

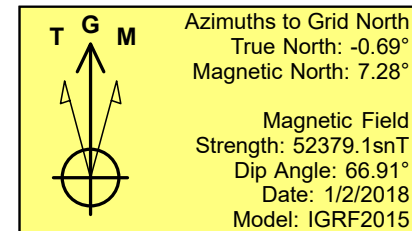
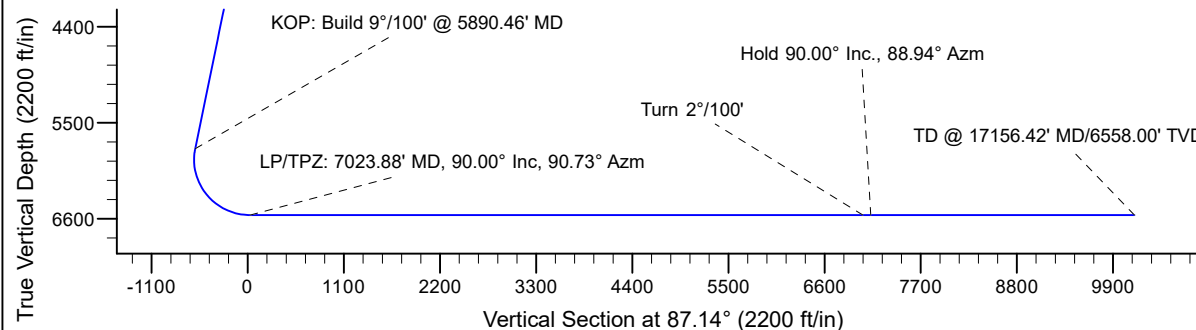
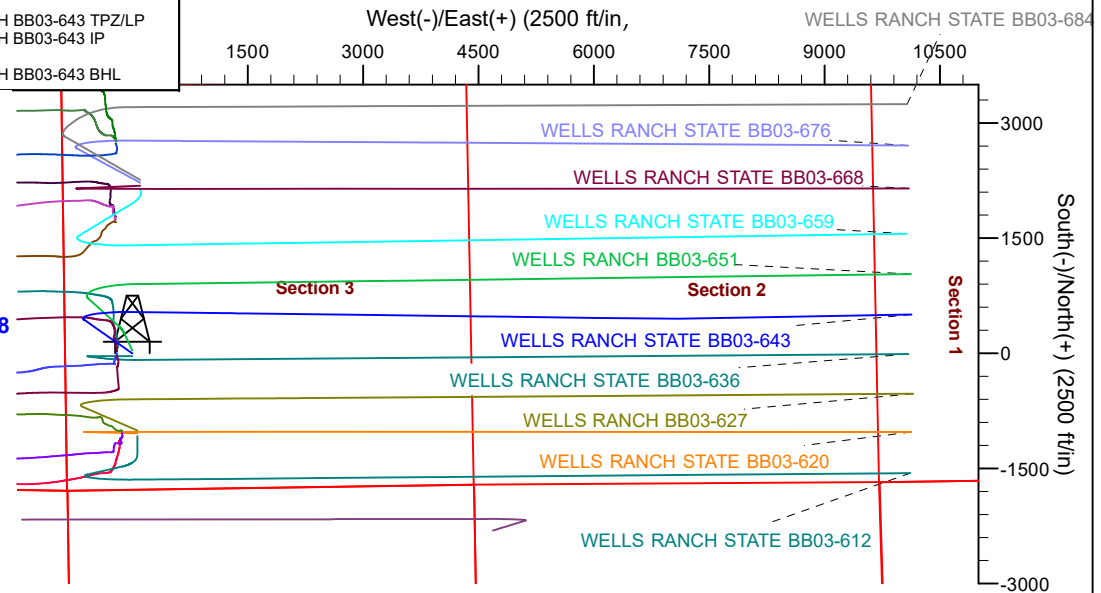
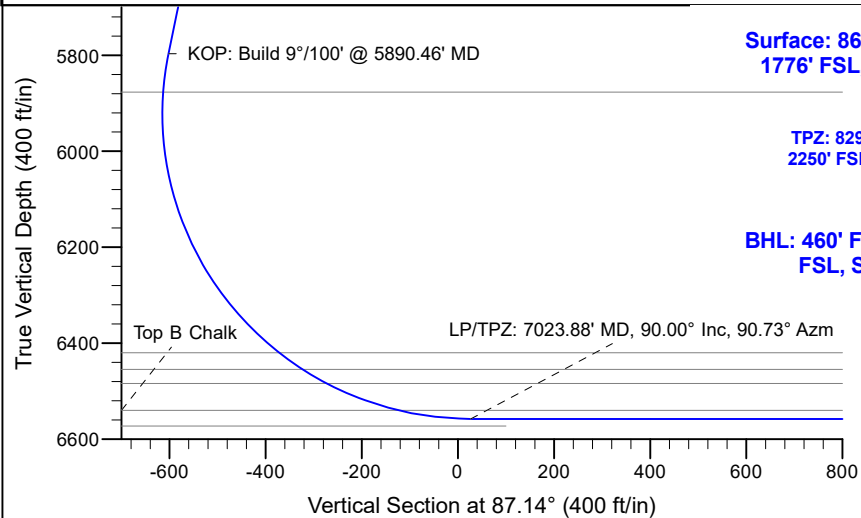
Project: Wells Ranch
Site: BB Section 03
Well: WELLS RANCH STATE BB03-643
Wellbore: Wellbore #1
Design: Plan 2

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	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	2500.00	0.00	0.00	2500.00	0.00	0.00	0.00	0.00	0.00	
3	3228.54	14.57	304.94	3220.71	52.77	-75.53	2.00	304.94	-72.80	
4	5890.46	14.57	304.94	5797.01	436.27	-624.52	0.00	0.00	-601.94	
5	7023.88	90.00	90.73	6558.00	539.56	-0.46	9.00	144.91	26.49	WELLS RANCH BB03-643 TPZ/LP
6	14047.94	90.00	90.73	6558.00	450.31	7023.03	0.00	0.00	7036.75	WELLS RANCH BB03-643 IP
7	14137.57	90.00	88.94	6558.00	450.58	7112.65	2.00	-90.00	7126.28	
8	17156.42	90.00	88.94	6558.00	506.67	10130.99	0.00	0.00	10143.65	WELLS RANCH BB03-643 BHL



WELL DETAILS: WELLS RANCH STATE BB03-643

Northing	Easting	Latitude	Longitude
1399838.60	3298045.94	40.4260199	-104.4294200

Plan: Plan 2 (WELLS RANCH STATE BB03-643/Wellbore #1)

Created By: Shelly Peterkin Date: 15:55, February 27 2019

Checked: _____ Date: _____

Reviewed: _____ Date: _____

Approved: _____ Date: _____

Northern Region - DJ Basin

Wells Ranch

BB Section 03

WELLS RANCH STATE BB03-643

Wellbore #1

Plan: Plan 2

Standard Planning Report

27 February, 2019

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well WELLS RANCH STATE BB03-643
Company:	Northern Region - DJ Basin	TVD Reference:	Well @ 4754.00ft
Project:	Wells Ranch	MD Reference:	Well @ 4754.00ft
Site:	BB Section 03	North Reference:	Grid
Well:	WELLS RANCH STATE BB03-643	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan 2		

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		BB Section 03			
Site Position:		Northing:	11,793.94 usft	Latitude:	36.1509298
From:	Map	Easting:	1,597.09 usft	Longitude:	-115.6527898
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	-6.56 °

Well	WELLS RANCH STATE BB03-643					
Well Position	+N/-S	1,388,047.44 ft	Northing:	1,399,838.60 usft	Latitude:	40.4260200
	+E/-W	3,296,455.45 ft	Easting:	3,298,045.94 usft	Longitude:	-104.4294200
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,724.00 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	1/2/2018	7.98	66.91	52,379.05198724

Design	Plan 2			
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	87.14

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	
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,228.54	14.57	304.94	3,220.71	52.77	-75.53	2.00	2.00	0.00	304.94	
5,890.46	14.57	304.94	5,797.01	436.27	-624.52	0.00	0.00	0.00	0.00	
7,023.88	90.00	90.73	6,558.00	539.56	-0.46	9.00	6.65	12.86	144.91	WELLS RANCH BB03
14,047.94	90.00	90.73	6,558.00	450.31	7,023.03	0.00	0.00	0.00	0.00	WELLS RANCH BB03
14,137.57	90.00	88.94	6,558.00	450.58	7,112.65	2.00	0.00	-2.00	-90.00	
17,156.42	90.00	88.94	6,558.00	506.67	10,130.99	0.00	0.00	0.00	0.00	WELLS RANCH BB03

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well WELLS RANCH STATE BB03-643
Company:	Northern Region - DJ Basin	TVD Reference:	Well @ 4754.00ft
Project:	Wells Ranch	MD Reference:	Well @ 4754.00ft
Site:	BB Section 03	North Reference:	Grid
Well:	WELLS RANCH STATE BB03-643	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan 2		

