

# **Northern Region - DJ Basin**

**Wells Ranch**

**BB Section 07**

**SLW Ranch State BB07-678**

**Original Drilling**

**Plan 1**

## **Anticollision Summary Report**

**26 September, 2017**

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

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well SLW Ranch State BB07-678
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	WELL @ 4662.0ft
<b>Reference Site:</b>	BB Section 07	<b>MD Reference:</b>	WELL @ 4662.0ft
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SLW Ranch State BB07-678	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Original Drilling	<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 10,000.0 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>	9/26/2017		
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.0	17,888.2	Plan 1 (Original Drilling)	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						
B Section 12						
SLW Ranch B12-62-1HN - Original Drilling - As Drilled	6,112.2	10,779.0	4,294.6	4,161.2	32.186	CC, ES
SLW Ranch B12-62-1HN - Original Drilling - As Drilled	6,500.0	10,779.0	4,329.7	4,193.5	31.801	SF
SLW Ranch B12-63-1HN - Original Drilling - As Drilled	6,138.9	10,812.0	3,609.7	3,474.9	26.772	CC
SLW Ranch B12-63-1HN - Original Drilling - As Drilled	6,150.0	10,812.0	3,609.7	3,474.8	26.747	ES
SLW Ranch B12-63-1HN - Original Drilling - As Drilled	6,500.0	10,812.0	3,636.6	3,498.8	26.387	SF
SLW Ranch B12-64-1HN - Original Drilling - As Drilled	6,271.1	10,993.0	3,011.1	2,876.1	22.302	CC
SLW Ranch B12-64-1HN - Original Drilling - As Drilled	6,300.0	10,993.0	3,011.3	2,875.9	22.245	ES
SLW Ranch B12-64-1HN - Original Drilling - As Drilled	6,550.0	10,993.0	3,028.9	2,891.4	22.027	SF
SLW Ranch B12-65-1HN - Original Drilling - As Drilled	6,350.6	10,974.0	2,336.2	2,257.0	29.519	CC, ES
SLW Ranch B12-65-1HN - Original Drilling - As Drilled	6,600.0	10,974.0	2,353.8	2,273.1	29.157	SF
SLW Ranch B12-65HN - Original Drilling - As Drilled	6,436.5	10,992.0	1,781.8	1,702.6	22.482	CC
SLW Ranch B12-65HN - Original Drilling - As Drilled	6,450.0	10,992.0	1,781.9	1,702.5	22.449	ES
SLW Ranch B12-65HN - Original Drilling - As Drilled	6,600.0	10,992.0	1,791.8	1,711.4	22.288	SF
SLW Ranch B12-66-1HN - Original Drilling - As Drilled	6,502.2	11,132.0	1,471.5	1,391.0	18.276	CC, ES
SLW Ranch B12-66-1HN - Original Drilling - As Drilled	6,650.0	11,132.0	1,481.5	1,399.7	18.107	SF
SLW Ranch B12-67-1HN - Original Drilling - Original Drill	6,595.8	11,248.0	870.5	738.6	6.597	CC
SLW Ranch B12-67-1HN - Original Drilling - Original Drill	6,600.0	11,248.0	870.6	738.5	6.591	ES
SLW Ranch B12-67-1HN - Original Drilling - Original Drill	6,650.0	11,248.0	873.0	739.8	6.557	SF
SLW Ranch B12-79HN - Original Drilling - As Drilled	6,418.6	10,939.1	5,054.6	4,956.6	51.557	CC, ES
SLW Ranch B12-79HN - Original Drilling - As Drilled	6,550.0	10,950.7	5,075.4	4,976.5	51.337	SF
SLW Ranch B13-69HN - Original Drilling - As Drilled	6,102.4	10,833.0	4,514.9	4,380.7	33.651	CC, ES
SLW Ranch B13-69HN - Original Drilling - As Drilled	6,500.0	10,833.0	4,553.4	4,416.6	33.279	SF
Thomson B12-12 - Wellbore #1 - Wellbore #1	6,280.8	5,864.9	4,864.0	4,820.1	110.924	CC, ES
Thomson B12-12 - Wellbore #1 - Wellbore #1	6,600.0	6,121.1	4,949.8	4,904.1	108.417	SF
Trebor B12-05 - Wellbore #1 - As Drilled	6,307.8	5,973.9	4,202.0	4,156.6	92.473	CC, ES
Trebor B12-05 - Wellbore #1 - As Drilled	6,600.0	6,313.8	4,276.1	4,228.7	90.325	SF
Trebor B12-06 - Wellbore #1 - As Drilled	6,312.8	5,974.9	3,016.3	2,972.2	68.463	CC, ES
Trebor B12-06 - Wellbore #1 - As Drilled	6,500.0	6,150.9	3,048.1	3,002.8	67.355	SF
Trebor B12-07 - Wellbore #1 - As Drilled	6,283.8	5,968.1	1,980.3	1,936.0	44.709	CC, ES
Trebor B12-07 - Wellbore #1 - As Drilled	6,450.0	6,132.1	2,002.9	1,957.5	44.087	SF
Trebor B12-19 - Wellbore #1 - As Drilled	6,336.6	6,022.2	3,562.9	3,518.9	80.842	CC, ES
Trebor B12-19 - Wellbore #1 - As Drilled	6,550.0	6,204.5	3,606.0	3,560.7	79.551	SF
Trebor B12-8 - Wellbore #1 - As Drilled	5,758.6	5,512.5	1,113.9	1,072.8	27.143	CC
Trebor B12-8 - Wellbore #1 - As Drilled	5,800.0	5,547.8	1,114.1	1,072.7	26.939	ES
Trebor B12-8 - Wellbore #1 - As Drilled	6,300.0	5,998.8	1,150.8	1,105.6	25.469	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 SLW Ranch State BB07-678
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	WELL @ 4662.0ft
<b>Reference Site:</b>	BB Section 07	<b>MD Reference:</b>	WELL @ 4662.0ft
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SLW Ranch State BB07-678	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Original Drilling	<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 12-03 - Original Drilling - Original Drilling - A	17,888.2	6,619.4	6,815.8	6,710.4	64.703	CC, ES, SF
Wells Ranch State BB05-613 - Original Drilling - APD - R	17,888.2	11,951.1	869.6	729.2	6.195	CC, ES, SF
Wells Ranch State BB05-617 - Original Drilling - APD - R	17,888.2	11,864.5	1,146.9	1,006.4	8.159	CC, ES, SF
Wells Ranch State BB05-625 - Original Drilling - APD - R	17,888.2	11,719.8	1,696.4	1,556.0	12.083	CC, ES, SF
Wells Ranch State BB05-630 - Original Drilling - APD - R	17,888.2	11,880.8	1,967.2	1,826.7	13.996	CC, ES, SF
Wells Ranch State BB05-635 - Original Drilling - APD - R	17,888.2	11,927.1	2,324.4	2,184.0	16.552	CC, ES, SF
Wells Ranch State BB05-644 - Original Drilling - APD - R	17,888.2	11,832.0	2,953.8	2,813.3	21.020	CC, ES, SF
Wells Ranch State BB05-650 - Original Drilling - APD - R	17,888.2	11,951.7	3,284.3	3,143.9	23.388	CC, ES, SF
Wells Ranch State BB05-656 - Original Drilling - APD - R	17,888.2	11,476.6	3,686.4	3,478.8	17.757	CC, ES, SF
Wells Ranch State BB05-665 - Original Drilling - APD - R	17,888.2	11,899.7	4,372.1	4,231.5	31.113	CC, ES, SF
Wells Ranch State BB05-669 - Original Drilling - APD - R	17,888.2	12,014.9	4,708.3	4,568.0	33.552	CC, ES, SF
Wells Ranch State BB05-678 - Original Drilling - APD - R	17,888.2	11,990.2	5,047.8	4,907.3	35.942	CC, ES, SF
Wells Ranch State BB05-685 - Original Drilling - APD - R	17,888.2	11,616.1	5,620.8	5,480.3	40.007	CC, ES, SF
Wells Ranch State BB05-690 - Original Drilling - APD - R	17,888.2	12,074.8	5,951.5	5,740.5	28.209	CC, ES, SF
Wells Ranch USX BB03-04 - Original Drilling - Original D	17,888.2	6,659.5	7,719.3	7,596.6	62.889	CC, ES, SF
Wells Ranch USX BB03-12 - Original Drilling - Original D	17,888.2	6,595.3	6,014.2	5,925.5	67.796	CC, ES, SF
Wells Ranch USX BB03-13 - Original Drilling - Original D	17,888.2	6,691.4	5,740.3	5,674.2	86.783	CC, ES, SF
Wells Ranch USX BB03-25 PA - Original Drilling - Gyro S	17,888.2	6,500.0	6,593.3	6,523.3	94.180	CC, ES, SF

