

Project: Wells Ranch
 Site: A Section 20
 Well: Rampart A32-739
 Wellbore: Rampart A32-739
 Design: APD-Rev 1

Northern Region - DJ Basin

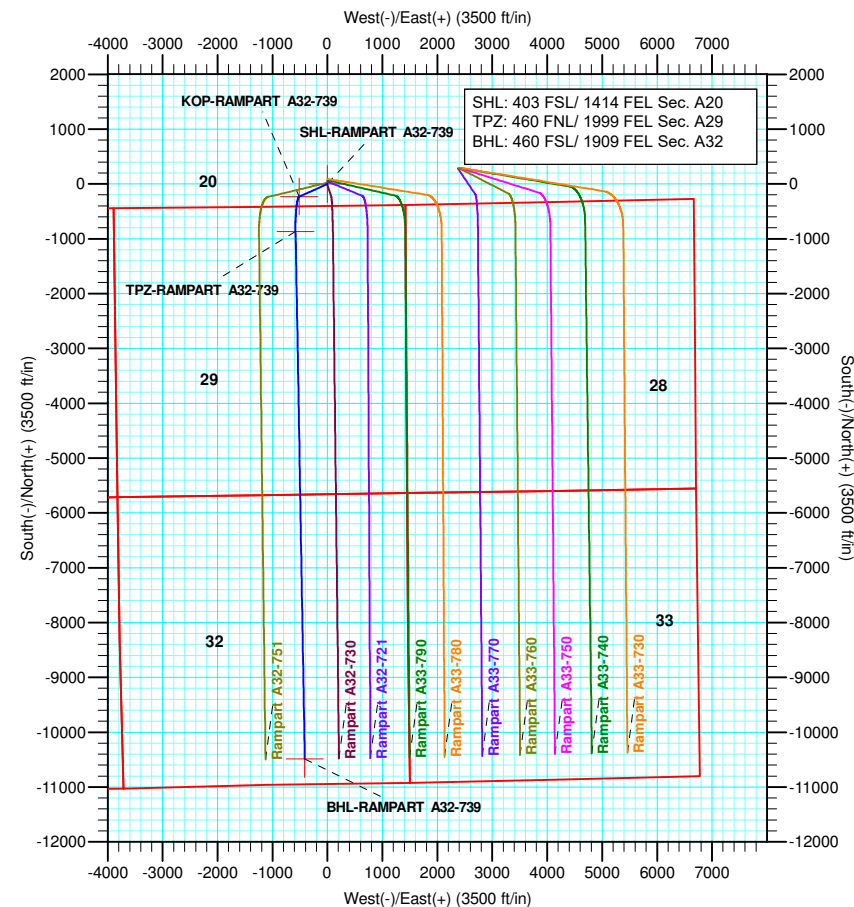
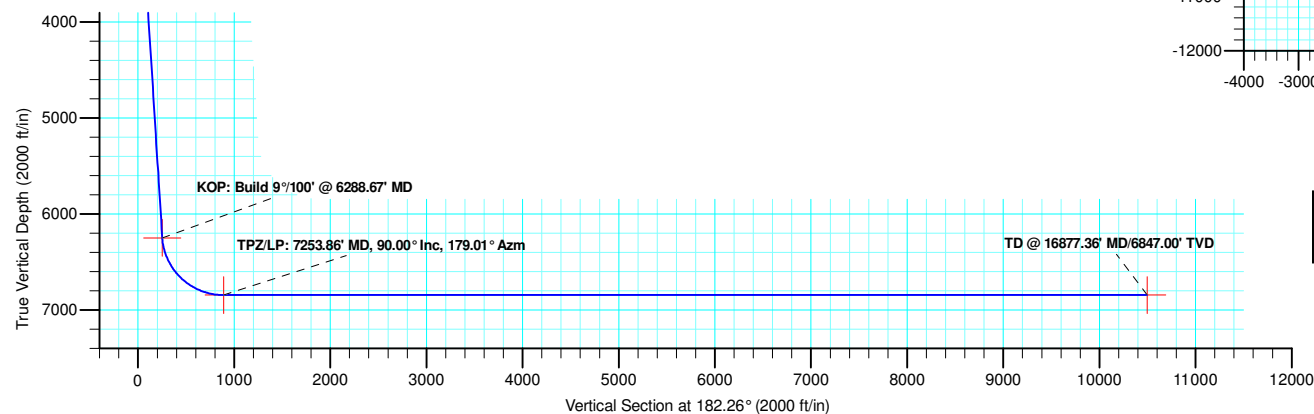
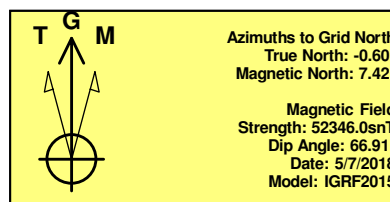
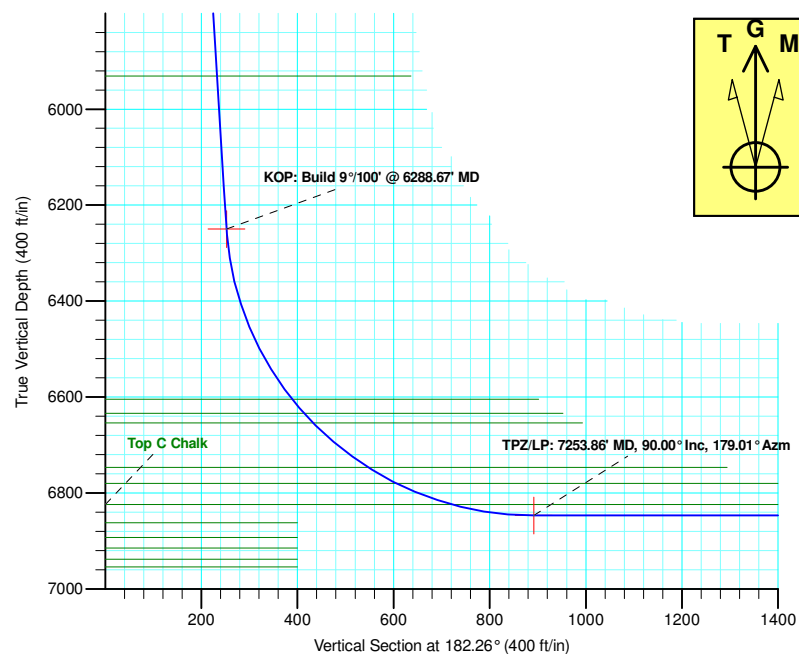
Geodetic System: US State Plane 1983
 Datum: North American Datum 1983
 Ellipsoid: GRS 1980
 Zone: Colorado Northern Zone
 System Datum: Mean Sea Level

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
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	2397.18	7.94	245.71	2395.91	-11.31	-25.06	2.00	245.71	12.29
4	6288.67	7.94	245.71	6250.06	-232.53	-515.25	0.00	0.00	252.65
5	7253.86	90.00	179.01	6847.00	-869.43	-580.71	9.00	-66.90	891.63
6	16877.36	90.00	179.01	6847.00	-10491.49	-413.68	0.00	0.00	10499.64

WELL DETAILS: Rampart A32-739

+N/-S	+E/-W	Northing	Ground Level: Easting	4706.00 Latitude	Longitude	Slot
0.00	0.00	1413717.64	3258846.09	40.4653293	-104.5696916	



Plan: APD-Rev 1 (Rampart A32-739/Rampart A32-739)

Created By: Keith Noack Date: 7:48, November 01 2018

Northern Region - DJ Basin

Wells Ranch

A Section 20

Rampart A32-739

Rampart A32-739

Plan: APD-Rev 1

Standard Planning Report

01 November, 2018

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Rampart A32-739
Company:	Northern Region - DJ Basin	TVD Reference:	KB @ 4736.00ft
Project:	Wells Ranch	MD Reference:	KB @ 4736.00ft
Site:	A Section 20	North Reference:	Grid
Well:	Rampart A32-739	Survey Calculation Method:	Minimum Curvature
Wellbore:	Rampart A32-739		
Design:	APD-Rev 1		

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 A32-739					
Well Position	+N/-S	-485.19 ft	Northing:	1,413,717.64 usft	Latitude:	40.4653293
	+E/-W	-2,385.82 ft	Easting:	3,258,846.09 usft	Longitude:	-104.5696916
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,706.00 ft

Wellbore	Rampart A32-739				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	5/7/2018	8.02	66.91	52,345.95353125

Design	APD-Rev 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	182.26

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	
2,397.18	7.94	245.71	2,395.91	-11.31	-25.06	2.00	2.00	0.00	245.71	
6,288.67	7.94	245.71	6,250.06	-232.53	-515.25	0.00	0.00	0.00	0.00	
7,253.86	90.00	179.01	6,847.00	-869.43	-580.71	9.00	8.50	-6.91	-66.90	TPZ-RAMPART A3
16,877.36	90.00	179.01	6,847.00	-10,491.49	-413.68	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 @ 4736.00ft
Project:	Wells Ranch	MD Reference:	KB @ 4736.00ft
Site:	A Section 20	North Reference:	Grid
Well:	Rampart A32-739	Survey Calculation Method:	Minimum Curvature
Wellbore:	Rampart A32-739		
Design:	APD-Rev 1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
442.00	0.00	0.00	442.00	0.00	0.00	0.00	0.00	0.00	0.00
Pierre									
475.00	0.00	0.00	475.00	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
1,512.00	0.00	0.00	1,512.00	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	245.71	2,099.98	-0.72	-1.59	0.78	2.00	2.00	0.00
2,200.00	4.00	245.71	2,199.84	-2.87	-6.36	3.12	2.00	2.00	0.00
2,300.00	6.00	245.71	2,299.45	-6.46	-14.30	7.01	2.00	2.00	0.00
2,397.18	7.94	245.71	2,395.91	-11.31	-25.06	12.29	2.00	2.00	0.00
Hold: 7.94° Inc, 245.71° Azm									
2,400.00	7.94	245.71	2,398.70	-11.47	-25.41	12.46	0.00	0.00	0.00
2,500.00	7.94	245.71	2,497.74	-17.15	-38.01	18.64	0.00	0.00	0.00
2,600.00	7.94	245.71	2,596.78	-22.84	-50.60	24.81	0.00	0.00	0.00
2,700.00	7.94	245.71	2,695.82	-28.52	-63.20	30.99	0.00	0.00	0.00
2,800.00	7.94	245.71	2,794.86	-34.21	-75.80	37.17	0.00	0.00	0.00
2,900.00	7.94	245.71	2,893.90	-39.89	-88.39	43.34	0.00	0.00	0.00
3,000.00	7.94	245.71	2,992.94	-45.58	-100.99	49.52	0.00	0.00	0.00
3,100.00	7.94	245.71	3,091.98	-51.26	-113.59	55.70	0.00	0.00	0.00
3,200.00	7.94	245.71	3,191.03	-56.95	-126.18	61.87	0.00	0.00	0.00
3,300.00	7.94	245.71	3,290.07	-62.63	-138.78	68.05	0.00	0.00	0.00
3,400.00	7.94	245.71	3,389.11	-68.32	-151.38	74.23	0.00	0.00	0.00
3,500.00	7.94	245.71	3,488.15	-74.00	-163.97	80.40	0.00	0.00	0.00
3,600.00	7.94	245.71	3,587.19	-79.69	-176.57	86.58	0.00	0.00	0.00
3,644.24	7.94	245.71	3,631.00	-82.20	-182.14	89.31	0.00	0.00	0.00
Parkman									
3,700.00	7.94	245.71	3,686.23	-85.37	-189.17	92.76	0.00	0.00	0.00
3,800.00	7.94	245.71	3,785.27	-91.05	-201.76	98.93	0.00	0.00	0.00
3,900.00	7.94	245.71	3,884.31	-96.74	-214.36	105.11	0.00	0.00	0.00
4,000.00	7.94	245.71	3,983.35	-102.42	-226.95	111.29	0.00	0.00	0.00
4,100.00	7.94	245.71	4,082.39	-108.11	-239.55	117.46	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

