

Project: Mustang
 Site: C Section 33
 Well: Gutteresen D09-721
 Wellbore: Gutteresen D09-721
 Design: Plan #3

Northern Region - DJ Basin

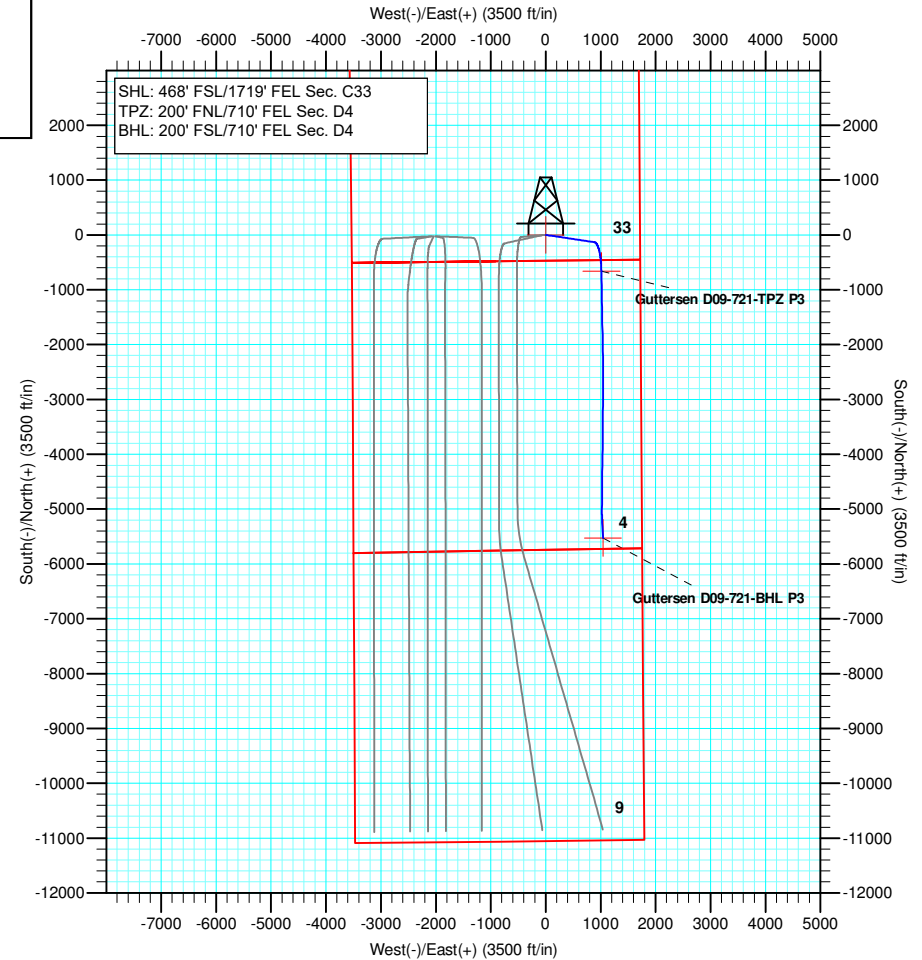
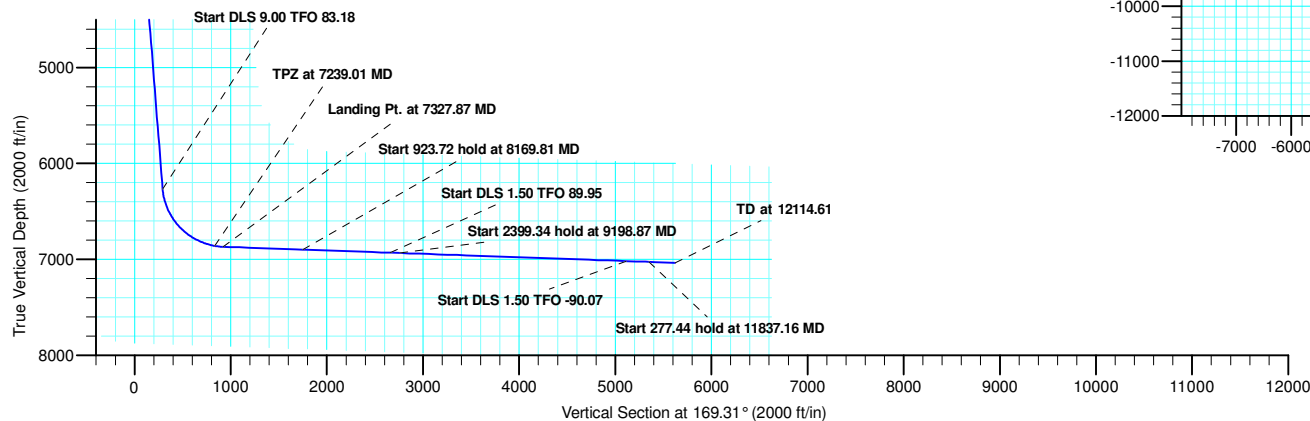
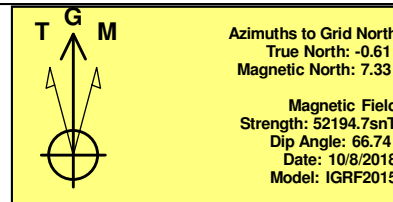
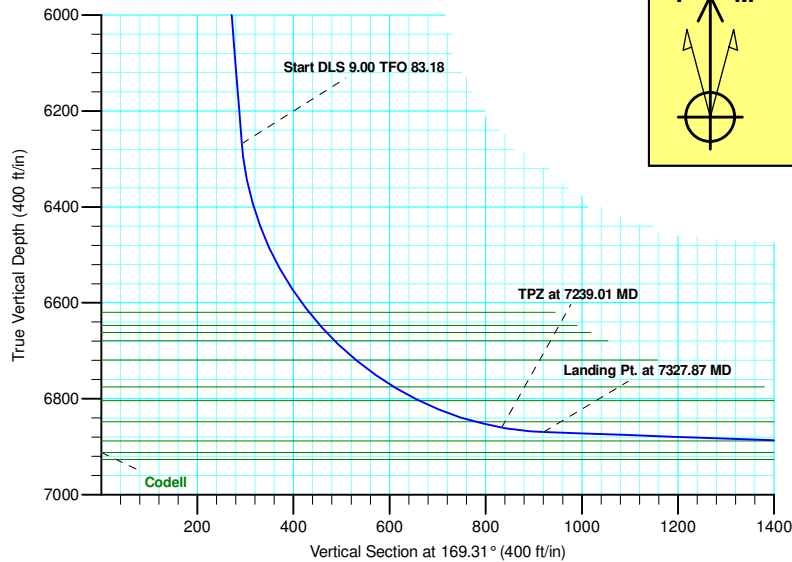
Geodetic System: US State Plane 1983
 Datum: North American Datum 1983
 Ellipsoid: GRS 1980
 Zone: Colorado Northern Zone
 System Datum: Mean Sea Level

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	2200.00	0.00	0.00	2200.00	0.00	0.00	0.00	0.00	0.00	
3	2874.87	13.50	98.40	2868.65	-11.56	78.27	2.00	98.40	25.88	
4	6371.41	13.50	98.40	6268.61	-130.82	885.61	0.00	0.00	292.84	
5	7239.01	80.00	178.98	6860.30	-656.80	1013.88	9.00	83.18	833.48	
6	7327.87	88.00	178.98	6869.58	-745.09	1015.45	9.00	0.00	920.53	
7	8169.81	88.00	178.98	6899.00	-1586.38	1030.44	0.00	0.00	1750.00	Gutteresen D09-721-IP1 P3
8	9093.53	88.00	178.98	6931.27	-2509.39	1046.88	0.00	0.00	2660.04	Gutteresen D09-721-IP2 P3
9	9198.87	88.00	180.56	6934.95	-2614.67	1047.30	1.50	89.95	2763.57	
10	11598.21	88.00	180.56	7018.69	-5012.43	1023.84	0.00	0.00	5115.36	Gutteresen D09-721-IP3 P3
11	11837.16	88.00	176.97	7027.03	-5251.14	1028.98	1.50	-90.07	5350.88	
12	12114.61	88.00	176.97	7036.72	-5528.03	1043.61	0.00	0.00	5625.68	Gutteresen D09-721-BHL P3

WELL DETAILS: Gutteresen D09-721

+N/-S	+E/-W	Northing	Ground Level: Easting	4722.00 Latitude	Longitude	Slot
0.00	0.00	1340075.05	3264359.76	40.2630290	-104.5527040	



Plan: Plan #3 (Gutteresen D09-721/Gutteresen D09-721)

Created By: Shelly Peterkin Date: 13:41, March 18 2020

Northern Region - DJ Basin

Mustang

C Section 33

Guttersen D09-721

Guttersen D09-721

Plan: Plan #3

Standard Planning Report

18 March, 2020

Noble Energy

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Guttersen D09-721
Company:	Northern Region - DJ Basin	TVD Reference:	Well @ 4752.00ft
Project:	Mustang	MD Reference:	Well @ 4752.00ft
Site:	C Section 33	North Reference:	Grid
Well:	Guttersen D09-721	Survey Calculation Method:	Minimum Curvature
Wellbore:	Guttersen D09-721		
Design:	Plan #3		

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 D09-721				
Well Position	+N/-S	173.36 ft	Northing:	1,340,075.05 usft	Latitude:	40.2630290
	+E/-W	2,083.80 ft	Easting:	3,264,359.76 usft	Longitude:	-104.5527040
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,722.00 ft

Wellbore	Guttersen D09-721				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	10/8/2018	7.95	66.74	52,194.67648782

Design	Plan #3			
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	169.31

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,874.87	13.50	98.40	2,868.65	-11.56	78.27	2.00	2.00	0.00	98.40	
6,371.41	13.50	98.40	6,268.61	-130.82	885.61	0.00	0.00	0.00	0.00	
7,239.01	80.00	178.98	6,860.30	-656.80	1,013.88	9.00	7.67	9.29	83.18	
7,327.87	88.00	178.98	6,869.58	-745.09	1,015.45	9.00	9.00	0.00	0.00	
8,169.81	88.00	178.98	6,899.00	-1,586.38	1,030.44	0.00	0.00	0.00	0.00	Guttersen D09-721-IF
9,093.53	88.00	178.98	6,931.27	-2,509.39	1,046.88	0.00	0.00	0.00	0.00	Guttersen D09-721-IF
9,198.87	88.00	180.56	6,934.95	-2,614.67	1,047.30	1.50	0.00	1.50	89.95	
11,598.21	88.00	180.56	7,018.69	-5,012.43	1,023.84	0.00	0.00	0.00	0.00	Guttersen D09-721-IF
11,837.16	88.00	176.97	7,027.03	-5,251.14	1,028.98	1.50	0.00	-1.50	-90.07	
12,114.61	88.00	176.97	7,036.72	-5,528.03	1,043.61	0.00	0.00	0.00	0.00	Guttersen D09-721-B

Noble Energy

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Guttersen D09-721
Company:	Northern Region - DJ Basin	TVD Reference:	Well @ 4752.00ft
Project:	Mustang	MD Reference:	Well @ 4752.00ft
Site:	C Section 33	North Reference:	Grid
Well:	Guttersen D09-721	Survey Calculation Method:	Minimum Curvature
Wellbore:	Guttersen D09-721		
Design:	Plan #3		

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
458.00	0.00	0.00	458.00	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
591.00	0.00	0.00	591.00	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
1,511.00	0.00	0.00	1,511.00	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
Start Build 2.00									
2,300.00	2.00	98.40	2,299.98	-0.26	1.73	0.57	2.00	2.00	0.00
2,400.00	4.00	98.40	2,399.84	-1.02	6.90	2.28	2.00	2.00	0.00
2,500.00	6.00	98.40	2,499.45	-2.29	15.53	5.13	2.00	2.00	0.00
2,600.00	8.00	98.40	2,598.70	-4.07	27.58	9.12	2.00	2.00	0.00
2,700.00	10.00	98.40	2,697.47	-6.36	43.06	14.24	2.00	2.00	0.00
2,800.00	12.00	98.40	2,795.62	-9.15	61.93	20.48	2.00	2.00	0.00
2,874.87	13.50	98.40	2,868.65	-11.56	78.27	25.88	2.00	2.00	0.00
Start 3496.54 hold at 2874.87 MD									
2,900.00	13.50	98.40	2,893.08	-12.42	84.08	27.80	0.00	0.00	0.00
3,000.00	13.50	98.40	2,990.32	-15.83	107.17	35.44	0.00	0.00	0.00
3,100.00	13.50	98.40	3,087.56	-19.24	130.26	43.07	0.00	0.00	0.00
3,200.00	13.50	98.40	3,184.80	-22.65	153.35	50.71	0.00	0.00	0.00
3,300.00	13.50	98.40	3,282.03	-26.06	176.44	58.34	0.00	0.00	0.00
3,400.00	13.50	98.40	3,379.27	-29.47	199.52	65.98	0.00	0.00	0.00
3,500.00	13.50	98.40	3,476.51	-32.88	222.61	73.61	0.00	0.00	0.00
3,600.00	13.50	98.40	3,573.75	-36.30	245.70	81.25	0.00	0.00	0.00
3,616.71	13.50	98.40	3,590.00	-36.87	249.56	82.52	0.00	0.00	0.00
Parkman									
3,700.00	13.50	98.40	3,670.99	-39.71	268.79	88.88	0.00	0.00	0.00
3,800.00	13.50	98.40	3,768.22	-43.12	291.88	96.52	0.00	0.00	0.00
3,900.00	13.50	98.40	3,865.46	-46.53	314.97	104.15	0.00	0.00	0.00
4,000.00	13.50	98.40	3,962.70	-49.94	338.06	111.79	0.00	0.00	0.00
4,033.22	13.50	98.40	3,995.00	-51.07	345.73	114.32	0.00	0.00	0.00

Noble Energy

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Guttersten D09-721
Company:	Northern Region - DJ Basin	TVD Reference:	Well @ 4752.00ft
Project:	Mustang	MD Reference:	Well @ 4752.00ft
Site:	C Section 33	North Reference:	Grid
Well:	Guttersten D09-721	Survey Calculation Method:	Minimum Curvature
Wellbore:	Guttersten D09-721		
Design:	Plan #3		

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)
Sussex									
4,100.00	13.50	98.40	4,059.94	-53.35	361.15	119.42	0.00	0.00	0.00
4,200.00	13.50	98.40	4,157.18	-56.76	384.24	127.06	0.00	0.00	0.00
4,300.00	13.50	98.40	4,254.41	-60.17	407.33	134.69	0.00	0.00	0.00
4,400.00	13.50	98.40	4,351.65	-63.58	430.42	142.33	0.00	0.00	0.00
4,500.00	13.50	98.40	4,448.89	-66.99	453.51	149.96	0.00	0.00	0.00
4,600.00	13.50	98.40	4,546.13	-70.40	476.60	157.60	0.00	0.00	0.00
4,600.90	13.50	98.40	4,547.00	-70.43	476.81	157.66	0.00	0.00	0.00
Shannon									
4,700.00	13.50	98.40	4,643.37	-73.81	499.69	165.23	0.00	0.00	0.00
4,800.00	13.50	98.40	4,740.60	-77.23	522.78	172.87	0.00	0.00	0.00
4,900.00	13.50	98.40	4,837.84	-80.64	545.87	180.50	0.00	0.00	0.00
5,000.00	13.50	98.40	4,935.08	-84.05	568.96	188.14	0.00	0.00	0.00
5,100.00	13.50	98.40	5,032.32	-87.46	592.05	195.77	0.00	0.00	0.00
5,200.00	13.50	98.40	5,129.56	-90.87	615.14	203.41	0.00	0.00	0.00
5,300.00	13.50	98.40	5,226.79	-94.28	638.23	211.04	0.00	0.00	0.00
5,400.00	13.50	98.40	5,324.03	-97.69	661.32	218.68	0.00	0.00	0.00
5,500.00	13.50	98.40	5,421.27	-101.10	684.41	226.31	0.00	0.00	0.00
5,600.00	13.50	98.40	5,518.51	-104.51	707.50	233.95	0.00	0.00	0.00
5,700.00	13.50	98.40	5,615.75	-107.92	730.59	241.58	0.00	0.00	0.00
5,800.00	13.50	98.40	5,712.98	-111.33	753.67	249.21	0.00	0.00	0.00
5,900.00	13.50	98.40	5,810.22	-114.74	776.76	256.85	0.00	0.00	0.00
6,000.00	13.50	98.40	5,907.46	-118.16	799.85	264.48	0.00	0.00	0.00
6,020.09	13.50	98.40	5,927.00	-118.84	804.49	266.02	0.00	0.00	0.00
Teepee Buttes									
6,100.00	13.50	98.40	6,004.70	-121.57	822.94	272.12	0.00	0.00	0.00
6,200.00	13.50	98.40	6,101.94	-124.98	846.03	279.75	0.00	0.00	0.00
6,300.00	13.50	98.40	6,199.17	-128.39	869.12	287.39	0.00	0.00	0.00
6,371.41	13.50	98.40	6,268.61	-130.82	885.61	292.84	0.00	0.00	0.00
Start DLS 9.00 TFO 83.18									
6,400.00	14.03	109.00	6,296.39	-132.44	892.19	295.65	9.00	1.87	37.05
6,450.00	15.94	124.84	6,344.70	-138.34	903.56	303.56	9.00	3.81	31.70
6,500.00	18.73	136.75	6,392.44	-148.11	914.70	315.23	9.00	5.58	23.80
6,550.00	22.08	145.41	6,439.31	-161.70	925.54	330.59	9.00	6.69	17.33
6,600.00	25.76	151.80	6,485.02	-179.02	936.01	349.55	9.00	7.37	12.78
6,650.00	29.66	156.65	6,529.28	-199.96	946.06	371.99	9.00	7.79	9.70
6,700.00	33.69	160.45	6,571.83	-224.40	955.60	397.78	9.00	8.07	7.60
6,750.00	37.82	163.52	6,612.40	-252.19	964.60	426.75	9.00	8.26	6.13
6,759.68	38.63	164.04	6,620.00	-257.94	966.27	432.71	9.00	8.34	5.45
Sharon Springs									
6,794.99	41.60	165.82	6,647.00	-279.90	972.17	455.39	9.00	8.40	5.03
Top A Chalk									
6,800.00	42.02	166.05	6,650.74	-283.14	972.99	458.73	9.00	8.44	4.69
6,815.32	43.31	166.75	6,662.00	-293.23	975.42	469.09	9.00	8.46	4.54
Top A Marl									
6,839.08	45.33	167.77	6,679.00	-309.43	979.08	485.69	9.00	8.49	4.27
Top B Chalk									
6,850.00	46.26	168.21	6,686.61	-317.08	980.71	493.51	9.00	8.52	4.06
6,898.74	50.43	170.03	6,719.00	-352.84	987.56	529.92	9.00	8.56	3.74
Top B Marl									
6,900.00	50.54	170.08	6,719.80	-353.80	987.73	530.89	9.00	8.58	3.50
6,950.00	54.84	171.73	6,750.10	-393.06	994.00	570.63	9.00	8.61	3.30
6,995.49	58.78	173.08	6,775.00	-430.78	999.02	608.64	9.00	8.65	2.98

