Wellbore #1 - As Drilled	8,800.00	8,192.00	7,055.39	6,988.74	105.870	ES
Becker Ranch #5J-103 - Wellbore #1 - As Drilled	11,700.00	8,438.00	7,562.91	7,478.43	89.518	SF
Becker Ranch #5J-203 - Wellbore #1 - Plan #1	100.00	180.00	6,625.87	6,625.30	10,000.000	CC, ES
Becker Ranch #5J-203 - Wellbore #1 - Plan #1	14,000.00	11,568.80	7,083.89	6,974.25	64.610	SF
Becker Ranch #5J-303 - Wellbore #1 - As Drilled	11,877.99	11,473.00	7,084.78	6,948.03	51.811	CC
Becker Ranch #5J-303 - Wellbore #1 - As Drilled	11,900.00	11,473.00	7,084.81	6,947.91	51.751	ES
Becker Ranch #5J-303 - Wellbore #1 - As Drilled	13,300.00	11,473.00	7,226.08	7,081.33	49.923	SF
Becker Ranch #5J-323 - Wellbore #1 - As Drilled	10,855.81	10,417.00	6,436.75	6,325.30	57.754	CC
Becker Ranch #5J-323 - Wellbore #1 - As Drilled	11,900.00	11,430.00	6,436.85	6,301.00	47.384	ES
Becker Ranch #5J-323 - Wellbore #1 - As Drilled	13,200.00	11,430.00	6,573.25	6,428.85	45.521	SF
Becker Ranch #5J-323R - Wellbore #1 - Plan #1	11,269.24	10,833.00	6,356.71	6,270.16	73.447	CC
Becker Ranch #5J-323R - Wellbore #1 - Plan #1	11,300.00	10,842.47	6,356.84	6,270.00	73.202	ES
Becker Ranch #5J-323R - Wellbore #1 - Plan #1	13,800.00	11,454.00	6,709.99	6,602.78	62.590	SF
Becker Ranch #5J-343 - Wellbore #1 - As Drilled	11,854.12	11,500.00	7,404.37	7,268.93	54.670	CC
Becker Ranch #5J-343 - Wellbore #1 - As Drilled	11,900.00	11,500.00	7,404.52	7,268.72	54.528	ES
Becker Ranch #5J-343 - Wellbore #1 - As Drilled	13,500.00	11,500.00	7,585.09	7,439.62	52.142	SF
Becker Ranch #5M-203 - Wellbore #1 - Plan #1	409.94	454.44	5,457.23	5,454.56	2,048.579	CC

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 Guttersen D09-745
Project:	Mustang	**TVD Reference:**	Well @ 4750.00ft
Reference Site:	C Section 33	**MD Reference:**	Well @ 4750.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen D09-745	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen D09-745	**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 05						
Becker Ranch #5M-203 - Wellbore #1 - Plan #1	11,900.00	11,268.00	5,483.23	5,387.70	57.395	ES
Becker Ranch #5M-203 - Wellbore #1 - Plan #1	13,300.00	11,268.00	5,670.83	5,566.04	54.118	SF
Becker Ranch #5M-243 - Wellbore #1 - Plan #1	11,861.99	11,282.50	6,094.19	5,999.79	64.562	CC
Becker Ranch #5M-243 - Wellbore #1 - Plan #1	11,900.00	11,282.50	6,094.30	5,999.62	64.364	ES
Becker Ranch #5M-243 - Wellbore #1 - Plan #1	13,600.00	11,282.50	6,337.17	6,232.11	60.315	SF
Becker Ranch #5M-303 - Wellbore #1 - Plan #1	11,858.82	11,462.20	5,764.29	5,669.61	60.878	CC
Becker Ranch #5M-303 - Wellbore #1 - Plan #1	11,900.00	11,462.20	5,764.44	5,669.45	60.682	ES
Becker Ranch #5M-303 - Wellbore #1 - Plan #1	13,400.00	11,462.20	5,966.77	5,862.90	57.445	SF
Becker Ranch #5M-323 - Wellbore #1 - Plan #1	11,849.00	11,315.70	5,069.31	4,974.66	53.556	CC
Becker Ranch #5M-323 - Wellbore #1 - Plan #1	11,900.00	11,315.70	5,069.57	4,974.50	53.328	ES
Becker Ranch #5M-323 - Wellbore #1 - Plan #1	13,100.00	11,315.70	5,221.39	5,118.69	50.840	SF
Becker Ranch #5M-423 - Wellbore #1 - Plan #1	11,850.77	11,437.50	5,277.84	5,183.01	55.657	CC
Becker Ranch #5M-423 - Wellbore #1 - Plan #1	11,900.00	11,437.50	5,278.07	5,182.84	55.425	ES
Becker Ranch #5M-423 - Wellbore #1 - Plan #1	13,200.00	11,437.50	5,447.57	5,343.89	52.539	SF
Becker Ranch #5R-203 - Wellbore #1 - Plan #1	11,836.81	11,257.60	4,138.13	4,043.38	43.674	CC
Becker Ranch #5R-203 - Wellbore #1 - Plan #1	11,900.00	11,257.60	4,138.61	4,043.34	43.439	ES
Becker Ranch #5R-203 - Wellbore #1 - Plan #1	12,700.00	11,257.60	4,227.20	4,126.68	42.054	SF
Becker Ranch #5R-243 - Wellbore #1 - Plan #1	11,846.82	11,231.80	4,832.75	4,738.36	51.202	CC
Becker Ranch #5R-243 - Wellbore #1 - Plan #1	11,900.00	11,231.80	4,833.04	4,738.24	50.981	ES
Becker Ranch #5R-243 - Wellbore #1 - Plan #1	13,000.00	11,231.80	4,968.43	4,866.87	48.923	SF
Becker Ranch #5R-303 - Wellbore #1 - Plan #1	11,839.53	11,308.90	4,419.28	4,324.60	46.676	CC
