

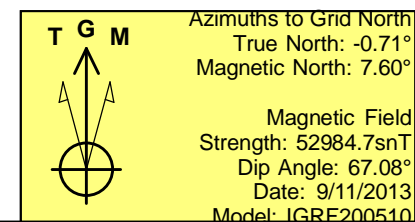
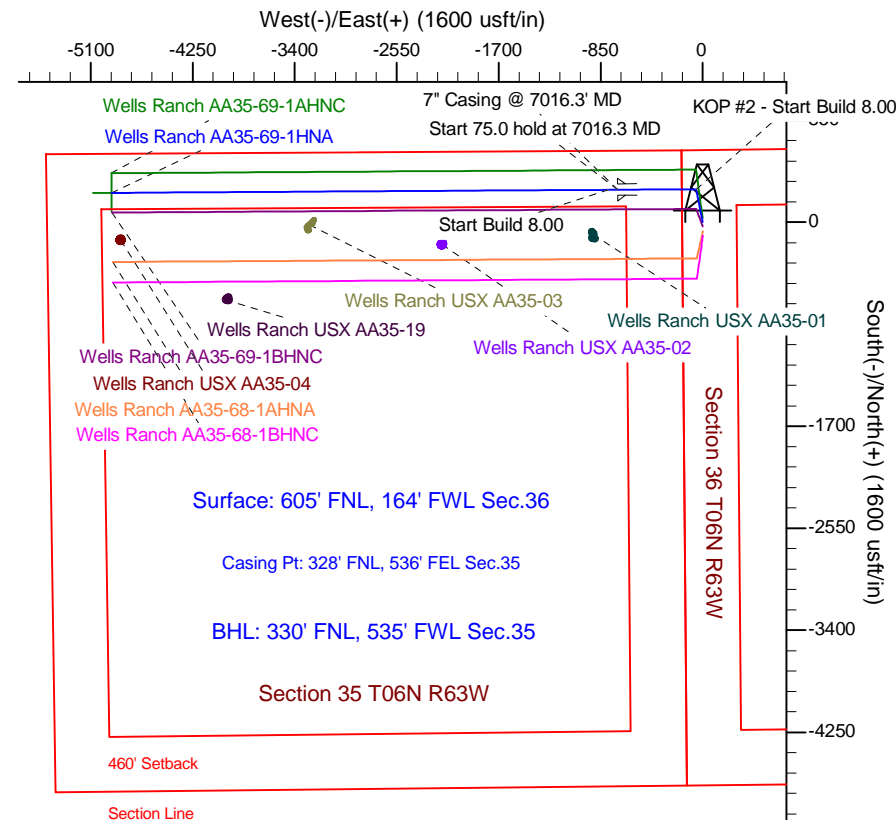
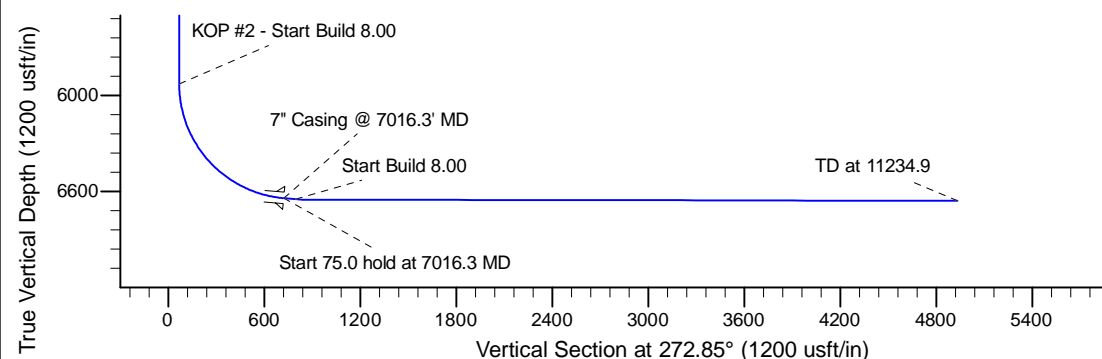
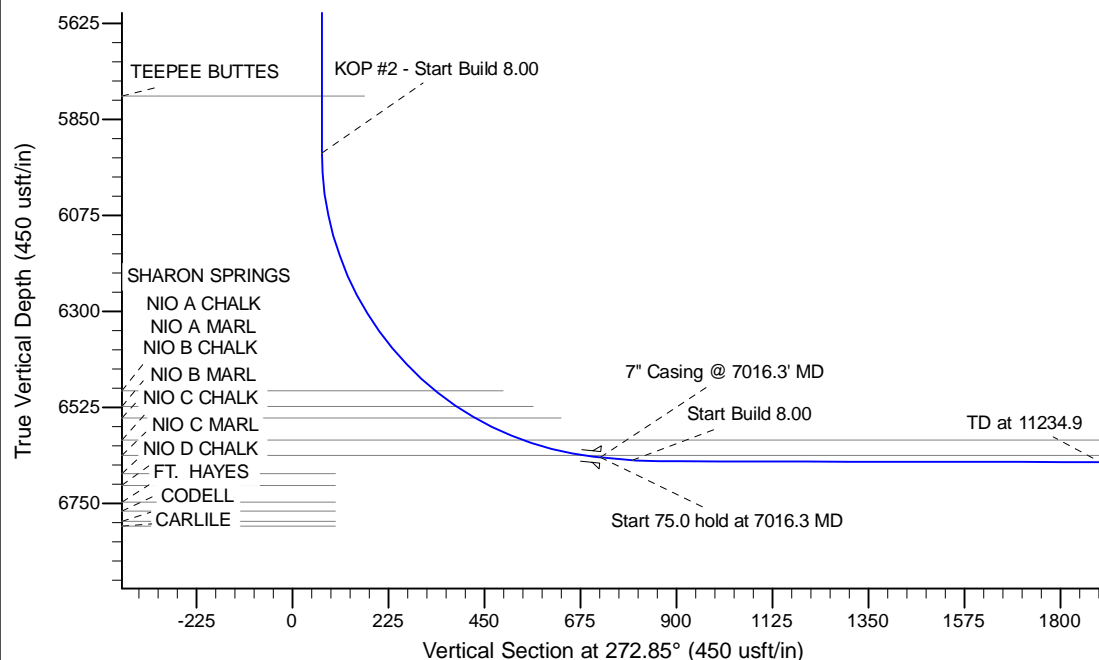
Project: Wattenberg Field
 Site: AA (Sec.36-T06N-R63W) Weld County, CO
 Well: Wells Ranch AA35-69-1HNA
 Wellbore: Original Drilling
 Design: APD - Rev 0

