

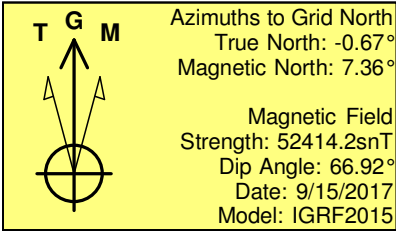
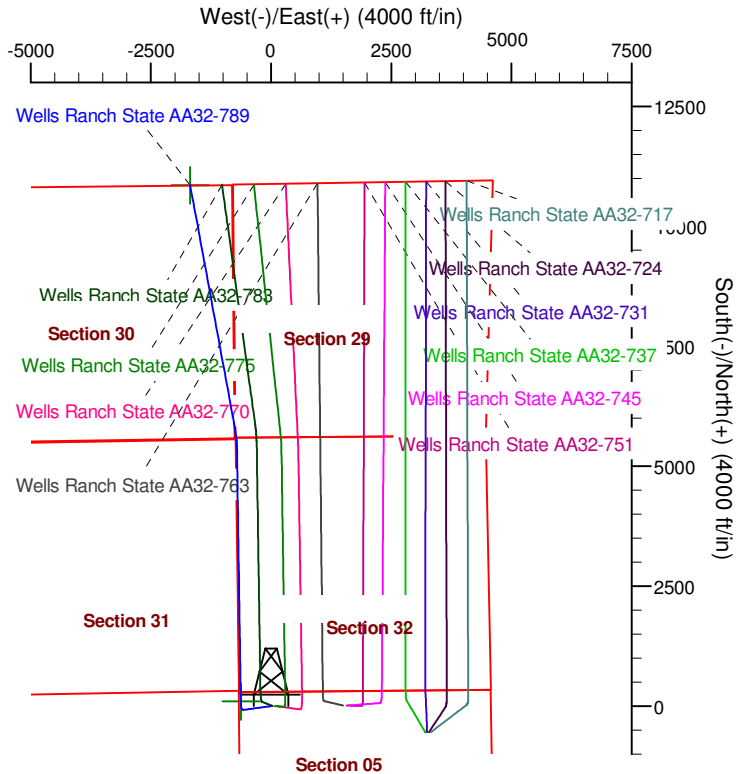
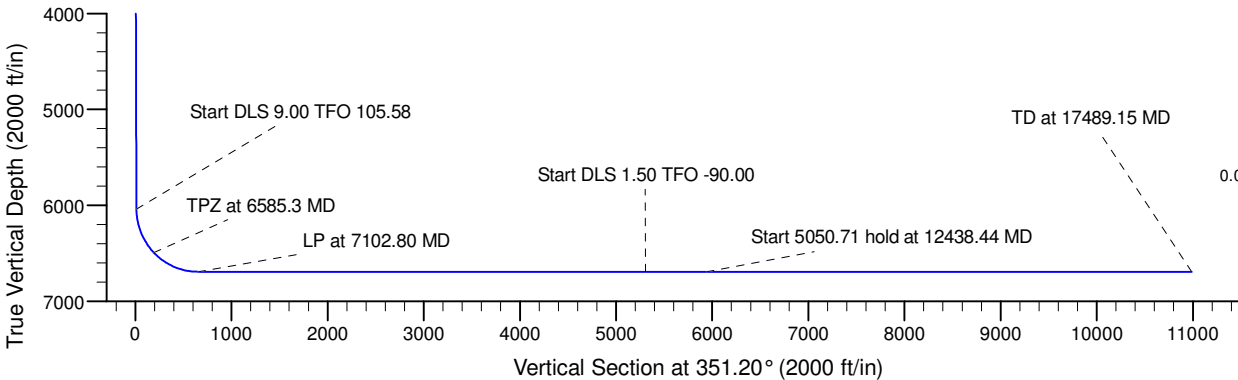
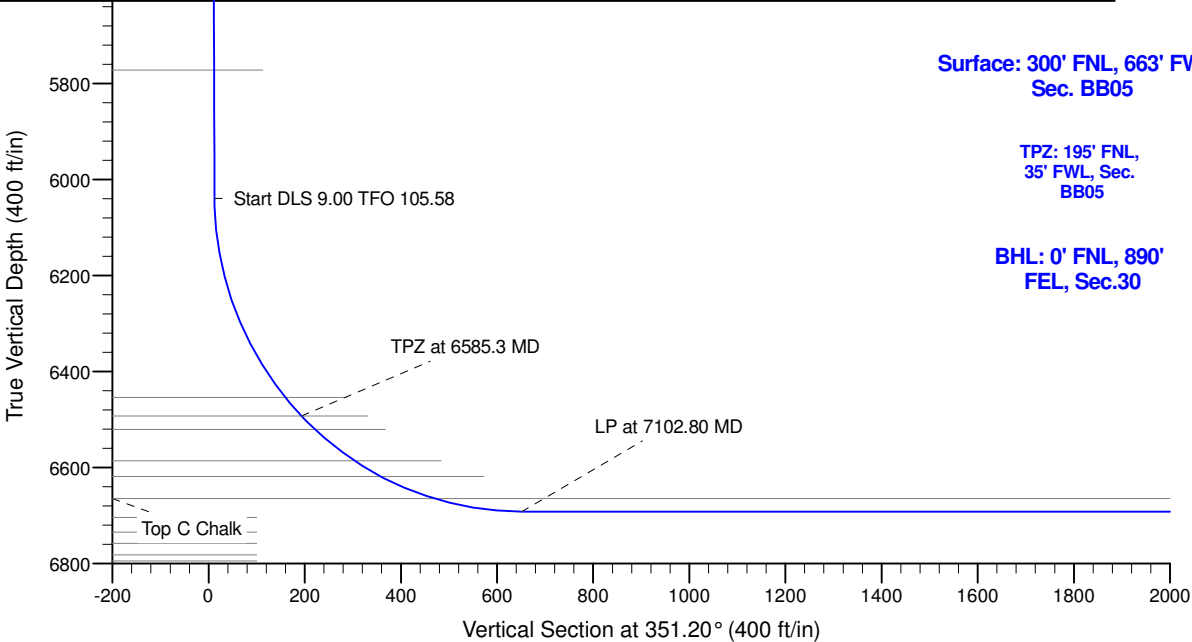
Project: Wells Ranch  
Site: BB Section 05  
Well: Wells Ranch State AA32-789  
Wellbore: Wellbore #1  
Design: Plan #2

# 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	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	2438.99	8.78	262.41	2437.28	-4.44	-33.27	2.00	262.41	0.71	
4	6083.84	8.78	262.41	6039.41	-77.94	-584.74	0.00	0.00	12.39	
5	6585.30	43.42	359.13	6493.00	98.56	-627.53	9.00	105.58	193.36	Wells Ranch State AA32-789 TPZ
6	7102.80	90.00	359.13	6692.00	560.87	-634.55	9.00	0.00	651.30	
7	11802.80	90.00	359.13	6692.00	5260.32	-705.91	0.00	0.00	5306.40	
8	12438.44	90.00	349.60	6692.00	5892.16	-768.28	1.50	-90.00	5940.35	
9	17489.15	90.00	349.60	6692.00	10859.83	-1680.43	0.00	0.00	10989.07	Wells Ranch State AA32-789 BHL P2



## WELL DETAILS: Wells Ranch State AA32-789

0.00	Northings	Easting	4672.00 Latitude	Longitude
0.00	1402944.41	3287316.53	40.4348940	-104.4678266

## Plan: Plan #2 (Wells Ranch State AA32-789/Wellbore #1)

Created By: Colby Baxter Date: 12:21, April 19 2018

Checked: \_\_\_\_\_ Date: \_\_\_\_\_

Reviewed: \_\_\_\_\_ Date: \_\_\_\_\_

Approved: \_\_\_\_\_ Date: \_\_\_\_\_

# **Northern Region - DJ Basin**

**Wells Ranch**

**BB Section 05**

**Wells Ranch State AA32-789**

**Wellbore #1**

**Plan: Plan #2**

## **Standard Survey Report**

**19 April, 2018**

# Noble Energy, Inc.

## Survey Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Wells Ranch State AA32-789
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	Well @ 4702.00ft
<b>Site:</b>	BB Section 05	<b>MD Reference:</b>	Well @ 4702.00ft
<b>Well:</b>	Wells Ranch State AA32-789	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan #2	<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 AA32-789					
Well Position	+N/-S	0.00 ft	Northing:	1,402,944.41 usft	Latitude:	40.4348940
	+E/-W	0.00 ft	Easting:	3,287,316.53 usft	Longitude:	-104.4678266
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	4,672.00 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	9/15/2017	8.03	66.92	52,414.24388641

<b>Design</b>	Plan #2				
<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	351.20	

<b>Survey Tool Program</b>	<b>Date</b>	4/19/2018			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
0.00	17,489.15	Plan #2 (Wellbore #1)	2_MWD+IFR1+MS	A008Mb: IFR dec & multi-station analysis	

