

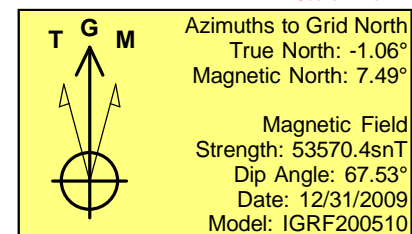
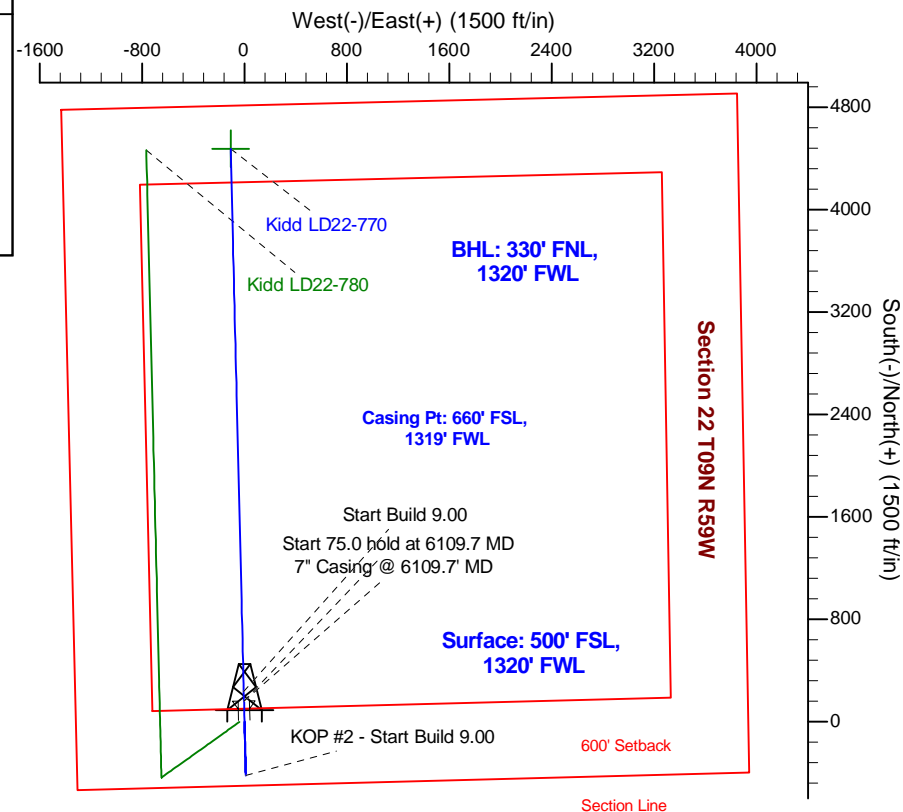
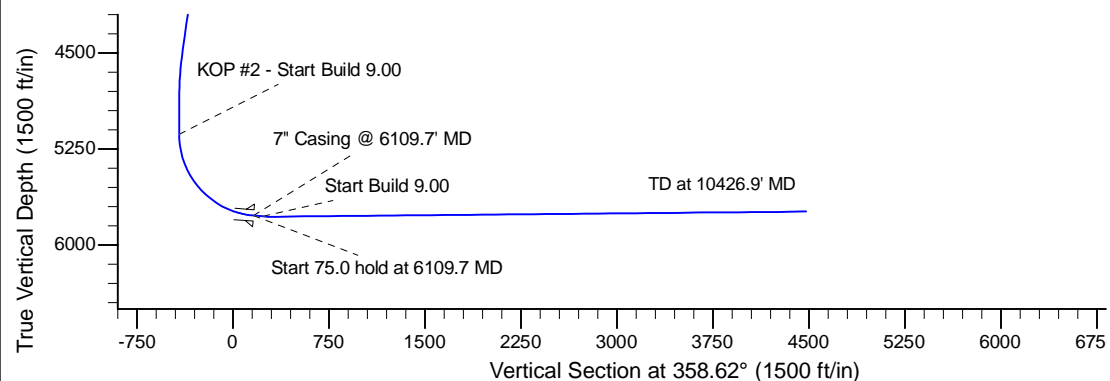
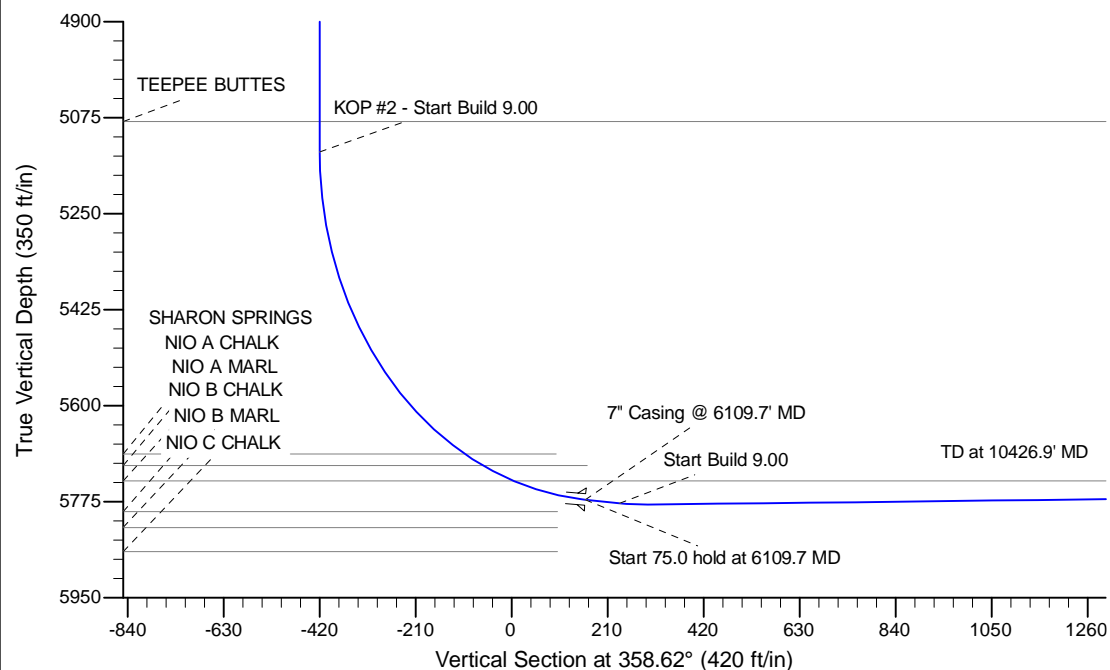
Project: Wattenberg Field
Site: LD (Sec.28-T09N-R58W) Weld County, CO
Well: Kidd LD22-770
Wellbore: Original Drilling
Design: APD - Rev 0

