

Project: Wells Ranch
 Site: A Section 21
 Well: Rampart A33-760
 Wellbore: Rampart A33-760
 Design: APD-Rev 1

Northern Region - DJ Basin

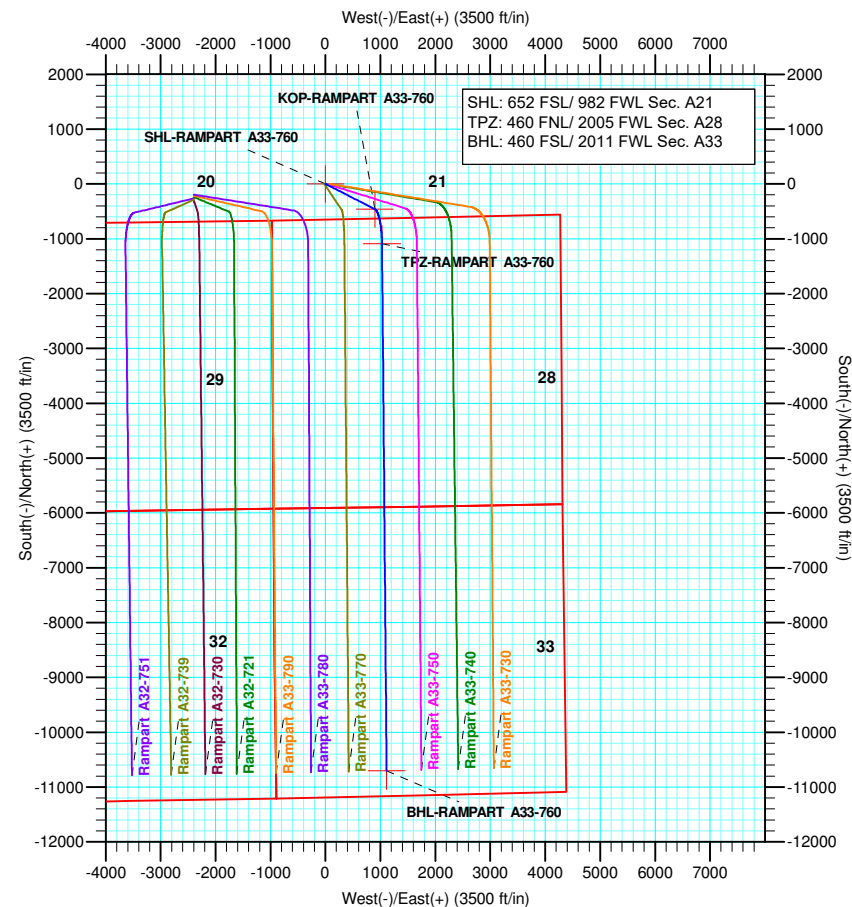
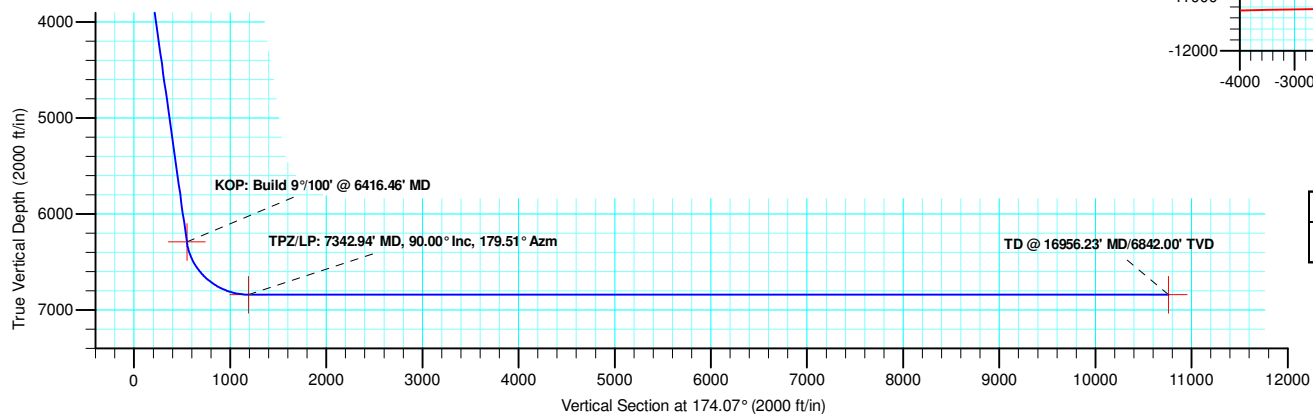
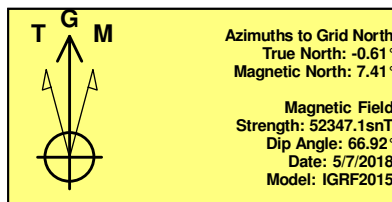
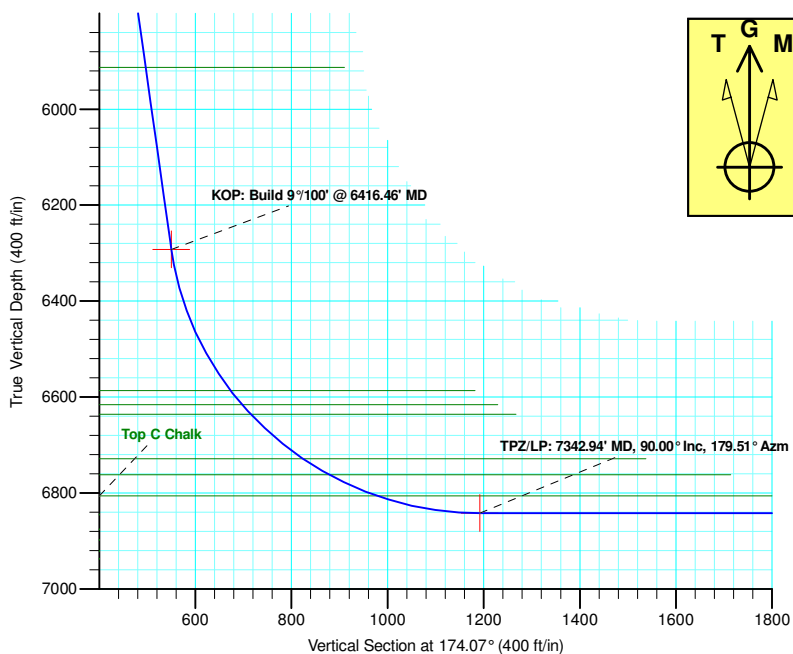
Geodetic System: US State Plane 1983
 Datum: North American Datum 1983
 Ellipsoid: GRS 1980
 Zone: Colorado Northern Zone
 System Datum: Mean Sea Level

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	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	2719.99	14.40	117.11	2712.43	-41.02	80.11	2.00	117.11	49.07
4	6416.46	14.40	117.11	6292.78	-459.95	898.36	0.00	0.00	550.27
5	7342.94	90.00	179.51	6842.00	-1091.23	1028.76	9.00	63.14	1191.64
6	16956.23	90.00	179.51	6842.00	-10704.17	1111.44	0.00	0.00	10761.72

WELL DETAILS: Rampart A33-760

+N/-S	+E/-W	Northing	Ground Level: Easting	4726.00 Latitude	Longitude	Slot
0.00	0.00	1414003.66	3261240.31	40.4660451	-104.5610764	



Plan: APD-Rev 1 (Rampart A33-760/Rampart A33-760)

Created By: Keith Noack Date: 9:25, November 01 2018

Northern Region - DJ Basin

Wells Ranch

A Section 21

Rampart A33-760

Rampart A33-760

Plan: APD-Rev 1

Standard Planning Report

01 November, 2018

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Rampart A33-760
Company:	Northern Region - DJ Basin	TVD Reference:	Well @ 4756.00ft
Project:	Wells Ranch	MD Reference:	Well @ 4756.00ft
Site:	A Section 21	North Reference:	Grid
Well:	Rampart A33-760	Survey Calculation Method:	Minimum Curvature
Wellbore:	Rampart A33-760		
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 21				
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 A33-760					
Well Position	+N/-S	-199.17 ft	Northing:	1,414,003.66 usft	Latitude:	40.4660451
	+E/-W	8.40 ft	Easting:	3,261,240.31 usft	Longitude:	-104.5610764
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,726.00 ft

Wellbore	Rampart A33-760				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	5/7/2018	8.01	66.92	52,347.05110192

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	174.07

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	
2,719.99	14.40	117.11	2,712.43	-41.02	80.11	2.00	2.00	0.00	117.11	
6,416.46	14.40	117.11	6,292.78	-459.95	898.36	0.00	0.00	0.00	0.00	
7,342.94	90.00	179.51	6,842.00	-1,091.23	1,028.76	9.00	8.16	6.73	63.14	TPZ-RAMPART A3
16,956.23	90.00	179.51	6,842.00	-10,704.17	1,111.44	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:	Well @ 4756.00ft
Project:	Wells Ranch	MD Reference:	Well @ 4756.00ft
Site:	A Section 21	North Reference:	Grid
Well:	Rampart A33-760	Survey Calculation Method:	Minimum Curvature
Wellbore:	Rampart A33-760		
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
424.00	0.00	0.00	424.00	0.00	0.00	0.00	0.00	0.00	0.00
Pierre									
495.00	0.00	0.00	495.00	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
1,532.00	0.00	0.00	1,532.00	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	117.11	2,099.98	-0.80	1.55	0.95	2.00	2.00	0.00
2,200.00	4.00	117.11	2,199.84	-3.18	6.21	3.80	2.00	2.00	0.00
2,300.00	6.00	117.11	2,299.45	-7.15	13.97	8.56	2.00	2.00	0.00
2,400.00	8.00	117.11	2,398.70	-12.71	24.82	15.20	2.00	2.00	0.00
2,500.00	10.00	117.11	2,497.47	-19.83	38.74	23.73	2.00	2.00	0.00
2,600.00	12.00	117.11	2,595.62	-28.53	55.72	34.13	2.00	2.00	0.00
2,700.00	14.00	117.11	2,693.06	-38.78	75.75	46.40	2.00	2.00	0.00
2,719.99	14.40	117.11	2,712.43	-41.02	80.11	49.07	2.00	2.00	0.00
Hold: 14.40° Inc, 117.11° Azm									
2,800.00	14.40	117.11	2,789.93	-50.08	97.82	59.92	0.00	0.00	0.00
2,900.00	14.40	117.11	2,886.79	-61.42	119.96	73.48	0.00	0.00	0.00
3,000.00	14.40	117.11	2,983.65	-72.75	142.09	87.04	0.00	0.00	0.00
3,100.00	14.40	117.11	3,080.51	-84.08	164.23	100.60	0.00	0.00	0.00
3,200.00	14.40	117.11	3,177.36	-95.42	186.37	114.15	0.00	0.00	0.00
3,300.00	14.40	117.11	3,274.22	-106.75	208.50	127.71	0.00	0.00	0.00
3,400.00	14.40	117.11	3,371.08	-118.08	230.64	141.27	0.00	0.00	0.00
3,500.00	14.40	117.11	3,467.94	-129.42	252.77	154.83	0.00	0.00	0.00
3,600.00	14.40	117.11	3,564.80	-140.75	274.91	168.39	0.00	0.00	0.00
3,649.77	14.40	117.11	3,613.00	-146.39	285.93	175.14	0.00	0.00	0.00
Parkman									
3,700.00	14.40	117.11	3,661.66	-152.08	297.05	181.95	0.00	0.00	0.00
3,800.00	14.40	117.11	3,758.52	-163.42	319.18	195.51	0.00	0.00	0.00
3,900.00	14.40	117.11	3,855.37	-174.75	341.32	209.07	0.00	0.00	0.00
4,000.00	14.40	117.11	3,952.23	-186.08	363.45	222.63	0.00	0.00	0.00
4,100.00	14.40	117.11	4,049.09	-197.42	385.59	236.18	0.00	0.00	0.00

