

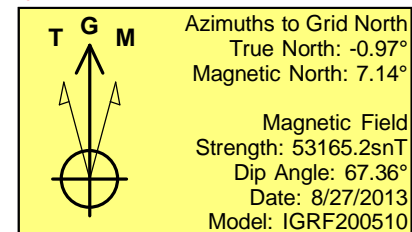
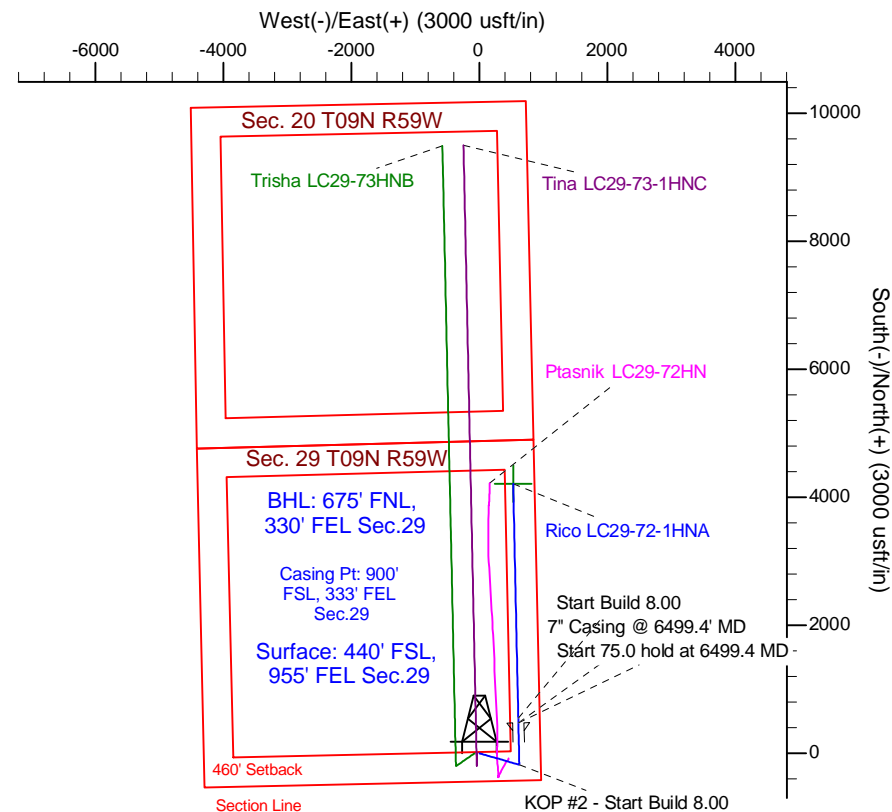
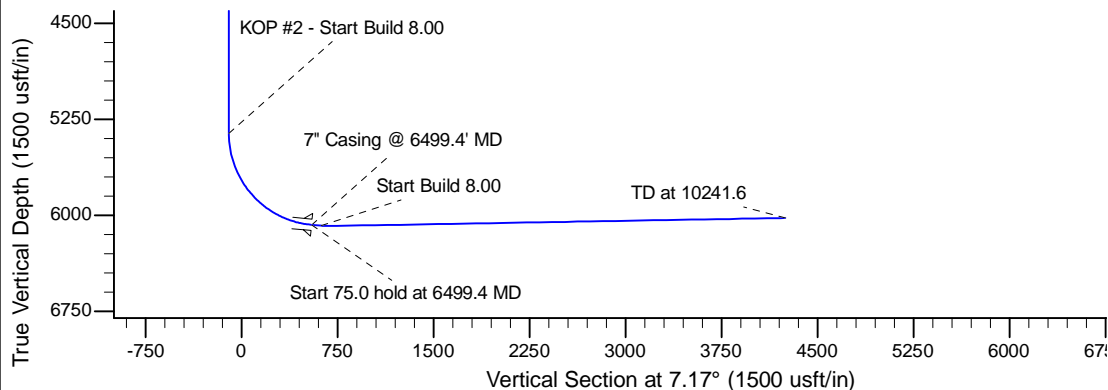
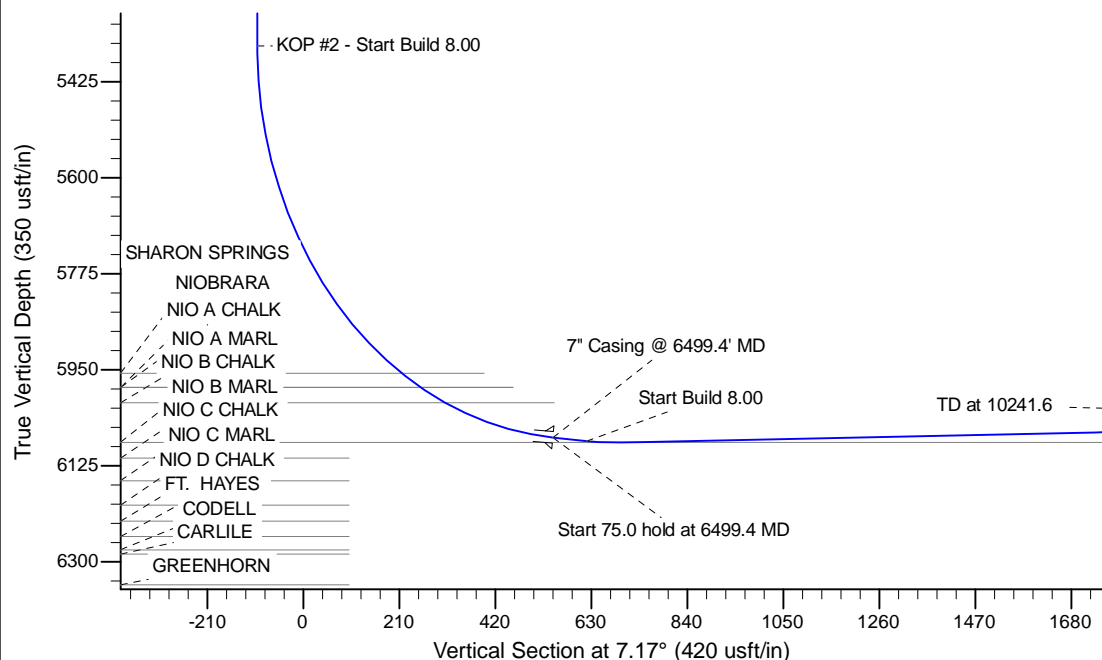
Project: Wattenberg Field
 Site: LC (Sec.29-T09N-R59W) Weld County, CO
 Well: Rico LC29-72-1HNA
 Wellbore: Original Drilling
 Design: APD - Rev 0