Noble Energy

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Guttersen D09-721
Company:	Northern Region - DJ Basin	TVD Reference:	Well @ 4752.00ft
Project:	Mustang	MD Reference:	Well @ 4752.00ft
Site:	C Section 33	North Reference:	Grid
Well:	Guttersen D09-721	Survey Calculation Method:	Minimum Curvature
Wellbore:	Guttersen D09-721		
Design:	Plan #3		

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)
Top C Chalk									
7,000.00	59.17	173.21	6,777.33	-434.62	999.48	612.49	9.00	8.66	2.84
7,050.00	63.51	174.57	6,801.30	-478.24	1,004.14	656.21	9.00	8.68	2.71
7,056.11	64.04	174.73	6,804.00	-483.69	1,004.65	661.67	9.00	8.69	2.59
Top C Marl									
7,100.00	67.86	175.82	6,821.89	-523.63	1,007.95	701.52	9.00	8.71	2.50
7,150.00	72.22	177.01	6,838.95	-570.52	1,010.88	748.15	9.00	8.72	2.36
7,182.10	75.03	177.73	6,848.00	-601.29	1,012.29	778.64	9.00	8.73	2.27
Top D Chalk									
7,200.00	76.59	178.13	6,852.39	-618.63	1,012.92	795.79	9.00	8.74	2.22
7,239.01	80.00	178.98	6,860.30	-656.80	1,013.88	833.48	9.00	8.74	2.18
TPZ at 7239.01 MD									
7,250.00	80.99	178.98	6,862.12	-667.64	1,014.07	844.17	9.00	9.00	0.00
7,300.00	85.49	178.98	6,868.00	-717.28	1,014.95	893.11	9.00	9.00	0.00
7,327.87	88.00	178.98	6,869.58	-745.09	1,015.45	920.53	9.00	9.00	0.00
Landing Pt. at 7327.87 MD									
7,400.00	88.00	178.98	6,872.10	-817.17	1,016.73	991.60	0.00	0.00	0.00
7,500.00	88.00	178.98	6,875.60	-917.09	1,018.51	1,090.12	0.00	0.00	0.00
7,600.00	88.00	178.98	6,879.09	-1,017.01	1,020.29	1,188.64	0.00	0.00	0.00
7,700.00	88.00	178.98	6,882.59	-1,116.94	1,022.07	1,287.15	0.00	0.00	0.00
7,800.00	88.00	178.98	6,886.08	-1,216.86	1,023.85	1,385.67	0.00	0.00	0.00
7,854.98	88.00	178.98	6,888.00	-1,271.80	1,024.83	1,439.84	0.00	0.00	0.00
Top Ft. Hayes									
7,900.00	88.00	178.98	6,889.57	-1,316.78	1,025.63	1,484.19	0.00	0.00	0.00
8,000.00	88.00	178.98	6,893.07	-1,416.71	1,027.41	1,582.71	0.00	0.00	0.00
8,100.00	88.00	178.98	6,896.56	-1,516.63	1,029.19	1,681.23	0.00	0.00	0.00
8,169.81	88.00	178.98	6,899.00	-1,586.38	1,030.44	1,750.00	0.00	0.00	0.00
Start 923.72 hold at 8169.81 MD									
8,200.00	88.00	178.98	6,900.06	-1,616.55	1,030.97	1,779.75	0.00	0.00	0.00
8,300.00	88.00	178.98	6,903.55	-1,716.48	1,032.75	1,878.27	0.00	0.00	0.00
8,400.00	88.00	178.98	6,907.04	-1,816.40	1,034.53	1,976.79	0.00	0.00	0.00
8,500.00	88.00	178.98	6,910.54	-1,916.32	1,036.32	2,075.31	0.00	0.00	0.00
8,541.88	88.00	178.98	6,912.00	-1,958.17	1,037.06	2,116.56	0.00	0.00	0.00
Codell									
8,600.00	88.00	178.98	6,914.03	-2,016.25	1,038.10	2,173.82	0.00	0.00	0.00
8,700.00	88.00	178.98	6,917.52	-2,116.17	1,039.88	2,272.34	0.00	0.00	0.00
8,800.00	88.00	178.98	6,921.02	-2,216.09	1,041.66	2,370.86	0.00	0.00	0.00
8,900.00	88.00	178.98	6,924.51	-2,316.01	1,043.44	2,469.38	0.00	0.00	0.00
8,971.19	88.00	178.98	6,927.00	-2,387.15	1,044.70	2,539.52	0.00	0.00	0.00
Carlile									
9,000.00	88.00	178.98	6,928.01	-2,415.94	1,045.22	2,567.90	0.00	0.00	0.00
9,093.53	88.00	178.98	6,931.27	-2,509.39	1,046.88	2,660.04	0.00	0.00	0.00
Start DLS 1.50 TFO 89.95									
9,100.00	88.00	179.08	6,931.50	-2,515.86	1,046.99	2,666.42	1.50	0.00	1.50
9,198.87	88.00	180.56	6,934.95	-2,614.67	1,047.30	2,763.57	1.50	0.00	1.50
Start 2399.34 hold at 9198.87 MD									
9,200.00	88.00	180.56	6,934.99	-2,615.80	1,047.29	2,764.68	0.00	0.00	0.00
9,300.00	88.00	180.56	6,938.48	-2,715.73	1,046.31	2,862.69	0.00	0.00	0.00
9,400.00	88.00	180.56	6,941.97	-2,815.67	1,045.34	2,960.71	0.00	0.00	0.00
9,500.00	88.00	180.56	6,945.46	-2,915.60	1,044.36	3,058.73	0.00	0.00	0.00
9,600.00	88.00	180.56	6,948.95	-3,015.53	1,043.38	3,156.75	0.00	0.00	0.00
9,700.00	88.00	180.56	6,952.44	-3,115.47	1,042.40	3,254.77	0.00	0.00	0.00
9,800.00	88.00	180.56	6,955.93	-3,215.40	1,041.42	3,352.78	0.00	0.00	0.00

Noble Energy

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Guttersten D09-721
Company:	Northern Region - DJ Basin	TVD Reference:	Well @ 4752.00ft
Project:	Mustang	MD Reference:	Well @ 4752.00ft
Site:	C Section 33	North Reference:	Grid
Well:	Guttersten D09-721	Survey Calculation Method:	Minimum Curvature
Wellbore:	Guttersten D09-721		
Design:	Plan #3		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
9,900.00	88.00	180.56	6,959.42	-3,315.34	1,040.45	3,450.80	0.00	0.00	0.00	
10,000.00	88.00	180.56	6,962.91	-3,415.27	1,039.47	3,548.82	0.00	0.00	0.00	
10,100.00	88.00	180.56	6,966.40	-3,515.21	1,038.49	3,646.84	0.00	0.00	0.00	
10,200.00	88.00	180.56	6,969.89	-3,615.14	1,037.51	3,744.86	0.00	0.00	0.00	
10,300.00	88.00	180.56	6,973.38	-3,715.07	1,036.54	3,842.88	0.00	0.00	0.00	
10,400.00	88.00	180.56	6,976.87	-3,815.01	1,035.56	3,940.89	0.00	0.00	0.00	
10,500.00	88.00	180.56	6,980.36	-3,914.94	1,034.58	4,038.91	0.00	0.00	0.00	
10,600.00	88.00	180.56	6,983.85	-4,014.88	1,033.60	4,136.93	0.00	0.00	0.00	
10,700.00	88.00	180.56	6,987.34	-4,114.81	1,032.62	4,234.95	0.00	0.00	0.00	
10,800.00	88.00	180.56	6,990.83	-4,214.75	1,031.65	4,332.97	0.00	0.00	0.00	
10,900.00	88.00	180.56	6,994.32	-4,314.68	1,030.67	4,430.99	0.00	0.00	0.00	
11,000.00	88.00	180.56	6,997.81	-4,414.61	1,029.69	4,529.00	0.00	0.00	0.00	
11,100.00	88.00	180.56	7,001.30	-4,514.55	1,028.71	4,627.02	0.00	0.00	0.00	
11,200.00	88.00	180.56	7,004.79	-4,614.48	1,027.74	4,725.04	0.00	0.00	0.00	
11,300.00	88.00	180.56	7,008.28	-4,714.42	1,026.76	4,823.06	0.00	0.00	0.00	
11,400.00	88.00	180.56	7,011.77	-4,814.35	1,025.78	4,921.08	0.00	0.00	0.00	
11,500.00	88.00	180.56	7,015.26	-4,914.29	1,024.80	5,019.10	0.00	0.00	0.00	
11,598.21	88.00	180.56	7,018.69	-5,012.43	1,023.84	5,115.36	0.00	0.00	0.00	
Start DLS 1.50 TFO -90.07										
11,600.00	88.00	180.53	7,018.75	-5,014.22	1,023.82	5,117.11	1.50	0.00	-1.50	
11,700.00	88.00	179.03	7,022.24	-5,114.16	1,024.20	5,215.39	1.50	0.00	-1.50	
11,800.00	88.00	177.53	7,025.74	-5,214.05	1,027.20	5,314.10	1.50	0.00	-1.50	
11,837.16	88.00	176.97	7,027.03	-5,251.14	1,028.98	5,350.88	1.50	0.00	-1.50	
Start 277.44 hold at 11837.16 MD										
11,900.00	88.00	176.97	7,029.23	-5,313.86	1,032.29	5,413.12	0.00	0.00	0.00	
12,000.00	88.00	176.97	7,032.72	-5,413.65	1,037.57	5,512.17	0.00	0.00	0.00	
12,100.00	88.00	176.97	7,036.21	-5,513.45	1,042.84	5,611.21	0.00	0.00	0.00	
12,114.61	88.00	176.97	7,036.72	-5,528.03	1,043.61	5,625.68	0.00	0.00	0.00	
TD at 12114.61										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
- hit/miss target										
- Shape										
Guttersten D09-721-SHL	0.00	0.00	0.00	0.00	0.00	1,340,075.05	3,264,359.76	40.2630290	-104.5527040	
- plan hits target center										
- Point										
Guttersten D09-721-TPZ	0.00	0.00	6,860.30	-656.80	1,013.88	1,339,418.25	3,265,373.64	40.2611964	-104.5490964	
- plan hits target center										
- Point										
Guttersten D09-721-BHL	0.00	0.00	7,036.72	-5,528.03	1,043.61	1,334,547.03	3,265,403.38	40.2478243	-104.5491770	
- plan hits target center										
- Point										

Noble Energy
Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Guttersten D09-721
Company:	Northern Region - DJ Basin	TVD Reference:	Well @ 4752.00ft
Project:	Mustang	MD Reference:	Well @ 4752.00ft
Site:	C Section 33	North Reference:	Grid
Well:	Guttersten D09-721	Survey Calculation Method:	Minimum Curvature
Wellbore:	Guttersten D09-721		
Design:	Plan #3		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
458.00	458.00	Pierre				
591.00	591.00	Upper Pierre Aquifer Top				
1,511.00	1,511.00	Upper Pierre Aquifer Base				
3,616.71	3,590.00	Parkman				
4,033.22	3,995.00	Sussex				
4,600.90	4,547.00	Shannon				
6,020.09	5,927.00	Teepee Buttes				
6,759.68	6,620.00	Sharon Springs				
6,794.99	6,647.00	Top A Chalk				
6,815.32	6,662.00	Top A Marl				
6,839.08	6,679.00	Top B Chalk				
6,898.74	6,719.00	Top B Marl				
6,995.49	6,775.00	Top C Chalk				
7,056.11	6,804.00	Top C Marl				
7,182.10	6,848.00	Top D Chalk				
7,854.98	6,888.00	Top Ft. Hayes				
8,541.88	6,912.00	Codell				
8,971.19	6,927.00	Carlile				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
2,200.00	2,200.00	0.00	0.00	Start Build 2.00	
2,874.87	2,868.65	-11.56	78.27	Start 3496.54 hold at 2874.87 MD	
6,371.41	6,268.61	-130.82	885.61	Start DLS 9.00 TFO 83.18	
7,239.01	6,860.30	-656.80	1,013.88	TPZ at 7239.01 MD	
7,327.87	6,869.58	-745.09	1,015.45	Landing Pt. at 7327.87 MD	
8,169.81	6,899.00	-1,586.38	1,030.44	Start 923.72 hold at 8169.81 MD	
9,093.53	6,931.27	-2,509.39	1,046.88	Start DLS 1.50 TFO 89.95	
9,198.87	6,934.95	-2,614.67	1,047.30	Start 2399.34 hold at 9198.87 MD	
11,598.21	7,018.69	-5,012.43	1,023.84	Start DLS 1.50 TFO -90.07	
11,837.16	7,027.03	-5,251.14	1,028.98	Start 277.44 hold at 11837.16 MD	
12,114.61	7,036.72	-5,528.03	1,043.61	TD at 12114.61	

Northern Region - DJ Basin

Mustang

C Section 33

Guttersen D09-721

Guttersen D09-721

Plan #3

Anticollision Summary Report

18 March, 2020

Noble Energy

Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen D09-721
Project:	Mustang	TVD Reference:	Well @ 4752.00ft
Reference Site:	C Section 33	MD Reference:	Well @ 4752.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersen D09-721	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Guttersen D09-721	Database:	EDMP
Reference Design:	Plan #3	Offset TVD Reference:	Offset Datum

Reference	Plan #3		
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 3/18/2020			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	12,114.61	Plan #3 (Guttersen D09-721)	2_MWD+IFR1+MS	A008Mb: IFR dec & multi-station analysis

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
C Section 32						
HENNINGTON C #32-10(PR) - Wellbore #1 - No Surveys	2,200.00	2,218.00	5,698.58	5,671.57	210.987	CC, ES
HENNINGTON C #32-10(PR) - Wellbore #1 - No Surveys	7,150.00	6,856.95	6,827.81	6,742.94	80.455	SF
HENNINGTON C #32-2(PR) - Wellbore #1 - No Surveys	2,200.00	2,219.00	6,986.79	6,959.77	258.598	CC, ES
HENNINGTON C #32-2(PR) - Wellbore #1 - No Surveys	7,000.00	6,796.33	8,049.97	7,966.02	95.888	SF
HENNINGTON C #32-7(PA) - Wellbore #1 - Gyro Survey	0.00	8.93	6,364.72			
HENNINGTON C #32-7(PA) - Wellbore #1 - Gyro Survey	900.00	874.31	6,368.40	6,362.52	1,082.626	ES
HENNINGTON C #32-7(PA) - Wellbore #1 - Gyro Survey	7,050.00	6,500.00	7,499.39	7,452.28	159.196	SF
HOWELL #1(SI) - Wellbore #1 - No Surveys	2,200.00	2,248.00	7,629.81	7,602.54	279.777	CC, ES
HOWELL #1(SI) - Wellbore #1 - No Surveys	10,400.00	7,024.87	9,658.32	9,561.35	99.602	SF
HOWELL #32-1(SI) - Wellbore #1 - No Surveys	2,200.00	2,232.00	7,310.58	7,283.45	269.451	CC, ES
HOWELL #32-1(SI) - Wellbore #1 - No Surveys	7,150.00	6,870.95	8,457.81	8,372.87	99.577	SF
HOWELL #32-2(SI) - Wellbore #1 - No Surveys	2,200.00	2,226.00	7,855.25	7,828.17	290.086	CC, ES
HOWELL #32-2(SI) - Wellbore #1 - No Surveys	7,100.00	6,847.89	8,990.31	8,905.72	106.287	SF
HOWELL #32-23(PR) - Wellbore #1 - No Surveys	2,200.00	2,259.00	8,515.85	8,488.49	311.172	CC, ES
HOWELL #32-23(PR) - Wellbore #1 - No Surveys	7,200.00	6,911.39	9,678.74	9,593.36	113.363	SF
HOWELL #C 32-12(SI) - Wellbore #1 - No Surveys	2,200.00	2,273.00	8,286.53	8,259.04	301.447	CC, ES
HOWELL #C 32-12(SI) - Wellbore #1 - No Surveys	9,100.00	7,004.50	9,980.47	9,889.22	109.377	SF
MCGUIRK-HOWELL C #32-11(SI) - Wellbore #1 - No Su	2,200.00	2,231.00	7,025.93	6,998.81	259.043	CC, ES
MCGUIRK-HOWELL C #32-11(SI) - Wellbore #1 - No Su	7,239.01	6,891.30	8,166.70	8,081.35	95.687	SF
MCGUIRK-HOWELL C #32-14(TA) - Wellbore #1 - No Su	2,200.00	2,237.00	6,967.14	6,939.96	256.380	CC, ES
MCGUIRK-HOWELL C #32-14(TA) - Wellbore #1 - No Su	10,000.00	6,999.91	8,746.18	8,650.94	91.834	SF
MCGUIRK-HOWELL C #32-4(SI) - Wellbore #1 - No Sur	2,200.00	2,274.00	9,110.88	9,083.38	331.330	CC, ES
MCGUIRK-HOWELL C #32-4(SI) - Wellbore #1 - No Sur	6,500.00	6,466.44	9,995.96	9,916.35	125.551	SF
NELSON #32-25(PR) - Wellbore #1 - No Surveys	2,200.00	2,263.00	8,261.49	8,234.09	301.493	CC, ES
NELSON #32-25(PR) - Wellbore #1 - No Surveys	7,150.00	6,901.95	9,417.99	9,332.82	110.578	SF
PLUSS #32-43(PA) - Wellbore #1 - Gyro Surveys	0.00	20.92	5,689.23			
PLUSS #32-43(PA) - Wellbore #1 - Gyro Surveys	1,200.00	1,186.34	5,692.35	5,684.30	707.579	ES
PLUSS #32-43(PA) - Wellbore #1 - Gyro Surveys	10,400.00	6,600.00	7,825.48	7,767.95	136.025	SF
PTF #C 32-1(SI) - Wellbore #1 - No Surveys	2,200.00	2,211.00	5,795.67	5,768.72	215.068	CC, ES
PTF #C 32-1(SI) - Wellbore #1 - No Surveys	6,950.00	6,761.10	6,802.55	6,718.99	81.412	SF
PTF #C 32-16(SI) - Wellbore #1 - No Surveys	2,200.00	2,212.00	4,212.03	4,185.08	156.251	CC, ES
PTF #C 32-16(SI) - Wellbore #1 - No Surveys	7,250.00	6,874.12	5,278.96	5,193.61	61.854	SF
PTF #C 32-8(SI) - Wellbore #1 - No Surveys	2,200.00	2,201.00	4,946.96	4,920.10	184.170	CC, ES
PTF #C 32-8(SI) - Wellbore #1 - No Surveys	6,950.00	6,751.10	6,003.17	5,919.71	71.929	SF
PTF #C 32-9(SI) - Wellbore #1 - No Surveys	2,200.00	2,203.00	4,363.24	4,336.36	162.333	CC, ES
PTF #C 32-9(SI) - Wellbore #1 - No Surveys	7,100.00	6,824.89	5,481.39	5,396.91	64.886	SF