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	1902.3	8.05	178.64	1901.0	-28.2	0.7	2.00	178.64	-28.2	
4	4500.9	8.05	178.64	4474.0	-391.8	9.3	0.00	0.00	-391.9	
5	4903.2	0.00	0.00	4875.0	-420.0	10.0	2.00	180.00	-420.1	
6	5165.2	0.00	0.00	5137.0	-420.0	10.0	0.00	0.00	-420.1	
7	6109.7	85.00	358.62	5771.2	161.0	-4.0	9.00	358.62	161.0	
8	6184.7	85.00	358.62	5777.7	235.7	-5.8	0.00	0.00	235.7	
9	6246.3	90.55	358.62	5780.1	297.2	-7.3	9.00	0.00	297.3	
10	10426.9	90.55	358.62	5740.0	4476.4	-108.0	0.00	0.00	4477.7	Kidd LD22-770 BHL 330'FNL, 1320'FWL



WELL DETAILS: Kidd LD22-770

Ground Level: 4821.0			
0.0	0.0	Northings	Eastings
1513323.33	3455973.30	Latitude	Longitude
40.730850	-103.854690		

Plan: APD - Rev 0 (Kidd LD22-770/Original Drilling)

Created By: Shailey Jewell Date: 7:59, March 06 2015

Checked: _____ Date: _____

Reviewed: _____ Date: _____

Approved: _____ Date: _____

Northern Region Drilling - Working

Wattenberg Field

LD (09N-58W)

Kidd LD22-770

Original Drilling

Plan: APD - Rev 0

Standard Planning Report

06 March, 2015

Noble Energy Inc

Planning Report

Database:	EDM01P	Local Co-ordinate Reference:	Well Kidd LD22-770
Company:	Northern Region Drilling - Working	TVD Reference:	WELL @ 4851.0ft (Original Well Elev)
Project:	Wattenberg Field	MD Reference:	WELL @ 4851.0ft (Original Well Elev)
Site:	LD (09N-58W)	North Reference:	Grid
Well:	Kidd LD22-770	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		LD (09N-58W)			
Site Position:		Northing:	1,523,557.18 usft	Latitude:	40.759270
From:	Lat/Long	Easting:	3,449,341.23 usft	Longitude:	-103.877940
Position Uncertainty:	0.0 ft	Slot Radius:	13-3/16 "	Grid Convergence:	1.05 °

