

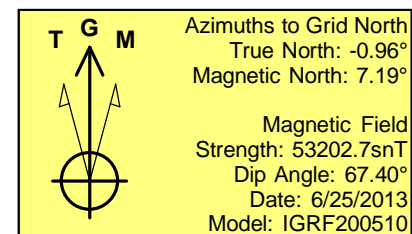
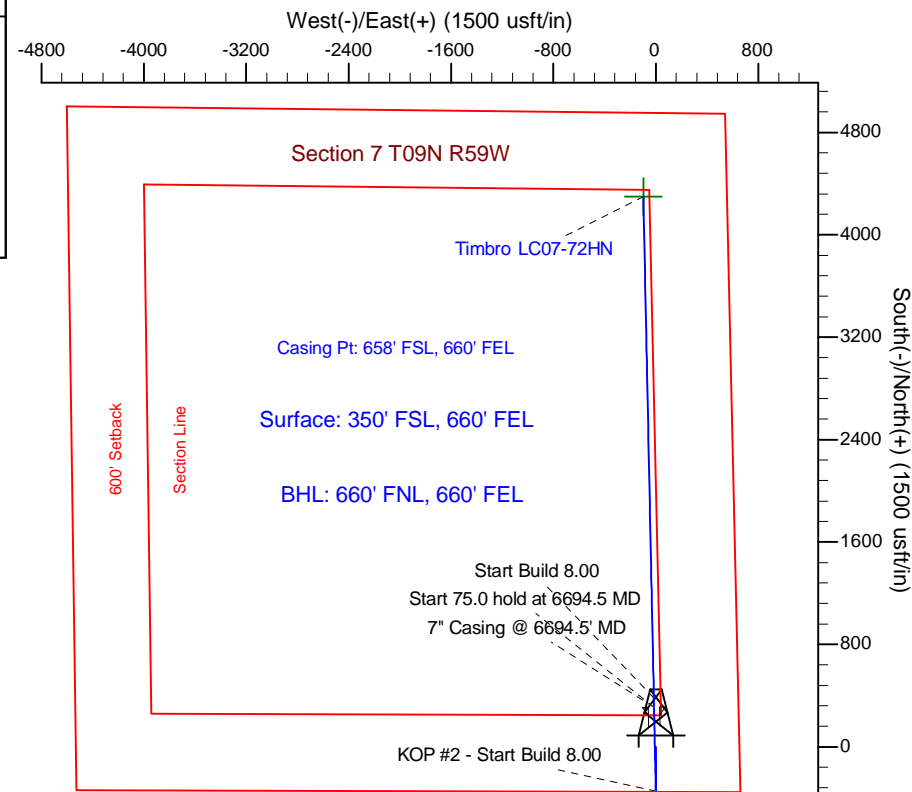
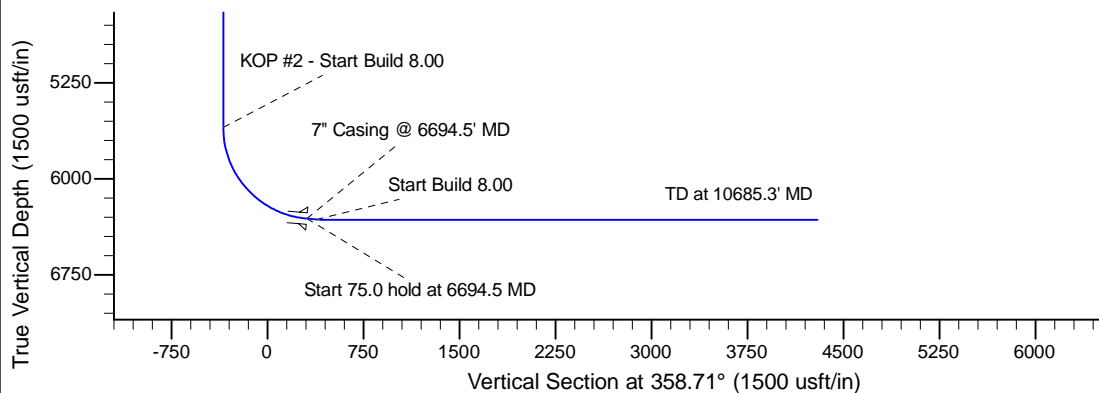
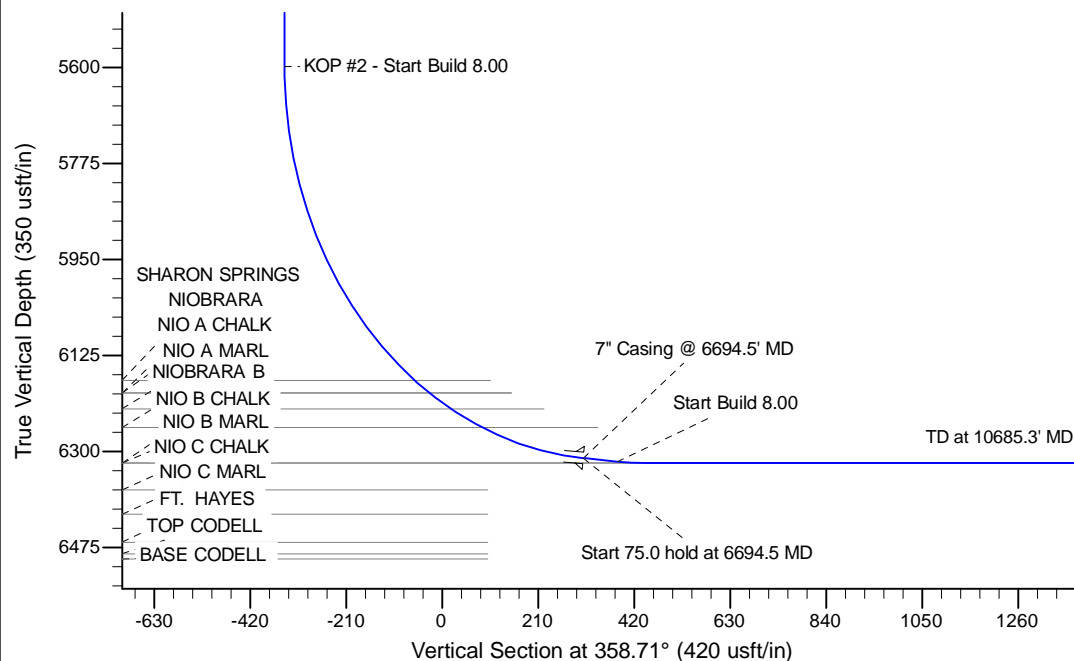
Project: Wattenberg Field
 Site: LC (Sec.7-T09N-R59W) Weld County, CO
 Well: Timbro LC07-72HN
 Wellbore: Original Drilling
 Design: APD - Rev 0