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Project:	Wells Ranch	MD Reference:	KB @ 4736.00ft
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Well:	Rampart A32-739	Survey Calculation Method:	Minimum Curvature
Wellbore:	Rampart A32-739		
Design:	APD-Rev 1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,167.26	7.94	245.71	4,149.00	-111.93	-248.02	121.62	0.00	0.00	0.00
Sussex									
4,200.00	7.94	245.71	4,181.43	-113.79	-252.15	123.64	0.00	0.00	0.00
4,300.00	7.94	245.71	4,280.47	-119.48	-264.74	129.82	0.00	0.00	0.00
4,400.00	7.94	245.71	4,379.51	-125.16	-277.34	135.99	0.00	0.00	0.00
4,500.00	7.94	245.71	4,478.55	-130.85	-289.94	142.17	0.00	0.00	0.00
4,600.00	7.94	245.71	4,577.59	-136.53	-302.53	148.35	0.00	0.00	0.00
4,700.00	7.94	245.71	4,676.63	-142.22	-315.13	154.52	0.00	0.00	0.00
4,800.00	7.94	245.71	4,775.67	-147.90	-327.73	160.70	0.00	0.00	0.00
4,900.00	7.94	245.71	4,874.71	-153.59	-340.32	166.88	0.00	0.00	0.00
5,000.00	7.94	245.71	4,973.75	-159.27	-352.92	173.05	0.00	0.00	0.00
5,007.32	7.94	245.71	4,981.00	-159.69	-353.84	173.51	0.00	0.00	0.00
Shannon									
5,100.00	7.94	245.71	5,072.79	-164.96	-365.52	179.23	0.00	0.00	0.00
5,200.00	7.94	245.71	5,171.83	-170.64	-378.11	185.41	0.00	0.00	0.00
5,300.00	7.94	245.71	5,270.87	-176.33	-390.71	191.58	0.00	0.00	0.00
5,400.00	7.94	245.71	5,369.92	-182.01	-403.31	197.76	0.00	0.00	0.00
5,500.00	7.94	245.71	5,468.96	-187.70	-415.90	203.94	0.00	0.00	0.00
5,600.00	7.94	245.71	5,568.00	-193.38	-428.50	210.11	0.00	0.00	0.00
5,700.00	7.94	245.71	5,667.04	-199.07	-441.10	216.29	0.00	0.00	0.00
5,800.00	7.94	245.71	5,766.08	-204.75	-453.69	222.47	0.00	0.00	0.00
5,900.00	7.94	245.71	5,865.12	-210.43	-466.29	228.64	0.00	0.00	0.00
5,966.52	7.94	245.71	5,931.00	-214.22	-474.67	232.75	0.00	0.00	0.00
Teepee Buttes									
6,000.00	7.94	245.71	5,964.16	-216.12	-478.89	234.82	0.00	0.00	0.00
6,100.00	7.94	245.71	6,063.20	-221.80	-491.48	241.00	0.00	0.00	0.00
6,200.00	7.94	245.71	6,162.24	-227.49	-504.08	247.17	0.00	0.00	0.00
6,288.67	7.94	245.71	6,250.06	-232.53	-515.25	252.65	0.00	0.00	0.00
KOP: Build 9°/100' @ 6288.67' MD									
6,300.00	8.40	239.27	6,261.27	-233.27	-516.67	253.45	9.00	3.99	-56.81
6,350.00	11.31	218.88	6,310.55	-238.96	-522.89	259.37	9.00	5.82	-40.79
6,400.00	15.01	207.55	6,359.23	-248.52	-528.96	269.17	9.00	7.42	-22.65
6,450.00	19.06	200.78	6,407.03	-261.90	-534.86	282.77	9.00	8.09	-13.54
6,500.00	23.27	196.35	6,453.65	-279.02	-540.54	300.10	9.00	8.42	-8.87
6,550.00	27.56	193.22	6,498.81	-299.77	-545.97	321.05	9.00	8.59	-6.26
6,600.00	31.91	190.88	6,542.21	-324.02	-551.11	345.48	9.00	8.70	-4.67
6,650.00	36.30	189.06	6,583.60	-351.63	-555.93	373.26	9.00	8.76	-3.65
6,676.97	38.67	188.22	6,605.00	-367.85	-558.40	389.57	9.00	8.80	-3.09
Sharon Springs									
6,700.00	40.70	187.57	6,622.73	-382.42	-560.41	404.20	9.00	8.82	-2.81
6,715.02	42.03	187.18	6,634.00	-392.26	-561.69	414.09	9.00	8.83	-2.62
Top A Chalk									
6,742.48	44.46	186.51	6,654.00	-410.94	-563.93	432.84	9.00	8.84	-2.44
Top A Marl									
6,750.00	45.12	186.34	6,659.34	-416.20	-564.52	438.12	9.00	8.85	-2.31
6,800.00	49.55	185.28	6,693.21	-452.77	-568.23	474.81	9.00	8.86	-2.12
6,850.00	53.99	184.35	6,724.14	-491.90	-571.51	514.04	9.00	8.88	-1.86
6,890.67	57.61	183.67	6,747.00	-525.46	-573.86	547.66	9.00	8.89	-1.67
Top B Chalk									
6,900.00	58.44	183.52	6,751.94	-533.35	-574.36	555.57	9.00	8.90	-1.59
6,950.00	62.89	182.77	6,776.43	-576.87	-576.74	599.14	9.00	8.90	-1.51
6,957.93	63.60	182.65	6,780.00	-583.94	-577.08	606.23	9.00	8.91	-1.43
Top B Marl									

Noble Energy, Inc.

