

Project: Wells Ranch
Site: BB Section 03
Well: WELLS RANCH STATE BB03-636
Wellbore: Wellbore #1
Design: Plan #2

Northern Region - DJ Basin

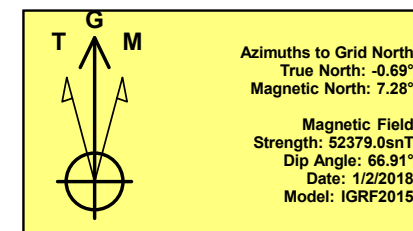
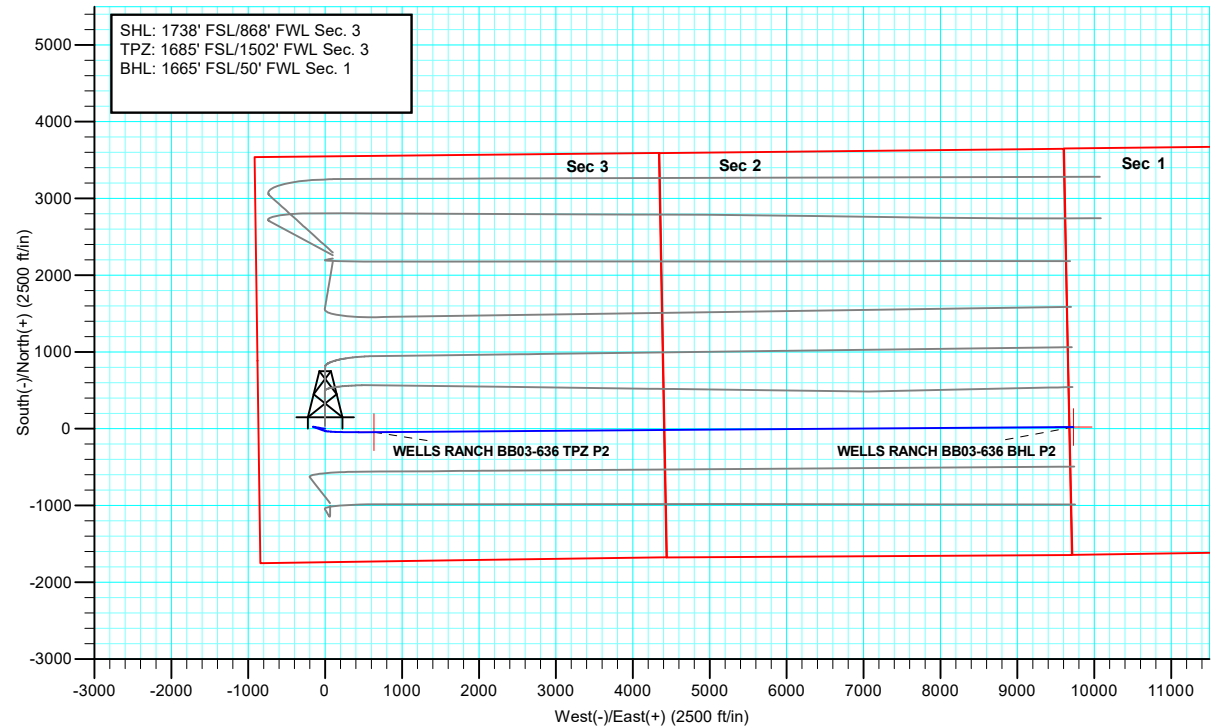
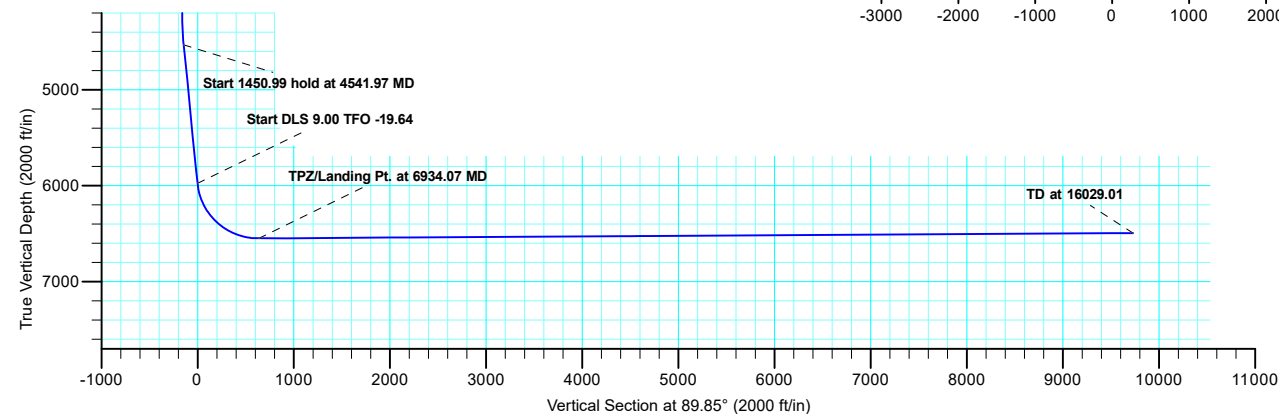
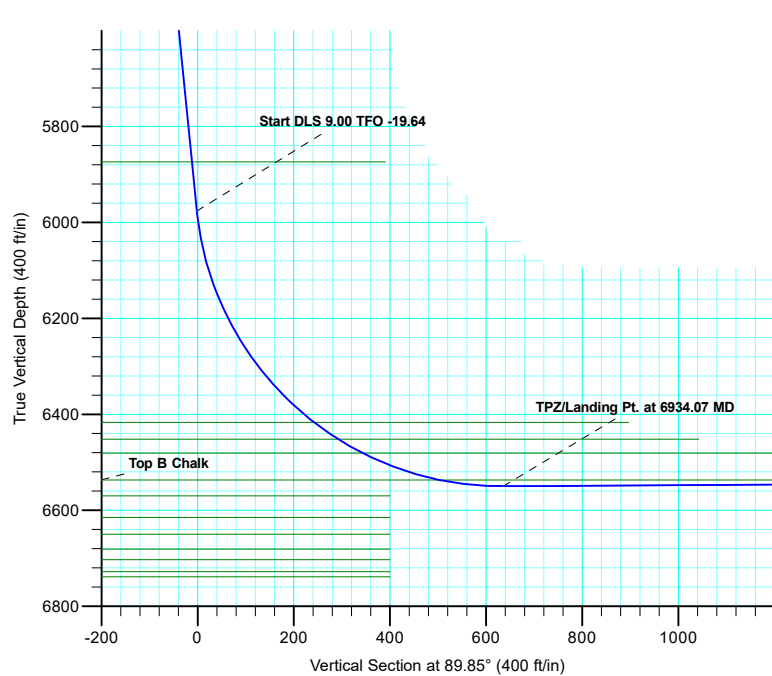
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: Colorado Northern Zone
System Datum: Mean Sea Level

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	2400.00	0.00	0.00	2400.00	0.00	0.00	0.00	0.00	0.00	
3	2700.00	6.00	280.00	2699.45	2.73	-15.46	2.00	280.00	-15.45	
4	3944.00	6.00	280.00	3936.64	25.31	-143.51	0.00	0.00	-143.45	
5	4541.97	6.00	109.12	4533.51	20.48	-144.78	2.00	-175.42	-144.73	
6	5992.96	6.00	109.12	5976.55	-29.18	-1.53	0.00	0.00	-1.61	
7	6934.07	90.35	89.56	6550.12	-44.61	636.02	9.00	-19.64	635.90	WELLS RANCH BB03-636 TPZ P2
8	16029.01	90.35	89.56	6494.56	24.75	9730.53	0.00	0.00	9730.56	WELLS RANCH BB03-636 BHL P2

WELL DETAILS: WELLS RANCH STATE BB03-636

+N/-S	+E/-W	Northing	Ground Level: Easting	4724.00 Latitude	Longitude	Slot
0.00	0.00	1399802.17	3298046.38	40.4259199	-104.4294200	



Plan: Plan #2 (WELLS RANCH STATE BB03-636/Wellbore #1)

Created By: Shelly C. Peterkin Date: 14:58, June 05 2019

Northern Region - DJ Basin

Wells Ranch

BB Section 03

WELLS RANCH STATE BB03-636

Wellbore #1

Plan: Plan #2

Standard Planning Report

05 June, 2019

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well WELLS RANCH STATE BB03-636
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 BB03-636	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 BB03-636					
Well Position	+N/-S	1,388,011.01 ft	Northing:	1,399,802.17 usft	Latitude:	40.4259200
	+E/-W	3,296,455.89 ft	Easting:	3,298,046.38 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	52,379.00026394

Design	Plan #2			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(ft)	(ft)	(ft)	(°)
	0.00	0.00	0.00	89.85

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	
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,700.00	6.00	280.00	2,699.45	2.73	-15.46	2.00	2.00	0.00	280.00	
3,944.00	6.00	280.00	3,936.64	25.31	-143.51	0.00	0.00	0.00	0.00	
4,541.97	6.00	109.12	4,533.51	20.48	-144.78	2.00	0.00	-28.58	-175.42	
5,992.96	6.00	109.12	5,976.55	-29.18	-1.53	0.00	0.00	0.00	0.00	
6,934.07	90.35	89.56	6,550.12	-44.61	636.02	9.00	8.96	-2.08	-19.64	WELLS RANCH BB03
16,029.01	90.35	89.56	6,494.56	24.75	9,730.53	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 BB03-636
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 BB03-636	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
487.00	0.00	0.00	487.00	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
Start Build 2.00									
2,500.00	2.00	280.00	2,499.98	0.30	-1.72	-1.72	2.00	2.00	0.00
2,600.00	4.00	280.00	2,599.84	1.21	-6.87	-6.87	2.00	2.00	0.00
2,700.00	6.00	280.00	2,699.45	2.73	-15.46	-15.45	2.00	2.00	0.00
Start 1244.00 hold at 2700.00 MD									
2,800.00	6.00	280.00	2,798.90	4.54	-25.75	-25.74	0.00	0.00	0.00
2,900.00	6.00	280.00	2,898.36	6.36	-36.04	-36.03	0.00	0.00	0.00
3,000.00	6.00	280.00	2,997.81	8.17	-46.34	-46.32	0.00	0.00	0.00
3,100.00	6.00	280.00	3,097.26	9.99	-56.63	-56.61	0.00	0.00	0.00
3,200.00	6.00	280.00	3,196.71	11.80	-66.93	-66.90	0.00	0.00	0.00
3,300.00	6.00	280.00	3,296.17	13.62	-77.22	-77.18	0.00	0.00	0.00
3,400.00	6.00	280.00	3,395.62	15.43	-87.51	-87.47	0.00	0.00	0.00
3,500.00	6.00	280.00	3,495.07	17.25	-97.81	-97.76	0.00	0.00	0.00
3,502.95	6.00	280.00	3,498.00	17.30	-98.11	-98.07	0.00	0.00	0.00
Parkman									
3,600.00	6.00	280.00	3,594.52	19.06	-108.10	-108.05	0.00	0.00	0.00
3,700.00	6.00	280.00	3,693.97	20.88	-118.40	-118.34	0.00	0.00	0.00
3,800.00	6.00	280.00	3,793.43	22.69	-128.69	-128.63	0.00	0.00	0.00
3,900.00	6.00	280.00	3,892.88	24.51	-138.98	-138.92	0.00	0.00	0.00
3,944.00	6.00	280.00	3,936.64	25.31	-143.51	-143.45	0.00	0.00	0.00
Start DLS 2.00 TFO -175.42									
4,000.00	4.88	278.95	3,992.38	26.18	-148.75	-148.68	2.00	-1.99	-1.88

Noble Energy, Inc.