Becker Ranch #5R-303 - Wellbore #1 - Plan #1	11,900.00	11,308.90	4,419.69	4,324.56	46.460	ES
Becker Ranch #5R-303 - Wellbore #1 - Plan #1	12,700.00	11,308.90	4,502.27	4,402.38	45.073	SF
Becker Ranch #5R-323 - Wellbore #1 - Plan #1	11,834.84	11,332.80	3,927.67	3,833.21	41.580	CC, ES
Becker Ranch #5R-323 - Wellbore #1 - Plan #1	12,600.00	11,332.80	4,001.51	3,902.05	40.235	SF
Becker Ranch #5R-443 - Wellbore #1 - Plan #1	11,846.11	11,417.20	4,775.42	4,680.91	50.530	CC
Becker Ranch #5R-443 - Wellbore #1 - Plan #1	11,900.00	11,417.20	4,775.72	4,680.80	50.311	ES
Becker Ranch #5R-443 - Wellbore #1 - Plan #1	12,900.00	11,417.20	4,890.31	4,789.19	48.360	SF
Becker Ranch #5U-243 - Wellbore #1 - Plan #1	11,827.56	11,243.60	3,563.12	3,468.74	37.756	CC, ES
Becker Ranch #5U-243 - Wellbore #1 - Plan #1	12,400.00	11,243.60	3,608.80	3,510.84	36.837	SF
Becker Ranch #5U-303 - Wellbore #1 - Plan #1	11,824.08	11,348.00	3,149.19	3,054.41	33.227	CC, ES
Becker Ranch #5U-303 - Wellbore #1 - Plan #1	12,300.00	11,348.00	3,184.95	3,087.43	32.661	SF
Becker Ranch #5U-443 - Wellbore #1 - Plan #1	11,825.89	11,407.70	3,357.90	3,263.34	35.510	CC, ES
Becker Ranch #5U-443 - Wellbore #1 - Plan #1	12,400.00	11,407.70	3,406.62	3,308.65	34.770	SF
LDS #D08-18D(PR) - Wellbore #1 - MWD Surveys	13,664.84	7,282.23	5,515.08	5,414.52	54.843	CC
LDS #D08-18D(PR) - Wellbore #1 - MWD Surveys	13,700.00	7,282.02	5,515.19	5,414.44	54.743	ES
LDS #D08-18D(PR) - Wellbore #1 - MWD Surveys	14,700.00	7,276.48	5,611.38	5,506.36	53.430	SF
LDS #D08-29(SI) - Wellbore #1 - Gyro Surveys	12,087.65	6,794.97	6,818.82	6,743.84	90.944	CC
LDS #D08-29(SI) - Wellbore #1 - Gyro Surveys	12,100.00	6,794.87	6,818.83	6,743.76	90.830	ES
LDS #D08-29(SI) - Wellbore #1 - Gyro Surveys	14,800.00	6,774.94	7,338.45	7,246.21	79.552	SF
LDS D08-28D(PR) - Wellbore #1 - MWD Surveys	12,171.66	6,895.88	5,813.58	5,736.83	75.750	CC
LDS D08-28D(PR) - Wellbore #1 - MWD Surveys	12,200.00	6,895.24	5,813.65	5,736.69	75.537	ES
LDS D08-28D(PR) - Wellbore #1 - MWD Surveys	14,300.00	6,851.88	6,190.71	6,099.92	68.188	SF
LDS D08-30D(SI) - Wellbore #1 - MWD Surveys	12,271.36	7,011.60	8,347.47	8,269.30	106.791	CC
LDS D08-30D(SI) - Wellbore #1 - MWD Surveys	12,300.00	7,014.05	8,347.52	8,269.12	106.477	ES
LDS D08-30D(SI) - Wellbore #1 - MWD Surveys	14,600.00	14,600.00	8,665.84	8,546.15	72.401	SF

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen D09-745
Project:	Mustang	**TVD Reference:**	Well @ 4750.00ft
Reference Site:	C Section 33	**MD Reference:**	Well @ 4750.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen D09-745	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen D09-745	**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 08						
Becker D17-715 - Wellbore #1 - Plan #1	17,384.45	12,434.56	3,308.43	3,154.37	21.474	CC, ES, SF
Becker D17-725 - Wellbore #1 - Plan #1	17,384.45	12,261.13	3,956.66	3,803.01	25.750	CC, ES, SF
Becker D17-730 - Wellbore #1 - Plan #1	12,156.21	7,178.78	4,293.41	4,214.21	54.208	CC
Becker D17-730 - Wellbore #1 - Plan #1	17,384.45	12,478.37	4,302.25	4,148.42	27.967	ES, SF
Becker D17-735 - Wellbore #1 - Plan #1	11,956.93	6,781.66	4,601.49	4,525.40	60.473	CC
Becker D17-735 - Wellbore #1 - Plan #1	17,384.45	12,377.97	4,604.53	4,451.12	30.015	ES, SF
Becker D17-745 - Wellbore #1 - Plan #1	11,680.49	5,966.36	5,144.54	5,073.22	72.132	CC
Becker D17-745 - Wellbore #1 - Plan #1	11,700.00	5,973.52	5,144.58	5,073.07	71.947	ES
Becker D17-745 - Wellbore #1 - Plan #1	17,384.45	12,329.30	5,252.70	5,099.41	34.266	SF
Becker D17-750 - Wellbore #1 - Plan #1	11,421.59	5,518.47	5,295.82	5,228.66	78.853	CC
Becker D17-750 - Wellbore #1 - Plan #1	11,500.00	5,547.20	5,296.32	5,228.42	78.002	ES
Becker D17-750 - Wellbore #1 - Plan #1	17,384.45	12,604.40	5,578.17	5,425.05	36.431	SF
Becker D17-755 - Wellbore #1 - Plan #1	17,384.45	12,567.34	5,900.60	5,747.89	38.640	CC, ES, SF
