

Project: Wells Ranch
 Site: A Section 20
 Well: Rampart A33-790
 Wellbore: Rampart A33-790
 Design: APD-Rev 0

Northern Region - DJ Basin

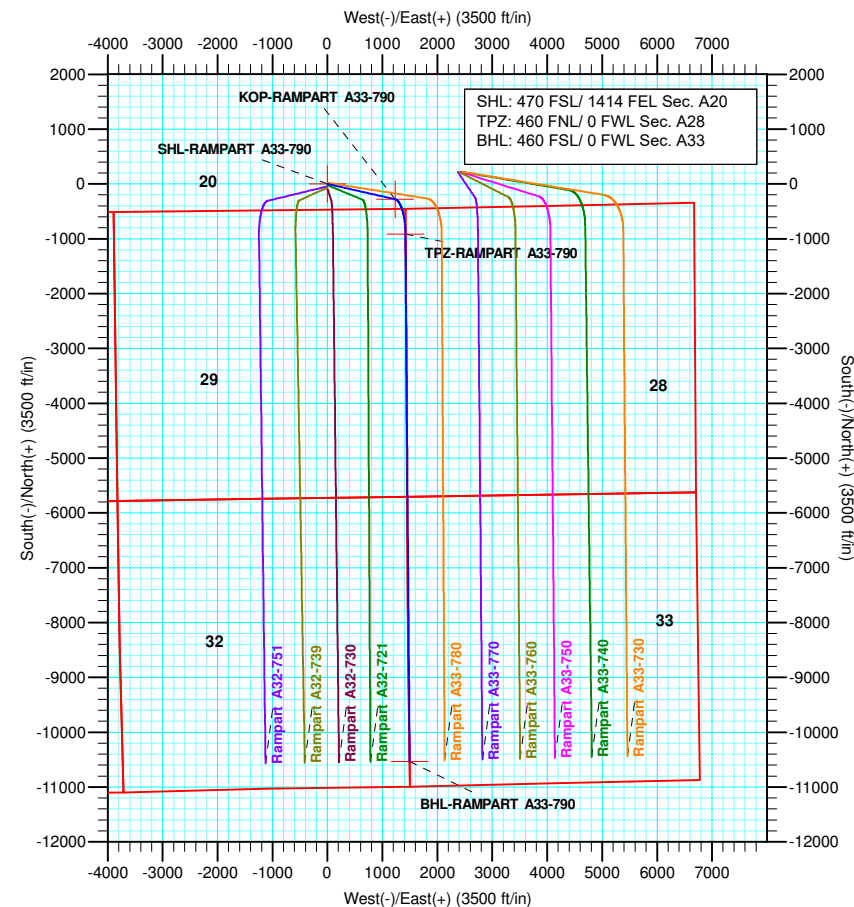
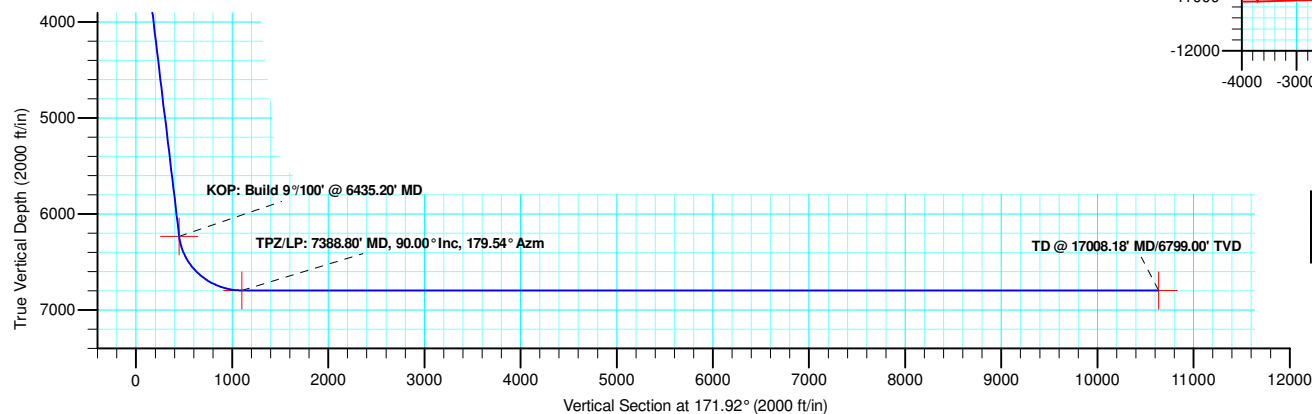
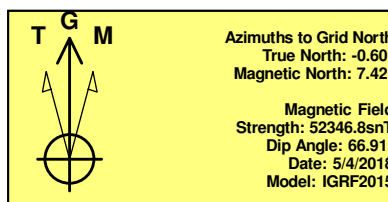
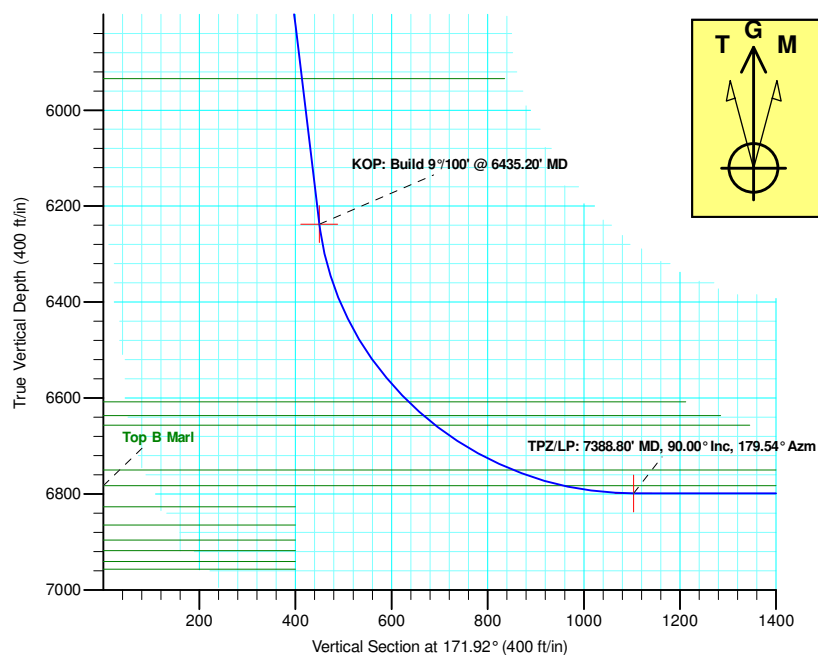
Geodetic System: US State Plane 1983
 Datum: North American Datum 1983
 Ellipsoid: GRS 1980
 Zone: Colorado Northern Zone
 System Datum: Mean Sea Level

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.00	0.00
3	2925.14	18.50	102.80	2909.14	-32.82	144.40	2.00	102.80	52.80
4	6435.20	18.50	102.80	6237.76	-279.70	1230.62	0.00	0.00	449.98
5	7388.80	90.00	179.54	6799.00	-913.14	1418.53	9.00	77.40	1103.55
6	17008.18	90.00	179.54	6799.00	-10532.21	1495.98	0.00	0.00	10637.92

WELL DETAILS: Rampart A33-790

+N/-S	+E/-W	Northing	Ground Level: Easting	4707.00 Latitude	Longitude	Slot
0.00	0.00	1413785.17	3258845.74	40.4655146	-104.5696903	



Plan: APD-Rev 0 (Rampart A33-790/Rampart A33-790)

Created By: Keith Noack Date: 15:06, October 31 2018

Northern Region - DJ Basin

Wells Ranch

A Section 20

Rampart A33-790

Rampart A33-790

Plan: APD-Rev 0

Standard Planning Report

31 October, 2018

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Rampart A33-790
Company:	Northern Region - DJ Basin	TVD Reference:	KB @ 4737.00ft
Project:	Wells Ranch	MD Reference:	KB @ 4737.00ft
Site:	A Section 20	North Reference:	Grid
Well:	Rampart A33-790	Survey Calculation Method:	Minimum Curvature
Wellbore:	Rampart A33-790		
Design:	APD-Rev 0		

Project	Wells Ranch, 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	A Section 20				
Site Position:		Northing:	1,414,202.83 usft	Latitude:	40.4665920
From:	Lat/Long	Easting:	3,261,231.91 usft	Longitude:	-104.5610990
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.61 °

Well	Rampart A33-790					
Well Position	+N/-S	-417.65 ft	Northing:	1,413,785.17 usft	Latitude:	40.4655147
	+E/-W	-2,386.17 ft	Easting:	3,258,845.75 usft	Longitude:	-104.5696903
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,707.00 ft

Wellbore	Rampart A33-790				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	5/4/2018	8.02	66.91	52,346.81815642

Design	APD-Rev 0			
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	171.92

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	
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,925.14	18.50	102.80	2,909.14	-32.82	144.40	2.00	2.00	0.00	102.80	
6,435.20	18.50	102.80	6,237.76	-279.70	1,230.62	0.00	0.00	0.00	0.00	
7,388.80	90.00	179.54	6,799.00	-913.14	1,418.53	9.00	7.50	8.05	77.40	TPZ-RAMPART A3
17,008.18	90.00	179.54	6,799.00	-10,532.21	1,495.98	0.00	0.00	0.00	0.00	BHL-RAMPART A3

Noble Energy, Inc.

Planning Report

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Company:	Northern Region - DJ Basin	TVD Reference:	KB @ 4737.00ft
Project:	Wells Ranch	MD Reference:	KB @ 4737.00ft
Site:	A Section 20	North Reference:	Grid
Well:	Rampart A33-790	Survey Calculation Method:	Minimum Curvature
Wellbore:	Rampart A33-790		
Design:	APD-Rev 0		

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
445.00	0.00	0.00	445.00	0.00	0.00	0.00	0.00	0.00	0.00
Pierre									
476.00	0.00	0.00	476.00	0.00	0.00	0.00	0.00	0.00	0.00
Upper Pierre Aquifer Top									
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
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
1,513.00	0.00	0.00	1,513.00	0.00	0.00	0.00	0.00	0.00	0.00
Upper Pierre Aquifer Base									
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
Build: 2°/100'									
2,100.00	2.00	102.80	2,099.98	-0.39	1.70	0.62	2.00	2.00	0.00
2,200.00	4.00	102.80	2,199.84	-1.55	6.80	2.49	2.00	2.00	0.00
2,300.00	6.00	102.80	2,299.45	-3.48	15.30	5.60	2.00	2.00	0.00
2,400.00	8.00	102.80	2,398.70	-6.18	27.19	9.94	2.00	2.00	0.00
2,500.00	10.00	102.80	2,497.47	-9.65	42.44	15.52	2.00	2.00	0.00
2,600.00	12.00	102.80	2,595.62	-13.87	61.05	22.32	2.00	2.00	0.00
2,700.00	14.00	102.80	2,693.06	-18.86	82.98	30.34	2.00	2.00	0.00
2,800.00	16.00	102.80	2,789.64	-24.60	108.22	39.57	2.00	2.00	0.00
2,900.00	18.00	102.80	2,885.27	-31.08	136.73	49.99	2.00	2.00	0.00
2,925.14	18.50	102.80	2,909.14	-32.82	144.40	52.80	2.00	2.00	0.00
Hold: 18.50° Inc, 102.80° Azm									
3,000.00	18.50	102.80	2,980.13	-38.09	167.57	61.27	0.00	0.00	0.00
3,100.00	18.50	102.80	3,074.96	-45.12	198.52	72.59	0.00	0.00	0.00
3,200.00	18.50	102.80	3,169.80	-52.15	229.46	83.90	0.00	0.00	0.00
3,300.00	18.50	102.80	3,264.63	-59.19	260.41	95.22	0.00	0.00	0.00
3,400.00	18.50	102.80	3,359.46	-66.22	291.35	106.53	0.00	0.00	0.00
3,500.00	18.50	102.80	3,454.29	-73.25	322.30	117.85	0.00	0.00	0.00
3,600.00	18.50	102.80	3,549.12	-80.29	353.24	129.16	0.00	0.00	0.00
3,689.51	18.50	102.80	3,634.00	-86.58	380.94	139.29	0.00	0.00	0.00
Parkman									
3,700.00	18.50	102.80	3,643.95	-87.32	384.19	140.48	0.00	0.00	0.00
3,800.00	18.50	102.80	3,738.78	-94.35	415.14	151.80	0.00	0.00	0.00
3,900.00	18.50	102.80	3,833.61	-101.39	446.08	163.11	0.00	0.00	0.00
4,000.00	18.50	102.80	3,928.44	-108.42	477.03	174.43	0.00	0.00	0.00
4,100.00	18.50	102.80	4,023.27	-115.45	507.97	185.74	0.00	0.00	0.00