Well	Kidd LD22-770					
Well Position	+N/-S	-10,233.9 ft	Northing:	1,513,323.33 usft	Latitude:	40.730850
	+E/-W	6,632.1 ft	Easting:	3,455,973.29 usft	Longitude:	-103.854690
Position Uncertainty		0.0 ft	Wellhead Elevation:	0.0 ft	Ground Level:	4,821.0 ft

Wellbore	Original Drilling				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	12/31/2009	8.55	67.53	53,570

Design	APD - Rev 0			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	358.62

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,902.3	8.05	178.64	1,901.0	-28.2	0.7	2.00	2.00	0.00	178.64	
4,500.9	8.05	178.64	4,474.0	-391.8	9.3	0.00	0.00	0.00	0.00	
4,903.2	0.00	0.00	4,875.0	-420.0	10.0	2.00	-2.00	0.00	180.00	
5,165.2	0.00	0.00	5,137.0	-420.0	10.0	0.00	0.00	0.00	0.00	
6,109.7	85.00	358.62	5,771.2	161.0	-4.0	9.00	9.00	0.00	358.62	
6,184.7	85.00	358.62	5,777.7	235.7	-5.8	0.00	0.00	0.00	0.00	
6,246.3	90.55	358.62	5,780.1	297.2	-7.3	9.00	9.00	0.00	0.00	
10,426.9	90.55	358.62	5,740.0	4,476.4	-108.0	0.00	0.00	0.00	0.00	Kidd LD22-770 BHL 3

Noble Energy Inc

Planning Report

Database:	EDM01P	Local Co-ordinate Reference:	Well Kidd LD22-770
Company:	Northern Region Drilling - Working	TVD Reference:	WELL @ 4851.0ft (Original Well Elev)
Project:	Wattenberg Field	MD Reference:	WELL @ 4851.0ft (Original Well Elev)
Site:	LD (09N-58W)	North Reference:	Grid
Well:	Kidd LD22-770	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Drilling		
Design:	APD - Rev 0		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
50.0	0.00	0.00	50.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
150.0	0.00	0.00	150.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
250.0	0.00	0.00	250.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
350.0	0.00	0.00	350.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
450.0	0.00	0.00	450.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
550.0	0.00	0.00	550.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
650.0	0.00	0.00	650.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
750.0	0.00	0.00	750.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
850.0	0.00	0.00	850.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
950.0	0.00	0.00	950.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,050.0	0.00	0.00	1,050.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,150.0	0.00	0.00	1,150.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
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	178.64	1,550.0	-0.4	0.0	-0.4	2.00	2.00	0.00
1,600.0	2.00	178.64	1,600.0	-1.7	0.0	-1.7	2.00	2.00	0.00
1,650.0	3.00	178.64	1,649.9	-3.9	0.1	-3.9	2.00	2.00	0.00
1,700.0	4.00	178.64	1,699.8	-7.0	0.2	-7.0	2.00	2.00	0.00
1,750.0	5.00	178.64	1,749.7	-10.9	0.3	-10.9	2.00	2.00	0.00
1,800.0	6.00	178.64	1,799.5	-15.7	0.4	-15.7	2.00	2.00	0.00
1,850.0	7.00	178.64	1,849.1	-21.3	0.5	-21.4	2.00	2.00	0.00
1,900.0	8.00	178.64	1,898.7	-27.9	0.7	-27.9	2.00	2.00	0.00
1,902.3	8.05	178.64	1,901.0	-28.2	0.7	-28.2	2.00	2.00	0.00
1,950.0	8.05	178.64	1,948.2	-34.9	0.8	-34.9	0.00	0.00	0.00
2,000.0	8.05	178.64	1,997.7	-41.9	1.0	-41.9	0.00	0.00	0.00
2,050.0	8.05	178.64	2,047.2	-48.9	1.2	-48.9	0.00	0.00	0.00
2,100.0	8.05	178.64	2,096.7	-55.9	1.3	-55.9	0.00	0.00	0.00
2,150.0	8.05	178.64	2,146.2	-62.9	1.5	-62.9	0.00	0.00	0.00
2,200.0	8.05	178.64	2,195.8	-69.8	1.7	-69.9	0.00	0.00	0.00
2,250.0	8.05	178.64	2,245.3	-76.8	1.8	-76.9	0.00	0.00	0.00
2,300.0	8.05	178.64	2,294.8	-83.8	2.0	-83.9	0.00	0.00	0.00
2,350.0	8.05	178.64	2,344.3	-90.8	2.2	-90.9	0.00	0.00	0.00
2,400.0	8.05	178.64	2,393.8	-97.8	2.3	-97.9	0.00	0.00	0.00
2,450.0	8.05	178.64	2,443.3	-104.8	2.5	-104.9	0.00	0.00	0.00
2,500.0	8.05	178.64	2,492.8	-111.8	2.7	-111.9	0.00	0.00	0.00
2,516.4	8.05	178.64	2,509.0	-114.1	2.7	-114.1	0.00	0.00	0.00