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	1200.0	0.00	0.00	1200.0	0.0	0.0	0.00	0.00	0.0	
3	1950.7	15.01	106.07	1942.1	-27.1	94.0	2.00	106.07	-15.1	
4	3706.4	15.01	106.07	3637.9	-152.9	531.0	0.00	0.00	-85.5	
5	4457.1	0.00	0.00	4380.0	-180.0	625.0	2.00	180.00	-100.6	
6	5436.9	0.00	0.00	5359.9	-180.0	625.0	0.00	0.00	-100.6	
7	6499.4	85.00	358.76	6073.3	473.6	610.9	8.00	358.76	546.2	
8	6574.4	85.00	358.76	6079.9	548.3	609.3	0.00	0.00	620.1	
9	6649.4	91.00	358.76	6082.5	623.2	607.6	8.00	0.00	694.2	
10	10241.6	91.00	358.76	6019.8	4214.0	530.1	0.00	0.00	4247.2	Rico LC29-72-1HNA BHL 675'FNL, 330'FEL



WELL DETAILS: Rico LC29-72-1HNA

		Ground Level: 4865.0	
0.0	0.0	1506938.66	3416956.12
		40.715230	-103.995840

Plan: APD - Rev 0 (Rico LC29-72-1HNA/Original Drilling)

Created By: Shailey Jewell	Date: 15:55, August 27 2013
Checked: _____	Date: _____
Reviewed: _____	Date: _____
Approved: _____	Date: _____

Northern Region Drilling - Working

Wattenberg Field

LC (09N-59W)

Rico LC29-72-1HNA

Original Drilling

Plan: APD - Rev 0

Standard Planning Report

27 August, 2013

Noble Energy Inc

Planning Report

Database:	EDM Production	Local Co-ordinate Reference:	Well Rico LC29-72-1HNA
Company:	Northern Region Drilling - Working	TVD Reference:	WELL @ 4889.0usft (Original Well Elev)
Project:	Wattenberg Field	MD Reference:	WELL @ 4889.0usft (Original Well Elev)
Site:	LC (09N-59W)	North Reference:	Grid
Well:	Rico LC29-72-1HNA	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		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		Rico LC29-72-1HNA				
Well Position	+N/-S	-20,771.1 usft	Northing:	1,506,938.67 usft	Latitude:	40.715230
	+E/-W	-16,771.9 usft	Easting:	3,416,956.12 usft	Longitude:	-103.995840
Position Uncertainty		0.0 usft	Wellhead Elevation:		Ground Level:	4,865.0 usft

Wellbore	Original Drilling				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	8/27/2013	8.12	67.36	53,165

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	7.17

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	
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,950.7	15.01	106.07	1,942.1	-27.1	94.0	2.00	2.00	0.00	106.07	
3,706.4	15.01	106.07	3,637.9	-152.9	531.0	0.00	0.00	0.00	0.00	
4,457.1	0.00	0.00	4,380.0	-180.0	625.0	2.00	-2.00	0.00	180.00	
5,436.9	0.00	0.00	5,359.9	-180.0	625.0	0.00	0.00	0.00	0.00	
6,499.4	85.00	358.76	6,073.3	473.6	610.9	8.00	8.00	0.00	358.76	
6,574.4	85.00	358.76	6,079.9	548.3	609.3	0.00	0.00	0.00	0.00	
6,649.4	91.00	358.76	6,082.5	623.2	607.6	8.00	8.00	0.00	0.00	
10,241.6	91.00	358.76	6,019.8	4,214.0	530.1	0.00	0.00	0.00	0.00	Rico LC29-72-1HNA f

