

Project: Mustang
Site: C Section 34
Well: Guttersen D10-735
Wellbore: Wellbore #1
Design: Plan #1

Northern Region - DJ Basin

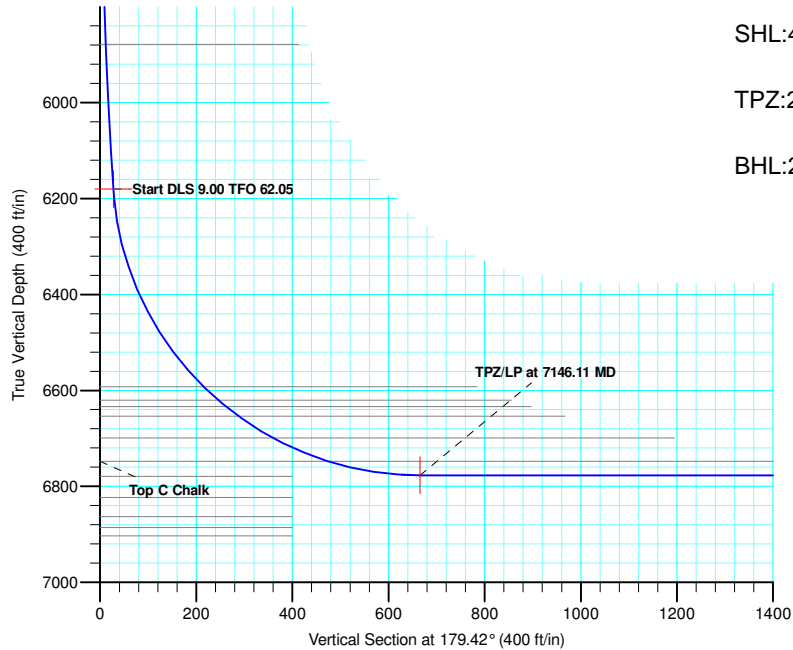
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: Colorado Northern Zone
System Datum: Mean Sea Level

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	5300.00	0.00	0.00	5300.00	0.00	0.00	0.00	0.00	0.00	
3	6183.02	7.05	120.03	6180.80	-27.16	46.99	0.80	120.03	27.63	
4	7146.11	90.00	181.90	6777.00	-664.50	90.93	9.00	62.05	665.38	Guttersen D10-735-TPZ
5	7348.36	90.00	179.88	6777.00	-866.71	87.80	1.00	-90.00	867.55	
6	17342.03	90.00	179.88	6777.00	-10860.36	109.16	0.00	0.00	10860.91	Guttersen D10-735-BHL

WELL DETAILS: Guttersen D10-735

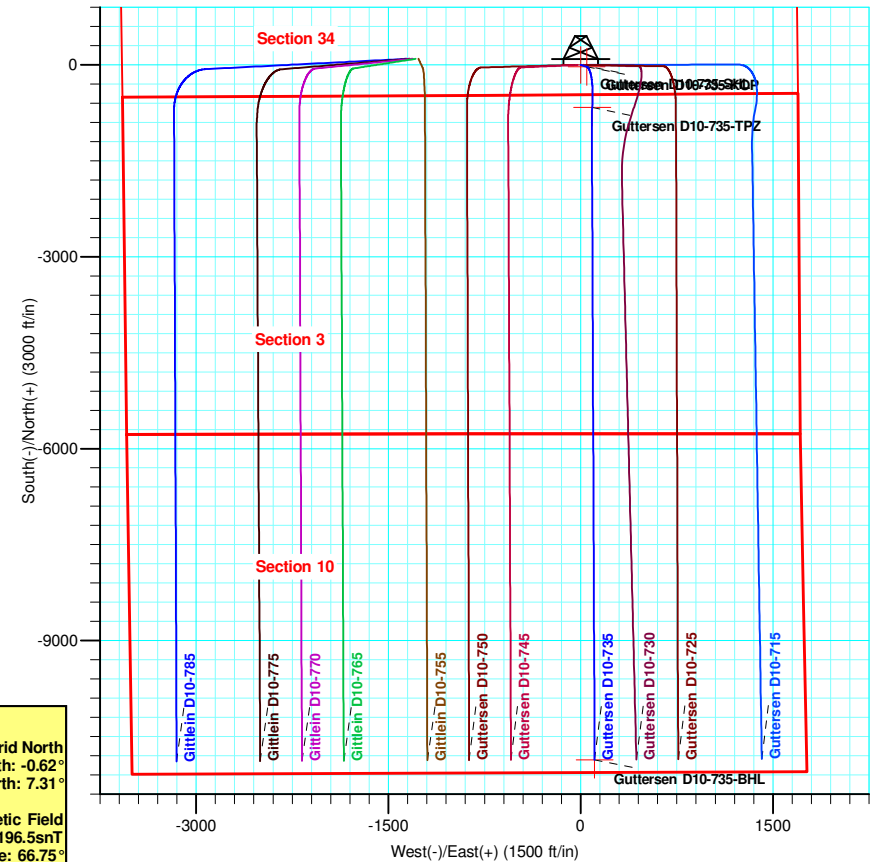
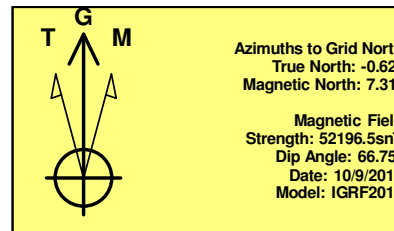
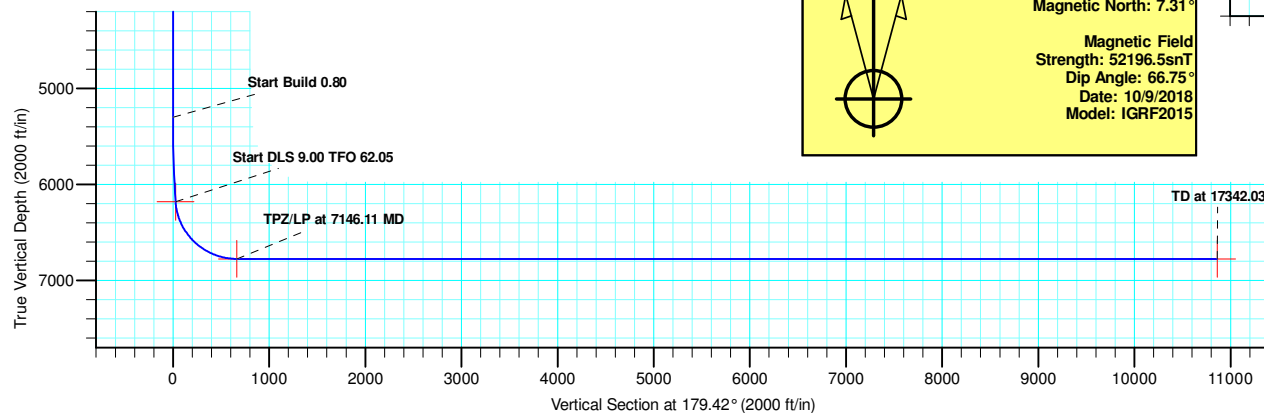
	North	Ground Level:	4697.00	Longitude
0.00	0.00	Easting	3269655.42	-104.5337270
		Latitude	40.2630300	



SHL:466' FSL, 1693' FEL, Sec C34

TPZ:200' FNL, 1605' FEL, Sec D3

BHL:200' FSL, 1654' FEL, Sec D10



Plan: Plan #1 (Guttersen D10-735/Wellbore #1)

Created By: Chad Stich Date: 15:53, October 16 2018

Checked: _____ Date: _____

Reviewed: _____ Date: _____

Approved: _____ Date: _____

Northern Region - DJ Basin

Mustang

C Section 34

Guttersen D10-735

Wellbore #1

Plan: Plan #1

Standard Survey Report

16 October, 2018

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen D10-735
Project:	Mustang	TVD Reference:	KB @ 4727.00ft
Site:	C Section 34	MD Reference:	KB @ 4727.00ft
Well:	Guttersen D10-735	North Reference:	Grid
Wellbore:	Wellbore #1	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		C Section 34			
Site Position:		Northing:	1,341,626.72 usft	Latitude:	40.2670999
From:	Map	Easting:	3,270,704.36 usft	Longitude:	-104.5299100
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.63 °

Well	Guttersen D10-735					
Well Position	+N/-S	0.00 ft	Northing:	1,340,132.55 usft	Latitude:	40.2630300
	+E/-W	0.00 ft	Easting:	3,269,655.42 usft	Longitude:	-104.5337270
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	4,697.00 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	10/9/2018	7.94	66.75	52,196.52773332

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	179.42	

Survey Tool Program	Date	10/9/2018			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.00	17,342.03	Plan #1 (Wellbore #1)	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

