

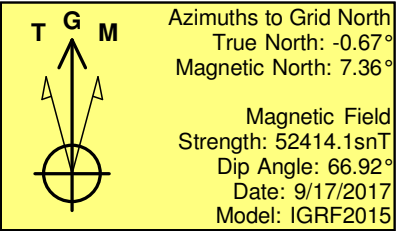
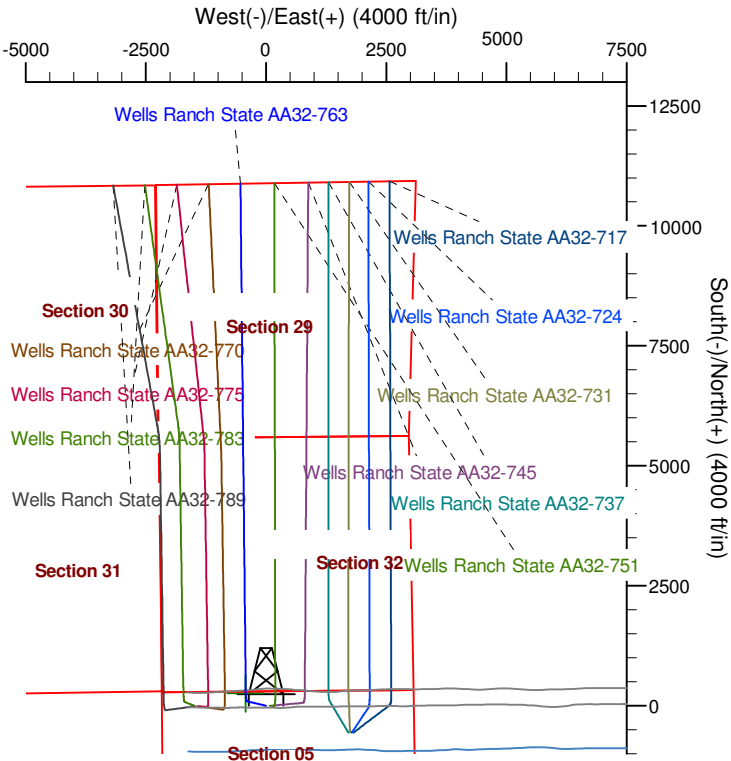
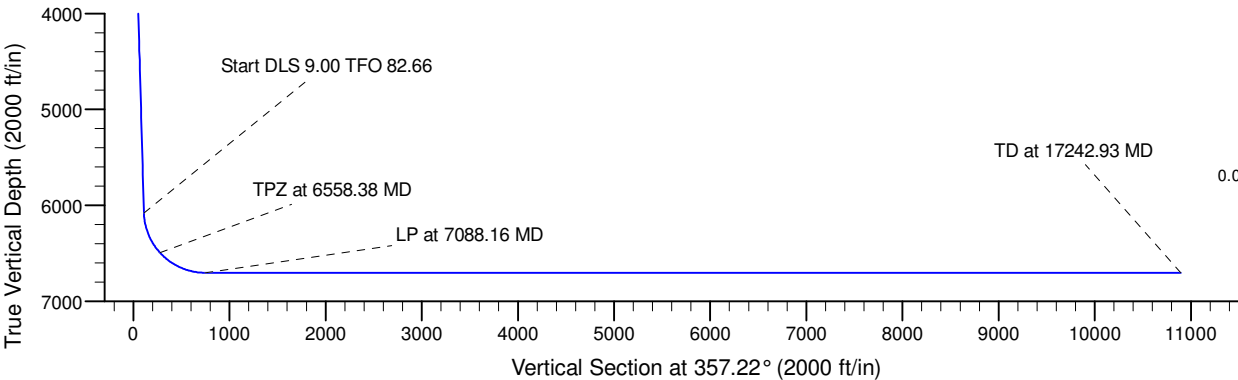
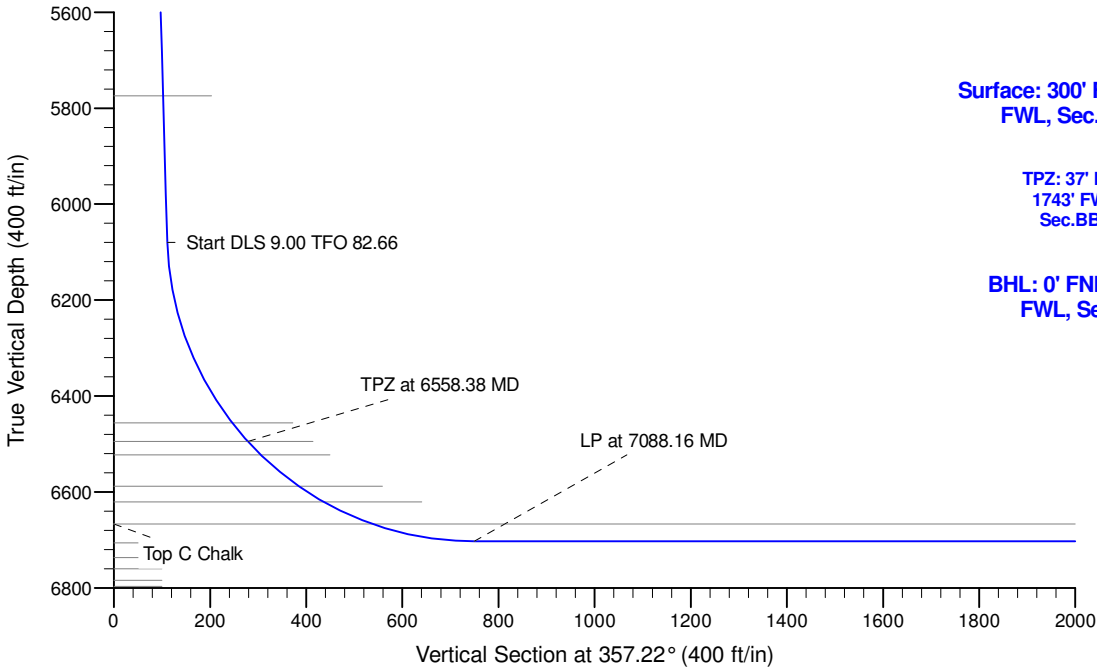
Project: Wells Ranch  
Site: BB Section 05  
Well: Wells Ranch State AA32-763  
Wellbore: Wellbore #1  
Design: Plan 1

# Northern Region - DJ Basin

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

## SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.00	0.00	
3	2294.11	5.88	283.13	2293.59	3.43	-14.69	2.00	283.13	4.14	
4	6100.19	5.88	283.13	6079.63	92.04	-394.55	0.00	0.00	111.09	
5	6558.38	42.32	359.31	6495.00	258.87	-420.40	9.00	82.66	278.98	Wells Ranch State AA32-763 TPZ
6	7088.16	90.00	359.41	6703.00	729.55	-425.60	9.00	0.13	749.37	
7	17242.93	90.00	359.41	6703.00	10883.78	-530.89	0.00	0.00	10896.72	Wells Ranch State AA32-763 BHL



## WELL DETAILS: Wells Ranch State AA32-763

	Northing	Easting	Latitude	Longitude
0.00	1402958.55	3288816.03	40.4348848	-104.4624396

## Plan: Plan 1 (Wells Ranch State AA32-763/Wellbore #1)

Created By: Colby Baxter	Date: 10:20, April 23 2018
Checked: _____	Date: _____
Reviewed: _____	Date: _____
Approved: _____	Date: _____

# **Northern Region - DJ Basin**

**Wells Ranch**

**BB Section 05**

**Wells Ranch State AA32-763**

**Wellbore #1**

**Plan: Plan 1**

## **Standard Survey Report**

**23 April, 2018**

# Noble Energy, Inc.

## Survey Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Wells Ranch State AA32-763
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	Well @ 4713.00ft
<b>Site:</b>	BB Section 05	<b>MD Reference:</b>	Well @ 4713.00ft
<b>Well:</b>	Wells Ranch State AA32-763	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan 1	<b>Database:</b>	EDMP

<b>Project</b>	Wells Ranch, Weld County Colorado		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Northern Zone		

Site		BB Section 05			
Site Position:		Northing:	1,398,574.18 usft	Latitude:	40.4229000
From:	Map	Easting:	3,287,271.79 usft	Longitude:	-104.4681700
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.67 °

Well	Wells Ranch State AA32-763					
Well Position	+N/-S	0.00 ft	Northing:	1,402,958.55 usft	Latitude:	40.4348848
	+E/-W	0.00 ft	Easting:	3,288,816.03 usft	Longitude:	-104.4624396
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	4,683.00 ft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2015	9/17/2017	8.03	66.92	52,414.07839064

<b>Design</b>	Plan 1				
<b>Audit Notes:</b>					
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00	
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>	
	0.00	0.00	0.00	357.22	

<b>Survey Tool Program</b>	<b>Date</b>	4/23/2018			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
0.00	17,242.93	Plan 1 (Wellbore #1)	2_MWD+IFR1	A005Mb: IFR declination correction only	

<b>Planned Survey</b>										
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Vertical Section (ft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Turn Rate (°/100ft)</b>	
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	
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00	
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00	
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00	

# Noble Energy, Inc.

## Survey Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Wells Ranch State AA32-763
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	Well @ 4713.00ft
<b>Site:</b>	BB Section 05	<b>MD Reference:</b>	Well @ 4713.00ft
<b>Well:</b>	Wells Ranch State AA32-763	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan 1	<b>Database:</b>	EDMP

### 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)
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
1,600.00	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	2.00	283.13	2,099.98	0.40	-1.70	0.48	2.00	2.00	0.00
2,200.00	4.00	283.13	2,199.84	1.59	-6.80	1.91	2.00	2.00	0.00
2,294.11	5.88	283.13	2,293.59	3.43	-14.69	4.14	2.00	2.00	0.00
2,300.00	5.88	283.13	2,299.45	3.56	-15.28	4.30	0.00	0.00	0.00
2,400.00	5.88	283.13	2,398.93	5.89	-25.26	7.11	0.00	0.00	0.00
2,500.00	5.88	283.13	2,498.40	8.22	-35.24	9.92	0.00	0.00	0.00
2,600.00	5.88	283.13	2,597.87	10.55	-45.22	12.73	0.00	0.00	0.00
2,700.00	5.88	283.13	2,697.35	12.88	-55.20	15.54	0.00	0.00	0.00
2,800.00	5.88	283.13	2,796.82	15.20	-65.18	18.35	0.00	0.00	0.00
2,900.00	5.88	283.13	2,896.29	17.53	-75.16	21.16	0.00	0.00	0.00
3,000.00	5.88	283.13	2,995.77	19.86	-85.14	23.97	0.00	0.00	0.00
3,100.00	5.88	283.13	3,095.24	22.19	-95.12	26.78	0.00	0.00	0.00
3,200.00	5.88	283.13	3,194.71	24.52	-105.10	29.59	0.00	0.00	0.00
3,300.00	5.88	283.13	3,294.19	26.84	-115.08	32.40	0.00	0.00	0.00
3,400.00	5.88	283.13	3,393.66	29.17	-125.06	35.21	0.00	0.00	0.00
3,500.00	5.88	283.13	3,493.13	31.50	-135.04	38.02	0.00	0.00	0.00
3,600.00	5.88	283.13	3,592.61	33.83	-145.02	40.83	0.00	0.00	0.00
3,700.00	5.88	283.13	3,692.08	36.16	-155.00	43.64	0.00	0.00	0.00
3,800.00	5.88	283.13	3,791.55	38.49	-164.98	46.45	0.00	0.00	0.00
3,900.00	5.88	283.13	3,891.03	40.81	-174.96	49.26	0.00	0.00	0.00
4,000.00	5.88	283.13	3,990.50	43.14	-184.94	52.07	0.00	0.00	0.00
4,100.00	5.88	283.13	4,089.98	45.47	-194.92	54.89	0.00	0.00	0.00
4,200.00	5.88	283.13	4,189.45	47.80	-204.90	57.70	0.00	0.00	0.00
4,300.00	5.88	283.13	4,288.92	50.13	-214.89	60.51	0.00	0.00	0.00
4,400.00	5.88	283.13	4,388.40	52.45	-224.87	63.32	0.00	0.00	0.00
4,500.00	5.88	283.13	4,487.87	54.78	-234.85	66.13	0.00	0.00	0.00
4,600.00	5.88	283.13	4,587.34	57.11	-244.83	68.94	0.00	0.00	0.00
4,700.00	5.88	283.13	4,686.82	59.44	-254.81	71.75	0.00	0.00	0.00
4,800.00	5.88	283.13	4,786.29	61.77	-264.79	74.56	0.00	0.00	0.00
4,900.00	5.88	283.13	4,885.76	64.09	-274.77	77.37	0.00	0.00	0.00
5,000.00	5.88	283.13	4,985.24	66.42	-284.75	80.18	0.00	0.00	0.00
5,100.00	5.88	283.13	5,084.71	68.75	-294.73	82.99	0.00	0.00	0.00
5,200.00	5.88	283.13	5,184.18	71.08	-304.71	85.80	0.00	0.00	0.00

# Noble Energy, Inc.

## Survey Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Wells Ranch State AA32-763
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	Well @ 4713.00ft
<b>Site:</b>	BB Section 05	<b>MD Reference:</b>	Well @ 4713.00ft
<b>Well:</b>	Wells Ranch State AA32-763	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan 1	<b>Database:</b>	EDMP