<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 AA32-789
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	Well @ 4702.00ft
<b>Site:</b>	BB Section 05	<b>MD Reference:</b>	Well @ 4702.00ft
<b>Well:</b>	Wells Ranch State AA32-789	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan #2	<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	262.41	2,099.98	-0.23	-1.73	0.04	2.00	2.00	0.00
2,200.00	4.00	262.41	2,199.84	-0.92	-6.92	0.15	2.00	2.00	0.00
2,300.00	6.00	262.41	2,299.45	-2.07	-15.56	0.33	2.00	2.00	0.00
2,400.00	8.00	262.41	2,398.70	-3.68	-27.64	0.59	2.00	2.00	0.00
2,438.99	8.78	262.41	2,437.28	-4.44	-33.27	0.71	2.00	2.00	0.00
2,500.00	8.78	262.41	2,497.57	-5.67	-42.51	0.90	0.00	0.00	0.00
2,600.00	8.78	262.41	2,596.40	-7.68	-57.64	1.22	0.00	0.00	0.00
2,700.00	8.78	262.41	2,695.23	-9.70	-72.77	1.54	0.00	0.00	0.00
2,800.00	8.78	262.41	2,794.05	-11.72	-87.90	1.86	0.00	0.00	0.00
2,900.00	8.78	262.41	2,892.88	-13.73	-103.03	2.18	0.00	0.00	0.00
3,000.00	8.78	262.41	2,991.71	-15.75	-118.16	2.50	0.00	0.00	0.00
3,100.00	8.78	262.41	3,090.54	-17.77	-133.29	2.82	0.00	0.00	0.00
3,200.00	8.78	262.41	3,189.37	-19.78	-148.42	3.15	0.00	0.00	0.00
3,300.00	8.78	262.41	3,288.19	-21.80	-163.55	3.47	0.00	0.00	0.00
3,400.00	8.78	262.41	3,387.02	-23.82	-178.68	3.79	0.00	0.00	0.00
3,500.00	8.78	262.41	3,485.85	-25.83	-193.81	4.11	0.00	0.00	0.00
3,600.00	8.78	262.41	3,584.68	-27.85	-208.94	4.43	0.00	0.00	0.00
3,700.00	8.78	262.41	3,683.51	-29.87	-224.07	4.75	0.00	0.00	0.00
3,800.00	8.78	262.41	3,782.34	-31.88	-239.20	5.07	0.00	0.00	0.00
3,900.00	8.78	262.41	3,881.16	-33.90	-254.33	5.39	0.00	0.00	0.00
4,000.00	8.78	262.41	3,979.99	-35.92	-269.46	5.71	0.00	0.00	0.00
4,100.00	8.78	262.41	4,078.82	-37.93	-284.59	6.03	0.00	0.00	0.00
4,200.00	8.78	262.41	4,177.65	-39.95	-299.72	6.35	0.00	0.00	0.00
4,300.00	8.78	262.41	4,276.48	-41.97	-314.85	6.67	0.00	0.00	0.00
4,400.00	8.78	262.41	4,375.31	-43.98	-329.98	6.99	0.00	0.00	0.00
4,500.00	8.78	262.41	4,474.13	-46.00	-345.11	7.31	0.00	0.00	0.00
4,600.00	8.78	262.41	4,572.96	-48.02	-360.24	7.64	0.00	0.00	0.00
4,700.00	8.78	262.41	4,671.79	-50.03	-375.37	7.96	0.00	0.00	0.00
4,800.00	8.78	262.41	4,770.62	-52.05	-390.50	8.28	0.00	0.00	0.00
4,900.00	8.78	262.41	4,869.45	-54.07	-405.63	8.60	0.00	0.00	0.00
5,000.00	8.78	262.41	4,968.27	-56.08	-420.76	8.92	0.00	0.00	0.00
5,100.00	8.78	262.41	5,067.10	-58.10	-435.89	9.24	0.00	0.00	0.00
5,200.00	8.78	262.41	5,165.93	-60.12	-451.02	9.56	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 AA32-789
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	Well @ 4702.00ft
<b>Site:</b>	BB Section 05	<b>MD Reference:</b>	Well @ 4702.00ft
<b>Well:</b>	Wells Ranch State AA32-789	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan #2	<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	8.78	262.41	5,264.76	-62.13	-466.15	9.88	0.00	0.00	0.00
5,400.00	8.78	262.41	5,363.59	-64.15	-481.28	10.20	0.00	0.00	0.00
5,500.00	8.78	262.41	5,462.42	-66.17	-496.41	10.52	0.00	0.00	0.00
5,600.00	8.78	262.41	5,561.24	-68.18	-511.54	10.84	0.00	0.00	0.00
5,700.00	8.78	262.41	5,660.07	-70.20	-526.67	11.16	0.00	0.00	0.00
5,800.00	8.78	262.41	5,758.90	-72.22	-541.80	11.48	0.00	0.00	0.00
5,900.00	8.78	262.41	5,857.73	-74.23	-556.93	11.80	0.00	0.00	0.00
6,000.00	8.78	262.41	5,956.56	-76.25	-572.06	12.12	0.00	0.00	0.00
6,083.84	8.78	262.41	6,039.41	-77.94	-584.74	12.39	0.00	0.00	0.00
6,100.00	8.50	271.93	6,055.39	-78.06	-587.16	12.64	9.00	-1.70	58.89
6,200.00	11.67	322.16	6,154.01	-69.81	-600.78	22.88	9.00	3.17	50.23
6,300.00	19.00	342.59	6,250.45	-46.24	-611.88	47.88	9.00	7.33	20.43
6,400.00	27.32	351.45	6,342.34	-7.93	-620.18	87.00	9.00	8.32	8.85
6,500.00	35.96	356.34	6,427.41	44.17	-625.48	139.30	9.00	8.63	4.90
6,585.30	43.43	359.13	6,493.00	98.56	-627.53	193.36	9.00	8.76	3.27
6,600.00	44.75	359.13	6,503.56	108.79	-627.68	203.49	9.00	9.00	0.00
6,700.00	53.75	359.13	6,568.77	184.45	-628.83	278.45	9.00	9.00	0.00
6,800.00	62.75	359.13	6,621.34	269.39	-630.12	362.58	9.00	9.00	0.00
6,900.00	71.75	359.13	6,659.98	361.50	-631.52	453.82	9.00	9.00	0.00
7,000.00	80.75	359.13	6,683.72	458.53	-632.99	549.93	9.00	9.00	0.00
7,100.00	89.75	359.13	6,692.00	558.07	-634.51	648.53	9.00	9.00	0.00
7,102.80	90.00	359.13	6,692.00	560.87	-634.55	651.30	9.00	9.00	0.00
7,200.00	90.00	359.13	6,692.00	658.06	-636.02	747.58	0.00	0.00	0.00
7,300.00	90.00	359.13	6,692.00	758.05	-637.54	846.62	0.00	0.00	0.00
7,400.00	90.00	359.13	6,692.00	858.03	-639.06	945.67	0.00	0.00	0.00
7,500.00	90.00	359.13	6,692.00	958.02	-640.58	1,044.71	0.00	0.00	0.00
7,600.00	90.00	359.13	6,692.00	1,058.01	-642.10	1,143.76	0.00	0.00	0.00
7,700.00	90.00	359.13	6,692.00	1,158.00	-643.62	1,242.80	0.00	0.00	0.00
7,800.00	90.00	359.13	6,692.00	1,257.99	-645.13	1,341.85	0.00	0.00	0.00
7,900.00	90.00	359.13	6,692.00	1,357.98	-646.65	1,440.89	0.00	0.00	0.00
8,000.00	90.00	359.13	6,692.00	1,457.97	-648.17	1,539.94	0.00	0.00	0.00
8,100.00	90.00	359.13	6,692.00	1,557.95	-649.69	1,638.98	0.00	0.00	0.00
8,200.00	90.00	359.13	6,692.00	1,657.94	-651.21	1,738.03	0.00	0.00	0.00
8,300.00	90.00	359.13	6,692.00	1,757.93	-652.73	1,837.07	0.00	0.00	0.00
8,400.00	90.00	359.13	6,692.00	1,857.92	-654.25	1,936.11	0.00	0.00	0.00
8,500.00	90.00	359.13	6,692.00	1,957.91	-655.76	2,035.16	0.00	0.00	0.00
8,600.00	90.00	359.13	6,692.00	2,057.90	-657.28	2,134.20	0.00	0.00	0.00
8,700.00	90.00	359.13	6,692.00	2,157.89	-658.80	2,233.25	0.00	0.00	0.00
8,800.00	90.00	359.13	6,692.00	2,257.87	-660.32	2,332.29	0.00	0.00	0.00
8,900.00	90.00	359.13	6,692.00	2,357.86	-661.84	2,431.34	0.00	0.00	0.00
9,000.00	90.00	359.13	6,692.00	2,457.85	-663.36	2,530.38	0.00	0.00	0.00
9,100.00	90.00	359.13	6,692.00	2,557.84	-664.87	2,629.43	0.00	0.00	0.00
9,200.00	90.00	359.13	6,692.00	2,657.83	-666.39	2,728.47	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 AA32-789
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	Well @ 4702.00ft
<b>Site:</b>	BB Section 05	<b>MD Reference:</b>	Well @ 4702.00ft
<b>Well:</b>	Wells Ranch State AA32-789	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan #2	<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	359.13	6,692.00	2,757.82	-667.91	2,827.52	0.00	0.00	0.00
9,400.00	90.00	359.13	6,692.00	2,857.80	-669.43	2,926.56	0.00	0.00	0.00
9,500.00	90.00	359.13	6,692.00	2,957.79	-670.95	3,025.61	0.00	0.00	0.00
9,600.00	90.00	359.13	6,692.00	3,057.78	-672.47	3,124.65	0.00	0.00	0.00
9,700.00	90.00	359.13	6,692.00	3,157.77	-673.98	3,223.70	0.00	0.00	0.00
9,800.00	90.00	359.13	6,692.00	3,257.76	-675.50	3,322.74	0.00	0.00	0.00
9,900.00	90.00	359.13	6,692.00	3,357.75	-677.02	3,421.78	0.00	0.00	0.00
10,000.00	90.00	359.13	6,692.00	3,457.74	-678.54	3,520.83	0.00	0.00	0.00