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
490.00	0.00	0.00	490.00	0.00	0.00	0.00	0.00	0.00	0.00
Pierre									
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
540.00	0.00	0.00	540.00	0.00	0.00	0.00	0.00	0.00	0.00
Upper Pierre Aquifer Top									
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
1,598.00	0.00	0.00	1,598.00	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
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
Build 2°/100'									
2,600.00	2.00	304.94	2,599.98	1.00	-1.43	-1.38	2.00	2.00	0.00
2,700.00	4.00	304.94	2,699.84	4.00	-5.72	-5.51	2.00	2.00	0.00
2,800.00	6.00	304.94	2,799.45	8.99	-12.87	-12.40	2.00	2.00	0.00
2,900.00	8.00	304.94	2,898.70	15.97	-22.86	-22.03	2.00	2.00	0.00
3,000.00	10.00	304.94	2,997.47	24.92	-35.68	-34.39	2.00	2.00	0.00
3,100.00	12.00	304.94	3,095.62	35.85	-51.32	-49.47	2.00	2.00	0.00
3,200.00	14.00	304.94	3,193.06	48.73	-69.76	-67.24	2.00	2.00	0.00
3,228.54	14.57	304.94	3,220.71	52.77	-75.53	-72.80	2.00	2.00	0.00
Hold 14.57° Inc., 304.94° Azm									
3,300.00	14.57	304.94	3,289.87	63.06	-90.27	-87.01	0.00	0.00	0.00
3,400.00	14.57	304.94	3,386.66	77.47	-110.89	-106.89	0.00	0.00	0.00
3,500.00	14.57	304.94	3,483.44	91.88	-131.52	-126.76	0.00	0.00	0.00
3,518.14	14.57	304.94	3,501.00	94.49	-135.26	-130.37	0.00	0.00	0.00
Parkman									
3,600.00	14.57	304.94	3,580.23	106.28	-152.14	-146.64	0.00	0.00	0.00
3,700.00	14.57	304.94	3,677.01	120.69	-172.77	-166.52	0.00	0.00	0.00
3,800.00	14.57	304.94	3,773.79	135.10	-193.39	-186.40	0.00	0.00	0.00
3,900.00	14.57	304.94	3,870.58	149.50	-214.01	-206.28	0.00	0.00	0.00
4,000.00	14.57	304.94	3,967.36	163.91	-234.64	-226.16	0.00	0.00	0.00
4,100.00	14.57	304.94	4,064.14	178.32	-255.26	-246.03	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well WELLS RANCH STATE BB03-643
Company:	Northern Region - DJ Basin	TVD Reference:	Well @ 4754.00ft
Project:	Wells Ranch	MD Reference:	Well @ 4754.00ft
Site:	BB Section 03	North Reference:	Grid
Well:	WELLS RANCH STATE BB03-643	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan 2		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,200.00	14.57	304.94	4,160.93	192.73	-275.88	-265.91	0.00	0.00	0.00
4,270.33	14.57	304.94	4,229.00	202.86	-290.39	-279.89	0.00	0.00	0.00
Sussex									
4,300.00	14.57	304.94	4,257.71	207.13	-296.51	-285.79	0.00	0.00	0.00
4,400.00	14.57	304.94	4,354.50	221.54	-317.13	-305.67	0.00	0.00	0.00
4,500.00	14.57	304.94	4,451.28	235.95	-337.75	-325.55	0.00	0.00	0.00
4,600.00	14.57	304.94	4,548.06	250.35	-358.38	-345.43	0.00	0.00	0.00
4,700.00	14.57	304.94	4,644.85	264.76	-379.00	-365.30	0.00	0.00	0.00
4,800.00	14.57	304.94	4,741.63	279.17	-399.62	-385.18	0.00	0.00	0.00
4,900.00	14.57	304.94	4,838.41	293.58	-420.25	-405.06	0.00	0.00	0.00
4,903.70	14.57	304.94	4,842.00	294.11	-421.01	-405.80	0.00	0.00	0.00
Shannon									
5,000.00	14.57	304.94	4,935.20	307.98	-440.87	-424.94	0.00	0.00	0.00
5,100.00	14.57	304.94	5,031.98	322.39	-461.50	-444.82	0.00	0.00	0.00
5,200.00	14.57	304.94	5,128.77	336.80	-482.12	-464.69	0.00	0.00	0.00
5,300.00	14.57	304.94	5,225.55	351.20	-502.74	-484.57	0.00	0.00	0.00
5,400.00	14.57	304.94	5,322.33	365.61	-523.37	-504.45	0.00	0.00	0.00
5,500.00	14.57	304.94	5,419.12	380.02	-543.99	-524.33	0.00	0.00	0.00
5,600.00	14.57	304.94	5,515.90	394.43	-564.61	-544.21	0.00	0.00	0.00
5,700.00	14.57	304.94	5,612.69	408.83	-585.24	-564.09	0.00	0.00	0.00
5,800.00	14.57	304.94	5,709.47	423.24	-605.86	-583.96	0.00	0.00	0.00
5,890.46	14.57	304.94	5,797.01	436.27	-624.52	-601.94	0.00	0.00	0.00
KOP: Build 9°/100' @ 5890.46' MD									
5,900.00	13.88	307.00	5,806.27	437.65	-626.41	-603.77	9.00	-7.27	21.57
5,950.00	10.63	321.85	5,855.13	444.89	-634.06	-611.04	9.00	-6.49	29.72
5,972.21	9.52	331.37	5,877.00	448.11	-636.20	-613.02	9.00	-5.01	42.85
Teepee Buttes									
6,000.00	8.59	346.18	5,904.45	452.14	-637.80	-614.42	9.00	-3.36	53.29
6,050.00	8.64	16.58	5,953.91	459.37	-637.62	-613.88	9.00	0.10	60.80
6,100.00	10.76	40.45	6,003.21	466.52	-633.52	-609.42	9.00	4.24	47.74
6,150.00	14.04	54.96	6,052.05	473.56	-625.52	-601.09	9.00	6.56	29.02
6,200.00	17.85	63.74	6,100.13	480.43	-613.68	-588.91	9.00	7.62	17.55
6,250.00	21.92	69.43	6,147.14	487.11	-598.06	-572.98	9.00	8.13	11.38
6,300.00	26.12	73.39	6,192.80	493.54	-578.77	-553.39	9.00	8.41	7.92
6,350.00	30.40	76.31	6,236.84	499.68	-555.91	-530.26	9.00	8.57	5.84
6,400.00	34.74	78.56	6,278.96	505.50	-529.65	-503.73	9.00	8.67	4.51
6,450.00	39.11	80.37	6,318.93	510.97	-500.12	-473.97	9.00	8.73	3.62
6,500.00	43.50	81.87	6,356.48	516.04	-467.52	-441.16	9.00	8.78	2.99
6,550.00	47.90	83.14	6,391.39	520.70	-432.05	-405.50	9.00	8.81	2.55
6,594.39	51.83	84.13	6,420.00	524.45	-398.33	-371.64	9.00	8.84	2.23
Sharon Springs									
6,600.00	52.32	84.25	6,423.45	524.90	-393.93	-367.22	9.00	8.85	2.09
6,650.00	56.75	85.23	6,452.45	528.62	-353.39	-326.54	9.00	8.86	1.96
6,654.67	57.16	85.32	6,455.00	528.94	-349.48	-322.63	9.00	8.87	1.85
Top A Chalk									
6,700.00	61.19	86.12	6,478.22	531.84	-310.67	-283.72	9.00	8.87	1.77
6,712.20	62.27	86.32	6,484.00	532.55	-299.96	-272.98	9.00	8.88	1.68
Top A Marl									
6,750.00	65.63	86.93	6,500.60	534.55	-266.06	-239.02	9.00	8.88	1.61
6,800.00	70.07	87.69	6,519.45	536.71	-219.81	-192.73	9.00	8.89	1.52
6,850.00	74.52	88.41	6,534.65	538.33	-172.22	-145.11	9.00	8.90	1.43
6,871.32	76.42	88.70	6,540.00	538.85	-151.58	-124.48	9.00	8.90	1.39
Top B Chalk									

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well WELLS RANCH STATE BB03-643
Company:	Northern Region - DJ Basin	TVD Reference:	Well @ 4754.00ft
Project:	Wells Ranch	MD Reference:	Well @ 4754.00ft
Site:	BB Section 03	North Reference:	Grid
Well:	WELLS RANCH STATE BB03-643	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan 2		

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)
6,900.00	78.97	89.10	6,546.11	539.39	-123.57	-96.48	9.00	8.90	1.36
6,950.00	83.42	89.76	6,553.76	539.88	-74.18	-47.12	9.00	8.90	1.33
7,000.00	87.87	90.42	6,557.56	539.80	-24.34	2.66	9.00	8.90	1.31
7,023.88	90.00	90.73	6,558.00	539.56	-0.46	26.49	9.00	8.91	1.30
LP/TPZ: 7023.88' MD, 90.00° Inc, 90.73° Azm									
7,100.00	90.00	90.73	6,558.00	538.59	75.65	102.46	0.00	0.00	0.00
7,200.00	90.00	90.73	6,558.00	537.32	175.64	202.26	0.00	0.00	0.00
7,300.00	90.00	90.73	6,558.00	536.05	275.64	302.07	0.00	0.00	0.00
7,400.00	90.00	90.73	6,558.00	534.78	375.63	401.87	0.00	0.00	0.00
7,500.00	90.00	90.73	6,558.00	533.51	475.62	501.67	0.00	0.00	0.00
7,600.00	90.00	90.73	6,558.00	532.24	575.61	601.48	0.00	0.00	0.00
7,700.00	90.00	90.73	6,558.00	530.97	675.60	701.28	0.00	0.00	0.00
7,800.00	90.00	90.73	6,558.00	529.70	775.60	801.09	0.00	0.00	0.00
7,900.00	90.00	90.73	6,558.00	528.43	875.59	900.89	0.00	0.00	0.00
8,000.00	90.00	90.73	6,558.00	527.16	975.58	1,000.69	0.00	0.00	0.00
8,100.00	90.00	90.73	6,558.00	525.89	1,075.57	1,100.50	0.00	0.00	0.00
8,200.00	90.00	90.73	6,558.00	524.62	1,175.56	1,200.30	0.00	0.00	0.00
8,300.00	90.00	90.73	6,558.00	523.35	1,275.55	1,300.10	0.00	0.00	0.00
8,400.00	90.00	90.73	6,558.00	522.08	1,375.55	1,399.91	0.00	0.00	0.00
8,500.00	90.00	90.73	6,558.00	520.81	1,475.54	1,499.71	0.00	0.00	0.00
8,600.00	90.00	90.73	6,558.00	519.54	1,575.53	1,599.51	0.00	0.00	0.00
8,700.00	90.00	90.73	6,558.00	518.27	1,675.52	1,699.32	0.00	0.00	0.00
8,800.00	90.00	90.73	6,558.00	516.99	1,775.51	1,799.12	0.00	0.00	0.00
8,900.00	90.00	90.73	6,558.00	515.72	1,875.51	1,898.93	0.00	0.00	0.00
9,000.00	90.00	90.73	6,558.00	514.45	1,975.50	1,998.73	0.00	0.00	0.00
9,100.00	90.00	90.73	6,558.00	513.18	2,075.49	2,098.53	0.00	0.00	0.00
9,200.00	90.00	90.73	6,558.00	511.91	2,175.48	2,198.34	0.00	0.00	0.00
9,300.00	90.00	90.73	6,558.00	510.64	2,275.47	2,298.14	0.00	0.00	0.00
9,400.00	90.00	90.73	6,558.00	509.37	2,375.47	2,397.94	0.00	0.00	0.00
9,500.00	90.00	90.73	6,558.00	508.10	2,475.46	2,497.75	0.00	0.00	0.00
9,600.00	90.00	90.73	6,558.00	506.83	2,575.45	2,597.55	0.00	0.00	0.00
9,700.00	90.00	90.73	6,558.00	505.56	2,675.44	2,697.35	0.00	0.00	0.00
9,800.00	90.00	90.73	6,558.00	504.29	2,775.43	2,797.16	0.00	0.00	0.00
9,900.00	90.00	90.73	6,558.00	503.02	2,875.43	2,896.96	0.00	0.00	0.00
10,000.00	90.00	90.73	6,558.00	501.75	2,975.42	2,996.77	0.00	0.00	0.00
10,100.00	90.00	90.73	6,558.00	500.48	3,075.41	3,096.57	0.00	0.00	0.00
10,200.00	90.00	90.73	6,558.00	499.21	3,175.40	3,196.37	0.00	0.00	0.00
10,300.00	90.00	90.73	6,558.00	497.94	3,275.39	3,296.18	0.00	0.00	0.00
10,400.00	90.00	90.73	6,558.00	496.67	3,375.39	3,395.98	0.00	0.00	0.00
10,500.00	90.00	90.73	6,558.00	495.39	3,475.38	3,495.78	0.00	0.00	0.00
10,600.00	90.00	90.73	6,558.00	494.12	3,575.37	3,595.59	0.00	0.00	0.00
10,700.00	90.00	90.73	6,558.00	492.85	3,675.36	3,695.39	0.00	0.00	0.00
10,800.00	90.00	90.73	6,558.00	491.58	3,775.35	3,795.19	0.00	0.00	0.00
10,900.00	90.00	90.73	6,558.00	490.31	3,875.35	3,895.00	0.00	0.00	0.00
11,000.00	90.00	90.73	6,558.00	489.04	3,975.34	3,994.80	0.00	0.00	0.00
11,100.00	90.00	90.73	6,558.00	487.77	4,075.33	4,094.61	0.00	0.00	0.00
11,200.00	90.00	90.73	6,558.00	486.50	4,175.32	4,194.41	0.00	0.00	0.00
11,300.00	90.00	90.73	6,558.00	485.23	4,275.31	4,294.21	0.00	0.00	0.00
11,400.00	90.00	90.73	6,558.00	483.96	4,375.30	4,394.02	0.00	0.00	0.00
11,500.00	90.00	90.73	6,558.00	482.69	4,475.30	4,493.82	0.00	0.00	0.00
11,600.00	90.00	90.73	6,558.00	481.42	4,575.29	4,593.62	0.00	0.00	0.00
11,700.00	90.00	90.73	6,558.00	480.15	4,675.28	4,693.43	0.00	0.00	0.00
11,800.00	90.00	90.73	6,558.00	478.88	4,775.27	4,793.23	0.00	0.00	0.00
11,900.00	90.00	90.73	6,558.00	477.61	4,875.26	4,893.03	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well WELLS RANCH STATE BB03-643
Company:	Northern Region - DJ Basin	TVD Reference:	Well @ 4754.00ft
Project:	Wells Ranch	MD Reference:	Well @ 4754.00ft
Site:	BB Section 03	North Reference:	Grid
Well:	WELLS RANCH STATE BB03-643	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan 2		

