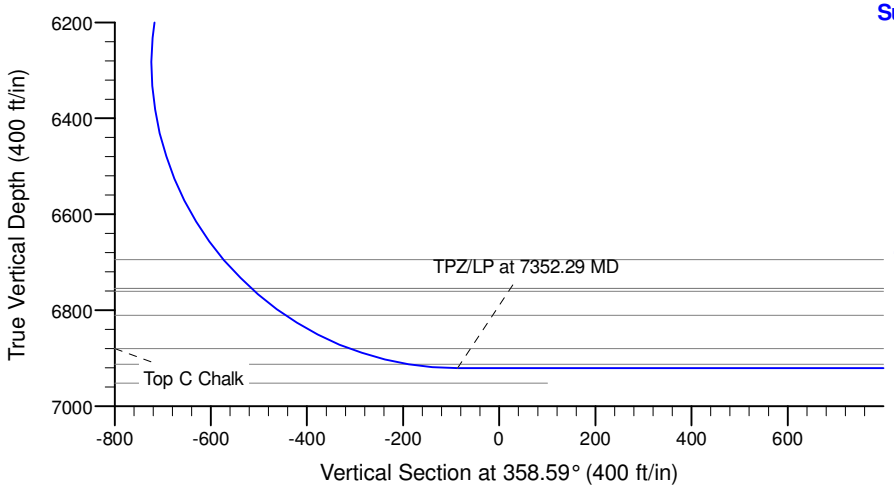
Northern Region - DJ Basin

Project: Mustang
Site: D Section 29
Well: Guttersen D29-778
Wellbore: Guttersen D29-778
Design: Prelim - Rev 1

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

SECTION DETAILS

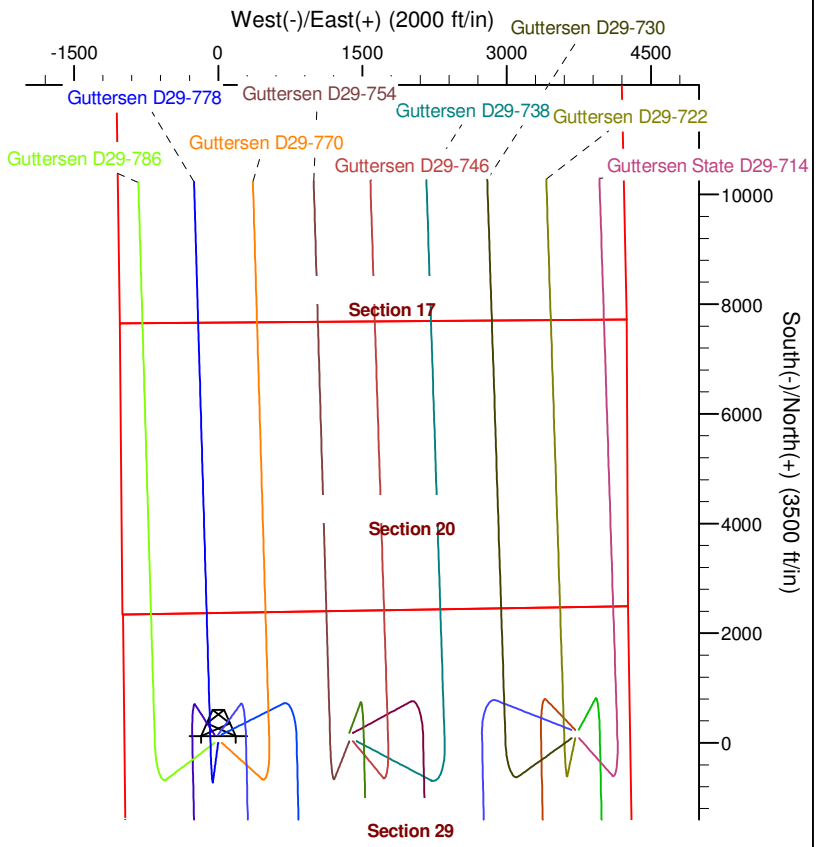
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	2200.00	0.00	0.00	2200.00	0.00	0.00	0.00	0.00	0.00	
3	2748.82	10.98	184.40	2745.46	-52.25	-4.02	2.00	184.40	-52.14	
4	6230.87	10.98	184.40	6163.82	-713.30	-54.84	0.00	0.00	-711.74	
5	7352.29	90.00	359.04	6921.00	-88.54	-78.97	9.00	174.55	-86.57	GUTTERSEN D29-778 TPZ
6	17670.79	90.00	359.04	6921.00	10228.52	-251.30	0.00	0.00	10231.61	GUTTERSEN D29-778 BHL

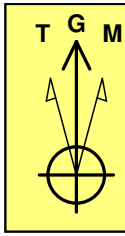


Surface: 2356' FNL,973' FWL, Sec.29

TPZ: 2440' FNL, 900' FWL, Sec.29

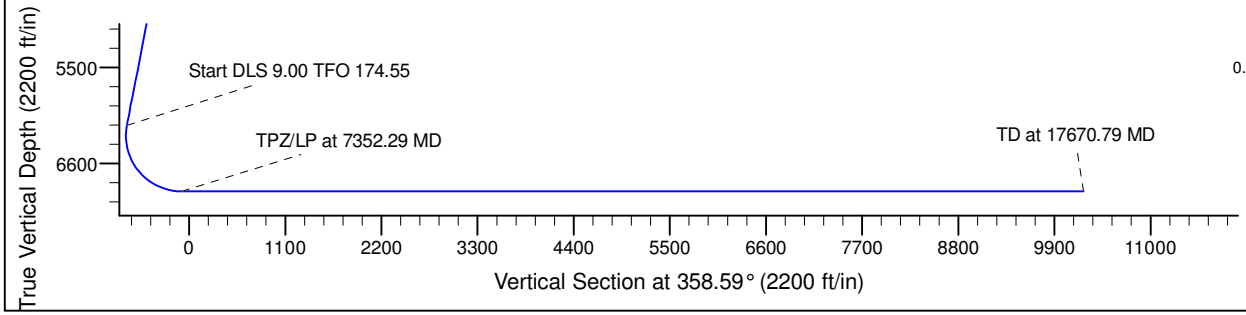
BHL: 2565' FSL, 788' FWL, Sec.17





Azimuths to Grid North
True North: -0.59°
Magnetic North: 7.49°

Magnetic Field
Strength: 52290.0snT
Dip Angle: 66.72°
Date: 8/8/2017
Model: IGRF2015



WELL DETAILS: Guttersen D29-778

	Northing	Easting	Latitude	Longitude
4780.00				
0.00	0.00	1315948.12	3256686.35	40.1970234	-104.5810945

Plan: Prelim - Rev 1 (Guttersen D29-778/Guttersen D29-778)

Created By: Colby Baxter Date: 9:28, April 09 2018

Checked: _____ Date: _____

Reviewed: _____ Date: _____

Approved: _____ Date: _____

Northern Region - DJ Basin

Mustang
D Section 29
Guttersen D29-778

Guttersen D29-778

Plan: Prelim - Rev 1

Standard Survey Report

09 April, 2018

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen D29-778
Project:	Mustang	**TVD Reference:**	Well @ 4810.00ft
Site:	D Section 29	**MD Reference:**	Well @ 4810.00ft
Well:	Guttersen D29-778	**North Reference:**	Grid
Wellbore:	Guttersen D29-778	**Survey Calculation Method:**	Minimum Curvature
Design:	Prelim - Rev 1	**Database:**	EDMP

Project	Mustang, Weld County Colorado		
Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site	D Section 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 D29-778					
Well Position	**+N/-S**	0.00 ft	**Northing:**	1,315,948.12 usft	**Latitude:**	40.1970234
	+E/-W	0.00 ft	**Easting:**	3,256,686.36 usft	**Longitude:**	-104.5810944
Position Uncertainty		0.00 ft	**Wellhead Elevation:**	ft	**Ground Level:**	4,780.00 ft

Wellbore	Guttersen D29-778				
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF2015	8/8/2017	8.08	66.72	52,289.98146425

Design	Prelim - Rev 1				
Audit Notes:					
Version:		**Phase:**	PLAN	**Tie On Depth:**	0.00
Vertical Section:	**Depth From (TVD) (ft)**	**+N/-S (ft)**	**+E/-W (ft)**	**Direction (°)**	
	0.00	0.00	0.00	358.59	

Survey Tool Program **Date** 4/9/2018

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	17,670.79	Prelim - Rev 1 (Guttersen D29-778)	2_MWD+IFR1+MS	A008Mb: IFR dec & multi-station analysis

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen D29-778
Project:	Mustang	**TVD Reference:**	Well @ 4810.00ft
Site:	D Section 29	**MD Reference:**	Well @ 4810.00ft
Well:	Guttersen D29-778	**North Reference:**	Grid
Wellbore:	Guttersen D29-778	**Survey Calculation Method:**	Minimum Curvature
Design:	Prelim - Rev 1	**Database:**	EDMP

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	2.00	184.40	2,299.98	-1.74	-0.13	-1.74	2.00	2.00	0.00
2,400.00	4.00	184.40	2,399.84	-6.96	-0.53	-6.94	2.00	2.00	0.00
2,500.00	6.00	184.40	2,499.45	-15.65	-1.20	-15.61	2.00	2.00	0.00
2,600.00	8.00	184.40	2,598.70	-27.80	-2.14	-27.74	2.00	2.00	0.00
2,700.00	10.00	184.40	2,697.47	-43.39	-3.34	-43.30	2.00	2.00	0.00
2,748.82	10.98	184.40	2,745.46	-52.25	-4.02	-52.14	2.00	2.00	0.00
2,800.00	10.98	184.40	2,795.71	-61.97	-4.76	-61.84	0.00	0.00	0.00
2,900.00	10.98	184.40	2,893.88	-80.96	-6.22	-80.78	0.00	0.00	0.00
3,000.00	10.98	184.40	2,992.05	-99.94	-7.68	-99.72	0.00	0.00	0.00
3,100.00	10.98	184.40	3,090.22	-118.92	-9.14	-118.66	0.00	0.00	0.00
3,200.00	10.98	184.40	3,188.40	-137.91	-10.60	-137.61	0.00	0.00	0.00
3,300.00	10.98	184.40	3,286.57	-156.89	-12.06	-156.55	0.00	0.00	0.00
3,400.00	10.98	184.40	3,384.74	-175.88	-13.52	-175.49	0.00	0.00	0.00
3,500.00	10.98	184.40	3,482.91	-194.86	-14.98	-194.43	0.00	0.00	0.00
3,600.00	10.98	184.40	3,581.08	-213.85	-16.44	-213.38	0.00	0.00	0.00
3,700.00	10.98	184.40	3,679.25	-232.83	-17.90	-232.32	0.00	0.00	0.00
3,800.00	10.98	184.40	3,777.42	-251.81	-19.36	-251.26	0.00	0.00	0.00
3,900.00	10.98	184.40	3,875.59	-270.80	-20.82	-270.21	0.00	0.00	0.00
4,000.00	10.98	184.40	3,973.76	-289.78	-22.28	-289.15	0.00	0.00	0.00
4,100.00	10.98	184.40	4,071.93	-308.77	-23.74	-308.09	0.00	0.00	0.00
4,200.00	10.98	184.40	4,170.10	-327.75	-25.20	-327.03	0.00	0.00	0.00
4,300.00	10.98	184.40	4,268.27	-346.74	-26.66	-345.98	0.00	0.00	0.00
4,400.00	10.98	184.40	4,366.44	-365.72	-28.12	-364.92	0.00	0.00	0.00
4,500.00	10.98	184.40	4,464.61	-384.70	-29.57	-383.86	0.00	0.00	0.00
4,600.00	10.98	184.40	4,562.78	-403.69	-31.03	-402.80	0.00	0.00	0.00
4,700.00	10.98	184.40	4,660.95	-422.67	-32.49	-421.75	0.00	0.00	0.00
4,800.00	10.98	184.40	4,759.12	-441.66	-33.95	-440.69	0.00	0.00	0.00
4,900.00	10.98	184.40	4,857.30	-460.64	-35.41	-459.63	0.00	0.00	0.00
5,000.00	10.98	184.40	4,955.47	-479.63	-36.87	-478.58	0.00	0.00	0.00
5,100.00	10.98	184.40	5,053.64	-498.61	-38.33	-497.52	0.00	0.00	0.00
5,200.00	10.98	184.40	5,151.81	-517.59	-39.79	-516.46	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen D29-778
Project:	Mustang	**TVD Reference:**	Well @ 4810.00ft
Site:	D Section 29	**MD Reference:**	Well @ 4810.00ft
Well:	Guttersen D29-778	**North Reference:**	Grid
Wellbore:	Guttersen D29-778	**Survey Calculation Method:**	Minimum Curvature
Design:	Prelim - Rev 1	**Database:**	EDMP

