

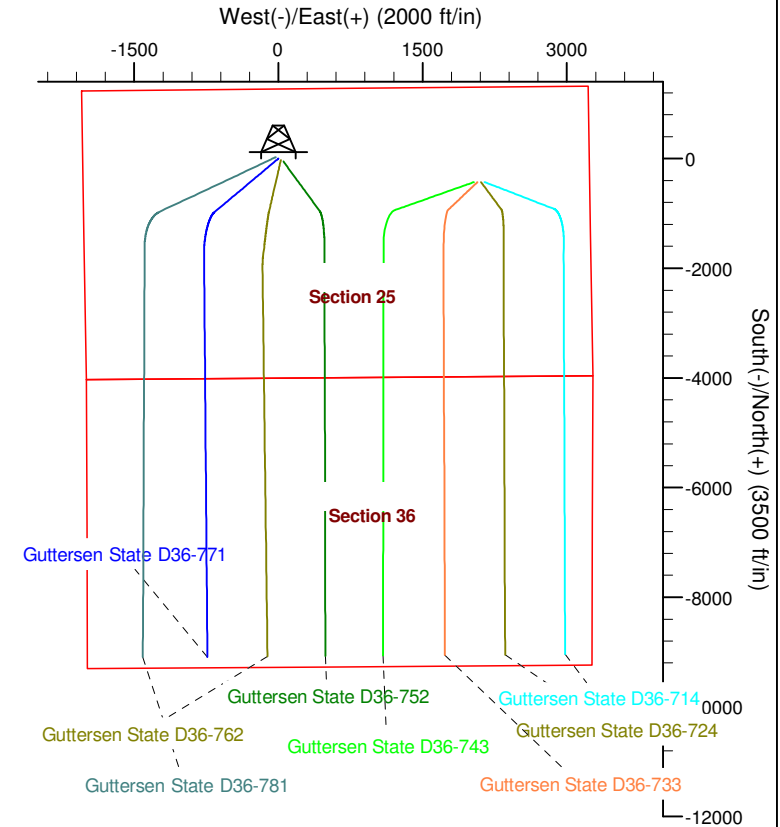
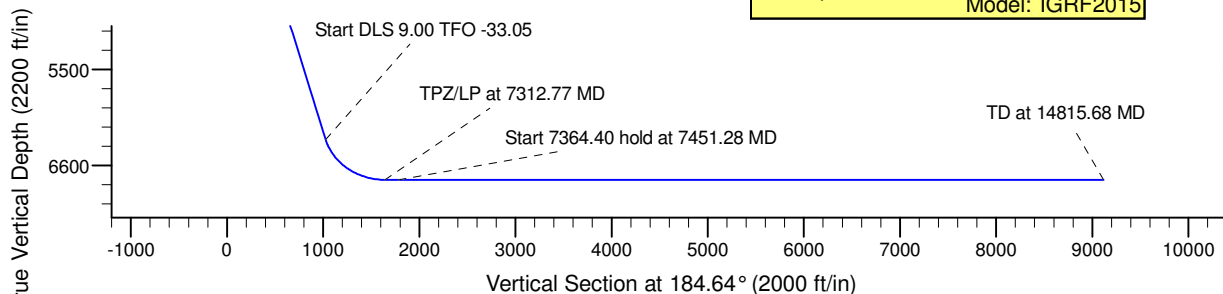
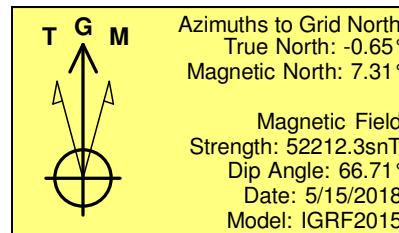
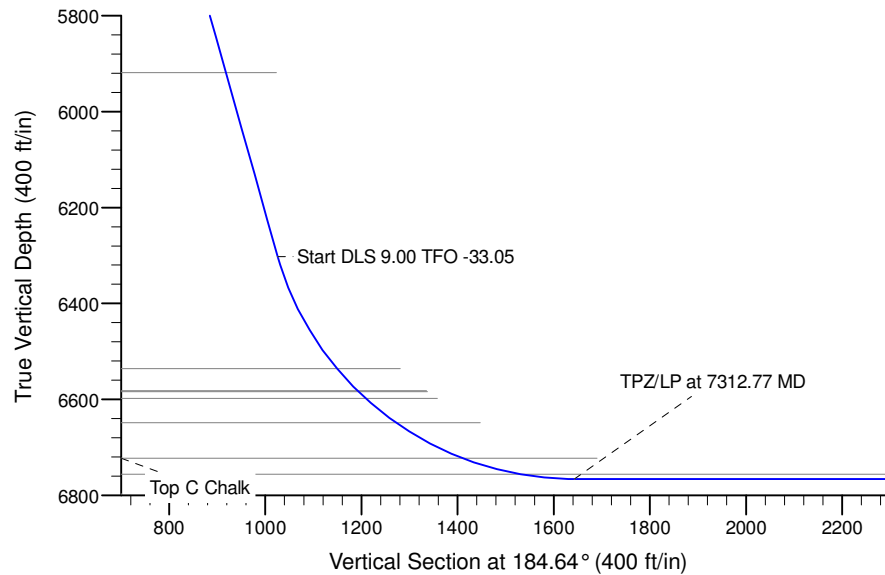
Project: Mustang
Site: D Section 25
Well: Gutteresen State D36-771
Wellbore: Wellbore #1
Design: Plan #1

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	2200.00	0.00	0.00	2200.00	0.00	0.00	0.00	0.00	0.00	
3	3095.77	17.92	214.26	3081.25	-114.80	-78.20	2.00	214.26	120.76	
4	6481.23	17.92	214.26	6302.55	-975.50	-664.50	0.00	0.00	1026.08	
5	7312.77	90.00	182.50	6766.00	-1585.94	-770.09	9.00	-33.05	1643.06	Gutteresen State D36-771 TPZ/LP
6	7451.28	90.00	179.73	6766.00	-1724.42	-772.79	2.00	-90.00	1781.30	
7	14815.68	90.00	179.73	6766.00	-9088.73	-738.03	0.00	0.00	9118.65	Gutteresen State D36-771 BHL



WELL DETAILS: Gutteresen State D36-771

	Northing	Easting	Latitude	Longitude
0.00	0.00	1317318.22	40.2001283	-104.5019099

Plan: Plan #1 (Gutteresen State D36-771/Wellbore #1)

Created By: Colby Baxter Date: 14:42, August 15 2018

Checked: _____ Date: _____

Reviewed: _____ Date: _____

Approved: _____ Date: _____

Northern Region - DJ Basin

Mustang

D Section 25

Guttersen State D36-771

Wellbore #1

Plan: Plan #1

Standard Survey Report

15 August, 2018

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen State D36-771
Project:	Mustang	TVD Reference:	KB @ 4817.00ft
Site:	D Section 25	MD Reference:	KB @ 4817.00ft
Well:	Guttersen State D36-771	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		D Section 25			
Site Position:		Northing:	1,316,029.45 usft	Latitude:	40.1965730
From:	Lat/Long	Easting:	3,279,365.57 usft	Longitude:	-104.4999090
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.65 °

Well	Guttersen State D36-771					
Well Position	+N/-S	0.00 ft	Northing:	1,317,318.22 usft	Latitude:	40.2001284
	+E/-W	0.00 ft	Easting:	3,278,792.07 usft	Longitude:	-104.5019099
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	4,787.00 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	5/15/2018	7.96	66.71	52,212.33374932

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	184.64	

Survey Tool Program	Date	8/15/2018			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.00	14,815.68	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

