

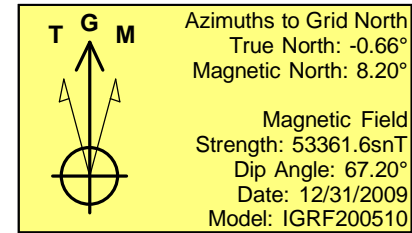
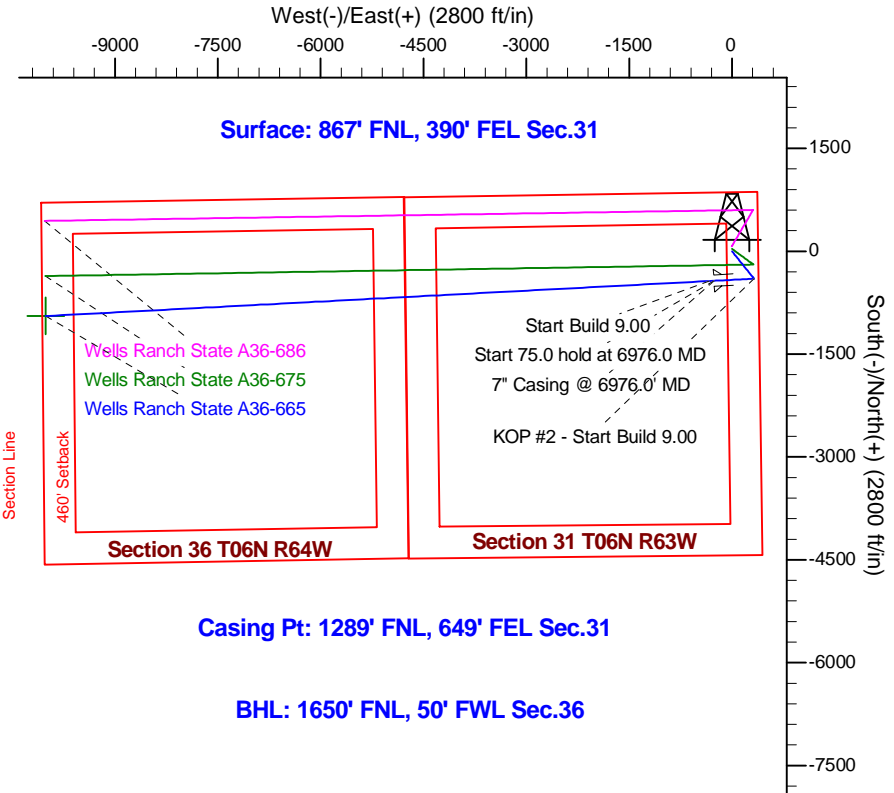
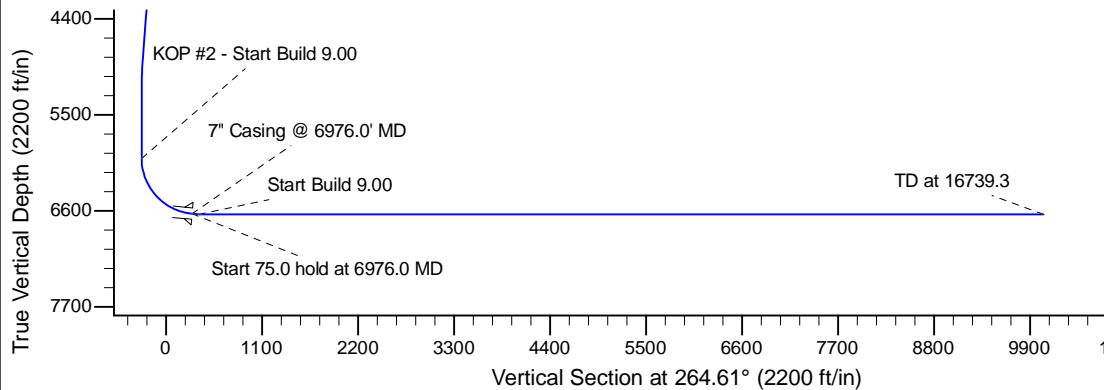
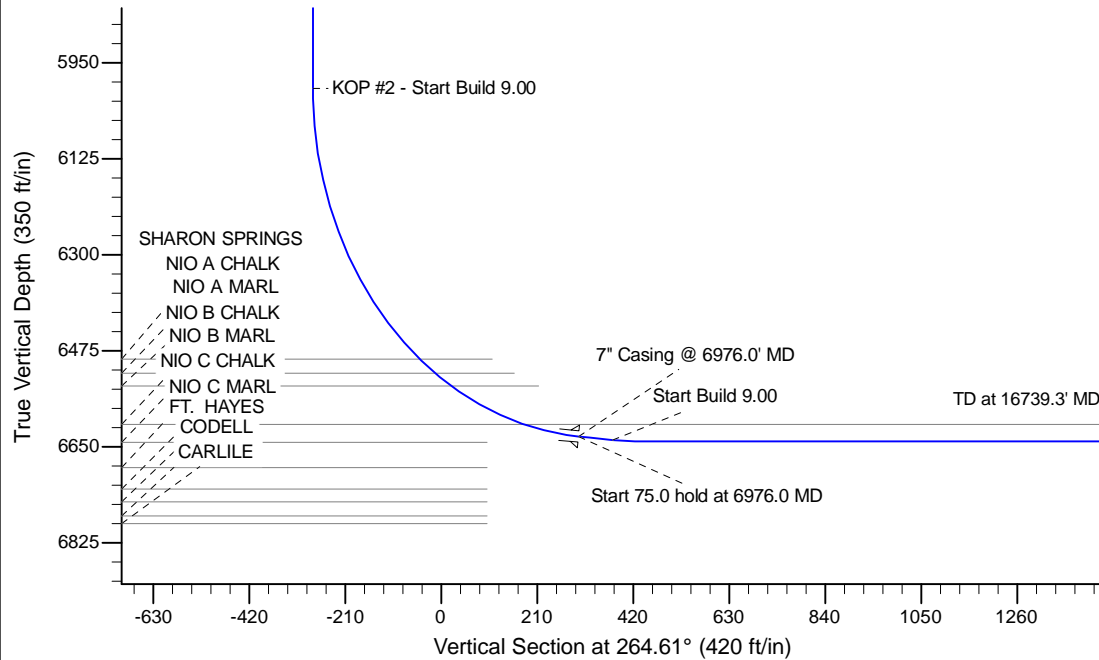
Project: Wattenberg Field  
Site: A (Sec.31-T06N-R63W) Weld County, CO  
Well: Wells Ranch State A36-665  
Wellbore: Original Drilling  
Design: APD - Rev 0

# Northern Region Drilling - Working

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

## SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	1200.0	0.00	0.00	1200.0	0.0	0.0	0.00	0.00	0.0	
3	1601.9	8.04	141.34	1600.6	-22.0	17.6	2.00	141.34	-15.4	
4	4862.8	8.04	141.34	4829.4	-378.0	302.4	0.00	0.00	-265.6	
5	5264.7	0.00	0.00	5230.0	-400.0	320.0	2.00	180.00	-281.0	
6	6031.5	0.00	0.00	5996.8	-400.0	320.0	0.00	0.00	-281.0	
7	6976.0	85.00	266.98	6631.0	-430.6	-260.3	9.00	266.98	299.6	
8	7051.0	85.00	266.98	6637.6	-434.5	-334.9	0.00	0.00	374.3	
9	7106.5	90.00	266.98	6640.0	-437.5	-390.3	9.00	0.00	429.7	
10	16739.3	90.00	266.98	6640.0	-944.7	-10009.7	0.00	0.00	10054.2	Wells Ranch State A36-665 BHL 1650'FNL, 50'FWL



WELL DETAILS: Wells Ranch State A36-665					
Ground Level: 4654.0					
0.0	0.0	Northing	Easting	Latitude	Longitude
		1407666.24	3286202.95	40.447890	-104.471630
Plan: APD - Rev 0 (Wells Ranch State A36-665/Original Drilling)					
Created By: Shailey Jewell			Date: 10/18, January 23 2015		
Checked: _____			Date: _____		
Reviewed: _____			Date: _____		
Approved: _____			Date: _____		