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,300.00	10.98	184.40	5,249.98	-536.58	-41.25	-535.40	0.00	0.00	0.00
5,400.00	10.98	184.40	5,348.15	-555.56	-42.71	-554.35	0.00	0.00	0.00
5,500.00	10.98	184.40	5,446.32	-574.55	-44.17	-573.29	0.00	0.00	0.00
5,600.00	10.98	184.40	5,544.49	-593.53	-45.63	-592.23	0.00	0.00	0.00
5,700.00	10.98	184.40	5,642.66	-612.52	-47.09	-611.17	0.00	0.00	0.00
5,800.00	10.98	184.40	5,740.83	-631.50	-48.55	-630.12	0.00	0.00	0.00
5,900.00	10.98	184.40	5,839.00	-650.48	-50.01	-649.06	0.00	0.00	0.00
6,000.00	10.98	184.40	5,937.17	-669.47	-51.47	-668.00	0.00	0.00	0.00
6,100.00	10.98	184.40	6,035.34	-688.45	-52.93	-686.95	0.00	0.00	0.00
6,200.00	10.98	184.40	6,133.51	-707.44	-54.39	-705.89	0.00	0.00	0.00
6,230.87	10.98	184.40	6,163.82	-713.30	-54.84	-711.74	0.00	0.00	0.00
6,300.00	4.82	191.44	6,232.26	-722.71	-55.92	-721.12	9.00	-8.91	10.19
6,400.00	4.42	345.50	6,332.14	-723.10	-57.72	-721.47	9.00	-0.40	154.06
6,500.00	13.33	354.66	6,430.85	-707.86	-59.76	-706.18	9.00	8.92	9.17
6,600.00	22.32	356.52	6,525.95	-677.37	-61.99	-675.64	9.00	8.98	1.85
6,700.00	31.31	357.34	6,615.11	-632.37	-64.35	-630.60	9.00	8.99	0.82
6,800.00	40.30	357.82	6,696.12	-573.98	-66.80	-572.16	9.00	9.00	0.48
6,900.00	49.30	358.15	6,767.00	-503.62	-69.25	-501.77	9.00	9.00	0.33
7,000.00	58.30	358.40	6,826.00	-423.05	-71.67	-421.16	9.00	9.00	0.25
7,100.00	67.30	358.61	6,871.67	-334.23	-73.98	-332.31	9.00	9.00	0.21
7,200.00	76.30	358.79	6,902.87	-239.35	-76.13	-237.41	9.00	9.00	0.18
7,300.00	85.29	358.96	6,918.85	-140.76	-78.06	-138.80	9.00	9.00	0.17
7,352.29	90.00	359.04	6,921.00	-88.54	-78.97	-86.57	9.00	9.00	0.16
7,400.00	90.00	359.04	6,921.00	-40.84	-79.77	-38.86	0.00	0.00	0.00
7,500.00	90.00	359.04	6,921.00	59.15	-81.44	61.13	0.00	0.00	0.00
7,600.00	90.00	359.04	6,921.00	159.14	-83.11	161.13	0.00	0.00	0.00
7,700.00	90.00	359.04	6,921.00	259.12	-84.78	261.13	0.00	0.00	0.00
7,800.00	90.00	359.04	6,921.00	359.11	-86.45	361.12	0.00	0.00	0.00
7,900.00	90.00	359.04	6,921.00	459.10	-88.12	461.12	0.00	0.00	0.00
8,000.00	90.00	359.04	6,921.00	559.08	-89.79	561.12	0.00	0.00	0.00
8,100.00	90.00	359.04	6,921.00	659.07	-91.46	661.11	0.00	0.00	0.00
8,200.00	90.00	359.04	6,921.00	759.05	-93.13	761.11	0.00	0.00	0.00
8,300.00	90.00	359.04	6,921.00	859.04	-94.80	861.11	0.00	0.00	0.00
8,400.00	90.00	359.04	6,921.00	959.03	-96.47	961.11	0.00	0.00	0.00
8,500.00	90.00	359.04	6,921.00	1,059.01	-98.14	1,061.10	0.00	0.00	0.00
8,600.00	90.00	359.04	6,921.00	1,159.00	-99.81	1,161.10	0.00	0.00	0.00
8,700.00	90.00	359.04	6,921.00	1,258.98	-101.48	1,261.10	0.00	0.00	0.00
8,800.00	90.00	359.04	6,921.00	1,358.97	-103.15	1,361.09	0.00	0.00	0.00
8,900.00	90.00	359.04	6,921.00	1,458.96	-104.82	1,461.09	0.00	0.00	0.00
9,000.00	90.00	359.04	6,921.00	1,558.94	-106.49	1,561.09	0.00	0.00	0.00
9,100.00	90.00	359.04	6,921.00	1,658.93	-108.16	1,661.08	0.00	0.00	0.00
9,200.00	90.00	359.04	6,921.00	1,758.91	-109.83	1,761.08	0.00	0.00	0.00
9,300.00	90.00	359.04	6,921.00	1,858.90	-111.50	1,861.08	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen D29-778
Project:	Mustang	**TVD Reference:**	Well @ 4810.00ft
Site:	D Section 29	**MD Reference:**	Well @ 4810.00ft
Well:	Guttersen D29-778	**North Reference:**	Grid
Wellbore:	Guttersen D29-778	**Survey Calculation Method:**	Minimum Curvature
Design:	Prelim - Rev 1	**Database:**	EDMP

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
9,400.00	90.00	359.04	6,921.00	1,958.89	-113.17	1,961.07	0.00	0.00	0.00
9,500.00	90.00	359.04	6,921.00	2,058.87	-114.84	2,061.07	0.00	0.00	0.00
9,600.00	90.00	359.04	6,921.00	2,158.86	-116.51	2,161.07	0.00	0.00	0.00
9,700.00	90.00	359.04	6,921.00	2,258.84	-118.18	2,261.07	0.00	0.00	0.00
9,800.00	90.00	359.04	6,921.00	2,358.83	-119.85	2,361.06	0.00	0.00	0.00
9,900.00	90.00	359.04	6,921.00	2,458.82	-121.52	2,461.06	0.00	0.00	0.00
10,000.00	90.00	359.04	6,921.00	2,558.80	-123.19	2,561.06	0.00	0.00	0.00
10,100.00	90.00	359.04	6,921.00	2,658.79	-124.86	2,661.05	0.00	0.00	0.00
10,200.00	90.00	359.04	6,921.00	2,758.77	-126.53	2,761.05	0.00	0.00	0.00
10,300.00	90.00	359.04	6,921.00	2,858.76	-128.20	2,861.05	0.00	0.00	0.00
10,400.00	90.00	359.04	6,921.00	2,958.75	-129.87	2,961.04	0.00	0.00	0.00
10,500.00	90.00	359.04	6,921.00	3,058.73	-131.54	3,061.04	0.00	0.00	0.00
10,600.00	90.00	359.04	6,921.00	3,158.72	-133.21	3,161.04	0.00	0.00	0.00
10,700.00	90.00	359.04	6,921.00	3,258.70	-134.88	3,261.03	0.00	0.00	0.00
10,800.00	90.00	359.04	6,921.00	3,358.69	-136.55	3,361.03	0.00	0.00	0.00
10,900.00	90.00	359.04	6,921.00	3,458.68	-138.22	3,461.03	0.00	0.00	0.00
11,000.00	90.00	359.04	6,921.00	3,558.66	-139.89	3,561.03	0.00	0.00	0.00
11,100.00	90.00	359.04	6,921.00	3,658.65	-141.56	3,661.02	0.00	0.00	0.00
11,200.00	90.00	359.04	6,921.00	3,758.64	-143.23	3,761.02	0.00	0.00	0.00
11,300.00	90.00	359.04	6,921.00	3,858.62	-144.90	3,861.02	0.00	0.00	0.00
11,400.00	90.00	359.04	6,921.00	3,958.61	-146.57	3,961.01	0.00	0.00	0.00
11,500.00	90.00	359.04	6,921.00	4,058.59	-148.24	4,061.01	0.00	0.00	0.00
11,600.00	90.00	359.04	6,921.00	4,158.58	-149.91	4,161.01	0.00	0.00	0.00
11,700.00	90.00	359.04	6,921.00	4,258.57	-151.58	4,261.00	0.00	0.00	0.00
11,800.00	90.00	359.04	6,921.00	4,358.55	-153.25	4,361.00	0.00	0.00	0.00
11,900.00	90.00	359.04	6,921.00	4,458.54	-154.92	4,461.00	0.00	0.00	0.00
12,000.00	90.00	359.04	6,921.00	4,558.52	-156.59	4,560.99	0.00	0.00	0.00
12,100.00	90.00	359.04	6,921.00	4,658.51	-158.26	4,660.99	0.00	0.00	0.00
12,200.00	90.00	359.04	6,921.00	4,758.50	-159.93	4,760.99	0.00	0.00	0.00
12,300.00	90.00	359.04	6,921.00	4,858.48	-161.60	4,860.99	0.00	0.00	0.00
12,400.00	90.00	359.04	6,921.00	4,958.47	-163.27	4,960.98	0.00	0.00	0.00
12,500.00	90.00	359.04	6,921.00	5,058.45	-164.94	5,060.98	0.00	0.00	0.00
12,600.00	90.00	359.04	6,921.00	5,158.44	-166.61	5,160.98	0.00	0.00	0.00
12,700.00	90.00	359.04	6,921.00	5,258.43	-168.28	5,260.97	0.00	0.00	0.00
12,800.00	90.00	359.04	6,921.00	5,358.41	-169.95	5,360.97	0.00	0.00	0.00
12,900.00	90.00	359.04	6,921.00	5,458.40	-171.62	5,460.97	0.00	0.00	0.00
13,000.00	90.00	359.04	6,921.00	5,558.38	-173.29	5,560.96	0.00	0.00	0.00
13,100.00	90.00	359.04	6,921.00	5,658.37	-174.96	5,660.96	0.00	0.00	0.00
13,200.00	90.00	359.04	6,921.00	5,758.36	-176.63	5,760.96	0.00	0.00	0.00
13,300.00	90.00	359.04	6,921.00	5,858.34	-178.30	5,860.95	0.00	0.00	0.00
13,400.00	90.00	359.04	6,921.00	5,958.33	-179.97	5,960.95	0.00	0.00	0.00
13,500.00	90.00	359.04	6,921.00	6,058.31	-181.64	6,060.95	0.00	0.00	0.00
13,600.00	90.00	359.04	6,921.00	6,158.30	-183.31	6,160.94	0.00	0.00	0.00

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen D29-778
Project:	Mustang	**TVD Reference:**	Well @ 4810.00ft
Site:	D Section 29	**MD Reference:**	Well @ 4810.00ft
Well:	Guttersen D29-778	**North Reference:**	Grid
Wellbore:	Guttersen D29-778	**Survey Calculation Method:**	Minimum Curvature
Design:	Prelim - Rev 1	**Database:**	EDMP

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
13,700.00	90.00	359.04	6,921.00	6,258.29	-184.98	6,260.94	0.00	0.00	0.00
13,800.00	90.00	359.04	6,921.00	6,358.27	-186.65	6,360.94	0.00	0.00	0.00
13,900.00	90.00	359.04	6,921.00	6,458.26	-188.32	6,460.94	0.00	0.00	0.00
14,000.00	90.00	359.04	6,921.00	6,558.24	-189.99	6,560.93	0.00	0.00	0.00
14,100.00	90.00	359.04	6,921.00	6,658.23	-191.66	6,660.93	0.00	0.00	0.00
14,200.00	90.00	359.04	6,921.00	6,758.22	-193.33	6,760.93	0.00	0.00	0.00
14,300.00	90.00	359.04	6,921.00	6,858.20	-195.00	6,860.92	0.00	0.00	0.00
14,400.00	90.00	359.04	6,921.00	6,958.19	-196.67	6,960.92	0.00	0.00	0.00
14,500.00	90.00	359.04	6,921.00	7,058.17	-198.34	7,060.92	0.00	0.00	0.00
14,600.00	90.00	359.04	6,921.00	7,158.16	-200.01	7,160.91	0.00	0.00	0.00
14,700.00	90.00	359.04	6,921.00	7,258.15	-201.68	7,260.91	0.00	0.00	0.00
14,800.00	90.00	359.04	6,921.00	7,358.13	-203.35	7,360.91	0.00	0.00	0.00
14,900.00	90.00	359.04	6,921.00	7,458.12	-205.02	7,460.90	0.00	0.00	0.00
15,000.00	90.00	359.04	6,921.00	7,558.11	-206.69	7,560.90	0.00	0.00	0.00
15,100.00	90.00	359.04	6,921.00	7,658.09	-208.36	7,660.90	0.00	0.00	0.00
15,200.00	90.00	359.04	6,921.00	7,758.08	-210.03	7,760.90	0.00	0.00	0.00
15,300.00	90.00	359.04	6,921.00	7,858.06	-211.70	7,860.89	0.00	0.00	0.00
15,400.00	90.00	359.04	6,921.00	7,958.05	-213.37	7,960.89	0.00	0.00	0.00
15,500.00	90.00	359.04	6,921.00	8,058.04	-215.04	8,060.89	0.00	0.00	0.00
15,600.00	90.00	359.04	6,921.00	8,158.02	-216.71	8,160.88	0.00	0.00	0.00
15,700.00	90.00	359.04	6,921.00	8,258.01	-218.38	8,260.88	0.00	0.00	0.00
15,800.00	90.00	359.04	6,921.00	8,357.99	-220.05	8,360.88	0.00	0.00	0.00
15,900.00	90.00	359.04	6,921.00	8,457.98	-221.72	8,460.87	0.00	0.00	0.00
16,000.00	90.00	359.04	6,921.00	8,557.97	-223.39	8,560.87	0.00	0.00	0.00
16,100.00	90.00	359.04	6,921.00	8,657.95	-225.06	8,660.87	0.00	0.00	0.00
16,200.00	90.00	359.04	6,921.00	8,757.94	-226.73	8,760.86	0.00	0.00	0.00
16,300.00	90.00	359.04	6,921.00	8,857.92	-228.40	8,860.86	0.00	0.00	0.00
16,400.00	90.00	359.04	6,921.00	8,957.91	-230.07	8,960.86	0.00	0.00	0.00
16,500.00	90.00	359.04	6,921.00	9,057.90	-231.74	9,060.86	0.00	0.00	0.00
16,600.00	90.00	359.04	6,921.00	9,157.88	-233.41	9,160.85	0.00	0.00	0.00
16,700.00	90.00	359.04	6,921.00	9,257.87	-235.08	9,260.85	0.00	0.00	0.00
16,800.00	90.00	359.04	6,921.00	9,357.85	-236.75	9,360.85	0.00	0.00	0.00
16,900.00	90.00	359.04	6,921.00	9,457.84	-238.42	9,460.84	0.00	0.00	0.00
17,000.00	90.00	359.04	6,921.00	9,557.83	-240.09	9,560.84	0.00	0.00	0.00
17,100.00	90.00	359.04	6,921.00	9,657.81	-241.76	9,660.84	0.00	0.00	0.00
17,200.00	90.00	359.04	6,921.00	9,757.80	-243.43	9,760.83	0.00	0.00	0.00
17,300.00	90.00	359.04	6,921.00	9,857.78	-245.10	9,860.83	0.00	0.00	0.00
17,400.00	90.00	359.04	6,921.00	9,957.77	-246.77	9,960.83	0.00	0.00	0.00
17,500.00	90.00	359.04	6,921.00	10,057.76	-248.44	10,060.82	0.00	0.00	0.00
17,600.00	90.00	359.04	6,921.00	10,157.74	-250.11	10,160.82	0.00	0.00	0.00
17,670.79	90.00	359.04	6,921.00	10,228.52	-251.30	10,231.61	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen D29-778
Project:	Mustang	**TVD Reference:**	Well @ 4810.00ft
Site:	D Section 29	**MD Reference:**	Well @ 4810.00ft
Well:	Guttersen D29-778	**North Reference:**	Grid
Wellbore:	Guttersen D29-778	**Survey Calculation Method:**	Minimum Curvature
Design:	Prelim - Rev 1	**Database:**	EDMP