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

Noble Energy

Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Gutteresen D09-721
Project:	Mustang	TVD Reference:	Well @ 4752.00ft
Reference Site:	C Section 33	MD Reference:	Well @ 4752.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Gutteresen D09-721	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Gutteresen D09-721	Database:	EDMP
Reference Design:	Plan #3	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
C Section 33						
GUTTERSEN C #33-31D (PR) - GUTTERSEN C #33-31	706.22	756.11	3,865.24	3,861.61	1,065.103	CC, ES
GUTTERSEN C #33-31D (PR) - GUTTERSEN C #33-31	6,800.00	6,877.08	5,953.76	5,901.07	113.000	SF
GUTTERSEN C #33-32 (PR) - Wellbore #1 - As-Drilled	1,515.52	1,540.61	3,885.55	3,855.76	130.415	CC
GUTTERSEN C #33-32 (PR) - Wellbore #1 - As-Drilled	2,300.00	2,312.14	3,887.33	3,840.15	82.391	ES
GUTTERSEN C #33-32 (PR) - Wellbore #1 - As-Drilled	6,900.00	6,767.99	4,919.75	4,742.03	27.682	SF
GUTTERSEN C #33-33D (PR) - GUTTERSEN C #33-33	2,379.94	2,664.71	3,767.04	3,748.44	202.511	CC
GUTTERSEN C #33-33D (PR) - GUTTERSEN C #33-33	2,400.00	2,683.11	3,767.11	3,748.33	200.528	ES
GUTTERSEN C #33-33D (PR) - GUTTERSEN C #33-33	7,150.00	7,069.80	4,853.32	4,796.62	85.597	SF
Gutteresen C28-715 - Gutteresen C28-715 - Plan #2	2,200.00	2,196.00	156.90	141.60	10.260	CC
Gutteresen C28-715 - Gutteresen C28-715 - Plan #2	2,300.00	2,292.12	157.35	141.38	9.853	ES
Gutteresen C28-715 - Gutteresen C28-715 - Plan #2	7,100.00	7,142.35	355.94	304.41	6.907	SF
Gutteresen C28-725 - Gutteresen C28-725 - Plan #2	2,200.00	2,194.00	151.90	136.61	9.938	CC, ES
Gutteresen C28-725 - Gutteresen C28-725 - Plan #2	7,000.00	7,384.19	281.54	230.87	5.557	SF
Gutteresen C28-735 - Gutteresen C28-735 - Plan #2	2,200.00	2,193.00	150.10	134.81	9.822	CC, ES
Gutteresen C28-735 - Gutteresen C28-735 - Plan #2	2,400.00	2,383.10	155.36	138.79	9.372	SF
Gutteresen C28-745 - Gutteresen C28-745 - Plan #2	2,200.00	2,192.00	152.04	136.76	9.951	CC, ES
Gutteresen C28-745 - Gutteresen C28-745 - Plan #2	2,400.00	2,382.26	158.10	141.52	9.535	SF
Gutteresen C28-750 - Gutteresen C28-750 - Plan #2	2,200.00	2,192.00	156.81	141.53	10.264	CC, ES
Gutteresen C28-750 - Gutteresen C28-750 - Plan #2	2,400.00	2,382.53	163.48	146.89	9.855	SF
Gutteresen C28-755 - Gutteresen C28-755 - Plan #2	2,203.14	2,206.28	2,001.46	1,986.12	130.481	CC
Gutteresen C28-755 - Gutteresen C28-755 - Plan #2	2,300.00	2,353.00	2,001.85	1,985.68	123.843	ES
Gutteresen C28-755 - Gutteresen C28-755 - Plan #2	6,700.00	7,623.70	2,200.01	2,149.98	43.976	SF
Gutteresen C28-765 - Gutteresen C28-765 - Plan #2	2,200.08	2,201.14	2,023.70	2,008.39	132.174	CC, ES
Gutteresen C28-765 - Gutteresen C28-765 - Plan #2	6,750.00	7,202.47	2,846.87	2,798.40	58.737	SF
Gutteresen C28-775 - Gutteresen C28-775 - Plan #2	2,200.00	2,202.00	2,068.48	2,053.16	135.072	CC, ES
Gutteresen C28-775 - Gutteresen C28-775 - Plan #2	6,750.00	7,321.35	3,500.78	3,451.98	71.736	SF
Gutteresen C28-785 - Gutteresen C28-785 - Plan #2	2,200.00	2,202.00	2,091.00	2,075.68	136.542	CC, ES
Gutteresen C28-785 - Gutteresen C28-785 - Plan #2	8,700.00	6,272.54	4,271.25	4,220.47	84.108	SF
Gutteresen D09-745 - Gutteresen D09-745 - Plan #3	2,200.00	2,202.00	22.60	7.29	1.476	Level 3, CC, ES, SF
Gutteresen D09-750 - Gutteresen D09-750 - Plan #3	2,200.00	2,198.00	45.21	29.91	2.955	CC, ES, SF
Gutteresen D09-755 - Gutteresen D09-755 - Plan #2	2,727.37	3,089.87	1,960.22	1,940.27	98.253	CC, ES
Gutteresen D09-755 - Gutteresen D09-755 - Plan #2	12,114.61	12,008.37	2,228.18	2,127.18	22.061	SF
Gutteresen D09-765 - Gutteresen D09-765 - Plan #1	2,200.00	2,203.00	2,016.31	2,000.99	131.634	CC, ES
Gutteresen D09-765 - Gutteresen D09-765 - Plan #1	12,114.61	12,026.96	2,876.77	2,774.92	28.246	SF
Gutteresen D09-770 - Gutteresen D09-770 - Plan #2	2,200.00	2,203.00	2,038.91	2,023.60	133.110	CC, ES
Gutteresen D09-770 - Gutteresen D09-770 - Plan #2	12,114.61	11,977.07	3,190.66	3,087.63	30.969	SF
Gutteresen D09-775 - Gutteresen D09-775 - Plan #2	2,200.00	2,203.00	2,061.52	2,046.20	134.586	CC, ES
Gutteresen D09-775 - Gutteresen D09-775 - Plan #2	12,114.61	11,981.30	3,552.25	3,450.02	34.747	SF
Gutteresen D09-785 - Gutteresen D09-785 - Plan #2	2,200.00	2,203.00	2,083.84	2,068.53	136.043	CC, ES
Gutteresen D09-785 - Gutteresen D09-785 - Plan #2	12,114.61	12,126.61	4,175.37	4,072.15	40.452	SF
LINDAY C #33-2 (SI) - Wellbore #1 - Gyro Surveys	100.00	53.87	1,567.36	1,567.14	7,104.062	CC, ES
LINDAY C #33-2 (SI) - Wellbore #1 - Gyro Surveys	6,900.00	6,696.82	2,630.53	2,582.78	55.088	SF
LINDAY C #33-1 (SI) - LINDAY #33-1 OH - As-Drilled	2,237.49	2,207.34	326.97	311.65	21.339	CC, ES
LINDAY #33-1 (SI) - LINDAY #33-1 OH - As-Drilled	2,600.00	2,565.37	349.59	331.78	19.620	SF
LINDAY #33-3 (SI) - Wellbore #1 - No Surveys	2,200.00	2,169.00	3,237.56	3,192.92	72.531	CC
LINDAY #33-3 (SI) - Wellbore #1 - No Surveys	2,300.00	2,268.98	3,238.63	3,191.90	69.305	ES
LINDAY #33-3 (SI) - Wellbore #1 - No Surveys	6,650.00	6,501.72	3,944.70	3,808.24	28.908	SF
LINDAY #33-4 (SI) - Wellbore #1 - No Surveys	2,200.00	2,169.00	2,851.36	2,806.72	63.879	CC
LINDAY #33-4 (SI) - Wellbore #1 - No Surveys	2,400.00	2,368.84	2,853.02	2,804.21	58.447	ES
LINDAY #33-4 (SI) - Wellbore #1 - No Surveys	6,650.00	6,501.72	3,271.01	3,134.35	23.935	SF
LINDAY #33-5 (SI) - Wellbore #1 - No Surveys	2,200.00	2,154.00	1,534.07	1,489.69	34.570	CC
LINDAY #33-5 (SI) - Wellbore #1 - No Surveys	2,400.00	2,353.84	1,536.22	1,487.67	31.641	ES
LINDAY #33-5 (SI) - Wellbore #1 - No Surveys	6,550.00	6,406.69	2,047.55	1,913.03	15.222	SF

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

Noble Energy

Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersten D09-721
Project:	Mustang	TVD Reference:	Well @ 4752.00ft
Reference Site:	C Section 33	MD Reference:	Well @ 4752.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersten D09-721	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Guttersten D09-721	Database:	EDMP
Reference Design:	Plan #3	Offset TVD Reference:	Offset Datum

Summary

Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
C Section 33						
LINDSAY #33-6 (SI) - Wellbore #1 - No Surveys	2,200.00	1,777.00	2,176.32	2,138.52	57.582	CC
LINDSAY #33-6 (SI) - Wellbore #1 - No Surveys	2,300.00	1,876.98	2,177.74	2,137.86	54.596	ES
LINDSAY #33-6 (SI) - Wellbore #1 - No Surveys	6,650.00	6,106.28	3,042.38	2,912.94	23.505	SF
LINDSAY #33-7 (SI) - Wellbore #1 - No Surveys	2,200.00	2,177.00	4,438.08	4,393.31	99.116	CC
LINDSAY #33-7 (SI) - Wellbore #1 - No Surveys	2,300.00	2,276.98	4,438.95	4,392.08	94.707	ES
LINDSAY #33-7 (SI) - Wellbore #1 - No Surveys	6,750.00	6,589.40	5,087.24	4,948.85	36.761	SF
LINDSAY #33-8 (SI) - Wellbore #1 - No Surveys	2,200.00	2,180.00	4,157.12	4,112.29	92.733	CC
LINDSAY #33-8 (SI) - Wellbore #1 - No Surveys	2,500.00	2,479.45	4,160.53	4,109.44	81.439	ES
LINDSAY #33-8 (SI) - Wellbore #1 - No Surveys	6,750.00	6,607.60	4,575.47	4,436.60	32.946	SF
LINDSAY #C33-10 (SI) - Wellbore #1 - No Surveys	2,200.00	2,207.00	5,113.32	5,068.02	112.876	CC
LINDSAY #C33-10 (SI) - Wellbore #1 - No Surveys	2,300.00	2,307.02	5,114.53	5,067.13	107.914	ES
LINDSAY #C33-10 (SI) - Wellbore #1 - No Surveys	6,850.00	6,679.61	5,972.79	5,832.68	42.631	SF
LINDSAY #C33-11 (PA) - LINDSAY #C33-11 OH - As-Dri	1,823.81	1,811.86	4,077.74	4,065.28	327.123	CC
LINDSAY #C33-11 (PA) - LINDSAY #C33-11 OH - As-Dri	2,200.00	2,159.00	4,078.69	4,063.66	271.481	ES
LINDSAY #C33-11 (PA) - LINDSAY #C33-11 OH - As-Dri	6,800.00	6,627.10	5,075.46	5,028.28	107.577	SF
LINDSAY #C33-12 (PA) - Wellbore #1 - As-Drilled	1,396.74	1,376.75	3,246.94	3,237.53	345.046	CC
LINDSAY #C33-12 (PA) - Wellbore #1 - As-Drilled	2,100.00	2,051.34	3,248.89	3,234.61	227.468	ES
LINDSAY #C33-12 (PA) - Wellbore #1 - As-Drilled	6,900.00	6,985.44	4,321.20	4,272.41	88.566	SF
LINDSAY #C33-13 (SI) - LINDSAY #C33-13 OH - As-Dril	100.00	81.29	2,870.06	2,869.79	10,000.000	CC
LINDSAY #C33-13 (SI) - LINDSAY #C33-13 OH - As-Dril	2,100.00	2,065.87	2,876.80	2,862.46	200.583	ES
LINDSAY #C33-13 (SI) - LINDSAY #C33-13 OH - As-Dril	7,150.00	6,794.03	4,001.27	3,952.58	82.176	SF
LINDSAY #C33-14 (SI) - Wellbore #1 - No Surveys	4,274.26	4,208.39	4,255.56	4,167.80	48.492	CC
LINDSAY #C33-14 (SI) - Wellbore #1 - No Surveys	5,800.00	5,708.02	4,270.43	4,150.64	35.647	ES
LINDSAY #C33-14 (SI) - Wellbore #1 - No Surveys	6,750.00	6,608.60	4,403.16	4,264.09	31.661	SF
LINDSAY #C33-15 (SI) - Wellbore #1 - No Surveys	5,164.23	5,059.77	2,957.36	2,851.41	27.913	CC
LINDSAY #C33-15 (SI) - Wellbore #1 - No Surveys	6,300.00	6,164.17	2,969.22	2,839.60	22.907	ES
LINDSAY #C33-15 (SI) - Wellbore #1 - No Surveys	6,650.00	6,505.72	3,037.35	2,900.47	22.190	SF
LINDSAY #C33-16 (SI) - Wellbore #1 - As-Drilled	6,403.19	6,256.02	375.27	330.13	8.312	CC, ES
LINDSAY #C33-16 (SI) - Wellbore #1 - As-Drilled	6,450.00	6,301.48	377.10	331.62	8.290	SF
LINDSAY #C33-9 (PR) - Wellbore #1 - No Surveys	5,997.47	5,852.00	1,699.84	1,576.74	13.808	CC
LINDSAY #C33-9 (PR) - Wellbore #1 - No Surveys	6,371.41	6,215.61	1,702.08	1,571.19	13.003	ES
LINDSAY #C33-9 (PR) - Wellbore #1 - No Surveys	6,550.00	6,386.31	1,729.54	1,594.99	12.854	SF
LINDSAY C #33-02 (SI) - Wellbore #1 - As-Drilled	100.00	53.87	1,567.36	1,567.14	7,104.534	CC, ES
LINDSAY C #33-02 (SI) - Wellbore #1 - As-Drilled	6,900.00	6,696.82	2,630.53	2,582.75	55.050	SF
LINDSAY C #33-17 (SI) - Wellbore #1 - As-Drilled	2,200.00	2,190.07	3,494.33	3,448.74	76.632	CC
LINDSAY C #33-17 (SI) - Wellbore #1 - As-Drilled	3,000.00	3,019.54	3,505.32	3,441.02	54.512	ES
LINDSAY C #33-17 (SI) - Wellbore #1 - As-Drilled	6,800.00	6,690.56	3,848.39	3,676.99	22.453	SF
LINDSAY C #33-18 (SI) - Wellbore #1 - As-Drilled	1,101.95	1,090.98	2,896.97	2,882.77	203.951	CC
LINDSAY C #33-18 (SI) - Wellbore #1 - As-Drilled	1,200.00	1,147.00	2,897.76	2,882.47	189.434	ES
LINDSAY C #33-18 (SI) - Wellbore #1 - As-Drilled	6,700.00	6,607.75	4,173.07	4,064.71	38.513	SF
LINDSAY C #33-19 (PR) - Wellbore #1 - No Surveys	2,200.00	2,186.00	4,145.80	4,100.87	92.265	CC
LINDSAY C #33-19 (PR) - Wellbore #1 - No Surveys	2,300.00	2,285.98	4,146.99	4,099.97	88.183	ES
LINDSAY C #33-19 (PR) - Wellbore #1 - No Surveys	6,750.00	6,601.60	4,943.72	4,805.24	35.700	SF
LINDSAY C #33-20 (SI) - Wellbore #1 - As-Drilled	1,561.93	1,573.56	2,977.49	2,942.37	84.765	CC
LINDSAY C #33-20 (SI) - Wellbore #1 - As-Drilled	2,400.00	2,481.90	2,983.67	2,927.68	53.293	ES
LINDSAY C #33-20 (SI) - Wellbore #1 - As-Drilled	6,700.00	6,595.47	3,871.51	3,696.12	22.074	SF
LINDSAY C #33-21 (SI) - Wellbore #1 - As-Drilled	1,600.00	1,601.61	2,197.57	2,161.75	61.347	CC
LINDSAY C #33-21 (SI) - Wellbore #1 - As-Drilled	2,300.00	2,279.70	2,199.51	2,149.10	43.628	ES
LINDSAY C #33-21 (SI) - Wellbore #1 - As-Drilled	6,500.00	6,373.63	2,822.81	2,657.59	17.086	SF
LINDSAY C #33-22 (SI) - Wellbore #1 - As-Drilled	3,063.92	3,070.93	2,050.50	1,976.90	27.860	CC
LINDSAY C #33-22 (SI) - Wellbore #1 - As-Drilled	4,000.00	3,976.64	2,067.83	1,966.83	20.472	ES
LINDSAY C #33-22 (SI) - Wellbore #1 - As-Drilled	6,300.00	6,175.52	2,200.41	2,039.71	13.693	SF
LINDSAY C #33-23 (SI) - Wellbore #1 - No Surveys	3,560.23	3,486.07	886.62	814.15	12.235	CC

