

Project: Mustang
 Site: DD Section 06
 Well: Gutteresen DD18-770
 Wellbore: Gutteresen DD18-770
 Design: Plan #1

Northern Region - DJ Basin

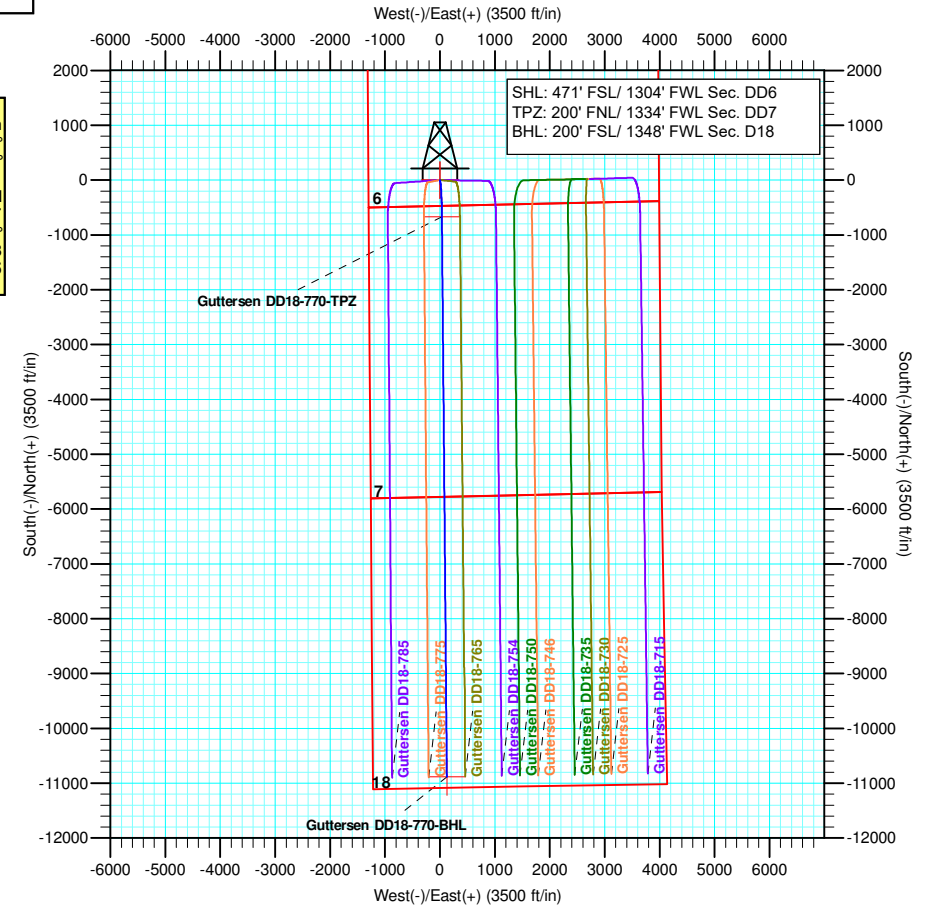
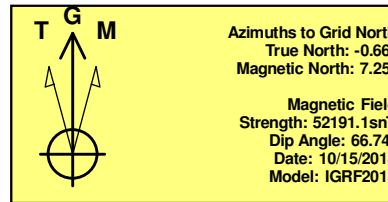
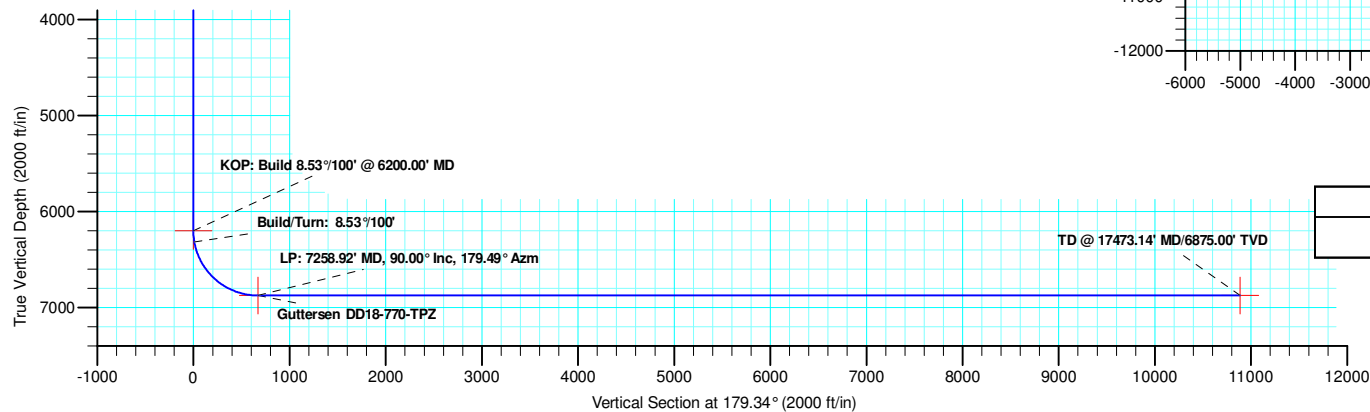
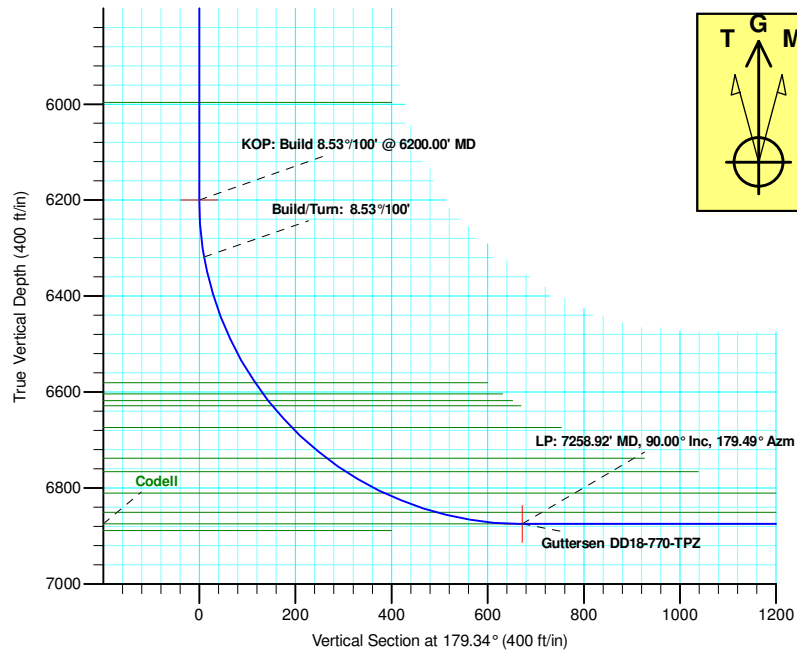
Geodetic System: US State Plane 1983
 Datum: North American Datum 1983
 Ellipsoid: GRS 1980
 Zone: Colorado Northern Zone
 System Datum: Mean Sea Level