Noble Energy Inc

Planning Report

Database:	EDM01P	Local Co-ordinate Reference:	Well Kidd LD22-770
Company:	Northern Region Drilling - Working	TVD Reference:	WELL @ 4851.0ft (Original Well Elev)
Project:	Wattenberg Field	MD Reference:	WELL @ 4851.0ft (Original Well Elev)
Site:	LD (09N-58W)	North Reference:	Grid
Well:	Kidd LD22-770	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Drilling		
Design:	APD - Rev 0		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
PIERRE									
2,550.0	8.05	178.64	2,542.3	-118.8	2.8	-118.9	0.00	0.00	0.00
2,600.0	8.05	178.64	2,591.8	-125.8	3.0	-125.9	0.00	0.00	0.00
2,650.0	8.05	178.64	2,641.3	-132.8	3.2	-132.9	0.00	0.00	0.00
2,700.0	8.05	178.64	2,690.8	-139.8	3.3	-139.9	0.00	0.00	0.00
2,750.0	8.05	178.64	2,740.3	-146.8	3.5	-146.9	0.00	0.00	0.00
2,800.0	8.05	178.64	2,789.8	-153.8	3.7	-153.8	0.00	0.00	0.00
2,850.0	8.05	178.64	2,839.4	-160.8	3.8	-160.8	0.00	0.00	0.00
2,900.0	8.05	178.64	2,888.9	-167.8	4.0	-167.8	0.00	0.00	0.00
2,950.0	8.05	178.64	2,938.4	-174.8	4.2	-174.8	0.00	0.00	0.00
3,000.0	8.05	178.64	2,987.9	-181.8	4.3	-181.8	0.00	0.00	0.00
3,050.0	8.05	178.64	3,037.4	-188.8	4.5	-188.8	0.00	0.00	0.00
3,100.0	8.05	178.64	3,086.9	-195.8	4.7	-195.8	0.00	0.00	0.00
3,150.0	8.05	178.64	3,136.4	-202.8	4.8	-202.8	0.00	0.00	0.00
3,200.0	8.05	178.64	3,185.9	-209.8	5.0	-209.8	0.00	0.00	0.00
3,250.0	8.05	178.64	3,235.4	-216.8	5.2	-216.8	0.00	0.00	0.00
3,300.0	8.05	178.64	3,284.9	-223.8	5.3	-223.8	0.00	0.00	0.00
3,350.0	8.05	178.64	3,334.4	-230.8	5.5	-230.8	0.00	0.00	0.00
3,400.0	8.05	178.64	3,383.9	-237.8	5.7	-237.8	0.00	0.00	0.00
3,417.2	8.05	178.64	3,401.0	-240.2	5.7	-240.2	0.00	0.00	0.00
PARKMAN									
3,450.0	8.05	178.64	3,433.5	-244.8	5.8	-244.8	0.00	0.00	0.00
3,500.0	8.05	178.64	3,483.0	-251.8	6.0	-251.8	0.00	0.00	0.00
3,550.0	8.05	178.64	3,532.5	-258.7	6.2	-258.8	0.00	0.00	0.00
3,600.0	8.05	178.64	3,582.0	-265.7	6.3	-265.8	0.00	0.00	0.00
3,650.0	8.05	178.64	3,631.5	-272.7	6.5	-272.8	0.00	0.00	0.00
3,700.0	8.05	178.64	3,681.0	-279.7	6.7	-279.8	0.00	0.00	0.00
3,750.0	8.05	178.64	3,730.5	-286.7	6.8	-286.8	0.00	0.00	0.00
3,800.0	8.05	178.64	3,780.0	-293.7	7.0	-293.8	0.00	0.00	0.00
3,850.0	8.05	178.64	3,829.5	-300.7	7.2	-300.8	0.00	0.00	0.00
3,900.0	8.05	178.64	3,879.0	-307.7	7.3	-307.8	0.00	0.00	0.00
3,950.0	8.05	178.64	3,928.5	-314.7	7.5	-314.8	0.00	0.00	0.00
4,000.0	8.05	178.64	3,978.0	-321.7	7.7	-321.8	0.00	0.00	0.00
4,049.5	8.05	178.64	4,027.0	-328.6	7.8	-328.7	0.00	0.00	0.00
SUSSEX									
4,050.0	8.05	178.64	4,027.5	-328.7	7.8	-328.8	0.00	0.00	0.00
4,100.0	8.05	178.64	4,077.1	-335.7	8.0	-335.8	0.00	0.00	0.00
4,150.0	8.05	178.64	4,126.6	-342.7	8.2	-342.8	0.00	0.00	0.00
4,200.0	8.05	178.64	4,176.1	-349.7	8.3	-349.8	0.00	0.00	0.00
4,250.0	8.05	178.64	4,225.6	-356.7	8.5	-356.8	0.00	0.00	0.00
4,300.0	8.05	178.64	4,275.1	-363.7	8.7	-363.8	0.00	0.00	0.00
4,350.0	8.05	178.64	4,324.6	-370.7	8.8	-370.8	0.00	0.00	0.00
4,400.0	8.05	178.64	4,374.1	-377.7	9.0	-377.8	0.00	0.00	0.00
4,450.0	8.05	178.64	4,423.6	-384.7	9.2	-384.8	0.00	0.00	0.00
4,460.5	8.05	178.64	4,434.0	-386.2	9.2	-386.3	0.00	0.00	0.00
SHANNON									
4,500.0	8.05	178.64	4,473.1	-391.7	9.3	-391.8	0.00	0.00	0.00
4,500.9	8.05	178.64	4,474.0	-391.8	9.3	-391.9	0.00	0.00	0.00
Start Drop -2.00									
4,550.0	7.06	178.64	4,522.7	-398.3	9.5	-398.4	2.00	-2.00	0.00
4,600.0	6.06	178.64	4,572.4	-404.0	9.6	-404.1	2.00	-2.00	0.00
4,650.0	5.06	178.64	4,622.1	-408.8	9.7	-408.9	2.00	-2.00	0.00
4,700.0	4.06	178.64	4,672.0	-412.8	9.8	-412.9	2.00	-2.00	0.00