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)	
5,300.00	5.88	283.13	5,283.66	73.41	-314.69	88.61	0.00	0.00	0.00	
5,400.00	5.88	283.13	5,383.13	75.73	-324.67	91.42	0.00	0.00	0.00	
5,500.00	5.88	283.13	5,482.60	78.06	-334.65	94.23	0.00	0.00	0.00	
5,600.00	5.88	283.13	5,582.08	80.39	-344.63	97.04	0.00	0.00	0.00	
5,700.00	5.88	283.13	5,681.55	82.72	-354.61	99.85	0.00	0.00	0.00	
5,800.00	5.88	283.13	5,781.02	85.05	-364.59	102.66	0.00	0.00	0.00	
5,900.00	5.88	283.13	5,880.50	87.38	-374.57	105.47	0.00	0.00	0.00	
6,000.00	5.88	283.13	5,979.97	89.70	-384.55	108.28	0.00	0.00	0.00	
6,100.00	5.88	283.13	6,079.44	92.03	-394.53	111.09	0.00	0.00	0.00	
6,100.19	5.88	283.13	6,079.63	92.04	-394.55	111.09	0.00	0.00	0.00	
6,200.00	11.34	335.11	6,178.41	102.12	-403.68	121.61	9.00	5.46	52.08	
6,300.00	19.59	349.07	6,274.74	127.55	-411.01	147.36	9.00	8.26	13.96	
6,400.00	28.30	354.81	6,366.06	167.70	-416.34	187.73	9.00	8.70	5.74	
6,500.00	37.13	358.00	6,450.12	221.58	-419.55	241.70	9.00	8.84	3.19	
6,558.38	42.32	359.31	6,495.00	258.87	-420.40	278.98	9.00	8.89	2.25	
6,600.00	46.07	359.32	6,524.84	287.87	-420.75	307.97	9.00	9.00	0.03	
6,700.00	55.07	359.34	6,588.29	365.02	-421.65	385.08	9.00	9.00	0.02	
6,800.00	64.07	359.36	6,638.89	451.15	-422.62	471.15	9.00	9.00	0.02	
6,900.00	73.07	359.38	6,675.40	544.13	-423.64	564.07	9.00	9.00	0.02	
7,000.00	82.07	359.39	6,696.91	641.68	-424.68	661.55	9.00	9.00	0.01	
7,088.16	90.00	359.41	6,703.00	729.55	-425.60	749.37	9.00	9.00	0.01	
7,100.00	90.00	359.41	6,703.00	741.39	-425.73	761.20	0.00	0.00	0.00	
7,200.00	90.00	359.41	6,703.00	841.39	-426.76	861.13	0.00	0.00	0.00	
7,300.00	90.00	359.41	6,703.00	941.38	-427.80	961.05	0.00	0.00	0.00	
7,400.00	90.00	359.41	6,703.00	1,041.38	-428.84	1,060.98	0.00	0.00	0.00	
7,500.00	90.00	359.41	6,703.00	1,141.37	-429.87	1,160.91	0.00	0.00	0.00	
7,600.00	90.00	359.41	6,703.00	1,241.37	-430.91	1,260.84	0.00	0.00	0.00	
7,700.00	90.00	359.41	6,703.00	1,341.36	-431.95	1,360.76	0.00	0.00	0.00	
7,800.00	90.00	359.41	6,703.00	1,441.36	-432.98	1,460.69	0.00	0.00	0.00	
7,900.00	90.00	359.41	6,703.00	1,541.35	-434.02	1,560.62	0.00	0.00	0.00	
8,000.00	90.00	359.41	6,703.00	1,641.35	-435.06	1,660.54	0.00	0.00	0.00	
8,100.00	90.00	359.41	6,703.00	1,741.34	-436.10	1,760.47	0.00	0.00	0.00	
8,200.00	90.00	359.41	6,703.00	1,841.33	-437.13	1,860.40	0.00	0.00	0.00	
8,300.00	90.00	359.41	6,703.00	1,941.33	-438.17	1,960.32	0.00	0.00	0.00	
8,400.00	90.00	359.41	6,703.00	2,041.32	-439.21	2,060.25	0.00	0.00	0.00	
8,500.00	90.00	359.41	6,703.00	2,141.32	-440.24	2,160.18	0.00	0.00	0.00	
8,600.00	90.00	359.41	6,703.00	2,241.31	-441.28	2,260.10	0.00	0.00	0.00	
8,700.00	90.00	359.41	6,703.00	2,341.31	-442.32	2,360.03	0.00	0.00	0.00	
8,800.00	90.00	359.41	6,703.00	2,441.30	-443.35	2,459.96	0.00	0.00	0.00	
8,900.00	90.00	359.41	6,703.00	2,541.30	-444.39	2,559.89	0.00	0.00	0.00	
9,000.00	90.00	359.41	6,703.00	2,641.29	-445.43	2,659.81	0.00	0.00	0.00	
9,100.00	90.00	359.41	6,703.00	2,741.29	-446.46	2,759.74	0.00	0.00	0.00	
9,200.00	90.00	359.41	6,703.00	2,841.28	-447.50	2,859.67	0.00	0.00	0.00	

# Noble Energy, Inc.

## Survey Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Wells Ranch State AA32-763
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	Well @ 4713.00ft
<b>Site:</b>	BB Section 05	<b>MD Reference:</b>	Well @ 4713.00ft
<b>Well:</b>	Wells Ranch State AA32-763	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan 1	<b>Database:</b>	EDMP

### 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)
9,300.00	90.00	359.41	6,703.00	2,941.28	-448.54	2,959.59	0.00	0.00	0.00
9,400.00	90.00	359.41	6,703.00	3,041.27	-449.57	3,059.52	0.00	0.00	0.00
9,500.00	90.00	359.41	6,703.00	3,141.26	-450.61	3,159.45	0.00	0.00	0.00
9,600.00	90.00	359.41	6,703.00	3,241.26	-451.65	3,259.37	0.00	0.00	0.00
9,700.00	90.00	359.41	6,703.00	3,341.25	-452.68	3,359.30	0.00	0.00	0.00
9,800.00	90.00	359.41	6,703.00	3,441.25	-453.72	3,459.23	0.00	0.00	0.00
9,900.00	90.00	359.41	6,703.00	3,541.24	-454.76	3,559.15	0.00	0.00	0.00
10,000.00	90.00	359.41	6,703.00	3,641.24	-455.80	3,659.08	0.00	0.00	0.00
10,100.00	90.00	359.41	6,703.00	3,741.23	-456.83	3,759.01	0.00	0.00	0.00
10,200.00	90.00	359.41	6,703.00	3,841.23	-457.87	3,858.94	0.00	0.00	0.00
10,300.00	90.00	359.41	6,703.00	3,941.22	-458.91	3,958.86	0.00	0.00	0.00
10,400.00	90.00	359.41	6,703.00	4,041.22	-459.94	4,058.79	0.00	0.00	0.00
10,500.00	90.00	359.41	6,703.00	4,141.21	-460.98	4,158.72	0.00	0.00	0.00
10,600.00	90.00	359.41	6,703.00	4,241.21	-462.02	4,258.64	0.00	0.00	0.00
10,700.00	90.00	359.41	6,703.00	4,341.20	-463.05	4,358.57	0.00	0.00	0.00
10,800.00	90.00	359.41	6,703.00	4,441.19	-464.09	4,458.50	0.00	0.00	0.00
10,900.00	90.00	359.41	6,703.00	4,541.19	-465.13	4,558.42	0.00	0.00	0.00
11,000.00	90.00	359.41	6,703.00	4,641.18	-466.16	4,658.35	0.00	0.00	0.00
11,100.00	90.00	359.41	6,703.00	4,741.18	-467.20	4,758.28	0.00	0.00	0.00
11,200.00	90.00	359.41	6,703.00	4,841.17	-468.24	4,858.20	0.00	0.00	0.00
11,300.00	90.00	359.41	6,703.00	4,941.17	-469.27	4,958.13	0.00	0.00	0.00
11,400.00	90.00	359.41	6,703.00	5,041.16	-470.31	5,058.06	0.00	0.00	0.00
11,500.00	90.00	359.41	6,703.00	5,141.16	-471.35	5,157.99	0.00	0.00	0.00
11,600.00	90.00	359.41	6,703.00	5,241.15	-472.38	5,257.91	0.00	0.00	0.00
11,700.00	90.00	359.41	6,703.00	5,341.15	-473.42	5,357.84	0.00	0.00	0.00
11,800.00	90.00	359.41	6,703.00	5,441.14	-474.46	5,457.77	0.00	0.00	0.00
11,900.00	90.00	359.41	6,703.00	5,541.14	-475.50	5,557.69	0.00	0.00	0.00
12,000.00	90.00	359.41	6,703.00	5,641.13	-476.53	5,657.62	0.00	0.00	0.00
12,100.00	90.00	359.41	6,703.00	5,741.13	-477.57	5,757.55	0.00	0.00	0.00
12,200.00	90.00	359.41	6,703.00	5,841.12	-478.61	5,857.47	0.00	0.00	0.00
12,300.00	90.00	359.41	6,703.00	5,941.11	-479.64	5,957.40	0.00	0.00	0.00
12,400.00	90.00	359.41	6,703.00	6,041.11	-480.68	6,057.33	0.00	0.00	0.00
12,500.00	90.00	359.41	6,703.00	6,141.10	-481.72	6,157.25	0.00	0.00	0.00
12,600.00	90.00	359.41	6,703.00	6,241.10	-482.75	6,257.18	0.00	0.00	0.00
12,700.00	90.00	359.41	6,703.00	6,341.09	-483.79	6,357.11	0.00	0.00	0.00
12,800.00	90.00	359.41	6,703.00	6,441.09	-484.83	6,457.04	0.00	0.00	0.00
12,900.00	90.00	359.41	6,703.00	6,541.08	-485.86	6,556.96	0.00	0.00	0.00
13,000.00	90.00	359.41	6,703.00	6,641.08	-486.90	6,656.89	0.00	0.00	0.00
13,100.00	90.00	359.41	6,703.00	6,741.07	-487.94	6,756.82	0.00	0.00	0.00
13,200.00	90.00	359.41	6,703.00	6,841.07	-488.97	6,856.74	0.00	0.00	0.00
13,300.00	90.00	359.41	6,703.00	6,941.06	-490.01	6,956.67	0.00	0.00	0.00
13,400.00	90.00	359.41	6,703.00	7,041.06	-491.05	7,056.60	0.00	0.00	0.00
13,500.00	90.00	359.41	6,703.00	7,141.05	-492.08	7,156.52	0.00	0.00	0.00

# Noble Energy, Inc.

## Survey Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Wells Ranch State AA32-763
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	Well @ 4713.00ft
<b>Site:</b>	BB Section 05	<b>MD Reference:</b>	Well @ 4713.00ft
<b>Well:</b>	Wells Ranch State AA32-763	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan 1	<b>Database:</b>	EDMP

### 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)
13,600.00	90.00	359.41	6,703.00	7,241.04	-493.12	7,256.45	0.00	0.00	0.00
13,700.00	90.00	359.41	6,703.00	7,341.04	-494.16	7,356.38	0.00	0.00	0.00
13,800.00	90.00	359.41	6,703.00	7,441.03	-495.19	7,456.30	0.00	0.00	0.00
13,900.00	90.00	359.41	6,703.00	7,541.03	-496.23	7,556.23	0.00	0.00	0.00
14,000.00	90.00	359.41	6,703.00	7,641.02	-497.27	7,656.16	0.00	0.00	0.00
14,100.00	90.00	359.41	6,703.00	7,741.02	-498.31	7,756.09	0.00	0.00	0.00
14,200.00	90.00	359.41	6,703.00	7,841.01	-499.34	7,856.01	0.00	0.00	0.00
14,300.00	90.00	359.41	6,703.00	7,941.01	-500.38	7,955.94	0.00	0.00	0.00
14,400.00	90.00	359.41	6,703.00	8,041.00	-501.42	8,055.87	0.00	0.00	0.00
14,500.00	90.00	359.41	6,703.00	8,141.00	-502.45	8,155.79	0.00	0.00	0.00
14,600.00	90.00	359.41	6,703.00	8,240.99	-503.49	8,255.72	0.00	0.00	0.00
14,700.00	90.00	359.41	6,703.00	8,340.99	-504.53	8,355.65	0.00	0.00	0.00
14,800.00	90.00	359.41	6,703.00	8,440.98	-505.56	8,455.57	0.00	0.00	0.00
14,900.00	90.00	359.41	6,703.00	8,540.97	-506.60	8,555.50	0.00	0.00	0.00
15,000.00	90.00	359.41	6,703.00	8,640.97	-507.64	8,655.43	0.00	0.00	0.00
15,100.00	90.00	359.41	6,703.00	8,740.96	-508.67	8,755.35	0.00	0.00	0.00
15,200.00	90.00	359.41	6,703.00	8,840.96	-509.71	8,855.28	0.00	0.00	0.00
15,300.00	90.00	359.41	6,703.00	8,940.95	-510.75	8,955.21	0.00	0.00	0.00
15,400.00	90.00	359.41	6,703.00	9,040.95	-511.78	9,055.14	0.00	0.00	0.00
15,500.00	90.00	359.41	6,703.00	9,140.94	-512.82	9,155.06	0.00	0.00	0.00
15,600.00	90.00	359.41	6,703.00	9,240.94	-513.86	9,254.99	0.00	0.00	0.00
15,700.00	90.00	359.41	6,703.00	9,340.93	-514.89	9,354.92	0.00	0.00	0.00
15,800.00	90.00	359.41	6,703.00	9,440.93	-515.93	9,454.84	0.00	0.00	0.00
15,900.00	90.00	359.41	6,703.00	9,540.92	-516.97	9,554.77	0.00	0.00	0.00
16,000.00	90.00	359.41	6,703.00	9,640.92	-518.01	9,654.70	0.00	0.00	0.00
16,100.00	90.00	359.41	6,703.00	9,740.91	-519.04	9,754.62	0.00	0.00	0.00
16,200.00	90.00	359.41	6,703.00	9,840.90	-520.08	9,854.55	0.00	0.00	0.00
16,300.00	90.00	359.41	6,703.00	9,940.90	-521.12	9,954.48	0.00	0.00	0.00
16,400.00	90.00	359.41	6,703.00	10,040.89	-522.15	10,054.40	0.00	0.00	0.00
16,500.00	90.00	359.41	6,703.00	10,140.89	-523.19	10,154.33	0.00	0.00	0.00
16,600.00	90.00	359.41	6,703.00	10,240.88	-524.23	10,254.26	0.00	0.00	0.00
16,700.00	90.00	359.41	6,703.00	10,340.88	-525.26	10,354.19	0.00	0.00	0.00
16,800.00	90.00	359.41	6,703.00	10,440.87	-526.30	10,454.11	0.00	0.00	0.00
16,900.00	90.00	359.41	6,703.00	10,540.87	-527.34	10,554.04	0.00	0.00	0.00
17,000.00	90.00	359.41	6,703.00	10,640.86	-528.37	10,653.97	0.00	0.00	0.00
17,100.00	90.00	359.41	6,703.00	10,740.86	-529.41	10,753.89	0.00	0.00	0.00
17,200.00	90.00	359.41	6,703.00	10,840.85	-530.45	10,853.82	0.00	0.00	0.00
17,242.93	90.00	359.41	6,703.00	10,883.78	-530.89	10,896.72	0.00	0.00	0.00

