

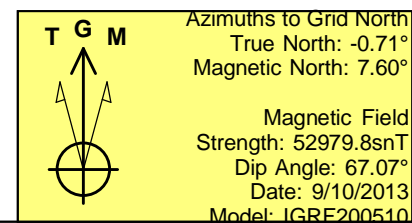
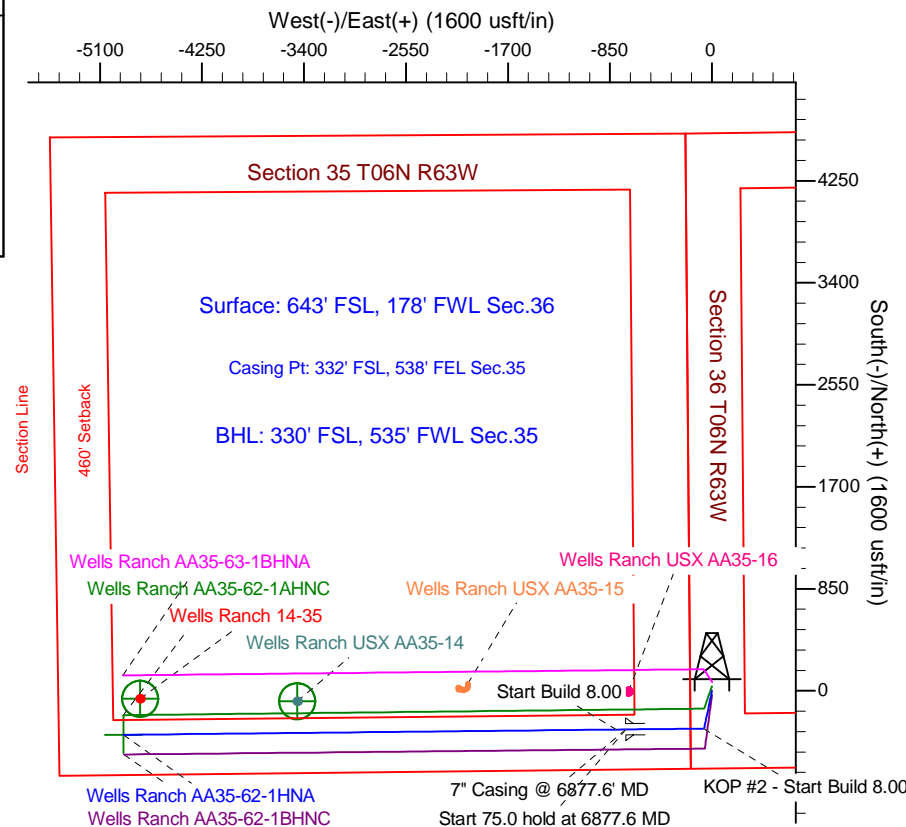
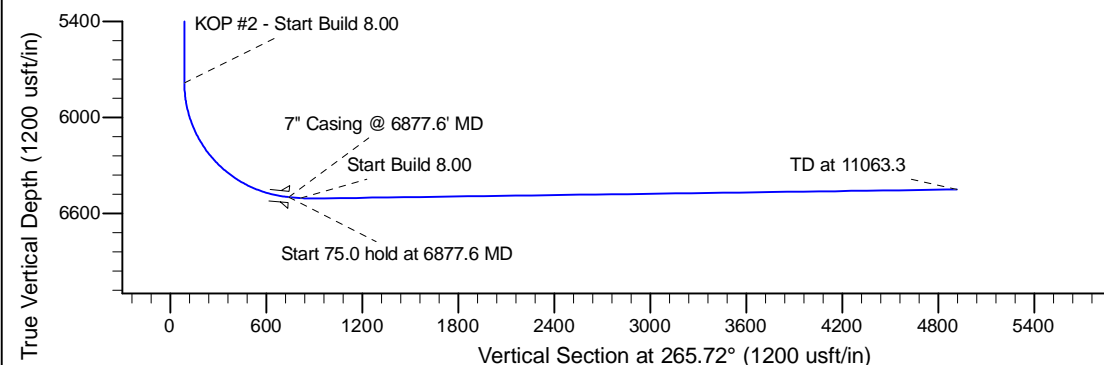
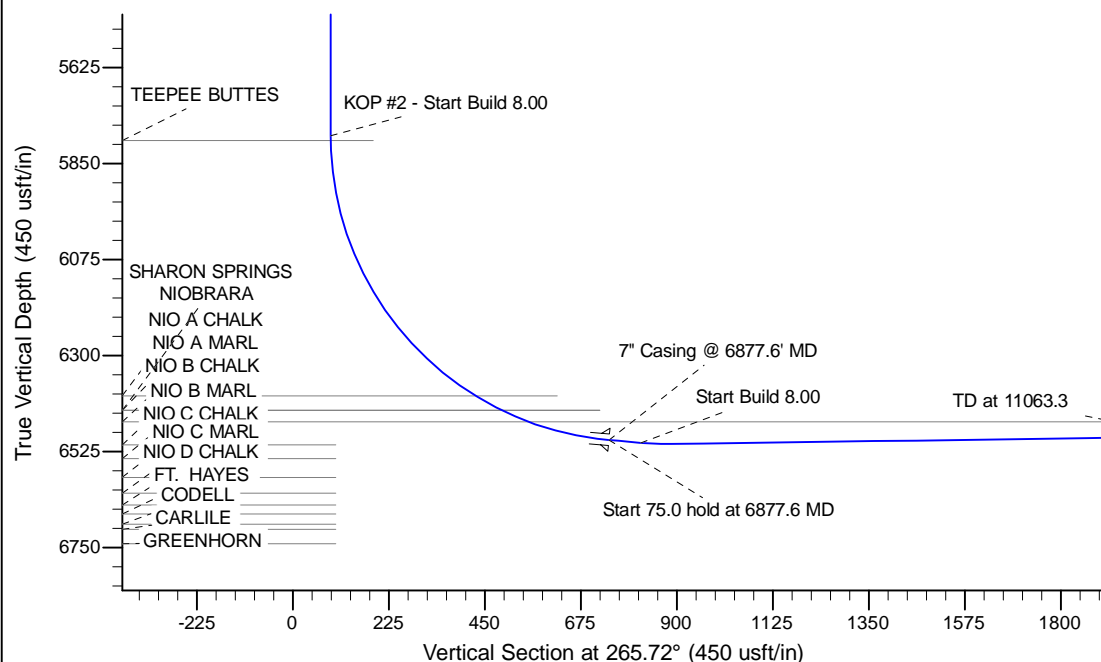
Project: Wattenberg Field
 Site: AA (Sec.36-T06N-R63W) Weld County, CO
 Well: Wells Ranch AA35-62-1HNA
 Wellbore: Original Drilling
 Design: APD - Rev 0

