Project: Mustang
Site: D Section 29
Well: Guttersen Y05-749
Wellbore: Guttersen Y05-749
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

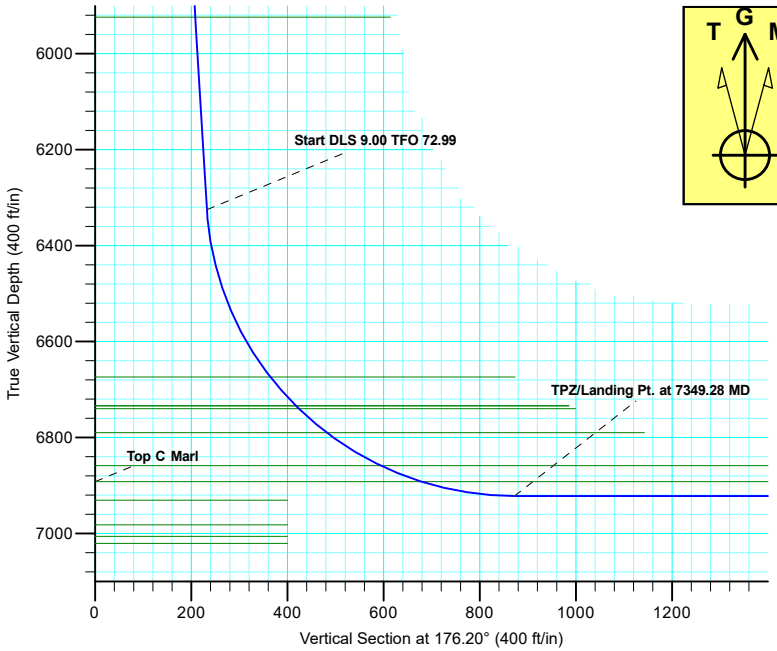
SECTION DETAILS

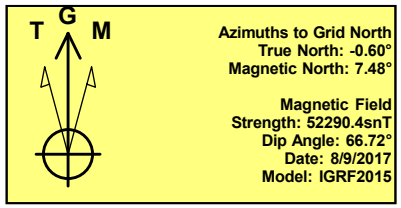
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	2200.00	0.00	0.00	2200.00	0.00	0.00	0.00	0.00	0.00
3	2688.40	9.77	106.56	2686.04	-11.84	39.81	2.00	106.56	14.45
4	6381.32	9.77	106.56	6325.42	-190.44	640.35	0.00	0.00	232.47
5	7349.28	90.00	179.31	6922.00	-825.03	746.05	9.00	72.99	872.68
6	20041.07	90.00	179.31	6922.00	-13515.92	898.04	0.00	0.00	13545.72

WELL DETAILS: Guttersen Y05-749

Ground Level: 4782.00

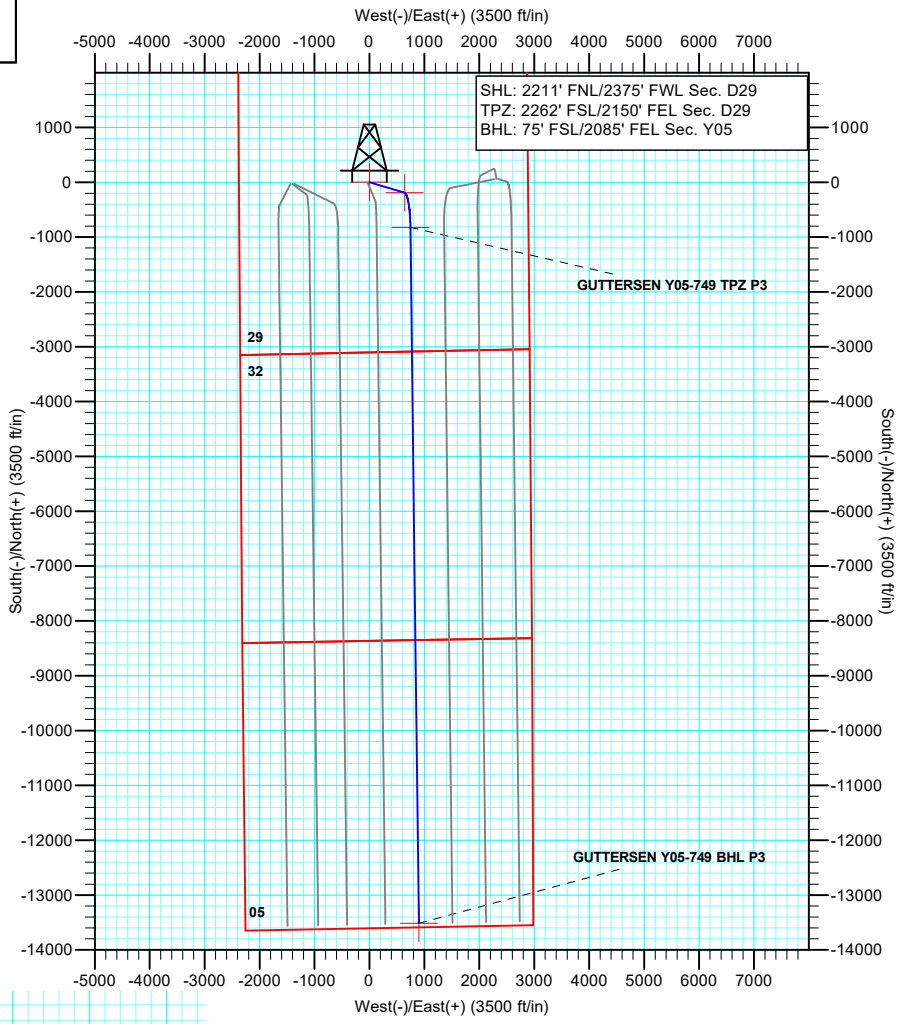
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1316129.48	3258087.24	40.1974812	-104.5760731	

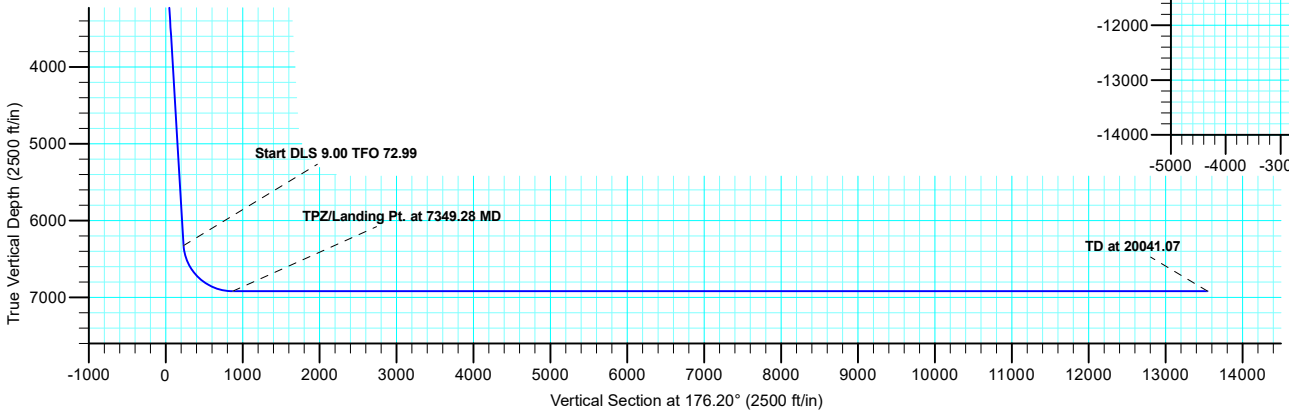




Azimuths to Grid North
True North: -0.60°
Magnetic North: 7.48°

Magnetic Field
Strength: 52290.4snT
Dip Angle: 66.72°
Date: 8/9/2017
Model: IGRF2015





Plan: Plan #3 (Guttersen Y05-749/Guttersen Y05-749)

Created By: Shelly C. Peterkin Date: 12:44, October 15 2019

Northern Region - DJ Basin

Mustang
D Section 29
Guttersen Y05-749

Guttersen Y05-749

Plan: Plan #3

Standard Planning Report

15 October, 2019

Database:	EDMP	**Local Co-ordinate Reference:**	Well Guttersen Y05-749
Company:	Northern Region - DJ Basin	**TVD Reference:**	Well @ 4812.00ft
Project:	Mustang	**MD Reference:**	Well @ 4812.00ft
Site:	D Section 29	**North Reference:**	Grid
Well:	Guttersen Y05-749	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Guttersen Y05-749		
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 D Section 29

Site Position:		**Northing:**	1,313,628.85 usft	**Latitude:**	40.1907138
From:	Map	**Easting:**	3,254,683.41 usft	**Longitude:**	-104.5883496
Position Uncertainty:	0.00 ft	**Slot Radius:**	13.200 in	**Grid Convergence:**	0.59 °

Well Guttersen Y05-749

Well Position	**+N/-S**	2,500.63 ft	**Northing:**	1,316,129.48 usft	**Latitude:**	40.1974813
	+E/-W	3,403.84 ft	**Easting:**	3,258,087.24 usft	**Longitude:**	-104.5760730
Position Uncertainty		0.00 ft	**Wellhead Elevation:**		**Ground Level:**	4,782.00 ft

Wellbore Guttersen Y05-749

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	8/9/2017	8.08	66.72	52,290.41682364

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	176.20

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	
2,688.40	9.77	106.56	2,686.04	-11.84	39.81	2.00	2.00	0.00	106.56	
6,381.32	9.77	106.56	6,325.42	-190.44	640.35	0.00	0.00	0.00	0.00	
7,349.28	90.00	179.31	6,922.00	-825.03	746.05	9.00	8.29	7.52	72.99	GUTTERSEN Y05-74
20,041.07	90.00	179.31	6,922.00	-13,515.92	898.04	0.00	0.00	0.00	0.00	GUTTERSEN Y05-74

Database:	EDMP	**Local Co-ordinate Reference:**	Well Guttersen Y05-749
Company:	Northern Region - DJ Basin	**TVD Reference:**	Well @ 4812.00ft
Project:	Mustang	**MD Reference:**	Well @ 4812.00ft
Site:	D Section 29	**North Reference:**	Grid
Well:	Guttersen Y05-749	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Guttersen Y05-749		
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
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
564.00	0.00	0.00	564.00	0.00	0.00	0.00	0.00	0.00	0.00
Pierre									
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
671.00	0.00	0.00	671.00	0.00	0.00	0.00	0.00	0.00	0.00
Upper Pierre Aquifer Top									
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
1,569.00	0.00	0.00	1,569.00	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	106.56	2,299.98	-0.50	1.67	0.61	2.00	2.00	0.00
2,400.00	4.00	106.56	2,399.84	-1.99	6.69	2.43	2.00	2.00	0.00
2,500.00	6.00	106.56	2,499.45	-4.47	15.04	5.46	2.00	2.00	0.00
2,600.00	8.00	106.56	2,598.70	-7.95	26.72	9.70	2.00	2.00	0.00
2,688.40	9.77	106.56	2,686.04	-11.84	39.81	14.45	2.00	2.00	0.00
Start 3692.91 hold at 2688.40 MD									
2,700.00	9.77	106.56	2,697.47	-12.40	41.69	15.14	0.00	0.00	0.00
2,800.00	9.77	106.56	2,796.02	-17.24	57.96	21.04	0.00	0.00	0.00
2,900.00	9.77	106.56	2,894.57	-22.07	74.22	26.94	0.00	0.00	0.00
3,000.00	9.77	106.56	2,993.12	-26.91	90.48	32.85	0.00	0.00	0.00
3,100.00	9.77	106.56	3,091.67	-31.74	106.74	38.75	0.00	0.00	0.00
3,200.00	9.77	106.56	3,190.22	-36.58	123.01	44.66	0.00	0.00	0.00
3,300.00	9.77	106.56	3,288.77	-41.42	139.27	50.56	0.00	0.00	0.00
3,400.00	9.77	106.56	3,387.32	-46.25	155.53	56.46	0.00	0.00	0.00
3,500.00	9.77	106.56	3,485.87	-51.09	171.79	62.37	0.00	0.00	0.00
3,600.00	9.77	106.56	3,584.42	-55.93	188.05	68.27	0.00	0.00	0.00
3,700.00	9.77	106.56	3,682.97	-60.76	204.32	74.17	0.00	0.00	0.00
3,778.16	9.77	106.56	3,760.00	-64.54	217.03	78.79	0.00	0.00	0.00
Parkman									
3,800.00	9.77	106.56	3,781.52	-65.60	220.58	80.08	0.00	0.00	0.00
3,900.00	9.77	106.56	3,880.07	-70.43	236.84	85.98	0.00	0.00	0.00
4,000.00	9.77	106.56	3,978.62	-75.27	253.10	91.88	0.00	0.00	0.00
4,100.00	9.77	106.56	4,077.17	-80.11	269.36	97.79	0.00	0.00	0.00

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Project:	Mustang	**MD Reference:**	Well @ 4812.00ft
Site:	D Section 29	**North Reference:**	Grid
Well:	Guttersen Y05-749	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Guttersen Y05-749		
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)
4,141.43	9.77	106.56	4,118.00	-82.11	276.10	100.23	0.00	0.00	0.00
Sussex									
4,200.00	9.77	106.56	4,175.72	-84.94	285.63	103.69	0.00	0.00	0.00
4,300.00	9.77	106.56	4,274.27	-89.78	301.89	109.60	0.00	0.00	0.00
4,400.00	9.77	106.56	4,372.82	-94.62	318.15	115.50	0.00	0.00	0.00
4,500.00	9.77	106.56	4,471.37	-99.45	334.41	121.40	0.00	0.00	0.00
4,600.00	9.77	106.56	4,569.92	-104.29	350.67	127.31	0.00	0.00	0.00
4,700.00	9.77	106.56	4,668.47	-109.12	366.94	133.21	0.00	0.00	0.00
4,800.00	9.77	106.56	4,767.03	-113.96	383.20	139.11	0.00	0.00	0.00
4,900.00	9.77	106.56	4,865.58	-118.80	399.46	145.02	0.00	0.00	0.00
4,928.84	9.77	106.56	4,894.00	-120.19	404.15	146.72	0.00	0.00	0.00
Shannon									
5,000.00	9.77	106.56	4,964.13	-123.63	415.72	150.92	0.00	0.00	0.00
5,100.00	9.77	106.56	5,062.68	-128.47	431.98	156.83	0.00	0.00	0.00
5,200.00	9.77	106.56	5,161.23	-133.31	448.25	162.73	0.00	0.00	0.00
5,300.00	9.77	106.56	5,259.78	-138.14	464.51	168.63	0.00	0.00	0.00
5,400.00	9.77	106.56	5,358.33	-142.98	480.77	174.54	0.00	0.00	0.00
5,500.00	9.77	106.56	5,456.88	-147.81	497.03	180.44	0.00	0.00	0.00
5,600.00	9.77	106.56	5,555.43	-152.65	513.30	186.34	0.00	0.00	0.00
5,700.00	9.77	106.56	5,653.98	-157.49	529.56	192.25	0.00	0.00	0.00
5,800.00	9.77	106.56	5,752.53	-162.32	545.82	198.15	0.00	0.00	0.00
5,900.00	9.77	106.56	5,851.08	-167.16	562.08	204.06	0.00	0.00	0.00
5,973.99	9.77	106.56	5,924.00	-170.74	574.11	208.42	0.00	0.00	0.00
Teepee Buttes									
6,000.00	9.77	106.56	5,949.63	-171.99	578.34	209.96	0.00	0.00	0.00
6,100.00	9.77	106.56	6,048.18	-176.83	594.61	215.86	0.00	0.00	0.00
6,200.00	9.77	106.56	6,146.73	-181.67	610.87	221.77	0.00	0.00	0.00
6,300.00	9.77	106.56	6,245.28	-186.50	627.13	227.67	0.00	0.00	0.00
6,381.32	9.77	106.56	6,325.42	-190.44	640.35	232.47	0.00	0.00	0.00
Start DLS 9.00 TFO 72.99									
6,400.00	10.38	115.52	6,343.81	-191.61	643.39	233.85	9.00	3.30	47.93
6,450.00	12.99	133.84	6,392.79	-197.45	651.52	240.21	9.00	5.20	36.63
6,500.00	16.42	145.40	6,441.16	-207.16	659.58	250.43	9.00	6.87	23.12
6,550.00	20.26	152.87	6,488.61	-220.69	667.55	264.46	9.00	7.69	14.94
6,600.00	24.33	157.99	6,534.87	-237.95	675.36	282.20	9.00	8.13	10.24
6,650.00	28.51	161.70	6,579.64	-258.84	682.97	303.55	9.00	8.38	7.42
6,700.00	32.78	164.52	6,622.65	-283.23	690.34	328.37	9.00	8.53	5.65
6,750.00	37.09	166.76	6,663.63	-310.96	697.41	356.52	9.00	8.63	4.47
6,763.10	38.23	167.27	6,674.00	-318.76	699.21	364.42	9.00	8.68	3.91
Sharon Springs									
6,800.00	41.44	168.58	6,702.33	-341.88	704.14	387.81	9.00	8.71	3.56
6,843.56	45.25	169.93	6,734.00	-371.25	709.70	417.48	9.00	8.74	3.10
Top A Chalk - Top A Marl									
6,850.00	45.82	170.12	6,738.51	-375.78	710.50	422.05	9.00	8.76	2.87
6,852.14	46.00	170.18	6,740.00	-377.29	710.76	423.58	9.00	8.77	2.83
Top B Chalk									
6,900.00	50.21	171.44	6,771.95	-412.45	716.43	459.04	9.00	8.78	2.64
6,928.98	52.76	172.13	6,790.00	-434.90	719.67	481.65	9.00	8.80	2.39
Top B Marl									
6,950.00	54.61	172.61	6,802.45	-451.68	721.92	498.55	9.00	8.82	2.25
7,000.00	59.03	173.65	6,829.80	-493.22	726.91	540.33	9.00	8.83	2.09
7,050.00	63.45	174.60	6,853.86	-536.81	731.39	584.12	9.00	8.84	1.90
7,061.72	64.49	174.81	6,859.00	-547.30	732.36	594.65	9.00	8.85	1.81