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen State D36-771
Project:	Mustang	TVD Reference:	KB @ 4817.00ft
Site:	D Section 25	MD Reference:	KB @ 4817.00ft
Well:	Guttersen State D36-771	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	2.00	214.26	2,299.98	-1.44	-0.98	1.52	2.00	2.00	0.00
2,400.00	4.00	214.26	2,399.84	-5.77	-3.93	6.07	2.00	2.00	0.00
2,500.00	6.00	214.26	2,499.45	-12.97	-8.84	13.64	2.00	2.00	0.00
2,600.00	8.00	214.26	2,598.70	-23.04	-15.70	24.24	2.00	2.00	0.00
2,700.00	10.00	214.26	2,697.47	-35.97	-24.50	37.84	2.00	2.00	0.00
2,800.00	12.00	214.26	2,795.62	-51.74	-35.24	54.42	2.00	2.00	0.00
2,900.00	14.00	214.26	2,893.06	-70.33	-47.91	73.98	2.00	2.00	0.00
3,000.00	16.00	214.26	2,989.64	-91.72	-62.48	96.47	2.00	2.00	0.00
3,095.77	17.92	214.26	3,081.25	-114.80	-78.20	120.76	2.00	2.00	0.00
3,100.00	17.92	214.26	3,085.27	-115.88	-78.94	121.89	0.00	0.00	0.00
3,200.00	17.92	214.26	3,180.42	-141.30	-96.25	148.63	0.00	0.00	0.00
3,300.00	17.92	214.26	3,275.57	-166.73	-113.57	175.37	0.00	0.00	0.00
3,400.00	17.92	214.26	3,370.72	-192.15	-130.89	202.11	0.00	0.00	0.00
3,500.00	17.92	214.26	3,465.87	-217.57	-148.21	228.85	0.00	0.00	0.00
3,600.00	17.92	214.26	3,561.03	-243.00	-165.52	255.60	0.00	0.00	0.00
3,700.00	17.92	214.26	3,656.18	-268.42	-182.84	282.34	0.00	0.00	0.00
3,800.00	17.92	214.26	3,751.33	-293.84	-200.16	309.08	0.00	0.00	0.00
3,900.00	17.92	214.26	3,846.48	-319.27	-217.48	335.82	0.00	0.00	0.00
4,000.00	17.92	214.26	3,941.63	-344.69	-234.80	362.56	0.00	0.00	0.00
4,100.00	17.92	214.26	4,036.78	-370.11	-252.11	389.30	0.00	0.00	0.00
4,200.00	17.92	214.26	4,131.93	-395.54	-269.43	416.04	0.00	0.00	0.00
4,300.00	17.92	214.26	4,227.08	-420.96	-286.75	442.79	0.00	0.00	0.00
4,400.00	17.92	214.26	4,322.23	-446.38	-304.07	469.53	0.00	0.00	0.00
4,500.00	17.92	214.26	4,417.39	-471.81	-321.39	496.27	0.00	0.00	0.00
4,600.00	17.92	214.26	4,512.54	-497.23	-338.70	523.01	0.00	0.00	0.00
4,700.00	17.92	214.26	4,607.69	-522.65	-356.02	549.75	0.00	0.00	0.00
4,800.00	17.92	214.26	4,702.84	-548.08	-373.34	576.49	0.00	0.00	0.00
4,900.00	17.92	214.26	4,797.99	-573.50	-390.66	603.24	0.00	0.00	0.00
5,000.00	17.92	214.26	4,893.14	-598.92	-407.98	629.98	0.00	0.00	0.00
5,100.00	17.92	214.26	4,988.29	-624.35	-425.29	656.72	0.00	0.00	0.00
5,200.00	17.92	214.26	5,083.44	-649.77	-442.61	683.46	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen State D36-771
Project:	Mustang	TVD Reference:	KB @ 4817.00ft
Site:	D Section 25	MD Reference:	KB @ 4817.00ft
Well:	Guttersen State D36-771	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)
5,300.00	17.92	214.26	5,178.59	-675.19	-459.93	710.20	0.00	0.00	0.00
5,400.00	17.92	214.26	5,273.75	-700.62	-477.25	736.94	0.00	0.00	0.00
5,500.00	17.92	214.26	5,368.90	-726.04	-494.57	763.68	0.00	0.00	0.00
5,600.00	17.92	214.26	5,464.05	-751.46	-511.88	790.43	0.00	0.00	0.00
5,700.00	17.92	214.26	5,559.20	-776.89	-529.20	817.17	0.00	0.00	0.00
5,800.00	17.92	214.26	5,654.35	-802.31	-546.52	843.91	0.00	0.00	0.00
5,900.00	17.92	214.26	5,749.50	-827.73	-563.84	870.65	0.00	0.00	0.00
6,000.00	17.92	214.26	5,844.65	-853.16	-581.16	897.39	0.00	0.00	0.00
6,100.00	17.92	214.26	5,939.80	-878.58	-598.47	924.13	0.00	0.00	0.00
6,200.00	17.92	214.26	6,034.95	-904.00	-615.79	950.88	0.00	0.00	0.00
6,300.00	17.92	214.26	6,130.11	-929.43	-633.11	977.62	0.00	0.00	0.00
6,400.00	17.92	214.26	6,225.26	-954.85	-650.43	1,004.36	0.00	0.00	0.00
6,481.23	17.92	214.26	6,302.55	-975.50	-664.50	1,026.08	0.00	0.00	0.00
6,500.00	19.35	211.48	6,320.33	-980.54	-667.75	1,031.37	9.00	7.66	-14.82
6,600.00	27.48	201.60	6,412.06	-1,016.20	-684.93	1,068.29	9.00	8.13	-9.88
6,700.00	36.00	196.05	6,497.04	-1,066.00	-701.58	1,119.28	9.00	8.52	-5.55
6,800.00	44.69	192.41	6,573.19	-1,128.71	-717.29	1,183.06	9.00	8.69	-3.64
6,900.00	53.46	189.74	6,638.64	-1,202.80	-731.67	1,258.07	9.00	8.77	-2.66
7,000.00	62.28	187.63	6,691.77	-1,286.44	-744.37	1,342.46	9.00	8.82	-2.11
7,100.00	71.13	185.83	6,731.27	-1,377.57	-755.08	1,434.16	9.00	8.85	-1.80
7,200.00	80.00	184.22	6,756.18	-1,473.94	-763.53	1,530.90	9.00	8.86	-1.61
7,300.00	88.87	182.69	6,765.87	-1,573.19	-769.51	1,630.30	9.00	8.87	-1.53
7,312.77	90.00	182.50	6,766.00	-1,585.94	-770.09	1,643.06	9.00	8.87	-1.51
7,400.00	90.00	180.76	6,766.00	-1,673.13	-772.57	1,730.17	2.00	0.00	-2.00
7,451.28	90.00	179.73	6,766.00	-1,724.42	-772.79	1,781.30	2.00	0.00	-2.00
7,500.00	90.00	179.73	6,766.00	-1,773.13	-772.56	1,829.84	0.00	0.00	0.00
7,600.00	90.00	179.73	6,766.00	-1,873.13	-772.08	1,929.47	0.00	0.00	0.00
7,700.00	90.00	179.73	6,766.00	-1,973.13	-771.61	2,029.10	0.00	0.00	0.00
7,800.00	90.00	179.73	6,766.00	-2,073.13	-771.14	2,128.74	0.00	0.00	0.00
7,900.00	90.00	179.73	6,766.00	-2,173.13	-770.67	2,228.37	0.00	0.00	0.00
8,000.00	90.00	179.73	6,766.00	-2,273.13	-770.20	2,328.00	0.00	0.00	0.00
8,100.00	90.00	179.73	6,766.00	-2,373.12	-769.72	2,427.63	0.00	0.00	0.00
8,200.00	90.00	179.73	6,766.00	-2,473.12	-769.25	2,527.27	0.00	0.00	0.00
8,300.00	90.00	179.73	6,766.00	-2,573.12	-768.78	2,626.90	0.00	0.00	0.00
8,400.00	90.00	179.73	6,766.00	-2,673.12	-768.31	2,726.53	0.00	0.00	0.00
8,500.00	90.00	179.73	6,766.00	-2,773.12	-767.84	2,826.17	0.00	0.00	0.00
8,600.00	90.00	179.73	6,766.00	-2,873.12	-767.37	2,925.80	0.00	0.00	0.00
8,700.00	90.00	179.73	6,766.00	-2,973.12	-766.89	3,025.43	0.00	0.00	0.00
8,800.00	90.00	179.73	6,766.00	-3,073.12	-766.42	3,125.06	0.00	0.00	0.00
8,900.00	90.00	179.73	6,766.00	-3,173.12	-765.95	3,224.70	0.00	0.00	0.00
9,000.00	90.00	179.73	6,766.00	-3,273.11	-765.48	3,324.33	0.00	0.00	0.00
9,100.00	90.00	179.73	6,766.00	-3,373.11	-765.01	3,423.96	0.00	0.00	0.00
9,200.00	90.00	179.73	6,766.00	-3,473.11	-764.53	3,523.59	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen State D36-771
Project:	Mustang	TVD Reference:	KB @ 4817.00ft
Site:	D Section 25	MD Reference:	KB @ 4817.00ft
Well:	Guttersen State D36-771	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)	
9,300.00	90.00	179.73	6,766.00	-3,573.11	-764.06	3,623.23	0.00	0.00	0.00	
9,400.00	90.00	179.73	6,766.00	-3,673.11	-763.59	3,722.86	0.00	0.00	0.00	
9,500.00	90.00	179.73	6,766.00	-3,773.11	-763.12	3,822.49	0.00	0.00	0.00	
9,600.00	90.00	179.73	6,766.00	-3,873.11	-762.65	3,922.12	0.00	0.00	0.00	
9,700.00	90.00	179.73	6,766.00	-3,973.11	-762.17	4,021.76	0.00	0.00	0.00	
9,800.00	90.00	179.73	6,766.00	-4,073.11	-761.70	4,121.39	0.00	0.00	0.00	
9,900.00	90.00	179.73	6,766.00	-4,173.10	-761.23	4,221.02	0.00	0.00	0.00	
10,000.00	90.00	179.73	6,766.00	-4,273.10	-760.76	4,320.66	0.00	0.00	0.00	
10,100.00	90.00	179.73	6,766.00	-4,373.10	-760.29	4,420.29	0.00	0.00	0.00	
10,200.00	90.00	179.73	6,766.00	-4,473.10	-759.82	4,519.92	0.00	0.00	0.00	
10,300.00	90.00	179.73	6,766.00	-4,573.10	-759.34	4,619.55	0.00	0.00	0.00	
10,400.00	90.00	179.73	6,766.00	-4,673.10	-758.87	4,719.19	0.00	0.00	0.00	
10,500.00	90.00	179.73	6,766.00	-4,773.10	-758.40	4,818.82	0.00	0.00	0.00	
10,600.00	90.00	179.73	6,766.00	-4,873.10	-757.93	4,918.45	0.00	0.00	0.00	
10,700.00	90.00	179.73	6,766.00	-4,973.10	-757.46	5,018.08	0.00	0.00	0.00	
10,800.00	90.00	179.73	6,766.00	-5,073.09	-756.98	5,117.72	0.00	0.00	0.00	
10,900.00	90.00	179.73	6,766.00	-5,173.09	-756.51	5,217.35	0.00	0.00	0.00	
11,000.00	90.00	179.73	6,766.00	-5,273.09	-756.04	5,316.98	0.00	0.00	0.00	
11,100.00	90.00	179.73	6,766.00	-5,373.09	-755.57	5,416.61	0.00	0.00	0.00	
11,200.00	90.00	179.73	6,766.00	-5,473.09	-755.10	5,516.25	0.00	0.00	0.00	
11,300.00	90.00	179.73	6,766.00	-5,573.09	-754.62	5,615.88	0.00	0.00	0.00	
11,400.00	90.00	179.73	6,766.00	-5,673.09	-754.15	5,715.51	0.00	0.00	0.00	
11,500.00	90.00	179.73	6,766.00	-5,773.09	-753.68	5,815.15	0.00	0.00	0.00	
11,600.00	90.00	179.73	6,766.00	-5,873.09	-753.21	5,914.78	0.00	0.00	0.00	
11,700.00	90.00	179.73	6,766.00	-5,973.08	-752.74	6,014.41	0.00	0.00	0.00	
11,800.00	90.00	179.73	6,766.00	-6,073.08	-752.26	6,114.04	0.00	0.00	0.00	
11,900.00	90.00	179.73	6,766.00	-6,173.08	-751.79	6,213.68	0.00	0.00	0.00	
12,000.00	90.00	179.73	6,766.00	-6,273.08	-751.32	6,313.31	0.00	0.00	0.00	
12,100.00	90.00	179.73	6,766.00	-6,373.08	-750.85	6,412.94	0.00	0.00	0.00	
12,200.00	90.00	179.73	6,766.00	-6,473.08	-750.38	6,512.57	0.00	0.00	0.00	
12,300.00	90.00	179.73	6,766.00	-6,573.08	-749.91	6,612.21	0.00	0.00	0.00	
12,400.00	90.00	179.73	6,766.00	-6,673.08	-749.43	6,711.84	0.00	0.00	0.00	
12,500.00	90.00	179.73	6,766.00	-6,773.08	-748.96	6,811.47	0.00	0.00	0.00	
12,600.00	90.00	179.73	6,766.00	-6,873.07	-748.49	6,911.10	0.00	0.00	0.00	
12,700.00	90.00	179.73	6,766.00	-6,973.07	-748.02	7,010.74	0.00	0.00	0.00	
12,800.00	90.00	179.73	6,766.00	-7,073.07	-747.55	7,110.37	0.00	0.00	0.00	
12,900.00	90.00	179.73	6,766.00	-7,173.07	-747.07	7,210.00	0.00	0.00	0.00	
13,000.00	90.00	179.73	6,766.00	-7,273.07	-746.60	7,309.64	0.00	0.00	0.00	
13,100.00	90.00	179.73	6,766.00	-7,373.07	-746.13	7,409.27	0.00	0.00	0.00	
13,200.00	90.00	179.73	6,766.00	-7,473.07	-745.66	7,508.90	0.00	0.00	0.00	
13,300.00	90.00	179.73	6,766.00	-7,573.07	-745.19	7,608.53	0.00	0.00	0.00	
13,400.00	90.00	179.73	6,766.00	-7,673.07	-744.71	7,708.17	0.00	0.00	0.00	
13,500.00	90.00	179.73	6,766.00	-7,773.06	-744.24	7,807.80	0.00	0.00	0.00	