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Project:	Wells Ranch	MD Reference:	KB @ 4737.00ft
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Well:	Rampart A33-790	Survey Calculation Method:	Minimum Curvature
Wellbore:	Rampart A33-790		
Design:	APD-Rev 0		

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)
4,200.00	18.50	102.80	4,118.10	-122.49	538.92	197.06	0.00	0.00	0.00
4,235.74	18.50	102.80	4,152.00	-125.00	549.98	201.10	0.00	0.00	0.00
Sussex									
4,300.00	18.50	102.80	4,212.94	-129.52	569.86	208.37	0.00	0.00	0.00
4,400.00	18.50	102.80	4,307.77	-136.55	600.81	219.69	0.00	0.00	0.00
4,500.00	18.50	102.80	4,402.60	-143.59	631.76	231.00	0.00	0.00	0.00
4,600.00	18.50	102.80	4,497.43	-150.62	662.70	242.32	0.00	0.00	0.00
4,700.00	18.50	102.80	4,592.26	-157.66	693.65	253.63	0.00	0.00	0.00
4,800.00	18.50	102.80	4,687.09	-164.69	724.59	264.95	0.00	0.00	0.00
4,900.00	18.50	102.80	4,781.92	-171.72	755.54	276.26	0.00	0.00	0.00
5,000.00	18.50	102.80	4,876.75	-178.76	786.49	287.58	0.00	0.00	0.00
5,100.00	18.50	102.80	4,971.58	-185.79	817.43	298.90	0.00	0.00	0.00
5,113.10	18.50	102.80	4,984.00	-186.71	821.48	300.38	0.00	0.00	0.00
Shannon									
5,200.00	18.50	102.80	5,066.41	-192.82	848.38	310.21	0.00	0.00	0.00
5,300.00	18.50	102.80	5,161.24	-199.86	879.32	321.53	0.00	0.00	0.00
5,400.00	18.50	102.80	5,256.07	-206.89	910.27	332.84	0.00	0.00	0.00
5,500.00	18.50	102.80	5,350.91	-213.92	941.21	344.16	0.00	0.00	0.00
5,600.00	18.50	102.80	5,445.74	-220.96	972.16	355.47	0.00	0.00	0.00
5,700.00	18.50	102.80	5,540.57	-227.99	1,003.11	366.79	0.00	0.00	0.00
5,800.00	18.50	102.80	5,635.40	-235.02	1,034.05	378.10	0.00	0.00	0.00
5,900.00	18.50	102.80	5,730.23	-242.06	1,065.00	389.42	0.00	0.00	0.00
6,000.00	18.50	102.80	5,825.06	-249.09	1,095.94	400.73	0.00	0.00	0.00
6,100.00	18.50	102.80	5,919.89	-256.12	1,126.89	412.05	0.00	0.00	0.00
6,114.88	18.50	102.80	5,934.00	-257.17	1,131.49	413.73	0.00	0.00	0.00
Teepee Buttes									
6,200.00	18.50	102.80	6,014.72	-263.16	1,157.83	423.37	0.00	0.00	0.00
6,300.00	18.50	102.80	6,109.55	-270.19	1,188.78	434.68	0.00	0.00	0.00
6,400.00	18.50	102.80	6,204.38	-277.22	1,219.73	446.00	0.00	0.00	0.00
6,435.20	18.50	102.80	6,237.76	-279.70	1,230.62	449.98	0.00	0.00	0.00
KOP: Build 9°/100' @ 6435.20' MD									
6,450.00	18.84	106.83	6,251.79	-280.91	1,235.20	451.82	9.00	2.26	27.22
6,500.00	20.55	119.21	6,298.88	-287.54	1,250.59	460.55	9.00	3.43	24.76
6,550.00	23.00	129.42	6,345.33	-298.03	1,265.80	473.07	9.00	4.90	20.41
6,600.00	25.97	137.58	6,390.84	-312.32	1,280.74	489.32	9.00	5.95	16.33
6,650.00	29.32	144.09	6,435.13	-330.33	1,295.32	509.20	9.00	6.69	13.01
6,700.00	32.92	149.33	6,477.94	-351.94	1,309.43	532.58	9.00	7.20	10.48
6,750.00	36.69	153.62	6,518.99	-377.02	1,323.01	559.32	9.00	7.55	8.58
6,800.00	40.60	157.20	6,558.04	-405.41	1,335.95	589.26	9.00	7.81	7.17
6,850.00	44.60	160.25	6,594.84	-436.95	1,348.20	622.20	9.00	8.00	6.10
6,868.72	46.12	161.28	6,608.00	-449.53	1,352.58	635.27	9.00	8.10	5.51
Sharon Springs									
6,900.00	48.67	162.89	6,629.17	-471.43	1,359.66	657.95	9.00	8.16	5.15
6,911.97	49.65	163.48	6,637.00	-480.10	1,362.28	666.90	9.00	8.21	4.87
Top A Chalk									
6,943.73	52.27	164.94	6,657.00	-503.83	1,368.98	691.34	9.00	8.25	4.62
Top A Marl									
6,950.00	52.79	165.22	6,660.82	-508.64	1,370.26	696.28	9.00	8.29	4.42
7,000.00	56.96	167.31	6,689.58	-548.36	1,379.95	736.97	9.00	8.33	4.17
7,050.00	61.15	169.20	6,715.29	-590.34	1,388.66	779.75	9.00	8.39	3.79
7,100.00	65.37	170.95	6,737.78	-634.31	1,396.34	824.37	9.00	8.44	3.50
7,130.88	67.99	171.97	6,750.00	-662.36	1,400.55	852.73	9.00	8.47	3.31
Top B Chalk									

Noble Energy, Inc.

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Project:	Wells Ranch	MD Reference:	KB @ 4737.00ft
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Well:	Rampart A33-790	Survey Calculation Method:	Minimum Curvature
Wellbore:	Rampart A33-790		
Design:	APD-Rev 0		

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)
7,150.00	69.61	172.59	6,756.91	-680.02	1,402.94	870.55	9.00	8.49	3.21
7,200.00	73.87	174.13	6,772.58	-727.17	1,408.43	918.01	9.00	8.51	3.09
7,242.10	77.46	175.38	6,783.00	-767.78	1,412.15	958.74	9.00	8.53	2.97
Top B Marl									
7,250.00	78.13	175.61	6,784.67	-775.48	1,412.75	966.44	9.00	8.54	2.92
7,300.00	82.40	177.05	6,793.12	-824.65	1,415.90	1,015.57	9.00	8.54	2.87
7,350.00	86.68	178.46	6,797.88	-874.37	1,417.85	1,065.07	9.00	8.55	2.81
7,388.80	90.00	179.54	6,799.00	-913.14	1,418.53	1,103.55	9.00	8.56	2.79
TPZ/LP: 7388.80' MD, 90.00° Inc, 179.54° Azm									
7,400.00	90.00	179.54	6,799.00	-924.34	1,418.62	1,114.65	0.00	0.00	0.00
7,500.00	90.00	179.54	6,799.00	-1,024.34	1,419.43	1,213.77	0.00	0.00	0.00
7,600.00	90.00	179.54	6,799.00	-1,124.33	1,420.23	1,312.88	0.00	0.00	0.00
7,700.00	90.00	179.54	6,799.00	-1,224.33	1,421.04	1,412.00	0.00	0.00	0.00
7,800.00	90.00	179.54	6,799.00	-1,324.33	1,421.84	1,511.12	0.00	0.00	0.00
7,900.00	90.00	179.54	6,799.00	-1,424.32	1,422.65	1,610.23	0.00	0.00	0.00
8,000.00	90.00	179.54	6,799.00	-1,524.32	1,423.45	1,709.35	0.00	0.00	0.00
8,100.00	90.00	179.54	6,799.00	-1,624.32	1,424.26	1,808.46	0.00	0.00	0.00
8,200.00	90.00	179.54	6,799.00	-1,724.31	1,425.06	1,907.58	0.00	0.00	0.00
8,300.00	90.00	179.54	6,799.00	-1,824.31	1,425.87	2,006.70	0.00	0.00	0.00
8,400.00	90.00	179.54	6,799.00	-1,924.31	1,426.67	2,105.81	0.00	0.00	0.00
8,500.00	90.00	179.54	6,799.00	-2,024.30	1,427.48	2,204.93	0.00	0.00	0.00
8,600.00	90.00	179.54	6,799.00	-2,124.30	1,428.28	2,304.05	0.00	0.00	0.00
8,700.00	90.00	179.54	6,799.00	-2,224.30	1,429.09	2,403.16	0.00	0.00	0.00
8,800.00	90.00	179.54	6,799.00	-2,324.29	1,429.89	2,502.28	0.00	0.00	0.00
8,900.00	90.00	179.54	6,799.00	-2,424.29	1,430.70	2,601.39	0.00	0.00	0.00
9,000.00	90.00	179.54	6,799.00	-2,524.29	1,431.50	2,700.51	0.00	0.00	0.00
9,100.00	90.00	179.54	6,799.00	-2,624.28	1,432.31	2,799.63	0.00	0.00	0.00
9,200.00	90.00	179.54	6,799.00	-2,724.28	1,433.11	2,898.74	0.00	0.00	0.00
9,300.00	90.00	179.54	6,799.00	-2,824.28	1,433.92	2,997.86	0.00	0.00	0.00
9,400.00	90.00	179.54	6,799.00	-2,924.28	1,434.72	3,096.98	0.00	0.00	0.00
9,500.00	90.00	179.54	6,799.00	-3,024.27	1,435.53	3,196.09	0.00	0.00	0.00
9,600.00	90.00	179.54	6,799.00	-3,124.27	1,436.33	3,295.21	0.00	0.00	0.00
9,700.00	90.00	179.54	6,799.00	-3,224.27	1,437.14	3,394.33	0.00	0.00	0.00
9,800.00	90.00	179.54	6,799.00	-3,324.26	1,437.94	3,493.44	0.00	0.00	0.00
9,900.00	90.00	179.54	6,799.00	-3,424.26	1,438.75	3,592.56	0.00	0.00	0.00
10,000.00	90.00	179.54	6,799.00	-3,524.26	1,439.55	3,691.67	0.00	0.00	0.00
10,100.00	90.00	179.54	6,799.00	-3,624.25	1,440.36	3,790.79	0.00	0.00	0.00
10,200.00	90.00	179.54	6,799.00	-3,724.25	1,441.16	3,889.91	0.00	0.00	0.00
10,300.00	90.00	179.54	6,799.00	-3,824.25	1,441.97	3,989.02	0.00	0.00	0.00
10,400.00	90.00	179.54	6,799.00	-3,924.24	1,442.77	4,088.14	0.00	0.00	0.00
10,500.00	90.00	179.54	6,799.00	-4,024.24	1,443.58	4,187.26	0.00	0.00	0.00
10,600.00	90.00	179.54	6,799.00	-4,124.24	1,444.38	4,286.37	0.00	0.00	0.00
10,700.00	90.00	179.54	6,799.00	-4,224.23	1,445.19	4,385.49	0.00	0.00	0.00
10,800.00	90.00	179.54	6,799.00	-4,324.23	1,445.99	4,484.60	0.00	0.00	0.00
10,900.00	90.00	179.54	6,799.00	-4,424.23	1,446.80	4,583.72	0.00	0.00	0.00
11,000.00	90.00	179.54	6,799.00	-4,524.22	1,447.60	4,682.84	0.00	0.00	0.00
11,100.00	90.00	179.54	6,799.00	-4,624.22	1,448.41	4,781.95	0.00	0.00	0.00
11,200.00	90.00	179.54	6,799.00	-4,724.22	1,449.21	4,881.07	0.00	0.00	0.00
11,300.00	90.00	179.54	6,799.00	-4,824.21	1,450.02	4,980.19	0.00	0.00	0.00
11,400.00	90.00	179.54	6,799.00	-4,924.21	1,450.83	5,079.30	0.00	0.00	0.00
11,500.00	90.00	179.54	6,799.00	-5,024.21	1,451.63	5,178.42	0.00	0.00	0.00
11,600.00	90.00	179.54	6,799.00	-5,124.20	1,452.44	5,277.53	0.00	0.00	0.00
11,700.00	90.00	179.54	6,799.00	-5,224.20	1,453.24	5,376.65	0.00	0.00	0.00
11,800.00	90.00	179.54	6,799.00	-5,324.20	1,454.05	5,475.77	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Rampart A33-790
Company:	Northern Region - DJ Basin	TVD Reference:	KB @ 4737.00ft
Project:	Wells Ranch	MD Reference:	KB @ 4737.00ft
Site:	A Section 20	North Reference:	Grid
Well:	Rampart A33-790	Survey Calculation Method:	Minimum Curvature
Wellbore:	Rampart A33-790		
Design:	APD-Rev 0		