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Site:	A Section 20	North Reference:	Grid
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Wellbore:	Rampart A32-739		
Design:	APD-Rev 1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
7,000.00	67.35	182.07	6,797.46	-622.17	-578.65	644.49	9.00	8.91	-1.38
7,050.00	71.81	181.42	6,814.90	-669.00	-580.07	691.33	9.00	8.92	-1.30
7,081.51	74.62	181.03	6,824.00	-699.15	-580.72	721.49	9.00	8.92	-1.25
Top C Chalk									
7,100.00	76.27	180.80	6,828.65	-717.05	-581.00	739.38	9.00	8.92	-1.22
7,150.00	80.73	180.20	6,838.62	-766.03	-581.43	788.34	9.00	8.92	-1.19
7,200.00	85.19	179.62	6,844.74	-815.64	-581.35	837.91	9.00	8.93	-1.16
7,253.86	90.00	179.01	6,847.00	-869.43	-580.71	891.63	9.00	8.93	-1.15
TPZ/LP: 7253.86' MD, 90.00° Inc, 179.01° Azm									
7,300.00	90.00	179.01	6,847.00	-915.57	-579.91	937.70	0.00	0.00	0.00
7,400.00	90.00	179.01	6,847.00	-1,015.55	-578.17	1,037.54	0.00	0.00	0.00
7,500.00	90.00	179.01	6,847.00	-1,115.54	-576.44	1,137.38	0.00	0.00	0.00
7,600.00	90.00	179.01	6,847.00	-1,215.52	-574.70	1,237.22	0.00	0.00	0.00
7,700.00	90.00	179.01	6,847.00	-1,315.51	-572.97	1,337.06	0.00	0.00	0.00
7,800.00	90.00	179.01	6,847.00	-1,415.49	-571.23	1,436.90	0.00	0.00	0.00
7,900.00	90.00	179.01	6,847.00	-1,515.48	-569.49	1,536.74	0.00	0.00	0.00
8,000.00	90.00	179.01	6,847.00	-1,615.46	-567.76	1,636.58	0.00	0.00	0.00
8,100.00	90.00	179.01	6,847.00	-1,715.45	-566.02	1,736.41	0.00	0.00	0.00
8,200.00	90.00	179.01	6,847.00	-1,815.43	-564.29	1,836.25	0.00	0.00	0.00
8,300.00	90.00	179.01	6,847.00	-1,915.42	-562.55	1,936.09	0.00	0.00	0.00
8,400.00	90.00	179.01	6,847.00	-2,015.40	-560.82	2,035.93	0.00	0.00	0.00
8,500.00	90.00	179.01	6,847.00	-2,115.39	-559.08	2,135.77	0.00	0.00	0.00
8,600.00	90.00	179.01	6,847.00	-2,215.37	-557.34	2,235.61	0.00	0.00	0.00
8,700.00	90.00	179.01	6,847.00	-2,315.36	-555.61	2,335.45	0.00	0.00	0.00
8,800.00	90.00	179.01	6,847.00	-2,415.34	-553.87	2,435.29	0.00	0.00	0.00
8,900.00	90.00	179.01	6,847.00	-2,515.32	-552.14	2,535.13	0.00	0.00	0.00
9,000.00	90.00	179.01	6,847.00	-2,615.31	-550.40	2,634.96	0.00	0.00	0.00
9,100.00	90.00	179.01	6,847.00	-2,715.29	-548.67	2,734.80	0.00	0.00	0.00
9,200.00	90.00	179.01	6,847.00	-2,815.28	-546.93	2,834.64	0.00	0.00	0.00
9,300.00	90.00	179.01	6,847.00	-2,915.26	-545.20	2,934.48	0.00	0.00	0.00
9,400.00	90.00	179.01	6,847.00	-3,015.25	-543.46	3,034.32	0.00	0.00	0.00
9,500.00	90.00	179.01	6,847.00	-3,115.23	-541.72	3,134.16	0.00	0.00	0.00
9,600.00	90.00	179.01	6,847.00	-3,215.22	-539.99	3,234.00	0.00	0.00	0.00
9,700.00	90.00	179.01	6,847.00	-3,315.20	-538.25	3,333.84	0.00	0.00	0.00
9,800.00	90.00	179.01	6,847.00	-3,415.19	-536.52	3,433.68	0.00	0.00	0.00
9,900.00	90.00	179.01	6,847.00	-3,515.17	-534.78	3,533.52	0.00	0.00	0.00
10,000.00	90.00	179.01	6,847.00	-3,615.16	-533.05	3,633.35	0.00	0.00	0.00
10,100.00	90.00	179.01	6,847.00	-3,715.14	-531.31	3,733.19	0.00	0.00	0.00
10,200.00	90.00	179.01	6,847.00	-3,815.13	-529.57	3,833.03	0.00	0.00	0.00
10,300.00	90.00	179.01	6,847.00	-3,915.11	-527.84	3,932.87	0.00	0.00	0.00
10,400.00	90.00	179.01	6,847.00	-4,015.10	-526.10	4,032.71	0.00	0.00	0.00
10,500.00	90.00	179.01	6,847.00	-4,115.08	-524.37	4,132.55	0.00	0.00	0.00
10,600.00	90.00	179.01	6,847.00	-4,215.07	-522.63	4,232.39	0.00	0.00	0.00
10,700.00	90.00	179.01	6,847.00	-4,315.05	-520.90	4,332.23	0.00	0.00	0.00
10,800.00	90.00	179.01	6,847.00	-4,415.04	-519.16	4,432.07	0.00	0.00	0.00
10,900.00	90.00	179.01	6,847.00	-4,515.02	-517.43	4,531.90	0.00	0.00	0.00
11,000.00	90.00	179.01	6,847.00	-4,615.01	-515.69	4,631.74	0.00	0.00	0.00
11,100.00	90.00	179.01	6,847.00	-4,714.99	-513.95	4,731.58	0.00	0.00	0.00
11,200.00	90.00	179.01	6,847.00	-4,814.98	-512.22	4,831.42	0.00	0.00	0.00
11,300.00	90.00	179.01	6,847.00	-4,914.96	-510.48	4,931.26	0.00	0.00	0.00
11,400.00	90.00	179.01	6,847.00	-5,014.95	-508.75	5,031.10	0.00	0.00	0.00
11,500.00	90.00	179.01	6,847.00	-5,114.93	-507.01	5,130.94	0.00	0.00	0.00
11,600.00	90.00	179.01	6,847.00	-5,214.92	-505.28	5,230.78	0.00	0.00	0.00
11,700.00	90.00	179.01	6,847.00	-5,314.90	-503.54	5,330.62	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Rampart A32-739
Company:	Northern Region - DJ Basin	TVD Reference:	KB @ 4736.00ft
Project:	Wells Ranch	MD Reference:	KB @ 4736.00ft
Site:	A Section 20	North Reference:	Grid
Well:	Rampart A32-739	Survey Calculation Method:	Minimum Curvature
Wellbore:	Rampart A32-739		
Design:	APD-Rev 1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
11,800.00	90.00	179.01	6,847.00	-5,414.89	-501.80	5,430.45	0.00	0.00	0.00
11,900.00	90.00	179.01	6,847.00	-5,514.87	-500.07	5,530.29	0.00	0.00	0.00
12,000.00	90.00	179.01	6,847.00	-5,614.86	-498.33	5,630.13	0.00	0.00	0.00
12,100.00	90.00	179.01	6,847.00	-5,714.84	-496.60	5,729.97	0.00	0.00	0.00
12,200.00	90.00	179.01	6,847.00	-5,814.83	-494.86	5,829.81	0.00	0.00	0.00
12,300.00	90.00	179.01	6,847.00	-5,914.81	-493.13	5,929.65	0.00	0.00	0.00
12,400.00	90.00	179.01	6,847.00	-6,014.80	-491.39	6,029.49	0.00	0.00	0.00
12,500.00	90.00	179.01	6,847.00	-6,114.78	-489.66	6,129.33	0.00	0.00	0.00
12,600.00	90.00	179.01	6,847.00	-6,214.77	-487.92	6,229.17	0.00	0.00	0.00
12,700.00	90.00	179.01	6,847.00	-6,314.75	-486.18	6,329.00	0.00	0.00	0.00
12,800.00	90.00	179.01	6,847.00	-6,414.74	-484.45	6,428.84	0.00	0.00	0.00
12,900.00	90.00	179.01	6,847.00	-6,514.72	-482.71	6,528.68	0.00	0.00	0.00
13,000.00	90.00	179.01	6,847.00	-6,614.71	-480.98	6,628.52	0.00	0.00	0.00
13,100.00	90.00	179.01	6,847.00	-6,714.69	-479.24	6,728.36	0.00	0.00	0.00
13,200.00	90.00	179.01	6,847.00	-6,814.68	-477.51	6,828.20	0.00	0.00	0.00
13,300.00	90.00	179.01	6,847.00	-6,914.66	-475.77	6,928.04	0.00	0.00	0.00
13,400.00	90.00	179.01	6,847.00	-7,014.65	-474.03	7,027.88	0.00	0.00	0.00
13,500.00	90.00	179.01	6,847.00	-7,114.63	-472.30	7,127.72	0.00	0.00	0.00
13,600.00	90.00	179.01	6,847.00	-7,214.62	-470.56	7,227.56	0.00	0.00	0.00
13,700.00	90.00	179.01	6,847.00	-7,314.60	-468.83	7,327.39	0.00	0.00	0.00
13,800.00	90.00	179.01	6,847.00	-7,414.59	-467.09	7,427.23	0.00	0.00	0.00
13,900.00	90.00	179.01	6,847.00	-7,514.57	-465.36	7,527.07	0.00	0.00	0.00
14,000.00	90.00	179.01	6,847.00	-7,614.56	-463.62	7,626.91	0.00	0.00	0.00
14,100.00	90.00	179.01	6,847.00	-7,714.54	-461.89	7,726.75	0.00	0.00	0.00
14,200.00	90.00	179.01	6,847.00	-7,814.53	-460.15	7,826.59	0.00	0.00	0.00
14,300.00	90.00	179.01	6,847.00	-7,914.51	-458.41	7,926.43	0.00	0.00	0.00
14,400.00	90.00	179.01	6,847.00	-8,014.50	-456.68	8,026.27	0.00	0.00	0.00
14,500.00	90.00	179.01	6,847.00	-8,114.48	-454.94	8,126.11	0.00	0.00	0.00
14,600.00	90.00	179.01	6,847.00	-8,214.47	-453.21	8,225.94	0.00	0.00	0.00
14,700.00	90.00	179.01	6,847.00	-8,314.45	-451.47	8,325.78	0.00	0.00	0.00
14,800.00	90.00	179.01	6,847.00	-8,414.44	-449.74	8,425.62	0.00	0.00	0.00
14,900.00	90.00	179.01	6,847.00	-8,514.42	-448.00	8,525.46	0.00	0.00	0.00
15,000.00	90.00	179.01	6,847.00	-8,614.41	-446.26	8,625.30	0.00	0.00	0.00
15,100.00	90.00	179.01	6,847.00	-8,714.39	-444.53	8,725.14	0.00	0.00	0.00
15,200.00	90.00	179.01	6,847.00	-8,814.38	-442.79	8,824.98	0.00	0.00	0.00
15,300.00	90.00	179.01	6,847.00	-8,914.36	-441.06	8,924.82	0.00	0.00	0.00
15,400.00	90.00	179.01	6,847.00	-9,014.35	-439.32	9,024.66	0.00	0.00	0.00
15,500.00	90.00	179.01	6,847.00	-9,114.33	-437.59	9,124.49	0.00	0.00	0.00
15,600.00	90.00	179.01	6,847.00	-9,214.32	-435.85	9,224.33	0.00	0.00	0.00
15,700.00	90.00	179.01	6,847.00	-9,314.30	-434.12	9,324.17	0.00	0.00	0.00
15,800.00	90.00	179.01	6,847.00	-9,414.29	-432.38	9,424.01	0.00	0.00	0.00
15,900.00	90.00	179.01	6,847.00	-9,514.27	-430.64	9,523.85	0.00	0.00	0.00
16,000.00	90.00	179.01	6,847.00	-9,614.26	-428.91	9,623.69	0.00	0.00	0.00
16,100.00	90.00	179.01	6,847.00	-9,714.24	-427.17	9,723.53	0.00	0.00	0.00
16,200.00	90.00	179.01	6,847.00	-9,814.23	-425.44	9,823.37	0.00	0.00	0.00
16,300.00	90.00	179.01	6,847.00	-9,914.21	-423.70	9,923.21	0.00	0.00	0.00
16,400.00	90.00	179.01	6,847.00	-10,014.20	-421.97	10,023.04	0.00	0.00	0.00
16,500.00	90.00	179.01	6,847.00	-10,114.18	-420.23	10,122.88	0.00	0.00	0.00
16,600.00	90.00	179.01	6,847.00	-10,214.17	-418.49	10,222.72	0.00	0.00	0.00
16,700.00	90.00	179.01	6,847.00	-10,314.15	-416.76	10,322.56	0.00	0.00	0.00
16,800.00	90.00	179.01	6,847.00	-10,414.14	-415.02	10,422.40	0.00	0.00	0.00
16,877.36	90.00	179.01	6,847.00	-10,491.49	-413.68	10,499.64	0.00	0.00	0.00
TD @ 16877.36' MD/6847.00' TVD									

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Rampart A32-739
Company:	Northern Region - DJ Basin	TVD Reference:	KB @ 4736.00ft
Project:	Wells Ranch	MD Reference:	KB @ 4736.00ft
Site:	A Section 20	North Reference:	Grid
Well:	Rampart A32-739	Survey Calculation Method:	Minimum Curvature
Wellbore:	Rampart A32-739		
Design:	APD-Rev 1		

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)		
SHL-RAMPART A32- - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	1,413,717.64	3,258,846.09	40.4653293	-104.5696916
KOP-RAMPART A32- - plan hits target center - Point	0.00	0.00	6,250.06	-232.53	-515.25	1,413,485.11	3,258,330.85	40.4647059	-104.5715520
BHL-RAMPART A32- - plan misses target center by 0.02ft at 16877.36ft MD (6847.00 TVD, -10491.49 N, -413.68 E) - Point	0.00	0.00	6,847.00	-10,491.49	-413.67	1,403,226.17	3,258,432.43	40.4365439	-104.5715730
TPZ-RAMPART A32- - plan hits target center - Point	0.00	0.00	6,847.00	-869.43	-580.71	1,412,848.21	3,258,265.39	40.4629596	-104.5718112

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(ft)	(ft)			(°)	(°)	
442.00	442.00	Pierre				
475.00	475.00	Upper Pierre Aquifer Top				
1,512.00	1,512.00	Upper Pierre Aquifer Base				
3,644.24	3,631.00	Parkman				
4,167.26	4,149.00	Sussex				
5,007.32	4,981.00	Shannon				
5,966.52	5,931.00	Teepee Buttes				
6,676.97	6,605.00	Sharon Springs				
6,715.02	6,634.00	Top A Chalk				
6,742.48	6,654.00	Top A Marl				
6,890.67	6,747.00	Top B Chalk				
6,957.93	6,780.00	Top B Marl				
7,081.51	6,824.00	Top C Chalk				

Plan Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)	
2,000.00	2,000.00	0.00	0.00	Build: 2°/100'
2,397.18	2,395.91	-11.31	-25.06	Hold: 7.94° Inc, 245.71° Azm
6,288.67	6,250.06	-232.53	-515.25	KOP: Build 9°/100' @ 6288.67' MD
7,253.86	6,847.00	-869.43	-580.71	TPZ/LP: 7253.86' MD, 90.00° Inc, 179.01° Azm
16,877.36	6,847.00	-10,491.49	-413.68	TD @ 16877.36' MD/6847.00' TVD