# **Northern Region Drilling - Working**

**Wattenberg Field**

**A (06N-64W)**

**Wells Ranch State A36-665**

**Original Drilling**

**Plan: APD - Rev 0**

## **Standard Planning Report**

**23 January, 2015**

# Noble Energy Inc

## Planning Report

<b>Database:</b>	EDM01P	<b>Local Co-ordinate Reference:</b>	Well Wells Ranch State A36-665
<b>Company:</b>	Northern Region Drilling - Working	<b>TVD Reference:</b>	WELL @ 4678.0ft (H&P 343 RKB 24')
<b>Project:</b>	Wattenberg Field	<b>MD Reference:</b>	WELL @ 4678.0ft (H&P 343 RKB 24')
<b>Site:</b>	A (06N-64W)	<b>North Reference:</b>	Grid
<b>Well:</b>	Wells Ranch State A36-665	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Drilling		
<b>Design:</b>	APD - Rev 0		

<b>Project</b>	Wattenberg Field, Weld County CO		
<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		Using geodetic scale factor

Site		A (06N-64W)			
Site Position:		Northing:	1,408,077.93 usft	Latitude:	40.449320
From:	Lat/Long	Easting:	3,276,618.19 usft	Longitude:	-104.506050
Position Uncertainty:	0.0 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.64 °

Well	Wells Ranch State A36-665					
Well Position	+N/-S	-411.7 ft	Northing:	1,407,666.24 usft	Latitude:	40.447890
	+E/-W	9,585.1 ft	Easting:	3,286,202.96 usft	Longitude:	-104.471630
Position Uncertainty		0.0 ft	Wellhead Elevation:	0.0 ft	Ground Level:	4,654.0 ft

<b>Wellbore</b>	Original Drilling				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF200510	12/31/2009	8.87	67.20	53,362

<b>Design</b>	APD - Rev 0			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	264.61

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,601.9	8.04	141.34	1,600.6	-22.0	17.6	2.00	2.00	0.00	141.34	
4,862.8	8.04	141.34	4,829.4	-378.0	302.4	0.00	0.00	0.00	0.00	
5,264.7	0.00	0.00	5,230.0	-400.0	320.0	2.00	-2.00	0.00	180.00	
6,031.5	0.00	0.00	5,996.8	-400.0	320.0	0.00	0.00	0.00	0.00	
6,976.0	85.00	266.98	6,631.0	-430.6	-260.3	9.00	9.00	0.00	266.98	
7,051.0	85.00	266.98	6,637.6	-434.5	-334.9	0.00	0.00	0.00	0.00	
7,106.5	90.00	266.98	6,640.0	-437.5	-390.3	9.00	9.00	0.00	0.00	
16,739.3	90.00	266.98	6,640.0	-944.7	-10,009.7	0.00	0.00	0.00	0.00	Wells Ranch State A3

# Noble Energy Inc

## Planning Report

<b>Database:</b>	EDM01P	<b>Local Co-ordinate Reference:</b>	Well Wells Ranch State A36-665
<b>Company:</b>	Northern Region Drilling - Working	<b>TVD Reference:</b>	WELL @ 4678.0ft (H&P 343 RKB 24')
<b>Project:</b>	Wattenberg Field	<b>MD Reference:</b>	WELL @ 4678.0ft (H&P 343 RKB 24')
<b>Site:</b>	A (06N-64W)	<b>North Reference:</b>	Grid
<b>Well:</b>	Wells Ranch State A36-665	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Drilling		
<b>Design:</b>	APD - Rev 0		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
50.0	0.00	0.00	50.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
150.0	0.00	0.00	150.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
250.0	0.00	0.00	250.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
350.0	0.00	0.00	350.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
450.0	0.00	0.00	450.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
550.0	0.00	0.00	550.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
650.0	0.00	0.00	650.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
750.0	0.00	0.00	750.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
850.0	0.00	0.00	850.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
950.0	0.00	0.00	950.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,050.0	0.00	0.00	1,050.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,150.0	0.00	0.00	1,150.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP - Start Build 2.00									
1,250.0	1.00	141.34	1,250.0	-0.3	0.3	-0.2	2.00	2.00	0.00
1,300.0	2.00	141.34	1,300.0	-1.4	1.1	-1.0	2.00	2.00	0.00
1,350.0	3.00	141.34	1,349.9	-3.1	2.5	-2.2	2.00	2.00	0.00
1,400.0	4.00	141.34	1,399.8	-5.4	4.4	-3.8	2.00	2.00	0.00
1,450.0	5.00	141.34	1,449.7	-8.5	6.8	-6.0	2.00	2.00	0.00
1,500.0	6.00	141.34	1,499.5	-12.3	9.8	-8.6	2.00	2.00	0.00
1,550.0	7.00	141.34	1,549.1	-16.7	13.3	-11.7	2.00	2.00	0.00
1,600.0	8.00	141.34	1,598.7	-21.8	17.4	-15.3	2.00	2.00	0.00
1,601.9	8.04	141.34	1,600.6	-22.0	17.6	-15.4	2.00	2.00	0.00
1,650.0	8.04	141.34	1,648.2	-27.2	21.8	-19.1	0.00	0.00	0.00
1,700.0	8.04	141.34	1,697.7	-32.7	26.2	-23.0	0.00	0.00	0.00
1,750.0	8.04	141.34	1,747.2	-38.1	30.5	-26.8	0.00	0.00	0.00
1,800.0	8.04	141.34	1,796.7	-43.6	34.9	-30.6	0.00	0.00	0.00
1,850.0	8.04	141.34	1,846.2	-49.1	39.3	-34.5	0.00	0.00	0.00
1,900.0	8.04	141.34	1,895.8	-54.5	43.6	-38.3	0.00	0.00	0.00
1,950.0	8.04	141.34	1,945.3	-60.0	48.0	-42.1	0.00	0.00	0.00
2,000.0	8.04	141.34	1,994.8	-65.4	52.4	-46.0	0.00	0.00	0.00
2,050.0	8.04	141.34	2,044.3	-70.9	56.7	-49.8	0.00	0.00	0.00
2,100.0	8.04	141.34	2,093.8	-76.4	61.1	-53.6	0.00	0.00	0.00
2,150.0	8.04	141.34	2,143.3	-81.8	65.5	-57.5	0.00	0.00	0.00
2,200.0	8.04	141.34	2,192.8	-87.3	69.8	-61.3	0.00	0.00	0.00
2,250.0	8.04	141.34	2,242.3	-92.7	74.2	-65.2	0.00	0.00	0.00
2,300.0	8.04	141.34	2,291.8	-98.2	78.6	-69.0	0.00	0.00	0.00
2,350.0	8.04	141.34	2,341.3	-103.7	82.9	-72.8	0.00	0.00	0.00
2,377.9	8.04	141.34	2,369.0	-106.7	85.4	-75.0	0.00	0.00	0.00
PIERRE									
2,400.0	8.04	141.34	2,390.8	-109.1	87.3	-76.7	0.00	0.00	0.00
2,450.0	8.04	141.34	2,440.4	-114.6	91.7	-80.5	0.00	0.00	0.00