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)
12,000.00	90.00	90.73	6,558.00	476.34	4,975.26	4,992.84	0.00	0.00	0.00
12,100.00	90.00	90.73	6,558.00	475.07	5,075.25	5,092.64	0.00	0.00	0.00
12,200.00	90.00	90.73	6,558.00	473.79	5,175.24	5,192.45	0.00	0.00	0.00
12,300.00	90.00	90.73	6,558.00	472.52	5,275.23	5,292.25	0.00	0.00	0.00
12,400.00	90.00	90.73	6,558.00	471.25	5,375.22	5,392.05	0.00	0.00	0.00
12,500.00	90.00	90.73	6,558.00	469.98	5,475.22	5,491.86	0.00	0.00	0.00
12,600.00	90.00	90.73	6,558.00	468.71	5,575.21	5,591.66	0.00	0.00	0.00
12,700.00	90.00	90.73	6,558.00	467.44	5,675.20	5,691.46	0.00	0.00	0.00
12,800.00	90.00	90.73	6,558.00	466.17	5,775.19	5,791.27	0.00	0.00	0.00
12,900.00	90.00	90.73	6,558.00	464.90	5,875.18	5,891.07	0.00	0.00	0.00
13,000.00	90.00	90.73	6,558.00	463.63	5,975.18	5,990.88	0.00	0.00	0.00
13,100.00	90.00	90.73	6,558.00	462.36	6,075.17	6,090.68	0.00	0.00	0.00
13,200.00	90.00	90.73	6,558.00	461.09	6,175.16	6,190.48	0.00	0.00	0.00
13,300.00	90.00	90.73	6,558.00	459.82	6,275.15	6,290.29	0.00	0.00	0.00
13,400.00	90.00	90.73	6,558.00	458.55	6,375.14	6,390.09	0.00	0.00	0.00
13,500.00	90.00	90.73	6,558.00	457.28	6,475.14	6,489.89	0.00	0.00	0.00
13,600.00	90.00	90.73	6,558.00	456.01	6,575.13	6,589.70	0.00	0.00	0.00
13,700.00	90.00	90.73	6,558.00	454.74	6,675.12	6,689.50	0.00	0.00	0.00
13,800.00	90.00	90.73	6,558.00	453.47	6,775.11	6,789.30	0.00	0.00	0.00
13,900.00	90.00	90.73	6,558.00	452.19	6,875.10	6,889.11	0.00	0.00	0.00
14,000.00	90.00	90.73	6,558.00	450.92	6,975.09	6,988.91	0.00	0.00	0.00
14,047.94	90.00	90.73	6,558.00	450.31	7,023.03	7,036.75	0.00	0.00	0.00
Turn 2°/100'									
14,100.00	90.00	89.69	6,558.00	450.13	7,075.09	7,088.74	2.00	0.00	-2.00
14,137.57	90.00	88.94	6,558.00	450.58	7,112.65	7,126.28	2.00	0.00	-2.00
Hold 90.00° Inc., 88.94° Azm									
14,200.00	90.00	88.94	6,558.00	451.74	7,175.08	7,188.68	0.00	0.00	0.00
14,300.00	90.00	88.94	6,558.00	453.60	7,275.06	7,288.63	0.00	0.00	0.00
14,400.00	90.00	88.94	6,558.00	455.45	7,375.04	7,388.59	0.00	0.00	0.00
14,500.00	90.00	88.94	6,558.00	457.31	7,475.02	7,488.54	0.00	0.00	0.00
14,600.00	90.00	88.94	6,558.00	459.17	7,575.01	7,588.49	0.00	0.00	0.00
14,700.00	90.00	88.94	6,558.00	461.03	7,674.99	7,688.44	0.00	0.00	0.00
14,800.00	90.00	88.94	6,558.00	462.89	7,774.97	7,788.39	0.00	0.00	0.00
14,900.00	90.00	88.94	6,558.00	464.74	7,874.96	7,888.34	0.00	0.00	0.00
15,000.00	90.00	88.94	6,558.00	466.60	7,974.94	7,988.29	0.00	0.00	0.00
15,100.00	90.00	88.94	6,558.00	468.46	8,074.92	8,088.24	0.00	0.00	0.00
15,200.00	90.00	88.94	6,558.00	470.32	8,174.90	8,188.19	0.00	0.00	0.00
15,300.00	90.00	88.94	6,558.00	472.18	8,274.89	8,288.14	0.00	0.00	0.00
15,400.00	90.00	88.94	6,558.00	474.03	8,374.87	8,388.09	0.00	0.00	0.00
15,500.00	90.00	88.94	6,558.00	475.89	8,474.85	8,488.04	0.00	0.00	0.00
15,600.00	90.00	88.94	6,558.00	477.75	8,574.83	8,587.99	0.00	0.00	0.00
15,700.00	90.00	88.94	6,558.00	479.61	8,674.82	8,687.95	0.00	0.00	0.00
15,800.00	90.00	88.94	6,558.00	481.47	8,774.80	8,787.90	0.00	0.00	0.00
15,900.00	90.00	88.94	6,558.00	483.32	8,874.78	8,887.85	0.00	0.00	0.00
16,000.00	90.00	88.94	6,558.00	485.18	8,974.77	8,987.80	0.00	0.00	0.00
16,100.00	90.00	88.94	6,558.00	487.04	9,074.75	9,087.75	0.00	0.00	0.00
16,200.00	90.00	88.94	6,558.00	488.90	9,174.73	9,187.70	0.00	0.00	0.00
16,300.00	90.00	88.94	6,558.00	490.76	9,274.71	9,287.65	0.00	0.00	0.00
16,400.00	90.00	88.94	6,558.00	492.61	9,374.70	9,387.60	0.00	0.00	0.00
16,500.00	90.00	88.94	6,558.00	494.47	9,474.68	9,487.55	0.00	0.00	0.00
16,600.00	90.00	88.94	6,558.00	496.33	9,574.66	9,587.50	0.00	0.00	0.00
16,700.00	90.00	88.94	6,558.00	498.19	9,674.64	9,687.45	0.00	0.00	0.00
16,800.00	90.00	88.94	6,558.00	500.04	9,774.63	9,787.40	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well WELLS RANCH STATE BB03-643
Company:	Northern Region - DJ Basin	TVD Reference:	Well @ 4754.00ft
Project:	Wells Ranch	MD Reference:	Well @ 4754.00ft
Site:	BB Section 03	North Reference:	Grid
Well:	WELLS RANCH STATE BB03-643	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan 2		

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)
16,900.00	90.00	88.94	6,558.00	501.90	9,874.61	9,887.35	0.00	0.00	0.00
17,000.00	90.00	88.94	6,558.00	503.76	9,974.59	9,987.30	0.00	0.00	0.00
17,100.00	90.00	88.94	6,558.00	505.62	10,074.58	10,087.26	0.00	0.00	0.00
17,156.42	90.00	88.94	6,558.00	506.67	10,130.99	10,143.65	0.00	0.00	0.00
TD @ 17156.42' MD/6558.00' TVD									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
WELLS RANCH BB03-6	0.00	0.00	6,558.00	506.67	10,130.99	1,400,345.27	3,308,176.91	40.4270692	-104.3930106
- plan hits target center									
- Point									
WELLS RANCH BB03-6	0.00	0.00	6,558.00	539.56	-0.46	1,400,378.16	3,298,045.48	40.4275010	-104.4293982
- plan hits target center									
- Point									

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
490.00	490.00	Pierre				
540.00	540.00	Upper Pierre Aquifer Top				
1,598.00	1,598.00	Upper Pierre Aquifer Base				
3,518.14	3,501.00	Parkman				
4,270.33	4,229.00	Sussex				
4,903.70	4,842.00	Shannon				
5,972.21	5,877.00	Teepee Buttes				
6,594.39	6,420.00	Sharon Springs				
6,654.67	6,455.00	Top A Chalk				
6,712.20	6,484.00	Top A Marl				
6,871.32	6,540.00	Top B Chalk				

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
2,500.00	2,500.00	0.00	0.00	Build 2°/100'
3,228.54	3,220.71	52.77	-75.53	Hold 14.57° Inc., 304.94° Azm
5,890.46	5,797.01	436.27	-624.52	KOP: Build 9°/100' @ 5890.46' MD
7,023.88	6,558.00	539.56	-0.46	LP/TPZ: 7023.88' MD, 90.00° Inc, 90.73° Azm
14,047.94	6,558.00	450.31	7,023.03	Turn 2°/100'
14,137.57	6,558.00	450.58	7,112.65	Hold 90.00° Inc., 88.94° Azm
17,156.42	6,558.00	506.67	10,130.99	TD @ 17156.42' MD/6558.00' TVD

Northern Region - DJ Basin

Wells Ranch

BB Section 03

WELLS RANCH STATE BB03-643

Wellbore #1

Plan 2

Anticollision Summary Report

27 February, 2019

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well WELLS RANCH STATE BB03-643
Project:	Wells Ranch	TVD Reference:	Well @ 4754.00ft
Reference Site:	BB Section 03	MD Reference:	Well @ 4754.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	WELLS RANCH STATE BB03-643	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan 2	Offset TVD Reference:	Offset Datum

Reference	Plan 2		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD + Stations Interval 100.00ft	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 2/27/2019			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	17,156.42	Plan 2 (Wellbore #1)	2_MWD+IFR1+MS	A008Mb: IFR dec & multi-station analysis

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
AA Section 34						
Wells Ranch 34E-232 - Original Drilling - Original Drilling	116.57	166.58	7,622.18	7,621.63	10,000.000	CC
Wells Ranch 34E-232 - Original Drilling - Original Drilling	200.00	214.00	7,622.58	7,621.57	7,498.738	ES
Wells Ranch 34E-232 - Original Drilling - Original Drilling	12,900.00	11,175.00	8,406.84	8,201.61	40.963	SF
AA Section 35						
Wells Ranch 14-35 - Wellbore #1 - Wellbore #1- As Drille	11,971.23	6,578.50	3,744.00	3,650.39	39.997	CC
Wells Ranch 14-35 - Wellbore #1 - Wellbore #1- As Drille	12,000.00	6,578.67	3,744.11	3,650.16	39.853	ES
Wells Ranch 14-35 - Wellbore #1 - Wellbore #1- As Drille	13,000.00	6,584.39	3,882.76	3,779.51	37.606	SF
Wells Ranch USX AA35-01 - Wellbore #1 - Wellbore #1-	15,985.14	6,628.67	7,726.91	7,585.62	54.690	CC
Wells Ranch USX AA35-01 - Wellbore #1 - Wellbore #1-	16,100.00	6,629.99	7,727.76	7,585.13	54.180	ES
Wells Ranch USX AA35-01 - Wellbore #1 - Wellbore #1-	17,156.42	6,641.53	7,815.17	7,661.44	50.836	SF
Wells Ranch USX AA35-02 - Wellbore #1 - Wellbore #1-	14,730.57	6,747.28	7,666.45	7,539.83	60.548	CC
Wells Ranch USX AA35-02 - Wellbore #1 - Wellbore #1-	14,800.00	6,746.75	7,666.76	7,539.34	60.167	ES
Wells Ranch USX AA35-02 - Wellbore #1 - Wellbore #1-	17,156.42	6,728.86	8,041.07	7,891.82	53.876	SF
Wells Ranch USX AA35-03 - Wellbore #1 - Wellbore #1-	13,390.79	6,613.49	7,828.07	7,717.69	70.924	CC
Wells Ranch USX AA35-03 - Wellbore #1 - Wellbore #1-	13,500.00	6,610.45	7,828.83	7,717.16	70.110	ES
Wells Ranch USX AA35-03 - Wellbore #1 - Wellbore #1-	16,700.00	6,546.33	8,422.90	8,282.06	59.801	SF
Wells Ranch USX AA35-04 - Wellbore #1 - Wellbore #1-	11,810.10	11,810.10	7,680.54	7,570.54	69.822	CC
Wells Ranch USX AA35-04 - Wellbore #1 - Wellbore #1-	11,900.00	11,900.00	7,681.07	7,569.71	68.974	ES
Wells Ranch USX AA35-04 - Wellbore #1 - Wellbore #1-	16,500.00	16,500.00	8,934.41	8,768.97	54.004	SF
Wells Ranch USX AA35-05 - Wellbore #1 - Wellbore #1-	11,893.64	6,586.83	6,434.51	6,341.73	69.357	CC
Wells Ranch USX AA35-05 - Wellbore #1 - Wellbore #1-	12,000.00	6,587.37	6,435.39	6,341.37	68.451	ES
Wells Ranch USX AA35-05 - Wellbore #1 - Wellbore #1-	14,700.00	6,603.04	7,002.33	6,883.96	59.158	SF
Wells Ranch USX AA35-06 - Wellbore #1 - Wellbore #1-	13,272.40	6,568.64	6,450.65	6,341.85	59.291	CC
Wells Ranch USX AA35-06 - Wellbore #1 - Wellbore #1-	13,300.00	6,568.55	6,450.71	6,341.58	59.112	ES
Wells Ranch USX AA35-06 - Wellbore #1 - Wellbore #1-	15,700.00	6,560.76	6,845.01	6,713.77	52.157	SF
Wells Ranch USX AA35-07 - Wellbore #1 - Wellbore #1-	14,805.76	6,604.09	6,450.21	6,323.11	50.748	CC
Wells Ranch USX AA35-07 - Wellbore #1 - Wellbore #1-	14,900.00	6,603.97	6,450.90	6,322.71	50.322	ES
Wells Ranch USX AA35-07 - Wellbore #1 - Wellbore #1-	16,800.00	6,601.48	6,751.46	6,606.40	46.543	SF
Wells Ranch USX AA35-08 - Wellbore #1 - Wellbore #1-	16,113.98	6,600.23	6,393.44	6,250.71	44.795	CC
Wells Ranch USX AA35-08 - Wellbore #1 - Wellbore #1-	16,200.00	6,600.45	6,394.02	6,250.29	44.487	ES
Wells Ranch USX AA35-08 - Wellbore #1 - Wellbore #1-	17,156.42	6,602.93	6,477.87	6,324.51	42.240	SF
Wells Ranch USX AA35-09 - Wellbore #1 - Wellbore #1-	16,237.16	6,634.00	5,161.55	5,017.24	35.766	CC
Wells Ranch USX AA35-09 - Wellbore #1 - Wellbore #1-	16,300.00	6,634.16	5,161.94	5,016.90	35.590	ES
Wells Ranch USX AA35-09 - Wellbore #1 - Wellbore #1-	17,156.42	6,636.39	5,242.77	5,089.65	34.239	SF
Wells Ranch USX AA35-10 - Wellbore #1 - Wellbore #1-	14,749.44	6,535.32	5,133.39	5,007.18	40.673	CC
Wells Ranch USX AA35-10 - Wellbore #1 - Wellbore #1-	14,800.00	6,535.41	5,133.64	5,006.85	40.488	ES