# Noble Energy, Inc.

## Survey Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Wells Ranch State AA32-763
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	Well @ 4713.00ft
<b>Site:</b>	BB Section 05	<b>MD Reference:</b>	Well @ 4713.00ft
<b>Well:</b>	Wells Ranch State AA32-763	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan 1	<b>Database:</b>	EDMP

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Wells Ranch State AA32 - plan hits target center - Point	0.00	0.00	6,495.00	258.87	-420.40	1,403,217.42	3,288,395.63	40.4356088	-104.4639389
Wells Ranch State AA32 - plan hits target center - Point	0.00	0.00	6,703.00	10,883.78	-530.89	1,413,842.31	3,288,285.14	40.4647755	-104.4638898

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
196.00	196.00	Pierre				
484.00	484.00	Upper Pierre Aquifer Top				
1,545.00	1,545.00	Upper Pierre Aquifer Base				
4,308.12	4,297.00	Sussex				
4,732.35	4,719.00	Parkman				
4,767.54	4,754.00	Shannon				
5,792.94	5,774.00	Teepee Buttes				
6,507.41	6,456.00	Sharon Springs				
6,558.38	6,495.00	Top A Chalk				
6,597.36	6,523.00	Top A Marl				
6,699.49	6,588.00	Top B Chalk				
6,761.46	6,621.00	Top B Marl				
6,873.03	6,667.00	Top C Chalk				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
2000	2000	0	0	Start Build 2.00	
6100	6080	92	-395	Start DLS 9.00 TFO 82.66	
6558	6495	259	-420	TPZ at 6558.38 MD	
7088	6703	730	-426	LP at 7088.16 MD	
17,243	6703	10,884	-531	TD at 17242.93 MD	

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_



# **Northern Region - DJ Basin**

**Wells Ranch**

**BB Section 05**

**Wells Ranch State AA32-763**

**Wellbore #1**

**Plan 1**

## **Anticollision Summary Report**

**23 April, 2018**

**Noble Energy, Inc.**  
Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Wells Ranch State AA32-763
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	Well @ 4713.00ft
<b>Reference Site:</b>	BB Section 05	<b>MD Reference:</b>	Well @ 4713.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Wells Ranch State AA32-763	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan 1	<b>Offset TVD Reference:</b>	Offset Datum

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

<b>Survey Tool Program</b>	<b>Date</b>	4/23/2018		
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.00	17,242.93	Plan 1 (Wellbore #1)	2_MWD+IFR1	A005Mb: IFR declination correction only

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
AA Section 28						
State 6524 11-28 - Original Drilling - Original Drilling - As	16,401.72	6,609.76	4,185.03	3,995.16	22.042	CC, ES
State 6524 11-28 - Original Drilling - Original Drilling - As	16,900.00	6,592.55	4,214.55	4,020.97	21.771	SF
State 6524 12-28 - Original Drilling - Original Drilling - As	15,361.44	6,651.40	4,047.07	3,923.60	32.779	CC
State 6524 12-28 - Original Drilling - Original Drilling - As	15,400.00	6,651.03	4,047.25	3,923.40	32.678	ES
State 6524 12-28 - Original Drilling - Original Drilling - As	16,100.00	6,644.64	4,113.90	3,984.53	31.799	SF
State 6524 13-28 (SI) - Original Drilling - Original Drilling	13,979.14	6,723.69	4,155.65	4,046.58	38.098	CC
State 6524 13-28 (SI) - Original Drilling - Original Drilling	14,000.00	6,724.63	4,155.71	4,046.41	38.023	ES
State 6524 13-28 (SI) - Original Drilling - Original Drilling	14,900.00	6,768.16	4,256.29	4,139.72	36.512	SF
State 6524 21-28 - Original Drilling - Original Drilling - As	16,746.34	6,716.85	5,693.95	5,555.35	41.083	CC
State 6524 21-28 - Original Drilling - Original Drilling - As	16,800.00	6,716.48	5,694.20	5,555.05	40.921	ES
State 6524 21-28 - Original Drilling - Original Drilling - As	17,242.93	6,713.40	5,715.56	5,572.22	39.875	SF
State 6524 22-28 (SI) - Original Drilling - Original Drilling	15,265.22	6,632.00	5,583.39	5,460.96	45.605	CC
State 6524 22-28 (SI) - Original Drilling - Original Drilling	15,300.00	6,631.34	5,583.50	5,460.71	45.474	ES
State 6524 22-28 (SI) - Original Drilling - Original Drilling	16,700.00	6,605.69	5,764.73	5,630.96	43.093	SF
State 6524 24-28 - Original Drilling - Original Drilling - As	12,708.07	6,548.69	5,524.55	5,406.15	46.661	CC
State 6524 24-28 - Original Drilling - Original Drilling - As	12,800.00	6,551.28	5,525.31	5,405.95	46.291	ES
State 6524 24-28 - Original Drilling - Original Drilling - As	14,300.00	6,593.55	5,749.16	5,616.90	43.467	SF
State Lease 14-28 (SI) - Original Drilling - Original Drilling	12,640.24	6,681.15	4,197.73	4,101.27	43.516	CC
State Lease 14-28 (SI) - Original Drilling - Original Drilling	12,700.00	6,681.06	4,198.16	4,101.11	43.256	ES
State Lease 14-28 (SI) - Original Drilling - Original Drilling	13,700.00	6,679.54	4,329.44	4,224.60	41.294	SF
State Lease 23-28 - Original Drilling - Original Drilling - A	13,931.58	6,673.98	5,646.25	5,537.87	52.097	CC
State Lease 23-28 - Original Drilling - Original Drilling - A	14,000.00	6,674.22	5,646.66	5,537.59	51.768	ES
State Lease 23-28 - Original Drilling - Original Drilling - A	15,600.00	6,680.52	5,887.59	5,765.88	48.372	SF
State Lease 32-28 (PA) - Original Drilling - Original Drilling	15,237.90	6,746.00	6,713.84	6,479.82	28.688	CC
State Lease 32-28 (PA) - Original Drilling - Original Drilling	15,300.00	6,746.00	6,714.13	6,479.46	28.611	ES
State Lease 32-28 (PA) - Original Drilling - Original Drilling	16,600.00	6,746.00	6,850.62	6,604.50	27.834	SF
State Lease 6524 41-28 (PA) - Original Drilling - Original	16,564.46	6,768.00	8,150.86	7,902.20	32.779	CC
State Lease 6524 41-28 (PA) - Original Drilling - Original	16,600.00	6,768.00	8,150.94	7,901.91	32.731	ES
State Lease 6524 41-28 (PA) - Original Drilling - Original	17,242.93	6,768.00	8,179.05	7,923.64	32.023	SF
Wells Ranch State 28C - Original Drilling - Original Drilling	16,057.99	6,770.59	7,477.67	7,347.02	57.236	CC
Wells Ranch State 28C - Original Drilling - Original Drilling	16,100.00	6,771.17	7,477.78	7,346.70	57.045	ES
Wells Ranch State 28C - Original Drilling - Original Drilling	17,242.93	6,787.55	7,570.95	7,429.18	53.405	SF
Wells Ranch State 28D - Original Drilling - Original Drilling	13,351.76	6,957.00	7,294.29	7,191.68	71.092	CC
Wells Ranch State 28D - Original Drilling - Original Drilling	13,400.00	6,957.00	7,294.45	7,191.35	70.755	ES
Wells Ranch State 28D - Original Drilling - Original Drilling	16,100.00	6,957.00	7,794.83	7,670.22	62.551	SF
Wells Ranch State 28R - Original Drilling - Original Drilling	17,232.23	6,733.41	7,679.98	7,536.11	53.381	CC
Wells Ranch State 28R - Original Drilling - Original Drilling	17,242.93	6,733.50	7,679.98	7,536.00	53.340	ES, SF

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

**Noble Energy, Inc.**  
Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Wells Ranch State AA32-763
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	Well @ 4713.00ft
<b>Reference Site:</b>	BB Section 05	<b>MD Reference:</b>	Well @ 4713.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Wells Ranch State AA32-763	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan 1	<b>Offset TVD Reference:</b>	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 28						
Wells Ranch State 28S - Original Drilling - Original Drilling	14,563.26	6,961.00	7,390.89	7,275.60	64.106	CC
Wells Ranch State 28S - Original Drilling - Original Drilling	14,600.00	6,961.00	7,390.98	7,275.31	63.896	ES
Wells Ranch State 28S - Original Drilling - Original Drilling	17,100.00	6,961.00	7,814.11	7,678.31	57.540	SF
Wells Ranch State 31-28 - Original Drilling - Original Drill	16,679.09	6,788.96	6,926.83	6,789.55	50.458	CC
Wells Ranch State 31-28 - Original Drilling - Original Drill	16,800.00	6,787.85	6,927.89	6,789.36	50.011	ES
Wells Ranch State 31-28 - Original Drilling - Original Drill	17,242.93	6,783.80	6,949.74	6,806.94	48.666	SF
Wells Ranch State 32-28 - Original Drilling - Original Drill	15,415.73	6,833.89	6,644.87	6,520.91	53.603	CC
Wells Ranch State 32-28 - Original Drilling - Original Drill	15,500.00	6,834.46	6,645.41	6,520.57	53.234	ES
Wells Ranch State 32-28 - Original Drilling - Original Drill	17,242.93	6,845.56	6,891.51	6,752.48	49.568	SF
Wells Ranch State 33-28 - Original Drilling - Original Drill	13,936.23	6,697.26	6,666.65	6,558.76	61.790	CC
Wells Ranch State 33-28 - Original Drilling - Original Drill	14,000.00	6,696.05	6,666.95	6,558.41	61.423	ES
Wells Ranch State 33-28 - Original Drilling - Original Drill	16,100.00	6,654.53	7,008.83	6,883.49	55.918	SF
Wells Ranch State 34-28 - Original Drilling - Original Drill	12,689.17	6,947.00	6,777.75	6,681.94	70.739	CC
Wells Ranch State 34-28 - Original Drilling - Original Drill	12,800.00	6,947.00	6,778.66	6,681.74	69.937	ES
Wells Ranch State 34-28 - Original Drilling - Original Drill	15,200.00	6,947.00	7,227.88	7,111.94	62.340	SF
Wells Ranch State 41-28 - Original Drilling - Original Drill	16,574.73	6,808.34	8,117.35	7,981.10	59.576	CC
Wells Ranch State 41-28 - Original Drilling - Original Drill	16,700.00	6,806.51	8,118.32	7,980.76	59.020	ES
Wells Ranch State 41-28 - Original Drilling - Original Drill	17,242.93	6,798.26	8,144.79	8,001.91	57.005	SF
Wells Ranch State 42-28 - Original Drilling - Original Drill	15,345.35	6,687.75	7,919.60	7,796.94	64.565	CC
Wells Ranch State 42-28 - Original Drilling - Original Drill	15,400.00	6,689.08	7,919.79	7,796.56	64.266	ES
Wells Ranch State 42-28 - Original Drilling - Original Drill	17,242.93	6,727.94	8,143.63	8,004.00	58.324	SF
Wells Ranch State 43-28 - Original Drilling - Original Drill	14,037.54	6,812.04	7,978.95	7,869.63	72.986	CC
Wells Ranch State 43-28 - Original Drilling - Original Drill	14,100.00	6,815.97	7,979.20	7,869.22	72.550	ES
Wells Ranch State 43-28 - Original Drilling - Original Drill	17,100.00	6,990.00	8,544.18	8,409.45	63.417	SF
Wells Ranch State 44-28 - Original Drilling - Original Drill	12,751.55	6,947.00	7,987.64	7,891.38	82.981	CC
Wells Ranch State 44-28 - Original Drilling - Original Drill	12,800.00	6,947.00	7,987.79	7,891.04	82.562	ES
Wells Ranch State 44-28 - Original Drilling - Original Drill	16,100.00	6,947.00	8,661.09	8,537.97	70.347	SF