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Project:	Wells Ranch	MD Reference:	Well @ 4756.00ft
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Well:	Rampart A33-760	Survey Calculation Method:	Minimum Curvature
Wellbore:	Rampart A33-760		
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)
4,184.57	14.40	117.11	4,131.00	-207.00	404.31	247.65	0.00	0.00	0.00
Sussex									
4,200.00	14.40	117.11	4,145.95	-208.75	407.73	249.74	0.00	0.00	0.00
4,300.00	14.40	117.11	4,242.81	-220.08	429.86	263.30	0.00	0.00	0.00
4,400.00	14.40	117.11	4,339.67	-231.42	452.00	276.86	0.00	0.00	0.00
4,500.00	14.40	117.11	4,436.52	-242.75	474.13	290.42	0.00	0.00	0.00
4,600.00	14.40	117.11	4,533.38	-254.08	496.27	303.98	0.00	0.00	0.00
4,700.00	14.40	117.11	4,630.24	-265.42	518.41	317.54	0.00	0.00	0.00
4,800.00	14.40	117.11	4,727.10	-276.75	540.54	331.10	0.00	0.00	0.00
4,900.00	14.40	117.11	4,823.96	-288.08	562.68	344.66	0.00	0.00	0.00
5,000.00	14.40	117.11	4,920.82	-299.42	584.81	358.21	0.00	0.00	0.00
5,043.55	14.40	117.11	4,963.00	-304.35	594.45	364.12	0.00	0.00	0.00
Shannon									
5,100.00	14.40	117.11	5,017.67	-310.75	606.95	371.77	0.00	0.00	0.00
5,200.00	14.40	117.11	5,114.53	-322.08	629.08	385.33	0.00	0.00	0.00
5,300.00	14.40	117.11	5,211.39	-333.42	651.22	398.89	0.00	0.00	0.00
5,400.00	14.40	117.11	5,308.25	-344.75	673.36	412.45	0.00	0.00	0.00
5,500.00	14.40	117.11	5,405.11	-356.08	695.49	426.01	0.00	0.00	0.00
5,600.00	14.40	117.11	5,501.97	-367.42	717.63	439.57	0.00	0.00	0.00
5,700.00	14.40	117.11	5,598.83	-378.75	739.76	453.13	0.00	0.00	0.00
5,800.00	14.40	117.11	5,695.68	-390.08	761.90	466.69	0.00	0.00	0.00
5,900.00	14.40	117.11	5,792.54	-401.42	784.04	480.24	0.00	0.00	0.00
6,000.00	14.40	117.11	5,889.40	-412.75	806.17	493.80	0.00	0.00	0.00
6,024.37	14.40	117.11	5,913.00	-415.51	811.57	497.11	0.00	0.00	0.00
Teepee Buttes									
6,100.00	14.40	117.11	5,986.26	-424.09	828.31	507.36	0.00	0.00	0.00
6,200.00	14.40	117.11	6,083.12	-435.42	850.44	520.92	0.00	0.00	0.00
6,300.00	14.40	117.11	6,179.98	-446.75	872.58	534.48	0.00	0.00	0.00
6,400.00	14.40	117.11	6,276.83	-458.09	894.72	548.04	0.00	0.00	0.00
6,416.46	14.40	117.11	6,292.78	-459.95	898.36	550.27	0.00	0.00	0.00
KOP: Build 9°/100' @ 6416.46' MD									
6,450.00	15.99	126.93	6,325.15	-464.63	905.77	555.69	9.00	4.73	29.28
6,500.00	18.99	138.13	6,372.85	-474.83	916.71	566.97	9.00	6.01	22.39
6,550.00	22.49	146.17	6,419.61	-488.84	927.47	582.01	9.00	6.99	16.08
6,600.00	26.28	152.07	6,465.15	-506.57	937.98	600.73	9.00	7.58	11.80
6,650.00	30.25	156.54	6,509.18	-527.91	948.18	623.02	9.00	7.94	8.95
6,700.00	34.34	160.06	6,551.44	-552.74	958.01	648.72	9.00	8.18	7.02
6,744.06	38.02	162.59	6,587.00	-577.37	966.32	674.08	9.00	8.34	5.74
Sharon Springs									
6,750.00	38.51	162.90	6,591.67	-580.89	967.41	677.69	9.00	8.40	5.21
6,781.70	41.19	164.44	6,616.00	-600.38	973.11	697.67	9.00	8.44	4.87
Top A Chalk									
6,800.00	42.74	165.26	6,629.61	-612.19	976.31	709.75	9.00	8.49	4.47
6,808.76	43.49	165.63	6,636.00	-617.99	977.81	715.67	9.00	8.51	4.27
Top A Marl									
6,850.00	47.02	167.26	6,665.03	-646.46	984.66	744.69	9.00	8.55	3.96
6,900.00	51.32	169.01	6,697.71	-683.47	992.42	782.31	9.00	8.60	3.49
6,950.00	55.64	170.56	6,727.46	-723.01	999.53	822.37	9.00	8.65	3.10
6,952.73	55.88	170.64	6,729.00	-725.24	999.90	824.63	9.00	8.67	2.92
Top B Chalk									
7,000.00	59.99	171.95	6,754.09	-764.83	1,005.95	864.63	9.00	8.69	2.78
7,016.15	61.39	172.38	6,762.00	-778.78	1,007.87	878.70	9.00	8.70	2.63
Top B Marl									