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	Vsect	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	2101.3	12.03	348.69	2096.9	61.6	-12.3	2.00	348.69	15.4	
4	2843.8	12.03	348.69	2823.1	213.4	-42.7	0.00	0.00	53.2	
5	3445.1	0.00	0.00	3420.0	275.0	-55.0	2.00	180.00	68.6	
6	5953.8	0.00	0.00	5928.7	275.0	-55.0	0.00	0.00	68.6	
7	7016.3	85.00	269.65	6642.2	271.0	-708.8	8.00	269.65	721.4	
8	7091.3	85.00	269.65	6648.8	270.5	-783.5	0.00	0.00	796.0	
9	7152.6	89.90	269.65	6651.5	270.2	-844.6	8.00	0.00	857.0	
10	11234.9	89.90	269.65	6658.6	245.1	-4926.9	0.00	0.00	4933.0	Wells Ranch AA35-69-1HNA BHL 330'FNL, 535'FWL



WELL DETAILS: Wells Ranch AA35-69-1HNA				
Ground Level: 4809.0				
0.0	0.0	Northing	Easting	Latitude
		1408144.50	3307779.10	40.448490
				Longitude
				-104.394090
Plan: APD - Rev 0 (Wells Ranch AA35-69-1HNA/Original Drilling)				
Created By: Shailey Jewell		Date: 15:06, September 11 2013		
Checked: _____		Date: _____		
Reviewed: _____		Date: _____		
Approved: _____		Date: _____		

Northern Region Drilling - Working

Wattenberg Field

AA (06N-63W)

Wells Ranch AA35-69-1HNA

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 AA35-69-1HNA
Company:	Northern Region Drilling - Working	TVD Reference:	WELL @ 4839.0usft (Original Well Elev)
Project:	Wattenberg Field	MD Reference:	WELL @ 4839.0usft (Original Well Elev)
Site:	AA (06N-63W)	North Reference:	Grid
Well:	Wells Ranch AA35-69-1HNA	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 AA35-69-1HNA					
Well Position	+N/-S	-19,701.0 usft	Northing:	1,408,144.50 usft	Latitude:	40.448490
	+E/-W	5,221.3 usft	Easting:	3,307,779.11 usft	Longitude:	-104.394090
Position Uncertainty		0.0 usft	Wellhead Elevation:		Ground Level:	4,809.0 usft

Wellbore	Original Drilling				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	9/11/2013	8.31	67.08	52,985

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	272.85

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	
2,101.3	12.03	348.69	2,096.9	61.6	-12.3	2.00	2.00	0.00	348.69	
2,843.8	12.03	348.69	2,823.1	213.4	-42.7	0.00	0.00	0.00	0.00	
3,445.1	0.00	0.00	3,420.0	275.0	-55.0	2.00	-2.00	0.00	180.00	
5,953.8	0.00	0.00	5,928.7	275.0	-55.0	0.00	0.00	0.00	0.00	
7,016.3	85.00	269.65	6,642.2	271.0	-708.8	8.00	8.00	0.00	269.65	
7,091.3	85.00	269.65	6,648.8	270.5	-783.5	0.00	0.00	0.00	0.00	
7,152.6	89.90	269.65	6,651.5	270.2	-844.6	8.00	8.00	0.00	0.00	
11,234.9	89.90	269.65	6,658.6	245.1	-4,926.9	0.00	0.00	0.00	0.00	Wells Ranch AA35-69

Noble Energy Inc

Planning Report

Database:	EDM Production	Local Co-ordinate Reference:	Well Wells Ranch AA35-69-1HNA
Company:	Northern Region Drilling - Working	TVD Reference:	WELL @ 4839.0usft (Original Well Elev)
Project:	Wattenberg Field	MD Reference:	WELL @ 4839.0usft (Original Well Elev)
Site:	AA (06N-63W)	North Reference:	Grid
Well:	Wells Ranch AA35-69-1HNA	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
1,104.0	0.00	0.00	1,104.0	0.0	0.0	0.0	0.00	0.00	0.00
PIERRE									
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	348.69	1,550.0	0.4	-0.1	0.1	2.00	2.00	0.00
1,600.0	2.00	348.69	1,600.0	1.7	-0.3	0.4	2.00	2.00	0.00
1,650.0	3.00	348.69	1,649.9	3.8	-0.8	1.0	2.00	2.00	0.00
1,700.0	4.00	348.69	1,699.8	6.8	-1.4	1.7	2.00	2.00	0.00
1,750.0	5.00	348.69	1,749.7	10.7	-2.1	2.7	2.00	2.00	0.00
1,800.0	6.00	348.69	1,799.5	15.4	-3.1	3.8	2.00	2.00	0.00
1,850.0	7.00	348.69	1,849.1	20.9	-4.2	5.2	2.00	2.00	0.00
1,900.0	8.00	348.69	1,898.7	27.3	-5.5	6.8	2.00	2.00	0.00
1,950.0	9.00	348.69	1,948.2	34.6	-6.9	8.6	2.00	2.00	0.00
2,000.0	10.00	348.69	1,997.5	42.7	-8.5	10.6	2.00	2.00	0.00
2,050.0	11.00	348.69	2,046.6	51.6	-10.3	12.9	2.00	2.00	0.00
2,100.0	12.00	348.69	2,095.6	61.4	-12.3	15.3	2.00	2.00	0.00
2,101.3	12.03	348.69	2,096.9	61.6	-12.3	15.4	2.00	2.00	0.00
2,150.0	12.03	348.69	2,144.5	71.6	-14.3	17.9	0.00	0.00	0.00
2,200.0	12.03	348.69	2,193.4	81.8	-16.4	20.4	0.00	0.00	0.00
2,250.0	12.03	348.69	2,242.3	92.0	-18.4	23.0	0.00	0.00	0.00
2,300.0	12.03	348.69	2,291.2	102.2	-20.4	25.5	0.00	0.00	0.00
2,350.0	12.03	348.69	2,340.1	112.5	-22.5	28.1	0.00	0.00	0.00
2,400.0	12.03	348.69	2,389.0	122.7	-24.5	30.6	0.00	0.00	0.00
2,450.0	12.03	348.69	2,437.9	132.9	-26.6	33.1	0.00	0.00	0.00