Noble Energy Inc

Planning Report

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Project:	Wattenberg Field	MD Reference:	WELL @ 4851.0ft (Original Well Elev)
Site:	LD (09N-58W)	North Reference:	Grid
Well:	Kidd LD22-770	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Drilling		
Design:	APD - Rev 0		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,750.0	3.06	178.64	4,721.9	-415.9	9.9	-416.0	2.00	-2.00	0.00
4,800.0	2.06	178.64	4,771.8	-418.1	10.0	-418.3	2.00	-2.00	0.00
4,850.0	1.06	178.64	4,821.8	-419.5	10.0	-419.6	2.00	-2.00	0.00
4,900.0	0.06	178.64	4,871.8	-420.0	10.0	-420.1	2.00	-2.00	0.00
4,903.2	0.00	0.00	4,875.0	-420.0	10.0	-420.1	2.00	-2.00	0.00
4,950.0	0.00	0.00	4,921.8	-420.0	10.0	-420.1	0.00	0.00	0.00
5,000.0	0.00	0.00	4,971.8	-420.0	10.0	-420.1	0.00	0.00	0.00
5,050.0	0.00	0.00	5,021.8	-420.0	10.0	-420.1	0.00	0.00	0.00
5,100.0	0.00	0.00	5,071.8	-420.0	10.0	-420.1	0.00	0.00	0.00
5,110.2	0.00	0.00	5,082.0	-420.0	10.0	-420.1	0.00	0.00	0.00
TEEPEE BUTTES									
5,150.0	0.00	0.00	5,121.8	-420.0	10.0	-420.1	0.00	0.00	0.00
5,165.2	0.00	0.00	5,137.0	-420.0	10.0	-420.1	0.00	0.00	0.00
KOP #2 - Start Build 9.00									
5,200.0	3.13	358.62	5,171.8	-419.1	10.0	-419.2	8.99	8.99	0.00
5,250.0	7.63	358.62	5,221.5	-414.4	9.9	-414.5	9.00	9.00	0.00
5,300.0	12.13	358.62	5,270.8	-405.8	9.7	-405.9	9.00	9.00	0.00
5,350.0	16.63	358.62	5,319.2	-393.4	9.4	-393.5	9.00	9.00	0.00
5,400.0	21.13	358.62	5,366.5	-377.2	9.0	-377.3	9.00	9.00	0.00
5,450.0	25.63	358.62	5,412.4	-357.4	8.5	-357.5	9.00	9.00	0.00
5,500.0	30.13	358.62	5,456.6	-334.0	7.9	-334.1	9.00	9.00	0.00
5,550.0	34.63	358.62	5,498.8	-307.2	7.3	-307.3	9.00	9.00	0.00
5,600.0	39.13	358.62	5,538.8	-277.3	6.6	-277.3	9.00	9.00	0.00
5,650.0	43.63	358.62	5,576.3	-244.2	5.8	-244.3	9.00	9.00	0.00
5,700.0	48.13	358.62	5,611.1	-208.3	4.9	-208.4	9.00	9.00	0.00
5,750.0	52.63	358.62	5,643.0	-169.8	4.0	-169.9	9.00	9.00	0.00
5,800.0	57.13	358.62	5,671.7	-129.0	3.0	-129.0	9.00	9.00	0.00
5,831.2	59.94	358.62	5,688.0	-102.4	2.3	-102.4	9.00	9.00	0.00
SHARON SPRINGS									
5,850.0	61.63	358.62	5,697.2	-86.0	1.9	-86.0	8.99	8.99	0.00
5,875.9	63.96	358.62	5,709.0	-63.0	1.4	-63.0	9.00	9.00	0.00
NIO A CHALK									
5,900.0	66.13	358.62	5,719.2	-41.1	0.9	-41.1	9.00	9.00	0.00
5,948.2	70.47	358.62	5,737.0	3.7	-0.2	3.7	9.00	9.00	0.00
NIO A MARL									
5,950.0	70.63	358.62	5,737.6	5.4	-0.3	5.4	8.94	8.94	0.00
6,000.0	75.13	358.62	5,752.3	53.1	-1.4	53.1	9.00	9.00	0.00
6,050.0	79.63	358.62	5,763.2	101.9	-2.6	101.9	9.00	9.00	0.00
6,100.0	84.13	358.62	5,770.3	151.4	-3.8	151.4	9.00	9.00	0.00
6,109.7	85.00	358.62	5,771.2	161.0	-4.0	161.0	8.98	8.98	0.00
Start 75.0 hold at 6109.7 MD - 7" Casing @ 6109.7' MD									
6,150.0	85.00	358.62	5,774.7	201.1	-5.0	201.2	0.00	0.00	0.00
6,184.7	85.00	358.62	5,777.7	235.7	-5.8	235.8	0.00	0.00	0.00
Start Build 9.00									
6,200.0	86.38	358.62	5,778.9	251.0	-6.2	251.0	9.01	9.01	0.00
6,246.3	90.55	358.62	5,780.1	297.2	-7.3	297.3	9.00	9.00	0.00
6,250.0	90.55	358.62	5,780.1	300.9	-7.4	301.0	0.00	0.00	0.00
6,300.0	90.55	358.62	5,779.6	350.9	-8.6	351.0	0.00	0.00	0.00
6,350.0	90.55	358.62	5,779.1	400.9	-9.8	401.0	0.00	0.00	0.00
6,400.0	90.55	358.62	5,778.7	450.9	-11.0	451.0	0.00	0.00	0.00
6,450.0	90.55	358.62	5,778.2	500.8	-12.2	501.0	0.00	0.00	0.00
6,500.0	90.55	358.62	5,777.7	550.8	-13.4	551.0	0.00	0.00	0.00
6,550.0	90.55	358.62	5,777.2	600.8	-14.6	601.0	0.00	0.00	0.00