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

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well SLW Ranch State BB07-678
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	WELL @ 4662.0ft
<b>Reference Site:</b>	BB Section 07	<b>MD Reference:</b>	WELL @ 4662.0ft
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SLW Ranch State BB07-678	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Original Drilling	<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						
UPV 05-03H3 - Original Drilling - Original Drilling - As Dri	14,241.2	6,455.0	5,399.7	5,280.8	45.431	CC
UPV 05-03H3 - Original Drilling - Original Drilling - As Dri	14,300.0	6,453.7	5,400.0	5,280.4	45.166	ES
UPV 05-03H3 - Original Drilling - Original Drilling - As Dri	15,800.0	6,418.3	5,619.8	5,486.3	42.088	SF
UPV 05-04H3 - Original Drilling - Original Drilling - As Dri	13,077.8	6,704.6	5,117.8	5,011.8	48.263	CC
UPV 05-04H3 - Original Drilling - Original Drilling - As Dri	13,100.0	6,706.1	5,117.8	5,011.5	48.144	ES
UPV 05-04H3 - Original Drilling - Original Drilling - As Dri	14,700.0	6,814.6	5,367.4	5,246.2	44.286	SF
UPV 05-05H3 - Original Drilling - Original Drilling - As Dri	13,007.9	6,652.6	3,781.4	3,676.6	36.088	CC, ES
UPV 05-05H3 - Original Drilling - Original Drilling - As Dri	13,900.0	6,669.8	3,885.1	3,771.8	34.298	SF
UPV 05-06H3 - Original Drilling - Original Drilling - As Dri	14,310.7	6,452.5	3,989.6	3,869.8	33.327	CC
UPV 05-06H3 - Original Drilling - Original Drilling - As Dri	14,400.0	6,453.3	3,990.6	3,869.8	33.039	ES
UPV 05-06H3 - Original Drilling - Original Drilling - As Dri	15,200.0	6,460.3	4,087.4	3,959.2	31.874	SF
Well Ranch AA32-757 - Wellbore #1 - Plan 1	14,471.7	6,100.0	5,115.4	4,995.1	42.530	CC
Well Ranch AA32-757 - Wellbore #1 - Plan 1	14,500.0	6,100.0	5,115.4	4,994.8	42.409	ES
Well Ranch AA32-757 - Wellbore #1 - Plan 1	15,900.0	6,100.0	5,310.9	5,177.0	39.676	SF
Wells Ranch 31-05 - Original Drilling - Original Drilling - A	15,760.1	15,760.1	5,396.5	5,227.1	31.857	CC
Wells Ranch 31-05 - Original Drilling - Original Drilling - A	15,800.0	15,800.0	5,396.7	5,226.6	31.741	ES
Wells Ranch 31-05 - Original Drilling - Original Drilling - A	17,000.0	17,000.0	5,536.7	5,350.9	29.796	SF
Wells Ranch 32-05 - Original Drilling - Original Drilling - A	15,636.1	6,635.8	4,082.3	3,946.2	29.983	CC
Wells Ranch 32-05 - Original Drilling - Original Drilling - A	15,700.0	6,636.7	4,082.8	3,945.9	29.817	ES
Wells Ranch 32-05 - Original Drilling - Original Drilling - A	16,400.0	6,647.3	4,153.1	4,009.5	28.920	SF
Wells Ranch 41-05 - Original Drilling - Original Drilling - A	16,947.8	6,547.8	5,305.3	5,153.5	34.944	CC
Wells Ranch 41-05 - Original Drilling - Original Drilling - A	17,000.0	6,548.3	5,305.6	5,153.1	34.799	ES
Wells Ranch 41-05 - Original Drilling - Original Drilling - A	17,888.2	6,556.0	5,387.9	5,226.5	33.381	SF
Wells Ranch 42-05 - Original Drilling - Original Drilling - A	16,897.2	6,707.6	4,043.6	3,892.0	26.677	CC
Wells Ranch 42-05 - Original Drilling - Original Drilling - A	16,900.0	6,707.7	4,043.6	3,891.9	26.671	ES
Wells Ranch 42-05 - Original Drilling - Original Drilling - A	17,600.0	6,724.9	4,104.1	3,945.7	25.915	SF
Wells Ranch AA32-718 - Wellbore #1 - Plan 1	16,971.8	6,227.1	5,028.9	4,877.3	33.173	CC
Wells Ranch AA32-718 - Wellbore #1 - Plan 1	17,000.0	6,227.6	5,029.0	4,877.1	33.099	ES
Wells Ranch AA32-718 - Wellbore #1 - Plan 1	17,888.2	6,250.0	5,111.4	4,950.7	31.807	SF
Wells Ranch AA32-725 - Wellbore #1 - Plan 1	16,613.3	6,250.0	5,102.6	4,955.9	34.779	CC
Wells Ranch AA32-725 - Wellbore #1 - Plan 1	16,700.0	6,250.0	5,103.4	4,955.6	34.537	ES
Wells Ranch AA32-725 - Wellbore #1 - Plan 1	17,800.0	6,250.0	5,238.7	5,080.8	33.170	SF
Wells Ranch AA32-731 - Wellbore #1 - Plan 1	16,168.6	6,177.1	5,068.3	4,927.2	35.923	CC
Wells Ranch AA32-731 - Wellbore #1 - Plan 1	16,200.0	6,176.8	5,068.4	4,926.9	35.825	ES
Wells Ranch AA32-731 - Wellbore #1 - Plan 1	17,400.0	6,150.0	5,215.7	5,062.9	34.131	SF
Wells Ranch AA32-738 - Wellbore #1 - Plan 1	15,809.6	6,300.0	5,043.6	4,905.5	36.528	CC
Wells Ranch AA32-738 - Wellbore #1 - Plan 1	15,900.0	6,300.0	5,044.4	4,905.2	36.238	ES
Wells Ranch AA32-738 - Wellbore #1 - Plan 1	17,000.0	6,300.0	5,182.1	5,032.2	34.579	SF
Wells Ranch AA32-744 - Wellbore #1 - Plan 1	15,151.2	6,150.0	5,080.3	4,950.6	39.160	CC
Wells Ranch AA32-744 - Wellbore #1 - Plan 1	15,200.0	6,150.0	5,080.6	4,950.3	38.988	ES
Wells Ranch AA32-744 - Wellbore #1 - Plan 1	16,400.0	6,200.0	5,230.0	5,088.4	36.922	SF
Wells Ranch AA32-750 - Wellbore #1 - Plan 1	14,878.1	6,200.0	5,081.1	4,955.2	40.356	CC
Wells Ranch AA32-750 - Wellbore #1 - Plan 1	14,900.0	6,200.0	5,081.2	4,955.0	40.272	ES
Wells Ranch AA32-750 - Wellbore #1 - Plan 1	16,200.0	6,200.0	5,250.1	5,111.8	37.954	SF
Wells Ranch AA32-763 - Wellbore #1 - Plan 1	14,085.9	6,300.0	4,960.8	4,843.8	42.411	CC
Wells Ranch AA32-763 - Wellbore #1 - Plan 1	14,100.0	6,300.0	4,960.8	4,843.7	42.348	ES
Wells Ranch AA32-763 - Wellbore #1 - Plan 1	15,400.0	6,272.4	5,131.0	5,001.2	39.524	SF
Wells Ranch AA32-770 - Wellbore #1 - Plan 1	13,519.1	6,200.0	5,137.3	5,027.2	46.651	CC
Wells Ranch AA32-770 - Wellbore #1 - Plan 1	13,600.0	6,200.0	5,137.9	5,026.8	46.258	ES
Wells Ranch AA32-770 - Wellbore #1 - Plan 1	15,000.0	6,200.0	5,346.3	5,222.3	43.118	SF
Wells Ranch AA32-776 - Wellbore #1 - Plan 1	13,146.4	6,225.6	5,180.2	5,075.0	49.261	CC
Wells Ranch AA32-776 - Wellbore #1 - Plan 1	13,200.0	6,225.8	5,180.5	5,074.7	48.966	ES
Wells Ranch AA32-776 - Wellbore #1 - Plan 1	14,800.0	6,250.0	5,437.7	5,317.0	45.042	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 SLW Ranch State BB07-678
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	WELL @ 4662.0ft
<b>Reference Site:</b>	BB Section 07	<b>MD Reference:</b>	WELL @ 4662.0ft