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Project:	Mustang	TVD Reference:	KB @ 4727.00ft
Site:	C Section 34	MD Reference:	KB @ 4727.00ft
Well:	Guttersen D10-735	North Reference:	Grid
Wellbore:	Wellbore #1	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	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	
3,800.00	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	
4,200.00	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	
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	
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	

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen D10-735
Project:	Mustang	TVD Reference:	KB @ 4727.00ft
Site:	C Section 34	MD Reference:	KB @ 4727.00ft
Well:	Guttersen D10-735	North Reference:	Grid
Wellbore:	Wellbore #1	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)
5,400.00	0.80	120.03	5,400.00	-0.35	0.60	0.35	0.80	0.80	0.00
5,500.00	1.60	120.03	5,499.97	-1.40	2.41	1.42	0.80	0.80	0.00
5,600.00	2.40	120.03	5,599.91	-3.14	5.43	3.19	0.80	0.80	0.00
5,700.00	3.19	120.03	5,699.79	-5.58	9.65	5.68	0.80	0.80	0.00
5,800.00	3.99	120.03	5,799.60	-8.72	15.08	8.87	0.80	0.80	0.00
5,900.00	4.79	120.03	5,899.30	-12.55	21.71	12.77	0.80	0.80	0.00
6,000.00	5.59	120.03	5,998.89	-17.08	29.54	17.37	0.80	0.80	0.00
6,100.00	6.39	120.03	6,098.34	-22.30	38.58	22.69	0.80	0.80	0.00
6,183.02	7.05	120.03	6,180.80	-27.16	46.99	27.63	0.80	0.80	0.00
6,200.00	7.88	129.92	6,197.63	-28.43	48.79	28.92	9.00	4.90	58.24
6,300.00	15.16	158.15	6,295.62	-45.00	58.93	45.59	9.00	7.27	28.23
6,400.00	23.64	167.46	6,389.88	-76.77	68.17	77.45	9.00	8.48	9.31
6,500.00	32.39	172.00	6,478.09	-122.96	76.27	123.72	9.00	8.75	4.53
6,600.00	41.24	174.75	6,558.07	-182.42	83.03	183.25	9.00	8.85	2.75
6,700.00	50.13	176.67	6,627.87	-253.70	88.28	254.57	9.00	8.90	1.92
6,800.00	59.05	178.15	6,685.75	-335.04	91.90	335.94	9.00	8.92	1.48
6,900.00	67.99	179.37	6,730.29	-424.43	93.80	425.36	9.00	8.93	1.22
7,000.00	76.93	180.45	6,760.40	-519.68	93.93	520.60	9.00	8.94	1.08
7,100.00	85.87	181.45	6,775.34	-618.45	92.28	619.34	9.00	8.95	1.00
7,146.11	90.00	181.90	6,777.00	-664.50	90.93	665.38	9.00	8.95	0.98
7,200.00	90.00	181.36	6,777.00	-718.36	89.40	719.23	1.00	0.00	-1.00
7,300.00	90.00	180.36	6,777.00	-818.35	87.90	819.19	1.00	0.00	-1.00
7,348.36	90.00	179.88	6,777.00	-866.71	87.80	867.55	1.00	0.00	-1.00
7,400.00	90.00	179.88	6,777.00	-918.35	87.91	919.19	0.00	0.00	0.00
7,500.00	90.00	179.88	6,777.00	-1,018.35	88.12	1,019.18	0.00	0.00	0.00
7,600.00	90.00	179.88	6,777.00	-1,118.35	88.33	1,119.18	0.00	0.00	0.00
7,700.00	90.00	179.88	6,777.00	-1,218.35	88.55	1,219.18	0.00	0.00	0.00
7,800.00	90.00	179.88	6,777.00	-1,318.35	88.76	1,319.18	0.00	0.00	0.00
7,900.00	90.00	179.88	6,777.00	-1,418.35	88.98	1,419.17	0.00	0.00	0.00
8,000.00	90.00	179.88	6,777.00	-1,518.35	89.19	1,519.17	0.00	0.00	0.00
8,100.00	90.00	179.88	6,777.00	-1,618.35	89.40	1,619.17	0.00	0.00	0.00
8,200.00	90.00	179.88	6,777.00	-1,718.35	89.62	1,719.16	0.00	0.00	0.00
8,300.00	90.00	179.88	6,777.00	-1,818.35	89.83	1,819.16	0.00	0.00	0.00
8,400.00	90.00	179.88	6,777.00	-1,918.35	90.04	1,919.16	0.00	0.00	0.00
8,500.00	90.00	179.88	6,777.00	-2,018.35	90.26	2,019.15	0.00	0.00	0.00
8,600.00	90.00	179.88	6,777.00	-2,118.35	90.47	2,119.15	0.00	0.00	0.00
8,700.00	90.00	179.88	6,777.00	-2,218.35	90.69	2,219.15	0.00	0.00	0.00
8,800.00	90.00	179.88	6,777.00	-2,318.35	90.90	2,319.14	0.00	0.00	0.00
8,900.00	90.00	179.88	6,777.00	-2,418.35	91.11	2,419.14	0.00	0.00	0.00
9,000.00	90.00	179.88	6,777.00	-2,518.35	91.33	2,519.14	0.00	0.00	0.00
9,100.00	90.00	179.88	6,777.00	-2,618.35	91.54	2,619.13	0.00	0.00	0.00
9,200.00	90.00	179.88	6,777.00	-2,718.35	91.76	2,719.13	0.00	0.00	0.00
9,300.00	90.00	179.88	6,777.00	-2,818.35	91.97	2,819.13	0.00	0.00	0.00