Database:	EDMP	**Local Co-ordinate Reference:**	Well Guttersen Y05-749
Company:	Northern Region - DJ Basin	**TVD Reference:**	Well @ 4812.00ft
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Site:	D Section 29	**North Reference:**	Grid
Well:	Guttersen Y05-749	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Guttersen Y05-749		
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									
7,100.00	67.88	175.48	6,874.46	-582.19	735.32	629.65	9.00	8.86	1.75
7,150.00	72.31	176.31	6,891.47	-629.07	738.68	676.65	9.00	8.86	1.65
7,151.74	72.46	176.34	6,892.00	-630.72	738.79	678.31	9.00	8.87	1.61
Top C Marl									
7,200.00	76.75	177.09	6,904.81	-677.16	741.45	724.83	9.00	8.87	1.57
7,250.00	81.18	177.85	6,914.38	-726.18	743.61	773.88	9.00	8.88	1.52
7,300.00	85.62	178.59	6,920.12	-775.81	745.15	823.50	9.00	8.88	1.48
7,349.28	90.00	179.31	6,922.00	-825.03	746.05	872.68	9.00	8.88	1.46
TPZ/Landing Pt. at 7349.28 MD									
7,400.00	90.00	179.31	6,922.00	-875.75	746.65	923.32	0.00	0.00	0.00
7,500.00	90.00	179.31	6,922.00	-975.74	747.85	1,023.18	0.00	0.00	0.00
7,600.00	90.00	179.31	6,922.00	-1,075.74	749.05	1,123.03	0.00	0.00	0.00
7,700.00	90.00	179.31	6,922.00	-1,175.73	750.25	1,222.88	0.00	0.00	0.00
7,800.00	90.00	179.31	6,922.00	-1,275.72	751.45	1,322.73	0.00	0.00	0.00
7,900.00	90.00	179.31	6,922.00	-1,375.71	752.64	1,422.59	0.00	0.00	0.00
8,000.00	90.00	179.31	6,922.00	-1,475.71	753.84	1,522.44	0.00	0.00	0.00
8,100.00	90.00	179.31	6,922.00	-1,575.70	755.04	1,622.29	0.00	0.00	0.00
8,200.00	90.00	179.31	6,922.00	-1,675.69	756.24	1,722.14	0.00	0.00	0.00
8,300.00	90.00	179.31	6,922.00	-1,775.69	757.43	1,821.99	0.00	0.00	0.00
8,400.00	90.00	179.31	6,922.00	-1,875.68	758.63	1,921.85	0.00	0.00	0.00
8,500.00	90.00	179.31	6,922.00	-1,975.67	759.83	2,021.70	0.00	0.00	0.00
8,600.00	90.00	179.31	6,922.00	-2,075.66	761.03	2,121.55	0.00	0.00	0.00
8,700.00	90.00	179.31	6,922.00	-2,175.66	762.22	2,221.40	0.00	0.00	0.00
8,800.00	90.00	179.31	6,922.00	-2,275.65	763.42	2,321.26	0.00	0.00	0.00
8,900.00	90.00	179.31	6,922.00	-2,375.64	764.62	2,421.11	0.00	0.00	0.00
9,000.00	90.00	179.31	6,922.00	-2,475.64	765.82	2,520.96	0.00	0.00	0.00
9,100.00	90.00	179.31	6,922.00	-2,575.63	767.01	2,620.81	0.00	0.00	0.00
9,200.00	90.00	179.31	6,922.00	-2,675.62	768.21	2,720.66	0.00	0.00	0.00
9,300.00	90.00	179.31	6,922.00	-2,775.61	769.41	2,820.52	0.00	0.00	0.00
9,400.00	90.00	179.31	6,922.00	-2,875.61	770.61	2,920.37	0.00	0.00	0.00
9,500.00	90.00	179.31	6,922.00	-2,975.60	771.80	3,020.22	0.00	0.00	0.00
9,600.00	90.00	179.31	6,922.00	-3,075.59	773.00	3,120.07	0.00	0.00	0.00
9,700.00	90.00	179.31	6,922.00	-3,175.59	774.20	3,219.93	0.00	0.00	0.00
9,800.00	90.00	179.31	6,922.00	-3,275.58	775.40	3,319.78	0.00	0.00	0.00
9,900.00	90.00	179.31	6,922.00	-3,375.57	776.59	3,419.63	0.00	0.00	0.00
10,000.00	90.00	179.31	6,922.00	-3,475.56	777.79	3,519.48	0.00	0.00	0.00
10,100.00	90.00	179.31	6,922.00	-3,575.56	778.99	3,619.33	0.00	0.00	0.00
10,200.00	90.00	179.31	6,922.00	-3,675.55	780.19	3,719.19	0.00	0.00	0.00
10,300.00	90.00	179.31	6,922.00	-3,775.54	781.38	3,819.04	0.00	0.00	0.00
10,400.00	90.00	179.31	6,922.00	-3,875.53	782.58	3,918.89	0.00	0.00	0.00
10,500.00	90.00	179.31	6,922.00	-3,975.53	783.78	4,018.74	0.00	0.00	0.00
10,600.00	90.00	179.31	6,922.00	-4,075.52	784.98	4,118.60	0.00	0.00	0.00
10,700.00	90.00	179.31	6,922.00	-4,175.51	786.17	4,218.45	0.00	0.00	0.00
10,800.00	90.00	179.31	6,922.00	-4,275.51	787.37	4,318.30	0.00	0.00	0.00
10,900.00	90.00	179.31	6,922.00	-4,375.50	788.57	4,418.15	0.00	0.00	0.00
11,000.00	90.00	179.31	6,922.00	-4,475.49	789.77	4,518.00	0.00	0.00	0.00
11,100.00	90.00	179.31	6,922.00	-4,575.48	790.96	4,617.86	0.00	0.00	0.00
11,200.00	90.00	179.31	6,922.00	-4,675.48	792.16	4,717.71	0.00	0.00	0.00
11,300.00	90.00	179.31	6,922.00	-4,775.47	793.36	4,817.56	0.00	0.00	0.00
11,400.00	90.00	179.31	6,922.00	-4,875.46	794.56	4,917.41	0.00	0.00	0.00
11,500.00	90.00	179.31	6,922.00	-4,975.46	795.76	5,017.27	0.00	0.00	0.00
11,600.00	90.00	179.31	6,922.00	-5,075.45	796.95	5,117.12	0.00	0.00	0.00

Database:	EDMP	**Local Co-ordinate Reference:**	Well Guttersen Y05-749
Company:	Northern Region - DJ Basin	**TVD Reference:**	Well @ 4812.00ft
Project:	Mustang	**MD Reference:**	Well @ 4812.00ft
Site:	D Section 29	**North Reference:**	Grid
Well:	Guttersen Y05-749	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Guttersen Y05-749		
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)
11,700.00	90.00	179.31	6,922.00	-5,175.44	798.15	5,216.97	0.00	0.00	0.00
11,800.00	90.00	179.31	6,922.00	-5,275.43	799.35	5,316.82	0.00	0.00	0.00
11,900.00	90.00	179.31	6,922.00	-5,375.43	800.55	5,416.67	0.00	0.00	0.00
12,000.00	90.00	179.31	6,922.00	-5,475.42	801.74	5,516.53	0.00	0.00	0.00
12,100.00	90.00	179.31	6,922.00	-5,575.41	802.94	5,616.38	0.00	0.00	0.00
12,200.00	90.00	179.31	6,922.00	-5,675.41	804.14	5,716.23	0.00	0.00	0.00
12,300.00	90.00	179.31	6,922.00	-5,775.40	805.34	5,816.08	0.00	0.00	0.00
12,400.00	90.00	179.31	6,922.00	-5,875.39	806.53	5,915.94	0.00	0.00	0.00
12,500.00	90.00	179.31	6,922.00	-5,975.38	807.73	6,015.79	0.00	0.00	0.00
12,600.00	90.00	179.31	6,922.00	-6,075.38	808.93	6,115.64	0.00	0.00	0.00
12,700.00	90.00	179.31	6,922.00	-6,175.37	810.13	6,215.49	0.00	0.00	0.00
12,800.00	90.00	179.31	6,922.00	-6,275.36	811.32	6,315.34	0.00	0.00	0.00
12,900.00	90.00	179.31	6,922.00	-6,375.36	812.52	6,415.20	0.00	0.00	0.00
13,000.00	90.00	179.31	6,922.00	-6,475.35	813.72	6,515.05	0.00	0.00	0.00
13,100.00	90.00	179.31	6,922.00	-6,575.34	814.92	6,614.90	0.00	0.00	0.00
13,200.00	90.00	179.31	6,922.00	-6,675.33	816.11	6,714.75	0.00	0.00	0.00
13,300.00	90.00	179.31	6,922.00	-6,775.33	817.31	6,814.61	0.00	0.00	0.00
13,400.00	90.00	179.31	6,922.00	-6,875.32	818.51	6,914.46	0.00	0.00	0.00
13,500.00	90.00	179.31	6,922.00	-6,975.31	819.71	7,014.31	0.00	0.00	0.00
13,600.00	90.00	179.31	6,922.00	-7,075.31	820.90	7,114.16	0.00	0.00	0.00
13,700.00	90.00	179.31	6,922.00	-7,175.30	822.10	7,214.02	0.00	0.00	0.00
13,800.00	90.00	179.31	6,922.00	-7,275.29	823.30	7,313.87	0.00	0.00	0.00
13,900.00	90.00	179.31	6,922.00	-7,375.28	824.50	7,413.72	0.00	0.00	0.00
14,000.00	90.00	179.31	6,922.00	-7,475.28	825.69	7,513.57	0.00	0.00	0.00
14,100.00	90.00	179.31	6,922.00	-7,575.27	826.89	7,613.42	0.00	0.00	0.00
14,200.00	90.00	179.31	6,922.00	-7,675.26	828.09	7,713.28	0.00	0.00	0.00
14,300.00	90.00	179.31	6,922.00	-7,775.26	829.29	7,813.13	0.00	0.00	0.00
14,400.00	90.00	179.31	6,922.00	-7,875.25	830.48	7,912.98	0.00	0.00	0.00
14,500.00	90.00	179.31	6,922.00	-7,975.24	831.68	8,012.83	0.00	0.00	0.00
14,600.00	90.00	179.31	6,922.00	-8,075.23	832.88	8,112.69	0.00	0.00	0.00
14,700.00	90.00	179.31	6,922.00	-8,175.23	834.08	8,212.54	0.00	0.00	0.00
14,800.00	90.00	179.31	6,922.00	-8,275.22	835.27	8,312.39	0.00	0.00	0.00
14,900.00	90.00	179.31	6,922.00	-8,375.21	836.47	8,412.24	0.00	0.00	0.00
15,000.00	90.00	179.31	6,922.00	-8,475.21	837.67	8,512.09	0.00	0.00	0.00
15,100.00	90.00	179.31	6,922.00	-8,575.20	838.87	8,611.95	0.00	0.00	0.00
15,200.00	90.00	179.31	6,922.00	-8,675.19	840.06	8,711.80	0.00	0.00	0.00
15,300.00	90.00	179.31	6,922.00	-8,775.18	841.26	8,811.65	0.00	0.00	0.00
15,400.00	90.00	179.31	6,922.00	-8,875.18	842.46	8,911.50	0.00	0.00	0.00
15,500.00	90.00	179.31	6,922.00	-8,975.17	843.66	9,011.36	0.00	0.00	0.00
15,600.00	90.00	179.31	6,922.00	-9,075.16	844.86	9,111.21	0.00	0.00	0.00
15,700.00	90.00	179.31	6,922.00	-9,175.15	846.05	9,211.06	0.00	0.00	0.00
15,800.00	90.00	179.31	6,922.00	-9,275.15	847.25	9,310.91	0.00	0.00	0.00
15,900.00	90.00	179.31	6,922.00	-9,375.14	848.45	9,410.76	0.00	0.00	0.00
16,000.00	90.00	179.31	6,922.00	-9,475.13	849.65	9,510.62	0.00	0.00	0.00
16,100.00	90.00	179.31	6,922.00	-9,575.13	850.84	9,610.47	0.00	0.00	0.00
16,200.00	90.00	179.31	6,922.00	-9,675.12	852.04	9,710.32	0.00	0.00	0.00
16,300.00	90.00	179.31	6,922.00	-9,775.11	853.24	9,810.17	0.00	0.00	0.00
16,400.00	90.00	179.31	6,922.00	-9,875.10	854.44	9,910.03	0.00	0.00	0.00
16,500.00	90.00	179.31	6,922.00	-9,975.10	855.63	10,009.88	0.00	0.00	0.00
16,600.00	90.00	179.31	6,922.00	-10,075.09	856.83	10,109.73	0.00	0.00	0.00
16,700.00	90.00	179.31	6,922.00	-10,175.08	858.03	10,209.58	0.00	0.00	0.00
16,800.00	90.00	179.31	6,922.00	-10,275.08	859.23	10,309.43	0.00	0.00	0.00
16,900.00	90.00	179.31	6,922.00	-10,375.07	860.42	10,409.29	0.00	0.00	0.00
17,000.00	90.00	179.31	6,922.00	-10,475.06	861.62	10,509.14	0.00	0.00	0.00

Database:	EDMP	**Local Co-ordinate Reference:**	Well Guttersen Y05-749
Company:	Northern Region - DJ Basin	**TVD Reference:**	Well @ 4812.00ft
Project:	Mustang	**MD Reference:**	Well @ 4812.00ft
Site:	D Section 29	**North Reference:**	Grid
Well:	Guttersen Y05-749	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Guttersen Y05-749		
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)
17,100.00	90.00	179.31	6,922.00	-10,575.05	862.82	10,608.99	0.00	0.00	0.00
17,200.00	90.00	179.31	6,922.00	-10,675.05	864.02	10,708.84	0.00	0.00	0.00
17,300.00	90.00	179.31	6,922.00	-10,775.04	865.21	10,808.70	0.00	0.00	0.00
17,400.00	90.00	179.31	6,922.00	-10,875.03	866.41	10,908.55	0.00	0.00	0.00
17,500.00	90.00	179.31	6,922.00	-10,975.03	867.61	11,008.40	0.00	0.00	0.00
17,600.00	90.00	179.31	6,922.00	-11,075.02	868.81	11,108.25	0.00	0.00	0.00
17,700.00	90.00	179.31	6,922.00	-11,175.01	870.00	11,208.10	0.00	0.00	0.00
17,800.00	90.00	179.31	6,922.00	-11,275.00	871.20	11,307.96	0.00	0.00	0.00
17,900.00	90.00	179.31	6,922.00	-11,375.00	872.40	11,407.81	0.00	0.00	0.00
18,000.00	90.00	179.31	6,922.00	-11,474.99	873.60	11,507.66	0.00	0.00	0.00
18,100.00	90.00	179.31	6,922.00	-11,574.98	874.79	11,607.51	0.00	0.00	0.00
18,200.00	90.00	179.31	6,922.00	-11,674.98	875.99	11,707.37	0.00	0.00	0.00
18,300.00	90.00	179.31	6,922.00	-11,774.97	877.19	11,807.22	0.00	0.00	0.00
18,400.00	90.00	179.31	6,922.00	-11,874.96	878.39	11,907.07	0.00	0.00	0.00
18,500.00	90.00	179.31	6,922.00	-11,974.95	879.58	12,006.92	0.00	0.00	0.00
18,600.00	90.00	179.31	6,922.00	-12,074.95	880.78	12,106.77	0.00	0.00	0.00
18,700.00	90.00	179.31	6,922.00	-12,174.94	881.98	12,206.63	0.00	0.00	0.00
18,800.00	90.00	179.31	6,922.00	-12,274.93	883.18	12,306.48	0.00	0.00	0.00
18,900.00	90.00	179.31	6,922.00	-12,374.93	884.37	12,406.33	0.00	0.00	0.00
19,000.00	90.00	179.31	6,922.00	-12,474.92	885.57	12,506.18	0.00	0.00	0.00
19,100.00	90.00	179.31	6,922.00	-12,574.91	886.77	12,606.04	0.00	0.00	0.00
19,200.00	90.00	179.31	6,922.00	-12,674.90	887.97	12,705.89	0.00	0.00	0.00
19,300.00	90.00	179.31	6,922.00	-12,774.90	889.17	12,805.74	0.00	0.00	0.00
19,400.00	90.00	179.31	6,922.00	-12,874.89	890.36	12,905.59	0.00	0.00	0.00
19,500.00	90.00	179.31	6,922.00	-12,974.88	891.56	13,005.44	0.00	0.00	0.00
19,600.00	90.00	179.31	6,922.00	-13,074.88	892.76	13,105.30	0.00	0.00	0.00
19,700.00	90.00	179.31	6,922.00	-13,174.87	893.96	13,205.15	0.00	0.00	0.00
19,800.00	90.00	179.31	6,922.00	-13,274.86	895.15	13,305.00	0.00	0.00	0.00
19,900.00	90.00	179.31	6,922.00	-13,374.85	896.35	13,404.85	0.00	0.00	0.00
20,000.00	90.00	179.31	6,922.00	-13,474.85	897.55	13,504.71	0.00	0.00	0.00
20,041.07	90.00	179.31	6,922.00	-13,515.92	898.04	13,545.72	0.00	0.00	0.00
TD at 20041.07									

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
GUTTERSEN Y05-749 S - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	1,316,129.48	3,258,087.24	40.1974813	-104.5760730
GUTTERSEN Y05-749 I - plan hits target center - Point	0.00	0.00	6,325.42	-190.44	640.35	1,315,939.04	3,258,727.59	40.1969402	-104.5737879
GUTTERSEN Y05-749 E - plan hits target center - Point	0.00	0.00	6,922.00	-13,515.92	898.04	1,302,613.59	3,258,985.28	40.1603547	-104.5733640
GUTTERSEN Y05-749 T - plan hits target center - Point	0.00	0.01	6,922.00	-825.03	746.05	1,315,304.45	3,258,833.29	40.1951952	-104.5734333

Database:	EDMP	**Local Co-ordinate Reference:**	Well Guttersen Y05-749
Company:	Northern Region - DJ Basin	**TVD Reference:**	Well @ 4812.00ft
Project:	Mustang	**MD Reference:**	Well @ 4812.00ft
Site:	D Section 29	**North Reference:**	Grid
Well:	Guttersen Y05-749	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Guttersen Y05-749		
Design:	Plan #3		

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
564.00	564.00	Pierre			
671.00	671.00	Upper Pierre Aquifer Top			
1,569.00	1,569.00	Upper Pierre Aquifer Base			
3,778.16	3,760.00	Parkman			
4,141.43	4,118.00	Sussex			
4,928.84	4,894.00	Shannon			
5,973.99	5,924.00	Teepee Buttes			
6,763.10	6,674.00	Sharon Springs			
6,843.56	6,734.00	Top A Chalk			
6,843.56	6,734.00	Top A Marl			
6,852.14	6,740.00	Top B Chalk			
6,928.98	6,790.00	Top B Marl			
7,061.72	6,859.00	Top C Chalk			
7,151.74	6,892.00	Top C Marl			

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
2,200.00	2,200.00	0.00	0.00	Start Build 2.00
2,688.40	2,686.04	-11.84	39.81	Start 3692.91 hold at 2688.40 MD
6,381.32	6,325.42	-190.44	640.35	Start DLS 9.00 TFO 72.99
7,349.28	6,922.00	-825.03	746.05	TPZ/Landing Pt. at 7349.28 MD
20,041.07	6,922.00	-13,515.92	898.04	TD at 20041.07

Northern Region - DJ Basin

Mustang
D Section 29
Guttersen Y05-749

Guttersen Y05-749
Plan #3

Anticollision Summary Report

15 October, 2019

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen Y05-749
Project:	Mustang	**TVD Reference:**	Well @ 4812.00ft
Reference Site:	D Section 29	**MD Reference:**	Well @ 4812.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen Y05-749	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen Y05-749	**Database:**	EDMP
Reference Design:	Plan #3	**Offset TVD Reference:**	Reference Datum

Reference	Plan #3		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD + Stations Interval 100.00ft	**Error Model:**	ISCWSA
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.00 ft	**Error Surface:**	Pedal Curve
Warning Levels Evaluated at:	2.00 **Sigma**	**Casing Method:**	Not applied

Survey Tool Program **Date** 10/15/2019

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	20,041.07	Plan #3 (Guttersen Y05-749)	2_MWD+IFR1+MS	A008Mb: IFR dec & multi-station analysis

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 16						
Diggen State D16-23 (SI) - Wellbore #1 - Gyro Surveys						Out of range
Diggin State D 16-07 (SI) - Wellbore #1 - No Surveys						Out of range
Diggin State D 16-19J (PR) - Wellbore #1 - As-Drilled						Out of range
Diggin State D16-13 (PR) - Wellbore #1 - Gyro Surveys	4,245.68	4,060.04	8,915.18	8,886.23	308.026	CC
Diggin State D16-13 (PR) - Wellbore #1 - Gyro Surveys	6,382.12	6,244.55	8,928.55	8,884.02	200.487	ES
Diggin State D16-13 (PR) - Wellbore #1 - Gyro Surveys	6,950.00	6,815.27	9,152.93	9,104.56	189.232	SF
Guttersen ST D 15-32 (SI) - Wellbore #1 - Gyro Surveys						Out of range
Guttersen ST D 16-21 (SI) - Wellbore #1 - Gyro Surveys						Out of range
Guttersen ST D 16-22D (SI) - Wellbore #1 - MWD Survey						Out of range
Guttersen ST D 16-33 (SI) - Wellbore #1 - Gyros	1,604.68	1,544.69	9,469.84	9,459.09	881.334	CC
Guttersen ST D 16-33 (SI) - Wellbore #1 - Gyros	1,800.00	1,676.07	9,470.56	9,458.66	795.644	ES
Guttersen ST D 16-33 (SI) - Wellbore #1 - Gyros	7,000.00	6,766.67	9,818.90	9,770.57	203.149	SF
Guttersen State D 15-31 (PR) - Wellbore #1 - Gyro Surve						Out of range
Guttersen State D 15-33 (SI) - Wellbore #1 - Gyro Survey						Out of range
Guttersen State D 16-15X (PR) - Wellbore #1 - Gyro Surv						Out of range
Guttersen State D 16-18 (SI) - Wellbore #1 - As-Drilled						Out of range
Guttersen State D 16-20 (SI) - Wellbore #1 - Gyro Survey						Out of range
Guttersen State D 16-24 (SI) - Wellbore #1 - Gyro Survey						Out of range
Guttersen State D 16-27 (PR) - Wellbore #1 - As-Drilled						Out of range
Guttersen State D 16-31 (PR) - Wellbore #1 - As-Drilled						Out of range
Guttersen State D 16-32D (SI) - Guttersen State D 16-32	553.49	493.49	9,529.58	9,526.28	2,885.792	CC
Guttersen State D 16-32D (SI) - Guttersen State D 16-32	1,000.00	904.97	9,530.36	9,524.03	1,504.019	ES
Guttersen State D 16-32D (SI) - Guttersen State D 16-32	4,400.00	1,800.00	9,978.74	9,957.58	471.495	SF
Guttersen State D 16-32D (SI) - Guttersen State D 16-32	553.49	506.49	9,529.55	9,526.25	2,885.781	CC
Guttersen State D 16-32D (SI) - Guttersen State D 16-32	1,000.00	917.97	9,530.34	9,524.00	1,504.015	ES
Guttersen State D 16-32D (SI) - Guttersen State D 16-32	4,400.00	1,813.00	9,978.72	9,957.55	471.488	SF
Guttersen State D16-63-1HN - Original Drilling - As-Drille	6,418.35	11,243.00	9,170.90	9,028.01	64.179	CC, ES
Guttersen State D16-63-1HN - Original Drilling - As-Drille	6,600.00	11,243.00	9,197.26	9,053.42	63.944	SF
Guttersen State D16-65-1HN - Original Drilling - As-Drille						Out of range
Spike ST GWS D 16-01 (SI) - Wellbore #1 - Gyro Survey						Out of range
Spike ST GWS D 16-02 (P&A) - Wellbore #1 - Gyro Surv						Out of range
Spike ST GWS D 16-03 (PR) - Wellbore #1 - As-Drilled						Out of range
Spike ST GWS D 16-04 (SI) - Wellbore #1 - As-Drilled						Out of range
Spike ST GWS D 16-05 (PR) - Wellbore #1 - Gyro Survey						Out of range
Spike ST GWS D 16-06 (SI) - Wellbore #1 - As-Drilled						Out of range
Spike ST GWS D 16-08 (PR) - Wellbore #1 - Gyro Survey						Out of range
Spike ST GWS D 16-12 (PA) - Wellbore #1 - Gyro Survey						Out of range