Becker D17-765 - Wellbore #1 - Plan #1	17,384.45	12,300.71	6,548.41	6,380.17	38.924	CC, ES, SF
Becker D17-770 - Wellbore #1 - Plan #1	17,384.45	12,433.24	6,873.93	6,705.71	40.863	CC, ES, SF
Becker D17-775 - Wellbore #1 - Plan #1	17,384.45	12,286.17	7,196.67	7,028.71	42.848	CC, ES, SF
Becker D17-785 - Wellbore #1 - Plan #1	11,997.06	6,638.64	7,831.93	7,756.25	103.492	CC
Becker D17-785 - Wellbore #1 - Plan #1	17,384.45	12,186.14	7,844.56	7,692.64	51.639	ES, SF
HSR-ALVIN DECHANT #12-8 (SI) - Wellbore #1 - No Su	15,560.56	6,818.00	7,433.66	7,296.38	54.150	CC
HSR-ALVIN DECHANT #12-8 (SI) - Wellbore #1 - No Su	15,600.00	6,818.00	7,433.77	7,296.16	54.023	ES
HSR-ALVIN DECHANT #12-8 (SI) - Wellbore #1 - No Su	17,384.45	6,818.00	7,654.14	7,504.06	50.999	SF
HSR-ALVIN DECHANT #13-8(SI) - Wellbore #1 - No Sur	17,145.94	6,807.00	7,508.70	7,359.03	50.169	CC
HSR-ALVIN DECHANT #13-8(SI) - Wellbore #1 - No Sur	17,200.00	6,807.00	7,508.90	7,358.78	50.019	ES
HSR-ALVIN DECHANT #13-8(SI) - Wellbore #1 - No Sur	17,384.45	6,807.00	7,512.49	7,360.86	49.546	SF
HSR-LDS #14-8(SI) - Wellbore #1 - No Surveys	16,618.35	6,798.00	6,371.54	6,226.12	43.815	CC
HSR-LDS #14-8(SI) - Wellbore #1 - No Surveys	16,700.00	6,798.00	6,372.06	6,225.96	43.615	ES
HSR-LDS #14-8(SI) - Wellbore #1 - No Surveys	17,384.45	6,798.00	6,417.43	6,266.13	42.416	SF
HSR-LDS #15-8(SI) - Wellbore #1 - No Surveys	16,889.46	6,795.00	4,936.78	4,789.25	33.462	CC
HSR-LDS #15-8(SI) - Wellbore #1 - No Surveys	16,900.00	6,795.00	4,936.79	4,789.17	33.442	ES
HSR-LDS #15-8(SI) - Wellbore #1 - No Surveys	17,384.45	6,795.00	4,961.53	4,810.15	32.775	SF
HSR-LDS #16-8(SI) - Wellbore #1 - No Surveys	17,000.89	6,794.00	3,578.84	3,430.43	24.115	CC, ES
HSR-LDS #16-8(SI) - Wellbore #1 - No Surveys	17,384.45	6,794.00	3,599.33	3,447.99	23.783	SF
HSR-LDS #3-8(SI) - Wellbore #1 - No Surveys	13,113.71	6,796.00	6,364.23	6,245.95	53.807	CC
HSR-LDS #3-8(SI) - Wellbore #1 - No Surveys	13,200.00	6,796.00	6,364.82	6,245.85	53.500	ES
HSR-LDS #3-8(SI) - Wellbore #1 - No Surveys	14,900.00	6,796.00	6,610.17	6,479.65	50.646	SF
HSR-LDS #4-8(SI) - Wellbore 1 - No Surveys	13,269.72	6,821.00	7,501.79	7,382.12	62.686	CC
HSR-LDS #4-8(SI) - Wellbore 1 - No Surveys	13,300.00	6,821.00	7,501.85	7,381.94	62.561	ES
HSR-LDS #4-8(SI) - Wellbore 1 - No Surveys	15,700.00	6,821.00	7,885.63	7,749.56	57.952	SF
HSR-LDS #5-8(SI) - Wellbore #1 - No Surveys	14,422.35	6,814.00	7,661.69	7,533.28	59.669	CC
HSR-LDS #5-8(SI) - Wellbore #1 - No Surveys	14,500.00	6,814.00	7,662.08	7,533.05	59.381	ES
HSR-LDS #5-8(SI) - Wellbore #1 - No Surveys	16,800.00	6,814.00	8,022.14	7,877.64	55.519	SF
HSR-LDS #6-8(SI) - Wellbore #1 - No Surveys	14,358.68	6,794.00	6,260.82	6,133.08	49.013	CC
HSR-LDS #6-8(SI) - Wellbore #1 - No Surveys	14,400.00	6,794.00	6,260.95	6,132.87	48.884	ES
HSR-LDS #6-8(SI) - Wellbore #1 - No Surveys	16,000.00	6,794.00	6,472.38	6,333.35	46.554	SF
HSR-LDS #9-8(SI) - Wellbore #1 - No Surveys	15,442.10	6,789.00	3,623.85	3,487.75	26.626	CC
HSR-LDS #9-8(SI) - Wellbore #1 - No Surveys	15,500.00	6,789.00	3,624.32	3,487.72	26.533	ES
HSR-LDS #9-8(SI) - Wellbore #1 - No Surveys	16,000.00	6,789.00	3,666.55	3,526.40	26.162	SF
HSR-LDS A #10-8(SI) - Wellbore #1 - No Surveys	15,722.95	6,793.00	4,855.29	4,716.96	35.099	CC
HSR-LDS A #10-8(SI) - Wellbore #1 - No Surveys	15,800.00	6,793.00	4,855.90	4,716.92	34.940	ES
HSR-LDS A #10-8(SI) - Wellbore #1 - No Surveys	16,700.00	6,793.00	4,952.62	4,807.45	34.116	SF
HSR-LDS A #11-8(SI) - Wellbore #1 - No Surveys	15,579.57	6,795.00	6,313.95	6,176.73	46.011	CC
HSR-LDS A #11-8(SI) - Wellbore #1 - No Surveys	15,600.00	6,795.00	6,313.99	6,176.59	45.954	ES
HSR-LDS A #11-8(SI) - Wellbore #1 - No Surveys	17,100.00	6,795.00	6,494.44	6,346.68	43.953	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 Guttersen D09-745
Project:	Mustang	**TVD Reference:**	Well @ 4750.00ft