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Survey Report

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9,400.00	90.00	179.88	6,777.00	-2,918.35	92.18	2,919.13	0.00	0.00	0.00
9,500.00	90.00	179.88	6,777.00	-3,018.35	92.40	3,019.12	0.00	0.00	0.00
9,600.00	90.00	179.88	6,777.00	-3,118.35	92.61	3,119.12	0.00	0.00	0.00
9,700.00	90.00	179.88	6,777.00	-3,218.35	92.82	3,219.12	0.00	0.00	0.00
9,800.00	90.00	179.88	6,777.00	-3,318.35	93.04	3,319.11	0.00	0.00	0.00
9,900.00	90.00	179.88	6,777.00	-3,418.35	93.25	3,419.11	0.00	0.00	0.00
10,000.00	90.00	179.88	6,777.00	-3,518.34	93.47	3,519.11	0.00	0.00	0.00
10,100.00	90.00	179.88	6,777.00	-3,618.34	93.68	3,619.10	0.00	0.00	0.00
10,200.00	90.00	179.88	6,777.00	-3,718.34	93.89	3,719.10	0.00	0.00	0.00
10,300.00	90.00	179.88	6,777.00	-3,818.34	94.11	3,819.10	0.00	0.00	0.00
10,400.00	90.00	179.88	6,777.00	-3,918.34	94.32	3,919.09	0.00	0.00	0.00
10,500.00	90.00	179.88	6,777.00	-4,018.34	94.53	4,019.09	0.00	0.00	0.00
10,600.00	90.00	179.88	6,777.00	-4,118.34	94.75	4,119.09	0.00	0.00	0.00
10,700.00	90.00	179.88	6,777.00	-4,218.34	94.96	4,219.08	0.00	0.00	0.00
10,800.00	90.00	179.88	6,777.00	-4,318.34	95.18	4,319.08	0.00	0.00	0.00
10,900.00	90.00	179.88	6,777.00	-4,418.34	95.39	4,419.08	0.00	0.00	0.00
11,000.00	90.00	179.88	6,777.00	-4,518.34	95.60	4,519.08	0.00	0.00	0.00
11,100.00	90.00	179.88	6,777.00	-4,618.34	95.82	4,619.07	0.00	0.00	0.00
11,200.00	90.00	179.88	6,777.00	-4,718.34	96.03	4,719.07	0.00	0.00	0.00
11,300.00	90.00	179.88	6,777.00	-4,818.34	96.25	4,819.07	0.00	0.00	0.00
11,400.00	90.00	179.88	6,777.00	-4,918.34	96.46	4,919.06	0.00	0.00	0.00
11,500.00	90.00	179.88	6,777.00	-5,018.34	96.67	5,019.06	0.00	0.00	0.00
11,600.00	90.00	179.88	6,777.00	-5,118.34	96.89	5,119.06	0.00	0.00	0.00
11,700.00	90.00	179.88	6,777.00	-5,218.34	97.10	5,219.05	0.00	0.00	0.00
11,800.00	90.00	179.88	6,777.00	-5,318.34	97.31	5,319.05	0.00	0.00	0.00
11,900.00	90.00	179.88	6,777.00	-5,418.34	97.53	5,419.05	0.00	0.00	0.00
12,000.00	90.00	179.88	6,777.00	-5,518.34	97.74	5,519.04	0.00	0.00	0.00
12,100.00	90.00	179.88	6,777.00	-5,618.34	97.96	5,619.04	0.00	0.00	0.00
12,200.00	90.00	179.88	6,777.00	-5,718.34	98.17	5,719.04	0.00	0.00	0.00
12,300.00	90.00	179.88	6,777.00	-5,818.34	98.38	5,819.03	0.00	0.00	0.00
12,400.00	90.00	179.88	6,777.00	-5,918.34	98.60	5,919.03	0.00	0.00	0.00
12,500.00	90.00	179.88	6,777.00	-6,018.34	98.81	6,019.03	0.00	0.00	0.00
12,600.00	90.00	179.88	6,777.00	-6,118.34	99.03	6,119.03	0.00	0.00	0.00
12,700.00	90.00	179.88	6,777.00	-6,218.34	99.24	6,219.02	0.00	0.00	0.00
12,800.00	90.00	179.88	6,777.00	-6,318.34	99.45	6,319.02	0.00	0.00	0.00
12,900.00	90.00	179.88	6,777.00	-6,418.34	99.67	6,419.02	0.00	0.00	0.00
13,000.00	90.00	179.88	6,777.00	-6,518.34	99.88	6,519.01	0.00	0.00	0.00
13,100.00	90.00	179.88	6,777.00	-6,618.34	100.09	6,619.01	0.00	0.00	0.00
13,200.00	90.00	179.88	6,777.00	-6,718.34	100.31	6,719.01	0.00	0.00	0.00
13,300.00	90.00	179.88	6,777.00	-6,818.34	100.52	6,819.00	0.00	0.00	0.00
13,400.00	90.00	179.88	6,777.00	-6,918.34	100.74	6,919.00	0.00	0.00	0.00
13,500.00	90.00	179.88	6,777.00	-7,018.34	100.95	7,019.00	0.00	0.00	0.00
13,600.00	90.00	179.88	6,777.00	-7,118.34	101.16	7,118.99	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen D10-735
Project:	Mustang	TVD Reference:	KB @ 4727.00ft
Site:	C Section 34	MD Reference:	KB @ 4727.00ft
Well:	Guttersen D10-735	North Reference:	Grid
Wellbore:	Wellbore #1	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	179.88	6,777.00	-7,218.34	101.38	7,218.99	0.00	0.00	0.00
13,800.00	90.00	179.88	6,777.00	-7,318.34	101.59	7,318.99	0.00	0.00	0.00
13,900.00	90.00	179.88	6,777.00	-7,418.34	101.80	7,418.98	0.00	0.00	0.00
14,000.00	90.00	179.88	6,777.00	-7,518.34	102.02	7,518.98	0.00	0.00	0.00
14,100.00	90.00	179.88	6,777.00	-7,618.34	102.23	7,618.98	0.00	0.00	0.00
14,200.00	90.00	179.88	6,777.00	-7,718.34	102.45	7,718.98	0.00	0.00	0.00
14,300.00	90.00	179.88	6,777.00	-7,818.34	102.66	7,818.97	0.00	0.00	0.00
14,400.00	90.00	179.88	6,777.00	-7,918.33	102.87	7,918.97	0.00	0.00	0.00
14,500.00	90.00	179.88	6,777.00	-8,018.33	103.09	8,018.97	0.00	0.00	0.00
14,600.00	90.00	179.88	6,777.00	-8,118.33	103.30	8,118.96	0.00	0.00	0.00
14,700.00	90.00	179.88	6,777.00	-8,218.33	103.52	8,218.96	0.00	0.00	0.00
14,800.00	90.00	179.88	6,777.00	-8,318.33	103.73	8,318.96	0.00	0.00	0.00
14,900.00	90.00	179.88	6,777.00	-8,418.33	103.94	8,418.95	0.00	0.00	0.00
15,000.00	90.00	179.88	6,777.00	-8,518.33	104.16	8,518.95	0.00	0.00	0.00
15,100.00	90.00	179.88	6,777.00	-8,618.33	104.37	8,618.95	0.00	0.00	0.00
15,200.00	90.00	179.88	6,777.00	-8,718.33	104.58	8,718.94	0.00	0.00	0.00
15,300.00	90.00	179.88	6,777.00	-8,818.33	104.80	8,818.94	0.00	0.00	0.00
15,400.00	90.00	179.88	6,777.00	-8,918.33	105.01	8,918.94	0.00	0.00	0.00
15,500.00	90.00	179.88	6,777.00	-9,018.33	105.23	9,018.93	0.00	0.00	0.00
15,600.00	90.00	179.88	6,777.00	-9,118.33	105.44	9,118.93	0.00	0.00	0.00
15,700.00	90.00	179.88	6,777.00	-9,218.33	105.65	9,218.93	0.00	0.00	0.00
15,800.00	90.00	179.88	6,777.00	-9,318.33	105.87	9,318.93	0.00	0.00	0.00
15,900.00	90.00	179.88	6,777.00	-9,418.33	106.08	9,418.92	0.00	0.00	0.00
16,000.00	90.00	179.88	6,777.00	-9,518.33	106.29	9,518.92	0.00	0.00	0.00
16,100.00	90.00	179.88	6,777.00	-9,618.33	106.51	9,618.92	0.00	0.00	0.00
16,200.00	90.00	179.88	6,777.00	-9,718.33	106.72	9,718.91	0.00	0.00	0.00
16,300.00	90.00	179.88	6,777.00	-9,818.33	106.94	9,818.91	0.00	0.00	0.00
16,400.00	90.00	179.88	6,777.00	-9,918.33	107.15	9,918.91	0.00	0.00	0.00
16,500.00	90.00	179.88	6,777.00	-10,018.33	107.36	10,018.90	0.00	0.00	0.00
16,600.00	90.00	179.88	6,777.00	-10,118.33	107.58	10,118.90	0.00	0.00	0.00
16,700.00	90.00	179.88	6,777.00	-10,218.33	107.79	10,218.90	0.00	0.00	0.00
16,800.00	90.00	179.88	6,777.00	-10,318.33	108.01	10,318.89	0.00	0.00	0.00
16,900.00	90.00	179.88	6,777.00	-10,418.33	108.22	10,418.89	0.00	0.00	0.00
17,000.00	90.00	179.88	6,777.00	-10,518.33	108.43	10,518.89	0.00	0.00	0.00
17,100.00	90.00	179.88	6,777.00	-10,618.33	108.65	10,618.88	0.00	0.00	0.00
17,200.00	90.00	179.88	6,777.00	-10,718.33	108.86	10,718.88	0.00	0.00	0.00
17,300.00	90.00	179.88	6,777.00	-10,818.33	109.07	10,818.88	0.00	0.00	0.00
17,342.03	90.00	179.88	6,777.00	-10,860.36	109.16	10,860.91	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen D10-735
Project:	Mustang	TVD Reference:	KB @ 4727.00ft
Site:	C Section 34	MD Reference:	KB @ 4727.00ft
Well:	Guttersen D10-735	North Reference:	Grid
Wellbore:	Wellbore #1	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 D10-735-SHL - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	1,340,132.55	3,269,655.42	40.2630300	-104.5337270
Guttersen D10-735-KOF - plan hits target center - Point	0.00	0.00	6,180.79	-27.16	46.99	1,340,105.39	3,269,702.41	40.2629540	-104.5335597
Guttersen D10-735-BHL - plan hits target center - Point	0.00	0.00	6,777.00	-10,860.36	109.16	1,329,272.22	3,269,764.59	40.2332159	-104.5337599
Guttersen D10-735-TPZ - plan hits target center - Point	0.00	0.00	6,777.00	-664.50	90.93	1,339,468.06	3,269,746.36	40.2612033	-104.5334271

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
441.00	441.00	Pierre			
574.00	574.00	Upper Pierre Aquifer Top			
1,478.00	1,478.00	Upper Pierre Aquifer Base			
3,588.00	3,588.00	Parkman			
4,238.00	4,238.00	Sussex			
4,835.00	4,835.00	Shannon			
5,879.63	5,879.00	Teepee Buttes			
6,646.64	6,592.00	Sharon Springs			
6,687.87	6,620.00	Top A Chalk			
6,709.66	6,634.00	Top A Marl			
6,742.48	6,654.00	Top B Chalk			
6,826.70	6,699.00	Top B Marl			
6,952.65	6,748.00	Top C Chalk			

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
5300	5300	0	0	Start Build 0.80
6183	6181	-27	47	Start DLS 9.00 TFO 62.05
7146	6777	-664	91	TPZ/LP at 7146.11 MD
17,342	6777	-10,860	109	TD at 17342.03