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

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well WELLS RANCH STATE BB03-643
Project:	Wells Ranch	TVD Reference:	Well @ 4754.00ft
Reference Site:	BB Section 03	MD Reference:	Well @ 4754.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	WELLS RANCH STATE BB03-643	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan 2	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						
AA Section 35						
Wells Ranch USX AA35-10 - Wellbore #1 - Wellbore #1-	16,000.00	6,537.73	5,283.52	5,145.92	38.397	SF
Wells Ranch USX AA35-11 - Wellbore #1 - Wellbore #1- A	13,291.42	6,600.34	5,022.90	4,913.78	46.032	CC
Wells Ranch USX AA35-11 - Wellbore #1 - Wellbore #1- A	13,400.00	6,599.84	5,024.07	4,913.66	45.505	ES
Wells Ranch USX AA35-11 - Wellbore #1 - Wellbore #1- A	14,900.00	6,593.03	5,250.02	5,126.12	42.373	SF
Wells Ranch USX AA35-12 - Wellbore #1 - Wellbore #1-	11,881.52	6,618.17	5,325.51	5,232.67	57.362	CC
Wells Ranch USX AA35-12 - Wellbore #1 - Wellbore #1-	11,900.00	6,618.34	5,325.54	5,232.48	57.229	ES
Wells Ranch USX AA35-12 - Wellbore #1 - Wellbore #1-	13,800.00	6,634.78	5,660.51	5,549.78	51.119	SF
Wells Ranch USX AA35-15 - Wellbore #1 - Wellbore #1-	14,840.36	6,520.46	3,855.65	3,728.40	30.298	CC
Wells Ranch USX AA35-15 - Wellbore #1 - Wellbore #1-	14,900.00	6,520.57	3,856.12	3,728.18	30.142	ES
Wells Ranch USX AA35-15 - Wellbore #1 - Wellbore #1-	15,600.00	6,521.84	3,929.77	3,795.77	29.326	SF
Wells Ranch USX AA35-16 - Wellbore #1 - Wellbore #1-	16,177.89	6,537.21	3,767.18	3,623.90	26.292	CC
Wells Ranch USX AA35-16 - Wellbore #1 - Wellbore #1-	16,200.00	6,537.15	3,767.24	3,623.71	26.246	ES
Wells Ranch USX AA35-16 - Wellbore #1 - Wellbore #1-	16,800.00	6,535.50	3,818.20	3,669.34	25.649	SF
Wells Ranch USX AA35-19 - Wellbore #1 - Wellbore #1-	12,689.89	6,644.69	7,196.01	7,093.80	70.407	CC
Wells Ranch USX AA35-19 - Wellbore #1 - Wellbore #1-	12,800.00	6,644.14	7,196.85	7,093.34	69.532	ES
Wells Ranch USX AA35-19 - Wellbore #1 - Wellbore #1-	15,800.00	6,628.46	7,790.00	7,659.33	59.613	SF
Wells Ranch USX AA35-23 - Wellbore #1 - Wellbore #1-	15,523.93	6,558.71	4,489.85	4,354.29	33.120	CC
Wells Ranch USX AA35-23 - Wellbore #1 - Wellbore #1-	15,600.00	6,559.19	4,490.50	4,354.07	32.914	ES
Wells Ranch USX AA35-23 - Wellbore #1 - Wellbore #1-	16,500.00	6,565.16	4,594.72	4,450.49	31.856	SF
Wells Ranch USX AA35-65HN - Plan A - Original Drilling	11,940.75	6,938.41	5,790.77	5,694.28	60.015	CC
Wells Ranch USX AA35-65HN - Plan A - Original Drilling	14,100.00	14,100.00	5,832.04	5,545.42	20.348	ES, SF
BB Section 01						
Wells Ranch 14-01 - Original Drilling - Original Drilling - A	17,156.42	6,473.40	1,452.32	1,300.16	9.545	CC, ES, SF
Wells Ranch 23-01 - Original Drilling - Original Drilling - A	17,156.42	6,459.38	1,555.75	1,501.47	28.661	CC, ES, SF
Wells Ranch 24-01 - Original Drilling - Original Drilling - A	17,156.42	6,467.61	2,147.55	2,029.82	18.241	CC, ES, SF
Wells Ranch USX BB01-01 - Original Drilling - Original D	17,156.42	6,451.21	4,877.79	4,785.12	52.632	CC, ES, SF
Wells Ranch USX BB01-02 - Original Drilling - Original D	17,156.42	6,534.99	3,755.94	3,643.26	33.334	CC, ES, SF
Wells Ranch USX BB01-03 - Original Drilling - Original D	17,156.42	6,625.19	2,813.64	2,678.41	20.806	CC, ES, SF
Wells Ranch USX BB01-04 - Original Drilling - Original D	17,156.42	6,655.86	2,344.66	2,190.96	15.254	CC, ES, SF
Wells Ranch USX BB01-05 - Original Drilling - Original D	17,156.42	6,542.68	1,238.94	1,084.98	8.047	CC, ES, SF
Wells Ranch USX BB01-06 - Original Drilling - Original D	17,156.42	6,518.03	1,857.46	1,759.19	18.901	CC, ES, SF
Wells Ranch USX BB01-07 - Original Drilling - Original D	17,156.42	6,515.53	3,149.14	3,065.79	37.784	CC, ES, SF
Wells Ranch USX BB01-08 - Original Drilling - Original D	17,156.42	6,524.86	4,456.79	4,389.85	66.573	CC, ES, SF
Wells Ranch USX BB01-09 - Original Drilling - Original D	17,156.42	6,482.44	4,279.18	4,228.79	84.912	CC, ES, SF
Wells Ranch USX BB01-10 - Original Drilling - Original D	17,156.42	6,446.02	2,857.54	2,804.66	54.031	CC, ES, SF
Wells Ranch USX BB01-12 - Original Drilling - Original D	17,156.42	6,491.09	313.65	203.06	2.836	CC, ES, SF
Wells Ranch USX BB01-15 - Original Drilling - Original D	17,156.42	6,461.05	3,221.43	3,135.39	37.439	CC, ES, SF
Wells Ranch USX BB01-16 - Original Drilling - Original D	17,156.42	6,512.06	4,340.46	4,265.23	57.698	CC, ES, SF
Wells Ranch USX BB01-17 - Original Drilling - Original D	17,156.42	6,549.06	4,075.40	3,992.01	48.867	CC, ES, SF
Wells Ranch USX BB01-19 - Original Drilling - Original D	17,156.42	6,582.79	2,133.76	1,993.82	15.247	CC, ES, SF
Wells Ranch USX BB01-23 - Original Drilling - Original D	17,156.42	6,524.78	3,857.29	3,797.58	64.604	CC, ES, SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well WELLS RANCH STATE BB03-643
Project:	Wells Ranch	TVD Reference:	Well @ 4754.00ft
Reference Site:	BB Section 03	MD Reference:	Well @ 4754.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	WELLS RANCH STATE BB03-643	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan 2	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						
BB Section 02						
Wells Ranch 11-2 - Wellbore #1 - Gyro Surveys	12,216.76	6,528.00	2,246.14	2,149.85	23.327	CC, ES
Wells Ranch 11-2 - Wellbore #1 - Gyro Surveys	12,600.00	6,526.70	2,278.60	2,178.65	22.798	SF
Wells Ranch 12-2 SI - Wellbore #1 - No Surveys	12,058.09	6,504.00	1,127.07	998.48	8.765	CC, ES
Wells Ranch 12-2 SI - Wellbore #1 - No Surveys	12,100.00	6,504.00	1,127.85	998.78	8.738	SF
Wells Ranch 13-2 - No Surveys - No Surveys	12,065.16	6,514.00	159.14	30.38	1.236	Level 3, CC, ES, SF
Wells Ranch 14-2 - Wellbore #1 - Gyro Surveys	12,091.85	6,423.83	1,517.81	1,423.58	16.107	CC
Wells Ranch 14-2 - Wellbore #1 - Gyro Surveys	12,100.00	6,423.88	1,517.83	1,423.51	16.092	ES
Wells Ranch 14-2 - Wellbore #1 - Gyro Surveys	12,300.00	6,424.94	1,532.02	1,436.11	15.975	SF
Wells Ranch 21-2 SI - Wellbore #1 - Gyro Surveys	13,443.18	6,516.86	2,319.52	2,208.86	20.961	CC, ES
Wells Ranch 21-2 SI - Wellbore #1 - Gyro Surveys	13,800.00	6,518.16	2,346.80	2,232.72	20.571	SF
Wells Ranch 22-2 SI - Wellbore #1 - No Surveys	13,559.12	6,504.00	1,346.83	1,200.64	9.213	CC, ES
Wells Ranch 22-2 SI - Wellbore #1 - No Surveys	13,700.00	6,504.00	1,354.18	1,206.65	9.179	SF
Wells Ranch 23-2 - Wellbore #1 - No Surveys	13,405.31	6,494.00	183.92	39.64	1.275	Level 3, CC, ES, SF
Wells Ranch 24-2 - Wellbore #1 - No Surveys	13,255.37	6,484.00	1,313.71	1,216.25	13.479	CC, ES
Wells Ranch 24-2 - Wellbore #1 - No Surveys	13,400.00	6,484.00	1,321.65	1,223.10	13.410	SF
Wells Ranch 31-2 - Wellbore #1 - Gyro Surveys	14,932.46	6,507.52	2,304.58	2,176.28	17.962	CC, ES
Wells Ranch 31-2 - Wellbore #1 - Gyro Surveys	15,200.00	6,505.20	2,320.06	2,189.43	17.761	SF