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	1800.0	0.00	0.00	1800.0	0.0	0.0	0.00	0.00	0.0	
3	2451.6	13.03	180.00	2446.0	-73.8	0.0	2.00	180.00	-73.8	
4	3327.2	13.03	180.00	3299.0	-271.2	0.0	0.00	0.00	-271.1	
5	3978.8	0.00	0.00	3945.0	-345.0	0.0	2.00	180.00	-344.9	
6	5632.0	0.00	0.00	5598.3	-345.0	0.0	0.00	0.00	-344.9	
7	6694.5	85.00	358.80	6311.7	308.6	-13.7	8.00	358.80	308.9	
8	6769.5	85.00	358.80	6318.3	383.3	-15.2	0.00	0.00	383.6	
9	6832.0	90.00	358.80	6321.0	445.7	-16.5	8.00	0.00	446.0	
10	10685.3	90.00	358.80	6321.0	4298.1	-97.0	0.00	0.00	4299.2	Timbro LC07-72HN BHL 660'FNL, 660'FEL



WELL DETAILS: Timbro LC07-72HN

		Ground Level: 5033.0			
0.0	0.0	Northing	Easting	Latitude	Longitude
		1522696.05	3411643.25	40.758720	-104.014050

Plan: APD - Rev 0 (Timbro LC07-72HN/Original Drilling)

Created By: Shailey Jewell	Date: 15:43, June 25 2013
Checked: _____	Date: _____
Reviewed: _____	Date: _____
Approved: _____	Date: _____

Northern Region Drilling - Working

Wattenberg Field

LC (09N-59W)

Timbro LC07-72HN

Original Drilling

Plan: APD - Rev 0

Standard Planning Report

26 June, 2013

Noble Energy Inc

Planning Report

Database:	EDM Production	Local Co-ordinate Reference:	Well Timbro LC07-72HN
Company:	Northern Region Drilling - Working	TVD Reference:	WELL @ 5046.0usft (Original Well Elev)
Project:	Wattenberg Field	MD Reference:	WELL @ 5046.0usft (Original Well Elev)
Site:	LC (09N-59W)	North Reference:	Grid
Well:	Timbro LC07-72HN	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		LC (09N-59W)			
Site Position:		Northing:	1,527,709.69 usft	Latitude:	40.771436
From:	Lat/Long	Easting:	3,433,728.00 usft	Longitude:	-103.934025
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	1.01 °