Checked By: _____ Approved By: _____ Date: _____

Northern Region - DJ Basin

Mustang

C Section 34

Guttersen D10-735

Wellbore #1

Plan #1

Anticollision Summary Report

16 October, 2018

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersten D10-735
Project:	Mustang	TVD Reference:	KB @ 4727.00ft
Reference Site:	C Section 34	MD Reference:	KB @ 4727.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersten D10-735	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	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	10/9/2018		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	17,342.03	Plan #1 (Wellbore #1)	2_MWD+IFR1+MS	A008Mb: IFR dec & multi-station analysis

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
C Section 34						
ALOYSIOUS #C34-11(PA) - Wellbore #1 - Gyro Surveys	5,510.09	5,539.71	2,156.04	2,117.39	55.779	CC
ALOYSIOUS #C34-11(PA) - Wellbore #1 - Gyro Surveys	5,600.00	5,632.94	2,156.55	2,117.27	54.906	ES
ALOYSIOUS #C34-11(PA) - Wellbore #1 - Gyro Surveys	6,350.00	6,320.13	2,218.19	2,174.01	50.200	SF
ALOYSIOUS #C34-8(PR) - Wellbore #1 - No Surveys	5,300.00	5,266.00	4,057.48	3,992.76	62.692	CC
ALOYSIOUS #C34-8(PR) - Wellbore #1 - No Surveys	5,400.00	5,366.00	4,058.15	3,992.22	61.545	ES
ALOYSIOUS #C34-8(PR) - Wellbore #1 - No Surveys	6,600.00	6,524.07	4,243.90	4,164.01	53.125	SF
ALOYSIOUS #C34-9(SI) - Wellbore #1 - Gyro Surveys	4,460.39	4,423.06	1,808.50	1,777.45	58.243	CC
ALOYSIOUS #C34-9(SI) - Wellbore #1 - Gyro Surveys	5,800.00	5,749.83	1,815.37	1,775.01	44.982	ES
ALOYSIOUS #C34-9(SI) - Wellbore #1 - Gyro Surveys	6,400.00	6,366.22	1,850.65	1,806.14	41.581	SF
ALOYSIOUS #34-1(PR) - Wellbore #1 - No Surveys	5,300.00	5,296.00	5,062.54	4,997.56	77.906	CC
ALOYSIOUS #34-1(PR) - Wellbore #1 - No Surveys	5,400.00	5,396.00	5,063.18	4,996.98	76.483	ES
ALOYSIOUS #34-1(PR) - Wellbore #1 - No Surveys	6,600.00	6,554.07	5,259.31	5,179.16	65.619	SF
ALOYSIOUS #34-2(PR) - Wellbore #1 - No Surveys	6,348.89	6,307.32	933.80	856.49	12.080	CC
ALOYSIOUS #34-2(PR) - Wellbore #1 - No Surveys	6,350.00	6,308.36	933.80	856.48	12.078	ES
ALOYSIOUS #34-2(PR) - Wellbore #1 - No Surveys	6,500.00	6,443.09	941.93	862.99	11.931	SF
ALOYSIOUS #34-3(PR) - Wellbore #1 - No Surveys	5,300.00	5,270.00	4,435.16	4,370.40	68.491	CC
ALOYSIOUS #34-3(PR) - Wellbore #1 - No Surveys	5,400.00	5,370.00	4,435.71	4,369.73	67.235	ES
ALOYSIOUS #34-3(PR) - Wellbore #1 - No Surveys	6,550.00	6,489.24	4,605.07	4,525.60	57.946	SF
ALOYSIOUS #34-4(SI) - Wellbore #1 - No Surveys	5,300.00	5,263.00	3,261.30	3,196.60	50.411	CC
ALOYSIOUS #34-4(SI) - Wellbore #1 - No Surveys	5,400.00	5,363.00	3,261.91	3,195.99	49.489	ES
ALOYSIOUS #34-4(SI) - Wellbore #1 - No Surveys	6,450.00	6,397.88	3,382.66	3,304.26	43.145	SF
ALOYSIOUS #34-5(PA) - Wellbore #1 - Gyro Surveys	5,527.47	5,525.04	1,584.24	1,545.59	40.983	CC
ALOYSIOUS #34-5(PA) - Wellbore #1 - Gyro Surveys	5,600.00	5,593.11	1,584.58	1,545.45	40.487	ES
ALOYSIOUS #34-5(PA) - Wellbore #1 - Gyro Surveys	6,300.00	6,279.28	1,624.41	1,580.52	37.008	SF
ALOYSIOUS #34-6(PR) - Wellbore #1 - Gyro Surveys	2,190.46	2,160.51	1,607.40	1,592.41	107.239	CC
ALOYSIOUS #34-6(PR) - Wellbore #1 - Gyro Surveys	4,000.00	3,960.66	1,609.66	1,581.88	57.943	ES
ALOYSIOUS #34-6(PR) - Wellbore #1 - Gyro Surveys	6,700.00	6,599.86	1,757.82	1,711.67	38.085	SF
ALOYSIOUS #34-7(PR) - Wellbore #1 - Gyro Surveys	151.93	122.93	2,920.47	2,919.90	5,153.832	CC
ALOYSIOUS #34-7(PR) - Wellbore #1 - Gyro Surveys	4,400.00	4,352.97	2,933.59	2,903.00	95.917	ES
ALOYSIOUS #34-7(PR) - Wellbore #1 - Gyro Surveys	6,950.00	6,729.88	3,096.43	3,049.31	65.721	SF
ALOYSIOUS #C34-15(PR) - Wellbore #1 - No Surveys	5,300.00	5,266.00	345.08	280.36	5.332	CC
ALOYSIOUS #C34-15(PR) - Wellbore #1 - No Surveys	5,400.00	5,366.00	345.77	279.83	5.244	ES
ALOYSIOUS #C34-15(PR) - Wellbore #1 - No Surveys	5,700.00	5,665.79	356.21	286.66	5.122	SF
Aloysius C #34-18(PA) - Wellbore #1 - Gyro Surveys	5,386.06	5,381.81	3,626.69	3,589.00	96.239	CC
Aloysius C #34-18(PA) - Wellbore #1 - Gyro Surveys	5,400.00	5,393.91	3,626.70	3,588.93	96.008	ES
Aloysius C #34-18(PA) - Wellbore #1 - Gyro Surveys	6,450.00	6,504.30	3,742.06	3,696.95	82.950	SF
ALOYSIOUS C #34-19(PR) - Wellbore #1 - No Surveys	5,300.00	5,273.00	4,147.75	4,082.96	64.027	CC