Planning Report

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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 BB03-636	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)
4,100.00	2.90	275.07	4,092.15	27.07	-155.48	-155.41	2.00	-1.98	-3.88
4,200.00	0.99	255.49	4,192.09	27.08	-158.83	-158.76	2.00	-1.92	-19.58
4,233.92	0.51	215.44	4,226.00	26.88	-159.20	-159.13	2.00	-1.39	-118.07
Sussex									
4,300.00	1.24	127.35	4,292.08	26.21	-158.81	-158.74	2.00	1.09	-133.30
4,400.00	3.18	113.22	4,392.00	24.46	-155.40	-155.34	2.00	1.94	-14.13
4,500.00	5.16	109.87	4,491.73	21.84	-148.63	-148.57	2.00	1.99	-3.35
4,541.97	6.00	109.12	4,533.51	20.48	-144.78	-144.73	2.00	1.99	-1.78
Start 1450.99 hold at 4541.97 MD									
4,600.00	6.00	109.12	4,591.21	18.50	-139.05	-139.00	0.00	0.00	0.00
4,700.00	6.00	109.12	4,690.67	15.07	-129.18	-129.14	0.00	0.00	0.00
4,800.00	6.00	109.12	4,790.12	11.65	-119.31	-119.28	0.00	0.00	0.00
4,849.15	6.00	109.12	4,839.00	9.97	-114.45	-114.43	0.00	0.00	0.00
Shannon									
4,900.00	6.00	109.12	4,889.57	8.23	-109.43	-109.41	0.00	0.00	0.00
5,000.00	6.00	109.12	4,989.02	4.81	-99.56	-99.55	0.00	0.00	0.00
5,100.00	6.00	109.12	5,088.48	1.38	-89.69	-89.69	0.00	0.00	0.00
5,200.00	6.00	109.12	5,187.93	-2.04	-79.82	-79.82	0.00	0.00	0.00
5,300.00	6.00	109.12	5,287.38	-5.46	-69.94	-69.96	0.00	0.00	0.00
5,400.00	6.00	109.12	5,386.83	-8.88	-60.07	-60.09	0.00	0.00	0.00
5,500.00	6.00	109.12	5,486.29	-12.31	-50.20	-50.23	0.00	0.00	0.00
5,600.00	6.00	109.12	5,585.74	-15.73	-40.33	-40.37	0.00	0.00	0.00
5,700.00	6.00	109.12	5,685.19	-19.15	-30.46	-30.50	0.00	0.00	0.00
5,800.00	6.00	109.12	5,784.65	-22.57	-20.58	-20.64	0.00	0.00	0.00
5,889.85	6.00	109.12	5,874.00	-25.65	-11.71	-11.78	0.00	0.00	0.00
Teepee Buttes									
5,900.00	6.00	109.12	5,884.10	-26.00	-10.71	-10.78	0.00	0.00	0.00
5,992.96	6.00	109.12	5,976.55	-29.18	-1.53	-1.61	0.00	0.00	0.00
Start DLS 9.00 TFO -19.64									
6,000.00	6.60	107.27	5,983.55	-29.42	-0.80	-0.88	9.00	8.52	-26.34
6,050.00	10.97	100.02	6,032.95	-31.10	6.63	6.55	9.00	8.74	-14.49
6,100.00	15.41	96.90	6,081.62	-32.73	17.92	17.83	9.00	8.89	-6.25
6,150.00	19.88	95.15	6,129.25	-34.29	32.99	32.90	9.00	8.94	-3.49
6,200.00	24.36	94.03	6,175.56	-35.78	51.75	51.66	9.00	8.96	-2.25
6,250.00	28.85	93.23	6,220.26	-37.18	74.10	74.00	9.00	8.97	-1.59
6,300.00	33.34	92.64	6,263.06	-38.50	99.88	99.78	9.00	8.98	-1.19
6,350.00	37.83	92.17	6,303.71	-39.71	128.94	128.84	9.00	8.98	-0.94
6,400.00	42.32	91.79	6,341.96	-40.82	161.10	161.00	9.00	8.99	-0.76
6,450.00	46.82	91.47	6,377.57	-41.81	196.17	196.06	9.00	8.99	-0.64
6,500.00	51.31	91.19	6,410.33	-42.68	233.92	233.81	9.00	8.99	-0.55
6,510.79	52.28	91.13	6,417.00	-42.85	242.40	242.29	9.00	8.99	-0.51
Sharon Springs									
6,550.00	55.81	90.94	6,440.02	-43.43	274.13	274.02	9.00	8.99	-0.48
6,571.88	57.78	90.84	6,452.00	-43.71	292.43	292.32	9.00	8.99	-0.45
Top A Chalk									
6,600.00	60.30	90.72	6,466.47	-44.04	316.54	316.43	9.00	8.99	-0.43
6,630.64	63.06	90.60	6,481.00	-44.35	343.51	343.40	9.00	8.99	-0.41
Top A Marl									
6,650.00	64.80	90.52	6,489.51	-44.52	360.90	360.78	9.00	8.99	-0.39
6,700.00	69.30	90.34	6,509.00	-44.87	406.93	406.81	9.00	8.99	-0.37
6,750.00	73.79	90.16	6,524.82	-45.07	454.34	454.23	9.00	8.99	-0.35
6,800.00	78.29	89.99	6,536.88	-45.14	502.85	502.74	9.00	8.99	-0.34
6,800.61	78.35	89.99	6,537.00	-45.14	503.45	503.33	9.00	8.99	-0.33

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well WELLS RANCH STATE BB03-636
Company:	Northern Region - DJ Basin	TVD Reference:	Well @ 4754.00ft
Project:	Wells Ranch	MD Reference:	Well @ 4754.00ft
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Well:	WELLS RANCH STATE BB03-636	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)
Top B Chalk									
6,850.00	82.79	89.83	6,545.09	-45.06	552.16	552.05	9.00	8.99	-0.33
6,900.00	87.29	89.67	6,549.42	-44.84	601.96	601.84	9.00	8.99	-0.32
6,934.07	90.35	89.56	6,550.12	-44.61	636.02	635.90	9.00	8.99	-0.32
TPZ/Landing Pt. at 6934.07 MD									
7,000.00	90.35	89.56	6,549.72	-44.11	701.95	701.83	0.00	0.00	0.00
7,100.00	90.35	89.56	6,549.11	-43.35	801.94	801.83	0.00	0.00	0.00
7,200.00	90.35	89.56	6,548.50	-42.59	901.94	901.82	0.00	0.00	0.00
7,300.00	90.35	89.56	6,547.88	-41.82	1,001.93	1,001.82	0.00	0.00	0.00
7,400.00	90.35	89.56	6,547.27	-41.06	1,101.93	1,101.82	0.00	0.00	0.00
7,500.00	90.35	89.56	6,546.66	-40.30	1,201.92	1,201.82	0.00	0.00	0.00
7,600.00	90.35	89.56	6,546.05	-39.54	1,301.92	1,301.81	0.00	0.00	0.00
7,700.00	90.35	89.56	6,545.44	-38.77	1,401.91	1,401.81	0.00	0.00	0.00
7,800.00	90.35	89.56	6,544.83	-38.01	1,501.91	1,501.81	0.00	0.00	0.00
7,900.00	90.35	89.56	6,544.22	-37.25	1,601.90	1,601.80	0.00	0.00	0.00
8,000.00	90.35	89.56	6,543.61	-36.48	1,701.90	1,701.80	0.00	0.00	0.00
8,100.00	90.35	89.56	6,543.00	-35.72	1,801.89	1,801.80	0.00	0.00	0.00
8,200.00	90.35	89.56	6,542.39	-34.96	1,901.89	1,901.79	0.00	0.00	0.00
8,300.00	90.35	89.56	6,541.78	-34.20	2,001.88	2,001.79	0.00	0.00	0.00
8,400.00	90.35	89.56	6,541.16	-33.43	2,101.88	2,101.79	0.00	0.00	0.00
8,500.00	90.35	89.56	6,540.55	-32.67	2,201.87	2,201.78	0.00	0.00	0.00
8,600.00	90.35	89.56	6,539.94	-31.91	2,301.87	2,301.78	0.00	0.00	0.00
8,700.00	90.35	89.56	6,539.33	-31.15	2,401.86	2,401.78	0.00	0.00	0.00
8,800.00	90.35	89.56	6,538.72	-30.38	2,501.86	2,501.77	0.00	0.00	0.00
8,900.00	90.35	89.56	6,538.11	-29.62	2,601.86	2,601.77	0.00	0.00	0.00
9,000.00	90.35	89.56	6,537.50	-28.86	2,701.85	2,701.77	0.00	0.00	0.00
9,100.00	90.35	89.56	6,536.89	-28.10	2,801.85	2,801.77	0.00	0.00	0.00
9,200.00	90.35	89.56	6,536.28	-27.33	2,901.84	2,901.76	0.00	0.00	0.00
9,300.00	90.35	89.56	6,535.67	-26.57	3,001.84	3,001.76	0.00	0.00	0.00
9,400.00	90.35	89.56	6,535.06	-25.81	3,101.83	3,101.76	0.00	0.00	0.00
9,500.00	90.35	89.56	6,534.45	-25.04	3,201.83	3,201.75	0.00	0.00	0.00
9,600.00	90.35	89.56	6,533.83	-24.28	3,301.82	3,301.75	0.00	0.00	0.00
9,700.00	90.35	89.56	6,533.22	-23.52	3,401.82	3,401.75	0.00	0.00	0.00
9,800.00	90.35	89.56	6,532.61	-22.76	3,501.81	3,501.74	0.00	0.00	0.00
9,900.00	90.35	89.56	6,532.00	-21.99	3,601.81	3,601.74	0.00	0.00	0.00
10,000.00	90.35	89.56	6,531.39	-21.23	3,701.80	3,701.74	0.00	0.00	0.00
10,100.00	90.35	89.56	6,530.78	-20.47	3,801.80	3,801.73	0.00	0.00	0.00
10,200.00	90.35	89.56	6,530.17	-19.71	3,901.79	3,901.73	0.00	0.00	0.00
10,300.00	90.35	89.56	6,529.56	-18.94	4,001.79	4,001.73	0.00	0.00	0.00
10,400.00	90.35	89.56	6,528.95	-18.18	4,101.78	4,101.72	0.00	0.00	0.00
10,500.00	90.35	89.56	6,528.34	-17.42	4,201.78	4,201.72	0.00	0.00	0.00
10,600.00	90.35	89.56	6,527.73	-16.66	4,301.77	4,301.72	0.00	0.00	0.00
10,700.00	90.35	89.56	6,527.11	-15.89	4,401.77	4,401.71	0.00	0.00	0.00
10,800.00	90.35	89.56	6,526.50	-15.13	4,501.76	4,501.71	0.00	0.00	0.00
10,900.00	90.35	89.56	6,525.89	-14.37	4,601.76	4,601.71	0.00	0.00	0.00
11,000.00	90.35	89.56	6,525.28	-13.60	4,701.75	4,701.71	0.00	0.00	0.00
11,100.00	90.35	89.56	6,524.67	-12.84	4,801.75	4,801.70	0.00	0.00	0.00
11,200.00	90.35	89.56	6,524.06	-12.08	4,901.75	4,901.70	0.00	0.00	0.00
11,300.00	90.35	89.56	6,523.45	-11.32	5,001.74	5,001.70	0.00	0.00	0.00
11,400.00	90.35	89.56	6,522.84	-10.55	5,101.74	5,101.69	0.00	0.00	0.00
11,500.00	90.35	89.56	6,522.23	-9.79	5,201.73	5,201.69	0.00	0.00	0.00
11,600.00	90.35	89.56	6,521.62	-9.03	5,301.73	5,301.69	0.00	0.00	0.00
11,700.00	90.35	89.56	6,521.01	-8.27	5,401.72	5,401.68	0.00	0.00	0.00
11,800.00	90.35	89.56	6,520.39	-7.50	5,501.72	5,501.68	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well WELLS RANCH STATE BB03-636
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 BB03-636	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)
11,900.00	90.35	89.56	6,519.78	-6.74	5,601.71	5,601.68	0.00	0.00	0.00
12,000.00	90.35	89.56	6,519.17	-5.98	5,701.71	5,701.67	0.00	0.00	0.00
12,100.00	90.35	89.56	6,518.56	-5.22	5,801.70	5,801.67	0.00	0.00	0.00
12,200.00	90.35	89.56	6,517.95	-4.45	5,901.70	5,901.67	0.00	0.00	0.00
12,300.00	90.35	89.56	6,517.34	-3.69	6,001.69	6,001.66	0.00	0.00	0.00
12,400.00	90.35	89.56	6,516.73	-2.93	6,101.69	6,101.66	0.00	0.00	0.00
12,500.00	90.35	89.56	6,516.12	-2.16	6,201.68	6,201.66	0.00	0.00	0.00
12,600.00	90.35	89.56	6,515.51	-1.40	6,301.68	6,301.65	0.00	0.00	0.00
12,700.00	90.35	89.56	6,514.90	-0.64	6,401.67	6,401.65	0.00	0.00	0.00
12,800.00	90.35	89.56	6,514.29	0.12	6,501.67	6,501.65	0.00	0.00	0.00
12,900.00	90.35	89.56	6,513.67	0.89	6,601.66	6,601.65	0.00	0.00	0.00
13,000.00	90.35	89.56	6,513.06	1.65	6,701.66	6,701.64	0.00	0.00	0.00
13,100.00	90.35	89.56	6,512.45	2.41	6,801.65	6,801.64	0.00	0.00	0.00
13,200.00	90.35	89.56	6,511.84	3.17	6,901.65	6,901.64	0.00	0.00	0.00
13,300.00	90.35	89.56	6,511.23	3.94	7,001.65	7,001.63	0.00	0.00	0.00
13,400.00	90.35	89.56	6,510.62	4.70	7,101.64	7,101.63	0.00	0.00	0.00
13,500.00	90.35	89.56	6,510.01	5.46	7,201.64	7,201.63	0.00	0.00	0.00
13,600.00	90.35	89.56	6,509.40	6.22	7,301.63	7,301.62	0.00	0.00	0.00
13,700.00	90.35	89.56	6,508.79	6.99	7,401.63	7,401.62	0.00	0.00	0.00
13,800.00	90.35	89.56	6,508.18	7.75	7,501.62	7,501.62	0.00	0.00	0.00
13,900.00	90.35	89.56	6,507.57	8.51	7,601.62	7,601.61	0.00	0.00	0.00
14,000.00	90.35	89.56	6,506.96	9.28	7,701.61	7,701.61	0.00	0.00	0.00
14,100.00	90.35	89.56	6,506.34	10.04	7,801.61	7,801.61	0.00	0.00	0.00
14,200.00	90.35	89.56	6,505.73	10.80	7,901.60	7,901.60	0.00	0.00	0.00
14,300.00	90.35	89.56	6,505.12	11.56	8,001.60	8,001.60	0.00	0.00	0.00
14,400.00	90.35	89.56	6,504.51	12.33	8,101.59	8,101.60	0.00	0.00	0.00
14,500.00	90.35	89.56	6,503.90	13.09	8,201.59	8,201.59	0.00	0.00	0.00
14,600.00	90.35	89.56	6,503.29	13.85	8,301.58	8,301.59	0.00	0.00	0.00
14,700.00	90.35	89.56	6,502.68	14.61	8,401.58	8,401.59	0.00	0.00	0.00
14,800.00	90.35	89.56	6,502.07	15.38	8,501.57	8,501.59	0.00	0.00	0.00
14,900.00	90.35	89.56	6,501.46	16.14	8,601.57	8,601.58	0.00	0.00	0.00
15,000.00	90.35	89.56	6,500.85	16.90	8,701.56	8,701.58	0.00	0.00	0.00
15,100.00	90.35	89.56	6,500.24	17.66	8,801.56	8,801.58	0.00	0.00	0.00
15,200.00	90.35	89.56	6,499.62	18.43	8,901.55	8,901.57	0.00	0.00	0.00
15,300.00	90.35	89.56	6,499.01	19.19	9,001.55	9,001.57	0.00	0.00	0.00
15,400.00	90.35	89.56	6,498.40	19.95	9,101.54	9,101.57	0.00	0.00	0.00
15,500.00	90.35	89.56	6,497.79	20.72	9,201.54	9,201.56	0.00	0.00	0.00
15,600.00	90.35	89.56	6,497.18	21.48	9,301.54	9,301.56	0.00	0.00	0.00
15,700.00	90.35	89.56	6,496.57	22.24	9,401.53	9,401.56	0.00	0.00	0.00
15,800.00	90.35	89.56	6,495.96	23.00	9,501.53	9,501.55	0.00	0.00	0.00
15,900.00	90.35	89.56	6,495.35	23.77	9,601.52	9,601.55	0.00	0.00	0.00
16,000.00	90.35	89.56	6,494.74	24.53	9,701.52	9,701.55	0.00	0.00	0.00
16,029.01	90.35	89.56	6,494.56	24.75	9,730.53	9,730.56	0.00	0.00	0.00
TD at 16029.01									