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

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen Y05-749
Project:	Mustang	**TVD Reference:**	Well @ 4812.00ft
Reference Site:	D Section 29	**MD Reference:**	Well @ 4812.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen Y05-749	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen Y05-749	**Database:**	EDMP
Reference Design:	Plan #3	**Offset TVD Reference:**	Reference Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 16						
Spike ST GWS D 16-14 (SI) - Wellbore #1 - No Surveys	6,403.69	6,322.44	9,255.79	9,106.36	61.942	CC, ES
Spike ST GWS D 16-14 (SI) - Wellbore #1 - No Surveys	7,000.00	6,804.80	9,488.39	9,327.39	58.933	SF
Spike ST GWS D 16-16 (SI) - Wellbore #1 - As-Drilled						Out of range
Spike State D 16-10 (SI) - Wellbore #1 - Gyro Surveys						Out of range
Spike State D 16-11 (SI) - Wellbore #1 - Gyro Surveys						Out of range
Spike State D 16-9 (SI) - Wellbore #1 - Gyro Surveys						Out of range
Spike State D16-15 (P&A) - Wellbore #1 - Wellbore #1						Out of range
Spike State D16-99HZ - Original Drilling - As-Drilled	6,412.19	11,167.00	9,715.69	9,574.10	68.618	CC, ES
Spike State D16-99HZ - Original Drilling - As-Drilled	6,650.00	11,167.00	9,760.54	9,617.73	68.348	SF
Spike State GWS D 16-7J (PR) - Wellbore #1 - As-Drilled						Out of range
Spike State GWS D16-13J (PR) - Wellbore #1 - Gyro Sur	6,393.43	6,345.04	9,688.63	9,643.71	215.722	CC
Spike State GWS D16-13J (PR) - Wellbore #1 - Gyro Sur	6,400.00	6,348.81	9,688.66	9,643.71	215.541	ES
Spike State GWS D16-13J (PR) - Wellbore #1 - Gyro Sur	6,900.00	6,808.91	9,869.55	9,821.32	204.663	SF

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen Y05-749
Project:	Mustang	**TVD Reference:**	Well @ 4812.00ft
Reference Site:	D Section 29	**MD Reference:**	Well @ 4812.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen Y05-749	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen Y05-749	**Database:**	EDMP
Reference Design:	Plan #3	**Offset TVD Reference:**	Reference Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 17						
Butterball D19-27D - Wellbore #1 - Gyro Surveys	100.00	40.41	8,063.20	8,063.00	10,000.000	CC
Butterball D19-27D - Wellbore #1 - Gyro Surveys	800.00	700.00	8,064.04	8,059.13	1,643.771	ES
Butterball D19-27D - Wellbore #1 - Gyro Surveys	6,700.00	6,939.22	9,036.34	8,956.89	113.735	SF
Guttersen State D16-33 (SI) - Wellbore #1 - No Surveys	3,357.40	3,285.34	9,472.17	9,431.80	234.644	CC
Guttersen State D16-33 (SI) - Wellbore #1 - No Surveys	6,381.32	6,265.42	9,486.06	9,408.51	122.331	ES
Guttersen State D16-33 (SI) - Wellbore #1 - No Surveys	7,000.00	6,769.80	9,761.59	9,677.72	116.381	SF
HSR LDS 6-17 (SI) - Wellbore #1 - No Surveys						Out of range
HSR LDS B5-17 (SI) - Wellbore #1 - No Surveys						Out of range
HSR Mike Gutteresen 16-17X (SI) - Wellbore #1 - As-Dril	4,415.40	4,427.60	8,364.80	8,333.92	270.900	CC
HSR Mike Gutteresen 16-17X (SI) - Wellbore #1 - As-Dril	4,500.00	4,489.79	8,364.92	8,333.51	266.339	ES
HSR Mike Gutteresen 16-17X (SI) - Wellbore #1 - As-Dril	6,950.00	6,773.77	8,660.08	8,611.92	179.822	SF
HSR Mike Guttersen 16-17 (DA) - Wellbore #1 - As-Drille	1,700.00	1,655.13	8,387.76	8,333.68	155.105	CC
HSR Mike Guttersen 16-17 (DA) - Wellbore #1 - As-Drille	1,800.00	1,666.00	8,388.25	8,333.21	152.407	ES
HSR Mike Guttersen 16-17 (DA) - Wellbore #1 - As-Drille	4,000.00	1,666.00	8,699.97	8,639.21	143.170	SF
HSR Weeks 10-17 - Wellbore #1 - Gyro Surveys	100.00	32.98	9,536.91	9,536.73	10,000.000	CC
HSR Weeks 10-17 - Wellbore #1 - Gyro Surveys	2,000.00	1,870.76	9,543.81	9,530.51	717.578	ES
HSR Weeks 10-17 - Wellbore #1 - Gyro Surveys	6,950.00	6,818.11	9,946.35	9,898.11	206.186	SF
HSR Weeks 15-17 (SI) - Wellbore #1 - As-Drilled	2,503.87	2,607.97	8,235.83	8,218.20	467.227	CC
HSR Weeks 15-17 (SI) - Wellbore #1 - As-Drilled	2,600.00	2,687.73	8,236.23	8,217.99	451.635	ES
HSR Weeks 15-17 (SI) - Wellbore #1 - As-Drilled	6,900.00	6,658.07	8,624.10	8,576.53	181.281	SF
HSR Weeks 9-17 - Wellbore #1 - Gyro Surveys	1,968.84	1,904.86	9,789.16	9,775.86	735.812	CC
HSR Weeks 9-17 - Wellbore #1 - Gyro Surveys	4,100.00	4,151.51	9,801.62	9,772.91	341.327	ES
HSR Weeks 9-17 - Wellbore #1 - Gyro Surveys	6,800.00	6,649.74	9,986.48	9,939.15	211.016	SF
HSR-LDS 3-17 (SI) - Wellbore #1 - No Surveys						Out of range
HSR-LDS 4-17 (SI) - Wellbore #1 - No Surveys						Out of range
LDS 18-17 (SI) - Wellbore #1 - No Surveys						Out of range
LDS D17-13 - Wellbore #1 - Gyro Surveys	2,405.40	2,654.55	8,157.88	8,140.41	466.747	CC, ES
LDS D17-13 - Wellbore #1 - Gyro Surveys	6,900.00	6,686.71	8,700.37	8,652.77	182.774	SF
LDS D17-18 (SI) - Wellbore #1 - No Surveys						Out of range
LDS D17-20 - Wellbore #1 - No Surveys						Out of range
LDS D17-21 - Wellbore #1 - No Surveys	2,200.00	2,140.00	9,945.42	9,919.09	377.743	CC
LDS D17-21 - Wellbore #1 - No Surveys	2,300.00	2,239.98	9,945.91	9,918.36	361.033	ES
LDS D17-21 - Wellbore #1 - No Surveys	3,500.00	3,425.87	9,997.45	9,955.35	237.479	SF
LDS D17-22 (SI) - Wellbore #1 - No Surveys						Out of range
LDS D17-24D - LDS D17-24D Gyros - As-Drilled	4,482.10	5,000.00	9,046.05	9,012.80	272.051	CC
LDS D17-24D - LDS D17-24D Gyros - As-Drilled	4,500.00	5,000.00	9,046.07	9,012.75	271.558	ES
LDS D17-24D - LDS D17-24D Gyros - As-Drilled	6,900.00	6,970.94	9,351.57	9,303.21	193.390	SF
LDS D17-24D - LDS D17-24D OH - As-Drilled	4,482.09	5,013.00	9,046.09	9,012.84	272.052	CC
LDS D17-24D - LDS D17-24D OH - As-Drilled	4,500.00	5,013.00	9,046.11	9,012.80	271.559	ES
LDS D17-24D - LDS D17-24D OH - As-Drilled	6,900.00	6,983.94	9,351.61	9,303.25	193.390	SF
LDS D17-25D - LDS D17-25D Gyros - As-Drilled	4,440.85	5,264.64	9,387.88	9,316.60	131.702	CC
LDS D17-25D - LDS D17-25D Gyros - As-Drilled	4,500.00	5,300.00	9,387.97	9,316.27	130.928	ES
LDS D17-25D - LDS D17-25D Gyros - As-Drilled	6,650.00	6,744.75	9,560.49	9,477.60	115.337	SF
LDS D17-25D - LDS D17-25D OH - LDS D17-25D - As D	4,440.86	5,277.64	9,387.87	9,316.59	131.702	CC
LDS D17-25D - LDS D17-25D OH - LDS D17-25D - As D	4,500.00	5,313.00	9,387.96	9,316.25	130.928	ES
LDS D17-25D - LDS D17-25D OH - LDS D17-25D - As D	6,650.00	6,757.75	9,560.48	9,477.59	115.337	SF
LDS D17-31D - LDS D17-31D - As-Drilled						Out of range
LDS D17-32D - LDS D17-32D - LDS D17-32D - As Drilled						Out of range
LDS D17-33 - LDS D17-33 - As-Drilled	713.33	661.42	9,168.41	9,163.94	2,050.679	CC
LDS D17-33 - LDS D17-33 - As-Drilled	2,200.00	2,135.81	9,172.62	9,157.50	606.625	ES
LDS D17-33 - LDS D17-33 - As-Drilled	7,000.00	6,897.21	9,857.47	9,808.59	201.672	SF
LDS D17-7 - Wellbore #1 - As-Drilled						Out of range
LDS D20-29D - Wellbore #1 - LDS D20-29D - As Drilled	3,662.33	4,364.00	7,560.40	7,526.06	220.155	CC

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

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen Y05-749
Project:	Mustang	**TVD Reference:**	Well @ 4812.00ft
Reference Site:	D Section 29	**MD Reference:**	Well @ 4812.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen Y05-749	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen Y05-749	**Database:**	EDMP
Reference Design:	Plan #3	**Offset TVD Reference:**	Reference Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 17						
LDS D20-29D - Wellbore #1 - LDS D20-29D - As Drilled	3,700.00	4,378.10	7,560.47	7,525.94	218.975	ES
LDS D20-29D - Wellbore #1 - LDS D20-29D - As Drilled	6,800.00	6,815.84	7,884.49	7,832.35	151.220	SF
LDS D20-30D - Wellbore #1 - LDS D20-30D - As Drilled	3,774.55	4,592.70	7,994.86	7,965.13	269.004	CC
LDS D20-30D - Wellbore #1 - LDS D20-30D - As Drilled	3,805.27	4,625.01	7,994.99	7,965.01	266.659	ES
LDS D20-30D - Wellbore #1 - LDS D20-30D - As Drilled	6,950.00	6,869.22	8,460.40	8,411.37	172.538	SF
LDS RED D17-11 (SI) - Wellbore #1 - As Drilled	495.70	430.58	9,490.55	9,487.63	3,255.471	CC
LDS RED D17-11 (SI) - Wellbore #1 - As Drilled	600.00	464.46	9,491.00	9,487.59	2,782.037	ES
LDS RED D17-11 (SI) - Wellbore #1 - As Drilled	6,850.00	6,500.00	9,944.06	9,897.21	212.250	SF
LDS Red D17-12 - Wellbore #1 - No Surveys	2,200.00	2,144.00	9,864.26	9,837.90	374.164	CC
LDS Red D17-12 - Wellbore #1 - No Surveys	2,300.00	2,243.98	9,865.08	9,837.50	357.647	ES
LDS Red D17-12 - Wellbore #1 - No Surveys	4,100.00	4,021.17	9,999.34	9,949.89	202.247	SF
LDS Red D17-14 (DA) - LDS Red D17-14 - No Surveys	2,200.00	2,156.00	8,136.07	8,044.39	88.751	CC
LDS Red D17-14 (DA) - LDS Red D17-14 - No Surveys	2,600.00	2,554.70	8,145.07	8,036.08	74.731	ES
LDS Red D17-14 (DA) - LDS Red D17-14 - No Surveys	6,850.00	6,705.49	8,567.03	8,276.72	29.510	SF
LDS Red D17-14X (SI) - Wellbore #1 - As-Drilled	777.88	722.88	8,320.72	8,315.81	1,694.511	CC
LDS Red D17-14X (SI) - Wellbore #1 - As-Drilled	1,900.00	1,787.27	8,324.61	8,311.96	658.406	ES
LDS Red D17-14X (SI) - Wellbore #1 - As-Drilled	6,850.00	6,632.51	8,755.02	8,707.70	185.006	SF
LDS Red D17-3J (PR) - Wellbore #1 - Gyro Surveys	605.74	556.75	8,574.87	8,571.16	2,309.377	CC
LDS Red D17-3J (PR) - Wellbore #1 - Gyro Surveys	1,200.00	1,108.63	8,578.13	8,570.36	1,104.577	ES
LDS Red D17-3J (PR) - Wellbore #1 - Gyro Surveys	6,900.00	6,700.00	9,207.15	9,159.54	193.373	SF
LDS White D17-1 - Wellbore #1 - Gyro Surveys						Out of range
LDS White D17-2 - Wellbore #1 - As-Drilled						Out of range
LDS White D17-8 - Wellbore #1 - As-Drilled						Out of range
Thomson D20-31D - Wellbore #1 - Gyro Surveys	5,485.53	6,500.00	6,994.08	6,943.47	138.201	CC
Thomson D20-31D - Wellbore #1 - Gyro Surveys	5,600.00	6,548.37	6,994.52	6,943.32	136.616	ES
Thomson D20-31D - Wellbore #1 - Gyro Surveys	6,700.00	7,153.94	7,114.92	7,057.96	124.915	SF
Weeks 20-17 (SI) - Wellbore #1 - Gyro Surveys	2,319.89	2,293.42	8,934.77	8,918.80	559.536	CC
Weeks 20-17 (SI) - Wellbore #1 - Gyro Surveys	2,400.00	2,343.20	8,935.04	8,918.63	544.427	ES
Weeks 20-17 (SI) - Wellbore #1 - Gyro Surveys	7,050.00	6,801.99	9,327.13	9,278.71	192.644	SF

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen Y05-749
Project:	Mustang	**TVD Reference:**	Well @ 4812.00ft
Reference Site:	D Section 29	**MD Reference:**	Well @ 4812.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen Y05-749	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen Y05-749	**Database:**	EDMP
Reference Design:	Plan #3	**Offset TVD Reference:**	Reference Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 18						
Horton D18-20D - Horton D18-20D - Horton D18-20D - A						Out of range
Horton D18-22D - Horton D18-22D - Horton D18-22D - A						Out of range
LSWD 1 - LSWD 1 - LSWD 1 - As Drilled						Out of range
Mick D18-03 - Mick D18-03 - Mick D18-03 - As Drilled						Out of range
Mick D18-04 - Wellbore #1 - Wellbore #1- As Drilled						Out of range
Mick D18-05 - Wellbore #1 - Wellbore #1- As Drilled						Out of range
Mick D18-06 - Mick D18-06 - Mick D18-06 - As Drilled						Out of range
Mick D18-11 - Mick D18-11 - Mick D18-11 - As Drilled						Out of range
Mick D18-12 - Wellbore #1 - Wellbore #1- As Drilled						Out of range
Mick D18-13 - Wellbore #1 - Wellbore #1- As Drilled						Out of range
Mick D18-14 - Mick D18-14 - Mick D18-14 - As Drilled	363.95	345.95	9,808.09	9,805.99	4,657.813	CC
Mick D18-14 - Mick D18-14 - Mick D18-14 - As Drilled	700.00	607.80	9,809.29	9,805.07	2,321.300	ES
Mick D18-14 - Mick D18-14 - Mick D18-14 - As Drilled	3,600.00	3,501.19	9,995.79	9,971.15	405.808	SF
Mick D18-19 - Mick D18-19 - Mick D18-19 - As Drilled						Out of range
Mick D18-25 - Mick D18-25 - Mick D18-25 - As Drilled						Out of range
Scooter D18-02 - Scooter D18-02 - Scooter D18-02 - As						Out of range
Scooter D18-07 - Scooter D18-07 - Scooter D18-07 - As						Out of range
Scooter D18-10 - Scooter D18-10 - Scooter D18-10 - As						Out of range
Scooter D18-15 - Scooter D18-15 - Scooter D18-15 - As	2,227.87	2,257.63	9,168.39	9,152.93	593.048	CC, ES
Scooter D18-15 - Scooter D18-15 - Scooter D18-15 - As	6,900.00	7,161.36	9,853.39	9,804.24	200.489	SF
Scooter D18-16 - Scooter D18-16 - Scooter D18-16 - As	2,200.00	2,149.00	8,681.50	8,655.10	328.757	CC
Scooter D18-16 - Scooter D18-16 - Scooter D18-16 - As	2,300.00	2,248.98	8,682.56	8,654.93	314.279	ES
Scooter D18-16 - Scooter D18-16 - Scooter D18-16 - As	6,950.00	6,751.45	9,373.08	9,289.77	112.506	SF
Scooter D18-17 JI - Scooter D18-17 JI - Scooter D18-17						Out of range
Scooter D18-1JI - Scooter D18-1JI - Scooter D18-1JI - As						Out of range
Scooter D18-4J - Scooter D18-4J - Scooter D18-4J - As D	1,371.97	1,327.00	9,601.45	9,592.31	1,049.875	CC
Scooter D18-4J - Scooter D18-4J - Scooter D18-4J - As D	2,300.00	2,318.71	9,605.80	9,589.88	603.300	ES
Scooter D18-4J - Scooter D18-4J - Scooter D18-4J - As D	6,100.00	5,979.50	9,996.60	9,954.27	236.163	SF
Scooter D18-78-1HN - Original Drilling - Original Drilling -						Out of range
Scooter D18-78-1HN - Original Drilling - ST01 - Original D						Out of range
Scooter D18-79-1HN - Original Drilling - Original Drilling -						Out of range
Scooter D18-79HN - Original Drilling - Original Drilling - A						Out of range
Scooter D18-8JI - Scooter D18-8JI - Scooter D18-8JI - As	467.60	372.61	9,699.00	9,696.43	3,773.408	CC
Scooter D18-8JI - Scooter D18-8JI - Scooter D18-8JI - As	700.00	546.82	9,699.61	9,695.60	2,417.870	ES
Scooter D18-8JI - Scooter D18-8JI - Scooter D18-8JI - As	3,200.00	1,400.00	9,995.83	9,979.91	627.886	SF
Scooter D18-9JI - Scooter D18-9JI - Scooter D18-9JI - As	610.57	514.61	9,614.12	9,610.54	2,682.965	CC
Scooter D18-9JI - Scooter D18-9JI - Scooter D18-9JI - As	800.00	651.35	9,614.71	9,609.98	2,029.420	ES
Scooter D18-9JI - Scooter D18-9JI - Scooter D18-9JI - As	4,200.00	2,906.10	9,999.57	9,973.96	390.532	SF
Shianne D18-29D - Shianne D18-29D - Shianne D18-29D						Out of range