10,100.00	90.00	359.13	6,692.00	3,557.72	-680.06	3,619.87	0.00	0.00	0.00
10,200.00	90.00	359.13	6,692.00	3,657.71	-681.58	3,718.92	0.00	0.00	0.00
10,300.00	90.00	359.13	6,692.00	3,757.70	-683.09	3,817.96	0.00	0.00	0.00
10,400.00	90.00	359.13	6,692.00	3,857.69	-684.61	3,917.01	0.00	0.00	0.00
10,500.00	90.00	359.13	6,692.00	3,957.68	-686.13	4,016.05	0.00	0.00	0.00
10,600.00	90.00	359.13	6,692.00	4,057.67	-687.65	4,115.10	0.00	0.00	0.00
10,700.00	90.00	359.13	6,692.00	4,157.65	-689.17	4,214.14	0.00	0.00	0.00
10,800.00	90.00	359.13	6,692.00	4,257.64	-690.69	4,313.19	0.00	0.00	0.00
10,900.00	90.00	359.13	6,692.00	4,357.63	-692.20	4,412.23	0.00	0.00	0.00
11,000.00	90.00	359.13	6,692.00	4,457.62	-693.72	4,511.28	0.00	0.00	0.00
11,100.00	90.00	359.13	6,692.00	4,557.61	-695.24	4,610.32	0.00	0.00	0.00
11,200.00	90.00	359.13	6,692.00	4,657.60	-696.76	4,709.37	0.00	0.00	0.00
11,300.00	90.00	359.13	6,692.00	4,757.59	-698.28	4,808.41	0.00	0.00	0.00
11,400.00	90.00	359.13	6,692.00	4,857.57	-699.80	4,907.45	0.00	0.00	0.00
11,500.00	90.00	359.13	6,692.00	4,957.56	-701.31	5,006.50	0.00	0.00	0.00
11,600.00	90.00	359.13	6,692.00	5,057.55	-702.83	5,105.54	0.00	0.00	0.00
11,700.00	90.00	359.13	6,692.00	5,157.54	-704.35	5,204.59	0.00	0.00	0.00
11,800.00	90.00	359.13	6,692.00	5,257.53	-705.87	5,303.63	0.00	0.00	0.00
11,802.80	90.00	359.13	6,692.00	5,260.32	-705.91	5,306.40	0.00	0.00	0.00
11,900.00	90.00	357.67	6,692.00	5,357.49	-708.62	5,402.84	1.50	0.00	-1.50
12,000.00	90.00	356.17	6,692.00	5,457.34	-713.99	5,502.34	1.50	0.00	-1.50
12,100.00	90.00	354.67	6,692.00	5,557.02	-721.98	5,602.06	1.50	0.00	-1.50
12,200.00	90.00	353.17	6,692.00	5,656.45	-732.56	5,701.95	1.50	0.00	-1.50
12,300.00	90.00	351.67	6,692.00	5,755.58	-745.75	5,801.92	1.50	0.00	-1.50
12,400.00	90.00	350.17	6,692.00	5,854.32	-761.53	5,901.92	1.50	0.00	-1.50
12,438.44	90.00	349.60	6,692.00	5,892.16	-768.28	5,940.35	1.50	0.00	-1.50
12,500.00	90.00	349.60	6,692.00	5,952.71	-779.40	6,001.88	0.00	0.00	0.00
12,600.00	90.00	349.60	6,692.00	6,051.07	-797.46	6,101.85	0.00	0.00	0.00
12,700.00	90.00	349.60	6,692.00	6,149.42	-815.52	6,201.81	0.00	0.00	0.00
12,800.00	90.00	349.60	6,692.00	6,247.78	-833.58	6,301.77	0.00	0.00	0.00
12,900.00	90.00	349.60	6,692.00	6,346.13	-851.64	6,401.73	0.00	0.00	0.00
13,000.00	90.00	349.60	6,692.00	6,444.49	-869.70	6,501.69	0.00	0.00	0.00
13,100.00	90.00	349.60	6,692.00	6,542.85	-887.76	6,601.65	0.00	0.00	0.00
13,200.00	90.00	349.60	6,692.00	6,641.20	-905.82	6,701.61	0.00	0.00	0.00
13,300.00	90.00	349.60	6,692.00	6,739.56	-923.88	6,801.57	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 AA32-789
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	Well @ 4702.00ft
<b>Site:</b>	BB Section 05	<b>MD Reference:</b>	Well @ 4702.00ft
<b>Well:</b>	Wells Ranch State AA32-789	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan #2	<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)
13,400.00	90.00	349.60	6,692.00	6,837.91	-941.94	6,901.53	0.00	0.00	0.00
13,500.00	90.00	349.60	6,692.00	6,936.27	-960.00	7,001.49	0.00	0.00	0.00
13,600.00	90.00	349.60	6,692.00	7,034.62	-978.06	7,101.45	0.00	0.00	0.00
13,700.00	90.00	349.60	6,692.00	7,132.98	-996.12	7,201.41	0.00	0.00	0.00
13,800.00	90.00	349.60	6,692.00	7,231.34	-1,014.18	7,301.37	0.00	0.00	0.00
13,900.00	90.00	349.60	6,692.00	7,329.69	-1,032.24	7,401.33	0.00	0.00	0.00
14,000.00	90.00	349.60	6,692.00	7,428.05	-1,050.30	7,501.29	0.00	0.00	0.00
14,100.00	90.00	349.60	6,692.00	7,526.40	-1,068.36	7,601.25	0.00	0.00	0.00
14,200.00	90.00	349.60	6,692.00	7,624.76	-1,086.42	7,701.21	0.00	0.00	0.00
14,300.00	90.00	349.60	6,692.00	7,723.11	-1,104.48	7,801.18	0.00	0.00	0.00
14,400.00	90.00	349.60	6,692.00	7,821.47	-1,122.54	7,901.14	0.00	0.00	0.00
14,500.00	90.00	349.60	6,692.00	7,919.83	-1,140.60	8,001.10	0.00	0.00	0.00
14,600.00	90.00	349.60	6,692.00	8,018.18	-1,158.66	8,101.06	0.00	0.00	0.00
14,700.00	90.00	349.60	6,692.00	8,116.54	-1,176.72	8,201.02	0.00	0.00	0.00
14,800.00	90.00	349.60	6,692.00	8,214.89	-1,194.78	8,300.98	0.00	0.00	0.00
14,900.00	90.00	349.60	6,692.00	8,313.25	-1,212.84	8,400.94	0.00	0.00	0.00
15,000.00	90.00	349.60	6,692.00	8,411.60	-1,230.90	8,500.90	0.00	0.00	0.00
15,100.00	90.00	349.60	6,692.00	8,509.96	-1,248.96	8,600.86	0.00	0.00	0.00
15,200.00	90.00	349.60	6,692.00	8,608.31	-1,267.02	8,700.82	0.00	0.00	0.00
15,300.00	90.00	349.60	6,692.00	8,706.67	-1,285.08	8,800.78	0.00	0.00	0.00
15,400.00	90.00	349.60	6,692.00	8,805.03	-1,303.14	8,900.74	0.00	0.00	0.00
15,500.00	90.00	349.60	6,692.00	8,903.38	-1,321.19	9,000.70	0.00	0.00	0.00
15,600.00	90.00	349.60	6,692.00	9,001.74	-1,339.25	9,100.66	0.00	0.00	0.00
15,700.00	90.00	349.60	6,692.00	9,100.09	-1,357.31	9,200.62	0.00	0.00	0.00
15,800.00	90.00	349.60	6,692.00	9,198.45	-1,375.37	9,300.58	0.00	0.00	0.00
15,900.00	90.00	349.60	6,692.00	9,296.80	-1,393.43	9,400.54	0.00	0.00	0.00
16,000.00	90.00	349.60	6,692.00	9,395.16	-1,411.49	9,500.51	0.00	0.00	0.00
16,100.00	90.00	349.60	6,692.00	9,493.52	-1,429.55	9,600.47	0.00	0.00	0.00
16,200.00	90.00	349.60	6,692.00	9,591.87	-1,447.61	9,700.43	0.00	0.00	0.00
16,300.00	90.00	349.60	6,692.00	9,690.23	-1,465.67	9,800.39	0.00	0.00	0.00
16,400.00	90.00	349.60	6,692.00	9,788.58	-1,483.73	9,900.35	0.00	0.00	0.00
16,500.00	90.00	349.60	6,692.00	9,886.94	-1,501.79	10,000.31	0.00	0.00	0.00
16,600.00	90.00	349.60	6,692.00	9,985.29	-1,519.85	10,100.27	0.00	0.00	0.00
16,700.00	90.00	349.60	6,692.00	10,083.65	-1,537.91	10,200.23	0.00	0.00	0.00
16,800.00	90.00	349.60	6,692.00	10,182.01	-1,555.97	10,300.19	0.00	0.00	0.00
16,900.00	90.00	349.60	6,692.00	10,280.36	-1,574.03	10,400.15	0.00	0.00	0.00
17,000.00	90.00	349.60	6,692.00	10,378.72	-1,592.09	10,500.11	0.00	0.00	0.00
17,100.00	90.00	349.60	6,692.00	10,477.07	-1,610.15	10,600.07	0.00	0.00	0.00
17,200.00	90.00	349.60	6,692.00	10,575.43	-1,628.21	10,700.03	0.00	0.00	0.00
17,300.00	90.00	349.60	6,692.00	10,673.78	-1,646.27	10,799.99	0.00	0.00	0.00
17,400.00	90.00	349.60	6,692.00	10,772.14	-1,664.33	10,899.95	0.00	0.00	0.00
17,489.15	90.00	349.60	6,692.00	10,859.83	-1,680.43	10,989.07	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 AA32-789
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	Well @ 4702.00ft
<b>Site:</b>	BB Section 05	<b>MD Reference:</b>	Well @ 4702.00ft
<b>Well:</b>	Wells Ranch State AA32-789	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan #2	<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	0.01	6,493.00	98.56	-627.53	1,403,042.97	3,286,689.00	40.4351846	-104.4700766
Wells Ranch State AA32 - plan hits target center - Point	0.00	0.00	6,692.00	10,859.83	-1,680.43	1,413,804.22	3,285,636.10	40.4647555	-104.4734113

### Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
194.00	194.00	Pierre			
473.00	473.00	Upper Pierre Aquifer Top			
1,534.00	1,534.00	Upper Pierre Aquifer Base			
4,318.74	4,295.00	Sussex			
4,745.75	4,717.00	Parkman			
4,781.16	4,752.00	Shannon			
5,813.26	5,772.00	Teepee Buttes			
6,533.49	6,454.00	Sharon Springs			
6,585.30	6,493.00	Top A Chalk			
6,625.05	6,521.00	Top A Marl			
6,730.12	6,586.00	Top B Chalk			
6,794.92	6,619.00	Top B Marl			
6,916.71	6,665.00	Top C Chalk			

### Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
2000	2000	0	0	Start Build 2.00
6084	6039	-4	-33	Start DLS 9.00 TFO 105.58
6585	6493	-78	-585	TPZ at 6585.3 MD
7103	6692	99	-628	LP at 7102.80 MD
11,803	6692	561	-635	Start DLS 1.50 TFO -90.00
12,438	6692	5260	-706	Start 5050.71 hold at 12438.44 MD
17,489	6692	5892	-768	TD at 17489.15 MD

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



# **Northern Region - DJ Basin**

**Wells Ranch**

**BB Section 05**

**Wells Ranch State AA32-789**

**Wellbore #1**

**Plan #2**

## **Anticollision Summary Report**

**19 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 AA32-789
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	Well @ 4702.00ft
<b>Reference Site:</b>	BB Section 05	<b>MD Reference:</b>	Well @ 4702.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Wells Ranch State AA32-789	<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 #2	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	Plan #2		
<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>	4/19/2018		
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.00	17,489.15	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 28						
State 6524 11-28 - Original Drilling - Original Drilling - As	15,506.94	6,595.30	6,592.45	6,436.15	42.177	CC
State 6524 11-28 - Original Drilling - Original Drilling - As	15,600.00	6,591.76	6,593.11	6,436.11	41.994	ES
State 6524 11-28 - Original Drilling - Original Drilling - As	16,900.00	6,542.40	6,737.82	6,572.69	40.803	SF
State 6524 12-28 - Original Drilling - Original Drilling - As	14,505.39	14,505.39	6,279.41	6,158.63	51.989	CC
State 6524 12-28 - Original Drilling - Original Drilling - As	14,600.00	14,600.00	6,280.12	6,158.18	51.501	ES
State 6524 12-28 - Original Drilling - Original Drilling - As	16,900.00	16,900.00	6,720.48	6,575.33	46.301	SF
State 6524 13-28 (SI) - Original Drilling - Original Drilling	13,122.76	6,684.40	6,151.03	6,068.60	74.622	CC
State 6524 13-28 (SI) - Original Drilling - Original Drilling	13,200.00	6,687.90	6,151.51	6,068.41	74.022	ES
State 6524 13-28 (SI) - Original Drilling - Original Drilling	15,400.00	6,813.52	6,558.32	6,459.62	66.446	SF
State 6524 21-28 - Original Drilling - Original Drilling - As	15,588.60	6,727.96	8,138.43	8,035.93	79.401	CC
State 6524 21-28 - Original Drilling - Original Drilling - As	15,700.00	6,727.21	8,139.19	8,035.72	78.664	ES
State 6524 21-28 - Original Drilling - Original Drilling - As	17,489.15	6,715.14	8,357.39	8,240.37	71.422	SF
State 6524 22-28 (SI) - Original Drilling - Original Drilling	14,148.14	6,631.26	7,777.01	7,686.58	86.003	CC
State 6524 22-28 (SI) - Original Drilling - Original Drilling	14,200.00	6,630.18	7,777.18	7,686.31	85.590	ES
State 6524 22-28 (SI) - Original Drilling - Original Drilling	17,200.00	6,561.02	8,354.13	8,243.06	75.214	SF
State 6524 24-28 - Original Drilling - Original Drilling - As	12,163.09	6,469.93	7,311.06	7,214.31	75.565	CC
State 6524 24-28 - Original Drilling - Original Drilling - As	12,200.00	6,470.84	7,311.33	7,214.28	75.334	ES
State 6524 24-28 - Original Drilling - Original Drilling - As	14,700.00	6,526.36	7,899.89	7,785.37	68.980	SF
State Lease 14-28 (SI) - Original Drilling - Original Drilling	12,188.62	6,668.60	5,985.37	5,908.47	77.828	CC
State Lease 14-28 (SI) - Original Drilling - Original Drilling	12,200.00	6,668.57	5,985.40	5,908.41	77.739	ES
State Lease 14-28 (SI) - Original Drilling - Original Drilling	14,100.00	6,663.29	6,393.36	6,303.87	71.436	SF
State Lease 23-28 - Original Drilling - Original Drilling - A	12,823.20	6,656.91	7,611.78	7,531.79	95.159	CC
State Lease 23-28 - Original Drilling - Original Drilling - A	12,900.00	6,656.97	7,612.17	7,531.53	94.407	ES
State Lease 23-28 - Original Drilling - Original Drilling - A	16,100.00	6,660.64	8,287.13	8,184.90	81.057	SF
State Lease 32-28 (PA) - Original Drilling - Original Drilling	13,928.51	6,746.00	8,886.39	8,685.82	44.306	CC
State Lease 32-28 (PA) - Original Drilling - Original Drilling	14,000.00	6,746.00	8,886.68	8,685.50	44.174	ES
State Lease 32-28 (PA) - Original Drilling - Original Drilling	16,400.00	6,746.00	9,223.68	9,004.49	42.081	SF
State Lease 6524 41-28 (PA) - Original Drilling - Original						Out of range
Wells Ranch State 28C - Original Drilling - Original Drilling	14,606.14	6,750.66	9,778.75	9,684.97	104.268	CC
Wells Ranch State 28C - Original Drilling - Original Drilling	14,700.00	6,751.78	9,779.20	9,684.61	103.382	ES
Wells Ranch State 28C - Original Drilling - Original Drilling	16,600.00	6,775.67	9,979.91	9,870.29	91.041	SF
Wells Ranch State 28D - Original Drilling - Original Drilling	12,300.84	6,957.00	9,144.78	9,068.20	119.404	CC, ES
Wells Ranch State 28D - Original Drilling - Original Drilling	16,000.00	6,957.00	9,985.06	9,883.41	98.232	SF
Wells Ranch State 28R - Original Drilling - Original Drilling						Out of range
Wells Ranch State 28S - Original Drilling - Original Drilling	13,148.83	6,961.00	9,438.04	9,355.16	113.873	CC
Wells Ranch State 28S - Original Drilling - Original Drilling	13,200.00	6,961.00	9,438.18	9,354.87	113.293	ES
Wells Ranch State 28S - Original Drilling - Original Drilling	16,400.00	6,961.00	9,982.32	9,875.75	93.664	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 AA32-789
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	Well @ 4702.00ft
<b>Reference Site:</b>	BB Section 05	<b>MD Reference:</b>	Well @ 4702.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Wells Ranch State AA32-789	<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 #2	<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 31-28 - Original Drilling - Original Drill	15,312.11	6,813.14	9,341.76	9,242.08	93.711	CC
Wells Ranch State 31-28 - Original Drilling - Original Drill	15,400.00	6,812.40	9,342.18	9,241.73	93.008	ES
Wells Ranch State 31-28 - Original Drilling - Original Drill	17,489.15	6,795.54	9,592.06	9,475.60	82.360	SF
Wells Ranch State 32-28 - Original Drilling - Original Drill	14,115.75	6,848.83	8,848.56	8,758.35	98.090	CC
Wells Ranch State 32-28 - Original Drilling - Original Drill	14,200.00	6,849.52	8,848.96	8,758.04	97.318	ES
Wells Ranch State 32-28 - Original Drilling - Original Drill	17,489.15	6,873.66	9,469.75	9,355.73	83.058	SF
Wells Ranch State 33-28 - Original Drilling - Original Drill	12,653.07	6,746.81	8,617.61	8,539.20	109.912	CC
Wells Ranch State 33-28 - Original Drilling - Original Drill	12,700.00	6,746.14	8,617.74	8,538.95	109.377	ES
Wells Ranch State 33-28 - Original Drilling - Original Drill	16,700.00	6,686.52	9,520.27	9,414.85	90.301	SF
Wells Ranch State 34-28 - Original Drilling - Original Drill	12,119.61	6,947.00	8,557.53	8,482.09	113.434	CC, ES
Wells Ranch State 34-28 - Original Drilling - Original Drill	15,700.00	6,947.00	9,535.63	9,437.45	97.122	SF
Wells Ranch State 41-28 - Original Drilling - Original Drill						Out of range
Wells Ranch State 42-28 - Original Drilling - Original Drill						Out of range
Wells Ranch State 43-28 - Original Drilling - Original Drill	12,523.29	6,712.99	9,927.91	9,850.76	128.672	CC
Wells Ranch State 43-28 - Original Drilling - Original Drill	12,600.00	6,717.89	9,928.21	9,850.41	127.610	ES
Wells Ranch State 43-28 - Original Drilling - Original Drill	13,700.00	6,787.16	9,997.10	9,910.24	115.093	SF
Wells Ranch State 44-28 - Original Drilling - Original Drill	12,107.24	6,947.00	9,768.59	9,693.46	130.015	CC, ES
Wells Ranch State 44-28 - Original Drilling - Original Drill	13,600.00	6,947.00	9,994.90	9,908.83	116.130	SF