Reference Site:	C Section 33	**MD Reference:**	Well @ 4750.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen D09-745	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen D09-745	**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 08						
LDS #18-8(SI) - Wellbore #1 - No Surveys	13,810.75	6,816.00	6,902.29	6,778.55	55.784	CC
LDS #18-8(SI) - Wellbore #1 - No Surveys	13,900.00	6,816.00	6,902.86	6,778.41	55.467	ES
LDS #18-8(SI) - Wellbore #1 - No Surveys	15,800.00	6,816.00	7,183.22	7,045.88	52.304	SF
LDS #20-8(SI) - Wellbore #1 - No Surveys	16,347.93	6,792.00	4,280.03	4,136.79	29.882	CC
LDS #20-8(SI) - Wellbore #1 - No Surveys	16,400.00	6,792.00	4,280.34	4,136.66	29.791	ES
LDS #20-8(SI) - Wellbore #1 - No Surveys	17,100.00	6,792.00	4,345.60	4,197.05	29.254	SF
LDS D #09-30(SI) - Wellbore #1 - No Surveys	12,513.53	6,783.00	3,154.12	3,040.42	27.742	CC, ES
LDS D #09-30(SI) - Wellbore #1 - No Surveys	13,000.00	6,783.00	3,191.41	3,074.16	27.217	SF
LDS D #09-31D(SI) - Wellbore #1 - No Surveys	12,537.96	6,783.00	3,156.13	3,042.25	27.715	CC, ES
LDS D #09-31D(SI) - Wellbore #1 - No Surveys	13,100.00	6,783.00	3,205.78	3,087.89	27.193	SF
RUBY RED #D #8-1D(PA) - Wellbore #1 - Gyro Surveys	13,340.76	6,746.45	4,002.10	3,918.01	47.594	CC
RUBY RED #D #8-1D(PA) - Wellbore #1 - Gyro Surveys	13,400.00	6,745.95	4,002.54	3,917.96	47.324	ES
RUBY RED #D #8-1D(PA) - Wellbore #1 - Gyro Surveys	14,300.00	6,738.15	4,115.44	4,024.88	45.443	SF
RUBY RED #D 8-7(PR) - Wellbore #1 - Gyro Surveys	14,401.95	6,808.32	5,092.82	5,000.43	55.121	CC, ES
RUBY RED #D 8-7(PR) - Wellbore #1 - Gyro Surveys	15,700.00	6,801.49	5,255.63	5,154.48	51.954	SF
RUBY RED #D 8-8(PR) - Wellbore #1 - Gyro Surveys	14,401.54	6,825.23	3,445.36	3,352.95	37.286	CC, ES
RUBY RED #D 8-8(PR) - Wellbore #1 - Gyro Surveys	15,100.00	6,813.40	3,515.43	3,418.26	36.178	SF
RUBY RED D8-2(PA) - Wellbore #1 - Gyro Surveys	12,858.10	6,814.88	5,181.08	5,100.41	64.226	CC
RUBY RED D8-2(PA) - Wellbore #1 - Gyro Surveys	12,900.00	6,814.75	5,181.25	5,100.24	63.961	ES
RUBY RED D8-2(PA) - Wellbore #1 - Gyro Surveys	14,800.00	14,800.00	5,533.02	5,412.45	45.889	SF
TWO E RANCHES #1(PA) - Wellbore #1 - Gyro Surveys	16,014.89	6,800.00	7,220.24	7,115.33	68.820	CC
TWO E RANCHES #1(PA) - Wellbore #1 - Gyro Surveys	16,100.00	6,800.00	7,220.74	7,115.12	68.366	ES
TWO E RANCHES #1(PA) - Wellbore #1 - Gyro Surveys	17,384.45	6,800.00	7,348.98	7,234.07	63.949	SF

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen D09-745
Project:	Mustang	**TVD Reference:**	Well @ 4750.00ft
Reference Site:	C Section 33	**MD Reference:**	Well @ 4750.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen D09-745	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen D09-745	**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 09						
ART RED #D 9-14(PR) - ART RED #D 9-14 - No Surveys	17,008.78	6,797.00	881.66	656.54	3.916	CC, ES, SF
ART RED #D 9-3J(PA) - ART RED #D 9-3J - No Surveys	16,544.08	6,789.00	1,998.58	1,777.29	9.032	CC, ES
ART RED #D 9-3J(PA) - ART RED #D 9-3J - No Surveys	16,700.00	6,789.00	2,004.65	1,782.10	9.008	SF
ART RED #D 9-4J(PR) - ART RED #D 9-4J - No Surveys	15,858.29	6,787.00	1,228.95	1,013.10	5.693	CC, ES
ART RED #D 9-4J(PR) - ART RED #D 9-4J - No Surveys	15,900.00	6,787.00	1,229.66	1,013.63	5.692	SF
ART RED D #9-10(PR) - ART RED D #9-10 - No Surveys	15,507.06	6,793.00	377.49	164.26	1.770	CC, ES, SF
ART RED D #9-11(PR) - ART RED D #9-11 - No Surveys	15,574.48	6,785.00	995.49	781.90	4.661	CC, ES
ART RED D #9-11(PR) - ART RED D #9-11 - No Surveys	15,600.00	6,785.00	995.81	781.96	4.657	SF
Art Red D 9-16 (PR) - Wellbore #1 - Gyro Surveys	16,959.77	6,800.44	1,839.08	1,726.72	16.367	CC, ES
Art Red D 9-16 (PR) - Wellbore #1 - Gyro Surveys	17,100.00	6,801.70	1,844.42	1,731.43	16.323	SF
FRONT RANGE #D09-20D(PR) - FRONT RANGE #D09	15,011.74	7,152.31	1,629.32	1,521.68	15.136	CC, ES
FRONT RANGE #D09-20D(PR) - FRONT RANGE #D09	15,300.00	7,154.38	1,654.62	1,543.21	14.851	SF
FRONT RANGE #D09-25D(PR) - FRONT RANGE #D09	16,123.63	7,015.10	1,471.09	1,363.30	13.647	CC, ES