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 D29-778 - plan hits target center - Point	0.00	0.00	6,921.00	-88.54	-78.97	1,315,859.59	3,256,607.38	40.1967826	-104.5813804
GUTTERSEN D29-778 I - plan hits target center - Point	0.00	0.00	6,921.00	10,228.52	-251.30	1,326,176.63	3,256,435.06	40.2251075	-104.5816148

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
585.00	585.00	Pierre			
669.00	669.00	Upper Pierre Aquifer Top			
1,567.00	1,567.00	Upper Pierre Aquifer Base			
3,803.65	3,781.00	Parkman			
4,168.32	4,139.00	Sussex			
4,958.78	4,915.00	Shannon			
6,007.97	5,945.00	Teepee Buttes			
6,798.53	6,695.00	Sharon Springs			
6,881.89	6,755.00	Top A Chalk			
6,881.89	6,755.00	Top A Marl			
6,890.87	6,761.00	Top B Chalk			
6,972.41	6,811.00	Top B Marl			
7,122.55	6,880.00	Top C Chalk			
7,251.25	6,913.00	Top C Marl			

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
2200	2200	0	0	Start Build 2.00
6231	6164	-52	-4	Start DLS 9.00 TFO 174.55
7352	6921	-713	-55	TPZ/LP at 7352.29 MD
17,671	6921	-89	-79	TD at 17670.79 MD

Checked By: _____ Approved By: _____ Date: _____

Northern Region - DJ Basin

Mustang
D Section 29
Guttersen D29-778

Guttersen D29-778
Prelim - Rev 1

Anticollision Summary Report

09 April, 2018

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen D29-778
Project:	Mustang	**TVD Reference:**	Well @ 4810.00ft
Reference Site:	D Section 29	**MD Reference:**	Well @ 4810.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen D29-778	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen D29-778	**Database:**	EDMP
Reference Design:	Prelim - Rev 1	**Offset TVD Reference:**	Offset Datum

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

Survey Tool Program **Date** 4/9/2018

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	17,670.79	Prelim - Rev 1 (Guttersen D29-778)	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						
Diggin State D 16-07 (SI) - Wellbore #1 - No Surveys	17,670.79	6,889.00	7,696.62	7,467.69	33.619	CC, ES, SF
Diggin State D 16-19J (PR) - Wellbore #1 - No Surveys	17,670.79	6,848.00	5,925.70	5,699.48	26.194	CC, ES, SF
Guttersen ST D 15-32 (SI) - Wellbore #1 - Gyro Surveys	17,638.33	6,883.42	9,641.03	9,526.00	83.815	CC
Guttersen ST D 15-32 (SI) - Wellbore #1 - Gyro Surveys	17,670.79	6,883.30	9,641.08	9,525.80	83.629	ES, SF
Guttersen ST D 16-21 (SI) - Wellbore #1 - Gyro Surveys	17,645.01	6,845.49	7,162.10	7,047.14	62.302	CC
Guttersen ST D 16-21 (SI) - Wellbore #1 - Gyro Surveys	17,670.79	6,845.52	7,162.14	7,046.98	62.192	ES, SF
Guttersen ST D 16-22D (SI) - Wellbore #1 - MWD Surve	17,670.79	7,030.54	8,350.58	8,233.12	71.093	CC, ES, SF
Guttersen ST D 16-33 (SI) - Wellbore #1 - No Surveys	16,583.59	6,863.00	4,483.33	4,263.24	20.370	CC
Guttersen ST D 16-33 (SI) - Wellbore #1 - No Surveys	16,600.00	6,863.00	4,483.36	4,263.14	20.358	ES
Guttersen ST D 16-33 (SI) - Wellbore #1 - No Surveys	17,100.00	6,863.00	4,512.98	4,289.34	20.180	SF
Guttersen State D 15-31 (PR) - Wellbore #1 - Gyro Surve	17,670.79	6,897.48	9,732.44	9,618.48	85.401	CC, ES, SF
Guttersen State D 16-18 (SI) - Wellbore #1 - No Surveys	17,670.79	6,863.00	7,254.49	7,027.56	31.967	CC, ES, SF
Guttersen State D 16-20 (SI) - Wellbore #1 - Gyro Survey	17,670.79	6,900.00	5,784.01	5,668.64	50.135	CC, ES, SF
Guttersen State D 16-27 (PR) - Wellbore #1 - No Survey	17,670.79	6,859.00	8,768.46	8,543.20	38.926	CC, ES, SF
Guttersen State D 16-31 (PR) - Wellbore #1 - No Survey	17,670.79	6,859.00	4,884.29	4,659.13	21.693	CC, ES, SF
Guttersen State D 16-32D (SI) - Wellbore #1 - MWD Sur	17,670.79	7,064.17	4,572.78	4,449.73	37.161	CC, ES, SF
Guttersen State D16-63-1HN - Original Drilling - Original	16,093.59	11,243.02	4,987.33	4,880.84	46.835	CC
Guttersen State D16-63-1HN - Original Drilling - Original	16,100.00	11,243.02	4,987.33	4,880.79	46.810	ES
Guttersen State D16-63-1HN - Original Drilling - Original	17,670.79	11,243.02	5,230.78	5,098.36	39.502	SF
Guttersen State D16-65-1HN - Original Drilling - Original	17,404.36	11,090.02	5,154.71	5,038.23	44.255	CC, ES
Guttersen State D16-65-1HN - Original Drilling - Original	17,670.79	11,090.02	5,161.59	5,042.38	43.296	SF
Spike ST GWS D 16-01 (SI) - Wellbore #1 - Gyro Survey	17,670.79	6,869.65	9,392.70	9,279.75	83.154	CC, ES, SF
Spike ST GWS D 16-02 (P&A) - Wellbore #1 - Gyro Surv	17,670.79	6,876.53	7,932.78	7,802.79	61.026	CC, ES, SF
Spike ST GWS D 16-03 (PR) - Wellbore #1 - No Surveys	17,670.79	6,857.00	6,788.35	6,563.69	30.217	CC, ES, SF
Spike ST GWS D 16-04 (SI) - Wellbore #1 - No Surveys	17,670.79	6,852.00	5,560.65	5,338.13	24.989	CC, ES, SF
Spike ST GWS D 16-05 (PR) - Wellbore #1 - Gyro Surve	17,670.79	6,879.25	5,144.05	5,029.87	45.052	CC, ES, SF
Spike ST GWS D 16-06 (SI) - Wellbore #1 - No Surveys	17,670.79	6,865.00	6,497.91	6,269.73	28.477	CC, ES, SF
Spike ST GWS D 16-08 (PR) - Wellbore #1 - Gyro Surve	17,670.79	6,940.11	9,297.85	9,182.99	80.947	CC, ES, SF
Spike ST GWS D 16-12 (PA) - Wellbore #1 - Gyro Surve	17,286.26	6,875.52	4,978.70	4,866.47	44.365	CC
Spike ST GWS D 16-12 (PA) - Wellbore #1 - Gyro Surve	17,300.00	6,875.41	4,978.71	4,866.38	44.322	ES
Spike ST GWS D 16-12 (PA) - Wellbore #1 - Gyro Surve	17,670.79	6,872.39	4,993.52	4,878.52	43.422	SF
Spike State D16-99HZ - Original Drilling - Original Drilling	16,577.67	11,150.02	5,056.38	4,945.85	45.746	CC
Spike State D16-99HZ - Original Drilling - Original Drilling	16,600.00	11,150.02	5,056.43	4,945.70	45.664	ES
Spike State D16-99HZ - Original Drilling - Original Drilling	17,670.79	11,150.02	5,173.19	5,046.46	40.819	SF
Spike State GWS D 16-7J (PR) - Wellbore #1 - No Surve	17,670.79	6,882.00	8,555.79	8,327.94	37.550	CC, ES, SF