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well WELLS RANCH STATE BB03-636
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 BB03-636	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2		

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)		
WELLS RANCH BB03-6	0.00	0.01	6,494.56	24.75	9,730.53	1,399,826.92	3,307,776.89	40.4256602	-104.3944705
- plan hits target center									
- Point									
WELLS RANCH BB03-6	0.00	0.00	6,550.12	-44.61	636.02	1,399,757.56	3,298,682.39	40.4257764	-104.4271376
- plan hits target center									
- Point									

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(ft)	(ft)			(°)	(°)	
487.00	487.00	Pierre				
540.00	540.00	Upper Pierre Aquifer Top				
1,598.00	1,598.00	Upper Pierre Aquifer Base				
3,502.95	3,498.00	Parkman				
4,233.92	4,226.00	Sussex				
4,849.15	4,839.00	Shannon				
5,889.85	5,874.00	Teepee Buttes				
6,510.79	6,417.00	Sharon Springs				
6,571.88	6,452.00	Top A Chalk				
6,630.64	6,481.00	Top A Marl				
6,800.61	6,537.00	Top B Chalk				

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates			
(ft)	(ft)	+N/-S	+E/-W	Comment	
(ft)	(ft)	(ft)	(ft)		
2,400.00	2,400.00	0.00	0.00	Start Build 2.00	
2,700.00	2,699.45	2.73	-15.46	Start 1244.00 hold at 2700.00 MD	
3,944.00	3,936.64	25.31	-143.51	Start DLS 2.00 TFO -175.42	
4,541.97	4,533.51	20.48	-144.78	Start 1450.99 hold at 4541.97 MD	
5,992.96	5,976.55	-29.18	-1.53	Start DLS 9.00 TFO -19.64	
6,934.07	6,550.12	-44.61	636.02	TPZ/Landing Pt. at 6934.07 MD	
16,029.01	6,494.56	24.75	9,730.53	TD at 16029.01	