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	6200.00	0.00	0.00	6200.00	0.00	0.00	0.00	0.00	0.00	
3	6319.07	10.16	164.13	6318.45	-10.13	2.88	8.53	164.13	10.16	
4	7258.92	90.00	179.49	6875.00	-671.48	35.15	8.53	15.60	671.84	Gutteresen DD18-770-TPZ
5	17473.14	90.00	179.49	6875.00	-10885.30	125.30	0.00	0.00	10886.02	Gutteresen DD18-770-BHL

WELL DETAILS: Gutteresen DD18-770

+N/-S	+E/-W	Northing	Ground Level: Easting	4818.00 Latitude	Longitude	Slot
0.00	0.00	1334979.49	3283199.24	40.2484700	-104.4854100	



Plan: Plan #1 (Gutteresen DD18-770/Gutteresen DD18-770)

Created By: Keith Noack Date: 10:59, October 16 2018

Northern Region - DJ Basin

Mustang

DD Section 06

Guttersen DD18-770

Guttersen DD18-770

Plan: Plan #1

Standard Planning Report

16 October, 2018

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Guttersen DD18-770
Company:	Northern Region - DJ Basin	TVD Reference:	Well @ 4848.00ft
Project:	Mustang	MD Reference:	Well @ 4848.00ft
Site:	DD Section 06	North Reference:	Grid
Well:	Guttersen DD18-770	Survey Calculation Method:	Minimum Curvature
Wellbore:	Guttersen DD18-770		
Design:	Plan #1		

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

Site	DD Section 06				
Site Position:		Northing:	1,335,191.36 usft	Latitude:	40.2490335
From:	Map	Easting:	3,283,773.88 usft	Longitude:	-104.4833427
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.66 °

Well	Guttersen DD18-770					
Well Position	+N/-S	-211.87 ft	Northing:	1,334,979.49 usft	Latitude:	40.2484700
	+E/-W	-574.64 ft	Easting:	3,283,199.24 usft	Longitude:	-104.4854100
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,818.00 ft

Wellbore	Guttersen DD18-770				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	10/15/2018	7.91	66.74	52,191.10858105

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	179.34

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
6,200.00	0.00	0.00	6,200.00	0.00	0.00	0.00	0.00	0.00	0.00	
6,319.07	10.16	164.13	6,318.45	-10.13	2.88	8.53	8.53	0.00	164.13	
7,258.92	90.00	179.49	6,875.00	-671.48	35.15	8.53	8.49	1.64	15.60	Guttersen DD18-77
17,473.14	90.00	179.49	6,875.00	-10,885.30	125.30	0.00	0.00	0.00	0.00	Guttersen DD18-77

Noble Energy, Inc.

Planning Report

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Company:	Northern Region - DJ Basin	TVD Reference:	Well @ 4848.00ft
Project:	Mustang	MD Reference:	Well @ 4848.00ft
Site:	DD Section 06	North Reference:	Grid
Well:	Guttersen DD18-770	Survey Calculation Method:	Minimum Curvature
Wellbore:	Guttersen DD18-770		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
402.00	0.00	0.00	402.00	0.00	0.00	0.00	0.00	0.00	0.00
Pierre									
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
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
742.00	0.00	0.00	742.00	0.00	0.00	0.00	0.00	0.00	0.00
Upper Pierre Aquifer Top									
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,637.00	0.00	0.00	1,637.00	0.00	0.00	0.00	0.00	0.00	0.00
Upper Pierre Aquifer Base									
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	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,777.00	0.00	0.00	3,777.00	0.00	0.00	0.00	0.00	0.00	0.00
Parkman									
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,167.00	0.00	0.00	4,167.00	0.00	0.00	0.00	0.00	0.00	0.00
Sussex									
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

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Project:	Mustang	MD Reference:	Well @ 4848.00ft
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Well:	Guttersen DD18-770	Survey Calculation Method:	Minimum Curvature
Wellbore:	Guttersen DD18-770		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,947.00	0.00	0.00	4,947.00	0.00	0.00	0.00	0.00	0.00	0.00
Shannon									
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00
5,300.00	0.00	0.00	5,300.00	0.00	0.00	0.00	0.00	0.00	0.00
5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,600.00	0.00	0.00	0.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,700.00	0.00	0.00	0.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,800.00	0.00	0.00	0.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,900.00	0.00	0.00	0.00	0.00	0.00	0.00
5,996.00	0.00	0.00	5,996.00	0.00	0.00	0.00	0.00	0.00	0.00
Teepee Buttes									
6,000.00	0.00	0.00	6,000.00	0.00	0.00	0.00	0.00	0.00	0.00
6,100.00	0.00	0.00	6,100.00	0.00	0.00	0.00	0.00	0.00	0.00
6,200.00	0.00	0.00	6,200.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP: Build 8.53°/100' @ 6200.00' MD									
6,250.00	4.27	164.13	6,249.95	-1.79	0.51	1.80	8.53	8.53	0.00
6,300.00	8.53	164.13	6,299.63	-7.15	2.03	7.17	8.53	8.53	0.00
6,319.07	10.16	164.13	6,318.45	-10.13	2.88	10.16	8.53	8.53	0.00
Build/Turn: 8.53°/100'									
6,350.00	12.72	167.35	6,348.76	-16.08	4.37	16.13	8.53	8.28	10.42
6,400.00	16.91	170.51	6,397.09	-28.63	6.78	28.71	8.53	8.38	6.32
6,450.00	21.14	172.44	6,444.35	-44.75	9.17	44.85	8.53	8.44	3.86
6,500.00	25.37	173.75	6,490.27	-64.34	11.52	64.47	8.53	8.47	2.62
6,550.00	29.62	174.70	6,534.62	-87.30	13.83	87.45	8.53	8.49	1.91
6,600.00	33.86	175.44	6,577.13	-113.50	16.08	113.68	8.53	8.50	1.47
6,604.67	34.26	175.50	6,581.00	-116.11	16.29	116.29	8.53	8.50	1.29
Sharon Springs									
6,632.91	36.66	175.84	6,604.00	-132.45	17.52	132.64	8.53	8.51	1.20
Top A Chalk									
6,650.00	38.12	176.02	6,617.58	-142.80	18.26	143.00	8.53	8.51	1.10
6,650.54	38.16	176.03	6,618.00	-143.13	18.28	143.33	8.53	8.51	1.06
Top A Marl									
6,664.65	39.36	176.18	6,629.00	-151.94	18.88	152.15	8.53	8.51	1.03
Top B Chalk									
6,700.00	42.37	176.51	6,655.73	-175.02	20.36	175.25	8.53	8.51	0.95
6,725.16	44.52	176.73	6,674.00	-192.30	21.38	192.53	8.53	8.51	0.86
Top B Marl									
6,750.00	46.63	176.92	6,691.38	-210.01	22.36	210.25	8.53	8.51	0.79
6,800.00	50.89	177.28	6,724.34	-247.55	24.25	247.81	8.53	8.52	0.72
6,822.11	52.77	177.43	6,738.00	-264.91	25.06	265.18	8.53	8.52	0.66
Top C Chalk									
6,850.00	55.15	177.60	6,754.41	-287.44	26.03	287.72	8.53	8.52	0.62
6,870.75	56.92	177.72	6,766.00	-304.63	26.74	304.92	8.53	8.52	0.59