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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)
7,050.00	64.34	173.23	6,777.43	-808.66	1,011.64	908.81	9.00	8.72	2.52
7,100.00	68.71	174.42	6,797.35	-854.24	1,016.56	954.66	9.00	8.73	2.38
7,125.06	70.90	174.99	6,806.00	-877.66	1,018.73	978.18	9.00	8.74	2.27
Top C Chalk									
7,150.00	73.08	175.54	6,813.71	-901.30	1,020.69	1,001.89	9.00	8.75	2.21
7,200.00	77.46	176.61	6,826.42	-949.53	1,023.99	1,050.21	9.00	8.76	2.14
7,250.00	81.85	177.64	6,835.40	-998.64	1,026.46	1,099.31	9.00	8.77	2.06
7,300.00	86.23	178.65	6,840.59	-1,048.33	1,028.07	1,148.90	9.00	8.77	2.02
7,342.94	90.00	179.51	6,842.00	-1,091.23	1,028.76	1,191.64	9.00	8.78	2.00
TPZ/LP: 7342.94' MD, 90.00° Inc, 179.51° Azm									
7,400.00	90.00	179.51	6,842.00	-1,148.29	1,029.25	1,248.45	0.00	0.00	0.00
7,500.00	90.00	179.51	6,842.00	-1,248.29	1,030.11	1,348.00	0.00	0.00	0.00
7,600.00	90.00	179.51	6,842.00	-1,348.29	1,030.97	1,447.55	0.00	0.00	0.00
7,700.00	90.00	179.51	6,842.00	-1,448.28	1,031.83	1,547.10	0.00	0.00	0.00
7,800.00	90.00	179.51	6,842.00	-1,548.28	1,032.69	1,646.65	0.00	0.00	0.00
7,900.00	90.00	179.51	6,842.00	-1,648.27	1,033.55	1,746.20	0.00	0.00	0.00
8,000.00	90.00	179.51	6,842.00	-1,748.27	1,034.41	1,845.75	0.00	0.00	0.00
8,100.00	90.00	179.51	6,842.00	-1,848.27	1,035.27	1,945.30	0.00	0.00	0.00
8,200.00	90.00	179.51	6,842.00	-1,948.26	1,036.13	2,044.85	0.00	0.00	0.00
8,300.00	90.00	179.51	6,842.00	-2,048.26	1,036.99	2,144.40	0.00	0.00	0.00
8,400.00	90.00	179.51	6,842.00	-2,148.26	1,037.85	2,243.95	0.00	0.00	0.00
8,500.00	90.00	179.51	6,842.00	-2,248.25	1,038.71	2,343.50	0.00	0.00	0.00
8,600.00	90.00	179.51	6,842.00	-2,348.25	1,039.57	2,443.06	0.00	0.00	0.00
8,700.00	90.00	179.51	6,842.00	-2,448.24	1,040.43	2,542.61	0.00	0.00	0.00
8,800.00	90.00	179.51	6,842.00	-2,548.24	1,041.29	2,642.16	0.00	0.00	0.00
8,900.00	90.00	179.51	6,842.00	-2,648.24	1,042.15	2,741.71	0.00	0.00	0.00
9,000.00	90.00	179.51	6,842.00	-2,748.23	1,043.01	2,841.26	0.00	0.00	0.00
9,100.00	90.00	179.51	6,842.00	-2,848.23	1,043.87	2,940.81	0.00	0.00	0.00
9,200.00	90.00	179.51	6,842.00	-2,948.23	1,044.73	3,040.36	0.00	0.00	0.00
9,300.00	90.00	179.51	6,842.00	-3,048.22	1,045.59	3,139.91	0.00	0.00	0.00
9,400.00	90.00	179.51	6,842.00	-3,148.22	1,046.45	3,239.46	0.00	0.00	0.00
9,500.00	90.00	179.51	6,842.00	-3,248.21	1,047.31	3,339.01	0.00	0.00	0.00
9,600.00	90.00	179.51	6,842.00	-3,348.21	1,048.17	3,438.56	0.00	0.00	0.00
9,700.00	90.00	179.51	6,842.00	-3,448.21	1,049.03	3,538.11	0.00	0.00	0.00
9,800.00	90.00	179.51	6,842.00	-3,548.20	1,049.89	3,637.66	0.00	0.00	0.00
9,900.00	90.00	179.51	6,842.00	-3,648.20	1,050.75	3,737.21	0.00	0.00	0.00
10,000.00	90.00	179.51	6,842.00	-3,748.20	1,051.61	3,836.76	0.00	0.00	0.00
10,100.00	90.00	179.51	6,842.00	-3,848.19	1,052.47	3,936.31	0.00	0.00	0.00
10,200.00	90.00	179.51	6,842.00	-3,948.19	1,053.33	4,035.86	0.00	0.00	0.00
10,300.00	90.00	179.51	6,842.00	-4,048.19	1,054.19	4,135.41	0.00	0.00	0.00
10,400.00	90.00	179.51	6,842.00	-4,148.18	1,055.05	4,234.96	0.00	0.00	0.00
10,500.00	90.00	179.51	6,842.00	-4,248.18	1,055.91	4,334.51	0.00	0.00	0.00
10,600.00	90.00	179.51	6,842.00	-4,348.17	1,056.77	4,434.06	0.00	0.00	0.00
10,700.00	90.00	179.51	6,842.00	-4,448.17	1,057.63	4,533.61	0.00	0.00	0.00
10,800.00	90.00	179.51	6,842.00	-4,548.17	1,058.49	4,633.16	0.00	0.00	0.00
10,900.00	90.00	179.51	6,842.00	-4,648.16	1,059.35	4,732.71	0.00	0.00	0.00
11,000.00	90.00	179.51	6,842.00	-4,748.16	1,060.21	4,832.26	0.00	0.00	0.00
11,100.00	90.00	179.51	6,842.00	-4,848.16	1,061.07	4,931.82	0.00	0.00	0.00
11,200.00	90.00	179.51	6,842.00	-4,948.15	1,061.93	5,031.37	0.00	0.00	0.00
11,300.00	90.00	179.51	6,842.00	-5,048.15	1,062.79	5,130.92	0.00	0.00	0.00
11,400.00	90.00	179.51	6,842.00	-5,148.14	1,063.65	5,230.47	0.00	0.00	0.00
11,500.00	90.00	179.51	6,842.00	-5,248.14	1,064.51	5,330.02	0.00	0.00	0.00
11,600.00	90.00	179.51	6,842.00	-5,348.14	1,065.37	5,429.57	0.00	0.00	0.00
11,700.00	90.00	179.51	6,842.00	-5,448.13	1,066.23	5,529.12	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Rampart A33-760
Company:	Northern Region - DJ Basin	TVD Reference:	Well @ 4756.00ft
Project:	Wells Ranch	MD Reference:	Well @ 4756.00ft
Site:	A Section 21	North Reference:	Grid
Well:	Rampart A33-760	Survey Calculation Method:	Minimum Curvature
Wellbore:	Rampart A33-760		
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	179.51	6,842.00	-5,548.13	1,067.09	5,628.67	0.00	0.00	0.00
11,900.00	90.00	179.51	6,842.00	-5,648.13	1,067.95	5,728.22	0.00	0.00	0.00
12,000.00	90.00	179.51	6,842.00	-5,748.12	1,068.81	5,827.77	0.00	0.00	0.00
12,100.00	90.00	179.51	6,842.00	-5,848.12	1,069.67	5,927.32	0.00	0.00	0.00
12,200.00	90.00	179.51	6,842.00	-5,948.12	1,070.53	6,026.87	0.00	0.00	0.00
12,300.00	90.00	179.51	6,842.00	-6,048.11	1,071.39	6,126.42	0.00	0.00	0.00
12,400.00	90.00	179.51	6,842.00	-6,148.11	1,072.25	6,225.97	0.00	0.00	0.00
12,500.00	90.00	179.51	6,842.00	-6,248.10	1,073.11	6,325.52	0.00	0.00	0.00
12,600.00	90.00	179.51	6,842.00	-6,348.10	1,073.97	6,425.07	0.00	0.00	0.00
12,700.00	90.00	179.51	6,842.00	-6,448.10	1,074.83	6,524.62	0.00	0.00	0.00
12,800.00	90.00	179.51	6,842.00	-6,548.09	1,075.69	6,624.17	0.00	0.00	0.00
12,900.00	90.00	179.51	6,842.00	-6,648.09	1,076.55	6,723.72	0.00	0.00	0.00
13,000.00	90.00	179.51	6,842.00	-6,748.09	1,077.41	6,823.27	0.00	0.00	0.00
13,100.00	90.00	179.51	6,842.00	-6,848.08	1,078.27	6,922.82	0.00	0.00	0.00
13,200.00	90.00	179.51	6,842.00	-6,948.08	1,079.13	7,022.37	0.00	0.00	0.00
13,300.00	90.00	179.51	6,842.00	-7,048.07	1,079.99	7,121.92	0.00	0.00	0.00
13,400.00	90.00	179.51	6,842.00	-7,148.07	1,080.85	7,221.47	0.00	0.00	0.00
13,500.00	90.00	179.51	6,842.00	-7,248.07	1,081.71	7,321.03	0.00	0.00	0.00
13,600.00	90.00	179.51	6,842.00	-7,348.06	1,082.57	7,420.58	0.00	0.00	0.00
13,700.00	90.00	179.51	6,842.00	-7,448.06	1,083.43	7,520.13	0.00	0.00	0.00
13,800.00	90.00	179.51	6,842.00	-7,548.06	1,084.29	7,619.68	0.00	0.00	0.00
13,900.00	90.00	179.51	6,842.00	-7,648.05	1,085.15	7,719.23	0.00	0.00	0.00
14,000.00	90.00	179.51	6,842.00	-7,748.05	1,086.01	7,818.78	0.00	0.00	0.00
14,100.00	90.00	179.51	6,842.00	-7,848.04	1,086.87	7,918.33	0.00	0.00	0.00
14,200.00	90.00	179.51	6,842.00	-7,948.04	1,087.73	8,017.88	0.00	0.00	0.00
14,300.00	90.00	179.51	6,842.00	-8,048.04	1,088.59	8,117.43	0.00	0.00	0.00
14,400.00	90.00	179.51	6,842.00	-8,148.03	1,089.46	8,216.98	0.00	0.00	0.00
14,500.00	90.00	179.51	6,842.00	-8,248.03	1,090.32	8,316.53	0.00	0.00	0.00
14,600.00	90.00	179.51	6,842.00	-8,348.03	1,091.18	8,416.08	0.00	0.00	0.00
14,700.00	90.00	179.51	6,842.00	-8,448.02	1,092.04	8,515.63	0.00	0.00	0.00
14,800.00	90.00	179.51	6,842.00	-8,548.02	1,092.90	8,615.18	0.00	0.00	0.00
14,900.00	90.00	179.51	6,842.00	-8,648.02	1,093.76	8,714.73	0.00	0.00	0.00
15,000.00	90.00	179.51	6,842.00	-8,748.01	1,094.62	8,814.28	0.00	0.00	0.00
15,100.00	90.00	179.51	6,842.00	-8,848.01	1,095.48	8,913.83	0.00	0.00	0.00
15,200.00	90.00	179.51	6,842.00	-8,948.00	1,096.34	9,013.38	0.00	0.00	0.00
15,300.00	90.00	179.51	6,842.00	-9,048.00	1,097.20	9,112.93	0.00	0.00	0.00
15,400.00	90.00	179.51	6,842.00	-9,148.00	1,098.06	9,212.48	0.00	0.00	0.00
15,500.00	90.00	179.51	6,842.00	-9,247.99	1,098.92	9,312.03	0.00	0.00	0.00
15,600.00	90.00	179.51	6,842.00	-9,347.99	1,099.78	9,411.58	0.00	0.00	0.00
15,700.00	90.00	179.51	6,842.00	-9,447.99	1,100.64	9,511.13	0.00	0.00	0.00
15,800.00	90.00	179.51	6,842.00	-9,547.98	1,101.50	9,610.68	0.00	0.00	0.00
15,900.00	90.00	179.51	6,842.00	-9,647.98	1,102.36	9,710.24	0.00	0.00	0.00
16,000.00	90.00	179.51	6,842.00	-9,747.97	1,103.22	9,809.79	0.00	0.00	0.00
16,100.00	90.00	179.51	6,842.00	-9,847.97	1,104.08	9,909.34	0.00	0.00	0.00
16,200.00	90.00	179.51	6,842.00	-9,947.97	1,104.94	10,008.89	0.00	0.00	0.00
16,300.00	90.00	179.51	6,842.00	-10,047.96	1,105.80	10,108.44	0.00	0.00	0.00
16,400.00	90.00	179.51	6,842.00	-10,147.96	1,106.66	10,207.99	0.00	0.00	0.00
16,500.00	90.00	179.51	6,842.00	-10,247.96	1,107.52	10,307.54	0.00	0.00	0.00
16,600.00	90.00	179.51	6,842.00	-10,347.95	1,108.38	10,407.09	0.00	0.00	0.00
16,700.00	90.00	179.51	6,842.00	-10,447.95	1,109.24	10,506.64	0.00	0.00	0.00
16,800.00	90.00	179.51	6,842.00	-10,547.95	1,110.10	10,606.19	0.00	0.00	0.00
16,900.00	90.00	179.51	6,842.00	-10,647.94	1,110.96	10,705.74	0.00	0.00	0.00
16,956.23	90.00	179.51	6,842.00	-10,704.17	1,111.44	10,761.72	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Rampart A33-760
Company:	Northern Region - DJ Basin	TVD Reference:	Well @ 4756.00ft
Project:	Wells Ranch	MD Reference:	Well @ 4756.00ft
Site:	A Section 21	North Reference:	Grid
Well:	Rampart A33-760	Survey Calculation Method:	Minimum Curvature
Wellbore:	Rampart A33-760		
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)
TD @ 16956.23' MD/6842.00' TVD									

Design Targets									
Target Name	- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	
- Shape									Latitude Longitude
SHL-RAMPART A33- - plan hits target center - Point		0.00	0.01	0.00	0.00	0.00	1,414,003.66	3,261,240.31	40.4660451 -104.5610764
KOP-RAMPART A33- - plan hits target center - Point		0.00	0.00	6,292.78	-459.95	898.36	1,413,543.71	3,262,138.67	40.4647565 -104.5578654
TPZ-RAMPART A33- - plan hits target center - Point		0.00	0.00	6,842.00	-1,091.23	1,028.76	1,412,912.43	3,262,269.06	40.4630199 -104.5574209
BHL-RAMPART A33- - plan hits target center - Point		0.00	0.01	6,842.00	-10,704.17	1,111.44	1,403,299.51	3,262,351.74	40.4366317 -104.5574910