Northern Region - DJ Basin

Wells Ranch

BB Section 03

WELLS RANCH STATE BB03-636

Wellbore #1

Plan #2

Anticollision Summary Report

05 June, 2019

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well WELLS RANCH STATE BB03-636
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 BB03-636	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	6/5/2019		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	16,028.99	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
Offset Well - Wellbore - Design						
AA Section 34						
Wells Ranch 34E-232 - Original Drilling - Original Drilling	116.56	166.56	7,658.38	7,657.83	10,000.000	CC
Wells Ranch 34E-232 - Original Drilling - Original Drilling	200.00	214.00	7,658.78	7,657.76	7,534.357	ES
Wells Ranch 34E-232 - Original Drilling - Original Drilling	12,600.00	11,175.00	9,005.03	8,802.82	44.533	SF
AA Section 35						
Wells Ranch 14-35 - Wellbore #1 - Wellbore #1- As Drille	11,324.21	6,538.99	4,268.17	4,180.32	48.585	CC
Wells Ranch 14-35 - Wellbore #1 - Wellbore #1- As Drille	11,400.00	6,538.81	4,268.84	4,180.14	48.125	ES
Wells Ranch 14-35 - Wellbore #1 - Wellbore #1- As Drille	12,600.00	6,535.77	4,454.76	4,355.24	44.763	SF
Wells Ranch USX AA35-01 - Wellbore #1 - Wellbore #1-	15,176.48	6,562.51	8,229.07	8,095.65	61.680	CC
Wells Ranch USX AA35-01 - Wellbore #1 - Wellbore #1-	15,300.00	6,562.60	8,230.00	8,095.11	61.017	ES
Wells Ranch USX AA35-01 - Wellbore #1 - Wellbore #1-	16,029.01	6,563.16	8,273.11	8,130.10	57.850	SF
Wells Ranch USX AA35-02 - Wellbore #1 - Wellbore #1-	13,700.00	13,700.00	8,158.64	8,018.01	58.017	ES, SF
Wells Ranch USX AA35-02 - Wellbore #1 - Wellbore #1-	13,922.45	6,715.48	8,155.61	8,036.70	68.583	CC
Wells Ranch USX AA35-03 - Wellbore #1 - Wellbore #1-	12,827.58	6,575.32	8,322.49	8,216.98	78.877	CC
Wells Ranch USX AA35-03 - Wellbore #1 - Wellbore #1-	12,900.00	6,573.77	8,322.81	8,216.46	78.256	ES
Wells Ranch USX AA35-03 - Wellbore #1 - Wellbore #1-	16,029.01	6,500.01	8,916.57	8,780.87	65.707	SF
Wells Ranch USX AA35-04 - Wellbore #1 - Wellbore #1-	11,243.44	6,538.44	8,207.01	8,120.10	94.428	CC
Wells Ranch USX AA35-04 - Wellbore #1 - Wellbore #1-	11,300.00	6,537.92	8,207.20	8,119.65	93.737	ES
Wells Ranch USX AA35-04 - Wellbore #1 - Wellbore #1-	15,300.00	6,489.34	9,154.72	9,031.22	74.129	SF
Wells Ranch USX AA35-05 - Wellbore #1 - Wellbore #1-	11,301.47	6,548.12	6,959.56	6,871.92	79.414	CC
Wells Ranch USX AA35-05 - Wellbore #1 - Wellbore #1-	11,400.00	6,547.87	6,960.25	6,871.50	78.421	ES
Wells Ranch USX AA35-05 - Wellbore #1 - Wellbore #1-	14,400.00	6,539.85	7,618.15	7,502.47	65.855	SF
Wells Ranch USX AA35-06 - Wellbore #1 - Wellbore #1-	12,680.57	6,526.00	6,947.68	6,844.10	67.076	CC
Wells Ranch USX AA35-06 - Wellbore #1 - Wellbore #1-	12,800.00	6,524.84	6,948.71	6,843.75	66.202	ES
Wells Ranch USX AA35-06 - Wellbore #1 - Wellbore #1-	15,400.00	6,500.01	7,460.89	7,332.54	58.130	SF
Wells Ranch USX AA35-07 - Wellbore #1 - Wellbore #1-	14,011.66	6,557.80	6,939.56	6,820.10	58.088	CC
Wells Ranch USX AA35-07 - Wellbore #1 - Wellbore #1-	14,100.00	6,557.13	6,940.12	6,819.62	57.593	ES
Wells Ranch USX AA35-07 - Wellbore #1 - Wellbore #1-	16,029.01	6,542.02	7,226.82	7,087.93	52.030	SF
Wells Ranch USX AA35-08 - Wellbore #1 - Wellbore #1-	15,320.31	6,545.94	6,897.13	6,762.06	51.061	CC
Wells Ranch USX AA35-08 - Wellbore #1 - Wellbore #1-	15,400.00	6,545.51	6,897.59	6,761.57	50.711	ES
Wells Ranch USX AA35-08 - Wellbore #1 - Wellbore #1-	16,029.01	6,541.96	6,933.45	6,790.51	48.508	SF
Wells Ranch USX AA35-09 - Wellbore #1 - Wellbore #1-	15,456.80	6,548.38	5,667.09	5,530.33	41.439	CC
Wells Ranch USX AA35-09 - Wellbore #1 - Wellbore #1-	15,500.00	6,548.07	5,667.25	5,529.98	41.285	ES
Wells Ranch USX AA35-09 - Wellbore #1 - Wellbore #1-	16,029.01	6,544.15	5,695.90	5,552.91	39.832	SF
Wells Ranch USX AA35-10 - Wellbore #1 - Wellbore #1-	13,969.84	6,488.01	5,621.88	5,503.16	47.354	CC
Wells Ranch USX AA35-10 - Wellbore #1 - Wellbore #1-	14,000.00	6,487.89	5,621.96	5,502.89	47.214	ES
Wells Ranch USX AA35-10 - Wellbore #1 - Wellbore #1-	15,600.00	6,481.54	5,853.45	5,719.70	43.762	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 BB03-636
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 BB03-636	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 AA35-11 - Wellbore #1 - Wellbore #1- A	12,670.44	6,548.49	5,520.04	5,416.49	53.310	CC
Wells Ranch USX AA35-11 - Wellbore #1 - Wellbore #1- A	12,700.00	6,548.15	5,520.12	5,416.23	53.135	ES
Wells Ranch USX AA35-11 - Wellbore #1 - Wellbore #1- A	14,500.00	6,528.51	5,815.31	5,695.13	48.389	SF
Wells Ranch USX AA35-12 - Wellbore #1 - Wellbore #1-	11,266.49	6,579.68	5,851.22	5,763.75	66.899	CC
Wells Ranch USX AA35-12 - Wellbore #1 - Wellbore #1-	11,300.00	6,579.74	5,851.31	5,763.47	66.610	ES
Wells Ranch USX AA35-12 - Wellbore #1 - Wellbore #1-	13,600.00	6,583.68	6,299.36	6,190.78	58.014	SF
Wells Ranch USX AA35-15 - Wellbore #1 - Wellbore #1-	14,074.74	6,460.63	4,345.35	4,225.45	36.242	CC
Wells Ranch USX AA35-15 - Wellbore #1 - Wellbore #1-	14,100.00	6,460.39	4,345.42	4,225.23	36.154	ES
Wells Ranch USX AA35-15 - Wellbore #1 - Wellbore #1-	15,100.00	6,450.42	4,464.66	4,335.40	34.541	SF
Wells Ranch USX AA35-16 - Wellbore #1 - Wellbore #1-	15,413.41	6,480.33	4,271.63	4,135.66	31.417	CC
Wells Ranch USX AA35-16 - Wellbore #1 - Wellbore #1-	15,500.00	6,479.43	4,272.51	4,135.53	31.193	ES
Wells Ranch USX AA35-16 - Wellbore #1 - Wellbore #1-	16,029.01	6,474.00	4,315.75	4,173.65	30.369	SF
Wells Ranch USX AA35-19 - Wellbore #1 - Wellbore #1-	12,113.02	6,604.43	7,705.01	7,607.79	79.250	CC
Wells Ranch USX AA35-19 - Wellbore #1 - Wellbore #1-	12,200.00	6,602.95	7,705.50	7,607.28	78.448	ES
Wells Ranch USX AA35-19 - Wellbore #1 - Wellbore #1-	15,500.00	6,543.69	8,416.45	8,288.54	65.799	SF
Wells Ranch USX AA35-23 - Wellbore #1 - Wellbore #1-	14,751.16	6,495.70	4,986.89	4,858.78	38.926	CC
Wells Ranch USX AA35-23 - Wellbore #1 - Wellbore #1-	14,800.00	6,495.58	4,987.13	4,858.45	38.754	ES
Wells Ranch USX AA35-23 - Wellbore #1 - Wellbore #1-	16,000.00	6,492.53	5,140.89	5,001.34	36.840	SF
Wells Ranch USX AA35-65HN - Plan A - Original Drilling	13,800.00	13,800.00	6,305.47	6,025.01	22.482	ES, SF
Wells Ranch USX AA35-65HN - Plan A - Original Drilling	14,387.55	9,982.02	6,295.85	6,106.14	33.186	CC
BB Section 01						
Wells Ranch 14-01 - Original Drilling - Original Drilling - A	16,029.01	6,412.56	1,145.64	1,026.61	9.625	CC, ES, SF
Wells Ranch 23-01 - Original Drilling - Original Drilling - A	16,029.01	6,428.56	1,971.73	1,916.35	35.608	CC, ES, SF
Wells Ranch 24-01 - Original Drilling - Original Drilling - A	16,029.01	6,406.02	2,169.00	2,086.53	26.301	CC, ES, SF
Wells Ranch USX BB01-01 - Original Drilling - Original D	16,029.01	6,400.01	5,489.39	5,398.07	60.107	CC, ES, SF
Wells Ranch USX BB01-02 - Original Drilling - Original D	16,029.01	6,468.02	4,401.34	4,293.94	40.983	CC, ES, SF
Wells Ranch USX BB01-03 - Original Drilling - Original D	16,029.01	6,576.72	3,467.83	3,343.21	27.827	CC, ES, SF
Wells Ranch USX BB01-04 - Original Drilling - Original D	16,029.01	6,610.96	2,935.23	2,795.32	20.980	CC, ES, SF
Wells Ranch USX BB01-05 - Original Drilling - Original D	16,029.01	6,487.96	1,833.77	1,695.82	13.293	CC, ES, SF
Wells Ranch USX BB01-06 - Original Drilling - Original D	16,029.01	6,461.07	2,485.80	2,385.92	24.886	CC, ES, SF
Wells Ranch USX BB01-07 - Original Drilling - Original D	16,029.01	6,456.81	3,731.98	3,645.79	43.296	CC, ES, SF
Wells Ranch USX BB01-08 - Original Drilling - Original D	16,029.01	6,452.66	4,999.05	4,927.98	70.344	CC, ES, SF
Wells Ranch USX BB01-09 - Original Drilling - Original D	16,029.01	6,458.93	4,693.91	4,643.06	92.308	CC, ES, SF
Wells Ranch USX BB01-10 - Original Drilling - Original D	16,029.01	6,401.11	3,281.91	3,227.06	59.838	CC, ES, SF
Wells Ranch USX BB01-12 - Original Drilling - Original D	16,029.01	6,449.98	716.26	635.38	8.856	CC, ES, SF
Wells Ranch USX BB01-15 - Original Drilling - Original D	16,029.01	6,402.34	3,414.92	3,351.55	53.887	CC, ES, SF
Wells Ranch USX BB01-16 - Original Drilling - Original D	16,029.01	6,438.45	4,583.78	4,524.77	77.687	CC, ES, SF
Wells Ranch USX BB01-17 - Original Drilling - Original D	16,029.01	6,494.29	4,667.66	4,582.79	54.999	CC, ES, SF
Wells Ranch USX BB01-19 - Original Drilling - Original D	16,029.01	6,534.10	2,782.91	2,655.19	21.790	CC, ES, SF
Wells Ranch USX BB01-23 - Original Drilling - Original D	16,029.01	6,431.22	4,195.11	4,145.34	84.288	CC, ES, SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well WELLS RANCH STATE BB03-636
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 BB03-636	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	11,539.55	6,493.61	2,765.59	2,675.42	30.670	CC
Wells Ranch 11-2 - Wellbore #1 - Gyro Surveys	11,600.00	6,493.01	2,766.26	2,675.41	30.451	ES
Wells Ranch 11-2 - Wellbore #1 - Gyro Surveys	12,100.00	6,488.11	2,821.81	2,726.56	29.626	SF
Wells Ranch 12-2 SI - Wellbore #1 - No Surveys	11,358.06	6,469.09	1,649.92	1,527.89	13.521	CC, ES
Wells Ranch 12-2 SI - Wellbore #1 - No Surveys	11,500.00	6,468.23	1,656.02	1,532.61	13.420	SF
Wells Ranch 13-2 - No Surveys - No Surveys	11,338.99	6,479.21	363.84	241.94	2.985	CC, ES, SF
Wells Ranch 14-2 - Wellbore #1 - Gyro Surveys	11,338.31	6,413.92	994.04	906.55	11.362	CC, ES
Wells Ranch 14-2 - Wellbore #1 - Gyro Surveys	11,400.00	6,413.91	995.95	907.84	11.303	SF
Wells Ranch 21-2 SI - Wellbore #1 - Gyro Surveys	12,766.91	6,479.65	2,814.05	2,709.59	26.938	CC
Wells Ranch 21-2 SI - Wellbore #1 - Gyro Surveys	12,800.00	6,479.57	2,814.25	2,709.41	26.843	ES
Wells Ranch 21-2 SI - Wellbore #1 - Gyro Surveys	13,300.00	6,478.26	2,864.10	2,754.84	26.214	SF
Wells Ranch 22-2 SI - Wellbore #1 - No Surveys	12,863.29	6,459.90	1,839.12	1,699.62	13.184	CC
Wells Ranch 22-2 SI - Wellbore #1 - No Surveys	12,900.00	6,459.67	1,839.49	1,699.58	13.148	ES
Wells Ranch 22-2 SI - Wellbore #1 - No Surveys	13,000.00	6,459.06	1,844.20	1,703.34	13.093	SF
Wells Ranch 23-2 - Wellbore #1 - No Surveys	12,678.38	6,451.03	311.82	174.57	2.272	CC, ES, SF
Wells Ranch 24-2 - Wellbore #1 - No Surveys	12,505.49	6,442.08	814.69	724.23	9.006	CC, ES
Wells Ranch 24-2 - Wellbore #1 - No Surveys	12,600.00	6,441.51	820.16	729.02	8.999	SF
Wells Ranch 31-2 - Wellbore #1 - Gyro Surveys	14,184.35	6,454.88	2,795.21	2,674.04	23.069	CC
Wells Ranch 31-2 - Wellbore #1 - Gyro Surveys	14,200.00	6,454.67	2,795.26	2,673.90	23.035	ES
Wells Ranch 31-2 - Wellbore #1 - Gyro Surveys	14,600.00	6,449.36	2,825.94	2,700.95	22.609	SF
Wells Ranch 32-2 - Wellbore #1 - No Surveys	13,985.91	6,467.04	1,691.43	1,538.56	11.064	CC
Wells Ranch 32-2 - Wellbore #1 - No Surveys	14,000.00	6,466.96	1,691.49	1,538.46	11.053	ES
Wells Ranch 32-2 - Wellbore #1 - No Surveys	14,100.00	6,466.34	1,695.27	1,541.28	11.009	SF
Wells Ranch 33-2 - Wellbore #1 - Gyro Surveys	14,190.40	6,100.00	369.51	292.49	4.798	CC, ES
Wells Ranch 33-2 - Wellbore #1 - Gyro Surveys	14,200.00	6,100.00	369.63	292.56	4.796	SF
Wells Ranch 34-2 SI - Wellbore #1 - No Surveys	14,206.70	6,441.69	824.86	669.58	5.312	CC, ES, SF
Wells Ranch 41-2 - Wellbore #1 - Gyro Surveys	15,113.91	6,462.87	2,753.34	2,621.02	20.809	CC, ES
Wells Ranch 41-2 - Wellbore #1 - Gyro Surveys	15,500.00	6,461.89	2,780.27	2,644.44	20.468	SF
Wells Ranch 42-2 SI - Wellbore #1 - No Surveys	15,107.19	6,446.19	1,827.94	1,661.84	11.005	CC, ES
Wells Ranch 42-2 SI - Wellbore #1 - No Surveys	15,300.00	6,445.01	1,838.08	1,670.31	10.956	SF
Wells Ranch 43-2 TA - Wellbore #1 - Gyro Surveys	15,102.76	6,451.42	95.40	-36.63	0.723	Level 1, CC, ES, SF
Wells Ranch 44-2 - Wellbore #1 - No Surveys	15,136.58	6,436.01	813.12	646.76	4.888	CC, ES, SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well WELLS RANCH STATE BB03-636