FRONT RANGE #D09-25D(PR) - FRONT RANGE #D09	16,300.00	7,014.75	1,481.63	1,372.02	13.517	SF
FRONT RANGE #D09-32D(PR) - FRONT RANGE #D09	14,993.26	7,037.52	2,872.76	2,766.46	27.025	CC
FRONT RANGE #D09-32D(PR) - FRONT RANGE #D09	15,000.00	7,037.51	2,872.77	2,766.41	27.010	ES
FRONT RANGE #D09-32D(PR) - FRONT RANGE #D09	15,400.00	7,037.17	2,901.41	2,792.39	26.614	SF
FRONT RANGE D #09-28(SI) - FRONT RANGE D #09-2	12,487.08	6,778.00	335.76	145.89	1.768	CC, ES
FRONT RANGE D #09-28(SI) - FRONT RANGE D #09-2	12,500.00	6,778.00	336.01	145.95	1.768	SF
FRONT RANGE D #09-33(PR) - FRONT RANGE D #09-	16,290.48	6,794.00	2,784.07	2,564.68	12.690	CC
FRONT RANGE D #09-33(PR) - FRONT RANGE D #09-	16,300.00	6,794.00	2,784.08	2,564.61	12.685	ES
FRONT RANGE D #09-33(PR) - FRONT RANGE D #09-	16,500.00	6,794.00	2,791.94	2,570.86	12.629	SF
FRONT RANGE D #16-29(SI) - FRONT RANGE D #16-2	17,384.45	6,799.57	1,739.91	1,634.22	16.461	CC, ES, SF
FRONT RANGE D #16-30(SI) - FRONT RANGE D #16-3	17,171.08	6,795.00	2,713.69	2,487.33	11.988	CC
FRONT RANGE D #16-30(SI) - FRONT RANGE D #16-3	17,200.00	6,795.00	2,713.85	2,487.22	11.975	ES
FRONT RANGE D #16-30(SI) - FRONT RANGE D #16-3	17,384.45	6,795.00	2,722.07	2,494.00	11.935	SF
GITTLEIN #18-9(PR) - GITTLEIN #18-9 - No Surveys	13,827.92	6,900.25	1,892.39	1,804.30	21.482	CC, ES
GITTLEIN #18-9(PR) - GITTLEIN #18-9 - No Surveys	14,100.00	6,900.25	1,911.85	1,821.67	21.201	SF
GITTLEIN #D #9-7(PR) - GITTLEIN #D #9-7 - No Survey	14,379.01	6,741.00	161.48	-41.95	0.794	Level 1, CC, ES, SF
GITTLEIN WHITE #D 9-2(SI) - GITTLEIN WHITE #D 9-2	12,927.13	6,775.00	448.31	255.23	2.322	CC, ES, SF
GITTLEIN-UPRC #9-12(PA) - GITTLEIN-UPRC #9-12 - W	15,599.94	6,789.01	2,121.46	2,031.01	23.455	CC
GITTLEIN-UPRC #9-12(PA) - GITTLEIN-UPRC #9-12 - W	15,600.00	6,789.01	2,121.46	2,031.01	23.454	ES
GITTLEIN-UPRC #9-12(PA) - GITTLEIN-UPRC #9-12 - W	15,900.00	6,792.83	2,142.57	2,050.00	23.144	SF
GUTTERSEN #9-15(PR) - GUTTERSEN #9-15 - No Sur	16,880.88	6,788.00	334.48	110.55	1.494	Level 3, CC, ES, SF
GUTTERSEN D #09-09(PR) - GUTTERSEN D #09-09 -	15,407.64	6,781.00	1,773.33	1,561.12	8.357	CC, ES
GUTTERSEN D #09-09(PR) - GUTTERSEN D #09-09 -	15,500.00	6,781.00	1,775.73	1,563.07	8.350	SF
GUTTERSEN D #09-21(PR) - GUTTERSEN D #09-21 -	15,026.50	6,785.00	282.24	72.92	1.348	Level 3, CC, ES, SF
GUTTERSEN D #09-22(SI) - GUTTERSEN D #09-22 - N	14,938.30	6,788.00	970.18	761.49	4.649	CC, ES, SF
GUTTERSEN D #09-24(PR) - GUTTERSEN D #09-24 -	16,194.98	6,797.00	182.85	-35.84	0.836	Level 1, CC
GUTTERSEN D #09-24(PR) - GUTTERSEN D #09-24 -	16,200.00	6,797.00	182.92	-35.88	0.836	Level 1, ES, SF
GUTTERSEN D #16-28(PR) - GUTTERSEN D #16-28 -	17,384.45	6,792.00	425.69	202.43	1.907	CC, ES, SF
Guttersen D09-27D - Wellbore #1 - Wellbore #1- As Drill	12,171.99	6,893.46	972.87	891.92	12.018	CC, ES
Guttersen D09-27D - Wellbore #1 - Wellbore #1- As Drill	12,300.00	6,894.19	981.26	899.09	11.942	SF
Guttersen D10-30D - Wellbore #1 - Wellbore #1- As Drill	12,334.36	6,835.10	2,224.31	2,145.09	28.077	CC, ES
Guttersen D10-30D - Wellbore #1 - Wellbore #1- As Drill	12,500.00	6,834.89	2,230.47	2,150.69	27.958	SF
HSR TIM GITTLEIN #3-9(SI) - HSR TIM GITTLEIN #3-9	12,944.27	6,778.00	1,000.36	807.10	5.176	CC, ES
HSR TIM GITTLEIN #3-9(SI) - HSR TIM GITTLEIN #3-9	13,000.00	6,778.00	1,001.92	808.13	5.170	SF
HSR TIM GITTLEIN #4-9(SI) - HSR TIM GITTLEIN #4-9	13,100.83	6,780.00	2,171.38	1,976.90	11.165	CC, ES
HSR TIM GITTLEIN #4-9(SI) - HSR TIM GITTLEIN #4-9	13,300.00	6,780.00	2,180.50	1,984.43	11.121	SF
HSR TIM GITTLEIN #5-9(SI) - HSR TIM GITTLEIN #5-9	14,137.23	6,782.00	2,167.11	1,964.72	10.708	CC, ES
HSR TIM GITTLEIN #5-9(SI) - HSR TIM GITTLEIN #5-9	14,300.00	6,782.00	2,173.22	1,969.49	10.667	SF
HSR TIM GITTLEIN #6-9(SI) - HSR TIM GITTLEIN #6-9	14,042.53	6,781.00	988.21	786.57	4.901	CC, ES