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)
11,900.00	90.00	179.54	6,799.00	-5,424.19	1,454.85	5,574.88	0.00	0.00	0.00
12,000.00	90.00	179.54	6,799.00	-5,524.19	1,455.66	5,674.00	0.00	0.00	0.00
12,100.00	90.00	179.54	6,799.00	-5,624.19	1,456.46	5,773.12	0.00	0.00	0.00
12,200.00	90.00	179.54	6,799.00	-5,724.18	1,457.27	5,872.23	0.00	0.00	0.00
12,300.00	90.00	179.54	6,799.00	-5,824.18	1,458.07	5,971.35	0.00	0.00	0.00
12,400.00	90.00	179.54	6,799.00	-5,924.18	1,458.88	6,070.46	0.00	0.00	0.00
12,500.00	90.00	179.54	6,799.00	-6,024.17	1,459.68	6,169.58	0.00	0.00	0.00
12,600.00	90.00	179.54	6,799.00	-6,124.17	1,460.49	6,268.70	0.00	0.00	0.00
12,700.00	90.00	179.54	6,799.00	-6,224.17	1,461.29	6,367.81	0.00	0.00	0.00
12,800.00	90.00	179.54	6,799.00	-6,324.17	1,462.10	6,466.93	0.00	0.00	0.00
12,900.00	90.00	179.54	6,799.00	-6,424.16	1,462.90	6,566.05	0.00	0.00	0.00
13,000.00	90.00	179.54	6,799.00	-6,524.16	1,463.71	6,665.16	0.00	0.00	0.00
13,100.00	90.00	179.54	6,799.00	-6,624.16	1,464.51	6,764.28	0.00	0.00	0.00
13,200.00	90.00	179.54	6,799.00	-6,724.15	1,465.32	6,863.39	0.00	0.00	0.00
13,300.00	90.00	179.54	6,799.00	-6,824.15	1,466.12	6,962.51	0.00	0.00	0.00
13,400.00	90.00	179.54	6,799.00	-6,924.15	1,466.93	7,061.63	0.00	0.00	0.00
13,500.00	90.00	179.54	6,799.00	-7,024.14	1,467.73	7,160.74	0.00	0.00	0.00
13,600.00	90.00	179.54	6,799.00	-7,124.14	1,468.54	7,259.86	0.00	0.00	0.00
13,700.00	90.00	179.54	6,799.00	-7,224.14	1,469.34	7,358.98	0.00	0.00	0.00
13,800.00	90.00	179.54	6,799.00	-7,324.13	1,470.15	7,458.09	0.00	0.00	0.00
13,900.00	90.00	179.54	6,799.00	-7,424.13	1,470.95	7,557.21	0.00	0.00	0.00
14,000.00	90.00	179.54	6,799.00	-7,524.13	1,471.76	7,656.33	0.00	0.00	0.00
14,100.00	90.00	179.54	6,799.00	-7,624.12	1,472.56	7,755.44	0.00	0.00	0.00
14,200.00	90.00	179.54	6,799.00	-7,724.12	1,473.37	7,854.56	0.00	0.00	0.00
14,300.00	90.00	179.54	6,799.00	-7,824.12	1,474.17	7,953.67	0.00	0.00	0.00
14,400.00	90.00	179.54	6,799.00	-7,924.11	1,474.98	8,052.79	0.00	0.00	0.00
14,500.00	90.00	179.54	6,799.00	-8,024.11	1,475.78	8,151.91	0.00	0.00	0.00
14,600.00	90.00	179.54	6,799.00	-8,124.11	1,476.59	8,251.02	0.00	0.00	0.00
14,700.00	90.00	179.54	6,799.00	-8,224.10	1,477.39	8,350.14	0.00	0.00	0.00
14,800.00	90.00	179.54	6,799.00	-8,324.10	1,478.20	8,449.26	0.00	0.00	0.00
14,900.00	90.00	179.54	6,799.00	-8,424.10	1,479.00	8,548.37	0.00	0.00	0.00
15,000.00	90.00	179.54	6,799.00	-8,524.09	1,479.81	8,647.49	0.00	0.00	0.00
15,100.00	90.00	179.54	6,799.00	-8,624.09	1,480.61	8,746.60	0.00	0.00	0.00
15,200.00	90.00	179.54	6,799.00	-8,724.09	1,481.42	8,845.72	0.00	0.00	0.00
15,300.00	90.00	179.54	6,799.00	-8,824.08	1,482.22	8,944.84	0.00	0.00	0.00
15,400.00	90.00	179.54	6,799.00	-8,924.08	1,483.03	9,043.95	0.00	0.00	0.00
15,500.00	90.00	179.54	6,799.00	-9,024.08	1,483.83	9,143.07	0.00	0.00	0.00
15,600.00	90.00	179.54	6,799.00	-9,124.07	1,484.64	9,242.19	0.00	0.00	0.00
15,700.00	90.00	179.54	6,799.00	-9,224.07	1,485.45	9,341.30	0.00	0.00	0.00
15,800.00	90.00	179.54	6,799.00	-9,324.07	1,486.25	9,440.42	0.00	0.00	0.00
15,900.00	90.00	179.54	6,799.00	-9,424.06	1,487.06	9,539.53	0.00	0.00	0.00
16,000.00	90.00	179.54	6,799.00	-9,524.06	1,487.86	9,638.65	0.00	0.00	0.00
16,100.00	90.00	179.54	6,799.00	-9,624.06	1,488.67	9,737.77	0.00	0.00	0.00
16,200.00	90.00	179.54	6,799.00	-9,724.05	1,489.47	9,836.88	0.00	0.00	0.00
16,300.00	90.00	179.54	6,799.00	-9,824.05	1,490.28	9,936.00	0.00	0.00	0.00
16,400.00	90.00	179.54	6,799.00	-9,924.05	1,491.08	10,035.12	0.00	0.00	0.00
16,500.00	90.00	179.54	6,799.00	-10,024.05	1,491.89	10,134.23	0.00	0.00	0.00
16,600.00	90.00	179.54	6,799.00	-10,124.04	1,492.69	10,233.35	0.00	0.00	0.00
16,700.00	90.00	179.54	6,799.00	-10,224.04	1,493.50	10,332.46	0.00	0.00	0.00
16,800.00	90.00	179.54	6,799.00	-10,324.04	1,494.30	10,431.58	0.00	0.00	0.00
16,900.00	90.00	179.54	6,799.00	-10,424.03	1,495.11	10,530.70	0.00	0.00	0.00
17,008.18	90.00	179.54	6,799.00	-10,532.21	1,495.98	10,637.92	0.00	0.00	0.00
TD @ 17008.18' MD/6799.00' TVD									

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Rampart A33-790
Company:	Northern Region - DJ Basin	TVD Reference:	KB @ 4737.00ft
Project:	Wells Ranch	MD Reference:	KB @ 4737.00ft
Site:	A Section 20	North Reference:	Grid
Well:	Rampart A33-790	Survey Calculation Method:	Minimum Curvature
Wellbore:	Rampart A33-790		
Design:	APD-Rev 0		

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
SHL-RAMPART A33- - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	1,413,785.17	3,258,845.75	40.4655147	-104.5696903
KOP-RAMPART A33- - plan hits target center - Point	0.00	0.00	6,237.76	-279.70	1,230.62	1,413,505.47	3,260,076.36	40.4647114	-104.5652783
BHL-RAMPART A33- - plan hits target center - Point	0.00	0.00	6,799.00	-10,532.21	1,495.98	1,403,252.99	3,260,341.72	40.4365624	-104.5647133
TPZ-RAMPART A33- - plan hits target center - Point	0.00	0.00	6,799.00	-913.14	1,418.53	1,412,872.04	3,260,264.27	40.4629673	-104.5646270

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
445.00	445.00	Pierre				
476.00	476.00	Upper Pierre Aquifer Top				
1,513.00	1,513.00	Upper Pierre Aquifer Base				
3,689.51	3,634.00	Parkman				
4,235.74	4,152.00	Sussex				
5,113.10	4,984.00	Shannon				
6,114.88	5,934.00	Teepee Buttes				
6,868.72	6,608.00	Sharon Springs				
6,911.97	6,637.00	Top A Chalk				
6,943.73	6,657.00	Top A Marl				
7,130.88	6,750.00	Top B Chalk				
7,242.10	6,783.00	Top B Marl				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
2,000.00	2,000.00	0.00	0.00	Build: 2°/100'	
2,925.14	2,909.14	-32.82	144.40	Hold: 18.50° Inc, 102.80° Azm	
6,435.20	6,237.76	-279.70	1,230.62	KOP: Build 9°/100' @ 6435.20' MD	
7,388.80	6,799.00	-913.14	1,418.53	TPZ/LP: 7388.80' MD, 90.00° Inc, 179.54° Azm	
17,008.18	6,799.00	-10,532.21	1,495.98	TD @ 17008.18' MD/6799.00' TVD	