Noble Energy, Inc.

Planning Report

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Company:	Northern Region - DJ Basin	TVD Reference:	Well @ 4848.00ft
Project:	Mustang	MD Reference:	Well @ 4848.00ft
Site:	DD Section 06	North Reference:	Grid
Well:	Guttersen DD18-770	Survey Calculation Method:	Minimum Curvature
Wellbore:	Guttersen DD18-770		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
Top C Marl									
6,900.00	59.41	177.89	6,781.43	-329.46	27.69	329.76	8.53	8.52	0.56
6,950.00	63.67	178.15	6,805.25	-373.38	29.21	373.69	8.53	8.52	0.52
6,963.22	64.80	178.21	6,811.00	-385.28	29.59	385.59	8.53	8.52	0.50
Top D Chalk									
7,000.00	67.93	178.39	6,825.75	-418.96	30.58	419.28	8.53	8.52	0.48
7,050.00	72.19	178.62	6,842.79	-465.93	31.81	466.27	8.53	8.52	0.46
7,078.76	74.64	178.75	6,851.00	-493.48	32.44	493.82	8.53	8.52	0.44
Top Ft. Hayes									
7,100.00	76.45	178.84	6,856.30	-514.05	32.87	514.39	8.53	8.52	0.43
7,150.00	80.72	179.05	6,866.20	-563.04	33.78	563.39	8.53	8.52	0.42
7,200.00	84.98	179.26	6,872.42	-612.63	34.51	612.99	8.53	8.52	0.41
7,250.00	89.24	179.46	6,874.94	-662.56	35.07	662.92	8.53	8.52	0.41
7,257.19	89.85	179.49	6,875.00	-669.74	35.14	670.10	8.54	8.53	0.41
Codell									
7,258.92	90.00	179.49	6,875.00	-671.48	35.15	671.84	8.52	8.51	0.40
LP: 7258.92' MD, 90.00° Inc, 179.49° Azm									
7,300.00	90.00	179.49	6,875.00	-712.55	35.51	712.91	0.00	0.00	0.00
7,400.00	90.00	179.49	6,875.00	-812.55	36.40	812.91	0.00	0.00	0.00
7,500.00	90.00	179.49	6,875.00	-912.54	37.28	912.91	0.00	0.00	0.00
7,600.00	90.00	179.49	6,875.00	-1,012.54	38.16	1,012.91	0.00	0.00	0.00
7,700.00	90.00	179.49	6,875.00	-1,112.54	39.05	1,112.91	0.00	0.00	0.00
7,800.00	90.00	179.49	6,875.00	-1,212.53	39.93	1,212.91	0.00	0.00	0.00
7,900.00	90.00	179.49	6,875.00	-1,312.53	40.81	1,312.91	0.00	0.00	0.00
8,000.00	90.00	179.49	6,875.00	-1,412.52	41.69	1,412.91	0.00	0.00	0.00
8,100.00	90.00	179.49	6,875.00	-1,512.52	42.58	1,512.91	0.00	0.00	0.00
8,200.00	90.00	179.49	6,875.00	-1,612.52	43.46	1,612.91	0.00	0.00	0.00
8,300.00	90.00	179.49	6,875.00	-1,712.51	44.34	1,712.91	0.00	0.00	0.00
8,400.00	90.00	179.49	6,875.00	-1,812.51	45.22	1,812.91	0.00	0.00	0.00
8,500.00	90.00	179.49	6,875.00	-1,912.50	46.11	1,912.91	0.00	0.00	0.00
8,600.00	90.00	179.49	6,875.00	-2,012.50	46.99	2,012.91	0.00	0.00	0.00
8,700.00	90.00	179.49	6,875.00	-2,112.50	47.87	2,112.91	0.00	0.00	0.00
8,800.00	90.00	179.49	6,875.00	-2,212.49	48.75	2,212.91	0.00	0.00	0.00
8,900.00	90.00	179.49	6,875.00	-2,312.49	49.64	2,312.91	0.00	0.00	0.00
9,000.00	90.00	179.49	6,875.00	-2,412.48	50.52	2,412.91	0.00	0.00	0.00
9,100.00	90.00	179.49	6,875.00	-2,512.48	51.40	2,512.91	0.00	0.00	0.00
9,200.00	90.00	179.49	6,875.00	-2,612.48	52.28	2,612.91	0.00	0.00	0.00
9,300.00	90.00	179.49	6,875.00	-2,712.47	53.17	2,712.91	0.00	0.00	0.00
9,400.00	90.00	179.49	6,875.00	-2,812.47	54.05	2,812.91	0.00	0.00	0.00
9,500.00	90.00	179.49	6,875.00	-2,912.47	54.93	2,912.90	0.00	0.00	0.00
9,600.00	90.00	179.49	6,875.00	-3,012.46	55.81	3,012.90	0.00	0.00	0.00
9,700.00	90.00	179.49	6,875.00	-3,112.46	56.70	3,112.90	0.00	0.00	0.00
9,800.00	90.00	179.49	6,875.00	-3,212.45	57.58	3,212.90	0.00	0.00	0.00
9,900.00	90.00	179.49	6,875.00	-3,312.45	58.46	3,312.90	0.00	0.00	0.00
10,000.00	90.00	179.49	6,875.00	-3,412.45	59.34	3,412.90	0.00	0.00	0.00
10,100.00	90.00	179.49	6,875.00	-3,512.44	60.23	3,512.90	0.00	0.00	0.00
10,200.00	90.00	179.49	6,875.00	-3,612.44	61.11	3,612.90	0.00	0.00	0.00
10,300.00	90.00	179.49	6,875.00	-3,712.43	61.99	3,712.90	0.00	0.00	0.00
10,400.00	90.00	179.49	6,875.00	-3,812.43	62.87	3,812.90	0.00	0.00	0.00
10,500.00	90.00	179.49	6,875.00	-3,912.43	63.76	3,912.90	0.00	0.00	0.00
10,600.00	90.00	179.49	6,875.00	-4,012.42	64.64	4,012.90	0.00	0.00	0.00
10,700.00	90.00	179.49	6,875.00	-4,112.42	65.52	4,112.90	0.00	0.00	0.00
10,800.00	90.00	179.49	6,875.00	-4,212.41	66.40	4,212.90	0.00	0.00	0.00
10,900.00	90.00	179.49	6,875.00	-4,312.41	67.29	4,312.90	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Guttersen DD18-770
Company:	Northern Region - DJ Basin	TVD Reference:	Well @ 4848.00ft
Project:	Mustang	MD Reference:	Well @ 4848.00ft
Site:	DD Section 06	North Reference:	Grid
Well:	Guttersen DD18-770	Survey Calculation Method:	Minimum Curvature
Wellbore:	Guttersen DD18-770		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
11,000.00	90.00	179.49	6,875.00	-4,412.41	68.17	4,412.90	0.00	0.00	0.00
11,100.00	90.00	179.49	6,875.00	-4,512.40	69.05	4,512.90	0.00	0.00	0.00
11,200.00	90.00	179.49	6,875.00	-4,612.40	69.93	4,612.90	0.00	0.00	0.00
11,300.00	90.00	179.49	6,875.00	-4,712.40	70.82	4,712.90	0.00	0.00	0.00
11,400.00	90.00	179.49	6,875.00	-4,812.39	71.70	4,812.90	0.00	0.00	0.00
11,500.00	90.00	179.49	6,875.00	-4,912.39	72.58	4,912.90	0.00	0.00	0.00
11,600.00	90.00	179.49	6,875.00	-5,012.38	73.46	5,012.90	0.00	0.00	0.00
11,700.00	90.00	179.49	6,875.00	-5,112.38	74.35	5,112.90	0.00	0.00	0.00
11,800.00	90.00	179.49	6,875.00	-5,212.38	75.23	5,212.90	0.00	0.00	0.00
11,900.00	90.00	179.49	6,875.00	-5,312.37	76.11	5,312.90	0.00	0.00	0.00
12,000.00	90.00	179.49	6,875.00	-5,412.37	76.99	5,412.90	0.00	0.00	0.00