# Noble Energy Inc

## Planning Report

<b>Database:</b>	EDM01P	<b>Local Co-ordinate Reference:</b>	Well Wells Ranch State A36-665
<b>Company:</b>	Northern Region Drilling - Working	<b>TVD Reference:</b>	WELL @ 4678.0ft (H&P 343 RKB 24')
<b>Project:</b>	Wattenberg Field	<b>MD Reference:</b>	WELL @ 4678.0ft (H&P 343 RKB 24')
<b>Site:</b>	A (06N-64W)	<b>North Reference:</b>	Grid
<b>Well:</b>	Wells Ranch State A36-665	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Drilling		
<b>Design:</b>	APD - Rev 0		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
2,500.0	8.04	141.34	2,489.9	-120.0	96.0	-84.3	0.00	0.00	0.00
2,550.0	8.04	141.34	2,539.4	-125.5	100.4	-88.2	0.00	0.00	0.00
2,600.0	8.04	141.34	2,588.9	-131.0	104.8	-92.0	0.00	0.00	0.00
2,650.0	8.04	141.34	2,638.4	-136.4	109.1	-95.8	0.00	0.00	0.00
2,700.0	8.04	141.34	2,687.9	-141.9	113.5	-99.7	0.00	0.00	0.00
2,750.0	8.04	141.34	2,737.4	-147.3	117.9	-103.5	0.00	0.00	0.00
2,800.0	8.04	141.34	2,786.9	-152.8	122.2	-107.3	0.00	0.00	0.00
2,850.0	8.04	141.34	2,836.4	-158.3	126.6	-111.2	0.00	0.00	0.00
2,900.0	8.04	141.34	2,885.9	-163.7	131.0	-115.0	0.00	0.00	0.00
2,950.0	8.04	141.34	2,935.4	-169.2	135.3	-118.8	0.00	0.00	0.00
3,000.0	8.04	141.34	2,985.0	-174.6	139.7	-122.7	0.00	0.00	0.00
3,050.0	8.04	141.34	3,034.5	-180.1	144.1	-126.5	0.00	0.00	0.00
3,100.0	8.04	141.34	3,084.0	-185.6	148.4	-130.3	0.00	0.00	0.00
3,150.0	8.04	141.34	3,133.5	-191.0	152.8	-134.2	0.00	0.00	0.00
3,200.0	8.04	141.34	3,183.0	-196.5	157.2	-138.0	0.00	0.00	0.00
3,250.0	8.04	141.34	3,232.5	-201.9	161.5	-141.9	0.00	0.00	0.00
3,300.0	8.04	141.34	3,282.0	-207.4	165.9	-145.7	0.00	0.00	0.00
3,350.0	8.04	141.34	3,331.5	-212.8	170.3	-149.5	0.00	0.00	0.00
3,400.0	8.04	141.34	3,381.0	-218.3	174.6	-153.4	0.00	0.00	0.00
3,450.0	8.04	141.34	3,430.5	-223.8	179.0	-157.2	0.00	0.00	0.00
3,500.0	8.04	141.34	3,480.0	-229.2	183.4	-161.0	0.00	0.00	0.00
3,530.3	8.04	141.34	3,510.0	-232.5	186.0	-163.4	0.00	0.00	0.00
<b>PARKMAN</b>									
3,550.0	8.04	141.34	3,529.6	-234.7	187.7	-164.9	0.00	0.00	0.00
3,600.0	8.04	141.34	3,579.1	-240.1	192.1	-168.7	0.00	0.00	0.00
3,650.0	8.04	141.34	3,628.6	-245.6	196.5	-172.5	0.00	0.00	0.00
3,700.0	8.04	141.34	3,678.1	-251.1	200.9	-176.4	0.00	0.00	0.00
3,750.0	8.04	141.34	3,727.6	-256.5	205.2	-180.2	0.00	0.00	0.00
3,800.0	8.04	141.34	3,777.1	-262.0	209.6	-184.0	0.00	0.00	0.00
3,850.0	8.04	141.34	3,826.6	-267.4	214.0	-187.9	0.00	0.00	0.00
3,900.0	8.04	141.34	3,876.1	-272.9	218.3	-191.7	0.00	0.00	0.00
3,950.0	8.04	141.34	3,925.6	-278.4	222.7	-195.5	0.00	0.00	0.00
4,000.0	8.04	141.34	3,975.1	-283.8	227.1	-199.4	0.00	0.00	0.00
4,050.0	8.04	141.34	4,024.6	-289.3	231.4	-203.2	0.00	0.00	0.00
4,100.0	8.04	141.34	4,074.1	-294.7	235.8	-207.1	0.00	0.00	0.00
4,150.0	8.04	141.34	4,123.7	-300.2	240.2	-210.9	0.00	0.00	0.00
4,200.0	8.04	141.34	4,173.2	-305.7	244.5	-214.7	0.00	0.00	0.00
4,250.0	8.04	141.34	4,222.7	-311.1	248.9	-218.6	0.00	0.00	0.00
4,300.0	8.04	141.34	4,272.2	-316.6	253.3	-222.4	0.00	0.00	0.00
4,306.9	8.04	141.34	4,279.0	-317.3	253.9	-222.9	0.00	0.00	0.00
<b>SUSSEX</b>									
4,350.0	8.04	141.34	4,321.7	-322.0	257.6	-226.2	0.00	0.00	0.00
4,400.0	8.04	141.34	4,371.2	-327.5	262.0	-230.1	0.00	0.00	0.00
4,450.0	8.04	141.34	4,420.7	-333.0	266.4	-233.9	0.00	0.00	0.00
4,500.0	8.04	141.34	4,470.2	-338.4	270.7	-237.7	0.00	0.00	0.00
4,550.0	8.04	141.34	4,519.7	-343.9	275.1	-241.6	0.00	0.00	0.00
4,600.0	8.04	141.34	4,569.2	-349.3	279.5	-245.4	0.00	0.00	0.00
4,650.0	8.04	141.34	4,618.7	-354.8	283.8	-249.2	0.00	0.00	0.00
4,700.0	8.04	141.34	4,668.3	-360.3	288.2	-253.1	0.00	0.00	0.00
4,750.0	8.04	141.34	4,717.8	-365.7	292.6	-256.9	0.00	0.00	0.00
4,800.0	8.04	141.34	4,767.3	-371.2	296.9	-260.7	0.00	0.00	0.00
4,850.0	8.04	141.34	4,816.8	-376.6	301.3	-264.6	0.00	0.00	0.00
4,862.8	8.04	141.34	4,829.4	-378.0	302.4	-265.6	0.00	0.00	0.00