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 BB03-636	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						
UPRR Pan Am 1 (PA) - Original Drilling - Original Drilling	4,157.73	4,154.83	2,891.23	2,793.54	29.597	CC
UPRR Pan Am 1 (PA) - Original Drilling - Original Drilling	4,400.00	4,397.00	2,894.00	2,790.65	28.003	ES
UPRR Pan Am 1 (PA) - Original Drilling - Original Drilling	6,700.00	6,514.00	3,027.04	2,873.64	19.733	SF
Wells 43-3 PA - Wellbore #1 - No Surveys	10,160.21	6,476.41	422.50	313.92	3.891	CC, ES, SF
Wells 34-3 - Wellbore #1 - Gyro Surveys	8,638.46	6,533.50	997.28	938.40	16.936	CC, ES
Wells 34-3 - Wellbore #1 - Gyro Surveys	8,800.00	6,526.55	1,010.26	950.07	16.784	SF
Wells Rach USX BB 3-14 - Wellbore #1 - Gyro Surveys	7,344.56	6,483.57	1,117.94	1,069.49	23.076	CC, ES
Wells Rach USX BB 3-14 - Wellbore #1 - Gyro Surveys	7,500.00	6,482.50	1,128.69	1,079.34	22.873	SF
Wells Ranch 12-03 - Original Drilling - Original Drilling - A	4,449.66	4,478.40	1,508.79	1,477.75	48.607	CC
Wells Ranch 12-03 - Original Drilling - Original Drilling - A	4,500.00	4,517.24	1,509.09	1,477.74	48.141	ES
Wells Ranch 12-03 - Original Drilling - Original Drilling - A	6,500.00	6,414.68	1,616.64	1,571.95	36.173	SF
Wells Ranch 21-3 TA - Wellbore #1 - No Surveys	7,376.81	6,543.42	2,935.93	2,852.66	35.260	CC
Wells Ranch 21-3 TA - Wellbore #1 - No Surveys	7,400.00	6,543.27	2,936.02	2,852.62	35.206	ES
Wells Ranch 21-3 TA - Wellbore #1 - No Surveys	8,100.00	6,539.00	3,023.68	2,935.73	34.379	SF
Wells Ranch 32-3 SI - Wellbore #1 - No Surveys	8,835.86	6,494.50	1,638.32	1,543.49	17.276	CC, ES
Wells Ranch 32-3 SI - Wellbore #1 - No Surveys	9,000.00	6,493.50	1,646.52	1,550.24	17.102	SF
Wells Ranch 41-3 - Wellbore #1 - No Surveys	10,023.87	6,875.00	3,442.22	3,343.51	34.870	CC, ES
Wells Ranch 41-3 - Wellbore #1 - No Surveys	11,000.00	6,875.00	3,577.95	3,470.44	33.281	SF
WELLS RANCH BB03-627 - Wellbore #1 - Plan #2	6,930.24	7,209.18	515.83	466.60	10.477	CC
WELLS RANCH BB03-627 - Wellbore #1 - Plan #2	16,029.01	16,289.54	524.63	282.57	2.167	ES, SF
WELLS RANCH BB03-651 - Wellbore #1 - Plan #4	2,200.00	2,200.00	72.86	57.56	4.760	CC, ES
WELLS RANCH BB03-651 - Wellbore #1 - Plan #4	16,029.01	16,075.03	1,039.89	798.56	4.309	SF
WELLS RANCH STATE BB03-620 - Wellbore #1 - Plan #	6,897.51	6,901.51	939.49	891.96	19.766	CC
WELLS RANCH STATE BB03-620 - Wellbore #1 - Plan #	16,029.01	16,026.51	1,011.76	770.33	4.191	ES, SF
WELLS RANCH STATE BB03-643 - Wellbore #1 - Plan #	2,200.00	2,200.00	36.43	21.12	2.380	CC, ES
WELLS RANCH STATE BB03-643 - Wellbore #1 - Plan #	16,029.01	16,096.73	525.34	285.93	2.194	SF
WELLS RANCH STATE BB03-659 - Wellbore #1 - Plan #	6,911.17	7,038.91	1,500.35	1,452.06	31.073	CC
WELLS RANCH STATE BB03-659 - Wellbore #1 - Plan #	16,029.01	16,136.94	1,567.08	1,326.46	6.513	ES, SF
WELLS RANCH STATE BB03-668 - Wellbore #1 - Plan #	16,002.04	15,989.62	2,159.47	1,918.85	8.974	CC
WELLS RANCH STATE BB03-668 - Wellbore #1 - Plan #	16,029.01	15,989.62	2,159.64	1,918.73	8.964	ES, SF
WELLS RANCH STATE BB03-676 - Wellbore #1 - Plan #	2,104.96	2,130.96	2,262.29	2,247.57	153.704	CC
WELLS RANCH STATE BB03-676 - Wellbore #1 - Plan #	2,200.00	2,219.34	2,262.33	2,246.95	147.141	ES
WELLS RANCH STATE BB03-676 - Wellbore #1 - Plan #	16,029.01	16,969.48	2,719.59	2,470.09	10.900	SF
WELLS RANCH STATE BB03-684 - Wellbore #1 - Plan #	1,903.70	1,931.70	2,298.66	2,285.38	173.055	CC
WELLS RANCH STATE BB03-684 - Wellbore #1 - Plan #	2,000.00	2,018.52	2,298.72	2,284.78	164.916	ES
WELLS RANCH STATE BB03-684 - Wellbore #1 - Plan #	16,029.01	16,967.19	3,257.93	3,008.40	13.056	SF
Wells Ranch State BB05-613 - Original Drilling - Original	2,016.11	2,006.14	1,050.78	1,037.16	77.118	CC, ES
Wells Ranch State BB05-613 - Original Drilling - Original	6,300.00	6,082.76	1,522.47	1,484.27	39.863	SF
Wells Ranch State BB05-617 - Original Drilling - Original	2,382.70	2,370.78	1,010.53	995.45	67.018	CC
Wells Ranch State BB05-617 - Original Drilling - Original	2,400.00	2,381.89	1,010.59	995.45	66.709	ES
Wells Ranch State BB05-617 - Original Drilling - Original	6,400.00	6,235.00	1,296.14	1,257.51	33.549	SF
Wells Ranch State BB05-625 - Original Drilling - Original	5,727.05	5,728.53	863.44	828.43	24.667	CC, ES
Wells Ranch State BB05-625 - Original Drilling - Original	6,100.00	6,035.66	886.39	849.16	23.809	SF
Wells Ranch State BB05-630 - Original Drilling - Original	2,996.31	2,986.57	170.15	152.09	9.423	CC
Wells Ranch State BB05-630 - Original Drilling - Original	3,000.00	2,990.16	170.15	152.08	9.413	ES
Wells Ranch State BB05-630 - Original Drilling - Original	3,300.00	3,284.75	179.02	159.35	9.098	SF
Wells Ranch State BB05-635 - Original Drilling - Original	3,866.80	3,855.93	139.00	115.99	6.041	CC
Wells Ranch State BB05-635 - Original Drilling - Original	3,900.00	3,888.62	139.08	115.87	5.993	ES
Wells Ranch State BB05-635 - Original Drilling - Original	4,500.00	4,496.19	147.55	120.69	5.492	SF
Wells Ranch State BB05-644 - Original Drilling - Original	3,513.00	3,498.01	208.18	187.28	9.962	CC, ES
Wells Ranch State BB05-644 - Original Drilling - Original	4,000.00	3,975.74	227.21	203.41	9.544	SF
Wells Ranch State BB05-650 - Original Drilling - Original	2,086.22	2,085.36	221.44	207.34	15.701	CC, ES
Wells Ranch State BB05-650 - Original Drilling - Original	3,000.00	2,964.31	271.51	253.52	15.098	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 BB03-636
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 BB03-636	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	5,762.87	5,924.00	1,513.90	1,477.73	41.853	CC
Wells Ranch State BB05-656 - Original Drilling - Original	5,800.00	5,954.00	1,514.00	1,477.59	41.582	ES
Wells Ranch State BB05-656 - Original Drilling - Original	6,150.00	6,187.45	1,535.13	1,496.67	39.916	SF
Wells Ranch State BB05-665 - Original Drilling - Original	234.39	258.44	1,794.57	1,793.23	1,334.476	CC
Wells Ranch State BB05-665 - Original Drilling - Original	2,751.07	2,720.27	1,802.81	1,786.07	107.686	ES
Wells Ranch State BB05-665 - Original Drilling - Original	6,350.00	6,172.19	2,038.24	2,000.03	53.349	SF
Wells Ranch State BB05-669 - Original Drilling - Original	1,005.26	1,030.28	1,828.57	1,821.79	269.756	CC
Wells Ranch State BB05-669 - Original Drilling - Original	1,300.00	1,316.18	1,829.30	1,820.47	207.045	ES
Wells Ranch State BB05-669 - Original Drilling - Original	6,500.00	6,164.20	2,355.26	2,316.38	60.577	SF
Wells Ranch State BB05-678 - Original Drilling - Original	4,154.46	4,209.67	2,616.88	2,591.96	104.995	CC
Wells Ranch State BB05-678 - Original Drilling - Original	4,200.00	4,257.49	2,616.96	2,591.75	103.808	ES
Wells Ranch State BB05-678 - Original Drilling - Original	7,000.00	7,000.00	2,855.04	2,812.47	67.055	SF
Wells Ranch State BB05-685 - Original Drilling - Original	2,179.45	2,236.48	2,805.86	2,791.76	199.032	CC
Wells Ranch State BB05-685 - Original Drilling - Original	2,200.00	2,250.37	2,805.88	2,791.70	197.901	ES
Wells Ranch State BB05-685 - Original Drilling - Original	6,550.00	6,329.00	3,390.02	3,350.21	85.152	SF
Wells Ranch State BB05-690 - Original Drilling - Original	0.00	49.71	2,847.37			
Wells Ranch State BB05-690 - Original Drilling - Original	1,956.82	2,012.86	2,848.43	2,835.02	212.491	ES
Wells Ranch State BB05-690 - Original Drilling - Original	7,600.00	6,033.08	3,876.74	3,833.98	90.661	SF
Wells Ranch USX BB 3-10 - Wellbore #1 - Gyro Surveys	8,590.00	6,491.58	314.13	255.82	5.387	CC, ES
Wells Ranch USX BB 3-10 - Wellbore #1 - Gyro Surveys	8,600.00	6,491.72	314.29	255.91	5.384	SF
Wells Ranch USX BB 3-11 SI - Wellbore #1 - Gyro Surveys	7,492.47	6,504.63	239.46	190.03	4.844	CC, ES
Wells Ranch USX BB 3-11 SI - Wellbore #1 - Gyro Surveys	7,500.00	6,504.43	239.58	190.11	4.843	SF
Wells Ranch USX BB 3-16 SI - Wellbore #1 - Gyro Surveys	9,973.47	6,451.39	1,098.87	1,026.51	15.186	CC, ES
Wells Ranch USX BB 3-16 SI - Wellbore #1 - Gyro Surveys	10,100.00	6,451.48	1,106.13	1,032.60	15.044	SF
Wells Ranch USX BB 3-2 SI - Wellbore #1 - No Surveys	8,599.70	6,504.94	3,067.13	2,974.49	33.105	CC
Wells Ranch USX BB 3-2 SI - Wellbore #1 - No Surveys	8,600.00	6,504.94	3,067.13	2,974.48	33.104	ES
Wells Ranch USX BB 3-2 SI - Wellbore #1 - No Surveys	9,400.00	6,500.06	3,169.82	3,070.35	31.866	SF
Wells Ranch USX BB 3-4 - Wellbore #1 - No Surveys	4,165.70	4,183.80	2,997.06	2,945.93	58.617	CC
Wells Ranch USX BB 3-4 - Wellbore #1 - No Surveys	4,300.00	4,318.08	2,997.99	2,945.23	56.824	ES
Wells Ranch USX BB 3-4 - Wellbore #1 - No Surveys	6,750.00	6,550.82	3,156.54	3,076.11	39.244	SF
Wells Ranch USX BB 3-6 SI - Wellbore #1 - Gyro Surveys	1,229.22	3,327.49	1,940.14	1,924.51	124.096	CC
Wells Ranch USX BB 3-6 SI - Wellbore #1 - Gyro Surveys	1,300.00	3,384.40	1,940.40	1,924.31	120.632	ES
Wells Ranch USX BB 3-6 SI - Wellbore #1 - Gyro Surveys	4,800.00	6,600.00	2,089.83	2,050.59	53.258	SF
Wells Ranch USX BB 3-8 - Wellbore #1 - Gyro Surveys	9,902.64	6,496.32	1,593.11	1,521.33	22.196	CC, ES
Wells Ranch USX BB 3-8 - Wellbore #1 - Gyro Surveys	10,100.00	6,493.30	1,605.28	1,531.73	21.825	SF
Wells Ranch USX BB03-04 - Original Drilling - Original D	3,388.64	3,335.87	3,012.01	2,988.69	129.126	CC
Wells Ranch USX BB03-04 - Original Drilling - Original D	3,500.00	3,418.70	3,012.61	2,988.60	125.489	ES
Wells Ranch USX BB03-04 - Original Drilling - Original D	6,850.00	6,600.44	3,205.01	3,158.55	68.987	SF
Wells Ranch USX BB03-12 - Original Drilling - Original D	4,170.39	4,127.44	340.11	311.24	11.782	CC
Wells Ranch USX BB03-12 - Original Drilling - Original D	4,200.00	4,157.37	340.21	311.13	11.701	ES
Wells Ranch USX BB03-12 - Original Drilling - Original D	4,500.00	4,459.45	352.11	320.99	11.314	SF
Wells Ranch USX BB03-13 - Original Drilling - Original D	5,522.04	5,447.45	905.04	866.99	23.790	CC
Wells Ranch USX BB03-13 - Original Drilling - Original D	5,800.00	5,719.04	905.92	865.97	22.681	ES
Wells Ranch USX BB03-13 - Original Drilling - Original D	6,250.00	6,142.18	923.93	880.98	21.510	SF
Wells Ranch USX BB03-25 PA - Original Drilling - Gyro S	6,888.66	6,492.93	400.07	353.71	8.629	CC, ES
Wells Ranch USX BB03-25 PA - Original Drilling - Gyro S	6,900.00	6,493.94	400.23	353.82	8.624	SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well WELLS RANCH STATE BB03-636
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 BB03-636	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	4,411.84	4,762.66	5,941.10	5,909.31	186.880	CC, ES
State 11-04 - Original Drilling - Original Drilling - As Drille	6,400.00	6,254.94	6,219.73	6,176.15	142.712	SF
State 12-04 - Original Drilling - Original Drilling - As Drille	4,409.41	4,733.03	5,516.96	5,485.28	174.137	CC, ES
State 12-04 - Original Drilling - Original Drilling - As Drille	6,300.00	6,353.56	5,662.77	5,619.06	129.556	SF
State 13-04 - Original Drilling - Original Drilling - As Drille	4,261.26	4,264.65	5,368.67	5,339.08	181.397	CC, ES
State 13-04 - Original Drilling - Original Drilling - As Drille	6,350.00	6,148.38	5,678.24	5,635.20	131.932	SF
State 21-04 - Original Drilling - Original Drilling - As Drille	4,358.72	4,541.71	5,035.00	5,004.11	163.017	CC, ES
State 21-04 - Original Drilling - Original Drilling - As Drille	6,500.00	6,501.07	5,329.69	5,284.95	119.133	SF
State 22-04 - Original Drilling - Original Drilling - As Drille	4,240.47	4,228.55	4,305.36	4,205.98	43.321	CC
State 22-04 - Original Drilling - Original Drilling - As Drille	4,300.00	4,288.08	4,305.98	4,205.20	42.729	ES
State 22-04 - Original Drilling - Original Drilling - As Drille	6,350.00	6,299.71	4,598.61	4,450.85	31.122	SF