12,100.00	90.00	179.49	6,875.00	-5,512.36	77.88	5,512.90	0.00	0.00	0.00
12,200.00	90.00	179.49	6,875.00	-5,612.36	78.76	5,612.90	0.00	0.00	0.00
12,300.00	90.00	179.49	6,875.00	-5,712.36	79.64	5,712.89	0.00	0.00	0.00
12,400.00	90.00	179.49	6,875.00	-5,812.35	80.52	5,812.89	0.00	0.00	0.00
12,500.00	90.00	179.49	6,875.00	-5,912.35	81.41	5,912.89	0.00	0.00	0.00
12,600.00	90.00	179.49	6,875.00	-6,012.34	82.29	6,012.89	0.00	0.00	0.00
12,700.00	90.00	179.49	6,875.00	-6,112.34	83.17	6,112.89	0.00	0.00	0.00
12,800.00	90.00	179.49	6,875.00	-6,212.34	84.05	6,212.89	0.00	0.00	0.00
12,900.00	90.00	179.49	6,875.00	-6,312.33	84.94	6,312.89	0.00	0.00	0.00
13,000.00	90.00	179.49	6,875.00	-6,412.33	85.82	6,412.89	0.00	0.00	0.00
13,100.00	90.00	179.49	6,875.00	-6,512.33	86.70	6,512.89	0.00	0.00	0.00
13,200.00	90.00	179.49	6,875.00	-6,612.32	87.58	6,612.89	0.00	0.00	0.00
13,300.00	90.00	179.49	6,875.00	-6,712.32	88.47	6,712.89	0.00	0.00	0.00
13,400.00	90.00	179.49	6,875.00	-6,812.31	89.35	6,812.89	0.00	0.00	0.00
13,500.00	90.00	179.49	6,875.00	-6,912.31	90.23	6,912.89	0.00	0.00	0.00
13,600.00	90.00	179.49	6,875.00	-7,012.31	91.11	7,012.89	0.00	0.00	0.00
13,700.00	90.00	179.49	6,875.00	-7,112.30	92.00	7,112.89	0.00	0.00	0.00
13,800.00	90.00	179.49	6,875.00	-7,212.30	92.88	7,212.89	0.00	0.00	0.00
13,900.00	90.00	179.49	6,875.00	-7,312.29	93.76	7,312.89	0.00	0.00	0.00
14,000.00	90.00	179.49	6,875.00	-7,412.29	94.64	7,412.89	0.00	0.00	0.00
14,100.00	90.00	179.49	6,875.00	-7,512.29	95.53	7,512.89	0.00	0.00	0.00
14,200.00	90.00	179.49	6,875.00	-7,612.28	96.41	7,612.89	0.00	0.00	0.00
14,300.00	90.00	179.49	6,875.00	-7,712.28	97.29	7,712.89	0.00	0.00	0.00
14,400.00	90.00	179.49	6,875.00	-7,812.27	98.17	7,812.89	0.00	0.00	0.00
14,500.00	90.00	179.49	6,875.00	-7,912.27	99.06	7,912.89	0.00	0.00	0.00
14,600.00	90.00	179.49	6,875.00	-8,012.27	99.94	8,012.89	0.00	0.00	0.00
14,700.00	90.00	179.49	6,875.00	-8,112.26	100.82	8,112.89	0.00	0.00	0.00
14,800.00	90.00	179.49	6,875.00	-8,212.26	101.71	8,212.89	0.00	0.00	0.00
14,900.00	90.00	179.49	6,875.00	-8,312.26	102.59	8,312.89	0.00	0.00	0.00
15,000.00	90.00	179.49	6,875.00	-8,412.25	103.47	8,412.89	0.00	0.00	0.00
15,100.00	90.00	179.49	6,875.00	-8,512.25	104.35	8,512.88	0.00	0.00	0.00
15,200.00	90.00	179.49	6,875.00	-8,612.24	105.24	8,612.88	0.00	0.00	0.00
15,300.00	90.00	179.49	6,875.00	-8,712.24	106.12	8,712.88	0.00	0.00	0.00
15,400.00	90.00	179.49	6,875.00	-8,812.24	107.00	8,812.88	0.00	0.00	0.00
15,500.00	90.00	179.49	6,875.00	-8,912.23	107.88	8,912.88	0.00	0.00	0.00
15,600.00	90.00	179.49	6,875.00	-9,012.23	108.77	9,012.88	0.00	0.00	0.00
15,700.00	90.00	179.49	6,875.00	-9,112.22	109.65	9,112.88	0.00	0.00	0.00
15,800.00	90.00	179.49	6,875.00	-9,212.22	110.53	9,212.88	0.00	0.00	0.00
15,900.00	90.00	179.49	6,875.00	-9,312.22	111.41	9,312.88	0.00	0.00	0.00
16,000.00	90.00	179.49	6,875.00	-9,412.21	112.30	9,412.88	0.00	0.00	0.00
16,100.00	90.00	179.49	6,875.00	-9,512.21	113.18	9,512.88	0.00	0.00	0.00
16,200.00	90.00	179.49	6,875.00	-9,612.20	114.06	9,612.88	0.00	0.00	0.00
16,300.00	90.00	179.49	6,875.00	-9,712.20	114.94	9,712.88	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Guttersen DD18-770
Company:	Northern Region - DJ Basin	TVD Reference:	Well @ 4848.00ft
Project:	Mustang	MD Reference:	Well @ 4848.00ft
Site:	DD Section 06	North Reference:	Grid
Well:	Guttersen DD18-770	Survey Calculation Method:	Minimum Curvature
Wellbore:	Guttersen DD18-770		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
16,400.00	90.00	179.49	6,875.00	-9,812.20	115.83	9,812.88	0.00	0.00	0.00
16,500.00	90.00	179.49	6,875.00	-9,912.19	116.71	9,912.88	0.00	0.00	0.00
16,600.00	90.00	179.49	6,875.00	-10,012.19	117.59	10,012.88	0.00	0.00	0.00
16,700.00	90.00	179.49	6,875.00	-10,112.19	118.47	10,112.88	0.00	0.00	0.00
16,800.00	90.00	179.49	6,875.00	-10,212.18	119.36	10,212.88	0.00	0.00	0.00
16,900.00	90.00	179.49	6,875.00	-10,312.18	120.24	10,312.88	0.00	0.00	0.00
17,000.00	90.00	179.49	6,875.00	-10,412.17	121.12	10,412.88	0.00	0.00	0.00
17,100.00	90.00	179.49	6,875.00	-10,512.17	122.00	10,512.88	0.00	0.00	0.00
17,200.00	90.00	179.49	6,875.00	-10,612.17	122.89	10,612.88	0.00	0.00	0.00
17,300.00	90.00	179.49	6,875.00	-10,712.16	123.77	10,712.88	0.00	0.00	0.00
17,400.00	90.00	179.49	6,875.00	-10,812.16	124.65	10,812.88	0.00	0.00	0.00
17,473.14	90.00	179.49	6,875.00	-10,885.30	125.30	10,886.02	0.00	0.00	0.00
TD @ 17473.14' MD/6875.00' TVD									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Guttersen DD18-770- - hit/miss target - plan hits target center - Shape - Point	0.00	0.00	0.00	0.00	0.00	1,334,979.49	3,283,199.24	40.2484700	-104.4854100
Guttersen DD18-770- - hit/miss target - plan hits target center - Shape - Point	0.00	0.00	6,200.00	0.00	0.00	1,334,979.49	3,283,199.24	40.2484700	-104.4854100
Guttersen DD18-770- - hit/miss target - plan hits target center - Shape - Point	0.00	0.00	6,875.00	-671.48	35.15	1,334,308.01	3,283,234.39	40.2466258	-104.4853116
Guttersen DD18-770- - hit/miss target - plan hits target center - Shape - Point	0.00	0.00	6,875.00	-10,885.30	125.30	1,324,094.22	3,283,324.54	40.2185868	-104.4854073