Noble Energy Inc

Planning Report

Database:	EDM Production	Local Co-ordinate Reference:	Well Rico LC29-72-1HNA
Company:	Northern Region Drilling - Working	TVD Reference:	WELL @ 4889.0usft (Original Well Elev)
Project:	Wattenberg Field	MD Reference:	WELL @ 4889.0usft (Original Well Elev)
Site:	LC (09N-59W)	North Reference:	Grid
Well:	Rico LC29-72-1HNA	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
KOP - Start Build 2.00									
1,250.0	1.00	106.07	1,250.0	-0.1	0.4	-0.1	2.00	2.00	0.00
1,275.0	1.50	106.07	1,275.0	-0.3	0.9	-0.2	2.00	2.00	0.00
PIERRE									
1,300.0	2.00	106.07	1,300.0	-0.5	1.7	-0.3	2.00	2.00	0.00
1,350.0	3.00	106.07	1,349.9	-1.1	3.8	-0.6	2.00	2.00	0.00
1,400.0	4.00	106.07	1,399.8	-1.9	6.7	-1.1	2.00	2.00	0.00
1,450.0	5.00	106.07	1,449.7	-3.0	10.5	-1.7	2.00	2.00	0.00
1,500.0	6.00	106.07	1,499.5	-4.3	15.1	-2.4	2.00	2.00	0.00
1,550.0	7.00	106.07	1,549.1	-5.9	20.5	-3.3	2.00	2.00	0.00
1,600.0	8.00	106.07	1,598.7	-7.7	26.8	-4.3	2.00	2.00	0.00
1,650.0	9.00	106.07	1,648.2	-9.8	33.9	-5.5	2.00	2.00	0.00
1,700.0	10.00	106.07	1,697.5	-12.0	41.8	-6.7	2.00	2.00	0.00
1,750.0	11.00	106.07	1,746.6	-14.6	50.6	-8.1	2.00	2.00	0.00
1,800.0	12.00	106.07	1,795.6	-17.3	60.2	-9.7	2.00	2.00	0.00
1,850.0	13.00	106.07	1,844.4	-20.3	70.6	-11.4	2.00	2.00	0.00
1,900.0	14.00	106.07	1,893.1	-23.6	81.8	-13.2	2.00	2.00	0.00
1,950.0	15.00	106.07	1,941.5	-27.0	93.8	-15.1	2.00	2.00	0.00
1,950.7	15.01	106.07	1,942.1	-27.1	94.0	-15.1	2.00	2.00	0.00
2,000.0	15.01	106.07	1,989.8	-30.6	106.2	-17.1	0.00	0.00	0.00
2,050.0	15.01	106.07	2,038.0	-34.2	118.7	-19.1	0.00	0.00	0.00
2,100.0	15.01	106.07	2,086.3	-37.8	131.1	-21.1	0.00	0.00	0.00
2,150.0	15.01	106.07	2,134.6	-41.4	143.6	-23.1	0.00	0.00	0.00
2,200.0	15.01	106.07	2,182.9	-44.9	156.0	-25.1	0.00	0.00	0.00
2,250.0	15.01	106.07	2,231.2	-48.5	168.5	-27.1	0.00	0.00	0.00
2,300.0	15.01	106.07	2,279.5	-52.1	180.9	-29.1	0.00	0.00	0.00
2,350.0	15.01	106.07	2,327.8	-55.7	193.4	-31.1	0.00	0.00	0.00
2,400.0	15.01	106.07	2,376.1	-59.3	205.8	-33.1	0.00	0.00	0.00
2,450.0	15.01	106.07	2,424.4	-62.9	218.3	-35.1	0.00	0.00	0.00