Northern Region - DJ Basin

Wells Ranch

A Section 20

Rampart A33-790

Rampart A33-790

APD-Rev 0

Anticollision Summary Report

31 October, 2018

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Rampart A33-790
Project:	Wells Ranch	TVD Reference:	KB @ 4737.00ft
Reference Site:	A Section 20	MD Reference:	KB @ 4737.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Rampart A33-790	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Rampart A33-790	Database:	EDMP
Reference Design:	APD-Rev 0	Offset TVD Reference:	Offset Datum

Reference	APD-Rev 0		
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	10/31/2018		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	2,000.00	APD-Rev 0 (Rampart A33-790)	2_Gyro-NS-CT_OWSG	A021Ga: Continuous gyro in casing
2,000.00	17,008.18	APD-Rev 0 (Rampart A33-790)	2_MWD+IFR1+MS	A008Mb: IFR dec & multi-station analysis

Summary						
Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
A Section 20						
Foe 16-20 - Original Drilling - Original Drilling - As Drilled	4,510.12	4,383.41	355.30	327.80	12.919	CC, ES
Foe 16-20 - Original Drilling - Original Drilling - As Drilled	4,900.00	4,757.20	373.23	343.12	12.395	SF
Foe 33-20 - Original Drilling - Original Drilling - As Drilled	2,001.23	1,984.73	1,398.28	1,384.73	103.202	CC, ES
Foe 33-20 - Original Drilling - Original Drilling - As Drilled	6,600.00	6,417.99	2,409.01	2,367.33	57.792	SF
Foe 34-20 (PA) - Original Drilling - Original Drilling - As D	2,000.00	1,963.00	573.12	527.11	12.455	CC
Foe 34-20 (PA) - Original Drilling - Original Drilling - As D	2,100.00	2,062.98	574.82	526.63	11.928	ES
Foe 34-20 (PA) - Original Drilling - Original Drilling - As D	2,700.00	2,656.06	656.36	595.89	10.854	SF
Foe 43-20 - Original Drilling - Original Drilling - As Drilled	4,202.59	4,139.39	1,811.13	1,785.58	70.896	CC
Foe 43-20 - Original Drilling - Original Drilling - As Drilled	4,300.00	4,223.36	1,811.63	1,785.45	69.218	ES
Foe 43-20 - Original Drilling - Original Drilling - As Drilled	6,550.00	6,345.44	1,983.56	1,941.60	47.278	SF
Linda Rae 1 - Original Drilling - Original Drilling - As Drille	348.75	312.76	4,789.36	4,787.45	2,509.428	CC
Linda Rae 1 - Original Drilling - Original Drilling - As Drille	2,000.00	1,954.98	4,790.82	4,777.41	357.352	ES
Linda Rae 1 - Original Drilling - Original Drilling - As Drille	8,300.00	6,828.72	6,541.12	6,486.70	120.194	SF
Rampart A32-721 - Rampart A32-721 - APD-Rev 1	2,000.00	2,000.00	22.56	8.99	1.663	CC
Rampart A32-721 - Rampart A32-721 - APD-Rev 1	2,100.00	2,099.69	22.84	8.92	1.641	ES, SF
Rampart A32-730 - Rampart A32-730 - APD-Rev 0	2,342.54	2,340.73	87.62	73.54	6.223	CC, ES
Rampart A32-730 - Rampart A32-730 - APD-Rev 0	2,400.00	2,402.30	87.93	73.79	6.217	SF
Rampart A32-739 - Rampart A32-739 - APD-Rev 1	2,000.00	1,999.00	67.53	53.97	4.978	CC, ES
Rampart A32-739 - Rampart A32-739 - APD-Rev 1	2,100.00	2,097.95	67.90	53.99	4.878	SF
Rampart A32-751 - Rampart A32-751 - APD-Rev 0	2,022.45	2,021.37	44.95	31.30	3.293	CC
Rampart A32-751 - Rampart A32-751 - APD-Rev 0	2,100.00	2,098.53	45.07	31.15	3.237	ES, SF
Rampart A33-780 - Rampart A33-780 - APD-Rev 0	2,000.00	2,000.00	22.47	8.90	1.656	CC
Rampart A33-780 - Rampart A33-780 - APD-Rev 0	2,100.00	2,100.13	22.59	8.66	1.622	ES, SF
Simmons 42-20D - Original Drilling - Original Drilling - As	4,564.18	4,694.23	3,084.91	3,055.58	105.191	CC
Simmons 42-20D - Original Drilling - Original Drilling - As	4,600.00	4,718.75	3,084.99	3,055.43	104.377	ES
Simmons 42-20D - Original Drilling - Original Drilling - As	6,700.00	6,532.64	3,299.15	3,255.30	75.242	SF
Snider 1-20EG - Original Drilling - Original Drilling - As D	1,284.90	1,249.92	1,922.55	1,914.10	227.359	CC
Snider 1-20EG - Original Drilling - Original Drilling - As D	2,023.31	2,003.85	1,922.75	1,909.13	141.174	ES
Snider 1-20EG - Original Drilling - Original Drilling - As D	7,050.00	6,621.07	3,372.26	3,328.52	77.098	SF
Stump A20-11 - Original Drilling - Original Drilling - As Dr	2,045.25	2,055.48	2,504.36	2,490.51	180.880	CC, ES
Stump A20-11 - Original Drilling - Original Drilling - As Dr	6,900.00	6,780.13	3,854.40	3,810.41	87.623	SF
Stump A20-12 - Original Drilling - Original Drilling - As Dr	2,004.52	1,981.91	3,509.89	3,496.37	259.646	CC, ES
Stump A20-12 - Original Drilling - Original Drilling - As Dr	7,000.00	7,000.00	4,984.01	4,939.09	110.941	SF
Stump A20-13 - Original Drilling - Original Drilling - As Dr	2,034.40	2,037.90	3,194.12	3,180.36	232.203	CC, ES
Stump A20-13 - Original Drilling - Original Drilling - As Dr	7,300.00	6,827.87	4,687.76	4,642.53	103.635	SF
Winter 20-19 - Original Drilling - Original Drilling - As Dril	327.22	294.22	4,839.11	4,837.34	2,729.487	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 Rampart A33-790
Project:	Wells Ranch	TVD Reference:	KB @ 4737.00ft
Reference Site:	A Section 20	MD Reference:	KB @ 4737.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Rampart A33-790	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Rampart A33-790	Database:	EDMP
Reference Design:	APD-Rev 0	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						
A Section 20						
Winter 20-19 - Original Drilling - Original Drilling - As Dril	400.00	336.58	4,839.32	4,837.14	2,214.122	ES
Winter 20-19 - Original Drilling - Original Drilling - As Dril	13,100.00	13,100.00	9,937.84	9,856.97	122.876	SF
Winter 24-19 - Original Drilling - Original Drilling - As Dril	100.00	59.50	4,824.15	4,823.92	10,000.000	CC
Winter 24-19 - Original Drilling - Original Drilling - As Dril	400.00	330.87	4,825.37	4,823.12	2,148.253	ES
Winter 24-19 - Original Drilling - Original Drilling - As Dril	6,800.00	6,800.00	6,701.53	6,645.20	118.966	SF
Winter 39-19 - Original Drilling - Original Drilling - As Dril	2,661.10	3,708.58	4,221.41	4,194.70	158.043	CC, ES
Winter 39-19 - Original Drilling - Original Drilling - As Dril	8,400.00	6,889.47	5,886.99	5,830.88	104.913	SF
Winter 40-19 - Original Drilling - Original Drilling - As Dril	2,395.75	3,153.02	4,486.27	4,452.10	131.287	CC
Winter 40-19 - Original Drilling - Original Drilling - As Dril	2,400.00	3,157.04	4,486.28	4,452.05	131.096	ES
Winter 40-19 - Original Drilling - Original Drilling - As Dril	6,700.00	6,820.42	5,520.62	5,446.24	74.226	SF