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Guttersen DD18-770
Company:	Northern Region - DJ Basin	TVD Reference:	Well @ 4848.00ft
Project:	Mustang	MD Reference:	Well @ 4848.00ft
Site:	DD Section 06	North Reference:	Grid
Well:	Guttersen DD18-770	Survey Calculation Method:	Minimum Curvature
Wellbore:	Guttersen DD18-770		
Design:	Plan #1		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
402.00	402.00	Pierre				
742.00	742.00	Upper Pierre Aquifer Top				
1,637.00	1,637.00	Upper Pierre Aquifer Base				
3,777.00	3,777.00	Parkman				
4,167.00	4,167.00	Sussex				
4,947.00	4,947.00	Shannon				
5,996.00	5,996.00	Teepee Buttes				
6,604.67	6,581.00	Sharon Springs				
6,632.91	6,604.00	Top A Chalk				
6,650.54	6,618.00	Top A Marl				
6,664.65	6,629.00	Top B Chalk				
6,725.16	6,674.00	Top B Marl				
6,822.11	6,738.00	Top C Chalk				
6,870.75	6,766.00	Top C Marl				
6,963.22	6,811.00	Top D Chalk				
7,078.76	6,851.00	Top Ft. Hayes				
7,257.19	6,875.00	Codell				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
6,200.00	6,200.00	0.00	0.00	KOP: Build 8.53°/100' @ 6200.00' MD	
6,319.07	6,318.45	-10.13	2.88	Build/Turn: 8.53°/100'	
7,258.92	6,875.00	-671.48	35.15	LP: 7258.92' MD, 90.00° Inc, 179.49° Azm	
17,473.14	6,875.00	-10,885.30	125.30	TD @ 17473.14' MD/6875.00' TVD	

Northern Region - DJ Basin

Mustang

DD Section 06

Guttersen DD18-770

Guttersen DD18-770

Plan #1

Anticollision Summary Report

16 October, 2018

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Gutttersen DD18-770
Project:	Mustang	TVD Reference:	Well @ 4848.00ft
Reference Site:	DD Section 06	MD Reference:	Well @ 4848.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Gutttersen DD18-770	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Gutttersen DD18-770	Database:	EDMP
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