**Noble Energy, Inc.**  
Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Wells Ranch State AA32-763
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	Well @ 4713.00ft
<b>Reference Site:</b>	BB Section 05	<b>MD Reference:</b>	Well @ 4713.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Wells Ranch State AA32-763	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan 1	<b>Offset TVD Reference:</b>	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 29						
J&L Farms 29B PR - Wellbore #1 - Gyro Surveys	13,085.47	6,650.60	406.84	307.41	4.092	CC, ES
J&L Farms 29B PR - Wellbore #1 - Gyro Surveys	13,100.00	6,650.66	407.10	307.50	4.087	SF
J&L Farms 11-29 PA - Wellbore #1 - Gyro Surveys	16,572.53	6,620.57	1,033.41	897.03	7.578	CC, ES
J&L Farms 11-29 PA - Wellbore #1 - Gyro Surveys	16,600.00	6,620.36	1,033.77	897.10	7.564	SF
J&L Farms 12-29 PR - Wellbore #1 - Gyro Surveys	15,264.83	6,662.43	1,157.15	1,034.67	9.447	CC, ES
J&L Farms 12-29 PR - Wellbore #1 - Gyro Surveys	15,300.00	6,663.10	1,157.69	1,034.82	9.422	SF
J&L Farms 21-29 PA - Wellbore #1 - Gyro Surveys	13,813.71	6,650.00	1,095.34	988.28	10.231	CC, ES
J&L Farms 13-29 SI - Wellbore #1 - Gyro Surveys	13,900.00	6,650.00	1,098.73	990.86	10.186	SF
J&L Farms 14-29 SI - Wellbore #1 - Gyro Surveys	12,619.05	6,653.90	1,102.12	1,007.52	11.650	CC, ES
J&L Farms 14-29 SI - Wellbore #1 - Gyro Surveys	12,700.00	6,654.68	1,105.09	1,009.69	11.584	SF
J&L Farms 21-29 PA - Wellbore #1 - Gyro Surveys	16,565.41	5,825.00	826.72	737.81	9.298	CC, ES
J&L Farms 21-29 PA - Wellbore #1 - Gyro Surveys	16,600.00	5,825.00	827.45	738.35	9.287	SF
J&L Farms 22-29 PR - Wellbore #1 - Gyro Surveys	15,131.11	6,634.85	487.69	366.83	4.035	CC, ES, SF
J&L Farms 23-29 PR - Wellbore #1 - Gyro Surveys	13,971.52	6,663.43	650.22	541.41	5.976	CC, ES
J&L Farms 23-29 PR - Wellbore #1 - Gyro Surveys	14,000.00	6,662.72	650.84	541.89	5.974	SF
J&L Farms 24-29 SI - Wellbore #1 - No Surveys	12,610.87	6,666.00	175.80	92.72	2.116	CC, ES, SF
J&L Farms 29-34 SI - Wellbore #1 - Gyro Surveys	12,653.66	6,690.49	1,779.11	1,683.95	18.696	CC, ES
J&L Farms 29-34 SI - Wellbore #1 - Gyro Surveys	12,800.00	6,694.65	1,785.11	1,688.77	18.529	SF
J&L Farms 31-29 SI - Wellbore #1 - Gyro Surveys	16,377.33	6,671.28	1,684.02	1,549.60	12.528	CC
J&L Farms 31-29 SI - Wellbore #1 - Gyro Surveys	16,400.00	6,671.44	1,684.18	1,549.55	12.510	ES
J&L Farms 31-29 SI - Wellbore #1 - Gyro Surveys	16,500.00	6,672.16	1,688.48	1,553.15	12.477	SF
J&L Farms 32-29D PR - Wellbore #1 - No Surveys	15,272.90	6,680.00	2,106.24	1,948.46	13.350	CC
J&L Farms 32-29D PR - Wellbore #1 - No Surveys	15,300.00	6,680.00	2,106.41	1,948.38	13.329	ES
J&L Farms 32-29D PR - Wellbore #1 - No Surveys	15,400.00	6,680.00	2,110.07	1,951.21	13.283	SF
J&L Farms 33-29 SI - Wellbore #1 - Gyro Surveys	14,126.60	6,689.52	1,788.38	1,677.88	16.185	CC, ES
J&L Farms 33-29 SI - Wellbore #1 - Gyro Surveys	14,300.00	6,689.76	1,796.76	1,684.97	16.073	SF
J&L Farms 41-29 SI - Wellbore #1 - No Surveys	16,611.11	6,680.00	2,961.38	2,789.29	17.208	CC, ES
J&L Farms 41-29 SI - Wellbore #1 - No Surveys	16,900.00	6,680.00	2,975.44	2,800.93	17.051	SF
J&L Farms 42-29 PA - Wellbore #1 - Gyro Surveys	15,082.64	6,550.00	3,046.96	2,926.92	25.384	CC
J&L Farms 42-29 PA - Wellbore #1 - Gyro Surveys	15,100.00	6,550.00	3,047.01	2,926.80	25.348	ES
J&L Farms 42-29 PA - Wellbore #1 - Gyro Surveys	15,500.00	6,550.00	3,075.41	2,952.04	24.929	SF
J&L Farms 43-29 PA - Wellbore #1 - Gyro Surveys	13,904.49	6,627.91	3,077.12	2,969.23	28.522	CC, ES
J&L Farms 43-29 PA - Wellbore #1 - Gyro Surveys	14,400.00	6,636.65	3,116.75	3,004.90	27.867	SF
J&L Farms 44-29 SI - Wellbore #1 - No Surveys	12,603.88	6,704.00	3,028.36	2,898.49	23.318	CC, ES
J&L Farms 44-29 SI - Wellbore #1 - No Surveys	13,100.00	6,704.00	3,068.73	2,934.86	22.923	SF

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

**Noble Energy, Inc.**  
Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Wells Ranch State AA32-763
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	Well @ 4713.00ft
<b>Reference Site:</b>	BB Section 05	<b>MD Reference:</b>	Well @ 4713.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Wells Ranch State AA32-763	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan 1	<b>Offset TVD Reference:</b>	Offset Datum

**Summary**

Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
<b>Offset Well - Wellbore - Design</b>						
AA Section 30						
Fairmeadows 01-30 - Original Drilling - Original Drilling -	12,579.22	7,100.85	6,189.91	6,092.42	63.495	CC
Fairmeadows 01-30 - Original Drilling - Original Drilling -	12,600.00	7,100.12	6,189.95	6,092.24	63.355	ES
Fairmeadows 01-30 - Original Drilling - Original Drilling -	14,800.00	7,022.15	6,575.77	6,459.85	56.727	SF
Fairmeadows 03-30 - Original Drilling - Original Drilling -	13,922.48	6,662.42	6,261.60	6,153.37	57.856	CC
Fairmeadows 03-30 - Original Drilling - Original Drilling -	14,000.00	6,663.61	6,262.08	6,153.01	57.416	ES
Fairmeadows 03-30 - Original Drilling - Original Drilling -	16,000.00	6,704.05	6,597.16	6,471.23	52.388	SF
Fairmeadows 04-30 - Original Drilling - Original Drilling -	13,914.09	6,705.23	3,732.30	3,606.56	29.683	CC, ES
Fairmeadows 04-30 - Original Drilling - Original Drilling -	14,600.00	6,701.72	3,794.81	3,662.93	28.774	SF
J&L Farms 31-30 - Original Drilling - Original Drilling - As	16,537.24	6,781.62	3,594.35	3,457.86	26.333	CC
J&L Farms 31-30 - Original Drilling - Original Drilling - As	16,600.00	6,781.43	3,594.90	3,457.72	26.205	ES
J&L Farms 31-30 - Original Drilling - Original Drilling - As	17,100.00	6,779.93	3,638.14	3,496.67	25.717	SF
J&L Farms 32-30 - Original Drilling - Original Drilling - As	15,221.31	6,647.13	3,659.90	3,537.89	29.997	CC
J&L Farms 32-30 - Original Drilling - Original Drilling - As	15,300.00	6,644.94	3,660.75	3,537.89	29.797	ES
J&L Farms 32-30 - Original Drilling - Original Drilling - As	15,900.00	6,628.64	3,722.24	3,594.38	29.112	SF
Larsen Fairmeadows 02-30 - Original Drilling - Original D	12,624.00	6,620.05	3,750.35	3,655.82	39.674	CC
Larsen Fairmeadows 02-30 - Original Drilling - Original D	12,700.00	6,620.47	3,751.12	3,655.78	39.345	ES
Larsen Fairmeadows 02-30 - Original Drilling - Original D	13,500.00	6,624.78	3,851.30	3,749.13	37.695	SF
Larsen Fairmeadows 05-30 - Original Drilling - Original D	12,545.45	6,617.45	4,978.21	4,884.50	53.122	CC
Larsen Fairmeadows 05-30 - Original Drilling - Original D	12,600.00	6,617.28	4,978.51	4,884.22	52.800	ES
Larsen Fairmeadows 05-30 - Original Drilling - Original D	14,100.00	6,600.00	5,215.31	5,108.45	48.808	SF
Larson Fairmeadows 06-30 - Original Drilling - Original D	13,923.32	6,482.24	5,038.38	4,930.68	46.782	CC
Larson Fairmeadows 06-30 - Original Drilling - Original D	14,000.00	6,480.11	5,038.96	4,930.44	46.435	ES
Larson Fairmeadows 06-30 - Original Drilling - Original D	15,300.00	6,441.44	5,222.91	5,103.57	43.763	SF
Shadow A26-622 - Original Drilling - Original Drilling - As	12,736.03	6,146.00	3,163.09	3,074.40	35.665	CC
Shadow A26-622 - Original Drilling - Original Drilling - As	12,800.00	6,146.00	3,163.73	3,074.37	35.403	ES
Shadow A26-622 - Original Drilling - Original Drilling - As	13,400.00	6,146.00	3,232.02	3,137.67	34.256	SF
Shadow A26-627 - Original Drilling - Original Drilling - As	13,024.25	6,096.00	3,178.97	3,087.25	34.660	CC, ES
Shadow A26-627 - Original Drilling - Original Drilling - As	13,700.00	6,146.00	3,250.76	3,153.05	33.270	SF
Shadow A26-632 - Original Drilling - Original Drilling - As	13,485.12	6,235.00	3,149.31	3,051.76	32.285	CC
Shadow A26-632 - Original Drilling - Original Drilling - As	13,500.00	6,235.00	3,149.34	3,051.63	32.231	ES
Shadow A26-632 - Original Drilling - Original Drilling - As	14,100.00	6,235.00	3,208.77	3,105.85	31.177	SF
Shadow A26-637 - Original Drilling - Original Drilling - As	13,703.96	6,142.00	3,171.11	3,074.23	32.732	CC, ES
Shadow A26-637 - Original Drilling - Original Drilling - As	14,300.00	6,142.00	3,226.64	3,124.57	31.614	SF
Shadow A26-646 - Original Drilling - Original Drilling - As	14,313.99	6,142.00	3,155.07	3,049.95	30.012	CC, ES
Shadow A26-646 - Original Drilling - Original Drilling - As	14,900.00	6,142.00	3,209.03	3,098.90	29.137	SF
Shadow A26-656 - Original Drilling - Original Drilling - As	15,083.15	6,186.00	3,192.35	3,078.53	28.047	CC
Shadow A26-656 - Original Drilling - Original Drilling - As	15,100.00	6,186.00	3,192.39	3,078.43	28.011	ES
Shadow A26-656 - Original Drilling - Original Drilling - As	15,700.00	6,186.00	3,251.40	3,132.73	27.398	SF
Shadow A26-663 - Original Drilling - Original Drilling - As	15,411.68	6,242.00	3,186.17	3,068.78	27.142	CC, ES
Shadow A26-663 - Original Drilling - Original Drilling - As	15,900.00	6,242.00	3,223.37	3,101.74	26.501	SF
Shadow A26-672 - Original Drilling - Original Drilling - As	16,017.86	6,238.00	3,203.37	3,079.48	25.856	CC, ES
Shadow A26-672 - Original Drilling - Original Drilling - As	16,500.00	6,204.63	3,238.77	3,110.72	25.294	SF
Shadow A26-676 - Original Drilling - Original Drilling - As	16,419.46	6,144.00	3,199.53	3,072.22	25.132	CC, ES
Shadow A26-676 - Original Drilling - Original Drilling - As	17,000.00	6,176.90	3,251.14	3,118.84	24.574	SF
Shadow A26-685 - Original Drilling - Original Drilling - As	16,912.25	6,275.00	3,182.45	3,049.11	23.868	CC, ES
Shadow A26-685 - Original Drilling - Original Drilling - As	17,242.93	6,275.00	3,199.58	3,063.22	23.463	SF
Shadow A26-690 - Original Drilling - Original Drilling - As	17,202.58	6,235.00	3,205.66	3,069.39	23.524	CC
Shadow A26-690 - Original Drilling - Original Drilling - As	17,242.93	6,235.00	3,205.92	3,069.22	23.453	ES, SF
Shadow State A26-614 - Original Drilling - Original Drillin	12,198.85	6,147.00	3,152.28	3,068.88	37.800	CC
Shadow State A26-614 - Original Drilling - Original Drillin	12,200.00	6,147.00	3,152.28	3,068.87	37.794	ES
Shadow State A26-614 - Original Drilling - Original Drillin	12,900.00	6,147.00	3,229.31	3,139.81	36.080	SF
Shadow State A26-618 - Original Drilling - Original Drillin	12,418.66	6,091.00	3,169.11	3,084.17	37.308	CC, ES
Shadow State A26-618 - Original Drilling - Original Drillin	13,100.00	6,091.00	3,241.53	3,150.74	35.706	SF