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 D10-735
Project:	Mustang	TVD Reference:	KB @ 4727.00ft
Reference Site:	C Section 34	MD Reference:	KB @ 4727.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersen D10-735	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan #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)	Between Ellipses (ft)	Separation Factor	Warning
C Section 34						
ALOYSIUS C #34-19(PR) - Wellbore #1 - No Surveys	5,400.00	5,373.00	4,148.37	4,082.37	62.855	ES
ALOYSIUS C #34-19(PR) - Wellbore #1 - No Surveys	6,550.00	6,492.24	4,317.87	4,238.38	54.320	SF
Aloysius C #34-20D(PR) - Wellbore #1 - MWD Surveys	100.00	81.92	2,247.55	2,247.28	8,333.998	CC
Aloysius C #34-20D(PR) - Wellbore #1 - MWD Surveys	800.00	781.26	2,247.68	2,243.67	560.503	ES
Aloysius C #34-20D(PR) - Wellbore #1 - MWD Surveys	6,500.00	6,678.20	3,199.91	3,154.84	71.011	SF
Aloysius C #34-21D(SI) - Wellbore #1 - MWD Surveys	812.00	793.23	1,651.04	1,646.97	405.138	CC, ES
Aloysius C #34-21D(SI) - Wellbore #1 - MWD Surveys	6,400.00	6,601.10	2,651.52	2,606.02	58.270	SF
ALOYSIUS C #34-22D(PR) - Wellbore #1 - MWD Survey	100.00	77.76	1,863.45	1,863.19	7,105.535	CC
ALOYSIUS C #34-22D(PR) - Wellbore #1 - MWD Survey	800.00	772.72	1,864.01	1,859.86	449.925	ES
ALOYSIUS C #34-22D(PR) - Wellbore #1 - MWD Survey	6,350.00	6,478.16	2,381.02	2,334.21	50.866	SF
ALOYSIUS C #34-23(PR) - Wellbore #1 - Gyro Surveys	5,701.72	5,685.32	870.97	831.16	21.876	CC
ALOYSIUS C #34-23(PR) - Wellbore #1 - Gyro Surveys	5,800.00	5,778.74	871.40	830.93	21.532	ES
ALOYSIUS C #34-23(PR) - Wellbore #1 - Gyro Surveys	6,250.00	6,224.07	881.36	837.81	20.239	SF
Aloysius C #34-24(SI) - Wellbore #1 - No Surveys	5,300.00	5,268.00	1,152.02	1,087.28	17.795	CC
Aloysius C #34-24(SI) - Wellbore #1 - No Surveys	5,400.00	5,368.00	1,152.69	1,086.74	17.477	ES
Aloysius C #34-24(SI) - Wellbore #1 - No Surveys	6,250.00	6,214.94	1,214.67	1,138.49	15.944	SF
ALOYSIUS C #34-27D(PR) - Wellbore #1 - MWD Survey	757.17	763.46	4,347.44	4,343.62	1,136.909	CC, ES
ALOYSIUS C #34-27D(PR) - Wellbore #1 - MWD Survey	6,500.00	6,597.87	4,833.65	4,785.93	101.286	SF
ALOYSIUS C #34-28D(PA) - Wellbore #1 - Gyro Surveys	636.76	609.76	4,478.96	4,474.95	1,118.201	CC
ALOYSIUS C #34-28D(PA) - Wellbore #1 - Gyro Surveys	700.00	654.38	4,479.09	4,474.70	1,020.804	ES
ALOYSIUS C #34-28D(PA) - Wellbore #1 - Gyro Surveys	6,400.00	6,496.43	4,858.90	4,802.26	85.772	SF
Aloysius C #34-31(PA) - Wellbore #1 - Gyro Surveys	448.79	441.79	4,869.52	4,866.77	1,774.693	CC
Aloysius C #34-31(PA) - Wellbore #1 - Gyro Surveys	3,500.00	3,458.17	4,882.55	4,858.34	201.602	ES
Aloysius C #34-31(PA) - Wellbore #1 - Gyro Surveys	6,650.00	6,641.81	5,118.92	5,072.82	111.038	SF
Aloysius C #34-32D(PR) - Wellbore #1 - MWD Surveys	100.00	80.66	2,887.20	2,886.93	10,000.000	CC
Aloysius C #34-32D(PR) - Wellbore #1 - MWD Surveys	600.00	566.54	2,888.83	2,885.91	991.245	ES
Aloysius C #34-32D(PR) - Wellbore #1 - MWD Surveys	6,600.00	6,798.91	4,206.96	4,160.38	90.314	SF
Aloysius C34-33D(PR) - Wellbore #1 - MWD Surveys	0.00	0.00	2,956.23			
Aloysius C34-33D(PR) - Wellbore #1 - MWD Surveys	200.00	174.79	2,956.59	2,955.80	3,733.081	ES
Aloysius C34-33D(PR) - Wellbore #1 - MWD Surveys	6,700.00	6,712.92	3,764.67	3,717.68	80.129	SF
Aloysius C34-99HZ - Original Drilling - Original Drilling - A	6,324.74	7,635.00	1,278.84	1,224.47	23.522	CC, ES
Aloysius C34-99HZ - Original Drilling - Original Drilling - A	6,450.00	7,635.00	1,296.79	1,240.93	23.215	SF
DONOVAN D #02-30(PR) - Wellbore #1 - No Surveys	6,797.18	6,653.29	1,418.33	1,336.80	17.396	CC
DONOVAN D #02-30(PR) - Wellbore #1 - No Surveys	6,800.00	6,654.75	1,418.33	1,336.78	17.391	ES
DONOVAN D #02-30(PR) - Wellbore #1 - No Surveys	6,900.00	6,699.29	1,422.35	1,340.18	17.310	SF
Gittlein C22-750 - Wellbore #1 - Plan #1	7,050.00	7,068.69	1,037.88	988.18	20.880	SF
Gittlein C22-750 - Wellbore #1 - Plan #1	7,096.11	7,033.54	1,037.64	987.98	20.894	CC, ES
Gittlein C22-755 - Wellbore #1 - Plan #1	2,200.00	2,202.00	1,288.03	1,272.71	84.108	CC
Gittlein C22-755 - Wellbore #1 - Plan #1	2,600.00	2,596.11	1,288.85	1,270.80	71.441	ES
Gittlein C22-755 - Wellbore #1 - Plan #1	6,900.00	7,084.32	1,359.82	1,310.41	27.524	SF
Gittlein C22-765 - Wellbore #1 - Plan #1	2,000.00	2,002.00	1,310.61	1,296.73	94.424	CC, ES
Gittlein C22-765 - Wellbore #1 - Plan #1	6,700.00	7,240.55	2,009.52	1,960.23	40.770	SF
Gittlein C22-770 - Wellbore #1 - Plan #1	2,400.00	2,403.00	1,332.91	1,316.16	79.570	CC, ES
Gittlein C22-770 - Wellbore #1 - Plan #1	7,700.00	6,464.59	2,266.40	2,216.96	45.837	SF
Gittlein C22-775 - Wellbore #1 - Plan #1	2,200.00	2,203.00	1,355.50	1,340.18	88.493	CC, ES
Gittlein C22-775 - Wellbore #1 - Plan #1	7,900.00	6,350.00	2,583.19	2,532.92	51.389	SF
Gittlein C22-785 - Wellbore #1 - Plan #1	2,000.00	2,003.00	1,377.81	1,363.93	99.240	CC, ES
Gittlein C22-785 - Wellbore #1 - Plan #1	8,600.00	6,240.45	3,220.53	3,166.18	59.257	SF
Gittlein D10-755 - Wellbore #1 - Plan #1	5,551.50	5,595.87	1,253.20	1,214.03	31.995	CC
Gittlein D10-755 - Wellbore #1 - Plan #1	17,342.91	17,334.09	1,304.38	1,119.95	7.072	ES, SF
Gittlein D10-765 - Wellbore #1 - Plan #1	2,000.00	2,002.00	1,290.30	1,276.42	92.961	CC, ES
Gittlein D10-765 - Wellbore #1 - Plan #1	17,342.91	17,277.11	1,958.21	1,773.46	10.599	SF
Gittlein D10-770 - Wellbore #1 - Plan #1	2,000.00	2,002.00	1,312.85	1,298.97	94.586	CC, 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 Guttersen D10-735
Project:	Mustang	TVD Reference:	KB @ 4727.00ft
Reference Site:	C Section 34	MD Reference:	KB @ 4727.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersen D10-735	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	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						
C Section 34						
Gittlein D10-770 - Wellbore #1 - Plan #1	17,342.91	17,520.84	2,285.88	2,101.41	12.392	SF
Gittlein D10-775 - Wellbore #1 - Plan #1	2,000.00	2,002.00	1,335.13	1,321.25	96.191	CC, ES
Gittlein D10-775 - Wellbore #1 - Plan #1	17,342.91	17,463.72	2,608.78	2,424.11	14.126	SF
Gittlein D10-785 - Wellbore #1 - Plan #1	2,000.00	2,003.00	1,357.66	1,343.78	97.789	CC, ES
Gittlein D10-785 - Wellbore #1 - Plan #1	17,342.91	17,600.61	3,261.94	3,076.87	17.625	SF
Guttersen C22-715 - Wellbore #1 - Plan #1	2,200.00	2,200.00	156.55	141.25	10.228	CC, ES
Guttersen C22-715 - Wellbore #1 - Plan #1	2,400.00	2,391.59	161.79	145.14	9.715	SF