Wells Ranch 32-2 - Wellbore #1 - No Surveys	14,722.43	6,518.00	1,202.88	1,042.76	7.512	CC, ES
Wells Ranch 32-2 - Wellbore #1 - No Surveys	14,800.00	6,518.00	1,205.38	1,044.64	7.499	SF
Wells Ranch 33-2 - Wellbore #1 - Gyro Surveys	14,907.41	6,100.00	556.51	455.34	5.501	CC, ES, SF
Wells Ranch 34-2 SI - Wellbore #1 - No Surveys	14,915.64	6,494.00	1,315.67	1,153.46	8.111	CC, ES
Wells Ranch 34-2 SI - Wellbore #1 - No Surveys	15,000.00	6,494.00	1,318.37	1,155.26	8.083	SF
Wells Ranch 41-2 - Wellbore #1 - Gyro Surveys	15,862.25	6,542.38	2,251.84	2,112.37	16.146	CC
Wells Ranch 41-2 - Wellbore #1 - Gyro Surveys	15,900.00	6,542.34	2,252.15	2,112.27	16.101	ES
Wells Ranch 41-2 - Wellbore #1 - Gyro Surveys	16,100.00	6,542.10	2,264.35	2,122.83	16.000	SF
Wells Ranch 42-2 SI - Wellbore #1 - No Surveys	15,845.11	6,504.00	1,327.10	1,153.69	7.653	CC, ES
Wells Ranch 42-2 SI - Wellbore #1 - No Surveys	15,900.00	6,504.00	1,328.24	1,154.33	7.638	SF
Wells Ranch 43-2 TA - Wellbore #1 - Gyro Surveys	15,821.03	6,489.08	407.21	268.60	2.938	CC, ES, SF
Wells Ranch 44-2 - Wellbore #1 - No Surveys	15,845.57	6,494.00	1,314.12	1,140.80	7.582	CC, ES
Wells Ranch 44-2 - Wellbore #1 - No Surveys	15,900.00	6,494.00	1,315.25	1,141.30	7.561	SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well WELLS RANCH STATE BB03-643
Project:	Wells Ranch	TVD Reference:	Well @ 4754.00ft
Reference Site:	BB Section 03	MD Reference:	Well @ 4754.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	WELLS RANCH STATE BB03-643	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan 2	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						
BB Section 03						
Wells 43-3 PA - Wellbore #1 - No Surveys	10,885.46	6,504.00	124.45	9.25	1.080	Level 2, CC, ES, SF
Wells 34-3 - Wellbore #1 - Gyro Surveys	9,392.03	6,575.04	1,573.86	1,508.55	24.099	CC
Wells 34-3 - Wellbore #1 - Gyro Surveys	9,400.00	6,574.87	1,573.88	1,508.50	24.072	ES
Wells 34-3 - Wellbore #1 - Gyro Surveys	9,600.00	6,570.22	1,587.53	1,520.53	23.694	SF
Wells Rach USX BB 3-14 - Wellbore #1 - Gyro Surveys	2,534.98	2,510.43	1,614.17	1,596.71	92.458	CC, ES
Wells Rach USX BB 3-14 - Wellbore #1 - Gyro Surveys	8,400.00	6,482.44	1,747.57	1,692.41	31.681	SF
Wells Ranch 12-03 - Original Drilling - Original Drilling - A	6,885.36	6,536.43	950.83	903.72	20.185	CC, ES
Wells Ranch 12-03 - Original Drilling - Original Drilling - A	6,950.00	6,548.11	953.42	906.11	20.154	SF
Wells Ranch 21-3 TA - Wellbore #1 - No Surveys	8,051.59	6,554.00	2,331.86	2,244.32	26.636	CC, ES
Wells Ranch 21-3 TA - Wellbore #1 - No Surveys	8,500.00	6,554.00	2,374.59	2,283.63	26.106	SF
Wells Ranch 32-3 SI - Wellbore #1 - No Surveys	9,536.69	6,514.00	1,064.19	963.46	10.565	CC, ES
Wells Ranch 32-3 SI - Wellbore #1 - No Surveys	9,600.00	6,514.00	1,066.07	964.69	10.516	SF
Wells Ranch 41-3 - Wellbore #1 - No Surveys	10,686.95	6,875.00	3,000.36	2,898.94	29.586	CC
Wells Ranch 41-3 - Wellbore #1 - No Surveys	10,700.00	6,875.00	3,000.38	2,898.83	29.545	ES
Wells Ranch 41-3 - Wellbore #1 - No Surveys	11,400.00	6,875.00	3,083.92	2,975.36	28.408	SF
WELLS RANCH BB03-627 - Wellbore #1 - Plan 1	14,104.79	14,155.42	997.99	805.77	5.192	CC
WELLS RANCH BB03-627 - Wellbore #1 - Plan 1	17,156.42	17,206.85	1,032.72	767.44	3.893	ES, SF
WELLS RANCH BB03-651 - Wellbore #1 - Plan 3	2,836.20	2,835.23	29.77	9.93	1.500	CC, ES, SF
WELLS RANCH STATE BB03-612 - Wellbore #1 - Plan #	2,000.00	1,991.00	1,079.62	1,065.77	78.004	CC, ES
WELLS RANCH STATE BB03-612 - Wellbore #1 - Plan #	17,156.42	17,156.41	2,065.44	1,800.94	7.809	SF
WELLS RANCH STATE BB03-620 - Wellbore #1 - Plan 1	2,538.57	2,537.89	1,041.86	1,024.17	58.894	CC
WELLS RANCH STATE BB03-620 - Wellbore #1 - Plan 1	2,600.00	2,600.46	1,042.24	1,024.11	57.498	ES
WELLS RANCH STATE BB03-620 - Wellbore #1 - Plan 1	17,156.42	17,129.19	1,530.63	1,266.21	5.789	SF
WELLS RANCH STATE BB03-636 - Wellbore #1 - Plan 1	2,250.20	2,250.20	36.43	20.76	2.326	CC
WELLS RANCH STATE BB03-636 - Wellbore #1 - Plan 1	2,400.00	2,399.71	37.01	20.29	2.214	ES
WELLS RANCH STATE BB03-636 - Wellbore #1 - Plan 1	17,100.00	17,033.23	520.39	258.97	1.991	SF
WELLS RANCH STATE BB03-659 - Wellbore #1 - Plan 1	6,932.37	7,103.20	867.32	817.88	17.540	CC
WELLS RANCH STATE BB03-659 - Wellbore #1 - Plan 1	17,111.09	17,274.90	1,052.08	788.01	3.984	ES, SF
WELLS RANCH STATE BB03-668 - Wellbore #1 - Plan 1	6,979.82	7,161.82	1,604.04	1,554.29	32.248	CC
WELLS RANCH STATE BB03-668 - Wellbore #1 - Plan 1	17,156.42	17,304.30	1,643.08	1,378.22	6.204	ES, SF
WELLS RANCH STATE BB03-676 - Wellbore #1 - Plan 1	17,151.89	17,284.21	2,201.32	1,935.88	8.293	CC
WELLS RANCH STATE BB03-676 - Wellbore #1 - Plan 1	17,156.42	17,284.21	2,201.33	1,935.84	8.292	ES, SF
WELLS RANCH STATE BB03-684 - Wellbore #1 - Plan 1	1,903.70	1,931.70	2,262.29	2,249.00	170.317	CC
WELLS RANCH STATE BB03-684 - Wellbore #1 - Plan 1	2,000.00	2,020.53	2,262.33	2,248.39	162.226	ES
WELLS RANCH STATE BB03-684 - Wellbore #1 - Plan 1	17,156.42	17,665.22	2,745.94	2,479.76	10.316	SF
Wells Ranch State BB05-613 - Original Drilling - Original	2,016.17	2,006.21	1,086.89	1,073.26	79.766	CC, ES
Wells Ranch State BB05-613 - Original Drilling - Original	6,600.00	6,437.35	2,084.09	2,042.86	50.544	SF
Wells Ranch State BB05-617 - Original Drilling - Original	2,382.76	2,370.79	1,046.60	1,031.52	69.409	CC
Wells Ranch State BB05-617 - Original Drilling - Original	2,400.00	2,381.72	1,046.67	1,031.52	69.090	ES
Wells Ranch State BB05-617 - Original Drilling - Original	6,650.00	6,396.69	1,818.98	1,778.24	44.648	SF
Wells Ranch State BB05-625 - Original Drilling - Original	2,191.77	2,179.82	1,014.69	1,000.38	70.935	CC
Wells Ranch State BB05-625 - Original Drilling - Original	2,200.00	2,185.06	1,014.71	1,000.38	70.778	ES
Wells Ranch State BB05-625 - Original Drilling - Original	6,500.00	6,408.10	1,351.85	1,310.96	33.060	SF
Wells Ranch State BB05-630 - Original Drilling - Original	2,460.93	2,463.22	200.10	184.60	12.909	CC
Wells Ranch State BB05-630 - Original Drilling - Original	2,500.00	2,500.29	200.27	184.59	12.772	ES
Wells Ranch State BB05-630 - Original Drilling - Original	3,000.00	2,984.31	213.09	195.01	11.783	SF
Wells Ranch State BB05-635 - Original Drilling - Original	3,254.68	3,237.01	187.62	168.12	9.618	CC, ES
Wells Ranch State BB05-635 - Original Drilling - Original	3,400.00	3,374.10	193.02	172.74	9.514	SF
Wells Ranch State BB05-644 - Original Drilling - Original	4,063.07	4,033.61	30.13	5.75	1.236	Level 3, CC, ES, SF
Wells Ranch State BB05-650 - Original Drilling - Original	3,969.39	3,929.36	187.24	163.43	7.866	CC
Wells Ranch State BB05-650 - Original Drilling - Original	4,000.00	3,959.67	187.29	163.28	7.802	ES
Wells Ranch State BB05-650 - Original Drilling - Original	6,593.86	6,470.36	228.98	187.23	5.485	SF
Wells Ranch State BB05-656 - Original Drilling - Original	6,391.80	6,381.44	794.53	753.77	19.493	CC, ES