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen Y05-749
Project:	Mustang	**TVD Reference:**	Well @ 4812.00ft
Reference Site:	D Section 29	**MD Reference:**	Well @ 4812.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen Y05-749	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen Y05-749	**Database:**	EDMP
Reference Design:	Plan #3	**Offset TVD Reference:**	Reference Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 19						
Butterball 13-19 - Butterball 13-19 - Butterball 13-19 - As	0.00	0.00	7,981.51			
Butterball 13-19 - Butterball 13-19 - Butterball 13-19 - As	2,205.36	2,191.91	7,988.68	7,973.52	526.616	ES
Butterball 13-19 - Butterball 13-19 - Butterball 13-19 - As	7,000.00	6,839.28	8,814.05	8,765.84	182.838	SF
Butterball 14-19 - Butterball 14-19 - Butterball 14-19 - As	2,293.17	2,501.48	7,347.67	7,331.12	443.839	CC
Butterball 14-19 - Butterball 14-19 - Butterball 14-19 - As	2,300.00	2,508.83	7,347.68	7,331.08	442.517	ES
Butterball 14-19 - Butterball 14-19 - Butterball 14-19 - As	7,100.00	7,070.45	8,136.29	8,086.91	164.760	SF
Butterball 23-19 - Butterball 23-19 - Butterball 23-19 - As	634.96	600.00	6,931.09	6,927.12	1,744.372	CC
Butterball 23-19 - Butterball 23-19 - Butterball 23-19 - As	2,000.00	1,920.23	6,939.83	6,926.34	514.646	ES
Butterball 23-19 - Butterball 23-19 - Butterball 23-19 - As	7,050.00	6,840.48	7,859.68	7,811.42	162.836	SF
Butterball B04-19 - Butterball B04-19 - Butterball B04-19	1,278.23	1,249.24	8,033.23	8,024.69	941.072	CC
Butterball B04-19 - Butterball B04-19 - Butterball B04-19	2,200.00	2,159.06	8,034.54	8,019.52	535.041	ES
Butterball B04-19 - Butterball B04-19 - Butterball B04-19	7,200.00	6,977.32	8,969.92	8,920.84	182.727	SF
Butterball D18-75HN - Original Drilling - Original Drilling -	1,925.92	1,910.00	8,414.43	8,402.22	689.343	CC, ES
Butterball D18-75HN - Original Drilling - Original Drilling -	6,750.00	6,279.00	9,550.78	9,505.30	209.991	SF
Butterball D19-17D - Butterball D19-17D - Butterball D19	4,553.48	6,049.31	7,655.67	7,524.30	58.278	CC
Butterball D19-17D - Butterball D19-17D - Butterball D19	4,600.00	6,070.65	7,655.74	7,524.04	58.130	ES
Butterball D19-17D - Butterball D19-17D - Butterball D19	6,450.00	6,920.37	7,788.66	7,648.12	55.420	SF
Butterball D19-18D - Butterball D19-18D - Butterball D19	2,606.04	3,655.11	8,439.76	8,411.64	300.105	CC, ES
Butterball D19-18D - Butterball D19-18D - Butterball D19	6,900.00	6,817.43	9,057.71	9,005.06	172.024	SF
Butterball D19-19D - Butterball D19-19D - Butterball D19	2,356.43	2,788.70	8,639.41	8,618.91	421.398	CC
Butterball D19-19D - Butterball D19-19D - Butterball D19	2,400.00	2,855.78	8,639.66	8,618.67	411.721	ES
Butterball D19-19D - Butterball D19-19D - Butterball D19	7,000.00	6,905.27	9,416.28	9,365.33	184.814	SF
Butterball D19-20D - Butterball D19-20D - Butterball D19	3,143.13	4,500.00	8,106.85	8,077.79	278.986	CC
Butterball D19-20D - Butterball D19-20D - Butterball D19	3,200.00	4,500.00	8,107.05	8,077.79	277.032	ES
Butterball D19-20D - Butterball D19-20D - Butterball D19	7,000.00	6,999.01	8,688.52	8,637.99	171.949	SF
Butterball D19-22D - Wellbore #1 - Wellbore #1 - As Drille	2,251.71	2,320.01	6,137.47	6,119.02	332.632	CC, ES
Butterball D19-22D - Wellbore #1 - Wellbore #1 - As Drille	6,800.00	6,738.54	6,859.99	6,806.68	128.686	SF
Butterball D19-75HN - Original Drilling - Original Drilling -	5,953.54	11,767.00	5,955.19	5,847.26	55.174	CC
Butterball D19-75HN - Original Drilling - Original Drilling -	6,000.00	11,767.00	5,955.38	5,847.16	55.034	ES
Butterball D19-75HN - Original Drilling - Original Drilling -	6,550.00	11,767.00	5,993.03	5,882.04	53.995	SF
Butterball D24-19 - Butterball D24-19 - Butterball D24-19	217.88	184.88	6,224.19	6,223.17	6,105.902	CC
Butterball D24-19 - Butterball D24-19 - Butterball D24-19	400.00	328.22	6,224.69	6,222.51	2,865.009	ES
Butterball D24-19 - Butterball D24-19 - Butterball D24-19	7,100.00	6,911.15	7,222.78	7,174.07	148.296	SF
Butterball H24-69HN - Original Drilling - Original Drilling -	0.00	0.00	8,446.14			
Butterball H24-69HN - Original Drilling - Original Drilling -	800.00	750.04	8,447.80	8,443.86	2,146.185	ES
Butterball H24-69HN - Original Drilling - Original Drilling -	6,700.00	6,279.00	9,244.02	9,198.94	205.048	SF
Champlin 366 Amoco F 1 - Wellbore #1 - Wellbore #1 - A	569.36	531.36	5,268.49	5,265.00	1,508.741	CC
Champlin 366 Amoco F 1 - Wellbore #1 - Wellbore #1 - A	700.00	633.29	5,268.83	5,264.51	1,220.912	ES
Champlin 366 Amoco F 1 - Wellbore #1 - Wellbore #1 - A	6,900.00	6,734.13	6,119.72	6,072.14	128.635	SF
Dechant D19-32D - Dechant D19-32D - Dechant D19-32D	501.28	478.31	8,755.64	8,752.57	2,853.332	CC
Dechant D19-32D - Dechant D19-32D - Dechant D19-32D	800.00	700.00	8,756.85	8,751.82	1,741.893	ES
Dechant D19-32D - Dechant D19-32D - Dechant D19-32D	6,700.00	7,198.03	9,664.50	9,549.16	83.792	SF
Graznak 01-19 - Graznak 01-19 - Graznak 01-19 - As Dri	2,200.00	2,171.00	7,316.94	7,290.34	275.083	CC, ES
Graznak 01-19 - Graznak 01-19 - Graznak 01-19 - As Dri	7,100.00	6,845.46	8,240.44	8,156.02	97.612	SF
Higgins D19-720 - Original Drilling - Original Drilling - As	937.92	921.94	7,600.79	7,594.94	1,300.237	CC
Higgins D19-720 - Original Drilling - Original Drilling - As	1,000.00	959.62	7,600.89	7,594.75	1,238.369	ES
Higgins D19-720 - Original Drilling - Original Drilling - As	6,750.00	6,692.95	8,558.67	8,515.24	197.067	SF
Higgins D19-720 - Sidetrack Curve/Horizontal - ST01 - A	6,437.84	11,660.02	4,830.97	4,772.54	82.679	CC, ES
Higgins D19-720 - Sidetrack Curve/Horizontal - ST01 - A	6,650.00	11,660.02	4,856.96	4,797.73	81.996	SF
Independence D18-717 - Independence D18-717 - Plan 1	2,200.00	2,188.00	7,817.86	7,802.60	512.186	CC, ES
Independence D18-717 - Independence D18-717 - Plan 1	6,650.00	6,300.00	8,188.55	8,142.79	178.945	SF
Independence D18-725 - Independence D18-725 - Plan 1	2,200.00	2,188.00	7,827.31	7,812.04	512.805	CC, ES
Independence D18-725 - Independence D18-725 - Plan 1	6,650.00	6,200.00	8,389.10	8,343.63	184.492	SF

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

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen Y05-749
Project:	Mustang	**TVD Reference:**	Well @ 4812.00ft
Reference Site:	D Section 29	**MD Reference:**	Well @ 4812.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen Y05-749	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen Y05-749	**Database:**	EDMP
Reference Design:	Plan #3	**Offset TVD Reference:**	Reference Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 19						
Independence D18-732 - Independence D18-732 - Plan 1	2,200.00	2,188.00	7,837.24	7,821.98	513.455	CC, ES
Independence D18-732 - Independence D18-732 - Plan 1	6,900.00	6,183.00	8,732.76	8,686.89	190.364	SF
Independence D18-739 - Independence D18-739 - Plan 1	2,200.00	2,187.00	7,846.79	7,831.53	514.202	CC, ES
Independence D18-739 - Independence D18-739 - Plan 1	6,850.00	6,007.02	8,838.66	8,793.30	194.876	SF
Independence D18-744 - Independence D18-744 - Plan 1	2,200.00	2,186.00	7,856.39	7,841.13	514.952	CC, ES
Independence D18-744 - Independence D18-744 - Plan 1	6,950.00	5,673.21	9,059.88	9,015.34	203.412	SF
Independence D18-759 - Independence D18-759 - Plan 1	2,438.40	3,074.84	9,064.45	9,045.31	473.587	CC, ES
Independence D18-759 - Independence D18-759 - Plan 1	6,700.00	6,350.00	9,477.40	9,431.37	205.915	SF
Independence D18-767 - Independence D18-767 - Plan 1	2,200.00	2,205.00	9,089.72	9,074.40	593.144	CC, ES
Independence D18-767 - Independence D18-767 - Plan 1	6,750.00	5,974.77	9,814.53	9,769.75	219.156	SF
Independence D30-711 - Independence D30-711 OH - As	6,724.84	15,181.22	3,124.48	3,030.88	33.384	CC
Independence D30-711 - Independence D30-711 OH - As	6,750.00	15,188.31	3,124.53	3,030.84	33.351	ES
Independence D30-711 - Independence D30-711 OH - As	9,700.00	17,754.00	3,190.39	3,065.75	25.597	SF
Independence D30-718 - Independence D30-718 OH - A	6,339.37	15,076.84	3,497.91	3,406.71	38.353	CC, ES
Independence D30-718 - Independence D30-718 OH - A	9,800.00	17,823.00	3,644.74	3,519.47	29.095	SF
Independence D30-724 - Independence D30-724 OH - A	6,351.79	15,041.70	3,985.00	3,895.10	44.327	CC
Independence D30-724 - Independence D30-724 OH - A	6,381.32	15,042.70	3,985.11	3,895.09	44.272	ES
Independence D30-724 - Independence D30-724 OH - A	9,900.00	17,803.00	4,093.55	3,968.34	32.695	SF
Independence D30-731 - Independence D30-731 OH - A	6,195.04	14,704.51	4,356.90	4,270.02	50.148	CC
Independence D30-731 - Independence D30-731 OH - A	6,200.00	14,704.69	4,356.90	4,270.00	50.135	ES
Independence D30-731 - Independence D30-731 OH - A	10,100.00	17,781.00	4,567.80	4,441.01	36.025	SF
Independence D30-737 - Independence D30-737 OH - A	6,224.23	15,189.04	4,799.86	4,710.58	53.763	CC, ES
Independence D30-737 - Independence D30-737 OH - A	10,200.00	17,920.00	4,953.40	4,825.69	38.786	SF
Independence D30-743 - Independence D30-743 OH - A	6,089.31	14,971.17	5,210.70	5,123.68	59.879	CC
Independence D30-743 - Independence D30-743 OH - A	6,100.00	14,971.60	5,210.71	5,123.63	59.838	ES
Independence D30-743 - Independence D30-743 OH - A	10,400.00	17,884.51	5,412.62	5,283.80	42.018	SF
Independence D30-758 - Independence D30-758 OH - A	5,979.27	15,176.17	5,989.05	5,899.05	66.545	CC
Independence D30-758 - Independence D30-758 OH - A	6,000.00	15,177.00	5,989.08	5,899.01	66.491	ES
Independence D30-758 - Independence D30-758 OH - A	10,400.00	17,863.00	6,143.26	6,015.37	48.035	SF
Independence D30-765 - Independence D30-765 OH - A	6,050.83	15,282.28	6,464.21	6,374.36	71.949	CC
Independence D30-765 - Independence D30-765 OH - A	6,100.00	15,283.65	6,464.39	6,374.35	71.793	ES
Independence D30-765 - Independence D30-765 OH - A	10,700.00	17,947.00	6,651.92	6,522.39	51.352	SF
Independence D30-770 - Independence D30-770 OH - A	5,814.58	14,763.00	6,739.12	6,653.69	78.889	CC, ES
Independence D30-770 - Independence D30-770 OH - A	10,800.00	17,813.00	6,978.39	6,848.30	53.640	SF
Independence D30-777 - Independence D30-777 - As-Dr	5,817.73	14,952.00	7,229.38	7,143.98	84.656	CC, ES
Independence D30-777 - Independence D30-777 - As-Dr	11,100.00	17,958.00	7,502.43	7,370.57	56.895	SF
Independence State D30-784 - Independence State D30-	5,708.04	15,469.13	7,693.23	7,604.79	86.984	CC, ES
Independence State D30-784 - Independence State D30-	11,400.00	17,958.00	8,105.61	7,971.61	60.492	SF
LDS White D19-10 - LDS White D19-10 - LDS White D19	404.94	367.94	6,157.21	6,154.87	2,640.056	CC
LDS White D19-10 - LDS White D19-10 - LDS White D19	2,200.00	2,123.27	6,165.88	6,150.97	413.781	ES
LDS White D19-10 - LDS White D19-10 - LDS White D19	6,950.00	6,795.75	7,044.38	6,996.46	147.003	SF
LDS White D19-15 - LDS White D19-15 - LDS White D19	1,685.60	1,650.61	5,234.01	5,222.61	459.144	CC
LDS White D19-15 - LDS White D19-15 - LDS White D19	2,000.00	1,924.82	5,234.85	5,221.37	388.267	ES
LDS White D19-15 - LDS White D19-15 - LDS White D19	6,950.00	6,731.17	6,137.62	6,089.95	128.749	SF
LDS White D19-16 - Wellbore #1 - Wellbore #1 - As Drille	100.00	49.85	4,261.73	4,261.52	10,000.000	CC
LDS White D19-16 - Wellbore #1 - Wellbore #1 - As Drille	2,219.63	2,212.76	4,266.88	4,251.60	279.251	ES
LDS White D19-16 - Wellbore #1 - Wellbore #1 - As Drille	6,850.00	6,706.21	5,059.23	5,011.89	106.870	SF
Mile High 02-19 - Wellbore #1 - Wellbore #1 - As Drilled	190.90	151.90	7,064.21	7,063.40	8,747.598	CC
Mile High 02-19 - Wellbore #1 - Wellbore #1 - As Drilled	2,100.00	2,015.76	7,069.66	7,055.50	499.064	ES
Mile High 02-19 - Wellbore #1 - Wellbore #1 - As Drilled	6,950.00	6,793.62	7,867.08	7,819.18	164.252	SF
Sean D19-09 - Wellbore #1 - Wellbore #1 - As Drilled	749.52	706.68	5,183.99	5,179.24	1,091.700	CC
Sean D19-09 - Wellbore #1 - Wellbore #1 - As Drilled	2,242.02	2,256.67	5,185.19	5,169.68	334.328	ES
Sean D19-09 - Wellbore #1 - Wellbore #1 - As Drilled	6,850.00	6,709.27	5,889.23	5,841.85	124.283	SF

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

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen Y05-749
Project:	Mustang	**TVD Reference:**	Well @ 4812.00ft
Reference Site:	D Section 29	**MD Reference:**	Well @ 4812.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen Y05-749	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen Y05-749	**Database:**	EDMP
Reference Design:	Plan #3	**Offset TVD Reference:**	Reference Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 19						
Turk Blue D19-02J - Turk Blue D19-02J - Turk Blue D19-	2,046.54	2,021.60	8,797.99	8,784.00	628.875	CC
Turk Blue D19-02J - Turk Blue D19-02J - Turk Blue D19-	2,200.00	2,139.14	8,798.30	8,783.35	588.509	ES
Turk Blue D19-02J - Turk Blue D19-02J - Turk Blue D19-	6,950.00	6,900.00	9,683.16	9,634.88	200.569	SF
Turk Blue D19-04 - Turk Blue D19-04 - Turk Blue D19-04	2,222.23	2,283.45	9,790.74	9,775.20	629.931	CC, ES
Turk Blue D19-04 - Turk Blue D19-04 - Turk Blue D19-04	3,900.00	3,984.50	9,991.20	9,963.88	365.722	SF
Turk Blue D19-05 - Turk Blue D19-05 - Turk Blue D19-05	2,203.20	2,189.36	8,673.70	8,658.56	572.816	CC, ES
Turk Blue D19-05 - Turk Blue D19-05 - Turk Blue D19-05	7,050.00	6,916.84	9,564.48	9,515.86	196.730	SF
Turk Blue D19-06 - Turk Blue D19-06 - Turk Blue D19-06	612.62	575.62	7,761.64	7,757.83	2,040.795	CC
Turk Blue D19-06 - Turk Blue D19-06 - Turk Blue D19-06	2,208.55	2,192.25	7,764.58	7,749.42	512.094	ES
Turk Blue D19-06 - Turk Blue D19-06 - Turk Blue D19-06	6,950.00	6,950.00	8,588.96	8,540.53	177.344	SF
Turk White D19-01 - Wellbore #1 - Wellbore #1 - As Drille	100.00	49.02	7,386.62	7,386.41	10,000.000	CC
Turk White D19-01 - Wellbore #1 - Wellbore #1 - As Drille	2,200.00	2,150.11	7,391.69	7,376.70	493.003	ES
Turk White D19-01 - Wellbore #1 - Wellbore #1 - As Drille	6,900.00	6,787.55	8,105.65	8,057.81	169.440	SF
Turk White D19-02 - Wellbore #1 - Wellbore #1 - As Drille	632.11	583.18	8,201.54	8,197.62	2,096.087	CC
Turk White D19-02 - Wellbore #1 - Wellbore #1 - As Drille	1,800.00	1,701.34	8,205.84	8,193.83	683.198	ES
Turk White D19-02 - Wellbore #1 - Wellbore #1 - As Drille	6,950.00	6,784.41	8,961.11	8,913.24	187.189	SF
Turk White D19-08 - Wellbore #1 - Wellbore #1 - As Drille	100.00	52.39	6,140.38	6,140.16	10,000.000	CC
Turk White D19-08 - Wellbore #1 - Wellbore #1 - As Drille	2,213.30	2,193.02	6,141.83	6,126.65	404.449	ES
Turk White D19-08 - Wellbore #1 - Wellbore #1 - As Drille	6,850.00	6,654.37	6,835.67	6,788.49	144.895	SF