HSR TIM GITTLEIN #6-9(SI) - HSR TIM GITTLEIN #6-9	14,100.00	6,781.00	989.88	787.70	4.896	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 Guttersen D09-745
Project:	Mustang	**TVD Reference:**	Well @ 4750.00ft
Reference Site:	C Section 33	**MD Reference:**	Well @ 4750.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen D09-745	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen D09-745	**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 09						
KARCH WHITE #D 9-1(SI) - KARCH WHITE #D 9-1 - No	12,923.62	6,773.00	1,601.20	1,408.19	8.296	CC, ES
KARCH WHITE #D 9-1(SI) - KARCH WHITE #D 9-1 - No	13,000.00	6,773.00	1,603.02	1,409.64	8.290	SF
KARCH WHITE #D 9-8(PR) - KARCH WHITE #D 9-8 - N	14,456.33	6,776.00	1,552.77	1,348.05	7.585	CC, ES
KARCH WHITE #D 9-8(PR) - KARCH WHITE #D 9-8 - N	14,500.00	6,776.00	1,553.39	1,348.44	7.580	SF
ROADHOUSE D #9-17(SI) - ROADHOUSE D #9-17 - No	13,584.86	6,777.00	1,015.01	816.94	5.124	CC, ES
ROADHOUSE D #9-17(SI) - ROADHOUSE D #9-17 - No	13,600.00	6,777.00	1,015.13	817.00	5.123	SF
D Section 10						
Guttersen State D15-27 - Wellbore #1 - Wellbore #1- As	17,323.41	6,839.36	6,331.13	6,215.70	54.847	CC
Guttersen State D15-27 - Wellbore #1 - Wellbore #1- As	17,384.45	6,839.77	6,331.43	6,215.55	54.637	ES, SF
Karch State D 10-22 (SI) - Wellbore #1 - No Surveys	14,858.55	6,830.00	6,161.63	5,818.38	17.951	CC
Karch State D 10-22 (SI) - Wellbore #1 - No Surveys	14,900.00	6,830.00	6,161.77	5,818.22	17.936	ES
Karch State D 10-22 (SI) - Wellbore #1 - No Surveys	15,500.00	6,830.00	6,194.93	5,847.39	17.825	SF
Spike ST GWS D 10-14 (PR) - Wellbore #1 - Gyro Surve	17,046.82	6,841.33	4,276.76	4,163.58	37.786	CC
Spike ST GWS D 10-14 (PR) - Wellbore #1 - Gyro Surve	17,100.00	6,841.68	4,277.09	4,163.54	37.664	ES
Spike ST GWS D 10-14 (PR) - Wellbore #1 - Gyro Surve	17,384.45	6,843.60	4,290.07	4,174.72	37.194	SF
Spike ST GWS D 10-16 (PA) - Wellbore #1 - No Surveys	16,877.30	6,834.00	6,867.80	6,642.98	30.548	CC
Spike ST GWS D 10-16 (PA) - Wellbore #1 - No Surveys	16,900.00	6,834.00	6,867.83	6,642.85	30.525	ES
Spike ST GWS D 10-16 (PA) - Wellbore #1 - No Surveys	17,384.45	6,834.00	6,886.50	6,658.14	30.156	SF
Spike State D 10-21D (SI) - Wellbore #1 - Wellbore #1	15,095.03	6,964.34	5,010.11	4,911.48	50.801	CC
Spike State D 10-21D (SI) - Wellbore #1 - Wellbore #1	15,100.00	6,964.33	5,010.11	4,911.46	50.785	ES
Spike State D 10-21D (SI) - Wellbore #1 - Wellbore #1	16,100.00	6,962.38	5,109.90	5,005.99	49.174	SF
Spike State GWS D 10-15 (PA) - Wellbore #1 - No Surve	16,741.56	7,106.00	6,034.25	5,815.48	27.583	CC
Spike State GWS D 10-15 (PA) - Wellbore #1 - No Surve	16,800.00	7,106.00	6,034.53	5,815.34	27.531	ES
Spike State GWS D 10-15 (PA) - Wellbore #1 - No Surve	17,384.45	7,106.00	6,068.40	5,845.28	27.198	SF
Two E Ranch 4-10 (SI) - Wellbore #1 - No Surveys	14,299.68	6,802.00	3,062.19	2,724.34	9.064	CC
Two E Ranch 4-10 (SI) - Wellbore #1 - No Surveys	14,300.00	6,802.00	3,062.19	2,724.33	9.064	ES
Two E Ranch 4-10 (SI) - Wellbore #1 - No Surveys	14,500.00	6,802.00	3,068.74	2,729.68	9.051	SF
Volley State D 10-13 (PR) - Wellbore #1 - Gyro Surveys	16,996.21	6,749.94	2,852.34	2,739.95	25.378	CC
Volley State D 10-13 (PR) - Wellbore #1 - Gyro Surveys	17,000.00	6,749.96	2,852.34	2,739.92	25.373	ES
Volley State D 10-13 (PR) - Wellbore #1 - Gyro Surveys	17,300.00	6,853.55	2,868.42	2,754.18	25.108	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 Guttersen D09-745
Project:	Mustang	**TVD Reference:**	Well @ 4750.00ft
Reference Site:	C Section 33	**MD Reference:**	Well @ 4750.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen D09-745	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen D09-745	**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 16						
Diggen State D16-23 (SI) - Wellbore #1 - Gyro Surveys	17,384.45	6,828.14	4,264.46	4,203.33	69.766	CC, ES, SF
Diggin State D 16-07 (SI) - Wellbore #1 - No Surveys	17,384.45	6,834.00	2,280.73	2,112.25	13.537	CC, ES, SF