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
424.00	424.00	Pierre				
495.00	495.00	Upper Pierre Aquifer Top				
1,532.00	1,532.00	Upper Pierre Aquifer Base				
3,649.77	3,613.00	Parkman				
4,184.57	4,131.00	Sussex				
5,043.55	4,963.00	Shannon				
6,024.37	5,913.00	Teepee Buttes				
6,744.06	6,587.00	Sharon Springs				
6,781.70	6,616.00	Top A Chalk				
6,808.76	6,636.00	Top A Marl				
6,952.73	6,729.00	Top B Chalk				
7,016.15	6,762.00	Top B Marl				
7,125.06	6,806.00	Top C Chalk				

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
2,000.00	2,000.00	0.00	0.00	Build: 2°/100'
2,719.99	2,712.43	-41.02	80.11	Hold: 14.40° Inc, 117.11° Azm
6,416.46	6,292.78	-459.95	898.36	KOP: Build 9°/100' @ 6416.46' MD
7,342.94	6,842.00	-1,091.23	1,028.76	TPZ/LP: 7342.94' MD, 90.00° Inc, 179.51° Azm
16,956.23	6,842.00	-10,704.17	1,111.44	TD @ 16956.23' MD/6842.00' TVD

Northern Region - DJ Basin

Wells Ranch

A Section 21

Rampart A33-760

Rampart A33-760

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 A33-760
Project:	Wells Ranch	TVD Reference:	Well @ 4756.00ft
Reference Site:	A Section 21	MD Reference:	Well @ 4756.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Rampart A33-760	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Rampart A33-760	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	2,000.00	APD-Rev 1 (Rampart A33-760)	2_Gyro-NS-CT_OWSG	A021Ga: Continuous gyro in casing
2,000.00	16,956.23	APD-Rev 1 (Rampart A33-760)	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	645.64	599.68	1,656.74	1,652.79	418.879	CC
Foe 16-20 - Original Drilling - Original Drilling - As Drilled	800.00	741.28	1,657.18	1,652.20	332.226	ES
Foe 16-20 - Original Drilling - Original Drilling - As Drilled	6,900.00	6,660.27	2,727.82	2,684.61	63.129	SF
Foe 33-20 - Original Drilling - Original Drilling - As Drilled	528.73	492.74	3,095.87	3,092.70	977.477	CC
Foe 33-20 - Original Drilling - Original Drilling - As Drilled	2,000.00	1,957.29	3,101.85	3,088.42	230.990	ES
Foe 33-20 - Original Drilling - Original Drilling - As Drilled	7,000.00	6,783.08	4,321.56	4,277.73	98.612	SF
Foe 34-20 (PA) - Original Drilling - Original Drilling - As D	2,000.00	1,944.00	2,975.75	2,930.12	65.208	CC
Foe 34-20 (PA) - Original Drilling - Original Drilling - As D	2,100.00	2,043.98	2,977.24	2,929.43	62.270	ES
Foe 34-20 (PA) - Original Drilling - Original Drilling - As D	7,150.00	6,757.71	4,046.33	3,890.10	25.901	SF
Foe 43-20 - Original Drilling - Original Drilling - As Drilled	335.58	308.68	2,100.28	2,098.43	1,134.774	CC
Foe 43-20 - Original Drilling - Original Drilling - As Drilled	1,700.00	1,663.71	2,101.87	2,090.51	185.079	ES
Foe 43-20 - Original Drilling - Original Drilling - As Drilled	6,650.00	6,490.73	3,138.00	3,096.51	75.631	SF
Linda Rae 1 - Original Drilling - Original Drilling - As Drille	359.70	304.71	7,177.11	7,175.19	3,740.641	CC
Linda Rae 1 - Original Drilling - Original Drilling - As Drille	2,000.00	1,932.96	7,178.70	7,165.37	538.548	ES
Linda Rae 1 - Original Drilling - Original Drilling - As Drille	11,400.00	6,880.08	9,741.24	9,672.09	140.877	SF
Rampart A32-721 - Rampart A32-721 - APD-Rev 1	2,507.56	2,845.22	2,381.10	2,366.56	163.733	CC, ES
Rampart A32-721 - Rampart A32-721 - APD-Rev 1	16,956.23	16,864.70	2,725.25	2,545.83	15.190	SF
Rampart A32-730 - Rampart A32-730 - APD-Rev 0	2,000.00	1,980.00	2,413.83	2,400.39	179.600	CC, ES
Rampart A32-730 - Rampart A32-730 - APD-Rev 0	16,956.23	16,763.48	3,297.23	3,118.68	18.467	SF
Rampart A32-739 - Rampart A32-739 - APD-Rev 1	2,000.00	1,980.00	2,411.24	2,397.80	179.410	CC, ES
Rampart A32-739 - Rampart A32-739 - APD-Rev 1	16,956.23	16,872.07	3,920.10	3,740.70	21.850	SF
Rampart A32-751 - Rampart A32-751 - APD-Rev 0	2,000.00	1,980.00	2,408.82	2,395.38	179.231	CC, ES
Rampart A32-751 - Rampart A32-751 - APD-Rev 0	16,956.23	16,922.75	4,635.48	4,456.30	25.871	SF
Rampart A33-780 - Rampart A33-780 - APD-Rev 0	7,352.66	7,709.01	1,345.65	1,298.79	28.720	CC
Rampart A33-780 - Rampart A33-780 - APD-Rev 0	16,956.23	17,292.82	1,375.11	1,194.14	7.598	ES, SF
Rampart A33-790 - Rampart A33-790 - APD-Rev 0	6,343.25	6,880.05	1,978.15	1,938.38	49.743	CC
Rampart A33-790 - Rampart A33-790 - APD-Rev 0	16,956.23	16,977.84	2,010.48	1,830.95	11.198	ES, SF
Simmons 42-20D - Original Drilling - Original Drilling - As	1,703.68	1,708.38	3,090.82	3,079.54	273.930	CC
Simmons 42-20D - Original Drilling - Original Drilling - As	2,000.00	1,982.63	3,092.03	3,078.73	232.450	ES
Simmons 42-20D - Original Drilling - Original Drilling - As	6,750.00	6,644.05	4,173.78	4,130.74	96.984	SF
Snider 1-20EG - Original Drilling - Original Drilling - As D	1,303.87	1,249.90	4,309.90	4,301.38	505.717	CC
Snider 1-20EG - Original Drilling - Original Drilling - As D	2,023.73	2,001.34	4,310.24	4,296.62	316.658	ES
Snider 1-20EG - Original Drilling - Original Drilling - As D	8,500.00	6,715.16	5,762.50	5,714.32	119.605	SF
Stump A20-11 - Original Drilling - Original Drilling - As Dr	201.13	155.13	4,639.12	4,638.27	5,479.719	CC
Stump A20-11 - Original Drilling - Original Drilling - As Dr	2,039.49	2,055.91	4,642.08	4,628.25	335.599	ES
Stump A20-11 - Original Drilling - Original Drilling - As Dr	7,250.00	7,041.37	5,852.32	5,806.68	128.234	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 A33-760
Project:	Wells Ranch	TVD Reference:	Well @ 4756.00ft
Reference Site:	A Section 21	MD Reference:	Well @ 4756.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Rampart A33-760	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Rampart A33-760	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						
Stump A20-12 - Original Drilling - Original Drilling - As Dr	2,009.62	1,981.26	5,672.43	5,658.91	419.529	CC, ES
Stump A20-12 - Original Drilling - Original Drilling - As Dr	7,250.00	7,012.22	6,942.01	6,896.55	152.700	SF
Stump A20-13 - Original Drilling - Original Drilling - As Dr	2,044.18	2,066.59	5,591.81	5,577.93	403.061	CC, ES
Stump A20-13 - Original Drilling - Original Drilling - As Dr	10,200.00	6,821.21	7,651.03	7,595.33	137.364	SF
Winter 20-19 - Original Drilling - Original Drilling - As Dril	351.99	300.00	7,228.92	7,227.04	3,845.699	CC
Winter 20-19 - Original Drilling - Original Drilling - As Dril	400.00	325.30	7,228.99	7,226.84	3,373.217	ES
Winter 20-19 - Original Drilling - Original Drilling - As Dril	10,800.00	6,798.93	9,968.28	9,908.64	167.155	SF
Winter 24-19 - Original Drilling - Original Drilling - As Dril	100.00	41.96	7,213.90	7,213.70	10,000.000	CC
Winter 24-19 - Original Drilling - Original Drilling - As Dril	500.00	389.26	7,215.23	7,212.38	2,531.358	ES
Winter 24-19 - Original Drilling - Original Drilling - As Dril	7,150.00	7,039.07	8,753.71	8,695.57	150.558	SF
Winter 39-19 - Original Drilling - Original Drilling - As Dril	2,592.56	3,900.00	6,530.14	6,503.64	246.420	CC, ES
Winter 39-19 - Original Drilling - Original Drilling - As Dril	10,900.00	6,920.63	8,902.24	8,833.22	128.974	SF
Winter 40-19 - Original Drilling - Original Drilling - As Dril	2,618.20	4,200.00	6,768.80	6,724.90	154.171	CC, ES
Winter 40-19 - Original Drilling - Original Drilling - As Dril	7,250.00	7,115.44	7,645.27	7,569.59	101.020	SF