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SLW Ranch State BB07-678	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Original Drilling	<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 AA32-783 - Wellbore #1 - Plan 1	12,768.5	6,150.0	5,147.1	5,046.6	51.222	CC
Wells Ranch AA32-783 - Wellbore #1 - Plan 1	12,800.0	6,150.0	5,147.2	5,046.3	51.031	ES
Wells Ranch AA32-783 - Wellbore #1 - Plan 1	14,500.0	6,122.1	5,429.6	5,312.9	46.519	SF
Wells Ranch AA32-790 - Wellbore #1 - Plan 1	12,388.0	6,200.0	5,098.6	5,001.6	52.553	CC
Wells Ranch AA32-790 - Wellbore #1 - Plan 1	12,400.0	6,200.0	5,098.6	5,001.5	52.474	ES
Wells Ranch AA32-790 - Wellbore #1 - Plan 1	14,100.0	6,200.0	5,378.1	5,264.6	47.369	SF
Wells Ranch BB01-611 - Original Drilling - APD - Rev 2						Out of range
Wells Ranch BB01-611 - Original Drilling - Original Drilling						Out of range
Wells Ranch BB01-615 - Original Drilling - APD - Rev 2						Out of range
Wells Ranch BB01-615 - Original Drilling - Option 2						Out of range
Wells Ranch BB01-615 - Original Drilling - Original Drilling						Out of range
Wells Ranch BB01-624 - Original Drilling - APD - Rev 2						Out of range
Wells Ranch BB01-624 - Original Drilling - As Drilled - 1						Out of range
Wells Ranch BB01-624 - Original Drilling - New Plan						Out of range
Wells Ranch BB01-624 - Original Drilling - Original Drilling						Out of range
Wells Ranch BB01-624 - Original Drilling - Original Plan						Out of range
Wells Ranch BB01-624 - Original Drilling - ST01 - ST01 -						Out of range
Wells Ranch BB01-638 - Original Drilling - APD - Rev 2						Out of range
Wells Ranch BB01-638 - Original Drilling - Original Drilling						Out of range
Wells Ranch BB01-649 - Original Drilling - APD - Rev 2						Out of range
Wells Ranch BB01-649 - Original Drilling - Original Drilling						Out of range
Wells Ranch BB01-655 - Original Drilling - APD - Rev 2						Out of range
Wells Ranch BB01-655 - Original Drilling - Original Drilling						Out of range
Wells Ranch BB01-669 - Original Drilling - APD - Rev 2						Out of range
Wells Ranch BB01-669 - Original Drilling - Original Drilling						Out of range
Wells Ranch BB01-675 - Original Drilling - APD - Rev 2						Out of range
Wells Ranch BB01-675 - Original Drilling - Original Drilling						Out of range
Wells Ranch State BB01-690 - Original Drilling - APD - R						Out of range
Wells Ranch State BB01-690 - Original Drilling - Original						Out of range
Wells Ranch USX BB05-09 - Original Drilling - Original D	17,073.3	6,680.1	2,840.8	2,687.1	18.486	CC
Wells Ranch USX BB05-09 - Original Drilling - Original D	17,100.0	6,680.5	2,840.9	2,686.9	18.448	ES
Wells Ranch USX BB05-09 - Original Drilling - Original D	17,400.0	6,684.1	2,859.5	2,702.6	18.224	SF
Wells Ranch USX BB05-10 - Original Drilling - Original D	15,717.2	6,740.4	2,630.6	2,493.3	19.158	CC, ES
Wells Ranch USX BB05-10 - Original Drilling - Original D	16,100.0	6,748.9	2,658.3	2,517.4	18.870	SF
Wells Ranch USX BB05-11 - Original Drilling - Original D	14,341.2	6,624.5	2,887.7	2,767.2	23.954	CC
Wells Ranch USX BB05-11 - Original Drilling - Original D	14,400.0	6,622.2	2,888.3	2,767.1	23.822	ES
Wells Ranch USX BB05-11 - Original Drilling - Original D	14,800.0	6,604.5	2,923.9	2,798.9	23.398	SF
Wells Ranch USX BB05-12 - Original Drilling - Original D	13,006.9	6,569.5	2,601.5	2,496.9	24.866	CC, ES
Wells Ranch USX BB05-12 - Original Drilling - Original D	13,500.0	6,569.1	2,647.8	2,538.6	24.244	SF
Wells Ranch USX BB05-13 - Original Drilling - Original D	12,793.9	6,635.2	1,376.6	1,274.3	13.459	CC
Wells Ranch USX BB05-13 - Original Drilling - Original D	12,800.0	6,635.1	1,376.6	1,274.3	13.449	ES
Wells Ranch USX BB05-13 - Original Drilling - Original D	12,900.0	6,632.4	1,380.7	1,277.3	13.356	SF
Wells Ranch USX BB05-14 - Original Drilling - Original D	14,272.4	6,661.9	1,509.3	1,389.4	12.589	CC
Wells Ranch USX BB05-14 - Original Drilling - Original D	14,300.0	6,661.2	1,509.6	1,389.4	12.557	ES
Wells Ranch USX BB05-14 - Original Drilling - Original D	14,400.0	6,658.7	1,514.7	1,393.5	12.501	SF
Wells Ranch USX BB05-15 - Original Drilling - Original D	15,587.2	6,725.5	1,438.2	1,302.4	10.588	CC
Wells Ranch USX BB05-15 - Original Drilling - Original D	15,600.0	6,725.2	1,438.3	1,302.3	10.577	ES
Wells Ranch USX BB05-15 - Original Drilling - Original D	15,700.0	6,723.2	1,442.7	1,305.7	10.537	SF
Wells Ranch USX BB05-16 - Original Drilling - Original D	16,877.0	6,671.4	1,506.9	1,355.5	9.957	CC
Wells Ranch USX BB05-16 - Original Drilling - Original D	16,900.0	6,672.0	1,507.0	1,355.4	9.940	ES
Wells Ranch USX BB05-16 - Original Drilling - Original D	17,000.0	6,674.8	1,511.9	1,359.4	9.914	SF
Wells Ranch USX BB05-23 - Original Drilling - Original D	16,462.1	6,680.0	2,119.0	1,972.7	14.484	CC
Wells Ranch USX BB05-23 - Original Drilling - Original D	16,500.0	6,680.4	2,119.4	1,972.6	14.441	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 SLW Ranch State BB07-678
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	WELL @ 4662.0ft
<b>Reference Site:</b>	BB Section 07	<b>MD Reference:</b>	WELL @ 4662.0ft
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SLW Ranch State BB07-678	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Original Drilling	<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 USX BB05-23 - Original Drilling - Original D	16,700.0	6,682.5	2,132.3	1,983.8	14.355	SF
Wells Ranch USX BB05-25 - Original Drilling - Original D	13,451.6	6,642.8	2,080.4	1,970.5	18.916	CC
Wells Ranch USX BB05-25 - Original Drilling - Original D	13,500.0	6,641.3	2,081.0	1,970.5	18.824	ES
Wells Ranch USX BB05-25 - Original Drilling - Original D	13,700.0	6,634.9	2,095.2	1,982.8	18.635	SF