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen Y05-749
Project:	Mustang	**TVD Reference:**	Well @ 4812.00ft
Reference Site:	D Section 29	**MD Reference:**	Well @ 4812.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen Y05-749	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen Y05-749	**Database:**	EDMP
Reference Design:	Plan #3	**Offset TVD Reference:**	Reference Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 20						
Bohlender D20-2J - Wellbore #1 - No Surveys	2,200.00	2,156.00	6,009.52	5,983.05	227.047	CC
Bohlender D20-2J - Wellbore #1 - No Surveys	2,300.00	2,255.98	6,010.40	5,982.71	217.076	ES
Bohlender D20-2J - Wellbore #1 - No Surveys	6,850.00	6,694.51	6,570.07	6,487.43	79.505	SF
Bohlender D20-3 - Wellbore #1 - Gyro Surveys	2,001.08	1,963.32	6,865.02	6,851.38	503.332	CC
Bohlender D20-3 - Wellbore #1 - Gyro Surveys	2,201.71	2,165.39	6,865.06	6,850.00	455.804	ES
Bohlender D20-3 - Wellbore #1 - Gyro Surveys	6,850.00	6,714.79	7,342.40	7,294.82	154.328	SF
Bohlender D20-4 (P&A) - Wellbore #1 - No Surveys	2,200.00	2,158.00	7,218.96	7,168.14	142.068	CC
Bohlender D20-4 (P&A) - Wellbore #1 - No Surveys	2,300.00	2,257.98	7,219.87	7,166.71	135.813	ES
Bohlender D20-4 (P&A) - Wellbore #1 - No Surveys	6,900.00	6,729.95	7,824.05	7,665.13	49.231	SF
Bohlender D20-6 - Wellbore#1 - Gyro Surveys	2,321.87	2,358.94	5,541.47	5,525.33	343.410	CC
Bohlender D20-6 - Wellbore#1 - Gyro Surveys	2,400.00	2,429.71	5,541.87	5,525.22	332.878	ES
Bohlender D20-6 - Wellbore#1 - Gyro Surveys	6,800.00	6,651.90	5,975.26	5,928.05	126.564	SF
Butterball D19-27D - Butterball D19-27D - Butterball D19	100.00	40.41	8,063.20	8,063.01	10,000.000	CC
Butterball D19-27D - Butterball D19-27D - Butterball D19	800.00	700.00	8,064.04	8,059.14	1,643.772	ES
Butterball D19-27D - Butterball D19-27D - Butterball D19	6,700.00	6,939.22	9,036.34	8,956.90	113.741	SF
Duncan D20-1 (P&A) - Wellbore #1 - No Surveys	3,765.56	3,704.58	7,350.83	7,263.57	84.234	CC
Duncan D20-1 (P&A) - Wellbore #1 - No Surveys	6,381.32	6,282.42	7,364.22	7,215.70	49.586	ES
Duncan D20-1 (P&A) - Wellbore #1 - No Surveys	6,900.00	6,728.95	7,564.22	7,405.07	47.528	SF
Duncan D20-10 - Wellbore #1 - Gyro Surveys	2,808.17	2,771.46	4,043.13	4,023.87	209.946	CC
Duncan D20-10 - Wellbore #1 - Gyro Surveys	3,400.00	3,353.74	4,043.84	4,020.45	172.862	ES
Duncan D20-10 - Wellbore #1 - Gyro Surveys	6,700.00	6,594.08	4,160.41	4,113.58	88.840	SF
Duncan D20-11 (SI) - Wellbore #1 - No Surveys	2,200.00	2,163.00	4,255.52	4,228.99	160.409	CC
Duncan D20-11 (SI) - Wellbore #1 - No Surveys	2,300.00	2,262.98	4,256.16	4,228.41	153.380	ES
Duncan D20-11 (SI) - Wellbore #1 - No Surveys	6,750.00	6,626.63	4,673.10	4,591.28	57.111	SF
Duncan D20-12 (SI) - Wellbore #1 - No Surveys	2,200.00	2,161.00	4,526.40	4,499.89	170.732	CC
Duncan D20-12 (SI) - Wellbore #1 - No Surveys	2,300.00	2,260.98	4,527.50	4,499.77	163.262	ES
Duncan D20-12 (SI) - Wellbore #1 - No Surveys	6,750.00	6,624.63	5,108.64	5,026.93	62.525	SF
Duncan D20-13 (SI) - Wellbore #1 - No Surveys	2,200.00	2,166.00	3,172.63	3,146.07	119.472	CC, ES
Duncan D20-13 (SI) - Wellbore #1 - No Surveys	6,700.00	6,588.65	3,813.72	3,732.53	46.973	SF
Duncan D20-14 (SI) - Wellbore #1 - Gyro Surveys	227.01	187.02	3,267.33	3,266.27	3,081.377	CC
Duncan D20-14 (SI) - Wellbore #1 - Gyro Surveys	2,000.00	1,947.09	3,272.51	3,258.94	241.233	ES
Duncan D20-14 (SI) - Wellbore #1 - Gyro Surveys	6,750.00	6,699.49	3,789.33	3,742.16	80.329	SF
Duncan D20-15 (P&A) - Wellbore #1 - Gyro Surveys	2,589.26	2,565.82	2,926.99	2,909.21	164.611	CC
Duncan D20-15 (P&A) - Wellbore #1 - Gyro Surveys	2,900.00	2,865.84	2,927.98	2,908.06	147.049	ES
Duncan D20-15 (P&A) - Wellbore #1 - Gyro Surveys	6,600.00	6,502.59	3,091.45	3,045.30	66.985	SF
Duncan D20-16 (SI) - Wellbore #1 - Gyro Surveys	6,409.18	6,327.07	3,501.79	3,456.87	77.967	CC, ES
Duncan D20-16 (SI) - Wellbore #1 - Gyro Surveys	6,750.00	6,612.03	3,582.95	3,535.82	76.030	SF
Duncan D20-2 - Wellbore #1 - Gyro Surveys	1,961.75	1,910.73	6,889.51	6,876.22	518.168	CC
Duncan D20-2 - Wellbore #1 - Gyro Surveys	2,200.00	2,123.14	6,890.03	6,875.14	462.695	ES
Duncan D20-2 - Wellbore #1 - Gyro Surveys	7,200.00	7,200.00	7,552.06	7,502.15	151.301	SF
Duncan D20-7 - Wellbore #1 - Gyro Surveys	2,430.84	2,423.86	6,000.59	5,983.85	358.481	CC
Duncan D20-7 - Wellbore #1 - Gyro Surveys	2,600.00	2,579.86	6,001.32	5,983.45	335.940	ES
Duncan D20-7 - Wellbore #1 - Gyro Surveys	6,850.00	6,693.21	6,252.31	6,204.70	131.301	SF
Duncan D20-8 - Wellbore #1 - Gyro Surveys	6,033.90	5,961.06	5,896.05	5,853.83	139.648	CC
Duncan D20-8 - Wellbore #1 - Gyro Surveys	6,200.00	6,098.19	5,896.61	5,853.29	136.117	ES
Duncan D20-8 - Wellbore #1 - Gyro Surveys	6,950.00	6,807.28	6,128.84	6,080.53	126.876	SF
Duncan D20-9 (P&A) - Wellbore #1 - Gyro Surveys	6,392.40	6,313.01	4,736.37	4,691.58	105.740	CC
Duncan D20-9 (P&A) - Wellbore #1 - Gyro Surveys	6,400.00	6,321.16	4,736.41	4,691.56	105.607	ES
Duncan D20-9 (P&A) - Wellbore #1 - Gyro Surveys	6,800.00	6,689.80	4,854.40	4,806.88	102.148	SF
E Ranches (P&A) - Wellbore #1 - No Surveys	2,200.00	2,158.00	3,120.50	3,069.69	61.411	CC
E Ranches (P&A) - Wellbore #1 - No Surveys	2,300.00	2,257.98	3,121.63	3,068.47	58.721	ES
E Ranches (P&A) - Wellbore #1 - No Surveys	6,650.00	6,537.64	3,669.57	3,515.24	23.778	SF
Guttersen 10-20 - Wellbore #1 - Gyro Surveys	2,305.71	2,277.78	4,445.96	4,430.16	281.354	CC

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

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen Y05-749
Project:	Mustang	**TVD Reference:**	Well @ 4812.00ft
Reference Site:	D Section 29	**MD Reference:**	Well @ 4812.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen Y05-749	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen Y05-749	**Database:**	EDMP
Reference Design:	Plan #3	**Offset TVD Reference:**	Reference Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 20						
Guttersen 10-20 - Wellbore #1 - Gyro Surveys	2,400.00	2,362.48	4,446.21	4,429.79	270.833	ES
Guttersen 10-20 - Wellbore #1 - Gyro Surveys	6,700.00	6,616.92	4,672.21	4,625.38	99.777	SF
LDS D20-30D - LDS D20-30D - LDS D20-30D - As Drilled	3,794.82	4,600.00	8,002.59	7,970.27	247.617	CC
LDS D20-30D - LDS D20-30D - LDS D20-30D - As Drilled	3,900.00	4,632.51	8,003.07	7,970.21	243.508	ES
LDS D20-30D - LDS D20-30D - LDS D20-30D - As Drilled	6,850.00	6,784.57	8,390.53	8,340.10	166.381	SF

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen Y05-749
Project:	Mustang	**TVD Reference:**	Well @ 4812.00ft
Reference Site:	D Section 29	**MD Reference:**	Well @ 4812.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen Y05-749	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen Y05-749	**Database:**	EDMP
Reference Design:	Plan #3	**Offset TVD Reference:**	Reference Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 28						
O'SH D 28-7 (P&A) - Wellbore #1 - No Surveys	6,917.53	6,780.99	5,495.78	5,335.61	34.312	CC
O'SH D 28-7 (P&A) - Wellbore #1 - No Surveys	6,950.00	6,800.45	5,496.02	5,335.35	34.208	ES
O'SH D 28-7 (P&A) - Wellbore #1 - No Surveys	7,250.00	6,912.38	5,521.51	5,357.73	33.712	SF
Spike ST GWS D 28-12 (SI) - Wellbore #1 - Gyro Survey	7,592.16	6,926.73	2,682.55	2,632.45	53.550	CC
Spike ST GWS D 28-12 (SI) - Wellbore #1 - Gyro Survey	7,600.00	6,926.79	2,682.56	2,632.44	53.524	ES
Spike ST GWS D 28-12 (SI) - Wellbore #1 - Gyro Survey	8,200.00	6,931.44	2,750.55	2,698.10	52.448	SF
Guttersen D State 28-29D (PR) - Wellbore #1 - MWD Sur	941.12	915.14	4,041.20	4,036.11	793.780	CC
Guttersen D State 28-29D (PR) - Wellbore #1 - MWD Sur	1,000.00	943.71	4,041.42	4,036.02	748.430	ES
Guttersen D State 28-29D (PR) - Wellbore #1 - MWD Sur	6,950.00	6,831.71	4,508.27	4,460.18	93.743	SF
Guttersen D State 28-30D - Guttersen D State 28-30D OH	6,462.55	6,582.43	3,225.62	3,164.49	52.763	CC, ES
Guttersen D State 28-30D - Guttersen D State 28-30D OH	6,700.00	6,774.51	3,260.42	3,197.80	52.067	SF
Guttersen D State 28-30D - Gyros - As-Drilled	6,462.55	6,569.43	3,225.63	3,164.49	52.763	CC, ES
Guttersen D State 28-30D - Gyros - As-Drilled	6,700.00	6,761.51	3,260.43	3,197.81	52.067	SF
Guttersen State D28-18D (PR) - Wellbore #1 - MWD Surv	6,671.85	6,669.44	4,867.19	4,816.64	96.302	CC, ES
Guttersen State D28-18D (PR) - Wellbore #1 - MWD Surv	7,200.00	6,965.19	4,951.94	4,898.77	93.138	SF
Guttersen State D28-21D (SI) - Wellbore #1 - As-Drilled	7,066.26	6,899.68	4,729.03	4,677.74	92.205	CC, ES
Guttersen State D28-21D (SI) - Wellbore #1 - As-Drilled	8,400.00	6,922.60	4,994.40	4,939.23	90.522	SF
Guttersen State D28-24D (SI) - Wellbore #1 - MWD Surv	8,299.00	7,094.03	4,686.09	4,628.30	81.086	CC
Guttersen State D28-24D (SI) - Wellbore #1 - MWD Surv	8,300.00	7,094.05	4,686.09	4,628.29	81.079	ES
Guttersen State D28-24D (SI) - Wellbore #1 - MWD Surv	10,200.00	7,125.00	5,056.90	4,988.46	73.887	SF
Guttersen State D28-28D (PR) - Wellbore #1 - MWD Surv	0.00	0.00	5,289.85			
Guttersen State D28-28D (PR) - Wellbore #1 - MWD Surv	300.00	235.85	5,290.83	5,289.35	3,562.462	ES
Guttersen State D28-28D (PR) - Wellbore #1 - MWD Surv	7,100.00	6,890.93	5,573.60	5,523.47	111.190	SF
Guttersen State D28-79HN - Wellbore #1 - As-Drilled	6,800.00	9,154.16	2,343.81	2,268.46	31.105	SF
Guttersen State D28-79HN - Wellbore #1 - As-Drilled	7,050.00	8,994.34	2,327.03	2,253.24	31.533	ES
Guttersen State D28-79HN - Wellbore #1 - As-Drilled	7,064.46	8,985.10	2,326.99	2,253.29	31.577	CC
HSR Guttersen State 10-28 (SI) - Wellbore #1 - Gyro Sur	7,515.48	6,975.31	5,147.85	5,097.76	102.781	CC, ES
HSR Guttersen State 10-28 (SI) - Wellbore #1 - Gyro Sur	10,000.00	6,904.85	5,715.61	5,654.46	93.466	SF
HSR Guttersen State 15-28 (SI) - Wellbore #1 - Gyro Sur	9,154.91	9,154.91	5,731.97	5,667.22	88.531	CC
HSR Guttersen State 15-28 (SI) - Wellbore #1 - Gyro Sur	9,200.00	9,200.00	5,732.14	5,666.97	87.956	ES
HSR Guttersen State 15-28 (SI) - Wellbore #1 - Gyro Sur	12,300.00	7,048.96	6,533.26	6,457.18	85.870	SF
HSR Guttersen State 7-28 (PR) - Wellbore #1 - Gyro Sur	6,834.67	6,535.59	5,286.54	5,239.56	112.531	CC
HSR Guttersen State 7-28 (PR) - Wellbore #1 - Gyro Sur	6,850.00	6,541.76	5,286.59	5,239.54	112.355	ES
HSR Guttersen State 7-28 (PR) - Wellbore #1 - Gyro Sur	8,800.00	6,600.00	5,835.95	5,781.96	108.100	SF
O'SH D 28-1 (SI) - Wellbore #1 - Gyro Surveys	6,731.25	6,672.59	6,656.18	6,609.08	141.319	CC
O'SH D 28-1 (SI) - Wellbore #1 - Gyro Surveys	6,750.00	6,692.07	6,656.26	6,609.03	140.924	ES
O'SH D 28-1 (SI) - Wellbore #1 - Gyro Surveys	9,500.00	6,906.11	7,692.70	7,634.95	133.211	SF
O'SH D 28-2 (SI) - Wellbore #1 - Gyro Surveys	6,625.40	6,536.29	5,819.24	5,772.95	125.687	CC, ES
O'SH D 28-2 (SI) - Wellbore #1 - Gyro Surveys	7,250.00	6,923.98	5,937.10	5,887.90	120.665	SF
O'SH D 28-8 (SI) - Wellbore #1 - Gyro Surveys	6,967.71	6,730.20	6,829.91	6,781.88	142.192	CC, ES
O'SH D 28-8 (SI) - Wellbore #1 - Gyro Surveys	10,800.00	6,994.71	8,129.43	8,064.88	125.943	SF
Spike ST GWS D 28-03 (PR) - Wellbore #1 - Gyro Survey	6,564.01	6,486.76	4,722.16	4,661.90	78.359	CC, ES
Spike ST GWS D 28-03 (PR) - Wellbore #1 - Gyro Survey	7,100.00	6,856.65	4,830.34	4,765.47	74.464	SF
Spike ST GWS D 28-4 (SI) - Wellbore #1 - Gyro Surveys	6,491.92	6,397.28	3,545.92	3,500.50	78.083	CC
Spike ST GWS D 28-4 (SI) - Wellbore #1 - Gyro Surveys	6,500.00	6,409.08	3,545.94	3,500.46	77.964	ES
Spike ST GWS D 28-4 (SI) - Wellbore #1 - Gyro Surveys	6,900.00	6,718.18	3,624.08	3,576.11	75.547	SF
Spike State D 28-13 (SI) - Wellbore #1 - Gyro Surveys	9,035.38	6,924.86	2,754.16	2,698.14	49.170	CC, ES
Spike State D 28-13 (SI) - Wellbore #1 - Gyro Surveys	9,800.00	6,928.19	2,858.32	2,797.74	47.177	SF
Spike State D28-05 (PR) - Wellbore #1 - Gyro Surveys	6,654.29	6,507.63	2,827.94	2,781.65	61.082	CC, ES
Spike State D28-05 (PR) - Wellbore #1 - Gyro Surveys	7,050.00	6,828.99	2,876.77	2,828.03	59.022	SF
Spike State D28-06 (SI) - Wellbore #1 - Gyro Surveys	6,808.03	6,660.26	4,473.02	4,425.70	94.528	CC, ES
Spike State D28-06 (SI) - Wellbore #1 - Gyro Surveys	7,300.00	6,851.36	4,535.40	4,485.90	91.631	SF
Spike State D28-11 (SI) - Wellbore #1 - Gyro Surveys	7,414.62	7,019.10	4,275.45	4,225.45	85.517	CC, ES

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

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen Y05-749
Project:	Mustang	**TVD Reference:**	Well @ 4812.00ft
Reference Site:	D Section 29	**MD Reference:**	Well @ 4812.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen Y05-749	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen Y05-749	**Database:**	EDMP
Reference Design:	Plan #3	**Offset TVD Reference:**	Reference Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 28						
Spike State D28-11 (SI) - Wellbore #1 - Gyro Surveys	9,200.00	7,143.16	4,631.59	4,573.99	80.401	SF
Spike State GWS D 28-14 (P&A) - Wellbore #1 - Gyro Su	9,112.18	6,939.81	4,287.95	4,231.38	75.788	CC, ES
Spike State GWS D 28-14 (P&A) - Wellbore #1 - Gyro Su	10,700.00	7,038.69	4,571.43	4,505.45	69.287	SF

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen Y05-749
Project:	Mustang	**TVD Reference:**	Well @ 4812.00ft
Reference Site:	D Section 29	**MD Reference:**	Well @ 4812.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen Y05-749	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen Y05-749	**Database:**	EDMP
Reference Design:	Plan #3	**Offset TVD Reference:**	Reference Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 29						
Guttersen D29-30D - Wellbore #1 - Design #1	803.33	803.33	2,217.35	2,212.05	418.040	CC
Guttersen D29-30D - Wellbore #1 - Design #1	900.00	883.39	2,217.54	2,211.60	373.483	ES
Guttersen D29-30D - Wellbore #1 - Design #1	6,600.00	6,709.87	3,783.82	3,733.67	75.456	SF
Guttersen D29-31D - Wellbore #1 - Guttersen D29-31D	100.00	70.11	1,763.30	1,763.05	7,012.989	CC
Guttersen D29-31D - Wellbore #1 - Guttersen D29-31D	400.00	362.24	1,764.30	1,762.44	953.258	ES
Guttersen D29-31D - Wellbore #1 - Guttersen D29-31D	6,800.00	6,762.68	3,167.96	3,120.07	66.156	SF
Guttersen D29-33D - Wellbore #1 - Guttersen D29-33D -	886.77	882.77	2,193.89	2,189.21	468.803	CC
Guttersen D29-33D - Wellbore #1 - Guttersen D29-33D -	1,000.00	978.75	2,194.25	2,188.84	405.502	ES
Guttersen D29-33D - Wellbore #1 - Guttersen D29-33D -	8,700.00	7,157.68	2,979.21	2,917.57	48.336	SF
Guttersen D29-65HN - Guttersen D29-65HN OH - As-Dri	6,950.00	9,407.27	37.29	-59.67	0.385	Level 1, ES, SF
Guttersen D29-65HN - Guttersen D29-65HN OH - As-Dri	6,971.45	9,409.41	30.94	-33.85	0.477	Level 1, CC
Guttersen D29-67HN - Original Drilling - Original Drilling -	6,559.16	9,210.23	1,234.47	1,150.44	14.691	CC, ES
Guttersen D29-67HN - Original Drilling - Original Drilling -	6,700.00	9,224.83	1,257.67	1,170.47	14.424	SF
Guttersen D29-69HN - Original Drilling - Original Drilling -	1,030.74	1,019.77	2,209.91	2,204.36	398.395	CC
Guttersen D29-69HN - Original Drilling - Original Drilling -	1,100.00	1,071.38	2,210.18	2,204.20	369.606	ES
Guttersen D29-69HN - Original Drilling - Original Drilling -	6,650.00	9,351.79	2,454.06	2,366.44	28.009	SF
Guttersen D29-722 - Guttersen D29-722 OH - As-Drilled	7,081.21	7,050.80	1,486.12	1,441.62	33.392	CC, ES
Guttersen D29-722 - Guttersen D29-722 OH - As-Drilled	7,150.00	6,981.41	1,487.26	1,442.64	33.337	SF
Guttersen D29-730 - Guttersen D29-730 OH - As-Drilled	6,911.26	6,921.21	900.88	857.26	20.649	CC, ES, SF
Guttersen D29-738 - Guttersen D29-738 OH - As-Drilled	426.96	426.97	153.17	150.58	59.117	CC
Guttersen D29-738 - Guttersen D29-738 OH - As-Drilled	2,200.00	2,198.53	155.90	141.53	10.844	ES
Guttersen D29-738 - Guttersen D29-738 OH - As-Drilled	7,073.06	7,079.85	188.76	143.16	4.139	SF
Guttersen D29-746 - Guttersen D29-746 OH - As-Drilled	717.99	718.00	149.02	144.37	32.079	CC
Guttersen D29-746 - Guttersen D29-746 OH - As-Drilled	2,200.00	2,198.66	151.38	137.04	10.559	ES
Guttersen D29-746 - Guttersen D29-746 OH - As-Drilled	6,774.37	6,903.85	326.06	282.97	7.567	SF
Guttersen D29-754 - Guttersen D29-754 OH - As-Drilled	598.49	598.50	152.43	148.62	40.019	CC
Guttersen D29-754 - Guttersen D29-754 OH - As-Drilled	2,200.00	2,199.63	154.82	140.46	10.782	ES
Guttersen D29-754 - Guttersen D29-754 OH - As-Drilled	2,400.00	2,393.32	158.56	143.41	10.465	SF
Guttersen D29-770 - Guttersen D29-770 OH - Guttersen	2,548.17	2,703.67	1,358.56	1,342.64	85.305	CC, ES
Guttersen D29-770 - Guttersen D29-770 OH - Guttersen	6,750.00	6,989.00	1,540.18	1,496.87	35.560	SF
Guttersen D29-778 - Guttersen D29-778 OH - As-Drilled	151.41	153.42	1,412.22	1,411.57	2,160.251	CC
Guttersen D29-778 - Guttersen D29-778 OH - As-Drilled	2,200.00	2,192.55	1,413.56	1,399.21	98.493	ES
Guttersen D29-778 - Guttersen D29-778 OH - As-Drilled	7,000.00	7,172.20	2,209.77	2,165.29	49.671	SF
Guttersen D29-786 - Guttersen D29-786 OH - As-Drilled	1,886.29	1,889.33	1,448.52	1,435.62	112.264	CC
Guttersen D29-786 - Guttersen D29-786 OH - As-Drilled	2,200.00	2,196.15	1,449.01	1,434.68	101.073	ES
Guttersen D29-786 - Guttersen D29-786 OH - As-Drilled	7,300.00	6,739.40	2,774.02	2,729.86	62.814	SF
Guttersen D29-99HZ - Guttersen D29-99HZ OH - As-Dril	8,300.00	9,289.80	37.34	-13.69	0.732	Level 1, ES, SF
Guttersen D29-99HZ - Guttersen D29-99HZ OH - As-Dril	8,313.17	9,289.73	34.94	-4.85	0.878	Level 1, CC
Guttersen D30-68-1HN - Original Drilling - Original Drillin	1,022.22	1,012.53	2,188.08	2,182.58	397.689	CC, ES
Guttersen D30-68-1HN - Original Drilling - Original Drillin	6,400.00	6,222.01	3,250.52	3,207.60	75.735	SF
Guttersen D30-69-1HN - Original Drilling - Original Drillin	1,193.87	1,181.89	2,196.00	2,189.30	327.766	CC
Guttersen D30-69-1HN - Original Drilling - Original Drillin	1,200.00	1,187.36	2,196.00	2,189.26	325.758	ES
Guttersen D30-69-1HN - Original Drilling - Original Drillin	6,550.00	6,353.19	3,785.34	3,738.84	81.406	SF
Guttersen State D29-714 - Guttersen State D29-714 OH	7,093.31	6,908.46	2,015.73	1,971.27	45.341	CC
Guttersen State D29-714 - Guttersen State D29-714 OH	7,100.00	6,904.53	2,015.74	1,971.27	45.326	ES
Guttersen State D29-714 - Guttersen State D29-714 OH	7,300.00	6,845.67	2,026.53	1,981.57	45.074	SF
Guttersen State Y05-719 - Guttersen State Y05-719 - Pla	7,348.90	7,469.95	1,838.21	1,787.53	36.271	CC
Guttersen State Y05-719 - Guttersen State Y05-719 - Pla	20,041.07	20,149.90	1,839.71	1,612.18	8.085	ES, SF
Guttersen Y05-726 - Guttersen Y05-726 - Plan #3	7,349.27	7,606.84	1,226.45	1,175.57	24.109	CC
Guttersen Y05-726 - Guttersen Y05-726 - Plan #3	20,041.07	20,276.68	1,226.50	998.26	5.374	ES, SF
Guttersen Y05-734 - Guttersen Y05-734 - Plan #3	7,349.27	7,466.29	613.04	561.53	11.902	CC
Guttersen Y05-734 - Guttersen Y05-734 - Plan #3	20,041.07	20,158.09	613.05	385.39	2.693	ES, SF
Guttersen Y05-756 - Guttersen Y05-756 - Plan #3	2,200.00	2,200.00	37.01	21.70	2.418	CC, ES