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Rampart A33-760
Project:	Wells Ranch	TVD Reference:	Well @ 4756.00ft
Reference Site:	A Section 21	MD Reference:	Well @ 4756.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Rampart A33-760	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Rampart A33-760	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
A Section 21						
Culbreath 23-21 - Original Drilling - Original Drilling - As Drilled	3,597.82	3,496.07	1,785.57	1,764.31	83.994	CC
Culbreath 23-21 - Original Drilling - Original Drilling - As Drilled	3,700.00	3,587.50	1,785.97	1,764.11	81.720	ES
Culbreath 23-21 - Original Drilling - Original Drilling - As Drilled	6,600.00	6,444.52	1,947.53	1,905.79	46.666	SF
Culbreath 33-21 (PA) - Original Drilling - Original Drilling	6,451.73	6,288.81	2,236.21	2,091.40	15.442	CC, ES
Culbreath 33-21 (PA) - Original Drilling - Original Drilling	6,700.00	6,513.44	2,276.46	2,126.17	15.147	SF
Harper A21-618 - Original Drilling - APD - Rev 1	2,169.03	2,181.09	218.08	203.58	15.048	CC, ES
Harper A21-618 - Original Drilling - APD - Rev 1	6,750.00	7,618.42	555.59	510.43	12.302	SF
Harper A21-626 - Original Drilling - APD - Rev 1	2,000.00	2,001.00	239.52	225.79	17.457	CC, ES
Harper A21-626 - Original Drilling - APD - Rev 1	2,200.00	2,200.84	244.91	230.27	16.736	SF
Harper A21-631 - Original Drilling - APD - Rev 1	2,000.00	2,001.00	259.99	246.26	18.948	CC, ES
Harper A21-631 - Original Drilling - APD - Rev 1	2,200.00	2,200.84	265.23	250.60	18.124	SF
Harper A21-637 - Original Drilling - APD - Rev 1	2,000.00	2,001.00	281.63	267.91	20.525	CC, ES
Harper A21-637 - Original Drilling - APD - Rev 1	2,100.00	2,092.21	284.46	270.24	20.003	SF
Harper A21-643 - Original Drilling - APD - Rev 1	1,910.79	1,925.79	1,601.61	1,588.47	121.866	CC
Harper A21-643 - Original Drilling - APD - Rev 1	2,000.00	2,014.49	1,601.61	1,587.84	116.295	ES
Harper A21-643 - Original Drilling - APD - Rev 1	6,600.00	7,806.29	2,161.34	2,114.51	46.153	SF
Harper A21-649 - Original Drilling - APD - Rev 1	2,000.00	2,016.00	1,623.60	1,609.82	117.835	CC, ES
Harper A21-649 - Original Drilling - APD - Rev 1	6,650.00	7,911.43	2,546.12	2,498.75	53.751	SF
Harper A21-656 - Original Drilling - APD - Rev 1	2,000.00	2,016.00	1,648.43	1,634.65	119.637	CC, ES
Harper A21-656 - Original Drilling - APD - Rev 1	6,650.00	7,879.21	2,874.52	2,827.01	60.504	SF
Harper A21-664 - Original Drilling - APD - Rev 2	2,000.00	2,016.00	1,670.43	1,656.65	121.234	CC, ES
Harper A21-664 - Original Drilling - APD - Rev 2	6,750.00	8,103.14	3,449.13	3,400.23	70.531	SF
Harper A21-669 - Original Drilling - APD - Rev 1	2,000.00	2,017.00	1,691.58	1,677.80	122.737	CC, ES
Harper A21-669 - Original Drilling - APD - Rev 1	6,450.00	5,202.85	3,455.49	3,420.28	98.127	SF
Harper A21-674 - Original Drilling - APD - Rev 1	2,000.00	2,017.00	1,713.58	1,699.80	124.333	CC, ES
Harper A21-674 - Original Drilling - APD - Rev 1	6,500.00	5,042.23	3,661.45	3,626.85	105.838	SF
Harper A21-681 - Original Drilling - APD - Rev 1	1,909.35	1,927.35	1,738.43	1,725.28	132.270	CC
Harper A21-681 - Original Drilling - APD - Rev 1	2,000.00	2,000.00	1,738.52	1,724.80	126.708	ES
Harper A21-681 - Original Drilling - APD - Rev 1	6,500.00	4,804.11	3,844.93	3,811.51	115.054	SF
Kona A19-616 - Kona A19-616 - Kona A19-616 - As Drilled	2,685.78	2,695.53	182.91	169.45	13.585	CC
Kona A19-616 - Kona A19-616 - Kona A19-616 - As Drilled	2,700.00	2,709.60	182.93	169.43	13.547	ES
Kona A19-616 - Kona A19-616 - Kona A19-616 - As Drilled	3,600.00	3,604.16	221.75	204.49	12.845	SF
Kona A19-624 - Kona A19-624 - Kona A19-624 - As Drilled	100.00	96.85	230.73	230.46	861.745	CC
Kona A19-624 - Kona A19-624 - Kona A19-624 - As Drilled	2,000.00	1,994.65	239.65	227.08	19.056	ES
Kona A19-624 - Kona A19-624 - Kona A19-624 - As Drilled	2,100.00	2,092.02	241.91	229.14	18.940	SF
Kona A19-636 - Kona A19-636 - Kona A19-636 - As Drilled	0.00	0.00	276.37			
Kona A19-636 - Kona A19-636 - Kona A19-636 - As Drilled	2,200.00	2,182.87	298.33	286.02	24.228	SF
Kona A19-646 - Original Drilling - Original Drilling - As Drilled	2,031.40	2,054.55	1,616.89	1,603.40	119.881	CC, ES
Kona A19-646 - Original Drilling - Original Drilling - As Drilled	6,500.00	6,282.03	2,220.66	2,185.23	62.684	SF
Kona A19-662 - Original Drilling - Original Drilling - As Drilled	2,047.35	2,076.88	1,714.43	1,700.89	126.634	CC, ES
Kona A19-662 - Original Drilling - Original Drilling - As Drilled	6,500.00	5,852.00	3,055.65	3,021.47	89.393	SF
Kona A19-670 - Kona A19-670 - Original Drilling - As Drilled	1,985.21	2,003.29	1,737.17	1,723.79	129.876	CC
Kona A19-670 - Kona A19-670 - Original Drilling - As Drilled	2,000.00	2,010.41	1,737.20	1,723.77	129.368	ES
Kona A19-670 - Kona A19-670 - Original Drilling - As Drilled	6,500.00	5,599.66	3,393.92	3,359.79	99.417	SF
Kona A19-685 - Original Drilling - Original Drilling - As Drilled	2,003.50	2,021.43	1,689.59	1,676.10	125.285	CC, ES
Kona A19-685 - Original Drilling - Original Drilling - As Drilled	7,500.00	7,500.00	4,423.89	4,381.00	103.131	SF
McKee 12-21 (PA) - Original Drilling - Original Drilling - As Drilled	2,000.00	1,998.00	2,423.21	2,376.47	51.840	CC
McKee 12-21 (PA) - Original Drilling - Original Drilling - As Drilled	2,100.00	2,097.98	2,424.26	2,375.34	49.554	ES
McKee 12-21 (PA) - Original Drilling - Original Drilling - As Drilled	6,600.00	6,463.15	3,192.33	3,044.13	21.541	SF
McKee 21-21 (PA) - Original Drilling - Original Drilling - As Drilled	2,000.00	2,014.00	3,925.94	3,878.87	83.420	CC
McKee 21-21 (PA) - Original Drilling - Original Drilling - As Drilled	2,300.00	2,313.45	3,928.69	3,875.40	73.729	ES
McKee 21-21 (PA) - Original Drilling - Original Drilling - As Drilled	6,750.00	6,605.67	4,336.98	4,185.02	28.540	SF
McKee 22-21 - Original Drilling - Original Drilling - As Drilled	0.00	0.00	2,653.96			

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 A33-760
Project:	Wells Ranch	TVD Reference:	Well @ 4756.00ft
Reference Site:	A Section 21	MD Reference:	Well @ 4756.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Rampart A33-760	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Rampart A33-760	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 22-21 - Original Drilling - Original Drilling - As Drill	1,600.00	1,573.59	2,662.65	2,651.93	248.376	ES
McKee 22-21 - Original Drilling - Original Drilling - As Drill	6,650.00	6,520.74	3,078.28	3,036.15	73.068	SF
McKee 31-21 - Original Drilling - Original Drilling - As Drill	2,943.94	2,929.31	4,702.23	4,684.40	263.677	CC
McKee 31-21 - Original Drilling - Original Drilling - As Drill	3,100.00	3,065.70	4,702.55	4,683.95	252.830	ES
McKee 31-21 - Original Drilling - Original Drilling - As Drill	6,850.00	6,908.34	4,938.26	4,893.88	111.269	SF
McKee 32-21 - Original Drilling - Original Drilling - As Drill	4,617.69	4,464.26	3,298.16	3,270.32	118.476	CC
McKee 32-21 - Original Drilling - Original Drilling - As Drill	4,900.00	4,740.63	3,298.61	3,268.85	110.813	ES
McKee 32-21 - Original Drilling - Original Drilling - As Drill	6,750.00	6,579.47	3,416.38	3,373.41	79.496	SF
McKee 41-21 - Original Drilling - Original Drilling - As Drill	6,158.37	5,949.40	5,229.38	5,190.85	135.712	CC
McKee 41-21 - Original Drilling - Original Drilling - As Drill	6,300.00	6,061.08	5,229.87	5,190.42	132.570	ES
McKee 41-21 - Original Drilling - Original Drilling - As Drill	6,900.00	6,553.26	5,391.38	5,347.93	124.079	SF
McKee 42-21 - Original Drilling - Original Drilling - As Drill	6,479.16	6,351.03	3,953.52	3,912.36	96.033	CC, ES
McKee 42-21 - Original Drilling - Original Drilling - As Drill	6,900.00	6,717.46	4,058.52	4,014.38	91.949	SF
Rampart A33-730 - Rampart A33-730 - APD-Rev 1	2,000.00	2,000.00	67.56	54.05	5.001	CC
Rampart A33-730 - Rampart A33-730 - APD-Rev 1	2,100.00	2,097.73	67.69	53.84	4.887	ES, SF
Rampart A33-740 - Rampart A33-740 - APD-Rev 0	2,000.00	2,001.00	44.91	31.40	3.324	CC
Rampart A33-740 - Rampart A33-740 - APD-Rev 0	2,100.00	2,099.46	45.09	31.23	3.254	ES, SF
Rampart A33-750 - Rampart A33-750 - APD-Rev 0	2,000.00	2,001.00	22.45	8.94	1.662	CC
Rampart A33-750 - Rampart A33-750 - APD-Rev 0	2,100.00	2,100.25	22.59	8.73	1.630	ES, SF
Rampart A33-770 - Rampart A33-770 - APD-Rev 0	2,001.65	2,002.67	22.54	9.02	1.667	CC, ES
Rampart A33-770 - Rampart A33-770 - APD-Rev 0	2,100.00	2,101.43	23.11	9.25	1.667	SF
Sexton 43-21 (PA) - Original Drilling - Original Drilling - A	6,523.42	6,348.88	3,326.51	3,180.24	22.742	CC
Sexton 43-21 (PA) - Original Drilling - Original Drilling - A	6,550.00	6,373.61	3,326.88	3,180.00	22.651	ES
Sexton 43-21 (PA) - Original Drilling - Original Drilling - A	6,900.00	6,651.71	3,400.86	3,246.97	22.100	SF
Wells Trust 13-21 - Original Drilling - Original Drilling - As	2,028.99	2,014.01	1,212.20	1,198.50	88.512	CC, ES
Wells Trust 13-21 - Original Drilling - Original Drilling - As	6,550.00	6,414.80	2,090.62	2,049.73	51.124	SF
Wells Trust 14-21 - Original Drilling - Original Drilling - As	2,024.90	1,986.86	538.20	524.64	39.682	CC, ES
Wells Trust 14-21 - Original Drilling - Original Drilling - As	2,500.00	2,454.65	574.06	558.53	36.970	SF
Wells Trust 24-21 - Original Drilling - Original Drilling - As	3,523.88	3,440.88	163.97	143.11	7.860	CC, ES
Wells Trust 24-21 - Original Drilling - Original Drilling - As	3,600.00	3,514.42	165.13	143.82	7.750	SF