Northern Region - DJ Basin

Wells Ranch

A Section 20

Rampart A32-739

Rampart A32-739

APD-Rev 1

Anticollision Summary Report

01 November, 2018

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Rampart A32-739
Project:	Wells Ranch	TVD Reference:	KB @ 4736.00ft
Reference Site:	A Section 20	MD Reference:	KB @ 4736.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Rampart A32-739	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Rampart A32-739	Database:	EDMP
Reference Design:	APD-Rev 1	Offset TVD Reference:	Offset Datum

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

Survey Tool Program	Date	10/31/2018		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	2,001.99	APD-Rev 1 (Rampart A32-739)	2_Gyro-NS-CT_OWSG	A021Ga: Continuous gyro in casing
2,001.99	16,877.36	APD-Rev 1 (Rampart A32-739)	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	1,534.63	1,508.78	769.07	758.84	75.132	CC
Foe 16-20 - Original Drilling - Original Drilling - As Drilled	2,000.00	1,970.47	770.34	756.87	57.178	ES
Foe 16-20 - Original Drilling - Original Drilling - As Drilled	6,450.00	6,379.96	1,378.93	1,339.19	34.696	SF
Foe 33-20 - Original Drilling - Original Drilling - As Drilled	2,003.60	1,987.89	1,461.45	1,447.88	107.741	CC
Foe 33-20 - Original Drilling - Original Drilling - As Drilled	2,300.00	2,284.69	1,462.24	1,447.41	98.618	ES
Foe 33-20 - Original Drilling - Original Drilling - As Drilled	6,450.00	6,421.72	1,626.08	1,586.07	40.638	SF
Foe 34-20 (PA) - Original Drilling - Original Drilling - As D	5,780.81	5,711.07	297.06	167.25	2.288	CC
Foe 34-20 (PA) - Original Drilling - Original Drilling - As D	6,100.00	6,027.20	300.31	163.13	2.189	ES
Foe 34-20 (PA) - Original Drilling - Original Drilling - As D	6,300.00	6,225.27	305.70	163.89	2.156	SF
Foe 43-20 - Original Drilling - Original Drilling - As Drilled	1,739.26	1,732.31	1,944.63	1,932.89	165.543	CC
Foe 43-20 - Original Drilling - Original Drilling - As Drilled	2,100.00	2,121.56	1,945.19	1,930.99	137.003	ES
Foe 43-20 - Original Drilling - Original Drilling - As Drilled	6,500.00	6,416.55	2,456.70	2,416.70	61.420	SF
Linda Rae 1 - Original Drilling - Original Drilling - As Drille	6,652.86	6,594.01	4,268.43	4,221.87	91.685	CC
Linda Rae 1 - Original Drilling - Original Drilling - As Drille	6,700.00	6,630.87	4,268.93	4,221.82	90.624	ES
Linda Rae 1 - Original Drilling - Original Drilling - As Drille	7,253.86	6,856.20	4,359.13	4,307.78	84.894	SF
Rampart A32-721 - Rampart A32-721 - APD-Rev 1	2,019.27	2,020.39	44.97	31.33	3.297	CC
Rampart A32-721 - Rampart A32-721 - APD-Rev 1	2,100.00	2,101.51	45.10	31.18	3.239	ES, SF
Rampart A32-730 - Rampart A32-730 - APD-Rev 0	2,227.99	2,227.74	20.53	6.56	1.469	Level 3, CC, ES, SF
Rampart A32-751 - Rampart A32-751 - APD-Rev 0	2,000.00	2,000.00	22.59	9.02	1.665	CC
Rampart A32-751 - Rampart A32-751 - APD-Rev 0	2,100.00	2,100.18	22.90	8.97	1.644	ES, SF
Rampart A33-780 - Rampart A33-780 - APD-Rev 0	2,000.67	2,001.68	90.01	76.43	6.631	CC, ES
Rampart A33-780 - Rampart A33-780 - APD-Rev 0	2,100.00	2,101.40	90.49	76.56	6.498	SF
Rampart A33-790 - Rampart A33-790 - APD-Rev 0	2,001.27	2,002.29	67.53	53.96	4.975	CC, ES
Rampart A33-790 - Rampart A33-790 - APD-Rev 0	2,100.00	2,101.43	67.92	54.00	4.878	SF
Simmons 42-20D - Original Drilling - Original Drilling - As	2,029.02	2,076.45	3,257.21	3,243.54	238.373	CC, ES
Simmons 42-20D - Original Drilling - Original Drilling - As	6,600.00	6,589.81	3,543.58	3,502.35	85.942	SF
Snider 1-20EG - Original Drilling - Original Drilling - As D	6,449.53	6,359.90	1,442.64	1,402.75	36.162	CC
Snider 1-20EG - Original Drilling - Original Drilling - As D	6,450.00	6,360.31	1,442.64	1,402.75	36.159	ES
Snider 1-20EG - Original Drilling - Original Drilling - As D	6,700.00	6,565.38	1,466.17	1,424.66	35.324	SF
Stump A20-11 - Original Drilling - Original Drilling - As Dr	6,350.78	6,352.63	2,252.23	2,212.66	56.918	CC, ES
Stump A20-11 - Original Drilling - Original Drilling - As Dr	6,650.00	6,673.82	2,303.06	2,261.36	55.228	SF
Stump A20-12 - Original Drilling - Original Drilling - As Dr	6,339.44	6,230.41	3,240.74	3,201.63	82.866	CC
Stump A20-12 - Original Drilling - Original Drilling - As Dr	6,350.00	6,242.60	3,240.79	3,201.61	82.700	ES
Stump A20-12 - Original Drilling - Original Drilling - As Dr	6,850.00	6,775.89	3,366.76	3,324.03	78.795	SF
Stump A20-13 - Original Drilling - Original Drilling - As Dr	6,606.92	6,511.78	2,675.90	2,634.98	65.396	CC, ES
Stump A20-13 - Original Drilling - Original Drilling - As Dr	7,000.00	6,826.35	2,717.67	2,674.28	62.642	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 A32-739
Project:	Wells Ranch	TVD Reference:	KB @ 4736.00ft
Reference Site:	A Section 20	MD Reference:	KB @ 4736.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Rampart A32-739	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Rampart A32-739	Database:	EDMP
Reference Design:	APD-Rev 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						
A Section 20						
Winter 20-19 - Original Drilling - Original Drilling - As Dril	6,502.54	6,476.72	4,663.80	4,621.23	109.554	CC, ES
Winter 20-19 - Original Drilling - Original Drilling - As Dril	7,100.00	6,843.68	4,762.74	4,717.16	104.499	SF
Winter 24-19 - Original Drilling - Original Drilling - As Dril	100.00	59.88	4,827.98	4,827.75	10,000.000	CC
Winter 24-19 - Original Drilling - Original Drilling - As Dril	400.00	328.49	4,829.32	4,827.09	2,160.220	ES
Winter 24-19 - Original Drilling - Original Drilling - As Dril	6,800.00	6,940.00	5,041.85	4,987.57	92.874	SF
Winter 39-19 - Original Drilling - Original Drilling - As Dril	6,511.74	6,576.50	3,482.19	3,434.43	72.900	CC, ES
Winter 39-19 - Original Drilling - Original Drilling - As Dril	7,253.86	6,942.96	3,650.72	3,597.41	68.485	SF
Winter 40-19 - Original Drilling - Original Drilling - As Dril	6,364.87	6,608.59	3,870.71	3,797.94	53.190	CC, ES
Winter 40-19 - Original Drilling - Original Drilling - As Dril	6,600.00	6,848.73	3,894.93	3,820.99	52.678	SF