Guttersen C22-725 - Wellbore #1 - Plan #1	2,000.00	2,000.00	151.51	137.64	10.921	CC, ES
Guttersen C22-725 - Wellbore #1 - Plan #1	2,200.00	2,190.86	157.38	142.17	10.347	SF
Guttersen C22-730 - Wellbore #1 - Plan #1	2,600.00	2,600.00	149.75	131.57	8.239	CC, ES
Guttersen C22-730 - Wellbore #1 - Plan #1	7,080.30	6,962.28	266.18	217.11	5.424	SF
Guttersen C22-735 - Wellbore #1 - Plan #1	6,942.41	7,013.80	54.54	5.59	1.114	Level 2, CC, ES, SF
Guttersen C22-745 - Wellbore #1 - Plan #1	2,000.00	2,000.00	156.47	142.59	11.279	CC, ES
Guttersen C22-745 - Wellbore #1 - Plan #1	2,200.00	2,189.71	162.87	147.67	10.715	SF
GUTTERSEN D #03-27(PR) - Wellbore #1 - No Surveys	6,781.72	6,645.13	279.76	198.33	3.436	CC, ES, SF
Guttersen D10-715 - Wellbore #1 - Plan #1	2,000.00	2,000.00	67.54	53.67	4.868	CC, ES
Guttersen D10-715 - Wellbore #1 - Plan #1	2,100.00	2,097.66	69.24	54.68	4.754	SF
Guttersen D10-725 - Wellbore #1 - Plan #1	2,000.00	2,000.00	44.93	31.06	3.239	CC, ES
Guttersen D10-725 - Wellbore #1 - Plan #1	2,100.00	2,098.42	46.65	32.08	3.202	SF
Guttersen D10-730 - Wellbore #1 - Plan #1	2,600.00	2,600.00	22.33	4.15	1.228	Level 3, CC, ES, SF
Guttersen D10-745 - Wellbore #1 - Plan #1	2,300.00	2,300.00	22.61	6.58	1.411	Level 3, CC, ES, SF
Guttersen D10-750 - Wellbore #1 - Plan #1	2,000.00	2,000.00	45.22	31.34	3.259	CC, ES
Guttersen D10-750 - Wellbore #1 - Plan #1	2,100.00	2,098.41	46.93	32.36	3.222	SF
LANE #34-214(PR) - Wellbore #1 - No Surveys	5,300.00	5,262.00	3,964.78	3,900.10	61.293	CC
LANE #34-214(PR) - Wellbore #1 - No Surveys	5,500.00	5,461.97	3,966.25	3,899.14	59.103	ES
LANE #34-214(PR) - Wellbore #1 - No Surveys	6,500.00	6,440.09	4,090.50	4,011.57	51.824	SF
LANE #34-814(PR) - Wellbore #1 - No Surveys	5,300.00	5,262.00	3,195.28	3,130.60	49.397	CC
LANE #34-814(PR) - Wellbore #1 - No Surveys	5,700.00	5,661.79	3,197.53	3,128.01	45.995	ES
LANE #34-814(PR) - Wellbore #1 - No Surveys	6,450.00	6,396.88	3,266.85	3,188.43	41.658	SF
LANE C #34-17(PR) - Wellbore #1 - No Surveys	5,300.00	5,260.00	3,532.69	3,468.02	54.628	CC
LANE C #34-17(PR) - Wellbore #1 - No Surveys	5,500.00	5,459.97	3,533.79	3,466.70	52.672	ES
LANE C #34-17(PR) - Wellbore #1 - No Surveys	6,450.00	6,394.88	3,622.31	3,543.91	46.202	SF
POLLOCK-HADDIX #2(PA) - Wellbore #1 - Gyro Surveys	3,396.13	3,355.22	4,295.60	4,272.11	182.874	CC
POLLOCK-HADDIX #2(PA) - Wellbore #1 - Gyro Surveys	3,600.00	3,530.38	4,296.18	4,271.35	173.027	ES
POLLOCK-HADDIX #2(PA) - Wellbore #1 - Gyro Surveys	6,500.00	6,444.90	4,432.84	4,387.77	98.360	SF
POLLOCK-HADDIX #34-1(SI) - Wellbore #1 - No Survey	5,300.00	5,263.00	2,830.42	2,765.73	43.751	CC
POLLOCK-HADDIX #34-1(SI) - Wellbore #1 - No Survey	5,500.00	5,462.97	2,832.01	2,764.90	42.195	ES
POLLOCK-HADDIX #34-1(SI) - Wellbore #1 - No Survey	6,400.00	6,352.88	2,913.19	2,835.31	37.405	SF
TWO E RANCHES #1(PR) - Wellbore #1 - Gyro Surveys	5,386.64	5,388.96	2,837.31	2,799.60	75.251	CC
TWO E RANCHES #1(PR) - Wellbore #1 - Gyro Surveys	5,500.00	5,522.34	2,837.77	2,799.23	73.623	ES
TWO E RANCHES #1(PR) - Wellbore #1 - Gyro Surveys	6,600.00	6,578.32	2,971.79	2,926.03	64.945	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 D10-735
Project:	Mustang	TVD Reference:	KB @ 4727.00ft
Reference Site:	C Section 34	MD Reference:	KB @ 4727.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersen D10-735	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	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						
D Section 03						
Becca D 3-11 (PR) - Wellbore #1 - No Surveys	10,360.50	6,773.00	1,666.16	1,358.26	5.411	CC, ES
Becca D 3-11 (PR) - Wellbore #1 - No Surveys	10,400.00	6,773.00	1,666.63	1,358.49	5.409	SF
Becca D 3-12 (PR) - Wellbore #1 - No Surveys	10,408.41	6,769.00	2,991.61	2,683.55	9.711	CC, ES
Becca D 3-12 (PR) - Wellbore #1 - No Surveys	10,600.00	6,769.00	2,997.73	2,688.50	9.694	SF
Becca D 3-13 (PR) - Wellbore #1 - No Surveys	11,653.26	6,781.00	2,869.19	2,552.07	9.048	CC, ES
Becca D 3-13 (PR) - Wellbore #1 - No Surveys	11,800.00	6,781.00	2,872.94	2,554.85	9.032	SF
Becca D 3-14 (PR) - Wellbore #1 - No Surveys	11,518.84	6,771.00	1,650.51	1,334.74	5.227	CC, ES
Becca D 3-14 (PR) - Wellbore #1 - No Surveys	11,600.00	6,771.00	1,652.51	1,336.23	5.225	SF
Becca D03-24 (PR) - Wellbore #1 - No Surveys	10,923.63	6,775.00	1,072.29	760.59	3.440	CC, ES, SF
Becca D03-32D - Wellbore #1 - Wellbore #1- As Drilled	9,641.23	7,054.03	3,724.79	3,664.82	62.111	CC, ES
Becca D03-32D - Wellbore #1 - Wellbore #1- As Drilled	11,600.00	7,042.40	4,208.40	4,132.75	55.629	SF
Cody D #03-28(SI) - Wellbore #1 - No Surveys	7,042.39	6,740.62	881.05	798.25	10.640	CC, ES
Cody D #03-28(SI) - Wellbore #1 - No Surveys	7,050.00	6,741.80	881.08	798.25	10.638	SF
Cody D 03-28 (SI) - Wellbore #1 - No Surveys	7,042.40	6,756.62	881.05	589.12	3.018	CC
Cody D 03-28 (SI) - Wellbore #1 - No Surveys	7,050.00	6,757.80	881.08	589.09	3.018	ES, SF
Cody D 3-20 (PR) - Wellbore #1 - No Surveys	9,695.98	6,771.00	2,333.46	2,029.89	7.687	CC
Cody D 3-20 (PR) - Wellbore #1 - No Surveys	9,700.00	6,771.00	2,333.46	2,029.87	7.686	ES
Cody D 3-20 (PR) - Wellbore #1 - No Surveys	9,800.00	6,771.00	2,335.77	2,031.62	7.679	SF
Cody D 3-7 (PR) - Wellbore #1 - No Surveys	9,084.93	6,755.00	354.26	54.78	1.183	Level 2, CC, ES, SF
CODY WHITE #D 3-2(PR) - Wellbore #1 - No Surveys	7,606.01	6,745.00	369.98	285.94	4.402	CC, ES, SF
Cody White D 3-1 (PR) - Wellbore #1 - No Surveys	7,594.42	6,754.00	950.04	656.94	3.241	CC
Cody White D 3-1 (PR) - Wellbore #1 - No Surveys	7,600.00	6,754.00	950.06	656.94	3.241	ES, SF
Cody White D 3-2 (PR) - Wellbore #1 - No Surveys	7,606.01	6,755.00	369.98	76.80	1.262	Level 3, CC, ES, SF
Cody White D 3-8 (PR) - Wellbore #1 - No Surveys	8,916.79	6,756.00	956.10	657.48	3.202	CC, ES, SF
Guttersen D 02-32D (PR) - Wellbore #1 - As Drilled Surv	9,679.86	6,877.58	1,682.69	1,620.79	27.183	CC
Guttersen D 02-32D (PR) - Wellbore #1 - As Drilled Surv	9,700.00	6,877.54	1,682.81	1,620.72	27.101	ES
Guttersen D 02-32D (PR) - Wellbore #1 - As Drilled Surv	10,000.00	6,877.05	1,712.87	1,648.29	26.524	SF
Guttersen D 03-17 (PR) - Wellbore #1 - No Surveys	8,321.48	6,762.00	255.61	-40.31	0.864	Level 1, CC, ES, SF
Guttersen D 03-25 (PR) - Wellbore #1 - No Surveys	10,814.31	6,773.00	2,325.44	2,014.60	7.481	CC, ES
Guttersen D 03-25 (PR) - Wellbore #1 - No Surveys	10,900.00	6,773.00	2,327.02	2,015.64	7.473	SF
Guttersen D 10-29 (PR) - Wellbore #1 - No Surveys	12,180.37	6,782.00	2,192.17	1,871.29	6.832	CC