Noble Energy Inc

Planning Report

Database:	EDM Production	Local Co-ordinate Reference:	Well Rico LC29-72-1HNA
Company:	Northern Region Drilling - Working	TVD Reference:	WELL @ 4889.0usft (Original Well Elev)
Project:	Wattenberg Field	MD Reference:	WELL @ 4889.0usft (Original Well Elev)
Site:	LC (09N-59W)	North Reference:	Grid
Well:	Rico LC29-72-1HNA	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	15.01	106.07	2,472.7	-66.4	230.7	-37.1	0.00	0.00	0.00
2,550.0	15.01	106.07	2,521.0	-70.0	243.2	-39.1	0.00	0.00	0.00
2,600.0	15.01	106.07	2,569.3	-73.6	255.6	-41.1	0.00	0.00	0.00
2,650.0	15.01	106.07	2,617.6	-77.2	268.1	-43.1	0.00	0.00	0.00
2,700.0	15.01	106.07	2,665.9	-80.8	280.5	-45.1	0.00	0.00	0.00
2,750.0	15.01	106.07	2,714.2	-84.4	293.0	-47.1	0.00	0.00	0.00
2,800.0	15.01	106.07	2,762.4	-88.0	305.4	-49.2	0.00	0.00	0.00
2,850.0	15.01	106.07	2,810.7	-91.5	317.8	-51.2	0.00	0.00	0.00
2,900.0	15.01	106.07	2,859.0	-95.1	330.3	-53.2	0.00	0.00	0.00
2,950.0	15.01	106.07	2,907.3	-98.7	342.7	-55.2	0.00	0.00	0.00
3,000.0	15.01	106.07	2,955.6	-102.3	355.2	-57.2	0.00	0.00	0.00
3,050.0	15.01	106.07	3,003.9	-105.9	367.6	-59.2	0.00	0.00	0.00
3,100.0	15.01	106.07	3,052.2	-109.5	380.1	-61.2	0.00	0.00	0.00
3,150.0	15.01	106.07	3,100.5	-113.0	392.5	-63.2	0.00	0.00	0.00
3,200.0	15.01	106.07	3,148.8	-116.6	405.0	-65.2	0.00	0.00	0.00
3,250.0	15.01	106.07	3,197.1	-120.2	417.4	-67.2	0.00	0.00	0.00
3,300.0	15.01	106.07	3,245.4	-123.8	429.9	-69.2	0.00	0.00	0.00
3,350.0	15.01	106.07	3,293.7	-127.4	442.3	-71.2	0.00	0.00	0.00
3,400.0	15.01	106.07	3,342.0	-131.0	454.8	-73.2	0.00	0.00	0.00
3,450.0	15.01	106.07	3,390.3	-134.6	467.2	-75.2	0.00	0.00	0.00
3,466.3	15.01	106.07	3,406.0	-135.7	471.3	-75.8	0.00	0.00	0.00
PARKMAN									
3,500.0	15.01	106.07	3,438.5	-138.1	479.7	-77.2	0.00	0.00	0.00
3,550.0	15.01	106.07	3,486.8	-141.7	492.1	-79.2	0.00	0.00	0.00
3,600.0	15.01	106.07	3,535.1	-145.3	504.5	-81.2	0.00	0.00	0.00
3,650.0	15.01	106.07	3,583.4	-148.9	517.0	-83.2	0.00	0.00	0.00
3,700.0	15.01	106.07	3,631.7	-152.5	529.4	-85.2	0.00	0.00	0.00
3,706.4	15.01	106.07	3,637.9	-152.9	531.0	-85.5	0.00	0.00	0.00
Start Drop -2.00									
3,750.0	14.14	106.07	3,680.1	-156.0	541.6	-87.2	2.00	-2.00	0.00
3,800.0	13.14	106.07	3,728.7	-159.2	552.9	-89.0	2.00	-2.00	0.00
3,850.0	12.14	106.07	3,777.5	-162.3	563.4	-90.7	2.00	-2.00	0.00
3,900.0	11.14	106.07	3,826.4	-165.1	573.1	-92.2	2.00	-2.00	0.00
3,950.0	10.14	106.07	3,875.6	-167.6	582.0	-93.7	2.00	-2.00	0.00
4,000.0	9.14	106.07	3,924.9	-169.9	590.0	-95.0	2.00	-2.00	0.00
4,050.0	8.14	106.07	3,974.3	-172.0	597.3	-96.1	2.00	-2.00	0.00
4,100.0	7.14	106.07	4,023.9	-173.8	603.6	-97.2	2.00	-2.00	0.00
4,150.0	6.14	106.07	4,073.5	-175.5	609.2	-98.0	2.00	-2.00	0.00
4,152.5	6.09	106.07	4,076.0	-175.5	609.5	-98.1	2.00	-2.00	0.00
SUSSEX									
4,200.0	5.14	106.07	4,123.3	-176.8	613.9	-98.8	2.00	-2.00	0.00
4,250.0	4.14	106.07	4,173.1	-177.9	617.8	-99.4	2.00	-2.00	0.00
4,300.0	3.14	106.07	4,223.0	-178.8	620.9	-99.9	2.00	-2.00	0.00
4,350.0	2.14	106.07	4,273.0	-179.4	623.1	-100.3	2.00	-2.00	0.00
4,400.0	1.14	106.07	4,322.9	-179.8	624.5	-100.5	2.00	-2.00	0.00
4,450.0	0.14	106.07	4,372.9	-180.0	625.0	-100.6	2.00	-2.00	0.00
4,457.1	0.00	0.00	4,380.0	-180.0	625.0	-100.6	2.00	-2.00	0.00
4,500.0	0.00	0.00	4,422.9	-180.0	625.0	-100.6	0.00	0.00	0.00
4,529.1	0.00	0.00	4,452.0	-180.0	625.0	-100.6	0.00	0.00	0.00
SHANNON									
4,550.0	0.00	0.00	4,472.9	-180.0	625.0	-100.6	0.00	0.00	0.00
4,600.0	0.00	0.00	4,522.9	-180.0	625.0	-100.6	0.00	0.00	0.00
4,650.0	0.00	0.00	4,572.9	-180.0	625.0	-100.6	0.00	0.00	0.00