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Rampart A32-739
Project:	Wells Ranch	TVD Reference:	KB @ 4736.00ft
Reference Site:	A Section 20	MD Reference:	KB @ 4736.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Rampart A32-739	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Rampart A32-739	Database:	EDMP
Reference Design:	APD-Rev 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						
A Section 21						
Culbreath 23-21 - Original Drilling - Original Drilling - As I	1,416.55	1,412.61	3,968.35	3,958.85	417.898	CC
Culbreath 23-21 - Original Drilling - Original Drilling - As I	2,000.00	1,982.34	3,969.74	3,956.22	293.660	ES
Culbreath 23-21 - Original Drilling - Original Drilling - As I	6,900.00	6,759.67	4,738.79	4,696.35	111.660	SF
Culbreath 33-21 (PA) - Original Drilling - Original Drilling	2,000.00	1,982.00	4,924.58	4,878.18	106.138	CC
Culbreath 33-21 (PA) - Original Drilling - Original Drilling	2,100.00	2,081.98	4,926.32	4,877.74	101.417	ES
Culbreath 33-21 (PA) - Original Drilling - Original Drilling	7,000.00	6,779.46	5,687.94	5,533.05	36.723	SF
Harper A21-618 - Original Drilling - APD - Rev 1	2,025.14	2,066.29	2,351.15	2,337.19	168.402	CC
Harper A21-618 - Original Drilling - APD - Rev 1	2,100.00	2,173.72	2,351.59	2,337.14	162.812	ES
Harper A21-618 - Original Drilling - APD - Rev 1	6,550.00	6,250.00	2,875.92	2,836.44	72.838	SF
Harper A21-626 - Original Drilling - APD - Rev 1	2,000.00	2,021.00	2,355.88	2,342.11	171.118	CC, ES
Harper A21-626 - Original Drilling - APD - Rev 1	6,350.00	6,250.00	2,934.33	2,894.95	74.508	SF
Harper A21-631 - Original Drilling - APD - Rev 1	2,000.00	2,021.00	2,360.51	2,346.74	171.453	CC, ES
Harper A21-631 - Original Drilling - APD - Rev 1	6,400.00	6,200.00	3,067.80	3,028.42	77.912	SF
Harper A21-637 - Original Drilling - APD - Rev 1	1,907.81	1,928.81	2,365.57	2,352.45	180.366	CC
Harper A21-637 - Original Drilling - APD - Rev 1	2,000.00	2,018.33	2,365.58	2,351.82	171.941	ES
Harper A21-637 - Original Drilling - APD - Rev 1	6,550.00	6,295.68	3,264.48	3,224.04	80.713	SF
Harper A21-643 - Original Drilling - APD - Rev 1	2,173.95	2,385.48	2,998.73	2,983.53	197.222	CC, ES
Harper A21-643 - Original Drilling - APD - Rev 1	6,350.00	6,200.00	3,330.29	3,291.36	85.547	SF
Harper A21-649 - Original Drilling - APD - Rev 1	2,000.00	2,036.00	3,018.30	3,004.47	218.210	CC, ES
Harper A21-649 - Original Drilling - APD - Rev 1	6,350.00	6,250.00	3,529.36	3,489.98	89.621	SF
Harper A21-656 - Original Drilling - APD - Rev 1	2,000.00	2,036.00	3,043.88	3,030.05	220.058	CC, ES
Harper A21-656 - Original Drilling - APD - Rev 1	6,450.00	6,200.00	3,742.17	3,702.52	94.365	SF
Harper A21-664 - Original Drilling - APD - Rev 2	2,000.00	2,036.00	3,057.80	3,043.97	221.061	CC, ES
Harper A21-664 - Original Drilling - APD - Rev 2	6,600.00	6,039.18	4,132.16	4,092.50	104.201	SF
Harper A21-669 - Original Drilling - APD - Rev 1	2,000.00	2,037.00	3,061.29	3,047.45	221.252	CC, ES
Harper A21-669 - Original Drilling - APD - Rev 1	6,500.00	5,703.90	4,274.64	4,236.59	112.350	SF
Harper A21-674 - Original Drilling - APD - Rev 1	2,000.00	2,037.00	3,075.39	3,061.55	222.269	CC, ES
Harper A21-674 - Original Drilling - APD - Rev 1	6,550.00	5,506.98	4,485.30	4,447.89	119.911	SF
Harper A21-681 - Original Drilling - APD - Rev 1	1,906.24	1,944.24	3,101.41	3,088.24	235.384	CC
Harper A21-681 - Original Drilling - APD - Rev 1	2,000.00	2,023.08	3,101.51	3,087.72	224.970	ES
Harper A21-681 - Original Drilling - APD - Rev 1	6,550.00	5,003.45	4,788.31	4,753.41	137.221	SF
Kona A19-616 - Kona A19-616 - Kona A19-616 - As Drill	6,629.09	9,928.78	399.33	342.84	7.069	CC
Kona A19-616 - Kona A19-616 - Kona A19-616 - As Drill	6,650.00	9,929.98	400.22	342.74	6.964	ES
Kona A19-616 - Kona A19-616 - Kona A19-616 - As Drill	6,700.00	9,932.38	409.38	349.93	6.887	SF
Kona A19-624 - Kona A19-624 - Kona A19-624 - As Drill	6,561.71	10,119.26	920.75	862.89	15.915	CC, ES
Kona A19-624 - Kona A19-624 - Kona A19-624 - As Drill	6,650.00	10,125.79	930.97	871.23	15.584	SF
Kona A19-636 - Kona A19-636 - Kona A19-636 - As Drill	6,428.47	10,516.60	1,610.69	1,545.72	24.791	CC, ES
Kona A19-636 - Kona A19-636 - Kona A19-636 - As Drill	6,550.00	10,532.37	1,626.66	1,560.14	24.453	SF
Kona A19-646 - Original Drilling - Original Drilling - As Dr	6,399.88	10,299.00	2,275.72	2,213.20	36.399	CC
Kona A19-646 - Original Drilling - Original Drilling - As Dr	6,400.00	10,299.00	2,275.72	2,213.20	36.398	ES
Kona A19-646 - Original Drilling - Original Drilling - As Dr	6,500.00	10,299.00	2,285.75	2,222.50	36.135	SF
Kona A19-662 - Original Drilling - Original Drilling - As Dr	1,879.39	1,917.50	3,196.08	3,183.23	248.574	CC
Kona A19-662 - Original Drilling - Original Drilling - As Dr	1,900.00	1,932.53	3,196.10	3,183.12	246.189	ES
Kona A19-662 - Original Drilling - Original Drilling - As Dr	6,650.00	10,203.00	3,382.16	3,319.38	53.872	SF
Kona A19-670 - Kona A19-670 - Original Drilling - As Drill	1,913.46	1,951.51	3,215.83	3,202.77	246.265	CC, ES
Kona A19-670 - Kona A19-670 - Original Drilling - As Drill	6,600.00	10,273.60	3,989.16	3,925.65	62.813	SF
Kona A19-685 - Original Drilling - Original Drilling - As Dr	1,942.48	1,979.59	3,183.42	3,170.18	240.409	CC
Kona A19-685 - Original Drilling - Original Drilling - As Dr	2,000.00	2,018.49	3,183.59	3,170.13	236.417	ES
Kona A19-685 - Original Drilling - Original Drilling - As Dr	6,600.00	11,024.92	4,771.74	4,710.59	78.024	SF
McKee 12-21 (PA) - Original Drilling - Original Drilling - A	2,000.00	2,018.00	3,332.68	3,285.55	70.706	CC
McKee 12-21 (PA) - Original Drilling - Original Drilling - A	2,100.00	2,117.98	3,334.21	3,284.90	67.615	ES
McKee 12-21 (PA) - Original Drilling - Original Drilling - A	6,650.00	6,601.60	3,953.59	3,803.32	26.310	SF
McKee 21-21 (PA) - Original Drilling - Original Drilling - A	2,000.00	2,034.00	5,376.50	5,329.05	113.305	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 A32-739
Project:	Wells Ranch	TVD Reference:	KB @ 4736.00ft
Reference Site:	A Section 20	MD Reference:	KB @ 4736.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Rampart A32-739	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Rampart A32-739	Database:	EDMP
Reference Design:	APD-Rev 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						
A Section 21						
McKee 21-21 (PA) - Original Drilling - Original Drilling - A	2,100.00	2,133.98	5,378.09	5,328.46	108.366	ES
McKee 21-21 (PA) - Original Drilling - Original Drilling - A	6,800.00	6,727.21	6,093.07	5,939.88	39.774	SF
McKee 22-21 - Original Drilling - Original Drilling - As Dril	0.00	11.92	4,357.40			
McKee 22-21 - Original Drilling - Original Drilling - As Dril	1,500.00	1,487.98	4,364.50	4,354.45	434.017	ES
McKee 22-21 - Original Drilling - Original Drilling - As Dril	6,800.00	6,690.04	5,134.33	5,092.43	122.538	SF
McKee 31-21 - Original Drilling - Original Drilling - As Dril	2,033.45	2,129.57	6,428.46	6,414.33	454.912	CC, ES
McKee 31-21 - Original Drilling - Original Drilling - As Dril	6,950.00	7,136.87	7,186.50	7,142.61	163.737	SF
McKee 32-21 - Original Drilling - Original Drilling - As Dril	2,016.89	2,050.35	5,409.22	5,395.30	388.633	CC, ES
McKee 32-21 - Original Drilling - Original Drilling - As Dril	6,950.00	6,801.89	6,241.38	6,198.68	146.160	SF
McKee 41-21 - Original Drilling - Original Drilling - As Dril	0.00	0.00	7,346.65			
McKee 41-21 - Original Drilling - Original Drilling - As Dril	2,029.03	2,106.63	7,355.26	7,341.21	523.292	ES
McKee 41-21 - Original Drilling - Original Drilling - As Dril	7,000.00	6,623.90	8,177.23	8,135.18	194.471	SF
McKee 42-21 - Original Drilling - Original Drilling - As Dril	2,011.65	2,025.54	6,599.86	6,586.18	482.395	CC, ES
McKee 42-21 - Original Drilling - Original Drilling - As Dril	7,100.00	6,883.55	7,407.50	7,364.14	170.827	SF
Rampart A33-730 - Rampart A33-730 - APD-Rev 1	1,908.34	1,928.34	2,478.39	2,465.45	191.537	CC
Rampart A33-730 - Rampart A33-730 - APD-Rev 1	2,000.00	2,000.00	2,478.47	2,464.96	183.463	ES
Rampart A33-730 - Rampart A33-730 - APD-Rev 1	16,877.36	17,720.27	5,873.66	5,692.96	32.505	SF
Rampart A33-740 - Rampart A33-740 - APD-Rev 0	1,907.81	1,928.81	2,455.87	2,442.93	189.799	CC
Rampart A33-740 - Rampart A33-740 - APD-Rev 0	2,000.00	2,000.00	2,455.96	2,442.45	181.798	ES
Rampart A33-740 - Rampart A33-740 - APD-Rev 0	16,877.36	17,515.21	5,226.63	5,046.43	29.004	SF
Rampart A33-750 - Rampart A33-750 - APD-Rev 0	1,907.81	1,928.81	2,433.56	2,420.62	188.075	CC
Rampart A33-750 - Rampart A33-750 - APD-Rev 0	2,000.00	2,000.00	2,433.65	2,420.14	180.146	ES
Rampart A33-750 - Rampart A33-750 - APD-Rev 0	16,877.36	17,093.98	4,555.32	4,375.59	25.345	SF
Rampart A33-760 - Rampart A33-760 - APD-Rev 1	1,908.33	1,928.33	2,411.24	2,398.30	186.347	CC
Rampart A33-760 - Rampart A33-760 - APD-Rev 1	2,000.00	2,000.00	2,411.33	2,397.82	178.493	ES
Rampart A33-760 - Rampart A33-760 - APD-Rev 1	16,877.36	16,956.23	3,920.11	3,740.66	21.845	SF
Rampart A33-770 - Rampart A33-770 - APD-Rev 0	1,907.81	1,928.81	2,388.84	2,375.91	184.619	CC
Rampart A33-770 - Rampart A33-770 - APD-Rev 0	2,000.00	2,015.23	2,388.87	2,375.33	176.474	ES
Rampart A33-770 - Rampart A33-770 - APD-Rev 0	16,877.36	16,811.58	3,233.07	3,053.39	17.994	SF