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	1500.0	0.00	0.00	1500.0	0.0	0.0	0.00	0.00	0.0	
3	2150.8	13.02	191.66	2145.2	-72.1	-14.9	2.00	191.66	20.2	
4	2925.3	13.02	191.66	2899.8	-242.9	-50.1	0.00	0.00	68.1	
5	3576.1	0.00	0.00	3545.0	-315.0	-65.0	2.00	180.00	88.3	
6	5815.1	0.00	0.00	5784.0	-315.0	-65.0	0.00	0.00	88.3	
7	6877.6	85.00	269.39	6497.5	-322.0	-718.7	8.00	269.39	740.8	
8	6952.6	85.00	269.39	6504.0	-322.8	-793.4	0.00	0.00	815.3	
9	7025.1	90.80	269.39	6506.7	-323.6	-865.9	8.00	0.00	887.6	
10	11063.3	90.80	269.39	6450.3	-366.7	-4903.5	0.00	0.00	4917.2	Wells Ranch AA35-62-1HNA BHL 330'FSL, 535'FWL



WELL DETAILS: Wells Ranch AA35-62-1HNA				
	Ground Level	4740.0		
0.0	0.0	1404101.01	3307823.97	40.437390
	Latitude		Longitude	
			-104.394110	
Plan: APD - Rev 0 (Wells Ranch AA35-62-1HNA/Original Drilling)				
Created By: Shailey Jewell		Date: 7:53, September 11 2013		
Checked: _____		Date: _____		
Reviewed: _____		Date: _____		
Approved: _____		Date: _____		

Northern Region Drilling - Working

Wattenberg Field

AA (06N-63W)

Wells Ranch AA35-62-1HNA

Original Drilling

Plan: APD - Rev 0

Standard Planning Report

11 September, 2013

Noble Energy Inc

Planning Report

Database:	EDM Production	Local Co-ordinate Reference:	Well Wells Ranch AA35-62-1HNA
Company:	Northern Region Drilling - Working	TVD Reference:	WELL @ 4764.0usft (Original Well Elev)
Project:	Wattenberg Field	MD Reference:	WELL @ 4764.0usft (Original Well Elev)
Site:	AA (06N-63W)	North Reference:	Grid
Well:	Wells Ranch AA35-62-1HNA	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Drilling		
Design:	APD - Rev 0		

Project	Wattenberg Field, Weld County CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site		AA (06N-63W)			
Site Position:		Northing:	1,427,844.88 usft	Latitude:	40.502740
From:	Lat/Long	Easting:	3,302,558.01 usft	Longitude:	-104.411980
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.70 °

Well	Wells Ranch AA35-62-1HNA					
Well Position	+N/-S	-23,744.7 usft	Northing:	1,404,101.01 usft	Latitude:	40.437390
	+E/-W	5,266.1 usft	Easting:	3,307,823.97 usft	Longitude:	-104.394110
Position Uncertainty		0.0 usft	Wellhead Elevation:		Ground Level:	4,740.0 usft

Wellbore	Original Drilling				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	9/10/2013	8.31	67.07	52,980

Design	APD - Rev 0			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	265.72

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	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	
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,150.8	13.02	191.66	2,145.2	-72.1	-14.9	2.00	2.00	0.00	191.66	
2,925.3	13.02	191.66	2,899.8	-242.9	-50.1	0.00	0.00	0.00	0.00	
3,576.1	0.00	0.00	3,545.0	-315.0	-65.0	2.00	-2.00	0.00	180.00	
5,815.1	0.00	0.00	5,784.0	-315.0	-65.0	0.00	0.00	0.00	0.00	
6,877.6	85.00	269.39	6,497.5	-322.0	-718.7	8.00	8.00	0.00	269.39	
6,952.6	85.00	269.39	6,504.0	-322.8	-793.4	0.00	0.00	0.00	0.00	
7,025.1	90.80	269.39	6,506.7	-323.6	-865.9	8.00	8.00	0.00	0.00	
11,063.3	90.80	269.39	6,450.3	-366.7	-4,903.5	0.00	0.00	0.00	0.00	Wells Ranch AA35-62