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen D29-778
Project:	Mustang	**TVD Reference:**	Well @ 4810.00ft
Reference Site:	D Section 29	**MD Reference:**	Well @ 4810.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen D29-778	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen D29-778	**Database:**	EDMP
Reference Design:	Prelim - Rev 1	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 17						
Butterball D19-27D - Wellbore #1 - Gyro Surveys	15,254.86	7,123.90	2,114.95	2,016.15	21.406	CC, ES
Butterball D19-27D - Wellbore #1 - Gyro Surveys	15,500.00	7,119.16	2,129.11	2,029.16	21.303	SF
Guttersen State D16-33 (SI) - Wellbore #1 - No Surveys	16,583.59	6,863.00	4,483.33	4,340.61	31.412	CC
Guttersen State D16-33 (SI) - Wellbore #1 - No Surveys	16,600.00	6,863.00	4,483.36	4,340.51	31.384	ES
Guttersen State D16-33 (SI) - Wellbore #1 - No Surveys	17,300.00	6,863.00	4,540.21	4,392.85	30.811	SF
HSR LDS 6-17 (SI) - Wellbore #1 - No Surveys	17,670.79	6,861.00	1,256.88	1,121.62	9.293	CC, ES, SF
HSR LDS B5-17 (SI) - Wellbore #1 - No Surveys	17,670.79	6,862.00	917.33	827.67	10.231	CC, ES, SF
HSR Mike Gutteresen 16-17X (SI) - Wellbore #1 - No Su	15,671.36	6,868.00	3,781.80	3,646.18	27.885	CC
HSR Mike Gutteresen 16-17X (SI) - Wellbore #1 - No Su	15,700.00	6,868.00	3,781.91	3,646.07	27.840	ES
HSR Mike Gutteresen 16-17X (SI) - Wellbore #1 - No Su	16,200.00	6,868.00	3,818.57	3,679.52	27.461	SF
HSR Weeks 10-17 - Wellbore #1 - Gyro Surveys	17,076.91	6,700.00	2,478.96	2,369.11	22.566	CC
HSR Weeks 10-17 - Wellbore #1 - Gyro Surveys	17,100.00	6,700.00	2,479.07	2,369.03	22.530	ES
HSR Weeks 10-17 - Wellbore #1 - Gyro Surveys	17,300.00	6,700.00	2,488.98	2,377.66	22.360	SF
HSR Weeks 15-17 (SI) - Wellbore #1 - No Surveys	15,776.27	6,866.00	2,494.24	2,357.82	18.283	CC
HSR Weeks 15-17 (SI) - Wellbore #1 - No Surveys	15,800.00	6,866.00	2,494.36	2,357.75	18.260	ES
HSR Weeks 15-17 (SI) - Wellbore #1 - No Surveys	16,000.00	6,866.00	2,504.26	2,366.38	18.162	SF
HSR Weeks 9-17 - Wellbore #1 - Gyro Surveys	17,129.79	6,873.42	3,594.20	3,483.86	32.576	CC, ES
HSR Weeks 9-17 - Wellbore #1 - Gyro Surveys	17,670.79	6,873.13	3,634.68	3,521.01	31.976	SF
HSR-LDS 3-17 (SI) - Wellbore #1 - No Surveys	17,670.79	6,856.00	2,314.07	2,206.26	21.464	CC, ES, SF
HSR-LDS 4-17 (SI) - Wellbore #1 - No Surveys	17,670.79	6,858.00	1,909.66	1,821.04	21.549	CC, ES, SF
LDS 18-17 (SI) - Wellbore #1 - No Surveys	17,670.79	6,861.00	1,568.22	1,460.47	14.555	CC, ES, SF
LDS D17-13 - Wellbore #1 - Gyro Surveys	15,464.85	6,892.60	446.96	348.98	4.561	CC, ES, SF
LDS D17-18 (SI) - Wellbore #1 - No Surveys	17,670.79	6,859.00	2,472.98	2,337.26	18.222	CC, ES, SF
LDS D17-20 - Wellbore #1 - No Surveys	17,599.10	6,867.00	537.01	386.23	3.561	CC
LDS D17-20 - Wellbore #1 - No Surveys	17,600.00	6,867.00	537.01	386.22	3.561	ES, SF
LDS D17-21 - Wellbore #1 - No Surveys	17,540.89	6,863.00	1,681.51	1,531.23	11.189	CC, ES
LDS D17-21 - Wellbore #1 - No Surveys	17,670.79	6,863.00	1,686.52	1,535.46	11.165	SF
LDS D17-22 (SI) - Wellbore #1 - No Surveys	17,670.79	6,858.00	3,103.26	2,952.22	20.546	CC, ES, SF
LDS D17-24D - Wellbore #1 - LDS D17-24D - As Drilled	16,503.63	6,997.37	1,763.21	1,651.18	15.739	CC, ES
LDS D17-24D - Wellbore #1 - LDS D17-24D - As Drilled	16,600.00	6,996.59	1,765.84	1,653.22	15.680	SF
LDS D17-25D - Wellbore #1 - LDS D17-25D - As Drilled	16,769.56	7,106.96	519.88	406.76	4.596	CC, ES
LDS D17-25D - Wellbore #1 - LDS D17-25D - As Drilled	16,800.00	7,106.87	520.77	407.01	4.578	SF
LDS D17-31D - LDS D17-31D - LDS D17-31D - As Drille	17,670.79	7,094.54	1,631.55	1,552.85	20.732	CC, ES, SF
LDS D17-32D - LDS D17-32D - LDS D17-32D - As Drille	17,670.79	6,912.96	902.39	791.99	8.174	CC, ES, SF
LDS D17-33 - LDS D17-33 - LDS D17-33 - As Drilled	16,533.18	6,921.43	630.54	524.11	5.924	CC, ES, SF
LDS D17-7 - Wellbore #1 - No Surveys	17,670.79	6,857.00	2,500.65	2,353.19	16.957	CC, ES, SF
LDS D20-29D - Wellbore #1 - LDS D20-29D - As Drilled	14,945.03	7,051.38	491.66	396.33	5.158	CC, ES, SF
LDS D20-30D - Wellbore #1 - LDS D20-30D - As Drilled	14,988.05	6,947.96	944.84	850.15	9.978	CC, ES
LDS D20-30D - Wellbore #1 - LDS D20-30D - As Drilled	15,000.00	6,947.87	944.91	850.16	9.972	SF
LDS RED D17-11 (SI) - Wellbore #1 - No Surveys	17,093.85	6,864.00	1,341.66	1,194.91	9.142	CC
LDS RED D17-11 (SI) - Wellbore #1 - No Surveys	17,100.00	6,864.00	1,341.68	1,194.87	9.139	ES
LDS RED D17-11 (SI) - Wellbore #1 - No Surveys	17,200.00	6,864.00	1,345.86	1,198.52	9.134	SF
LDS Red D17-12 - Wellbore #1 - No Surveys	17,296.66	6,867.00	312.67	164.28	2.107	CC
LDS Red D17-12 - Wellbore #1 - No Surveys	17,300.00	6,867.00	312.69	164.27	2.107	ES, SF
LDS Red D17-14X (SI) - Wellbore #1 - No Surveys	15,919.54	6,868.00	1,372.81	1,235.26	9.980	CC, ES
LDS Red D17-14X (SI) - Wellbore #1 - No Surveys	16,000.00	6,868.00	1,375.17	1,237.11	9.961	SF
LDS Red D17-3J - Wellbore #1 - Gyro Surveys	16,143.34	6,876.51	114.81	11.56	1.112	Level 2, CC, ES, SF
LDS White D17-1 - Wellbore #1 - Gyro Surveys	17,670.79	6,811.89	4,338.68	4,233.66	41.313	CC, ES, SF
LDS White D17-2 - Wellbore #1 - No Surveys	17,670.79	6,854.00	3,253.81	3,121.19	24.535	CC, ES, SF
LDS White D17-8 - Wellbore #1 - No Surveys	17,670.79	6,852.00	3,799.89	3,650.15	25.378	CC, ES, SF
Thomson D20-31D - Wellbore #1 - Gyro Surveys	13,675.07	7,159.40	982.01	882.74	9.893	CC, ES, SF
Weeks 20-17 (SI) - Wellbore #1 - Gyro Surveys	16,341.12	6,862.41	3,005.54	2,900.76	28.686	CC, ES
Weeks 20-17 (SI) - Wellbore #1 - Gyro Surveys	16,700.00	6,861.29	3,026.89	2,919.85	28.278	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 D29-778
Project:	Mustang	**TVD Reference:**	Well @ 4810.00ft
Reference Site:	D Section 29	**MD Reference:**	Well @ 4810.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen D29-778	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen D29-778	**Database:**	EDMP
Reference Design:	Prelim - Rev 1	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 18						
Horton D18-20D - Horton D18-20D - Horton D18-20D - A	17,660.34	7,144.92	4,573.22	4,440.46	34.446	CC
Horton D18-20D - Horton D18-20D - Horton D18-20D - A	17,670.79	7,144.72	4,573.24	4,440.26	34.392	ES, SF
Horton D18-22D - Horton D18-22D - Horton D18-22D - A	17,608.56	7,023.25	2,075.74	1,956.07	17.345	CC, ES
Horton D18-22D - Horton D18-22D - Horton D18-22D - A	17,670.79	7,023.30	2,076.67	1,956.78	17.322	SF
LSWD 1 - LSWD 1 - LSWD 1 - As Drilled	17,670.79	6,916.00	4,307.83	4,167.79	30.761	CC, ES, SF
Mick D18-03 - Mick D18-03 - Mick D18-03 - As Drilled	17,670.79	6,873.21	4,467.90	4,363.96	42.984	CC, ES, SF
Mick D18-04 - Wellbore #1 - Wellbore #1- As Drilled	17,670.79	6,846.22	5,820.86	5,711.99	53.466	CC, ES, SF
Mick D18-05 - Wellbore #1 - Wellbore #1- As Drilled	16,300.00	16,300.00	5,831.40	5,699.78	44.306	SF
Mick D18-05 - Wellbore #1 - Wellbore #1- As Drilled	17,670.79	6,700.01	5,437.79	5,324.40	47.954	CC, ES
Mick D18-06 - Mick D18-06 - Mick D18-06 - As Drilled	17,670.79	6,780.61	3,998.14	3,885.47	35.486	CC, ES, SF
Mick D18-11 - Mick D18-11 - Mick D18-11 - As Drilled	16,878.48	6,792.00	4,061.90	3,953.19	37.365	CC
Mick D18-11 - Mick D18-11 - Mick D18-11 - As Drilled	16,900.00	6,792.67	4,061.96	3,953.08	37.306	ES
Mick D18-11 - Mick D18-11 - Mick D18-11 - As Drilled	17,600.00	6,817.18	4,125.40	4,012.10	36.410	SF
Mick D18-12 - Wellbore #1 - Wellbore #1- As Drilled	17,066.80	6,728.12	5,173.69	5,063.72	47.045	CC
Mick D18-12 - Wellbore #1 - Wellbore #1- As Drilled	17,100.00	6,728.14	5,173.80	5,063.56	46.933	ES
Mick D18-12 - Wellbore #1 - Wellbore #1- As Drilled	17,670.79	6,728.42	5,208.83	5,094.58	45.594	SF
Mick D18-13 - Wellbore #1 - Wellbore #1- As Drilled	15,828.46	7,018.11	5,254.65	5,153.41	51.906	CC
Mick D18-13 - Wellbore #1 - Wellbore #1- As Drilled	15,900.00	7,017.60	5,255.13	5,153.35	51.629	ES
Mick D18-13 - Wellbore #1 - Wellbore #1- As Drilled	17,000.00	7,009.73	5,383.65	5,275.07	49.582	SF
Mick D18-14 - Mick D18-14 - Mick D18-14 - As Drilled	15,728.27	6,799.70	4,054.93	3,955.21	40.662	CC, ES
Mick D18-14 - Mick D18-14 - Mick D18-14 - As Drilled	16,500.00	6,793.06	4,127.71	4,023.20	39.497	SF
Mick D18-19 - Mick D18-19 - Mick D18-19 - As Drilled	17,670.79	6,818.10	4,798.88	4,688.56	43.501	CC, ES, SF
Mick D18-25 - Mick D18-25 - Mick D18-25 - As Drilled	16,355.09	6,863.12	4,572.90	4,468.04	43.607	CC
Mick D18-25 - Mick D18-25 - Mick D18-25 - As Drilled	16,400.00	6,862.64	4,573.12	4,467.91	43.464	ES
Mick D18-25 - Mick D18-25 - Mick D18-25 - As Drilled	17,300.00	6,853.14	4,669.49	4,558.83	42.193	SF
Scooter D18-02 - Scooter D18-02 - Scooter D18-02 - As	17,670.79	6,937.20	3,466.75	3,366.42	34.551	CC, ES, SF
Scooter D18-07 - Scooter D18-07 - Scooter D18-07 - As	17,670.79	6,958.54	2,903.87	2,790.65	25.648	CC, ES, SF
Scooter D18-10 - Scooter D18-10 - Scooter D18-10 - As	16,879.57	6,862.25	2,799.24	2,690.28	25.691	CC
Scooter D18-10 - Scooter D18-10 - Scooter D18-10 - As	16,900.00	6,862.06	2,799.31	2,690.20	25.654	ES
Scooter D18-10 - Scooter D18-10 - Scooter D18-10 - As	17,200.00	6,859.16	2,817.52	2,706.53	25.385	SF
Scooter D18-15 - Scooter D18-15 - Scooter D18-15 - As	15,729.63	6,964.31	2,692.24	2,591.98	26.851	CC, ES
Scooter D18-15 - Scooter D18-15 - Scooter D18-15 - As	16,100.00	6,950.60	2,717.57	2,615.09	26.519	SF
Scooter D18-16 - Scooter D18-16 - Scooter D18-16 - As	15,770.56	6,872.00	1,443.03	1,306.60	10.577	CC, ES
Scooter D18-16 - Scooter D18-16 - Scooter D18-16 - As	15,900.00	6,872.00	1,448.82	1,311.64	10.561	SF
Scooter D18-17 JI - Scooter D18-17 JI - Scooter D18-17	17,670.79	7,009.03	2,436.01	2,331.14	23.228	CC, ES, SF
Scooter D18-1JI - Scooter D18-1JI - Scooter D18-1JI - A	17,670.79	7,212.25	2,232.35	2,106.59	17.751	CC, ES, SF
Scooter D18-4J - Scooter D18-4J - Scooter D18-4J - As	16,623.17	6,830.90	1,803.74	1,696.91	16.885	CC, ES
Scooter D18-4J - Scooter D18-4J - Scooter D18-4J - As	16,800.00	6,829.45	1,812.39	1,704.50	16.799	SF
Scooter D18-78-1HN - Original Drilling - Original Drilling -	17,670.79	6,869.95	5,523.33	5,421.21	54.088	CC, ES, SF
Scooter D18-78-1HN - Original Drilling - ST01 - Original D	15,600.00	11,297.00	4,896.45	4,741.84	31.669	SF
Scooter D18-78-1HN - Original Drilling - ST01 - Original D	16,913.80	10,022.00	4,878.39	4,734.98	34.017	CC, ES
Scooter D18-79-1HN - Original Drilling - Original Drilling -	17,300.00	17,300.00	5,540.53	5,278.96	21.182	ES, SF
Scooter D18-79-1HN - Original Drilling - Original Drilling -	17,670.79	9,170.00	5,529.41	5,392.03	40.249	CC
Scooter D18-79HN - Original Drilling - Original Drilling - A	15,639.43	11,410.00	5,974.29	5,818.55	38.362	SF
Scooter D18-79HN - Original Drilling - Original Drilling - A	17,600.00	9,409.27	5,942.07	5,803.56	42.901	ES
Scooter D18-79HN - Original Drilling - Original Drilling - A	17,670.79	9,280.33	5,940.90	5,803.74	43.312	CC
Scooter D18-8JI - Scooter D18-8JI - Scooter D18-8JI - A	17,670.79	7,134.61	1,604.48	1,485.04	13.433	CC, ES, SF
Scooter D18-9JI - Scooter D18-9JI - Scooter D18-9JI - A	17,225.70	6,893.33	1,296.02	1,182.24	11.391	CC, ES
Scooter D18-9JI - Scooter D18-9JI - Scooter D18-9JI - A	17,300.00	6,893.00	1,298.15	1,184.06	11.379	SF
Shianne D18-29D - Shianne D18-29D - Shianne D18-29D	17,670.79	6,954.01	5,260.10	5,155.66	50.362	CC, ES, 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 D29-778
Project:	Mustang	**TVD Reference:**	Well @ 4810.00ft
Reference Site:	D Section 29	**MD Reference:**	Well @ 4810.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen D29-778	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen D29-778	**Database:**	EDMP
Reference Design:	Prelim - Rev 1	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 19						
Butterball 13-19 - Butterball 13-19 - Butterball 13-19 - As	11,845.22	6,958.19	5,220.21	5,149.09	73.398	CC
Butterball 13-19 - Butterball 13-19 - Butterball 13-19 - As	11,900.00	6,959.44	5,220.50	5,148.99	73.004	ES
Butterball 13-19 - Butterball 13-19 - Butterball 13-19 - As	13,600.00	7,000.40	5,507.10	5,425.55	67.524	SF
Butterball 14-19 - Butterball 14-19 - Butterball 14-19 - As	10,496.69	7,050.28	5,137.92	5,075.44	82.223	CC
Butterball 14-19 - Butterball 14-19 - Butterball 14-19 - As	10,500.00	7,050.28	5,137.93	5,075.42	82.195	ES
Butterball 14-19 - Butterball 14-19 - Butterball 14-19 - As	12,300.00	7,052.52	5,445.20	5,372.57	74.972	SF
Butterball 23-19 - Butterball 23-19 - Butterball 23-19 - As	11,781.56	6,944.11	4,068.05	3,997.43	57.610	CC
Butterball 23-19 - Butterball 23-19 - Butterball 23-19 - As	11,800.00	6,944.24	4,068.09	3,997.35	57.505	ES
Butterball 23-19 - Butterball 23-19 - Butterball 23-19 - As	12,800.00	6,950.71	4,193.59	4,116.89	54.675	SF
Butterball B04-19 - Butterball B04-19 - Butterball B04-19	11,158.08	6,946.37	5,684.88	5,618.53	85.671	CC
Butterball B04-19 - Butterball B04-19 - Butterball B04-19	11,200.00	6,946.11	5,685.04	5,618.40	85.313	ES
Butterball B04-19 - Butterball B04-19 - Butterball B04-19	13,300.00	6,931.84	6,075.00	5,996.31	77.206	SF
Butterball D18-75HN - Original Drilling - Original Drilling -	16,177.74	7,740.13	3,343.60	3,232.01	29.964	CC
Butterball D18-75HN - Original Drilling - Original Drilling -	17,670.79	9,160.12	3,347.55	3,204.84	23.457	ES, SF
Butterball D19-17D - Butterball D19-17D - Butterball D19	14,053.51	7,484.37	1,908.23	1,816.85	20.881	CC, ES
Butterball D19-17D - Butterball D19-17D - Butterball D19	15,300.00	7,497.45	2,279.24	2,138.21	16.161	SF
Butterball D19-18D - Butterball D19-18D - Butterball D19	14,077.47	6,970.98	3,669.67	3,582.01	41.860	CC
Butterball D19-18D - Butterball D19-18D - Butterball D19	14,100.00	6,970.96	3,669.74	3,581.91	41.781	ES
Butterball D19-18D - Butterball D19-18D - Butterball D19	14,900.00	6,969.93	3,760.73	3,667.91	40.516	SF
Butterball D19-19D - Butterball D19-19D - Butterball D19	13,514.56	6,989.69	4,683.34	4,598.06	54.916	CC, ES
Butterball D19-19D - Butterball D19-19D - Butterball D19	14,600.00	6,998.96	4,807.47	4,715.94	52.524	SF
Butterball D19-20D - Butterball D19-20D - Butterball D19	12,541.42	7,065.05	4,563.65	4,485.78	58.607	CC
Butterball D19-20D - Butterball D19-20D - Butterball D19	12,600.00	7,065.29	4,564.03	4,485.65	58.231	ES
Butterball D19-20D - Butterball D19-20D - Butterball D19	14,100.00	7,071.29	4,822.45	4,733.00	53.913	SF
Butterball D19-22D - Wellbore #1 - Wellbore #1 - As Drill	12,536.27	6,971.42	2,183.58	2,105.43	27.941	CC, ES
Butterball D19-22D - Wellbore #1 - Wellbore #1 - As Drill	12,700.00	6,972.97	2,189.71	2,110.85	27.769	SF
Butterball D19-75HN - Original Drilling - Original Drilling -	9,600.00	11,767.00	3,376.64	3,252.70	27.244	SF
Butterball D19-75HN - Original Drilling - Original Drilling -	14,646.18	6,675.16	3,086.32	2,996.46	34.346	CC, ES
Butterball D24-19 - Butterball D24-19 - Butterball D24-19	10,540.69	6,961.55	4,087.11	4,024.71	65.497	CC, ES
Butterball D24-19 - Butterball D24-19 - Butterball D24-19	11,700.00	6,973.81	4,248.33	4,179.39	61.624	SF
Butterball H24-69HN - Original Drilling - Original Drilling -	15,179.92	6,375.00	2,730.54	2,637.63	29.390	CC
Butterball H24-69HN - Original Drilling - Original Drilling -	15,200.00	6,375.00	2,730.61	2,637.55	29.342	ES
Butterball H24-69HN - Original Drilling - Original Drilling -	15,600.00	6,375.00	2,762.66	2,667.22	28.947	SF
Champlin 366 Amoco F 1 - Wellbore #1 - Wellbore #1 - A	11,426.07	6,890.25	2,206.57	2,138.58	32.454	CC, ES
Champlin 366 Amoco F 1 - Wellbore #1 - Wellbore #1 - A	11,800.00	6,890.15	2,238.03	2,167.90	31.915	SF
Dechant D19-32D - Dechant D19-32D - Dechant D19-32	12,400.00	7,613.67	6,022.18	5,902.61	50.368	ES
Dechant D19-32D - Dechant D19-32D - Dechant D19-32	12,427.09	7,614.49	6,022.11	5,902.62	50.397	CC
Dechant D19-32D - Dechant D19-32D - Dechant D19-32	15,900.00	15,900.00	6,930.96	6,760.69	40.707	SF
Graznak 01-19 - Graznak 01-19 - Graznak 01-19 - As Dr	11,106.18	6,894.00	4,936.61	4,834.53	48.359	CC, ES
Graznak 01-19 - Graznak 01-19 - Graznak 01-19 - As Dr	12,300.00	6,894.00	5,078.91	4,969.55	46.443	SF
Higgins D19-720 - Original Drilling - Original Drilling - As	14,999.38	6,941.84	1,511.24	1,421.25	16.793	CC
Higgins D19-720 - Original Drilling - Original Drilling - As	15,000.00	6,941.84	1,511.24	1,421.24	16.792	ES
Higgins D19-720 - Original Drilling - Original Drilling - As	15,100.00	6,941.91	1,514.59	1,423.94	16.709	SF
Higgins D19-720 - Sidetrack Curve/Horizontal - ST01 - A	14,912.52	6,922.01	1,498.68	1,409.38	16.782	CC, ES
Higgins D19-720 - Sidetrack Curve/Horizontal - ST01 - A	15,000.00	6,900.02	1,500.94	1,411.03	16.693	SF
Independence D18-712 - Independence D18-712 - Plan 1	17,670.79	9,979.16	924.48	797.12	7.259	CC, ES, SF
Independence D18-717 - Independence D18-717 - Plan 1	17,670.79	9,765.89	1,299.35	1,173.37	10.314	CC, ES, SF
Independence D18-725 - Independence D18-725 - Plan 1	17,670.79	9,816.53	1,836.72	1,710.66	14.570	CC, ES, SF
Independence D18-732 - Independence D18-732 - Plan 1	17,670.79	9,781.77	2,270.49	2,144.10	17.965	CC, ES, SF
Independence D18-739 - Independence D18-739 - Plan 1	14,556.84	6,554.90	2,621.67	2,531.41	29.046	CC
Independence D18-739 - Independence D18-739 - Plan 1	17,670.79	9,891.30	2,627.33	2,500.77	20.760	ES, SF
Independence D18-744 - Independence D18-744 - Plan 1	14,487.26	6,277.51	2,991.40	2,902.43	33.623	CC
Independence D18-744 - Independence D18-744 - Plan 1	17,670.79	9,926.83	3,026.34	2,899.25	23.813	ES, 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 D29-778
Project:	Mustang	**TVD Reference:**	Well @ 4810.00ft
Reference Site:	D Section 29	**MD Reference:**	Well @ 4810.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen D29-778	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen D29-778	**Database:**	EDMP
Reference Design:	Prelim - Rev 1	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 19						
Independence D18-759 - Independence D18-759 - Plan 1	17,670.79	9,772.24	3,721.92	3,595.67	29.480	CC, ES, SF
Independence D18-767 - Independence D18-767 - Plan 1	17,670.79	9,763.35	4,291.27	4,165.26	34.054	CC, ES, SF
Independence D30-711 - Independence D30-711 - Plan 1	15,099.65	7,520.44	880.04	782.90	9.059	CC
Independence D30-711 - Independence D30-711 - Plan 1	15,100.00	7,520.14	880.04	782.89	9.059	ES
Independence D30-711 - Independence D30-711 - Plan 1	15,300.00	7,354.89	883.95	785.48	8.977	SF
Independence D30-718 - Independence D30-718 - Plan 1	15,123.02	7,344.64	1,254.08	1,157.74	13.017	CC, ES
Independence D30-718 - Independence D30-718 - Plan 1	15,400.00	7,144.51	1,262.52	1,164.41	12.869	SF
Independence D30-724 - Independence D30-724 - Plan 1	15,156.75	7,197.65	1,710.15	1,614.15	17.813	CC
Independence D30-724 - Independence D30-724 - Plan 1	15,200.00	7,163.60	1,710.28	1,613.96	17.757	ES
Independence D30-724 - Independence D30-724 - Plan 1	15,600.00	6,900.00	1,728.85	1,630.14	17.513	SF
Independence D30-731 - Independence D30-731 - Plan 1	15,370.85	6,965.23	2,059.61	1,962.12	21.127	CC
Independence D30-731 - Independence D30-731 - Plan 1	15,400.00	6,943.98	2,059.69	1,962.00	21.086	ES
Independence D30-731 - Independence D30-731 - Plan 1	15,700.00	6,772.36	2,072.55	1,973.12	20.844	SF
Independence D30-737 - Independence D30-737 - Plan 1	15,594.57	6,682.46	2,531.18	2,432.15	25.560	CC
Independence D30-737 - Independence D30-737 - Plan 1	15,600.00	6,679.91	2,531.19	2,432.12	25.551	ES
Independence D30-737 - Independence D30-737 - Plan 1	15,900.00	6,580.02	2,546.48	2,445.68	25.263	SF
Independence D30-743 - Independence D30-743 - Plan 1	15,675.97	6,453.26	2,853.96	2,754.72	28.758	CC
Independence D30-743 - Independence D30-743 - Plan 1	15,700.00	6,451.93	2,854.06	2,754.63	28.704	ES
Independence D30-743 - Independence D30-743 - Plan 1	16,100.00	6,438.35	2,885.22	2,783.29	28.306	SF
Independence D30-758 - Independence D30-758 - Plan 1	15,090.21	7,324.58	3,778.63	3,682.80	39.427	CC
Independence D30-758 - Independence D30-758 - Plan 1	15,200.00	7,263.37	3,779.34	3,682.68	39.101	ES
Independence D30-758 - Independence D30-758 - Plan 1	16,200.00	6,850.00	3,868.14	3,765.34	37.626	SF
Independence D30-765 - Independence D30-765 - Plan 1	15,414.26	7,110.26	4,200.35	4,101.85	42.645	CC
Independence D30-765 - Independence D30-765 - Plan 1	15,500.00	7,053.98	4,200.76	4,101.67	42.396	ES
Independence D30-765 - Independence D30-765 - Plan 1	16,400.00	6,750.00	4,281.29	4,176.92	41.021	SF
Independence D30-770 - Independence D30-770 - Plan 1	15,556.86	6,724.66	4,593.94	4,495.24	46.545	CC
Independence D30-770 - Independence D30-770 - Plan 1	15,600.00	6,702.25	4,594.08	4,495.09	46.410	ES
Independence D30-770 - Independence D30-770 - Plan 1	16,600.00	6,482.82	4,695.01	4,590.16	44.779	SF
Independence D30-777 - Independence D30-777 - Plan 1	15,668.84	6,293.32	4,952.03	4,853.48	50.251	CC
Independence D30-777 - Independence D30-777 - Plan 1	15,700.00	6,297.29	4,952.13	4,853.32	50.117	ES
Independence D30-777 - Independence D30-777 - Plan 1	16,800.00	6,350.00	5,078.65	4,972.67	47.920	SF
Independence State D30-784 - Independence State D30	15,491.93	5,684.06	5,318.69	5,223.92	56.120	CC
Independence State D30-784 - Independence State D30	15,500.00	5,686.02	5,318.70	5,223.85	56.076	ES
Independence State D30-784 - Independence State D30	17,200.00	6,101.00	5,570.80	5,463.56	51.947	SF
LDS White D19-10 - LDS White D19-10 - LDS White D19	11,871.98	6,898.55	3,013.77	2,942.68	42.391	CC
LDS White D19-10 - LDS White D19-10 - LDS White D19	11,900.00	6,898.58	3,013.90	2,942.61	42.276	ES
LDS White D19-10 - LDS White D19-10 - LDS White D19	12,500.00	6,899.11	3,078.51	3,003.74	41.168	SF
LDS White D19-15 - LDS White D19-15 - LDS White D19	10,458.92	6,863.16	2,961.45	2,899.92	48.125	CC, ES
LDS White D19-15 - LDS White D19-15 - LDS White D19	11,100.00	6,859.23	3,030.05	2,964.96	46.556	SF
LDS White D19-16 - Wellbore #1 - Wellbore #1 - As Drill	10,481.14	6,896.38	1,670.98	1,609.21	27.052	CC
LDS White D19-16 - Wellbore #1 - Wellbore #1 - As Drill	10,500.00	6,896.34	1,671.09	1,609.20	27.003	ES
LDS White D19-16 - Wellbore #1 - Wellbore #1 - As Drill	10,700.00	6,895.96	1,685.25	1,622.29	26.767	SF
Mile High 02-19 - Wellbore #1 - Wellbore #1 - As Drilled	13,453.96	6,892.09	2,485.89	2,403.28	30.093	CC, ES
Mile High 02-19 - Wellbore #1 - Wellbore #1 - As Drilled	13,800.00	6,893.11	2,509.86	2,425.11	29.616	SF
Sean D19-09 - Wellbore #1 - Wellbore #1 - As Drilled	11,946.28	6,884.00	1,339.31	1,153.93	7.225	CC, ES
Sean D19-09 - Wellbore #1 - Wellbore #1 - As Drilled	12,000.00	6,884.00	1,340.39	1,154.65	7.216	SF
Turk Blue D19-02J - Turk Blue D19-02J - Turk Blue D19-	14,148.85	6,924.94	4,474.93	4,386.97	50.876	CC
Turk Blue D19-02J - Turk Blue D19-02J - Turk Blue D19-	14,200.00	6,924.67	4,475.22	4,386.87	50.657	ES
Turk Blue D19-02J - Turk Blue D19-02J - Turk Blue D19-	15,200.00	6,919.12	4,596.72	4,502.32	48.696	SF
Turk Blue D19-04 - Turk Blue D19-04 - Turk Blue D19-04	14,585.80	6,907.62	5,339.67	5,248.42	58.520	CC
Turk Blue D19-04 - Turk Blue D19-04 - Turk Blue D19-04	14,600.00	6,907.73	5,339.69	5,248.33	58.450	ES
Turk Blue D19-04 - Turk Blue D19-04 - Turk Blue D19-04	16,000.00	6,916.64	5,523.76	5,423.77	55.243	SF
Turk Blue D19-05 - Turk Blue D19-05 - Turk Blue D19-05	12,940.54	7,038.48	5,327.59	5,248.26	67.158	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 D29-778
Project:	Mustang	**TVD Reference:**	Well @ 4810.00ft
Reference Site:	D Section 29	**MD Reference:**	Well @ 4810.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen D29-778	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen D29-778	**Database:**	EDMP
Reference Design:	Prelim - Rev 1	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 19						
Turk Blue D19-05 - Turk Blue D19-05 - Turk Blue D19-05	13,000.00	7,039.52	5,327.92	5,248.15	66.793	ES
Turk Blue D19-05 - Turk Blue D19-05 - Turk Blue D19-05	14,500.00	7,066.32	5,551.06	5,462.18	62.457	SF
Turk Blue D19-06 - Turk Blue D19-06 - Turk Blue D19-06	13,008.96	6,909.97	4,066.58	3,987.23	51.253	CC, ES
Turk Blue D19-06 - Turk Blue D19-06 - Turk Blue D19-06	14,000.00	6,920.88	4,185.58	4,100.23	49.043	SF
Turk White D19-01 - Wellbore #1 - Wellbore #1 - As Drill	14,466.18	6,882.17	1,341.95	1,251.71	14.872	CC, ES
Turk White D19-01 - Wellbore #1 - Wellbore #1 - As Drill	14,600.00	6,881.56	1,348.60	1,257.61	14.822	SF
Turk White D19-02 - Wellbore #1 - Wellbore #1 - As Drill	14,571.85	6,892.17	2,798.58	2,707.51	30.730	CC
Turk White D19-02 - Wellbore #1 - Wellbore #1 - As Drill	14,600.00	6,892.23	2,798.72	2,707.44	30.660	ES
Turk White D19-02 - Wellbore #1 - Wellbore #1 - As Drill	15,000.00	6,893.09	2,831.14	2,737.45	30.218	SF
Turk White D19-08 - Wellbore #1 - Wellbore #1 - As Drill	12,985.39	6,881.43	1,471.09	1,392.02	18.605	CC
Turk White D19-08 - Wellbore #1 - Wellbore #1 - As Drill	13,000.00	6,881.53	1,471.16	1,391.98	18.581	ES
Turk White D19-08 - Wellbore #1 - Wellbore #1 - As Drill	13,100.00	6,882.18	1,475.55	1,395.75	18.492	SF
D Section 20						
Bohlender D20-2J - Wellbore #1 - No Surveys	13,459.82	6,879.00	162.58	43.80	1.369	Level 3, CC, ES, SF
Bohlender D20-3 - Wellbore #1 - Gyro Surveys	14,470.23	6,886.78	1,097.19	1,006.89	12.151	CC, ES
Bohlender D20-3 - Wellbore #1 - Gyro Surveys	14,500.00	6,886.67	1,097.59	1,007.09	12.128	SF
Bohlender D20-4 (P&A) - Wellbore #1 - No Surveys	14,602.73	6,881.00	259.14	54.10	1.264	Level 3, CC, ES, SF
Bohlender D20-6 - Wellbore#1 - Gyro Surveys	13,124.69	6,869.10	1,119.04	1,038.98	13.978	CC, ES
Bohlender D20-6 - Wellbore#1 - Gyro Surveys	13,200.00	6,869.92	1,121.57	1,041.06	13.931	SF
Butterball D19-27D - Butterball D19-27D - Butterball D19	15,254.86	7,123.90	2,114.95	2,016.15	21.406	CC, ES
Butterball D19-27D - Butterball D19-27D - Butterball D19	15,500.00	7,119.16	2,129.11	2,029.16	21.303	SF
Duncan D20-1 (P&A) - Wellbore #1 - No Surveys	14,539.80	6,880.00	3,910.80	3,706.26	19.120	CC, ES
Duncan D20-1 (P&A) - Wellbore #1 - No Surveys	15,000.00	6,880.00	3,937.79	3,730.14	18.964	SF
Duncan D20-10 - Wellbore #1 - Gyro Surveys	11,423.15	6,888.50	2,741.14	2,673.15	40.315	CC, ES
Duncan D20-10 - Wellbore #1 - Gyro Surveys	11,900.00	6,887.26	2,782.31	2,711.54	39.318	SF
Duncan D20-11 (SI) - Wellbore #1 - No Surveys	11,842.80	6,886.00	1,190.49	1,083.42	11.119	CC, ES
Duncan D20-11 (SI) - Wellbore #1 - No Surveys	11,900.00	6,886.00	1,191.86	1,084.44	11.095	SF
Duncan D20-12 (SI) - Wellbore #1 - No Surveys	11,804.15	6,884.00	186.71	79.93	1.749	CC, ES, SF
Duncan D20-13 (SI) - Wellbore #1 - No Surveys	10,268.20	6,889.00	228.30	131.64	2.362	CC, ES, SF
Duncan D20-14 (SI) - Wellbore #1 - Gyro Surveys	10,799.07	6,857.16	794.99	731.36	12.495	CC
Duncan D20-14 (SI) - Wellbore #1 - Gyro Surveys	10,800.00	6,857.15	794.99	731.36	12.493	ES, SF
Duncan D20-15 (P&A) - Wellbore #1 - Gyro Surveys	10,439.73	6,876.68	2,267.00	2,205.53	36.876	CC, ES
Duncan D20-15 (P&A) - Wellbore #1 - Gyro Surveys	10,800.00	6,878.62	2,295.45	2,231.99	36.174	SF
Duncan D20-16 (SI) - Wellbore #1 - Gyro Surveys	10,411.12	6,880.42	3,910.24	3,848.96	63.813	CC, ES
Duncan D20-16 (SI) - Wellbore #1 - Gyro Surveys	11,500.00	6,876.84	4,059.01	3,991.75	60.343	SF
Duncan D20-2 - Wellbore #1 - Gyro Surveys	14,455.36	6,871.32	2,482.59	2,392.48	27.551	CC, ES
Duncan D20-2 - Wellbore #1 - Gyro Surveys	14,800.00	6,869.29	2,506.40	2,414.23	27.194	SF
Duncan D20-7 - Wellbore #1 - Gyro Surveys	13,435.99	6,881.49	2,760.08	2,677.65	33.484	CC, ES
Duncan D20-7 - Wellbore #1 - Gyro Surveys	13,900.00	6,882.84	2,798.81	2,713.63	32.857	SF
Duncan D20-8 - Wellbore #1 - Gyro Surveys	13,038.85	6,890.43	3,838.32	3,758.81	48.279	CC, ES
Duncan D20-8 - Wellbore #1 - Gyro Surveys	13,900.00	6,888.76	3,933.73	3,849.06	46.459	SF
Duncan D20-9 (P&A) - Wellbore #1 - Gyro Surveys	11,791.04	6,903.08	3,878.50	3,807.94	54.971	CC
Duncan D20-9 (P&A) - Wellbore #1 - Gyro Surveys	11,800.00	6,903.12	3,878.51	3,807.89	54.923	ES
Duncan D20-9 (P&A) - Wellbore #1 - Gyro Surveys	12,800.00	6,907.98	4,007.58	3,931.18	52.452	SF
E Ranches (P&A) - Wellbore #1 - No Surveys	10,474.47	6,881.00	275.78	100.33	1.572	CC, ES, SF
Guttersen 10-20 - Wellbore #1 - Gyro Surveys	11,973.70	6,862.47	2,255.24	2,184.31	31.794	CC
Guttersen 10-20 - Wellbore #1 - Gyro Surveys	12,000.00	6,862.42	2,255.39	2,184.28	31.715	ES
Guttersen 10-20 - Wellbore #1 - Gyro Surveys	12,300.00	6,861.92	2,278.72	2,205.87	31.278	SF
LDS D20-30D - LDS D20-30D - LDS D20-30D - As Drille	14,991.63	6,933.51	947.45	851.35	9.858	CC, ES
LDS D20-30D - LDS D20-30D - LDS D20-30D - As Drille	15,000.00	6,933.45	947.49	851.35	9.855	SF