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Gutttersen State D36-771
Project:	Mustang	TVD Reference:	KB @ 4817.00ft
Site:	D Section 25	MD Reference:	KB @ 4817.00ft
Well:	Gutttersen State D36-771	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)
13,600.00	90.00	179.73	6,766.00	-7,873.06	-743.77	7,907.43	0.00	0.00	0.00
13,700.00	90.00	179.73	6,766.00	-7,973.06	-743.30	8,007.06	0.00	0.00	0.00
13,800.00	90.00	179.73	6,766.00	-8,073.06	-742.83	8,106.70	0.00	0.00	0.00
13,900.00	90.00	179.73	6,766.00	-8,173.06	-742.35	8,206.33	0.00	0.00	0.00
14,000.00	90.00	179.73	6,766.00	-8,273.06	-741.88	8,305.96	0.00	0.00	0.00
14,100.00	90.00	179.73	6,766.00	-8,373.06	-741.41	8,405.60	0.00	0.00	0.00
14,200.00	90.00	179.73	6,766.00	-8,473.06	-740.94	8,505.23	0.00	0.00	0.00
14,300.00	90.00	179.73	6,766.00	-8,573.06	-740.47	8,604.86	0.00	0.00	0.00
14,400.00	90.00	179.73	6,766.00	-8,673.05	-740.00	8,704.49	0.00	0.00	0.00
14,500.00	90.00	179.73	6,766.00	-8,773.05	-739.52	8,804.13	0.00	0.00	0.00
14,600.00	90.00	179.73	6,766.00	-8,873.05	-739.05	8,903.76	0.00	0.00	0.00
14,700.00	90.00	179.73	6,766.00	-8,973.05	-738.58	9,003.39	0.00	0.00	0.00
14,800.00	90.00	179.73	6,766.00	-9,073.05	-738.11	9,103.02	0.00	0.00	0.00
14,815.68	90.00	179.73	6,766.00	-9,088.73	-738.03	9,118.65	0.00	0.00	0.00