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

Noble Energy

Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Gutteresen D09-721
Project:	Mustang	TVD Reference:	Well @ 4752.00ft
Reference Site:	C Section 33	MD Reference:	Well @ 4752.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Gutteresen D09-721	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Gutteresen D09-721	Database:	EDMP
Reference Design:	Plan #3	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
C Section 33						
LINDSAY C #33-23 (SI) - Wellbore #1 - No Surveys	3,900.00	3,816.46	890.16	810.66	11.198	ES
LINDSAY C #33-23 (SI) - Wellbore #1 - No Surveys	6,400.00	6,247.39	1,107.53	976.28	8.438	SF
LINDSAY C #33-24 (SI) - Wellbore #1 - As-Drilled	2,200.00	2,176.20	1,249.98	1,201.62	25.850	CC
LINDSAY C #33-24 (SI) - Wellbore #1 - As-Drilled	2,300.00	2,276.91	1,252.15	1,201.24	24.595	ES
LINDSAY C #33-24 (SI) - Wellbore #1 - As-Drilled	6,371.41	6,273.08	2,060.32	1,887.41	11.916	SF
LINDSAY C #33-25 (SI) - Wellbore #1 - No Surveys	2,200.00	2,174.00	2,299.31	2,254.59	51.411	CC
LINDSAY C #33-25 (SI) - Wellbore #1 - No Surveys	2,300.00	2,273.98	2,301.03	2,254.21	49.149	ES
LINDSAY C #33-25 (SI) - Wellbore #1 - No Surveys	6,900.00	6,706.20	3,348.42	3,207.79	23.810	SF

Noble Energy

Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersten D09-721
Project:	Mustang	TVD Reference:	Well @ 4752.00ft
Reference Site:	C Section 33	MD Reference:	Well @ 4752.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersten D09-721	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Guttersten D09-721	Database:	EDMP
Reference Design:	Plan #3	Offset TVD Reference:	Offset Datum

Summary

Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
C Section 34						
ALOYSIOUS #C34-08(PR) - Wellbore #1 - No Surveys	6,420.55	6,257.30	3,318.89	3,240.77	42.488	CC, ES
ALOYSIOUS #C34-08(PR) - Wellbore #1 - No Surveys	6,700.00	6,512.83	3,375.33	3,293.95	41.475	SF
ALOYSIOUS #C34-09(SI) - Wellbore #1 - Gyro Surveys	6,716.81	6,552.27	5,625.87	5,578.93	119.869	CC, ES
ALOYSIOUS #C34-09(SI) - Wellbore #1 - Gyro Surveys	6,900.00	6,900.00	5,637.66	5,588.89	115.601	SF
ALOYSIOUS #C34-11(PA) - Wellbore #1 - Gyro Surveys	6,601.21	6,499.05	3,184.52	3,138.08	68.565	CC, ES
ALOYSIOUS #C34-11(PA) - Wellbore #1 - Gyro Surveys	6,950.00	6,750.86	3,245.25	3,196.69	66.826	SF
ALOYSIOUS #34-1(PR) - Wellbore #1 - No Surveys	6,399.05	6,266.46	4,542.45	4,464.33	58.150	CC
ALOYSIOUS #34-1(PR) - Wellbore #1 - No Surveys	6,400.00	6,267.39	4,542.45	4,464.32	58.141	ES
ALOYSIOUS #34-1(PR) - Wellbore #1 - No Surveys	6,800.00	6,621.74	4,661.06	4,578.42	56.404	SF
ALOYSIOUS #34-2(PR) - Wellbore #1 - No Surveys	6,980.21	6,706.93	5,301.71	5,218.24	63.514	CC
ALOYSIOUS #34-2(PR) - Wellbore #1 - No Surveys	7,000.00	6,717.33	5,301.82	5,218.20	63.401	ES
ALOYSIOUS #34-2(PR) - Wellbore #1 - No Surveys	7,500.00	6,815.60	5,367.84	5,281.99	62.527	SF
ALOYSIOUS #34-3(PR) - Wellbore #1 - No Surveys	6,442.11	6,282.11	5,127.36	5,048.97	65.407	CC
ALOYSIOUS #34-3(PR) - Wellbore #1 - No Surveys	6,450.00	6,289.70	5,127.40	5,048.91	65.326	ES
ALOYSIOUS #34-3(PR) - Wellbore #1 - No Surveys	6,850.00	6,631.61	5,238.95	5,156.06	63.205	SF
ALOYSIOUS #34-4(SI) - Wellbore #1 - No Surveys	6,478.72	6,310.21	4,048.89	3,970.17	51.434	CC, ES
ALOYSIOUS #34-4(SI) - Wellbore #1 - No Surveys	6,850.00	6,624.61	4,133.64	4,050.84	49.924	SF
ALOYSIOUS #34-5(PA) - Wellbore #1 - Gyro Surveys	6,639.90	6,441.57	4,449.70	4,403.34	95.985	CC
ALOYSIOUS #34-5(PA) - Wellbore #1 - Gyro Surveys	6,650.00	6,454.60	4,449.73	4,403.29	95.818	ES
ALOYSIOUS #34-5(PA) - Wellbore #1 - Gyro Surveys	7,100.00	6,763.15	4,534.81	4,485.80	92.533	SF
ALOYSIOUS #34-6(PR) - Wellbore #1 - Gyro Surveys	6,901.64	6,671.61	2,705.46	2,657.54	56.464	CC, ES
ALOYSIOUS #34-6(PR) - Wellbore #1 - Gyro Surveys	7,200.00	6,803.91	2,738.81	2,689.51	55.553	SF
ALOYSIOUS #34-7(PR) - Wellbore #1 - Gyro Surveys	6,741.94	6,549.52	1,446.21	1,399.18	30.746	CC
ALOYSIOUS #34-7(PR) - Wellbore #1 - Gyro Surveys	6,750.00	6,555.08	1,446.24	1,399.15	30.714	ES
ALOYSIOUS #34-7(PR) - Wellbore #1 - Gyro Surveys	6,900.00	6,656.89	1,458.13	1,410.13	30.378	SF
ALOYSIOUS #C34-15(PR) - Wellbore #1 - No Surveys	6,931.51	6,680.25	4,064.54	3,981.43	48.903	CC
ALOYSIOUS #C34-15(PR) - Wellbore #1 - No Surveys	6,950.00	6,691.10	4,064.65	3,981.38	48.814	ES
ALOYSIOUS #C34-15(PR) - Wellbore #1 - No Surveys	7,239.01	6,801.30	4,095.10	4,010.02	48.134	SF
Aloysius C #34-18(PA) - Wellbore #1 - Gyro Surveys	6,497.83	6,459.22	4,904.28	4,858.23	106.487	CC
Aloysius C #34-18(PA) - Wellbore #1 - Gyro Surveys	6,500.00	6,460.84	4,904.29	4,858.22	106.453	ES
Aloysius C #34-18(PA) - Wellbore #1 - Gyro Surveys	6,900.00	6,900.00	5,007.88	4,958.83	102.097	SF
ALOYSIOUS C #34-19(PR) - Wellbore #1 - No Surveys	6,433.34	6,276.66	4,220.87	4,071.79	28.313	CC
ALOYSIOUS C #34-19(PR) - Wellbore #1 - No Surveys	6,450.00	6,292.70	4,221.07	4,071.60	28.241	ES
ALOYSIOUS C #34-19(PR) - Wellbore #1 - No Surveys	6,800.00	6,598.74	4,313.92	4,157.08	27.505	SF
Aloysius C #34-20D(PR) - Wellbore #1 - MWD Surveys	6,472.49	6,383.04	3,016.32	2,967.25	61.469	CC, ES
Aloysius C #34-20D(PR) - Wellbore #1 - MWD Surveys	6,800.00	6,776.11	3,075.26	3,023.99	59.979	SF
Aloysius C #34-21D(SI) - Wellbore #1 - MWD Surveys	6,538.69	6,571.46	4,116.23	4,064.50	79.570	CC
Aloysius C #34-21D(SI) - Wellbore #1 - MWD Surveys	6,550.00	6,581.73	4,116.30	4,064.50	79.464	ES
Aloysius C #34-21D(SI) - Wellbore #1 - MWD Surveys	6,950.00	6,913.47	4,206.73	4,152.67	77.815	SF
ALOYSIOUS C #34-22D(PR) - Wellbore #1 - MWD Survey	6,607.49	6,593.13	5,413.13	5,362.45	106.806	CC, ES
ALOYSIOUS C #34-22D(PR) - Wellbore #1 - MWD Survey	7,100.00	6,926.79	5,519.15	5,465.85	103.551	SF
ALOYSIOUS C #34-23(PR) - Wellbore #1 - Gyro Surveys	6,795.33	6,584.84	4,757.97	4,710.66	100.571	CC
ALOYSIOUS C #34-23(PR) - Wellbore #1 - Gyro Surveys	6,800.00	6,588.36	4,757.97	4,710.64	100.511	ES
ALOYSIOUS C #34-23(PR) - Wellbore #1 - Gyro Surveys	7,250.00	6,824.30	4,826.17	4,776.65	97.448	SF
Aloysius C #34-24(SI) - Wellbore #1 - No Surveys	6,729.77	6,539.23	3,705.55	3,624.22	45.561	CC
Aloysius C #34-24(SI) - Wellbore #1 - No Surveys	6,750.00	6,555.40	3,705.70	3,624.15	45.443	ES
Aloysius C #34-24(SI) - Wellbore #1 - No Surveys	7,100.00	6,764.89	3,757.42	3,672.90	44.454	SF
ALOYSIOUS C #34-27D(PR) - Wellbore #1 - MWD Survey	6,489.74	6,452.02	6,820.16	6,770.99	138.726	CC
ALOYSIOUS C #34-27D(PR) - Wellbore #1 - MWD Survey	6,500.00	6,462.84	6,820.22	6,770.98	138.529	ES
ALOYSIOUS C #34-27D(PR) - Wellbore #1 - MWD Survey	7,000.00	6,807.71	6,971.50	6,919.55	134.206	SF
ALOYSIOUS C #34-28D(PA) - Wellbore #1 - Gyro Surveys	751.97	705.26	5,593.91	5,589.16	1,176.600	CC
ALOYSIOUS C #34-28D(PA) - Wellbore #1 - Gyro Surveys	900.00	800.00	5,594.55	5,588.93	996.329	ES
ALOYSIOUS C #34-28D(PA) - Wellbore #1 - Gyro Surveys	6,950.00	6,770.39	6,235.54	6,184.15	121.326	SF

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

Noble Energy

Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen D09-721
Project:	Mustang	TVD Reference:	Well @ 4752.00ft
Reference Site:	C Section 33	MD Reference:	Well @ 4752.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersen D09-721	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Guttersen D09-721	Database:	EDMP
Reference Design:	Plan #3	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
C Section 34						
Aloysius C #34-31(PA) - Wellbore #1 - Gyro Surveys	6,401.46	6,348.49	3,808.04	3,762.62	83.855	CC, ES
Aloysius C #34-31(PA) - Wellbore #1 - Gyro Surveys	6,700.00	6,609.82	3,876.03	3,828.61	81.736	SF
Aloysius C #34-32D(PR) - Wellbore #1 - MWD Surveys	6,407.85	6,443.95	2,371.38	2,318.52	44.861	CC, ES
Aloysius C #34-32D(PR) - Wellbore #1 - MWD Surveys	6,600.00	6,693.64	2,396.80	2,342.81	44.390	SF
Aloysius C34-33D(PR) - Wellbore #1 - MWD Surveys	6,472.80	6,430.25	1,339.22	1,289.88	27.142	CC, ES
Aloysius C34-33D(PR) - Wellbore #1 - MWD Surveys	6,600.00	6,544.66	1,350.18	1,300.04	26.928	SF
Aloysius C34-99HZ - Original Drilling - Original Drilling - A	6,643.24	10,570.00	1,609.09	1,537.13	22.360	CC
Aloysius C34-99HZ - Original Drilling - Original Drilling - A	6,650.00	10,570.00	1,609.13	1,536.96	22.298	ES
Aloysius C34-99HZ - Original Drilling - Original Drilling - A	7,100.00	10,570.00	1,766.12	1,679.30	20.342	SF
DONOVAN D #02-30(PR) - Wellbore #1 - No Surveys	7,138.15	6,779.23	5,804.23	5,719.75	68.710	CC
DONOVAN D #02-30(PR) - Wellbore #1 - No Surveys	7,150.00	6,782.95	5,804.27	5,719.73	68.659	ES
DONOVAN D #02-30(PR) - Wellbore #1 - No Surveys	9,093.53	6,875.27	6,193.51	6,100.48	66.574	SF
Gittlein C22-750 - Wellbore #1 - Plan #2	7,359.23	6,709.89	3,333.55	3,282.89	65.803	CC, ES
Gittlein C22-750 - Wellbore #1 - Plan #2	8,400.00	6,500.00	3,475.02	3,420.89	64.202	SF
Gittlein C22-755 - Wellbore #1 - Plan #2	7,186.70	6,922.22	3,021.99	2,971.26	59.581	CC, ES
Gittlein C22-755 - Wellbore #1 - Plan #2	8,000.00	6,586.43	3,099.20	3,046.88	59.235	SF
Gittlein C22-765 - Wellbore #1 - Plan #2	7,144.15	7,026.20	2,368.33	2,317.49	46.581	CC, ES
Gittlein C22-765 - Wellbore #1 - Plan #2	7,239.01	6,984.36	2,370.96	2,320.02	46.544	SF
Gittlein C22-770 - Wellbore #1 - Plan #2	7,107.60	7,200.00	2,051.40	2,000.14	40.016	CC, ES
Gittlein C22-770 - Wellbore #1 - Plan #2	7,150.00	7,177.79	2,051.96	2,000.66	39.997	SF
Gittlein C22-775 - Wellbore #1 - Plan #2	7,068.68	7,283.81	1,729.44	1,678.04	33.644	CC, ES
Gittlein C22-775 - Wellbore #1 - Plan #2	7,100.00	7,269.92	1,729.81	1,678.38	33.639	SF
Gittlein C22-785 - Wellbore #1 - Plan #2	7,000.00	7,510.52	1,196.58	1,144.45	22.954	SF
Gittlein C22-785 - Wellbore #1 - Plan #2	7,040.46	7,491.89	1,195.91	1,143.81	22.955	CC, ES
Gittlein D10-755 - Wellbore #1 - Plan #2	9,148.02	9,079.70	3,040.91	2,975.77	46.689	CC
Gittlein D10-755 - Wellbore #1 - Plan #2	12,114.61	12,043.73	3,057.09	2,952.67	29.278	ES, SF
Gittlein D10-765 - Wellbore #1 - Plan #2	9,136.64	9,004.68	2,386.24	2,321.20	36.691	CC
Gittlein D10-765 - Wellbore #1 - Plan #2	12,114.61	11,969.62	2,411.68	2,307.51	23.151	ES, SF
Gittlein D10-770 - Wellbore #1 - Plan #2	9,154.21	9,240.47	2,059.16	1,993.18	31.208	CC
Gittlein D10-770 - Wellbore #1 - Plan #2	12,114.61	12,200.26	2,068.69	1,964.01	19.761	ES, SF
Gittlein D10-775 - Wellbore #1 - Plan #2	9,137.18	9,201.17	1,726.30	1,660.86	26.379	CC
Gittlein D10-775 - Wellbore #1 - Plan #2	12,114.61	12,176.00	1,752.24	1,648.35	16.867	ES, SF
Gittlein D10-785 - Wellbore #1 - Plan #2	9,128.00	9,350.47	1,100.55	1,035.95	17.038	CC
Gittlein D10-785 - Wellbore #1 - Plan #2	9,198.87	9,421.30	1,101.19	1,035.87	16.858	ES
Gittlein D10-785 - Wellbore #1 - Plan #2	12,114.61	12,332.06	1,139.08	1,037.01	11.160	SF
Guttersen C22-715 - Wellbore #1 - Plan #2	4,257.96	3,000.00	5,176.42	5,151.45	207.340	CC, ES
Guttersen C22-715 - Wellbore #1 - Plan #2	10,800.00	6,206.38	6,427.47	6,359.83	95.028	SF
Guttersen C22-725 - Wellbore #1 - Plan #2	7,478.30	6,175.54	4,935.17	4,885.70	99.763	CC
Guttersen C22-725 - Wellbore #1 - Plan #2	7,500.00	6,176.21	4,935.22	4,885.68	99.623	ES
Guttersen C22-725 - Wellbore #1 - Plan #2	9,700.00	6,200.00	5,425.78	5,365.70	90.300	SF
Guttersen C22-730 - Wellbore #1 - Plan #2	7,426.74	6,543.65	4,633.29	4,583.26	92.605	CC, ES
Guttersen C22-730 - Wellbore #1 - Plan #2	9,400.00	6,400.00	5,032.18	4,973.75	86.119	SF
Guttersen C22-735 - Wellbore #1 - Plan #2	7,210.98	6,849.65	4,325.77	4,275.54	86.130	CC, ES
Guttersen C22-735 - Wellbore #1 - Plan #2	9,200.00	6,400.00	4,684.85	4,627.86	82.203	SF
Guttersen C22-745 - Wellbore #1 - Plan #2	7,163.79	7,000.00	3,674.23	3,623.74	72.768	CC, ES
Guttersen C22-745 - Wellbore #1 - Plan #2	8,400.00	6,650.00	3,845.82	3,792.21	71.734	SF
GUTTERSEN D #03-27(PR) - Wellbore #1 - No Surveys	7,123.59	6,774.38	4,666.42	4,582.02	55.289	CC, ES
GUTTERSEN D #03-27(PR) - Wellbore #1 - No Surveys	8,100.00	6,840.56	4,806.81	4,718.68	54.540	SF
Guttersen D10-715 - Wellbore #1 - Plan #2	4,126.09	2,865.63	5,214.37	5,190.31	216.688	CC
Guttersen D10-715 - Wellbore #1 - Plan #2	4,200.00	2,900.00	5,214.73	5,190.30	213.425	ES
Guttersen D10-715 - Wellbore #1 - Plan #2	12,114.61	12,221.06	5,605.34	5,500.61	53.521	SF
Guttersen D10-725 - Wellbore #1 - Plan #2	6,786.73	5,850.77	5,001.07	4,955.82	110.512	CC
Guttersen D10-725 - Wellbore #1 - Plan #2	12,114.61	12,008.77	5,016.83	4,912.41	48.047	ES, SF