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

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen Y05-749
Project:	Mustang	**TVD Reference:**	Well @ 4812.00ft
Reference Site:	D Section 29	**MD Reference:**	Well @ 4812.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen Y05-749	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen Y05-749	**Database:**	EDMP
Reference Design:	Plan #3	**Offset TVD Reference:**	Reference Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 29						
Guttersen Y05-756 - Guttersen Y05-756 - Plan #3	2,300.00	2,300.45	38.04	22.05	2.378	SF
Guttersen Y05-771 - Guttersen Y05-771 - Plan #3	6,244.38	6,466.98	1,297.81	1,252.37	28.558	CC
Guttersen Y05-771 - Guttersen Y05-771 - Plan #3	20,041.07	19,886.86	1,304.31	1,076.83	5.734	ES, SF
Guttersen Y05-779 - Guttersen Y05- 779 - Plan #3	2,390.79	2,477.69	1,400.80	1,383.93	83.067	CC
Guttersen Y05-779 - Guttersen Y05- 779 - Plan #3	2,400.00	2,486.89	1,400.81	1,383.89	82.766	ES
Guttersen Y05-779 - Guttersen Y05- 779 - Plan #3	20,041.07	19,979.95	1,832.53	1,604.93	8.052	SF
Guttersen Y05-786 - Guttersen Y05-786 - Plan #3	2,200.00	2,202.00	1,440.19	1,424.88	94.045	CC, ES
Guttersen Y05-786 - Guttersen Y05-786 - Plan #3	20,041.07	19,816.06	2,390.32	2,162.60	10.497	SF
Jessie D29-1J - Wellbore #1 - Gyro Surveys	6,393.52	6,313.02	1,568.41	1,523.61	35.009	CC
Jessie D29-1J - Wellbore #1 - Gyro Surveys	6,400.00	6,317.97	1,568.45	1,523.61	34.978	ES
Jessie D29-1J - Wellbore #1 - Gyro Surveys	6,550.00	6,463.03	1,586.78	1,540.88	34.568	SF
Jessie D29-4J - Wellbore #1 - Gyro Surveys	7,942.37	6,897.02	559.54	508.27	10.912	CC, ES
Jessie D29-4J - Wellbore #1 - Gyro Surveys	8,000.00	6,899.69	562.50	510.85	10.892	SF
Kate Red D29-03J - Kate Red D29-03J - Kate Red D29-0	2,254.44	2,255.27	2,079.47	2,063.91	133.688	CC
Kate Red D29-03J - Kate Red D29-03J - Kate Red D29-0	2,300.00	2,297.62	2,079.68	2,063.82	131.117	ES
Kate Red D29-03J - Kate Red D29-03J - Kate Red D29-0	8,200.00	6,909.37	2,219.85	2,167.94	42.764	SF
Kate Red D29-11 - Wellbore #1 - Gyro Surveys	2,338.11	2,320.54	1,197.76	1,181.70	74.588	CC
Kate Red D29-11 - Wellbore #1 - Gyro Surveys	2,688.40	2,679.14	1,199.20	1,180.69	64.789	ES
Kate Red D29-11 - Wellbore #1 - Gyro Surveys	7,600.00	6,888.30	1,231.85	1,181.84	24.632	SF
Kate Red D29-13 - Wellbore #1 - Gyro Surveys	9,022.77	6,937.00	2,559.27	2,503.25	45.681	CC, ES
Kate Red D29-13 - Wellbore #1 - Gyro Surveys	9,400.00	6,938.95	2,586.93	2,529.49	45.040	SF
Kate Red D29-14 - Wellbore #1 - Gyro Surveys	8,917.62	6,928.36	1,193.48	1,138.03	21.524	CC, ES
Kate Red D29-14 - Wellbore #1 - Gyro Surveys	9,000.00	6,929.34	1,196.31	1,140.67	21.500	SF
Kate Red D29-2J - Wellbore #1 - Kate Red D29-2J	1,369.11	1,334.15	1,764.51	1,755.35	192.557	CC
Kate Red D29-2J - Wellbore #1 - Kate Red D29-2J	2,000.00	1,952.66	1,765.91	1,752.33	130.029	ES
Kate Red D29-2J - Wellbore #1 - Kate Red D29-2J	6,600.00	6,529.60	2,375.25	2,329.26	51.645	SF
Kate Red D29-3 - Wellbore #1 - Kate Red D29-3	100.00	61.89	1,611.19	1,610.96	6,885.250	CC
Kate Red D29-3 - Wellbore #1 - Kate Red D29-3	700.00	652.07	1,614.27	1,609.88	368.119	ES
Kate Red D29-3 - Wellbore #1 - Kate Red D29-3	6,500.00	6,413.72	2,050.04	2,004.74	45.261	SF
Kate Red D29-5 - Wellbore #1 - Gyro Surveys	100.00	61.12	1,722.28	1,722.05	7,369.411	CC
Kate Red D29-5 - Wellbore #1 - Gyro Surveys	600.00	557.21	1,725.16	1,721.47	466.866	ES
Kate Red D29-5 - Wellbore #1 - Gyro Surveys	6,850.00	6,744.01	2,507.07	2,459.49	52.694	SF
Kate Red D29-6 - Wellbore #1 - Gyro Surveys	1,898.11	1,862.13	453.96	441.06	35.182	CC
Kate Red D29-6 - Wellbore #1 - Gyro Surveys	2,100.00	2,060.23	454.91	440.60	31.777	ES
Kate Red D29-6 - Wellbore #1 - Gyro Surveys	6,200.00	6,114.29	1,048.76	1,005.70	24.355	SF
Kate White D29-1 - Wellbore #1 - Gyro Surveys	6,444.71	6,370.24	2,486.40	2,441.22	55.035	CC
Kate White D29-1 - Wellbore #1 - Gyro Surveys	6,450.00	6,375.43	2,486.42	2,441.20	54.989	ES
Kate White D29-1 - Wellbore #1 - Gyro Surveys	6,750.00	6,660.93	2,541.09	2,493.81	53.737	SF
Kate White D29-15 - Wellbore #1 - Gyro Surveys	8,812.94	6,924.16	60.09	4.91	1.089	Level 2, CC, ES, SF
Kate White D29-16 - Wellbore #1 - Gyro Surveys	8,898.45	6,905.73	1,464.04	1,408.63	26.423	CC
Kate White D29-16 - Wellbore #1 - Gyro Surveys	8,900.00	6,905.73	1,464.04	1,408.62	26.418	ES
Kate White D29-16 - Wellbore #1 - Gyro Surveys	9,100.00	6,905.77	1,477.84	1,421.10	26.042	SF
Kate White D29-7 - Wellbore #1 - Gyro Surveys	6,451.13	6,361.94	636.25	591.07	14.083	CC, ES
Kate White D29-7 - Wellbore #1 - Gyro Surveys	6,550.00	6,461.27	641.83	595.94	13.985	SF
Kate White D29-8 - Wellbore #1 - Gyro Surveys	6,634.33	6,528.19	1,661.58	1,615.26	35.869	CC
Kate White D29-8 - Wellbore #1 - Gyro Surveys	6,650.00	6,543.21	1,661.66	1,615.23	35.786	ES
Kate White D29-8 - Wellbore #1 - Gyro Surveys	6,900.00	6,765.12	1,686.30	1,638.23	35.085	SF
Kate White D29-9 (SI) - Wellbore #1 - Gyro Surveys	7,672.20	6,882.61	1,489.21	1,438.85	29.575	CC, ES
Kate White D29-9 (SI) - Wellbore #1 - Gyro Surveys	7,900.00	6,889.84	1,506.51	1,455.21	29.366	SF

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen Y05-749
Project:	Mustang	**TVD Reference:**	Well @ 4812.00ft
Reference Site:	D Section 29	**MD Reference:**	Well @ 4812.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen Y05-749	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen Y05-749	**Database:**	EDMP
Reference Design:	Plan #3	**Offset TVD Reference:**	Reference Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 30						
Adams D30-27D - Adams D30-27D - Adams D30-27D - A	2,347.59	2,595.56	4,605.53	4,586.09	237.005	CC, ES
Adams D30-27D - Adams D30-27D - Adams D30-27D - A	6,900.00	6,918.10	5,320.01	5,267.90	102.089	SF
Adams D30-29D - Wellbore #1 - Wellbore #1 - As Drilled	0.00	0.00	5,720.02			
Adams D30-29D - Wellbore #1 - Wellbore #1 - As Drilled	300.00	242.45	5,720.72	5,719.29	4,001.595	ES
Adams D30-29D - Wellbore #1 - Wellbore #1 - As Drilled	7,200.00	6,956.67	7,451.75	7,401.77	149.079	SF
Adams D30-30D - Adams D30-30D Gyros - Gyros	393.18	363.25	5,697.61	5,695.32	2,489.916	CC
Adams D30-30D - Adams D30-30D Gyros - Gyros	500.00	421.93	5,698.05	5,695.16	1,971.680	ES
Adams D30-30D - Adams D30-30D Gyros - Gyros	6,650.00	6,650.00	8,007.32	7,952.08	144.944	SF
Adams D30-30D - Adams D30-30D OH - As Drilled	393.19	376.25	5,697.58	5,695.30	2,489.924	CC
Adams D30-30D - Adams D30-30D OH - As Drilled	500.00	434.93	5,698.03	5,695.14	1,971.681	ES
Adams D30-30D - Adams D30-30D OH - As Drilled	6,650.00	6,650.00	8,007.30	7,952.14	145.157	SF
Adams D30-31D - Adams D30-31D Gyros - Gyros	100.00	66.03	5,679.74	5,679.50	10,000.000	CC
Adams D30-31D - Adams D30-31D Gyros - Gyros	200.00	146.10	5,679.94	5,679.12	6,900.425	ES
Adams D30-31D - Adams D30-31D Gyros - Gyros	7,200.00	7,200.00	8,113.30	7,999.40	71.232	SF
Adams D30-31D - Adams D30-31D OH - As-drilled	0.00	0.00	5,679.75			
Adams D30-31D - Adams D30-31D OH - As-drilled	200.00	159.10	5,679.95	5,679.13	6,900.914	ES
Adams D30-31D - Adams D30-31D OH - As-drilled	7,200.00	7,200.00	8,113.31	7,999.62	71.360	SF
Corbin D30-23D - Corbin D30-23D - Corbin D30-23D - As	8,617.64	7,322.83	4,362.74	4,294.57	63.997	CC
Corbin D30-23D - Corbin D30-23D - Corbin D30-23D - As	8,700.00	7,323.71	4,363.52	4,294.05	62.818	ES
Corbin D30-23D - Corbin D30-23D - Corbin D30-23D - As	11,100.00	7,350.88	5,019.46	4,915.77	48.405	SF
Corbin Red D30-04J - Corbin Red D30-04J - Corbin Red	2,216.67	2,217.73	4,274.52	4,259.23	279.621	CC, ES
Corbin Red D30-04J - Corbin Red D30-04J - Corbin Red	9,800.00	7,319.56	5,032.11	4,971.66	83.245	SF
Corbin Red D30-09 - Corbin Red D30-09 - Corbin Red D3	2,192.83	2,177.90	3,228.31	3,213.25	214.265	CC
Corbin Red D30-09 - Corbin Red D30-09 - Corbin Red D3	2,200.00	2,184.19	3,228.31	3,213.20	213.589	ES
Corbin Red D30-09 - Corbin Red D30-09 - Corbin Red D3	8,500.00	7,071.72	3,821.21	3,767.79	71.533	SF
Corbin Red D30-15 - Corbin Red D30-15 - Corbin Red D3	0.00	0.00	5,003.12			
Corbin Red D30-15 - Corbin Red D30-15 - Corbin Red D3	1,900.00	1,851.06	5,005.36	4,992.49	389.020	ES
Corbin Red D30-15 - Corbin Red D30-15 - Corbin Red D3	10,800.00	6,961.78	5,392.20	5,328.07	84.073	SF
Corbin Red D30-16 - Corbin Red D30-16 - Corbin Red D3	9,061.62	6,915.98	3,839.90	3,783.64	68.251	CC, ES
Corbin Red D30-16 - Corbin Red D30-16 - Corbin Red D3	10,000.00	6,913.33	3,952.88	3,892.66	65.635	SF
Dechant D30-17D - Dechant D30-17D - Dechant D30-17D	4,580.81	5,700.00	4,303.24	4,239.16	67.155	CC
Dechant D30-17D - Dechant D30-17D - Dechant D30-17D	4,600.00	5,700.00	4,303.28	4,239.11	67.062	ES
Dechant D30-17D - Dechant D30-17D - Dechant D30-17D	6,500.00	6,914.05	4,491.16	4,417.58	61.036	SF
Dechant D30-20D - Dechant D30-20D - Dechant D30-20D	3,087.85	4,183.00	6,504.98	6,476.48	228.215	CC
Dechant D30-20D - Dechant D30-20D - Dechant D30-20D	3,100.00	4,183.00	6,504.99	6,476.44	227.839	ES
Dechant D30-20D - Dechant D30-20D - Dechant D30-20D	10,800.00	6,969.00	7,978.20	7,911.09	118.869	SF
Dechant D30-24D - Dechant D30-24D - Dechant D30-24D	3,268.63	4,121.77	5,633.91	5,604.06	188.713	CC
Dechant D30-24D - Dechant D30-24D - Dechant D30-24D	3,300.00	4,136.94	5,633.96	5,603.93	187.574	ES
Dechant D30-24D - Dechant D30-24D - Dechant D30-24D	10,600.00	7,222.62	6,224.82	6,156.93	91.691	SF
Dechant D30-25D - Dechant D30-25D - Dechant D30-25D	0.00	0.00	6,066.22			
Dechant D30-25D - Dechant D30-25D - Dechant D30-25D	300.00	257.68	6,066.99	6,065.41	3,846.844	ES
Dechant D30-25D - Dechant D30-25D - Dechant D30-25D	11,000.00	11,000.00	7,487.98	7,407.31	92.823	SF
Dechant D31-27D - Dechant D31-27D - Dechant D31-27D	9,515.27	7,266.88	4,436.70	4,373.98	70.730	CC, ES
Dechant D31-27D - Dechant D31-27D - Dechant D31-27D	12,600.00	7,247.47	5,403.66	5,315.99	61.635	SF
Dechant D31-28D - Dechant D31-28D - Dechant D31-28D	9,459.92	6,988.99	5,844.34	5,785.46	99.265	CC
Dechant D31-28D - Dechant D31-28D - Dechant D31-28D	9,500.00	6,989.36	5,844.48	5,785.40	98.929	ES
Dechant D31-28D - Dechant D31-28D - Dechant D31-28D	11,700.00	7,011.32	6,258.89	6,189.28	89.917	SF
Dechant D31-29D - Dechant D31-29D - Dechant D31-29D	0.00	0.00	6,087.22			
Dechant D31-29D - Dechant D31-29D - Dechant D31-29D	900.00	853.79	6,088.44	6,082.63	1,049.301	ES
Dechant D31-29D - Dechant D31-29D - Dechant D31-29D	13,200.00	13,200.00	7,910.91	7,810.23	78.573	SF
Dechant D31-77HN - Original Drilling - Original Drilling - A	1,936.96	1,938.99	6,110.65	6,100.10	579.297	CC, ES
Dechant D31-77HN - Original Drilling - Original Drilling - A	15,700.00	11,360.01	6,971.38	6,807.21	42.464	SF
Hanson D30-11 - Hanson D30-11 - Hanson D30-11 - As D	0.00	0.00	5,781.15			