Sexton 43-21 (PA) - Original Drilling - Original Drilling - A	2,000.00	1,974.00	6,224.27	6,178.03	134.616	CC
Sexton 43-21 (PA) - Original Drilling - Original Drilling - A	2,100.00	2,073.98	6,226.00	6,177.59	128.599	ES
Sexton 43-21 (PA) - Original Drilling - Original Drilling - A	7,050.00	6,788.90	6,992.05	6,836.82	45.044	SF
Wells Trust 13-21 - Original Drilling - Original Drilling - As	553.45	549.46	2,448.69	2,445.24	708.342	CC
Wells Trust 13-21 - Original Drilling - Original Drilling - As	2,013.62	2,021.14	2,449.25	2,435.57	179.095	ES
Wells Trust 13-21 - Original Drilling - Original Drilling - As	6,650.00	6,575.09	3,060.21	3,019.15	74.544	SF
Wells Trust 14-21 - Original Drilling - Original Drilling - As	1,256.01	1,234.03	1,868.84	1,860.55	225.318	CC
Wells Trust 14-21 - Original Drilling - Original Drilling - As	1,600.00	1,568.77	1,869.14	1,858.48	175.292	ES
Wells Trust 14-21 - Original Drilling - Original Drilling - As	6,850.00	6,701.48	2,543.99	2,501.82	60.319	SF
Wells Trust 24-21 - Original Drilling - Original Drilling - As	2,004.83	1,977.26	2,750.30	2,736.80	203.665	CC, ES
Wells Trust 24-21 - Original Drilling - Original Drilling - As	7,000.00	6,728.62	3,437.81	3,395.12	80.535	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 A32-739
Project:	Wells Ranch	TVD Reference:	KB @ 4736.00ft
Reference Site:	A Section 20	MD Reference:	KB @ 4736.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Rampart A32-739	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Rampart A32-739	Database:	EDMP
Reference Design:	APD-Rev 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						
A Section 28						
Ankeney 2-28 (SI) - Wellbore #1 - No Surveys	2,000.00	1,956.00	6,600.07	6,554.19	143.857	CC
Ankeney 2-28 (SI) - Wellbore #1 - No Surveys	9,105.37	6,803.00	6,613.42	6,447.90	39.956	ES
Ankeney 2-28 (SI) - Wellbore #1 - No Surveys	10,600.00	6,803.00	6,780.21	6,605.97	38.913	SF
Ankeney 28-01 (PA) - Wellbore #1 - Gyro Surveys	1,264.69	1,209.72	6,494.61	6,486.36	787.424	CC
Ankeney 28-01 (PA) - Wellbore #1 - Gyro Surveys	1,400.00	1,300.00	6,495.01	6,485.98	718.917	ES
Ankeney 28-01 (PA) - Wellbore #1 - Gyro Surveys	12,200.00	6,752.11	7,383.59	7,315.44	108.336	SF
Art Rohr 1 (PA) - Wellbore #1 - No Surveys	10,116.43	6,798.00	3,900.35	3,728.15	22.650	CC, ES
Art Rohr 1 (PA) - Wellbore #1 - No Surveys	10,600.00	6,798.00	3,930.22	3,755.23	22.460	SF
Danley 1 (TA) - Wellbore #1 - Gyro Surveys	2,016.33	1,999.46	2,451.34	2,437.73	180.139	CC, ES
Danley 1 (TA) - Wellbore #1 - Gyro Surveys	7,800.00	6,787.64	2,944.98	2,899.60	64.891	SF
Danley 12-28 (SI) - Wellbore #1 - Gyro Surveys	8,813.82	6,784.26	2,713.74	2,662.58	53.046	CC, ES
Danley 12-28 (SI) - Wellbore #1 - Gyro Surveys	9,400.00	6,811.33	2,776.21	2,722.32	51.514	SF
Danley 13-28 (PR) - Wellbore #1 - Gyro Surveys	10,134.54	6,746.19	2,665.63	2,605.96	44.672	CC, ES
Danley 13-28 (PR) - Wellbore #1 - Gyro Surveys	10,600.00	6,751.82	2,705.96	2,643.99	43.669	SF
Danley 14-28 (PR) - Wellbore #1 - Gyro Surveys	11,482.05	6,734.59	2,637.93	2,568.42	37.952	CC
Danley 14-28 (PR) - Wellbore #1 - Gyro Surveys	11,500.00	6,735.18	2,637.99	2,568.37	37.892	ES
Danley 14-28 (PR) - Wellbore #1 - Gyro Surveys	11,900.00	6,748.21	2,670.80	2,599.16	37.281	SF
Dewey 21-28 (TA) - Wellbore #1 - Gyro Surveys	691.76	655.76	3,557.12	3,552.82	826.552	CC
Dewey 21-28 (TA) - Wellbore #1 - Gyro Surveys	2,000.00	1,951.03	3,559.76	3,546.36	265.719	ES
Dewey 21-28 (TA) - Wellbore #1 - Gyro Surveys	8,900.00	6,693.16	4,182.90	4,133.27	84.280	SF
Dewey 22-28 (SI) - Wellbore #1 - Gyro Surveys	8,696.30	6,601.51	4,007.99	3,958.37	80.759	CC
Dewey 22-28 (SI) - Wellbore #1 - Gyro Surveys	8,700.00	6,601.66	4,008.00	3,958.35	80.728	ES
Dewey 22-28 (SI) - Wellbore #1 - Gyro Surveys	10,000.00	6,660.51	4,214.26	4,158.14	75.085	SF
Hannan Rohr 1 (PA) - Wellbore #1 - Gyro Surveys	11,516.99	6,771.46	3,933.52	3,863.75	56.383	CC, ES
Hannan Rohr 1 (PA) - Wellbore #1 - Gyro Surveys	12,400.00	6,768.71	4,031.41	3,956.86	54.076	SF
Rohr A 28-25 (SI) - Wellbore #1 - Gyro Surveys	10,629.70	6,680.51	3,449.50	3,386.57	54.820	CC, ES
Rohr A 28-25 (SI) - Wellbore #1 - Gyro Surveys	11,400.00	6,697.41	3,534.42	3,467.42	52.754	SF
Wardlaw 16-28 - Original Drilling - Original Drilling - As D	11,530.17	6,776.00	6,385.85	6,203.74	35.066	CC
Wardlaw 16-28 - Original Drilling - Original Drilling - As D	11,600.00	6,776.00	6,386.23	6,203.64	34.975	ES
Wardlaw 16-28 - Original Drilling - Original Drilling - As D	12,800.00	6,776.00	6,510.88	6,320.73	34.240	SF
Wardlaw 16-28 (SI) - Wellbore #1 - Gyro Surveys	11,489.76	6,730.14	6,407.32	6,337.73	92.081	CC
Wardlaw 16-28 (SI) - Wellbore #1 - Gyro Surveys	11,500.00	6,730.04	6,407.32	6,337.67	91.988	ES
Wardlaw 16-28 (SI) - Wellbore #1 - Gyro Surveys	13,800.00	6,705.49	6,811.04	6,728.39	82.405	SF
Wardlaw 20-28 - Original Drilling - Original Drilling - As D	10,875.65	6,771.00	6,079.05	5,901.92	34.320	CC
Wardlaw 20-28 - Original Drilling - Original Drilling - As D	10,900.00	6,771.00	6,079.10	5,901.81	34.288	ES
Wardlaw 20-28 - Original Drilling - Original Drilling - As D	12,000.00	6,771.00	6,182.16	5,997.97	33.565	SF
Wardlaw 20-28 (SI) - Wellbore #1 - Gyro Surveys	10,842.76	6,734.56	6,088.28	6,023.50	93.980	CC
Wardlaw 20-28 (SI) - Wellbore #1 - Gyro Surveys	10,900.00	6,733.95	6,088.55	6,023.38	93.433	ES
Wardlaw 20-28 (SI) - Wellbore #1 - Gyro Surveys	13,100.00	6,712.66	6,493.21	6,415.84	83.934	SF
Wardlaw 33-28 (PA) - Wellbore #1 - Gyro Surveys	9,661.22	6,000.00	4,826.90	4,774.02	91.287	CC
Wardlaw 33-28 (PA) - Wellbore #1 - Gyro Surveys	9,700.00	6,000.00	4,827.06	4,773.95	90.894	ES
Wardlaw 33-28 (PA) - Wellbore #1 - Gyro Surveys	16,877.36	7,373.84	8,570.47	8,401.40	50.692	SF
Webster 09-28 - Original Drilling - Original Drilling - As D	10,078.31	6,786.00	6,373.49	6,201.80	37.122	CC
Webster 09-28 - Original Drilling - Original Drilling - As D	10,100.00	6,786.00	6,373.53	6,201.70	37.092	ES
Webster 09-28 - Original Drilling - Original Drilling - As D	11,400.00	6,786.00	6,509.09	6,329.29	36.201	SF
Webster 15-28 (SI) - Wellbore #1 - Gyro Surveys	11,406.04	6,728.79	5,070.82	5,001.87	73.545	CC, ES
Webster 15-28 (SI) - Wellbore #1 - Gyro Surveys	15,800.00	15,800.00	6,709.65	6,594.80	58.423	SF
Webster 9-28 (PR) - Wellbore #1 - Gyro Surveys	10,038.81	6,755.96	6,389.19	6,330.10	108.125	CC
Webster 9-28 (PR) - Wellbore #1 - Gyro Surveys	10,100.00	6,755.69	6,389.48	6,330.00	107.416	ES
Webster 9-28 (PR) - Wellbore #1 - Gyro Surveys	12,700.00	6,744.34	6,921.24	6,847.47	93.821	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 A32-739
Project:	Wells Ranch	TVD Reference:	KB @ 4736.00ft
Reference Site:	A Section 20	MD Reference:	KB @ 4736.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Rampart A32-739	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Rampart A32-739	Database:	EDMP
Reference Design:	APD-Rev 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						
A Section 29						
Amos 1 (DA) - Wellbore #1 - No Surveys	10,113.79	3,800.00	3,782.36	3,701.29	46.657	CC, ES
Amos 1 (DA) - Wellbore #1 - No Surveys	11,800.00	3,800.00	4,141.20	4,044.66	42.897	SF
Anderson 3-29 (SI) - Wellbore #1 - Gyro Surveys	7,285.29	6,797.48	1,353.80	1,310.80	31.482	CC, ES
Anderson 3-29 (SI) - Wellbore #1 - Gyro Surveys	7,500.00	6,797.32	1,370.72	1,326.83	31.233	SF
Andy 29-1 (PA) - Wellbore #1 - No Surveys	8,829.21	6,795.00	1,284.73	1,121.08	7.850	CC, ES
Andy 29-1 (PA) - Wellbore #1 - No Surveys	8,900.00	6,795.00	1,286.68	1,122.46	7.835	SF
Andy 29-2 (PA) - Wellbore #1 - Gyro Surveys	8,638.46	6,807.83	2,562.82	2,512.94	51.384	CC, ES
Andy 29-2 (PA) - Wellbore #1 - Gyro Surveys	9,400.00	6,804.27	2,673.57	2,618.86	48.868	SF
Capehart 1 (SI) - Wellbore #1 - Gyro Surveys	8,790.43	6,813.87	90.02	38.90	1.761	CC, ES, SF
Capehart 31-29 (TA) - Wellbore #1 - Gyro Surveys	7,442.23	6,801.96	227.57	183.04	5.111	CC, ES, SF
Capehart 41-29 (TA) - Wellbore #1 - Gyro Surveys	175.17	132.17	1,358.02	1,357.35	2,018.919	CC
Capehart 41-29 (TA) - Wellbore #1 - Gyro Surveys	1,000.00	946.87	1,360.00	1,353.60	212.271	ES
Capehart 41-29 (TA) - Wellbore #1 - Gyro Surveys	7,600.00	6,791.05	1,511.87	1,466.89	33.609	SF
Capehart 42-29 (SI) - Wellbore #1 - Gyro Surveys	8,884.06	6,796.14	1,570.87	1,519.23	30.418	CC
Capehart 42-29 (SI) - Wellbore #1 - Gyro Surveys	8,900.00	6,796.05	1,570.95	1,519.18	30.346	ES
Capehart 42-29 (SI) - Wellbore #1 - Gyro Surveys	9,200.00	6,794.49	1,602.32	1,548.45	29.744	SF
Miller 15-29 (PR) - Wellbore #1 - Gyro Surveys	11,176.03	6,769.30	20.83	-46.03	0.312	Level 1, CC, ES, SF
Miller 16-29 (SI) - Wellbore #1 - Gyro Surveys	11,432.06	6,796.65	1,537.02	1,467.55	22.126	CC, ES
Miller 16-29 (SI) - Wellbore #1 - Gyro Surveys	11,500.00	6,802.04	1,538.52	1,468.72	22.041	SF
Miller 33-29 (SI) - Wellbore #1 - Gyro Surveys	10,188.91	6,821.05	22.45	-37.93	0.372	Level 1, CC, ES, SF
Miller 43-29 (SI) - Wellbore #1 - Gyro Surveys	10,275.27	6,748.65	1,359.79	1,299.12	22.413	CC, ES
Miller 43-29 (SI) - Wellbore #1 - Gyro Surveys	10,400.00	6,747.77	1,365.50	1,304.39	22.345	SF
Rhine 15-29 (PR) - Wellbore #1 - Gyro Surveys	11,200.09	6,771.55	55.27	-12.52	0.815	Level 1, CC, ES, SF
Uhrich 1 (SI) - Wellbore #1 - Gyro Surveys	11,344.60	6,784.96	2,680.55	2,611.84	39.011	CC, ES