Noble Energy Inc

Planning Report

Database:	EDM Production	Local Co-ordinate Reference:	Well Rico LC29-72-1HNA
Company:	Northern Region Drilling - Working	TVD Reference:	WELL @ 4889.0usft (Original Well Elev)
Project:	Wattenberg Field	MD Reference:	WELL @ 4889.0usft (Original Well Elev)
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Well:	Rico LC29-72-1HNA	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)
4,700.0	0.00	0.00	4,622.9	-180.0	625.0	-100.6	0.00	0.00	0.00
4,750.0	0.00	0.00	4,672.9	-180.0	625.0	-100.6	0.00	0.00	0.00
4,800.0	0.00	0.00	4,722.9	-180.0	625.0	-100.6	0.00	0.00	0.00
4,850.0	0.00	0.00	4,772.9	-180.0	625.0	-100.6	0.00	0.00	0.00
4,900.0	0.00	0.00	4,822.9	-180.0	625.0	-100.6	0.00	0.00	0.00
4,950.0	0.00	0.00	4,872.9	-180.0	625.0	-100.6	0.00	0.00	0.00
5,000.0	0.00	0.00	4,922.9	-180.0	625.0	-100.6	0.00	0.00	0.00
5,050.0	0.00	0.00	4,972.9	-180.0	625.0	-100.6	0.00	0.00	0.00
5,100.0	0.00	0.00	5,022.9	-180.0	625.0	-100.6	0.00	0.00	0.00
5,150.0	0.00	0.00	5,072.9	-180.0	625.0	-100.6	0.00	0.00	0.00
5,200.0	0.00	0.00	5,122.9	-180.0	625.0	-100.6	0.00	0.00	0.00
5,250.0	0.00	0.00	5,172.9	-180.0	625.0	-100.6	0.00	0.00	0.00
5,300.0	0.00	0.00	5,222.9	-180.0	625.0	-100.6	0.00	0.00	0.00
5,348.1	0.00	0.00	5,271.0	-180.0	625.0	-100.6	0.00	0.00	0.00
TEEPEE BUTTES									
5,350.0	0.00	0.00	5,272.9	-180.0	625.0	-100.6	0.00	0.00	0.00
5,400.0	0.00	0.00	5,322.9	-180.0	625.0	-100.6	0.00	0.00	0.00
5,436.9	0.00	0.00	5,359.8	-180.0	625.0	-100.6	0.00	0.00	0.00
KOP #2 - Start Build 8.00									
5,450.0	1.05	358.76	5,372.9	-179.9	625.0	-100.5	7.99	7.99	0.00
5,500.0	5.05	358.76	5,422.9	-177.2	624.9	-97.8	8.00	8.00	0.00
5,550.0	9.05	358.76	5,472.5	-171.1	624.8	-91.8	8.00	8.00	0.00
5,600.0	13.05	358.76	5,521.5	-161.5	624.6	-82.3	8.00	8.00	0.00
5,650.0	17.05	358.76	5,569.8	-148.5	624.3	-69.5	8.00	8.00	0.00
5,700.0	21.05	358.76	5,617.1	-132.2	624.0	-53.3	8.00	8.00	0.00
5,750.0	25.05	358.76	5,663.1	-112.7	623.5	-34.0	8.00	8.00	0.00
5,800.0	29.05	358.76	5,707.6	-89.9	623.1	-11.5	8.00	8.00	0.00
5,850.0	33.05	358.76	5,750.4	-64.2	622.5	14.0	8.00	8.00	0.00
5,900.0	37.05	358.76	5,791.3	-35.5	621.9	42.4	8.00	8.00	0.00
5,950.0	41.05	358.76	5,830.2	-4.0	621.2	73.6	8.00	8.00	0.00
6,000.0	45.05	358.76	5,866.7	30.1	620.5	107.3	8.00	8.00	0.00
6,050.0	49.05	358.76	5,900.8	66.7	619.7	143.5	8.00	8.00	0.00
6,100.0	53.05	358.76	5,932.2	105.6	618.8	182.0	8.00	8.00	0.00
6,141.2	56.34	358.76	5,956.0	139.2	618.1	215.2	8.00	8.00	0.00
SHARON SPRINGS									
6,150.0	57.05	358.76	5,960.8	146.5	617.9	222.5	8.00	8.00	0.00
6,190.7	60.30	358.76	5,982.0	181.3	617.2	256.9	8.00	8.00	0.00
NIOBRARA - NIO A CHALK									
6,200.0	61.05	358.76	5,986.5	189.4	617.0	264.9	8.00	8.00	0.00
6,250.0	65.05	358.76	6,009.2	233.9	616.1	309.0	8.00	8.00	0.00
6,251.9	65.20	358.76	6,010.0	235.7	616.0	310.7	8.00	8.00	0.00
NIO A MARL									
6,300.0	69.05	358.76	6,028.7	280.0	615.1	354.5	8.00	8.00	0.00
6,350.0	73.05	358.76	6,044.9	327.2	614.0	401.3	8.00	8.00	0.00
6,400.0	77.05	358.76	6,057.8	375.5	613.0	449.1	8.00	8.00	0.00
6,450.0	81.05	358.76	6,067.3	424.6	611.9	497.6	8.00	8.00	0.00
6,499.4	85.00	358.76	6,073.3	473.6	610.9	546.1	8.00	8.00	0.00
Start 75.0 hold at 6499.4 MD - 7" Casing @ 6499.4' MD									
6,500.0	85.00	358.76	6,073.4	474.2	610.9	546.7	0.32	0.32	0.00
6,550.0	85.00	358.76	6,077.7	524.0	609.8	596.0	0.00	0.00	0.00
6,574.4	85.00	358.76	6,079.9	548.3	609.3	620.0	0.00	0.00	0.00
Start Build 8.00									
6,600.0	87.05	358.76	6,081.6	573.8	608.7	645.3	7.99	7.99	0.00