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

Noble Energy

Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersten D09-721
Project:	Mustang	TVD Reference:	Well @ 4752.00ft
Reference Site:	C Section 33	MD Reference:	Well @ 4752.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersten D09-721	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Guttersten D09-721	Database:	EDMP
Reference Design:	Plan #3	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
C Section 34						
Guttersten D10-730 - Wellbore #1 - Plan #2	9,151.20	9,177.81	4,661.22	4,596.17	71.656	CC
Guttersten D10-730 - Wellbore #1 - Plan #2	12,114.61	12,140.61	4,673.08	4,569.22	44.993	ES, SF
Guttersten D10-735 - Wellbore #1 - Plan #2	9,146.36	9,075.22	4,337.97	4,273.55	67.332	CC
Guttersten D10-735 - Wellbore #1 - Plan #2	12,114.61	12,040.77	4,354.99	4,251.58	42.114	ES, SF
Guttersten D10-745 - Wellbore #1 - Plan #2	9,140.82	9,001.68	3,687.58	3,623.07	57.162	CC
Guttersten D10-745 - Wellbore #1 - Plan #2	12,114.61	11,972.79	3,709.09	3,605.56	35.826	ES, SF
Guttersten D10-750 - Wellbore #1 - Plan #2	9,155.02	9,229.91	3,365.12	3,299.64	51.394	CC
Guttersten D10-750 - Wellbore #1 - Plan #2	12,114.61	12,188.89	3,374.02	3,269.95	32.421	ES, SF
LANE #34-214(PR) - Wellbore #1 - No Surveys	6,494.87	6,324.58	5,966.33	5,887.45	75.639	CC
LANE #34-214(PR) - Wellbore #1 - No Surveys	6,500.00	6,329.44	5,966.34	5,887.40	75.579	ES
LANE #34-214(PR) - Wellbore #1 - No Surveys	7,000.00	6,714.33	6,111.60	6,027.59	72.752	SF
LANE #34-814(PR) - Wellbore #1 - No Surveys	6,574.76	6,399.11	6,289.12	6,209.42	78.907	CC
LANE #34-814(PR) - Wellbore #1 - No Surveys	6,600.00	6,422.02	6,289.41	6,209.41	78.619	ES
LANE #34-814(PR) - Wellbore #1 - No Surveys	7,100.00	6,758.89	6,415.50	6,330.90	75.835	SF
LANE C #34-17(PR) - Wellbore #1 - No Surveys	6,529.79	6,355.49	6,074.12	5,994.90	76.673	CC
LANE C #34-17(PR) - Wellbore #1 - No Surveys	6,550.00	6,374.31	6,074.34	5,994.87	76.442	ES
LANE C #34-17(PR) - Wellbore #1 - No Surveys	7,050.00	6,736.30	6,213.58	6,129.28	73.703	SF
POLLOCK-HADDIX #2(PA) - Wellbore #1 - Gyro Surveys	6,516.06	6,300.68	6,982.94	6,937.39	153.291	CC, ES
POLLOCK-HADDIX #2(PA) - Wellbore #1 - Gyro Surveys	7,150.00	6,712.84	7,189.31	7,140.24	146.522	SF
POLLOCK-HADDIX #34-1(SI) - Wellbore #1 - No Survey	6,539.05	6,367.13	5,134.33	5,054.99	64.710	CC
POLLOCK-HADDIX #34-1(SI) - Wellbore #1 - No Survey	6,550.00	6,377.31	5,134.39	5,054.92	64.604	ES
POLLOCK-HADDIX #34-1(SI) - Wellbore #1 - No Survey	7,000.00	6,715.33	5,243.04	5,159.06	62.437	SF
TWO E RANCHES #1(PR) - Wellbore #1 - Gyro Surveys	6,527.31	6,346.49	2,257.27	2,211.52	49.345	CC, ES
TWO E RANCHES #1(PR) - Wellbore #1 - Gyro Surveys	6,800.00	6,576.94	2,298.71	2,251.15	48.327	SF

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

Noble Energy

Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersten D09-721
Project:	Mustang	TVD Reference:	Well @ 4752.00ft
Reference Site:	C Section 33	MD Reference:	Well @ 4752.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersten D09-721	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Guttersten D09-721	Database:	EDMP
Reference Design:	Plan #3	Offset TVD Reference:	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Separation Factor	Warning
D Section 03						
Becca D 3-11 (PR) - Wellbore #1 - No Surveys	10,383.58	6,947.30	2,688.16	2,372.45	8.515	CC
Becca D 3-11 (PR) - Wellbore #1 - No Surveys	10,400.00	6,947.87	2,688.21	2,372.34	8.511	ES
Becca D 3-11 (PR) - Wellbore #1 - No Surveys	10,600.00	6,954.85	2,696.84	2,379.08	8.487	SF
Becca D 3-12 (PR) - Wellbore #1 - No Surveys	10,447.33	6,945.52	1,363.38	1,047.33	4.314	CC, ES
Becca D 3-12 (PR) - Wellbore #1 - No Surveys	10,500.00	6,947.36	1,364.39	1,047.75	4.309	SF
Becca D 3-13 (PR) - Wellbore #1 - No Surveys	11,751.73	7,003.05	1,498.75	1,171.32	4.577	CC
Becca D 3-13 (PR) - Wellbore #1 - No Surveys	11,800.00	7,004.74	1,499.22	1,171.25	4.571	ES
Becca D 3-13 (PR) - Wellbore #1 - No Surveys	11,837.16	7,006.03	1,500.23	1,171.87	4.569	SF
Becca D 3-14 (PR) - Wellbore #1 - No Surveys	11,542.35	6,985.74	2,717.62	2,392.56	8.360	CC
Becca D 3-14 (PR) - Wellbore #1 - No Surveys	11,598.21	6,987.69	2,718.19	2,392.55	8.347	ES
Becca D 3-14 (PR) - Wellbore #1 - No Surveys	11,837.16	7,003.97	2,726.10	2,397.80	8.304	SF
Becca D03-24 (PR) - Wellbore #1 - No Surveys	10,939.93	6,968.72	3,288.70	2,968.53	10.272	CC
Becca D03-24 (PR) - Wellbore #1 - No Surveys	11,000.00	6,970.81	3,289.24	2,968.49	10.255	ES
Becca D03-24 (PR) - Wellbore #1 - No Surveys	11,200.00	6,977.79	3,298.95	2,976.30	10.225	SF
Becca D03-32D - Wellbore #1 - Wellbore #1 - As Drilled	9,687.66	7,102.86	623.42	562.13	10.172	CC
Becca D03-32D - Wellbore #1 - Wellbore #1 - As Drilled	9,700.00	7,103.21	623.54	562.02	10.135	ES
Becca D03-32D - Wellbore #1 - Wellbore #1 - As Drilled	9,900.00	7,108.95	658.56	590.62	9.694	SF
Cody D #03-28(SI) - Wellbore #1 - No Surveys	7,193.84	6,797.93	3,497.60	3,412.84	41.269	CC
Cody D #03-28(SI) - Wellbore #1 - No Surveys	7,200.00	6,799.39	3,497.61	3,412.83	41.255	ES
Cody D #03-28(SI) - Wellbore #1 - No Surveys	7,700.00	6,829.59	3,541.97	3,455.48	40.949	SF
Cody D 03-28 (SI) - Wellbore #1 - No Surveys	7,193.84	6,813.93	3,497.60	3,201.93	11.830	CC
Cody D 03-28 (SI) - Wellbore #1 - No Surveys	7,200.00	6,815.39	3,497.61	3,201.87	11.827	ES
Cody D 03-28 (SI) - Wellbore #1 - No Surveys	7,327.87	6,832.58	3,502.00	3,205.25	11.801	SF
Cody D 3-20 (PR) - Wellbore #1 - No Surveys	9,726.66	6,922.37	2,012.99	1,702.40	6.481	CC, ES
Cody D 3-20 (PR) - Wellbore #1 - No Surveys	9,800.00	6,924.93	2,014.32	1,703.03	6.471	SF
Cody D 3-7 (PR) - Wellbore #1 - No Surveys	9,146.44	6,886.12	3,985.50	3,679.51	13.025	CC, ES
Cody D 3-7 (PR) - Wellbore #1 - No Surveys	9,400.00	6,905.03	3,996.66	3,688.28	12.960	SF
CODY WHITE #D 3-2(PR) - Wellbore #1 - No Surveys	7,721.83	6,826.35	3,992.20	3,905.94	46.281	CC, ES
CODY WHITE #D 3-2(PR) - Wellbore #1 - No Surveys	8,700.00	6,860.52	4,110.15	4,019.22	45.200	SF
Cody White D 3-1 (PR) - Wellbore #1 - No Surveys	7,730.94	6,835.67	5,312.25	5,014.31	17.830	CC, ES
Cody White D 3-1 (PR) - Wellbore #1 - No Surveys	8,300.00	6,855.55	5,342.61	5,041.57	17.747	SF
Cody White D 3-2 (PR) - Wellbore #1 - No Surveys	7,721.83	6,836.35	3,992.20	3,694.26	13.399	CC, ES
Cody White D 3-2 (PR) - Wellbore #1 - No Surveys	8,000.00	6,846.07	4,001.87	3,702.47	13.366	SF
Cody White D 3-8 (PR) - Wellbore #1 - No Surveys	9,054.04	6,883.90	5,297.58	4,992.11	17.342	CC
Cody White D 3-8 (PR) - Wellbore #1 - No Surveys	9,093.53	6,885.27	5,297.73	4,991.97	17.326	ES
Cody White D 3-8 (PR) - Wellbore #1 - No Surveys	9,300.00	6,907.52	5,307.51	4,999.61	17.237	SF
Guttersten D 02-32D (PR) - Wellbore #1 - As Drilled Surv	9,660.32	6,975.89	6,029.70	5,966.83	95.905	CC
Guttersten D 02-32D (PR) - Wellbore #1 - As Drilled Surv	9,700.00	6,976.86	6,029.83	5,966.65	95.448	ES
Guttersten D 02-32D (PR) - Wellbore #1 - As Drilled Surv	12,114.61	7,039.00	6,486.45	6,405.82	80.447	SF
Guttersten D 03-17 (PR) - Wellbore #1 - No Surveys	8,447.46	6,868.70	4,606.51	4,304.68	15.262	CC
Guttersten D 03-17 (PR) - Wellbore #1 - No Surveys	8,500.00	6,870.54	4,606.81	4,304.64	15.246	ES
Guttersten D 03-17 (PR) - Wellbore #1 - No Surveys	9,093.53	6,908.73	4,651.54	4,344.56	15.153	SF
Guttersten D 03-25 (PR) - Wellbore #1 - No Surveys	10,845.50	6,963.42	2,034.34	1,715.06	6.372	CC, ES
Guttersten D 03-25 (PR) - Wellbore #1 - No Surveys	11,000.00	6,968.81	2,040.19	1,719.32	6.358	SF
Guttersten D 10-29 (PR) - Wellbore #1 - No Surveys	12,114.61	7,016.72	2,161.23	1,831.25	6.550	CC, ES, SF
HSR-Gittlein, D 4-3 (PR) - Wellbore #1 - No Surveys	7,509.02	6,835.91	1,186.02	888.68	3.989	CC, ES, SF
HSR-Gittlein, D 5-3 (PR) - Wellbore #1 - No Surveys	9,003.44	6,904.87	1,169.93	863.88	3.823	CC, ES, SF
HSR-Gittlein, L 3-3 (PR) - Wellbore #1 - No Surveys	7,708.94	6,839.90	2,663.81	2,365.77	8.938	CC, ES
HSR-Gittlein, L 3-3 (PR) - Wellbore #1 - No Surveys	7,800.00	6,843.08	2,665.37	2,366.85	8.929	SF
HSR-Gittlein, L 6-3 (PR) - Wellbore #1 - No Surveys	9,024.79	6,889.87	2,654.63	2,349.08	8.688	CC
HSR-Gittlein, L 6-3 (PR) - Wellbore #1 - No Surveys	9,093.53	6,907.73	2,655.52	2,348.80	8.658	ES
HSR-Gittlein, L 6-3 (PR) - Wellbore #1 - No Surveys	9,100.00	6,907.50	2,655.70	2,348.94	8.657	SF
HSR-Guttersten "A" 16-3 (SI) - Wellbore #1 - Gyro Survey	11,918.91	6,972.36	5,274.50	5,199.49	70.320	CC

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

Noble Energy
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen D09-721
Project:	Mustang	TVD Reference:	Well @ 4752.00ft
Reference Site:	C Section 33	MD Reference:	Well @ 4752.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersen D09-721	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Guttersen D09-721	Database:	EDMP
Reference Design:	Plan #3	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
D Section 03						
HSR-Guttersen "A" 16-3 (SI) - Wellbore #1 - Gyro Survey	12,000.00	6,975.65	5,275.12	5,199.46	69.723	ES
HSR-Guttersen "A" 16-3 (SI) - Wellbore #1 - Gyro Survey	12,114.61	6,980.31	5,278.12	5,201.56	68.935	SF
HSR-Guttersen "A" 9-3 (SI) - Wellbore #1 - Gyro Surveys	10,470.80	6,935.91	5,100.66	5,036.01	78.895	CC
HSR-Guttersen "A" 9-3 (SI) - Wellbore #1 - Gyro Surveys	10,500.00	6,936.85	5,100.75	5,035.87	78.626	ES
HSR-Guttersen "A" 9-3 (SI) - Wellbore #1 - Gyro Surveys	12,114.61	6,988.96	5,334.90	5,258.70	70.010	SF
HSR-Guttersen 10-3 (SI) - Wellbore #1 - No Surveys	10,279.72	6,938.67	4,009.31	3,694.61	12.740	CC
HSR-Guttersen 10-3 (SI) - Wellbore #1 - No Surveys	10,300.00	6,939.38	4,009.36	3,694.48	12.733	ES
HSR-Guttersen 10-3 (SI) - Wellbore #1 - No Surveys	10,700.00	6,953.34	4,031.25	3,712.82	12.660	SF
HSR-Guttersen 15-3 (SI) - Wellbore #1 - Gyro Surveys	12,006.05	7,007.59	4,113.96	4,038.25	54.342	CC, ES
HSR-Guttersen 15-3 (SI) - Wellbore #1 - Gyro Surveys	12,114.61	7,012.76	4,115.39	4,038.79	53.729	SF
UPRR 39 PAN AM A 01 (PA) - Wellbore #1 - No Surveys	11,679.54	7,001.53	1,384.75	1,058.02	4.238	CC
UPRR 39 PAN AM A 01 (PA) - Wellbore #1 - No Surveys	11,700.00	7,002.24	1,384.85	1,057.88	4.235	ES
UPRR 39 PAN AM A 01 (PA) - Wellbore #1 - No Surveys	11,800.00	7,005.74	1,388.08	1,060.02	4.231	SF

Noble Energy

Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen D09-721
Project:	Mustang	TVD Reference:	Well @ 4752.00ft
Reference Site:	C Section 33	MD Reference:	Well @ 4752.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersen D09-721	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Guttersen D09-721	Database:	EDMP
Reference Design:	Plan #3	Offset TVD Reference:	Offset Datum