Noble Energy Inc

Planning Report

Database:	EDM Production	Local Co-ordinate Reference:	Well Wells Ranch AA35-69-1HNA
Company:	Northern Region Drilling - Working	TVD Reference:	WELL @ 4839.0usft (Original Well Elev)
Project:	Wattenberg Field	MD Reference:	WELL @ 4839.0usft (Original Well Elev)
Site:	AA (06N-63W)	North Reference:	Grid
Well:	Wells Ranch AA35-69-1HNA	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)
2,500.0	12.03	348.69	2,486.8	143.1	-28.6	35.7	0.00	0.00	0.00
2,550.0	12.03	348.69	2,535.7	153.3	-30.7	38.2	0.00	0.00	0.00
2,600.0	12.03	348.69	2,584.7	163.5	-32.7	40.8	0.00	0.00	0.00
2,650.0	12.03	348.69	2,633.6	173.8	-34.8	43.3	0.00	0.00	0.00
2,700.0	12.03	348.69	2,682.5	184.0	-36.8	45.9	0.00	0.00	0.00
2,750.0	12.03	348.69	2,731.4	194.2	-38.8	48.4	0.00	0.00	0.00
2,800.0	12.03	348.69	2,780.3	204.4	-40.9	51.0	0.00	0.00	0.00
2,843.8	12.03	348.69	2,823.1	213.3	-42.7	53.2	0.00	0.00	0.00
Start Drop -2.00									
2,850.0	11.90	348.69	2,829.2	214.6	-42.9	53.5	1.99	-1.99	0.00
2,900.0	10.90	348.69	2,878.2	224.3	-44.9	55.9	2.00	-2.00	0.00
2,950.0	9.90	348.69	2,927.4	233.2	-46.6	58.2	2.00	-2.00	0.00
3,000.0	8.90	348.69	2,976.7	241.2	-48.2	60.2	2.00	-2.00	0.00
3,050.0	7.90	348.69	3,026.1	248.3	-49.7	61.9	2.00	-2.00	0.00
3,100.0	6.90	348.69	3,075.7	254.6	-50.9	63.5	2.00	-2.00	0.00
3,150.0	5.90	348.69	3,125.4	260.1	-52.0	64.9	2.00	-2.00	0.00
3,200.0	4.90	348.69	3,175.2	264.7	-52.9	66.0	2.00	-2.00	0.00
3,250.0	3.90	348.69	3,225.0	268.5	-53.7	67.0	2.00	-2.00	0.00
3,300.0	2.90	348.69	3,275.0	271.4	-54.3	67.7	2.00	-2.00	0.00
3,350.0	1.90	348.69	3,324.9	273.5	-54.7	68.2	2.00	-2.00	0.00
3,400.0	0.90	348.69	3,374.9	274.7	-54.9	68.5	2.00	-2.00	0.00
3,445.1	0.00	0.00	3,420.0	275.0	-55.0	68.6	2.00	-2.00	0.00
3,450.0	0.00	0.00	3,424.9	275.0	-55.0	68.6	0.00	0.00	0.00
3,500.0	0.00	0.00	3,474.9	275.0	-55.0	68.6	0.00	0.00	0.00
3,550.0	0.00	0.00	3,524.9	275.0	-55.0	68.6	0.00	0.00	0.00
3,600.0	0.00	0.00	3,574.9	275.0	-55.0	68.6	0.00	0.00	0.00
3,611.1	0.00	0.00	3,586.0	275.0	-55.0	68.6	0.00	0.00	0.00
PARKMAN									
3,650.0	0.00	0.00	3,624.9	275.0	-55.0	68.6	0.00	0.00	0.00
3,700.0	0.00	0.00	3,674.9	275.0	-55.0	68.6	0.00	0.00	0.00
3,750.0	0.00	0.00	3,724.9	275.0	-55.0	68.6	0.00	0.00	0.00
3,800.0	0.00	0.00	3,774.9	275.0	-55.0	68.6	0.00	0.00	0.00
3,850.0	0.00	0.00	3,824.9	275.0	-55.0	68.6	0.00	0.00	0.00
3,900.0	0.00	0.00	3,874.9	275.0	-55.0	68.6	0.00	0.00	0.00
3,950.0	0.00	0.00	3,924.9	275.0	-55.0	68.6	0.00	0.00	0.00
4,000.0	0.00	0.00	3,974.9	275.0	-55.0	68.6	0.00	0.00	0.00
4,050.0	0.00	0.00	4,024.9	275.0	-55.0	68.6	0.00	0.00	0.00
4,100.0	0.00	0.00	4,074.9	275.0	-55.0	68.6	0.00	0.00	0.00
4,150.0	0.00	0.00	4,124.9	275.0	-55.0	68.6	0.00	0.00	0.00
4,200.0	0.00	0.00	4,174.9	275.0	-55.0	68.6	0.00	0.00	0.00
4,250.0	0.00	0.00	4,224.9	275.0	-55.0	68.6	0.00	0.00	0.00
4,300.0	0.00	0.00	4,274.9	275.0	-55.0	68.6	0.00	0.00	0.00
4,350.0	0.00	0.00	4,324.9	275.0	-55.0	68.6	0.00	0.00	0.00
4,352.1	0.00	0.00	4,327.0	275.0	-55.0	68.6	0.00	0.00	0.00
SUSSEX									
4,400.0	0.00	0.00	4,374.9	275.0	-55.0	68.6	0.00	0.00	0.00
4,450.0	0.00	0.00	4,424.9	275.0	-55.0	68.6	0.00	0.00	0.00
4,500.0	0.00	0.00	4,474.9	275.0	-55.0	68.6	0.00	0.00	0.00
4,550.0	0.00	0.00	4,524.9	275.0	-55.0	68.6	0.00	0.00	0.00
4,600.0	0.00	0.00	4,574.9	275.0	-55.0	68.6	0.00	0.00	0.00
4,650.0	0.00	0.00	4,624.9	275.0	-55.0	68.6	0.00	0.00	0.00
4,700.0	0.00	0.00	4,674.9	275.0	-55.0	68.6	0.00	0.00	0.00
4,750.0	0.00	0.00	4,724.9	275.0	-55.0	68.6	0.00	0.00	0.00