Noble Energy Inc

Planning Report

Database:	EDM Production	Local Co-ordinate Reference:	Well Rico LC29-72-1HNA
Company:	Northern Region Drilling - Working	TVD Reference:	WELL @ 4889.0usft (Original Well Elev)
Project:	Wattenberg Field	MD Reference:	WELL @ 4889.0usft (Original Well Elev)
Site:	LC (09N-59W)	North Reference:	Grid
Well:	Rico LC29-72-1HNA	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)
6,607.6	87.65	358.76	6,082.0	581.4	608.5	652.8	8.00	8.00	0.00
NIO B CHALK									
6,649.4	91.00	358.76	6,082.5	623.2	607.6	694.2	8.00	8.00	0.00
6,650.0	91.00	358.76	6,082.5	623.8	607.6	694.8	0.00	0.00	0.00
6,700.0	91.00	358.76	6,081.6	673.8	606.6	744.2	0.00	0.00	0.00
6,750.0	91.00	358.76	6,080.7	723.8	605.5	793.7	0.00	0.00	0.00
6,800.0	91.00	358.76	6,079.9	773.7	604.4	843.1	0.00	0.00	0.00
6,850.0	91.00	358.76	6,079.0	823.7	603.3	892.6	0.00	0.00	0.00
6,900.0	91.00	358.76	6,078.1	873.7	602.2	942.0	0.00	0.00	0.00
6,950.0	91.00	358.76	6,077.2	923.7	601.2	991.5	0.00	0.00	0.00
7,000.0	91.00	358.76	6,076.4	973.7	600.1	1,040.9	0.00	0.00	0.00
7,050.0	91.00	358.76	6,075.5	1,023.6	599.0	1,090.4	0.00	0.00	0.00
7,100.0	91.00	358.76	6,074.6	1,073.6	597.9	1,139.9	0.00	0.00	0.00
7,150.0	91.00	358.76	6,073.8	1,123.6	596.8	1,189.3	0.00	0.00	0.00
7,200.0	91.00	358.76	6,072.9	1,173.6	595.8	1,238.8	0.00	0.00	0.00
7,250.0	91.00	358.76	6,072.0	1,223.6	594.7	1,288.2	0.00	0.00	0.00
7,300.0	91.00	358.76	6,071.1	1,273.5	593.6	1,337.7	0.00	0.00	0.00
7,350.0	91.00	358.76	6,070.3	1,323.5	592.5	1,387.1	0.00	0.00	0.00
7,400.0	91.00	358.76	6,069.4	1,373.5	591.4	1,436.6	0.00	0.00	0.00
7,450.0	91.00	358.76	6,068.5	1,423.5	590.4	1,486.0	0.00	0.00	0.00
7,500.0	91.00	358.76	6,067.6	1,473.5	589.3	1,535.5	0.00	0.00	0.00
7,550.0	91.00	358.76	6,066.8	1,523.5	588.2	1,584.9	0.00	0.00	0.00
7,600.0	91.00	358.76	6,065.9	1,573.4	587.1	1,634.4	0.00	0.00	0.00
7,650.0	91.00	358.76	6,065.0	1,623.4	586.0	1,683.9	0.00	0.00	0.00
7,700.0	91.00	358.76	6,064.2	1,673.4	585.0	1,733.3	0.00	0.00	0.00
7,750.0	91.00	358.76	6,063.3	1,723.4	583.9	1,782.8	0.00	0.00	0.00
7,800.0	91.00	358.76	6,062.4	1,773.4	582.8	1,832.2	0.00	0.00	0.00
7,850.0	91.00	358.76	6,061.5	1,823.3	581.7	1,881.7	0.00	0.00	0.00
7,900.0	91.00	358.76	6,060.7	1,873.3	580.6	1,931.1	0.00	0.00	0.00
7,950.0	91.00	358.76	6,059.8	1,923.3	579.6	1,980.6	0.00	0.00	0.00
8,000.0	91.00	358.76	6,058.9	1,973.3	578.5	2,030.0	0.00	0.00	0.00
8,050.0	91.00	358.76	6,058.0	2,023.3	577.4	2,079.5	0.00	0.00	0.00
8,100.0	91.00	358.76	6,057.2	2,073.2	576.3	2,129.0	0.00	0.00	0.00
8,150.0	91.00	358.76	6,056.3	2,123.2	575.2	2,178.4	0.00	0.00	0.00
8,200.0	91.00	358.76	6,055.4	2,173.2	574.2	2,227.9	0.00	0.00	0.00
8,250.0	91.00	358.76	6,054.6	2,223.2	573.1	2,277.3	0.00	0.00	0.00
8,300.0	91.00	358.76	6,053.7	2,273.2	572.0	2,326.8	0.00	0.00	0.00
8,350.0	91.00	358.76	6,052.8	2,323.1	570.9	2,376.2	0.00	0.00	0.00
8,400.0	91.00	358.76	6,051.9	2,373.1	569.8	2,425.7	0.00	0.00	0.00
8,450.0	91.00	358.76	6,051.1	2,423.1	568.8	2,475.1	0.00	0.00	0.00
8,500.0	91.00	358.76	6,050.2	2,473.1	567.7	2,524.6	0.00	0.00	0.00
8,550.0	91.00	358.76	6,049.3	2,523.1	566.6	2,574.1	0.00	0.00	0.00
8,600.0	91.00	358.76	6,048.4	2,573.0	565.5	2,623.5	0.00	0.00	0.00
8,650.0	91.00	358.76	6,047.6	2,623.0	564.4	2,673.0	0.00	0.00	0.00
8,700.0	91.00	358.76	6,046.7	2,673.0	563.4	2,722.4	0.00	0.00	0.00
8,750.0	91.00	358.76	6,045.8	2,723.0	562.3	2,771.9	0.00	0.00	0.00
8,800.0	91.00	358.76	6,045.0	2,773.0	561.2	2,821.3	0.00	0.00	0.00
8,850.0	91.00	358.76	6,044.1	2,823.0	560.1	2,870.8	0.00	0.00	0.00
8,900.0	91.00	358.76	6,043.2	2,872.9	559.0	2,920.2	0.00	0.00	0.00
8,950.0	91.00	358.76	6,042.3	2,922.9	558.0	2,969.7	0.00	0.00	0.00
9,000.0	91.00	358.76	6,041.5	2,972.9	556.9	3,019.1	0.00	0.00	0.00
9,050.0	91.00	358.76	6,040.6	3,022.9	555.8	3,068.6	0.00	0.00	0.00
9,100.0	91.00	358.76	6,039.7	3,072.9	554.7	3,118.1	0.00	0.00	0.00
9,150.0	91.00	358.76	6,038.9	3,122.8	553.6	3,167.5	0.00	0.00	0.00