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen Y05-749
Project:	Mustang	**TVD Reference:**	Well @ 4812.00ft
Reference Site:	D Section 29	**MD Reference:**	Well @ 4812.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen Y05-749	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen Y05-749	**Database:**	EDMP
Reference Design:	Plan #3	**Offset TVD Reference:**	Reference Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 30						
Hanson D30-11 - Hanson D30-11 - Hanson D30-11 - As D	2,218.44	2,231.25	5,786.33	5,770.96	376.352	ES
Hanson D30-11 - Hanson D30-11 - Hanson D30-11 - As D	10,600.00	7,112.61	7,123.43	7,061.21	114.496	SF
Hanson D30-12 - Hanson D30-12 - Hanson D30-12 - As	0.00	0.00	6,965.35			
Hanson D30-12 - Hanson D30-12 - Hanson D30-12 - As	2,200.00	2,140.75	6,969.27	6,954.31	465.984	ES
Hanson D30-12 - Hanson D30-12 - Hanson D30-12 - As	11,800.00	6,889.99	8,769.29	8,702.46	131.222	SF
Hanson D30-13 - Hanson D30-13 - Hanson D30-13 - As	2,210.54	2,221.48	7,441.71	7,426.44	487.123	CC, ES
Hanson D30-13 - Hanson D30-13 - Hanson D30-13 - As	12,900.00	7,044.00	8,654.15	8,578.67	114.662	SF
Hanson D30-14 - Hanson D30-14 - Hanson D30-14 - As	2,281.95	2,400.00	6,020.53	6,004.35	371.892	CC, ES
Hanson D30-14 - Hanson D30-14 - Hanson D30-14 - As	11,600.00	7,235.00	6,768.82	6,699.53	97.684	SF
Hettinger C Unit 1 - Hettinger C Unit 1 - Hettinger C Unit	176.78	148.78	3,560.59	3,559.85	4,773.795	CC
Hettinger C Unit 1 - Hettinger C Unit 1 - Hettinger C Unit	600.00	543.18	3,561.33	3,557.69	978.350	ES
Hettinger C Unit 1 - Hettinger C Unit 1 - Hettinger C Unit	7,000.00	6,965.90	4,557.96	4,509.18	93.431	SF
Hettinger D30-02 - Hettinger D30-02 - Hettinger D30-02 -	2,200.00	2,167.00	4,661.12	4,634.55	175.466	CC, ES
Hettinger D30-02 - Hettinger D30-02 - Hettinger D30-02 -	7,050.00	6,820.86	5,540.19	5,456.03	65.832	SF
Hettinger D30-03 - Hettinger D30-03 - Hettinger D30-03 -	0.00	0.00	5,902.76			
Hettinger D30-03 - Hettinger D30-03 - Hettinger D30-03 -	2,200.00	2,164.77	5,907.70	5,892.66	392.753	ES
Hettinger D30-03 - Hettinger D30-03 - Hettinger D30-03 -	7,150.00	6,936.22	6,849.35	6,800.39	139.879	SF
Hettinger D30-04 - Hettinger D30-04 - Hettinger D30-04 -	1,771.92	1,743.93	7,080.70	7,068.67	588.394	CC
Hettinger D30-04 - Hettinger D30-04 - Hettinger D30-04 -	2,207.02	2,196.35	7,081.24	7,066.06	466.743	ES
Hettinger D30-04 - Hettinger D30-04 - Hettinger D30-04 -	7,250.00	7,021.86	7,997.86	7,948.37	161.601	SF
Hettinger D30-05 - Hettinger D30-05 - Hettinger D30-05 -	1,301.30	1,278.38	6,855.64	6,846.90	785.042	CC
Hettinger D30-05 - Hettinger D30-05 - Hettinger D30-05 -	2,000.00	1,932.08	6,857.09	6,843.57	507.351	ES
Hettinger D30-05 - Hettinger D30-05 - Hettinger D30-05 -	11,200.00	6,866.73	8,912.69	8,849.88	141.906	SF
Hettinger D30-06 - Hettinger D30-06 - Hettinger D30-06 -	0.00	0.00	5,664.26			
Hettinger D30-06 - Hettinger D30-06 - Hettinger D30-06 -	100.00	49.96	5,664.41	5,664.20	10,000.000	ES
Hettinger D30-06 - Hettinger D30-06 - Hettinger D30-06 -	9,600.00	6,935.71	7,113.45	7,057.23	126.530	SF
Hettinger D30-08 - Hettinger D30-08 - Hettinger D30-08 -	692.11	668.11	3,212.33	3,207.92	728.158	CC
Hettinger D30-08 - Hettinger D30-08 - Hettinger D30-08 -	1,600.00	1,554.49	3,214.83	3,204.08	298.933	ES
Hettinger D30-08 - Hettinger D30-08 - Hettinger D30-08 -	7,200.00	6,864.21	3,983.29	3,934.41	81.483	SF
Leslie E Hanson Gas Unit 1 - Leslie E Hanson Gas Unit 1	2,200.00	2,185.00	6,753.85	6,727.13	252.752	CC, ES
Leslie E Hanson Gas Unit 1 - Leslie E Hanson Gas Unit 1	11,000.00	6,907.00	7,696.69	7,595.32	75.928	SF
McWilliams D29-32 - McWilliams D29-32 - McWilliams D	2,229.37	2,232.90	2,539.22	2,523.82	164.915	CC, ES
McWilliams D29-32 - McWilliams D29-32 - McWilliams D	7,300.00	6,961.09	3,247.96	3,198.36	65.488	SF
McWilliams D30-07 - McWilliams D30-07 - McWilliams D	2,200.00	2,175.00	4,363.07	4,336.44	163.816	CC, ES
McWilliams D30-07 - McWilliams D30-07 - McWilliams D	7,200.00	6,879.81	5,188.47	5,103.32	60.938	SF
McWilliams D30-18 - McWilliams D30-18 - McWilliams D	0.00	0.00	5,122.94			
McWilliams D30-18 - McWilliams D30-18 - McWilliams D	800.00	738.09	5,124.69	5,119.65	1,017.179	ES
McWilliams D30-18 - McWilliams D30-18 - McWilliams D	7,250.00	7,011.78	5,957.73	5,908.23	120.348	SF
McWilliams D30-19 - McWilliams D30-19 - McWilliams D	1,870.46	1,844.57	6,230.76	6,218.01	488.822	CC
McWilliams D30-19 - McWilliams D30-19 - McWilliams D	2,000.00	1,943.83	6,231.08	6,217.52	459.631	ES
McWilliams D30-19 - McWilliams D30-19 - McWilliams D	9,000.00	6,974.55	7,712.36	7,656.71	138.597	SF
McWilliams D30-21 - McWilliams D30-21 - McWilliams D	1,781.01	1,763.05	4,770.14	4,758.00	393.107	CC
McWilliams D30-21 - McWilliams D30-21 - McWilliams D	2,209.92	2,220.69	4,770.42	4,755.15	312.450	ES
McWilliams D30-21 - McWilliams D30-21 - McWilliams D	9,400.00	7,019.86	5,824.50	5,768.18	103.411	SF
McWilliams D30-22 - McWilliams D30-22 - McWilliams D	2,146.70	2,124.79	3,889.74	3,875.03	264.448	CC
McWilliams D30-22 - McWilliams D30-22 - McWilliams D	2,200.00	2,169.80	3,889.79	3,874.74	258.337	ES
McWilliams D30-22 - McWilliams D30-22 - McWilliams D	8,000.00	6,940.07	4,705.00	4,653.99	92.246	SF

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen Y05-749
Project:	Mustang	**TVD Reference:**	Well @ 4812.00ft
Reference Site:	D Section 29	**MD Reference:**	Well @ 4812.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen Y05-749	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen Y05-749	**Database:**	EDMP
Reference Design:	Plan #3	**Offset TVD Reference:**	Reference Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 31						
Dechant 1-31A (PR) - Wellbore #1 - Gyro Surveys	13,942.86	7,278.19	7,190.92	7,099.53	78.684	CC
Dechant 1-31A (PR) - Wellbore #1 - Gyro Surveys	14,000.00	7,279.26	7,191.14	7,099.35	78.340	ES
Dechant 1-31A (PR) - Wellbore #1 - Gyro Surveys	16,200.00	7,320.44	7,536.72	7,432.37	72.226	SF
Dechant D 31-22D (PR) - Wellbore #1 - Gyro Surveys	12,213.42	7,102.47	4,587.28	4,505.75	56.264	CC, ES
Dechant D 31-22D (PR) - Wellbore #1 - Gyro Surveys	13,100.00	7,106.47	4,672.17	4,586.98	54.847	SF
Dechant D31-18D (PR) - Wellbore #1 - As Drilled	10,985.19	7,438.08	5,874.23	5,789.87	69.638	CC
Dechant D31-18D (PR) - Wellbore #1 - As Drilled	11,000.00	7,438.59	5,874.25	5,789.83	69.582	ES
Dechant D31-18D (PR) - Wellbore #1 - As Drilled	12,200.00	7,477.68	5,998.40	5,909.33	67.347	SF
Dechant D31-21D(PR) - Wellbore #1 - As Drilled	12,135.71	7,057.99	5,617.86	5,538.66	70.933	CC
Dechant D31-21D(PR) - Wellbore #1 - As Drilled	12,200.00	7,058.88	5,618.23	5,538.65	70.598	ES
Dechant D31-21D(PR) - Wellbore #1 - As Drilled	13,600.00	7,077.61	5,805.52	5,719.01	67.112	SF
Dechant D31-24D (PR) - Wellbore #1 - Gyro Surveys	13,476.28	6,783.81	5,682.87	5,595.48	65.025	CC
Dechant D31-24D (PR) - Wellbore #1 - Gyro Surveys	13,500.00	6,784.81	5,682.92	5,595.38	64.914	ES
Dechant D31-24D (PR) - Wellbore #1 - Gyro Surveys	19,300.00	19,300.00	8,134.67	7,994.52	58.042	SF
Dechant D31-31D (SI) - Dechant D31-31D Gyros - As-Dr	11,077.54	7,000.00	8,154.94	8,072.57	99.008	CC
Dechant D31-31D (SI) - Dechant D31-31D Gyros - As-Dr	11,100.00	7,000.00	8,154.97	8,072.48	98.863	ES
Dechant D31-31D (SI) - Dechant D31-31D Gyros - As-Dr	13,700.00	7,000.00	8,566.23	8,471.92	90.826	SF
Dechant D31-31D (SI) - Dechant D31-31D OH - As-Drille	11,077.48	7,068.36	8,154.64	8,072.18	98.891	CC
Dechant D31-31D (SI) - Dechant D31-31D OH - As-Drille	11,100.00	7,068.40	8,154.68	8,072.09	98.745	ES
Dechant D31-31D (SI) - Dechant D31-31D OH - As-Drille	13,700.00	7,074.23	8,565.97	8,471.54	90.715	SF
Dechant State D31-32 (SI) - Wellbore #1 - As-Drilled	12,074.46	6,919.48	7,841.67	7,765.73	103.256	CC
Dechant State D31-32 (SI) - Wellbore #1 - As-Drilled	12,100.00	6,919.62	7,841.72	7,765.60	103.025	ES
Dechant State D31-32 (SI) - Wellbore #1 - As-Drilled	15,200.00	6,939.00	8,441.58	8,348.30	90.492	SF
Dechant Y 06-27D (PR) - Wellbore #1 - As Drilled	14,830.34	7,125.39	4,463.39	4,362.58	44.274	CC, ES
Dechant Y 06-27D (PR) - Wellbore #1 - As Drilled	15,500.00	7,139.96	4,513.33	4,409.51	43.476	SF
Dechant Y 06-28D (PR) - Wellbore #1 - As Drilled	14,884.22	7,028.22	5,674.62	5,573.79	56.280	CC
Dechant Y 06-28D (PR) - Wellbore #1 - As Drilled	14,900.00	7,029.14	5,674.64	5,573.69	56.212	ES
Dechant Y 06-28D (PR) - Wellbore #1 - As Drilled	19,100.00	19,100.00	7,066.41	6,913.91	46.336	SF
Riva Blue 31-15 (PR) - Wellbore #1 - Gyro Surveys	13,943.58	7,000.36	5,099.49	5,009.56	56.704	CC
Riva Blue 31-15 (PR) - Wellbore #1 - Gyro Surveys	14,000.00	7,000.35	5,099.80	5,009.49	56.471	ES
Riva Blue 31-15 (PR) - Wellbore #1 - Gyro Surveys	15,100.00	7,000.20	5,228.97	5,132.76	54.350	SF
Riva Blue 31-16 (PR) - Wellbore #1 - Gyro Surveys	14,180.01	6,960.58	4,064.44	3,972.77	44.336	CC
Riva Blue 31-16 (PR) - Wellbore #1 - Gyro Surveys	14,200.00	6,960.67	4,064.49	3,972.69	44.274	ES
Riva Blue 31-16 (PR) - Wellbore #1 - Gyro Surveys	14,900.00	6,963.90	4,127.72	4,032.27	43.247	SF
Riva Blue 31-9 (PR) - Wellbore #1 - Gyro Surveys	12,929.56	7,003.75	4,010.56	3,928.11	48.643	CC, ES
Riva Blue 31-9 (PR) - Wellbore #1 - Gyro Surveys	13,700.00	7,014.39	4,083.88	3,997.39	47.218	SF
Riva Blue D 31-04J (PR) - Wellbore #1 - Gyro Surveys	13,264.16	7,038.64	4,785.71	4,700.42	56.105	CC
Riva Blue D 31-04J (PR) - Wellbore #1 - Gyro Surveys	13,300.00	7,040.62	4,785.85	4,700.30	55.945	ES
Riva Blue D 31-04J (PR) - Wellbore #1 - Gyro Surveys	14,400.00	7,101.45	4,918.26	4,826.52	53.614	SF
Riva Blue D 31-11 (PR) - Wellbore #1 - Gyro Surveys	12,745.53	6,985.19	6,113.05	6,030.31	73.882	CC
Riva Blue D 31-11 (PR) - Wellbore #1 - Gyro Surveys	12,800.00	6,984.36	6,113.30	6,030.20	73.567	ES
Riva Blue D 31-11 (PR) - Wellbore #1 - Gyro Surveys	14,500.00	6,958.33	6,359.79	6,267.48	68.901	SF
Riva Blue D 31-12 (SI) - Wellbore #1 - Gyro Surveys	12,874.17	6,948.32	7,745.57	7,663.79	94.705	CC
Riva Blue D 31-12 (SI) - Wellbore #1 - Gyro Surveys	12,900.00	6,948.53	7,745.62	7,663.65	94.500	ES
Riva Blue D 31-12 (SI) - Wellbore #1 - Gyro Surveys	15,700.00	6,972.99	8,244.89	8,147.14	84.348	SF
Riva Blue D31-14 (PR) - Wellbore #1 - Gyro Surveys	14,545.73	6,977.67	6,287.35	6,192.73	66.452	CC
Riva Blue D31-14 (PR) - Wellbore #1 - Gyro Surveys	14,600.00	6,976.69	6,287.58	6,192.60	66.195	ES
Riva Blue D31-14 (PR) - Wellbore #1 - Gyro Surveys	16,200.00	6,947.29	6,501.26	6,397.52	62.669	SF
Riva D 31-10 (PR) - Wellbore #1 - As-Drilled	12,796.46	6,829.33	5,316.82	5,236.13	65.886	CC
Riva D 31-10 (PR) - Wellbore #1 - As-Drilled	12,800.00	6,829.46	5,316.82	5,236.10	65.866	ES
Riva D 31-10 (PR) - Wellbore #1 - As-Drilled	14,200.00	6,933.29	5,498.79	5,410.11	62.007	SF
Riva Red D 31-2J (PA) - Wellbore #1 - Gyro Surveys	11,017.75	7,019.51	7,133.37	7,064.58	103.704	CC
Riva Red D 31-2J (PA) - Wellbore #1 - Gyro Surveys	11,100.00	7,020.07	7,133.84	7,064.54	102.938	ES

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

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen Y05-749
Project:	Mustang	**TVD Reference:**	Well @ 4812.00ft
Reference Site:	D Section 29	**MD Reference:**	Well @ 4812.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen Y05-749	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen Y05-749	**Database:**	EDMP
Reference Design:	Plan #3	**Offset TVD Reference:**	Reference Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 31						
Riva Red D 31-2J (PA) - Wellbore #1 - Gyro Surveys	13,900.00	7,038.88	7,693.61	7,609.33	91.279	SF
Riva Red D 31-3 (PA) - Wellbore #1 - Gyro Surveys	9,987.76	6,730.97	6,258.45	6,197.61	102.871	CC
Riva Red D 31-3 (PA) - Wellbore #1 - Gyro Surveys	10,000.00	6,731.25	6,258.46	6,197.55	102.755	ES
Riva Red D 31-3 (PA) - Wellbore #1 - Gyro Surveys	16,500.00	16,500.00	9,030.91	8,914.02	77.262	SF
Riva Red D 31-6 (PA) - Wellbore #1 - No Surveys	11,731.57	6,918.00	6,249.00	5,924.95	19.284	CC
Riva Red D 31-6 (PA) - Wellbore #1 - No Surveys	11,800.00	6,918.00	6,249.37	5,924.89	19.259	ES
Riva Red D 31-6 (PA) - Wellbore #1 - No Surveys	12,400.00	6,918.00	6,284.65	5,956.48	19.151	SF
Riva Red D31-06X (SI) - Wellbore #1 - Gyro Surveys	11,527.07	7,187.79	6,337.60	6,265.10	87.418	CC
Riva Red D31-06X (SI) - Wellbore #1 - Gyro Surveys	11,600.00	7,190.07	6,338.02	6,265.05	86.862	ES
Riva Red D31-06X (SI) - Wellbore #1 - Gyro Surveys	13,700.00	7,225.00	6,699.48	6,615.21	79.495	SF
Riva White D 31-1 (PR) - Wellbore #1 - Gyro Surveys	10,252.66	6,956.96	3,867.06	3,803.59	60.927	CC, ES
Riva White D 31-1 (PR) - Wellbore #1 - Gyro Surveys	11,200.00	6,942.36	3,981.38	3,913.52	58.669	SF
Riva White D 31-7 (PR) - Wellbore #1 - Gyro Surveys	11,508.08	6,926.72	4,972.02	4,900.36	69.382	CC, ES
Riva White D 31-7 (PR) - Wellbore #1 - Gyro Surveys	12,900.00	6,960.33	5,163.07	5,084.18	65.447	SF
Riva White D 31-8 (PA) - Wellbore #1 - Gyro Surveys	11,691.71	6,737.89	3,936.17	3,864.02	54.558	CC
Riva White D 31-8 (PA) - Wellbore #1 - Gyro Surveys	11,700.00	6,738.29	3,936.18	3,863.98	54.519	ES
Riva White D 31-8 (PA) - Wellbore #1 - Gyro Surveys	12,600.00	6,780.58	4,039.36	3,962.52	52.563	SF
River Red D 31-4 (PA) - Wellbore #1 - Gyro Surveys	1,775.89	1,766.93	7,963.36	7,951.23	656.528	CC
River Red D 31-4 (PA) - Wellbore #1 - Gyro Surveys	2,000.00	1,951.02	7,963.85	7,950.27	586.629	ES
River Red D 31-4 (PA) - Wellbore #1 - Gyro Surveys	12,800.00	6,167.41	8,494.66	8,379.81	73.965	SF
UPRR 53 Pan Am UT R 1 (PA) - Wellbore #1 - No Survey	10,947.45	6,911.00	4,467.59	4,149.28	14.036	CC, ES
UPRR 53 Pan Am UT R 1 (PA) - Wellbore #1 - No Survey	11,300.00	6,911.00	4,481.48	4,161.18	13.991	SF