State 23-04 - Original Drilling - Original Drilling - As Drille	4,150.18	4,006.48	3,954.68	3,926.37	139.711	CC, ES
State 23-04 - Original Drilling - Original Drilling - As Drille	6,300.00	6,299.30	4,239.68	4,196.22	97.550	SF
State 24-04 - Original Drilling - Original Drilling - As Drille	4,236.72	4,180.15	4,043.56	4,014.35	138.399	CC, ES
State 24-04 - Original Drilling - Original Drilling - As Drille	6,250.00	6,243.97	4,257.52	4,214.35	98.640	SF
State 31-04 (SI) - Original Drilling - Original Drilling - As D	4,188.16	4,142.81	3,955.14	3,926.11	136.235	CC
State 31-04 (SI) - Original Drilling - Original Drilling - As D	4,200.00	4,156.23	3,955.16	3,926.04	135.821	ES
State 31-04 (SI) - Original Drilling - Original Drilling - As D	6,400.00	6,354.50	4,199.21	4,155.17	95.343	SF
State 32-04 - Original Drilling - Original Drilling - As Drille	4,236.30	4,224.38	3,007.17	2,907.88	30.285	CC
State 32-04 - Original Drilling - Original Drilling - As Drille	4,300.00	4,288.08	3,007.85	2,907.07	29.844	ES
State 32-04 - Original Drilling - Original Drilling - As Drille	6,250.00	6,216.26	3,241.52	3,095.69	22.228	SF
State 33-04 - Original Drilling - Original Drilling - As Drille	4,247.21	4,220.29	2,681.52	2,582.29	27.024	CC
State 33-04 - Original Drilling - Original Drilling - As Drille	4,300.00	4,273.08	2,682.00	2,581.53	26.696	ES
State 33-04 - Original Drilling - Original Drilling - As Drille	6,200.00	6,156.56	2,897.28	2,752.81	20.055	SF
State 41-04 (SI) - Original Drilling - Original Drilling - As D	4,059.72	3,959.14	3,206.66	3,178.78	114.998	CC
State 41-04 (SI) - Original Drilling - Original Drilling - As D	4,100.00	3,999.61	3,206.85	3,178.68	113.840	ES
State 41-04 (SI) - Original Drilling - Original Drilling - As D	6,500.00	6,477.72	3,465.63	3,420.84	77.377	SF
State 42-04 (SI) - Original Drilling - Original Drilling - As D	4,227.05	4,205.14	2,172.50	2,073.60	21.966	CC
State 42-04 (SI) - Original Drilling - Original Drilling - As D	4,300.00	4,278.08	2,173.27	2,072.67	21.601	ES
State 42-04 (SI) - Original Drilling - Original Drilling - As D	6,250.00	6,206.26	2,379.15	2,233.48	16.332	SF
State Lease 34-04 (PA) - Original Drilling - Original Drilling	4,260.75	4,229.84	2,796.06	2,696.59	28.109	CC
State Lease 34-04 (PA) - Original Drilling - Original Drilling	4,300.00	4,269.08	2,796.28	2,695.89	27.854	ES
State Lease 34-04 (PA) - Original Drilling - Original Drilling	6,250.00	6,197.26	2,992.22	2,846.74	20.568	SF
State Wells 14-04 - Original Drilling - Original Drilling - As	4,254.84	4,229.92	5,257.74	5,158.29	52.869	CC
State Wells 14-04 - Original Drilling - Original Drilling - As	4,300.00	4,275.08	5,258.05	5,157.55	52.317	ES
State Wells 14-04 - Original Drilling - Original Drilling - As	6,400.00	6,324.96	5,559.34	5,410.93	37.458	SF
State Wells 44-04 - Original Drilling - Original Drilling - As	4,192.83	4,122.29	1,722.68	1,693.78	59.610	CC
State Wells 44-04 - Original Drilling - Original Drilling - As	4,200.00	4,128.34	1,722.69	1,693.74	59.515	ES
State Wells 44-04 - Original Drilling - Original Drilling - As	6,150.00	6,053.45	1,906.64	1,864.41	45.148	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 BB03-636
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 BB03-636	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	4,218.47	4,055.30	9,649.65	9,620.93	335.986	CC, ES
UPV 05-03H3 - Original Drilling - Original Drilling - As Dri	6,350.00	6,032.46	9,981.87	9,939.23	234.067	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	4,245.00	4,173.85	9,320.87	9,291.66	319.062	CC, ES
UPV 05-06H3 - Original Drilling - Original Drilling - As Dri	6,400.00	6,400.00	9,615.37	9,571.32	218.255	SF
Wells Ranch 31-05 - Original Drilling - Original Drilling - A	4,194.92	4,012.21	8,321.91	8,293.38	291.635	CC
Wells Ranch 31-05 - Original Drilling - Original Drilling - A	4,200.00	4,016.05	8,321.92	8,293.35	291.317	ES
Wells Ranch 31-05 - Original Drilling - Original Drilling - A	6,350.00	6,400.01	8,563.96	8,519.96	194.660	SF
Wells Ranch 32-05 - Original Drilling - Original Drilling - A	4,269.27	4,287.01	8,048.89	8,019.19	271.037	CC
Wells Ranch 32-05 - Original Drilling - Original Drilling - A	4,300.00	4,311.18	8,049.07	8,019.18	269.329	ES
Wells Ranch 32-05 - Original Drilling - Original Drilling - A	6,500.00	6,463.99	8,408.46	8,363.95	188.907	SF
Wells Ranch 41-05 - Original Drilling - Original Drilling - A	4,332.87	4,542.77	7,184.28	7,153.51	233.422	CC, ES
Wells Ranch 41-05 - Original Drilling - Original Drilling - A	6,750.00	6,752.48	7,733.91	7,688.01	168.483	SF
Wells Ranch 42-05 - Original Drilling - Original Drilling - A	4,301.59	4,392.23	6,798.94	6,768.78	225.431	CC, ES
Wells Ranch 42-05 - Original Drilling - Original Drilling - A	6,500.00	6,490.00	7,174.83	7,130.22	160.839	SF
Wells Ranch BB01-611 - Original Drilling - Original Drilling	16,029.01	16,278.00	1,729.38	1,491.72	7.277	CC, ES, SF
Wells Ranch BB01-615 - Original Drilling - Original Drilling	16,029.01	16,386.00	1,295.97	1,065.07	5.613	CC, ES, SF
Wells Ranch BB01-624 - Original Drilling - Original Drilling	16,029.01	6,931.00	9,949.01	9,903.81	220.136	CC, ES, SF
Wells Ranch BB01-624 - Original Drilling - ST01 - ST01 -	16,029.01	16,377.00	716.57	558.28	4.527	CC, ES, SF
Wells Ranch BB01-638 - Original Drilling - Original Drilling	16,029.01	16,495.00	506.47	412.74	5.403	CC, ES, SF
Wells Ranch BB01-649 - Original Drilling - Original Drilling	16,029.01	16,403.00	934.80	722.11	4.395	CC, ES, SF
Wells Ranch BB01-655 - Original Drilling - Original Drilling	16,029.01	16,335.00	1,462.38	1,244.88	6.723	CC, ES, SF
Wells Ranch BB01-669 - Original Drilling - Original Drilling	16,029.01	16,351.00	2,087.16	1,856.32	9.042	CC, ES, SF
Wells Ranch BB01-675 - Original Drilling - Original Drilling	16,029.01	16,379.00	2,735.87	2,505.50	11.876	CC, ES, SF
Wells Ranch State AA32-717 - Wellbore #1 - Plan #3	4,382.25	4,857.35	7,551.75	7,518.88	229.729	CC
Wells Ranch State AA32-717 - Wellbore #1 - Plan #3	4,400.00	4,874.06	7,551.81	7,518.81	228.855	ES
Wells Ranch State AA32-717 - Wellbore #1 - Plan #3	6,350.00	6,500.00	7,768.05	7,721.92	168.392	SF
Wells Ranch State AA32-724 - Wellbore #1 - Plan #3	4,168.90	4,005.48	7,750.06	7,721.34	269.883	CC
Wells Ranch State AA32-724 - Wellbore #1 - Plan #3	4,200.00	4,035.05	7,750.23	7,721.30	267.832	ES
Wells Ranch State AA32-724 - Wellbore #1 - Plan #3	6,550.00	6,200.11	8,252.64	8,207.81	184.082	SF
Wells Ranch State AA32-731 - Wellbore #1 - Plan #3	3,800.60	2,970.94	7,870.95	7,847.38	333.850	CC
Wells Ranch State AA32-731 - Wellbore #1 - Plan #3	3,900.00	3,017.20	7,871.30	7,847.22	326.860	ES
Wells Ranch State AA32-731 - Wellbore #1 - Plan #3	6,600.00	5,408.00	8,640.74	8,599.19	207.995	SF
Wells Ranch State AA32-737 - Wellbore #1 - Plan #3	3,294.27	2,449.84	7,943.96	7,924.02	398.381	CC
Wells Ranch State AA32-737 - Wellbore #1 - Plan #3	3,400.00	2,500.00	7,944.45	7,923.97	387.924	ES
Wells Ranch State AA32-737 - Wellbore #1 - Plan #3	6,550.00	4,805.85	8,836.73	8,797.80	226.956	SF
Wells Ranch State AA32-745 - Wellbore #1 - Plan #3	4,532.14	5,488.45	9,217.48	9,182.17	261.030	CC
Wells Ranch State AA32-745 - Wellbore #1 - Plan #3	5,300.00	6,231.74	9,221.20	9,180.53	226.686	ES
Wells Ranch State AA32-745 - Wellbore #1 - Plan #3	6,350.00	6,350.00	9,369.12	9,324.46	209.783	SF
Wells Ranch State AA32-751 - Wellbore #1 - Plan #3	4,172.37	3,913.35	9,561.53	9,533.19	337.342	CC
Wells Ranch State AA32-751 - Wellbore #1 - Plan #3	4,200.00	3,940.65	9,561.66	9,533.13	335.037	ES
Wells Ranch State AA32-751 - Wellbore #1 - Plan #3	6,450.00	6,103.09	9,973.30	9,929.60	228.231	SF
Wells Ranch State AA32-763 - Wellbore #1 - Plan #2	3,406.23	2,356.42	9,737.10	9,717.09	486.777	CC
Wells Ranch State AA32-763 - Wellbore #1 - Plan #2	3,500.00	2,400.00	9,737.50	9,717.02	475.455	ES
Wells Ranch State AA32-763 - Wellbore #1 - Plan #2	5,200.00	3,743.62	9,994.11	9,963.11	322.417	SF
Wells Ranch State AA32-770 - Wellbore #1 - Plan #3						Out of range
Wells Ranch State AA32-775 - Wellbore #1 - Plan #3						Out of range
Wells Ranch State AA32-783 - Wellbore #1 - Plan #3						Out of range
Wells Ranch State AA32-789 - Wellbore #1 - Plan #3						Out of range
Wells Ranch State BB01-690 - Original Drilling - Original	16,029.01	16,119.00	3,700.96	3,458.98	15.294	CC, ES, SF
Wells Ranch USX BB05-09 - Original Drilling - Original D	4,413.66	4,739.27	6,460.75	6,429.06	203.870	CC, ES
Wells Ranch USX BB05-09 - Original Drilling - Original D	6,450.00	6,384.27	6,764.87	6,720.74	153.302	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 BB03-636
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 BB03-636	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 BB05-10 - Original Drilling - Original D	4,338.71	4,539.92	7,779.25	7,748.47	252.776	CC, ES
Wells Ranch USX BB05-10 - Original Drilling - Original D	6,550.00	6,575.11	8,185.61	8,140.64	182.041	SF
Wells Ranch USX BB05-11 - Original Drilling - Original Dr	4,239.96	4,156.23	9,102.48	9,073.35	312.399	CC, ES
Wells Ranch USX BB05-11 - Original Drilling - Original D	6,350.00	6,350.00	9,412.48	9,368.72	215.098	SF
Wells Ranch USX BB05-12 - Original Drilling - Original D						Out of range
Wells Ranch USX BB05-13 - Original Drilling - Original D						Out of range
Wells Ranch USX BB05-14 - Original Drilling - Original D	4,260.79	4,281.19	9,221.04	9,191.38	310.948	CC, ES
Wells Ranch USX BB05-14 - Original Drilling - Original D	6,500.00	6,200.01	9,596.47	9,552.89	220.208	SF
Wells Ranch USX BB05-15 - Original Drilling - Original D	4,285.03	4,334.43	7,985.98	7,956.07	267.049	CC
Wells Ranch USX BB05-15 - Original Drilling - Original D	4,300.00	4,345.73	7,986.02	7,956.02	266.247	ES
Wells Ranch USX BB05-15 - Original Drilling - Original D	6,350.00	6,600.01	8,213.02	8,168.38	184.020	SF
Wells Ranch USX BB05-16 - Original Drilling - Original D	4,417.61	4,753.27	6,710.57	6,678.79	211.204	CC, ES
Wells Ranch USX BB05-16 - Original Drilling - Original D	6,500.00	6,605.95	7,023.80	6,978.76	155.937	SF
Wells Ranch USX BB05-23 - Original Drilling - Original D	4,452.28	4,900.01	7,064.77	7,032.38	218.127	CC, ES
Wells Ranch USX BB05-23 - Original Drilling - Original D	6,400.00	6,409.80	7,320.95	7,276.79	165.789	SF
Wells Ranch USX BB05-25 - Original Drilling - Original D	4,260.97	4,229.44	9,982.35	9,952.88	338.734	CC, ES
Wells Ranch USX BB05-25 - Original Drilling - Original D	4,541.97	4,400.01	9,996.61	9,965.61	322.521	SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well WELLS RANCH STATE BB03-636
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 BB03-636	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	6,779.96	6,541.06	3,002.51	2,956.63	65.439	CC, ES
Wells Ranch 10A - Original Drilling - Original Drilling - As	7,900.00	6,563.30	3,218.28	3,166.75	62.446	SF
Wells Ranch 10B - Original Drilling - Original Drilling - As	6,933.76	6,488.65	5,797.28	5,750.77	124.645	CC
Wells Ranch 10B - Original Drilling - Original Drilling - As	6,934.07	6,488.65	5,797.28	5,750.77	124.642	ES
Wells Ranch 10B - Original Drilling - Original Drilling - As	10,900.00	6,466.98	7,024.25	6,950.03	94.647	SF
Wells Ranch 10C - Original Drilling - Original Drilling - As	9,534.32	6,466.69	2,851.99	2,784.20	42.071	CC, ES
Wells Ranch 10C - Original Drilling - Original Drilling - As	10,300.00	6,462.62	2,952.98	2,878.26	39.525	SF
Wells Ranch 10F - Original Drilling - Original Drilling - As	6,133.71	6,194.17	3,192.29	3,149.57	74.727	CC
Wells Ranch 10F - Original Drilling - Original Drilling - As	6,150.00	6,213.34	3,192.33	3,149.49	74.516	ES
Wells Ranch 10F - Original Drilling - Original Drilling - As	6,800.00	6,690.65	3,295.45	3,248.82	70.674	SF
Wells Ranch 10H - Original Drilling - Original Drilling - As	6,080.88	5,959.22	5,743.84	5,702.10	137.605	CC