Noble Energy Inc

Planning Report

Database:	EDM Production	Local Co-ordinate Reference:	Well Rico LC29-72-1HNA
Company:	Northern Region Drilling - Working	TVD Reference:	WELL @ 4889.0usft (Original Well Elev)
Project:	Wattenberg Field	MD Reference:	WELL @ 4889.0usft (Original Well Elev)
Site:	LC (09N-59W)	North Reference:	Grid
Well:	Rico LC29-72-1HNA	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)
9,200.0	91.00	358.76	6,038.0	3,172.8	552.6	3,217.0	0.00	0.00	0.00
9,250.0	91.00	358.76	6,037.1	3,222.8	551.5	3,266.4	0.00	0.00	0.00
9,300.0	91.00	358.76	6,036.2	3,272.8	550.4	3,315.9	0.00	0.00	0.00
9,350.0	91.00	358.76	6,035.4	3,322.8	549.3	3,365.3	0.00	0.00	0.00
9,400.0	91.00	358.76	6,034.5	3,372.7	548.2	3,414.8	0.00	0.00	0.00
9,450.0	91.00	358.76	6,033.6	3,422.7	547.2	3,464.2	0.00	0.00	0.00
9,500.0	91.00	358.76	6,032.7	3,472.7	546.1	3,513.7	0.00	0.00	0.00
9,550.0	91.00	358.76	6,031.9	3,522.7	545.0	3,563.2	0.00	0.00	0.00
9,600.0	91.00	358.76	6,031.0	3,572.7	543.9	3,612.6	0.00	0.00	0.00
9,650.0	91.00	358.76	6,030.1	3,622.6	542.8	3,662.1	0.00	0.00	0.00
9,700.0	91.00	358.76	6,029.3	3,672.6	541.8	3,711.5	0.00	0.00	0.00
9,750.0	91.00	358.76	6,028.4	3,722.6	540.7	3,761.0	0.00	0.00	0.00
9,800.0	91.00	358.76	6,027.5	3,772.6	539.6	3,810.4	0.00	0.00	0.00
9,850.0	91.00	358.76	6,026.6	3,822.6	538.5	3,859.9	0.00	0.00	0.00
9,900.0	91.00	358.76	6,025.8	3,872.5	537.4	3,909.3	0.00	0.00	0.00
9,950.0	91.00	358.76	6,024.9	3,922.5	536.4	3,958.8	0.00	0.00	0.00
10,000.0	91.00	358.76	6,024.0	3,972.5	535.3	4,008.3	0.00	0.00	0.00
10,050.0	91.00	358.76	6,023.1	4,022.5	534.2	4,057.7	0.00	0.00	0.00
10,100.0	91.00	358.76	6,022.3	4,072.5	533.1	4,107.2	0.00	0.00	0.00
10,150.0	91.00	358.76	6,021.4	4,122.4	532.0	4,156.6	0.00	0.00	0.00
10,200.0	91.00	358.76	6,020.5	4,172.4	531.0	4,206.1	0.00	0.00	0.00
10,241.6	91.00	358.76	6,019.8	4,214.0	530.1	4,247.2	0.00	0.00	0.00
TD at 10241.6 - Rico LC29-72-1HNA BHL 675°FNL, 330°FEL									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Rico LC29-72-1HNA BH	0.00	0.00	6,019.8	4,214.0	530.1	1,511,152.62	3,417,486.17	40.726770	-103.993670
- plan hits target center									
- Point									

Casing Points				
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
6,499.4	6,073.3	7" Casing @ 6499.4' MD	7	8-3/4

Noble Energy Inc

Planning Report

Database:	EDM Production	Local Co-ordinate Reference:	Well Rico LC29-72-1HNA
Company:	Northern Region Drilling - Working	TVD Reference:	WELL @ 4889.0usft (Original Well Elev)
Project:	Wattenberg Field	MD Reference:	WELL @ 4889.0usft (Original Well Elev)
Site:	LC (09N-59W)	North Reference:	Grid
Well:	Rico LC29-72-1HNA	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Drilling		
Design:	APD - Rev 0		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,275.0	1,275.0	PIERRE		0.00		
3,466.3	3,406.0	PARKMAN		0.00		
4,152.5	4,076.0	SUSSEX		0.00		
4,529.1	4,452.0	SHANNON		0.00		
5,348.1	5,271.0	TEEPEE BUTTES		0.00		
6,141.2	5,956.0	SHARON SPRINGS		0.00		
6,190.7	5,982.0	NIOBRARA		0.00		
6,190.7	5,982.0	NIO A CHALK		0.00		
6,251.9	6,010.0	NIO A MARL		0.00		
6,607.6	6,082.0	NIO B CHALK		0.00		

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
1,200.0	1,200.0	0.0	0.0	KOP - Start Build 2.00	
3,706.4	3,637.9	-152.9	531.0	Start Drop -2.00	
5,436.9	5,359.8	-180.0	625.0	KOP #2 - Start Build 8.00	
6,499.4	6,073.3	473.6	610.9	Start 75.0 hold at 6499.4 MD	
6,574.4	6,079.9	548.3	609.3	Start Build 8.00	
10,241.6	6,019.8	4,214.0	530.1	TD at 10241.6	

Northern Region Drilling - Working

**Wattenberg Field
LC (09N-59W)
Rico LC29-72-1HNA**

**Original Drilling
APD - Rev 0**

Anticollision Summary Report

27 August, 2013

Noble Energy Inc
Anticollision Summary Report

Company:	Northern Region Drilling - Working	Local Co-ordinate Reference:	Well Rico LC29-72-1HNA
Project:	Wattenberg Field	TVD Reference:	WELL @ 4889.0usft (Original Well Elev)
Reference Site:	LC (09N-59W)	MD Reference:	WELL @ 4889.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Rico LC29-72-1HNA	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	8/27/2013			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.0	10,241.6	APD - Rev 0 (Original Drilling)	MWD+IFR1+MS_WY	Fixed:v2:Rockies, crustal dec + 3-axis correction	