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

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well SLW Ranch State BB07-678
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	WELL @ 4662.0ft
<b>Reference Site:</b>	BB Section 07	<b>MD Reference:</b>	WELL @ 4662.0ft
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SLW Ranch State BB07-678	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Original Drilling	<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	9,056.7	6,606.0	5,327.3	5,265.9	86.669	CC
Skurich-Roth 21-06 - Original Drilling - Original Drilling - A	9,100.0	6,605.8	5,327.5	5,265.6	86.118	ES
Skurich-Roth 21-06 - Original Drilling - Original Drilling - A	11,700.0	6,596.7	5,946.5	5,862.8	71.010	SF
Skurich-Roth 23-06 - Original Drilling - Original Drilling - A	9,090.7	6,649.5	2,757.2	2,695.3	44.572	CC
Skurich-Roth 23-06 - Original Drilling - Original Drilling - A	9,100.0	6,649.9	2,757.2	2,695.3	44.511	ES
Skurich-Roth 23-06 - Original Drilling - Original Drilling - A	9,900.0	6,683.1	2,873.3	2,804.8	41.940	SF
Skurich-Roth 24-06 - Original Drilling - Original Drilling - A	9,047.6	6,570.9	1,452.5	1,391.2	23.672	CC, ES
Skurich-Roth 24-06 - Original Drilling - Original Drilling - A	9,300.0	6,572.2	1,474.3	1,410.9	23.262	SF
Skurich-Roth 33-06 - Original Drilling - Original Drilling - A	10,328.6	6,636.7	2,704.0	2,629.7	36.411	CC, ES
Skurich-Roth 33-06 - Original Drilling - Original Drilling - A	11,000.0	6,617.1	2,786.0	2,705.7	34.709	SF
Skurich-Roth 42-06 - Original Drilling - Original Drilling - A	11,603.8	6,644.3	4,008.4	3,919.9	45.311	CC, ES
Skurich-Roth 42-06 - Original Drilling - Original Drilling - A	12,800.0	6,669.4	4,182.9	4,083.3	42.007	SF
Skurich-Roth 6D - Original Drilling - Original Drilling - As	8,601.6	6,458.8	4,703.5	4,646.4	82.332	CC, ES
Skurich-Roth 6D - Original Drilling - Original Drilling - As	10,900.0	6,422.3	5,234.5	5,159.0	69.319	SF
Skurich-Rothe 11-06 - Original Drilling - Original Drilling -	7,779.2	6,578.3	5,374.0	5,310.5	84.637	CC
Skurich-Rothe 11-06 - Original Drilling - Original Drilling -	7,800.0	6,578.3	5,374.0	5,310.4	84.495	ES
Skurich-Rothe 11-06 - Original Drilling - Original Drilling -	10,700.0	6,577.9	6,115.8	6,031.0	72.174	SF
Skurich-Rothe 12-06 - Original Drilling - Original Drilling -	7,854.3	6,539.8	4,105.6	4,053.5	78.791	CC
Skurich-Rothe 12-06 - Original Drilling - Original Drilling -	7,900.0	6,539.9	4,105.8	4,053.5	78.411	ES
Skurich-Rothe 12-06 - Original Drilling - Original Drilling -	9,800.0	6,546.2	4,543.0	4,477.5	69.315	SF
Skurich-Rothe 13-06 - Original Drilling - Original Drilling -	7,732.3	6,534.1	2,778.4	2,725.0	52.094	CC, ES
Skurich-Rothe 13-06 - Original Drilling - Original Drilling -	8,600.0	6,525.9	2,910.6	2,852.2	49.858	SF
Skurich-Rothe 14-06 - Original Drilling - Original Drilling -	7,807.7	6,570.8	1,444.3	1,392.4	27.816	CC, ES
Skurich-Rothe 14-06 - Original Drilling - Original Drilling -	8,000.0	6,579.5	1,457.0	1,404.1	27.535	SF
Skurich-Rothe 22-06 - Original Drilling - Original Drilling -	9,037.9	6,523.8	3,826.2	3,765.0	62.547	CC
Skurich-Rothe 22-06 - Original Drilling - Original Drilling -	9,100.0	6,523.4	3,826.7	3,765.0	61.980	ES
Skurich-Rothe 22-06 - Original Drilling - Original Drilling -	10,600.0	6,513.5	4,132.6	4,058.5	55.825	SF
Skurich-Rothe 31-06 - Original Drilling - Original Drilling -	10,276.1	6,811.2	5,339.0	5,264.8	71.980	CC
Skurich-Rothe 31-06 - Original Drilling - Original Drilling -	10,300.0	6,811.1	5,339.1	5,264.6	71.736	ES
Skurich-Rothe 31-06 - Original Drilling - Original Drilling -	12,600.0	6,794.7	5,822.4	5,727.6	61.394	SF
Skurich-Rothe 34-06 - Original Drilling - Original Drilling -	10,329.0	6,605.0	1,438.0	1,363.8	19.378	CC, ES
Skurich-Rothe 34-06 - Original Drilling - Original Drilling -	10,500.0	6,605.1	1,448.1	1,372.3	19.102	SF
Skurich-Rothe 41-06 - Original Drilling - Original Drilling -	11,635.9	6,687.4	5,354.7	5,265.7	60.206	CC
Skurich-Rothe 41-06 - Original Drilling - Original Drilling -	11,700.0	6,690.1	5,355.0	5,265.4	59.714	ES
Skurich-Rothe 41-06 - Original Drilling - Original Drilling -	13,700.0	6,785.8	5,737.6	5,629.4	53.023	SF
Skurich-Rothe 43-06 - Original Drilling - Original Drilling -	11,507.8	6,648.4	2,835.4	2,748.1	32.457	CC, ES
Skurich-Rothe 43-06 - Original Drilling - Original Drilling -	12,100.0	6,656.7	2,896.6	2,803.6	31.160	SF
Skurich-Rothe 44-06 - Original Drilling - Original Drilling -	11,641.4	6,595.5	1,537.3	1,448.5	17.315	CC, ES
Skurich-Rothe 44-06 - Original Drilling - Original Drilling -	11,800.0	6,595.9	1,545.5	1,455.1	17.103	SF
Skurich-Rothe 6A - Original Drilling - Original Drilling - As	11,049.2	6,606.5	2,136.5	2,054.4	26.024	CC, ES
Skurich-Rothe 6A - Original Drilling - Original Drilling - As	11,400.0	6,605.5	2,165.1	2,079.7	25.344	SF
Skurich-Rothe 32-06 - Original Drilling - Original Drilling -	10,308.7	6,585.0	4,085.1	3,902.2	22.342	CC, ES
Skurich-Rothe 32-06 - Original Drilling - Original Drilling -	11,100.0	6,585.0	4,161.0	3,970.2	21.818	SF
SLW Ranch State BB06-619 - Original Drilling - Prelim -	7,476.5	7,550.0	1,378.8	1,324.2	25.252	CC
SLW Ranch State BB06-619 - Original Drilling - Prelim -	12,600.0	12,660.2	1,424.5	1,273.8	9.452	ES
SLW Ranch State BB06-619 - Original Drilling - Prelim -	12,700.0	12,703.9	1,426.5	1,274.5	9.385	SF
SLW Ranch State BB06-631 - Original Drilling - Plan 1	12,645.9	12,393.3	2,203.5	2,051.9	14.535	CC, ES
SLW Ranch State BB06-631 - Original Drilling - Plan 1	12,800.0	12,386.9	2,209.3	2,056.5	14.464	SF
SLW Ranch State BB06-642 - Original Drilling - Plan 1	12,646.8	12,372.0	2,893.3	2,742.2	19.146	CC
SLW Ranch State BB06-642 - Original Drilling - Plan 1	12,700.0	12,369.1	2,893.8	2,742.2	19.082	ES
SLW Ranch State BB06-642 - Original Drilling - Plan 1	13,000.0	12,369.1	2,914.9	2,760.9	18.928	SF
SLW Ranch State BB06-652 - Original Drilling - Plan 1	12,650.5	12,150.9	3,507.7	3,356.6	23.218	CC
SLW Ranch State BB06-652 - Original Drilling - Plan 1	12,700.0	12,150.9	3,508.1	3,356.4	23.133	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 SLW Ranch State BB07-678
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	WELL @ 4662.0ft
<b>Reference Site:</b>	BB Section 07	<b>MD Reference:</b>	WELL @ 4662.0ft
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SLW Ranch State BB07-678	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Original Drilling	<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						
SLW Ranch State BB06-652 - Original Drilling - Plan 1	13,100.0	12,150.9	3,536.4	3,381.1	22.780	SF
SLW Ranch State BB06-662 - Original Drilling - Plan 1	6,962.1	5,889.4	4,164.6	4,117.0	87.609	CC
SLW Ranch State BB06-662 - Original Drilling - Plan 1	12,700.0	12,150.2	4,178.4	4,026.2	27.449	ES
SLW Ranch State BB06-662 - Original Drilling - Plan 1	13,400.0	12,150.2	4,243.4	4,084.8	26.760	SF
SLW Ranch State BB06-672 - Original Drilling - Plan 1	3,861.9	2,860.7	4,389.3	4,365.9	187.590	CC
SLW Ranch State BB06-672 - Original Drilling - Plan 1	3,900.0	2,900.0	4,389.5	4,365.8	185.244	ES
SLW Ranch State BB06-672 - Original Drilling - Plan 1	13,600.0	12,492.6	4,917.0	4,755.6	30.466	SF
SLW Ranch State BB06-682 - SLW Ranch State BB06-6	2,000.0	1,977.0	4,426.5	4,412.7	320.986	CC
SLW Ranch State BB06-682 - SLW Ranch State BB06-6	2,100.0	2,030.7	4,426.9	4,412.6	308.700	ES
SLW Ranch State BB06-682 - SLW Ranch State BB06-6	13,900.0	12,588.5	5,607.3	5,442.4	34.013	SF