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

Survey Tool Program		Date	10/16/2018		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.00	17,473.14	Plan #1 (Gutttersen DD18-770)	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 06						
Gutttersen 06D - Wellbore #1 - Wellbore #1 - As Drilled	5,480.04	5,471.47	2,702.39	2,664.04	70.481	CC
Gutttersen 06D - Wellbore #1 - Wellbore #1 - As Drilled	5,500.00	5,485.61	2,702.41	2,663.95	70.262	ES
Gutttersen 06D - Wellbore #1 - Wellbore #1 - As Drilled	6,700.00	6,520.14	2,783.84	2,737.87	60.549	SF
Gutttersen 23-06 - Wellbore #1 - Wellbore #1 - As Drilled	5,361.12	5,349.76	1,570.08	1,532.60	41.894	CC
Gutttersen 23-06 - Wellbore #1 - Wellbore #1 - As Drilled	5,600.00	5,575.00	1,571.20	1,532.08	40.166	ES
Gutttersen 23-06 - Wellbore #1 - Wellbore #1 - As Drilled	6,400.00	6,371.68	1,612.76	1,568.07	36.090	SF
Gutttersen 24-06 - Wellbore #1 - Wellbore #1 - As Drilled	6,349.94	6,322.83	664.75	620.33	14.965	CC
Gutttersen 24-06 - Wellbore #1 - Wellbore #1 - As Drilled	6,350.00	6,322.89	664.75	620.33	14.964	ES
Gutttersen 24-06 - Wellbore #1 - Wellbore #1 - As Drilled	6,500.00	6,458.80	671.82	626.47	14.814	SF
Gutttersen 33-06 - Wellbore #1 - Wellbore #1 - As Drilled	6,210.74	6,215.95	2,509.52	2,465.97	57.622	CC, ES
Gutttersen 33-06 - Wellbore #1 - Wellbore #1 - As Drilled	6,600.00	6,630.01	2,565.33	2,519.16	55.560	SF
Gutttersen 34-06 - Wellbore #1 - Wellbore #1 - As Drilled	4,789.86	4,778.10	2,018.16	1,984.74	60.377	CC
Gutttersen 34-06 - Wellbore #1 - Wellbore #1 - As Drilled	5,100.00	5,073.70	2,019.34	1,983.77	56.774	ES
Gutttersen 34-06 - Wellbore #1 - Wellbore #1 - As Drilled	6,900.00	6,751.40	2,067.39	2,020.08	43.697	SF
Gutttersen 43-06 - Wellbore #1 - Wellbore #1 - As Drilled	5,305.74	5,315.13	3,609.16	3,571.98	97.085	CC
Gutttersen 43-06 - Wellbore #1 - Wellbore #1 - As Drilled	5,400.00	5,387.48	3,609.44	3,571.68	95.582	ES
Gutttersen 43-06 - Wellbore #1 - Wellbore #1 - As Drilled	6,800.00	6,577.78	3,726.74	3,680.30	80.234	SF
Gutttersen 44-06 - Wellbore #1 - Wellbore #1 - As Drilled	4,801.27	4,800.01	3,252.86	3,219.29	96.903	CC
Gutttersen 44-06 - Wellbore #1 - Wellbore #1 - As Drilled	4,900.00	4,875.98	3,253.27	3,219.08	95.162	ES
Gutttersen 44-06 - Wellbore #1 - Wellbore #1 - As Drilled	7,100.00	6,830.75	3,315.98	3,267.99	69.099	SF
Gutttersen DD18-715 - Gutttersen DD18-715 - Plan #1	2,200.00	2,208.00	2,724.36	2,709.03	177.652	CC, ES
Gutttersen DD18-715 - Gutttersen DD18-715 - Plan #1	17,473.14	17,440.37	3,660.47	3,475.59	19.799	SF
Gutttersen DD18-725 - Gutttersen DD18-725 - Plan #1	4,200.00	4,208.00	2,702.03	2,672.36	91.056	CC
Gutttersen DD18-725 - Gutttersen DD18-725 - Plan #1	4,300.00	4,274.03	2,702.47	2,672.21	89.296	ES
Gutttersen DD18-725 - Gutttersen DD18-725 - Plan #1	17,473.14	17,276.88	3,000.61	2,816.53	16.300	SF
Gutttersen DD18-730 - Gutttersen DD18-730 - Plan #1	7,219.12	7,229.55	2,624.18	2,575.10	53.472	CC
Gutttersen DD18-730 - Gutttersen DD18-730 - Plan #1	17,473.14	17,467.47	2,660.49	2,476.70	14.476	ES, SF
Gutttersen DD18-735 - Gutttersen DD18-735 - Plan #1	7,218.30	7,157.19	2,298.25	2,249.60	47.246	CC
Gutttersen DD18-735 - Gutttersen DD18-735 - Plan #1	17,473.14	17,393.03	2,330.02	2,146.12	12.670	ES, SF
Gutttersen DD18-746 - Gutttersen DD18-746 - Plan #1	7,219.35	7,156.06	1,650.66	1,602.06	33.964	CC
Gutttersen DD18-746 - Gutttersen DD18-746 - Plan #1	17,473.14	17,388.93	1,673.28	1,489.85	9.122	ES, SF
Gutttersen DD18-750 - Plan #1 - Plan #1	7,237.76	7,438.45	1,312.10	1,261.54	25.953	CC
Gutttersen DD18-750 - Plan #1 - Plan #1	17,473.14	17,652.14	1,330.26	1,145.63	7.205	ES, SF
Gutttersen DD18-754 - Gutttersen DD18-754 - Plan #1	2,200.00	2,199.00	44.66	29.36	2.918	CC, ES
Gutttersen DD18-754 - Gutttersen DD18-754 - Plan #1	2,300.00	2,297.44	46.34	30.35	2.897	SF
Gutttersen DD18-765 - Gutttersen DD18-765 - Plan #1	3,700.98	3,700.98	22.33	-3.74	0.857	Level 1, CC
Gutttersen DD18-765 - Gutttersen DD18-765 - Plan #1	3,800.00	3,799.75	22.51	-4.27	0.841	Level 1, 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 Guttersen DD18-770
Project:	Mustang	TVD Reference:	Well @ 4848.00ft
Reference Site:	DD Section 06	MD Reference:	Well @ 4848.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersen DD18-770	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Guttersen DD18-770	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 06						
Guttersen DD18-775 - Guttersen DD18-775 - Plan #1	4,300.00	4,301.00	22.33	-8.03	0.735	Level 1, CC, ES, SF
Guttersen DD18-785 - Guttersen DD18-785 - Plan #1	2,200.00	2,203.00	44.66	29.34	2.916	CC, ES
Guttersen DD18-785 - Guttersen DD18-785 - Plan #1	2,300.00	2,301.38	46.48	30.47	2.903	SF
DD Section 17						
Guttersen 23-17 - Wellbore #1 - Wellbore #1 - As Drilled	15,498.55	6,858.83	5,878.04	5,777.65	58.551	CC
Guttersen 23-17 - Wellbore #1 - Wellbore #1 - As Drilled	15,500.00	6,858.82	5,878.04	5,777.63	58.544	ES
Guttersen 23-17 - Wellbore #1 - Wellbore #1 - As Drilled	17,000.00	6,847.66	6,066.76	5,957.02	55.285	SF
Guttersen State DD17-78HN - Original Drilling - Original	17,473.14	6,898.24	4,665.57	4,551.94	41.057	CC, ES, SF
Guttersen State DD17-78HN - Original Drilling - ST01 - S	12,379.57	11,546.00	4,597.23	4,452.23	31.705	CC
Guttersen State DD17-78HN - Original Drilling - ST01 - S	15,200.00	15,200.00	4,654.11	4,429.80	20.749	ES, SF
Guttersen State DD17-79-1HN - Original Drilling - Origina	12,516.03	11,370.03	4,284.09	4,139.80	29.693	CC
Guttersen State DD17-79-1HN - Original Drilling - Origina	15,200.00	15,200.00	4,317.98	4,096.60	19.505	ES, SF
Guttersen State DD17-79HN - Original Drilling - Original	12,401.04	11,559.00	4,028.49	3,882.67	27.626	CC, ES
Guttersen State DD17-79HN - Original Drilling - Original	12,500.00	11,546.84	4,029.69	3,883.29	27.527	SF
Guttersen USX DD17-19 - Original Drilling - Original Dri	13,479.44	6,824.70	5,197.56	5,112.34	60.989	CC
Guttersen USX DD17-19 - Original Drilling - Original Dri	13,500.00	6,824.67	5,197.60	5,112.23	60.879	ES
Guttersen USX DD17-19 - Original Drilling - Original Dri	14,900.00	6,822.79	5,388.19	5,294.22	57.336	SF
DD Section 18						
Guttersen 18D - Wellbore #1 - Wellbore #1 - As Drilled	16,388.69	6,790.29	2,597.38	2,491.46	24.524	CC
Guttersen 18D - Wellbore #1 - Wellbore #1 - As Drilled	16,400.00	6,790.44	2,597.40	2,491.40	24.504	ES
Guttersen 18D - Wellbore #1 - Wellbore #1 - As Drilled	16,700.00	6,794.36	2,615.96	2,508.10	24.254	SF
Guttersen 24-18 - Wellbore #1 - Wellbore #1 - As Drilled	17,033.97	6,822.27	716.17	604.80	6.431	CC, ES, SF
Guttersen 33-18 - Wellbore #1 - Wellbore #1 - As Drilled	15,623.01	6,826.95	2,000.59	1,899.55	19.800	CC, ES
Guttersen 33-18 - Wellbore #1 - Wellbore #1 - As Drilled	15,800.00	6,828.26	2,008.40	1,906.21	19.655	SF
Guttersen 34-18 - Wellbore #1 - Wellbore #1 - As Drilled	17,062.48	6,839.90	1,926.92	1,815.60	17.310	CC, ES
Guttersen 34-18 - Wellbore #1 - Wellbore #1 - As Drilled	17,200.00	6,839.53	1,931.82	1,819.61	17.215	SF
Guttersen 43-18 - Wellbore #1 - Wellbore #1 - As Drilled	15,624.40	6,839.87	3,197.99	3,093.98	30.747	CC, ES
Guttersen 43-18 - Wellbore #1 - Wellbore #1 - As Drilled	16,100.00	6,841.89	3,233.16	3,126.15	30.212	SF
Guttersen 44-18 - Wellbore #1 - Wellbore #1 - As Drilled	16,991.94	6,816.87	3,270.40	3,159.78	29.565	CC
Guttersen 44-18 - Wellbore #1 - Wellbore #1 - As Drilled	17,000.00	6,816.83	3,270.41	3,159.72	29.548	ES
Guttersen 44-18 - Wellbore #1 - Wellbore #1 - As Drilled	17,400.00	6,814.84	3,295.75	3,182.51	29.104	SF
Karch Blue DD18-03J - Wellbore #1 - Wellbore #1 - As D	15,977.60	6,830.20	317.08	212.75	3.039	CC, ES, SF
Karch Blue DD18-12 - Original Drilling - Original Drilling	15,597.59	6,805.78	817.59	711.58	7.712	CC
Karch Blue DD18-12 - Original Drilling - Original Drilling	15,600.00	6,805.77	817.59	711.57	7.711	ES, SF
Karch Blue DD18-13 - Wellbore #1 - Wellbore #1 - As Dr	17,084.45	6,842.33	864.14	751.55	7.675	CC, ES
Karch Blue DD18-13 - Wellbore #1 - Wellbore #1 - As Dr	17,100.00	6,842.04	864.28	751.58	7.669	SF
SPIKE STATE GWS DD #18-1J(PA) - SPIKE STATE GV	13,680.08	6,844.00	2,613.95	2,414.66	13.117	CC
SPIKE STATE GWS DD #18-1J(PA) - SPIKE STATE GV	13,700.00	6,844.00	2,614.02	2,414.59	13.107	ES
SPIKE STATE GWS DD #18-1J(PA) - SPIKE STATE GV	13,900.00	6,844.00	2,623.18	2,422.39	13.064	SF