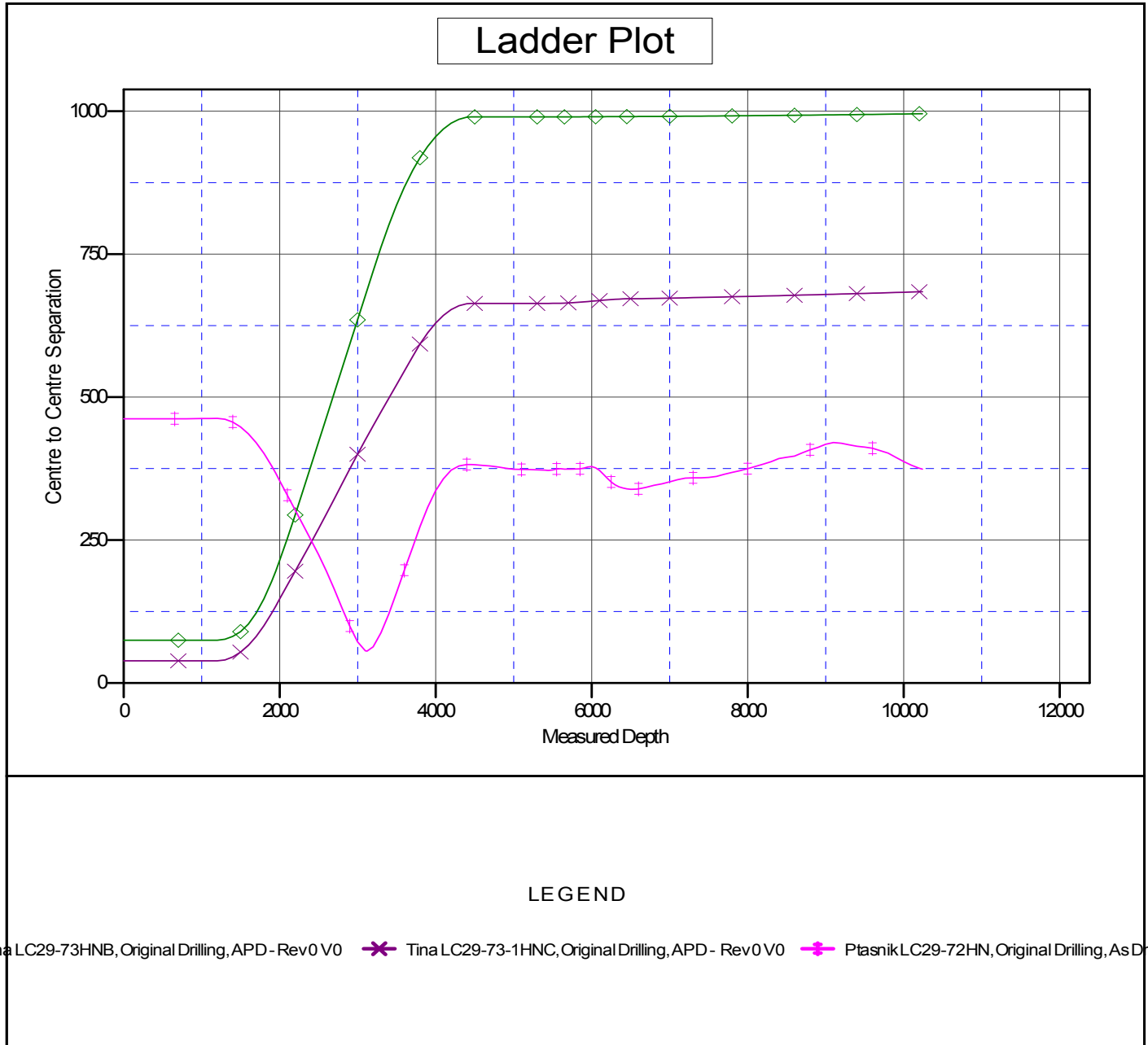
Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
LC (09N-59W)						
Ptasnik LC29-72HN - Original Drilling - As Drilled	3,120.7	3,068.2	55.9	48.5	7.496	CC, ES, SF
Tina LC29-73-1HNC - Original Drilling - APD - Rev 0	1,200.0	1,200.0	38.8	33.7	7.587	CC, ES
Tina LC29-73-1HNC - Original Drilling - APD - Rev 0	1,300.0	1,300.0	40.5	34.9	7.299	SF
Trisha LC29-73HNB - Original Drilling - APD - Rev 0	1,200.0	1,202.0	74.8	69.7	14.618	CC, ES
Trisha LC29-73HNB - Original Drilling - APD - Rev 0	10,241.6	10,231.6	995.7	908.8	11.459	SF

Noble Energy Inc
Anticollision Summary Report

Company:	Northern Region Drilling - Working	Local Co-ordinate Reference:	Well Rico LC29-72-1HNA
Project:	Wattenberg Field	TVD Reference:	WELL @ 4889.0usft (Original Well Elev)
Reference Site:	LC (09N-59W)	MD Reference:	WELL @ 4889.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Rico LC29-72-1HNA	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 @ 4889.0usft (Original Well Ele
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000

Coordinates are relative to: Rico LC29-72-1HNA
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.97°



Noble Energy Inc
Anticollision Summary Report

Company:	Northern Region Drilling - Working	Local Co-ordinate Reference:	Well Rico LC29-72-1HNA
Project:	Wattenberg Field	TVD Reference:	WELL @ 4889.0usft (Original Well Elev)
Reference Site:	LC (09N-59W)	MD Reference:	WELL @ 4889.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Rico LC29-72-1HNA	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 @ 4889.0usft (Original Well Ele
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000

Coordinates are relative to: Rico LC29-72-1HNA
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.97°