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

**Noble Energy, Inc.**  
Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Wells Ranch State AA32-763
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	Well @ 4713.00ft
<b>Reference Site:</b>	BB Section 05	<b>MD Reference:</b>	Well @ 4713.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Wells Ranch State AA32-763	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan 1	<b>Offset TVD Reference:</b>	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
AA Section 30						
Wells Ranch 41-30 - Original Drilling - Original Drilling - A	16,571.17	6,645.00	2,417.19	2,170.92	9.815	CC
Wells Ranch 41-30 - Original Drilling - Original Drilling - A	16,600.00	6,645.00	2,417.36	2,170.77	9.803	ES
Wells Ranch 41-30 - Original Drilling - Original Drilling - A	16,800.00	6,645.00	2,427.99	2,179.58	9.774	SF
Wells Ranch 42-30 - Original Drilling - Original Drilling - A	15,237.58	6,640.00	2,618.70	2,386.80	11.292	CC, ES
Wells Ranch 42-30 - Original Drilling - Original Drilling - A	15,500.00	6,640.00	2,631.81	2,397.41	11.228	SF
Wells Ranch 43-30 - Original Drilling - Original Drilling - A	14,021.02	6,640.00	2,439.13	2,220.13	11.138	CC, ES
Wells Ranch 43-30 - Original Drilling - Original Drilling - A	14,200.00	6,640.00	2,445.68	2,224.89	11.077	SF
Wells Ranch 44-30 - Original Drilling - Original Drilling - A	12,585.81	6,660.00	2,328.84	2,124.46	11.395	CC
Wells Ranch 44-30 - Original Drilling - Original Drilling - A	12,600.00	6,660.00	2,328.89	2,124.35	11.386	ES
Wells Ranch 44-30 - Original Drilling - Original Drilling - A	12,800.00	6,660.00	2,338.67	2,132.19	11.326	SF
Wolfe 02-30G - Original Drilling - Original Drilling - As Dri	15,227.08	6,669.30	6,297.47	6,175.36	51.573	CC
Wolfe 02-30G - Original Drilling - Original Drilling - As Dri	15,300.00	6,668.73	6,297.89	6,174.99	51.245	ES
Wolfe 02-30G - Original Drilling - Original Drilling - As Dri	17,100.00	6,656.61	6,570.07	6,432.07	47.608	SF



**Noble Energy, Inc.**  
Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Wells Ranch State AA32-763
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	Well @ 4713.00ft
<b>Reference Site:</b>	BB Section 05	<b>MD Reference:</b>	Well @ 4713.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Wells Ranch State AA32-763	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan 1	<b>Offset TVD Reference:</b>	Offset Datum

**Summary**

Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
<b>Offset Well - Wellbore - Design</b>						
AA Section 31						
Devries USX AA31-11 - Wellbore #1 - Wellbore #1 - As D	8,762.35	6,863.21	4,976.52	4,917.29	84.008	CC
Devries USX AA31-11 - Wellbore #1 - Wellbore #1 - As D	8,800.00	6,864.04	4,976.67	4,917.11	83.569	ES
Devries USX AA31-11 - Wellbore #1 - Wellbore #1 - As D	11,200.00	6,916.66	5,541.21	5,463.07	70.906	SF
Devries USX AA31-19 - Wellbore #1 - Wellbore #1 - As	10,648.76	6,778.25	5,644.34	5,563.54	69.855	CC
Devries USX AA31-19 - Wellbore #1 - Wellbore #1 - As	10,700.00	6,779.59	5,644.57	5,563.33	69.473	ES
Devries USX AA31-19 - Wellbore #1 - Wellbore #1 - As	12,700.00	6,822.92	6,005.34	5,909.63	62.750	SF
UPV 31-10G3 - Wellbore #1 - Wellbore #1 - As Drilled	8,901.10	6,666.56	3,668.80	3,610.03	62.426	CC, ES
UPV 31-10G3 - Wellbore #1 - Wellbore #1 - As Drilled	10,300.00	6,655.56	3,926.43	3,856.92	56.483	SF
UPV 31-12G3 - Wellbore #1 - Wellbore #1 - As Drilled	8,440.94	6,539.57	6,377.32	6,322.55	116.428	CC
UPV 31-12G3 - Wellbore #1 - Wellbore #1 - As Drilled	8,500.00	6,538.96	6,377.60	6,322.38	115.495	ES
UPV 31-12G3 - Wellbore #1 - Wellbore #1 - As Drilled	14,200.00	14,200.00	8,592.43	8,473.96	72.528	SF
UPV 31-13G3 - Wellbore #1 - Wellbore #1 - As Drilled	7,005.27	6,678.92	6,420.83	6,373.21	134.841	CC, ES
UPV 31-13G3 - Wellbore #1 - Wellbore #1 - As Drilled	11,400.00	6,719.50	7,785.45	7,710.56	103.947	SF
UPV 31-14G3 - Wellbore #1 - Wellbore #1 - As Drilled	5,063.33	4,447.51	4,975.07	4,941.97	150.305	CC
UPV 31-14G3 - Wellbore #1 - Wellbore #1 - As Drilled	5,100.00	4,454.53	4,975.18	4,941.93	149.653	ES
UPV 31-14G3 - Wellbore #1 - Wellbore #1 - As Drilled	10,500.00	6,627.13	5,913.54	5,842.59	83.357	SF
UPV 31-15G3 - Wellbore #1 - Wellbore #1 - As Drilled	7,345.36	6,747.64	3,657.91	3,608.93	74.689	CC, ES
UPV 31-15G3 - Wellbore #1 - Wellbore #1 - As Drilled	9,000.00	6,822.06	4,014.05	3,955.24	68.254	SF
UPV 31-16G3 - Wellbore #1 - Wellbore #1 - As Drilled	7,420.10	6,529.93	2,475.22	2,426.57	50.876	CC, ES
UPV 31-16G3 - Wellbore #1 - Wellbore #1 - As Drilled	8,200.00	6,591.49	2,594.53	2,541.45	48.878	SF
UPV 31-9G3 - Wellbore #1 - Wellbore #1 - As Drilled	8,854.30	6,670.29	2,554.50	2,495.60	43.365	CC, ES
UPV 31-9G3 - Wellbore #1 - Wellbore #1 - As Drilled	9,600.00	6,675.35	2,661.11	2,596.46	41.160	SF
Wells Ranch AA30-717 - Wellbore #1 - Rev 2	17,232.24	11,777.66	2,200.25	2,012.58	11.724	CC
Wells Ranch AA30-717 - Wellbore #1 - Rev 2	17,242.93	11,777.66	2,200.27	2,012.48	11.717	ES, SF
Wells Ranch AA30-725 - Wellbore #1 - Rev 4	17,232.30	12,202.11	2,649.32	2,461.42	14.100	CC
Wells Ranch AA30-725 - Wellbore #1 - Rev 4	17,242.93	12,202.11	2,649.34	2,461.32	14.091	ES, SF
Wells Ranch State A36-625 - Original Drilling - Original D	7,839.54	6,317.00	1,817.83	1,769.81	37.850	CC, ES
Wells Ranch State A36-625 - Original Drilling - Original D	8,300.00	6,269.00	1,872.10	1,821.47	36.972	SF
Wells Ranch State A36-635 - Original Drilling - Original D	8,315.10	6,202.12	1,902.45	1,852.09	37.777	CC, ES
Wells Ranch State A36-635 - Original Drilling - Original D	8,800.00	6,223.00	1,963.30	1,909.41	36.434	SF
Wells Ranch State A36-649 - Original Drilling - Original D	9,293.83	6,257.00	1,902.06	1,843.79	32.642	CC
Wells Ranch State A36-649 - Original Drilling - Original D	9,300.00	6,257.00	1,902.07	1,843.75	32.614	ES
Wells Ranch State A36-649 - Original Drilling - Original D	9,700.00	6,257.00	1,944.94	1,883.77	31.794	SF
Wells Ranch State A36-655 - Original Drilling - Original D	9,624.39	6,162.00	1,933.06	1,870.90	31.099	CC, ES
Wells Ranch State A36-655 - Original Drilling - Original D	10,000.00	6,162.00	1,969.22	1,904.58	30.465	SF
Wells Ranch State A36-665 - Original Drilling - Original D	10,674.51	6,166.00	1,940.40	1,868.68	27.052	CC
Wells Ranch State A36-665 - Original Drilling - Original D	10,700.00	6,166.00	1,940.57	1,868.56	26.949	ES
Wells Ranch State A36-665 - Original Drilling - Original D	11,000.00	6,166.00	1,967.51	1,892.73	26.311	SF
Wells Ranch State A36-675 - Original Drilling - Original D	10,865.22	6,168.00	1,918.31	1,845.44	26.325	CC
Wells Ranch State A36-675 - Original Drilling - Original D	10,900.00	6,168.00	1,918.63	1,845.38	26.195	ES
Wells Ranch State A36-675 - Original Drilling - Original D	11,200.00	6,168.00	1,947.30	1,871.40	25.655	SF
Wells Ranch State A36-686 - Original Drilling - Original D	11,711.62	6,354.00	1,903.20	1,819.05	22.616	CC, ES
Wells Ranch State A36-686 - Original Drilling - Original D	12,000.00	6,354.00	1,924.93	1,838.56	22.289	SF
Wells Ranch USX AA31-01 - Wellbore #1 - Wellbore #1 -	11,283.96	6,735.82	2,630.79	2,549.64	32.421	CC
Wells Ranch USX AA31-01 - Wellbore #1 - Wellbore #1 -	11,300.00	6,735.64	2,630.84	2,549.52	32.354	ES
Wells Ranch USX AA31-01 - Wellbore #1 - Wellbore #1 -	11,800.00	6,730.15	2,680.92	2,595.26	31.297	SF

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

**Noble Energy, Inc.**  
Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Wells Ranch State AA32-763
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	Well @ 4713.00ft
<b>Reference Site:</b>	BB Section 05	<b>MD Reference:</b>	Well @ 4713.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Wells Ranch State AA32-763	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan 1	<b>Offset TVD Reference:</b>	Offset Datum

**Summary**

Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
<b>Offset Well - Wellbore - Design</b>						
AA Section 32						
State 14-32 PR - Wellbore #1 - Gyro Surveys	7,385.70	6,660.17	1,077.16	1,028.30	22.047	CC, ES
State 14-32 PR - Wellbore #1 - Gyro Surveys	7,500.00	6,662.98	1,083.20	1,033.80	21.924	SF
State 23-32 PR - Wellbore #1 - Gyro Surveys	8,637.16	6,675.93	356.23	299.50	6.280	CC, ES, SF
State 24-32 PA - Wellbore #1 - No Surveys	7,317.64	6,673.00	230.12	-86.52	0.727	Level 1, CC, ES, SF
State 32-32 PA - Wellbore #1 - No Surveys	9,960.60	6,684.00	1,548.68	1,445.30	14.981	CC, ES
State 32-32 PA - Wellbore #1 - No Surveys	10,100.00	6,684.00	1,554.94	1,450.52	14.891	SF
State 6525 11-32 PA - Wellbore #1 - No Surveys	11,276.08	6,660.00	924.55	808.60	7.974	CC, ES
State 6525 11-32 PA - Wellbore #1 - No Surveys	11,300.00	6,660.00	924.86	808.65	7.958	SF
State 6525 12-32 PA - Wellbore #1 - No Surveys	10,059.10	6,655.00	1,095.56	991.51	10.529	CC, ES
State 6525 12-32 PA - Wellbore #1 - No Surveys	10,200.00	6,655.00	1,104.58	999.30	10.491	SF
State 6525 13-32 SI - Wellbore #1 - Gyro Surveys	8,670.14	6,315.00	896.86	843.60	16.839	CC, ES
State 6525 13-32 SI - Wellbore #1 - Gyro Surveys	8,800.00	6,315.00	906.22	852.02	16.721	SF
State 6525 21-32 PA - Wellbore #1 - Gyro Surveys	11,212.70	6,650.00	146.42	67.02	1.844	CC, ES, SF
State 6525 22-32 PR - Wellbore #1 - No Surveys	9,998.91	6,680.00	240.49	136.79	2.319	CC
State 6525 22-32 PR - Wellbore #1 - No Surveys	10,000.00	6,680.00	240.49	136.79	2.319	ES, SF
State 6525 31-32 PA - Wellbore #1 - Gyro Surveys	11,321.14	6,656.39	1,507.13	1,425.83	18.538	CC, ES
State 6525 31-32 PA - Wellbore #1 - Gyro Surveys	11,500.00	6,658.91	1,517.70	1,435.13	18.380	SF
State 6525 33-32 PA - Wellbore #1 - Gyro Surveys	8,562.42	6,634.06	1,590.65	1,534.75	28.455	CC, ES
State 6525 33-32 PA - Wellbore #1 - Gyro Surveys	8,800.00	6,629.38	1,608.29	1,550.93	28.041	SF
State 6525 34-32 PR - Wellbore #1 - Gyro Surveys	1,813.51	1,815.88	1,452.73	1,440.27	116.565	CC
State 6525 34-32 PR - Wellbore #1 - Gyro Surveys	2,000.00	1,991.41	1,453.65	1,439.91	105.780	ES
State 6525 34-32 PR - Wellbore #1 - Gyro Surveys	7,500.00	6,608.31	1,625.79	1,576.85	33.220	SF
State 6525 42-32 PR - Wellbore #1 - No Surveys	9,809.34	6,715.00	2,793.02	2,690.77	27.317	CC, ES
State 6525 42-32 PR - Wellbore #1 - No Surveys	10,300.00	6,715.00	2,835.79	2,729.72	26.737	SF
State 6525 43-32 PR - Wellbore #1 - Gyro Surveys	8,512.08	8,512.08	2,894.73	2,832.52	46.531	CC, ES
State 6525 43-32 PR - Wellbore #1 - Gyro Surveys	8,900.00	8,900.00	2,920.58	2,854.28	44.048	SF
State 6525 44-32 PR - Wellbore #1 - No Surveys	2,000.00	2,025.00	2,626.02	2,601.42	106.714	CC, ES
State 6525 44-32 PR - Wellbore #1 - No Surveys	7,800.00	6,728.00	2,889.16	2,802.81	33.459	SF
State Lease 41-32 PA - Wellbore #1 - Gyro Surveys	11,215.93	6,666.04	2,797.00	2,716.70	34.831	CC, ES
State Lease 41-32 PA - Wellbore #1 - Gyro Surveys	11,800.00	6,666.69	2,857.34	2,772.58	33.714	SF
State Wells 32D PR - Wellbore #1 - Gyro Surveys	10,646.30	6,661.97	403.57	328.78	5.396	CC, ES, SF