Noble Energy Inc

Planning Report

Database:	EDM Production	Local Co-ordinate Reference:	Well Wells Ranch AA35-62-1HNA
Company:	Northern Region Drilling - Working	TVD Reference:	WELL @ 4764.0usft (Original Well Elev)
Project:	Wattenberg Field	MD Reference:	WELL @ 4764.0usft (Original Well Elev)
Site:	AA (06N-63W)	North Reference:	Grid
Well:	Wells Ranch AA35-62-1HNA	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Drilling		
Design:	APD - Rev 0		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	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
1,250.0	0.00	0.00	1,250.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,350.0	0.00	0.00	1,350.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,450.0	0.00	0.00	1,450.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP - Start Build 2.00									
1,550.0	1.00	191.66	1,550.0	-0.4	-0.1	0.1	2.00	2.00	0.00
1,600.0	2.00	191.66	1,600.0	-1.7	-0.4	0.5	2.00	2.00	0.00
1,650.0	3.00	191.66	1,649.9	-3.8	-0.8	1.1	2.00	2.00	0.00
1,700.0	4.00	191.66	1,699.8	-6.8	-1.4	1.9	2.00	2.00	0.00
1,750.0	5.00	191.66	1,749.7	-10.7	-2.2	3.0	2.00	2.00	0.00
1,800.0	6.00	191.66	1,799.5	-15.4	-3.2	4.3	2.00	2.00	0.00
1,850.0	7.00	191.66	1,849.1	-20.9	-4.3	5.9	2.00	2.00	0.00
1,900.0	8.00	191.66	1,898.7	-27.3	-5.6	7.7	2.00	2.00	0.00
1,950.0	9.00	191.66	1,948.2	-34.5	-7.1	9.7	2.00	2.00	0.00
2,000.0	10.00	191.66	1,997.5	-42.6	-8.8	11.9	2.00	2.00	0.00
2,050.0	11.00	191.66	2,046.6	-51.5	-10.6	14.5	2.00	2.00	0.00
2,100.0	12.00	191.66	2,095.6	-61.3	-12.7	17.2	2.00	2.00	0.00
2,150.0	13.00	191.66	2,144.4	-71.9	-14.8	20.2	2.00	2.00	0.00
2,150.8	13.02	191.66	2,145.2	-72.1	-14.9	20.2	2.00	2.00	0.00
2,200.0	13.02	191.66	2,193.2	-82.9	-17.1	23.3	0.00	0.00	0.00
2,250.0	13.02	191.66	2,241.9	-94.0	-19.4	26.3	0.00	0.00	0.00
2,300.0	13.02	191.66	2,290.6	-105.0	-21.7	29.4	0.00	0.00	0.00
2,350.0	13.02	191.66	2,339.3	-116.0	-23.9	32.5	0.00	0.00	0.00
2,400.0	13.02	191.66	2,388.0	-127.1	-26.2	35.6	0.00	0.00	0.00
2,450.0	13.02	191.66	2,436.7	-138.1	-28.5	38.7	0.00	0.00	0.00
2,500.0	13.02	191.66	2,485.4	-149.1	-30.8	41.8	0.00	0.00	0.00
2,550.0	13.02	191.66	2,534.2	-160.1	-33.0	44.9	0.00	0.00	0.00

Noble Energy Inc

Planning Report

Database:	EDM Production	Local Co-ordinate Reference:	Well Wells Ranch AA35-62-1HNA
Company:	Northern Region Drilling - Working	TVD Reference:	WELL @ 4764.0usft (Original Well Elev)
Project:	Wattenberg Field	MD Reference:	WELL @ 4764.0usft (Original Well Elev)
Site:	AA (06N-63W)	North Reference:	Grid
Well:	Wells Ranch AA35-62-1HNA	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Drilling		
Design:	APD - Rev 0		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
2,600.0	13.02	191.66	2,582.9	-171.2	-35.3	48.0	0.00	0.00	0.00
2,650.0	13.02	191.66	2,631.6	-182.2	-37.6	51.1	0.00	0.00	0.00
2,700.0	13.02	191.66	2,680.3	-193.2	-39.9	54.2	0.00	0.00	0.00
2,750.0	13.02	191.66	2,729.0	-204.3	-42.1	57.3	0.00	0.00	0.00
2,795.1	13.02	191.66	2,773.0	-214.2	-44.2	60.1	0.00	0.00	0.00
PIERRE									
2,800.0	13.02	191.66	2,777.7	-215.3	-44.4	60.4	0.00	0.00	0.00
2,850.0	13.02	191.66	2,826.5	-226.3	-46.7	63.4	0.00	0.00	0.00
2,900.0	13.02	191.66	2,875.2	-237.3	-49.0	66.5	0.00	0.00	0.00
2,925.3	13.02	191.66	2,899.8	-242.9	-50.1	68.1	0.00	0.00	0.00
Start Drop -2.00									
2,950.0	12.52	191.66	2,923.9	-248.3	-51.2	69.6	2.00	-2.00	0.00
3,000.0	11.52	191.66	2,972.8	-258.5	-53.3	72.5	2.00	-2.00	0.00
3,050.0	10.52	191.66	3,021.9	-267.8	-55.3	75.1	2.00	-2.00	0.00
3,100.0	9.52	191.66	3,071.1	-276.3	-57.0	77.5	2.00	-2.00	0.00
3,150.0	8.52	191.66	3,120.5	-284.0	-58.6	79.6	2.00	-2.00	0.00
3,200.0	7.52	191.66	3,170.0	-290.9	-60.0	81.5	2.00	-2.00	0.00
3,250.0	6.52	191.66	3,219.6	-296.8	-61.3	83.2	2.00	-2.00	0.00
3,300.0	5.52	191.66	3,269.4	-302.0	-62.3	84.7	2.00	-2.00	0.00
3,350.0	4.52	191.66	3,319.2	-306.3	-63.2	85.9	2.00	-2.00	0.00
3,400.0	3.52	191.66	3,369.0	-309.7	-63.9	86.8	2.00	-2.00	0.00
3,450.0	2.52	191.66	3,419.0	-312.3	-64.4	87.5	2.00	-2.00	0.00
3,500.0	1.52	191.66	3,468.9	-314.0	-64.8	88.0	2.00	-2.00	0.00
3,512.1	1.28	191.66	3,481.0	-314.3	-64.9	88.1	2.00	-2.00	0.00
PARKMAN									
3,550.0	0.52	191.66	3,518.9	-314.9	-65.0	88.3	2.00	-2.00	0.00
3,576.1	0.00	0.00	3,545.0	-315.0	-65.0	88.3	2.00	-2.00	0.00
3,600.0	0.00	0.00	3,568.9	-315.0	-65.0	88.3	0.00	0.00	0.00
3,650.0	0.00	0.00	3,618.9	-315.0	-65.0	88.3	0.00	0.00	0.00
3,700.0	0.00	0.00	3,668.9	-315.0	-65.0	88.3	0.00	0.00	0.00
3,750.0	0.00	0.00	3,718.9	-315.0	-65.0	88.3	0.00	0.00	0.00
3,800.0	0.00	0.00	3,768.9	-315.0	-65.0	88.3	0.00	0.00	0.00
3,850.0	0.00	0.00	3,818.9	-315.0	-65.0	88.3	0.00	0.00	0.00
3,900.0	0.00	0.00	3,868.9	-315.0	-65.0	88.3	0.00	0.00	0.00
3,950.0	0.00	0.00	3,918.9	-315.0	-65.0	88.3	0.00	0.00	0.00
4,000.0	0.00	0.00	3,968.9	-315.0	-65.0	88.3	0.00	0.00	0.00
4,050.0	0.00	0.00	4,018.9	-315.0	-65.0	88.3	0.00	0.00	0.00
4,100.0	0.00	0.00	4,068.9	-315.0	-65.0	88.3	0.00	0.00	0.00
4,150.0	0.00	0.00	4,118.9	-315.0	-65.0	88.3	0.00	0.00	0.00
4,200.0	0.00	0.00	4,168.9	-315.0	-65.0	88.3	0.00	0.00	0.00
4,250.0	0.00	0.00	4,218.9	-315.0	-65.0	88.3	0.00	0.00	0.00
4,300.0	0.00	0.00	4,268.9	-315.0	-65.0	88.3	0.00	0.00	0.00
4,335.1	0.00	0.00	4,304.0	-315.0	-65.0	88.3	0.00	0.00	0.00
SUSSEX									
4,350.0	0.00	0.00	4,318.9	-315.0	-65.0	88.3	0.00	0.00	0.00
4,400.0	0.00	0.00	4,368.9	-315.0	-65.0	88.3	0.00	0.00	0.00
4,450.0	0.00	0.00	4,418.9	-315.0	-65.0	88.3	0.00	0.00	0.00
4,500.0	0.00	0.00	4,468.9	-315.0	-65.0	88.3	0.00	0.00	0.00
4,550.0	0.00	0.00	4,518.9	-315.0	-65.0	88.3	0.00	0.00	0.00
4,600.0	0.00	0.00	4,568.9	-315.0	-65.0	88.3	0.00	0.00	0.00
4,650.0	0.00	0.00	4,618.9	-315.0	-65.0	88.3	0.00	0.00	0.00
4,700.0	0.00	0.00	4,668.9	-315.0	-65.0	88.3	0.00	0.00	0.00
4,750.0	0.00	0.00	4,718.9	-315.0	-65.0	88.3	0.00	0.00	0.00