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Gutttersen State D36-77'	0.00	0.00	0.00	0.00	0.00	1,317,318.22	3,278,792.07	40.2001284	-104.5019099
- plan hits target center									
- Point									
Gutttersen State D36-77'	0.00	0.00	6,302.55	-975.50	-664.50	1,316,342.72	3,278,127.58	40.1974712	-104.5043278
- plan hits target center									
- Point									
Gutttersen State D36-77'	0.00	0.00	6,766.00	-9,088.73	-738.03	1,308,229.50	3,278,054.04	40.1752031	-104.5049170
- plan hits target center									
- Point									
Gutttersen State D36-77'	0.00	0.00	6,766.00	-1,585.94	-770.09	1,315,732.29	3,278,021.98	40.1957988	-104.5047304
- plan hits target center									
- Point									

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen State D36-771
Project:	Mustang	TVD Reference:	KB @ 4817.00ft
Site:	D Section 25	MD Reference:	KB @ 4817.00ft
Well:	Guttersen State D36-771	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDMP

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
680.00	680.00	Upper Pierre Aquifer Top				
693.00	693.00	Pierre				
1,617.00	1,617.00	Upper Pierre Aquifer Base				
3,687.20	3,644.00	Parkman				
4,130.71	4,066.00	Sussex				
4,325.14	4,251.00	Shannon				
6,078.14	5,919.00	Teepee Buttes				
6,749.55	6,536.00	Sharon Springs				
6,812.51	6,582.00	Top A Chalk				
6,815.38	6,584.00	Top A Marl				
6,835.88	6,598.00	Top B Chalk				
6,917.73	6,649.00	Top B Marl				
7,075.74	6,723.00	Top C Chalk				
7,198.97	6,756.00	Top C Marl				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
2200	2200	0	0	Start Build 2.00	
6481	6303	-115	-78	Start DLS 9.00 TFO -33.05	
7313	6766	-976	-664	TPZ/LP at 7312.77 MD	
7451	6766	-1586	-770	Start 7364.40 hold at 7451.28 MD	
14,816	6766	-1724	-773	TD at 14815.68 MD	