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Rampart A33-790
Project:	Wells Ranch	TVD Reference:	KB @ 4737.00ft
Reference Site:	A Section 20	MD Reference:	KB @ 4737.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Rampart A33-790	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Rampart A33-790	Database:	EDMP
Reference Design:	APD-Rev 0	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						
A Section 21						
Culbreath 23-21 - Original Drilling - Original Drilling - As I	6,618.18	6,420.57	3,033.23	2,990.52	71.030	CC, ES
Culbreath 23-21 - Original Drilling - Original Drilling - As I	7,000.00	6,700.19	3,118.43	3,073.11	68.799	SF
Culbreath 33-21 (PA) - Original Drilling - Original Drilling	6,713.32	6,470.05	3,841.69	3,691.64	25.603	CC
Culbreath 33-21 (PA) - Original Drilling - Original Drilling	6,750.00	6,499.99	3,842.33	3,691.53	25.478	ES
Culbreath 33-21 (PA) - Original Drilling - Original Drilling	7,050.00	6,696.29	3,897.32	3,741.29	24.977	SF
Harper A21-618 - Original Drilling - APD - Rev 1	6,602.75	6,272.82	1,109.59	1,067.60	26.426	CC, ES
Harper A21-618 - Original Drilling - APD - Rev 1	6,650.00	6,300.00	1,111.16	1,068.89	26.287	SF
Harper A21-626 - Original Drilling - APD - Rev 1	6,539.88	6,264.03	1,363.67	1,321.20	32.111	CC, ES
Harper A21-626 - Original Drilling - APD - Rev 1	6,650.00	6,300.00	1,373.64	1,330.58	31.901	SF
Harper A21-631 - Original Drilling - APD - Rev 1	6,474.01	6,176.25	1,606.17	1,564.04	38.122	CC, ES
Harper A21-631 - Original Drilling - APD - Rev 1	6,600.00	6,215.44	1,618.90	1,576.13	37.849	SF
Harper A21-637 - Original Drilling - APD - Rev 1	6,026.61	5,663.31	1,843.46	1,804.83	47.729	CC
Harper A21-637 - Original Drilling - APD - Rev 1	6,100.00	5,730.20	1,843.70	1,804.52	47.059	ES
Harper A21-637 - Original Drilling - APD - Rev 1	6,650.00	6,218.28	1,891.01	1,847.71	43.669	SF
Harper A21-643 - Original Drilling - APD - Rev 1	6,442.74	6,213.69	2,255.47	2,213.64	53.915	CC, ES
Harper A21-643 - Original Drilling - APD - Rev 1	6,600.00	6,279.61	2,276.72	2,234.06	53.378	SF
Harper A21-649 - Original Drilling - APD - Rev 1	6,149.53	5,901.28	2,532.98	2,493.25	63.753	CC
Harper A21-649 - Original Drilling - APD - Rev 1	6,300.00	6,037.14	2,533.81	2,492.97	62.049	ES
Harper A21-649 - Original Drilling - APD - Rev 1	6,600.00	6,250.00	2,561.41	2,518.60	59.835	SF
Harper A21-656 - Original Drilling - APD - Rev 1	5,110.21	4,788.41	2,714.67	2,683.08	85.940	CC
Harper A21-656 - Original Drilling - APD - Rev 1	5,200.00	4,867.44	2,715.00	2,682.77	84.245	ES
Harper A21-656 - Original Drilling - APD - Rev 1	6,650.00	6,131.41	2,844.95	2,802.30	66.705	SF
Harper A21-664 - Original Drilling - APD - Rev 2	3,957.03	3,497.14	2,844.15	2,821.56	125.938	CC
Harper A21-664 - Original Drilling - APD - Rev 2	4,000.00	3,527.33	2,844.26	2,821.44	124.614	ES
Harper A21-664 - Original Drilling - APD - Rev 2	6,650.00	5,755.53	3,218.68	3,177.63	78.398	SF
Harper A21-669 - Original Drilling - APD - Rev 1	3,729.97	3,255.10	2,891.34	2,870.35	137.753	CC, ES
Harper A21-669 - Original Drilling - APD - Rev 1	6,650.00	5,506.23	3,455.02	3,415.12	86.578	SF
Harper A21-674 - Original Drilling - APD - Rev 1	3,523.85	3,035.78	2,945.36	2,925.76	150.331	CC, ES
Harper A21-674 - Original Drilling - APD - Rev 1	6,600.00	5,244.45	3,625.81	3,587.24	94.006	SF
Harper A21-681 - Original Drilling - APD - Rev 1	3,267.42	2,752.95	3,019.24	3,001.35	168.786	CC
Harper A21-681 - Original Drilling - APD - Rev 1	3,300.00	2,769.93	3,019.33	3,001.31	167.569	ES
Harper A21-681 - Original Drilling - APD - Rev 1	6,600.00	4,871.50	3,899.40	3,862.72	106.297	SF
Kona A19-616 - Kona A19-616 - Kona A19-616 - As Drill	6,781.59	8,039.72	416.06	374.59	10.033	CC, ES
Kona A19-616 - Kona A19-616 - Kona A19-616 - As Drill	6,850.00	8,020.01	424.75	381.21	9.755	SF
Kona A19-624 - Kona A19-624 - Kona A19-624 - As Drill	6,694.97	8,251.84	991.62	948.83	23.175	CC
Kona A19-624 - Kona A19-624 - Kona A19-624 - As Drill	6,700.00	8,249.08	991.65	948.80	23.142	ES
Kona A19-624 - Kona A19-624 - Kona A19-624 - As Drill	6,800.00	8,202.01	1,004.88	960.85	22.824	SF
Kona A19-636 - Kona A19-636 - Kona A19-636 - As Drill	6,570.43	8,596.89	1,553.53	1,505.24	32.176	CC, ES
Kona A19-636 - Kona A19-636 - Kona A19-636 - As Drill	6,700.00	8,595.00	1,571.86	1,522.16	31.627	SF
Kona A19-646 - Original Drilling - Original Drilling - As Dr	6,525.94	8,503.00	2,307.24	2,260.73	49.612	CC, ES
Kona A19-646 - Original Drilling - Original Drilling - As Dr	6,600.00	8,503.00	2,312.69	2,265.67	49.188	SF
Kona A19-662 - Original Drilling - Original Drilling - As Dr	3,236.98	2,640.00	3,096.52	3,081.25	202.761	CC, ES
Kona A19-662 - Original Drilling - Original Drilling - As Dr	6,700.00	8,437.08	3,322.25	3,275.05	70.395	SF
Kona A19-670 - Kona A19-670 - Original Drilling - As Drill	3,067.75	2,476.57	3,168.49	3,153.80	215.613	CC, ES
Kona A19-670 - Kona A19-670 - Original Drilling - As Drill	6,650.00	5,494.52	3,815.62	3,779.29	105.016	SF
Kona A19-685 - Original Drilling - Original Drilling - As Dr	3,540.37	2,959.58	3,041.95	3,025.39	183.683	CC, ES
Kona A19-685 - Original Drilling - Original Drilling - As Dr	7,800.00	7,800.00	4,815.44	4,768.15	101.833	SF
McKee 12-21 (PA) - Original Drilling - Original Drilling - A	6,441.96	6,261.17	2,984.79	2,839.67	20.567	CC
McKee 12-21 (PA) - Original Drilling - Original Drilling - A	6,450.00	6,268.79	2,984.84	2,839.53	20.541	ES
McKee 12-21 (PA) - Original Drilling - Original Drilling - A	6,700.00	6,494.94	3,036.17	2,885.32	20.127	SF
McKee 21-21 (PA) - Original Drilling - Original Drilling - A	6,496.37	6,328.48	4,839.29	4,692.56	32.981	CC
McKee 21-21 (PA) - Original Drilling - Original Drilling - A	6,500.00	6,331.88	4,839.30	4,692.49	32.962	ES
McKee 21-21 (PA) - Original Drilling - Original Drilling - A	6,900.00	6,662.17	4,952.67	4,797.63	31.943	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 Rampart A33-790
Project:	Wells Ranch	TVD Reference:	KB @ 4737.00ft
Reference Site:	A Section 20	MD Reference:	KB @ 4737.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Rampart A33-790	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Rampart A33-790	Database:	EDMP
Reference Design:	APD-Rev 0	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						
A Section 21						
McKee 22-21 - Original Drilling - Original Drilling - As Dril	6,524.14	6,331.20	3,720.59	3,678.34	88.061	CC, ES
McKee 22-21 - Original Drilling - Original Drilling - As Dril	6,900.00	6,641.99	3,815.20	3,770.30	84.981	SF
McKee 31-21 - Original Drilling - Original Drilling - As Dril	6,563.37	6,661.65	5,737.18	5,693.73	132.043	CC, ES
McKee 31-21 - Original Drilling - Original Drilling - As Dril	7,100.00	7,052.98	5,923.43	5,876.49	126.186	SF
McKee 32-21 - Original Drilling - Original Drilling - As Dril	6,597.06	6,400.74	4,573.94	4,531.30	107.256	CC
McKee 32-21 - Original Drilling - Original Drilling - As Dril	6,600.00	6,403.34	4,573.95	4,531.28	107.201	ES
McKee 32-21 - Original Drilling - Original Drilling - As Dril	7,100.00	6,760.55	4,719.83	4,673.85	102.647	SF
McKee 41-21 - Original Drilling - Original Drilling - As Dril	6,567.27	6,232.58	6,520.94	6,478.98	155.397	CC, ES
McKee 41-21 - Original Drilling - Original Drilling - As Dril	7,200.00	6,614.36	6,744.07	6,698.23	147.112	SF
McKee 42-21 - Original Drilling - Original Drilling - As Dril	6,682.61	6,471.17	5,557.07	5,514.05	129.176	CC, ES
McKee 42-21 - Original Drilling - Original Drilling - As Dril	7,300.00	6,841.21	5,739.52	5,692.69	122.560	SF
Rampart A33-730 - Rampart A33-730 - APD-Rev 1	3,628.42	2,900.00	2,364.78	2,348.27	143.194	CC, ES
Rampart A33-730 - Rampart A33-730 - APD-Rev 1	17,008.18	17,720.27	3,963.98	3,782.58	21.852	SF
Rampart A33-740 - Rampart A33-740 - APD-Rev 0	3,620.49	2,900.00	2,343.38	2,326.89	142.094	CC, ES
Rampart A33-740 - Rampart A33-740 - APD-Rev 0	17,008.18	17,515.21	3,317.95	3,137.47	18.384	SF
Rampart A33-750 - Rampart A33-750 - APD-Rev 0	3,666.16	2,952.70	2,315.40	2,298.67	138.430	CC
Rampart A33-750 - Rampart A33-750 - APD-Rev 0	3,700.00	2,972.08	2,315.50	2,298.66	137.478	ES
Rampart A33-750 - Rampart A33-750 - APD-Rev 0	17,008.18	17,093.98	2,645.46	2,464.91	14.652	SF
Rampart A33-760 - Rampart A33-760 - APD-Rev 1	6,880.05	6,343.25	1,978.15	1,938.38	49.743	CC
Rampart A33-760 - Rampart A33-760 - APD-Rev 1	17,008.18	16,956.23	2,010.71	1,830.71	11.171	ES, SF
Rampart A33-770 - Rampart A33-770 - APD-Rev 0	7,388.15	7,211.36	1,320.01	1,276.63	30.426	CC
Rampart A33-770 - Rampart A33-770 - APD-Rev 0	17,008.18	16,811.58	1,322.99	1,142.25	7.320	ES, SF
Sexton 43-21 (PA) - Original Drilling - Original Drilling - A	6,767.08	6,505.57	5,098.97	4,948.08	33.794	CC
Sexton 43-21 (PA) - Original Drilling - Original Drilling - A	6,800.00	6,531.04	5,099.44	4,947.90	33.652	ES
Sexton 43-21 (PA) - Original Drilling - Original Drilling - A	7,150.00	6,729.91	5,163.75	5,006.76	32.891	SF
Wells Trust 13-21 - Original Drilling - Original Drilling - As	6,478.38	6,274.80	1,756.68	1,714.83	41.978	CC, ES
Wells Trust 13-21 - Original Drilling - Original Drilling - As	6,650.00	6,435.47	1,778.74	1,735.61	41.248	SF
Wells Trust 14-21 - Original Drilling - Original Drilling - As	6,618.33	6,385.88	758.44	715.86	17.813	CC, ES
Wells Trust 14-21 - Original Drilling - Original Drilling - As	6,700.00	6,455.16	763.16	719.93	17.656	SF
Wells Trust 24-21 - Original Drilling - Original Drilling - As	6,751.75	6,464.61	1,539.23	1,496.07	35.664	CC, ES
Wells Trust 24-21 - Original Drilling - Original Drilling - As	6,950.00	6,604.09	1,560.67	1,516.09	35.005	SF