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen Y05-749
Project:	Mustang	**TVD Reference:**	Well @ 4812.00ft
Reference Site:	D Section 29	**MD Reference:**	Well @ 4812.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen Y05-749	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen Y05-749	**Database:**	EDMP
Reference Design:	Plan #3	**Offset TVD Reference:**	Reference Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 32						
HP D32-21D - Wellbore #1 - MWD Surveys	12,198.02	7,084.64	421.41	340.99	5.240	CC, ES, SF
HP D32-23D - Wellbore #1 - MWD Surveys	13,278.79	7,020.88	749.58	663.03	8.660	CC
HP D32-23D - Wellbore #1 - MWD Surveys	13,300.00	7,020.86	749.88	662.99	8.630	ES, SF
HP Farms D 32-22D - Wellbore #1 - MWD Surveys	12,127.13	7,246.95	856.39	768.21	9.712	CC, ES
HP Farms D 32-22D - Wellbore #1 - MWD Surveys	12,200.00	7,247.77	859.49	770.43	9.651	SF
HP Farms D32-03 - Wellbore #1 - Gyro Surveys	10,427.02	6,951.46	989.45	924.87	15.320	CC, ES, SF
HP Farms D32-18D - Wellbore #1 - MWD Surveys	10,945.79	7,143.48	382.69	312.55	5.456	CC, ES, SF
HP Farms D32-24D - Wellbore #1 - MWD Surveys	13,543.86	7,210.18	393.38	304.16	4.409	CC, ES, SF
Norris 14-32 - Wellbore #1 - Projection Survey	14,415.30	6,937.00	2,585.10	2,455.24	19.906	CC, ES
Norris 14-32 - Wellbore #1 - Projection Survey	14,600.00	6,937.00	2,591.69	2,460.89	19.814	SF
Norris A Unit 2 - Wellbore #1 - As-Drilled	13,685.78	7,067.36	1,915.55	1,826.88	21.604	CC
Norris A Unit 2 - Wellbore #1 - As-Drilled	13,700.00	7,067.15	1,915.61	1,826.86	21.587	ES
Norris A Unit 2 - Wellbore #1 - As-Drilled	13,800.00	7,065.70	1,918.95	1,829.79	21.521	SF
Norris D32-1 (SI) - Wellbore #1 - Gyro Surveys	10,315.69	6,925.56	1,493.09	1,429.35	23.425	CC, ES
Norris D32-1 (SI) - Wellbore #1 - Gyro Surveys	10,500.00	6,922.68	1,504.42	1,439.20	23.067	SF
Norris D32-10 - Wellbore #1 - Gyro Surveys	12,994.86	6,750.00	231.25	156.30	3.085	CC, ES
Norris D32-10 - Wellbore #1 - Gyro Surveys	13,000.00	6,750.00	231.31	156.30	3.084	SF
Norris D32-15 - Wellbore #1 - Gyro Surveys	14,280.80	6,800.00	198.40	111.66	2.287	CC, ES, SF
Norris D32-1J - Wellbore #1 - Gyro Surveys	11,108.74	6,956.81	1,064.43	995.29	15.396	CC, ES
Norris D32-1J - Wellbore #1 - Gyro Surveys	11,200.00	6,954.00	1,068.33	998.32	15.260	SF
Norris D32-2 - Wellbore #1 - Gyro Surveys	10,237.85	6,949.38	180.52	117.27	2.854	CC, ES, SF
Norris D32-2J - Wellbore #1 - Gyro Surveys	10,718.76	6,964.50	1,723.56	1,657.05	25.914	CC, ES
Norris D32-2J - Wellbore #1 - Gyro Surveys	10,900.00	6,967.10	1,733.06	1,665.90	25.805	SF
Norris D32-4 (P&A) - Wellbore #1 - No Surveys	10,280.49	6,920.00	2,485.60	2,307.75	13.976	CC
Norris D32-4 (P&A) - Wellbore #1 - No Surveys	10,300.00	6,920.00	2,485.68	2,307.73	13.969	ES
Norris D32-4 (P&A) - Wellbore #1 - No Surveys	10,400.00	6,920.00	2,488.48	2,310.07	13.948	SF
Norris D32-5 - Wellbore #1 - Gyro Surveys	11,624.91	6,916.74	2,457.84	2,385.33	33.897	CC, ES
Norris D32-5 - Wellbore #1 - Gyro Surveys	11,900.00	6,913.73	2,473.18	2,399.44	33.539	SF
Norris D32-6 - Wellbore #1 - Gyro Surveys	11,648.60	6,934.93	1,240.23	1,167.48	17.046	CC, ES
Norris D32-6 - Wellbore #1 - Gyro Surveys	11,700.00	6,935.06	1,241.30	1,168.39	17.025	SF
Norris D32-7 - Wellbore #1 - Gyro Surveys	11,616.42	6,911.36	104.57	32.01	1.441	Level 3, CC, ES, SF
Norris D32-9 (SI) - Wellbore #1 - Gyro Surveys	12,971.65	6,919.87	1,566.65	1,484.27	19.017	CC
Norris D32-9 (SI) - Wellbore #1 - Gyro Surveys	13,000.00	6,919.73	1,566.91	1,484.24	18.954	ES
Norris D32-9 (SI) - Wellbore #1 - Gyro Surveys	13,200.00	6,918.72	1,583.21	1,498.96	18.793	SF
Y Section 04						
HSR-Guttersen 01-04 - Original Drilling - Original Drilling	15,487.19	7,105.00	6,468.06	6,365.91	63.320	CC
HSR-Guttersen 01-04 - Original Drilling - Original Drilling	15,500.00	7,104.90	6,468.08	6,365.82	63.252	ES
HSR-Guttersen 01-04 - Original Drilling - Original Drilling	17,400.00	7,089.21	6,744.96	6,629.80	58.569	SF
HSR-Guttersen 02-04 - Original Drilling - Original Drilling	15,480.45	6,953.40	5,369.10	5,267.27	52.725	CC
HSR-Guttersen 02-04 - Original Drilling - Original Drilling	15,500.00	6,953.45	5,369.13	5,267.13	52.637	ES
HSR-Guttersen 02-04 - Original Drilling - Original Drilling	16,900.00	6,957.17	5,553.59	5,441.98	49.760	SF
HSR-Guttersen 03-04 - Original Drilling - Original Drilling	15,555.22	6,949.62	3,928.95	3,826.64	38.403	CC
HSR-Guttersen 03-04 - Original Drilling - Original Drilling	15,600.00	6,949.30	3,929.20	3,826.50	38.257	ES
HSR-Guttersen 03-04 - Original Drilling - Original Drilling	16,300.00	6,944.04	3,998.91	3,891.19	37.122	SF
HSR-Guttersen 05-04 - Original Drilling - Original Drilling	16,913.96	6,800.00	2,802.51	2,689.75	24.854	CC, ES
HSR-Guttersen 05-04 - Original Drilling - Original Drilling	17,300.00	6,800.00	2,828.97	2,713.29	24.455	SF
HSR-Guttersen 07-04 - Original Drilling - Original Drilling	16,712.59	6,964.98	5,213.85	5,102.40	46.781	CC
HSR-Guttersen 07-04 - Original Drilling - Original Drilling	16,800.00	6,964.89	5,214.58	5,102.37	46.470	ES
HSR-Guttersen 07-04 - Original Drilling - Original Drilling	17,900.00	6,963.76	5,347.35	5,227.59	44.647	SF
Melvin Y04-04 - Original Drilling - Original Drilling - As Dr	15,762.74	6,879.81	3,111.36	3,007.55	29.970	CC
Melvin Y04-04 - Original Drilling - Original Drilling - As Dr	15,800.00	6,878.97	3,111.59	3,007.43	29.874	ES
Melvin Y04-04 - Original Drilling - Original Drilling - As Dr	16,300.00	6,867.64	3,157.38	3,049.65	29.309	SF

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen Y05-749
Project:	Mustang	**TVD Reference:**	Well @ 4812.00ft
Reference Site:	D Section 29	**MD Reference:**	Well @ 4812.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen Y05-749	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen Y05-749	**Database:**	EDMP
Reference Design:	Plan #3	**Offset TVD Reference:**	Reference Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Y Section 05						
Olsen Red Y05-02D - Olsen Red Y05-02D - Olsen Red Y	15,840.99	6,961.06	1,521.06	1,416.51	14.549	CC, ES
Olsen Red Y05-02D - Olsen Red Y05-02D - Olsen Red Y	15,900.00	6,962.05	1,522.20	1,417.42	14.528	SF
Olsen Y5-05JI - Olsen Y5-05JI - Olsen Y5-05JI - As Drille	16,818.52	6,940.00	2,551.02	2,450.81	25.458	CC, ES
Olsen Y5-05JI - Olsen Y5-05JI - Olsen Y5-05JI - As Drille	17,000.00	6,940.00	2,557.46	2,456.37	25.298	SF
Perkins 32-05 - Perkins 32-05 - Perkins 32-05 - As Drilled	16,826.42	6,992.00	145.76	-3.42	0.977	Level 1, CC, ES, SF
Perkins 42-05 - Perkins 42-05 - Perkins 42-05 - As Drilled	16,832.01	7,009.00	1,450.82	1,301.46	9.713	CC, ES
Perkins 42-05 - Perkins 42-05 - Perkins 42-05 - As Drilled	16,900.00	7,009.00	1,452.42	1,302.37	9.680	SF
Perkins 43-05 - Perkins 43-05 - Perkins 43-05 - As Drilled	18,139.77	7,014.00	1,443.31	1,283.53	9.033	CC, ES
Perkins 43-05 - Perkins 43-05 - Perkins 43-05 - As Drilled	18,200.00	7,014.00	1,444.57	1,284.17	9.006	SF
Perkins USX Y05-16 - Perkins USX Y05-16 - Perkins US	19,063.94	6,991.71	905.73	775.44	6.952	CC, ES
Perkins USX Y05-16 - Perkins USX Y05-16 - Perkins US	19,100.00	6,991.92	906.44	775.75	6.936	SF
Pioneer Y17-715 - Pioneer Y17-715 - Plan #1	19,669.90	6,657.14	1,645.12	1,508.64	12.053	CC
Pioneer Y17-715 - Pioneer Y17-715 - Plan #1	19,700.00	6,659.97	1,645.40	1,508.59	12.027	ES
Pioneer Y17-715 - Pioneer Y17-715 - Plan #1	19,800.00	6,671.84	1,650.21	1,512.54	11.987	SF
Pioneer Y17-725 - Pioneer Y17-725 - Plan #1	19,791.77	6,903.96	1,050.60	912.86	7.627	CC
Pioneer Y17-725 - Pioneer Y17-725 - Plan #1	19,800.00	6,908.77	1,050.62	912.77	7.621	ES
Pioneer Y17-725 - Pioneer Y17-725 - Plan #1	19,900.00	6,976.27	1,054.01	915.06	7.585	SF
Pioneer Y17-735 - Pioneer Y17-735 - Plan #1	20,041.07	7,042.11	466.66	329.18	3.394	CC, ES, SF
Pioneer Y17-745 - Pioneer Y17-745 - Plan #1	20,041.07	7,069.46	239.51	107.48	1.814	CC, ES, SF
Pioneer Y17-755 - Pioneer Y17-755 - Plan #1	20,041.07	7,163.73	892.48	756.15	6.547	CC, ES, SF
Pioneer Y17-765 - Pioneer Y17-765 - Plan #1	20,041.07	7,164.15	1,518.48	1,380.11	10.974	CC, ES, SF
Pioneer Y17-775 - Pioneer Y17-775 - Plan #1	19,964.69	6,840.09	2,161.70	2,025.70	15.895	CC
Pioneer Y17-775 - Pioneer Y17-775 - Plan #1	20,041.07	6,905.59	2,162.11	2,025.26	15.799	ES, SF
Pioneer Y17-785 - Pioneer Y17-785 - Plan #1	19,717.97	6,591.15	2,765.57	2,632.11	20.723	CC, ES
Pioneer Y17-785 - Pioneer Y17-785 - Plan #1	20,041.07	6,732.06	2,782.48	2,646.53	20.468	SF
Y Section 06						
Gray 10-6 (PA) - Wellbore #1 - Gyro Surveys	18,129.72	6,936.84	5,048.17	4,925.61	41.189	CC, ES
Gray 10-6 (PA) - Wellbore #1 - Gyro Surveys	19,000.00	6,900.00	5,122.51	4,995.41	40.302	SF
Norris 14-6 (PA) - Wellbore #1 - Gyro Surveys	19,152.43	7,054.11	7,242.20	7,111.01	55.204	CC
Norris 14-6 (PA) - Wellbore #1 - Gyro Surveys	19,200.00	7,056.69	7,242.36	7,110.81	55.056	ES
Norris 14-6 (PA) - Wellbore #1 - Gyro Surveys	20,041.07	7,099.91	7,296.41	7,159.28	53.206	SF
Norris 41-6 (PA) - Wellbore #1 - Gyro Surveys	15,890.70	7,016.80	4,050.61	3,945.67	38.599	CC
Norris 41-6 (PA) - Wellbore #1 - Gyro Surveys	15,900.00	7,017.04	4,050.62	3,945.62	38.576	ES
Norris 41-6 (PA) - Wellbore #1 - Gyro Surveys	16,500.00	7,032.31	4,096.15	3,987.92	37.847	SF
Norris Y 6-5 (PA) - Wellbore #1 - Gyro Surveys	16,430.18	6,877.92	7,363.59	7,254.73	67.648	CC
Norris Y 6-5 (PA) - Wellbore #1 - Gyro Surveys	16,500.00	6,878.77	7,363.92	7,254.56	67.339	ES
Norris Y 6-5 (PA) - Wellbore #1 - Gyro Surveys	18,500.00	6,911.34	7,648.92	7,528.27	63.398	SF

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen Y05-749
Project:	Mustang	**TVD Reference:**	Well @ 4812.00ft
Reference Site:	D Section 29	**MD Reference:**	Well @ 4812.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen Y05-749	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen Y05-749	**Database:**	EDMP
Reference Design:	Plan #3	**Offset TVD Reference:**	Reference Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Y Section 07						
Harkis 11-7 (PA) - Wellbore #1 - Gyro Surveys	20,041.07	6,937.89	7,660.98	7,523.23	55.617	CC, ES, SF
Harkis 1-7 (PA) - Wellbore #1 - Gyro Surveys	20,041.07	7,005.69	7,402.63	7,265.87	54.129	CC, ES, SF
HP Farms Y 7-15JI (PR) - Wellbore #1 - As-Drilled	20,041.07	7,172.31	7,211.52	7,094.38	61.566	CC, ES, SF
HP Y07-09 (PR) - Wellbore #1 - As-Drilled	20,041.07	6,889.67	5,074.10	4,959.63	44.326	CC, ES, SF
HP Y07-10D (SI) - Wellbore #1 - Gyro Surveys	20,041.07	7,249.32	6,239.74	6,095.11	43.143	CC, ES, SF
Perkins 31-7 (SI) - Wellbore #1 - As-Drilled	20,041.07	7,030.60	5,122.94	4,985.07	37.158	CC, ES, SF
Perkins USX Y 7-17 (SI) - Wellbore #1 - Gyro Surveys	20,041.07	6,961.28	4,650.69	4,516.11	34.557	CC, ES, SF
Pioneer 22-7 (SI) - Wellbore #1 - As-Drilled	18,600.00	18,600.00	7,271.94	7,115.42	46.461	SF
Pioneer 22-7 (SI) - Wellbore #1 - As-Drilled	20,041.07	6,938.12	6,644.45	6,511.33	49.913	CC, ES
Pioneer D31-716 - Pioneer D31-716 - Plan #2	10,273.34	17,365.08	3,478.16	3,349.12	26.955	CC
Pioneer D31-716 - Pioneer D31-716 - Plan #2	10,300.00	17,366.51	3,478.26	3,349.01	26.910	ES
Pioneer D31-716 - Pioneer D31-716 - Plan #2	20,041.07	7,671.56	3,557.35	3,416.19	25.201	SF
Pioneer D31-725 - Pioneer D31-725 - Plan #3	10,273.36	17,186.24	4,105.17	3,976.38	31.876	CC
Pioneer D31-725 - Pioneer D31-725 - Plan #3	10,300.00	17,181.22	4,105.25	3,976.33	31.842	ES
Pioneer D31-725 - Pioneer D31-725 - Plan #3	20,041.07	7,686.51	4,175.03	4,034.94	29.802	SF
Pioneer D31-735 - Pioneer D31-735 - Plan #2	10,273.37	17,013.99	4,732.03	4,603.65	36.862	CC
Pioneer D31-735 - Pioneer D31-735 - Plan #2	10,300.00	17,010.06	4,732.10	4,603.59	36.824	ES
Pioneer D31-735 - Pioneer D31-735 - Plan #2	20,041.07	7,541.43	4,795.83	4,656.78	34.491	SF
Pioneer D31-744 - Pioneer D31-744 - Plan #3	10,273.38	17,095.39	5,358.18	5,229.63	41.683	CC
Pioneer D31-744 - Pioneer D31-744 - Plan #3	10,300.00	17,096.35	5,358.24	5,229.54	41.633	ES
Pioneer D31-744 - Pioneer D31-744 - Plan #3	20,041.07	7,581.41	5,418.86	5,279.47	38.875	SF
Pioneer D31-756 - Pioneer D31-756 - Plan #4	9,838.20	17,574.24	5,982.94	5,853.96	46.386	CC
Pioneer D31-756 - Pioneer D31-756 - Plan #4	9,900.00	17,574.24	5,983.26	5,853.92	46.261	ES
Pioneer D31-756 - Pioneer D31-756 - Plan #4	20,041.07	7,532.66	6,249.86	6,110.36	44.802	SF
Pioneer D31-775 - Pioneer D31-775 - Plan #4	20,041.07	6,000.39	6,993.17	6,859.10	52.160	CC, ES, SF
Pioneer D31-785 - Pioneer D31-785 - Plan #5	20,041.07	4,635.07	7,463.94	7,336.71	58.667	CC, ES, SF
Pioneer USX Y07-08D (PR) - Pioneer USX Y07-08D OH	20,041.07	7,162.19	4,434.22	4,301.78	33.481	CC, ES, SF
Pioneer Y07-07D (PR) - Wellbore #1 - Gyro Surveys	20,041.07	7,424.29	5,525.86	5,344.92	30.540	CC, ES, SF
Pioneer Y18-715 - Pioneer Y18-715 - Plan #1	20,041.07	7,750.00	3,518.90	3,378.13	24.997	CC, ES, SF
Pioneer Y18-725 - Pioneer Y18-725 - Plan #1	20,041.07	7,579.69	4,129.31	3,988.73	29.374	CC, ES, SF
Pioneer Y18-735 - Pioneer Y18-735 - Plan #2	20,041.07	7,400.00	4,757.50	4,618.22	34.159	CC, ES, SF
Pioneer Y18-744 - Pioneer Y18-744 - Plan #1	19,946.76	7,150.00	5,365.31	5,227.07	38.814	CC
Pioneer Y18-744 - Pioneer Y18-744 - Plan #1	20,041.07	7,206.17	5,365.76	5,226.71	38.589	ES, SF
Pioneer Y18-756 - Pioneer Y18-756 - Plan #1	19,970.15	7,069.52	5,983.29	5,845.31	43.365	CC
Pioneer Y18-756 - Pioneer Y18-756 - Plan #1	20,041.07	7,100.00	5,983.56	5,844.99	43.183	ES, SF
Pioneer Y18-766 - Pioneer Y18-766 - Plan #1	19,755.95	6,511.63	6,571.06	6,436.38	48.789	CC
Pioneer Y18-766 - Pioneer Y18-766 - Plan #1	19,800.00	6,504.65	6,571.21	6,436.24	48.688	ES
Pioneer Y18-766 - Pioneer Y18-766 - Plan #1	20,041.07	6,439.74	6,577.00	6,440.69	48.252	SF
Pioneer Y18-775 - Pioneer Y18-775 - Plan #2	20,040.95	5,556.00	7,027.09	6,894.84	53.135	CC
Pioneer Y18-775 - Pioneer Y18-775 - Plan #2	20,041.07	5,555.96	7,027.09	6,894.84	53.135	ES, SF
Pioneer Y18-785 - Pioneer Y18-785 - Plan #1	20,041.07	4,660.95	7,301.82	7,174.35	57.281	CC, ES, SF
UPRC 7-10Q (PR) - Wellbore #1 - As-Drilled	20,041.07	20,041.07	6,206.00	6,043.64	38.223	CC, ES, SF
UPRR 53 PAN AM E 1 (PA) - Wellbore #1 - Gyro Surveys	20,041.07	7,064.81	8,276.42	8,148.99	64.948	CC, ES, SF

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen Y05-749
Project:	Mustang	**TVD Reference:**	Well @ 4812.00ft
Reference Site:	D Section 29	**MD Reference:**	Well @ 4812.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen Y05-749	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen Y05-749	**Database:**	EDMP
Reference Design:	Plan #3	**Offset TVD Reference:**	Reference Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Y Section 16						
Hullabaloo State Y21-716 - Original Drilling - Original Dril	20,041.07	6,047.00	8,721.06	8,615.10	82.305	CC, ES, SF
Hullabaloo State Y21-726 - Original Drilling - Original Dril	20,041.07	6,526.00	8,248.42	8,143.75	78.806	CC, ES, SF
Hullabaloo State Y21-736 - Original Drilling - Original Dril	20,041.07	6,523.00	7,907.43	7,809.49	80.739	CC, ES, SF
Hullabaloo State Y21-746 - Original Drilling - Original Dril	20,041.07	6,710.00	7,589.97	7,492.22	77.647	CC, ES, SF
Hullabaloo State Y21-756 - Original Drilling - Original Dril	20,041.07	6,425.00	6,959.58	6,869.00	76.831	CC, ES, SF
Hullabaloo State Y21-763 - Orignal Drilling - Orignal Drilli	20,041.07	6,708.00	6,576.06	6,487.54	74.286	CC, ES, SF
Hullabaloo State Y21-769 - Original Drilling - Original Dril	20,041.07	6,417.00	6,249.25	6,166.37	75.401	CC, ES, SF
Hullabaloo State Y21-775 - Original Drilling - Original Dril	20,041.07	6,372.80	6,120.13	6,042.19	78.521	CC, ES, SF
Hullabaloo State Y21-781 - Original Drilling - Original Dril	20,041.07	6,416.00	5,911.83	5,837.21	79.220	CC, ES, SF
Hullabaloo State Y21-787 - Original Drilling - Original Dril	20,041.07	6,416.00	5,740.86	5,670.36	81.432	CC, ES, SF
State 01 - Original Drilling - Original Drilling - As Drilled	20,041.07	6,919.12	8,976.87	8,870.78	84.614	CC, ES, SF
State 21 (PA) - Original Drilling - Original Drilling - As Dril	20,041.07	7,037.00	9,844.87	9,659.30	53.053	CC, ES, SF
State Y16-05D - Wellbore #1 - Wellbore #1 - As Drilled	20,041.07	7,174.55	7,756.66	7,684.41	107.372	CC, ES, SF