Checked By: _____ Approved By: _____ Date: _____

Northern Region - DJ Basin

Mustang

D Section 25

Guttersen State D36-771

Wellbore #1

Plan #1

Anticollision Summary Report

15 August, 2018

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen State D36-771
Project:	Mustang	TVD Reference:	KB @ 4817.00ft
Reference Site:	D Section 25	MD Reference:	KB @ 4817.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersen State D36-771	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	8/15/2018		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	14,815.68	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						
D Section 25						
Coors Energy 13-25D (PR) - Wellbore #1 - MWD Survey	7,759.36	6,948.09	579.38	519.04	9.603	CC, ES, SF
Coors Energy 14-25D (PR) - Wellbore #1 - MWD Survey	9,044.61	6,900.59	591.44	531.95	9.942	CC, ES
Coors Energy 14-25D (PR) - Wellbore #1 - MWD Survey	9,100.00	6,900.10	594.03	533.68	9.844	SF
Coors Energy 23-25D (PR) - Wellbore #1 - MWD Survey	7,753.59	6,925.66	747.26	688.81	12.784	CC, ES, SF
Coors Energy 24-25 (PR) - Wellbore #1 - Gyro Surveys	9,326.15	6,762.11	894.79	833.42	14.582	CC, ES, SF
Coors Energy 25HD (PR) - Wellbore #1 - MWD Surveys	8,409.95	6,991.24	1,054.57	995.35	17.808	CC, ES, SF
Coors Energy 25LD (PR) - Wellbore #1 - MWD Surveys	9,548.43	6,830.25	100.51	36.33	1.566	CC, ES, SF
Coors Energy 25TD (PR) - Wellbore #1 - MWD Surveys	9,640.55	6,800.04	2,807.14	2,743.01	43.774	CC, ES
Coors Energy 25TD (PR) - Wellbore #1 - MWD Surveys	10,100.00	6,796.38	2,844.49	2,778.26	42.952	SF
Coors Energy 25XD (PR) - Wellbore #1 - MWD Surveys	1,492.51	1,466.95	3,791.10	3,782.16	424.033	CC
Coors Energy 25XD (PR) - Wellbore #1 - MWD Surveys	1,600.00	1,536.94	3,791.66	3,782.06	395.181	ES
Coors Energy 25XD (PR) - Wellbore #1 - MWD Surveys	9,100.00	6,945.28	3,982.71	3,922.15	65.768	SF
Coors Energy 25YD (PR) - Wellbore #1 - MWD Surveys	870.61	902.63	3,825.28	3,820.77	848.765	CC, ES
Coors Energy 25YD (PR) - Wellbore #1 - MWD Surveys	10,900.00	6,976.57	4,154.95	4,080.06	55.480	SF
Coors Energy 33-25D (PR) - Wellbore #1 - MWD Survey	7,762.28	6,939.45	2,058.18	1,997.16	33.729	CC, ES
Coors Energy 33-25D (PR) - Wellbore #1 - MWD Survey	8,100.00	6,939.00	2,085.70	2,022.82	33.170	SF
Coors Energy 34-25 (PR) - Wellbore #1 - Gyro Surveys	9,337.08	6,756.56	1,890.97	1,829.54	30.783	CC, ES
Coors Energy 34-25 (PR) - Wellbore #1 - Gyro Surveys	9,500.00	6,757.01	1,897.98	1,835.93	30.588	SF
Coors Energy 43-25D (PR) - Wellbore #1 - MWD Survey	4,637.00	4,786.00	3,300.61	3,258.83	78.986	CC, ES
Coors Energy 43-25D (PR) - Wellbore #1 - MWD Survey	8,000.00	6,972.40	3,362.60	3,301.72	55.233	SF
Coors Energy 44-25D (PR) - Wellbore #1 - MWD Survey	9,053.07	6,795.02	3,381.52	3,322.34	57.139	CC, ES
Coors Energy 44-25D (PR) - Wellbore #1 - MWD Survey	9,800.00	6,796.68	3,463.03	3,400.34	55.245	SF
Dalbey D 25-03 (SI) - Wellbore #1 - Gyro Surveys	1,553.88	1,526.89	428.37	417.87	40.776	CC
Dalbey D 25-03 (SI) - Wellbore #1 - Gyro Surveys	2,400.00	2,369.22	431.19	414.77	26.260	ES
Dalbey D 25-03 (SI) - Wellbore #1 - Gyro Surveys	3,400.00	3,339.63	495.11	471.87	21.305	SF
Dalbey D 25-05 (SI) - Wellbore #1 - Gyro Surveys	6,664.20	6,518.02	948.44	901.10	20.036	CC, ES
Dalbey D 25-05 (SI) - Wellbore #1 - Gyro Surveys	6,800.00	6,637.72	957.26	908.89	19.788	SF
Guttersen 11-25 (PR) - Wellbore #1 - MWD Surveys	100.00	82.21	1,442.04	1,441.76	5,268.125	CC
Guttersen 11-25 (PR) - Wellbore #1 - MWD Surveys	900.00	872.64	1,444.66	1,439.97	307.630	ES
Guttersen 11-25 (PR) - Wellbore #1 - MWD Surveys	6,550.00	6,368.51	1,787.99	1,742.81	39.578	SF
Guttersen 22-25 (PR) - Wellbore #1 - MWD Surveys	4,143.97	4,055.76	406.21	378.85	14.849	CC
Guttersen 22-25 (PR) - Wellbore #1 - MWD Surveys	4,200.00	4,109.37	406.56	378.80	14.645	ES
Guttersen 22-25 (PR) - Wellbore #1 - MWD Surveys	4,600.00	4,493.82	428.04	397.39	13.966	SF
Guttersen 25E (PR) - Wellbore #1 - MWD Surveys	100.00	82.53	2,088.11	2,087.84	7,633.047	CC
Guttersen 25E (PR) - Wellbore #1 - MWD Surveys	1,700.00	1,667.55	2,092.81	2,082.43	201.660	ES
Guttersen 25E (PR) - Wellbore #1 - MWD Surveys	6,650.00	6,460.15	2,527.04	2,480.88	54.742	SF
Guttersen 25KD (PR) - Wellbore #1 - MWD Surveys	6,926.46	6,814.39	44.32	-6.08	0.879	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 State D36-771
Project:	Mustang	TVD Reference:	KB @ 4817.00ft
Reference Site:	D Section 25	MD Reference:	KB @ 4817.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersten State D36-771	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
D Section 25						
Guttersten 250 (PR) - Wellbore #1 - MWD Surveys	5,143.09	5,053.59	1,074.77	1,039.78	30.720	CC
Guttersten 250 (PR) - Wellbore #1 - MWD Surveys	5,200.00	5,104.18	1,075.00	1,039.60	30.369	ES
Guttersten 250 (PR) - Wellbore #1 - MWD Surveys	6,800.00	6,547.97	1,225.50	1,178.56	26.105	SF
Guttersten D 25-17 (SI) - Wellbore #1 - Gyro Surveys	2,237.55	2,204.23	1,803.00	1,787.67	117.602	CC
Guttersten D 25-17 (SI) - Wellbore #1 - Gyro Surveys	2,300.00	2,267.45	1,803.37	1,787.61	114.385	ES
Guttersten D 25-17 (SI) - Wellbore #1 - Gyro Surveys	6,750.00	6,578.62	2,683.26	2,635.77	56.500	SF
Guttersten D25-715 - Wellbore #1 - Plan #1	2,000.00	1,986.00	2,223.78	2,209.95	160.879	CC
Guttersten D25-715 - Wellbore #1 - Plan #1	2,100.00	2,056.26	2,224.35	2,209.93	154.232	ES
Guttersten D25-715 - Wellbore #1 - Plan #1	8,300.00	6,350.00	3,717.75	3,663.80	68.910	SF
Guttersten D25-724 - Wellbore #1 - Plan #1	2,000.00	1,985.00	2,187.72	2,173.90	158.312	CC
Guttersten D25-724 - Wellbore #1 - Plan #1	2,100.00	2,065.80	2,188.09	2,173.64	151.379	ES
Guttersten D25-724 - Wellbore #1 - Plan #1	7,700.00	6,619.44	3,092.41	3,040.23	59.262	SF
Guttersten D25-734 - Wellbore #1 - Plan #1	2,232.99	2,226.06	2,151.35	2,135.90	139.238	CC
Guttersten D25-734 - Wellbore #1 - Plan #1	2,300.00	2,295.26	2,151.57	2,135.66	135.277	ES
Guttersten D25-734 - Wellbore #1 - Plan #1	7,100.00	7,036.88	2,425.33	2,373.82	47.091	SF
Guttersten D25-743 - Wellbore #1 - Plan #1	6,544.97	7,530.00	1,745.77	1,695.37	34.637	CC
Guttersten D25-743 - Wellbore #1 - Plan #1	6,550.00	7,528.22	1,745.78	1,695.36	34.624	ES
Guttersten D25-743 - Wellbore #1 - Plan #1	6,750.00	7,429.15	1,756.48	1,705.45	34.420	SF
Guttersten D25-753 - Wellbore #1 - Plan #1	2,000.00	2,000.00	167.70	153.83	12.089	CC, ES
Guttersten D25-753 - Wellbore #1 - Plan #1	2,600.00	2,566.24	195.59	178.03	11.137	SF
Guttersten D25-762 - Wellbore #1 - Plan #1	2,000.00	2,000.00	154.62	140.75	11.146	CC, ES
Guttersten D25-762 - Wellbore #1 - Plan #1	2,700.00	2,661.98	187.24	169.13	10.341	SF
Guttersten D25-772 - Wellbore #1 - Plan #1	7,164.76	7,332.81	54.22	0.15	1.003	Level 2, CC, ES, SF
Guttersten D25-781 - Wellbore #1 - Plan #1	2,000.00	2,000.00	154.62	140.75	11.146	CC, ES
Guttersten D25-781 - Wellbore #1 - Plan #1	2,200.00	2,185.86	163.42	148.26	10.778	SF
Guttersten State D36-714 - Wellbore #1 - Plan #1	2,200.00	2,185.00	2,187.73	2,172.48	143.430	CC, ES
Guttersten State D36-714 - Wellbore #1 - Plan #1	14,816.36	14,702.49	3,722.11	3,569.55	24.398	SF
Guttersten State D36-724 - Wellbore #1 - Plan #1	2,200.00	2,186.00	2,151.06	2,135.81	140.993	CC, ES
Guttersten State D36-724 - Wellbore #1 - Plan #1	14,816.36	14,633.39	3,097.06	2,944.21	20.263	SF
Guttersten State D36-733 - Wellbore #1 - Plan #1	2,581.33	2,674.25	2,114.00	2,095.88	116.680	CC
Guttersten State D36-733 - Wellbore #1 - Plan #1	2,600.00	2,707.08	2,114.03	2,095.74	115.592	ES
Guttersten State D36-733 - Wellbore #1 - Plan #1	14,816.36	14,641.76	2,472.00	2,319.31	16.190	SF
Guttersten State D36-743 - Wellbore #1 - Plan #1	6,409.54	6,678.77	1,823.69	1,775.65	37.967	CC
Guttersten State D36-743 - Wellbore #1 - Plan #1	14,800.00	14,719.96	1,826.81	1,674.76	12.014	ES
Guttersten State D36-743 - Wellbore #1 - Plan #1	14,815.68	14,719.96	1,826.89	1,674.83	12.014	SF