Well		Timbro LC07-72HN				
Well Position	+N/-S	-5,013.6 usft	Northing:	1,522,696.05 usft	Latitude:	40.758720
	+E/-W	-22,084.8 usft	Easting:	3,411,643.24 usft	Longitude:	-104.014050
Position Uncertainty		0.0 usft	Wellhead Elevation:		Ground Level:	5,033.0 usft

Wellbore	Original Drilling				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	6/25/2013	8.15	67.40	53,203

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	358.71

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	
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,451.6	13.03	180.00	2,446.0	-73.8	0.0	2.00	2.00	0.00	180.00	
3,327.2	13.03	180.00	3,299.0	-271.2	0.0	0.00	0.00	0.00	0.00	
3,978.8	0.00	0.00	3,945.0	-345.0	0.0	2.00	-2.00	0.00	180.00	
5,632.0	0.00	0.00	5,598.3	-345.0	0.0	0.00	0.00	0.00	0.00	
6,694.5	85.00	358.80	6,311.7	308.6	-13.7	8.00	8.00	0.00	358.80	
6,769.5	85.00	358.80	6,318.3	383.3	-15.2	0.00	0.00	0.00	0.00	
6,832.0	90.00	358.80	6,321.0	445.7	-16.5	8.00	8.00	0.00	0.00	
10,685.3	90.00	358.80	6,321.0	4,298.1	-97.0	0.00	0.00	0.00	0.00	Timbro LC07-72HN B

Noble Energy Inc

Planning Report

Database:	EDM Production	Local Co-ordinate Reference:	Well Timbro LC07-72HN
Company:	Northern Region Drilling - Working	TVD Reference:	WELL @ 5046.0usft (Original Well Elev)
Project:	Wattenberg Field	MD Reference:	WELL @ 5046.0usft (Original Well Elev)
Site:	LC (09N-59W)	North Reference:	Grid
Well:	Timbro LC07-72HN	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
1,550.0	0.00	0.00	1,550.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,650.0	0.00	0.00	1,650.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,750.0	0.00	0.00	1,750.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP - Start Build 2.00									
1,850.0	1.00	180.00	1,850.0	-0.4	0.0	-0.4	2.00	2.00	0.00
1,900.0	2.00	180.00	1,900.0	-1.7	0.0	-1.7	2.00	2.00	0.00
1,950.0	3.00	180.00	1,949.9	-3.9	0.0	-3.9	2.00	2.00	0.00
2,000.0	4.00	180.00	1,999.8	-7.0	0.0	-7.0	2.00	2.00	0.00
2,050.0	5.00	180.00	2,049.7	-10.9	0.0	-10.9	2.00	2.00	0.00
2,100.0	6.00	180.00	2,099.5	-15.7	0.0	-15.7	2.00	2.00	0.00
2,150.0	7.00	180.00	2,149.1	-21.4	0.0	-21.3	2.00	2.00	0.00
2,200.0	8.00	180.00	2,198.7	-27.9	0.0	-27.9	2.00	2.00	0.00
2,250.0	9.00	180.00	2,248.2	-35.3	0.0	-35.3	2.00	2.00	0.00
2,300.0	10.00	180.00	2,297.5	-43.5	0.0	-43.5	2.00	2.00	0.00
2,350.0	11.00	180.00	2,346.6	-52.6	0.0	-52.6	2.00	2.00	0.00
2,400.0	12.00	180.00	2,395.6	-62.6	0.0	-62.6	2.00	2.00	0.00
2,450.0	13.00	180.00	2,444.4	-73.4	0.0	-73.4	2.00	2.00	0.00
2,451.6	13.03	180.00	2,446.0	-73.8	0.0	-73.8	2.00	2.00	0.00
2,500.0	13.03	180.00	2,493.1	-84.7	0.0	-84.7	0.00	0.00	0.00
2,550.0	13.03	180.00	2,541.9	-96.0	0.0	-95.9	0.00	0.00	0.00

