

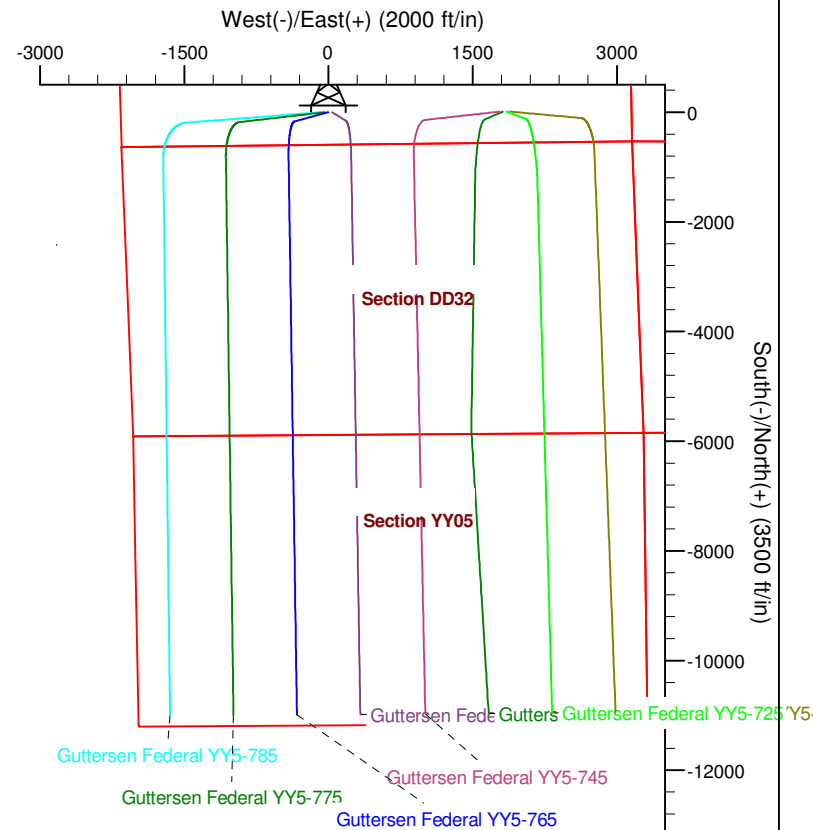
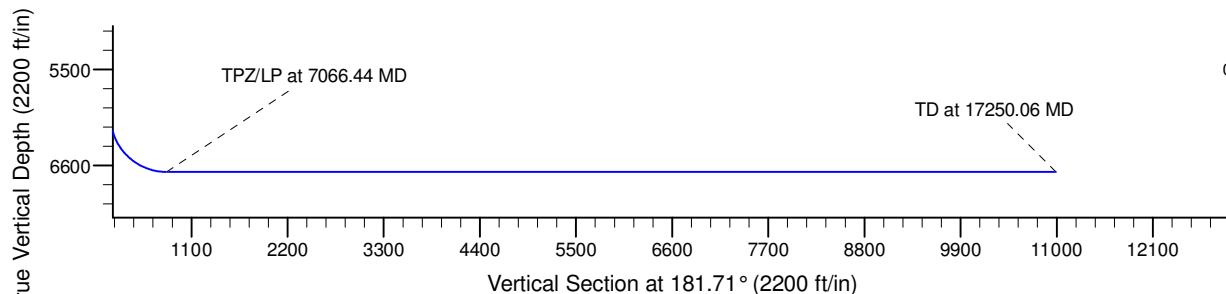
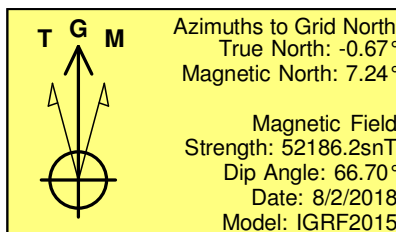
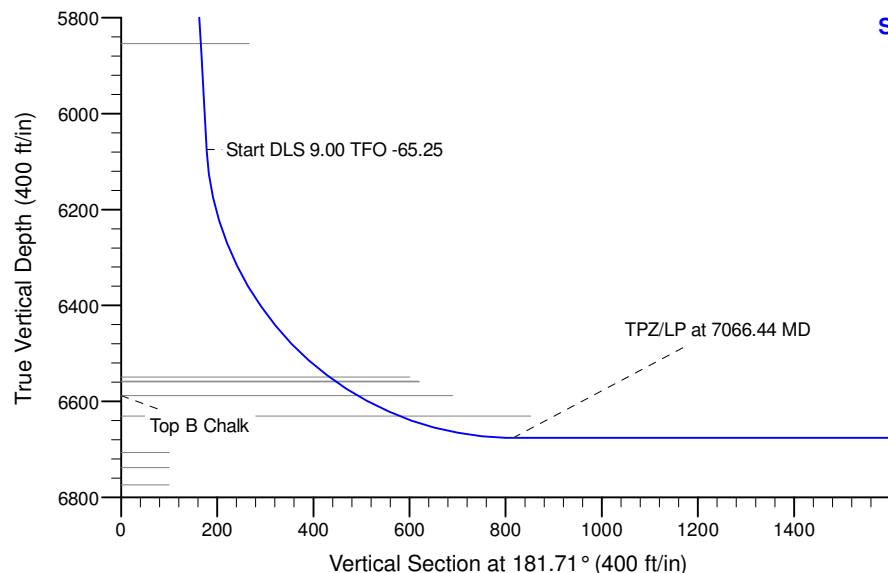
Project: Mustang
Site: DD Section 29
Well: Guttersen Federal YY5-765
Wellbore: Guttersen Federal YY5-765
Design: Plan #1

Northern Region - DJ Basin

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

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	2700.00	0.00	0.00	2700.00	0.00	0.00	0.00	0.00	0.00	
3	3048.44	6.97	244.60	3047.58	-9.08	-19.12	2.00	244.60	9.64	
4	6098.99	6.97	244.60	6075.60	-167.86	-353.44	0.00	0.00	178.31	
5	7066.44	90.00	179.51	6676.00	-804.20	-414.55	9.00	-65.25	816.18	Guttersen Federal YY5-765-TPZ
6	17250.06	90.00	179.51	6676.00	-10987.45	-327.32	0.00	0.00	10992.32	Guttersen Federal YY5-765-BHL



WELL DETAILS: Guttersen Federal YY5-765

	North	East	Lat	Long
0.00	0.00	1314051.11	40.1908200	-104.4633600

Plan: Plan #1 (Guttersen Federal YY5-765/Guttersen Federal YY5-765)

Created By: Colby Baxter Date: 12:12, September 25 2018

Checked: _____ Date: _____

Reviewed: _____ Date: _____

Approved: _____ Date: _____

Northern Region - DJ Basin

Mustang

DD Section 29

Guttersen Federal YY5-765

Guttersen Federal YY5-765

Plan: Plan #1

Standard Survey Report

25 September, 2018

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen Federal YY5-765
Project:	Mustang	TVD Reference:	Well @ 4893.00ft
Site:	DD Section 29	MD Reference:	Well @ 4893.00ft
Well:	Guttersen Federal YY5-765	North Reference:	Grid
Wellbore:	Guttersen Federal YY5-765	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDMP

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

Site	DD Section 29				
Site Position:		Northing:	1,317,717.97 usft	Latitude:	40.2008380
From:	Lat/Long	Easting:	3,291,067.61 usft	Longitude:	-104.4579500
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.67 °

Well		Guttersen Federal YY5-765				
Well Position	+N/-S	0.00 ft	Northing:	1,314,051.11 usft	Latitude:	40.1908200
	+E/-W	0.00 ft	Easting:	3,289,599.21 usft	Longitude:	-104.4633600
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	4,863.00 ft

Wellbore	Guttersen Federal YY5-765				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	8/2/2018	7.91	66.70	52,186.19421455

Design	Plan #1				
Audit Notes:					
Version:	Phase:	PLAN	Tie On Depth:	0.00	
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00	181.71	

Survey Tool Program	Date	9/24/2018			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.00	17,250.06	Plan #1 (Guttersen Federal YY5-765)	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 Federal YY5-765
Project:	Mustang	TVD Reference:	Well @ 4893.00ft
Site:	DD Section 29	MD Reference:	Well @ 4893.00ft
Well:	Guttersen Federal YY5-765	North Reference:	Grid
Wellbore:	Guttersen Federal YY5-765	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDMP

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	2.00	244.60	2,799.98	-0.75	-1.58	0.80	2.00	2.00	0.00
2,900.00	4.00	244.60	2,899.84	-2.99	-6.30	3.18	2.00	2.00	0.00
3,000.00	6.00	244.60	2,999.45	-6.73	-14.18	7.15	2.00	2.00	0.00
3,048.44	6.97	244.60	3,047.58	-9.08	-19.12	9.64	2.00	2.00	0.00
3,100.00	6.97	244.60	3,098.76	-11.76	-24.77	12.50	0.00	0.00	0.00
3,200.00	6.97	244.60	3,198.02	-16.97	-35.73	18.02	0.00	0.00	0.00
3,300.00	6.97	244.60	3,297.28	-22.17	-46.69	23.55	0.00	0.00	0.00
3,400.00	6.97	244.60	3,396.54	-27.38	-57.65	29.08	0.00	0.00	0.00
3,500.00	6.97	244.60	3,495.81	-32.58	-68.61	34.61	0.00	0.00	0.00
3,600.00	6.97	244.60	3,595.07	-37.79	-79.57	40.14	0.00	0.00	0.00
3,700.00	6.97	244.60	3,694.33	-42.99	-90.53	45.67	0.00	0.00	0.00
3,800.00	6.97	244.60	3,793.59	-48.20	-101.48	51.20	0.00	0.00	0.00
3,900.00	6.97	244.60	3,892.85	-53.40	-112.44	56.73	0.00	0.00	0.00
4,000.00	6.97	244.60	3,992.11	-58.61	-123.40	62.26	0.00	0.00	0.00
4,100.00	6.97	244.60	4,091.37	-63.81	-134.36	67.79	0.00	0.00	0.00
4,200.00	6.97	244.60	4,190.63	-69.02	-145.32	73.32	0.00	0.00	0.00
4,300.00	6.97	244.60	4,289.90	-74.22	-156.28	78.84	0.00	0.00	0.00
4,400.00	6.97	244.60	4,389.16	-79.43	-167.24	84.37	0.00	0.00	0.00
4,500.00	6.97	244.60	4,488.42	-84.63	-178.20	89.90	0.00	0.00	0.00
4,600.00	6.97	244.60	4,587.68	-89.84	-189.16	95.43	0.00	0.00	0.00
4,700.00	6.97	244.60	4,686.94	-95.04	-200.12	100.96	0.00	0.00	0.00
4,800.00	6.97	244.60	4,786.20	-100.25	-211.08	106.49	0.00	0.00	0.00
4,900.00	6.97	244.60	4,885.46	-105.45	-222.04	112.02	0.00	0.00	0.00
5,000.00	6.97	244.60	4,984.72	-110.66	-233.00	117.55	0.00	0.00	0.00
5,100.00	6.97	244.60	5,083.99	-115.86	-243.96	123.08	0.00	0.00	0.00
5,200.00	6.97	244.60	5,183.25	-121.07	-254.92	128.61	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen Federal YY5-765
Project:	Mustang	TVD Reference:	Well @ 4893.00ft
Site:	DD Section 29	MD Reference:	Well @ 4893.00ft
Well:	Guttersen Federal YY5-765	North Reference:	Grid
Wellbore:	Guttersen Federal YY5-765	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDMP

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,300.00	6.97	244.60	5,282.51	-126.27	-265.88	134.13	0.00	0.00	0.00
5,400.00	6.97	244.60	5,381.77	-131.48	-276.84	139.66	0.00	0.00	0.00
5,500.00	6.97	244.60	5,481.03	-136.68	-287.80	145.19	0.00	0.00	0.00
5,600.00	6.97	244.60	5,580.29	-141.89	-298.76	150.72	0.00	0.00	0.00
5,700.00	6.97	244.60	5,679.55	-147.09	-309.72	156.25	0.00	0.00	0.00
5,800.00	6.97	244.60	5,778.81	-152.30	-320.68	161.78	0.00	0.00	0.00
5,900.00	6.97	244.60	5,878.08	-157.50	-331.63	167.31	0.00	0.00	0.00
6,000.00	6.97	244.60	5,977.34	-162.71	-342.59	172.84	0.00	0.00	0.00
6,098.99	6.97	244.60	6,075.60	-167.86	-353.44	178.31	0.00	0.00	0.00
6,100.00	7.01	243.92	6,076.60	-167.91	-353.55	178.37	9.00	3.82	-67.00
6,200.00	13.56	206.87	6,175.03	-181.08	-364.35	191.85	9.00	6.55	-37.05
6,300.00	21.91	195.51	6,270.22	-209.58	-374.66	220.64	9.00	8.35	-11.36
6,400.00	30.62	190.30	6,359.82	-252.70	-384.23	264.03	9.00	8.71	-5.20
6,500.00	39.45	187.25	6,441.63	-309.39	-392.81	320.95	9.00	8.83	-3.05
6,600.00	48.33	185.17	6,513.63	-378.24	-400.20	389.99	9.00	8.88	-2.08
6,700.00	57.25	183.60	6,574.04	-457.58	-406.22	469.47	9.00	8.91	-1.57
6,800.00	66.18	182.31	6,621.39	-545.43	-410.72	557.41	9.00	8.93	-1.28
6,900.00	75.11	181.20	6,654.50	-639.63	-413.58	651.66	9.00	8.94	-1.12
7,000.00	84.06	180.17	6,672.56	-737.88	-414.74	749.90	9.00	8.94	-1.03
7,066.44	90.00	179.51	6,676.00	-804.20	-414.55	816.18	9.00	8.95	-1.00
7,100.00	90.00	179.51	6,676.00	-837.76	-414.27	849.72	0.00	0.00	0.00
7,200.00	90.00	179.51	6,676.00	-937.75	-413.41	949.65	0.00	0.00	0.00
7,300.00	90.00	179.51	6,676.00	-1,037.75	-412.55	1,049.57	0.00	0.00	0.00
7,400.00	90.00	179.51	6,676.00	-1,137.75	-411.70	1,149.50	0.00	0.00	0.00
7,500.00	90.00	179.51	6,676.00	-1,237.74	-410.84	1,249.43	0.00	0.00	0.00
7,600.00	90.00	179.51	6,676.00	-1,337.74	-409.98	1,349.35	0.00	0.00	0.00
7,700.00	90.00	179.51	6,676.00	-1,437.73	-409.13	1,449.28	0.00	0.00	0.00
7,800.00	90.00	179.51	6,676.00	-1,537.73	-408.27	1,549.21	0.00	0.00	0.00
7,900.00	90.00	179.51	6,676.00	-1,637.73	-407.41	1,649.13	0.00	0.00	0.00
8,000.00	90.00	179.51	6,676.00	-1,737.72	-406.56	1,749.06	0.00	0.00	0.00
8,100.00	90.00	179.51	6,676.00	-1,837.72	-405.70	1,848.99	0.00	0.00	0.00
8,200.00	90.00	179.51	6,676.00	-1,937.72	-404.84	1,948.91	0.00	0.00	0.00
8,300.00	90.00	179.51	6,676.00	-2,037.71	-403.99	2,048.84	0.00	0.00	0.00
8,400.00	90.00	179.51	6,676.00	-2,137.71	-403.13	2,148.76	0.00	0.00	0.00
8,500.00	90.00	179.51	6,676.00	-2,237.70	-402.27	2,248.69	0.00	0.00	0.00
8,600.00	90.00	179.51	6,676.00	-2,337.70	-401.42	2,348.62	0.00	0.00	0.00
8,700.00	90.00	179.51	6,676.00	-2,437.70	-400.56	2,448.54	0.00	0.00	0.00
8,800.00	90.00	179.51	6,676.00	-2,537.69	-399.70	2,548.47	0.00	0.00	0.00
8,900.00	90.00	179.51	6,676.00	-2,637.69	-398.85	2,648.40	0.00	0.00	0.00
9,000.00	90.00	179.51	6,676.00	-2,737.69	-397.99	2,748.32	0.00	0.00	0.00
9,100.00	90.00	179.51	6,676.00	-2,837.68	-397.13	2,848.25	0.00	0.00	0.00
9,200.00	90.00	179.51	6,676.00	-2,937.68	-396.28	2,948.18	0.00	0.00	0.00
9,300.00	90.00	179.51	6,676.00	-3,037.68	-395.42	3,048.10	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen Federal YY5-765
Project:	Mustang	TVD Reference:	Well @ 4893.00ft
Site:	DD Section 29	MD Reference:	Well @ 4893.00ft
Well:	Guttersen Federal YY5-765	North Reference:	Grid
Wellbore:	Guttersen Federal YY5-765	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDMP

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
9,400.00	90.00	179.51	6,676.00	-3,137.67	-394.56	3,148.03	0.00	0.00	0.00
9,500.00	90.00	179.51	6,676.00	-3,237.67	-393.71	3,247.96	0.00	0.00	0.00
9,600.00	90.00	179.51	6,676.00	-3,337.66	-392.85	3,347.88	0.00	0.00	0.00
9,700.00	90.00	179.51	6,676.00	-3,437.66	-391.99	3,447.81	0.00	0.00	0.00
9,800.00	90.00	179.51	6,676.00	-3,537.66	-391.14	3,547.74	0.00	0.00	0.00
9,900.00	90.00	179.51	6,676.00	-3,637.65	-390.28	3,647.66	0.00	0.00	0.00
10,000.00	90.00	179.51	6,676.00	-3,737.65	-389.42	3,747.59	0.00	0.00	0.00
10,100.00	90.00	179.51	6,676.00	-3,837.65	-388.57	3,847.51	0.00	0.00	0.00
10,200.00	90.00	179.51	6,676.00	-3,937.64	-387.71	3,947.44	0.00	0.00	0.00
10,300.00	90.00	179.51	6,676.00	-4,037.64	-386.86	4,047.37	0.00	0.00	0.00
10,400.00	90.00	179.51	6,676.00	-4,137.64	-386.00	4,147.29	0.00	0.00	0.00
10,500.00	90.00	179.51	6,676.00	-4,237.63	-385.14	4,247.22	0.00	0.00	0.00
10,600.00	90.00	179.51	6,676.00	-4,337.63	-384.29	4,347.15	0.00	0.00	0.00
10,700.00	90.00	179.51	6,676.00	-4,437.62	-383.43	4,447.07	0.00	0.00	0.00
10,800.00	90.00	179.51	6,676.00	-4,537.62	-382.57	4,547.00	0.00	0.00	0.00
10,900.00	90.00	179.51	6,676.00	-4,637.62	-381.72	4,646.93	0.00	0.00	0.00
11,000.00	90.00	179.51	6,676.00	-4,737.61	-380.86	4,746.85	0.00	0.00	0.00
11,100.00	90.00	179.51	6,676.00	-4,837.61	-380.00	4,846.78	0.00	0.00	0.00
11,200.00	90.00	179.51	6,676.00	-4,937.61	-379.15	4,946.71	0.00	0.00	0.00
11,300.00	90.00	179.51	6,676.00	-5,037.60	-378.29	5,046.63	0.00	0.00	0.00
11,400.00	90.00	179.51	6,676.00	-5,137.60	-377.43	5,146.56	0.00	0.00	0.00
11,500.00	90.00	179.51	6,676.00	-5,237.59	-376.58	5,246.49	0.00	0.00	0.00
11,600.00	90.00	179.51	6,676.00	-5,337.59	-375.72	5,346.41	0.00	0.00	0.00
11,700.00	90.00	179.51	6,676.00	-5,437.59	-374.86	5,446.34	0.00	0.00	0.00
11,800.00	90.00	179.51	6,676.00	-5,537.58	-374.01	5,546.27	0.00	0.00	0.00
11,900.00	90.00	179.51	6,676.00	-5,637.58	-373.15	5,646.19	0.00	0.00	0.00
12,000.00	90.00	179.51	6,676.00	-5,737.58	-372.29	5,746.12	0.00	0.00	0.00
12,100.00	90.00	179.51	6,676.00	-5,837.57	-371.44	5,846.04	0.00	0.00	0.00
12,200.00	90.00	179.51	6,676.00	-5,937.57	-370.58	5,945.97	0.00	0.00	0.00
12,300.00	90.00	179.51	6,676.00	-6,037.57	-369.72	6,045.90	0.00	0.00	0.00
12,400.00	90.00	179.51	6,676.00	-6,137.56	-368.87	6,145.82	0.00	0.00	0.00
12,500.00	90.00	179.51	6,676.00	-6,237.56	-368.01	6,245.75	0.00	0.00	0.00
12,600.00	90.00	179.51	6,676.00	-6,337.55	-367.15	6,345.68	0.00	0.00	0.00
12,700.00	90.00	179.51	6,676.00	-6,437.55	-366.30	6,445.60	0.00	0.00	0.00
12,800.00	90.00	179.51	6,676.00	-6,537.55	-365.44	6,545.53	0.00	0.00	0.00
12,900.00	90.00	179.51	6,676.00	-6,637.54	-364.58	6,645.46	0.00	0.00	0.00
13,000.00	90.00	179.51	6,676.00	-6,737.54	-363.73	6,745.38	0.00	0.00	0.00
13,100.00	90.00	179.51	6,676.00	-6,837.54	-362.87	6,845.31	0.00	0.00	0.00
13,200.00	90.00	179.51	6,676.00	-6,937.53	-362.01	6,945.24	0.00	0.00	0.00
13,300.00	90.00	179.51	6,676.00	-7,037.53	-361.16	7,045.16	0.00	0.00	0.00
13,400.00	90.00	179.51	6,676.00	-7,137.53	-360.30	7,145.09	0.00	0.00	0.00
13,500.00	90.00	179.51	6,676.00	-7,237.52	-359.44	7,245.02	0.00	0.00	0.00
13,600.00	90.00	179.51	6,676.00	-7,337.52	-358.59	7,344.94	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen Federal YY5-765
Project:	Mustang	TVD Reference:	Well @ 4893.00ft
Site:	DD Section 29	MD Reference:	Well @ 4893.00ft
Well:	Guttersen Federal YY5-765	North Reference:	Grid
Wellbore:	Guttersen Federal YY5-765	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDMP

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
13,700.00	90.00	179.51	6,676.00	-7,437.51	-357.73	7,444.87	0.00	0.00	0.00
13,800.00	90.00	179.51	6,676.00	-7,537.51	-356.87	7,544.79	0.00	0.00	0.00
13,900.00	90.00	179.51	6,676.00	-7,637.51	-356.02	7,644.72	0.00	0.00	0.00
14,000.00	90.00	179.51	6,676.00	-7,737.50	-355.16	7,744.65	0.00	0.00	0.00
14,100.00	90.00	179.51	6,676.00	-7,837.50	-354.30	7,844.57	0.00	0.00	0.00
14,200.00	90.00	179.51	6,676.00	-7,937.50	-353.45	7,944.50	0.00	0.00	0.00
14,300.00	90.00	179.51	6,676.00	-8,037.49	-352.59	8,044.43	0.00	0.00	0.00
14,400.00	90.00	179.51	6,676.00	-8,137.49	-351.74	8,144.35	0.00	0.00	0.00
14,500.00	90.00	179.51	6,676.00	-8,237.48	-350.88	8,244.28	0.00	0.00	0.00
14,600.00	90.00	179.51	6,676.00	-8,337.48	-350.02	8,344.21	0.00	0.00	0.00
14,700.00	90.00	179.51	6,676.00	-8,437.48	-349.17	8,444.13	0.00	0.00	0.00
14,800.00	90.00	179.51	6,676.00	-8,537.47	-348.31	8,544.06	0.00	0.00	0.00
14,900.00	90.00	179.51	6,676.00	-8,637.47	-347.45	8,643.99	0.00	0.00	0.00
15,000.00	90.00	179.51	6,676.00	-8,737.47	-346.60	8,743.91	0.00	0.00	0.00
15,100.00	90.00	179.51	6,676.00	-8,837.46	-345.74	8,843.84	0.00	0.00	0.00
15,200.00	90.00	179.51	6,676.00	-8,937.46	-344.88	8,943.77	0.00	0.00	0.00
15,300.00	90.00	179.51	6,676.00	-9,037.46	-344.03	9,043.69	0.00	0.00	0.00
15,400.00	90.00	179.51	6,676.00	-9,137.45	-343.17	9,143.62	0.00	0.00	0.00
15,500.00	90.00	179.51	6,676.00	-9,237.45	-342.31	9,243.54	0.00	0.00	0.00
15,600.00	90.00	179.51	6,676.00	-9,337.44	-341.46	9,343.47	0.00	0.00	0.00
15,700.00	90.00	179.51	6,676.00	-9,437.44	-340.60	9,443.40	0.00	0.00	0.00
15,800.00	90.00	179.51	6,676.00	-9,537.44	-339.74	9,543.32	0.00	0.00	0.00
15,900.00	90.00	179.51	6,676.00	-9,637.43	-338.89	9,643.25	0.00	0.00	0.00
16,000.00	90.00	179.51	6,676.00	-9,737.43	-338.03	9,743.18	0.00	0.00	0.00
16,100.00	90.00	179.51	6,676.00	-9,837.43	-337.17	9,843.10	0.00	0.00	0.00
16,200.00	90.00	179.51	6,676.00	-9,937.42	-336.32	9,943.03	0.00	0.00	0.00
16,300.00	90.00	179.51	6,676.00	-10,037.42	-335.46	10,042.96	0.00	0.00	0.00
16,400.00	90.00	179.51	6,676.00	-10,137.42	-334.60	10,142.88	0.00	0.00	0.00
16,500.00	90.00	179.51	6,676.00	-10,237.41	-333.75	10,242.81	0.00	0.00	0.00
16,600.00	90.00	179.51	6,676.00	-10,337.41	-332.89	10,342.74	0.00	0.00	0.00
16,700.00	90.00	179.51	6,676.00	-10,437.40	-332.03	10,442.66	0.00	0.00	0.00
16,800.00	90.00	179.51	6,676.00	-10,537.40	-331.18	10,542.59	0.00	0.00	0.00
16,900.00	90.00	179.51	6,676.00	-10,637.40	-330.32	10,642.52	0.00	0.00	0.00
17,000.00	90.00	179.51	6,676.00	-10,737.39	-329.46	10,742.44	0.00	0.00	0.00
17,100.00	90.00	179.51	6,676.00	-10,837.39	-328.61	10,842.37	0.00	0.00	0.00
17,200.00	90.00	179.51	6,676.00	-10,937.39	-327.75	10,942.30	0.00	0.00	0.00
17,250.06	90.00	179.51	6,676.00	-10,987.45	-327.32	10,992.32	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen Federal YY5-765
Project:	Mustang	TVD Reference:	Well @ 4893.00ft
Site:	DD Section 29	MD Reference:	Well @ 4893.00ft
Well:	Guttersen Federal YY5-765	North Reference:	Grid
Wellbore:	Guttersen Federal YY5-765	Survey Calculation Method:	Minimum Curvature
Design:	Plan #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 Federal YY5- - plan misses target center by 1.43ft at 0.00ft MD (0.00 TVD, 0.00 N, 0.00 E) - Point	0.00	0.00	0.00	1.34	0.49	1,314,052.46	3,289,599.70	40.1908237	-104.4633582
Guttersen Federal YY5- - plan hits target center - Point	0.00	0.00	6,075.60	-167.86	-353.44	1,313,883.25	3,289,245.77	40.1903706	-104.4646321
Guttersen Federal YY5- - plan hits target center - Point	0.00	0.01	6,676.00	-10,987.45	-327.32	1,303,063.69	3,289,271.89	40.1606707	-104.4649906
Guttersen Federal YY5- - plan hits target center - Point	0.00	0.00	6,676.00	-804.20	-414.55	1,313,246.92	3,289,184.66	40.1886258	-104.4648774