Noble Energy Inc

Planning Report

Database:	EDM Production	Local Co-ordinate Reference:	Well Wells Ranch AA35-62-1HNA
Company:	Northern Region Drilling - Working	TVD Reference:	WELL @ 4764.0usft (Original Well Elev)
Project:	Wattenberg Field	MD Reference:	WELL @ 4764.0usft (Original Well Elev)
Site:	AA (06N-63W)	North Reference:	Grid
Well:	Wells Ranch AA35-62-1HNA	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Drilling		
Design:	APD - Rev 0		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,800.0	0.00	0.00	4,768.9	-315.0	-65.0	88.3	0.00	0.00	0.00
4,850.0	0.00	0.00	4,818.9	-315.0	-65.0	88.3	0.00	0.00	0.00
4,856.1	0.00	0.00	4,825.0	-315.0	-65.0	88.3	0.00	0.00	0.00
SHANNON									
4,900.0	0.00	0.00	4,868.9	-315.0	-65.0	88.3	0.00	0.00	0.00
4,950.0	0.00	0.00	4,918.9	-315.0	-65.0	88.3	0.00	0.00	0.00
5,000.0	0.00	0.00	4,968.9	-315.0	-65.0	88.3	0.00	0.00	0.00
5,050.0	0.00	0.00	5,018.9	-315.0	-65.0	88.3	0.00	0.00	0.00
5,100.0	0.00	0.00	5,068.9	-315.0	-65.0	88.3	0.00	0.00	0.00
5,150.0	0.00	0.00	5,118.9	-315.0	-65.0	88.3	0.00	0.00	0.00
5,200.0	0.00	0.00	5,168.9	-315.0	-65.0	88.3	0.00	0.00	0.00
5,250.0	0.00	0.00	5,218.9	-315.0	-65.0	88.3	0.00	0.00	0.00
5,300.0	0.00	0.00	5,268.9	-315.0	-65.0	88.3	0.00	0.00	0.00
5,350.0	0.00	0.00	5,318.9	-315.0	-65.0	88.3	0.00	0.00	0.00
5,400.0	0.00	0.00	5,368.9	-315.0	-65.0	88.3	0.00	0.00	0.00
5,450.0	0.00	0.00	5,418.9	-315.0	-65.0	88.3	0.00	0.00	0.00
5,500.0	0.00	0.00	5,468.9	-315.0	-65.0	88.3	0.00	0.00	0.00
5,550.0	0.00	0.00	5,518.9	-315.0	-65.0	88.3	0.00	0.00	0.00
5,600.0	0.00	0.00	5,568.9	-315.0	-65.0	88.3	0.00	0.00	0.00
5,650.0	0.00	0.00	5,618.9	-315.0	-65.0	88.3	0.00	0.00	0.00
5,700.0	0.00	0.00	5,668.9	-315.0	-65.0	88.3	0.00	0.00	0.00
5,750.0	0.00	0.00	5,718.9	-315.0	-65.0	88.3	0.00	0.00	0.00
5,800.0	0.00	0.00	5,768.9	-315.0	-65.0	88.3	0.00	0.00	0.00
5,815.1	0.00	0.00	5,784.0	-315.0	-65.0	88.3	0.00	0.00	0.00
KOP #2 - Start Build 8.00									
5,827.1	0.96	269.39	5,796.0	-315.0	-65.1	88.4	8.01	8.01	0.00
TEEPEE BUTTES									
5,850.0	2.79	269.39	5,818.9	-315.0	-65.9	89.2	8.00	8.00	0.00
5,900.0	6.79	269.39	5,868.7	-315.1	-70.0	93.3	8.00	8.00	0.00
5,950.0	10.79	269.39	5,918.1	-315.1	-77.7	101.0	8.00	8.00	0.00
6,000.0	14.79	269.39	5,966.9	-315.3	-88.7	112.0	8.00	8.00	0.00
6,050.0	18.79	269.39	6,014.7	-315.4	-103.2	126.4	8.00	8.00	0.00
6,100.0	22.79	269.39	6,061.5	-315.6	-120.9	144.1	8.00	8.00	0.00
6,150.0	26.79	269.39	6,106.9	-315.8	-141.9	165.0	8.00	8.00	0.00
6,200.0	30.79	269.39	6,150.7	-316.1	-166.0	189.1	8.00	8.00	0.00
6,250.0	34.79	269.39	6,192.7	-316.4	-193.0	216.1	8.00	8.00	0.00
6,300.0	38.79	269.39	6,232.7	-316.7	-223.0	246.0	8.00	8.00	0.00
6,350.0	42.79	269.39	6,270.6	-317.0	-255.6	278.6	8.00	8.00	0.00
6,400.0	46.79	269.39	6,306.0	-317.4	-290.9	313.7	8.00	8.00	0.00
6,450.0	50.79	269.39	6,339.0	-317.8	-328.5	351.2	8.00	8.00	0.00
6,500.0	54.79	269.39	6,369.2	-318.2	-368.3	391.0	8.00	8.00	0.00
6,545.0	58.40	269.39	6,394.0	-318.6	-405.9	428.5	8.00	8.00	0.00
SHARON SPRINGS									
6,550.0	58.79	269.39	6,396.6	-318.7	-410.1	432.7	8.00	8.00	0.00
6,600.0	62.79	269.39	6,421.0	-319.2	-453.7	476.3	8.00	8.00	0.00
6,615.7	64.05	269.39	6,428.0	-319.3	-467.8	490.3	8.00	8.00	0.00
NIO A CHALK - NIOBRARA									
6,650.0	66.79	269.39	6,442.3	-319.6	-499.0	521.4	8.00	8.00	0.00
6,684.2	69.53	269.39	6,455.0	-320.0	-530.7	553.1	8.00	8.00	0.00
NIO A MARL									
6,700.0	70.79	269.39	6,460.4	-320.1	-545.6	567.9	8.00	8.00	0.00
6,750.0	74.79	269.39	6,475.1	-320.6	-593.3	615.6	8.00	8.00	0.00
6,800.0	78.79	269.39	6,486.6	-321.2	-642.0	664.1	8.00	8.00	0.00