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

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Wells Ranch State AA32-789
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	Well @ 4702.00ft
<b>Reference Site:</b>	BB Section 05	<b>MD Reference:</b>	Well @ 4702.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Wells Ranch State AA32-789	<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 #2	<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	13,020.86	6,649.62	1,503.08	1,421.56	18.438	CC, ES
J&L Farms 29B PR - Wellbore #1 - Gyro Surveys	13,200.00	6,650.34	1,513.72	1,430.58	18.207	SF
J&L Farms 11-29 PA - Wellbore #1 - Gyro Surveys	16,563.60	6,669.53	1,479.33	1,368.99	13.408	CC, ES
J&L Farms 11-29 PA - Wellbore #1 - Gyro Surveys	16,700.00	6,669.53	1,485.60	1,374.03	13.316	SF
J&L Farms 12-29 PR - Wellbore #1 - Gyro Surveys	15,295.77	6,636.84	1,134.90	1,035.22	11.386	CC
J&L Farms 12-29 PR - Wellbore #1 - Gyro Surveys	15,300.00	6,636.91	1,134.91	1,035.18	11.380	ES
J&L Farms 12-29 PR - Wellbore #1 - Gyro Surveys	15,400.00	6,638.49	1,139.68	1,038.98	11.319	SF
J&L Farms 13-29 SI - Wellbore #1 - Gyro Surveys	13,855.82	6,643.29	948.72	860.66	10.774	CC, ES
J&L Farms 13-29 SI - Wellbore #1 - Gyro Surveys	13,900.00	6,642.95	949.74	861.18	10.724	SF
J&L Farms 14-29 SI - Wellbore #1 - Gyro Surveys	12,679.79	6,659.30	738.49	659.57	9.357	CC, ES
J&L Farms 14-29 SI - Wellbore #1 - Gyro Surveys	12,700.00	6,659.51	738.77	659.58	9.329	SF
J&L Farms 21-29 PA - Wellbore #1 - Gyro Surveys	16,394.93	5,825.00	2,550.30	2,447.36	24.775	CC
J&L Farms 21-29 PA - Wellbore #1 - Gyro Surveys	16,400.00	5,825.00	2,550.30	2,447.31	24.763	ES
J&L Farms 21-29 PA - Wellbore #1 - Gyro Surveys	16,800.00	5,825.00	2,582.27	2,476.25	24.358	SF
J&L Farms 22-29 PR - Wellbore #1 - Gyro Surveys	14,884.28	6,540.88	2,731.25	2,635.40	28.494	CC
J&L Farms 22-29 PR - Wellbore #1 - Gyro Surveys	14,900.00	6,540.81	2,731.30	2,635.29	28.449	ES
J&L Farms 22-29 PR - Wellbore #1 - Gyro Surveys	15,300.00	6,538.80	2,762.71	2,663.53	27.856	SF
J&L Farms 23-29 PR - Wellbore #1 - Gyro Surveys	13,714.28	6,647.66	2,695.56	2,608.55	30.979	CC, ES
J&L Farms 23-29 PR - Wellbore #1 - Gyro Surveys	14,200.00	6,635.31	2,738.94	2,648.19	30.179	SF
J&L Farms 24-29 SI - Wellbore #1 - No Surveys	12,453.92	6,666.00	1,996.33	1,930.61	30.374	CC, ES
J&L Farms 24-29 SI - Wellbore #1 - No Surveys	12,800.00	6,666.00	2,026.11	1,957.59	29.570	SF
J&L Farms 29-34 SI - Wellbore #1 - Gyro Surveys	12,327.26	6,690.28	3,586.60	3,510.07	46.867	CC, ES
J&L Farms 29-34 SI - Wellbore #1 - Gyro Surveys	13,200.00	6,700.00	3,714.23	3,631.52	44.909	SF
J&L Farms 31-29 SI - Wellbore #1 - Gyro Surveys	15,908.29	6,666.05	4,124.27	4,019.43	39.339	CC, ES
J&L Farms 31-29 SI - Wellbore #1 - Gyro Surveys	16,800.00	6,673.77	4,219.56	4,108.12	37.862	SF
J&L Farms 32-29D PR - Wellbore #1 - No Surveys	14,748.10	6,680.00	4,352.13	4,221.58	33.339	CC
J&L Farms 32-29D PR - Wellbore #1 - No Surveys	14,800.00	6,680.00	4,352.44	4,221.42	33.221	ES
J&L Farms 32-29D PR - Wellbore #1 - No Surveys	15,600.00	6,680.00	4,434.72	4,297.61	32.345	SF
J&L Farms 33-29 SI - Wellbore #1 - Gyro Surveys	13,672.72	6,685.43	3,843.59	3,756.81	44.293	CC
J&L Farms 33-29 SI - Wellbore #1 - Gyro Surveys	13,700.00	6,685.45	3,843.69	3,756.66	44.167	ES
J&L Farms 33-29 SI - Wellbore #1 - Gyro Surveys	14,600.00	6,686.27	3,953.86	3,860.24	42.230	SF
J&L Farms 41-29 SI - Wellbore #1 - No Surveys	15,921.03	6,680.00	5,422.78	5,282.65	38.697	CC
J&L Farms 41-29 SI - Wellbore #1 - No Surveys	16,000.00	6,680.00	5,423.36	5,282.51	38.506	ES
J&L Farms 41-29 SI - Wellbore #1 - No Surveys	17,100.00	6,680.00	5,549.46	5,400.44	37.239	SF
J&L Farms 42-29 PA - Wellbore #1 - Gyro Surveys	14,401.00	6,550.00	5,245.10	5,153.02	56.964	CC, ES
J&L Farms 42-29 PA - Wellbore #1 - Gyro Surveys	15,900.00	6,550.00	5,455.10	5,352.27	53.050	SF
J&L Farms 43-29 PA - Wellbore #1 - Gyro Surveys	13,232.99	6,545.79	5,074.87	4,992.18	61.376	CC
J&L Farms 43-29 PA - Wellbore #1 - Gyro Surveys	13,300.00	6,547.76	5,075.31	4,992.03	60.944	ES
J&L Farms 43-29 PA - Wellbore #1 - Gyro Surveys	14,800.00	6,587.36	5,311.17	5,217.15	56.490	SF
J&L Farms 44-29 SI - Wellbore #1 - No Surveys	12,227.22	6,704.00	4,819.19	4,708.12	43.391	CC, ES
J&L Farms 44-29 SI - Wellbore #1 - No Surveys	13,200.00	6,704.00	4,963.13	4,845.13	42.060	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 AA32-789
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	Well @ 4702.00ft
<b>Reference Site:</b>	BB Section 05	<b>MD Reference:</b>	Well @ 4702.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Wells Ranch State AA32-789	<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 #2	<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 30						
Fairmeadows 01-30 - Original Drilling - Original Drilling -	13,512.69	6,928.39	4,286.09	4,198.67	49.026	CC, ES
Fairmeadows 01-30 - Original Drilling - Original Drilling -	14,400.00	6,886.17	4,376.77	4,284.63	47.499	SF
Fairmeadows 03-30 - Original Drilling - Original Drilling -	14,843.20	6,660.49	4,123.48	4,027.41	42.924	CC
Fairmeadows 03-30 - Original Drilling - Original Drilling -	14,900.00	6,661.31	4,123.87	4,027.41	42.753	ES
Fairmeadows 03-30 - Original Drilling - Original Drilling -	15,600.00	6,672.21	4,192.34	4,092.06	41.805	SF
Fairmeadows 04-30 - Original Drilling - Original Drilling -	14,404.22	6,664.89	1,632.88	1,523.34	14.906	CC, ES
Fairmeadows 04-30 - Original Drilling - Original Drilling -	14,500.00	6,664.11	1,635.69	1,525.76	14.879	SF
J&L Farms 31-30 - Original Drilling - Original Drilling - As	16,964.83	6,685.33	1,051.33	937.77	9.258	CC, ES
J&L Farms 31-30 - Original Drilling - Original Drilling - As	17,000.00	6,685.40	1,051.92	938.27	9.256	SF
J&L Farms 32-30 - Original Drilling - Original Drilling - As	15,680.11	6,637.29	1,338.45	1,235.53	13.005	CC, ES
J&L Farms 32-30 - Original Drilling - Original Drilling - As	15,700.00	6,636.66	1,338.59	1,235.59	12.996	SF
Larsen Fairmeadows 02-30 - Original Drilling - Original D	13,135.89	6,626.72	1,870.17	1,787.82	22.711	CC, ES
Larsen Fairmeadows 02-30 - Original Drilling - Original D	13,300.00	6,627.69	1,877.36	1,794.32	22.608	SF
Larsen Fairmeadows 05-30 - Original Drilling - Original D	13,267.65	6,619.18	3,093.47	3,010.09	37.104	CC
Larsen Fairmeadows 05-30 - Original Drilling - Original D	13,300.00	6,619.07	3,093.63	3,010.06	37.017	ES
Larsen Fairmeadows 05-30 - Original Drilling - Original D	13,700.00	6,617.72	3,123.53	3,037.90	36.478	SF
Larson Fairmeadows 06-30 - Original Drilling - Original D	14,633.98	6,536.95	2,919.16	2,825.03	31.012	CC, ES
Larson Fairmeadows 06-30 - Original Drilling - Original D	15,000.00	6,526.95	2,942.01	2,846.02	30.651	SF
Shadow A26-622 - Original Drilling - Original Drilling - As	13,149.02	6,269.00	1,322.00	1,245.81	17.351	CC, ES
Shadow A26-622 - Original Drilling - Original Drilling - As	13,200.00	6,270.16	1,322.98	1,246.61	17.323	SF
Shadow A26-627 - Original Drilling - Original Drilling - As	13,446.38	6,241.00	1,304.49	1,225.95	16.611	CC, ES
Shadow A26-627 - Original Drilling - Original Drilling - As	13,500.00	6,241.00	1,305.59	1,226.89	16.590	SF
Shadow A26-632 - Original Drilling - Original Drilling - As	13,862.15	6,368.92	1,188.63	1,105.75	14.342	CC, ES
Shadow A26-632 - Original Drilling - Original Drilling - As	13,900.00	6,368.15	1,189.23	1,106.21	14.324	SF
Shadow A26-637 - Original Drilling - Original Drilling - As	14,092.85	6,278.80	1,189.48	1,107.91	14.582	CC
Shadow A26-637 - Original Drilling - Original Drilling - As	14,100.00	6,278.78	1,189.50	1,107.90	14.577	ES, SF
Shadow A26-646 - Original Drilling - Original Drilling - As	14,708.53	6,304.33	1,070.30	982.01	12.122	CC, ES, SF
Shadow A26-656 - Original Drilling - Original Drilling - As	15,478.80	6,431.38	989.03	894.46	10.458	CC, ES
Shadow A26-656 - Original Drilling - Original Drilling - As	15,600.00	6,439.39	996.36	900.59	10.404	SF
Shadow A26-663 - Original Drilling - Original Drilling - As	15,798.10	6,431.00	942.75	846.20	9.764	CC
Shadow A26-663 - Original Drilling - Original Drilling - As	15,800.00	6,431.00	942.75	846.20	9.764	ES, SF
Shadow A26-672 - Original Drilling - Original Drilling - As	16,392.47	6,462.83	864.43	762.72	8.499	CC
Shadow A26-672 - Original Drilling - Original Drilling - As	16,400.00	6,463.15	864.46	762.71	8.496	ES, SF
Shadow A26-676 - Original Drilling - Original Drilling - As	16,782.15	6,486.38	798.86	694.40	7.647	CC, ES
Shadow A26-676 - Original Drilling - Original Drilling - As	16,800.00	6,486.24	799.06	694.56	7.647	SF
Shadow A26-685 - Original Drilling - Original Drilling - As	17,275.12	6,570.04	688.68	580.63	6.374	CC, ES, SF
Shadow A26-690 - Original Drilling - Original Drilling - As	17,489.15	6,575.09	706.80	597.27	6.453	CC, ES, SF
Shadow State A26-614 - Original Drilling - Original Drillin	12,605.58	6,287.78	1,393.77	1,321.28	19.226	CC, ES
Shadow State A26-614 - Original Drilling - Original Drillin	12,700.00	6,289.40	1,396.97	1,324.12	19.176	SF
Shadow State A26-618 - Original Drilling - Original Drillin	12,830.94	6,186.00	1,393.39	1,320.25	19.050	CC, ES
Shadow State A26-618 - Original Drilling - Original Drillin	12,900.00	6,186.00	1,395.10	1,321.70	19.008	SF
Wells Ranch 41-30 - Original Drilling - Original Drilling - A	16,798.13	6,645.00	116.06	-105.93	0.523	Level 1, CC
Wells Ranch 41-30 - Original Drilling - Original Drilling - A	16,800.00	6,645.00	116.08	-106.00	0.523	Level 1, ES, SF
Wells Ranch 42-30 - Original Drilling - Original Drilling - A	15,518.38	6,640.00	309.73	98.40	1.466	Level 3, CC, ES, SF
Wells Ranch 43-30 - Original Drilling - Original Drilling - A	14,289.02	6,640.00	340.08	138.74	1.689	CC, ES, SF
Wells Ranch 44-30 - Original Drilling - Original Drilling - A	12,856.00	6,660.00	475.96	285.57	2.500	CC, ES, SF
Wolfe 02-30G - Original Drilling - Original Drilling - As Dri	16,134.98	6,650.77	3,936.51	3,829.86	36.908	CC, ES
Wolfe 02-30G - Original Drilling - Original Drilling - As Dri	16,700.00	6,647.16	3,976.86	3,867.00	36.201	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 AA32-789
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	Well @ 4702.00ft
<b>Reference Site:</b>	BB Section 05	<b>MD Reference:</b>	Well @ 4702.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Wells Ranch State AA32-789	<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 #2	<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 31						
Devries USX AA31-11 - Wellbore #1 - Wellbore #1 - As D	8,955.93	6,778.46	3,259.49	3,204.58	59.358	CC, ES
Devries USX AA31-11 - Wellbore #1 - Wellbore #1 - As D	9,900.00	6,798.95	3,393.40	3,333.24	56.414	SF
Devries USX AA31-19 - Wellbore #1 - Wellbore #1 - As	10,847.27	6,772.92	3,916.11	3,844.30	54.532	CC, ES
Devries USX AA31-19 - Wellbore #1 - Wellbore #1 - As	11,600.00	6,810.01	3,987.75	3,912.32	52.864	SF
UPV 31-10G3 - Wellbore #1 - Wellbore #1 - As Drilled	9,090.37	6,652.50	1,949.06	1,894.35	35.629	CC
UPV 31-10G3 - Wellbore #1 - Wellbore #1 - As Drilled	9,100.00	6,652.40	1,949.08	1,894.32	35.591	ES
UPV 31-10G3 - Wellbore #1 - Wellbore #1 - As Drilled	9,400.00	6,649.39	1,973.49	1,917.03	34.949	SF
UPV 31-12G3 - Wellbore #1 - Wellbore #1 - As Drilled	8,642.88	6,552.50	4,659.87	4,607.73	89.383	CC, ES
UPV 31-12G3 - Wellbore #1 - Wellbore #1 - As Drilled	12,200.00	12,200.00	5,845.34	5,757.25	66.355	SF
UPV 31-13G3 - Wellbore #1 - Wellbore #1 - As Drilled	7,199.06	6,670.42	4,710.17	4,662.65	99.118	CC
UPV 31-13G3 - Wellbore #1 - Wellbore #1 - As Drilled	7,200.00	6,670.42	4,710.17	4,662.65	99.114	ES
UPV 31-13G3 - Wellbore #1 - Wellbore #1 - As Drilled	9,300.00	6,688.07	5,157.45	5,102.19	93.323	SF
UPV 31-14G3 - Wellbore #1 - Wellbore #1 - As Drilled	7,594.30	6,144.75	3,347.06	3,299.25	70.014	CC
UPV 31-14G3 - Wellbore #1 - Wellbore #1 - As Drilled	7,600.00	6,146.23	3,347.06	3,299.23	69.974	ES
UPV 31-14G3 - Wellbore #1 - Wellbore #1 - As Drilled	9,400.00	9,400.00	3,785.98	3,717.86	55.578	SF
UPV 31-15G3 - Wellbore #1 - Wellbore #1 - As Drilled	7,533.29	6,721.19	1,945.82	1,897.43	40.214	CC, ES
UPV 31-15G3 - Wellbore #1 - Wellbore #1 - As Drilled	7,800.00	6,733.17	1,963.97	1,914.75	39.902	SF
UPV 31-16G3 - Wellbore #1 - Wellbore #1 - As Drilled	7,610.05	6,619.71	764.73	716.27	15.781	CC, ES, SF
UPV 31-9G3 - Wellbore #1 - Wellbore #1 - As Drilled	9,037.93	6,647.03	835.10	780.26	15.228	CC, ES
UPV 31-9G3 - Wellbore #1 - Wellbore #1 - As Drilled	9,100.00	6,647.45	837.40	782.17	15.161	SF
Wells Ranch State A36-625 - Original Drilling - Original D	7,896.00	6,638.83	266.30	225.95	6.600	CC, ES, SF
Wells Ranch State A36-635 - Original Drilling - Original D	8,508.13	6,509.37	349.37	305.87	8.031	CC, ES, SF
Wells Ranch State A36-649 - Original Drilling - Original D	9,485.30	6,511.20	348.67	299.64	7.111	CC, ES
Wells Ranch State A36-649 - Original Drilling - Original D	9,500.00	6,511.31	348.98	299.90	7.110	SF
Wells Ranch State A36-655 - Original Drilling - Original D	9,802.43	6,510.23	396.22	344.09	7.600	CC, ES, SF
Wells Ranch State A36-665 - Original Drilling - Original D	10,859.84	6,525.13	347.80	287.17	5.737	CC, ES
Wells Ranch State A36-665 - Original Drilling - Original D	10,900.00	6,524.28	350.11	289.02	5.731	SF
Wells Ranch State A36-675 - Original Drilling - Original D	11,038.92	6,501.10	362.02	301.97	6.029	CC, ES, SF
Wells Ranch State A36-686 - Original Drilling - Original D	11,926.18	6,576.32	297.87	228.51	4.295	CC, ES, SF
Wells Ranch USX AA31-01 - Wellbore #1 - Wellbore #1 -	11,468.68	6,681.69	900.37	830.33	12.856	CC, ES
Wells Ranch USX AA31-01 - Wellbore #1 - Wellbore #1 -	11,500.00	6,681.34	900.91	830.61	12.815	SF