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
764.00	764.00	Fox Hills				
764.00	764.00	Pierre				
911.00	911.00	Upper Pierre Aquifer Top				
1,673.00	1,673.00	Upper Pierre Aquifer Base				
3,750.04	3,744.00	Parkman				
4,327.31	4,317.00	Sussex				
4,998.26	4,983.00	Shannon				
5,875.75	5,854.00	Teepee Buttes				
6,656.02	6,549.00	Sharon Springs				
6,671.33	6,558.00	Top A Marl				
6,673.06	6,559.00	Top A Chalk				
6,726.66	6,588.00	Top B Chalk				
6,824.89	6,631.00	Top B Marl				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
2700	2700	0	0	Start Build 2.00	
6099	6076	-168	-353	Start DLS 9.00 TFO -65.25	
7066	6676	-804	-415	TPZ/LP at 7066.44 MD	
17,250	6676	-10,987	-327	TD at 17250.06 MD	

Checked By: _____ Approved By: _____ Date: _____

Northern Region - DJ Basin

Mustang

DD Section 29

Guttersen Federal YY5-765

Guttersen Federal YY5-765

Plan #1

Anticollision Summary Report

25 September, 2018

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersten Federal YY5-765
Project:	Mustang	TVD Reference:	Well @ 4893.00ft
Reference Site:	DD Section 29	MD Reference:	Well @ 4893.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersten Federal YY5-765	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Guttersten Federal YY5-765	Database:	EDMP
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

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

Survey Tool Program	Date 9/24/2018			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	17,250.06	Plan #1 (Guttersten Federal YY5-765)	2_MWD+IFR1+MS	A008Mb: IFR dec & multi-station analysis

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
DD Section 28						
Guttersten 11-28 (PA) - Wellbore #1 - Gyro Surveys	100.00	39.77	5,604.31	5,604.11	10,000.000	CC
Guttersten 11-28 (PA) - Wellbore #1 - Gyro Surveys	700.00	619.62	5,606.55	5,602.28	1,312.924	ES
Guttersten 11-28 (PA) - Wellbore #1 - Gyro Surveys	6,600.00	6,458.29	6,179.69	6,134.40	136.471	SF
Guttersten 12-28 (SI) - Wellbore #1 - Gyro Surveys	2,144.23	2,091.36	4,819.79	4,805.20	330.341	CC
Guttersten 12-28 (SI) - Wellbore #1 - Gyro Surveys	2,400.00	2,312.04	4,820.62	4,804.34	296.166	ES
Guttersten 12-28 (SI) - Wellbore #1 - Gyro Surveys	6,650.00	6,499.30	5,321.62	5,276.06	116.785	SF
Guttersten 21-28 (PA) - Wellbore #1 - Gyro Surveys	621.11	568.12	6,552.07	6,548.26	1,720.257	CC
Guttersten 21-28 (PA) - Wellbore #1 - Gyro Surveys	2,700.00	2,630.76	6,555.18	6,536.72	354.999	ES
Guttersten 21-28 (PA) - Wellbore #1 - Gyro Surveys	6,750.00	6,550.54	7,165.19	7,119.25	155.963	SF
Guttersten 22-28 (PA) - Wellbore #1 - Gyro Surveys	2,711.99	2,662.88	5,688.17	5,669.55	305.574	CC, ES
Guttersten 22-28 (PA) - Wellbore #1 - Gyro Surveys	6,750.00	6,502.45	6,288.98	6,243.15	137.231	SF
Guttersten 28A (PA) - Wellbore #1 - Gyro Surveys	100.00	20.81	5,630.62	5,630.46	10,000.000	CC
Guttersten 28A (PA) - Wellbore #1 - Gyro Surveys	2,718.86	2,692.29	5,644.53	5,625.78	301.111	ES
Guttersten 28A (PA) - Wellbore #1 - Gyro Surveys	6,650.00	6,482.43	6,189.79	6,144.30	136.088	SF
Guttersten Federal YY4-755 - Guttersten Federal YY4-755	2,700.00	2,641.00	5,375.24	5,356.56	287.754	CC, ES
Guttersten Federal YY4-755 - Guttersten Federal YY4-755	17,250.06	17,107.00	5,954.06	5,768.89	32.154	SF
Guttersten Federal YY4-765 - Guttersten Federal YY4-765	6,008.03	6,563.42	5,133.91	5,089.69	116.101	CC
Guttersten Federal YY4-765 - Guttersten Federal YY4-765	6,098.99	6,611.33	5,134.38	5,089.66	114.836	ES
Guttersten Federal YY4-765 - Guttersten Federal YY4-765	17,250.06	17,248.09	5,295.12	5,109.54	28.534	SF
Guttersten Federal YY4-775 - Guttersten Federal YY4-775	6,310.93	6,931.61	4,494.62	4,447.48	95.336	CC
Guttersten Federal YY4-775 - Guttersten Federal YY4-775	15,600.00	15,667.93	4,577.71	4,418.41	28.737	ES
Guttersten Federal YY4-775 - Guttersten Federal YY4-775	17,250.06	17,219.54	4,632.23	4,447.86	25.125	SF
Guttersten Federal YY4-785 - Guttersten Federal YY4-785	6,517.74	7,224.84	3,853.09	3,803.65	77.937	CC
Guttersten Federal YY4-785 - Guttersten Federal YY4-785	17,250.06	17,682.62	3,975.70	3,789.27	21.325	ES, SF
Guttersten State DD28-755 - Wellbore #1 - Plan #1	2,004.45	1,944.45	5,378.44	5,364.75	392.883	CC
Guttersten State DD28-755 - Wellbore #1 - Plan #1	2,200.00	2,114.24	5,378.78	5,363.80	359.179	ES
Guttersten State DD28-755 - Wellbore #1 - Plan #1	10,200.00	6,250.00	6,574.07	6,515.96	113.125	SF
Guttersten State DD28-765 - Wellbore #1 - Plan #1	6,124.38	7,331.33	5,192.85	5,146.87	112.925	CC
Guttersten State DD28-765 - Wellbore #1 - Plan #1	6,150.00	7,328.49	5,192.91	5,146.84	112.708	ES
Guttersten State DD28-765 - Wellbore #1 - Plan #1	9,400.00	6,400.00	5,715.42	5,660.64	104.338	SF
Guttersten State DD28-775 - Wellbore #1 - Plan #1	6,299.64	7,504.49	4,548.09	4,500.15	94.874	CC
Guttersten State DD28-775 - Wellbore #1 - Plan #1	6,300.00	7,504.62	4,548.09	4,500.15	94.872	ES
Guttersten State DD28-775 - Wellbore #1 - Plan #1	8,300.00	6,850.00	4,772.69	4,720.47	91.389	SF
Guttersten State DD28-785 - Wellbore #1 - Plan #1	6,365.61	7,647.63	3,890.85	3,841.29	78.509	CC, ES
Guttersten State DD28-785 - Wellbore #1 - Plan #1	7,400.00	7,300.00	3,960.53	3,909.47	77.572	SF
State 27 (SI) - Wellbore #1 - Gyro Surveys	2,315.21	2,226.79	4,522.04	4,506.36	288.325	CC
State 27 (SI) - Wellbore #1 - Gyro Surveys	2,703.03	2,629.74	4,524.20	4,505.73	244.862	ES