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen D29-778
Project:	Mustang	**TVD Reference:**	Well @ 4810.00ft
Reference Site:	D Section 29	**MD Reference:**	Well @ 4810.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen D29-778	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen D29-778	**Database:**	EDMP
Reference Design:	Prelim - Rev 1	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 28						
O'SH D 28-7 (P&A) - Wellbore #1 - No Surveys	2,200.00	2,200.00	7,578.57	7,526.91	146.719	CC
O'SH D 28-7 (P&A) - Wellbore #1 - No Surveys	7,846.07	6,921.00	7,648.09	7,484.11	46.638	ES
O'SH D 28-7 (P&A) - Wellbore #1 - No Surveys	9,600.00	6,921.00	7,846.63	7,675.93	45.967	SF
Spike ST GWS D 28-12 (SI) - Wellbore #1 - Gyro Surve	381.30	377.30	4,865.22	4,862.94	2,133.580	CC
Spike ST GWS D 28-12 (SI) - Wellbore #1 - Gyro Surve	5,500.00	5,427.35	4,874.51	4,836.31	127.611	ES
Spike ST GWS D 28-12 (SI) - Wellbore #1 - Gyro Surve	7,150.00	6,900.91	4,940.00	4,891.57	102.004	SF
Guttersen D State 28-29D (PR) - Wellbore #1 - MWD Su	940.93	916.94	5,389.79	5,384.69	1,057.537	CC
Guttersen D State 28-29D (PR) - Wellbore #1 - MWD Su	1,000.00	940.86	5,389.98	5,384.59	999.975	ES
Guttersen D State 28-29D (PR) - Wellbore #1 - MWD Su	12,400.00	6,936.93	6,253.98	6,180.03	84.572	SF
Guttersen D State 28-30D - Wellbore #1 - Guttersen D S	9,788.66	6,977.58	4,287.52	4,229.22	73.542	CC
Guttersen D State 28-30D - Wellbore #1 - Guttersen D S	9,800.00	6,977.53	4,287.54	4,229.18	73.473	ES
Guttersen D State 28-30D - Wellbore #1 - Guttersen D S	11,100.00	6,972.20	4,483.57	4,419.06	69.495	SF
Guttersen State D28-18D (PR) - Wellbore #1 - MWD Sur	0.00	0.00	6,672.93			
Guttersen State D28-18D (PR) - Wellbore #1 - MWD Sur	12,000.00	7,018.36	7,603.76	7,533.38	108.029	SF
Guttersen State D28-21D (SI) - Wellbore #1 - MWD Surv	0.00	0.00	6,512.76			
Guttersen State D28-21D (SI) - Wellbore #1 - MWD Surv	900.00	887.46	6,514.84	6,508.98	1,111.813	ES
Guttersen State D28-21D (SI) - Wellbore #1 - MWD Surv	11,300.00	6,932.97	7,978.14	7,911.53	119.780	SF
Guttersen State D28-24D (SI) - Wellbore #1 - MWD Surv	654.13	643.14	6,524.06	6,519.92	1,577.945	CC
Guttersen State D28-24D (SI) - Wellbore #1 - MWD Surv	1,000.00	941.71	6,525.16	6,518.74	1,015.579	ES
Guttersen State D28-24D (SI) - Wellbore #1 - MWD Surv	7,150.00	7,077.16	7,031.29	6,978.30	132.688	SF
Guttersen State D28-28D (PR) - Wellbore #1 - MWD Sur	0.00	0.00	6,673.47			
Guttersen State D28-28D (PR) - Wellbore #1 - MWD Sur	300.00	232.43	6,674.43	6,672.96	4,531.354	ES
Guttersen State D28-28D (PR) - Wellbore #1 - MWD Sur	13,300.00	6,943.28	7,668.15	7,587.88	95.534	SF
Guttersen State D28-79HN - Wellbore #1 - Actual	9,297.02	11,086.00	4,469.53	4,354.64	38.903	CC
Guttersen State D28-79HN - Wellbore #1 - Actual	9,300.00	11,086.00	4,469.53	4,354.62	38.898	ES
Guttersen State D28-79HN - Wellbore #1 - Actual	9,800.00	11,086.00	4,497.74	4,380.98	38.523	SF
HSR Guttersen State 10-28 (SI) - Wellbore #1 - Gyro Su	6,647.93	6,800.00	7,366.87	7,319.80	156.533	CC
HSR Guttersen State 10-28 (SI) - Wellbore #1 - Gyro Su	6,650.00	6,800.00	7,366.87	7,319.80	156.514	ES
HSR Guttersen State 10-28 (SI) - Wellbore #1 - Gyro Su	11,400.00	7,141.62	8,804.67	8,741.17	138.647	SF
HSR Guttersen State 7-28 (PR) - Wellbore #1 - Gyro Sur	2,685.61	2,866.36	7,351.77	7,332.69	385.306	CC
HSR Guttersen State 7-28 (PR) - Wellbore #1 - Gyro Sur	2,748.82	2,900.00	7,351.99	7,332.58	378.824	ES
HSR Guttersen State 7-28 (PR) - Wellbore #1 - Gyro Sur	12,600.00	6,621.79	8,793.99	8,724.79	127.071	SF
O'SH D 28-1 (SI) - Wellbore #1 - Gyro Surveys	8,804.15	6,923.06	8,654.55	8,601.79	164.046	CC, ES
O'SH D 28-1 (SI) - Wellbore #1 - Gyro Surveys	13,800.00	6,946.77	9,992.96	9,914.37	127.164	SF
O'SH D 28-2 (SI) - Wellbore #1 - Gyro Surveys	9,185.85	6,937.01	7,677.64	7,623.52	141.852	CC
O'SH D 28-2 (SI) - Wellbore #1 - Gyro Surveys	9,200.00	6,937.02	7,677.66	7,623.46	141.673	ES
O'SH D 28-2 (SI) - Wellbore #1 - Gyro Surveys	13,400.00	6,940.18	8,758.15	8,682.09	115.146	SF
O'SH D 28-8 (SI) - Wellbore #1 - Gyro Surveys	100.00	118.08	8,891.52	8,891.15	10,000.000	CC
O'SH D 28-8 (SI) - Wellbore #1 - Gyro Surveys	2,300.00	2,352.50	8,893.23	8,877.19	554.579	ES
O'SH D 28-8 (SI) - Wellbore #1 - Gyro Surveys	12,100.00	6,644.15	9,987.24	9,918.96	146.258	SF
Spike ST GWS D 28-4 (SI) - Wellbore #1 - Gyro Surveys	9,391.92	6,892.85	5,060.13	5,004.66	91.228	CC
Spike ST GWS D 28-4 (SI) - Wellbore #1 - Gyro Surveys	9,400.00	6,892.89	5,060.14	5,004.63	91.160	ES
Spike ST GWS D 28-4 (SI) - Wellbore #1 - Gyro Surveys	11,400.00	6,905.57	5,444.00	5,378.32	82.887	SF
Spike State D 28-13 (SI) - Wellbore #1 - Gyro Surveys	6,350.39	6,371.45	5,223.38	5,178.71	116.944	CC, ES
Spike State D 28-13 (SI) - Wellbore #1 - Gyro Surveys	7,000.00	6,839.29	5,332.72	5,284.81	111.300	SF
Spike State D28-05 (PR) - Wellbore #1 - Gyro Surveys	2,314.17	2,341.06	4,806.27	4,790.22	299.366	CC
Spike State D28-05 (PR) - Wellbore #1 - Gyro Surveys	2,400.00	2,412.99	4,806.72	4,790.13	289.852	ES
Spike State D28-05 (PR) - Wellbore #1 - Gyro Surveys	10,000.00	6,873.90	5,277.77	5,220.42	92.031	SF
Spike State D28-06 (SI) - Wellbore #1 - Gyro Surveys	2,226.33	2,223.61	6,513.51	6,498.18	424.830	CC
Spike State D28-06 (SI) - Wellbore #1 - Gyro Surveys	2,300.00	2,273.91	6,513.81	6,498.05	413.372	ES
Spike State D28-06 (SI) - Wellbore #1 - Gyro Surveys	11,600.00	6,786.15	7,516.57	7,451.65	115.782	SF
Spike State D28-11 (SI) - Wellbore #1 - Gyro Surveys	2,468.66	2,447.17	6,481.93	6,465.01	383.088	CC
Spike State D28-11 (SI) - Wellbore #1 - Gyro Surveys	6,750.00	6,824.21	6,494.48	6,447.04	136.927	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 D29-778
Project:	Mustang	**TVD Reference:**	Well @ 4810.00ft
Reference Site:	D Section 29	**MD Reference:**	Well @ 4810.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen D29-778	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen D29-778	**Database:**	EDMP
Reference Design:	Prelim - Rev 1	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 28						
Spike State D28-11 (SI) - Wellbore #1 - Gyro Surveys	10,300.00	6,853.64	7,432.44	7,374.53	128.341	SF
Spike State GWS D 28-14 (P&A) - Wellbore #1 - Gyro Su	6,245.80	6,000.00	6,693.49	6,650.48	155.632	CC
Spike State GWS D 28-14 (P&A) - Wellbore #1 - Gyro Su	6,250.00	6,000.00	6,693.50	6,650.47	155.576	ES
Spike State GWS D 28-14 (P&A) - Wellbore #1 - Gyro Su	7,200.00	6,714.70	6,863.41	6,815.64	143.657	SF