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Company:	Northern Region Drilling - Working	TVD Reference:	WELL @ 4839.0usft (Original Well Elev)
Project:	Wattenberg Field	MD Reference:	WELL @ 4839.0usft (Original Well Elev)
Site:	AA (06N-63W)	North Reference:	Grid
Well:	Wells Ranch AA35-69-1HNA	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	4,774.9	275.0	-55.0	68.6	0.00	0.00	0.00
4,850.0	0.00	0.00	4,824.9	275.0	-55.0	68.6	0.00	0.00	0.00
4,900.0	0.00	0.00	4,874.9	275.0	-55.0	68.6	0.00	0.00	0.00
4,950.0	0.00	0.00	4,924.9	275.0	-55.0	68.6	0.00	0.00	0.00
4,951.1	0.00	0.00	4,926.0	275.0	-55.0	68.6	0.00	0.00	0.00
SHANNON									
5,000.0	0.00	0.00	4,974.9	275.0	-55.0	68.6	0.00	0.00	0.00
5,050.0	0.00	0.00	5,024.9	275.0	-55.0	68.6	0.00	0.00	0.00
5,100.0	0.00	0.00	5,074.9	275.0	-55.0	68.6	0.00	0.00	0.00
5,150.0	0.00	0.00	5,124.9	275.0	-55.0	68.6	0.00	0.00	0.00
5,200.0	0.00	0.00	5,174.9	275.0	-55.0	68.6	0.00	0.00	0.00
5,250.0	0.00	0.00	5,224.9	275.0	-55.0	68.6	0.00	0.00	0.00
5,300.0	0.00	0.00	5,274.9	275.0	-55.0	68.6	0.00	0.00	0.00
5,350.0	0.00	0.00	5,324.9	275.0	-55.0	68.6	0.00	0.00	0.00
5,400.0	0.00	0.00	5,374.9	275.0	-55.0	68.6	0.00	0.00	0.00
5,450.0	0.00	0.00	5,424.9	275.0	-55.0	68.6	0.00	0.00	0.00
5,500.0	0.00	0.00	5,474.9	275.0	-55.0	68.6	0.00	0.00	0.00
5,550.0	0.00	0.00	5,524.9	275.0	-55.0	68.6	0.00	0.00	0.00
5,600.0	0.00	0.00	5,574.9	275.0	-55.0	68.6	0.00	0.00	0.00
5,650.0	0.00	0.00	5,624.9	275.0	-55.0	68.6	0.00	0.00	0.00
5,700.0	0.00	0.00	5,674.9	275.0	-55.0	68.6	0.00	0.00	0.00
5,750.0	0.00	0.00	5,724.9	275.0	-55.0	68.6	0.00	0.00	0.00
5,800.0	0.00	0.00	5,774.9	275.0	-55.0	68.6	0.00	0.00	0.00
5,820.1	0.00	0.00	5,795.0	275.0	-55.0	68.6	0.00	0.00	0.00
TEEPEE BUTTES									
5,850.0	0.00	0.00	5,824.9	275.0	-55.0	68.6	0.00	0.00	0.00
5,900.0	0.00	0.00	5,874.9	275.0	-55.0	68.6	0.00	0.00	0.00
5,950.0	0.00	0.00	5,924.9	275.0	-55.0	68.6	0.00	0.00	0.00
5,953.8	0.00	0.00	5,928.7	275.0	-55.0	68.6	0.00	0.00	0.00
KOP #2 - Start Build 8.00									
6,000.0	3.69	269.65	5,974.9	275.0	-56.5	70.1	7.99	7.99	0.00
6,050.0	7.69	269.65	6,024.6	275.0	-61.4	75.0	8.00	8.00	0.00
6,100.0	11.69	269.65	6,073.9	274.9	-69.9	83.4	8.00	8.00	0.00
6,150.0	15.69	269.65	6,122.5	274.8	-81.7	95.2	8.00	8.00	0.00
6,200.0	19.69	269.65	6,170.1	274.7	-96.9	110.4	8.00	8.00	0.00
6,250.0	23.69	269.65	6,216.5	274.6	-115.4	128.9	8.00	8.00	0.00
6,300.0	27.69	269.65	6,261.6	274.5	-137.0	150.5	8.00	8.00	0.00
6,350.0	31.69	269.65	6,305.0	274.3	-161.8	175.2	8.00	8.00	0.00
6,400.0	35.69	269.65	6,346.6	274.2	-189.5	202.9	8.00	8.00	0.00
6,450.0	39.69	269.65	6,386.2	274.0	-220.1	233.4	8.00	8.00	0.00
6,500.0	43.69	269.65	6,423.5	273.8	-253.3	266.6	8.00	8.00	0.00
6,550.0	47.69	269.65	6,458.4	273.6	-289.1	302.3	8.00	8.00	0.00
6,592.4	51.08	269.65	6,486.0	273.4	-321.3	334.5	8.00	8.00	0.00
SHARON SPRINGS									
6,600.0	51.69	269.65	6,490.7	273.3	-327.2	340.4	8.00	8.00	0.00
6,650.0	55.69	269.65	6,520.3	273.1	-367.5	380.6	8.00	8.00	0.00
6,654.7	56.07	269.65	6,523.0	273.1	-371.4	384.6	8.00	8.00	0.00
NIO A CHALK									
6,700.0	59.69	269.65	6,547.1	272.8	-409.8	422.8	8.00	8.00	0.00
6,705.9	60.16	269.65	6,550.0	272.8	-414.9	427.9	8.00	8.00	0.00
NIO A MARL									
6,750.0	63.69	269.65	6,570.8	272.6	-453.8	466.8	8.00	8.00	0.00
6,800.0	67.69	269.65	6,591.3	272.3	-499.3	512.2	8.00	8.00	0.00