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

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Rampart A33-790
Project:	Wells Ranch	TVD Reference:	KB @ 4737.00ft
Reference Site:	A Section 20	MD Reference:	KB @ 4737.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Rampart A33-790	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Rampart A33-790	Database:	EDMP
Reference Design:	APD-Rev 0	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						
A Section 28						
Ankeney 2-28 (SI) - Wellbore #1 - No Surveys	9,186.42	6,754.00	4,631.34	4,465.61	27.945	CC
Ankeney 2-28 (SI) - Wellbore #1 - No Surveys	9,200.00	6,754.00	4,631.36	4,465.53	27.928	ES
Ankeney 2-28 (SI) - Wellbore #1 - No Surveys	10,100.00	6,754.00	4,720.59	4,548.03	27.356	SF
Ankeney 28-01 (PA) - Wellbore #1 - Gyro Surveys	9,048.63	6,696.30	4,654.97	4,602.57	88.832	CC
Ankeney 28-01 (PA) - Wellbore #1 - Gyro Surveys	9,100.00	6,696.71	4,655.26	4,602.49	88.214	ES
Ankeney 28-01 (PA) - Wellbore #1 - Gyro Surveys	11,200.00	6,713.41	5,128.05	5,061.04	76.532	SF
Art Rohr 1 (PA) - Wellbore #1 - No Surveys	10,222.68	6,749.00	1,927.80	1,755.47	11.186	CC, ES
Art Rohr 1 (PA) - Wellbore #1 - No Surveys	10,400.00	6,749.00	1,935.94	1,761.81	11.118	SF
Danley 1 (TA) - Wellbore #1 - Gyro Surveys	7,356.97	6,757.71	889.42	843.70	19.453	CC, ES
Danley 1 (TA) - Wellbore #1 - Gyro Surveys	7,400.00	6,759.23	890.86	844.89	19.380	SF
Danley 12-28 (SI) - Wellbore #1 - Gyro Surveys	8,929.91	6,753.30	728.72	676.06	13.839	CC, ES
Danley 12-28 (SI) - Wellbore #1 - Gyro Surveys	9,000.00	6,756.19	732.07	678.51	13.668	SF
Danley 13-28 (PR) - Wellbore #1 - Gyro Surveys	10,252.14	6,734.10	692.73	631.66	11.343	CC, ES
Danley 13-28 (PR) - Wellbore #1 - Gyro Surveys	10,300.00	6,734.66	694.38	632.54	11.228	SF
Danley 14-28 (PR) - Wellbore #1 - Gyro Surveys	11,599.38	6,715.18	677.61	606.98	9.594	CC
Danley 14-28 (PR) - Wellbore #1 - Gyro Surveys	11,600.00	6,715.20	677.61	606.97	9.593	ES
Danley 14-28 (PR) - Wellbore #1 - Gyro Surveys	11,700.00	6,718.40	685.03	612.92	9.499	SF
Dewey 21-28 (TA) - Wellbore #1 - Gyro Surveys	7,690.31	6,697.48	1,974.01	1,927.37	42.328	CC
Dewey 21-28 (TA) - Wellbore #1 - Gyro Surveys	7,700.00	6,697.56	1,974.03	1,927.34	42.282	ES
Dewey 21-28 (TA) - Wellbore #1 - Gyro Surveys	8,200.00	6,701.71	2,038.74	1,989.05	41.028	SF
Dewey 22-28 (SI) - Wellbore #1 - Gyro Surveys	8,803.90	6,647.28	2,022.33	1,970.46	38.987	CC, ES
Dewey 22-28 (SI) - Wellbore #1 - Gyro Surveys	9,300.00	6,671.63	2,082.14	2,026.31	37.293	SF
Hannan Rohr 1 (PA) - Wellbore #1 - Gyro Surveys	11,623.02	6,724.53	1,973.95	1,903.41	27.981	CC, ES
Hannan Rohr 1 (PA) - Wellbore #1 - Gyro Surveys	12,000.00	6,723.36	2,009.63	1,935.44	27.088	SF
Rohr A 28-25 (SI) - Wellbore #1 - Gyro Surveys	10,740.46	6,695.91	1,481.20	1,416.71	22.970	CC, ES
Rohr A 28-25 (SI) - Wellbore #1 - Gyro Surveys	11,000.00	6,701.43	1,503.75	1,436.57	22.384	SF
Wardlaw 16-28 - Original Drilling - Original Drilling - As D	11,613.23	6,727.00	4,426.35	4,244.51	24.342	CC, ES
Wardlaw 16-28 - Original Drilling - Original Drilling - As D	12,400.00	6,727.00	4,495.73	4,307.21	23.847	SF
Wardlaw 16-28 (SI) - Wellbore #1 - Gyro Surveys	11,572.99	6,699.82	4,447.15	4,376.87	63.274	CC
Wardlaw 16-28 (SI) - Wellbore #1 - Gyro Surveys	11,600.00	6,699.49	4,447.23	4,376.70	63.053	ES
Wardlaw 16-28 (SI) - Wellbore #1 - Gyro Surveys	13,100.00	6,681.66	4,701.97	4,620.11	57.434	SF
Wardlaw 20-28 - Original Drilling - Original Drilling - As D	10,961.59	6,722.00	4,113.47	3,936.49	23.242	CC
Wardlaw 20-28 - Original Drilling - Original Drilling - As D	11,000.00	6,722.00	4,113.65	3,936.32	23.198	ES
Wardlaw 20-28 - Original Drilling - Original Drilling - As D	11,700.00	6,722.00	4,179.23	3,996.00	22.809	SF
Wardlaw 20-28 (SI) - Wellbore #1 - Gyro Surveys	10,928.99	6,699.39	4,122.14	4,056.56	62.856	CC
Wardlaw 20-28 (SI) - Wellbore #1 - Gyro Surveys	11,000.00	6,698.69	4,122.75	4,056.53	62.258	ES
Wardlaw 20-28 (SI) - Wellbore #1 - Gyro Surveys	12,400.00	6,686.20	4,376.72	4,300.02	57.063	SF
Wardlaw 33-28 (PA) - Wellbore #1 - Gyro Surveys	9,780.01	6,100.00	2,877.16	2,820.27	50.576	CC
Wardlaw 33-28 (PA) - Wellbore #1 - Gyro Surveys	9,800.00	6,100.00	2,877.23	2,820.17	50.421	ES
Wardlaw 33-28 (PA) - Wellbore #1 - Gyro Surveys	15,100.00	7,543.74	5,882.94	5,694.99	31.301	SF
Webster 09-28 - Original Drilling - Original Drilling - As D	10,161.55	6,737.00	4,400.48	4,228.80	25.632	CC
Webster 09-28 - Original Drilling - Original Drilling - As D	10,200.00	6,737.00	4,400.65	4,228.65	25.585	ES
Webster 09-28 - Original Drilling - Original Drilling - As D	11,000.00	6,737.00	4,479.65	4,301.18	25.101	SF
Webster 15-28 (SI) - Wellbore #1 - Gyro Surveys	11,501.45	6,692.35	3,109.83	3,040.05	44.568	CC, ES
Webster 15-28 (SI) - Wellbore #1 - Gyro Surveys	12,400.00	6,689.66	3,237.04	3,159.96	41.996	SF
Webster 9-28 (PR) - Wellbore #1 - Gyro Surveys	10,122.07	6,712.59	4,415.58	4,355.60	73.609	CC, ES
Webster 9-28 (PR) - Wellbore #1 - Gyro Surveys	11,900.00	6,705.43	4,760.08	4,687.16	65.276	SF