Noble Energy Inc

Planning Report

Database:	EDM Production	Local Co-ordinate Reference:	Well Wells Ranch AA35-62-1HNA
Company:	Northern Region Drilling - Working	TVD Reference:	WELL @ 4764.0usft (Original Well Elev)
Project:	Wattenberg Field	MD Reference:	WELL @ 4764.0usft (Original Well Elev)
Site:	AA (06N-63W)	North Reference:	Grid
Well:	Wells Ranch AA35-62-1HNA	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Drilling		
Design:	APD - Rev 0		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
6,850.0	82.79	269.39	6,494.6	-321.7	-691.3	713.4	8.00	8.00	0.00
6,877.6	85.00	269.39	6,497.5	-322.0	-718.8	740.8	8.00	8.00	0.00
Start 75.0 hold at 6877.6 MD - 7" Casing @ 6877.6' MD									
6,900.0	85.00	269.39	6,499.4	-322.2	-741.1	763.0	0.00	0.00	0.00
6,950.0	85.00	269.39	6,503.8	-322.8	-790.9	812.7	0.00	0.00	0.00
6,952.6	85.00	269.39	6,504.0	-322.8	-793.5	815.3	0.00	0.00	0.00
Start Build 8.00									
7,000.0	88.79	269.39	6,506.6	-323.3	-840.8	862.6	8.00	8.00	0.00
7,025.1	90.80	269.39	6,506.7	-323.6	-865.9	887.6	8.00	8.00	0.00
7,050.0	90.80	269.39	6,506.3	-323.8	-890.8	912.4	0.00	0.00	0.00
7,100.0	90.80	269.39	6,505.6	-324.4	-940.8	962.3	0.00	0.00	0.00
7,150.0	90.80	269.39	6,504.9	-324.9	-990.8	1,012.2	0.00	0.00	0.00
7,200.0	90.80	269.39	6,504.2	-325.4	-1,040.8	1,062.1	0.00	0.00	0.00
7,250.0	90.80	269.39	6,503.5	-326.0	-1,090.7	1,112.0	0.00	0.00	0.00
7,300.0	90.80	269.39	6,502.8	-326.5	-1,140.7	1,161.9	0.00	0.00	0.00
7,350.0	90.80	269.39	6,502.1	-327.0	-1,190.7	1,211.8	0.00	0.00	0.00
7,400.0	90.80	269.39	6,501.4	-327.6	-1,240.7	1,261.7	0.00	0.00	0.00
7,450.0	90.80	269.39	6,500.7	-328.1	-1,290.7	1,311.6	0.00	0.00	0.00
7,500.0	90.80	269.39	6,500.1	-328.6	-1,340.7	1,361.5	0.00	0.00	0.00
7,550.0	90.80	269.39	6,499.4	-329.2	-1,390.7	1,411.4	0.00	0.00	0.00
7,600.0	90.80	269.39	6,498.7	-329.7	-1,440.7	1,461.3	0.00	0.00	0.00
7,650.0	90.80	269.39	6,498.0	-330.2	-1,490.7	1,511.2	0.00	0.00	0.00
7,700.0	90.80	269.39	6,497.3	-330.8	-1,540.7	1,561.1	0.00	0.00	0.00
7,750.0	90.80	269.39	6,496.6	-331.3	-1,590.7	1,610.9	0.00	0.00	0.00
7,800.0	90.80	269.39	6,495.9	-331.8	-1,640.7	1,660.8	0.00	0.00	0.00
7,850.0	90.80	269.39	6,495.2	-332.4	-1,690.7	1,710.7	0.00	0.00	0.00
7,900.0	90.80	269.39	6,494.5	-332.9	-1,740.6	1,760.6	0.00	0.00	0.00
7,950.0	90.80	269.39	6,493.8	-333.4	-1,790.6	1,810.5	0.00	0.00	0.00
8,000.0	90.80	269.39	6,493.1	-334.0	-1,840.6	1,860.4	0.00	0.00	0.00
8,050.0	90.80	269.39	6,492.4	-334.5	-1,890.6	1,910.3	0.00	0.00	0.00
8,100.0	90.80	269.39	6,491.7	-335.0	-1,940.6	1,960.2	0.00	0.00	0.00
8,150.0	90.80	269.39	6,491.0	-335.6	-1,990.6	2,010.1	0.00	0.00	0.00
8,200.0	90.80	269.39	6,490.3	-336.1	-2,040.6	2,060.0	0.00	0.00	0.00
8,250.0	90.80	269.39	6,489.6	-336.6	-2,090.6	2,109.9	0.00	0.00	0.00
8,300.0	90.80	269.39	6,488.9	-337.2	-2,140.6	2,159.8	0.00	0.00	0.00
8,350.0	90.80	269.39	6,488.2	-337.7	-2,190.6	2,209.7	0.00	0.00	0.00
8,400.0	90.80	269.39	6,487.5	-338.3	-2,240.6	2,259.6	0.00	0.00	0.00
8,450.0	90.80	269.39	6,486.8	-338.8	-2,290.6	2,309.4	0.00	0.00	0.00
8,500.0	90.80	269.39	6,486.1	-339.3	-2,340.6	2,359.3	0.00	0.00	0.00
8,550.0	90.80	269.39	6,485.4	-339.9	-2,390.5	2,409.2	0.00	0.00	0.00
8,600.0	90.80	269.39	6,484.7	-340.4	-2,440.5	2,459.1	0.00	0.00	0.00
8,650.0	90.80	269.39	6,484.0	-340.9	-2,490.5	2,509.0	0.00	0.00	0.00
8,700.0	90.80	269.39	6,483.3	-341.5	-2,540.5	2,558.9	0.00	0.00	0.00
8,750.0	90.80	269.39	6,482.6	-342.0	-2,590.5	2,608.8	0.00	0.00	0.00
8,800.0	90.80	269.39	6,481.9	-342.5	-2,640.5	2,658.7	0.00	0.00	0.00
8,850.0	90.80	269.39	6,481.2	-343.1	-2,690.5	2,708.6	0.00	0.00	0.00
8,900.0	90.80	269.39	6,480.5	-343.6	-2,740.5	2,758.5	0.00	0.00	0.00
8,950.0	90.80	269.39	6,479.8	-344.1	-2,790.5	2,808.4	0.00	0.00	0.00
9,000.0	90.80	269.39	6,479.1	-344.7	-2,840.5	2,858.3	0.00	0.00	0.00
9,050.0	90.80	269.39	6,478.4	-345.2	-2,890.5	2,908.2	0.00	0.00	0.00
9,100.0	90.80	269.39	6,477.7	-345.7	-2,940.5	2,958.1	0.00	0.00	0.00
9,150.0	90.80	269.39	6,477.0	-346.3	-2,990.5	3,007.9	0.00	0.00	0.00
9,200.0	90.80	269.39	6,476.3	-346.8	-3,040.4	3,057.8	0.00	0.00	0.00