Noble Energy Inc

Planning Report

Database:	EDM Production	Local Co-ordinate Reference:	Well Wells Ranch AA35-69-1HNA
Company:	Northern Region Drilling - Working	TVD Reference:	WELL @ 4839.0usft (Original Well Elev)
Project:	Wattenberg Field	MD Reference:	WELL @ 4839.0usft (Original Well Elev)
Site:	AA (06N-63W)	North Reference:	Grid
Well:	Wells Ranch AA35-69-1HNA	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)
6,829.6	70.06	269.65	6,602.0	272.1	-526.9	539.8	8.00	8.00	0.00
NIO B CHALK									
6,850.0	71.69	269.65	6,608.7	272.0	-546.2	559.1	8.00	8.00	0.00
6,900.0	75.69	269.65	6,622.7	271.7	-594.2	607.0	8.00	8.00	0.00
6,950.0	79.69	269.65	6,633.4	271.4	-643.0	655.7	8.00	8.00	0.00
6,979.1	82.02	269.65	6,638.0	271.2	-671.7	684.4	8.00	8.00	0.00
NIO B MARL									
7,000.0	83.69	269.65	6,640.6	271.1	-692.5	705.1	8.00	8.00	0.00
7,016.3	85.00	269.65	6,642.2	271.0	-708.7	721.3	8.00	8.00	0.00
Start 75.0 hold at 7016.3 MD - 7" Casing @ 7016.3' MD									
7,050.0	85.00	269.65	6,645.1	270.8	-742.3	754.8	0.01	0.01	0.00
7,091.3	85.00	269.65	6,648.7	270.5	-783.4	795.9	0.00	0.00	0.00
Start Build 8.00									
7,100.0	85.69	269.65	6,649.5	270.5	-792.1	804.6	7.96	7.96	0.00
7,150.0	89.69	269.65	6,651.5	270.2	-842.0	854.4	8.00	8.00	0.00
7,152.6	89.90	269.65	6,651.5	270.2	-844.6	857.0	8.00	8.00	0.00
7,200.0	89.90	269.65	6,651.6	269.9	-892.0	904.4	0.00	0.00	0.00
7,250.0	89.90	269.65	6,651.6	269.6	-942.0	954.3	0.00	0.00	0.00
7,300.0	89.90	269.65	6,651.7	269.2	-992.0	1,004.2	0.00	0.00	0.00
7,350.0	89.90	269.65	6,651.8	268.9	-1,042.0	1,054.1	0.00	0.00	0.00
7,400.0	89.90	269.65	6,651.9	268.6	-1,092.0	1,104.0	0.00	0.00	0.00
7,450.0	89.90	269.65	6,652.0	268.3	-1,142.0	1,154.0	0.00	0.00	0.00
7,500.0	89.90	269.65	6,652.1	268.0	-1,192.0	1,203.9	0.00	0.00	0.00
7,550.0	89.90	269.65	6,652.2	267.7	-1,242.0	1,253.8	0.00	0.00	0.00
7,600.0	89.90	269.65	6,652.3	267.4	-1,292.0	1,303.7	0.00	0.00	0.00
7,650.0	89.90	269.65	6,652.3	267.1	-1,342.0	1,353.7	0.00	0.00	0.00
7,700.0	89.90	269.65	6,652.4	266.8	-1,392.0	1,403.6	0.00	0.00	0.00
7,750.0	89.90	269.65	6,652.5	266.5	-1,442.0	1,453.5	0.00	0.00	0.00
7,800.0	89.90	269.65	6,652.6	266.2	-1,492.0	1,503.4	0.00	0.00	0.00
7,850.0	89.90	269.65	6,652.7	265.9	-1,542.0	1,553.3	0.00	0.00	0.00
7,900.0	89.90	269.65	6,652.8	265.6	-1,592.0	1,603.3	0.00	0.00	0.00
7,950.0	89.90	269.65	6,652.9	265.3	-1,642.0	1,653.2	0.00	0.00	0.00
8,000.0	89.90	269.65	6,653.0	265.0	-1,692.0	1,703.1	0.00	0.00	0.00
8,050.0	89.90	269.65	6,653.0	264.6	-1,742.0	1,753.0	0.00	0.00	0.00
8,100.0	89.90	269.65	6,653.1	264.3	-1,792.0	1,803.0	0.00	0.00	0.00
8,150.0	89.90	269.65	6,653.2	264.0	-1,842.0	1,852.9	0.00	0.00	0.00
8,200.0	89.90	269.65	6,653.3	263.7	-1,892.0	1,902.8	0.00	0.00	0.00
8,250.0	89.90	269.65	6,653.4	263.4	-1,942.0	1,952.7	0.00	0.00	0.00
8,300.0	89.90	269.65	6,653.5	263.1	-1,992.0	2,002.6	0.00	0.00	0.00
8,350.0	89.90	269.65	6,653.6	262.8	-2,042.0	2,052.6	0.00	0.00	0.00
8,400.0	89.90	269.65	6,653.7	262.5	-2,092.0	2,102.5	0.00	0.00	0.00
8,450.0	89.90	269.65	6,653.7	262.2	-2,142.0	2,152.4	0.00	0.00	0.00
8,500.0	89.90	269.65	6,653.8	261.9	-2,192.0	2,202.3	0.00	0.00	0.00
8,550.0	89.90	269.65	6,653.9	261.6	-2,242.0	2,252.2	0.00	0.00	0.00
8,600.0	89.90	269.65	6,654.0	261.3	-2,292.0	2,302.2	0.00	0.00	0.00
8,650.0	89.90	269.65	6,654.1	261.0	-2,342.0	2,352.1	0.00	0.00	0.00
8,700.0	89.90	269.65	6,654.2	260.7	-2,392.0	2,402.0	0.00	0.00	0.00
8,750.0	89.90	269.65	6,654.3	260.3	-2,442.0	2,451.9	0.00	0.00	0.00
8,800.0	89.90	269.65	6,654.4	260.0	-2,492.0	2,501.9	0.00	0.00	0.00
8,850.0	89.90	269.65	6,654.4	259.7	-2,542.0	2,551.8	0.00	0.00	0.00
8,900.0	89.90	269.65	6,654.5	259.4	-2,592.0	2,601.7	0.00	0.00	0.00
8,950.0	89.90	269.65	6,654.6	259.1	-2,642.0	2,651.6	0.00	0.00	0.00
9,000.0	89.90	269.65	6,654.7	258.8	-2,692.0	2,701.5	0.00	0.00	0.00