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

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Wells Ranch State AA32-789
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	Well @ 4702.00ft
<b>Reference Site:</b>	BB Section 05	<b>MD Reference:</b>	Well @ 4702.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Wells Ranch State AA32-789	<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 #2	<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	7,562.43	6,662.04	635.31	587.01	13.153	CC, ES
State 14-32 PR - Wellbore #1 - Gyro Surveys	7,600.00	6,663.00	636.42	588.03	13.152	SF
State 23-32 PR - Wellbore #1 - Gyro Surveys	8,806.91	6,671.52	2,074.71	2,021.39	38.914	CC, ES
State 23-32 PR - Wellbore #1 - Gyro Surveys	9,100.00	6,673.39	2,095.31	2,040.73	38.395	SF
State 24-32 PA - Wellbore #1 - No Surveys	2,000.00	1,981.00	1,626.63	1,533.26	17.421	CC
State 24-32 PA - Wellbore #1 - No Surveys	2,200.00	2,180.84	1,632.72	1,529.94	15.885	ES
State 24-32 PA - Wellbore #1 - No Surveys	7,500.00	6,673.00	1,942.29	1,626.10	6.143	SF
State 32-32 PA - Wellbore #1 - No Surveys	10,124.61	6,684.00	3,273.52	3,177.31	34.024	CC, ES
State 32-32 PA - Wellbore #1 - No Surveys	10,700.00	6,684.00	3,323.70	3,224.39	33.469	SF
State 6525 11-32 PA - Wellbore #1 - No Surveys	11,451.99	6,660.00	806.66	701.61	7.679	CC, ES, SF
State 6525 12-32 PA - Wellbore #1 - No Surveys	10,235.85	6,655.00	629.79	533.11	6.514	CC, ES, SF
State 6525 13-32 SI - Wellbore #1 - Gyro Surveys	8,845.60	6,315.00	960.40	911.59	19.674	CC, ES
State 6525 13-32 SI - Wellbore #1 - Gyro Surveys	8,900.00	6,315.00	961.94	912.94	19.631	SF
State 6525 21-32 PA - Wellbore #1 - Gyro Surveys	11,385.10	6,603.04	1,875.33	1,806.14	27.103	CC
State 6525 21-32 PA - Wellbore #1 - Gyro Surveys	11,400.00	6,602.50	1,875.39	1,806.11	27.070	ES
State 6525 21-32 PA - Wellbore #1 - Gyro Surveys	11,600.00	6,595.83	1,887.59	1,817.36	26.877	SF
State 6525 22-32 PR - Wellbore #1 - No Surveys	10,169.22	6,680.00	1,965.53	1,869.06	20.376	CC, ES
State 6525 22-32 PR - Wellbore #1 - No Surveys	10,400.00	6,680.00	1,979.03	1,881.42	20.275	SF
State 6525 31-32 PA - Wellbore #1 - Gyro Surveys	11,484.97	6,669.44	3,238.33	3,168.16	46.147	CC
State 6525 31-32 PA - Wellbore #1 - Gyro Surveys	11,500.00	6,669.23	3,238.36	3,168.09	46.084	ES
State 6525 31-32 PA - Wellbore #1 - Gyro Surveys	12,000.00	6,662.32	3,284.03	3,210.93	44.920	SF
State 6525 33-32 PA - Wellbore #1 - Gyro Surveys	8,727.38	6,573.18	3,307.64	3,255.23	63.106	CC, ES
State 6525 33-32 PA - Wellbore #1 - Gyro Surveys	9,600.00	6,557.08	3,420.77	3,364.57	60.866	SF
State 6525 34-32 PR - Wellbore #1 - Gyro Surveys	1,611.00	1,624.31	2,778.32	2,767.25	251.020	CC
State 6525 34-32 PR - Wellbore #1 - Gyro Surveys	1,800.00	1,794.51	2,778.84	2,766.50	225.170	ES
State 6525 34-32 PR - Wellbore #1 - Gyro Surveys	8,200.00	6,494.84	3,399.90	3,350.57	68.916	SF
State 6525 42-32 PR - Wellbore #1 - No Surveys	9,967.36	6,715.00	4,517.11	4,421.63	47.309	CC
State 6525 42-32 PR - Wellbore #1 - No Surveys	10,000.00	6,715.00	4,517.23	4,421.56	47.215	ES
State 6525 42-32 PR - Wellbore #1 - No Surveys	11,000.00	6,715.00	4,633.64	4,532.44	45.787	SF
State 6525 43-32 PR - Wellbore #1 - Gyro Surveys	175.09	232.09	4,477.89	4,476.86	4,345.830	CC
State 6525 43-32 PR - Wellbore #1 - Gyro Surveys	300.00	325.76	4,478.37	4,476.57	2,480.386	ES
State 6525 43-32 PR - Wellbore #1 - Gyro Surveys	10,300.00	6,800.00	4,892.05	4,831.28	80.500	SF
State 6525 44-32 PR - Wellbore #1 - No Surveys	2,000.00	2,036.00	4,054.93	4,030.22	164.140	CC, ES
State 6525 44-32 PR - Wellbore #1 - No Surveys	8,400.00	6,728.00	4,652.84	4,566.20	53.703	SF
State Lease 41-32 PA - Wellbore #1 - Gyro Surveys	11,373.90	6,652.26	4,527.80	4,458.42	65.260	CC
State Lease 41-32 PA - Wellbore #1 - Gyro Surveys	11,400.00	6,652.29	4,527.88	4,458.33	65.098	ES
State Lease 41-32 PA - Wellbore #1 - Gyro Surveys	12,300.00	6,653.21	4,652.93	4,578.05	62.141	SF
State Wells 32D PR - Wellbore #1 - Gyro Surveys	10,821.65	6,700.00	1,323.82	1,257.94	20.095	CC, ES
State Wells 32D PR - Wellbore #1 - Gyro Surveys	10,900.00	6,700.00	1,326.13	1,259.88	20.015	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 AA32-789
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	Well @ 4702.00ft
<b>Reference Site:</b>	BB Section 05	<b>MD Reference:</b>	Well @ 4702.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Wells Ranch State AA32-789	<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 #2	<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>						
BB Section 03						
UPRR Pan Am 1 (PA) - Original Drilling - Original Drilling						Out of range
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						Out of range
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						Out of range
WELLS RANCH BB03-651 - Wellbore #1 - Plan 3						Out of range
WELLS RANCH STATE BB03-612 - Wellbore #1 - Plan #						Out of range
WELLS RANCH STATE BB03-620 - Wellbore #1 - Plan 1						Out of range
WELLS RANCH STATE BB03-636 - Wellbore #1 - Plan 1						Out of range
WELLS RANCH STATE BB03-643 - Wellbore #1 - Plan 1						Out of range
WELLS RANCH STATE BB03-659 - Wellbore #1 - Plan 1						Out of range
WELLS RANCH STATE BB03-668 - Wellbore #1 - Plan 1						Out of range
WELLS RANCH STATE BB03-676 - Wellbore #1 - Plan 1						Out of range
WELLS RANCH STATE BB03-684 - Wellbore #1 - Plan 1						Out of range
Wells Ranch State BB05-613 - Original Drilling - Original	6,163.00	16,996.00	4,734.03	4,584.23	31.604	CC, ES
Wells Ranch State BB05-613 - Original Drilling - Original	6,250.00	16,996.00	4,740.54	4,590.25	31.543	SF
Wells Ranch State BB05-617 - Original Drilling - Original	6,158.47	16,953.00	4,436.14	4,285.78	29.502	CC, ES
Wells Ranch State BB05-617 - Original Drilling - Original	6,250.00	16,953.00	4,443.41	4,292.55	29.454	SF
Wells Ranch State BB05-625 - Original Drilling - Original	6,167.84	16,728.00	3,918.94	3,771.29	26.542	CC, ES
Wells Ranch State BB05-625 - Original Drilling - Original	6,250.00	16,728.00	3,924.84	3,776.76	26.505	SF
Wells Ranch State BB05-630 - Original Drilling - Original	6,169.92	17,015.00	3,667.47	3,517.57	24.467	CC, ES
Wells Ranch State BB05-630 - Original Drilling - Original	6,250.00	17,015.00	3,673.14	3,522.73	24.421	SF
Wells Ranch State BB05-635 - Original Drilling - Original	6,188.59	17,038.00	3,320.01	3,171.07	22.291	CC, ES
Wells Ranch State BB05-635 - Original Drilling - Original	6,250.00	17,038.00	3,323.39	3,174.02	22.249	SF
Wells Ranch State BB05-644 - Original Drilling - Original	6,192.88	16,922.00	2,683.99	2,535.92	18.126	CC
Wells Ranch State BB05-644 - Original Drilling - Original	6,200.00	16,922.00	2,684.04	2,535.92	18.120	ES
Wells Ranch State BB05-644 - Original Drilling - Original	6,250.00	16,922.00	2,687.00	2,538.54	18.099	SF
Wells Ranch State BB05-650 - Original Drilling - Original	6,221.54	16,968.00	2,401.50	2,261.67	17.173	CC, ES
Wells Ranch State BB05-650 - Original Drilling - Original	6,300.00	16,968.00	2,407.23	2,266.78	17.140	SF
Wells Ranch State BB05-656 - Original Drilling - Original	6,216.75	16,618.00	2,065.24	1,921.31	14.349	CC, ES
Wells Ranch State BB05-656 - Original Drilling - Original	6,300.00	16,618.00	2,071.89	1,927.03	14.303	SF
Wells Ranch State BB05-665 - Original Drilling - Original	6,265.03	16,983.00	1,374.71	1,234.32	9.792	CC, ES
Wells Ranch State BB05-665 - Original Drilling - Original	6,350.00	16,983.00	1,382.16	1,240.34	9.746	SF
Wells Ranch State BB05-669 - Original Drilling - Original	6,371.93	17,049.00	1,143.03	1,010.65	8.635	CC
Wells Ranch State BB05-669 - Original Drilling - Original	6,400.00	17,049.00	1,143.87	1,010.64	8.586	ES
Wells Ranch State BB05-669 - Original Drilling - Original	6,500.00	17,049.00	1,160.31	1,024.15	8.522	SF
Wells Ranch State BB05-678 - Original Drilling - Original	6,383.58	17,130.00	887.03	773.49	7.812	CC
Wells Ranch State BB05-678 - Original Drilling - Original	6,400.00	17,130.00	887.33	773.14	7.771	ES
Wells Ranch State BB05-678 - Original Drilling - Original	6,500.00	17,130.00	901.86	783.74	7.635	SF
Wells Ranch State BB05-685 - Original Drilling - Original	6,584.07	16,716.00	532.16	466.03	8.047	CC
Wells Ranch State BB05-685 - Original Drilling - Original	6,600.00	16,716.00	532.46	465.35	7.935	ES
Wells Ranch State BB05-685 - Original Drilling - Original	6,950.00	16,716.00	670.04	563.31	6.278	SF
Wells Ranch State BB05-690 - Original Drilling - Original	6,870.13	17,090.00	510.49	449.34	8.349	CC
Wells Ranch State BB05-690 - Original Drilling - Original	6,900.00	17,090.00	511.56	449.25	8.211	ES
Wells Ranch State BB05-690 - Original Drilling - Original	7,200.00	17,090.00	624.12	528.02	6.494	SF
Wells Ranch USX BB 3-10 - Wellbore #1 - Gyro Surveys						Out of range
Wells Ranch USX BB 3-11 SI - Wellbore #1 - Gyro Surveys						Out of range
Wells Ranch USX BB 3-16 SI - Wellbore #1 - Gyro Surveys						Out of range
Wells Ranch USX BB 3-2 SI - Wellbore #1 - No Surveys						Out of range