Noble Energy Inc

Planning Report

Database:	EDM Production	Local Co-ordinate Reference:	Well Wells Ranch AA35-62-1HNA
Company:	Northern Region Drilling - Working	TVD Reference:	WELL @ 4764.0usft (Original Well Elev)
Project:	Wattenberg Field	MD Reference:	WELL @ 4764.0usft (Original Well Elev)
Site:	AA (06N-63W)	North Reference:	Grid
Well:	Wells Ranch AA35-62-1HNA	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Drilling		
Design:	APD - Rev 0		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,250.0	90.80	269.39	6,475.6	-347.3	-3,090.4	3,107.7	0.00	0.00	0.00
9,300.0	90.80	269.39	6,474.9	-347.9	-3,140.4	3,157.6	0.00	0.00	0.00
9,350.0	90.80	269.39	6,474.2	-348.4	-3,190.4	3,207.5	0.00	0.00	0.00
9,400.0	90.80	269.39	6,473.5	-348.9	-3,240.4	3,257.4	0.00	0.00	0.00
9,450.0	90.80	269.39	6,472.8	-349.5	-3,290.4	3,307.3	0.00	0.00	0.00
9,500.0	90.80	269.39	6,472.1	-350.0	-3,340.4	3,357.2	0.00	0.00	0.00
9,550.0	90.80	269.39	6,471.4	-350.5	-3,390.4	3,407.1	0.00	0.00	0.00
9,600.0	90.80	269.39	6,470.7	-351.1	-3,440.4	3,457.0	0.00	0.00	0.00
9,607.1	90.80	269.39	6,470.6	-351.2	-3,447.5	3,464.1	0.00	0.00	0.00
Wells Ranch USX AA35-14									
9,650.0	90.80	269.39	6,470.0	-351.6	-3,490.4	3,506.9	0.00	0.00	0.00
9,700.0	90.80	269.39	6,469.3	-352.1	-3,540.4	3,556.8	0.00	0.00	0.00
9,750.0	90.80	269.39	6,468.6	-352.7	-3,590.4	3,606.7	0.00	0.00	0.00
9,800.0	90.80	269.39	6,467.9	-353.2	-3,640.4	3,656.6	0.00	0.00	0.00
9,850.0	90.80	269.39	6,467.2	-353.7	-3,690.3	3,706.5	0.00	0.00	0.00
9,900.0	90.80	269.39	6,466.5	-354.3	-3,740.3	3,756.3	0.00	0.00	0.00
9,950.0	90.80	269.39	6,465.8	-354.8	-3,790.3	3,806.2	0.00	0.00	0.00
10,000.0	90.80	269.39	6,465.1	-355.3	-3,840.3	3,856.1	0.00	0.00	0.00
10,050.0	90.80	269.39	6,464.4	-355.9	-3,890.3	3,906.0	0.00	0.00	0.00
10,100.0	90.80	269.39	6,463.8	-356.4	-3,940.3	3,955.9	0.00	0.00	0.00
10,150.0	90.80	269.39	6,463.1	-357.0	-3,990.3	4,005.8	0.00	0.00	0.00
10,200.0	90.80	269.39	6,462.4	-357.5	-4,040.3	4,055.7	0.00	0.00	0.00
10,250.0	90.80	269.39	6,461.7	-358.0	-4,090.3	4,105.6	0.00	0.00	0.00
10,300.0	90.80	269.39	6,461.0	-358.6	-4,140.3	4,155.5	0.00	0.00	0.00
10,350.0	90.80	269.39	6,460.3	-359.1	-4,190.3	4,205.4	0.00	0.00	0.00
10,400.0	90.80	269.39	6,459.6	-359.6	-4,240.3	4,255.3	0.00	0.00	0.00
10,450.0	90.80	269.39	6,458.9	-360.2	-4,290.3	4,305.2	0.00	0.00	0.00
10,500.0	90.80	269.39	6,458.2	-360.7	-4,340.2	4,355.1	0.00	0.00	0.00
10,550.0	90.80	269.39	6,457.5	-361.2	-4,390.2	4,405.0	0.00	0.00	0.00
10,600.0	90.80	269.39	6,456.8	-361.8	-4,440.2	4,454.8	0.00	0.00	0.00
10,650.0	90.80	269.39	6,456.1	-362.3	-4,490.2	4,504.7	0.00	0.00	0.00
10,700.0	90.80	269.39	6,455.4	-362.8	-4,540.2	4,554.6	0.00	0.00	0.00
10,750.0	90.80	269.39	6,454.7	-363.4	-4,590.2	4,604.5	0.00	0.00	0.00
10,800.0	90.80	269.39	6,454.0	-363.9	-4,640.2	4,654.4	0.00	0.00	0.00
10,850.0	90.80	269.39	6,453.3	-364.4	-4,690.2	4,704.3	0.00	0.00	0.00
10,900.0	90.80	269.39	6,452.6	-365.0	-4,740.2	4,754.2	0.00	0.00	0.00
10,908.7	90.80	269.39	6,452.5	-365.1	-4,748.8	4,762.8	0.00	0.00	0.00
Wells Ranch 14-35									
10,950.0	90.80	269.39	6,451.9	-365.5	-4,790.2	4,804.1	0.00	0.00	0.00
11,000.0	90.80	269.39	6,451.2	-366.0	-4,840.2	4,854.0	0.00	0.00	0.00
11,050.0	90.80	269.39	6,450.5	-366.6	-4,890.2	4,903.9	0.00	0.00	0.00
11,063.3	90.80	269.39	6,450.3	-366.7	-4,903.5	4,917.2	0.00	0.00	0.00
TD at 11063.3 - Wells Ranch AA35-62-1HNA BHL 330'FSL, 535'FWL									