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

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well SLW Ranch State BB07-678
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	WELL @ 4662.0ft
<b>Reference Site:</b>	BB Section 07	<b>MD Reference:</b>	WELL @ 4662.0ft
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SLW Ranch State BB07-678	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Original Drilling	<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>						
BB Section 07						
Skurich 11-07 - Original Drilling - Original Drilling - As Dri	7,700.3	6,551.0	129.1	77.9	2.522	CC, ES, SF
Skurich 13-07 - Original Drilling - Original Drilling - As Dri	1,580.5	1,527.6	1,987.1	1,976.5	187.282	CC
Skurich 13-07 - Original Drilling - Original Drilling - As Dri	2,000.0	1,934.7	1,988.0	1,974.5	146.940	ES
Skurich 13-07 - Original Drilling - Original Drilling - As Dri	8,400.0	6,563.2	2,800.2	2,744.3	50.102	SF
Skurich 21-07 - Original Drilling - Original Drilling - As Dri	8,979.2	6,561.6	102.0	41.3	1.680	CC, ES, SF
Skurich 23-07 - Original Drilling - Original Drilling - As Dri	2,400.0	2,375.0	2,158.7	2,102.8	38.637	CC
Skurich 33-07 - Original Drilling - Original Drilling - As Dri	2,500.0	2,475.0	2,160.1	2,101.9	37.100	ES
Skurich 23-07 - Original Drilling - Original Drilling - As Dri	9,300.0	6,572.0	2,604.4	2,432.3	15.136	SF
Skurich 33-07 - Original Drilling - Original Drilling - As Dri	10,299.3	6,583.6	2,477.6	2,403.8	33.552	CC
Skurich 33-07 - Original Drilling - Original Drilling - As Dri	10,300.0	6,583.6	2,477.6	2,403.8	33.549	ES
Skurich 33-07 - Original Drilling - Original Drilling - As Dri	10,800.0	6,578.3	2,527.7	2,449.5	32.320	SF
Skurich 43-07 - Original Drilling - Original Drilling - As Drill	11,619.0	6,484.2	2,779.3	2,691.5	31.632	CC, ES
Skurich 43-07 - Original Drilling - Original Drilling - As Drill	12,200.0	6,538.5	2,839.0	2,745.6	30.395	SF
Skurich-SLW 7B - Original Drilling - Original Drilling - As	1,614.7	1,592.7	2,582.0	2,571.0	235.959	CC
Skurich-SLW 7B - Original Drilling - Original Drilling - As	2,000.0	1,960.6	2,583.3	2,569.7	189.845	ES
Skurich-SLW 7B - Original Drilling - Original Drilling - As	9,500.0	6,556.4	3,537.7	3,471.9	53.785	SF
Skurich-SLW 7D - Original Drilling - Original Drilling - As	8,475.1	6,575.0	609.8	444.7	3.692	CC, ES
Skurich-SLW 7D - Original Drilling - Original Drilling - As	8,500.0	6,575.0	610.3	445.0	3.691	SF
Skurich-SLW Ranch 7A - Original Drilling - Original Drilling	10,885.8	6,646.6	3,419.4	3,338.8	42.467	CC
Skurich-SLW Ranch 7A - Original Drilling - Original Drilling	10,900.0	6,646.0	3,419.4	3,338.7	42.388	ES
Skurich-SLW Ranch 7A - Original Drilling - Original Drilling	11,800.0	11,800.0	3,539.3	3,432.7	33.208	SF
SLW Ranch 12-07 - Original Drilling - Original Drilling - A	2,828.5	2,810.3	612.5	593.0	31.346	CC
SLW Ranch 12-07 - Original Drilling - Original Drilling - A	2,900.0	2,879.6	612.7	592.6	30.578	ES
SLW Ranch 12-07 - Original Drilling - Original Drilling - A	7,700.0	6,574.4	1,295.5	1,244.1	25.208	SF
SLW Ranch 14-07 - Original Drilling - Original Drilling - A	100.0	52.4	3,300.0	3,299.8	10,000.000	CC
SLW Ranch 14-07 - Original Drilling - Original Drilling - A	2,500.0	2,458.8	3,304.8	3,287.7	192.754	ES
SLW Ranch 14-07 - Original Drilling - Original Drilling - A	8,200.0	6,609.5	4,031.2	3,863.5	24.040	SF
SLW Ranch 22-07 - Original Drilling - Original Drilling - A	2,458.5	2,463.2	1,208.0	1,191.0	71.066	CC
SLW Ranch 22-07 - Original Drilling - Original Drilling - A	8,900.0	6,592.3	1,222.3	1,162.2	20.330	ES
SLW Ranch 22-07 - Original Drilling - Original Drilling - A	9,000.0	6,591.4	1,227.5	1,166.6	20.159	SF
SLW Ranch 24-07 - Original Drilling - Original Drilling - A	1,775.9	1,737.9	3,583.6	3,571.5	297.744	CC
SLW Ranch 24-07 - Original Drilling - Original Drilling - A	2,100.0	2,036.5	3,585.1	3,570.9	251.858	ES
SLW Ranch 24-07 - Original Drilling - Original Drilling - A	10,700.0	6,541.5	4,549.3	4,474.8	61.057	SF
SLW Ranch 31-07 - Original Drilling - Original Drilling - A	10,185.4	6,610.9	86.0	13.3	1.183	Level 2, CC, ES, SF
SLW Ranch 32-07 - Original Drilling - Original Drilling - A	10,012.8	6,600.0	1,115.1	1,044.2	15.719	CC, ES
SLW Ranch 32-07 - Original Drilling - Original Drilling - A	10,100.0	6,600.0	1,118.5	1,046.8	15.601	SF
SLW Ranch 34-07 - Original Drilling - Original Drilling - A	10,334.7	6,644.1	4,173.5	4,099.0	56.016	CC
SLW Ranch 34-07 - Original Drilling - Original Drilling - A	10,400.0	6,642.3	4,174.0	4,098.8	55.520	ES
SLW Ranch 34-07 - Original Drilling - Original Drilling - A	11,800.0	6,603.7	4,423.2	4,336.1	50.809	SF
SLW Ranch 41-07 - Original Drilling - Original Drilling - A	11,591.9	6,592.5	103.8	15.7	1.178	Level 2, CC, ES, SF
SLW Ranch 42-07 - Original Drilling - Original Drilling - A	11,530.7	6,611.2	1,260.6	1,173.0	14.391	CC, ES
SLW Ranch 42-07 - Original Drilling - Original Drilling - A	11,600.0	6,611.2	1,262.5	1,174.2	14.305	SF
SLW Ranch 44-07 - Original Drilling - Original Drilling - A	11,563.8	6,628.6	4,253.6	4,165.6	48.330	CC
SLW Ranch 44-07 - Original Drilling - Original Drilling - A	11,600.0	6,627.6	4,253.8	4,165.4	48.114	ES
SLW Ranch 44-07 - Original Drilling - Original Drilling - A	12,900.0	6,605.5	4,458.6	4,358.8	44.681	SF
SLW Ranch BB07-79HNL - Original Drilling - APD - Rev	6,954.1	11,081.5	28.8	16.9	2.413	CC, ES, SF
SLW Ranch State BB06-690 - Original Drilling - Plan 1	2,000.0	2,000.0	47.4	33.5	3.414	CC, ES
SLW Ranch State BB06-690 - Original Drilling - Plan 1	2,100.0	2,098.8	48.6	34.0	3.331	SF
SLW Ranch State BB07-615 - Original Drilling - Plan 1	2,000.0	1,985.0	2,461.1	2,447.3	178.093	CC, ES
SLW Ranch State BB07-615 - Original Drilling - Plan 1	17,888.2	17,978.2	4,499.5	4,218.1	15.989	SF
SLW Ranch State BB07-621 - Original Drilling - Plan 1	2,200.0	2,185.0	2,440.4	2,425.1	159.994	CC, ES
SLW Ranch State BB07-621 - Original Drilling - Plan 1	17,888.2	17,808.9	4,146.0	3,865.0	14.754	SF
SLW Ranch State BB07-627 - Original Drilling - Plan 1	2,400.0	2,385.0	2,416.3	2,399.6	144.801	CC, ES