Wells Ranch 10H - Original Drilling - Original Drilling - As	6,100.00	5,978.50	5,743.88	5,702.00	137.167	ES
Wells Ranch 10H - Original Drilling - Original Drilling - As	10,200.00	6,460.22	7,286.11	7,219.96	110.145	SF
Wells Ranch 10J - Original Drilling - Original Drilling - As	6,683.98	6,451.15	1,697.66	1,653.01	38.027	CC
Wells Ranch 10J - Original Drilling - Original Drilling - As	6,700.00	6,457.34	1,697.73	1,653.01	37.962	ES
Wells Ranch 10J - Original Drilling - Original Drilling - As	6,900.00	6,500.99	1,711.92	1,666.33	37.554	SF
Wells Ranch 10K - Original Drilling - Original Drilling - As	7,002.25	6,416.73	4,488.15	4,441.62	96.456	CC, ES
Wells Ranch 10K - Original Drilling - Original Drilling - As	9,600.00	6,473.21	5,185.37	5,121.27	80.895	SF
Wells Ranch 11-10 - Original Drilling - Original Drilling - A	6,143.90	6,064.93	2,393.20	2,350.88	56.551	CC
Wells Ranch 11-10 - Original Drilling - Original Drilling - A	6,200.00	6,118.80	2,393.53	2,350.83	56.054	ES
Wells Ranch 11-10 - Original Drilling - Original Drilling - A	6,750.00	6,478.27	2,453.72	2,407.93	53.589	SF
Wells Ranch 12-10 - Original Drilling - Original Drilling - A	6,161.90	6,000.18	3,893.12	3,850.97	92.373	CC
Wells Ranch 12-10 - Original Drilling - Original Drilling - A	6,200.00	6,029.74	3,893.21	3,850.83	91.867	ES
Wells Ranch 12-10 - Original Drilling - Original Drilling - A	8,400.00	6,200.00	4,469.76	4,416.55	83.999	SF
Wells Ranch 13-10 - Original Drilling - Original Drilling - A	100.00	27.13	5,140.58	5,140.41	10,000.000	CC
Wells Ranch 13-10 - Original Drilling - Original Drilling - A	500.00	400.00	5,142.61	5,139.82	1,846.106	ES
Wells Ranch 13-10 - Original Drilling - Original Drilling - A	9,700.00	6,392.77	6,332.39	6,269.30	100.371	SF
Wells Ranch 14-10 - Original Drilling - Original Drilling - A	6,283.31	6,155.74	6,278.16	6,235.04	145.615	CC
Wells Ranch 14-10 - Original Drilling - Original Drilling - A	6,350.00	6,218.73	6,278.44	6,234.89	144.143	ES
Wells Ranch 14-10 - Original Drilling - Original Drilling - A	11,000.00	6,418.49	7,981.44	7,908.56	109.512	SF
Wells Ranch 21-10 - Original Drilling - Original Drilling - A	7,449.38	6,564.35	2,222.89	2,173.56	45.065	CC, ES
Wells Ranch 21-10 - Original Drilling - Original Drilling - A	8,100.00	6,546.37	2,316.08	2,262.49	43.219	SF
Wells Ranch 22-10 - Original Drilling - Original Drilling - A	7,487.98	6,489.05	3,611.29	3,561.95	73.186	CC
Wells Ranch 22-10 - Original Drilling - Original Drilling - A	7,500.00	6,488.92	3,611.31	3,561.89	73.075	ES
Wells Ranch 22-10 - Original Drilling - Original Drilling - A	9,100.00	6,470.82	3,954.71	3,893.71	64.828	SF
Wells Ranch 23-10 - Original Drilling - Original Drilling - A	7,374.53	6,500.00	5,115.59	5,066.91	105.086	CC
Wells Ranch 23-10 - Original Drilling - Original Drilling - A	7,400.00	6,500.00	5,115.65	5,066.82	104.767	ES
Wells Ranch 23-10 - Original Drilling - Original Drilling - A	10,400.00	6,486.15	5,943.27	5,872.00	83.393	SF
Wells Ranch 24-10 - Original Drilling - Original Drilling - A	7,582.50	6,400.00	6,358.86	6,309.21	128.055	CC
Wells Ranch 24-10 - Original Drilling - Original Drilling - A	7,600.00	6,400.00	6,358.89	6,309.11	127.755	ES
Wells Ranch 24-10 - Original Drilling - Original Drilling - A	11,700.00	6,329.89	7,575.04	7,493.06	92.399	SF
Wells Ranch 31-10 - Original Drilling - Original Drilling - A	8,803.59	6,465.51	2,312.88	2,252.59	38.365	CC, ES
Wells Ranch 31-10 - Original Drilling - Original Drilling - A	9,400.00	6,463.81	2,388.53	2,323.11	36.509	SF
Wells Ranch 32-10 - Original Drilling - Original Drilling - A	9,031.83	6,461.87	3,665.76	3,601.36	56.920	CC
Wells Ranch 32-10 - Original Drilling - Original Drilling - A	9,100.00	6,462.13	3,666.39	3,601.30	56.324	ES
Wells Ranch 32-10 - Original Drilling - Original Drilling - A	10,400.00	6,467.12	3,912.76	3,836.34	51.205	SF
Wells Ranch 33-10 - Original Drilling - Original Drilling - A	8,784.56	6,493.82	5,031.90	4,971.74	83.639	CC
Wells Ranch 33-10 - Original Drilling - Original Drilling - A	8,800.00	6,494.24	5,031.92	4,971.61	83.429	ES
Wells Ranch 33-10 - Original Drilling - Original Drilling - A	11,300.00	6,547.11	5,625.33	5,543.42	68.677	SF
Wells Ranch 34-10 - Original Drilling - Original Drilling - A	9,047.92	6,460.73	6,126.06	6,062.50	96.385	CC
Wells Ranch 34-10 - Original Drilling - Original Drilling - A	9,100.00	6,461.06	6,126.28	6,062.19	95.591	ES
Wells Ranch 34-10 - Original Drilling - Original Drilling - A	12,300.00	6,481.67	6,935.72	6,843.55	75.252	SF
Wells Ranch 41-10 - Original Drilling - Original Drilling - A	10,108.57	6,444.73	2,363.35	2,289.46	31.984	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 BB03-636
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 BB03-636	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 41-10 - Original Drilling - Original Drilling - A	10,600.00	6,441.66	2,413.90	2,335.48	30.779	SF
Wells Ranch 42-10 - Original Drilling - Original Drilling - A	9,993.11	6,431.06	3,615.10	3,542.58	49.854	CC
Wells Ranch 42-10 - Original Drilling - Original Drilling - A	10,000.00	6,431.02	3,615.11	3,542.52	49.802	ES
Wells Ranch 42-10 - Original Drilling - Original Drilling - A	11,200.00	6,422.39	3,811.23	3,727.89	45.733	SF
Wells Ranch 43-10 - Original Drilling - Original Drilling - A	10,096.14	6,378.91	4,995.62	4,922.15	67.996	CC
Wells Ranch 43-10 - Original Drilling - Original Drilling - A	10,200.00	6,378.25	4,996.70	4,922.09	66.971	ES
Wells Ranch 43-10 - Original Drilling - Original Drilling - A	12,100.00	6,365.43	5,382.52	5,290.88	58.733	SF
Wells Ranch 44-10 - Original Drilling - Original Drilling - A	10,070.13	6,406.16	6,214.21	6,140.94	84.805	CC
Wells Ranch 44-10 - Original Drilling - Original Drilling - A	10,100.00	6,405.54	6,214.29	6,140.68	84.430	ES
Wells Ranch 44-10 - Original Drilling - Original Drilling - A	13,000.00	6,346.97	6,870.07	6,770.54	69.024	SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well WELLS RANCH STATE BB03-636
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 BB03-636	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	11,551.90	6,437.91	3,564.55	3,367.98	18.134	CC
Wells 12-11 - Original Drilling - Original Drilling - As Drille	11,600.00	6,437.62	3,564.88	3,367.76	18.085	ES
Wells 12-11 - Original Drilling - Original Drilling - As Drille	12,100.00	6,434.56	3,606.44	3,404.28	17.839	SF
Wells Ranch 13-11 - Original Drilling - Original Drilling - A	11,389.52	6,398.86	4,966.55	4,878.44	56.372	CC
Wells Ranch 13-11 - Original Drilling - Original Drilling - A	11,400.00	6,398.85	4,966.56	4,878.33	56.295	ES
Wells Ranch 13-11 - Original Drilling - Original Drilling - A	13,100.00	6,396.04	5,252.84	5,148.90	50.539	SF
Wells Ranch 14-11 - Original Drilling - Original Drilling - A	10,777.06	6,470.11	6,936.67	6,823.58	61.337	CC
Wells Ranch 14-11 - Original Drilling - Original Drilling - A	10,900.00	6,467.79	6,937.76	6,823.32	60.621	ES
Wells Ranch 14-11 - Original Drilling - Original Drilling - A	13,500.00	6,418.82	7,451.79	7,313.45	53.865	SF
Wells Ranch 23-11 - Original Drilling - Original Drilling - A	12,687.89	6,441.80	4,715.92	4,612.50	45.602	CC
Wells Ranch 23-11 - Original Drilling - Original Drilling - A	12,700.00	6,441.57	4,715.93	4,612.38	45.539	ES
Wells Ranch 23-11 - Original Drilling - Original Drilling - A	14,000.00	6,418.57	4,894.99	4,779.28	42.303	SF
Wells Ranch 24-11 - Original Drilling - Original Drilling - A	12,742.37	6,438.99	6,228.64	6,124.64	59.891	CC
Wells Ranch 24-11 - Original Drilling - Original Drilling - A	12,800.00	6,438.44	6,228.91	6,124.23	59.506	ES
Wells Ranch 24-11 - Original Drilling - Original Drilling - A	15,000.00	6,415.95	6,625.14	6,500.31	53.073	SF
Wells Ranch BB09-626 - Wells Ranch BB09-626 OH - As	11,000.00	11,000.00	5,940.07	5,849.48	65.574	ES
Wells Ranch BB09-626 - Wells Ranch BB09-626 OH - As	11,279.93	6,273.58	5,933.82	5,852.72	73.169	CC
Wells Ranch BB09-626 - Wells Ranch BB09-626 OH - As	13,800.00	6,139.00	6,435.35	6,331.69	62.082	SF
Wells Ranch BB09-639 - Wells Ranch BB09-639 OH - As	9,430.05	8,314.00	5,218.19	5,144.27	70.586	CC
Wells Ranch BB09-639 - Wells Ranch BB09-639 OH - As	9,600.00	9,600.00	5,220.01	5,132.12	59.394	ES
Wells Ranch BB09-639 - Wells Ranch BB09-639 OH - As	13,400.00	6,236.00	5,673.69	5,572.53	56.087	SF
Wells Ranch BB09-649 - Wells Ranch BB09-649 OH - As	8,900.00	8,815.99	4,665.85	4,592.74	63.823	CC
Wells Ranch BB09-649 - Wells Ranch BB09-649 OH - As	10,700.00	7,041.43	4,668.21	4,591.06	60.507	ES
Wells Ranch BB09-649 - Wells Ranch BB09-649 OH - As	11,700.00	11,700.00	4,730.94	4,631.18	47.421	SF
Wells Ranch BB09-650 - Wells Ranch BB09-650 OH - As	6,850.00	10,982.10	4,231.63	4,149.51	51.528	ES
Wells Ranch BB09-650 - Wells Ranch BB09-650 OH - As	6,886.38	10,958.49	4,231.49	4,149.51	51.617	CC
Wells Ranch BB09-650 - Wells Ranch BB09-650 OH - As	12,700.00	6,387.56	4,493.41	4,398.33	47.257	SF
Wells Ranch BB09-654 - Wells Ranch BB09-654 OH - As	6,934.07	10,773.00	3,764.43	3,684.03	46.820	ES
Wells Ranch BB09-654 - Wells Ranch BB09-654 OH - As	6,976.77	10,743.44	3,764.33	3,684.10	46.920	CC
Wells Ranch BB09-654 - Wells Ranch BB09-654 OH - As	12,300.00	6,423.00	3,964.88	3,873.09	43.197	SF
Wells Ranch BB09-665 - Wells Ranch BB09-665 OH - As	11,388.27	5,944.72	3,188.45	3,106.59	38.946	CC
Wells Ranch BB09-665 - Wells Ranch BB09-665 OH - As	11,400.00	5,946.55	3,188.48	3,106.46	38.877	ES
Wells Ranch BB09-665 - Wells Ranch BB09-665 OH - As	12,000.00	12,000.00	3,244.87	3,134.44	29.383	SF
Wells Ranch BB09-674 - Wells Ranch BB09-674 OH - As	7,142.80	10,504.92	2,639.50	2,561.08	33.658	CC, ES
Wells Ranch BB09-674 - Wells Ranch BB09-674 OH - As	11,800.00	6,245.60	2,727.77	2,641.62	31.663	SF
Wells Ranch BB11-618 - Original Drilling - Original Drillin	11,198.52	6,991.00	6,310.33	6,227.48	76.169	CC
Wells Ranch BB11-618 - Original Drilling - Original Drillin	16,000.00	11,714.46	6,367.03	6,178.55	33.780	ES
Wells Ranch BB11-618 - Original Drilling - Original Drillin	16,029.01	11,757.00	6,368.16	6,178.82	33.633	SF
Wells Ranch BB11-627 - Original Drilling - Original Drillin	16,029.01	11,840.72	5,811.50	5,621.21	30.541	CC, ES, SF
Wells Ranch BB11-635 - Original Drilling - Original Drillin	14,209.06	10,153.34	5,305.50	5,158.07	35.987	CC
Wells Ranch BB11-635 - Original Drilling - Original Drillin	15,200.00	15,200.00	5,355.36	5,137.19	24.547	ES, SF
Wells Ranch BB11-643 - Original Drilling - Original Drillin	15,266.89	11,144.02	4,801.72	4,629.10	27.818	CC
Wells Ranch BB11-643 - Original Drilling - Original Drillin	15,500.00	11,217.00	4,803.60	4,627.34	27.254	ES
Wells Ranch BB11-643 - Original Drilling - Original Drillin	16,029.01	11,312.00	4,840.20	4,657.46	26.488	SF
Wells Ranch BB11-650 - Original Drilling - Original Drillin	16,029.01	12,188.00	4,292.18	4,099.58	22.286	CC, ES, SF
Wells Ranch BB11-658 - Original Drilling - Original Drillin	15,366.69	11,271.75	3,807.53	3,632.78	21.788	CC
Wells Ranch BB11-658 - Original Drilling - Original Drillin	15,700.00	15,700.00	3,817.35	3,586.10	16.507	ES, SF
Wells Ranch BB11-667 - Original Drilling - Original Drillin	10,446.97	5,864.27	3,279.06	3,208.11	46.215	CC
Wells Ranch BB11-667 - Original Drilling - Original Drillin	15,800.00	15,800.00	3,301.71	3,091.26	15.689	ES, SF
Wells Ranch BB11-674 - Original Drilling - Original Drillin	14,419.55	10,259.58	2,754.82	2,602.82	18.124	CC
Wells Ranch BB11-674 - Original Drilling - Original Drillin	16,029.01	11,837.66	2,758.06	2,568.07	14.517	ES, SF
Wells Ranch BB11-682 - Original Drilling - Original Drillin	15,000.00	15,000.00	2,158.53	1,945.49	10.132	ES, SF
Wells Ranch BB11-682 - Original Drilling - Original Drillin	15,471.92	11,435.00	2,131.60	1,954.66	12.047	CC