# Noble Energy Inc

## Planning Report

<b>Database:</b>	EDM01P	<b>Local Co-ordinate Reference:</b>	Well Wells Ranch State A36-665
<b>Company:</b>	Northern Region Drilling - Working	<b>TVD Reference:</b>	WELL @ 4678.0ft (H&P 343 RKB 24')
<b>Project:</b>	Wattenberg Field	<b>MD Reference:</b>	WELL @ 4678.0ft (H&P 343 RKB 24')
<b>Site:</b>	A (06N-64W)	<b>North Reference:</b>	Grid
<b>Well:</b>	Wells Ranch State A36-665	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Drilling		
<b>Design:</b>	APD - Rev 0		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
<b>Start Drop -2.00</b>									
4,883.5	7.62	141.34	4,850.0	-380.2	304.2	-267.1	2.00	-2.00	0.00
<b>SHANNON</b>									
4,900.0	7.29	141.34	4,866.3	-381.9	305.5	-268.3	2.00	-2.00	0.00
4,950.0	6.29	141.34	4,916.0	-386.5	309.2	-271.5	2.00	-2.00	0.00
5,000.0	5.29	141.34	4,965.7	-390.5	312.4	-274.3	2.00	-2.00	0.00
5,050.0	4.29	141.34	5,015.5	-393.7	315.0	-276.6	2.00	-2.00	0.00
5,100.0	3.29	141.34	5,065.4	-396.3	317.0	-278.4	2.00	-2.00	0.00
5,150.0	2.29	141.34	5,115.4	-398.2	318.6	-279.7	2.00	-2.00	0.00
5,200.0	1.29	141.34	5,165.3	-399.4	319.5	-280.6	2.00	-2.00	0.00
5,250.0	0.29	141.34	5,215.3	-400.0	320.0	-281.0	2.00	-2.00	0.00
5,264.7	0.00	0.00	5,230.0	-400.0	320.0	-281.0	2.00	-2.00	0.00
5,300.0	0.00	0.00	5,265.3	-400.0	320.0	-281.0	0.00	0.00	0.00
5,350.0	0.00	0.00	5,315.3	-400.0	320.0	-281.0	0.00	0.00	0.00
5,400.0	0.00	0.00	5,365.3	-400.0	320.0	-281.0	0.00	0.00	0.00
5,450.0	0.00	0.00	5,415.3	-400.0	320.0	-281.0	0.00	0.00	0.00
5,500.0	0.00	0.00	5,465.3	-400.0	320.0	-281.0	0.00	0.00	0.00
5,550.0	0.00	0.00	5,515.3	-400.0	320.0	-281.0	0.00	0.00	0.00
5,600.0	0.00	0.00	5,565.3	-400.0	320.0	-281.0	0.00	0.00	0.00
5,650.0	0.00	0.00	5,615.3	-400.0	320.0	-281.0	0.00	0.00	0.00
5,700.0	0.00	0.00	5,665.3	-400.0	320.0	-281.0	0.00	0.00	0.00
5,750.0	0.00	0.00	5,715.3	-400.0	320.0	-281.0	0.00	0.00	0.00
5,800.0	0.00	0.00	5,765.3	-400.0	320.0	-281.0	0.00	0.00	0.00
5,850.0	0.00	0.00	5,815.3	-400.0	320.0	-281.0	0.00	0.00	0.00
5,851.7	0.00	0.00	5,817.0	-400.0	320.0	-281.0	0.00	0.00	0.00
<b>TEEPEE BUTTES</b>									
5,900.0	0.00	0.00	5,865.3	-400.0	320.0	-281.0	0.00	0.00	0.00
5,950.0	0.00	0.00	5,915.3	-400.0	320.0	-281.0	0.00	0.00	0.00
6,000.0	0.00	0.00	5,965.3	-400.0	320.0	-281.0	0.00	0.00	0.00
6,031.5	0.00	0.00	5,996.8	-400.0	320.0	-281.0	0.00	0.00	0.00
<b>KOP #2 - Start Build 9.00</b>									
6,050.0	1.66	266.98	6,015.3	-400.0	319.7	-280.7	8.99	8.99	0.00
6,100.0	6.16	266.98	6,065.2	-400.2	316.3	-277.3	9.00	9.00	0.00
6,150.0	10.66	266.98	6,114.7	-400.6	309.0	-270.0	9.00	9.00	0.00
6,200.0	15.16	266.98	6,163.4	-401.2	297.9	-258.8	9.00	9.00	0.00
6,250.0	19.66	266.98	6,211.1	-402.0	282.9	-243.9	9.00	9.00	0.00
6,300.0	24.16	266.98	6,257.5	-402.9	264.3	-225.3	9.00	9.00	0.00
6,350.0	28.66	266.98	6,302.2	-404.1	242.1	-203.0	9.00	9.00	0.00
6,400.0	33.16	266.98	6,345.1	-405.5	216.4	-177.4	9.00	9.00	0.00
6,450.0	37.66	266.98	6,385.8	-407.0	187.5	-148.4	9.00	9.00	0.00
6,500.0	42.16	266.98	6,424.2	-408.7	155.5	-116.4	9.00	9.00	0.00
6,550.0	46.66	266.98	6,459.9	-410.5	120.5	-81.4	9.00	9.00	0.00
6,595.7	50.77	266.98	6,490.0	-412.3	86.3	-47.2	9.00	9.00	0.00
<b>SHARON SPRINGS</b>									
6,600.0	51.16	266.98	6,492.7	-412.5	82.9	-43.8	8.97	8.97	0.00
6,638.6	54.64	266.98	6,516.0	-414.1	52.2	-13.1	9.00	9.00	0.00
<b>NIO A CHALK</b>									
6,650.0	55.66	266.98	6,522.5	-414.6	42.8	-3.7	8.99	8.99	0.00
6,680.3	58.39	266.98	6,539.0	-416.0	17.5	21.7	9.00	9.00	0.00
<b>NIO A MARL</b>									
6,700.0	60.16	266.98	6,549.1	-416.8	0.5	38.6	8.99	8.99	0.00
6,750.0	64.66	266.98	6,572.2	-419.2	-43.7	82.9	9.00	9.00	0.00
6,800.0	69.16	266.98	6,591.8	-421.6	-89.6	128.8	9.00	9.00	0.00

# Noble Energy Inc

## Planning Report

<b>Database:</b>	EDM01P	<b>Local Co-ordinate Reference:</b>	Well Wells Ranch State A36-665
<b>Company:</b>	Northern Region Drilling - Working	<b>TVD Reference:</b>	WELL @ 4678.0ft (H&P 343 RKB 24')
<b>Project:</b>	Wattenberg Field	<b>MD Reference:</b>	WELL @ 4678.0ft (H&P 343 RKB 24')
<b>Site:</b>	A (06N-64W)	<b>North Reference:</b>	Grid
<b>Well:</b>	Wells Ranch State A36-665	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Drilling		
<b>Design:</b>	APD - Rev 0		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
6,850.0	73.66	266.98	6,607.8	-424.1	-136.9	176.2	9.00	9.00	0.00
6,854.5	74.06	266.98	6,609.0	-424.3	-141.2	180.4	9.03	9.03	0.00
<b>NIO B CHALK</b>									
6,900.0	78.16	266.98	6,619.9	-426.7	-185.4	224.6	9.00	9.00	0.00
6,950.0	82.66	266.98	6,628.3	-429.2	-234.6	273.9	9.00	9.00	0.00
6,976.0	85.00	266.98	6,631.0	-430.6	-260.4	299.7	8.99	8.99	0.00
<b>Start 75.0 hold at 6976.0 MD - 7" Casing @ 6976.0' MD</b>									
7,000.0	85.00	266.98	6,633.1	-431.9	-284.3	323.6	0.00	0.00	0.00
7,050.0	85.00	266.98	6,637.5	-434.5	-334.0	373.4	0.00	0.00	0.00
7,051.0	85.00	266.98	6,637.6	-434.5	-335.0	374.3	0.00	0.00	0.00
<b>Start Build 9.00</b>									
7,100.0	89.41	266.98	6,640.0	-437.1	-383.9	423.2	9.01	9.01	0.00
7,106.5	90.00	266.98	6,640.0	-437.5	-390.3	429.7	9.02	9.02	0.00
7,150.0	90.00	266.98	6,640.0	-439.8	-433.8	473.2	0.00	0.00	0.00
7,200.0	90.00	266.98	6,640.0	-442.4	-483.7	523.1	0.00	0.00	0.00
7,250.0	90.00	266.98	6,640.0	-445.0	-533.7	573.1	0.00	0.00	0.00
7,300.0	90.00	266.98	6,640.0	-447.7	-583.6	623.1	0.00	0.00	0.00
7,350.0	90.00	266.98	6,640.0	-450.3	-633.5	673.0	0.00	0.00	0.00
7,400.0	90.00	266.98	6,640.0	-452.9	-683.4	723.0	0.00	0.00	0.00
7,450.0	90.00	266.98	6,640.0	-455.6	-733.4	772.9	0.00	0.00	0.00
7,500.0	90.00	266.98	6,640.0	-458.2	-783.3	822.9	0.00	0.00	0.00
7,550.0	90.00	266.98	6,640.0	-460.8	-833.2	872.8	0.00	0.00	0.00
7,600.0	90.00	266.98	6,640.0	-463.4	-883.2	922.8	0.00	0.00	0.00
7,650.0	90.00	266.98	6,640.0	-466.1	-933.1	972.8	0.00	0.00	0.00
7,700.0	90.00	266.98	6,640.0	-468.7	-983.0	1,022.7	0.00	0.00	0.00
7,750.0	90.00	266.98	6,640.0	-471.3	-1,033.0	1,072.7	0.00	0.00	0.00
7,800.0	90.00	266.98	6,640.0	-474.0	-1,082.9	1,122.6	0.00	0.00	0.00
7,850.0	90.00	266.98	6,640.0	-476.6	-1,132.8	1,172.6	0.00	0.00	0.00
7,900.0	90.00	266.98	6,640.0	-479.2	-1,182.7	1,222.5	0.00	0.00	0.00
7,950.0	90.00	266.98	6,640.0	-481.9	-1,232.7	1,272.5	0.00	0.00	0.00
8,000.0	90.00	266.98	6,640.0	-484.5	-1,282.6	1,322.5	0.00	0.00	0.00
8,050.0	90.00	266.98	6,640.0	-487.1	-1,332.5	1,372.4	0.00	0.00	0.00
8,100.0	90.00	266.98	6,640.0	-489.8	-1,382.5	1,422.4	0.00	0.00	0.00
8,150.0	90.00	266.98	6,640.0	-492.4	-1,432.4	1,472.3	0.00	0.00	0.00
8,200.0	90.00	266.98	6,640.0	-495.0	-1,482.3	1,522.3	0.00	0.00	0.00
8,250.0	90.00	266.98	6,640.0	-497.7	-1,532.3	1,572.2	0.00	0.00	0.00
8,300.0	90.00	266.98	6,640.0	-500.3	-1,582.2	1,622.2	0.00	0.00	0.00
8,350.0	90.00	266.98	6,640.0	-502.9	-1,632.1	1,672.2	0.00	0.00	0.00
8,400.0	90.00	266.98	6,640.0	-505.6	-1,682.1	1,722.1	0.00	0.00	0.00
8,450.0	90.00	266.98	6,640.0	-508.2	-1,732.0	1,772.1	0.00	0.00	0.00
8,500.0	90.00	266.98	6,640.0	-510.8	-1,781.9	1,822.0	0.00	0.00	0.00
8,550.0	90.00	266.98	6,640.0	-513.5	-1,831.8	1,872.0	0.00	0.00	0.00
8,600.0	90.00	266.98	6,640.0	-516.1	-1,881.8	1,922.0	0.00	0.00	0.00
8,650.0	90.00	266.98	6,640.0	-518.7	-1,931.7	1,971.9	0.00	0.00	0.00
8,700.0	90.00	266.98	6,640.0	-521.4	-1,981.6	2,021.9	0.00	0.00	0.00
8,750.0	90.00	266.98	6,640.0	-524.0	-2,031.6	2,071.8	0.00	0.00	0.00
8,800.0	90.00	266.98	6,640.0	-526.6	-2,081.5	2,121.8	0.00	0.00	0.00
8,850.0	90.00	266.98	6,640.0	-529.3	-2,131.4	2,171.7	0.00	0.00	0.00
8,900.0	90.00	266.98	6,640.0	-531.9	-2,181.4	2,221.7	0.00	0.00	0.00
8,950.0	90.00	266.98	6,640.0	-534.5	-2,231.3	2,271.7	0.00	0.00	0.00
9,000.0	90.00	266.98	6,640.0	-537.2	-2,281.2	2,321.6	0.00	0.00	0.00
9,050.0	90.00	266.98	6,640.0	-539.8	-2,331.2	2,371.6	0.00	0.00	0.00
9,100.0	90.00	266.98	6,640.0	-542.4	-2,381.1	2,421.5	0.00	0.00	0.00