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 AA32-789
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	Well @ 4702.00ft
<b>Reference Site:</b>	BB Section 05	<b>MD Reference:</b>	Well @ 4702.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Wells Ranch State AA32-789	<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 #2	<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 USX BB 3-4 - Wellbore #1 - No Surveys						Out of range
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						Out of range
Wells Ranch USX BB03-12 - Original Drilling - Original D						Out of range
Wells Ranch USX BB03-13 - Original Drilling - Original D						Out of range
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 AA32-789
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	Well @ 4702.00ft
<b>Reference Site:</b>	BB Section 05	<b>MD Reference:</b>	Well @ 4702.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Wells Ranch State AA32-789	<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 #2	<b>Offset TVD Reference:</b>	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 05						
UPV 05-03H3 - Original Drilling - Original Drilling - As Dri	100.00	71.28	1,375.83	1,375.58	5,486.406	CC
UPV 05-03H3 - Original Drilling - Original Drilling - As Dri	2,014.07	1,996.43	1,377.22	1,363.44	99.929	ES
UPV 05-03H3 - Original Drilling - Original Drilling - As Dri	6,750.00	6,713.21	1,979.74	1,932.78	42.157	SF
UPV 05-04H3 - Original Drilling - Original Drilling - As Dri	2,940.91	2,901.82	385.90	365.71	19.116	CC
UPV 05-04H3 - Original Drilling - Original Drilling - As Dri	3,000.00	2,959.67	386.04	365.44	18.740	ES
UPV 05-04H3 - Original Drilling - Original Drilling - As Dri	4,600.00	4,531.29	465.20	433.31	14.591	SF
UPV 05-05H3 - Original Drilling - Original Drilling - As Dri	453.97	427.97	1,866.95	1,864.24	687.105	CC
UPV 05-05H3 - Original Drilling - Original Drilling - As Dri	3,400.00	3,335.18	1,871.04	1,847.68	80.106	ES
UPV 05-05H3 - Original Drilling - Original Drilling - As Dri	6,300.00	6,201.86	1,996.54	1,952.46	45.287	SF
UPV 05-06H3 - Original Drilling - Original Drilling - As Dri	1,188.51	1,178.52	2,152.40	2,144.43	270.075	CC
UPV 05-06H3 - Original Drilling - Original Drilling - As Dri	2,023.11	2,022.17	2,153.83	2,139.93	154.934	ES
UPV 05-06H3 - Original Drilling - Original Drilling - As Dri	6,550.00	6,519.37	2,682.00	2,635.95	58.240	SF
Wells Ranch 31-05 - Original Drilling - Original Drilling - A	0.00	7.94	2,744.55			
Wells Ranch 31-05 - Original Drilling - Original Drilling - A	300.00	292.23	2,745.28	2,743.58	1,619.155	ES
Wells Ranch 31-05 - Original Drilling - Original Drilling - A	6,900.00	6,645.68	3,498.78	3,451.83	74.513	SF
Wells Ranch 32-05 - Original Drilling - Original Drilling - A	1,652.39	1,660.42	3,095.56	3,084.24	273.368	CC
Wells Ranch 32-05 - Original Drilling - Original Drilling - A	1,900.00	1,892.47	3,095.99	3,082.97	237.805	ES
Wells Ranch 32-05 - Original Drilling - Original Drilling - A	6,650.00	6,513.22	3,755.46	3,709.46	81.634	SF
Wells Ranch 41-05 - Original Drilling - Original Drilling - A	191.45	229.45	3,967.93	3,966.84	3,671.948	CC
Wells Ranch 41-05 - Original Drilling - Original Drilling - A	2,017.24	2,078.60	3,970.19	3,956.11	281.991	ES
Wells Ranch 41-05 - Original Drilling - Original Drilling - A	7,000.00	6,622.34	4,701.38	4,654.43	100.150	SF
Wells Ranch 42-05 - Original Drilling - Original Drilling - A	113.72	126.72	4,259.48	4,259.04	9,617.611	CC
Wells Ranch 42-05 - Original Drilling - Original Drilling - A	2,000.00	2,009.06	4,265.36	4,251.57	309.447	ES
Wells Ranch 42-05 - Original Drilling - Original Drilling - A	6,800.00	6,545.11	4,961.27	4,914.88	106.931	SF
Wells Ranch BB01-611 - Original Drilling - Original Drilling						Out of range
Wells Ranch BB01-615 - Original Drilling - Original Drilling						Out of range
Wells Ranch BB01-624 - Original Drilling - Original Drilling						Out of range
Wells Ranch BB01-624 - Original Drilling - ST01 - ST01 -						Out of range
Wells Ranch BB01-638 - Original Drilling - Original Drilling						Out of range
Wells Ranch BB01-649 - Original Drilling - Original Drilling						Out of range
Wells Ranch BB01-655 - Original Drilling - Original Drilling						Out of range
Wells Ranch BB01-669 - Original Drilling - Original Drilling						Out of range
Wells Ranch BB01-675 - Original Drilling - Original Drilling						Out of range
Wells Ranch State AA32-717 - Wellbore #1 - Plan 1	1,901.69	1,932.69	3,367.35	3,354.07	253.582	CC
Wells Ranch State AA32-717 - Wellbore #1 - Plan 1	2,000.00	2,017.14	3,367.42	3,353.48	241.677	ES
Wells Ranch State AA32-717 - Wellbore #1 - Plan 1	17,489.15	17,400.91	5,749.80	5,560.04	30.302	SF
Wells Ranch State AA32-724 - Wellbore #1 - Plan 1	2,000.00	2,030.00	3,330.38	3,316.40	238.218	CC, ES
Wells Ranch State AA32-724 - Wellbore #1 - Plan 1	17,489.15	17,306.65	5,310.39	5,120.79	28.008	SF
Wells Ranch State AA32-731 - Wellbore #1 - Plan 1	2,000.00	2,030.00	3,293.42	3,279.44	235.575	CC, ES
Wells Ranch State AA32-731 - Wellbore #1 - Plan 1	17,489.15	17,038.15	4,908.98	4,719.84	25.954	SF
Wells Ranch State AA32-737 - Wellbore #1 - Plan 1	2,367.30	2,802.46	3,239.12	3,221.25	181.293	CC
Wells Ranch State AA32-737 - Wellbore #1 - Plan 1	2,400.00	2,834.58	3,239.30	3,221.21	179.031	ES
Wells Ranch State AA32-737 - Wellbore #1 - Plan 1	17,489.15	17,180.43	4,479.89	4,290.59	23.665	SF
Wells Ranch State AA32-745 - Wellbore #1 - Plan 1	1,911.69	1,924.69	1,612.03	1,598.74	121.330	CC
Wells Ranch State AA32-745 - Wellbore #1 - Plan 1	2,000.00	2,000.00	1,612.08	1,598.21	116.207	ES
Wells Ranch State AA32-745 - Wellbore #1 - Plan 1	17,489.15	17,234.50	4,058.02	3,872.24	21.843	SF
Wells Ranch State AA32-751 - Wellbore #1 - Plan 1	2,000.00	2,012.00	1,574.53	1,560.62	113.147	CC, ES
Wells Ranch State AA32-751 - Wellbore #1 - Plan 1	17,489.15	17,257.76	3,628.18	3,442.20	19.508	SF
Wells Ranch State AA32-759 (Killed) - Wellbore #1 - Plan	2,000.00	2,011.00	1,537.12	1,523.21	110.487	CC, ES
Wells Ranch State AA32-759 (Killed) - Wellbore #1 - Plan	17,489.15	17,092.05	3,091.51	2,906.31	16.693	SF
Wells Ranch State AA32-763 - Wellbore #1 - Plan 1	2,287.36	2,447.53	1,491.35	1,475.00	91.218	CC
Wells Ranch State AA32-763 - Wellbore #1 - Plan 1	2,300.00	2,460.17	1,491.38	1,474.94	90.737	ES
Wells Ranch State AA32-763 - Wellbore #1 - Plan 1	17,489.15	17,232.30	2,649.30	2,434.42	12.329	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 AA32-789
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	Well @ 4702.00ft
<b>Reference Site:</b>	BB Section 05	<b>MD Reference:</b>	Well @ 4702.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Wells Ranch State AA32-789	<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 #2	<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 AA32-770 - Wellbore #1 - Plan #2	2,000.00	2,002.00	112.43	98.55	8.100	CC, ES
Wells Ranch State AA32-770 - Wellbore #1 - Plan #2	2,100.00	2,098.07	115.89	101.34	7.962	SF
Wells Ranch State AA32-775 - Wellbore #1 - Plan #2	2,000.00	2,002.00	74.96	61.08	5.401	CC, ES
Wells Ranch State AA32-775 - Wellbore #1 - Plan #2	2,100.00	2,101.98	76.70	62.11	5.258	SF
Wells Ranch State AA32-783 - Wellbore #1 - Plan #2	2,000.00	2,001.00	37.50	23.62	2.702	CC, ES
Wells Ranch State AA32-783 - Wellbore #1 - Plan #2	2,100.00	2,100.98	39.23	24.65	2.690	SF
Wells Ranch State BB01-690 - Original Drilling - Original						Out of range
Wells Ranch USX BB05-09 - Original Drilling - Original D	1,949.90	1,968.15	4,927.52	4,914.04	365.619	CC
Wells Ranch USX BB05-09 - Original Drilling - Original D	2,000.00	2,003.55	4,927.60	4,913.82	357.599	ES
Wells Ranch USX BB05-09 - Original Drilling - Original D	6,700.00	6,529.23	5,644.46	5,598.28	122.228	SF
Wells Ranch USX BB05-10 - Original Drilling - Original D	1,611.21	1,634.51	4,069.30	4,058.20	366.462	CC
Wells Ranch USX BB05-10 - Original Drilling - Original D	1,900.00	1,894.75	4,070.65	4,057.61	311.968	ES
Wells Ranch USX BB05-10 - Original Drilling - Original D	6,550.00	6,412.90	4,627.43	4,581.98	101.809	SF
Wells Ranch USX BB05-11 - Original Drilling - Original D	1,517.61	1,519.64	3,156.29	3,145.94	305.139	CC
Wells Ranch USX BB05-11 - Original Drilling - Original D	2,100.00	2,119.20	3,159.01	3,144.49	217.661	ES
Wells Ranch USX BB05-11 - Original Drilling - Original D	6,500.00	6,502.44	3,511.80	3,466.09	76.829	SF
Wells Ranch USX BB05-12 - Original Drilling - Original D	262.34	252.37	3,029.35	3,027.92	2,111.125	CC
Wells Ranch USX BB05-12 - Original Drilling - Original D	3,200.00	3,138.09	3,035.89	3,013.91	138.143	ES
Wells Ranch USX BB05-12 - Original Drilling - Original D	6,400.00	6,367.02	3,183.41	3,138.42	70.765	SF
Wells Ranch USX BB05-13 - Original Drilling - Original D	6,086.76	6,065.95	4,285.49	4,242.67	100.086	CC, ES
Wells Ranch USX BB05-13 - Original Drilling - Original D	6,500.00	6,481.35	4,410.22	4,364.59	96.657	SF
Wells Ranch USX BB05-14 - Original Drilling - Original D	1,029.58	1,065.59	4,361.72	4,354.72	622.837	CC
Wells Ranch USX BB05-14 - Original Drilling - Original D	1,800.00	1,802.95	4,364.40	4,352.06	353.664	ES
Wells Ranch USX BB05-14 - Original Drilling - Original D	6,550.00	6,602.16	4,705.54	4,659.34	101.844	SF
Wells Ranch USX BB05-15 - Original Drilling - Original D	1,792.19	1,816.58	4,960.91	4,948.53	400.663	CC
Wells Ranch USX BB05-15 - Original Drilling - Original D	1,900.00	1,879.99	4,961.43	4,948.45	382.005	ES
Wells Ranch USX BB05-15 - Original Drilling - Original D	6,550.00	6,272.66	5,427.17	5,382.23	120.761	SF
Wells Ranch USX BB05-16 - Original Drilling - Original D	1,859.80	1,900.00	5,637.32	5,624.40	436.345	CC
Wells Ranch USX BB05-16 - Original Drilling - Original D	2,000.00	2,033.06	5,637.34	5,623.46	406.028	ES
Wells Ranch USX BB05-16 - Original Drilling - Original D	6,650.00	6,490.86	6,295.32	6,249.35	136.924	SF
Wells Ranch USX BB05-23 - Original Drilling - Original D	383.10	416.10	4,908.60	4,906.18	2,026.590	CC
Wells Ranch USX BB05-23 - Original Drilling - Original D	500.00	500.00	4,909.02	4,905.89	1,566.712	ES
Wells Ranch USX BB05-23 - Original Drilling - Original D	6,700.00	6,577.87	5,602.45	5,555.99	120.602	SF
Wells Ranch USX BB05-25 - Original Drilling - Original D	1,760.93	1,754.02	3,607.43	3,595.38	299.420	CC
Wells Ranch USX BB05-25 - Original Drilling - Original D	1,900.00	1,868.35	3,608.00	3,595.06	278.739	ES
Wells Ranch USX BB05-25 - Original Drilling - Original D	6,450.00	6,380.58	3,820.57	3,775.42	84.619	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 AA32-789
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	Well @ 4702.00ft
<b>Reference Site:</b>	BB Section 05	<b>MD Reference:</b>	Well @ 4702.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Wells Ranch State AA32-789	<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 #2	<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	6,426.54	6,305.92	3,293.74	3,249.24	74.016	CC, ES
Skurich-Roth 21-06 - Original Drilling - Original Drilling - A	6,900.00	6,564.93	3,350.73	3,304.17	71.964	SF
Skurich-Roth 23-06 - Original Drilling - Original Drilling - A	6,186.73	6,074.61	4,357.85	4,314.90	101.465	CC, ES
Skurich-Roth 23-06 - Original Drilling - Original Drilling - A	6,585.30	6,510.57	4,451.71	4,406.07	97.540	SF
Skurich-Roth 24-06 - Original Drilling - Original Drilling - A	6,169.23	6,120.11	5,337.39	5,294.29	123.841	CC, ES
Skurich-Roth 24-06 - Original Drilling - Original Drilling - A	6,600.00	6,481.27	5,463.33	5,417.68	119.685	SF
Skurich-Roth 42-06 - Original Drilling - Original Drilling - A	6,149.45	6,024.38	3,558.12	3,515.40	83.300	CC
Skurich-Roth 33-06 - Original Drilling - Original Drilling - A	6,150.00	6,024.76	3,558.12	3,515.40	83.294	ES
Skurich-Roth 33-06 - Original Drilling - Original Drilling - A	6,450.00	6,315.37	3,622.12	3,577.41	81.015	SF
Skurich-Roth 42-06 - Original Drilling - Original Drilling - A	6,124.84	6,012.85	1,788.39	1,745.74	41.933	CC, ES
Skurich-Roth 42-06 - Original Drilling - Original Drilling - A	6,300.00	6,174.63	1,812.10	1,768.26	41.339	SF
Skurich-Roth 6D - Original Drilling - Original Drilling - As	6,313.63	6,174.72	3,854.26	3,810.54	88.174	CC, ES
Skurich-Roth 6D - Original Drilling - Original Drilling - As	7,400.00	7,400.00	4,166.79	4,116.48	82.826	SF
Skurich-Roth 11-06 - Original Drilling - Original Drilling -	6,453.11	6,297.15	4,557.64	4,503.91	84.830	CC
Skurich-Roth 11-06 - Original Drilling - Original Drilling -	6,500.00	6,335.90	4,558.19	4,503.85	83.876	ES
Skurich-Roth 11-06 - Original Drilling - Original Drilling -	7,050.00	6,595.72	4,621.45	4,562.66	78.601	SF
Skurich-Roth 12-06 - Original Drilling - Original Drilling -	6,273.40	6,116.77	4,745.21	4,701.86	109.455	CC, ES
Skurich-Roth 12-06 - Original Drilling - Original Drilling -	6,850.00	6,584.26	4,864.26	4,817.79	104.686	SF
Skurich-Roth 13-06 - Original Drilling - Original Drilling -	6,211.86	6,144.07	5,428.64	5,385.18	124.929	CC, ES
Skurich-Roth 13-06 - Original Drilling - Original Drilling -	6,850.00	6,535.46	5,625.18	5,576.99	116.723	SF
Skurich-Roth 14-06 - Original Drilling - Original Drilling -	6,192.34	6,140.55	6,192.22	6,149.02	143.361	CC
Skurich-Roth 14-06 - Original Drilling - Original Drilling -	6,200.00	6,150.12	6,192.25	6,149.00	143.162	ES
Skurich-Roth 14-06 - Original Drilling - Original Drilling -	6,700.00	6,677.54	6,342.67	6,296.21	136.515	SF
Skurich-Roth 22-06 - Original Drilling - Original Drilling -	6,223.25	6,099.86	3,773.75	3,730.61	87.468	CC, ES
Skurich-Roth 22-06 - Original Drilling - Original Drilling -	6,650.00	6,483.59	3,863.64	3,817.94	84.530	SF
Skurich-Roth 31-06 - Original Drilling - Original Drilling -	6,388.57	6,291.86	2,078.82	2,034.49	46.898	CC
Skurich-Roth 31-06 - Original Drilling - Original Drilling -	6,400.00	6,300.44	2,078.86	2,034.47	46.828	ES
Skurich-Roth 31-06 - Original Drilling - Original Drilling -	6,650.00	6,441.43	2,105.34	2,059.73	46.156	SF
Skurich-Roth 34-06 - Original Drilling - Original Drilling -	6,124.97	5,939.78	4,653.85	4,611.46	109.791	CC, ES
Skurich-Roth 34-06 - Original Drilling - Original Drilling -	6,500.00	6,311.05	4,756.73	4,711.84	105.975	SF
Skurich-Roth 41-06 - Original Drilling - Original Drilling -	6,298.69	6,238.64	784.01	740.25	17.917	CC
Skurich-Roth 41-06 - Original Drilling - Original Drilling -	6,300.00	6,239.89	784.01	740.24	17.914	ES
Skurich-Roth 41-06 - Original Drilling - Original Drilling -	6,400.00	6,330.85	789.53	745.13	17.780	SF
Skurich-Roth 43-06 - Original Drilling - Original Drilling -	6,115.76	6,000.65	2,920.92	2,878.30	68.537	CC, ES
Skurich-Roth 43-06 - Original Drilling - Original Drilling -	6,400.00	6,272.86	2,982.82	2,938.28	66.977	SF
Skurich-Roth 44-06 - Original Drilling - Original Drilling -	6,114.78	6,061.48	4,167.70	4,124.87	97.304	CC, ES
Skurich-Roth 44-06 - Original Drilling - Original Drilling -	6,450.00	6,397.84	4,252.37	4,207.25	94.255	SF
Skurich-Roth 6A - Original Drilling - Original Drilling - As	6,130.52	6,054.14	3,735.90	3,693.07	87.229	CC, ES
Skurich-Roth 6A - Original Drilling - Original Drilling - As	6,450.00	6,329.37	3,814.29	3,769.44	85.058	SF
Skurich-Roth 32-06 - Original Drilling - Original Drilling -	6,197.85	6,099.90	2,566.36	2,422.42	17.830	CC
Skurich-Roth 32-06 - Original Drilling - Original Drilling -	6,200.00	6,102.01	2,566.36	2,422.37	17.824	ES
Skurich-Roth 32-06 - Original Drilling - Original Drilling -	6,500.00	6,375.41	2,620.17	2,469.78	17.422	SF