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen D29-778
Project:	Mustang	**TVD Reference:**	Well @ 4810.00ft
Reference Site:	D Section 29	**MD Reference:**	Well @ 4810.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen D29-778	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen D29-778	**Database:**	EDMP
Reference Design:	Prelim - Rev 1	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 29						
Guttersen D29-30D - Wellbore #1 - Design #1	9,724.29	7,078.26	789.30	724.70	12.218	CC, ES
Guttersen D29-30D - Wellbore #1 - Design #1	9,800.00	7,078.26	792.93	727.76	12.168	SF
Guttersen D29-31D - Wellbore #1 - Guttersen D29-31D	100.00	73.67	513.49	513.23	1,990.277	CC
Guttersen D29-31D - Wellbore #1 - Guttersen D29-31D	600.00	571.40	514.91	511.97	174.877	ES
Guttersen D29-31D - Wellbore #1 - Guttersen D29-31D	8,600.00	6,977.98	741.01	686.92	13.699	SF
Guttersen D29-33D - Wellbore #1 - Guttersen D29-33D -	872.80	872.57	815.66	811.07	177.448	CC
Guttersen D29-33D - Wellbore #1 - Guttersen D29-33D -	900.00	895.38	815.70	810.93	170.994	ES
Guttersen D29-33D - Wellbore #1 - Guttersen D29-33D -	6,450.00	6,586.61	1,161.05	1,112.99	24.159	SF
Guttersen D29-65HN - Original Drilling - Original Drilling	7,000.00	7,219.02	84.39	38.02	1.820	SF
Guttersen D29-65HN - Original Drilling - Original Drilling	7,050.00	7,212.12	68.13	37.61	2.233	ES
Guttersen D29-65HN - Original Drilling - Original Drilling	7,053.42	7,211.63	68.05	38.89	2.334	CC
Guttersen D29-67HN - Original Drilling - Original Drilling	8,494.16	7,075.35	78.75	46.03	2.407	CC
Guttersen D29-67HN - Original Drilling - Original Drilling	8,500.00	7,075.44	78.97	45.74	2.377	ES, SF
Guttersen D29-69HN - Original Drilling - Original Drilling	9,724.25	7,239.34	77.37	33.75	1.774	CC, ES, SF
Guttersen D29-722 - Guttersen D29-722 - Prelim - Rev 1	17,663.87	17,642.27	3,663.82	3,481.29	20.072	CC
Guttersen D29-722 - Guttersen D29-722 - Prelim - Rev 1	17,670.79	17,638.72	3,663.82	3,481.26	20.069	ES, SF
Guttersen D29-730 - Guttersen D29-730 - Prelim - Rev 1	17,665.78	17,560.66	3,053.35	2,871.56	16.796	CC
Guttersen D29-730 - Guttersen D29-730 - Prelim - Rev 1	17,670.79	17,556.91	3,053.35	2,871.56	16.796	ES, SF
Guttersen D29-738 - Guttersen D29-738 - Prelim - Rev 1	2,200.00	2,208.00	1,440.19	1,424.85	93.913	CC, ES
Guttersen D29-738 - Guttersen D29-738 - Prelim - Rev 1	17,670.79	17,786.98	2,417.75	2,235.32	13.253	SF
Guttersen D29-746 - Guttersen D29-746 - Prelim - Rev 1	2,200.00	2,196.00	1,402.18	1,386.89	91.692	CC, ES
Guttersen D29-746 - Guttersen D29-746 - Prelim - Rev 1	17,668.88	17,505.44	1,838.24	1,655.79	10.075	SF
Guttersen D29-754 - Guttersen D29-754 - Prelim - Rev 1	17,670.79	17,720.39	1,248.89	1,066.13	6.834	CC, ES, SF
Guttersen D29-770 - Guttersen D29-770 - Prelim - Rev 1	2,200.00	2,200.00	37.01	21.70	2.418	CC, ES
Guttersen D29-770 - Guttersen D29-770 - Prelim - Rev 1	2,300.00	2,299.33	38.08	22.09	2.382	SF
Guttersen D29-786 - Guttersen D29-786 - Prelim - Rev 1	2,200.00	2,200.00	38.01	22.70	2.483	CC, ES
Guttersen D29-786 - Guttersen D29-786 - Prelim - Rev 1	2,300.00	2,299.17	38.91	22.92	2.434	SF
Guttersen D29-99HZ - Wellbore #1 - MWD Surveys	6,511.69	6,831.93	1,021.73	976.84	22.757	CC, ES
Guttersen D29-99HZ - Wellbore #1 - MWD Surveys	6,650.00	6,952.67	1,041.23	994.68	22.369	SF
Guttersen D30-68-1HN - Original Drilling - Original Drillin	8,828.17	6,601.01	970.66	921.48	19.737	CC, ES
Guttersen D30-68-1HN - Original Drilling - Original Drillin	9,000.00	6,601.01	985.75	935.39	19.576	SF
Guttersen D30-69-1HN - Original Drilling - Original Drillin	9,557.54	6,646.36	1,089.51	1,031.52	18.787	CC, ES
Guttersen D30-69-1HN - Original Drilling - Original Drillin	9,700.00	6,649.04	1,098.77	1,039.43	18.515	SF
Guttersen State D29-714 - Guttersen D29-714 - Prelim -	2,108.33	2,128.33	3,753.16	3,738.44	254.949	CC
Guttersen State D29-714 - Guttersen D29-714 - Prelim -	2,200.00	2,212.77	3,753.18	3,737.83	244.503	ES
Guttersen State D29-714 - Guttersen D29-714 - Prelim -	17,670.79	17,735.31	4,217.76	4,035.41	23.130	SF
Guttersen State Y05-719 - Guttersen Y05-719 - Prelim -	2,200.00	2,210.00	3,758.32	3,742.97	244.960	CC, ES
Guttersen State Y05-719 - Guttersen Y05-719 - Prelim -	9,300.00	6,500.00	4,215.34	4,161.79	78.726	SF
Guttersen Y05-726 - Guttersen Y05-726 - Prelim - Rev 1	7,000.00	7,903.73	3,436.70	3,386.99	69.141	ES
Guttersen Y05-726 - Guttersen Y05-726 - Prelim - Rev 1	7,014.00	7,884.28	3,436.69	3,387.00	69.168	CC
Guttersen Y05-726 - Guttersen Y05-726 - Prelim - Rev 1	8,700.00	6,780.05	3,530.47	3,478.64	68.114	SF
Guttersen Y05-734 - Guttersen Y05-734 - Prelim - Rev 1	7,036.49	7,929.94	2,823.78	2,773.48	56.138	CC, ES
Guttersen Y05-734 - Guttersen Y05-734 - Prelim - Rev 1	8,100.00	7,160.93	2,855.95	2,804.92	55.968	SF
Guttersen Y05-749 - Guttersen Y05-749 - Prelim - Rev 1	2,200.00	2,202.00	1,412.58	1,397.26	92.241	CC, ES
Guttersen Y05-749 - Guttersen Y05-749 - Prelim - Rev 1	8,300.00	6,606.31	2,194.19	2,144.11	43.818	SF
Guttersen Y05-756 - Guttersen Y05-756 - Prelim - Rev 1	2,200.00	2,202.00	1,375.77	1,360.46	89.838	CC, ES
Guttersen Y05-756 - Guttersen Y05-756 - Prelim - Rev 1	7,900.00	6,969.52	1,597.11	1,547.41	32.130	SF
Guttersen Y05-771 - Guttersen Y05-771 - Prelim - Rev 1	2,200.00	2,200.00	155.23	139.92	10.141	CC, ES
Guttersen Y05-771 - Guttersen Y05-771 - Prelim - Rev 1	2,300.00	2,295.66	158.32	142.33	9.906	SF
Guttersen Y05-779 - Guttersen Y05- 779 - Prelim - Rev 1	2,200.00	2,200.00	150.03	134.72	9.802	CC, ES
Guttersen Y05-779 - Guttersen Y05- 779 - Prelim - Rev 1	7,880.89	7,037.89	365.53	315.51	7.308	SF
Guttersen Y05-786 - Guttersen Y05-786 - Prelim - Rev 1	2,200.00	2,204.00	154.04	138.72	10.054	CC
Guttersen Y05-786 - Guttersen Y05-786 - Prelim - Rev 1	7,641.43	7,204.18	187.63	138.09	3.788	ES, 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 D29-778
Project:	Mustang	**TVD Reference:**	Well @ 4810.00ft
Reference Site:	D Section 29	**MD Reference:**	Well @ 4810.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen D29-778	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen D29-778	**Database:**	EDMP
Reference Design:	Prelim - Rev 1	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 29						
Jessie D29-1J - Wellbore #1 - Gyro Surveys	8,839.24	6,875.04	2,735.15	2,682.39	51.842	CC, ES
Jessie D29-1J - Wellbore #1 - Gyro Surveys	9,400.00	6,871.12	2,792.04	2,736.89	50.628	SF
Jessie D29-4J - Wellbore #1 - Gyro Surveys	6,236.22	6,109.20	2,794.44	2,751.10	64.473	CC
Jessie D29-4J - Wellbore #1 - Gyro Surveys	6,250.00	6,122.81	2,794.47	2,751.03	64.326	ES
Jessie D29-4J - Wellbore #1 - Gyro Surveys	6,900.00	6,653.75	2,868.29	2,821.19	60.905	SF
Kate Red D29-03J - Kate Red D29-03J - Kate Red D29-0	6,356.07	6,276.72	546.84	502.76	12.406	CC, ES
Kate Red D29-03J - Kate Red D29-03J - Kate Red D29-0	6,400.00	6,319.83	548.40	504.02	12.357	SF
Kate Red D29-11 - Wellbore #1 - Gyro Surveys	6,316.43	6,235.33	994.25	950.13	22.537	CC, ES
Kate Red D29-11 - Wellbore #1 - Gyro Surveys	6,650.00	6,563.74	1,013.37	967.10	21.903	SF
Kate Red D29-13 - Wellbore #1 - Gyro Surveys	6,370.34	6,338.17	1,662.31	1,618.06	37.560	CC, ES
Kate Red D29-13 - Wellbore #1 - Gyro Surveys	6,500.00	6,458.56	1,675.54	1,630.45	37.162	SF
Kate Red D29-14 - Wellbore #1 - Gyro Surveys	6,339.91	6,263.18	1,816.76	1,772.66	41.197	CC, ES
Kate Red D29-14 - Wellbore #1 - Gyro Surveys	6,550.00	6,486.89	1,844.85	1,799.35	40.546	SF
Kate Red D29-2J - Wellbore #1 - Kate Red D29-2J	8,774.35	6,887.29	260.83	208.27	4.963	CC, ES, SF
Kate Red D29-3 - Wellbore #1 - Kate Red D29-3	9,171.49	6,879.42	1,149.61	1,095.30	21.167	CC, ES
Kate Red D29-3 - Wellbore #1 - Kate Red D29-3	9,300.00	6,878.95	1,156.77	1,101.91	21.085	SF
Kate Red D29-5 - Wellbore #1 - Gyro Surveys	7,866.03	6,896.43	228.85	179.34	4.623	CC, ES, SF
Kate Red D29-6 - Wellbore #1 - Gyro Surveys	777.86	743.86	1,081.52	1,076.54	217.039	CC
Kate Red D29-6 - Wellbore #1 - Gyro Surveys	2,300.00	2,273.72	1,083.46	1,067.71	68.757	ES
Kate Red D29-6 - Wellbore #1 - Gyro Surveys	7,900.00	6,913.75	1,129.92	1,080.32	22.778	SF
Kate White D29-1 - Wellbore #1 - Gyro Surveys	9,211.17	6,904.16	3,820.13	3,765.54	69.968	CC, ES
Kate White D29-1 - Wellbore #1 - Gyro Surveys	10,400.00	6,901.96	4,000.84	3,940.56	66.366	SF
Kate White D29-15 - Wellbore #1 - Gyro Surveys	6,302.15	6,169.13	2,643.40	2,599.61	60.368	CC, ES
Kate White D29-15 - Wellbore #1 - Gyro Surveys	6,650.00	6,498.63	2,694.16	2,648.19	58.610	SF
Kate White D29-16 - Wellbore #1 - Gyro Surveys	6,310.67	6,211.24	3,954.82	3,910.84	89.925	CC, ES
Kate White D29-16 - Wellbore #1 - Gyro Surveys	6,900.00	6,725.30	4,056.88	4,009.56	85.732	SF
Kate White D29-7 - Wellbore #1 - Gyro Surveys	2,270.16	2,263.30	2,597.95	2,582.33	166.278	CC
Kate White D29-7 - Wellbore #1 - Gyro Surveys	7,809.16	6,865.36	2,612.38	2,563.07	52.981	ES
Kate White D29-7 - Wellbore #1 - Gyro Surveys	8,200.00	6,863.69	2,641.45	2,591.16	52.516	SF
Kate White D29-8 - Wellbore #1 - Gyro Surveys	2,337.27	2,347.11	3,712.39	3,696.23	229.775	CC
Kate White D29-8 - Wellbore #1 - Gyro Surveys	7,827.73	6,933.54	3,744.81	3,695.30	75.652	ES
Kate White D29-8 - Wellbore #1 - Gyro Surveys	8,800.00	6,913.61	3,868.90	3,816.45	73.755	SF
Kate White D29-9 (SI) - Wellbore #1 - Gyro Surveys	5,691.50	5,621.77	3,683.30	3,643.71	93.040	CC
Kate White D29-9 (SI) - Wellbore #1 - Gyro Surveys	5,800.00	5,700.00	3,683.90	3,643.63	91.480	ES
Kate White D29-9 (SI) - Wellbore #1 - Gyro Surveys	7,150.00	6,802.04	3,772.03	3,723.98	78.490	SF