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

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

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well SLW Ranch State BB07-678
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	WELL @ 4662.0ft
<b>Reference Site:</b>	BB Section 07	<b>MD Reference:</b>	WELL @ 4662.0ft
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SLW Ranch State BB07-678	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Original Drilling	<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 07						
SLW Ranch State BB07-627 - Original Drilling - Plan 1	17,888.2	17,892.1	3,747.6	3,466.4	13.327	SF
SLW Ranch State BB07-633 - Original Drilling - Plan 1	2,200.0	2,184.0	2,395.6	2,380.4	157.095	CC
SLW Ranch State BB07-633 - Original Drilling - Plan 1	2,300.0	2,256.2	2,396.1	2,380.2	151.084	ES
SLW Ranch State BB07-633 - Original Drilling - Plan 1	17,888.2	17,701.3	3,308.0	3,027.1	11.775	SF
SLW Ranch State BB07-639 - Original Drilling - Plan 1	2,200.0	2,184.0	2,374.1	2,358.8	155.682	CC
SLW Ranch State BB07-639 - Original Drilling - Plan 1	2,400.0	2,367.7	2,374.7	2,358.1	142.969	ES
SLW Ranch State BB07-639 - Original Drilling - Plan 1	17,888.2	17,875.1	2,962.7	2,681.3	10.528	SF
SLW Ranch State BB07-646 - Original Drilling - Plan 1	4,518.6	4,627.2	2,273.5	2,240.5	68.871	CC
SLW Ranch State BB07-646 - Original Drilling - Plan 1	17,888.2	17,723.1	2,499.2	2,218.3	8.895	ES, SF
SLW Ranch State BB07-650 - Original Drilling - Plan 1	6,239.9	6,572.7	1,882.7	1,834.6	39.163	CC
SLW Ranch State BB07-650 - Original Drilling - Plan 1	17,888.2	17,821.5	2,084.6	1,803.4	7.413	ES, SF
SLW Ranch State BB07-653 - Original Drilling - Plan 1	2,200.0	2,198.0	87.5	72.2	5.718	CC, ES
SLW Ranch State BB07-653 - Original Drilling - Plan 1	2,400.0	2,394.8	90.9	74.3	5.453	SF
SLW Ranch State BB07-660 - Original Drilling - Plan 1	2,400.0	2,399.0	65.6	48.9	3.921	CC, ES
SLW Ranch State BB07-660 - Original Drilling - Plan 1	2,500.0	2,498.4	66.8	49.3	3.830	SF
SLW Ranch State BB07-668 - Original Drilling - Plan 1	2,400.0	2,399.0	43.8	27.1	2.617	CC
SLW Ranch State BB07-668 - Original Drilling - Plan 1	2,500.0	2,499.0	44.4	27.0	2.548	ES
SLW Ranch State BB07-668 - Original Drilling - Plan 1	17,888.2	17,858.3	692.3	411.1	2.462	SF
SLW Ranch State BB07-673 - Original Drilling - Plan 1	2,400.0	2,401.0	22.0	5.3	1.316	Level 3, CC
SLW Ranch State BB07-673 - Original Drilling - Plan 1	2,500.0	2,501.0	22.6	5.2	1.297	Level 3, ES
SLW Ranch State BB07-673 - Original Drilling - Plan 1	17,888.2	17,909.6	307.0	26.8	1.096	Level 2, SF
SLW Ranch State BB07-685 - Original Drilling - Plan 1	2,200.0	2,200.0	25.5	10.2	1.666	CC, ES
SLW Ranch State BB07-685 - Original Drilling - Plan 1	17,888.2	17,211.8	434.0	166.3	1.621	SF