Guttersten State D36-752 - Wellbore #1 - Plan #1	2,200.00	2,200.00	75.00	67.35	9.800	CC, ES
Guttersten State D36-752 - Wellbore #1 - Plan #1	14,805.90	14,742.49	1,227.17	1,077.61	8.205	SF
Guttersten State D36-762 - Wellbore #1 - Plan #1	2,200.00	2,200.00	37.49	22.19	2.449	CC, ES
Guttersten State D36-762 - Wellbore #1 - Plan #1	2,300.00	2,299.21	38.23	22.24	2.392	SF
Guttersten State D36-781 - Wellbore #1 - Plan #1	2,000.00	2,000.00	37.50	23.63	2.703	CC
Guttersten State D36-781 - Wellbore #1 - Plan #1	2,100.00	2,099.82	37.72	23.15	2.588	ES
Guttersten State D36-781 - Wellbore #1 - Plan #1	2,200.00	2,199.40	38.86	23.60	2.546	SF
Karch Blue D 25-02 (DA) - Wellbore #1 - No Surveys	2,200.00	2,144.00	1,393.35	1,342.82	27.573	CC
Karch Blue D 25-02 (DA) - Wellbore #1 - No Surveys	2,300.00	2,243.98	1,394.86	1,341.99	26.381	ES
Karch Blue D 25-02 (DA) - Wellbore #1 - No Surveys	6,550.00	6,310.90	2,508.91	2,359.16	16.754	SF
Karch Blue D 25-08 (SI) - Wellbore #1 - Gyro Surveys	2,278.81	2,255.16	2,661.95	2,646.32	170.329	CC
Karch Blue D 25-08 (SI) - Wellbore #1 - Gyro Surveys	2,300.00	2,273.96	2,661.99	2,646.22	168.838	ES
Karch Blue D 25-08 (SI) - Wellbore #1 - Gyro Surveys	7,100.00	6,814.56	3,385.14	3,335.19	67.768	SF
Karch Blue D25-07 (SI) - Wellbore #1 - Gyro Surveys	2,338.41	2,298.81	1,436.89	1,420.89	89.846	CC
Karch Blue D25-07 (SI) - Wellbore #1 - Gyro Surveys	2,400.00	2,358.17	1,437.02	1,420.62	87.616	ES
Karch Blue D25-07 (SI) - Wellbore #1 - Gyro Surveys	6,700.00	6,458.73	1,972.44	1,925.48	41.995	SF
L F Ranch 2-25 (PR) - Wellbore #1 - Gyro Surveys	100.00	41.55	2,599.35	2,599.15	10,000.000	CC
L F Ranch 2-25 (PR) - Wellbore #1 - Gyro Surveys	2,200.00	2,132.14	2,607.21	2,592.27	174.482	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 Gutteresen State D36-771
Project:	Mustang	TVD Reference:	KB @ 4817.00ft
Reference Site:	D Section 25	MD Reference:	KB @ 4817.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Gutteresen State D36-771	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 25						
L F Ranch 2-25 (PR) - Wellbore #1 - Gyro Surveys	6,800.00	6,611.82	3,673.70	3,626.01	77.031	SF
LF Ranches 1 (PA) - Wellbore #1 - No Surveys	2,200.00	2,148.00	2,265.90	2,215.29	44.769	CC
LF Ranches 1 (PA) - Wellbore #1 - No Surveys	2,300.00	2,247.98	2,267.05	2,214.10	42.811	ES
LF Ranches 1 (PA) - Wellbore #1 - No Surveys	6,750.00	6,484.34	3,263.62	3,109.39	21.161	SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersten State D36-771
Project:	Mustang	TVD Reference:	KB @ 4817.00ft
Reference Site:	D Section 25	MD Reference:	KB @ 4817.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersten State D36-771	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 26						
Adam Red D 26-11 (PR) - Wellbore #1 - Gyro Surveys	7,776.21	6,899.81	4,699.48	4,646.44	88.614	CC
Adam Red D 26-11 (PR) - Wellbore #1 - Gyro Surveys	7,800.00	6,899.78	4,699.54	4,646.38	88.416	ES
Adam Red D 26-11 (PR) - Wellbore #1 - Gyro Surveys	9,800.00	6,897.81	5,116.72	5,052.37	79.523	SF
Adam Red D 26-12 (PR) - Wellbore #1 - Gyro Surveys	7,769.51	6,777.80	5,902.05	5,842.24	98.667	CC
Adam Red D 26-12 (PR) - Wellbore #1 - Gyro Surveys	7,800.00	6,777.65	5,902.13	5,842.17	98.423	ES
Adam Red D 26-12 (PR) - Wellbore #1 - Gyro Surveys	10,600.00	6,763.83	6,545.67	6,469.99	86.490	SF
Adam Red D 26-13 (PR) - Wellbore #1 - Gyro Surveys	8,920.70	6,726.14	5,720.39	5,661.56	97.237	CC, ES
Adam Red D 26-13 (PR) - Wellbore #1 - Gyro Surveys	11,500.00	6,642.01	6,274.25	6,199.83	84.303	SF
Adam Red D 26-14 (PR) - Wellbore #1 - Gyro Surveys	8,928.30	6,854.66	4,357.85	4,293.91	68.160	CC, ES
Adam Red D 26-14 (PR) - Wellbore #1 - Gyro Surveys	10,500.00	6,872.91	4,632.57	4,558.60	62.627	SF
Coors Energy 14-25H (PR) - Wellbore #1 - MWD Survey	8,500.00	7,568.30	144.82	87.28	2.517	SF
Coors Energy 14-25H (PR) - Wellbore #1 - MWD Survey	8,600.00	7,570.79	91.19	55.11	2.528	ES
Coors Energy 14-25H (PR) - Wellbore #1 - MWD Survey	8,613.32	7,571.12	90.22	56.67	2.689	CC
Heyde 1-26 (PR) - Wellbore #1 - Gyro Surveys	6,529.09	6,353.26	2,646.95	2,600.64	57.157	CC
Heyde 1-26 (PR) - Wellbore #1 - Gyro Surveys	6,550.00	6,382.61	2,647.08	2,600.58	56.927	ES
Heyde 1-26 (PR) - Wellbore #1 - Gyro Surveys	6,950.00	6,656.48	2,721.74	2,672.47	55.241	SF
Heyde 26ND (PR) - Wellbore #1 - MWD Surveys	6,768.46	6,797.46	3,982.29	3,932.49	79.954	CC, ES
Heyde 26ND (PR) - Wellbore #1 - MWD Surveys	7,300.00	6,997.96	4,067.51	4,014.76	77.114	SF
Heyde 26RD (PR) - Wellbore #1 - MWD Surveys	1,003.48	1,001.84	3,060.24	3,053.75	470.914	CC, ES
Heyde 26RD (PR) - Wellbore #1 - MWD Surveys	6,900.00	6,756.87	3,504.17	3,454.44	70.458	SF
Heyde 26VD (PR) - Wellbore #1 - MWD Surveys	6,511.87	6,504.67	1,669.10	1,622.35	35.708	CC, ES
Heyde 26VD (PR) - Wellbore #1 - MWD Surveys	6,750.00	6,704.39	1,696.40	1,647.93	34.998	SF
Heyde 31-26 (PR) - Wellbore #1 - No Surveys	6,586.56	6,434.61	3,903.02	3,856.19	83.351	CC
Heyde 31-26 (PR) - Wellbore #1 - No Surveys	6,600.00	6,446.30	3,903.08	3,856.15	83.175	ES
Heyde 31-26 (PR) - Wellbore #1 - No Surveys	7,100.00	6,853.19	3,997.44	3,946.95	79.161	SF
Heyde 32-26 (SI) - Wellbore #1 - Gyro Surveys	6,979.72	6,787.89	3,389.42	3,339.78	68.280	CC
Heyde 32-26 (SI) - Wellbore #1 - Gyro Surveys	7,000.00	6,799.38	3,389.54	3,339.76	68.097	ES
Heyde 32-26 (SI) - Wellbore #1 - Gyro Surveys	7,451.28	6,861.79	3,456.80	3,404.78	66.456	SF
Heyde 41-26 (PR) - Wellbore #1 - Gyro Surveys	4,584.19	4,411.05	2,580.17	2,548.60	81.722	CC
Heyde 41-26 (PR) - Wellbore #1 - Gyro Surveys	4,800.00	4,611.05	2,581.20	2,548.06	77.895	ES
Heyde 41-26 (PR) - Wellbore #1 - Gyro Surveys	6,800.00	6,644.25	2,690.35	2,641.84	55.460	SF
Heyde 42-26 (PR) - Wellbore #1 - Gyro Surveys	6,793.13	6,561.37	2,018.19	1,970.07	41.940	CC
Heyde 42-26 (PR) - Wellbore #1 - Gyro Surveys	6,800.00	6,566.20	2,018.21	1,970.04	41.897	ES
Heyde 42-26 (PR) - Wellbore #1 - Gyro Surveys	7,100.00	6,727.23	2,051.01	2,000.83	40.874	SF
HSR-Waste Services 10-26 (SI) - Wellbore #1 - No Surve	7,987.42	6,795.00	2,992.52	2,826.30	18.004	CC
HSR-Waste Services 10-26 (SI) - Wellbore #1 - No Surve	8,000.00	6,795.00	2,992.54	2,826.25	17.996	ES
HSR-Waste Services 10-26 (SI) - Wellbore #1 - No Surve	8,300.00	6,795.00	3,008.80	2,840.74	17.903	SF
HSR-Waste Services 15-26 (SI) - Wellbore #1 - No Surve	8,983.52	6,811.00	3,240.39	3,068.37	18.838	CC
HSR-Waste Services 15-26 (SI) - Wellbore #1 - No Surve	9,000.00	6,811.00	3,240.43	3,068.30	18.825	ES
HSR-Waste Services 15-26 (SI) - Wellbore #1 - No Surve	9,400.00	6,811.00	3,267.04	3,092.13	18.678	SF
HSR-Waste Services 16-26 (SI) - Wellbore #1 - Gyro Su	8,994.26	6,763.13	1,988.58	1,929.10	33.433	CC
HSR-Waste Services 16-26 (SI) - Wellbore #1 - Gyro Su	9,000.00	6,763.09	1,988.59	1,929.06	33.408	ES
HSR-Waste Services 16-26 (SI) - Wellbore #1 - Gyro Su	9,400.00	6,760.81	2,029.55	1,967.23	32.569	SF
HSR-Waste Services 9-26 (PA) - Wellbore #1 - Gyro Sur	7,738.32	6,792.07	1,814.16	1,761.48	34.436	CC, ES
HSR-Waste Services 9-26 (PA) - Wellbore #1 - Gyro Sur	8,100.00	6,793.95	1,849.87	1,795.10	33.778	SF
Waste Management 11-26 (PR) - Wellbore #1 - Gyro Sur	6,681.55	6,315.54	6,160.95	6,114.18	131.719	CC
Waste Management 11-26 (PR) - Wellbore #1 - Gyro Sur	6,700.00	6,330.91	6,161.02	6,114.11	131.332	ES
Waste Management 11-26 (PR) - Wellbore #1 - Gyro Sur	9,000.00	6,688.50	6,987.97	6,929.68	119.870	SF
Waste Management 12-26 (PR) - Wellbore #1 - Gyro Sur	7,132.81	6,782.51	5,998.31	5,948.01	119.233	CC
Waste Management 12-26 (PR) - Wellbore #1 - Gyro Sur	7,150.00	6,787.72	5,998.38	5,947.97	119.008	ES
Waste Management 12-26 (PR) - Wellbore #1 - Gyro Sur	10,100.00	6,866.54	6,928.36	6,863.19	106.313	SF
Waste Management 12-26A (PR) - Wellbore #1 - Gyro S	6,907.82	6,703.95	5,436.61	5,387.52	110.761	CC, ES
Waste Management 12-26A (PR) - Wellbore #1 - Gyro S	8,900.00	7,000.00	6,049.84	5,990.65	102.209	SF