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

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well WELLS RANCH STATE BB03-643
Project:	Wells Ranch	TVD Reference:	Well @ 4754.00ft
Reference Site:	BB Section 03	MD Reference:	Well @ 4754.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	WELLS RANCH STATE BB03-643	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan 2	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						
BB Section 03						
Wells Ranch State BB05-656 - Original Drilling - Original	6,450.00	6,399.39	797.21	756.16	19.424	SF
Wells Ranch State BB05-665 - Original Drilling - Original	6,662.04	6,304.98	1,407.76	1,367.19	34.697	CC, ES
Wells Ranch State BB05-665 - Original Drilling - Original	6,800.00	6,330.00	1,414.93	1,373.94	34.521	SF
Wells Ranch State BB05-669 - Original Drilling - Original	6,686.75	6,423.23	1,686.29	1,644.86	40.698	CC, ES
Wells Ranch State BB05-669 - Original Drilling - Original	6,800.00	6,420.49	1,690.98	1,649.23	40.503	SF
Wells Ranch State BB05-678 - Original Drilling - Original	6,742.48	6,614.00	2,047.47	2,005.97	49.328	CC
Wells Ranch State BB05-678 - Original Drilling - Original	6,750.00	6,614.00	2,047.50	2,005.97	49.302	ES
Wells Ranch State BB05-678 - Original Drilling - Original	6,900.00	6,578.34	2,055.78	2,013.90	49.092	SF
Wells Ranch State BB05-685 - Original Drilling - Original	6,541.12	6,495.99	2,659.75	2,618.43	64.366	CC
Wells Ranch State BB05-685 - Original Drilling - Original	6,550.00	6,496.85	2,659.78	2,618.42	64.316	ES
Wells Ranch State BB05-685 - Original Drilling - Original	6,800.00	6,489.41	2,681.44	2,639.36	63.711	SF
Wells Ranch State BB05-690 - Original Drilling - Original	0.00	49.78	2,811.01			
Wells Ranch State BB05-690 - Original Drilling - Original	1,956.82	2,012.86	2,812.08	2,798.67	209.780	ES
Wells Ranch State BB05-690 - Original Drilling - Original	7,600.00	6,174.46	3,051.27	3,006.99	68.902	SF
Wells Ranch USX BB 3-10 - Wellbore #1 - Gyro Surveys	9,318.24	6,515.22	264.53	200.23	4.114	CC, ES, SF
Wells Ranch USX BB 3-11 SI - Wellbore #1 - Gyro Surve	8,221.80	6,516.68	361.68	307.42	6.665	CC, ES, SF
Wells Ranch USX BB 3-16 SI - Wellbore #1 - Gyro Surve	10,729.69	6,468.33	1,649.69	1,570.65	20.870	CC, ES
Wells Ranch USX BB 3-16 SI - Wellbore #1 - Gyro Surve	11,000.00	6,470.27	1,671.69	1,590.44	20.574	SF
Wells Ranch USX BB 3-2 SI - Wellbore #1 - No Surveys	9,271.53	6,523.00	2,487.90	2,389.79	25.356	CC
Wells Ranch USX BB 3-2 SI - Wellbore #1 - No Surveys	9,300.00	6,523.00	2,488.07	2,389.66	25.283	ES
Wells Ranch USX BB 3-2 SI - Wellbore #1 - No Surveys	9,800.00	6,523.00	2,543.41	2,440.44	24.699	SF
Wells Ranch USX BB 3-4 - Wellbore #1 - No Surveys	6,814.85	6,550.35	2,449.03	2,367.64	30.089	CC, ES
Wells Ranch USX BB 3-4 - Wellbore #1 - No Surveys	6,950.00	6,579.76	2,454.74	2,372.73	29.931	SF
Wells Ranch USX BB 3-6 SI - Wellbore #1 - Gyro Survey	1,229.33	3,327.60	1,910.71	1,895.08	122.205	CC
Wells Ranch USX BB 3-6 SI - Wellbore #1 - Gyro Survey	1,300.00	3,384.54	1,910.97	1,894.88	118.797	ES
Wells Ranch USX BB 3-6 SI - Wellbore #1 - Gyro Survey	4,700.00	6,600.00	2,048.64	2,009.13	51.846	SF
Wells Ranch USX BB 3-8 - Wellbore #1 - Gyro Surveys	10,604.00	6,518.83	1,040.46	962.58	13.359	CC, ES
Wells Ranch USX BB 3-8 - Wellbore #1 - Gyro Surveys	10,700.00	6,517.92	1,044.88	966.04	13.253	SF
Wells Ranch USX BB03-04 - Original Drilling - Original D	6,829.58	6,570.92	2,478.03	2,431.00	52.697	CC, ES
Wells Ranch USX BB03-04 - Original Drilling - Original D	7,100.00	6,604.71	2,500.55	2,452.68	52.234	SF
Wells Ranch USX BB03-12 - Original Drilling - Original D	4,622.89	4,539.81	29.83	-2.36	0.927	Level 1, CC, ES, SF
Wells Ranch USX BB03-13 - Original Drilling - Original D	2,543.87	2,507.76	945.10	927.58	53.949	CC
Wells Ranch USX BB03-13 - Original Drilling - Original D	2,600.00	2,563.82	945.34	927.43	52.775	ES
Wells Ranch USX BB03-13 - Original Drilling - Original D	7,023.88	6,433.73	1,532.72	1,485.76	32.638	SF
Wells Ranch USX BB03-25 PA - Original Drilling - Gyro S	149.73	110.33	665.25	664.75	1,339.748	CC
Wells Ranch USX BB03-25 PA - Original Drilling - Gyro S	2,500.00	2,459.65	667.60	650.45	38.917	ES
Wells Ranch USX BB03-25 PA - Original Drilling - Gyro S	7,700.00	6,478.81	1,015.47	965.23	20.212	SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well WELLS RANCH STATE BB03-643
Project:	Wells Ranch	TVD Reference:	Well @ 4754.00ft
Reference Site:	BB Section 03	MD Reference:	Well @ 4754.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	WELLS RANCH STATE BB03-643	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan 2	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						
BB Section 04						
State 11-04 - Original Drilling - Original Drilling - As Drille	6,059.94	5,891.42	5,256.41	5,214.39	125.081	CC, ES
State 11-04 - Original Drilling - Original Drilling - As Drille	6,450.00	6,247.53	5,359.97	5,315.69	121.058	SF
State 12-04 - Original Drilling - Original Drilling - As Drille	6,069.58	6,163.14	4,814.25	4,771.34	112.186	CC, ES
State 12-04 - Original Drilling - Original Drilling - As Drille	6,350.00	6,324.36	4,876.66	4,832.35	110.072	SF
State 13-04 - Original Drilling - Original Drilling - As Drille	6,011.66	5,837.34	4,891.92	4,850.24	117.362	CC, ES
State 13-04 - Original Drilling - Original Drilling - As Drille	6,350.00	6,110.33	4,981.06	4,937.46	114.240	SF
State 21-04 - Original Drilling - Original Drilling - As Drille	6,094.25	6,020.52	4,310.04	4,267.45	101.214	CC
State 21-04 - Original Drilling - Original Drilling - As Drille	6,100.00	6,025.98	4,310.06	4,267.44	101.124	ES
State 21-04 - Original Drilling - Original Drilling - As Drille	6,500.00	6,404.32	4,415.15	4,370.23	98.284	SF
State 22-04 - Original Drilling - Original Drilling - As Drille	6,049.92	5,949.84	3,701.45	3,560.93	26.340	CC
State 22-04 - Original Drilling - Original Drilling - As Drille	6,050.00	5,949.91	3,701.45	3,560.93	26.340	ES
State 22-04 - Original Drilling - Original Drilling - As Drille	6,400.00	6,274.96	3,792.57	3,644.61	25.633	SF
State 23-04 - Original Drilling - Original Drilling - As Drille	6,007.72	5,888.10	3,525.49	3,483.62	84.209	CC, ES
State 23-04 - Original Drilling - Original Drilling - As Drille	6,300.00	6,222.12	3,589.83	3,545.96	81.827	SF
State 24-04 - Original Drilling - Original Drilling - As Drille	5,972.64	5,813.60	3,763.18	3,721.56	90.405	CC, ES
State 24-04 - Original Drilling - Original Drilling - As Drille	6,300.00	6,185.07	3,835.35	3,791.42	87.311	SF
State 31-04 (SI) - Original Drilling - Original Drilling - As D	6,129.67	6,056.50	3,260.02	3,217.08	75.913	CC, ES
State 31-04 (SI) - Original Drilling - Original Drilling - As D	6,450.00	6,330.05	3,316.57	3,271.82	74.112	SF
State 32-04 - Original Drilling - Original Drilling - As Drille	6,067.82	5,967.52	2,362.54	2,221.59	16.762	CC, ES
State 32-04 - Original Drilling - Original Drilling - As Drille	6,300.00	6,188.80	2,401.01	2,254.97	16.440	SF
State 33-04 - Original Drilling - Original Drilling - As Drille	6,012.46	5,897.77	2,206.70	2,067.26	15.826	CC, ES
State 33-04 - Original Drilling - Original Drilling - As Drille	6,250.00	6,128.14	2,250.36	2,105.58	15.544	SF
State 41-04 (SI) - Original Drilling - Original Drilling - As D	6,238.95	6,178.02	2,580.11	2,536.28	58.860	CC
State 41-04 (SI) - Original Drilling - Original Drilling - As D	6,250.00	6,188.95	2,580.15	2,536.25	58.767	ES
State 41-04 (SI) - Original Drilling - Original Drilling - As D	6,550.00	6,442.95	2,616.56	2,571.02	57.457	SF
State 42-04 (SI) - Original Drilling - Original Drilling - As D	6,128.16	6,016.79	1,501.30	1,359.02	10.552	CC
State 42-04 (SI) - Original Drilling - Original Drilling - As D	6,150.00	6,038.05	1,501.56	1,358.79	10.517	ES
State 42-04 (SI) - Original Drilling - Original Drilling - As D	6,300.00	6,178.80	1,517.63	1,371.63	10.395	SF
State Lease 34-04 (PA) - Original Drilling - Original Drillin	5,957.13	5,839.15	2,595.15	2,456.84	18.764	CC, ES
State Lease 34-04 (PA) - Original Drilling - Original Drillin	6,250.00	6,124.14	2,648.99	2,504.04	18.275	SF
State Wells 14-04 - Original Drilling - Original Drilling - As	5,992.57	5,880.10	4,912.75	4,773.65	35.318	CC
State Wells 14-04 - Original Drilling - Original Drilling - As	6,000.00	5,887.45	4,912.79	4,773.52	35.274	ES
State Wells 14-04 - Original Drilling - Original Drilling - As	6,450.00	6,301.93	5,061.94	4,913.18	34.026	SF
State Wells 44-04 - Original Drilling - Original Drilling - As	4,370.23	4,241.25	1,775.00	1,744.83	58.834	CC
State Wells 44-04 - Original Drilling - Original Drilling - As	4,400.00	4,265.98	1,775.05	1,744.68	58.452	ES
State Wells 44-04 - Original Drilling - Original Drilling - As	6,200.00	6,046.37	1,875.22	1,831.76	43.143	SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well WELLS RANCH STATE BB03-643
Project:	Wells Ranch	TVD Reference:	Well @ 4754.00ft
Reference Site:	BB Section 03	MD Reference:	Well @ 4754.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	WELLS RANCH STATE BB03-643	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan 2	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
BB Section 05						
UPV 05-03H3 - Original Drilling - Original Drilling - As Dri	6,040.43	5,772.14	9,091.77	9,050.27	219.093	CC, ES
UPV 05-03H3 - Original Drilling - Original Drilling - As Dri	6,500.00	6,087.37	9,248.51	9,204.76	211.422	SF
UPV 05-04H3 - Original Drilling - Original Drilling - As Dri						Out of range
UPV 05-05H3 - Original Drilling - Original Drilling - As Dri						Out of range
UPV 05-06H3 - Original Drilling - Original Drilling - As Dri	6,044.91	6,055.53	8,760.61	8,718.16	206.380	CC
UPV 05-06H3 - Original Drilling - Original Drilling - As Dri	6,050.00	6,058.71	8,760.63	8,718.15	206.238	ES
UPV 05-06H3 - Original Drilling - Original Drilling - As Dri	6,450.00	6,400.00	8,883.84	8,839.15	198.791	SF
Wells Ranch 31-05 - Original Drilling - Original Drilling - A	6,077.64	6,231.16	7,672.93	7,629.78	177.830	CC, ES
Wells Ranch 31-05 - Original Drilling - Original Drilling - A	6,450.00	6,400.01	7,778.79	7,734.05	173.863	SF
Wells Ranch 32-05 - Original Drilling - Original Drilling - A	6,046.50	6,030.67	7,464.90	7,422.51	176.111	CC
Wells Ranch 32-05 - Original Drilling - Original Drilling - A	6,050.00	6,034.09	7,464.91	7,422.50	176.011	ES
Wells Ranch 32-05 - Original Drilling - Original Drilling - A	6,500.00	6,415.79	7,619.26	7,574.41	169.920	SF
Wells Ranch 41-05 - Original Drilling - Original Drilling - A	6,061.39	5,989.58	6,522.73	6,480.44	154.236	CC, ES
Wells Ranch 41-05 - Original Drilling - Original Drilling - A	6,800.00	6,800.00	6,886.01	6,839.55	148.231	SF
Wells Ranch 42-05 - Original Drilling - Original Drilling - A	6,042.99	5,950.85	6,217.44	6,175.32	147.600	CC
Wells Ranch 42-05 - Original Drilling - Original Drilling - A	6,050.00	5,958.79	6,217.48	6,175.31	147.420	ES
Wells Ranch 42-05 - Original Drilling - Original Drilling - A	6,500.00	6,404.58	6,372.49	6,327.69	142.238	SF
Wells Ranch BB01-611 - Original Drilling - Original Drillin	17,156.42	16,278.00	2,171.18	1,914.00	8.442	CC, ES, SF
Wells Ranch BB01-615 - Original Drilling - Original Drillin	17,156.42	16,386.00	1,706.73	1,446.12	6.549	CC, ES, SF
Wells Ranch BB01-624 - Original Drilling - Original Drillin	17,156.42	6,931.00	9,585.81	9,537.60	198.829	CC, ES, SF
Wells Ranch BB01-624 - Original Drilling - ST01 - ST01 -	17,156.42	16,377.00	1,038.63	813.50	4.613	CC, ES, SF
Wells Ranch BB01-638 - Original Drilling - Original Drillin	17,156.42	16,495.00	387.74	135.78	1.539	CC, ES, SF