# Noble Energy Inc

## Planning Report

<b>Database:</b>	EDM01P	<b>Local Co-ordinate Reference:</b>	Well Wells Ranch State A36-665
<b>Company:</b>	Northern Region Drilling - Working	<b>TVD Reference:</b>	WELL @ 4678.0ft (H&P 343 RKB 24')
<b>Project:</b>	Wattenberg Field	<b>MD Reference:</b>	WELL @ 4678.0ft (H&P 343 RKB 24')
<b>Site:</b>	A (06N-64W)	<b>North Reference:</b>	Grid
<b>Well:</b>	Wells Ranch State A36-665	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Drilling		
<b>Design:</b>	APD - Rev 0		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
9,150.0	90.00	266.98	6,640.0	-545.1	-2,431.0	2,471.5	0.00	0.00	0.00	
9,200.0	90.00	266.98	6,640.0	-547.7	-2,480.9	2,521.4	0.00	0.00	0.00	
9,250.0	90.00	266.98	6,640.0	-550.3	-2,530.9	2,571.4	0.00	0.00	0.00	
9,300.0	90.00	266.98	6,640.0	-553.0	-2,580.8	2,621.4	0.00	0.00	0.00	
9,350.0	90.00	266.98	6,640.0	-555.6	-2,630.7	2,671.3	0.00	0.00	0.00	
9,400.0	90.00	266.98	6,640.0	-558.2	-2,680.7	2,721.3	0.00	0.00	0.00	
9,450.0	90.00	266.98	6,640.0	-560.9	-2,730.6	2,771.2	0.00	0.00	0.00	
9,500.0	90.00	266.98	6,640.0	-563.5	-2,780.5	2,821.2	0.00	0.00	0.00	
9,550.0	90.00	266.98	6,640.0	-566.1	-2,830.5	2,871.1	0.00	0.00	0.00	
9,600.0	90.00	266.98	6,640.0	-568.8	-2,880.4	2,921.1	0.00	0.00	0.00	
9,650.0	90.00	266.98	6,640.0	-571.4	-2,930.3	2,971.1	0.00	0.00	0.00	
9,700.0	90.00	266.98	6,640.0	-574.0	-2,980.3	3,021.0	0.00	0.00	0.00	
9,750.0	90.00	266.98	6,640.0	-576.7	-3,030.2	3,071.0	0.00	0.00	0.00	
9,800.0	90.00	266.98	6,640.0	-579.3	-3,080.1	3,120.9	0.00	0.00	0.00	
9,850.0	90.00	266.98	6,640.0	-581.9	-3,130.0	3,170.9	0.00	0.00	0.00	
9,900.0	90.00	266.98	6,640.0	-584.6	-3,180.0	3,220.8	0.00	0.00	0.00	
9,950.0	90.00	266.98	6,640.0	-587.2	-3,229.9	3,270.8	0.00	0.00	0.00	
10,000.0	90.00	266.98	6,640.0	-589.8	-3,279.8	3,320.8	0.00	0.00	0.00	
10,050.0	90.00	266.98	6,640.0	-592.5	-3,329.8	3,370.7	0.00	0.00	0.00	
10,100.0	90.00	266.98	6,640.0	-595.1	-3,379.7	3,420.7	0.00	0.00	0.00	
10,150.0	90.00	266.98	6,640.0	-597.7	-3,429.6	3,470.6	0.00	0.00	0.00	
10,200.0	90.00	266.98	6,640.0	-600.4	-3,479.6	3,520.6	0.00	0.00	0.00	
10,250.0	90.00	266.98	6,640.0	-603.0	-3,529.5	3,570.5	0.00	0.00	0.00	
10,300.0	90.00	266.98	6,640.0	-605.6	-3,579.4	3,620.5	0.00	0.00	0.00	
10,350.0	90.00	266.98	6,640.0	-608.3	-3,629.4	3,670.5	0.00	0.00	0.00	
10,400.0	90.00	266.98	6,640.0	-610.9	-3,679.3	3,720.4	0.00	0.00	0.00	
10,450.0	90.00	266.98	6,640.0	-613.5	-3,729.2	3,770.4	0.00	0.00	0.00	
10,500.0	90.00	266.98	6,640.0	-616.2	-3,779.1	3,820.3	0.00	0.00	0.00	
10,550.0	90.00	266.98	6,640.0	-618.8	-3,829.1	3,870.3	0.00	0.00	0.00	
10,600.0	90.00	266.98	6,640.0	-621.4	-3,879.0	3,920.2	0.00	0.00	0.00	
10,650.0	90.00	266.98	6,640.0	-624.1	-3,928.9	3,970.2	0.00	0.00	0.00	
10,700.0	90.00	266.98	6,640.0	-626.7	-3,978.9	4,020.2	0.00	0.00	0.00	
10,750.0	90.00	266.98	6,640.0	-629.3	-4,028.8	4,070.1	0.00	0.00	0.00	
10,800.0	90.00	266.98	6,640.0	-632.0	-4,078.7	4,120.1	0.00	0.00	0.00	
10,850.0	90.00	266.98	6,640.0	-634.6	-4,128.7	4,170.0	0.00	0.00	0.00	
10,900.0	90.00	266.98	6,640.0	-637.2	-4,178.6	4,220.0	0.00	0.00	0.00	
10,950.0	90.00	266.98	6,640.0	-639.9	-4,228.5	4,269.9	0.00	0.00	0.00	
11,000.0	90.00	266.98	6,640.0	-642.5	-4,278.5	4,319.9	0.00	0.00	0.00	
11,050.0	90.00	266.98	6,640.0	-645.1	-4,328.4	4,369.9	0.00	0.00	0.00	
11,100.0	90.00	266.98	6,640.0	-647.8	-4,378.3	4,419.8	0.00	0.00	0.00	
11,150.0	90.00	266.98	6,640.0	-650.4	-4,428.2	4,469.8	0.00	0.00	0.00	
11,200.0	90.00	266.98	6,640.0	-653.0	-4,478.2	4,519.7	0.00	0.00	0.00	
11,250.0	90.00	266.98	6,640.0	-655.7	-4,528.1	4,569.7	0.00	0.00	0.00	
11,300.0	90.00	266.98	6,640.0	-658.3	-4,578.0	4,619.6	0.00	0.00	0.00	
11,350.0	90.00	266.98	6,640.0	-660.9	-4,628.0	4,669.6	0.00	0.00	0.00	
11,400.0	90.00	266.98	6,640.0	-663.6	-4,677.9	4,719.6	0.00	0.00	0.00	
11,450.0	90.00	266.98	6,640.0	-666.2	-4,727.8	4,769.5	0.00	0.00	0.00	
11,500.0	90.00	266.98	6,640.0	-668.8	-4,777.8	4,819.5	0.00	0.00	0.00	
11,550.0	90.00	266.98	6,640.0	-671.5	-4,827.7	4,869.4	0.00	0.00	0.00	
11,600.0	90.00	266.98	6,640.0	-674.1	-4,877.6	4,919.4	0.00	0.00	0.00	
11,650.0	90.00	266.98	6,640.0	-676.7	-4,927.6	4,969.3	0.00	0.00	0.00	
11,700.0	90.00	266.98	6,640.0	-679.4	-4,977.5	5,019.3	0.00	0.00	0.00	
11,750.0	90.00	266.98	6,640.0	-682.0	-5,027.4	5,069.3	0.00	0.00	0.00	
11,800.0	90.00	266.98	6,640.0	-684.6	-5,077.3	5,119.2	0.00	0.00	0.00	