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Rampart A33-760
Project:	Wells Ranch	TVD Reference:	Well @ 4756.00ft
Reference Site:	A Section 21	MD Reference:	Well @ 4756.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Rampart A33-760	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Rampart A33-760	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	9,166.25	6,778.00	2,625.29	2,458.39	15.729	CC
Ankeney 2-28 (SI) - Wellbore #1 - No Surveys	9,200.00	6,778.00	2,625.51	2,458.33	15.705	ES
Ankeney 2-28 (SI) - Wellbore #1 - No Surveys	9,500.00	6,778.00	2,646.42	2,476.88	15.609	SF
Ankeney 28-01 (PA) - Wellbore #1 - Gyro Surveys	9,028.82	6,740.23	2,649.33	2,596.29	49.947	CC, ES
Ankeney 28-01 (PA) - Wellbore #1 - Gyro Surveys	9,800.00	6,746.37	2,759.28	2,700.68	47.087	SF
Art Rohr 1 (PA) - Wellbore #1 - No Surveys	10,200.00	6,773.00	78.83	-94.98	0.454	Level 1, ES, SF
Art Rohr 1 (PA) - Wellbore #1 - No Surveys	10,201.02	6,773.00	78.82	-94.93	0.454	Level 1, CC
Danley 1 (TA) - Wellbore #1 - Gyro Surveys	4,153.40	4,057.87	1,038.68	1,013.84	41.821	CC
Danley 1 (TA) - Wellbore #1 - Gyro Surveys	4,300.00	4,201.29	1,039.15	1,013.35	40.271	ES
Danley 1 (TA) - Wellbore #1 - Gyro Surveys	7,342.94	6,811.38	1,115.58	1,069.92	24.430	SF
Danley 12-28 (SI) - Wellbore #1 - Gyro Surveys	8,909.41	6,797.48	1,276.85	1,223.46	23.919	CC, ES
Danley 12-28 (SI) - Wellbore #1 - Gyro Surveys	9,000.00	6,801.19	1,280.05	1,226.45	23.880	SF
Danley 13-28 (PR) - Wellbore #1 - Gyro Surveys	10,230.63	6,797.10	1,313.08	1,250.89	21.115	CC, ES
Danley 13-28 (PR) - Wellbore #1 - Gyro Surveys	10,300.00	6,798.14	1,314.91	1,252.56	21.088	SF
Danley 14-28 (PR) - Wellbore #1 - Gyro Surveys	11,578.75	6,770.00	1,329.16	1,257.25	18.484	CC, ES
Danley 14-28 (PR) - Wellbore #1 - Gyro Surveys	11,600.00	6,770.64	1,329.33	1,257.36	18.470	SF
Dewey 21-28 (TA) - Wellbore #1 - Gyro Surveys	7,669.88	6,788.08	29.15	-17.78	0.621	Level 1, CC, ES, SF
Dewey 22-28 (SI) - Wellbore #1 - Gyro Surveys	8,790.17	6,823.45	20.85	-32.20	0.393	Level 1, CC, ES, SF
Hannan Rohr 1 (PA) - Wellbore #1 - Gyro Surveys	11,600.00	6,750.54	33.44	-38.50	0.465	Level 1, ES, SF
Hannan Rohr 1 (PA) - Wellbore #1 - Gyro Surveys	11,601.31	6,750.54	33.42	-38.32	0.466	Level 1, CC
Rohr A 28-25 (SI) - Wellbore #1 - Gyro Surveys	10,720.33	6,786.87	523.76	458.01	7.966	CC, ES, SF
Wardlaw 16-28 - Original Drilling - Original Drilling - As D	11,592.94	6,751.00	2,418.96	2,235.50	13.185	CC
Wardlaw 16-28 - Original Drilling - Original Drilling - As D	11,600.00	6,751.00	2,418.97	2,235.44	13.180	ES
Wardlaw 16-28 - Original Drilling - Original Drilling - As D	11,900.00	6,751.00	2,438.37	2,252.14	13.093	SF
Wardlaw 16-28 (SI) - Wellbore #1 - Gyro Surveys	11,552.31	6,733.97	2,439.99	2,368.46	34.112	CC
Wardlaw 16-28 (SI) - Wellbore #1 - Gyro Surveys	11,600.00	6,733.47	2,440.46	2,368.46	33.896	ES
Wardlaw 16-28 (SI) - Wellbore #1 - Gyro Surveys	12,100.00	6,728.12	2,500.70	2,424.72	32.913	SF
Wardlaw 20-28 - Original Drilling - Original Drilling - As D	10,941.14	6,746.00	2,106.44	1,927.92	11.799	CC, ES
Wardlaw 20-28 - Original Drilling - Original Drilling - As D	11,200.00	6,746.00	2,122.29	1,941.39	11.732	SF
Wardlaw 20-28 (SI) - Wellbore #1 - Gyro Surveys	10,908.17	6,734.28	2,115.30	2,048.56	31.693	CC, ES
Wardlaw 20-28 (SI) - Wellbore #1 - Gyro Surveys	11,300.00	6,729.99	2,151.28	2,081.16	30.681	SF
Wardlaw 33-28 (PA) - Wellbore #1 - Gyro Surveys	9,836.21	6,362.89	974.89	916.92	16.818	CC, ES
Wardlaw 33-28 (PA) - Wellbore #1 - Gyro Surveys	12,600.00	7,519.15	2,701.97	2,531.22	15.824	SF
Webster 09-28 - Original Drilling - Original Drilling - As D	10,141.25	6,761.00	2,393.89	2,220.80	13.830	CC, ES
Webster 09-28 - Original Drilling - Original Drilling - As D	10,400.00	6,761.00	2,407.83	2,232.47	13.731	SF
Webster 15-28 (SI) - Wellbore #1 - Gyro Surveys	11,480.35	6,739.75	1,102.82	1,031.80	15.528	CC
Webster 15-28 (SI) - Wellbore #1 - Gyro Surveys	11,500.00	6,739.78	1,103.00	1,031.73	15.476	ES
Webster 15-28 (SI) - Wellbore #1 - Gyro Surveys	11,600.00	6,739.96	1,109.29	1,036.94	15.333	SF
Webster 9-28 (PR) - Wellbore #1 - Gyro Surveys	10,101.65	6,749.75	2,409.17	2,348.15	39.483	CC, ES
Webster 9-28 (PR) - Wellbore #1 - Gyro Surveys	10,700.00	6,747.33	2,482.36	2,416.61	37.757	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 A33-760
Project:	Wells Ranch	TVD Reference:	Well @ 4756.00ft
Reference Site:	A Section 21	MD Reference:	Well @ 4756.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Rampart A33-760	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Rampart A33-760	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	2,000.00	1,914.00	6,636.26	6,591.21	147.322	CC
Amos 1 (DA) - Wellbore #1 - No Surveys	2,100.00	2,013.98	6,637.00	6,589.78	140.547	ES
Amos 1 (DA) - Wellbore #1 - No Surveys	12,600.00	3,800.00	7,350.18	7,233.43	62.954	SF
Anderson 3-29 (SI) - Wellbore #1 - Gyro Surveys	211.42	149.42	4,463.45	4,462.59	5,203.089	CC
Anderson 3-29 (SI) - Wellbore #1 - Gyro Surveys	900.00	810.00	4,466.54	4,460.97	801.484	ES
Anderson 3-29 (SI) - Wellbore #1 - Gyro Surveys	9,800.00	6,746.56	5,863.82	5,809.94	108.841	SF
Andy 29-1 (PA) - Wellbore #1 - No Surveys	2,000.00	1,928.00	5,048.68	5,003.35	111.392	CC
Andy 29-1 (PA) - Wellbore #1 - No Surveys	2,100.00	2,027.98	5,049.55	5,002.05	106.305	ES
Andy 29-1 (PA) - Wellbore #1 - No Surveys	9,800.00	6,770.00	5,341.56	5,171.77	31.460	SF
Andy 29-2 (PA) - Wellbore #1 - Gyro Surveys	227.08	158.08	6,108.95	6,108.00	6,449.339	CC
Andy 29-2 (PA) - Wellbore #1 - Gyro Surveys	2,000.00	1,909.85	6,112.03	6,098.77	460.964	ES
Andy 29-2 (PA) - Wellbore #1 - Gyro Surveys	11,800.00	6,781.99	7,217.09	7,150.11	107.742	SF
Capehart 1 (SI) - Wellbore #1 - Gyro Surveys	998.71	917.71	4,073.31	4,067.01	647.022	CC
Capehart 1 (SI) - Wellbore #1 - Gyro Surveys	8,910.09	6,768.05	4,080.68	4,027.46	76.681	ES
Capehart 1 (SI) - Wellbore #1 - Gyro Surveys	10,100.00	6,767.78	4,250.63	4,192.13	72.666	SF
Capehart 31-29 (TA) - Wellbore #1 - Gyro Surveys	1,790.66	1,725.72	3,068.34	3,056.45	258.070	CC
Capehart 31-29 (TA) - Wellbore #1 - Gyro Surveys	2,000.00	1,914.72	3,069.06	3,055.78	231.143	ES
Capehart 31-29 (TA) - Wellbore #1 - Gyro Surveys	8,600.00	6,791.03	3,915.83	3,865.86	78.375	SF
Capehart 41-29 (TA) - Wellbore #1 - Gyro Surveys	2,043.22	1,991.49	2,026.69	2,013.06	148.664	CC
Capehart 41-29 (TA) - Wellbore #1 - Gyro Surveys	2,100.00	2,049.53	2,026.88	2,012.95	145.439	ES
Capehart 41-29 (TA) - Wellbore #1 - Gyro Surveys	8,000.00	6,800.83	2,521.19	2,473.35	52.700	SF
Capehart 42-29 (SI) - Wellbore #1 - Gyro Surveys	269.36	195.58	5,323.85	5,322.61	4,293.834	CC
Capehart 42-29 (SI) - Wellbore #1 - Gyro Surveys	2,000.00	1,925.56	5,328.95	5,315.63	400.063	ES
Capehart 42-29 (SI) - Wellbore #1 - Gyro Surveys	11,200.00	6,760.41	5,973.89	5,909.55	92.849	SF
Miller 15-29 (PR) - Wellbore #1 - Gyro Surveys	11,259.54	7,145.55	3,931.28	3,859.83	55.016	CC
Miller 15-29 (PR) - Wellbore #1 - Gyro Surveys	11,300.00	7,141.79	3,931.49	3,859.81	54.843	ES
Miller 15-29 (PR) - Wellbore #1 - Gyro Surveys	12,000.00	7,076.64	3,999.82	3,924.83	53.343	SF
Miller 16-29 (SI) - Wellbore #1 - Gyro Surveys	11,534.37	6,714.18	2,429.78	2,358.61	34.141	CC, ES
Miller 16-29 (SI) - Wellbore #1 - Gyro Surveys	11,800.00	6,723.66	2,444.24	2,371.93	33.800	SF
Miller 33-29 (SI) - Wellbore #1 - Gyro Surveys	10,307.88	6,828.01	4,000.91	3,938.18	63.784	CC, ES
Miller 33-29 (SI) - Wellbore #1 - Gyro Surveys	11,300.00	6,765.03	4,122.09	4,054.86	61.311	SF
Miller 43-29 (SI) - Wellbore #1 - Gyro Surveys	10,381.49	6,810.85	2,617.48	2,554.17	41.343	CC
Miller 43-29 (SI) - Wellbore #1 - Gyro Surveys	10,400.00	6,810.62	2,617.54	2,554.14	41.285	ES
Miller 43-29 (SI) - Wellbore #1 - Gyro Surveys	10,700.00	6,806.94	2,636.78	2,572.12	40.780	SF
Rhine 15-29 (PR) - Wellbore #1 - Gyro Surveys	11,331.49	6,609.76	4,021.16	3,951.97	58.115	CC, ES
Rhine 15-29 (PR) - Wellbore #1 - Gyro Surveys	12,200.00	6,565.31	4,113.59	4,040.43	56.231	SF
Uhrich 1 (SI) - Wellbore #1 - Gyro Surveys	11,487.06	6,756.00	6,648.70	6,577.64	93.571	CC
Uhrich 1 (SI) - Wellbore #1 - Gyro Surveys	11,500.00	6,755.87	6,648.71	6,577.57	93.461	ES
Uhrich 1 (SI) - Wellbore #1 - Gyro Surveys	13,800.00	6,733.00	7,039.48	6,956.04	84.364	SF
Uhrich 13-29 (PR) - Wellbore #1 - Gyro Surveys	10,233.95	6,778.16	6,725.67	6,663.63	108.420	CC
Uhrich 13-29 (PR) - Wellbore #1 - Gyro Surveys	10,300.00	6,778.43	6,725.99	6,663.55	107.714	ES
Uhrich 13-29 (PR) - Wellbore #1 - Gyro Surveys	13,000.00	6,789.27	7,272.24	7,195.68	94.985	SF
Uhrich 14-29 (SI) - Wellbore #1 - Gyro Surveys	11,663.41	6,580.33	5,150.79	5,079.28	72.029	CC
Uhrich 14-29 (SI) - Wellbore #1 - Gyro Surveys	11,700.00	6,578.92	5,150.92	5,079.19	71.808	ES