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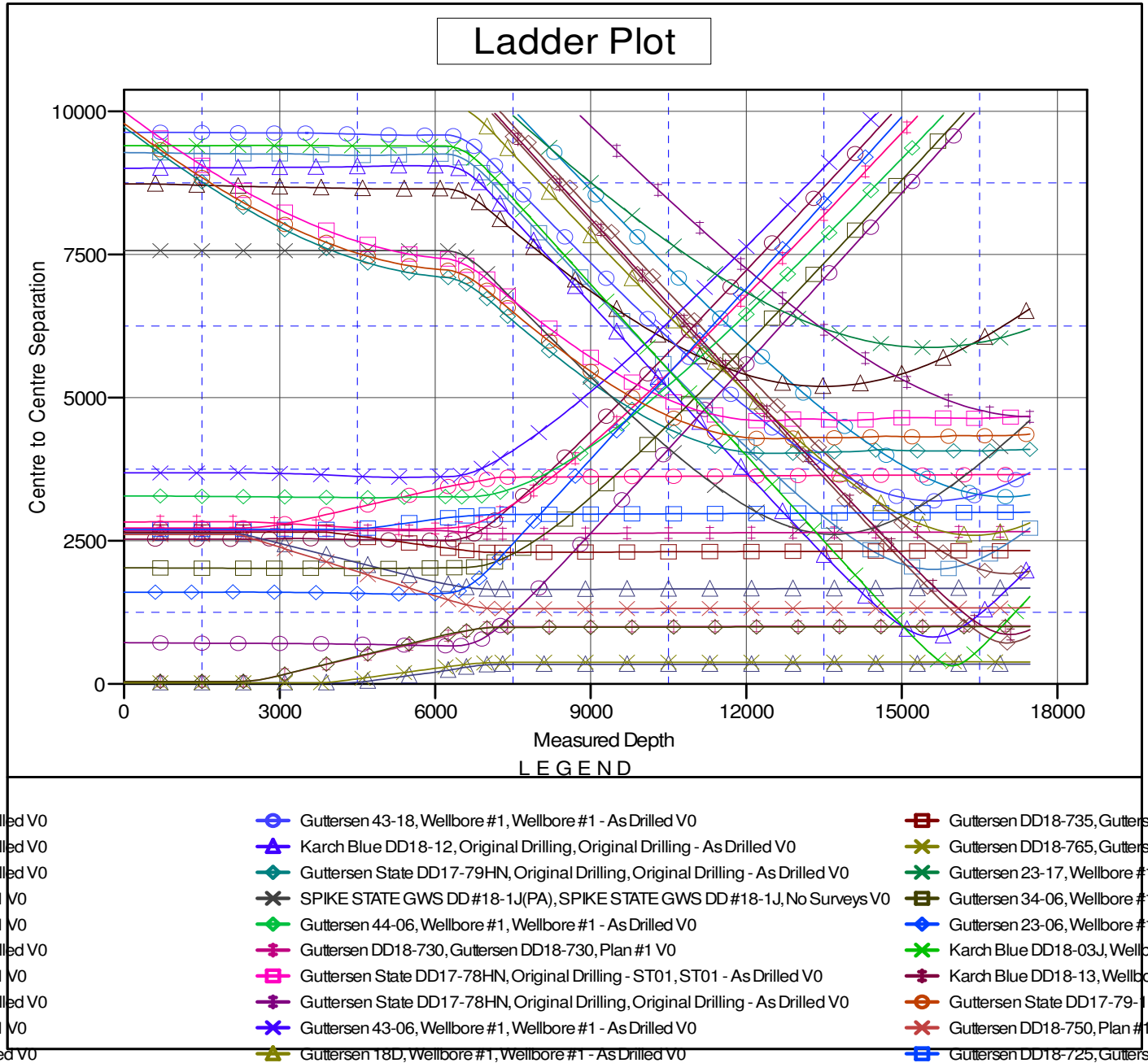
Noble Energy, Inc.