# Noble Energy Inc

## Planning Report

<b>Database:</b>	EDM01P	<b>Local Co-ordinate Reference:</b>	Well Wells Ranch State A36-665
<b>Company:</b>	Northern Region Drilling - Working	<b>TVD Reference:</b>	WELL @ 4678.0ft (H&P 343 RKB 24')
<b>Project:</b>	Wattenberg Field	<b>MD Reference:</b>	WELL @ 4678.0ft (H&P 343 RKB 24')
<b>Site:</b>	A (06N-64W)	<b>North Reference:</b>	Grid
<b>Well:</b>	Wells Ranch State A36-665	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Drilling		
<b>Design:</b>	APD - Rev 0		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
11,850.0	90.00	266.98	6,640.0	-687.3	-5,127.3	5,169.2	0.00	0.00	0.00
11,900.0	90.00	266.98	6,640.0	-689.9	-5,177.2	5,219.1	0.00	0.00	0.00
11,950.0	90.00	266.98	6,640.0	-692.5	-5,227.1	5,269.1	0.00	0.00	0.00
12,000.0	90.00	266.98	6,640.0	-695.2	-5,277.1	5,319.0	0.00	0.00	0.00
12,050.0	90.00	266.98	6,640.0	-697.8	-5,327.0	5,369.0	0.00	0.00	0.00
12,100.0	90.00	266.98	6,640.0	-700.4	-5,376.9	5,419.0	0.00	0.00	0.00
12,150.0	90.00	266.98	6,640.0	-703.1	-5,426.9	5,468.9	0.00	0.00	0.00
12,200.0	90.00	266.98	6,640.0	-705.7	-5,476.8	5,518.9	0.00	0.00	0.00
12,250.0	90.00	266.98	6,640.0	-708.3	-5,526.7	5,568.8	0.00	0.00	0.00
12,300.0	90.00	266.98	6,640.0	-711.0	-5,576.7	5,618.8	0.00	0.00	0.00
12,350.0	90.00	266.98	6,640.0	-713.6	-5,626.6	5,668.7	0.00	0.00	0.00
12,400.0	90.00	266.98	6,640.0	-716.2	-5,676.5	5,718.7	0.00	0.00	0.00
12,450.0	90.00	266.98	6,640.0	-718.9	-5,726.4	5,768.7	0.00	0.00	0.00
12,500.0	90.00	266.98	6,640.0	-721.5	-5,776.4	5,818.6	0.00	0.00	0.00
12,550.0	90.00	266.98	6,640.0	-724.1	-5,826.3	5,868.6	0.00	0.00	0.00
12,600.0	90.00	266.98	6,640.0	-726.8	-5,876.2	5,918.5	0.00	0.00	0.00
12,650.0	90.00	266.98	6,640.0	-729.4	-5,926.2	5,968.5	0.00	0.00	0.00
12,700.0	90.00	266.98	6,640.0	-732.0	-5,976.1	6,018.4	0.00	0.00	0.00
12,750.0	90.00	266.98	6,640.0	-734.7	-6,026.0	6,068.4	0.00	0.00	0.00
12,800.0	90.00	266.98	6,640.0	-737.3	-6,076.0	6,118.4	0.00	0.00	0.00
12,850.0	90.00	266.98	6,640.0	-739.9	-6,125.9	6,168.3	0.00	0.00	0.00
12,900.0	90.00	266.98	6,640.0	-742.6	-6,175.8	6,218.3	0.00	0.00	0.00
12,950.0	90.00	266.98	6,640.0	-745.2	-6,225.8	6,268.2	0.00	0.00	0.00
13,000.0	90.00	266.98	6,640.0	-747.8	-6,275.7	6,318.2	0.00	0.00	0.00
13,050.0	90.00	266.98	6,640.0	-750.5	-6,325.6	6,368.1	0.00	0.00	0.00
13,100.0	90.00	266.98	6,640.0	-753.1	-6,375.5	6,418.1	0.00	0.00	0.00
13,150.0	90.00	266.98	6,640.0	-755.7	-6,425.5	6,468.1	0.00	0.00	0.00
13,200.0	90.00	266.98	6,640.0	-758.4	-6,475.4	6,518.0	0.00	0.00	0.00
13,250.0	90.00	266.98	6,640.0	-761.0	-6,525.3	6,568.0	0.00	0.00	0.00
13,300.0	90.00	266.98	6,640.0	-763.6	-6,575.3	6,617.9	0.00	0.00	0.00
13,350.0	90.00	266.98	6,640.0	-766.3	-6,625.2	6,667.9	0.00	0.00	0.00
13,400.0	90.00	266.98	6,640.0	-768.9	-6,675.1	6,717.8	0.00	0.00	0.00
13,450.0	90.00	266.98	6,640.0	-771.5	-6,725.1	6,767.8	0.00	0.00	0.00
13,500.0	90.00	266.98	6,640.0	-774.2	-6,775.0	6,817.8	0.00	0.00	0.00
13,550.0	90.00	266.98	6,640.0	-776.8	-6,824.9	6,867.7	0.00	0.00	0.00
13,600.0	90.00	266.98	6,640.0	-779.4	-6,874.9	6,917.7	0.00	0.00	0.00
13,650.0	90.00	266.98	6,640.0	-782.1	-6,924.8	6,967.6	0.00	0.00	0.00
13,700.0	90.00	266.98	6,640.0	-784.7	-6,974.7	7,017.6	0.00	0.00	0.00
13,750.0	90.00	266.98	6,640.0	-787.3	-7,024.6	7,067.5	0.00	0.00	0.00
13,800.0	90.00	266.98	6,640.0	-790.0	-7,074.6	7,117.5	0.00	0.00	0.00
13,850.0	90.00	266.98	6,640.0	-792.6	-7,124.5	7,167.5	0.00	0.00	0.00
13,900.0	90.00	266.98	6,640.0	-795.2	-7,174.4	7,217.4	0.00	0.00	0.00
13,950.0	90.00	266.98	6,640.0	-797.9	-7,224.4	7,267.4	0.00	0.00	0.00
14,000.0	90.00	266.98	6,640.0	-800.5	-7,274.3	7,317.3	0.00	0.00	0.00
14,050.0	90.00	266.98	6,640.0	-803.1	-7,324.2	7,367.3	0.00	0.00	0.00
14,100.0	90.00	266.98	6,640.0	-805.8	-7,374.2	7,417.2	0.00	0.00	0.00
14,150.0	90.00	266.98	6,640.0	-808.4	-7,424.1	7,467.2	0.00	0.00	0.00
14,200.0	90.00	266.98	6,640.0	-811.0	-7,474.0	7,517.2	0.00	0.00	0.00
14,250.0	90.00	266.98	6,640.0	-813.7	-7,524.0	7,567.1	0.00	0.00	0.00
14,300.0	90.00	266.98	6,640.0	-816.3	-7,573.9	7,617.1	0.00	0.00	0.00
14,350.0	90.00	266.98	6,640.0	-818.9	-7,623.8	7,667.0	0.00	0.00	0.00
14,400.0	90.00	266.98	6,640.0	-821.6	-7,673.7	7,717.0	0.00	0.00	0.00
14,450.0	90.00	266.98	6,640.0	-824.2	-7,723.7	7,766.9	0.00	0.00	0.00
14,500.0	90.00	266.98	6,640.0	-826.8	-7,773.6	7,816.9	0.00	0.00	0.00