Wells Ranch BB01-649 - Original Drilling - Original Drillin	17,156.42	16,403.00	302.26	52.75	1.211	Level 3, CC, ES, SF
Wells Ranch BB01-655 - Original Drilling - Original Drillin	17,156.42	16,335.00	870.89	630.45	3.622	CC, ES, SF
Wells Ranch BB01-669 - Original Drilling - Original Drillin	17,156.42	16,340.67	1,522.77	1,275.25	6.152	CC, ES, SF
Wells Ranch BB01-675 - Original Drilling - Original Drillin	17,156.42	16,379.00	2,182.17	1,937.00	8.901	CC, ES, SF
Wells Ranch State AA32-717 - Wellbore #1 - Plan 1	6,090.77	6,350.00	6,589.20	6,544.62	147.787	CC, ES
Wells Ranch State AA32-717 - Wellbore #1 - Plan 1	6,400.00	6,373.01	6,663.53	6,617.98	146.286	SF
Wells Ranch State AA32-724 - Wellbore #1 - Plan 1	6,073.47	6,150.00	6,976.02	6,932.54	160.430	CC, ES
Wells Ranch State AA32-724 - Wellbore #1 - Plan 1	6,350.00	6,200.00	7,035.07	6,990.57	158.102	SF
Wells Ranch State AA32-731 - Wellbore #1 - Plan 1	5,991.89	5,208.56	7,434.02	7,393.96	185.566	CC
Wells Ranch State AA32-731 - Wellbore #1 - Plan 1	6,000.00	5,216.63	7,434.07	7,393.95	185.289	ES
Wells Ranch State AA32-731 - Wellbore #1 - Plan 1	6,550.00	5,703.95	7,647.35	7,604.04	176.558	SF
Wells Ranch State AA32-737 - Wellbore #1 - Plan 1	5,954.06	4,728.65	7,649.00	7,610.91	200.809	CC, ES
Wells Ranch State AA32-737 - Wellbore #1 - Plan 1	6,500.00	5,211.78	7,856.46	7,815.13	190.132	SF
Wells Ranch State AA32-745 - Wellbore #1 - Plan 1	6,074.91	6,250.00	8,274.60	8,230.86	189.169	CC, ES
Wells Ranch State AA32-745 - Wellbore #1 - Plan 1	6,350.00	6,300.00	8,333.51	8,288.82	186.437	SF
Wells Ranch State AA32-751 - Wellbore #1 - Plan 1	6,067.95	6,150.00	8,618.01	8,574.90	199.890	CC, ES
Wells Ranch State AA32-751 - Wellbore #1 - Plan 1	6,350.00	6,200.00	8,680.57	8,636.46	196.798	SF
Wells Ranch State AA32-759 (Killed) - Wellbore #1 - Plan	6,002.53	5,200.00	8,991.84	8,952.00	225.697	CC, ES
Wells Ranch State AA32-759 (Killed) - Wellbore #1 - Plan	6,300.00	5,300.00	9,059.53	9,018.46	220.603	SF
Wells Ranch State AA32-763 - Wellbore #1 - Plan 1	5,983.55	4,907.68	9,329.34	9,290.65	241.094	CC, ES
Wells Ranch State AA32-763 - Wellbore #1 - Plan 1	6,550.00	5,389.43	9,555.73	9,513.90	228.469	SF
Wells Ranch State AA32-770 - Wellbore #1 - Plan 1	6,064.22	6,200.00	9,819.38	9,775.99	226.312	CC, ES
Wells Ranch State AA32-770 - Wellbore #1 - Plan 1	6,400.00	6,250.00	9,908.26	9,863.79	222.804	SF
Wells Ranch State AA32-775 - Wellbore #1 - Plan 1						Out of range
Wells Ranch State AA32-783 - Wellbore #1 - Plan 1						Out of range
Wells Ranch State AA32-789 - Wellbore #1 - Plan1						Out of range
Wells Ranch State BB01-690 - Original Drilling - Original	17,156.42	16,119.00	3,130.63	2,874.28	12.213	CC, ES, SF
Wells Ranch USX BB05-09 - Original Drilling - Original D	6,027.93	5,967.95	5,922.31	5,880.16	140.488	CC, ES
Wells Ranch USX BB05-09 - Original Drilling - Original D	6,450.00	6,321.95	6,059.13	6,014.64	136.192	SF
Wells Ranch USX BB05-10 - Original Drilling - Original D	6,027.31	6,008.95	7,288.16	7,245.88	172.389	CC, ES
Wells Ranch USX BB05-10 - Original Drilling - Original D	6,600.00	6,520.65	7,528.22	7,482.89	166.054	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 WELLS RANCH STATE BB03-643
Project:	Wells Ranch	TVD Reference:	Well @ 4754.00ft
Reference Site:	BB Section 03	MD Reference:	Well @ 4754.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	WELLS RANCH STATE BB03-643	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan 2	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						
BB Section 05						
Wells Ranch USX BB05-11 - Original Drilling - Original Dr	6,021.03	5,873.09	8,635.86	8,594.05	206.551	CC, ES
Wells Ranch USX BB05-11 - Original Drilling - Original Dr	6,450.00	6,450.00	8,776.98	8,732.05	195.306	SF
Wells Ranch USX BB05-12 - Original Drilling - Original D	6,016.82	5,834.31	9,980.80	9,939.12	239.428	CC, ES
Wells Ranch USX BB05-12 - Original Drilling - Original D	6,150.00	5,969.02	9,994.62	9,952.03	234.664	SF
Wells Ranch USX BB05-13 - Original Drilling - Original D						Out of range
Wells Ranch USX BB05-14 - Original Drilling - Original D	6,011.08	5,962.24	8,801.20	8,759.06	208.858	CC, ES
Wells Ranch USX BB05-14 - Original Drilling - Original D	6,450.00	6,150.12	8,949.08	8,905.10	203.502	SF
Wells Ranch USX BB05-15 - Original Drilling - Original D	6,043.29	6,043.29	7,563.97	7,521.59	178.461	CC
Wells Ranch USX BB05-15 - Original Drilling - Original D	6,050.00	6,050.00	7,564.01	7,521.58	178.265	ES
Wells Ranch USX BB05-15 - Original Drilling - Original D	6,450.00	6,600.01	7,690.49	7,645.04	169.201	SF
Wells Ranch USX BB05-16 - Original Drilling - Original D	6,013.33	6,032.18	6,272.76	6,230.34	147.889	CC, ES
Wells Ranch USX BB05-16 - Original Drilling - Original D	6,500.00	6,517.19	6,445.30	6,399.98	142.197	SF
Wells Ranch USX BB05-23 - Original Drilling - Original D	6,018.26	5,985.51	6,575.33	6,533.08	155.604	CC, ES
Wells Ranch USX BB05-23 - Original Drilling - Original D	6,450.00	6,380.84	6,715.28	6,670.52	150.009	SF
Wells Ranch USX BB05-25 - Original Drilling - Original D	6,006.13	5,741.75	9,550.43	9,509.08	230.952	CC, ES
Wells Ranch USX BB05-25 - Original Drilling - Original D	6,500.00	6,135.97	9,732.63	9,688.66	221.361	SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well WELLS RANCH STATE BB03-643
Project:	Wells Ranch	TVD Reference:	Well @ 4754.00ft
Reference Site:	BB Section 03	MD Reference:	Well @ 4754.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	WELLS RANCH STATE BB03-643	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan 2	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						
BB Section 10						
Wells Ranch 10A - Original Drilling - Original Drilling - As	2,545.14	2,515.27	3,123.11	3,105.61	178.488	CC, ES
Wells Ranch 10A - Original Drilling - Original Drilling - As	9,100.00	6,595.49	3,941.04	3,881.40	66.083	SF
Wells Ranch 10B - Original Drilling - Original Drilling - As	2,362.78	2,288.90	5,879.20	5,863.13	365.848	CC
Wells Ranch 10B - Original Drilling - Original Drilling - As	2,500.00	2,378.70	5,879.73	5,862.85	348.463	ES
Wells Ranch 10B - Original Drilling - Original Drilling - As	11,900.00	6,518.03	7,615.28	7,532.96	92.505	SF
Wells Ranch 10C - Original Drilling - Original Drilling - As	10,326.25	6,486.82	3,411.06	3,336.25	45.598	CC, ES
Wells Ranch 10C - Original Drilling - Original Drilling - As	11,300.00	6,487.17	3,547.33	3,464.04	42.590	SF
Wells Ranch 10F - Original Drilling - Original Drilling - As	2,567.42	2,553.06	3,250.97	3,233.25	183.491	CC
Wells Ranch 10F - Original Drilling - Original Drilling - As	2,600.00	2,587.67	3,251.03	3,233.07	181.077	ES
Wells Ranch 10F - Original Drilling - Original Drilling - As	8,000.00	6,715.46	4,035.92	3,983.77	77.391	SF
Wells Ranch 10H - Original Drilling - Original Drilling - As	2,523.80	2,483.23	5,808.76	5,791.42	335.130	CC
Wells Ranch 10H - Original Drilling - Original Drilling - As	2,600.00	2,579.23	5,809.18	5,791.24	323.823	ES
Wells Ranch 10H - Original Drilling - Original Drilling - As	11,200.00	6,485.38	7,882.38	7,808.80	107.125	SF
Wells Ranch 10J - Original Drilling - Original Drilling - As	2,601.34	2,595.79	1,823.81	1,806.67	106.402	CC, ES
Wells Ranch 10J - Original Drilling - Original Drilling - As	8,000.00	6,514.24	2,381.40	2,330.16	46.477	SF
Wells Ranch 10K - Original Drilling - Original Drilling - As	218.97	154.97	4,578.97	4,578.05	4,982.233	CC
Wells Ranch 10K - Original Drilling - Original Drilling - As	600.00	518.35	4,579.98	4,576.43	1,288.616	ES
Wells Ranch 10K - Original Drilling - Original Drilling - As	16,000.00	16,000.00	9,660.55	9,539.23	79.624	SF
Wells Ranch 11-10 - Original Drilling - Original Drilling - A	100.00	42.48	2,453.87	2,453.67	10,000.000	CC
Wells Ranch 11-10 - Original Drilling - Original Drilling - A	2,600.00	2,576.31	2,457.35	2,439.43	137.202	ES
Wells Ranch 11-10 - Original Drilling - Original Drilling - A	7,900.00	6,520.13	3,160.28	3,109.14	61.787	SF
Wells Ranch 12-10 - Original Drilling - Original Drilling - A	100.00	45.24	3,935.72	3,935.51	10,000.000	CC
Wells Ranch 12-10 - Original Drilling - Original Drilling - A	2,600.00	2,611.12	3,941.99	3,923.96	218.701	ES
Wells Ranch 12-10 - Original Drilling - Original Drilling - A	9,600.00	6,200.00	5,205.08	5,143.89	85.069	SF
Wells Ranch 13-10 - Original Drilling - Original Drilling - A	100.00	27.07	5,176.96	5,176.78	10,000.000	CC
Wells Ranch 13-10 - Original Drilling - Original Drilling - A	500.00	400.00	5,178.99	5,176.20	1,859.166	ES
Wells Ranch 13-10 - Original Drilling - Original Drilling - A	10,800.00	6,400.00	6,998.48	6,927.43	98.496	SF
Wells Ranch 14-10 - Original Drilling - Original Drilling - A	2,537.71	2,499.66	6,362.69	6,345.24	364.666	CC
Wells Ranch 14-10 - Original Drilling - Original Drilling - A	2,600.00	2,566.63	6,363.03	6,345.13	355.402	ES
Wells Ranch 14-10 - Original Drilling - Original Drilling - A	12,000.00	6,443.51	8,565.27	8,484.63	106.222	SF
Wells Ranch 21-10 - Original Drilling - Original Drilling - A	1,001.82	947.85	2,601.96	2,595.47	400.450	CC
Wells Ranch 21-10 - Original Drilling - Original Drilling - A	2,523.83	2,489.07	2,609.21	2,591.88	150.533	ES
Wells Ranch 21-10 - Original Drilling - Original Drilling - A	9,100.00	6,572.67	2,955.05	2,894.11	48.494	SF
Wells Ranch 22-10 - Original Drilling - Original Drilling - A	100.00	31.91	3,833.31	3,833.13	10,000.000	CC
Wells Ranch 22-10 - Original Drilling - Original Drilling - A	400.00	316.68	3,834.21	3,832.07	1,796.054	ES
Wells Ranch 22-10 - Original Drilling - Original Drilling - A	10,200.00	6,492.44	4,622.17	4,552.71	66.544	SF
Wells Ranch 23-10 - Original Drilling - Original Drilling - A	915.40	841.45	5,341.30	5,335.48	917.536	CC
Wells Ranch 23-10 - Original Drilling - Original Drilling - A	2,517.20	2,466.78	5,344.35	5,327.11	310.077	ES
Wells Ranch 23-10 - Original Drilling - Original Drilling - A	15,100.00	15,100.00	8,970.78	8,847.57	72.811	SF
Wells Ranch 24-10 - Original Drilling - Original Drilling - A	100.00	20.13	6,510.33	6,510.17	10,000.000	CC
Wells Ranch 24-10 - Original Drilling - Original Drilling - A	2,500.00	2,391.62	6,511.10	6,494.19	385.063	ES
Wells Ranch 24-10 - Original Drilling - Original Drilling - A	12,700.00	6,347.60	8,154.34	8,064.10	90.364	SF
Wells Ranch 31-10 - Original Drilling - Original Drilling - A	9,584.78	6,483.58	2,886.90	2,820.03	43.171	CC
Wells Ranch 31-10 - Original Drilling - Original Drilling - A	9,600.00	6,483.64	2,886.94	2,819.92	43.074	ES
Wells Ranch 31-10 - Original Drilling - Original Drilling - A	10,400.00	6,486.95	2,999.79	2,926.10	40.704	SF
Wells Ranch 32-10 - Original Drilling - Original Drilling - A	9,840.58	6,481.56	4,234.87	4,163.33	59.195	CC
Wells Ranch 32-10 - Original Drilling - Original Drilling - A	9,900.00	6,482.16	4,235.29	4,163.13	58.695	ES
Wells Ranch 32-10 - Original Drilling - Original Drilling - A	11,400.00	6,497.17	4,512.84	4,427.69	52.998	SF
Wells Ranch 33-10 - Original Drilling - Original Drilling - A	9,622.02	6,521.30	5,605.51	5,538.12	83.183	CC
Wells Ranch 33-10 - Original Drilling - Original Drilling - A	9,700.00	6,523.43	5,606.05	5,537.87	82.213	ES
Wells Ranch 33-10 - Original Drilling - Original Drilling - A	12,300.00	6,588.86	6,211.95	6,121.43	68.624	SF
Wells Ranch 34-10 - Original Drilling - Original Drilling - A	9,906.78	6,482.50	6,694.29	6,623.11	94.045	CC
Wells Ranch 34-10 - Original Drilling - Original Drilling - A	10,000.00	6,483.67	6,694.94	6,622.78	92.773	ES