Noble Energy Inc

Planning Report

Database:	EDM Production	Local Co-ordinate Reference:	Well Wells Ranch AA35-62-1HNA
Company:	Northern Region Drilling - Working	TVD Reference:	WELL @ 4764.0usft (Original Well Elev)
Project:	Wattenberg Field	MD Reference:	WELL @ 4764.0usft (Original Well Elev)
Site:	AA (06N-63W)	North Reference:	Grid
Well:	Wells Ranch AA35-62-1HNA	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Drilling		
Design:	APD - Rev 0		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
- Shape									
Wells Ranch AA35-62-1I - plan hits target center - Point	0.00	0.00	6,450.3	-366.7	-4,903.5	1,403,734.32	3,302,920.67	40.436550	-104.411740
Wells Ranch USX AA35- - plan misses target center by 515.5usft at 9607.1usft MD (6470.6 TVD, -351.2 N, -3447.5 E) - Circle (radius 150.0)	0.00	0.00	6,913.0	-86.6	-3,456.5	1,404,014.43	3,304,367.58	40.437270	-104.406530
Wells Ranch 14-35 - plan misses target center by 988.9usft at 10908.7usft MD (6452.5 TVD, -365.1 N, -4748.8 E) - Circle (radius 150.0)	0.00	0.00	7,395.0	-66.3	-4,765.2	1,404,034.76	3,303,058.96	40.437370	-104.411230

Casing Points				
Measured Depth	Vertical Depth	Name	Casing Diameter	Hole Diameter
(usft)	(usft)		(")	(")
6,877.6	6,497.5	7" Casing @ 6877.6' MD	7	8-3/4

Formations					
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction
(usft)	(usft)			(°)	(°)
2,795.1	2,773.0	PIERRE		0.00	
3,512.1	3,481.0	PARKMAN		0.00	
4,335.1	4,304.0	SUSSEX		0.00	
4,856.1	4,825.0	SHANNON		0.00	
5,827.1	5,796.0	TEEPEE BUTTES		0.00	
6,545.0	6,394.0	SHARON SPRINGS		0.00	
6,615.7	6,428.0	NIO A CHALK		0.00	
6,615.7	6,428.0	NIOBRARA		0.00	
6,684.2	6,455.0	NIO A MARL		0.00	

Plan Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(usft)	(usft)	+N/-S	+E/-W	
(usft)	(usft)	(usft)	(usft)	
1,500.0	1,500.0	0.0	0.0	KOP - Start Build 2.00
2,925.3	2,899.8	-242.9	-50.1	Start Drop -2.00
5,815.1	5,784.0	-315.0	-65.0	KOP #2 - Start Build 8.00
6,877.6	6,497.5	-322.0	-718.8	Start 75.0 hold at 6877.6 MD
6,952.6	6,504.0	-322.8	-793.5	Start Build 8.00
11,063.3	6,450.3	-366.7	-4,903.5	TD at 11063.3

Northern Region Drilling - Working

Wattenberg Field

AA (06N-63W)

Wells Ranch AA35-62-1HNA

Original Drilling

APD - Rev 0

Anticollision Summary Report

11 September, 2013

Noble Energy Inc

Anticollision Summary Report

Company:	Northern Region Drilling - Working	Local Co-ordinate Reference:	Well Wells Ranch AA35-62-1HNA
Project:	Wattenberg Field	TVD Reference:	WELL @ 4764.0usft (Original Well Elev)
Reference Site:	AA (06N-63W)	MD Reference:	WELL @ 4764.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Wells Ranch AA35-62-1HNA	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	EDM Production
Reference Design:	APD - Rev 0	Offset TVD Reference:	Offset Datum

Reference	APD - Rev 0		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.0 usft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program	Date	9/10/2013		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	11,063.3	APD - Rev 0 (Original Drilling)	MWD	MWD - Standard