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

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Rampart A33-790
Project:	Wells Ranch	TVD Reference:	KB @ 4737.00ft
Reference Site:	A Section 20	MD Reference:	KB @ 4737.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Rampart A33-790	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Rampart A33-790	Database:	EDMP
Reference Design:	APD-Rev 0	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						
A Section 29						
Amos 1 (DA) - Wellbore #1 - No Surveys	2,000.00	1,933.00	4,784.58	4,739.15	105.308	CC
Amos 1 (DA) - Wellbore #1 - No Surveys	2,100.00	2,032.98	4,785.29	4,737.68	100.508	ES
Amos 1 (DA) - Wellbore #1 - No Surveys	11,800.00	3,800.00	5,422.75	5,320.67	53.119	SF
Anderson 3-29 (SI) - Wellbore #1 - Gyro Surveys	224.76	181.76	2,143.73	2,142.71	2,106.762	CC
Anderson 3-29 (SI) - Wellbore #1 - Gyro Surveys	700.00	644.82	2,145.74	2,141.45	499.382	ES
Anderson 3-29 (SI) - Wellbore #1 - Gyro Surveys	8,000.00	6,735.96	3,398.49	3,352.41	73.756	SF
Andy 29-1 (PA) - Wellbore #1 - No Surveys	2,000.00	1,947.00	3,130.45	3,084.73	68.478	CC
Andy 29-1 (PA) - Wellbore #1 - No Surveys	2,100.00	2,046.98	3,131.13	3,083.24	65.380	ES
Andy 29-1 (PA) - Wellbore #1 - No Surveys	9,200.00	6,746.00	3,276.18	3,110.99	19.832	SF
Andy 29-2 (PA) - Wellbore #1 - Gyro Surveys	500.86	450.87	3,941.03	3,938.11	1,346.556	CC
Andy 29-2 (PA) - Wellbore #1 - Gyro Surveys	2,000.00	1,915.84	3,944.71	3,931.42	296.927	ES
Andy 29-2 (PA) - Wellbore #1 - Gyro Surveys	10,200.00	6,758.86	4,758.05	4,700.90	83.253	SF
Capehart 1 (SI) - Wellbore #1 - Gyro Surveys	8,933.95	6,745.19	2,074.83	2,022.26	39.467	CC, ES
Capehart 1 (SI) - Wellbore #1 - Gyro Surveys	9,100.00	6,745.22	2,081.47	2,028.47	39.278	SF
Capehart 31-29 (TA) - Wellbore #1 - Gyro Surveys	361.34	315.35	1,188.38	1,186.41	603.905	CC
Capehart 31-29 (TA) - Wellbore #1 - Gyro Surveys	1,900.00	1,847.55	1,192.52	1,179.81	93.813	ES
Capehart 31-29 (TA) - Wellbore #1 - Gyro Surveys	7,700.00	6,762.54	1,773.79	1,727.29	38.140	SF
Capehart 41-29 (TA) - Wellbore #1 - Gyro Surveys	7,643.60	6,760.91	487.55	440.95	10.462	CC, ES, SF
Capehart 42-29 (SI) - Wellbore #1 - Gyro Surveys	671.46	616.50	3,336.72	3,332.61	811.691	CC
Capehart 42-29 (SI) - Wellbore #1 - Gyro Surveys	2,000.00	1,936.10	3,340.02	3,326.65	249.954	ES
Capehart 42-29 (SI) - Wellbore #1 - Gyro Surveys	9,800.00	6,740.93	3,634.70	3,578.74	64.963	SF
Miller 15-29 (PR) - Wellbore #1 - Gyro Surveys	11,304.44	6,918.60	1,936.67	1,866.72	27.687	CC, ES
Miller 15-29 (PR) - Wellbore #1 - Gyro Surveys	11,400.00	6,909.71	1,939.00	1,868.82	27.628	SF
Miller 16-29 (SI) - Wellbore #1 - Gyro Surveys	11,557.50	6,719.32	422.29	352.26	6.030	CC, ES, SF
Miller 33-29 (SI) - Wellbore #1 - Gyro Surveys	10,332.02	6,742.01	1,994.40	1,932.85	32.402	CC, ES
Miller 33-29 (SI) - Wellbore #1 - Gyro Surveys	10,500.00	6,740.26	2,001.46	1,939.49	32.297	SF
Miller 43-29 (SI) - Wellbore #1 - Gyro Surveys	10,400.00	6,750.36	611.80	549.50	9.820	ES, SF
Miller 43-29 (SI) - Wellbore #1 - Gyro Surveys	10,405.15	6,750.33	611.78	549.50	9.824	CC
Rhine 15-29 (PR) - Wellbore #1 - Gyro Surveys	11,352.54	6,651.10	2,014.32	1,946.21	29.573	CC, ES
Rhine 15-29 (PR) - Wellbore #1 - Gyro Surveys	11,500.00	6,641.80	2,019.69	1,951.27	29.521	SF
Uhrich 1 (SI) - Wellbore #1 - Gyro Surveys	11,512.56	6,733.88	4,641.34	4,571.46	66.418	CC, ES
Uhrich 1 (SI) - Wellbore #1 - Gyro Surveys	12,600.00	6,723.14	4,767.02	4,692.14	63.665	SF
Uhrich 13-29 (PR) - Wellbore #1 - Gyro Surveys	10,259.15	6,748.91	4,719.06	4,658.05	77.339	CC
Uhrich 13-29 (PR) - Wellbore #1 - Gyro Surveys	10,300.00	6,749.08	4,719.24	4,658.01	77.070	ES
Uhrich 13-29 (PR) - Wellbore #1 - Gyro Surveys	11,600.00	6,754.47	4,905.86	4,838.81	73.174	SF
Uhrich 14-29 (SI) - Wellbore #1 - Gyro Surveys	11,686.25	6,615.45	3,143.74	3,073.37	44.673	CC
Uhrich 14-29 (SI) - Wellbore #1 - Gyro Surveys	11,700.00	6,615.00	3,143.77	3,073.34	44.634	ES
Uhrich 14-29 (SI) - Wellbore #1 - Gyro Surveys	12,100.00	6,602.77	3,170.81	3,098.90	44.090	SF
Uhrich 19-29 (SI) - Wellbore #1 - Gyro Surveys	11,033.52	6,734.73	3,784.26	3,717.84	56.977	CC, ES
Uhrich 19-29 (SI) - Wellbore #1 - Gyro Surveys	11,700.00	6,725.42	3,842.48	3,773.23	55.481	SF
Uhrich 23-29 (SI) - Wellbore #1 - Gyro Surveys	10,579.23	6,727.99	3,096.59	3,033.42	49.024	CC
Uhrich 23-29 (SI) - Wellbore #1 - Gyro Surveys	10,600.00	6,727.90	3,096.66	3,033.40	48.953	ES
Uhrich 23-29 (SI) - Wellbore #1 - Gyro Surveys	11,000.00	6,726.20	3,125.04	3,060.24	48.226	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 Rampart A33-790
Project:	Wells Ranch	TVD Reference:	KB @ 4737.00ft
Reference Site:	A Section 20	MD Reference:	KB @ 4737.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Rampart A33-790	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Rampart A33-790	Database:	EDMP
Reference Design:	APD-Rev 0	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						
A Section 32						
Ehrlich 13-32 (PR) - Wellbore #1 - Gyro Surveys	15,420.74	6,852.27	4,652.29	4,551.47	46.143	CC, ES
Ehrlich 13-32 (PR) - Wellbore #1 - Gyro Surveys	16,200.00	6,892.00	4,716.90	4,612.13	45.023	SF
Ehrlich 14-32 (TA) - Wellbore #1 - Gyro Surveys	16,802.61	6,825.34	4,541.76	4,430.09	40.672	CC, ES
Ehrlich 14-32 (TA) - Wellbore #1 - Gyro Surveys	17,008.18	6,820.98	4,546.41	4,433.59	40.301	SF
Farmland 10-32 (SI) - Wellbore #1 - Gyro Surveys	15,617.56	6,725.48	1,981.78	1,880.03	19.478	CC, ES
Farmland 10-32 (SI) - Wellbore #1 - Gyro Surveys	15,700.00	6,725.08	1,983.49	1,881.52	19.452	SF
Farmland 16-32 (SI) - Wellbore #1 - Gyro Surveys	16,840.36	6,695.04	607.30	495.98	5.455	CC, ES, SF
Hoffner 1 (PR) - Wellbore #1 - Gyro Surveys	12,877.27	6,696.06	1,970.49	1,890.54	24.645	CC, ES
Hoffner 1 (PR) - Wellbore #1 - Gyro Surveys	13,000.00	6,694.05	1,974.31	1,894.05	24.601	SF
Hoffner 32-32 (SI) - Wellbore #1 - Gyro Surveys	14,212.40	6,700.00	1,979.21	1,888.77	21.884	CC, ES
Hoffner 32-32 (SI) - Wellbore #1 - Gyro Surveys	14,300.00	6,700.00	1,981.15	1,890.47	21.847	SF
Johnson 5-32 (PR) - Wellbore #1 - Gyro Surveys	14,515.02	6,802.48	4,350.18	4,256.83	46.599	CC, ES
Johnson 5-32 (PR) - Wellbore #1 - Gyro Surveys	15,200.00	6,820.12	4,403.74	4,307.11	45.574	SF
Johnson A 32-06 (PR) - Wellbore #1 - Gyro Surveys	14,379.02	6,748.48	3,108.45	3,016.45	33.786	CC
Johnson A 32-06 (PR) - Wellbore #1 - Gyro Surveys	14,400.00	6,748.54	3,108.52	3,016.41	33.748	ES
Johnson A 32-06 (PR) - Wellbore #1 - Gyro Surveys	14,700.00	6,749.39	3,124.98	3,031.67	33.492	SF
Larsen 1 (PR) - Wellbore #1 - Gyro Surveys	12,900.00	6,712.92	675.18	594.72	8.392	SF
Larsen 1 (PR) - Wellbore #1 - Gyro Surveys	12,915.74	6,712.90	674.99	594.60	8.396	CC, ES
Larsen 2 (PR) - Wellbore #1 - Gyro Surveys	14,137.09	6,697.69	682.66	592.87	7.603	CC, ES, SF
Larson A32-17 (PR) - Wellbore #1 - MWD Surveys	13,446.49	6,709.32	1,092.33	1,008.10	12.969	CC, ES, SF
QC USX A32-19 (PR) - Wellbore #1 - MWD Surveys	13,486.02	6,710.14	3,671.67	3,586.86	43.297	CC
QC USX A32-19 (PR) - Wellbore #1 - MWD Surveys	13,500.00	6,710.34	3,671.69	3,586.81	43.258	ES
QC USX A32-19 (PR) - Wellbore #1 - MWD Surveys	14,000.00	6,717.51	3,707.46	3,620.35	42.561	SF
Rubix A 32-03 (PR) - Wellbore #1 - Gyro Surveys	12,686.66	6,698.53	3,192.39	3,113.86	40.652	CC
Rubix A 32-03 (PR) - Wellbore #1 - Gyro Surveys	12,700.00	6,698.77	3,192.41	3,113.82	40.617	ES
Rubix A 32-03 (PR) - Wellbore #1 - Gyro Surveys	13,100.00	6,705.06	3,219.03	3,138.79	40.120	SF
Rubix A 32-04 (SI) - Wellbore #1 - No Surveys	12,699.32	6,727.00	4,526.85	4,336.84	23.824	CC
Rubix A 32-04 (SI) - Wellbore #1 - No Surveys	12,700.00	6,727.00	4,526.85	4,336.84	23.823	ES
Rubix A 32-04 (SI) - Wellbore #1 - No Surveys	13,200.00	6,727.00	4,554.46	4,361.84	23.645	SF
Webster 11-32 (PR) - Wellbore #1 - Gyro Surveys	15,401.74	6,730.75	3,052.73	2,952.72	30.522	CC, ES
Webster 11-32 (PR) - Wellbore #1 - Gyro Surveys	15,700.00	6,733.13	3,067.27	2,966.06	30.306	SF
Webster 14-32 (TA) - Wellbore #1 - Gyro Surveys	17,008.18	6,669.84	3,271.80	3,160.97	29.522	CC, ES, SF
Webster 15-32 (PR) - Wellbore #1 - Gyro Surveys	16,784.10	6,692.15	1,865.76	1,754.96	16.838	CC, ES
Webster 15-32 (PR) - Wellbore #1 - Gyro Surveys	16,800.00	6,692.19	1,865.83	1,754.98	16.832	SF
Webster 9-32 (SI) - Wellbore #1 - Gyro Surveys	15,439.93	6,682.92	653.59	553.72	6.544	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 Rampart A33-790
Project:	Wells Ranch	TVD Reference:	KB @ 4737.00ft
Reference Site:	A Section 20	MD Reference:	KB @ 4737.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Rampart A33-790	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Rampart A33-790	Database:	EDMP
Reference Design:	APD-Rev 0	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
A Section 33						
Achziger 11-33 (PR) - Wellbore #1 - Gyro Surveys	15,362.03	6,678.49	2,193.63	2,094.05	22.028	CC
Achziger 11-33 (PR) - Wellbore #1 - Gyro Surveys	15,400.00	6,678.93	2,193.96	2,093.93	21.934	ES
Achziger 11-33 (PR) - Wellbore #1 - Gyro Surveys	15,700.00	6,682.54	2,219.51	2,116.73	21.596	SF
Achziger 14-33 (PA) - Wellbore #1 - No Surveys	16,976.76	6,687.00	1,961.90	1,739.00	8.802	CC
Achziger 14-33 (PA) - Wellbore #1 - No Surveys	17,008.18	6,687.00	1,962.15	1,738.87	8.788	ES, SF
Briggs 15-33 (SI) - Wellbore #1 - Gyro Surveys	16,770.62	6,558.75	3,270.17	3,159.54	29.562	CC
Briggs 15-33 (SI) - Wellbore #1 - Gyro Surveys	16,800.00	6,558.82	3,270.30	3,159.36	29.480	ES
Briggs 15-33 (SI) - Wellbore #1 - Gyro Surveys	17,008.18	6,559.37	3,278.78	3,165.83	29.029	SF
Ehrlich 19-33 (PR) - Wellbore #1 - Gyro Survey	16,197.15	6,693.05	1,171.80	1,065.65	11.039	CC
Ehrlich 19-33 (PR) - Wellbore #1 - Gyro Survey	16,200.00	6,693.06	1,171.81	1,065.61	11.034	ES
Ehrlich 19-33 (PR) - Wellbore #1 - Gyro Survey	16,300.00	6,693.55	1,176.31	1,068.84	10.946	SF
French 09-33 - Original Drilling - Original Drilling - As Dril	15,444.09	6,777.70	4,629.23	4,529.00	46.185	CC
French 09-33 - Original Drilling - Original Drilling - As Dril	15,500.00	6,776.89	4,629.57	4,528.79	45.938	ES
French 09-33 - Original Drilling - Original Drilling - As Dril	16,600.00	6,760.83	4,771.33	4,662.05	43.662	SF
Hammerbeck 16-33 - Original Drilling - Original Drilling -	16,860.37	6,801.73	4,689.28	4,577.73	42.038	CC
Hammerbeck 16-33 - Original Drilling - Original Drilling -	16,900.00	6,801.98	4,689.44	4,577.51	41.893	ES
Hammerbeck 16-33 - Original Drilling - Original Drilling -	17,008.18	6,802.66	4,691.61	4,578.63	41.526	SF
Hammerbeck 20-33 - Wellbore #1 - Gyro Surveys	16,135.01	6,769.54	3,925.30	3,819.74	37.183	CC
Hammerbeck 20-33 - Wellbore #1 - Gyro Surveys	16,200.00	6,768.76	3,925.84	3,819.62	36.958	ES
Hammerbeck 20-33 - Wellbore #1 - Gyro Surveys	17,008.18	6,758.95	4,021.23	3,908.66	35.722	SF
Noffsinger 11-33 (PR) - Wellbore #1 - Gyro Surveys	12,703.06	6,715.23	548.72	469.95	6.966	CC, ES
Noffsinger 11-33 (PR) - Wellbore #1 - Gyro Surveys	12,800.00	6,715.58	557.22	476.96	6.943	SF
Noffsinger 12-33 (PR) - Wellbore #1 - Gyro Surveys	14,433.89	6,708.67	741.36	649.07	8.034	CC, ES
Noffsinger 12-33 (PR) - Wellbore #1 - Gyro Surveys	14,500.00	6,708.61	744.30	650.97	7.975	SF
Noffsinger 21-33 (PA) - Wellbore #1 - No Surveys	12,676.14	6,727.00	1,974.48	1,784.89	10.415	CC
Noffsinger 21-33 (PA) - Wellbore #1 - No Surveys	12,700.00	6,727.00	1,974.62	1,784.75	10.400	ES
Noffsinger 21-33 (PA) - Wellbore #1 - No Surveys	12,900.00	6,727.00	1,987.13	1,795.17	10.352	SF
Noffsinger 22-33 (PR) - Wellbore #1 - Gyro Surveys	12,646.02	6,391.78	3,515.54	3,438.17	45.436	CC
Noffsinger 22-33 (PR) - Wellbore #1 - Gyro Surveys	12,700.00	6,390.15	3,515.95	3,438.05	45.130	ES
Noffsinger 22-33 (PR) - Wellbore #1 - Gyro Surveys	13,600.00	6,360.38	3,642.53	3,557.48	42.831	SF
Noffsinger 31-33 (PR) - Wellbore #1 - Gyro Surveys						Out of range
Noffsinger 32-33 (PR) - Wellbore #1 - Gyro Surveys	14,449.35	6,527.22	3,174.82	3,082.56	34.412	CC
Noffsinger 32-33 (PR) - Wellbore #1 - Gyro Surveys	14,500.00	6,530.84	3,175.22	3,082.43	34.221	ES
Noffsinger 32-33 (PR) - Wellbore #1 - Gyro Surveys	15,100.00	6,566.25	3,240.67	3,142.87	33.137	SF
Sitzman 12-33 (PR) - Wellbore #1 - Gyro Surveys	15,516.58	6,694.05	607.07	506.28	6.023	CC, ES
Sitzman 12-33 (PR) - Wellbore #1 - Gyro Surveys	15,600.00	6,693.92	612.77	510.78	6.008	SF
Sitzman 13-33 (SI) - Wellbore #1 - Gyro Surveys	17,008.18	6,690.33	616.20	505.01	5.542	CC, ES, SF
Sughrue 41-33 - Original Drilling - Original Drilling - As I	12,672.48	6,973.63	4,676.11	4,597.25	59.295	CC
Sughrue 41-33 - Original Drilling - Original Drilling - As I	12,700.00	6,972.33	4,676.19	4,597.07	59.102	ES
Sughrue 41-33 - Original Drilling - Original Drilling - As I	14,200.00	6,901.29	4,918.75	4,828.26	54.357	SF
Webster 10-33 (PA) - Wellbore #1 - Gyro Surveys	15,415.18	6,600.54	3,327.31	3,227.58	33.364	CC, ES
Webster 10-33 (PA) - Wellbore #1 - Gyro Surveys	16,100.00	6,592.25	3,397.05	3,291.63	32.225	SF