Summary

Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
D Section 04						
Burghart D04-22 - Wellbore #1 - Wellbore #1- As Drilled	9,548.71	6,909.26	611.56	552.68	10.387	CC, ES, SF
Gittlein Blue D04-08 (SI) - Wellbore #1 - Wellbore #1- As Drilled	9,093.34	6,888.41	29.84	-26.62	0.529	Level 1, CC, ES, SF
GITTLEIN D #04-24(PR) - GITTLEIN D #04-24 - No Surv	11,109.75	6,968.64	2,012.57	1,828.37	10.926	CC, ES
GITTLEIN D #04-24(PR) - GITTLEIN D #04-24 - No Surv	11,200.00	6,971.79	2,014.59	1,829.99	10.913	SF
Gittlein D #04-33(PR) - Gittlein D #04-33 - INC Only	11,124.83	2,251.88	4,306.86	4,105.65	21.405	CC, ES
Gittlein D #04-33(PR) - Gittlein D #04-33 - INC Only	11,600.00	2,268.46	4,332.96	4,128.94	21.238	SF
Guttersen D 04-18(PR) - Guttersen D 04-18 - Wellbore #	8,348.89	6,800.01	2,214.84	2,173.32	53.345	CC, ES
Guttersen D 04-18(PR) - Guttersen D 04-18 - Wellbore #	8,600.00	6,800.01	2,229.03	2,186.87	52.870	SF
Guttersen D 04-21(SI) - Guttersen D 04-21 - Wellbore #1	9,869.72	6,800.01	1,751.23	1,701.73	35.376	CC, ES
Guttersen D 04-21(SI) - Guttersen D 04-21 - Wellbore #1	10,000.00	6,800.01	1,756.07	1,706.24	35.238	SF
Guttersen D 04-32 (SI) - Wellbore #1 - As-Drilled	9,536.06	6,968.60	4,416.49	4,357.36	74.687	CC, ES
Guttersen D 04-32 (SI) - Wellbore #1 - As-Drilled	10,800.00	7,013.03	4,593.58	4,528.90	71.028	SF
Guttersen D03-33D - Wellbore #1 - Wellbore #1- As Drill	10,884.81	7,047.90	521.13	450.00	7.326	CC, ES
Guttersen D03-33D - Wellbore #1 - Wellbore #1- As Drill	10,900.00	7,048.55	521.36	450.08	7.315	SF
Guttersen D04-30D - Plan B - Plan B	1,104.08	1,112.11	3,325.70	3,319.35	523.886	CC, ES
Guttersen D04-30D - Plan B - Plan B	7,900.00	6,928.90	4,710.12	4,660.07	94.100	SF
Guttersen D04-31D - Plan B - Plan B	908.99	917.00	3,332.02	3,327.10	676.020	CC, ES
Guttersen D04-31D - Plan B - Plan B	9,800.00	7,187.31	4,830.48	4,765.59	74.446	SF
Guttersen D04-69HN - Original Drilling - Original Drilling	6,968.55	10,726.61	48.99	-32.12	0.604	Level 1, CC
Guttersen D04-69HN - Original Drilling - Original Drilling	7,000.00	10,729.65	58.77	-62.56	0.484	Level 1, ES, SF
Karch Blue D04-02 - Wellbore #1 - Wellbore #1- As Drille	7,800.71	6,907.16	1,140.08	1,088.90	22.276	CC, ES, SF
Karch Blue D04-07 - Wellbore #1 - Wellbore #1- As Drille	9,145.99	6,916.24	1,313.82	1,256.96	23.108	CC, ES
Karch Blue D04-07 - Wellbore #1 - Wellbore #1- As Drille	9,200.00	6,917.61	1,314.55	1,257.58	23.074	SF
Karch D04-17 - Wellbore #1 - Wellbore #1- As Drilled	8,400.00	6,860.02	619.75	566.81	11.707	SF
Karch D04-17 - Wellbore #1 - Wellbore #1- As Drilled	8,402.63	6,860.09	619.75	566.81	11.707	CC, ES
MARIE #D4-11(PR) - MARIE #D4-11 - No Surveys	10,375.99	6,937.03	2,376.52	2,197.81	13.298	CC, ES
MARIE #D4-11(PR) - MARIE #D4-11 - No Surveys	10,500.00	6,941.36	2,379.75	2,200.46	13.273	SF
MARIE D #04-20(PR) - MARIE D #04-20 - As-Drilled	9,713.99	6,924.97	3,238.41	3,062.69	18.430	CC, ES
MARIE D #04-20(PR) - MARIE D #04-20 - As-Drilled	10,000.00	6,934.95	3,251.00	3,073.89	18.356	SF
Marie D #4-10 (TA) - Wellbore #1 - Wellbore #1- As Drille	10,500.66	6,955.02	1,199.11	1,134.17	18.466	CC, ES, SF
MARIE D #4-12 (PR) - Wellbore #1 - Gyro Surveys	10,401.65	6,924.64	3,801.38	3,737.30	59.324	CC, ES
MARIE D #4-12 (PR) - Wellbore #1 - Gyro Surveys	11,200.00	6,947.09	3,884.24	3,816.57	57.400	SF
MARIE D #4-13 (PR) - MARIE D #4-13 - No Surveys	11,678.10	6,988.48	3,675.89	3,505.90	21.623	CC
MARIE D #4-13 (PR) - MARIE D #4-13 - No Surveys	11,700.00	6,989.24	3,676.02	3,505.89	21.607	ES
MARIE D #4-13 (PR) - MARIE D #4-13 - No Surveys	11,900.00	7,003.77	3,688.49	3,517.01	21.510	SF
MARIE D #4-14(PR) - MARIE D #4-14 - No Surveys	11,677.60	6,986.46	2,528.66	2,358.71	14.878	CC, ES
MARIE D #4-14(PR) - MARIE D #4-14 - No Surveys	11,800.00	6,990.74	2,533.58	2,362.96	14.850	SF
Marie D #4-15 (PA) - Wellbore #1 - Wellbore #1- As Drille	11,670.39	6,990.63	1,228.09	1,154.99	16.800	CC, ES
Marie D #4-15 (PA) - Wellbore #1 - Wellbore #1- As Drille	11,700.00	6,991.94	1,228.56	1,155.37	16.787	SF
Marie D #4-16 (PA) - Wellbore #1 - Wellbore #1- As Drille	11,598.94	6,980.06	31.12	-41.38	0.429	Level 1, CC
Marie D #4-16 (PA) - Wellbore #1 - Wellbore #1- As Drille	11,600.00	6,980.11	31.14	-41.54	0.428	Level 1, ES, SF
MARIE D #4-19 (PR) - MARIE D #4-19 - No Surveys	2,200.00	2,181.00	2,648.87	2,604.02	59.065	CC
MARIE D #4-19 (PR) - MARIE D #4-19 - No Surveys	2,300.00	2,280.98	2,649.98	2,603.04	56.455	ES
MARIE D #4-19 (PR) - MARIE D #4-19 - No Surveys	8,500.00	6,908.46	3,000.95	2,851.85	20.128	SF
MARIE D #4-23 (SI) - Wellbore #1 - As-Drilled	11,000.00	6,964.04	589.03	520.60	8.608	SF
MARIE D #4-23 (SI) - Wellbore #1 - As-Drilled	11,014.65	6,964.52	588.84	520.44	8.608	CC, ES
MARIE D #4-25 (PR) - MARIE D #4-25 - No Surveys	10,947.94	6,962.00	3,140.69	2,976.32	19.107	CC, ES
MARIE D #4-25 (PR) - MARIE D #4-25 - No Surveys	11,200.00	6,970.79	3,150.78	2,985.08	19.015	SF
MARIE D #4-3(SI) - MARIE D #4-3 - As-Drilled	100.00	58.69	1,926.55	1,926.32	8,415.720	CC
MARIE D #4-3(SI) - MARIE D #4-3 - As-Drilled	2,210.62	2,178.64	1,932.61	1,917.48	127.709	ES
MARIE D #4-3(SI) - MARIE D #4-3 - As-Drilled	7,900.00	6,858.83	2,562.18	2,511.23	50.283	SF
MARIE D #4-4(SI) - MARIE D #4-4 - No Surveys	2,200.00	2,183.00	3,131.59	3,080.28	61.029	CC
MARIE D #4-4(SI) - MARIE D #4-4 - No Surveys	2,300.00	2,282.98	3,133.09	3,079.43	58.386	ES

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

Noble Energy
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen D09-721
Project:	Mustang	TVD Reference:	Well @ 4752.00ft
Reference Site:	C Section 33	MD Reference:	Well @ 4752.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersen D09-721	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Guttersen D09-721	Database:	EDMP
Reference Design:	Plan #3	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
D Section 04						
MARIE D #4-4(SI) - MARIE D #4-4 - No Surveys	8,000.00	6,876.07	3,934.53	3,769.61	23.858	SF
MARIE D #4-5(SI) - MARIE D #4-5 - No Surveys	2,200.00	2,178.00	3,796.53	3,745.32	74.131	CC
MARIE D #4-5(SI) - MARIE D #4-5 - No Surveys	2,300.00	2,277.98	3,797.67	3,744.11	70.903	ES
MARIE D #4-5(SI) - MARIE D #4-5 - No Surveys	9,500.00	6,923.46	3,941.88	3,769.31	22.842	SF
MARIE D #4-6(SI) - MARIE D #4-6 - No Surveys	9,183.51	6,896.42	2,587.38	2,416.55	15.146	CC
MARIE D #4-6(SI) - MARIE D #4-6 - No Surveys	9,200.00	6,896.99	2,587.40	2,416.50	15.139	ES
MARIE D #4-6(SI) - MARIE D #4-6 - No Surveys	9,400.00	6,903.97	2,595.58	2,423.83	15.113	SF
Marie D #4-9 (PR) - Wellbore #1 - Wellbore #1- As Drilled	10,313.58	6,934.25	31.95	-31.59	0.503	Level 1, CC, ES, SF
Marie D04-72-1HN - Original Drilling - Original Drilling - A	7,573.68	11,401.38	381.85	270.73	3.436	ES, SF
Marie D04-72-1HN - Original Drilling - Original Drilling - A	9,103.72	9,864.08	373.60	282.62	4.106	CC
Marie D04-73-1HN - Original Drilling - Original Drilling - A	7,561.61	11,125.52	461.96	359.15	4.493	CC, ES, SF
Marie D04-74-1HN - Original Drilling - Original Drilling - P	12,114.61	7,046.89	942.84	868.19	12.631	CC, ES, SF
Marie D04-74-1HN - Original Drilling - ST01 - ST-01- As	11,628.38	7,165.49	916.78	850.27	13.785	CC, ES
Marie D04-74-1HN - Original Drilling - ST01 - ST-01- As	11,700.00	7,115.29	918.22	851.56	13.774	SF
Two E Ranch 01-04 - Wellbore #1 - Wellbore #1- As Drill	7,758.09	6,836.04	271.21	220.73	5.373	CC, ES, SF

Noble Energy

Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen D09-721
Project:	Mustang	TVD Reference:	Well @ 4752.00ft
Reference Site:	C Section 33	MD Reference:	Well @ 4752.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersen D09-721	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Guttersen D09-721	Database:	EDMP
Reference Design:	Plan #3	Offset TVD Reference:	Offset Datum

Summary

Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
D Section 05						
BECKER #12-10I(PA) - Wellbore #1 - Gyro Surveys	1,387.21	1,383.26	5,665.88	5,656.47	602.457	CC
BECKER #12-10I(PA) - Wellbore #1 - Gyro Surveys	1,800.00	1,770.08	5,666.56	5,654.33	463.253	ES
BECKER #12-10I(PA) - Wellbore #1 - Gyro Surveys	11,800.00	6,706.19	6,416.72	6,348.37	93.884	SF
BECKER #15-9I(PR) - Wellbore #1 - Gyro Surveys	11,028.92	6,962.39	7,269.74	7,201.33	106.267	CC
BECKER #15-9I(PR) - Wellbore #1 - Gyro Surveys	11,100.00	6,964.04	7,270.09	7,201.24	105.606	ES
BECKER #15-9I(PR) - Wellbore #1 - Gyro Surveys	12,114.61	6,987.55	7,374.76	7,299.95	98.582	SF
BECKER #5-12(PA) - Wellbore #1 - Gyro	361.35	381.37	6,017.73	6,015.50	2,699.724	CC
BECKER #5-12(PA) - Wellbore #1 - Gyro	700.00	695.50	6,018.38	6,013.84	1,326.203	ES
BECKER #5-12(PA) - Wellbore #1 - Gyro	10,300.00	10,300.00	6,725.18	6,651.37	91.112	SF
BECKER #5-13(PA) - Wellbore #1 - Gyro Surveys	0.00	0.00	7,842.39			
BECKER #5-13(PA) - Wellbore #1 - Gyro Surveys	2,238.50	2,338.53	7,852.86	7,836.97	494.162	ES
BECKER #5-13(PA) - Wellbore #1 - Gyro Surveys	12,114.61	5,612.36	8,317.53	8,249.83	122.868	SF
BECKER #5-14(PA) - Wellbore #1 - Gyro Surveys	11,638.56	6,831.30	9,089.43	9,017.35	126.110	CC, ES
BECKER #5-14(PA) - Wellbore #1 - Gyro Surveys	12,114.61	6,830.86	9,121.41	9,046.28	121.407	SF
BECKER #5-16(PA) - Wellbore #1 - Gyro Surveys	10,413.39	7,073.92	5,374.67	5,309.77	82.819	CC, ES
BECKER #5-16(PA) - Wellbore #1 - Gyro Surveys	11,900.00	7,145.99	5,586.92	5,514.45	77.086	SF
BECKER #5-2(PA) - Wellbore #1 - Gyro Surveys	11,603.94	7,126.82	8,098.75	8,025.67	110.818	CC, ES
BECKER #5-2(PA) - Wellbore #1 - Gyro Surveys	12,114.61	7,141.00	8,138.78	8,062.44	106.604	SF
BECKER #5-3(PA) - Wellbore #1 - Gyro Surveys	424.66	474.67	7,217.15	7,214.37	2,601.237	CC
BECKER #5-3(PA) - Wellbore #1 - Gyro Surveys	1,000.00	1,000.00	7,219.62	7,212.94	1,080.495	ES
BECKER #5-3(PA) - Wellbore #1 - Gyro Surveys	12,114.61	6,700.00	8,442.61	8,372.46	120.346	SF
BECKER #5-4(PA) - Wellbore #1 - Gyro Surveys	1,340.74	1,358.75	4,898.69	4,889.54	535.616	CC
BECKER #5-4(PA) - Wellbore #1 - Gyro Surveys	2,100.00	2,089.64	4,901.38	4,886.97	339.985	ES
BECKER #5-4(PA) - Wellbore #1 - Gyro Surveys	11,000.00	6,800.00	5,679.53	5,615.62	88.866	SF
BECKER #5-5(PA) - Wellbore #1 - Gyro Surveys	11,631.15	7,024.53	5,348.21	5,275.32	73.372	CC, ES
BECKER #5-5(PA) - Wellbore #1 - Gyro Surveys	12,114.61	7,039.11	5,390.38	5,314.63	71.160	SF
BECKER #5-8(PR) - Wellbore #1 - Gyro Surveys	1,945.62	1,974.71	8,852.55	8,839.08	657.313	CC
BECKER #5-8(PR) - Wellbore #1 - Gyro Surveys	2,000.00	2,000.00	8,852.61	8,838.86	643.783	ES
BECKER #5-8(PR) - Wellbore #1 - Gyro Surveys	12,114.61	6,900.00	9,081.85	9,007.26	121.764	SF
BECKER #6(SI) - Wellbore #1 - Gyro Surveys	10,981.23	6,718.76	5,957.97	5,891.01	88.976	CC
BECKER #6(SI) - Wellbore #1 - Gyro Surveys	11,000.00	6,719.25	5,958.00	5,890.93	88.830	ES
BECKER #6(SI) - Wellbore #1 - Gyro Surveys	12,114.61	6,747.11	6,088.98	6,015.78	83.183	SF
BECKER #7(PA) - Wellbore #1 - Gyro Surveys	11,110.79	7,054.70	8,482.58	8,413.01	121.943	CC
BECKER #7(PA) - Wellbore #1 - Gyro Surveys	11,200.00	7,055.86	8,483.05	8,412.93	120.987	ES
BECKER #7(PA) - Wellbore #1 - Gyro Surveys	12,114.61	7,067.87	8,566.32	8,490.61	113.144	SF
Becker 05-1(PA) - Wellbore #1 - Gyro Surveys	10,464.24	6,951.94	6,581.80	6,517.17	101.834	CC
Becker 05-1(PA) - Wellbore #1 - Gyro Surveys	10,500.00	6,952.84	6,581.90	6,517.06	101.514	ES
Becker 05-1(PA) - Wellbore #1 - Gyro Surveys	12,114.61	6,993.41	6,809.34	6,735.78	92.570	SF
Becker 05-15(PA) - Wellbore #1 - Gyro Surveys	11,734.69	6,773.54	6,798.28	6,723.25	90.610	CC, ES
Becker 05-15(PA) - Wellbore #1 - Gyro Surveys	12,114.61	6,763.87	6,817.67	6,740.43	88.261	SF
Becker 08-12I (SI) - Wellbore #1 - As-Drilled	0.00	10.90	8,103.87			
Becker 08-12I (SI) - Wellbore #1 - As-Drilled	500.00	448.45	8,106.76	8,103.80	2,731.481	ES
Becker 08-12I (SI) - Wellbore #1 - As-Drilled	12,114.61	6,570.91	8,883.24	8,811.56	123.932	SF
Becker D17-715 - Wellbore #1 - Plan #2	12,114.61	7,400.00	4,909.58	4,828.42	60.499	CC, ES, SF
Becker D17-725 - Wellbore #1 - Plan #2	12,058.94	7,228.36	5,549.38	5,469.93	69.855	CC
Becker D17-725 - Wellbore #1 - Plan #2	12,114.61	7,250.00	5,549.54	5,469.60	69.420	ES, SF
Becker D17-735 - Wellbore #1 - Plan #2	11,784.75	6,780.95	6,169.63	6,094.88	82.533	CC
Becker D17-735 - Wellbore #1 - Plan #2	11,800.00	6,786.28	6,169.68	6,094.79	82.389	ES
Becker D17-735 - Wellbore #1 - Plan #2	12,114.61	6,943.75	6,180.46	6,102.54	79.319	SF
Becker D17-745 - Wellbore #1 - Plan #2	2,105.56	2,130.56	6,318.98	6,304.26	429.301	CC
Becker D17-745 - Wellbore #1 - Plan #2	2,200.00	2,200.00	6,319.03	6,303.72	412.829	ES
Becker D17-745 - Wellbore #1 - Plan #2	12,114.61	6,020.29	6,719.46	6,646.98	92.709	SF
Becker D17-755 - Wellbore #1 - Plan #2	12,114.61	7,572.83	7,489.17	7,407.16	91.314	CC, ES, SF