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

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersten Federal YY5-765
Project:	Mustang	TVD Reference:	Well @ 4893.00ft
Reference Site:	DD Section 29	MD Reference:	Well @ 4893.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersten Federal YY5-765	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Guttersten Federal YY5-765	Database:	EDMP
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
DD Section 28						
State 27 (SI) - Wellbore #1 - Gyro Surveys	6,900.00	6,712.96	5,044.14	4,997.11	107.257	SF
DD Section 29						
Champlin 366 Amoco C UT 1 (PR) - Wellbore #1 - Gyro	2,736.87	2,739.47	3,963.99	3,945.00	208.713	CC, ES
Champlin 366 Amoco C UT 1 (PR) - Wellbore #1 - Gyro	6,450.00	6,410.82	4,320.36	4,275.53	96.370	SF
Champlin Amoco 1 (PA) - Wellbore #1 - No Surveys	6,106.41	6,051.97	983.31	840.77	6.899	CC, ES
Champlin Amoco 1 (PA) - Wellbore #1 - No Surveys	6,200.00	6,144.04	989.40	844.69	6.837	SF
Guttersten 42-29 (PR) - Wellbore #1 - Gyro Surveys	2,702.75	2,668.18	3,765.79	3,747.18	202.350	CC, ES
Guttersten 42-29 (PR) - Wellbore #1 - Gyro Surveys	6,700.00	6,746.75	4,228.82	4,154.89	57.200	SF
Guttersten Federal YY5-715 - Guttersten Federal YY5-715	2,200.00	2,198.00	1,891.37	1,876.07	123.622	CC, ES
Guttersten Federal YY5-715 - Guttersten Federal YY5-715	17,250.06	17,283.96	3,314.67	3,128.54	17.809	SF
Guttersten Federal YY5-725 - Guttersten Federal YY5-725	2,700.00	2,701.00	1,855.05	1,836.16	98.177	CC, ES
Guttersten Federal YY5-725 - Guttersten Federal YY5-725	17,250.06	17,307.41	2,655.37	2,469.48	14.284	SF
Guttersten Federal YY5-735 - Guttersten Federal YY5-735	2,700.00	2,701.00	1,815.94	1,797.04	96.107	CC
Guttersten Federal YY5-735 - Guttersten Federal YY5-735	12,100.00	12,165.24	1,861.13	1,755.22	17.573	ES
Guttersten Federal YY5-735 - Guttersten Federal YY5-735	17,250.06	17,278.85	1,995.28	1,809.91	10.764	SF
Guttersten Federal YY5-745 - Guttersten Federal YY5-745	7,016.84	7,188.26	1,305.72	1,256.29	26.416	CC
Guttersten Federal YY5-745 - Guttersten Federal YY5-745	17,250.06	17,412.61	1,337.30	1,150.73	7.168	ES, SF
Guttersten Federal YY5-755 - Guttersten Federal YY5-755	2,700.00	2,701.00	39.11	20.22	2.070	CC, ES, SF
Guttersten Federal YY5-775 - Guttersten Federal YY5-775	2,200.00	2,200.00	36.32	21.01	2.373	CC, ES
Guttersten Federal YY5-775 - Guttersten Federal YY5-775	2,300.00	2,298.84	37.75	21.75	2.359	SF
Guttersten Federal YY5-785 - Guttersten Federal YY5-785	2,200.00	2,201.00	74.52	59.21	4.867	CC, ES
Guttersten Federal YY5-785 - Guttersten Federal YY5-785	2,300.00	2,298.43	76.24	60.24	4.765	SF
Guttersten State DD29-715 - Wellbore #1 - Plan #1	2,000.00	1,977.00	1,896.83	1,883.04	137.547	CC
Guttersten State DD29-715 - Wellbore #1 - Plan #1	2,100.00	2,051.59	1,897.35	1,882.94	131.696	ES
Guttersten State DD29-715 - Wellbore #1 - Plan #1	8,000.00	6,216.60	3,257.02	3,207.93	66.353	SF
Guttersten State DD29-725 - Wellbore #1 - Plan #1	2,000.00	1,987.00	1,859.00	1,845.18	134.455	CC
Guttersten State DD29-725 - Wellbore #1 - Plan #1	2,100.00	2,068.88	1,859.43	1,844.96	128.546	ES
Guttersten State DD29-725 - Wellbore #1 - Plan #1	6,800.00	7,040.77	2,584.65	2,537.05	54.296	SF
Guttersten State DD29-735 - Wellbore #1 - Plan #1	2,840.76	2,924.39	1,798.51	1,778.57	90.193	CC, ES
Guttersten State DD29-735 - Wellbore #1 - Plan #1	6,950.00	6,882.80	1,916.25	1,868.24	39.912	SF
Guttersten State DD29-745 - Wellbore #1 - Plan #1	6,601.28	7,228.40	1,255.56	1,207.44	26.091	CC, ES
Guttersten State DD29-745 - Wellbore #1 - Plan #1	6,700.00	7,165.11	1,257.41	1,209.15	26.057	SF
Guttersten State DD29-755 - Wellbore #1 - Plan #1	2,000.00	1,997.00	153.72	139.86	11.089	CC, ES
Guttersten State DD29-755 - Wellbore #1 - Plan #1	2,200.00	2,186.79	160.09	144.91	10.542	SF
Guttersten State DD29-765 - Wellbore #1 - Plan #1	7,008.60	6,892.80	76.28	27.78	1.573	CC, ES, SF
Guttersten State DD29-775 - Wellbore #1 - Plan #1	2,000.00	1,992.00	152.97	139.13	11.049	CC, ES
Guttersten State DD29-775 - Wellbore #1 - Plan #1	2,200.00	2,183.43	158.22	143.03	10.416	SF
Guttersten State DD29-785 - Wellbore #1 - Plan #1	2,000.00	1,987.00	165.61	151.79	11.978	CC, ES
Guttersten State DD29-785 - Wellbore #1 - Plan #1	2,300.00	2,272.68	177.43	161.60	11.211	SF
DD Section 32						
Childrens Hospital 1 (PA) - Wellbore #1 - No Surveys	8,510.37	6,616.00	1,976.58	1,814.64	12.206	CC, ES
Childrens Hospital 1 (PA) - Wellbore #1 - No Surveys	8,600.00	6,616.00	1,978.61	1,816.31	12.191	SF
Guttersten 43-32 (SI) - Wellbore #1 - No Surveys	10,177.31	6,593.00	3,009.86	2,838.47	17.562	CC
Guttersten 43-32 (SI) - Wellbore #1 - No Surveys	10,200.00	6,593.00	3,009.95	2,838.43	17.549	ES
Guttersten 43-32 (SI) - Wellbore #1 - No Surveys	10,400.00	6,593.00	3,018.09	2,845.47	17.484	SF
Guttersten 33-32 (PA) - Wellbore #1 - Gyro Surveys	10,180.33	6,620.59	1,820.77	1,758.25	29.123	CC, ES
Guttersten 33-32 (PA) - Wellbore #1 - Gyro Surveys	10,400.00	6,617.18	1,833.97	1,770.49	28.890	SF
L F Ranches A 1 (PA) - Wellbore #1 - No Surveys	11,146.15	6,563.00	164.09	-13.36	0.925	Level 1, CC, ES, SF