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Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersten State D36-771
Project:	Mustang	TVD Reference:	KB @ 4817.00ft
Reference Site:	D Section 25	MD Reference:	KB @ 4817.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersten State D36-771	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
D Section 26						
Waste Management 21-26 (PR) - Wellbore #1 - Gyro Sur	6,629.03	6,503.16	4,837.94	4,790.74	102.489	CC
Waste Management 21-26 (PR) - Wellbore #1 - Gyro Sur	6,650.00	6,520.04	4,838.08	4,790.72	102.159	ES
Waste Management 21-26 (PR) - Wellbore #1 - Gyro Sur	7,250.00	6,873.79	4,959.28	4,908.23	97.152	SF
Waste Management 22-26 (PR) - Wellbore #1 - Gyro Sur	7,061.20	6,822.67	4,608.02	4,558.00	92.119	CC, ES
Waste Management 22-26 (PR) - Wellbore #1 - Gyro Sur	8,600.00	6,875.33	5,011.21	4,953.97	87.554	SF
Waste Management 26FD (PR) - Wellbore #1 - MWD Su	835.62	873.65	6,147.57	6,142.13	1,129.447	CC
Waste Management 26FD (PR) - Wellbore #1 - MWD Su	1,052.47	1,103.90	6,147.74	6,140.70	873.484	ES
Waste Management 26FD (PR) - Wellbore #1 - MWD Su	10,200.00	6,874.00	7,785.22	7,717.97	115.758	SF
Waste Management 26KD (PR) - Wellbore #1 - MWD Su	7,324.68	6,791.51	5,227.02	5,169.30	90.569	CC, ES
Waste Management 26KD (PR) - Wellbore #1 - MWD Su	10,400.00	10,400.00	6,177.57	6,095.74	75.491	SF
Waste Management D 26-25 (SI) - Wellbore #1 - Gyro S	8,446.98	6,969.48	5,023.96	4,967.37	88.777	CC
Waste Management D 26-25 (SI) - Wellbore #1 - Gyro S	8,500.00	6,972.39	5,024.24	4,967.33	88.275	ES
Waste Management D 26-25 (SI) - Wellbore #1 - Gyro S	10,600.00	7,088.01	5,464.58	5,394.91	78.429	SF
Waste Management 26JD (PR) - Wellbore #1 - MWD Surv	966.90	990.00	5,624.13	5,618.18	946.182	CC
Waste Management 26JD (PR) - Wellbore #1 - MWD Surv	1,000.00	990.00	5,624.22	5,618.16	927.699	ES
Waste Management 26JD (PR) - Wellbore #1 - MWD Surv	7,250.00	6,833.54	5,849.55	5,796.79	110.863	SF
D Section 36						
Kanga State D 36-1JI (SI) - Wellbore #1 - Gyro Surveys	10,447.92	6,761.22	3,389.56	3,320.73	49.246	CC, ES
Kanga State D 36-1JI (SI) - Wellbore #1 - Gyro Surveys	11,000.00	6,785.59	3,434.14	3,362.52	47.946	SF
Kanga State D 36-2JI - Wellbore #1 - Gyro Surveys	10,087.67	6,839.20	1,945.17	1,878.46	29.160	CC
Kanga State D 36-2JI - Wellbore #1 - Gyro Surveys	10,100.00	6,839.45	1,945.20	1,878.44	29.137	ES
Kanga State D 36-2JI - Wellbore #1 - Gyro Surveys	10,300.00	6,843.41	1,956.72	1,889.22	28.991	SF
Kanga State D36-11JI (PR) - Wellbore #1 - Gyro Surveys	13,110.02	6,792.63	800.68	667.74	6.023	CC, ES, SF
Rhoo State D36-07JI (SI) - Wellbore #1 - Gyro Surveys	11,521.55	6,811.77	1,952.56	1,875.82	25.444	CC, ES
Rhoo State D36-07JI (SI) - Wellbore #1 - Gyro Surveys	11,700.00	6,805.76	1,960.68	1,883.26	25.327	SF
Spike State D 36-04 (SI) - Gyro Surveys - Wellbore #1	10,350.78	6,806.90	611.48	543.27	8.965	CC, ES
Spike State D 36-04 (SI) - Gyro Surveys - Wellbore #1	10,400.00	6,807.71	613.45	544.64	8.914	SF
Spike State D 36-3 (SI) - Wellbore #1 - No Surveys	10,535.84	6,774.00	587.95	406.51	3.240	CC, ES, SF
Spike State D36-05 (SI) - Wellbore #1 - Gyro Surveys	11,704.37	6,803.64	715.42	637.49	9.181	CC, ES
Spike State D36-05 (SI) - Wellbore #1 - Gyro Surveys	11,800.00	6,800.65	721.77	642.84	9.144	SF
Spike State D36-06 (PA) - Wellbore #1 - Gyro Surveys	11,729.69	6,794.24	553.40	475.15	7.072	CC, ES, SF
State 09 (SI) - Wellbore #1 - Gyro Surveys	10,990.82	6,708.47	2,705.94	2,633.59	37.402	CC
State 09 (SI) - Wellbore #1 - Gyro Surveys	11,000.00	6,708.21	2,705.95	2,633.56	37.378	ES
State 09 (SI) - Wellbore #1 - Gyro Surveys	11,400.00	6,700.00	2,736.67	2,662.58	36.938	SF
State 30 (SI) - Wellbore #1 - Gyro Surveys	13,713.38	6,789.02	346.90	253.62	3.719	CC, ES, SF