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

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well WELLS RANCH STATE BB03-643
Project:	Wells Ranch	TVD Reference:	Well @ 4754.00ft
Reference Site:	BB Section 03	MD Reference:	Well @ 4754.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	WELLS RANCH STATE BB03-643	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan 2	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						
BB Section 10						
Wells Ranch 34-10 - Original Drilling - Original Drilling - A	13,300.00	6,525.14	7,505.04	7,404.00	74.273	SF
Wells Ranch 41-10 - Original Drilling - Original Drilling - A	10,890.39	6,468.60	2,910.93	2,829.97	35.957	CC
Wells Ranch 41-10 - Original Drilling - Original Drilling - A	10,900.00	6,468.60	2,910.95	2,829.89	35.911	ES
Wells Ranch 41-10 - Original Drilling - Original Drilling - A	11,600.00	6,468.25	2,996.18	2,909.10	34.408	SF
Wells Ranch 42-10 - Original Drilling - Original Drilling - A	10,800.37	6,454.90	4,164.74	4,084.90	52.163	CC, ES
Wells Ranch 42-10 - Original Drilling - Original Drilling - A	12,100.00	6,454.43	4,362.81	4,271.40	47.727	SF
Wells Ranch 43-10 - Original Drilling - Original Drilling - A	10,931.21	6,401.04	5,543.05	5,461.94	68.345	CC
Wells Ranch 43-10 - Original Drilling - Original Drilling - A	11,000.00	6,401.11	5,543.48	5,461.62	67.719	ES
Wells Ranch 43-10 - Original Drilling - Original Drilling - A	13,200.00	6,403.54	5,989.39	5,888.28	59.237	SF
Wells Ranch 44-10 - Original Drilling - Original Drilling - A	10,929.92	6,425.15	6,761.82	6,680.63	83.289	CC
Wells Ranch 44-10 - Original Drilling - Original Drilling - A	11,000.00	6,424.59	6,762.18	6,680.22	82.510	ES
Wells Ranch 44-10 - Original Drilling - Original Drilling - A	14,047.94	6,397.67	7,446.04	7,337.29	68.468	SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well WELLS RANCH STATE BB03-643
Project:	Wells Ranch	TVD Reference:	Well @ 4754.00ft
Reference Site:	BB Section 03	MD Reference:	Well @ 4754.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	WELLS RANCH STATE BB03-643	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan 2	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						
BB Section 11						
Wells 12-11 - Original Drilling - Original Drilling - As Drille	12,357.89	6,474.00	4,082.39	3,877.60	19.935	CC
Wells 12-11 - Original Drilling - Original Drilling - As Drille	12,400.00	6,474.00	4,082.61	3,877.34	19.889	ES
Wells 12-11 - Original Drilling - Original Drilling - As Drille	13,000.00	6,474.00	4,132.58	3,921.37	19.566	SF
Wells Ranch 13-11 - Original Drilling - Original Drilling - A	12,224.06	6,424.77	5,487.56	5,391.57	57.169	CC
Wells Ranch 13-11 - Original Drilling - Original Drilling - A	12,300.00	6,425.07	5,488.08	5,391.23	56.666	ES
Wells Ranch 13-11 - Original Drilling - Original Drilling - A	14,100.00	6,432.57	5,799.79	5,686.84	51.351	SF
Wells Ranch 14-11 - Original Drilling - Original Drilling - A	11,651.60	6,502.35	7,469.39	7,347.57	61.311	CC
Wells Ranch 14-11 - Original Drilling - Original Drilling - A	11,700.00	6,501.73	7,469.55	7,347.19	61.043	ES
Wells Ranch 14-11 - Original Drilling - Original Drilling - A	14,400.00	6,467.13	7,967.89	7,820.53	54.072	SF
Wells Ranch 23-11 - Original Drilling - Original Drilling - A	13,516.64	6,491.51	5,210.24	5,098.77	46.741	CC
Wells Ranch 23-11 - Original Drilling - Original Drilling - A	13,600.00	6,490.58	5,210.91	5,098.49	46.351	ES
Wells Ranch 23-11 - Original Drilling - Original Drilling - A	14,900.00	6,475.90	5,415.05	5,290.89	43.613	SF
Wells Ranch 24-11 - Original Drilling - Original Drilling - A	13,602.36	6,495.31	6,721.50	6,609.04	59.769	CC
Wells Ranch 24-11 - Original Drilling - Original Drilling - A	13,700.00	6,495.25	6,722.21	6,608.62	59.181	ES
Wells Ranch 24-11 - Original Drilling - Original Drilling - A	15,900.00	6,494.21	7,156.60	7,023.27	53.678	SF
Wells Ranch BB11-618 - Original Drilling - Original Drillin	13,987.53	8,919.00	6,828.67	6,698.56	52.483	CC
Wells Ranch BB11-618 - Original Drilling - Original Drillin	16,700.00	11,709.99	6,876.84	6,682.07	35.308	ES
Wells Ranch BB11-618 - Original Drilling - Original Drillin	17,156.42	12,373.35	6,891.22	6,683.05	33.103	SF
Wells Ranch BB11-627 - Original Drilling - Original Drillin	14,065.04	9,035.57	6,313.47	6,181.16	47.719	CC
Wells Ranch BB11-627 - Original Drilling - Original Drillin	16,900.00	11,910.00	6,324.47	6,125.02	31.710	ES
Wells Ranch BB11-627 - Original Drilling - Original Drillin	17,156.42	12,069.66	6,331.52	6,127.13	30.978	SF
Wells Ranch BB11-635 - Original Drilling - Original Drillin	14,829.13	10,113.00	5,795.48	5,643.10	38.031	CC
Wells Ranch BB11-635 - Original Drilling - Original Drillin	17,156.42	12,629.39	5,827.78	5,617.98	27.778	ES, SF
Wells Ranch BB11-643 - Original Drilling - Original Drillin	14,199.73	9,354.90	5,289.66	5,152.46	38.556	CC
Wells Ranch BB11-643 - Original Drilling - Original Drillin	16,100.00	11,217.00	5,306.21	5,124.80	29.250	ES
Wells Ranch BB11-643 - Original Drilling - Original Drillin	17,156.42	12,709.89	5,337.39	5,126.21	25.274	SF
Wells Ranch BB11-650 - Original Drilling - Original Drillin	14,416.64	9,698.62	4,785.04	4,642.55	33.581	CC
Wells Ranch BB11-650 - Original Drilling - Original Drillin	17,156.42	12,446.80	4,791.93	4,584.52	23.104	ES, SF
Wells Ranch BB11-658 - Original Drilling - Original Drillin	16,500.00	16,500.00	4,326.64	4,078.10	17.408	SF
Wells Ranch BB11-658 - Original Drilling - Original Drillin	17,156.42	12,756.00	4,287.10	4,075.87	20.296	CC, ES
Wells Ranch BB11-667 - Original Drilling - Original Drillin	14,631.26	9,952.84	3,772.58	3,632.37	26.905	CC
Wells Ranch BB11-667 - Original Drilling - Original Drillin	17,100.00	12,381.00	3,785.61	3,594.69	19.829	ES
Wells Ranch BB11-667 - Original Drilling - Original Drillin	17,156.42	12,381.00	3,786.69	3,595.08	19.763	SF
Wells Ranch BB11-674 - Original Drilling - Original Drillin	14,605.37	9,757.44	3,245.12	3,098.68	22.160	CC
Wells Ranch BB11-674 - Original Drilling - Original Drillin	17,000.00	17,000.00	3,273.15	3,011.45	12.507	ES, SF
Wells Ranch BB11-682 - Original Drilling - Original Drillin	16,121.74	11,406.34	2,630.94	2,448.24	14.400	CC
Wells Ranch BB11-682 - Original Drilling - Original Drillin	16,300.00	11,503.94	2,633.11	2,447.14	14.159	ES
Wells Ranch BB11-682 - Original Drilling - Original Drillin	17,156.42	12,329.36	2,658.23	2,452.15	12.899	SF
Wells Ranch State BB09-683 - Wells Ranch State BB09-	11,857.04	6,653.26	2,636.47	2,543.72	28.426	CC
Wells Ranch State BB09-683 - Wells Ranch State BB09-	11,900.00	6,623.13	2,636.60	2,543.48	28.312	ES
Wells Ranch State BB09-683 - Wells Ranch State BB09-	12,500.00	6,350.00	2,682.06	2,584.26	27.423	SF
Wells Ranch USX BB11-01 - Original Drilling - Original Dr	15,934.44	6,514.38	2,774.70	2,634.37	19.773	CC
Wells Ranch USX BB11-01 - Original Drilling - Original Dr	16,000.00	6,514.76	2,775.47	2,634.35	19.667	ES
Wells Ranch USX BB11-01 - Original Drilling - Original Dr	16,300.00	6,516.50	2,798.68	2,654.75	19.445	SF
Wells Ranch USX BB11-02 - Original Drilling - Original Dr	14,592.43	6,521.65	2,776.21	2,651.82	22.318	CC
Wells Ranch USX BB11-02 - Original Drilling - Original Dr	14,600.00	6,521.61	2,776.22	2,651.74	22.302	ES
Wells Ranch USX BB11-02 - Original Drilling - Original Dr	15,000.00	6,519.68	2,805.97	2,677.58	21.855	SF
Wells Ranch USX BB11-03 - Original Drilling - Original Dr	13,450.90	6,488.21	2,713.99	2,603.31	24.522	CC
Wells Ranch USX BB11-03 - Original Drilling - Original Dr	13,500.00	6,487.45	2,714.43	2,603.21	24.406	ES
Wells Ranch USX BB11-03 - Original Drilling - Original Dr	13,900.00	6,480.91	2,750.89	2,636.28	24.003	SF
Wells Ranch USX BB11-04 - Original Drilling - Original Dr	12,178.63	6,493.45	2,851.41	2,755.67	29.783	CC
Wells Ranch USX BB11-04 - Original Drilling - Original Dr	12,200.00	6,493.58	2,851.49	2,755.51	29.710	ES
Wells Ranch USX BB11-04 - Original Drilling - Original Dr	12,700.00	6,496.57	2,898.68	2,798.23	28.856	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 WELLS RANCH STATE BB03-643
Project:	Wells Ranch	TVD Reference:	Well @ 4754.00ft
Reference Site:	BB Section 03	MD Reference:	Well @ 4754.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	WELLS RANCH STATE BB03-643	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan 2	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						
BB Section 11						
Wells Ranch USX BB11-06 - Original Drilling - Original Dr	13,422.32	6,517.97	3,993.89	3,883.48	36.174	CC
Wells Ranch USX BB11-06 - Original Drilling - Original Dr	13,500.00	6,516.15	3,994.64	3,883.36	35.896	ES
Wells Ranch USX BB11-06 - Original Drilling - Original Dr	14,300.00	6,502.63	4,095.45	3,977.07	34.597	SF
Wells Ranch USX BB11-07 - Original Drilling - Original Dr	14,725.15	6,522.76	4,103.49	3,977.46	32.560	CC
Wells Ranch USX BB11-07 - Original Drilling - Original Dr	14,800.00	6,522.09	4,104.17	3,977.25	32.336	ES
Wells Ranch USX BB11-07 - Original Drilling - Original Dr	15,600.00	6,517.63	4,195.70	4,061.38	31.238	SF
Wells Ranch USX BB11-08 - Original Drilling - Original Dr	16,001.65	6,534.40	4,156.99	4,015.75	29.434	CC
Wells Ranch USX BB11-08 - Original Drilling - Original Dr	16,100.00	6,534.36	4,158.15	4,015.73	29.197	ES
Wells Ranch USX BB11-08 - Original Drilling - Original Dr	16,800.00	6,534.08	4,232.96	4,084.04	28.425	SF
Wells Ranch USX BB11-09 - Original Drilling - Original Dr	16,064.72	6,448.47	5,611.37	5,469.75	39.624	CC
Wells Ranch USX BB11-09 - Original Drilling - Original Dr	16,100.00	6,448.66	5,611.48	5,469.43	39.505	ES
Wells Ranch USX BB11-09 - Original Drilling - Original Dr	17,156.42	6,454.65	5,716.57	5,563.85	37.430	SF
Wells Ranch USX BB11-10 - Original Drilling - Original Dr	14,660.59	6,406.89	5,527.30	5,402.65	44.342	CC
Wells Ranch USX BB11-10 - Original Drilling - Original Dr	14,700.00	6,406.56	5,527.44	5,402.31	44.174	ES
Wells Ranch USX BB11-10 - Original Drilling - Original Dr	16,200.00	6,395.21	5,737.66	5,598.44	41.214	SF
Wells Ranch USX BB11-15 - Original Drilling - Original Dr	14,709.62	6,532.10	6,748.29	6,622.50	53.646	CC
Wells Ranch USX BB11-15 - Original Drilling - Original Dr	14,800.00	6,531.70	6,748.90	6,622.02	53.192	ES
Wells Ranch USX BB11-15 - Original Drilling - Original Dr	16,900.00	6,522.53	7,094.86	6,948.44	48.454	SF
Wells Ranch USX BB11-16 - Original Drilling - Original Dr	16,074.27	6,638.44	6,734.93	6,592.42	47.261	CC
Wells Ranch USX BB11-16 - Original Drilling - Original Dr	16,200.00	6,633.32	6,736.10	6,592.10	46.777	ES
Wells Ranch USX BB11-16 - Original Drilling - Original Dr	17,156.42	6,594.37	6,821.17	6,667.18	44.297	SF
Wells Ranch USX BB11-17 - Original Drilling - Original Dr	15,372.89	6,484.00	3,467.91	3,227.23	14.409	CC
Wells Ranch USX BB11-17 - Original Drilling - Original Dr	15,400.00	6,484.00	3,468.02	3,227.01	14.389	ES
Wells Ranch USX BB11-17 - Original Drilling - Original Dr	15,800.00	6,484.00	3,494.11	3,248.96	14.253	SF
Wells Ranch USX BB11-23 - Original Drilling - Original Dr	15,355.90	6,563.15	6,095.14	5,961.54	45.624	CC
Wells Ranch USX BB11-23 - Original Drilling - Original Dr	15,400.00	6,563.39	6,095.30	5,961.16	45.442	ES
Wells Ranch USX BB11-23 - Original Drilling - Original Dr	17,100.00	6,530.39	6,339.76	6,189.78	42.270	SF