Uhrich 1 (SI) - Wellbore #1 - Gyro Surveys	11,900.00	6,779.24	2,737.48	2,664.63	37.579	SF
Uhrich 13-29 (PR) - Wellbore #1 - Gyro Surveys	10,091.22	6,796.37	2,746.48	2,686.86	46.067	CC
Uhrich 13-29 (PR) - Wellbore #1 - Gyro Surveys	10,100.00	6,796.41	2,746.50	2,686.81	46.012	ES
Uhrich 13-29 (PR) - Wellbore #1 - Gyro Surveys	10,800.00	6,799.05	2,836.47	2,771.82	43.880	SF
Uhrich 14-29 (SI) - Wellbore #1 - Gyro Surveys	11,527.38	6,722.91	1,188.46	1,118.44	16.972	CC, ES
Uhrich 14-29 (SI) - Wellbore #1 - Gyro Surveys	11,700.00	6,714.00	1,200.90	1,129.46	16.811	SF
Uhrich 19-29 (SI) - Wellbore #1 - Gyro Surveys	10,873.29	6,781.71	1,819.00	1,753.79	27.893	CC
Uhrich 19-29 (SI) - Wellbore #1 - Gyro Surveys	10,900.00	6,781.24	1,819.20	1,753.74	27.791	ES
Uhrich 19-29 (SI) - Wellbore #1 - Gyro Surveys	11,200.00	6,776.03	1,848.10	1,780.36	27.281	SF
Uhrich 23-29 (SI) - Wellbore #1 - Gyro Surveys	10,425.94	6,778.48	1,127.15	1,065.19	18.191	CC, ES
Uhrich 23-29 (SI) - Wellbore #1 - Gyro Surveys	10,600.00	6,777.32	1,140.51	1,077.09	17.982	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 A32-739
Project:	Wells Ranch	TVD Reference:	KB @ 4736.00ft
Reference Site:	A Section 20	MD Reference:	KB @ 4736.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Rampart A32-739	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Rampart A32-739	Database:	EDMP
Reference Design:	APD-Rev 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						
A Section 32						
Ehrlich 13-32 (PR) - Wellbore #1 - Gyro Surveys	15,252.35	6,841.52	2,727.23	2,627.90	27.456	CC
Ehrlich 13-32 (PR) - Wellbore #1 - Gyro Surveys	15,300.00	6,844.44	2,727.64	2,627.86	27.337	ES
Ehrlich 13-32 (PR) - Wellbore #1 - Gyro Surveys	15,700.00	6,867.25	2,763.58	2,660.88	26.908	SF
Ehrlich 14-32 (TA) - Wellbore #1 - Gyro Surveys	16,635.92	6,823.97	2,629.53	2,519.18	23.828	CC, ES
Ehrlich 14-32 (TA) - Wellbore #1 - Gyro Surveys	16,877.36	6,818.90	2,640.59	2,528.24	23.503	SF
Farmland 10-32 (SI) - Wellbore #1 - Gyro Surveys	15,474.58	6,753.83	58.80	-42.08	0.583	Level 1, CC, ES, SF
Farmland 16-32 (SI) - Wellbore #1 - Gyro Surveys	16,710.36	6,736.99	1,303.95	1,193.30	11.785	CC, ES, SF
Hoffner 1 (PR) - Wellbore #1 - Gyro Surveys	12,733.55	6,761.67	22.94	-56.34	0.289	Level 1, CC, ES, SF
Hoffner 32-32 (SI) - Wellbore #1 - Gyro Surveys	14,069.35	6,745.73	43.69	-46.01	0.487	Level 1, CC, ES, SF
Johnson 5-32 (PR) - Wellbore #1 - Gyro Surveys	14,350.42	6,812.02	2,416.71	2,324.69	26.264	CC, ES
Johnson 5-32 (PR) - Wellbore #1 - Gyro Surveys	14,700.00	6,821.09	2,441.84	2,347.12	25.778	SF
Johnson A 32-06 (PR) - Wellbore #1 - Gyro Surveys	14,225.79	6,778.73	1,173.92	1,082.94	12.903	CC, ES
Johnson A 32-06 (PR) - Wellbore #1 - Gyro Surveys	14,300.00	6,778.91	1,176.26	1,084.55	12.826	SF
Larsen 1 (PR) - Wellbore #1 - Gyro Surveys	12,784.98	6,766.30	1,272.51	1,192.82	15.969	CC, ES
Larsen 1 (PR) - Wellbore #1 - Gyro Surveys	12,800.00	6,766.22	1,272.60	1,192.84	15.957	SF
Larsen 2 (PR) - Wellbore #1 - Gyro Surveys	14,006.27	6,749.85	1,253.46	1,164.25	14.051	CC, ES
Larsen 2 (PR) - Wellbore #1 - Gyro Surveys	14,100.00	6,749.70	1,256.96	1,167.48	14.048	SF
Larsen A32-17 (PR) - Wellbore #1 - MWD Surveys	13,310.61	6,757.66	850.38	766.88	10.185	CC, ES, SF
QC USX A32-19 (PR) - Wellbore #1 - MWD Surveys	13,328.35	6,766.44	1,729.50	1,645.50	20.590	CC, ES
QC USX A32-19 (PR) - Wellbore #1 - MWD Surveys	13,500.00	6,768.89	1,737.99	1,652.50	20.330	SF
Rubix A 32-03 (PR) - Wellbore #1 - Gyro Surveys	12,533.46	6,765.37	1,243.07	1,165.55	16.036	CC, ES
Rubix A 32-03 (PR) - Wellbore #1 - Gyro Surveys	12,700.00	6,767.36	1,254.18	1,175.27	15.894	SF
Rubix A 32-04 (SI) - Wellbore #1 - No Surveys	12,532.89	6,776.00	2,577.07	2,387.29	13.579	CC, ES
Rubix A 32-04 (SI) - Wellbore #1 - No Surveys	12,800.00	6,776.00	2,590.88	2,398.87	13.494	SF
Webster 11-32 (PR) - Wellbore #1 - Gyro Surveys	15,249.15	6,759.16	1,127.79	1,028.70	11.382	CC, ES
Webster 11-32 (PR) - Wellbore #1 - Gyro Surveys	15,300.00	6,759.51	1,128.93	1,029.32	11.333	SF
Webster 14-32 (TA) - Wellbore #1 - Gyro Surveys	16,877.36	6,727.85	1,362.85	1,252.78	12.381	CC, ES, SF
Webster 15-32 (PR) - Wellbore #1 - Gyro Surveys	16,642.42	6,743.51	45.91	-64.35	0.416	Level 1, CC, ES, SF
Webster 9-32 (SI) - Wellbore #1 - Gyro Surveys	15,310.34	6,762.81	1,269.47	1,169.83	12.741	CC, ES
Webster 9-32 (SI) - Wellbore #1 - Gyro Surveys	15,400.00	6,763.96	1,272.63	1,172.74	12.740	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 A32-739
Project:	Wells Ranch	TVD Reference:	KB @ 4736.00ft
Reference Site:	A Section 20	MD Reference:	KB @ 4736.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Rampart A32-739	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Rampart A32-739	Database:	EDMP
Reference Design:	APD-Rev 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						
A Section 33						
Achziger 11-33 (PR) - Wellbore #1 - Gyro Surveys	15,258.40	6,705.18	4,118.73	4,019.70	41.590	CC
Achziger 11-33 (PR) - Wellbore #1 - Gyro Surveys	15,300.00	6,705.68	4,118.94	4,019.62	41.471	ES
Achziger 11-33 (PR) - Wellbore #1 - Gyro Surveys	16,000.00	6,714.66	4,184.95	4,081.86	40.594	SF
Achziger 14-33 (PA) - Wellbore #1 - No Surveys	16,870.53	6,736.00	3,871.59	3,648.14	17.326	CC
Achziger 14-33 (PA) - Wellbore #1 - No Surveys	16,877.36	6,736.00	3,871.60	3,648.10	17.323	ES, SF
Briggs 15-33 (SI) - Wellbore #1 - Gyro Surveys	16,676.49	6,539.97	5,182.16	5,072.52	47.268	CC
Briggs 15-33 (SI) - Wellbore #1 - Gyro Surveys	16,700.00	6,540.01	5,182.21	5,072.40	47.195	ES
Briggs 15-33 (SI) - Wellbore #1 - Gyro Surveys	16,877.36	6,540.33	5,186.05	5,075.02	46.709	SF
Ehrlich 19-33 (PR) - Wellbore #1 - Gyro Survey	16,083.83	6,762.54	3,088.86	2,983.07	29.197	CC
Ehrlich 19-33 (PR) - Wellbore #1 - Gyro Survey	16,100.00	6,762.46	3,088.90	2,983.00	29.168	ES
Ehrlich 19-33 (PR) - Wellbore #1 - Gyro Survey	16,400.00	6,760.94	3,105.00	2,997.49	28.881	SF
French 09-33 - Original Drilling - Original Drilling - As Dril	15,361.53	6,859.70	6,551.92	6,451.48	65.229	CC
French 09-33 - Original Drilling - Original Drilling - As Dril	15,400.00	6,859.14	6,552.04	6,451.31	65.049	ES
French 09-33 - Original Drilling - Original Drilling - As Dril	16,877.36	6,837.33	6,724.95	6,615.44	61.413	SF
Hammerbeck 16-33 - Original Drilling - Original Drilling -	16,780.08	6,895.22	6,598.30	6,486.31	58.922	CC
Hammerbeck 16-33 - Original Drilling - Original Drilling -	16,800.00	6,895.35	6,598.33	6,486.20	58.844	ES
Hammerbeck 16-33 - Original Drilling - Original Drilling -	16,877.36	6,895.82	6,599.02	6,486.32	58.554	SF
Hammerbeck 20-33 - Wellbore #1 - Gyro Surveys	16,046.03	6,855.05	5,841.44	5,735.77	55.280	CC
Hammerbeck 20-33 - Wellbore #1 - Gyro Surveys	16,100.00	6,854.38	5,841.69	5,735.63	55.079	ES
Hammerbeck 20-33 - Wellbore #1 - Gyro Surveys	16,877.36	6,844.82	5,900.29	5,789.36	53.187	SF
Noffsinger 11-33 (PR) - Wellbore #1 - Gyro Surveys	12,584.04	6,757.35	2,498.28	2,420.21	32.000	CC
Noffsinger 11-33 (PR) - Wellbore #1 - Gyro Surveys	12,600.00	6,757.41	2,498.33	2,420.16	31.961	ES
Noffsinger 11-33 (PR) - Wellbore #1 - Gyro Surveys	12,900.00	6,758.47	2,518.18	2,438.54	31.618	SF
Noffsinger 12-33 (PR) - Wellbore #1 - Gyro Surveys	14,316.37	6,747.60	2,675.00	2,583.44	29.217	CC, ES
Noffsinger 12-33 (PR) - Wellbore #1 - Gyro Surveys	14,600.00	6,747.28	2,689.99	2,596.98	28.920	SF
Noffsinger 21-33 (PA) - Wellbore #1 - No Surveys	12,570.22	6,776.00	3,924.19	3,734.37	20.673	CC
Noffsinger 21-33 (PA) - Wellbore #1 - No Surveys	12,600.00	6,776.00	3,924.30	3,734.29	20.652	ES
Noffsinger 21-33 (PA) - Wellbore #1 - No Surveys	13,000.00	6,776.00	3,947.66	3,755.23	20.515	SF
Noffsinger 22-33 (PR) - Wellbore #1 - Gyro Surveys	12,553.21	6,427.71	5,465.70	5,388.92	71.185	CC
Noffsinger 22-33 (PR) - Wellbore #1 - Gyro Surveys	12,600.00	6,426.21	5,465.90	5,388.80	70.892	ES
Noffsinger 22-33 (PR) - Wellbore #1 - Gyro Surveys	14,100.00	6,376.27	5,680.11	5,594.78	66.567	SF
Noffsinger 31-33 (PR) - Wellbore #1 - Gyro Surveys						Out of range
Noffsinger 32-33 (PR) - Wellbore #1 - Gyro Surveys	14,352.29	6,468.49	5,107.57	5,016.84	56.296	CC
Noffsinger 32-33 (PR) - Wellbore #1 - Gyro Surveys	14,400.00	6,469.47	5,107.79	5,016.72	56.087	ES
Noffsinger 32-33 (PR) - Wellbore #1 - Gyro Surveys	15,500.00	6,500.00	5,234.83	5,137.45	53.756	SF
Sitzman 12-33 (PR) - Wellbore #1 - Gyro Surveys	15,397.76	6,733.34	2,530.64	2,430.48	25.267	CC
Sitzman 12-33 (PR) - Wellbore #1 - Gyro Surveys	15,400.00	6,733.34	2,530.64	2,430.47	25.264	ES
Sitzman 12-33 (PR) - Wellbore #1 - Gyro Surveys	15,600.00	6,733.11	2,538.71	2,437.50	25.084	SF
Sitzman 13-33 (SI) - Wellbore #1 - Gyro Surveys	16,877.36	6,742.53	2,522.73	2,410.47	22.471	CC, ES, SF
Sughrue 41-33 - Original Drilling - Original Drilling - As I	12,589.36	7,021.00	6,621.01	6,541.81	83.601	CC
Sughrue 41-33 - Original Drilling - Original Drilling - As I	12,600.00	7,021.00	6,621.02	6,541.74	83.520	ES
Sughrue 41-33 - Original Drilling - Original Drilling - As I	14,800.00	7,021.01	6,980.31	6,888.29	75.860	SF
Webster 10-33 (PA) - Wellbore #1 - Gyro Surveys	15,321.77	6,595.83	5,252.10	5,153.20	53.105	CC, ES
Webster 10-33 (PA) - Wellbore #1 - Gyro Surveys	16,400.00	6,583.07	5,361.62	5,256.56	51.031	SF