Uhrich 14-29 (SI) - Wellbore #1 - Gyro Surveys	13,000.00	6,529.94	5,321.10	5,242.90	68.043	SF
Uhrich 19-29 (SI) - Wellbore #1 - Gyro Surveys	11,008.37	6,756.95	5,791.32	5,723.79	85.760	CC, ES
Uhrich 19-29 (SI) - Wellbore #1 - Gyro Surveys	12,900.00	6,730.90	6,092.36	6,015.06	78.817	SF
Uhrich 23-29 (SI) - Wellbore #1 - Gyro Surveys	10,554.70	6,752.06	5,103.42	5,039.19	79.458	CC
Uhrich 23-29 (SI) - Wellbore #1 - Gyro Surveys	10,600.00	6,751.81	5,103.62	5,039.12	79.127	ES
Uhrich 23-29 (SI) - Wellbore #1 - Gyro Surveys	12,100.00	6,744.01	5,332.24	5,260.22	74.036	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 A33-760
Project:	Wells Ranch	TVD Reference:	Well @ 4756.00ft
Reference Site:	A Section 21	MD Reference:	Well @ 4756.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Rampart A33-760	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Rampart A33-760	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	15,400.08	6,930.25	6,660.17	6,557.89	65.112	CC, ES
Ehrlich 13-32 (PR) - Wellbore #1 - Gyro Surveys	16,956.23	7,019.95	6,838.97	6,727.70	61.464	SF
Ehrlich 14-32 (TA) - Wellbore #1 - Gyro Surveys	16,775.76	6,902.93	6,550.65	6,437.48	57.884	CC
Ehrlich 14-32 (TA) - Wellbore #1 - Gyro Surveys	16,800.00	6,902.42	6,550.69	6,437.36	57.798	ES
Ehrlich 14-32 (TA) - Wellbore #1 - Gyro Surveys	16,956.23	6,899.10	6,553.13	6,438.74	57.288	SF
Farmland 10-32 (SI) - Wellbore #1 - Gyro Surveys	15,593.50	6,782.07	3,990.89	3,887.66	38.663	CC
Farmland 10-32 (SI) - Wellbore #1 - Gyro Surveys	15,600.00	6,782.04	3,990.89	3,887.63	38.648	ES
Farmland 10-32 (SI) - Wellbore #1 - Gyro Surveys	16,200.00	6,779.28	4,036.71	3,930.53	38.017	SF
Farmland 16-32 (SI) - Wellbore #1 - Gyro Surveys	16,817.41	6,726.58	2,617.46	2,504.74	23.220	CC, ES
Farmland 16-32 (SI) - Wellbore #1 - Gyro Surveys	16,956.23	6,727.02	2,621.14	2,507.77	23.121	SF
Hoffner 1 (PR) - Wellbore #1 - Gyro Surveys	12,853.35	6,703.11	3,978.71	3,897.47	48.979	CC
Hoffner 1 (PR) - Wellbore #1 - Gyro Surveys	12,900.00	6,702.32	3,978.98	3,897.47	48.815	ES
Hoffner 1 (PR) - Wellbore #1 - Gyro Surveys	13,600.00	6,690.91	4,048.14	3,963.32	47.729	SF
Hoffner 32-32 (SI) - Wellbore #1 - Gyro Surveys	14,188.49	6,716.71	3,988.03	3,896.25	43.451	CC
Hoffner 32-32 (SI) - Wellbore #1 - Gyro Surveys	14,200.00	6,716.66	3,988.05	3,896.20	43.418	ES
Hoffner 32-32 (SI) - Wellbore #1 - Gyro Surveys	14,800.00	6,713.95	4,034.64	3,939.80	42.542	SF
Johnson 5-32 (PR) - Wellbore #1 - Gyro Surveys	14,491.57	6,866.76	6,358.28	6,263.66	67.203	CC
Johnson 5-32 (PR) - Wellbore #1 - Gyro Surveys	14,500.00	6,866.98	6,358.28	6,263.61	67.162	ES
Johnson 5-32 (PR) - Wellbore #1 - Gyro Surveys	16,200.00	6,910.75	6,583.65	6,479.73	63.355	SF
Johnson A 32-06 (PR) - Wellbore #1 - Gyro Surveys	14,354.73	6,816.91	5,116.88	5,023.33	54.695	CC
Johnson A 32-06 (PR) - Wellbore #1 - Gyro Surveys	14,400.00	6,817.03	5,117.08	5,023.23	54.523	ES
Johnson A 32-06 (PR) - Wellbore #1 - Gyro Surveys	15,400.00	6,819.55	5,222.55	5,123.44	52.695	SF
Larsen 1 (PR) - Wellbore #1 - Gyro Surveys	12,892.61	6,732.79	2,683.13	2,601.44	32.842	CC
Larsen 1 (PR) - Wellbore #1 - Gyro Surveys	12,900.00	6,732.77	2,683.14	2,601.41	32.827	ES
Larsen 1 (PR) - Wellbore #1 - Gyro Surveys	13,200.00	6,731.96	2,700.68	2,617.68	32.537	SF
Larsen 2 (PR) - Wellbore #1 - Gyro Surveys	14,113.95	6,716.43	2,691.51	2,600.33	29.518	CC, ES
Larsen 2 (PR) - Wellbore #1 - Gyro Surveys	14,400.00	6,715.67	2,706.67	2,614.28	29.298	SF
Larson A32-17 (PR) - Wellbore #1 - MWD Surveys	13,422.49	6,733.86	3,100.72	3,015.14	36.233	CC, ES
Larson A32-17 (PR) - Wellbore #1 - MWD Surveys	13,800.00	6,723.22	3,123.60	3,036.34	35.798	SF
QC USX A32-19 (PR) - Wellbore #1 - MWD Surveys	13,461.50	6,724.57	5,680.17	5,594.04	65.950	CC
QC USX A32-19 (PR) - Wellbore #1 - MWD Surveys	13,500.00	6,725.11	5,680.30	5,593.92	65.754	ES
QC USX A32-19 (PR) - Wellbore #1 - MWD Surveys	14,900.00	6,744.61	5,859.46	5,765.53	62.385	SF
Rubix A 32-03 (PR) - Wellbore #1 - Gyro Surveys	12,662.32	6,709.85	5,200.50	5,120.68	65.157	CC
Rubix A 32-03 (PR) - Wellbore #1 - Gyro Surveys	12,700.00	6,710.58	5,200.64	5,120.57	64.958	ES
Rubix A 32-03 (PR) - Wellbore #1 - Gyro Surveys	14,000.00	6,720.98	5,369.77	5,283.05	61.920	SF
Rubix A 32-04 (SI) - Wellbore #1 - No Surveys	12,674.11	6,751.00	6,534.84	6,343.14	34.089	CC
Rubix A 32-04 (SI) - Wellbore #1 - No Surveys	12,700.00	6,751.00	6,534.89	6,343.02	34.058	ES
Rubix A 32-04 (SI) - Wellbore #1 - No Surveys	13,800.00	6,751.00	6,631.12	6,432.60	33.402	SF
Webster 11-32 (PR) - Wellbore #1 - Gyro Surveys	15,377.63	6,768.03	5,061.89	4,960.43	49.889	CC
Webster 11-32 (PR) - Wellbore #1 - Gyro Surveys	15,400.00	6,768.15	5,061.94	4,960.33	49.816	ES
Webster 11-32 (PR) - Wellbore #1 - Gyro Surveys	16,300.00	6,772.91	5,145.24	5,038.84	48.358	SF
Webster 14-32 (TA) - Wellbore #1 - Gyro Surveys	16,956.23	6,684.15	5,282.46	5,170.46	47.168	CC, ES, SF
Webster 15-32 (PR) - Wellbore #1 - Gyro Surveys	16,760.44	6,720.74	3,876.01	3,763.68	34.508	CC
Webster 15-32 (PR) - Wellbore #1 - Gyro Surveys	16,800.00	6,720.92	3,876.21	3,763.64	34.435	ES
Webster 15-32 (PR) - Wellbore #1 - Gyro Surveys	16,956.23	6,721.66	3,880.95	3,767.50	34.209	SF
Webster 9-32 (SI) - Wellbore #1 - Gyro Surveys	15,416.75	6,673.06	2,663.21	2,561.96	26.304	CC, ES
Webster 9-32 (SI) - Wellbore #1 - Gyro Surveys	15,600.00	6,675.04	2,669.50	2,567.42	26.150	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 A33-760
Project:	Wells Ranch	TVD Reference:	Well @ 4756.00ft
Reference Site:	A Section 21	MD Reference:	Well @ 4756.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Rampart A33-760	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Rampart A33-760	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	15,341.14	6,721.36	184.54	83.44	1.825	CC, ES, SF
Achziger 14-33 (PA) - Wellbore #1 - No Surveys	16,955.12	6,711.00	48.44	-176.35	0.216	Level 1, CC, ES, SF
Briggs 15-33 (SI) - Wellbore #1 - Gyro Surveys	16,750.21	6,663.96	1,262.89	1,150.59	11.246	CC, ES
Briggs 15-33 (SI) - Wellbore #1 - Gyro Surveys	16,900.00	6,664.62	1,271.74	1,158.03	11.184	SF
Ehrlich 19-33 (PR) - Wellbore #1 - Gyro Survey	16,175.21	6,719.80	838.07	730.43	7.785	CC, ES, SF
French 09-33 - Original Drilling - Original Drilling - As Dril	15,424.08	6,766.28	2,619.62	2,517.99	25.776	CC, ES
French 09-33 - Original Drilling - Original Drilling - As Dril	15,800.00	6,760.78	2,646.45	2,541.59	25.239	SF
Hammerbeck 16-33 - Original Drilling - Original Drilling -	16,840.09	6,779.45	2,678.98	2,566.02	23.715	CC, ES
Hammerbeck 16-33 - Original Drilling - Original Drilling -	16,956.23	6,780.18	2,681.50	2,567.38	23.497	SF
Hammerbeck 20-33 - Wellbore #1 - Gyro Surveys	16,114.63	6,754.44	1,915.34	1,808.33	17.900	CC, ES
Hammerbeck 20-33 - Wellbore #1 - Gyro Surveys	16,300.00	6,752.19	1,924.29	1,815.49	17.688	SF
Noffsinger 11-33 (PR) - Wellbore #1 - Gyro Surveys	12,680.74	6,739.93	1,459.27	1,379.17	18.218	CC, ES
Noffsinger 11-33 (PR) - Wellbore #1 - Gyro Surveys	12,700.00	6,740.02	1,459.40	1,379.24	18.206	SF
Noffsinger 12-33 (PR) - Wellbore #1 - Gyro Surveys	14,411.54	6,742.67	1,267.43	1,173.82	13.538	CC, ES, SF
Noffsinger 21-33 (PA) - Wellbore #1 - No Surveys	12,654.51	6,751.00	33.50	-157.80	0.175	Level 1, CC, ES, SF
Noffsinger 22-33 (PR) - Wellbore #1 - Gyro Surveys	12,624.13	6,424.03	1,507.72	1,429.02	19.157	CC, ES
Noffsinger 22-33 (PR) - Wellbore #1 - Gyro Surveys	12,800.00	6,418.21	1,517.94	1,437.47	18.864	SF
Noffsinger 31-33 (PR) - Wellbore #1 - Gyro Surveys						Out of range
Noffsinger 32-33 (PR) - Wellbore #1 - Gyro Surveys	14,432.47	6,684.73	1,168.88	1,074.97	12.447	CC, ES
Noffsinger 32-33 (PR) - Wellbore #1 - Gyro Surveys	14,500.00	6,686.41	1,170.83	1,076.12	12.362	SF
Sitzman 12-33 (PR) - Wellbore #1 - Gyro Surveys	15,494.16	6,728.36	1,402.32	1,300.12	13.722	CC
Sitzman 12-33 (PR) - Wellbore #1 - Gyro Surveys	15,500.00	6,728.35	1,402.33	1,300.12	13.720	ES, SF
Sitzman 13-33 (SI) - Wellbore #1 - Gyro Surveys	16,956.23	6,714.19	1,400.93	1,286.78	12.273	CC, ES, SF
Sughrue 41-33 - Original Drilling - Original Drilling - As I	12,656.43	6,886.95	2,669.85	2,589.87	33.380	CC
Sughrue 41-33 - Original Drilling - Original Drilling - As I	12,700.00	6,884.89	2,670.21	2,589.79	33.203	ES
Sughrue 41-33 - Original Drilling - Original Drilling - As I	13,200.00	6,861.20	2,724.50	2,640.02	32.250	SF
Webster 10-33 (PA) - Wellbore #1 - Gyro Surveys	15,393.33	6,679.97	1,319.26	1,218.01	13.029	CC
Webster 10-33 (PA) - Wellbore #1 - Gyro Surveys	15,400.00	6,679.89	1,319.28	1,217.94	13.019	ES
Webster 10-33 (PA) - Wellbore #1 - Gyro Surveys	15,500.00	6,678.68	1,323.57	1,221.16	12.925	SF