**Noble Energy, Inc.**  
Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Wells Ranch State AA32-763
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	Well @ 4713.00ft
<b>Reference Site:</b>	BB Section 05	<b>MD Reference:</b>	Well @ 4713.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Wells Ranch State AA32-763	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan 1	<b>Offset TVD Reference:</b>	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	2,000.00	2,046.00	9,019.84	8,971.98	188.477	CC
UPRR Pan Am 1 (PA) - Original Drilling - Original Drilling	2,100.00	2,145.98	9,021.55	8,971.34	179.685	ES
UPRR Pan Am 1 (PA) - Original Drilling - Original Drilling	9,300.00	6,749.00	9,985.07	9,812.75	57.946	SF
Wells 43-3 PA - Wellbore #1 - No Surveys						Out of range
Wells 34-3 - Wellbore #1 - Gyro Surveys						Out of range
Wells Rach USX BB 3-14 - Wellbore #1 - Gyro Surveys						Out of range
Wells Ranch 12-03 - Original Drilling - Original Drilling - A	213.18	250.18	9,159.10	9,157.87	7,433.696	CC
Wells Ranch 12-03 - Original Drilling - Original Drilling - A	300.00	300.00	9,159.34	9,157.63	5,334.998	ES
Wells Ranch 12-03 - Original Drilling - Original Drilling - A	7,800.00	6,600.81	9,993.30	9,943.17	199.369	SF
Wells Ranch 21-3 TA - Wellbore #1 - No Surveys						Out of range
Wells Ranch 32-3 SI - Wellbore #1 - No Surveys						Out of range
Wells Ranch 41-3 - Wellbore #1 - No Surveys						Out of range
WELLS RANCH BB03-627 - Wellbore #1 - Plan 1	4,900.97	6,000.00	9,690.71	9,651.95	250.043	CC, ES
WELLS RANCH BB03-627 - Wellbore #1 - Plan 1	6,850.00	6,100.00	9,978.20	9,933.03	220.888	SF
WELLS RANCH BB03-651 - Wellbore #1 - Plan 3	5,023.29	6,150.00	9,303.68	9,263.93	234.078	CC, ES
WELLS RANCH BB03-651 - Wellbore #1 - Plan 3	8,100.00	6,300.00	9,979.53	9,929.09	197.873	SF
WELLS RANCH STATE BB03-612 - Wellbore #1 - Plan #						Out of range
WELLS RANCH STATE BB03-620 - Wellbore #1 - Plan 1	4,876.53	5,950.00	9,876.19	9,837.68	256.489	CC
WELLS RANCH STATE BB03-620 - Wellbore #1 - Plan 1	4,900.00	5,950.00	9,876.22	9,837.63	255.918	ES
WELLS RANCH STATE BB03-620 - Wellbore #1 - Plan 1	6,350.00	6,050.00	9,994.16	9,950.27	227.679	SF
WELLS RANCH STATE BB03-636 - Wellbore #1 - Plan 1	4,753.79	5,800.00	9,522.64	9,485.28	254.882	CC
WELLS RANCH STATE BB03-636 - Wellbore #1 - Plan 1	4,800.00	5,800.00	9,522.76	9,485.22	253.727	ES
WELLS RANCH STATE BB03-636 - Wellbore #1 - Plan 1	7,300.00	5,950.00	9,992.47	9,946.84	218.996	SF
WELLS RANCH STATE BB03-643 - Wellbore #1 - Plan 1	4,924.80	6,000.00	9,332.14	9,293.32	240.429	CC, ES
WELLS RANCH STATE BB03-643 - Wellbore #1 - Plan 1	7,900.00	6,100.00	9,987.80	9,939.24	205.673	SF
WELLS RANCH STATE BB03-659 - Wellbore #1 - Plan 1	4,917.35	6,050.00	8,995.10	8,955.78	228.780	CC, ES
WELLS RANCH STATE BB03-659 - Wellbore #1 - Plan 1	9,100.00	6,125.56	9,993.24	9,936.77	176.973	SF
WELLS RANCH STATE BB03-668 - Wellbore #1 - Plan 1	4,997.67	6,050.00	8,896.74	8,857.42	226.268	CC
WELLS RANCH STATE BB03-668 - Wellbore #1 - Plan 1	5,000.00	6,050.00	8,896.74	8,857.42	226.220	ES
WELLS RANCH STATE BB03-668 - Wellbore #1 - Plan 1	9,700.00	6,150.00	9,965.48	9,904.75	164.102	SF
WELLS RANCH STATE BB03-676 - Wellbore #1 - Plan 1	4,975.29	6,050.00	8,835.73	8,796.34	224.291	CC
WELLS RANCH STATE BB03-676 - Wellbore #1 - Plan 1	5,000.00	6,050.00	8,835.76	8,796.28	223.790	ES
WELLS RANCH STATE BB03-676 - Wellbore #1 - Plan 1	10,300.00	6,200.00	9,987.61	9,922.02	152.267	SF
WELLS RANCH STATE BB03-684 - Wellbore #1 - Plan 1	5,120.49	6,223.56	8,678.38	8,637.50	212.327	CC, ES
WELLS RANCH STATE BB03-684 - Wellbore #1 - Plan 1	10,800.00	6,450.00	9,976.05	9,905.67	141.748	SF
Wells Ranch State BB05-613 - Original Drilling - Original	6,155.63	15,735.01	4,869.93	4,734.73	36.021	CC, ES
Wells Ranch State BB05-613 - Original Drilling - Original	6,250.00	15,737.75	4,877.76	4,741.99	35.928	SF
Wells Ranch State BB05-617 - Original Drilling - Original	6,152.13	15,718.08	4,571.94	4,435.72	33.563	CC, ES
Wells Ranch State BB05-617 - Original Drilling - Original	6,250.00	15,721.33	4,580.42	4,443.64	33.486	SF
Wells Ranch State BB05-625 - Original Drilling - Original	6,163.21	15,545.99	4,042.78	3,907.84	29.958	CC, ES
Wells Ranch State BB05-625 - Original Drilling - Original	6,250.00	15,548.00	4,049.56	3,914.13	29.901	SF
Wells Ranch State BB05-630 - Original Drilling - Original	6,161.10	15,591.00	3,797.02	3,663.30	28.395	CC, ES
Wells Ranch State BB05-630 - Original Drilling - Original	6,250.00	15,591.00	3,804.16	3,669.88	28.331	SF
Wells Ranch State BB05-635 - Original Drilling - Original	6,182.00	15,770.46	3,430.96	3,295.79	25.383	CC, ES
Wells Ranch State BB05-635 - Original Drilling - Original	6,300.00	15,776.49	3,443.76	3,307.72	25.316	SF
Wells Ranch State BB05-644 - Original Drilling - Original	6,187.88	15,734.55	2,786.25	2,649.70	20.405	CC, ES
Wells Ranch State BB05-644 - Original Drilling - Original	6,250.00	15,738.44	2,789.94	2,652.92	20.361	SF
Wells Ranch State BB05-650 - Original Drilling - Original	6,216.78	15,863.60	2,460.55	2,323.23	17.919	CC, ES
Wells Ranch State BB05-650 - Original Drilling - Original	6,300.00	15,870.06	2,467.34	2,329.28	17.871	SF
Wells Ranch State BB05-656 - Original Drilling - Original	6,209.63	15,403.51	2,154.74	2,022.55	16.301	CC, ES
Wells Ranch State BB05-656 - Original Drilling - Original	6,300.00	15,410.76	2,162.96	2,029.72	16.233	SF
Wells Ranch State BB05-665 - Original Drilling - Original	6,251.99	15,731.98	1,447.70	1,313.56	10.793	CC, ES
Wells Ranch State BB05-665 - Original Drilling - Original	6,300.00	15,734.60	1,450.28	1,315.34	10.748	SF

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

**Noble Energy, Inc.**  
Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Wells Ranch State AA32-763
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	Well @ 4713.00ft
<b>Reference Site:</b>	BB Section 05	<b>MD Reference:</b>	Well @ 4713.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Wells Ranch State AA32-763	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan 1	<b>Offset TVD Reference:</b>	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 BB05-669 - Original Drilling - Original	6,341.14	15,766.83	1,170.96	1,040.08	8.947	CC
Wells Ranch State BB05-669 - Original Drilling - Original	6,350.00	15,767.13	1,171.05	1,039.92	8.930	ES
Wells Ranch State BB05-669 - Original Drilling - Original	6,450.00	15,769.10	1,185.02	1,051.40	8.869	SF
Wells Ranch State BB05-678 - Original Drilling - Original	6,360.47	15,910.35	837.16	709.33	6.549	CC, ES
Wells Ranch State BB05-678 - Original Drilling - Original	6,450.00	15,912.85	848.07	716.77	6.459	SF
Wells Ranch State BB05-685 - Original Drilling - Original	6,487.19	15,525.50	308.60	186.57	2.529	CC
Wells Ranch State BB05-685 - Original Drilling - Original	6,500.00	15,525.88	309.00	185.13	2.495	ES
Wells Ranch State BB05-685 - Original Drilling - Original	6,550.00	15,527.08	317.93	188.06	2.448	SF
Wells Ranch State BB05-690 - Original Drilling - Original	6,757.93	15,860.04	184.54	85.06	1.855	CC
Wells Ranch State BB05-690 - Original Drilling - Original	6,800.00	15,858.47	190.61	79.26	1.712	ES, SF
Wells Ranch USX BB 3-10 - Wellbore #1 - Gyro Surveys						Out of range
Wells Ranch USX BB 3-11 SI - Wellbore #1 - Gyro Surve						Out of range
Wells Ranch USX BB 3-16 SI - Wellbore #1 - Gyro Surve						Out of range
Wells Ranch USX BB 3-2 SI - Wellbore #1 - No Surveys						Out of range
Wells Ranch USX BB 3-4 - Wellbore #1 - No Surveys	2,000.00	2,067.00	8,935.73	8,910.76	357.794	CC, ES
Wells Ranch USX BB 3-4 - Wellbore #1 - No Surveys	9,600.00	6,770.00	9,975.22	9,876.57	101.120	SF
Wells Ranch USX BB 3-6 SI - Wellbore #1 - Gyro Survey						Out of range
Wells Ranch USX BB 3-8 - Wellbore #1 - Gyro Surveys						Out of range
Wells Ranch USX BB03-04 - Original Drilling - Original D	1,932.92	2,000.00	8,923.87	8,910.36	660.306	CC
Wells Ranch USX BB03-04 - Original Drilling - Original D	2,000.00	2,038.52	8,923.98	8,910.09	642.519	ES
Wells Ranch USX BB03-04 - Original Drilling - Original D	9,600.00	6,665.88	9,983.38	9,920.71	159.293	SF
Wells Ranch USX BB03-12 - Original Drilling - Original D	1,341.21	1,351.27	9,337.36	9,328.23	1,023.228	CC
Wells Ranch USX BB03-12 - Original Drilling - Original D	2,000.00	1,957.25	9,338.62	9,325.02	686.650	ES
Wells Ranch USX BB03-12 - Original Drilling - Original D	7,100.00	6,510.32	9,996.20	9,949.19	212.651	SF
Wells Ranch USX BB03-13 - Original Drilling - Original D	2,008.92	2,038.15	9,916.01	9,902.07	711.140	CC, ES
Wells Ranch USX BB03-13 - Original Drilling - Original D	2,900.00	2,700.01	9,999.32	9,979.98	517.176	SF
Wells Ranch USX BB03-25 PA - Original Drilling - Gyro S						Out of range

**Noble Energy, Inc.**  
Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Wells Ranch State AA32-763
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	Well @ 4713.00ft
<b>Reference Site:</b>	BB Section 05	<b>MD Reference:</b>	Well @ 4713.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Wells Ranch State AA32-763	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan 1	<b>Offset TVD Reference:</b>	Offset Datum