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

Noble Energy, Inc.

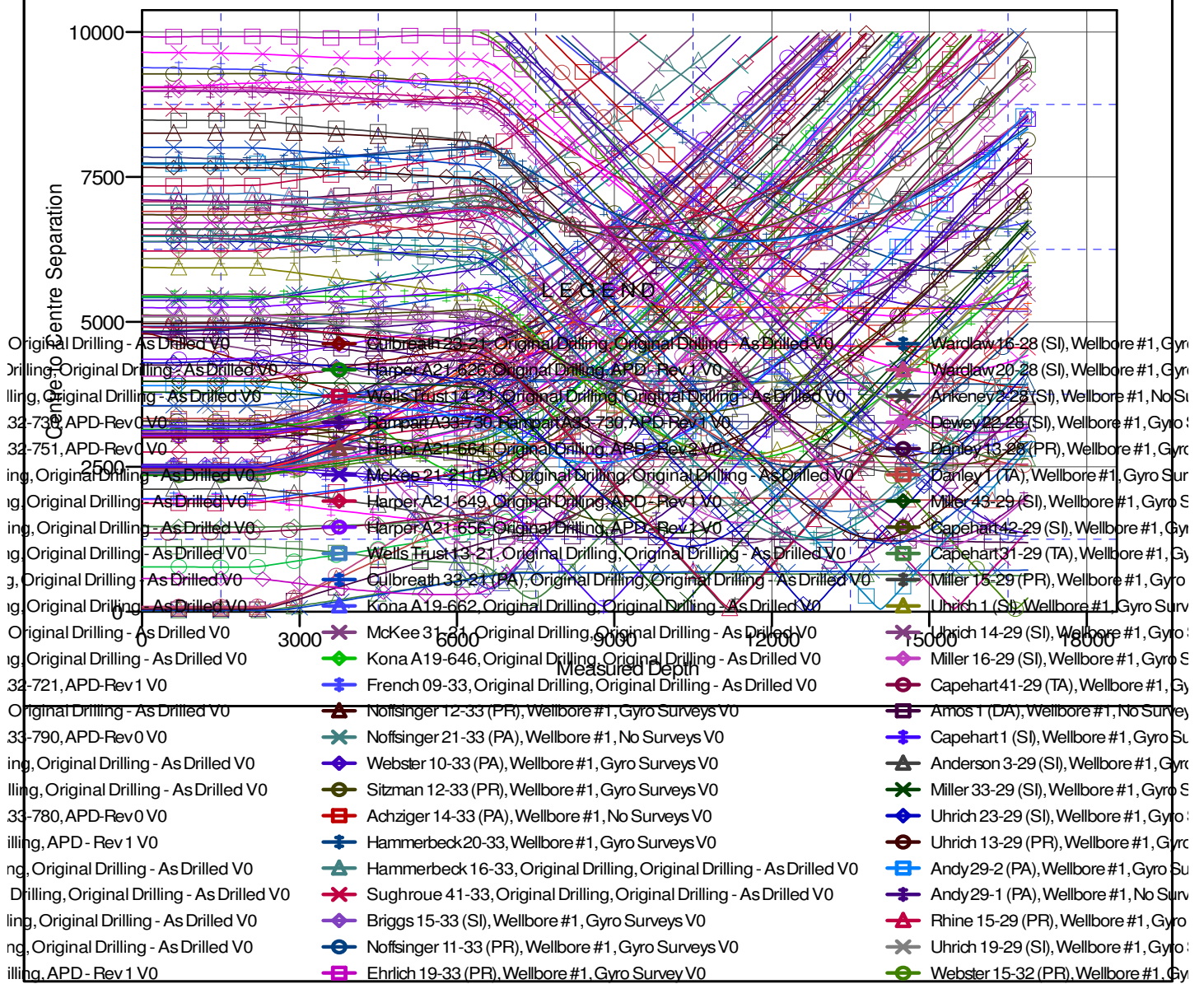
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Rampart A32-739
Project:	Wells Ranch	TVD Reference:	KB @ 4736.00ft
Reference Site:	A Section 20	MD Reference:	KB @ 4736.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Rampart A32-739	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Rampart A32-739	Database:	EDMP
Reference Design:	APD-Rev 1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KB @ 4736.00ft
Offset Depths are relative to Offset Datum
Central Meridian is -105.5000000

Coordinates are relative to: Rampart A32-739
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.60°

Ladder Plot



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

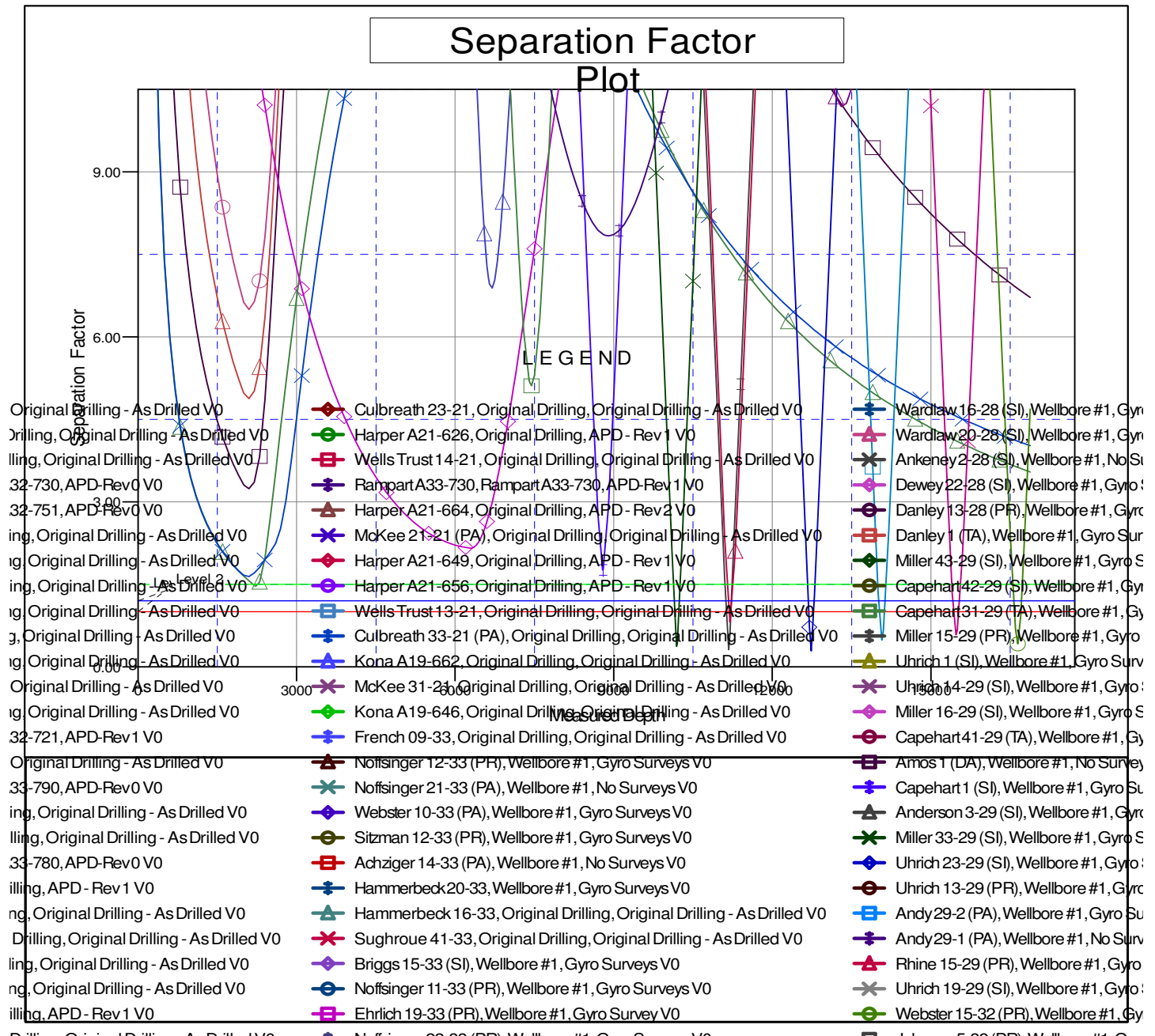
Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Rampart A32-739
Project:	Wells Ranch	TVD Reference:	KB @ 4736.00ft
Reference Site:	A Section 20	MD Reference:	KB @ 4736.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Rampart A32-739	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Rampart A32-739	Database:	EDMP
Reference Design:	APD-Rev 1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KB @ 4736.00ft
 Offset Depths are relative to Offset Datum
 Central Meridian is -105.5000000

Coordinates are relative to: Rampart A32-739
 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