Noble Energy Inc

Planning Report

Database:	EDM Production	Local Co-ordinate Reference:	Well Wells Ranch AA35-69-1HNA
Company:	Northern Region Drilling - Working	TVD Reference:	WELL @ 4839.0usft (Original Well Elev)
Project:	Wattenberg Field	MD Reference:	WELL @ 4839.0usft (Original Well Elev)
Site:	AA (06N-63W)	North Reference:	Grid
Well:	Wells Ranch AA35-69-1HNA	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)	
9,050.0	89.90	269.65	6,654.8	258.5	-2,742.0	2,751.5	0.00	0.00	0.00	
9,100.0	89.90	269.65	6,654.9	258.2	-2,792.0	2,801.4	0.00	0.00	0.00	
9,150.0	89.90	269.65	6,655.0	257.9	-2,842.0	2,851.3	0.00	0.00	0.00	
9,200.0	89.90	269.65	6,655.0	257.6	-2,892.0	2,901.2	0.00	0.00	0.00	
9,250.0	89.90	269.65	6,655.1	257.3	-2,942.0	2,951.2	0.00	0.00	0.00	
9,300.0	89.90	269.65	6,655.2	257.0	-2,992.0	3,001.1	0.00	0.00	0.00	
9,350.0	89.90	269.65	6,655.3	256.7	-3,042.0	3,051.0	0.00	0.00	0.00	
9,400.0	89.90	269.65	6,655.4	256.4	-3,092.0	3,100.9	0.00	0.00	0.00	
9,450.0	89.90	269.65	6,655.5	256.1	-3,142.0	3,150.8	0.00	0.00	0.00	
9,500.0	89.90	269.65	6,655.6	255.7	-3,192.0	3,200.8	0.00	0.00	0.00	
9,550.0	89.90	269.65	6,655.7	255.4	-3,242.0	3,250.7	0.00	0.00	0.00	
9,600.0	89.90	269.65	6,655.7	255.1	-3,292.0	3,300.6	0.00	0.00	0.00	
9,650.0	89.90	269.65	6,655.8	254.8	-3,342.0	3,350.5	0.00	0.00	0.00	
9,700.0	89.90	269.65	6,655.9	254.5	-3,392.0	3,400.5	0.00	0.00	0.00	
9,750.0	89.90	269.65	6,656.0	254.2	-3,442.0	3,450.4	0.00	0.00	0.00	
9,800.0	89.90	269.65	6,656.1	253.9	-3,492.0	3,500.3	0.00	0.00	0.00	
9,850.0	89.90	269.65	6,656.2	253.6	-3,542.0	3,550.2	0.00	0.00	0.00	
9,900.0	89.90	269.65	6,656.3	253.3	-3,592.0	3,600.1	0.00	0.00	0.00	
9,950.0	89.90	269.65	6,656.4	253.0	-3,642.0	3,650.1	0.00	0.00	0.00	
10,000.0	89.90	269.65	6,656.4	252.7	-3,692.0	3,700.0	0.00	0.00	0.00	
10,050.0	89.90	269.65	6,656.5	252.4	-3,742.0	3,749.9	0.00	0.00	0.00	
10,100.0	89.90	269.65	6,656.6	252.1	-3,792.0	3,799.8	0.00	0.00	0.00	
10,150.0	89.90	269.65	6,656.7	251.8	-3,842.0	3,849.8	0.00	0.00	0.00	
10,200.0	89.90	269.65	6,656.8	251.4	-3,892.0	3,899.7	0.00	0.00	0.00	
10,250.0	89.90	269.65	6,656.9	251.1	-3,942.0	3,949.6	0.00	0.00	0.00	
10,300.0	89.90	269.65	6,657.0	250.8	-3,992.0	3,999.5	0.00	0.00	0.00	
10,350.0	89.90	269.65	6,657.1	250.5	-4,042.0	4,049.4	0.00	0.00	0.00	
10,400.0	89.90	269.65	6,657.1	250.2	-4,092.0	4,099.4	0.00	0.00	0.00	
10,450.0	89.90	269.65	6,657.2	249.9	-4,142.0	4,149.3	0.00	0.00	0.00	
10,500.0	89.90	269.65	6,657.3	249.6	-4,192.0	4,199.2	0.00	0.00	0.00	
10,550.0	89.90	269.65	6,657.4	249.3	-4,242.0	4,249.1	0.00	0.00	0.00	
10,600.0	89.90	269.65	6,657.5	249.0	-4,292.0	4,299.0	0.00	0.00	0.00	
10,650.0	89.90	269.65	6,657.6	248.7	-4,342.0	4,349.0	0.00	0.00	0.00	
10,700.0	89.90	269.65	6,657.7	248.4	-4,392.0	4,398.9	0.00	0.00	0.00	
10,750.0	89.90	269.65	6,657.8	248.1	-4,442.0	4,448.8	0.00	0.00	0.00	
10,800.0	89.90	269.65	6,657.8	247.8	-4,492.0	4,498.7	0.00	0.00	0.00	
10,850.0	89.90	269.65	6,657.9	247.5	-4,542.0	4,548.7	0.00	0.00	0.00	
10,900.0	89.90	269.65	6,658.0	247.2	-4,592.0	4,598.6	0.00	0.00	0.00	
10,950.0	89.90	269.65	6,658.1	246.8	-4,642.0	4,648.5	0.00	0.00	0.00	
11,000.0	89.90	269.65	6,658.2	246.5	-4,692.0	4,698.4	0.00	0.00	0.00	
11,050.0	89.90	269.65	6,658.3	246.2	-4,742.0	4,748.3	0.00	0.00	0.00	
11,100.0	89.90	269.65	6,658.4	245.9	-4,792.0	4,798.3	0.00	0.00	0.00	
11,150.0	89.90	269.65	6,658.5	245.6	-4,842.0	4,848.2	0.00	0.00	0.00	
11,200.0	89.90	269.65	6,658.5	245.3	-4,892.0	4,898.1	0.00	0.00	0.00	
11,234.9	89.90	269.65	6,658.6	245.1	-4,926.9	4,933.0	0.00	0.00	0.00	
TD at 11234.9 - Wells Ranch AA35-69-1HNA BHL 330'FNL, 535'FWL										