Noble Energy Inc

Planning Report

Database:	EDM Production	Local Co-ordinate Reference:	Well Timbro LC07-72HN
Company:	Northern Region Drilling - Working	TVD Reference:	WELL @ 5046.0usft (Original Well Elev)
Project:	Wattenberg Field	MD Reference:	WELL @ 5046.0usft (Original Well Elev)
Site:	LC (09N-59W)	North Reference:	Grid
Well:	Timbro LC07-72HN	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	13.03	180.00	2,590.6	-107.2	0.0	-107.2	0.00	0.00	0.00
2,650.0	13.03	180.00	2,639.3	-118.5	0.0	-118.5	0.00	0.00	0.00
2,700.0	13.03	180.00	2,688.0	-129.8	0.0	-129.8	0.00	0.00	0.00
2,750.0	13.03	180.00	2,736.7	-141.1	0.0	-141.0	0.00	0.00	0.00
2,800.0	13.03	180.00	2,785.4	-152.3	0.0	-152.3	0.00	0.00	0.00
2,850.0	13.03	180.00	2,834.1	-163.6	0.0	-163.6	0.00	0.00	0.00
2,900.0	13.03	180.00	2,882.8	-174.9	0.0	-174.9	0.00	0.00	0.00
2,950.0	13.03	180.00	2,931.6	-186.2	0.0	-186.1	0.00	0.00	0.00
3,000.0	13.03	180.00	2,980.3	-197.4	0.0	-197.4	0.00	0.00	0.00
3,050.0	13.03	180.00	3,029.0	-208.7	0.0	-208.7	0.00	0.00	0.00
3,100.0	13.03	180.00	3,077.7	-220.0	0.0	-219.9	0.00	0.00	0.00
3,150.0	13.03	180.00	3,126.4	-231.3	0.0	-231.2	0.00	0.00	0.00
3,200.0	13.03	180.00	3,175.1	-242.5	0.0	-242.5	0.00	0.00	0.00
3,250.0	13.03	180.00	3,223.8	-253.8	0.0	-253.8	0.00	0.00	0.00
3,300.0	13.03	180.00	3,272.5	-265.1	0.0	-265.0	0.00	0.00	0.00
3,327.2	13.03	180.00	3,299.0	-271.2	0.0	-271.2	0.00	0.00	0.00
Start Drop -2.00									
3,350.0	12.58	180.00	3,321.3	-276.3	0.0	-276.2	2.00	-2.00	0.00
3,400.0	11.58	180.00	3,370.2	-286.7	0.0	-286.7	2.00	-2.00	0.00
3,450.0	10.58	180.00	3,419.2	-296.3	0.0	-296.3	2.00	-2.00	0.00
3,500.0	9.58	180.00	3,468.5	-305.1	0.0	-305.0	2.00	-2.00	0.00
3,550.0	8.58	180.00	3,517.8	-313.0	0.0	-312.9	2.00	-2.00	0.00
3,600.0	7.58	180.00	3,567.3	-320.0	0.0	-319.9	2.00	-2.00	0.00
3,650.0	6.58	180.00	3,617.0	-326.2	0.0	-326.1	2.00	-2.00	0.00
3,700.0	5.58	180.00	3,666.7	-331.4	0.0	-331.4	2.00	-2.00	0.00
3,750.0	4.58	180.00	3,716.5	-335.9	0.0	-335.8	2.00	-2.00	0.00
3,800.0	3.58	180.00	3,766.4	-339.4	0.0	-339.3	2.00	-2.00	0.00
3,850.0	2.58	180.00	3,816.3	-342.1	0.0	-342.0	2.00	-2.00	0.00
3,900.0	1.58	180.00	3,866.3	-343.9	0.0	-343.8	2.00	-2.00	0.00
3,950.0	0.58	180.00	3,916.2	-344.9	0.0	-344.8	2.00	-2.00	0.00
3,978.8	0.00	0.00	3,945.0	-345.0	0.0	-344.9	2.00	-2.00	0.00
4,000.0	0.00	0.00	3,966.2	-345.0	0.0	-344.9	0.00	0.00	0.00
4,050.0	0.00	0.00	4,016.2	-345.0	0.0	-344.9	0.00	0.00	0.00
4,100.0	0.00	0.00	4,066.2	-345.0	0.0	-344.9	0.00	0.00	0.00
4,150.0	0.00	0.00	4,116.2	-345.0	0.0	-344.9	0.00	0.00	0.00
4,200.0	0.00	0.00	4,166.2	-345.0	0.0	-344.9	0.00	0.00	0.00
4,250.0	0.00	0.00	4,216.2	-345.0	0.0	-344.9	0.00	0.00	0.00
4,300.0	0.00	0.00	4,266.2	-345.0	0.0	-344.9	0.00	0.00	0.00
4,350.0	0.00	0.00	4,316.2	-345.0	0.0	-344.9	0.00	0.00	0.00
4,400.0	0.00	0.00	4,366.2	-345.0	0.0	-344.9	0.00	0.00	0.00
4,450.0	0.00	0.00	4,416.2	-345.0	0.0	-344.9	0.00	0.00	0.00
4,500.0	0.00	0.00	4,466.2	-345.0	0.0	-344.9	0.00	0.00	0.00
4,550.0	0.00	0.00	4,516.2	-345.0	0.0	-344.9	0.00	0.00	0.00
4,600.0	0.00	0.00	4,566.2	-345.0	0.0	-344.9	0.00	0.00	0.00
4,650.0	0.00	0.00	4,616.2	-345.0	0.0	-344.9	0.00	0.00	0.00
4,700.0	0.00	0.00	4,666.2	-345.0	0.0	-344.9	0.00	0.00	0.00
4,750.0	0.00	0.00	4,716.2	-345.0	0.0	-344.9	0.00	0.00	0.00
4,800.0	0.00	0.00	4,766.2	-345.0	0.0	-344.9	0.00	0.00	0.00
4,850.0	0.00	0.00	4,816.2	-345.0	0.0	-344.9	0.00	0.00	0.00
4,900.0	0.00	0.00	4,866.2	-345.0	0.0	-344.9	0.00	0.00	0.00
4,950.0	0.00	0.00	4,916.2	-345.0	0.0	-344.9	0.00	0.00	0.00
5,000.0	0.00	0.00	4,966.2	-345.0	0.0	-344.9	0.00	0.00	0.00
5,050.0	0.00	0.00	5,016.2	-345.0	0.0	-344.9	0.00	0.00	0.00