Diggin State D 16-19J (PR) - Wellbore #1 - No Surveys	17,384.45	6,793.00	2,299.76	2,096.28	11.302	CC, ES, SF
Diggin State D16-13 (PR) - Wellbore #1 - Gyro Surveys	17,384.45	6,786.95	5,330.90	5,261.79	77.137	CC, ES, SF
Guttersen ST D 15-32 (SI) - Wellbore #1 - Gyro Surveys	17,384.45	6,841.86	3,665.36	3,578.62	42.256	CC, ES, SF
Guttersen ST D 16-21 (SI) - Wellbore #1 - Gyro Surveys	17,384.45	6,827.53	2,956.13	2,903.11	55.762	CC, ES, SF
Guttersen ST D 16-22D (SI) - Wellbore #1 - MWD Surve	17,384.45	6,946.32	2,922.51	2,852.69	41.856	CC, ES, SF
Guttersen ST D 16-33 (SI) - Wellbore #1 - No Surveys	17,384.45	6,808.00	4,989.04	4,796.58	25.923	CC, ES, SF
Guttersen State D 15-31 (PR) - Wellbore #1 - Gyro Surve	17,384.45	6,830.84	2,463.45	2,356.61	23.056	CC, ES, SF
Guttersen State D 15-33 (SI) - Wellbore #1 - Gyro Survey	17,384.45	6,773.58	4,740.49	4,662.89	61.087	CC, ES, SF
Guttersen State D 16-15X (PR) - Wellbore #1 - Gyro Sur	17,384.45	6,858.87	4,704.32	4,650.01	86.621	CC, ES, SF
Guttersen State D 16-18 (SI) - Wellbore #1 - No Surveys	17,384.45	6,808.00	1,459.80	1,289.94	8.594	CC, ES, SF
Guttersen State D 16-20 (SI) - Wellbore #1 - Gyro Survey	17,384.45	6,781.98	3,318.83	3,245.90	45.509	CC, ES, SF
Guttersen State D 16-24 (SI) - Wellbore #1 - Gyro Survey	17,384.45	6,832.42	4,069.35	4,016.41	76.861	CC, ES, SF
Guttersen State D 16-27 (PR) - Wellbore #1 - No Survey	17,384.45	6,804.00	1,034.92	812.03	4.643	CC, ES, SF
Guttersen State D 16-31 (PR) - Wellbore #1 - No Survey	17,384.45	6,804.00	3,166.42	2,950.35	14.655	CC, ES, SF
Guttersen State D 16-32D (SI) - Wellbore #1 - MWD Sur	17,384.45	7,002.68	3,958.50	3,863.07	41.481	CC, ES, SF
Guttersen State D16-63-1HN - Original Drilling - Original	17,384.45	8,764.99	4,533.24	4,449.44	54.092	CC, ES, SF
Guttersen State D16-65-1HN - Original Drilling - Original	13,600.00	13,600.00	6,985.53	6,790.00	35.727	SF
Guttersen State D16-65-1HN - Original Drilling - Original	17,384.45	8,837.44	3,201.24	3,116.11	37.608	CC, ES
Spike ST GWS D 16-01 (SI) - Wellbore #1 - Gyro Survey	17,384.45	6,829.49	1,833.38	1,722.84	16.586	CC, ES, SF
Spike ST GWS D 16-02 (P&A) - Wellbore #1 - Gyro Surv	17,384.45	6,820.45	795.50	716.51	10.071	CC, ES, SF
Spike ST GWS D 16-03 (PR) - Wellbore #1 - No Surveys	17,384.45	6,802.00	1,302.57	1,096.28	6.314	CC, ES, SF
Spike ST GWS D 16-04 (SI) - Wellbore #1 - No Surveys	17,384.45	6,797.00	2,451.84	2,230.25	11.065	CC, ES, SF
Spike ST GWS D 16-05 (PR) - Wellbore #1 - Gyro Surve	17,384.45	6,802.12	3,224.00	3,132.95	35.410	CC, ES, SF
Spike ST GWS D 16-06 (SI) - Wellbore #1 - No Surveys	17,384.45	6,810.00	2,380.61	2,200.77	13.238	CC, ES, SF
Spike ST GWS D 16-08 (PR) - Wellbore #1 - Gyro Surve	17,384.45	6,832.42	2,873.81	2,784.44	32.156	CC, ES, SF
Spike ST GWS D 16-12 (PA) - Wellbore #1 - Gyro Surve	17,384.45	6,789.73	4,129.12	4,048.89	51.467	CC, ES, SF
Spike ST GWS D 16-14 (SI) - Wellbore #1 - No Surveys	17,384.45	6,843.00	5,121.06	4,952.82	30.440	CC, ES, SF
Spike ST GWS D 16-16 (SI) - Wellbore #1 - No Surveys	17,384.45	6,842.00	5,110.42	4,930.16	28.350	CC, ES, SF
Spike State D 16-10 (SI) - Wellbore #1 - Gyro Surveys	17,384.45	6,815.20	3,481.40	3,426.59	63.521	CC, ES, SF
Spike State D 16-11 (SI) - Wellbore #1 - Gyro Surveys	17,384.45	6,825.99	3,521.81	3,463.35	60.243	CC, ES, SF
Spike State D 16-9 (SI) - Wellbore #1 - Gyro Surveys	17,384.45	6,832.83	3,906.77	3,832.76	52.789	CC, ES, SF
Spike State D16-15 (P&A) - Wellbore #1 - Wellbore #1	17,384.45	6,953.82	4,783.67	4,717.88	72.721	CC, ES, SF
Spike State D16-99HZ - Original Drilling - Original Drilling	13,400.00	13,400.00	7,846.97	7,673.92	45.343	SF
Spike State D16-99HZ - Original Drilling - Original Drilling	17,384.45	8,359.02	3,878.74	3,801.13	49.976	CC, ES
Spike State GWS D 16-7J (PR) - Wellbore #1 - No Surve	17,384.45	6,827.00	1,726.84	1,529.93	8.770	CC, ES, SF
Spike State GWS D16-13J (PR) - Wellbore #1 - Gyro Su	17,384.45	6,785.03	4,543.17	4,478.26	69.990	CC, ES, SF

Noble Energy, Inc.