Noble Energy Inc

Planning Report

Database:	EDM Production	Local Co-ordinate Reference:	Well Wells Ranch AA35-69-1HNA
Company:	Northern Region Drilling - Working	TVD Reference:	WELL @ 4839.0usft (Original Well Elev)
Project:	Wattenberg Field	MD Reference:	WELL @ 4839.0usft (Original Well Elev)
Site:	AA (06N-63W)	North Reference:	Grid
Well:	Wells Ranch AA35-69-1HNA	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 AA35-69-1I	0.00	0.00	6,658.6	245.1	-4,926.9	1,408,389.59	3,302,852.40	40.449330	-104.411780
- plan hits target center									
- Point									

Casing Points				
Measured Depth	Vertical Depth	Name		
(usft)	(usft)			
		Casing Diameter	Hole Diameter	
		(")	(")	
7,016.3	6,642.2	7" Casing @ 7016.3' MD	7	8-3/4

Formations						
Measured Depth	Vertical Depth	Name		Lithology	Dip	Dip Direction
(usft)	(usft)				(°)	(°)
1,104.0	1,104.0	PIERRE			0.00	
3,611.1	3,586.0	PARKMAN			0.00	
4,352.1	4,327.0	SUSSEX			0.00	
4,951.1	4,926.0	SHANNON			0.00	
5,820.1	5,795.0	TEEPEE BUTTES			0.00	
6,592.4	6,486.0	SHARON SPRINGS			0.00	
6,654.7	6,523.0	NIO A CHALK			0.00	
6,705.9	6,550.0	NIO A MARL			0.00	
6,829.6	6,602.0	NIO B CHALK			0.00	
6,979.1	6,638.0	NIO B MARL			0.00	

Plan Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(usft)	(usft)	+N/-S	+E/-W	
		(usft)	(usft)	
1,500.0	1,500.0	0.0	0.0	KOP - Start Build 2.00
2,843.8	2,823.1	213.3	-42.7	Start Drop -2.00
5,953.8	5,928.7	275.0	-55.0	KOP #2 - Start Build 8.00
7,016.3	6,642.2	271.0	-708.7	Start 75.0 hold at 7016.3 MD
7,091.3	6,648.7	270.5	-783.4	Start Build 8.00
11,234.9	6,658.6	245.1	-4,926.9	TD at 11234.9

Northern Region Drilling - Working

Wattenberg Field

AA (06N-63W)

Wells Ranch AA35-69-1HNA

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 AA35-69-1HNA
Project:	Wattenberg Field	TVD Reference:	WELL @ 4839.0usft (Original Well Elev)
Reference Site:	AA (06N-63W)	MD Reference:	WELL @ 4839.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Wells Ranch AA35-69-1HNA	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	9/11/2013		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	11,234.9	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
AA (06N-63W)						
Wells Ranch AA35-68-1AHNA - Original Drilling - APD - R	1,500.0	1,499.0	76.5	70.1	11.865	CC, ES
Wells Ranch AA35-68-1AHNA - Original Drilling - APD - R	11,234.9	11,139.3	583.0	314.9	2.174	SF
Wells Ranch AA35-68-1BHNC - Original Drilling - APD -	1,200.0	1,199.0	112.9	107.8	22.145	CC, ES
Wells Ranch AA35-68-1BHNC - Original Drilling - APD -	11,234.9	11,298.4	748.7	477.9	2.764	SF
Wells Ranch AA35-69-1AHNC - Original Drilling - APD -	1,166.3	1,167.3	36.4	31.5	7.355	CC
Wells Ranch AA35-69-1AHNC - Original Drilling - APD -	11,234.9	11,311.4	192.4	-41.0	0.824	Level 1, ES, SF
Wells Ranch AA35-69-1BHNC - Original Drilling - APD -	1,500.0	1,500.0	36.4	30.0	5.648	CC
Wells Ranch AA35-69-1BHNC - Original Drilling - APD -	11,234.9	11,289.0	175.1	-81.1	0.684	Level 1, ES, SF
Wells Ranch USX AA35-01 - Wellbore #1 - Wellbore #1-	7,227.3	6,603.1	365.1	326.6	9.469	CC, ES
Wells Ranch USX AA35-01 - Wellbore #1 - Wellbore #1-	7,300.0	6,602.7	372.3	332.0	9.248	SF
Wells Ranch USX AA35-02 - Wellbore #1 - Wellbore #1-	8,479.9	6,598.1	440.1	369.2	6.203	CC
Wells Ranch USX AA35-02 - Wellbore #1 - Wellbore #1-	8,500.0	6,598.2	440.6	369.1	6.162	ES
Wells Ranch USX AA35-02 - Wellbore #1 - Wellbore #1-	8,600.0	6,598.8	456.2	382.0	6.147	SF
Wells Ranch USX AA35-03 - Wellbore #1 - Wellbore #1-	9,577.6	6,614.7	275.1	173.9	2.720	CC, ES
Wells Ranch USX AA35-03 - Wellbore #1 - Wellbore #1-	9,600.0	6,615.3	276.0	174.2	2.712	SF
Wells Ranch USX AA35-04 - Wellbore #1 - Wellbore #1-	11,160.8	6,641.1	392.6	247.3	2.703	CC, ES
Wells Ranch USX AA35-04 - Wellbore #1 - Wellbore #1-	11,200.0	6,641.0	394.6	248.2	2.696	SF
Wells Ranch USX AA35-19 - Wellbore #1 - Wellbore #1-	10,290.1	6,601.8	893.8	772.8	7.388	CC
Wells Ranch USX AA35-19 - Wellbore #1 - Wellbore #1-	10,300.0	6,601.8	893.8	772.6	7.371	ES
Wells Ranch USX AA35-19 - Wellbore #1 - Wellbore #1-	10,500.0	6,603.1	918.1	791.2	7.239	SF