Noble Energy, Inc.

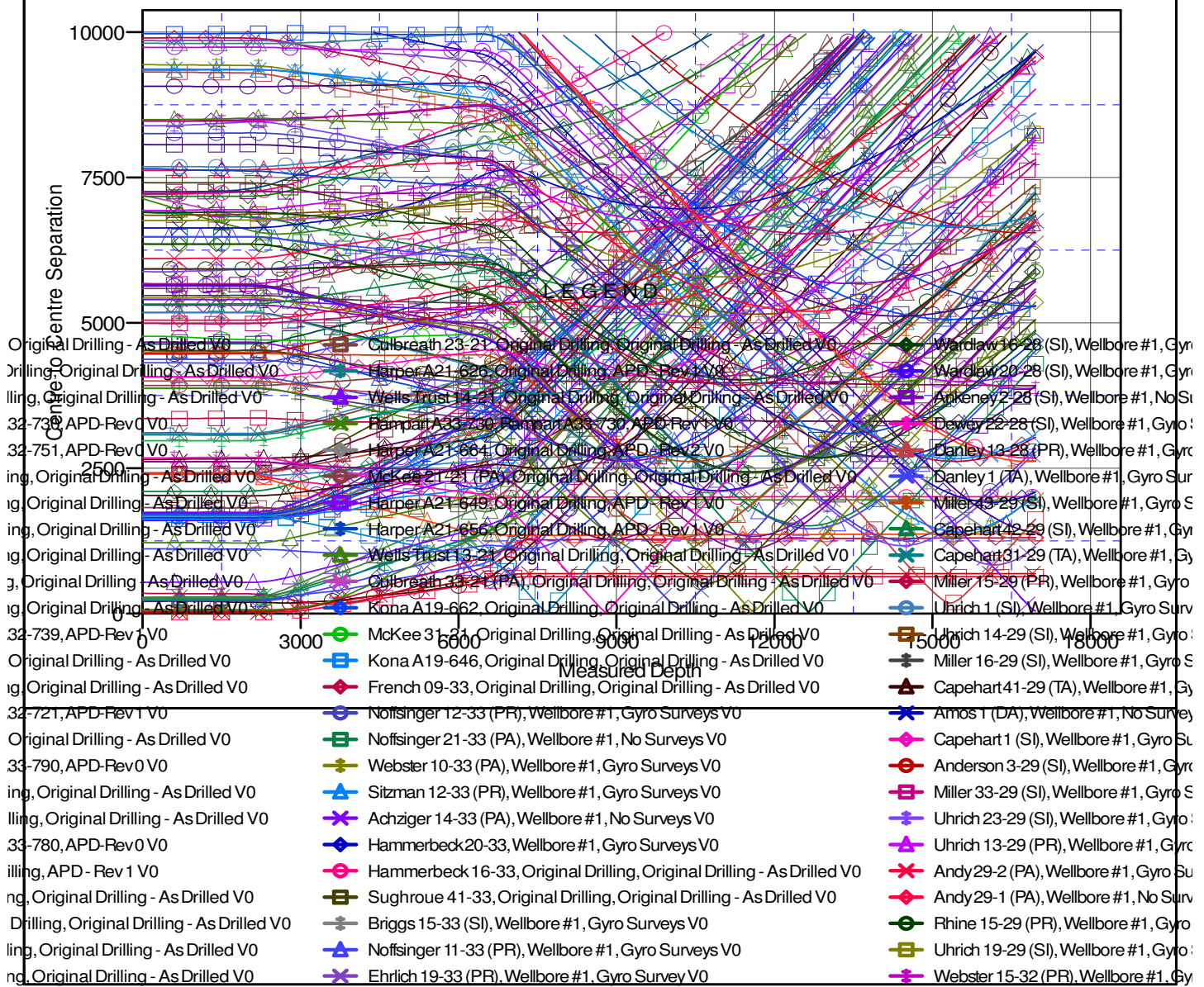
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Rampart A33-760
Project:	Wells Ranch	TVD Reference:	Well @ 4756.00ft
Reference Site:	A Section 21	MD Reference:	Well @ 4756.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Rampart A33-760	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Rampart A33-760	Database:	EDMP
Reference Design:	APD-Rev 1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to Well @ 4756.00ft
Offset Depths are relative to Offset Datum
Central Meridian is -105.5000000

Coordinates are relative to: Rampart A33-760
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.61°

Ladder Plot



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

Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Rampart A33-760
Project:	Wells Ranch	TVD Reference:	Well @ 4756.00ft
Reference Site:	A Section 21	MD Reference:	Well @ 4756.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Rampart A33-760	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Rampart A33-760	Database:	EDMP
Reference Design:	APD-Rev 1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to Well @ 4756.00ft
Offset Depths are relative to Offset Datum
Central Meridian is -105.5000000

Coordinates are relative to: Rampart A33-760
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.61°