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

Noble Energy

Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen D09-721
Project:	Mustang	TVD Reference:	Well @ 4752.00ft
Reference Site:	C Section 33	MD Reference:	Well @ 4752.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersen D09-721	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Guttersen D09-721	Database:	EDMP
Reference Design:	Plan #3	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
D Section 05						
Becker D17-765 - Wellbore #1 - Plan #2	12,078.42	7,424.19	8,129.83	8,046.10	97.093	CC
Becker D17-765 - Wellbore #1 - Plan #2	12,114.61	7,450.00	8,129.97	8,045.81	96.597	ES, SF
Becker D17-775 - Wellbore #1 - Plan #2	11,931.42	7,226.04	8,770.65	8,690.39	109.278	CC
Becker D17-775 - Wellbore #1 - Plan #2	12,114.61	7,300.00	8,771.98	8,689.91	106.894	ES, SF
Becker D17-785 - Wellbore #1 - Plan #2	2,104.64	2,153.64	9,164.37	9,149.57	619.268	CC
Becker D17-785 - Wellbore #1 - Plan #2	2,200.00	2,200.00	9,164.50	9,149.19	598.730	ES
Becker D17-785 - Wellbore #1 - Plan #2	12,114.61	6,782.49	9,403.79	9,326.93	122.346	SF
Becker Ranch #5E-323 (PR) - Wellbore #1 - As Drilled	449.94	531.00	7,941.25	7,938.29	2,676.939	CC
Becker Ranch #5E-323 (PR) - Wellbore #1 - As Drilled	500.00	531.00	7,941.41	7,938.26	2,524.038	ES
Becker Ranch #5E-323 (PR) - Wellbore #1 - As Drilled	12,114.61	11,303.75	9,317.77	9,185.91	70.668	SF
Becker Ranch #5E-403 (PR) - As Drilled - As Drilled	0.00	51.00	7,949.15			
Becker Ranch #5E-403 (PR) - As Drilled - As Drilled	12,114.61	11,599.00	9,603.42	9,465.07	69.417	SF
Becker Ranch #5J-103 (PA) - Wellbore #1 - As Drilled	2,301.94	2,655.35	7,803.81	7,786.53	451.509	CC, ES
Becker Ranch #5J-103 (PA) - Wellbore #1 - As Drilled	12,114.61	8,438.00	9,158.01	9,073.02	107.763	SF
Becker Ranch #5J-203 (PR) - Wellbore #1 - As-Drilled	0.00	66.10	6,648.41			
Becker Ranch #5J-203 (PR) - Wellbore #1 - As-Drilled	100.00	153.07	6,648.65	6,648.28	10,000.000	ES
Becker Ranch #5J-203 (PR) - Wellbore #1 - As-Drilled	12,114.61	11,523.00	8,320.72	8,182.55	60.219	SF
Becker Ranch #5J-303 (PR) - Wellbore #1 - As Drilled	2,233.36	2,406.68	7,848.91	7,832.66	482.906	CC
Becker Ranch #5J-303 (PR) - Wellbore #1 - As Drilled	2,312.07	2,695.81	7,849.39	7,831.82	446.814	ES
Becker Ranch #5J-303 (PR) - Wellbore #1 - As Drilled	12,114.61	11,473.00	8,652.41	8,513.96	62.498	SF
Becker Ranch #5J-323 (PA) - Wellbore #1 - As Drilled	0.00	49.77	6,651.96			
Becker Ranch #5J-323 (PA) - Wellbore #1 - As Drilled	12,114.61	11,430.00	8,005.29	7,867.76	58.210	SF
Becker Ranch #5J-323R (PR) - Wellbore #1 - As-Drilled	968.23	1,043.53	6,649.15	6,642.52	1,002.020	CC
Becker Ranch #5J-323R (PR) - Wellbore #1 - As-Drilled	1,000.00	1,057.87	6,649.20	6,642.40	977.843	ES
Becker Ranch #5J-323R (PR) - Wellbore #1 - As-Drilled	12,114.61	11,390.00	7,897.15	7,759.74	57.473	SF
Becker Ranch #5J-343 (PR) - Wellbore #1 - As Drilled	615.19	696.24	7,913.30	7,909.15	1,908.582	CC
Becker Ranch #5J-343 (PR) - Wellbore #1 - As Drilled	1,000.00	1,032.82	7,913.77	7,907.04	1,176.326	ES
Becker Ranch #5J-343 (PR) - Wellbore #1 - As Drilled	12,114.61	11,500.00	8,972.53	8,835.13	65.300	SF
Becker Ranch #5M-203 (PR) - Wellbore #1 - As-Drilled	0.00	35.29	5,479.69			
Becker Ranch #5M-203 (PR) - Wellbore #1 - As-Drilled	400.00	422.49	5,481.34	5,478.95	2,287.220	ES
Becker Ranch #5M-203 (PR) - Wellbore #1 - As-Drilled	11,600.00	11,600.00	7,047.76	6,907.57	50.273	SF
Becker Ranch #5M-243 (PR) - Wellbore #1 - As-Drilled	0.00	67.67	6,655.07			
Becker Ranch #5M-243 (PR) - Wellbore #1 - As-Drilled	2,203.30	2,289.99	6,666.93	6,651.29	426.290	ES
Becker Ranch #5M-243 (PR) - Wellbore #1 - As-Drilled	12,114.61	11,420.00	7,652.13	7,515.18	55.876	SF
Becker Ranch #5M-303 (PR) - Wellbore #1 - As-Drilled	2,492.78	3,226.85	6,611.13	6,591.37	334.581	CC
Becker Ranch #5M-303 (PR) - Wellbore #1 - As-Drilled	2,500.00	3,229.10	6,611.14	6,591.35	334.011	ES
Becker Ranch #5M-303 (PR) - Wellbore #1 - As-Drilled	12,114.61	11,467.00	7,343.59	7,207.55	53.983	SF
Becker Ranch #5M-323 (PR) - Wellbore #1 - As-Drilled	921.49	965.01	5,415.28	5,409.12	879.713	CC
Becker Ranch #5M-323 (PR) - Wellbore #1 - As-Drilled	1,600.00	1,596.53	5,417.62	5,406.85	503.122	ES
Becker Ranch #5M-323 (PR) - Wellbore #1 - As-Drilled	12,114.61	11,327.00	6,634.60	6,497.12	48.261	SF
Becker Ranch #5M-423 (PR) - Wellbore #1 - As-Drilled	929.20	972.72	5,447.48	5,441.28	877.859	CC
Becker Ranch #5M-423 (PR) - Wellbore #1 - As-Drilled	1,000.00	1,005.00	5,447.63	5,441.06	829.235	ES
Becker Ranch #5M-423 (PR) - Wellbore #1 - As-Drilled	12,114.61	11,441.00	6,839.19	6,701.14	49.539	SF
Becker Ranch #5R-203 (PR) - Wellbore #1 - As-Drilled	0.00	41.59	4,404.31			
Becker Ranch #5R-203 (PR) - Wellbore #1 - As-Drilled	900.00	905.62	4,405.01	4,399.09	744.678	ES
Becker Ranch #5R-203 (PR) - Wellbore #1 - As-Drilled	12,114.61	11,265.00	5,705.84	5,568.74	41.618	SF
Becker Ranch #5R-243 (PR) - Wellbore #1 - As-Drilled	1,581.06	1,623.77	5,380.20	5,369.28	492.861	CC
Becker Ranch #5R-243 (PR) - Wellbore #1 - As-Drilled	1,600.00	1,633.61	5,380.22	5,369.20	488.269	ES
Becker Ranch #5R-243 (PR) - Wellbore #1 - As-Drilled	12,114.61	11,249.00	6,399.62	6,262.44	46.652	SF
Becker Ranch #5R-303 (PR) - Wellbore #1 - As-Drilled	2,525.56	3,143.44	5,163.64	5,143.89	261.429	CC, ES
Becker Ranch #5R-303 (PR) - Wellbore #1 - As-Drilled	12,114.61	11,320.00	5,977.38	5,840.58	43.693	SF
Becker Ranch #5R-323 (PR) - Wellbore #1 - As-Drilled	1,666.63	1,711.18	4,371.65	4,360.06	377.099	CC
Becker Ranch #5R-323 (PR) - Wellbore #1 - As-Drilled	1,900.00	1,921.03	4,372.28	4,359.11	331.926	ES

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

Noble Energy

Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen D09-721
Project:	Mustang	TVD Reference:	Well @ 4752.00ft
Reference Site:	C Section 33	MD Reference:	Well @ 4752.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersen D09-721	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Guttersen D09-721	Database:	EDMP
Reference Design:	Plan #3	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
D Section 05						
Becker Ranch #5R-323 (PR) - Wellbore #1 - As-Drilled	12,114.61	11,322.00	5,499.27	5,362.08	40.086	SF
Becker Ranch #5R-443 (PR) - Wellbore #1 - As-Drilled	2,341.09	2,640.26	5,368.47	5,351.27	312.257	CC, ES
Becker Ranch #5R-443 (PR) - Wellbore #1 - As-Drilled	12,114.61	11,409.00	6,252.79	6,115.45	45.528	SF
Becker Ranch #5U-243 (PR) - Wellbore #1 - As-Drilled	2,351.24	2,615.78	4,329.62	4,312.57	254.055	CC, ES
Becker Ranch #5U-243 (PR) - Wellbore #1 - As-Drilled	12,114.61	11,244.00	5,126.56	4,990.02	37.545	SF
Becker Ranch #5U-303 (PR) - Wellbore #1 - As-Drilled	2,606.70	3,218.57	4,077.95	4,057.70	201.423	CC, ES
Becker Ranch #5U-303 (PR) - Wellbore #1 - As-Drilled	12,114.61	11,347.00	4,721.32	4,584.99	34.630	SF
Becker Ranch #5U-443 (PR) - Wellbore #1 - As-Drilled	2,581.26	3,168.83	4,195.70	4,175.76	210.356	CC
Becker Ranch #5U-443 (PR) - Wellbore #1 - As-Drilled	2,600.00	3,177.18	4,195.78	4,175.74	209.322	ES
Becker Ranch #5U-443 (PR) - Wellbore #1 - As-Drilled	12,114.61	11,408.00	4,911.73	4,774.71	35.847	SF
LDS #D08-18D(SI) - Wellbore #1 - MWD Surveys	12,114.61	7,536.81	7,259.92	7,166.52	77.730	CC, ES, SF
LDS #D08-29 (PR) - Wellbore #1 - Gyro Surveys	11,830.78	6,992.62	8,503.48	8,429.27	114.589	CC
LDS #D08-29 (PR) - Wellbore #1 - Gyro Surveys	11,900.00	6,994.49	8,503.87	8,429.19	113.871	ES
LDS #D08-29 (PR) - Wellbore #1 - Gyro Surveys	12,114.61	7,000.29	8,508.68	8,432.55	111.755	SF
LDS D08-28D (SI) - Wellbore #1 - MWD Surveys	11,843.55	7,284.00	7,374.36	7,297.86	96.397	CC
LDS D08-28D (SI) - Wellbore #1 - MWD Surveys	11,900.00	7,284.00	7,374.57	7,297.71	95.938	ES
LDS D08-28D (SI) - Wellbore #1 - MWD Surveys	12,114.61	7,284.00	7,379.34	7,301.07	94.285	SF
LDS D08-30D (PR) - Wellbore #1 - MWD Surveys	716.18	729.19	9,341.08	9,336.54	2,056.291	CC
LDS D08-30D (PR) - Wellbore #1 - MWD Surveys	800.00	771.00	9,341.34	9,336.35	1,871.801	ES
LDS D08-30D (PR) - Wellbore #1 - MWD Surveys	12,114.61	7,143.91	9,917.41	9,839.54	127.356	SF
D Section 08						
HSR-ALVIN DECHANT #12-8 (SI) - Wellbore #1 - As-Dri	12,114.61	7,136.00	9,694.92	9,618.82	127.398	CC, ES, SF
HSR-ALVIN DECHANT #13-8 (SI) - Wellbore #1 - As-Dri						Out of range
HSR-LDS #14-8(SI) - Wellbore #1 - As-Drilled	12,114.61	7,099.13	9,185.63	9,111.76	124.346	CC, ES, SF
HSR-LDS #15-8(SI) - Wellbore #1 - As-Drilled	12,114.61	6,946.78	8,161.86	8,090.86	114.962	CC, ES, SF
HSR-LDS #16-8(SI) - Wellbore #1 - Gyro Surveys	12,114.61	6,794.54	7,238.96	7,148.63	80.142	CC, ES, SF
HSR-LDS #3-8(SI) - Wellbore #1 - As-Drilled	12,114.61	6,914.69	8,125.12	8,048.72	106.346	CC, ES, SF
HSR-LDS #4-8(SI) - Wellbore 1 - As-Drilled	12,114.61	6,950.36	9,208.99	9,132.62	120.578	CC, ES, SF
HSR-LDS #5-8(SI) - Wellbore #1 - As-Drilled	12,114.61	6,890.77	9,582.02	9,506.07	126.174	CC, ES, SF
HSR-LDS #6-8(SI) - Wellbore #1 - As-Drilled	12,114.61	6,881.53	8,281.02	8,205.13	109.128	CC, ES, SF
HSR-LDS #9-8(SI) - Wellbore #1 - As-Drilled	12,114.61	6,998.82	6,227.39	6,155.06	86.093	CC, ES, SF
HSR-LDS A #10-8(SI) - Wellbore #1 - As-Drilled	12,114.61	7,010.13	7,487.09	7,414.43	103.038	CC, ES, SF
HSR-LDS A #11-8(SI) - Wellbore #1 - As-Drilled	12,114.61	7,120.12	8,660.08	8,584.86	115.127	CC, ES, SF
LDS #18-8(SI) - Wellbore #1 - Gyro Surveys	12,114.61	7,069.68	8,734.45	8,657.51	113.530	CC, ES, SF
LDS #20-8(SI) - Wellbore #1 - No Surveys	12,114.61	7,020.72	7,250.45	7,141.28	66.414	CC, ES, SF
LDS D #09-30(SI) - Wellbore #1 - As-Drilled	12,114.61	7,025.02	4,739.48	4,567.87	27.618	CC, ES, SF
LDS D #09-31D(SI) - Wellbore #1 - As-Drilled	12,114.61	7,223.39	4,924.41	4,823.20	48.653	CC, ES, SF
RUBY RED #D #8-1D(PA) - Wellbore #1 - Gyro Surveys	12,114.61	6,989.58	5,712.37	5,635.96	74.762	CC, ES, SF
RUBY RED #D 8-7(PR) - Wellbore #1 - Gyro Surveys	12,114.61	7,064.71	7,056.05	6,980.11	92.918	CC, ES, SF
RUBY RED #D 8-8(PR) - Wellbore #1 - Gyro Surveys	12,114.61	7,113.11	5,526.47	5,451.40	73.625	CC, ES, SF
RUBY RED D8-2(PA) - Wellbore #1 - Gyro Surveys	12,114.61	7,038.25	6,791.13	6,714.56	88.699	CC, ES, SF
TWO E RANCHES #1(PA) - Wellbore #1 - Gyro Surveys	12,114.61	7,102.20	9,632.99	9,558.30	128.980	CC, ES, SF

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

Noble Energy

Anticollision Summary Report

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Reference Well:	Gutteresen D09-721	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Gutteresen D09-721	Database:	EDMP
Reference Design:	Plan #3	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
D Section 09						
ART RED #D 9-14(PR) - ART RED #D 9-14 - No Surveys	12,114.61	7,025.72	5,523.89	5,346.54	31.146	CC, ES, SF
ART RED #D 9-3J(PA) - Wellbore #1 - Gyro Surveys	12,114.61	6,784.31	5,865.51	5,765.87	58.864	CC, ES, SF
ART RED #D 9-4J(PR) - ART RED #D 9-4J - No Surveys	12,114.61	7,015.72	3,817.58	3,648.87	22.629	CC, ES, SF
ART RED D #9-10(PR) - ART RED D #9-10 - No Surveys	12,114.61	7,021.72	3,649.65	3,475.64	20.974	CC, ES, SF
ART RED D #9-11(PR) - ART RED D #9-11 - No Surveys	12,114.61	7,013.72	4,350.96	4,169.48	23.975	CC, ES, SF
Art Red D 9-16 (PR) - Wellbore #1 - Gyro Surveys	12,114.61	6,984.66	4,914.30	4,863.95	97.593	CC, ES, SF
FRONT RANGE #D09-20D(PR) - FRONT RANGE #D09	12,114.61	7,381.85	4,351.05	4,277.88	59.472	CC, ES, SF
FRONT RANGE #D09-25D(PR) - FRONT RANGE #D09	12,114.61	7,263.26	5,075.18	5,003.04	70.354	CC, ES, SF
FRONT RANGE #D09-32D(PR) - FRONT RANGE #D09	12,114.61	7,251.84	5,318.95	5,238.23	65.894	CC, ES, SF
FRONT RANGE D #09-28(SI) - FRONT RANGE D #09-2	12,114.61	7,006.72	1,947.38	1,754.96	10.121	CC, ES, SF
FRONT RANGE D #09-33(SI) - Wellbore #1 - Gyro Surve	12,114.61	6,951.59	6,137.38	6,068.21	88.724	CC, ES, SF
FRONT RANGE D #16-29(SI) - FRONT RANGE D #16-2	12,114.61	6,800.01	6,313.19	6,260.35	119.466	CC, ES, SF
FRONT RANGE D #16-30(SI) - Wellbore #1 - Gyro Surve	12,114.61	7,113.10	6,707.81	6,640.04	98.985	CC, ES, SF
GITTLEIN #18-9(PR) - GITTLEIN #18-9 - No Surveys	12,114.61	7,128.97	3,883.65	3,809.12	52.105	CC, ES, SF
GITTLEIN #D #9-7(PR) - GITTLEIN #D #9-7 - No Survey	12,114.61	6,969.72	2,713.67	2,535.25	15.210	CC, ES, SF
GITTLEIN WHITE #D 9-2(SI) - GITTLEIN WHITE #D 9-2	12,114.61	7,003.72	1,415.23	1,227.80	7.551	CC, ES, SF
GITTLEIN-UPRC #9-12(PA) - GITTLEIN-UPRC #9-12 - W	12,114.61	6,883.01	5,115.46	5,057.76	88.655	CC, ES, SF
GUTTERSEN #9-15(PR) - GUTTERSEN #9-15 - No Sur	12,114.61	7,016.72	4,979.48	4,807.53	28.959	CC, ES, SF
GUTTERSEN D #09-09(PR) - GUTTERSEN D #09-09 -	12,114.61	7,009.72	3,358.85	3,192.00	20.130	CC, ES, SF
GUTTERSEN D #09-21(PR) - GUTTERSEN D #09-21 -	12,114.61	7,013.72	3,497.59	3,317.96	19.471	CC, ES, SF
GUTTERSEN D #09-22(SI) - GUTTERSEN D #09-22 - N	12,114.61	7,016.72	2,943.28	2,772.37	17.221	CC, ES, SF
GUTTERSEN D #09-24(PR) - GUTTERSEN D #09-24 -	12,114.61	7,025.72	4,492.77	4,316.95	25.554	CC, ES, SF
GUTTERSEN D #16-28(PR) - GUTTERSEN D #16-28 -	12,114.61	7,020.72	5,800.06	5,625.69	33.261	CC, ES, SF
Gutteresen D09-27D - Wellbore #1 - Wellbore #1- As Drill	12,114.61	7,130.61	600.77	517.27	7.195	CC, ES, SF
Gutteresen D10-30D - Wellbore #1 - Wellbore #1- As Drill	12,114.61	7,075.85	719.32	644.08	9.560	CC, ES, SF
HSR TIM GITTLEIN #3-9(SI) - HSR TIM GITTLEIN #3-9	12,114.61	7,006.72	2,713.26	2,521.42	14.143	CC, ES, SF
HSR TIM GITTLEIN #4-9(SI) - HSR TIM GITTLEIN #4-9	12,114.61	7,008.72	3,878.12	3,685.86	20.172	CC, ES, SF
HSR TIM GITTLEIN #5-9(SI) - HSR TIM GITTLEIN #5-9	12,114.61	7,010.72	4,271.90	4,081.82	22.475	CC, ES, SF
HSR TIM GITTLEIN #6-9(SI) - HSR TIM GITTLEIN #6-9	12,114.61	7,009.72	3,233.93	3,046.34	17.240	CC, ES, SF
KARCH WHITE #D 9-1(SI) - KARCH WHITE #D 9-1 - No	12,114.61	7,001.72	869.08	702.26	5.209	CC, ES, SF
KARCH WHITE #D 9-8(PR) - KARCH WHITE #D 9-8 - N	12,114.61	7,004.72	2,400.98	2,233.64	14.348	CC, ES, SF
ROADHOUSE D #9-17(SI) - ROADHOUSE D #9-17 - No	12,114.61	7,005.72	1,624.75	1,450.73	9.337	CC, ES, SF