Noble Energy Inc

Planning Report

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Well:	Timbro LC07-72HN	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)
5,100.0	0.00	0.00	5,066.2	-345.0	0.0	-344.9	0.00	0.00	0.00
5,150.0	0.00	0.00	5,116.2	-345.0	0.0	-344.9	0.00	0.00	0.00
5,200.0	0.00	0.00	5,166.2	-345.0	0.0	-344.9	0.00	0.00	0.00
5,250.0	0.00	0.00	5,216.2	-345.0	0.0	-344.9	0.00	0.00	0.00
5,300.0	0.00	0.00	5,266.2	-345.0	0.0	-344.9	0.00	0.00	0.00
5,350.0	0.00	0.00	5,316.2	-345.0	0.0	-344.9	0.00	0.00	0.00
5,400.0	0.00	0.00	5,366.2	-345.0	0.0	-344.9	0.00	0.00	0.00
5,450.0	0.00	0.00	5,416.2	-345.0	0.0	-344.9	0.00	0.00	0.00
5,500.0	0.00	0.00	5,466.2	-345.0	0.0	-344.9	0.00	0.00	0.00
5,550.0	0.00	0.00	5,516.2	-345.0	0.0	-344.9	0.00	0.00	0.00
5,600.0	0.00	0.00	5,566.2	-345.0	0.0	-344.9	0.00	0.00	0.00
5,632.0	0.00	0.00	5,598.2	-345.0	0.0	-344.9	0.00	0.00	0.00
KOP #2 - Start Build 8.00									
5,650.0	1.44	358.80	5,616.2	-344.8	0.0	-344.7	7.99	7.99	0.00
5,700.0	5.44	358.80	5,666.1	-341.8	-0.1	-341.7	8.00	8.00	0.00
5,750.0	9.44	358.80	5,715.7	-335.3	-0.2	-335.2	8.00	8.00	0.00
5,800.0	13.44	358.80	5,764.7	-325.4	-0.4	-325.3	8.00	8.00	0.00
5,850.0	17.44	358.80	5,812.9	-312.1	-0.7	-312.0	8.00	8.00	0.00
5,900.0	21.44	358.80	5,860.0	-295.5	-1.0	-295.4	8.00	8.00	0.00
5,950.0	25.44	358.80	5,905.9	-275.6	-1.4	-275.5	8.00	8.00	0.00
6,000.0	29.44	358.80	5,950.3	-252.5	-1.9	-252.4	8.00	8.00	0.00
6,050.0	33.44	358.80	5,992.9	-226.5	-2.5	-226.4	8.00	8.00	0.00
6,100.0	37.44	358.80	6,033.6	-197.5	-3.1	-197.4	8.00	8.00	0.00
6,150.0	41.44	358.80	6,072.3	-165.8	-3.7	-165.6	8.00	8.00	0.00
6,200.0	45.44	358.80	6,108.6	-131.4	-4.5	-131.3	8.00	8.00	0.00
6,250.0	49.44	358.80	6,142.4	-94.6	-5.2	-94.4	8.00	8.00	0.00
6,294.1	52.97	358.80	6,170.0	-60.2	-5.9	-60.1	8.00	8.00	0.00
SHARON SPRINGS									
6,300.0	53.44	358.80	6,173.5	-55.5	-6.0	-55.3	8.00	8.00	0.00
6,333.8	56.14	358.80	6,193.0	-27.9	-6.6	-27.8	8.00	8.00	0.00
NIOBRARA - NIO A CHALK									
6,350.0	57.44	358.80	6,201.9	-14.3	-6.9	-14.2	8.00	8.00	0.00
6,389.1	60.56	358.80	6,222.0	19.1	-7.6	19.3	8.00	8.00	0.00
NIO A MARL									
6,400.0	61.44	358.80	6,227.3	28.7	-7.8	28.9	8.00	8.00	0.00
6,450.0	65.44	358.80	6,249.7	73.4	-8.7	73.6	8.00	8.00	0.00
6,465.6	66.69	358.80	6,256.0	87.7	-9.0	87.9	8.00	8.00	0.00
NIOBRARA B									
6,500.0	69.44	358.80	6,268.8	119.6	-9.7	119.7	8.00	8.00	0.00
6,550.0	73.44	358.80	6,284.7	166.9	-10.7	167.1	8.00	8.00	0.00
6,600.0	77.44	358.80	6,297.3	215.3	-11.7	215.5	8.00	8.00	0.00
6,650.0	81.44	358.80	6,306.5	264.4	-12.7	264.7	8.00	8.00	0.00
6,694.5	85.00	358.80	6,311.7	308.6	-13.6	308.8	8.00	8.00	0.00
Start 75.0 hold at 6694.5 MD - 7" Casing @ 6694.5' MD									
6,700.0	85.00	358.80	6,312.2	314.1	-13.8	314.3	0.03	0.03	0.00
6,750.0	85.00	358.80	6,316.6	363.9	-14.8	364.1	0.00	0.00	0.00
6,769.5	85.00	358.80	6,318.3	383.3	-15.2	383.6	0.00	0.00	0.00
Start Build 8.00									
6,800.0	87.44	358.80	6,320.3	413.7	-15.8	414.0	7.99	7.99	0.00
6,832.0	90.00	358.80	6,321.0	445.7	-16.5	446.0	8.00	8.00	0.00
NIO B CHALK - NIO B MARL									
6,850.0	90.00	358.80	6,321.0	463.7	-16.9	464.0	0.00	0.00	0.00
6,900.0	90.00	358.80	6,321.0	513.7	-17.9	514.0	0.00	0.00	0.00