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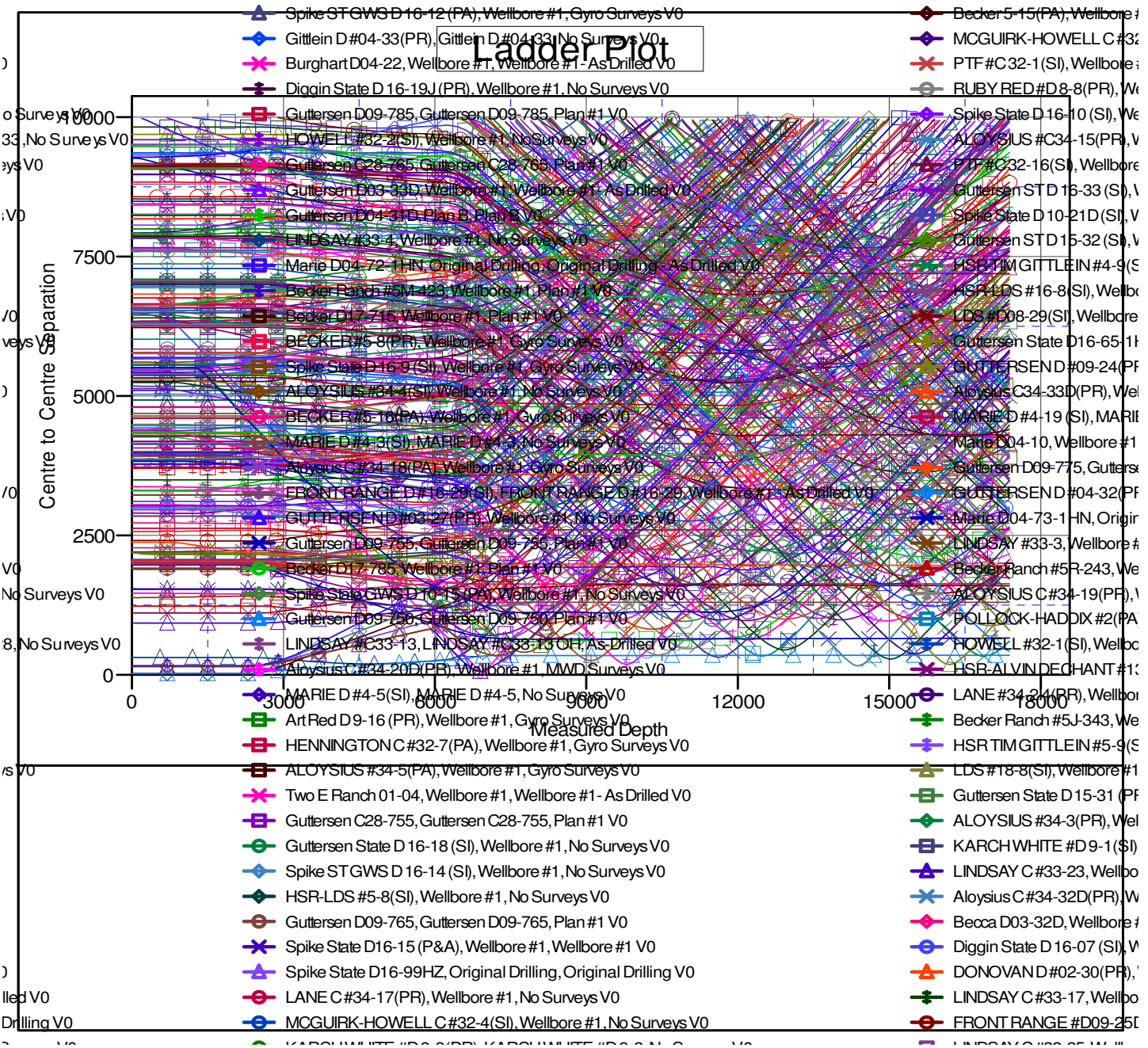
Reference Well:	Guttersen D09-745	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen D09-745	**Database:**	EDMP
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to Well @ 4750.00ft
Offset Depths are relative to Offset Datum
Central Meridian is -105.5000000

Coordinates are relative to: Guttersen D09-745
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.61°



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Anticollision Summary Report

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