Guttersen D 10-29 (PR) - Wellbore #1 - No Surveys	12,200.00	6,782.00	2,192.26	1,871.24	6.829	ES
Guttersen D 10-29 (PR) - Wellbore #1 - No Surveys	12,300.00	6,782.00	2,195.43	1,873.77	6.825	SF
HSR-Gittlein, D 4-3 (PR) - Wellbore #1 - No Surveys	7,437.34	6,762.00	3,179.15	2,886.13	10.850	CC, ES
HSR-Gittlein, D 4-3 (PR) - Wellbore #1 - No Surveys	7,500.00	6,762.00	3,179.77	2,886.60	10.846	SF
HSR-Gittlein, D 5-3 (PR) - Wellbore #1 - No Surveys	8,930.91	6,769.00	3,171.84	2,872.63	10.601	CC, ES
HSR-Gittlein, D 5-3 (PR) - Wellbore #1 - No Surveys	9,100.00	6,769.00	3,176.34	2,876.27	10.585	SF
HSR-Gittlein, L 3-3 (PR) - Wellbore #1 - No Surveys	7,613.95	6,759.00	1,698.41	1,405.05	5.789	CC, ES, SF
HSR-Gittlein, L 6-3 (PR) - Wellbore #1 - No Surveys	8,928.98	6,763.00	1,686.98	1,388.02	5.643	CC, ES
HSR-Gittlein, L 6-3 (PR) - Wellbore #1 - No Surveys	9,000.00	6,763.00	1,688.48	1,389.17	5.641	SF
HSR-Guttersen "A" 16-3 (SI) - Wellbore #1 - Gyro Survey	11,594.83	6,758.78	907.13	836.02	12.758	CC
HSR-Guttersen "A" 16-3 (SI) - Wellbore #1 - Gyro Survey	11,600.00	6,758.81	907.14	836.00	12.751	ES
HSR-Guttersen "A" 16-3 (SI) - Wellbore #1 - Gyro Survey	11,700.00	6,759.36	913.20	841.51	12.737	SF
HSR-Guttersen "A" 9-3 (SI) - Wellbore #1 - Gyro Surveys	10,476.25	6,754.71	745.20	681.80	11.755	CC, ES
HSR-Guttersen "A" 9-3 (SI) - Wellbore #1 - Gyro Surveys	10,500.00	6,754.78	745.58	682.02	11.730	SF
HSR-Guttersen 10-3 (SI) - Wellbore #1 - No Surveys	10,272.46	6,768.00	343.87	36.74	1.120	Level 2, CC, ES, SF
HSR-Guttersen 15-3 (SI) - Wellbore #1 - No Surveys	11,737.32	6,757.78	245.90	173.79	3.410	CC, ES, SF
UPRR 39 PAN AM A 01 (PA) - Wellbore #1 - No Surveys	11,610.54	6,782.00	2,984.01	2,667.19	9.419	CC, ES
UPRR 39 PAN AM A 01 (PA) - Wellbore #1 - No Surveys	11,800.00	6,782.00	2,990.02	2,671.95	9.401	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 D10-735
Project:	Mustang	TVD Reference:	KB @ 4727.00ft
Reference Site:	C Section 34	MD Reference:	KB @ 4727.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersten D10-735	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	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						
D Section 10						
Duncan D 10-6 (SI) - Wellbore #1 - No Surveys	13,824.25	6,803.00	1,998.97	1,664.82	5.982	CC, ES
Duncan D 10-6 (SI) - Wellbore #1 - No Surveys	13,900.00	6,803.00	2,000.40	1,665.74	5.977	SF
Guttersten State D 10-24 (SI) - Wellbore #1 - No Surveys	16,200.02	6,837.00	1,015.13	661.25	2.869	CC, ES, SF
Guttersten State D15-27 - Wellbore #1 - Wellbore #1- As	17,329.78	6,839.74	413.80	298.40	3.586	CC, ES
Guttersten State D15-27 - Wellbore #1 - Wellbore #1- As	17,342.03	6,839.86	413.98	298.50	3.585	SF
Karch Blue D 10-02 (SI) - Wellbore #1 - Gyro Surveys	13,189.03	6,801.86	505.02	422.04	6.086	CC, ES
Karch Blue D 10-02 (SI) - Wellbore #1 - Gyro Surveys	13,200.00	6,801.85	505.13	422.10	6.083	SF
Karch Blue D 10-07 (SI) - Wellbore #1 - Gyro Surveys	14,303.81	6,798.20	446.50	355.03	4.882	CC, ES, SF
Karch Blue D 10-08 (SI) - Wellbore #1 - Gyro Surveys	14,503.98	6,820.13	853.86	573.90	3.050	CC, ES, SF
Karch State D 10-22 (SI) - Wellbore #1 - No Surveys	14,864.77	6,824.00	246.28	-96.66	0.718	Level 1, CC, ES, SF
Spike D 10-10 (SI) - Wellbore #1 - No Surveys	15,655.20	6,828.00	240.95	-108.41	0.690	Level 1, CC, ES, SF
Spike ST GWS D 10-09 (SI) - Wellbore #1 - No Surveys	15,623.81	6,829.00	928.57	579.43	2.660	CC, ES, SF
Spike ST GWS D 10-12 (SI) - Wellbore #1 - No Surveys	15,570.89	6,814.00	3,030.76	2,682.84	8.711	CC
Spike ST GWS D 10-12 (SI) - Wellbore #1 - No Surveys	15,600.00	6,814.00	3,030.90	2,682.77	8.706	ES
Spike ST GWS D 10-12 (SI) - Wellbore #1 - No Surveys	15,700.00	6,814.00	3,033.51	2,684.67	8.696	SF
Spike ST GWS D 10-14 (PR) - Wellbore #1 - Gyro Surve	17,051.58	6,850.47	1,640.34	1,527.17	14.495	CC, ES
Spike ST GWS D 10-14 (PR) - Wellbore #1 - Gyro Surve	17,200.00	6,851.42	1,647.04	1,533.09	14.454	SF
Spike ST GWS D 10-16 (PA) - Wellbore #1 - No Surveys	16,884.09	6,828.00	950.83	726.17	4.232	CC, ES
Spike ST GWS D 10-16 (PA) - Wellbore #1 - No Surveys	16,900.00	6,828.00	950.96	726.18	4.231	SF
Spike State D 10-21D (SI) - Wellbore #1 - Wellbore #1	15,100.29	6,985.18	905.39	806.76	9.180	CC, ES
Spike State D 10-21D (SI) - Wellbore #1 - Wellbore #1	15,200.00	6,984.97	910.87	811.42	9.159	SF
Spike State D 10-23 (SI) - Wellbore #1 - No Surveys	16,207.59	6,833.00	411.62	57.74	1.163	Level 2, CC, ES, SF
Spike State GWS D 10-11 (PR) - Wellbore #1 - No Surve	15,533.56	6,814.00	1,665.86	1,318.02	4.789	CC, ES
Spike State GWS D 10-11 (PR) - Wellbore #1 - No Surve	15,600.00	6,814.00	1,667.19	1,318.91	4.787	SF
Spike State GWS D 10-13J (PR) - Wellbore #1 - No Surv	16,097.15	6,822.00	2,381.28	2,028.77	6.755	CC
Spike State GWS D 10-13J (PR) - Wellbore #1 - No Surv	16,100.00	6,822.00	2,381.28	2,028.75	6.755	ES
Spike State GWS D 10-13J (PR) - Wellbore #1 - No Surv	16,200.00	6,822.00	2,383.50	2,030.28	6.748	SF
Spike State GWS D 10-15 (PA) - Wellbore #1 - No Surve	16,747.39	7,106.00	2,064.43	1,964.24	20.605	CC
Spike State GWS D 10-15 (PA) - Wellbore #1 - No Surve	16,800.00	7,106.00	2,065.10	1,964.24	20.474	ES
Spike State GWS D 10-15 (PA) - Wellbore #1 - No Surve	17,342.91	7,106.00	2,148.61	2,023.27	17.143	SF
Two E Ranch 1-10 (PR) - Wellbore #1 - No Surveys	13,367.31	6,820.00	682.60	351.27	2.060	CC, ES, SF
Two E Ranch 2-10 (PR) - Wellbore #1 - No Surveys	12,840.67	6,779.00	2,844.97	2,519.22	8.734	CC, ES
Two E Ranch 2-10 (PR) - Wellbore #1 - No Surveys	13,000.00	6,779.00	2,849.43	2,522.60	8.718	SF
Two E Ranch 3-10 (PR) - Wellbore #1 - No Surveys	12,749.91	6,781.00	1,620.27	1,295.14	4.983	CC, ES
Two E Ranch 3-10 (PR) - Wellbore #1 - No Surveys	12,800.00	6,781.00	1,621.04	1,295.58	4.981	SF
Two E Ranch 4-10 (SI) - Wellbore #1 - No Surveys	14,303.41	6,804.03	2,852.70	2,514.86	8.444	CC, ES
Two E Ranch 4-10 (SI) - Wellbore #1 - No Surveys	14,500.00	6,804.03	2,859.47	2,520.30	8.431	SF
Volley State D 10-13 (PR) - Wellbore #1 - Gyro Surveys	17,000.92	6,882.88	3,063.15	2,950.38	27.162	CC, ES
Volley State D 10-13 (PR) - Wellbore #1 - Gyro Surveys	17,342.91	6,886.00	3,082.18	2,967.27	26.823	SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen D10-735
Project:	Mustang	TVD Reference:	KB @ 4727.00ft
Reference Site:	C Section 34	MD Reference:	KB @ 4727.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersen D10-735	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KB @ 4727.00ft