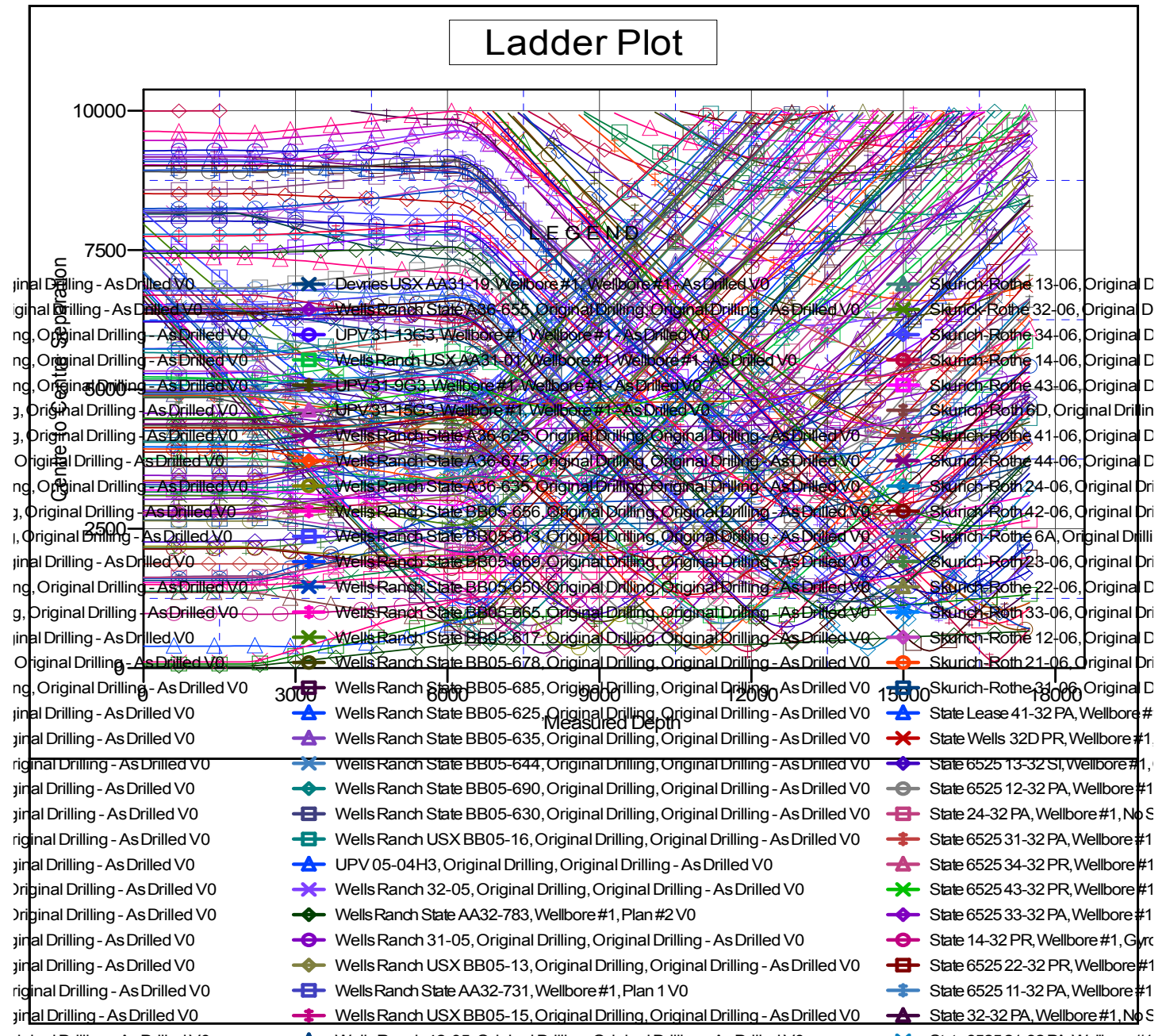
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



## Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Wells Ranch State AA32-789
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	Well @ 4702.00ft
<b>Reference Site:</b>	BB Section 05	<b>MD Reference:</b>	Well @ 4702.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Wells Ranch State AA32-789	<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 #2	<b>Offset TVD Reference:</b>	Offset Datum

Grid Convergence at Surface is:  $0.67^\circ$



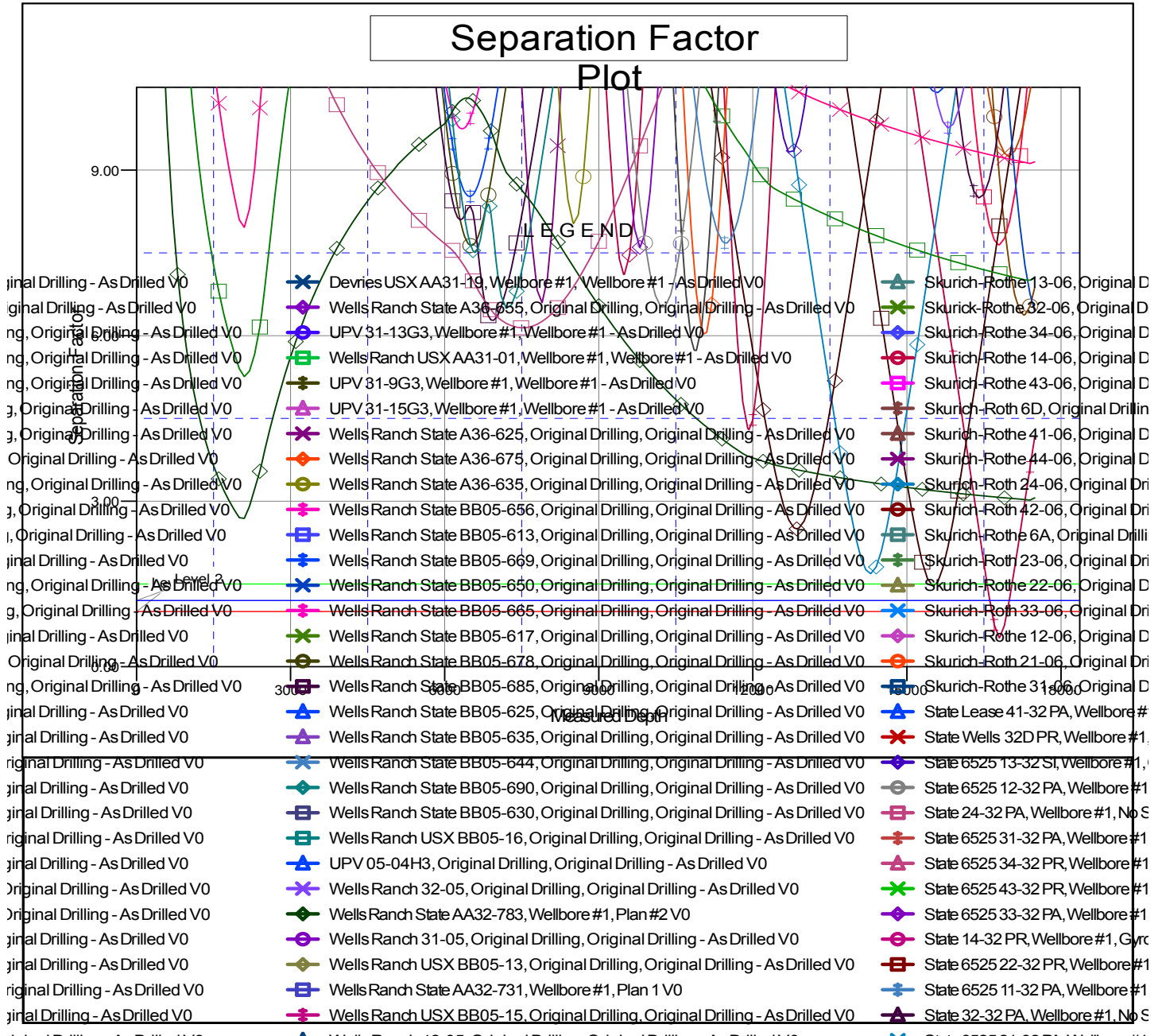
COMPASS 5000.14 Build 85

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

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Wells Ranch State AA32-789
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	Well @ 4702.00ft
<b>Reference Site:</b>	BB Section 05	<b>MD Reference:</b>	Well @ 4702.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Wells Ranch State AA32-789	<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 #2	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to Well @ 4702.00ft  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.5000000

Coordinates are relative to: Wells Ranch State AA32-789  
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