Anticollision Summary Report

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Project:	Mustang	TVD Reference:	Well @ 4848.00ft
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Reference Well:	Guttersen DD18-770	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Guttersen DD18-770	Database:	EDMP
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to Well @ 4848.00ft
Offset Depths are relative to Offset Datum
Central Meridian is -105.5000000

Coordinates are relative to: Guttersen DD18-770
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.66°



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

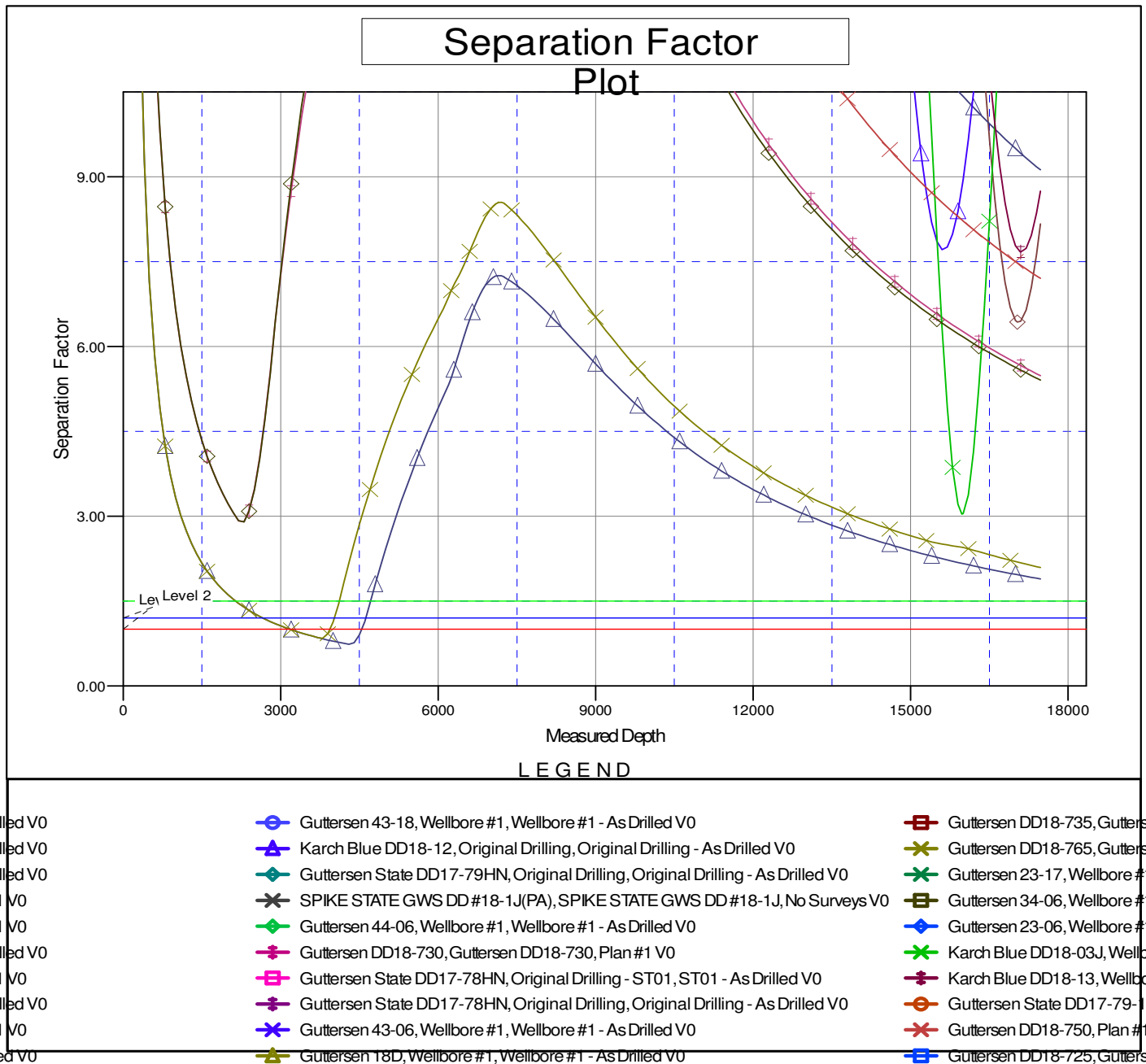
Noble Energy, Inc.

Anticollision Summary Report

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