Noble Energy Inc

Planning Report

Database:	EDM Production	Local Co-ordinate Reference:	Well Timbro LC07-72HN
Company:	Northern Region Drilling - Working	TVD Reference:	WELL @ 5046.0usft (Original Well Elev)
Project:	Wattenberg Field	MD Reference:	WELL @ 5046.0usft (Original Well Elev)
Site:	LC (09N-59W)	North Reference:	Grid
Well:	Timbro LC07-72HN	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)
6,950.0	90.00	358.80	6,321.0	563.7	-19.0	564.0	0.00	0.00	0.00
7,000.0	90.00	358.80	6,321.0	613.7	-20.0	614.0	0.00	0.00	0.00
7,050.0	90.00	358.80	6,321.0	663.7	-21.1	664.0	0.00	0.00	0.00
7,100.0	90.00	358.80	6,321.0	713.7	-22.1	714.0	0.00	0.00	0.00
7,150.0	90.00	358.80	6,321.0	763.6	-23.2	764.0	0.00	0.00	0.00
7,200.0	90.00	358.80	6,321.0	813.6	-24.2	814.0	0.00	0.00	0.00
7,250.0	90.00	358.80	6,321.0	863.6	-25.2	864.0	0.00	0.00	0.00
7,300.0	90.00	358.80	6,321.0	913.6	-26.3	914.0	0.00	0.00	0.00
7,350.0	90.00	358.80	6,321.0	963.6	-27.3	964.0	0.00	0.00	0.00
7,400.0	90.00	358.80	6,321.0	1,013.6	-28.4	1,014.0	0.00	0.00	0.00
7,450.0	90.00	358.80	6,321.0	1,063.6	-29.4	1,064.0	0.00	0.00	0.00
7,500.0	90.00	358.80	6,321.0	1,113.6	-30.5	1,114.0	0.00	0.00	0.00
7,550.0	90.00	358.80	6,321.0	1,163.6	-31.5	1,164.0	0.00	0.00	0.00
7,600.0	90.00	358.80	6,321.0	1,213.5	-32.5	1,214.0	0.00	0.00	0.00
7,650.0	90.00	358.80	6,321.0	1,263.5	-33.6	1,264.0	0.00	0.00	0.00
7,700.0	90.00	358.80	6,321.0	1,313.5	-34.6	1,314.0	0.00	0.00	0.00
7,750.0	90.00	358.80	6,321.0	1,363.5	-35.7	1,364.0	0.00	0.00	0.00
7,800.0	90.00	358.80	6,321.0	1,413.5	-36.7	1,414.0	0.00	0.00	0.00
7,850.0	90.00	358.80	6,321.0	1,463.5	-37.8	1,464.0	0.00	0.00	0.00
7,900.0	90.00	358.80	6,321.0	1,513.5	-38.8	1,514.0	0.00	0.00	0.00
7,950.0	90.00	358.80	6,321.0	1,563.5	-39.9	1,564.0	0.00	0.00	0.00
8,000.0	90.00	358.80	6,321.0	1,613.5	-40.9	1,614.0	0.00	0.00	0.00
8,050.0	90.00	358.80	6,321.0	1,663.5	-41.9	1,664.0	0.00	0.00	0.00
8,100.0	90.00	358.80	6,321.0	1,713.4	-43.0	1,714.0	0.00	0.00	0.00