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen D29-778
Project:	Mustang	**TVD Reference:**	Well @ 4810.00ft
Reference Site:	D Section 29	**MD Reference:**	Well @ 4810.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen D29-778	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen D29-778	**Database:**	EDMP
Reference Design:	Prelim - Rev 1	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 32						
HP D32-21D - Wellbore #1 - MWD Surveys	6,346.27	6,421.21	5,101.90	5,056.27	111.820	CC
HP D32-21D - Wellbore #1 - MWD Surveys	6,350.00	6,424.15	5,101.91	5,056.26	111.766	ES
HP D32-21D - Wellbore #1 - MWD Surveys	6,650.00	6,654.39	5,170.43	5,123.21	109.506	SF
HP D32-23D - Wellbore #1 - MWD Surveys	6,345.12	6,374.98	6,572.45	6,526.62	143.426	CC
HP D32-23D - Wellbore #1 - MWD Surveys	6,350.00	6,379.54	6,572.47	6,526.61	143.324	ES
HP D32-23D - Wellbore #1 - MWD Surveys	6,750.00	6,737.35	6,684.11	6,635.98	138.862	SF
HP Farms D 32-22D - Wellbore #1 - MWD Surveys	6,349.97	6,665.00	5,620.45	5,571.85	115.644	CC
HP Farms D 32-22D - Wellbore #1 - MWD Surveys	6,350.00	6,665.00	5,620.45	5,571.85	115.644	ES
HP Farms D 32-22D - Wellbore #1 - MWD Surveys	6,600.00	6,828.00	5,663.60	5,613.90	113.947	SF
HP Farms D32-03 - Wellbore #1 - Gyro Surveys	6,340.83	6,254.61	3,244.43	3,200.38	73.655	CC, ES
HP Farms D32-03 - Wellbore #1 - Gyro Surveys	6,600.00	6,482.22	3,293.71	3,248.11	72.230	SF
HP Farms D32-18D - Wellbore #1 - MWD Surveys	6,336.44	6,435.34	3,975.31	3,923.14	76.212	CC, ES
HP Farms D32-18D - Wellbore #1 - MWD Surveys	6,600.00	6,705.29	4,022.47	3,968.77	74.917	SF
HP Farms D32-24D - Wellbore #1 - MWD Surveys	6,352.58	6,606.54	6,397.25	6,341.24	114.221	CC, ES
HP Farms D32-24D - Wellbore #1 - MWD Surveys	6,600.00	6,765.17	6,444.51	6,387.45	112.939	SF
Norris 14-32 - Wellbore #1 - Projection Survey	6,352.97	6,302.16	7,021.53	6,944.23	90.834	CC, ES
Norris 14-32 - Wellbore #1 - Projection Survey	6,800.00	6,713.12	7,171.90	7,089.94	87.510	SF
Norris A Unit 2 - Wellbore #1 - Projection Survey	6,351.88	6,306.08	6,279.59	6,202.25	81.197	CC, ES
Norris A Unit 2 - Wellbore #1 - Projection Survey	6,800.00	6,718.12	6,430.80	6,348.80	78.420	SF
Norris D32-1 (SI) - Wellbore #1 - Gyro Surveys	6,339.81	6,300.00	4,708.83	4,664.50	106.240	CC, ES
Norris D32-1 (SI) - Wellbore #1 - Gyro Surveys	6,850.00	6,788.57	4,830.55	4,783.23	102.080	SF
Norris D32-10 - Wellbore #1 - Gyro Surveys	6,328.30	6,091.31	6,061.62	6,018.15	139.465	CC, ES
Norris D32-10 - Wellbore #1 - Gyro Surveys	6,850.00	6,730.67	6,242.95	6,196.06	133.118	SF
Norris D32-15 - Wellbore #1 - Gyro Surveys	6,363.44	6,470.97	7,277.69	7,232.89	162.438	CC, ES
Norris D32-15 - Wellbore #1 - Gyro Surveys	6,650.00	6,800.00	7,337.46	7,290.74	157.080	SF
Norris D32-1J - Wellbore #1 - Gyro Surveys	6,362.02	6,442.79	4,954.99	4,910.20	110.646	CC, ES
Norris D32-1J - Wellbore #1 - Gyro Surveys	6,800.00	6,858.85	5,064.42	5,017.07	106.969	SF
Norris D32-2 - Wellbore #1 - Gyro Surveys	6,335.36	6,263.38	3,698.69	3,654.57	83.834	CC, ES
Norris D32-2 - Wellbore #1 - Gyro Surveys	6,700.00	6,700.00	3,779.30	3,732.64	81.004	SF
Norris D32-2J - Wellbore #1 - Gyro Surveys	6,369.42	6,417.26	3,350.04	3,305.50	75.213	CC, ES
Norris D32-2J - Wellbore #1 - Gyro Surveys	6,600.00	6,563.69	3,393.58	3,347.81	74.147	SF
Norris D32-4 (P&A) - Wellbore #1 - No Surveys	6,353.47	6,285.66	2,890.10	2,742.08	19.525	CC, ES
Norris D32-4 (P&A) - Wellbore #1 - No Surveys	6,600.00	6,525.95	2,937.01	2,783.48	19.130	SF
Norris D32-5 - Wellbore #1 - Gyro Surveys	6,361.33	6,359.16	4,231.58	4,187.25	95.446	CC, ES
Norris D32-5 - Wellbore #1 - Gyro Surveys	6,650.00	6,613.38	4,297.51	4,251.49	93.374	SF
Norris D32-6 - Wellbore #1 - Gyro Surveys	6,335.84	6,204.26	4,347.11	4,303.30	99.227	CC, ES
Norris D32-6 - Wellbore #1 - Gyro Surveys	6,750.00	6,654.86	4,472.01	4,425.59	96.334	SF
Norris D32-7 - Wellbore #1 - Gyro Surveys	6,341.62	6,237.17	4,789.81	4,745.82	108.880	CC
Norris D32-7 - Wellbore #1 - Gyro Surveys	6,350.00	6,244.51	4,789.86	4,745.81	108.744	ES
Norris D32-7 - Wellbore #1 - Gyro Surveys	6,700.00	6,526.19	4,877.43	4,831.44	106.061	SF
Norris D32-9 (SI) - Wellbore #1 - Gyro Surveys	6,342.44	6,253.47	6,722.96	6,678.85	152.410	CC
Norris D32-9 (SI) - Wellbore #1 - Gyro Surveys	6,350.00	6,259.43	6,722.99	6,678.84	152.246	ES
Norris D32-9 (SI) - Wellbore #1 - Gyro Surveys	6,850.00	6,713.73	6,882.84	6,835.89	146.601	SF