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

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersten Federal YY5-765
Project:	Mustang	TVD Reference:	Well @ 4893.00ft
Reference Site:	DD Section 29	MD Reference:	Well @ 4893.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersten Federal YY5-765	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Guttersten Federal YY5-765	Database:	EDMP
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
DD Section 33						
Guttersten 23-33 (SI) - Wellbore #1 - No Surveys	10,212.18	6,583.00	5,703.55	5,532.13	33.272	CC, ES
Guttersten 23-33 (SI) - Wellbore #1 - No Surveys	11,300.00	6,583.00	5,806.36	5,628.53	32.651	SF
Guttersten 24-33 (SI) - Wellbore #1 - Gyro Surveys	11,529.63	6,565.50	5,652.62	5,580.95	78.863	CC
Guttersten 24-33 (SI) - Wellbore #1 - Gyro Surveys	11,600.00	6,565.27	5,653.06	5,580.91	78.355	ES
Guttersten 24-33 (SI) - Wellbore #1 - Gyro Surveys	13,400.00	6,559.88	5,954.02	5,871.98	72.573	SF
L F Ranch 1-33 (SI) - Wellbore #1 - No Surveys	11,075.46	6,576.00	4,627.84	4,450.63	26.115	CC
L F Ranch 1-33 (SI) - Wellbore #1 - No Surveys	11,100.00	6,576.00	4,627.91	4,450.54	26.092	ES
L F Ranch 1-33 (SI) - Wellbore #1 - No Surveys	11,700.00	6,576.00	4,669.80	4,488.82	25.803	SF
UPV 33-5J3 (SI) - Wellbore #1 - Gyro Surveys	8,348.94	6,483.06	4,578.38	4,527.14	89.344	CC, ES
UPV 33-5J3 (SI) - Wellbore #1 - Gyro Surveys	10,000.00	6,490.84	4,866.98	4,808.34	82.996	SF
YY Section 4						
L F Ranch 2-4 (PA) - Wellbore #1 - No Surveys	16,000.63	6,570.00	4,613.32	4,398.82	21.507	CC, ES
L F Ranch 2-4 (PA) - Wellbore #1 - No Surveys	16,500.00	6,570.00	4,640.27	4,422.60	21.318	SF
YY Section 5						
Champlin 525 Amoco A1 (TA) - Wellbore #1 - No Survey	16,457.59	6,630.00	694.58	475.26	3.167	CC, ES, SF
UPV 05-7K3 (PA) - Wellbore #1 - Gyro Surveys	13,764.12	6,698.87	1,982.53	1,893.55	22.281	CC, ES
UPV 05-7K3 (PA) - Wellbore #1 - Gyro Surveys	13,900.00	6,698.85	1,987.18	1,897.48	22.154	SF
YY Section 8						
Federal 14 (PA) - Wellbore #1 - Gyro Surveys	17,250.06	6,603.87	2,360.56	2,255.42	22.453	CC, ES, SF

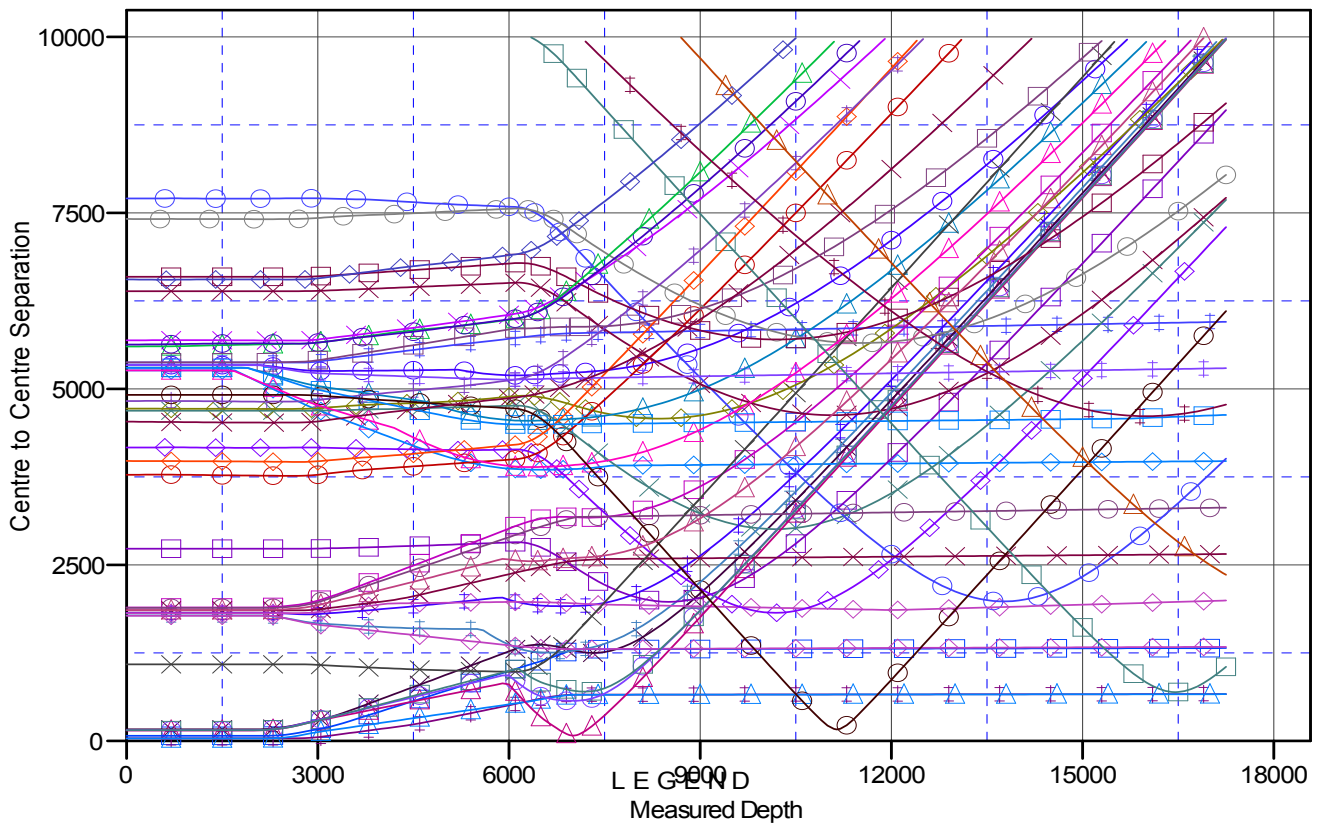
Noble Energy, Inc.
Anticollision Summary Report