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

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well WELLS RANCH STATE BB03-636
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 BB03-636	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 Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Separation Factor	Warning
BB Section 11						
Wells Ranch State BB09-617 - Wells Ranch State BB09-	11,360.61	6,199.92	6,385.05	6,302.78	77.613	CC
Wells Ranch State BB09-617 - Wells Ranch State BB09-	11,400.00	6,195.50	6,385.16	6,302.45	77.200	ES
Wells Ranch State BB09-617 - Wells Ranch State BB09-	14,200.00	5,856.00	6,970.11	6,863.16	65.169	SF
Wells Ranch State BB09-683 - Wells Ranch State BB09-	6,934.07	10,827.23	2,082.28	2,001.93	25.913	ES
Wells Ranch State BB09-683 - Wells Ranch State BB09-	6,975.72	10,797.61	2,082.16	2,001.99	25.970	CC
Wells Ranch State BB09-683 - Wells Ranch State BB09-	11,600.00	6,423.00	2,128.05	2,043.17	25.070	SF
Wells Ranch USX BB11-01 - Original Drilling - Original Dr	15,241.00	6,445.86	2,273.10	2,139.31	16.990	CC, ES
Wells Ranch USX BB11-01 - Original Drilling - Original Dr	15,500.00	6,445.64	2,287.81	2,151.56	16.791	SF
Wells Ranch USX BB11-02 - Original Drilling - Original Dr	13,899.62	6,462.22	2,289.63	2,171.78	19.428	CC
Wells Ranch USX BB11-02 - Original Drilling - Original Dr	13,900.00	6,462.21	2,289.63	2,171.77	19.427	ES
Wells Ranch USX BB11-02 - Original Drilling - Original Dr	14,200.00	6,458.52	2,309.24	2,188.55	19.134	SF
Wells Ranch USX BB11-03 - Original Drilling - Original Dr	12,673.33	6,434.07	2,218.55	2,115.32	21.493	CC
Wells Ranch USX BB11-03 - Original Drilling - Original Dr	12,700.00	6,433.31	2,218.71	2,115.17	21.430	ES
Wells Ranch USX BB11-03 - Original Drilling - Original Dr	13,000.00	6,424.43	2,242.45	2,136.18	21.100	SF
Wells Ranch USX BB11-04 - Original Drilling - Original Dr	11,397.48	6,453.40	2,330.23	2,241.83	26.360	CC
Wells Ranch USX BB11-04 - Original Drilling - Original Dr	11,400.00	6,453.40	2,330.23	2,241.80	26.352	ES
Wells Ranch USX BB11-04 - Original Drilling - Original Dr	11,800.00	6,453.00	2,364.74	2,272.53	25.645	SF
Wells Ranch USX BB11-06 - Original Drilling - Original Dr	12,616.83	6,438.82	3,497.80	3,395.27	34.112	CC, ES
Wells Ranch USX BB11-06 - Original Drilling - Original Dr	13,400.00	6,452.50	3,584.38	3,474.44	32.602	SF
Wells Ranch USX BB11-07 - Original Drilling - Original Dr	14,047.10	6,461.55	3,615.36	3,495.79	30.236	CC
Wells Ranch USX BB11-07 - Original Drilling - Original Dr	14,100.00	6,460.46	3,615.75	3,495.55	30.082	ES
Wells Ranch USX BB11-07 - Original Drilling - Original Dr	14,800.00	6,444.61	3,692.89	3,566.38	29.191	SF
Wells Ranch USX BB11-08 - Original Drilling - Original Dr	15,323.63	6,464.41	3,654.83	3,519.97	27.100	CC
Wells Ranch USX BB11-08 - Original Drilling - Original Dr	15,400.00	6,463.60	3,655.63	3,519.86	26.926	ES
Wells Ranch USX BB11-08 - Original Drilling - Original Dr	16,000.00	6,456.83	3,716.88	3,575.73	26.333	SF
Wells Ranch USX BB11-09 - Original Drilling - Original Dr	15,402.64	6,400.48	5,107.47	4,971.90	37.674	CC
Wells Ranch USX BB11-09 - Original Drilling - Original Dr	15,500.00	6,400.26	5,108.40	4,971.67	37.362	ES
Wells Ranch USX BB11-09 - Original Drilling - Original Dr	16,029.01	6,399.11	5,145.74	5,003.44	36.162	SF
Wells Ranch USX BB11-10 - Original Drilling - Original Dr	13,998.43	6,364.74	5,038.50	4,919.88	42.474	CC
Wells Ranch USX BB11-10 - Original Drilling - Original Dr	14,100.00	6,363.61	5,039.53	4,919.70	42.059	ES
Wells Ranch USX BB11-10 - Original Drilling - Original Dr	15,400.00	6,349.81	5,229.78	5,098.25	39.759	SF
Wells Ranch USX BB11-15 - Original Drilling - Original Dr	14,060.29	6,438.45	6,260.03	6,140.37	52.315	CC
Wells Ranch USX BB11-15 - Original Drilling - Original Dr	14,100.00	6,437.62	6,260.15	6,140.02	52.111	ES
Wells Ranch USX BB11-15 - Original Drilling - Original Dr	16,029.01	6,402.88	6,562.26	6,424.27	47.559	SF
Wells Ranch USX BB11-16 - Original Drilling - Original Dr	15,426.75	6,562.77	6,232.79	6,096.36	45.683	CC
Wells Ranch USX BB11-16 - Original Drilling - Original Dr	15,500.00	6,559.32	6,233.22	6,095.92	45.398	ES
Wells Ranch USX BB11-16 - Original Drilling - Original Dr	16,029.01	6,534.40	6,261.76	6,118.65	43.757	SF
Wells Ranch USX BB11-17 - Original Drilling - Original Dr	14,687.51	6,428.76	2,971.96	2,738.57	12.734	CC
Wells Ranch USX BB11-17 - Original Drilling - Original Dr	14,700.00	6,428.68	2,971.99	2,738.45	12.726	ES
Wells Ranch USX BB11-17 - Original Drilling - Original Dr	15,000.00	6,426.85	2,988.34	2,751.76	12.631	SF
Wells Ranch USX BB11-23 - Original Drilling - Original Dr	14,699.13	6,483.75	5,599.99	5,472.56	43.944	CC
Wells Ranch USX BB11-23 - Original Drilling - Original Dr	14,800.00	6,482.60	5,600.90	5,472.27	43.542	ES
Wells Ranch USX BB11-23 - Original Drilling - Original Dr	16,029.01	6,467.94	5,755.72	5,615.35	41.005	SF