# Noble Energy Inc

## Planning Report

<b>Database:</b>	EDM01P	<b>Local Co-ordinate Reference:</b>	Well Wells Ranch State A36-665
<b>Company:</b>	Northern Region Drilling - Working	<b>TVD Reference:</b>	WELL @ 4678.0ft (H&P 343 RKB 24')
<b>Project:</b>	Wattenberg Field	<b>MD Reference:</b>	WELL @ 4678.0ft (H&P 343 RKB 24')
<b>Site:</b>	A (06N-64W)	<b>North Reference:</b>	Grid
<b>Well:</b>	Wells Ranch State A36-665	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Drilling		
<b>Design:</b>	APD - Rev 0		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
14,550.0	90.00	266.98	6,640.0	-829.5	-7,823.5	7,866.9	0.00	0.00	0.00	
14,600.0	90.00	266.98	6,640.0	-832.1	-7,873.5	7,916.8	0.00	0.00	0.00	
14,650.0	90.00	266.98	6,640.0	-834.7	-7,923.4	7,966.8	0.00	0.00	0.00	
14,700.0	90.00	266.98	6,640.0	-837.4	-7,973.3	8,016.7	0.00	0.00	0.00	
14,750.0	90.00	266.98	6,640.0	-840.0	-8,023.3	8,066.7	0.00	0.00	0.00	
14,800.0	90.00	266.98	6,640.0	-842.6	-8,073.2	8,116.6	0.00	0.00	0.00	
14,850.0	90.00	266.98	6,640.0	-845.3	-8,123.1	8,166.6	0.00	0.00	0.00	
14,900.0	90.00	266.98	6,640.0	-847.9	-8,173.1	8,216.6	0.00	0.00	0.00	
14,950.0	90.00	266.98	6,640.0	-850.5	-8,223.0	8,266.5	0.00	0.00	0.00	
15,000.0	90.00	266.98	6,640.0	-853.2	-8,272.9	8,316.5	0.00	0.00	0.00	
15,050.0	90.00	266.98	6,640.0	-855.8	-8,322.8	8,366.4	0.00	0.00	0.00	
15,100.0	90.00	266.98	6,640.0	-858.4	-8,372.8	8,416.4	0.00	0.00	0.00	
15,150.0	90.00	266.98	6,640.0	-861.1	-8,422.7	8,466.3	0.00	0.00	0.00	
15,200.0	90.00	266.98	6,640.0	-863.7	-8,472.6	8,516.3	0.00	0.00	0.00	
15,250.0	90.00	266.98	6,640.0	-866.3	-8,522.6	8,566.3	0.00	0.00	0.00	
15,300.0	90.00	266.98	6,640.0	-869.0	-8,572.5	8,616.2	0.00	0.00	0.00	
15,350.0	90.00	266.98	6,640.0	-871.6	-8,622.4	8,666.2	0.00	0.00	0.00	
15,400.0	90.00	266.98	6,640.0	-874.2	-8,672.4	8,716.1	0.00	0.00	0.00	
15,450.0	90.00	266.98	6,640.0	-876.9	-8,722.3	8,766.1	0.00	0.00	0.00	
15,500.0	90.00	266.98	6,640.0	-879.5	-8,772.2	8,816.0	0.00	0.00	0.00	
15,550.0	90.00	266.98	6,640.0	-882.1	-8,822.1	8,866.0	0.00	0.00	0.00	
15,600.0	90.00	266.98	6,640.0	-884.7	-8,872.1	8,916.0	0.00	0.00	0.00	
15,650.0	90.00	266.98	6,640.0	-887.4	-8,922.0	8,965.9	0.00	0.00	0.00	
15,700.0	90.00	266.98	6,640.0	-890.0	-8,971.9	9,015.9	0.00	0.00	0.00	
15,750.0	90.00	266.98	6,640.0	-892.6	-9,021.9	9,065.8	0.00	0.00	0.00	
15,800.0	90.00	266.98	6,640.0	-895.3	-9,071.8	9,115.8	0.00	0.00	0.00	
15,850.0	90.00	266.98	6,640.0	-897.9	-9,121.7	9,165.7	0.00	0.00	0.00	
15,900.0	90.00	266.98	6,640.0	-900.5	-9,171.7	9,215.7	0.00	0.00	0.00	
15,950.0	90.00	266.98	6,640.0	-903.2	-9,221.6	9,265.7	0.00	0.00	0.00	
16,000.0	90.00	266.98	6,640.0	-905.8	-9,271.5	9,315.6	0.00	0.00	0.00	
16,050.0	90.00	266.98	6,640.0	-908.4	-9,321.5	9,365.6	0.00	0.00	0.00	
16,100.0	90.00	266.98	6,640.0	-911.1	-9,371.4	9,415.5	0.00	0.00	0.00	
16,150.0	90.00	266.98	6,640.0	-913.7	-9,421.3	9,465.5	0.00	0.00	0.00	
16,200.0	90.00	266.98	6,640.0	-916.3	-9,471.2	9,515.4	0.00	0.00	0.00	
16,250.0	90.00	266.98	6,640.0	-919.0	-9,521.2	9,565.4	0.00	0.00	0.00	
16,300.0	90.00	266.98	6,640.0	-921.6	-9,571.1	9,615.4	0.00	0.00	0.00	
16,350.0	90.00	266.98	6,640.0	-924.2	-9,621.0	9,665.3	0.00	0.00	0.00	
16,400.0	90.00	266.98	6,640.0	-926.9	-9,671.0	9,715.3	0.00	0.00	0.00	
16,450.0	90.00	266.98	6,640.0	-929.5	-9,720.9	9,765.2	0.00	0.00	0.00	
16,500.0	90.00	266.98	6,640.0	-932.1	-9,770.8	9,815.2	0.00	0.00	0.00	
16,550.0	90.00	266.98	6,640.0	-934.8	-9,820.8	9,865.1	0.00	0.00	0.00	
16,600.0	90.00	266.98	6,640.0	-937.4	-9,870.7	9,915.1	0.00	0.00	0.00	
16,650.0	90.00	266.98	6,640.0	-940.0	-9,920.6	9,965.1	0.00	0.00	0.00	
16,700.0	90.00	266.98	6,640.0	-942.7	-9,970.6	10,015.0	0.00	0.00	0.00	
16,739.3	90.00	266.98	6,640.0	-944.7	-10,009.7	10,054.2	0.00	0.00	0.00	
TD at 16739.3 - Wells Ranch State A36-665 BHL 1650'FNL, 50'FWL										

# Noble Energy Inc

## Planning Report

<b>Database:</b>	EDM01P	<b>Local Co-ordinate Reference:</b>	Well Wells Ranch State A36-665
<b>Company:</b>	Northern Region Drilling - Working	<b>TVD Reference:</b>	WELL @ 4678.0ft (H&P 343 RKB 24')
<b>Project:</b>	Wattenberg Field	<b>MD Reference:</b>	WELL @ 4678.0ft (H&P 343 RKB 24')
<b>Site:</b>	A (06N-64W)	<b>North Reference:</b>	Grid
<b>Well:</b>	Wells Ranch State A36-665	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Drilling		
<b>Design:</b>	APD - Rev 0		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)		
- Shape									
Wells Ranch State A36-665	0.00	0.00	6,640.0	-944.7	-10,009.7	1,406,721.53	3,276,193.61	40.445610	-104.507630
- plan hits target center									
- Point									

Casing Points				
Measured Depth	Vertical Depth	Name	Casing Diameter	Hole Diameter
(ft)	(ft)		(")	(")
6,976.0	6,631.0	7" Casing @ 6976.0' MD	7	8-3/4

Formations					
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction
(ft)	(ft)			(°)	(°)
2,377.9	2,369.0	PIERRE		0.00	
3,530.3	3,510.0	PARKMAN		0.00	
4,306.9	4,279.0	SUSSEX		0.00	
4,883.5	4,850.0	SHANNON		0.00	
5,851.7	5,817.0	TEEPEE BUTTES		0.00	
6,595.7	6,490.0	SHARON SPRINGS		0.00	
6,638.6	6,516.0	NIO A CHALK		0.00	
6,680.3	6,539.0	NIO A MARL		0.00	
6,854.5	6,609.0	NIO B CHALK		0.00	