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Project:	Mustang	TVD Reference:	Well @ 4893.00ft
Reference Site:	DD Section 29	MD Reference:	Well @ 4893.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersen Federal YY5-765	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Guttersen Federal YY5-765	Database:	EDMP
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to Well @ 4893.00ft
Offset Depths are relative to Offset Datum
Central Meridian is -105.5000000

Coordinates are relative to: Guttersen Federal YY5-765
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.67°

Ladder Plot



I-755, Guttersen Federal YY4-755, Plan #1 V0	Guttersen 33-32 (PA), Wellbore #1, Gyro Surveys V0	Guttersen Federal YY4-765, Guttersen F
i-785, Guttersen Federal YY5-785, Plan #1 V0	Guttersen 42-29 (PR), Wellbore #1, Gyro Surveys V0	Guttersen State DD28-785, Wellbore #1
i-755, Guttersen Federal YY5-755, Plan #1 V0	Guttersen State DD28-775, Wellbore #1, Plan #1 V0	Guttersen State DD29-775, Wellbore #1
785, Wellbore #1, Plan #1 V0	Guttersen State DD29-715, Wellbore #1, Plan #1 V0	Guttersen Federal YY4-775, Guttersen F
I-785, Guttersen Federal YY4-785, Plan #1 V0	L F Ranch 1-33 (SI), Wellbore #1, No Surveys V0	L F Ranches A 1 (PA), Wellbore #1, No
Wellbore #1, No Surveys V0	Guttersen 22-28 (PA), Wellbore #1, Gyro Surveys V0	Guttersen 11-28 (PA), Wellbore #1, Gyro
745, Wellbore #1, Plan #1 V0	Champlin 366 Amoco CUT 1 (PR), Wellbore #1, Gyro Surveys V0	Guttersen 28A (PA), Wellbore #1, Gyro S
i-775, Guttersen Federal YY5-775, Plan #1 V0	Guttersen 24-33 (SI), Wellbore #1, Gyro Surveys V0	L F Ranch 2-4 (PA), Wellbore #1, No Su
PA), Wellbore #1, No Surveys V0	Guttersen Federal YY5-715, Guttersen Federal YY5-715, Plan #1 V0	Guttersen State DD29-725, Wellbore #1
765, Wellbore #1, Plan #1 V0	Guttersen Federal YY5-725, Guttersen Federal YY5-725, Plan #1 V0	Guttersen State DD28-755, Wellbore #1
735, Wellbore #1, Plan #1 V0	Champlin Amoco 1 (PA), Wellbore #1, No Surveys V0	Federal 14 (PA), Wellbore #1, Gyro Sur
i-735, Guttersen Federal YY5-735, Plan #1 V0	Guttersen Federal YY5-745, Guttersen Federal YY5-745, Plan #1 V0	Champlin 525 Amoco A1 (TA), Wellbore

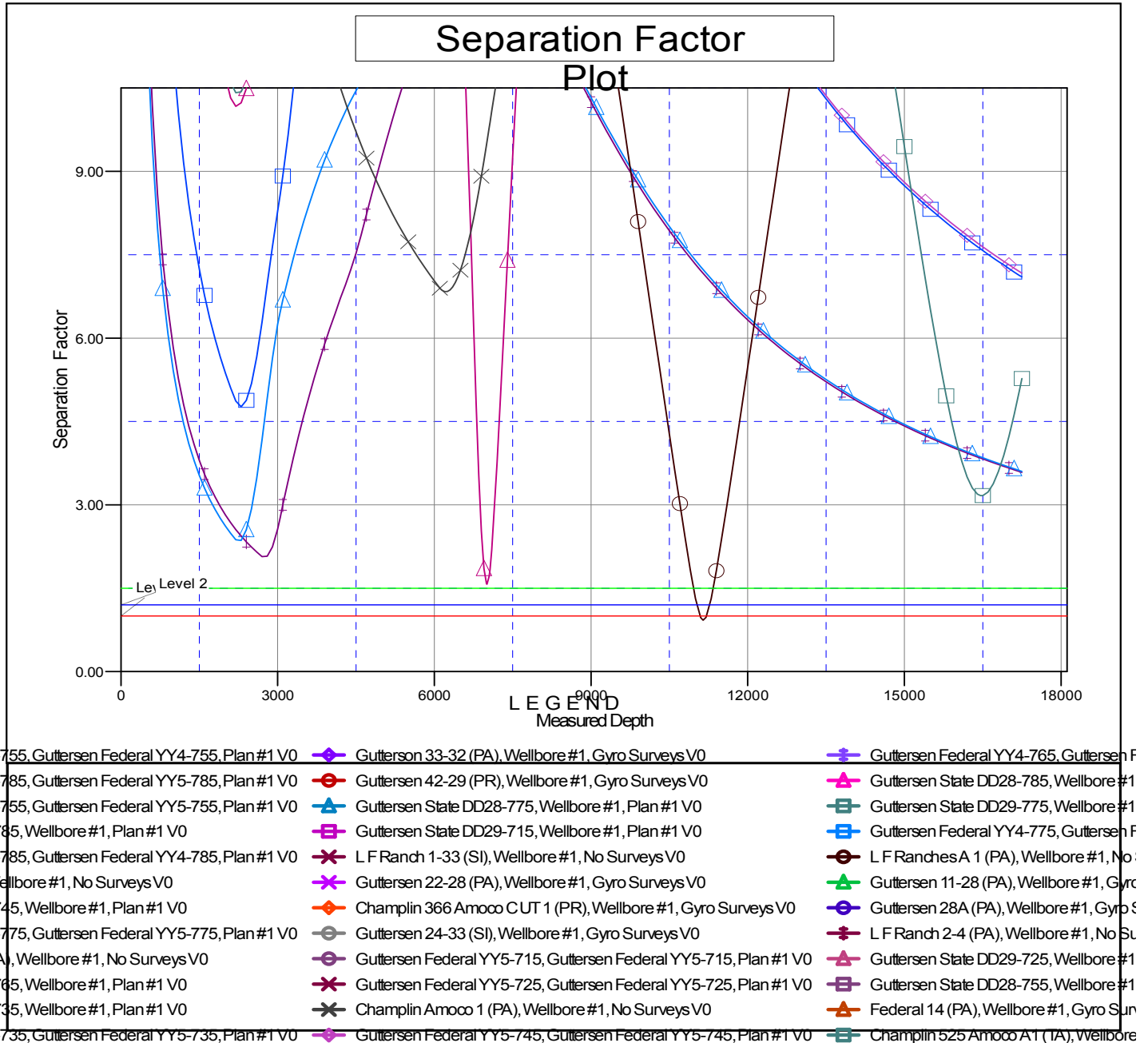
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