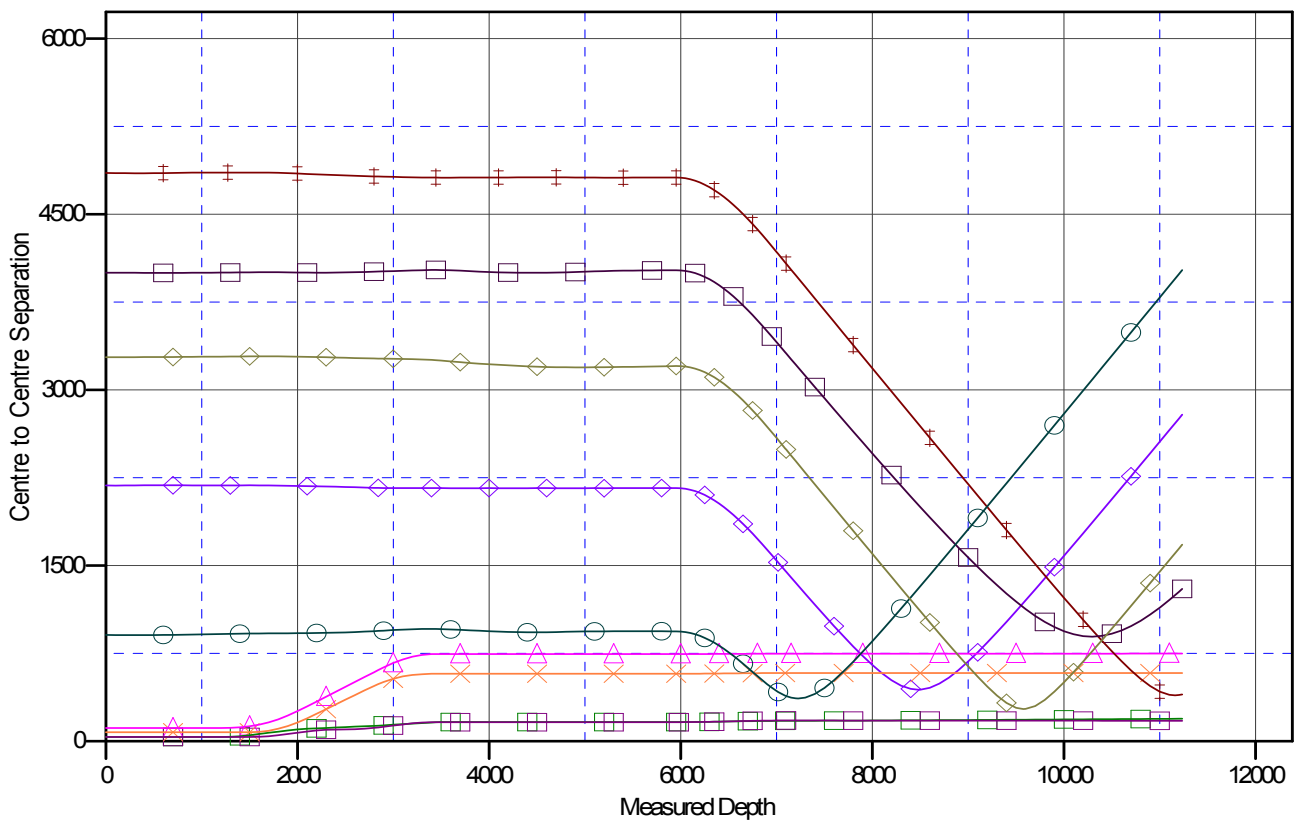
Noble Energy Inc
Anticollision Summary Report

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Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Wells Ranch AA35-69-1HNA	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 @ 4839.0usft (Original Well Ele
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000

Coordinates are relative to: Wells Ranch AA35-69-1HNA
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.71°

Ladder Plot



LEGEND

AHNC, Original Drilling, APD - Rev0 V0	Wells Ranch AA35-68-1AHNA, Original Drilling, APD - Rev0 V0	Wells Ranch USX AA35-19, Wellbore
BHNC, Original Drilling, APD - Rev0 V0	Wells Ranch AA35-68-1BHNC, Original Drilling, APD - Rev0 V0	Wells Ranch USX AA35-01, Wellbore
-02, Wellbore #1, Wellbore #1- As Drilled V0	Wells Ranch USX AA35-04, Wellbore #1, Wellbore #1- As Drilled V0	Wells Ranch USX AA35-03, Wellbore

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

Noble Energy Inc
Anticollision Summary Report

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Reference Wellbore	Original Drilling	Database:	EDM Production
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Offset Depths are relative to Offset Datum
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Coordinates are relative to: Wells Ranch AA35-69-1HNA
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.71°