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

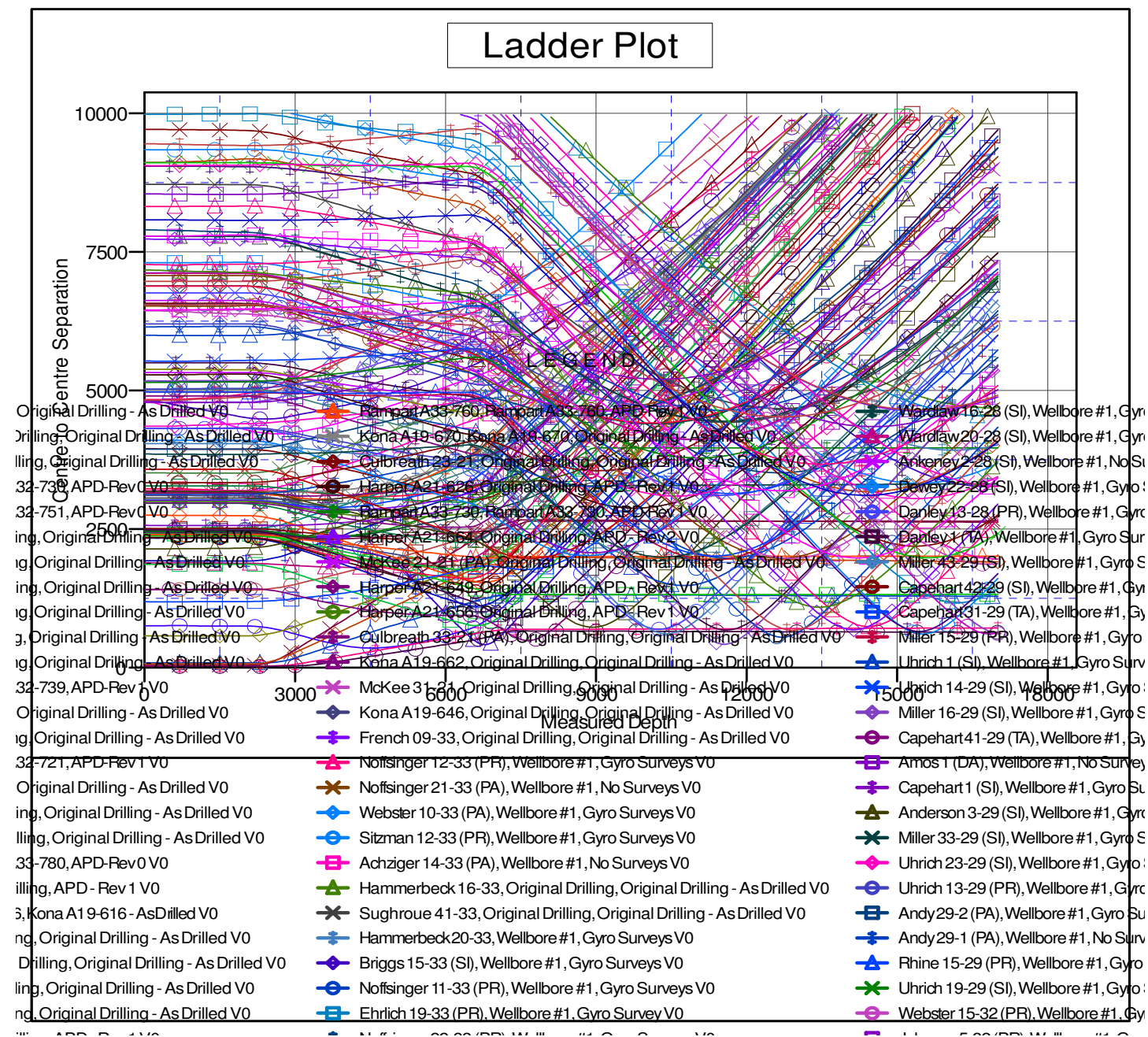
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Rampart A33-790
Project:	Wells Ranch	TVD Reference:	KB @ 4737.00ft
Reference Site:	A Section 20	MD Reference:	KB @ 4737.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Rampart A33-790	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Rampart A33-790	Database:	EDMP
Reference Design:	APD-Rev 0	Offset TVD Reference:	Offset Datum

Coordinates are relative to: Rampart A33-790

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.60°



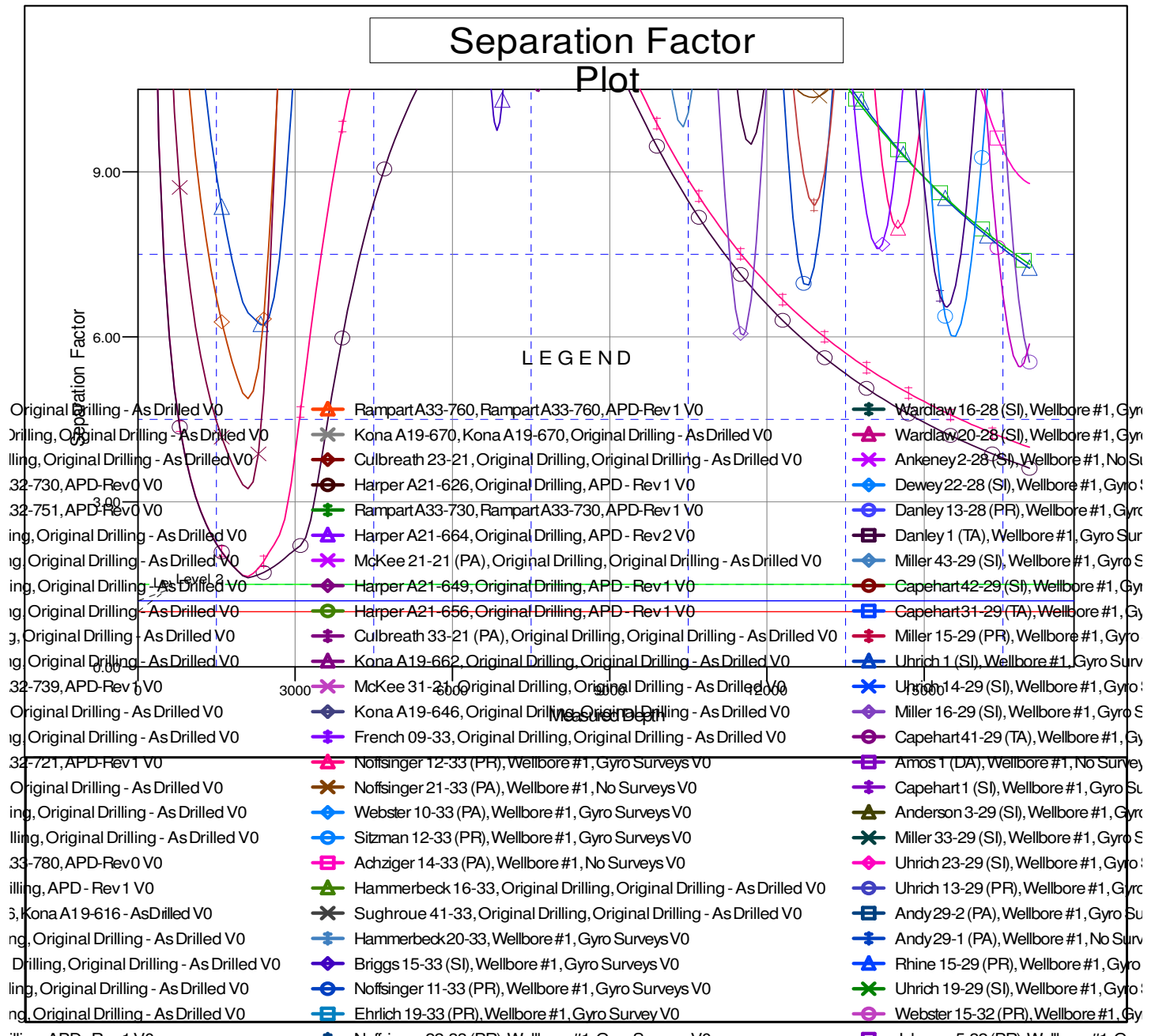
Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Rampart A33-790
Project:	Wells Ranch	TVD Reference:	KB @ 4737.00ft
Reference Site:	A Section 20	MD Reference:	KB @ 4737.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Rampart A33-790	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Rampart A33-790	Database:	EDMP
Reference Design:	APD-Rev 0	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KB @ 4737.00ft
Offset Depths are relative to Offset Datum
Central Meridian is -105.5000000

Coordinates are relative to: Rampart A33-790
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.60°



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