Offset Depths are relative to Offset Datum

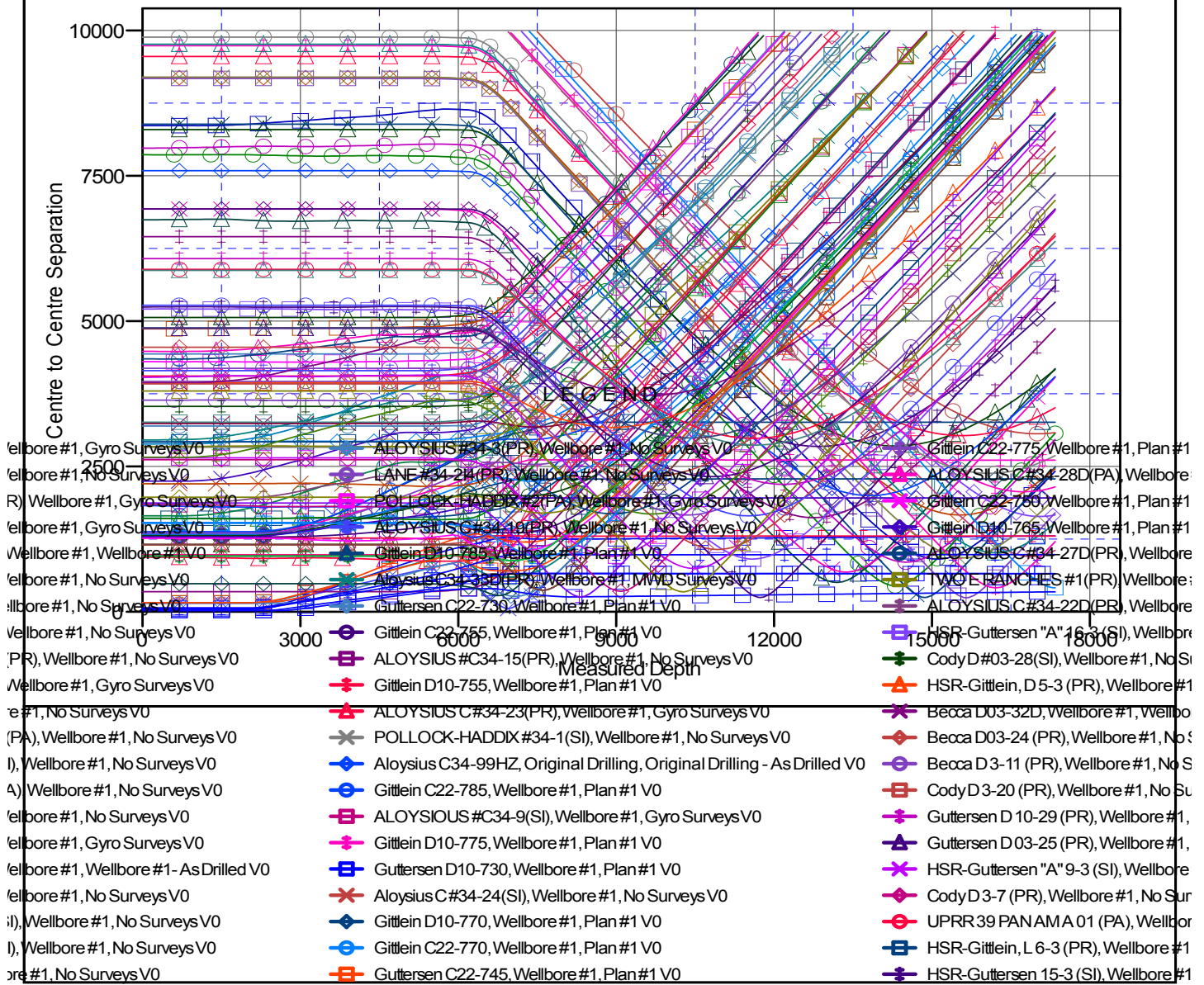
Central Meridian is -105.5000000

Coordinates are relative to: Guttersen D10-735

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.62°

Ladder Plot



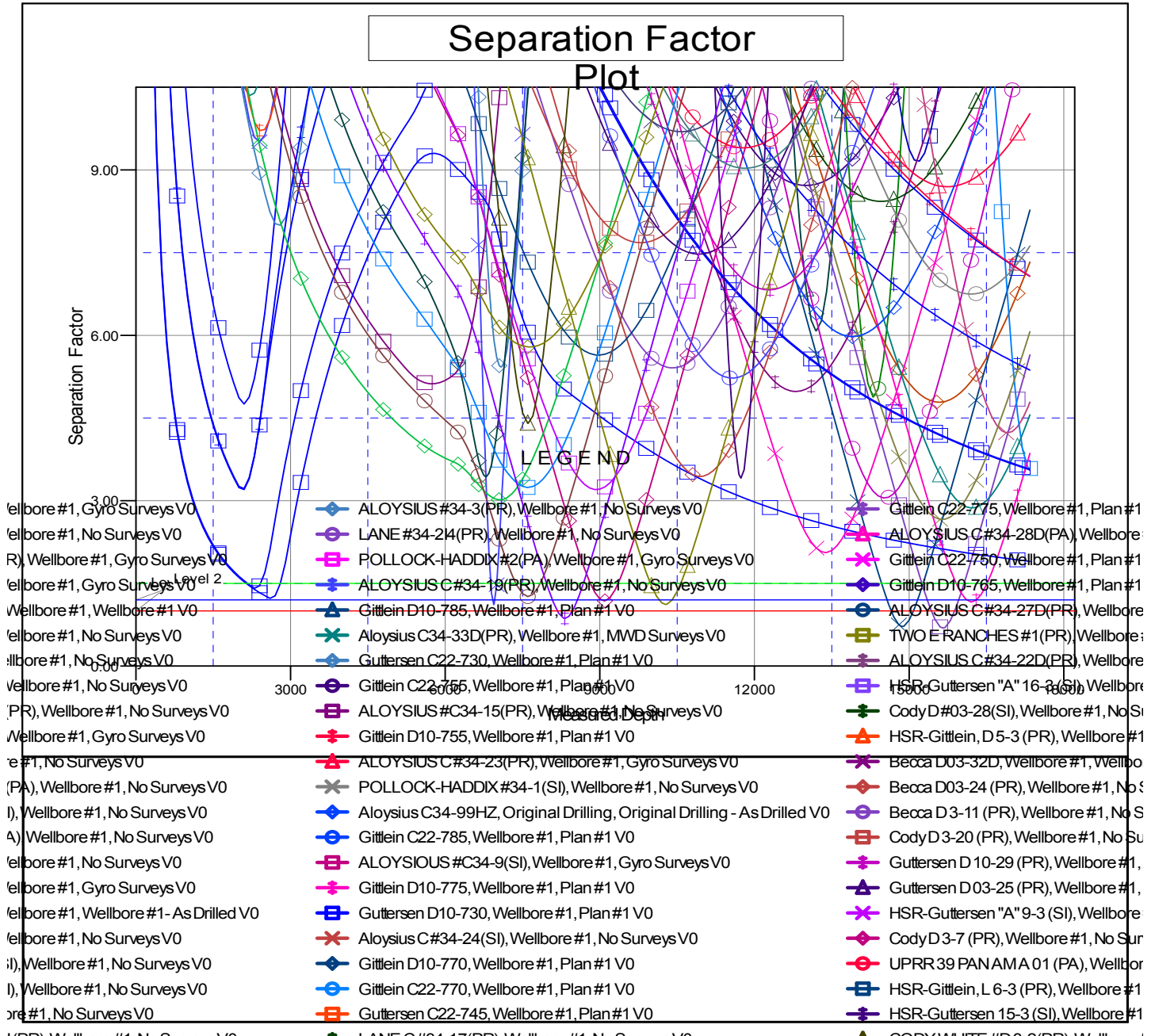
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen D10-735
Project:	Mustang	TVD Reference:	KB @ 4727.00ft
Reference Site:	C Section 34	MD Reference:	KB @ 4727.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersen D10-735	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KB @ 4727.00ft
Offset Depths are relative to Offset Datum
Central Meridian is -105.5000000

Coordinates are relative to: Guttersen D10-735
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.62°



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