Plan Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)	
1,200.0	1,200.0	0.0	0.0	KOP - Start Build 2.00
4,862.8	4,829.4	-22.0	17.6	Start Drop -2.00
6,031.5	5,996.8	-378.0	302.4	KOP #2 - Start Build 9.00
6,976.0	6,631.0	-400.0	320.0	Start 75.0 hold at 6976.0 MD
7,051.0	6,637.6	-400.0	320.0	Start Build 9.00
16,739.3	6,640.0	-430.6	-260.3	TD at 16739.3

# **Northern Region Drilling - Working**

**Wattenberg Field**

**A (06N-64W)**

**Wells Ranch State A36-665**

**Original Drilling**

**APD - Rev 0**

## **Anticollision Summary Report**

**23 January, 2015**

**Noble Energy Inc**  
Anticollision Summary Report

<b>Company:</b>	Northern Region Drilling - Working	<b>Local Co-ordinate Reference:</b>	Well Wells Ranch State A36-665
<b>Project:</b>	Wattenberg Field	<b>TVD Reference:</b>	WELL @ 4678.0ft (H&P 343 RKB 24')
<b>Reference Site:</b>	A (06N-64W)	<b>MD Reference:</b>	WELL @ 4678.0ft (H&P 343 RKB 24')
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Wells Ranch State A36-665	<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>	EDM01P
<b>Reference Design:</b>	APD - Rev 0	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	APD - Rev 0		
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
<b>Interpolation Method:</b>	MD Interval 100.0ft	<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>	Elliptical Conic
<b>Warning Levels Evaluated at:</b>	2.00 Sigma	<b>Casing Method:</b>	Not applied

<b>Survey Tool Program</b>	<b>Date</b>	1/23/2015		
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.0	16,739.3	APD - Rev 0 (Original Drilling)	MWD	MWD - Standard

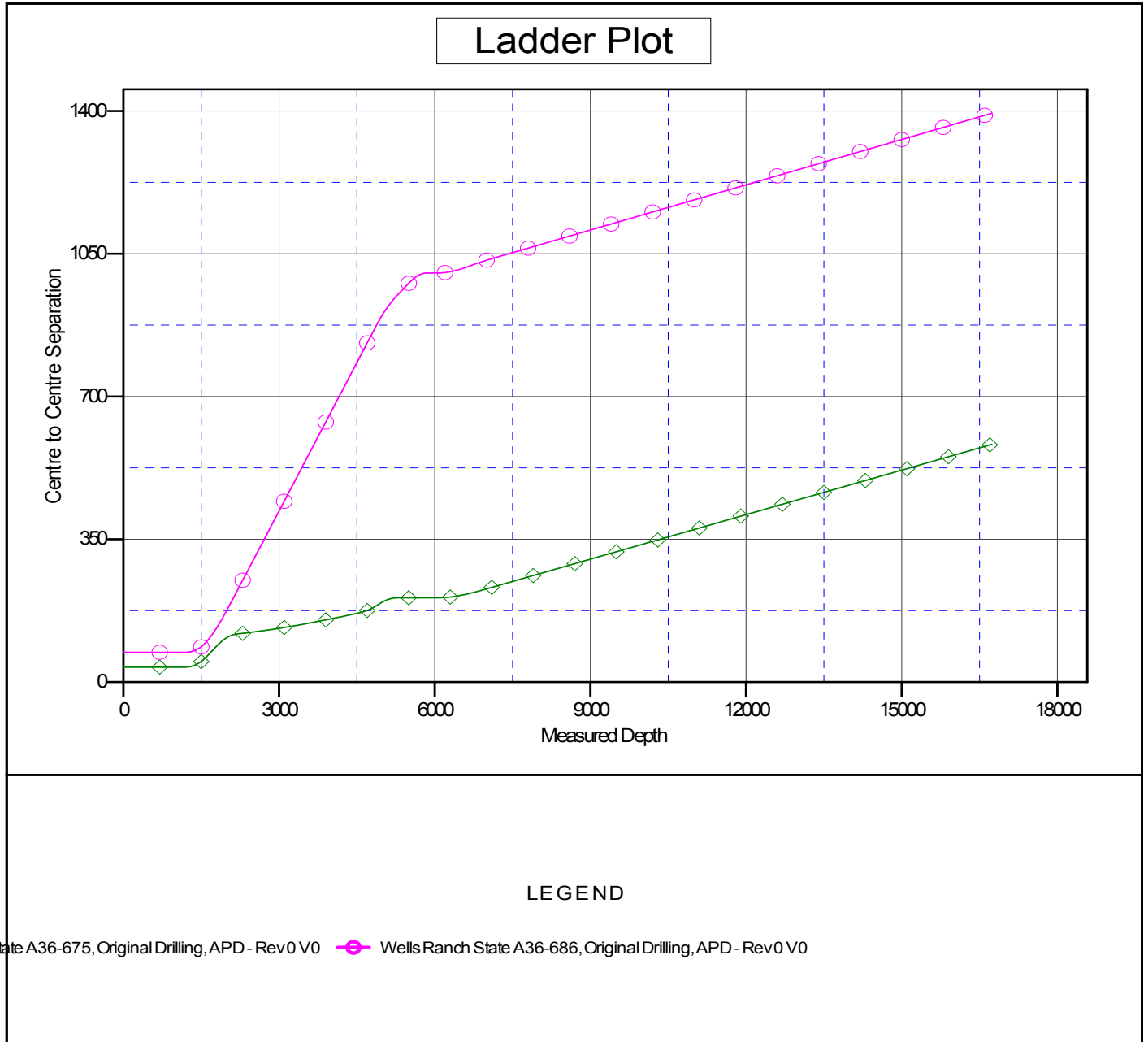
<b>Summary</b>						
<b>Site Name</b>	<b>Reference Measured Depth (ft)</b>	<b>Offset Measured Depth (ft)</b>	<b>Distance Between Centres (ft)</b>	<b>Distance Between Ellipses (ft)</b>	<b>Separation Factor</b>	<b>Warning</b>
<b>Offset Well - Wellbore - Design</b>						
A (06N-64W)						
Wells Ranch State A36-675 - Original Drilling - APD - Re	1,200.0	1,201.0	36.5	31.4	7.139	CC
Wells Ranch State A36-675 - Original Drilling - APD - Re	16,739.3	16,716.1	582.9	13.6	1.024	Level 2, ES, SF
Wells Ranch State A36-686 - Original Drilling - APD - Re	1,200.0	1,202.0	72.9	67.8	14.240	CC, ES
Wells Ranch State A36-686 - Original Drilling - APD - Re	16,739.3	16,875.2	1,394.7	828.5	2.463	SF

**Noble Energy Inc**  
Anticollision Summary Report

<b>Company:</b>	Northern Region Drilling - Working	<b>Local Co-ordinate Reference:</b>	Well Wells Ranch State A36-665
<b>Project:</b>	Wattenberg Field	<b>TVD Reference:</b>	WELL @ 4678.0ft (H&P 343 RKB 24')
<b>Reference Site:</b>	A (06N-64W)	<b>MD Reference:</b>	WELL @ 4678.0ft (H&P 343 RKB 24')
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Wells Ranch State A36-665	<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>	EDM01P
<b>Reference Design:</b>	APD - Rev 0	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4678.0ft (H&P 343 RKB 24')  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.500000

Coordinates are relative to: Wells Ranch State A36-665  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 0.66°



**Noble Energy Inc**  
Anticollision Summary Report

<b>Company:</b>	Northern Region Drilling - Working	<b>Local Co-ordinate Reference:</b>	Well Wells Ranch State A36-665
<b>Project:</b>	Wattenberg Field	<b>TVD Reference:</b>	WELL @ 4678.0ft (H&P 343 RKB 24')
<b>Reference Site:</b>	A (06N-64W)	<b>MD Reference:</b>	WELL @ 4678.0ft (H&P 343 RKB 24')
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Wells Ranch State A36-665	<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>	EDM01P
<b>Reference Design:</b>	APD - Rev 0	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4678.0ft (H&P 343 RKB 24')  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.500000

Coordinates are relative to: Wells Ranch State A36-665  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 0.66°