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Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen State D36-771
Project:	Mustang	TVD Reference:	KB @ 4817.00ft
Reference Site:	D Section 25	MD Reference:	KB @ 4817.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersen State D36-771	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 @ 4817.00ft

Offset Depths are relative to Offset Datum

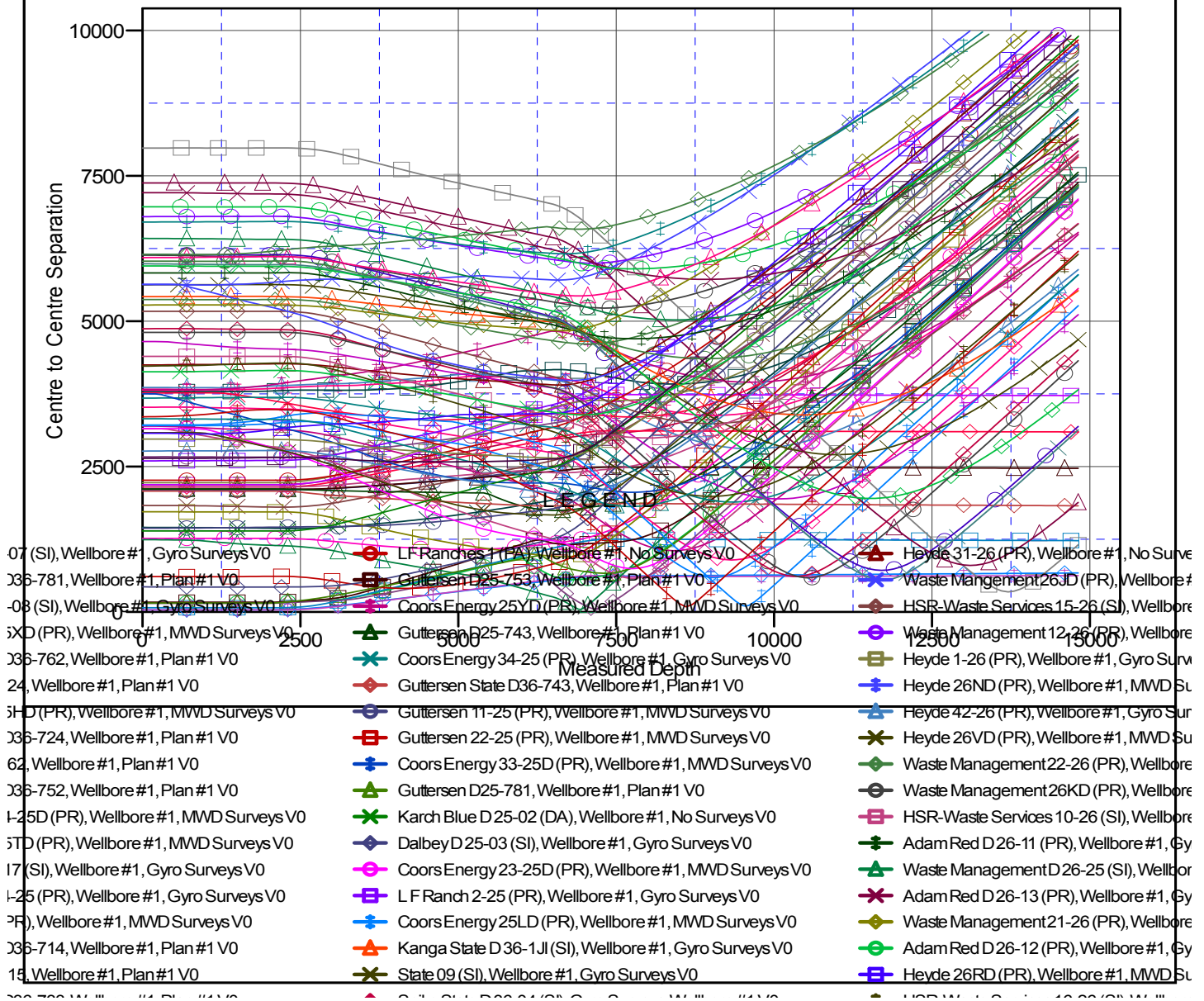
Central Meridian is -105.5000000

Coordinates are relative to: Guttersen State D36-771

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.64°

Ladder Plot



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

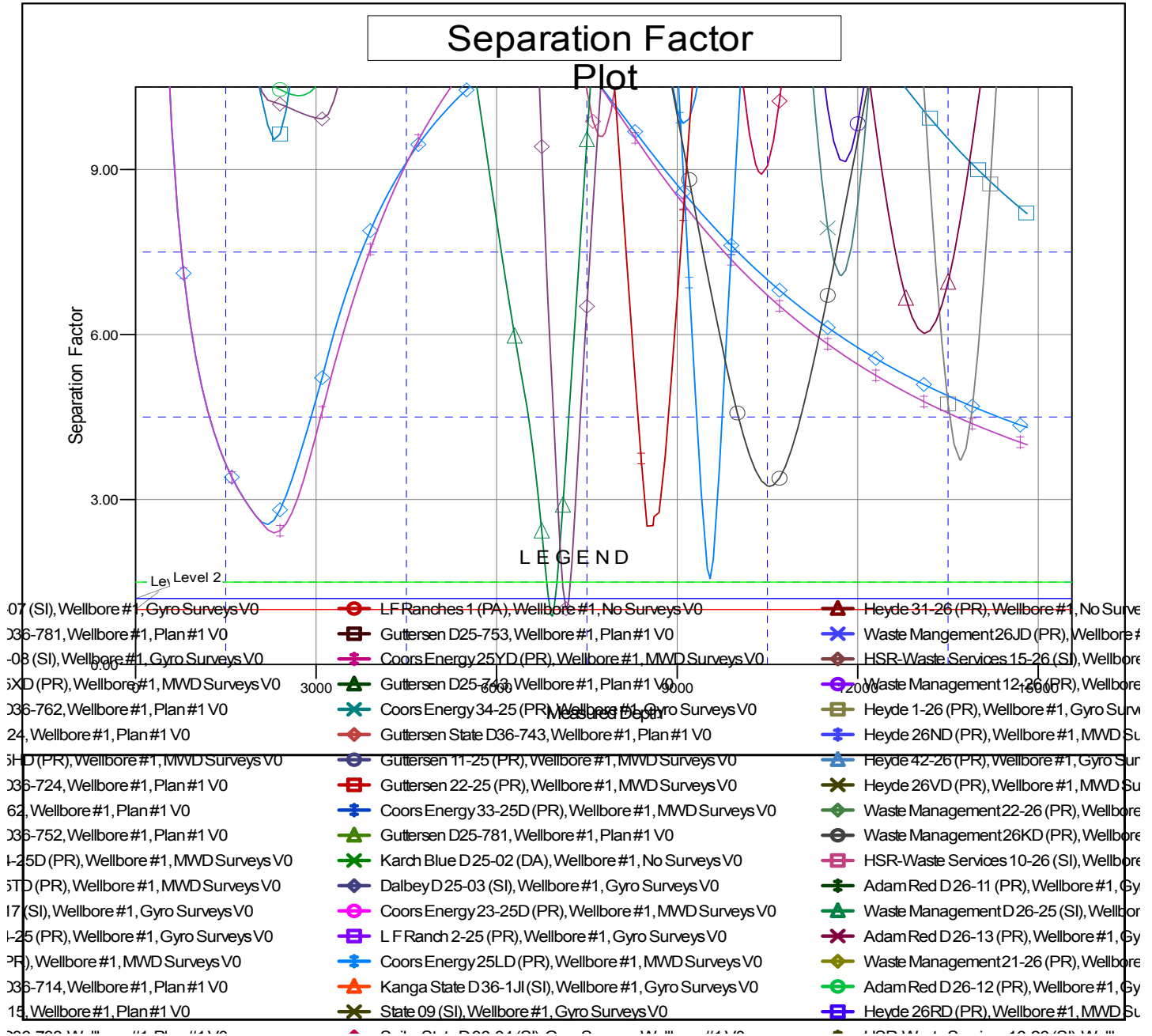
Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen State D36-771
Project:	Mustang	TVD Reference:	KB @ 4817.00ft
Reference Site:	D Section 25	MD Reference:	KB @ 4817.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersen State D36-771	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 @ 4817.00ft
 Offset Depths are relative to Offset Datum
 Central Meridian is -105.5000000

Coordinates are relative to: Guttersen State D36-771
 Coordinate System is US State Plane 1983, Colorado Northern Zone
 Grid Convergence at Surface is: 0.64°



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