8,150.0	90.00	358.80	6,321.0	1,763.4	-44.0	1,764.0	0.00	0.00	0.00
8,200.0	90.00	358.80	6,321.0	1,813.4	-45.1	1,814.0	0.00	0.00	0.00
8,250.0	90.00	358.80	6,321.0	1,863.4	-46.1	1,864.0	0.00	0.00	0.00
8,300.0	90.00	358.80	6,321.0	1,913.4	-47.2	1,914.0	0.00	0.00	0.00
8,350.0	90.00	358.80	6,321.0	1,963.4	-48.2	1,964.0	0.00	0.00	0.00
8,400.0	90.00	358.80	6,321.0	2,013.4	-49.3	2,014.0	0.00	0.00	0.00
8,450.0	90.00	358.80	6,321.0	2,063.4	-50.3	2,064.0	0.00	0.00	0.00
8,500.0	90.00	358.80	6,321.0	2,113.4	-51.3	2,114.0	0.00	0.00	0.00
8,550.0	90.00	358.80	6,321.0	2,163.3	-52.4	2,164.0	0.00	0.00	0.00
8,600.0	90.00	358.80	6,321.0	2,213.3	-53.4	2,214.0	0.00	0.00	0.00
8,650.0	90.00	358.80	6,321.0	2,263.3	-54.5	2,264.0	0.00	0.00	0.00
8,700.0	90.00	358.80	6,321.0	2,313.3	-55.5	2,314.0	0.00	0.00	0.00
8,750.0	90.00	358.80	6,321.0	2,363.3	-56.6	2,364.0	0.00	0.00	0.00
8,800.0	90.00	358.80	6,321.0	2,413.3	-57.6	2,414.0	0.00	0.00	0.00
8,850.0	90.00	358.80	6,321.0	2,463.3	-58.6	2,464.0	0.00	0.00	0.00
8,900.0	90.00	358.80	6,321.0	2,513.3	-59.7	2,514.0	0.00	0.00	0.00
8,950.0	90.00	358.80	6,321.0	2,563.3	-60.7	2,564.0	0.00	0.00	0.00
9,000.0	90.00	358.80	6,321.0	2,613.2	-61.8	2,614.0	0.00	0.00	0.00
9,050.0	90.00	358.80	6,321.0	2,663.2	-62.8	2,664.0	0.00	0.00	0.00
9,100.0	90.00	358.80	6,321.0	2,713.2	-63.9	2,714.0	0.00	0.00	0.00
9,150.0	90.00	358.80	6,321.0	2,763.2	-64.9	2,764.0	0.00	0.00	0.00
9,200.0	90.00	358.80	6,321.0	2,813.2	-66.0	2,814.0	0.00	0.00	0.00
9,250.0	90.00	358.80	6,321.0	2,863.2	-67.0	2,864.0	0.00	0.00	0.00
9,300.0	90.00	358.80	6,321.0	2,913.2	-68.0	2,914.0	0.00	0.00	0.00
9,350.0	90.00	358.80	6,321.0	2,963.2	-69.1	2,964.0	0.00	0.00	0.00
9,400.0	90.00	358.80	6,321.0	3,013.2	-70.1	3,014.0	0.00	0.00	0.00
9,450.0	90.00	358.80	6,321.0	3,063.1	-71.2	3,064.0	0.00	0.00	0.00
9,500.0	90.00	358.80	6,321.0	3,113.1	-72.2	3,114.0	0.00	0.00	0.00
9,550.0	90.00	358.80	6,321.0	3,163.1	-73.3	3,164.0	0.00	0.00	0.00
9,600.0	90.00	358.80	6,321.0	3,213.1	-74.3	3,214.0	0.00	0.00	0.00