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

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well SLW Ranch State BB07-678
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	WELL @ 4662.0ft
<b>Reference Site:</b>	BB Section 07	<b>MD Reference:</b>	WELL @ 4662.0ft
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SLW Ranch State BB07-678	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Original Drilling	<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>						
BB Section 08						
State 11-08 - Original Drilling - Original Drilling - As Drille	12,905.2	6,617.0	146.7	-66.2	0.689	Level 1, CC, ES, SF
State 5519 08-34 - Original Drilling - Original Drilling - As	15,504.2	6,716.7	4,071.4	3,936.6	30.199	CC, ES
State 5519 08-34 - Original Drilling - Original Drilling - As	16,300.0	6,693.2	4,148.5	4,006.4	29.205	SF
State 5519 08-43 - Original Drilling - Original Drilling - As	16,861.0	6,600.0	2,943.6	2,792.9	19.529	CC
State 5519 08-43 - Original Drilling - Original Drilling - As	16,900.0	6,606.9	2,943.8	2,792.6	19.467	ES
State 5519 08-43 - Original Drilling - Original Drilling - As	17,200.0	6,617.8	2,963.0	2,808.9	19.237	SF
State 5519 12-08 - Original Drilling - Original Drilling - As	12,902.1	6,620.9	1,372.2	1,268.7	13.259	CC, ES
State 5519 12-08 - Original Drilling - Original Drilling - As	13,000.0	6,620.8	1,375.7	1,271.3	13.178	SF
State 5519 13-08 - Original Drilling - Original Drilling - As	12,782.6	6,612.0	2,686.7	2,475.3	12.713	CC
State 5519 13-08 - Original Drilling - Original Drilling - As	12,800.0	6,612.0	2,686.7	2,475.2	12.701	ES
State 5519 13-08 - Original Drilling - Original Drilling - As	13,100.0	6,612.0	2,705.4	2,490.9	12.615	SF
State 5519 14-08 - Original Drilling - Original Drilling - As	12,565.5	6,639.8	4,381.1	4,281.0	43.749	CC
State 5519 14-08 - Original Drilling - Original Drilling - As	12,600.0	6,639.2	4,381.3	4,280.7	43.584	ES
State 5519 14-08 - Original Drilling - Original Drilling - As	13,700.0	6,620.8	4,525.7	4,415.4	41.045	SF
State 5519 21-08 - Original Drilling - Original Drilling - As	14,059.0	6,674.0	238.2	120.9	2.031	CC, ES, SF
State 5519 23-08 - Original Drilling - Original Drilling - As	14,194.1	6,660.9	2,759.6	2,640.6	23.205	CC
State 5519 23-08 - Original Drilling - Original Drilling - As	14,200.0	6,660.8	2,759.6	2,640.6	23.192	ES
State 5519 23-08 - Original Drilling - Original Drilling - As	14,600.0	6,657.0	2,789.3	2,666.7	22.747	SF
State 5519 24-08 - Original Drilling - Original Drilling - As	14,071.9	6,358.5	4,375.9	4,260.0	37.739	CC
State 5519 24-08 - Original Drilling - Original Drilling - As	14,100.0	6,359.5	4,376.0	4,259.7	37.631	ES
State 5519 24-08 - Original Drilling - Original Drilling - As	15,500.0	15,500.0	4,602.2	4,441.1	28.577	SF
State 5519 31-08 - Original Drilling - Original Drilling - As	15,747.2	6,650.6	366.6	228.9	2.662	CC, ES, SF
State 5519 32-08 - Original Drilling - Original Drilling - As	15,478.6	6,681.4	1,465.2	1,330.8	10.903	CC
State 5519 32-08 - Original Drilling - Original Drilling - As	15,500.0	6,681.0	1,465.3	1,330.7	10.886	ES
State 5519 32-08 - Original Drilling - Original Drilling - As	15,600.0	6,679.5	1,470.2	1,334.8	10.858	SF
State 5519 33-08 - Original Drilling - Original Drilling - As	15,468.9	6,632.7	2,813.0	2,679.0	20.990	CC
State 5519 33-08 - Original Drilling - Original Drilling - As	15,500.0	6,632.9	2,813.2	2,678.8	20.935	ES
State 5519 33-08 - Original Drilling - Original Drilling - As	15,900.0	6,635.1	2,845.9	2,708.0	20.646	SF
State 5519 41-08 - Original Drilling - Original Drilling - As	16,821.9	6,733.9	146.7	-4.2	0.972	Level 1, CC, ES, SF
State 5519 42-08 - Original Drilling - Original Drilling - As	16,876.2	6,717.5	1,352.0	1,200.4	8.922	CC
State 5519 42-08 - Original Drilling - Original Drilling - As	16,900.0	6,717.3	1,352.2	1,200.4	8.908	ES
State 5519 42-08 - Original Drilling - Original Drilling - As	17,000.0	6,716.6	1,357.6	1,205.2	8.907	SF
State 5519 44-08 - Original Drilling - Original Drilling - As	16,741.8	6,653.1	4,279.4	4,129.8	28.613	CC
State 5519 44-08 - Original Drilling - Original Drilling - As	16,800.0	6,653.5	4,279.8	4,129.5	28.485	ES
State 5519 44-08 - Original Drilling - Original Drilling - As	17,500.0	6,658.8	4,346.1	4,189.4	27.743	SF
State 5519 8A - Original Drilling - Original Drilling - As Dr	16,008.3	6,781.3	3,451.4	3,310.1	24.433	CC, ES
State 5519 8A - Original Drilling - Original Drilling - As Dr	16,500.0	6,753.8	3,486.2	3,340.4	23.913	SF
State 5519 8D - Original Drilling - Original Drilling - As Dr	13,517.0	6,675.3	636.8	526.1	5.751	CC, ES, SF
State Lease 5519 22-08 - Original Drilling - Original Drillin	14,275.6	6,709.7	1,020.5	900.4	8.492	CC, ES
State Lease 5519 22-08 - Original Drilling - Original Drillin	14,300.0	6,708.0	1,020.8	900.4	8.478	SF

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

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well SLW Ranch State BB07-678
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	WELL @ 4662.0ft
<b>Reference Site:</b>	BB Section 07	<b>MD Reference:</b>	WELL @ 4662.0ft
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SLW Ranch State BB07-678	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Original Drilling	<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 09						
70 Ranch 11-09 - Original Drilling - Original Drilling - As D	17,888.2	6,659.1	584.4	492.2	6.340	CC, ES, SF
70 Ranch 22-09 - Original Drilling - Original Drilling - As D	17,888.2	6,635.8	1,949.9	1,836.8	17.229	CC, ES, SF
70 Ranch 31-09 - Original Drilling - Original Drilling - As D	17,888.2	6,438.3	2,753.7	2,703.4	54.729	CC, ES, SF
70 Ranch 41-09 - Original Drilling - Original Drilling - As D	17,888.2	6,630.6	4,226.1	4,175.2	82.899	CC, ES, SF
70 Ranch 44-09 - Original Drilling - Original Drilling - As D	17,888.2	6,547.7	5,717.3	5,596.0	47.130	CC, ES, SF
70 Ranch USX BB09-05 - Original Drilling - Original Drilling	17,888.2	6,676.1	1,290.4	1,129.1	8.002	CC, ES, SF
70 Ranch USX BB09-07 - Original Drilling - Original Drilling	17,888.2	6,616.6	3,153.8	3,067.4	36.521	CC, ES, SF
70 Ranch USX BB09-08 - Original Drilling - Original Drilling	17,888.2	6,644.1	4,415.0	4,338.7	57.842	CC, ES, SF
70 Ranch USX BB09-09 - Original Drilling - Original Drilling	17,888.2	6,646.1	4,976.1	4,872.7	48.152	CC, ES, SF
70 Ranch USX BB09-10 - Original Drilling - Original Drilling	17,888.2	6,658.9	3,848.6	3,728.7	32.107	CC, ES, SF
70 Ranch USX BB09-11 - Original Drilling - Original Drilling	17,888.2	6,687.5	3,087.0	2,941.4	21.195	CC, ES, SF
70 Ranch USX BB09-15 - Original Drilling - Original Drilling	17,888.2	6,682.0	4,864.2	4,720.4	33.828	CC, ES, SF
70 Ranch USX BB09-63HN - Original Drilling - Original Drilling	17,700.0	10,838.8	3,539.7	3,289.5	14.146	SF
70 Ranch USX BB09-63HN - Original Drilling - Original Drilling	17,888.2	10,686.7	3,523.8	3,275.1	14.171	CC, ES
70 Ranch USX BB09-99HZ - Original Drilling - Original Drilling	17,888.2	6,477.4	730.7	638.5	7.924	CC, ES, SF
National Hog Farm 13-09 - Original Drilling - Original Drilling	17,888.2	6,765.6	2,588.7	2,424.9	15.807	CC, ES, SF
National Hog Farm 14-09 - Original Drilling - Original Drilling	17,633.6	6,446.3	4,621.3	4,461.9	28.993	CC
National Hog Farm 14-09 - Original Drilling - Original Drilling	17,700.0	6,446.8	4,621.8	4,461.6	28.854	ES
National Hog Farm 14-09 - Original Drilling - Original Drilling	17,888.2	6,448.3	4,628.3	4,466.0	28.525	SF
National Hog Farm 21-09 - Original Drilling - Original Drilling	17,888.2	6,643.9	1,659.0	1,606.9	31.844	CC, ES, SF
National Hog Farm 24-09 - Original Drilling - Original Drilling	17,888.2	6,897.5	4,360.6	4,205.6	28.140	CC, ES, SF