**Summary**

Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Separation Factor	Warning
<b>Offset Well - Wellbore - Design</b>						
BB Section 05						
UPV 05-03H3 - Original Drilling - Original Drilling - As Dri	2,725.44	2,685.29	350.08	331.38	18.730	CC
UPV 05-03H3 - Original Drilling - Original Drilling - As Dri	3,600.00	3,562.49	355.27	330.36	14.261	ES
UPV 05-03H3 - Original Drilling - Original Drilling - As Dri	6,100.19	6,052.08	443.09	400.35	10.367	SF
UPV 05-04H3 - Original Drilling - Original Drilling - As Dri	6,189.32	6,162.37	1,203.98	1,160.17	27.482	CC
UPV 05-04H3 - Original Drilling - Original Drilling - As Dri	6,200.00	6,173.61	1,204.03	1,160.14	27.432	ES
UPV 05-04H3 - Original Drilling - Original Drilling - As Dri	6,350.00	6,322.45	1,217.58	1,172.60	27.065	SF
UPV 05-05H3 - Original Drilling - Original Drilling - As Dri	6,122.95	6,087.94	2,268.14	2,225.18	52.797	CC, ES
UPV 05-05H3 - Original Drilling - Original Drilling - As Dri	6,350.00	6,323.88	2,305.34	2,260.75	51.703	SF
UPV 05-06H3 - Original Drilling - Original Drilling - As Dri	1,194.56	1,173.57	1,694.14	1,686.17	212.508	CC
UPV 05-06H3 - Original Drilling - Original Drilling - As Dri	2,100.00	2,079.79	1,695.13	1,680.76	117.924	ES
UPV 05-06H3 - Original Drilling - Original Drilling - As Dri	6,250.00	6,200.57	1,845.14	1,801.29	42.080	SF
Wells Ranch 31-05 - Original Drilling - Original Drilling - A	0.00	0.00	1,255.34			
Wells Ranch 31-05 - Original Drilling - Original Drilling - A	300.00	288.40	1,256.24	1,254.55	746.982	ES
Wells Ranch 31-05 - Original Drilling - Original Drilling - A	6,558.38	6,508.99	1,811.68	1,765.97	39.640	SF
Wells Ranch 32-05 - Original Drilling - Original Drilling - A	1,624.18	1,621.21	1,990.10	1,979.01	179.547	CC
Wells Ranch 32-05 - Original Drilling - Original Drilling - A	2,000.00	1,985.58	1,991.63	1,977.93	145.394	ES
Wells Ranch 32-05 - Original Drilling - Original Drilling - A	6,350.00	6,322.13	2,373.93	2,329.44	53.361	SF
Wells Ranch 41-05 - Original Drilling - Original Drilling - A	202.26	229.26	2,479.36	2,478.24	2,216.453	CC
Wells Ranch 41-05 - Original Drilling - Original Drilling - A	2,015.65	2,056.18	2,481.40	2,467.40	177.295	ES
Wells Ranch 41-05 - Original Drilling - Original Drilling - A	6,800.00	6,617.10	3,029.18	2,982.50	64.893	SF
Wells Ranch 42-05 - Original Drilling - Original Drilling - A	126.31	128.31	2,937.39	2,936.90	5,950.608	CC
Wells Ranch 42-05 - Original Drilling - Original Drilling - A	2,000.00	1,993.20	2,944.13	2,930.40	214.417	ES
Wells Ranch 42-05 - Original Drilling - Original Drilling - A	6,558.38	6,446.85	3,434.76	3,389.28	75.527	SF
Wells Ranch BB01-611 - Original Drilling - Original Drillin						Out of range
Wells Ranch BB01-615 - Original Drilling - Original Drillin						Out of range
Wells Ranch BB01-624 - Original Drilling - Original Drillin						Out of range
Wells Ranch BB01-624 - Original Drilling - ST01 - ST01 -						Out of range
Wells Ranch BB01-638 - Original Drilling - Original Drillin						Out of range
Wells Ranch BB01-649 - Original Drilling - Original Drillin						Out of range
Wells Ranch BB01-655 - Original Drilling - Original Drillin						Out of range
Wells Ranch BB01-669 - Original Drilling - Original Drillin						Out of range
Wells Ranch BB01-675 - Original Drilling - Original Drillin						Out of range
Wells Ranch State AA32-717 - Wellbore #1 - Plan #2	1,908.33	1,928.33	1,906.98	1,893.69	143.518	CC
Wells Ranch State AA32-717 - Wellbore #1 - Plan #2	2,000.00	2,014.40	1,907.01	1,893.08	136.959	ES
Wells Ranch State AA32-717 - Wellbore #1 - Plan #2	17,242.93	17,428.68	3,100.67	2,884.44	14.339	SF
Wells Ranch State AA32-724 - Wellbore #1 - Plan #2	2,000.00	2,019.00	1,871.22	1,857.28	134.225	CC, ES
Wells Ranch State AA32-724 - Wellbore #1 - Plan #2	17,242.93	17,339.24	2,662.20	2,446.10	12.319	SF
Wells Ranch State AA32-731 - Wellbore #1 - Plan #2	2,000.00	2,019.00	1,835.55	1,821.61	131.666	CC, ES
Wells Ranch State AA32-731 - Wellbore #1 - Plan #2	17,242.93	17,081.26	2,260.12	2,044.36	10.475	SF
Wells Ranch State AA32-737 - Wellbore #1 - Plan #2	5,923.06	6,165.06	1,712.00	1,668.97	39.789	CC
Wells Ranch State AA32-737 - Wellbore #1 - Plan #2	17,242.93	17,218.60	1,832.46	1,616.81	8.497	ES, SF
Wells Ranch State AA32-745 - Wellbore #1 - Plan #2	2,000.00	2,002.00	112.46	98.58	8.102	CC, ES
Wells Ranch State AA32-745 - Wellbore #1 - Plan #2	17,242.93	17,291.42	1,409.32	1,196.77	6.631	SF
Wells Ranch State AA32-751 - Wellbore #1 - Plan #2	2,000.00	2,001.00	74.96	61.09	5.402	CC, ES
Wells Ranch State AA32-751 - Wellbore #1 - Plan #2	17,242.93	17,301.95	705.39	493.22	3.325	SF
Wells Ranch State AA32-770 - Wellbore #1 - Plan #2	6,703.04	6,814.35	433.87	386.66	9.190	CC
Wells Ranch State AA32-770 - Wellbore #1 - Plan #2	11,700.00	11,784.68	464.75	340.68	3.746	ES
Wells Ranch State AA32-770 - Wellbore #1 - Plan #2	17,242.93	17,317.47	666.56	424.23	2.751	SF
Wells Ranch State AA32-775 - Wellbore #1 - Plan #2	6,816.08	6,879.79	784.29	736.87	16.542	CC
Wells Ranch State AA32-775 - Wellbore #1 - Plan #2	11,700.00	11,758.85	807.74	696.11	7.236	ES
Wells Ranch State AA32-775 - Wellbore #1 - Plan #2	17,242.93	17,206.51	1,319.61	1,107.11	6.210	SF
Wells Ranch State AA32-783 - Wellbore #1 - Plan #2	6,379.43	6,292.53	1,295.12	1,250.42	28.970	CC
Wells Ranch State AA32-783 - Wellbore #1 - Plan #2	11,900.00	11,761.24	1,326.26	1,198.24	10.360	ES

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

**Noble Energy, Inc.**  
Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Wells Ranch State AA32-763
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	Well @ 4713.00ft
<b>Reference Site:</b>	BB Section 05	<b>MD Reference:</b>	Well @ 4713.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Wells Ranch State AA32-763	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan 1	<b>Offset TVD Reference:</b>	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 State AA32-783 - Wellbore #1 - Plan #2	17,242.93	16,927.98	1,973.83	1,731.68	8.151	SF
Wells Ranch State AA32-789 - Wellbore #1 - Plan #2	2,447.53	2,287.36	1,491.35	1,475.00	91.218	CC, ES
Wells Ranch State AA32-789 - Wellbore #1 - Plan #2	17,242.93	17,048.21	2,612.37	2,401.96	12.416	SF
Wells Ranch State BB01-690 - Original Drilling - Original						Out of range
Wells Ranch USX BB05-09 - Original Drilling - Original D	1,975.50	1,982.75	3,783.10	3,769.48	277.713	CC
Wells Ranch USX BB05-09 - Original Drilling - Original D	2,000.00	2,000.13	3,783.12	3,769.35	274.726	ES
Wells Ranch USX BB05-09 - Original Drilling - Original D	6,558.38	6,470.16	4,346.89	4,301.29	95.325	SF
Wells Ranch USX BB05-10 - Original Drilling - Original D	1,395.01	1,408.12	3,255.54	3,246.01	341.489	CC
Wells Ranch USX BB05-10 - Original Drilling - Original D	1,600.00	1,588.71	3,256.43	3,245.53	298.700	ES
Wells Ranch USX BB05-10 - Original Drilling - Original D	6,450.00	6,337.85	3,657.85	3,612.95	81.470	SF
Wells Ranch USX BB05-11 - Original Drilling - Original D	1,457.27	1,448.29	2,819.43	2,809.55	285.487	CC
Wells Ranch USX BB05-11 - Original Drilling - Original D	2,294.11	2,326.08	2,825.09	2,809.17	177.546	ES
Wells Ranch USX BB05-11 - Original Drilling - Original D	6,400.00	6,354.07	2,993.23	2,948.35	66.689	SF
Wells Ranch USX BB05-12 - Original Drilling - Original D	0.00	0.00	3,334.97			
Wells Ranch USX BB05-12 - Original Drilling - Original D	6,102.70	6,052.78	3,358.90	3,316.07	78.434	ES
Wells Ranch USX BB05-12 - Original Drilling - Original D	6,500.00	6,499.02	3,474.94	3,429.24	76.030	SF
Wells Ranch USX BB05-13 - Original Drilling - Original D	6,039.61	6,005.04	4,584.01	4,541.61	108.126	CC
Wells Ranch USX BB05-13 - Original Drilling - Original D	6,100.19	6,052.64	4,584.10	4,541.31	107.146	ES
Wells Ranch USX BB05-13 - Original Drilling - Original D	6,558.38	6,476.50	4,743.84	4,698.07	103.654	SF
Wells Ranch USX BB05-14 - Original Drilling - Original D	0.00	23.23	4,149.35			
Wells Ranch USX BB05-14 - Original Drilling - Original D	1,800.00	1,795.18	4,152.33	4,140.01	337.197	ES
Wells Ranch USX BB05-14 - Original Drilling - Original D	6,450.00	6,451.81	4,387.80	4,342.39	96.645	SF
Wells Ranch USX BB05-15 - Original Drilling - Original D	1,784.81	1,800.00	4,363.32	4,351.03	354.906	CC
Wells Ranch USX BB05-15 - Original Drilling - Original D	1,800.00	1,800.00	4,363.35	4,351.00	353.348	ES
Wells Ranch USX BB05-15 - Original Drilling - Original D	6,450.00	6,295.53	4,704.86	4,660.09	105.093	SF
Wells Ranch USX BB05-16 - Original Drilling - Original D	2,002.32	2,034.17	4,736.60	4,722.70	340.815	CC, ES
Wells Ranch USX BB05-16 - Original Drilling - Original D	6,558.38	6,480.33	5,275.69	5,230.00	115.458	SF
Wells Ranch USX BB05-23 - Original Drilling - Original D	394.63	416.63	4,004.53	4,002.07	1,623.993	CC
Wells Ranch USX BB05-23 - Original Drilling - Original D	500.00	500.00	4,004.88	4,001.74	1,277.944	ES
Wells Ranch USX BB05-23 - Original Drilling - Original D	6,558.38	6,499.29	4,537.59	4,491.77	99.042	SF
Wells Ranch USX BB05-25 - Original Drilling - Original D	1,750.73	1,732.83	3,687.31	3,675.38	309.065	CC
Wells Ranch USX BB05-25 - Original Drilling - Original D	1,800.00	1,767.09	3,687.41	3,675.18	301.596	ES
Wells Ranch USX BB05-25 - Original Drilling - Original D	6,450.00	6,356.46	3,849.67	3,804.62	85.454	SF