Noble Energy Inc

Planning Report

Database:	EDM Production	Local Co-ordinate Reference:	Well Timbro LC07-72HN
Company:	Northern Region Drilling - Working	TVD Reference:	WELL @ 5046.0usft (Original Well Elev)
Project:	Wattenberg Field	MD Reference:	WELL @ 5046.0usft (Original Well Elev)
Site:	LC (09N-59W)	North Reference:	Grid
Well:	Timbro LC07-72HN	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)	
9,650.0	90.00	358.80	6,321.0	3,263.1	-75.3	3,264.0	0.00	0.00	0.00	
9,700.0	90.00	358.80	6,321.0	3,313.1	-76.4	3,314.0	0.00	0.00	0.00	
9,750.0	90.00	358.80	6,321.0	3,363.1	-77.4	3,364.0	0.00	0.00	0.00	
9,800.0	90.00	358.80	6,321.0	3,413.1	-78.5	3,414.0	0.00	0.00	0.00	
9,850.0	90.00	358.80	6,321.0	3,463.1	-79.5	3,464.0	0.00	0.00	0.00	
9,900.0	90.00	358.80	6,321.0	3,513.0	-80.6	3,514.0	0.00	0.00	0.00	
9,950.0	90.00	358.80	6,321.0	3,563.0	-81.6	3,564.0	0.00	0.00	0.00	
10,000.0	90.00	358.80	6,321.0	3,613.0	-82.7	3,614.0	0.00	0.00	0.00	
10,050.0	90.00	358.80	6,321.0	3,663.0	-83.7	3,664.0	0.00	0.00	0.00	
10,100.0	90.00	358.80	6,321.0	3,713.0	-84.7	3,714.0	0.00	0.00	0.00	
10,150.0	90.00	358.80	6,321.0	3,763.0	-85.8	3,764.0	0.00	0.00	0.00	
10,200.0	90.00	358.80	6,321.0	3,813.0	-86.8	3,814.0	0.00	0.00	0.00	
10,250.0	90.00	358.80	6,321.0	3,863.0	-87.9	3,864.0	0.00	0.00	0.00	
10,300.0	90.00	358.80	6,321.0	3,913.0	-88.9	3,914.0	0.00	0.00	0.00	
10,350.0	90.00	358.80	6,321.0	3,962.9	-90.0	3,964.0	0.00	0.00	0.00	
10,400.0	90.00	358.80	6,321.0	4,012.9	-91.0	4,014.0	0.00	0.00	0.00	
10,450.0	90.00	358.80	6,321.0	4,062.9	-92.1	4,064.0	0.00	0.00	0.00	
10,500.0	90.00	358.80	6,321.0	4,112.9	-93.1	4,114.0	0.00	0.00	0.00	
10,550.0	90.00	358.80	6,321.0	4,162.9	-94.1	4,164.0	0.00	0.00	0.00	
10,600.0	90.00	358.80	6,321.0	4,212.9	-95.2	4,214.0	0.00	0.00	0.00	
10,650.0	90.00	358.80	6,321.0	4,262.9	-96.2	4,264.0	0.00	0.00	0.00	
10,685.3	90.00	358.80	6,321.0	4,298.1	-97.0	4,299.2	0.00	0.00	0.00	
TD at 10685.3 - Timbro LC07-72HN BHL 660'FNL, 660'FEL										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude		
- hit/miss target										
- Shape								Longitude		
Timbro LC07-72HN BHL	0.00	0.00	6,321.0	4,298.1	-97.0	1,526,994.17	3,411,546.28	40.770520		
- plan hits target center										
- Point										

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name		Casing Diameter (")	Hole Diameter (")
6,694.5	6,311.7	7" Casing @ 6694.5' MD		7	8-3/4

Noble Energy Inc

Planning Report

Database:	EDM Production	Local Co-ordinate Reference:	Well Timbro LC07-72HN
Company:	Northern Region Drilling - Working	TVD Reference:	WELL @ 5046.0usft (Original Well Elev)
Project:	Wattenberg Field	MD Reference:	WELL @ 5046.0usft (Original Well Elev)
Site:	LC (09N-59W)	North Reference:	Grid
Well:	Timbro LC07-72HN	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Drilling		
Design:	APD - Rev 0		

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
6,294.1	6,170.0	SHARON SPRINGS		0.00	
6,333.8	6,193.0	NIOBRARA		0.00	
6,333.8	6,193.0	NIO A CHALK		0.00	
6,389.1	6,222.0	NIO A MARL		0.00	
6,465.6	6,256.0	NIOBRARA B		0.00	
6,832.0	6,321.0	NIO B CHALK		0.00	
6,832.0	6,321.0	NIO B MARL		0.00	

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
1,800.0	1,800.0	0.0	0.0	KOP - Start Build 2.00	
3,327.2	3,299.0	-73.8	0.0	Start Drop -2.00	
5,632.0	5,598.3	-271.2	0.0	KOP #2 - Start Build 8.00	
6,694.5	6,311.7	-345.0	0.0	Start 75.0 hold at 6694.5 MD	
6,769.5	6,318.3	-345.0	0.0	Start Build 8.00	
10,685.3	6,321.0	308.6	-13.7	TD at 10685.3	