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen D29-778
Project:	Mustang	**TVD Reference:**	Well @ 4810.00ft
Reference Site:	D Section 29	**MD Reference:**	Well @ 4810.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen D29-778	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen D29-778	**Database:**	EDMP
Reference Design:	Prelim - Rev 1	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Y Section 05						
Olsen Red Y05-02D - Olsen Red Y05-02D - Olsen Red Y	6,347.96	6,265.76	8,461.31	8,417.28	192.168	CC
Olsen Red Y05-02D - Olsen Red Y05-02D - Olsen Red Y	6,350.00	6,268.43	8,461.31	8,417.27	192.097	ES
Olsen Red Y05-02D - Olsen Red Y05-02D - Olsen Red Y	6,750.00	6,750.00	8,583.22	8,536.50	183.707	SF
Olsen Y5-05JI - Olsen Y5-05JI - Olsen Y5-05JI - As Drille	6,352.77	6,304.96	9,420.81	9,387.46	282.418	CC, ES
Olsen Y5-05JI - Olsen Y5-05JI - Olsen Y5-05JI - As Drille	6,850.00	6,752.95	9,605.18	9,569.90	272.319	SF
Perkins 32-05 - Perkins 32-05 - Perkins 32-05 - As Drille	6,349.48	6,353.67	9,711.05	9,633.27	124.859	CC
Perkins 32-05 - Perkins 32-05 - Perkins 32-05 - As Drille	6,350.00	6,354.19	9,711.05	9,633.26	124.848	ES
Perkins 32-05 - Perkins 32-05 - Perkins 32-05 - As Drille	6,900.00	6,839.00	9,928.32	9,845.10	119.307	SF
Perkins 42-05 - Perkins 42-05 - Perkins 42-05 - As Drille						Out of range
Perkins 43-05 - Perkins 43-05 - Perkins 43-05 - As Drille						Out of range
Perkins USX Y05-16 - Perkins USX Y05-16 - Perkins US						Out of range

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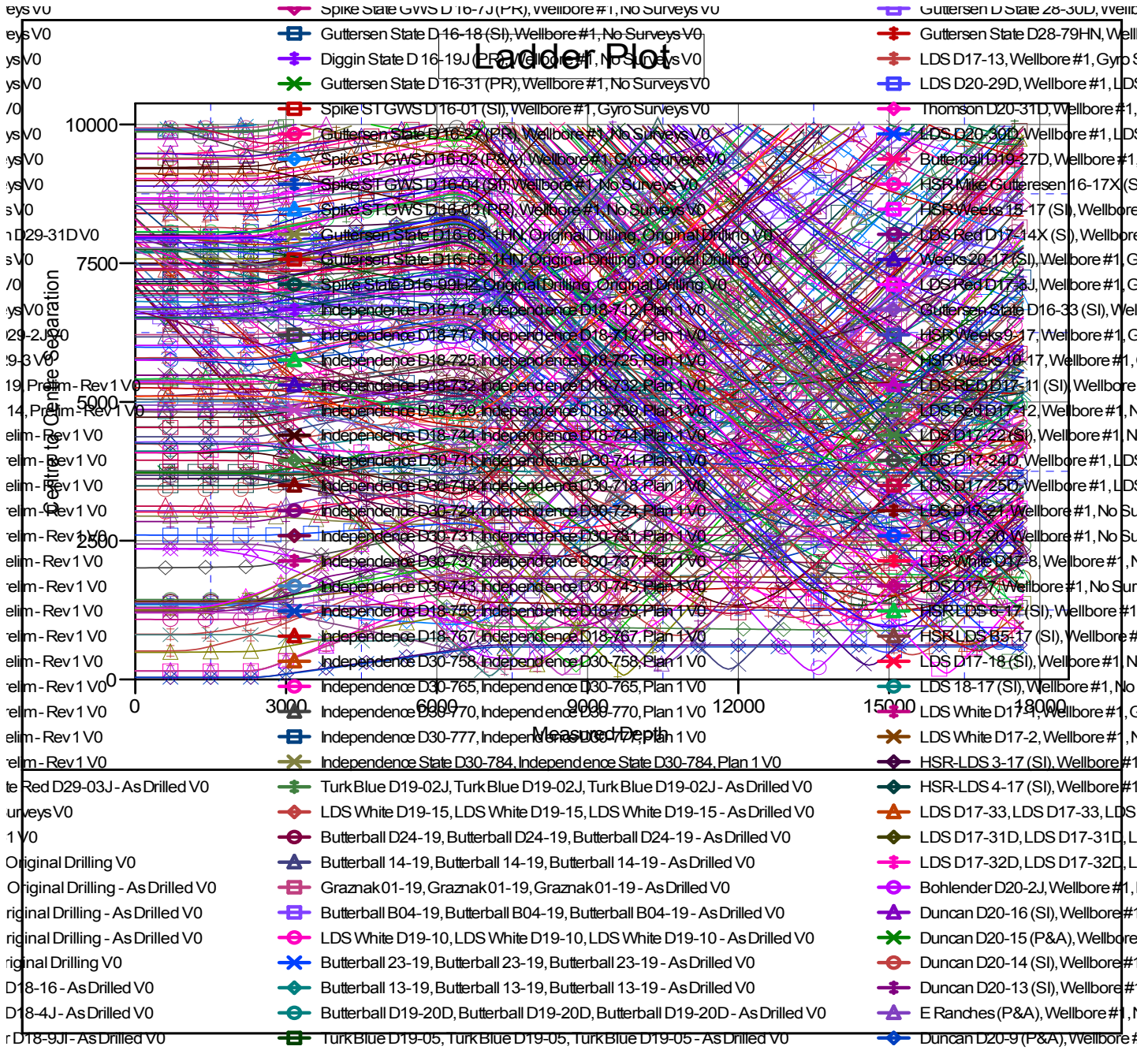
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen D29-778	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen D29-778	**Database:**	EDMP
Reference Design:	Prelim - Rev 1	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to Well @ 4810.00ft
Offset Depths are relative to Offset Datum
Central Meridian is -105.5000000

Coordinates are relative to: Guttersen D29-778
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.59°



Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen D29-778
Project:	Mustang	**TVD Reference:**	Well @ 4810.00ft
Reference Site:	D Section 29	**MD Reference:**	Well @ 4810.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen D29-778	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen D29-778	**Database:**	EDMP
Reference Design:	Prelim - Rev 1	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to Well @ 4810.00ft
Offset Depths are relative to Offset Datum
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Coordinates are relative to: Guttersen D29-778
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.59°