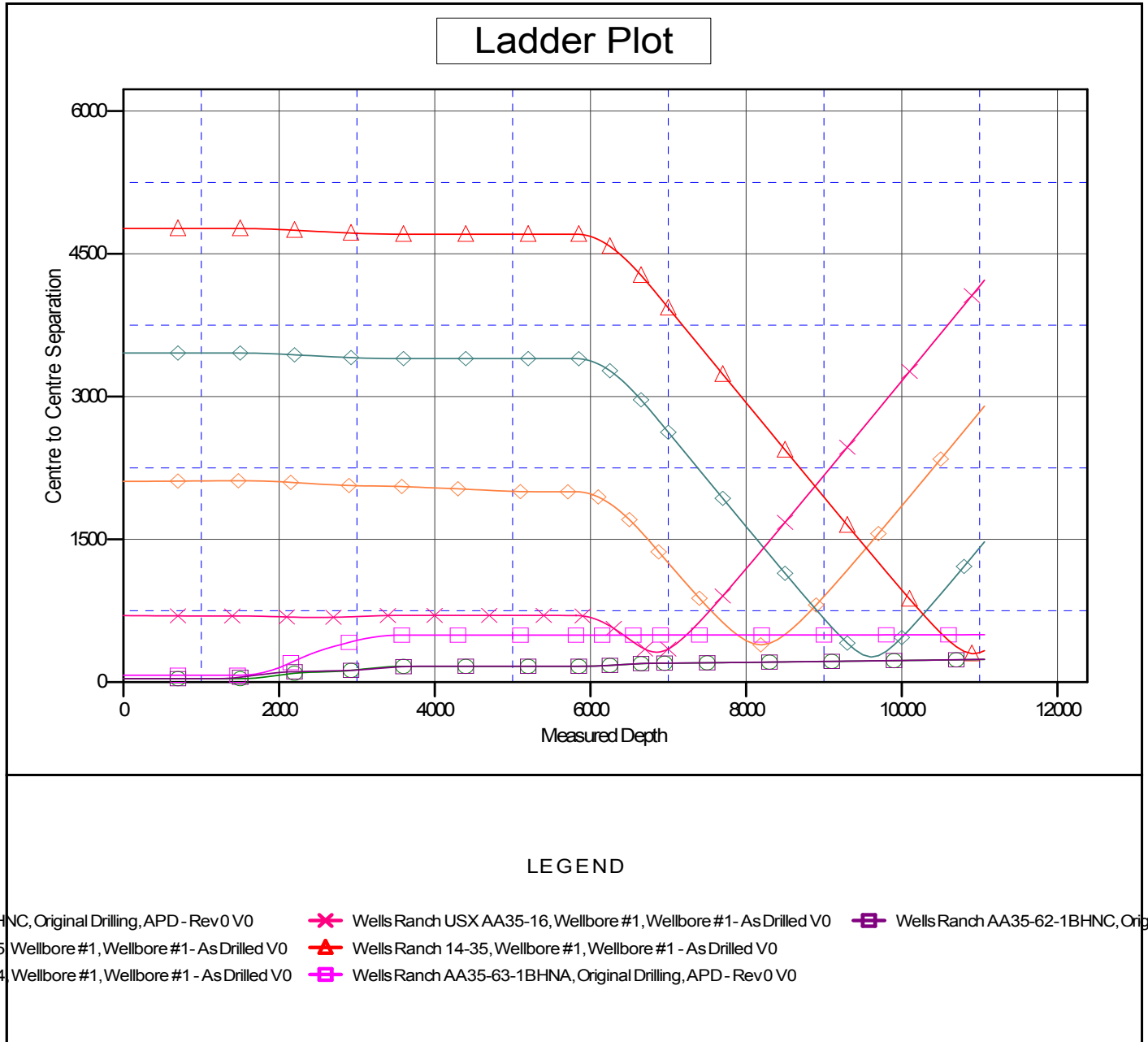
Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
AA (06N-63W)						
Wells Ranch 14-35 - Wellbore #1 - Wellbore #1 - As Drill	10,921.8	6,449.3	299.0	160.8	2.163	CC, ES, SF
Wells Ranch AA35-62-1AHNC - Original Drilling - APD -	1,500.0	1,500.0	36.4	30.0	5.636	CC, ES
Wells Ranch AA35-62-1AHNC - Original Drilling - APD -	11,063.3	11,159.0	238.6	45.7	1.237	Level 2, SF
Wells Ranch AA35-62-1BHNC - Original Drilling - APD -	1,200.0	1,200.0	36.4	31.3	7.122	CC, ES
Wells Ranch AA35-62-1BHNC - Original Drilling - APD -	11,063.3	11,191.5	239.3	48.1	1.252	Level 2, SF
Wells Ranch AA35-63-1BHNA - Original Drilling - APD - R	1,466.3	1,467.3	72.9	66.6	11.546	CC
Wells Ranch AA35-63-1BHNA - Original Drilling - APD - R	1,500.0	1,500.0	72.9	66.5	11.281	ES
Wells Ranch AA35-63-1BHNA - Original Drilling - APD - R	11,063.3	11,034.7	498.4	229.9	1.856	Level 3, SF
Wells Ranch USX AA35-14 - Wellbore #1 - Wellbore #1 -	9,613.3	6,464.5	264.6	162.9	2.600	CC, ES, SF
Wells Ranch USX AA35-15 - Wellbore #1 - Wellbore #1-	8,189.8	6,442.9	392.2	325.7	5.896	CC
Wells Ranch USX AA35-15 - Wellbore #1 - Wellbore #1-	8,200.0	6,442.8	392.3	325.5	5.874	ES
Wells Ranch USX AA35-15 - Wellbore #1 - Wellbore #1-	8,300.0	6,441.3	407.4	337.9	5.862	SF
Wells Ranch USX AA35-16 - Wellbore #1 - Wellbore #1-	6,850.5	6,458.3	314.5	281.7	9.600	CC, ES
Wells Ranch USX AA35-16 - Wellbore #1 - Wellbore #1-	6,900.0	6,463.3	318.3	284.5	9.413	SF

Noble Energy Inc
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Reference Well:	Wells Ranch AA35-62-1HNA	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	EDM Production
Reference Design:	APD - Rev 0	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4764.0usft (Original Well Ele
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000

Coordinates are relative to: Wells Ranch AA35-62-1HNA
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.71°



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

Noble Energy Inc
Anticollision Summary Report

Company:	Northern Region Drilling - Working	Local Co-ordinate Reference:	Well Wells Ranch AA35-62-1HNA
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