Noble Energy

Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersten D09-721
Project:	Mustang	TVD Reference:	Well @ 4752.00ft
Reference Site:	C Section 33	MD Reference:	Well @ 4752.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersten D09-721	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Guttersten D09-721	Database:	EDMP
Reference Design:	Plan #3	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
D Section 10						
Duncan D 10-6 (SI) - Wellbore #1 - No Surveys	12,114.61	7,037.72	2,940.58	2,619.86	9.169	CC, ES, SF
Guttersten State D 10-24 (SI) - Wellbore #1 - No Surveys	12,114.61	7,071.72	5,317.72	5,002.12	16.850	CC, ES, SF
Guttersten State D15-27 - Wellbore #1 - Wellbore #1- As	12,114.61	6,991.80	7,107.49	7,046.59	116.714	CC, ES, SF
Karch Blue D 10-02 (SI) - Wellbore #1 - Gyro Surveys	12,114.61	7,021.40	4,008.44	3,935.19	54.729	CC, ES, SF
Karch Blue D 10-07 (SI) - Wellbore #1 - Gyro Surveys	12,114.61	7,057.82	4,502.15	4,433.42	65.509	CC, ES, SF
Karch Blue D 10-08 (SI) - Wellbore #1 - Gyro Surveys	12,114.61	7,007.29	5,751.69	5,487.94	21.808	CC, ES, SF
Karch State D 10-22 (SI) - Wellbore #1 - No Surveys	12,114.61	7,058.72	5,385.51	5,061.71	16.632	CC, ES, SF
Spike D 10-10 (SI) - Wellbore #1 - No Surveys	12,114.61	7,062.72	5,461.16	5,141.31	17.074	CC, ES, SF
Spike ST GWS D 10-09 (SI) - Wellbore #1 - No Surveys	12,114.61	7,063.72	6,370.11	6,047.11	19.722	CC, ES, SF
Spike ST GWS D 10-12 (SI) - Wellbore #1 - As-Drilled	12,114.61	7,050.21	3,745.74	3,693.13	71.197	CC, ES, SF
Spike ST GWS D 10-14 (PR) - Wellbore #1 - Gyro Surve	12,114.61	7,042.81	5,682.88	5,628.58	104.664	CC, ES, SF
Spike ST GWS D 10-16 (PA) - Wellbore #1 - No Surveys	12,114.61	7,062.72	7,168.69	6,988.42	39.765	CC, ES, SF
Spike State D 10-21D (SI) - Wellbore #1 - Wellbore #1	12,114.61	7,200.24	4,596.51	4,527.32	66.436	CC, ES, SF
Spike State D 10-23 (SI) - Wellbore #1 - No Surveys	12,114.61	7,067.72	6,316.03	5,995.94	19.732	CC, ES, SF
Spike State GWS D 10-11 (PR) - Wellbore #1 - No Surve	12,114.61	7,048.72	4,391.41	4,077.13	13.973	CC, ES, SF
Spike State GWS D 10-13J (PR) - Wellbore #1 - No Surv	12,114.61	7,056.72	4,493.45	4,183.67	14.505	CC, ES, SF
Spike State GWS D 10-15 (PA) - Wellbore #1 - No Surve	12,114.61	7,106.00	6,638.72	6,464.88	38.189	CC, ES, SF
Two E Ranch 1-10 (PR) - Wellbore #1 - No Surveys	12,114.61	7,054.72	5,200.09	4,870.76	15.790	CC, ES, SF
Two E Ranch 2-10 (PR) - Wellbore #1 - No Surveys	12,114.61	7,013.72	1,696.36	1,372.78	5.242	CC, ES, SF
Two E Ranch 3-10 (PR) - Wellbore #1 - No Surveys	12,114.61	7,015.72	2,816.02	2,488.15	8.589	CC, ES, SF
Two E Ranch 4-10 (SI) - Wellbore #1 - No Surveys	12,114.61	7,030.72	2,698.89	2,387.11	8.656	CC, ES, SF
Volley State D 10-13 (PR) - Wellbore #1 - Gyro Surveys	12,114.61	6,965.67	5,109.82	5,058.88	100.323	CC, ES, SF

Noble Energy

Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersten D09-721
Project:	Mustang	TVD Reference:	Well @ 4752.00ft
Reference Site:	C Section 33	MD Reference:	Well @ 4752.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersten D09-721	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Guttersten D09-721	Database:	EDMP
Reference Design:	Plan #3	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
D Section 15						
Cally Blue D 15-12 (PR) - Wellbore #1 - Gyro Surveys	12,114.61	6,997.78	8,764.42	8,714.40	175.195	CC, ES, SF
Cally Blue D 15-14 (PR) - Wellbore #1 - Gyro Surveys						Out of range
Cally Blue D15-04J - Wellbore #1 - Wellbore #1- As Drilled						Out of range
Cally Blue D15-09 - Wellbore #1 - Wellbore #1- As Drilled						Out of range
Cally Blue D15-10 - Wellbore #1 - Wellbore #1- As Drilled	12,114.61	7,122.49	9,633.60	9,579.59	178.339	CC, ES, SF
Cally Blue D15-11 (PA) - Wellbore #1 - Gyro Surveys	12,114.61	7,025.09	9,066.49	9,015.08	176.340	CC, ES, SF
Cally Blue D15-15 - Wellbore #1 - Wellbore #1- As Drilled						Out of range
Cally D15-02 - Wellbore #1 - Wellbore #1-As Drilled	12,114.61	7,089.78	7,360.31	7,302.94	128.297	CC, ES, SF
Cally White D15-01 - Wellbore #1 - Wellbore #1- As Drille	12,114.61	6,963.38	8,200.25	8,139.89	135.849	CC, ES, SF
Cally White D15-07 - Wellbore #1 - Wellbore #1- As Drille	12,114.61	7,022.52	8,417.54	8,362.60	153.228	CC, ES, SF
Cally White D15-08 - Wellbore #1 - Wellbore #1- As Drille	12,114.61	6,980.49	9,220.65	9,162.53	158.654	CC, ES, SF
Chandler State D15-72-1HN - Original Drilling - Original D	12,114.61	6,184.00	8,004.02	7,945.36	136.442	CC, ES, SF
Chandler State D15-73-1HN - Original Drilling - Original D	12,114.61	6,135.00	7,563.01	7,505.51	131.530	CC, ES, SF
Chandler State D15-74-1HN - Original Drilling - Original D	12,114.61	6,515.97	7,232.53	7,171.13	117.788	CC, ES, SF
Chandler State D23-79HN - Original Drilling - Original Dr						Out of range
Duff D15-5 (PR) - Wellbore #1 - Gyro Surveys	12,114.61	6,851.29	7,587.25	7,536.89	150.658	CC, ES, SF
Guttersten D 15-21 (PR) - Wellbore #1 - Gyro Surveys	12,114.61	7,105.10	8,910.69	8,857.85	168.630	CC, ES, SF
Guttersten D 15-24 (PR) - Wellbore #1 - Gyro Surveys						Out of range
Guttersten D 15-29 (SI) - Wellbore #1 - Gyro Surveys	12,114.61	7,057.32	6,000.02	5,948.51	116.493	CC, ES, SF
Guttersten D 22-28 (PR) - Wellbore #1 - Gyro Surveys						Out of range
Guttersten D14-32 - Wellbore #1 - Wellbore #1- As Drilled	12,114.61	7,073.05	9,933.29	9,874.83	169.891	CC, ES, SF
Guttersten D15-17 - Wellbore #1 - Wellbore #1- As Drilled	12,114.61	7,093.62	8,213.80	8,155.87	141.784	CC, ES, SF
Guttersten D15-18 (SI) - Wellbore #1 - Gyro Surveys	12,114.61	7,097.82	7,490.74	7,436.00	136.844	CC, ES, SF
Guttersten D15-20 (PR) - Wellbore #1 - Gyro Surveys	12,114.61	7,063.62	8,289.48	8,238.83	163.638	CC, ES, SF
Guttersten D15-22 - Wellbore #1 - Wellbore #1- As Drilled	12,114.61	7,044.48	9,560.29	9,504.73	172.080	CC, ES, SF
Guttersten D15-28 (SI) - Wellbore #1 - Gyro Surveys	12,114.61	7,019.71	6,509.72	6,454.19	117.221	CC, ES, SF
Guttersten D15-30 (SI) - Wellbore #1 - Gyro Surveys	12,114.61	7,071.59	5,943.34	5,892.81	117.621	CC, ES, SF
Guttersten D22-27 - Wellbore #1 - Wellbore #1- As Drilled						Out of range
Guttersten D23-69HN - Guttersten D23-69HN OH - As-Dri						Out of range
HSR Guttersten 03-15 (SI) - Wellbore #1 - Gyro Surveys	12,114.61	7,119.64	6,716.00	6,662.73	126.076	CC, ES, SF
HSR Guttersten 6-15 (SI) - Wellbore #1 - Gyro Surveys	12,114.61	7,058.34	8,130.00	8,078.04	156.462	CC, ES, SF
Mills UPRC D 15-04 (SI) - Wellbore #1 - Gyro Surveys	12,114.61	7,075.63	6,677.50	6,626.04	129.759	CC, ES, SF
Two E Ranch 1-15B (SI) - Wellbore #1 - Gyro Surveys	12,114.61	7,075.97	9,954.19	9,903.55	196.582	CC, ES, SF

Noble Energy

Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Gutteresen D09-721
Project:	Mustang	TVD Reference:	Well @ 4752.00ft
Reference Site:	C Section 33	MD Reference:	Well @ 4752.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Gutteresen D09-721	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Gutteresen D09-721	Database:	EDMP
Reference Design:	Plan #3	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
D Section 16						
Diggen State D16-23 (SI) - Wellbore #1 - Gyro Surveys	12,114.61	7,051.52	9,489.50	9,438.06	184.468	CC, ES, SF
Diggin State D 16-07 (SI) - Wellbore #1 - No Surveys	12,114.61	7,062.72	7,710.81	7,539.62	45.042	CC, ES, SF
Diggin State D 16-19J (PR) - Wellbore #1 - As-Drilled	12,114.61	6,822.14	7,683.04	7,623.04	128.048	CC, ES, SF
Diggin State D16-13 (PR) - Wellbore #1 - Gyro Surveys						Out of range
Gutteresen ST D 15-32 (SI) - Wellbore #1 - Gyro Surveys	12,114.61	7,024.57	8,270.23	8,219.84	164.119	CC, ES, SF
Gutteresen ST D 16-21 (SI) - Wellbore #1 - Gyro Surveys	12,114.61	7,101.84	8,470.25	8,415.23	153.947	CC, ES, SF
Gutteresen ST D 16-22D (SI) - Wellbore #1 - MWD Surve	12,114.61	7,205.30	8,122.82	8,068.23	148.795	CC, ES, SF
Gutteresen ST D 16-33 (SI) - Wellbore #1 - Gyros						Out of range
Gutteresen State D 15-31 (PR) - Wellbore #1 - Gyro Surve	12,114.61	7,053.70	6,566.63	6,516.44	130.835	CC, ES, SF
Gutteresen State D 15-33 (SI) - Wellbore #1 - Gyro Survey	12,114.61	6,967.66	9,502.85	9,452.36	188.203	CC, ES, SF
Gutteresen State D 16-15X (PR) - Wellbore #1 - Gyro Sur						Out of range
Gutteresen State D 16-18 (SI) - Wellbore #1 - As-Drilled	12,114.61	7,129.65	6,985.01	6,928.02	122.552	CC, ES, SF
Gutteresen State D 16-20 (SI) - Wellbore #1 - Gyro Survey	12,114.61	7,029.49	8,818.51	8,759.55	149.572	CC, ES, SF
Gutteresen State D 16-24 (SI) - Wellbore #1 - Gyro Survey	12,114.61	7,049.66	9,569.68	9,514.77	174.295	CC, ES, SF
Gutteresen State D 16-27 (PR) - Wellbore #1 - As-Drilled	12,114.61	7,044.66	5,762.80	5,709.83	108.784	CC, ES, SF
Gutteresen State D 16-31 (PR) - Wellbore #1 - As-Drilled	12,114.61	7,089.77	8,217.73	8,153.57	128.087	CC, ES, SF
Gutteresen State D 16-32D (SI) - Gutteresen State D 16-32	12,114.61	7,050.00	9,162.40	9,092.94	131.905	CC, ES, SF
Gutteresen State D 16-32D (SI) - Gutteresen State D 16-32	12,114.61	7,231.96	9,160.77	9,091.19	131.645	CC, ES, SF
Gutteresen State D16-63-1HN - Original Drilling - As-Drille	12,114.61	7,151.00	9,854.69	9,801.05	183.704	CC, ES, SF
Gutteresen State D16-65-1HN - Original Drilling - As-Drille	12,114.61	7,138.79	8,526.77	8,473.41	159.817	CC, ES, SF
Spike ST GWS D 16-01 (SI) - Wellbore #1 - Gyro Survey	12,114.61	7,089.09	6,046.10	5,994.92	118.124	CC, ES, SF
Spike ST GWS D 16-02 (P&A) - Wellbore #1 - Gyro Surv	12,114.61	7,088.13	6,252.90	6,178.69	84.257	CC, ES, SF
Spike ST GWS D 16-03 (PR) - Wellbore #1 - As-Drilled	12,114.61	7,137.00	6,690.78	6,630.65	111.277	CC, ES, SF
Spike ST GWS D 16-04 (SI) - Wellbore #1 - As-Drilled	12,114.61	7,046.66	7,256.94	7,193.12	113.704	CC, ES, SF
Spike ST GWS D 16-05 (PR) - Wellbore #1 - Gyro Surve	12,114.61	7,020.15	8,498.95	8,438.14	139.751	CC, ES, SF
Spike ST GWS D 16-06 (SI) - Wellbore #1 - As-Drilled	12,114.61	7,052.64	7,909.52	7,851.75	136.928	CC, ES, SF
Spike ST GWS D 16-08 (PR) - Wellbore #1 - Gyro Surve	12,114.61	7,006.05	7,539.42	7,488.94	149.361	CC, ES, SF
Spike ST GWS D 16-12 (PA) - Wellbore #1 - Gyro Surve	12,114.61	6,994.41	9,544.08	9,484.12	159.184	CC, ES, SF
Spike ST GWS D 16-14 (SI) - Wellbore #1 - No Surveys						Out of range
Spike ST GWS D 16-16 (SI) - Wellbore #1 - As-Drilled						Out of range
Spike State D 16-10 (SI) - Wellbore #1 - Gyro Surveys	12,114.61	6,979.83	8,888.34	8,835.13	167.061	CC, ES, SF
Spike State D 16-11 (SI) - Wellbore #1 - Gyro Surveys	12,114.61	7,057.02	9,074.77	9,018.62	161.606	CC, ES, SF
Spike State D 16-9 (SI) - Wellbore #1 - Gyro Surveys	12,114.61	7,075.99	8,852.05	8,800.95	173.237	CC, ES, SF
Spike State D16-15 (P&A) - Wellbore #1 - Wellbore #1						Out of range
Spike State D16-99HZ - Original Drilling - As-Drilled	12,114.61	7,056.49	9,013.95	8,960.60	168.938	CC, ES, SF
Spike State GWS D 16-7J (PR) - Wellbore #1 - As-Drilled	12,114.61	7,037.29	6,715.48	6,662.77	127.413	CC, ES, SF
Spike State GWS D16-13J (PR) - Wellbore #1 - Gyro Su						Out of range

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

Noble Energy

Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Gutteresen D09-721
Project:	Mustang	TVD Reference:	Well @ 4752.00ft
Reference Site:	C Section 33	MD Reference:	Well @ 4752.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Gutteresen D09-721	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Gutteresen D09-721	Database:	EDMP
Reference Design:	Plan #3	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
D Section 17						
Butterball D19-27D - Butterball D19-27D OH - As-Drilled						Out of range
Butterball D19-27D - Gyros - Gyro Surveys						Out of range
Gutteresen State D16-33 (SI) - Wellbore #1 - No Surveys						Out of range
HSR LDS 6-17 (PA) - Wellbore #1 - Gyro Surveys						Out of range
HSR LDS B5-17 (SI) - Wellbore #1 - Gyro Surveys						Out of range
HSR Mike Gutteresen 16-17X (SI) - Wellbore #1 - As-Dri						Out of range
HSR Mike Gutteresen 16-17 (DA) - Wellbore #1 - As-Drille						Out of range
HSR Weeks 10-17 (TA) - Wellbore #1 - Gyro Surveys						Out of range
HSR Weeks 15-17 (PA) - Wellbore #1 - As-Drilled						Out of range
HSR Weeks 9-17 (TA) - Wellbore #1 - Gyro Surveys						Out of range
HSR-LDS 3-17 (PA) - Wellbore #1 - Gyro Surveys						Out of range
HSR-LDS 4-17 (SI) - Wellbore #1 - Gyro Surveys						Out of range
LDS 18-17 (PA) - Wellbore #1 - Gyro Surveys						Out of range
LDS D17-13 (PA) - Wellbore #1 - Gyro Surveys						Out of range
LDS D17-18 (SI) - Wellbore #1 - Gyro Surveys	12,114.61	7,116.13	9,857.72	9,788.55	142.527	CC, ES, SF
LDS D17-20 (PA) - Wellbore #1 - As-Drilled						Out of range
LDS D17-21 (PA) - Wellbore #1 - As-Drilled						Out of range
LDS D17-22 (TA) - Wellbore #1 - As-Drilled						Out of range
LDS D17-24D (PA) - LDS D17-24D Gyros - As-Drilled						Out of range
LDS D17-24D (PA) - LDS D17-24D OH - As-Drilled						Out of range
LDS D17-25D (PA) - LDS D17-25D Gyros - As-Drilled						Out of range
LDS D17-25D (PA) - LDS D17-25D OH - LDS D17-25D -						Out of range
LDS D17-31D (PR) - Gyros - As-Drilled						Out of range
LDS D17-31D (PR) - LDS D17-31D OH - As-Drilled						Out of range
LDS D17-32D (PA) - Gyros - As-Drilled						Out of range
LDS D17-32D (PA) - LDS D17-32D OH - As-Drilled						Out of range
LDS D17-33 (PA) - LDS D17-33 - As-Drilled						Out of range
LDS D17-7 (PA) - Wellbore #1 - As-Drilled						Out of range
LDS D20-29D (PA) - Gyros - As-Drilled						Out of range
LDS D20-29D (PA) - LDS D20-29D OH - As-Drilled						Out of range
LDS D20-30D (TA) - Gyros - As-Drilled						Out of range
LDS D20-30D (TA) - LDS D20-30D OH - As-Drilled						Out of range
LDS RED D17-11 (SI) - Wellbore #1 - As Drilled						Out of range
LDS Red D17-12 (PA) - Wellbore #1 - Gyro Surveys						Out of range
LDS Red D17-14 (DA) - LDS Red D17-14 - No Surveys						Out of range
LDS Red D17-14X (PA) - Wellbore #1 - As-Drilled						Out of range
LDS Red D17-3J (PA) - Wellbore #1 - Gyro Surveys						Out of range
LDS White D17-1 (PA) - Wellbore #1 - Gyro Surveys	12,114.61	7,084.69	8,108.76	8,042.13	121.690	CC, ES, SF
LDS White D17-2 (SI) - Wellbore #1 - As-Drilled	12,114.61	6,918.06	9,059.08	8,989.54	130.270	CC, ES, SF
LDS White D17-8 (SI) - Wellbore #1 - As-Drilled	12,114.61	6,999.94	9,231.60	9,166.42	141.621	CC, ES, SF
Thomson D20-31D (TA) - Gyros - Gyro Surveys						Out of range
Thomson D20-31D (TA) - Thomson D20-31D OH - As-Dr						Out of range
Weeks 20-17 (PA) - Wellbore #1 - Gyro Surveys						Out of range