**Noble Energy, Inc.**  
Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Wells Ranch State AA32-763
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	Well @ 4713.00ft
<b>Reference Site:</b>	BB Section 05	<b>MD Reference:</b>	Well @ 4713.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Wells Ranch State AA32-763	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan 1	<b>Offset TVD Reference:</b>	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 06						
Skurich-Roth 21-06 - Original Drilling - Original Drilling - A	6,380.12	6,295.26	5,007.22	4,962.90	112.988	CC
Skurich-Roth 21-06 - Original Drilling - Original Drilling - A	6,400.00	6,311.02	5,007.31	4,962.87	112.681	ES
Skurich-Roth 21-06 - Original Drilling - Original Drilling - A	9,200.00	6,573.24	5,939.77	5,881.71	102.303	SF
Skurich-Roth 23-06 - Original Drilling - Original Drilling - A	6,173.41	6,073.82	5,822.03	5,779.12	135.672	CC, ES
Skurich-Roth 23-06 - Original Drilling - Original Drilling - A	6,800.00	6,668.81	5,995.23	5,948.30	127.744	SF
Skurich-Roth 24-06 - Original Drilling - Original Drilling - A	6,159.02	6,137.58	6,626.49	6,583.34	153.595	CC, ES
Skurich-Roth 24-06 - Original Drilling - Original Drilling - A	6,750.00	6,607.91	6,818.61	6,772.00	146.290	SF
Skurich-Roth 33-06 - Original Drilling - Original Drilling - A	6,146.54	6,024.11	4,826.75	4,784.06	113.070	CC
Skurich-Roth 33-06 - Original Drilling - Original Drilling - A	6,150.00	6,026.18	4,826.76	4,784.05	113.017	ES
Skurich-Roth 33-06 - Original Drilling - Original Drilling - A	6,558.38	6,382.27	4,923.27	4,877.96	108.654	SF
Skurich-Roth 42-06 - Original Drilling - Original Drilling - A	6,150.61	6,048.34	3,027.71	2,984.93	70.777	CC, ES
Skurich-Roth 42-06 - Original Drilling - Original Drilling - A	6,558.38	6,477.44	3,115.57	3,069.94	68.279	SF
Skurich-Roth 6D - Original Drilling - Original Drilling - As	6,279.60	6,156.72	5,549.01	5,505.48	127.462	CC
Skurich-Roth 6D - Original Drilling - Original Drilling - As	6,300.00	6,171.88	5,549.13	5,505.47	127.102	ES
Skurich-Roth 6D - Original Drilling - Original Drilling - As	9,300.00	6,817.51	6,722.98	6,664.06	114.104	SF
Skurich-Rothe 11-06 - Original Drilling - Original Drilling -	6,390.41	6,254.30	6,271.98	6,218.99	118.376	CC
Skurich-Rothe 11-06 - Original Drilling - Original Drilling -	6,450.00	6,305.68	6,272.66	6,218.84	116.548	ES
Skurich-Rothe 11-06 - Original Drilling - Original Drilling -	10,100.00	6,579.70	7,481.35	7,405.09	98.097	SF
Skurich-Rothe 12-06 - Original Drilling - Original Drilling -	6,239.17	6,087.65	6,417.32	6,374.19	148.769	CC
Skurich-Rothe 12-06 - Original Drilling - Original Drilling -	6,250.00	6,096.93	6,417.36	6,374.15	148.526	ES
Skurich-Rothe 12-06 - Original Drilling - Original Drilling -	10,000.00	6,658.86	8,116.83	8,054.93	131.115	SF
Skurich-Rothe 13-06 - Original Drilling - Original Drilling -	6,186.94	6,034.55	6,995.04	6,952.23	163.398	CC
Skurich-Rothe 13-06 - Original Drilling - Original Drilling -	6,200.00	6,046.52	6,995.12	6,952.22	163.061	ES
Skurich-Rothe 13-06 - Original Drilling - Original Drilling -	9,200.00	6,584.96	8,551.96	8,493.75	146.893	SF
Skurich-Rothe 14-06 - Original Drilling - Original Drilling -	6,181.49	6,212.42	7,616.70	7,573.27	175.365	CC
Skurich-Rothe 14-06 - Original Drilling - Original Drilling -	6,200.00	6,243.32	7,616.87	7,573.26	174.674	ES
Skurich-Rothe 14-06 - Original Drilling - Original Drilling -	6,900.00	6,853.58	7,854.53	7,806.72	164.283	SF
Skurich-Rothe 22-06 - Original Drilling - Original Drilling -	6,204.77	6,090.29	5,380.72	5,337.67	124.983	CC, ES
Skurich-Rothe 22-06 - Original Drilling - Original Drilling -	9,900.00	9,900.00	7,382.54	7,312.27	105.055	SF
Skurich-Rothe 31-06 - Original Drilling - Original Drilling -	6,358.61	6,296.85	3,789.80	3,745.55	85.654	CC, ES
Skurich-Rothe 31-06 - Original Drilling - Original Drilling -	7,000.00	6,504.53	3,886.09	3,839.09	82.682	SF
Skurich-Rothe 34-06 - Original Drilling - Original Drilling -	6,125.14	5,971.60	5,720.32	5,677.84	134.638	CC, ES
Skurich-Rothe 34-06 - Original Drilling - Original Drilling -	6,650.00	6,428.13	5,892.40	5,846.64	128.781	SF
Skurich-Rothe 41-06 - Original Drilling - Original Drilling -	6,357.48	6,380.00	2,464.66	2,420.20	55.430	CC, ES
Skurich-Rothe 41-06 - Original Drilling - Original Drilling -	6,800.00	6,683.61	2,529.02	2,482.11	53.905	SF
Skurich-Rothe 43-06 - Original Drilling - Original Drilling -	6,135.48	6,067.36	3,898.65	3,855.79	90.968	CC, ES
Skurich-Rothe 43-06 - Original Drilling - Original Drilling -	6,500.00	6,384.93	3,984.61	3,939.40	88.147	SF
Skurich-Rothe 44-06 - Original Drilling - Original Drilling -	6,122.79	6,087.62	4,893.88	4,850.96	114.025	CC, ES
Skurich-Rothe 44-06 - Original Drilling - Original Drilling -	6,558.38	6,495.77	5,025.30	4,979.52	109.771	SF
Skurich-Rothe 6A - Original Drilling - Original Drilling - As	6,136.44	6,084.24	4,728.75	4,685.81	110.137	CC, ES
Skurich-Rothe 6A - Original Drilling - Original Drilling - As	6,558.38	6,422.56	4,845.73	4,800.22	106.470	SF
Skurich-Rothe 32-06 - Original Drilling - Original Drilling -	6,196.52	6,112.00	4,111.50	3,967.32	28.518	CC
Skurich-Rothe 32-06 - Original Drilling - Original Drilling -	6,200.00	6,115.41	4,111.50	3,967.25	28.502	ES
Skurich-Rothe 32-06 - Original Drilling - Original Drilling -	6,700.00	6,525.29	4,216.60	4,062.54	27.371	SF

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



**Noble Energy, Inc.**  
**Anticollision Summary Report**

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Wells Ranch State AA32-763
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	Well @ 4713.00ft
<b>Reference Site:</b>	BB Section 05	<b>MD Reference:</b>	Well @ 4713.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Wells Ranch State AA32-763	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan 1	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to Well @ 4713.00ft

Offset Depths are relative to Offset Datum

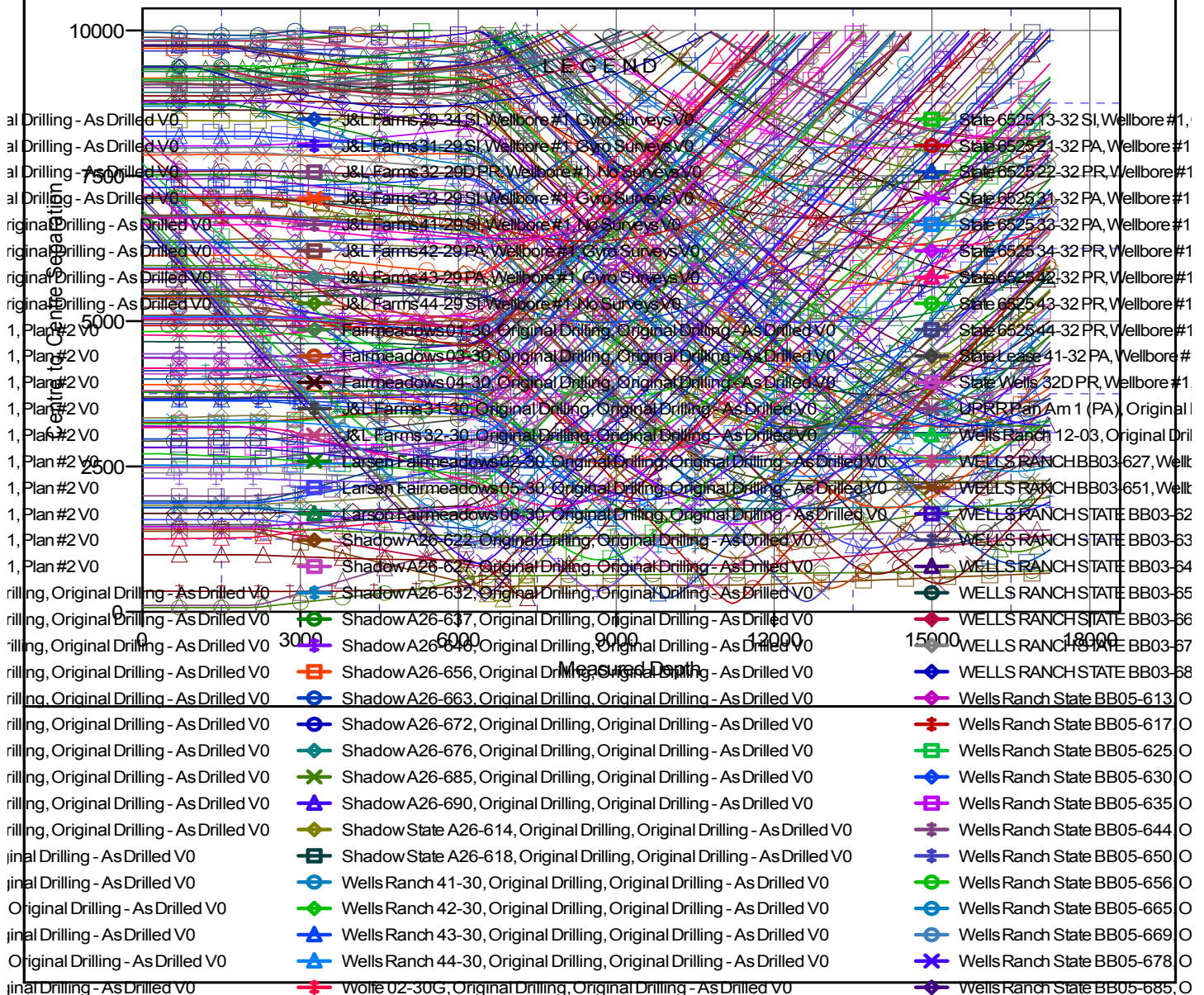
Central Meridian is -105.5000000

Coordinates are relative to: Wells Ranch State AA32-763

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.67°

## Ladder Plot



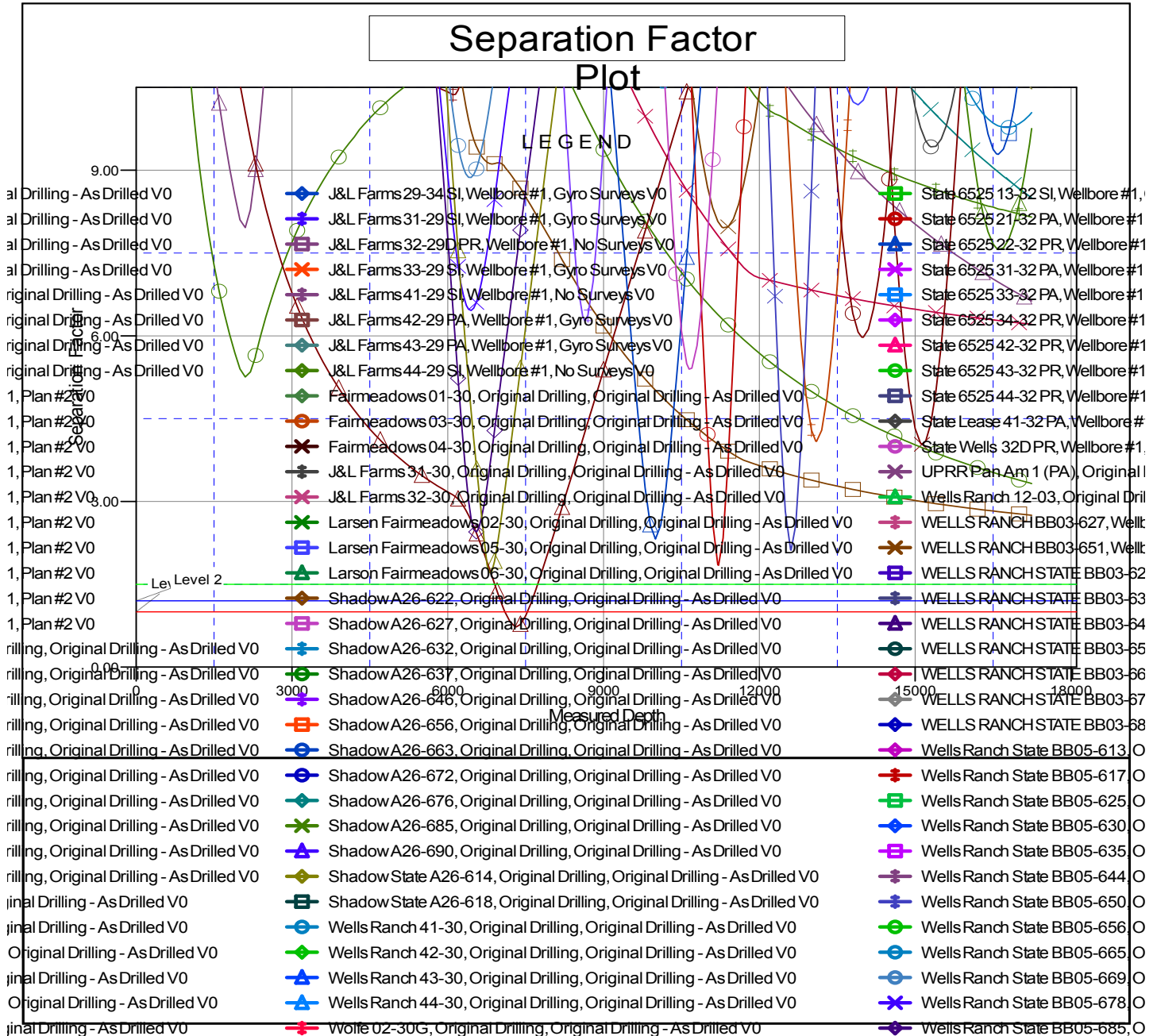
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

**Noble Energy, Inc.**  
**Anticollision Summary Report**

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Wells Ranch State AA32-763
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	Well @ 4713.00ft
<b>Reference Site:</b>	BB Section 05	<b>MD Reference:</b>	Well @ 4713.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Wells Ranch State AA32-763	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan 1	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to Well @ 4713.00ft  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.5000000

Coordinates are relative to: Wells Ranch State AA32-763  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 0.67°



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