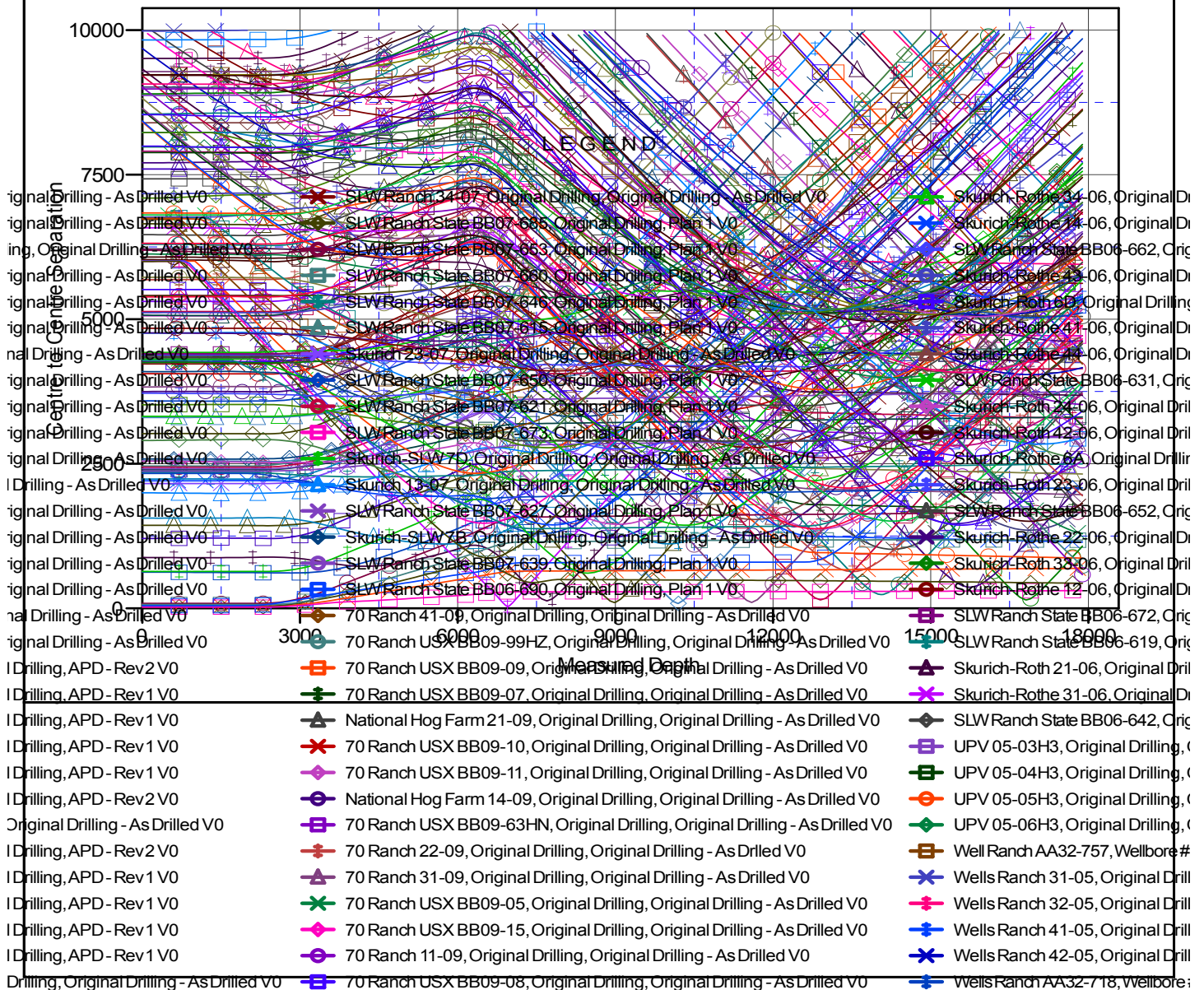
**Noble Energy, Inc.**  
**Anticollision Summary Report**

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well SLW Ranch State BB07-678
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	WELL @ 4662.0ft
<b>Reference Site:</b>	BB Section 07	<b>MD Reference:</b>	WELL @ 4662.0ft
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SLW Ranch State BB07-678	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Original Drilling	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan 1	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4662.0ft  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.5000000

Coordinates are relative to: SLW Ranch State BB07-678  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 0.66°

## Ladder Plot



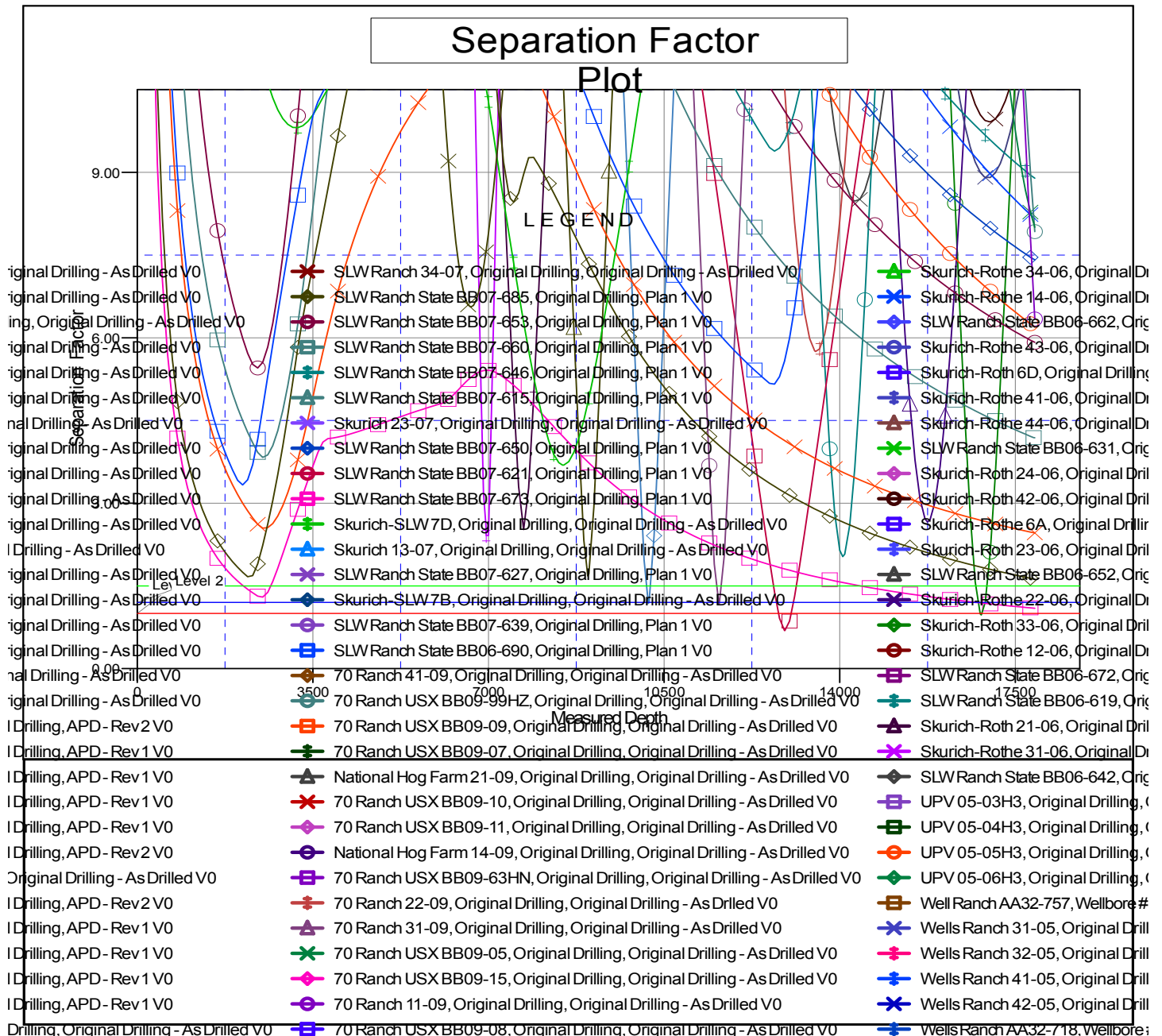
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

## Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well SLW Ranch State BB07-678
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	WELL @ 4662.0ft
<b>Reference Site:</b>	BB Section 07	<b>MD Reference:</b>	WELL @ 4662.0ft
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SLW Ranch State BB07-678	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Original Drilling	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan 1	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4662.0ft  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.5000000

Coordinates are relative to: SLW Ranch State BB07-678  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 0.66°



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