Noble Energy Inc

Planning Report

Database:	EDM01P	Local Co-ordinate Reference:	Well Kidd LD22-770
Company:	Northern Region Drilling - Working	TVD Reference:	WELL @ 4851.0ft (Original Well Elev)
Project:	Wattenberg Field	MD Reference:	WELL @ 4851.0ft (Original Well Elev)
Site:	LD (09N-58W)	North Reference:	Grid
Well:	Kidd LD22-770	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Drilling		
Design:	APD - Rev 0		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
6,600.0	90.55	358.62	5,776.7	650.8	-15.8	651.0	0.00	0.00	0.00	
6,650.0	90.55	358.62	5,776.3	700.8	-17.0	701.0	0.00	0.00	0.00	
6,700.0	90.55	358.62	5,775.8	750.8	-18.2	751.0	0.00	0.00	0.00	
6,750.0	90.55	358.62	5,775.3	800.7	-19.4	801.0	0.00	0.00	0.00	
6,800.0	90.55	358.62	5,774.8	850.7	-20.6	851.0	0.00	0.00	0.00	
6,850.0	90.55	358.62	5,774.3	900.7	-21.8	901.0	0.00	0.00	0.00	
6,900.0	90.55	358.62	5,773.9	950.7	-23.0	951.0	0.00	0.00	0.00	
6,950.0	90.55	358.62	5,773.4	1,000.7	-24.2	1,001.0	0.00	0.00	0.00	
7,000.0	90.55	358.62	5,772.9	1,050.7	-25.4	1,051.0	0.00	0.00	0.00	
7,050.0	90.55	358.62	5,772.4	1,100.6	-26.6	1,101.0	0.00	0.00	0.00	
7,100.0	90.55	358.62	5,771.9	1,150.6	-27.9	1,151.0	0.00	0.00	0.00	
7,150.0	90.55	358.62	5,771.5	1,200.6	-29.1	1,201.0	0.00	0.00	0.00	
7,200.0	90.55	358.62	5,771.0	1,250.6	-30.3	1,251.0	0.00	0.00	0.00	
7,250.0	90.55	358.62	5,770.5	1,300.6	-31.5	1,301.0	0.00	0.00	0.00	
7,300.0	90.55	358.62	5,770.0	1,350.6	-32.7	1,351.0	0.00	0.00	0.00	
7,350.0	90.55	358.62	5,769.5	1,400.5	-33.9	1,401.0	0.00	0.00	0.00	
7,400.0	90.55	358.62	5,769.1	1,450.5	-35.1	1,451.0	0.00	0.00	0.00	
7,450.0	90.55	358.62	5,768.6	1,500.5	-36.3	1,501.0	0.00	0.00	0.00	
7,500.0	90.55	358.62	5,768.1	1,550.5	-37.5	1,550.9	0.00	0.00	0.00	
7,550.0	90.55	358.62	5,767.6	1,600.5	-38.7	1,600.9	0.00	0.00	0.00	
7,600.0	90.55	358.62	5,767.1	1,650.5	-39.9	1,650.9	0.00	0.00	0.00	
7,650.0	90.55	358.62	5,766.7	1,700.4	-41.1	1,700.9	0.00	0.00	0.00	
7,700.0	90.55	358.62	5,766.2	1,750.4	-42.3	1,750.9	0.00	0.00	0.00	
7,750.0	90.55	358.62	5,765.7	1,800.4	-43.5	1,800.9	0.00	0.00	0.00	
7,800.0	90.55	358.62	5,765.2	1,850.4	-44.7	1,850.9	0.00	0.00	0.00	
7,850.0	90.55	358.62	5,764.7	1,900.4	-45.9	1,900.9	0.00	0.00	0.00	
7,900.0	90.55	358.62	5,764.3	1,950.4	-47.1	1,950.9	0.00	0.00	0.00	
7,950.0	90.55	358.62	5,763.8	2,000.3	-48.3	2,000.9	0.00	0.00	0.00	
8,000.0	90.55	358.62	5,763.3	2,050.3	-49.5	2,050.9	0.00	0.00	0.00	
8,050.0	90.55	358.62	5,762.8	2,100.3	-50.7	2,100.9	0.00	0.00	0.00	
8,100.0	90.55	358.62	5,762.3	2,150.3	-51.9	2,150.9	0.00	0.00	0.00	
8,150.0	90.55	358.62	5,761.9	2,200.3	-53.2	2,200.9	0.00	0.00	0.00	
8,200.0	90.55	358.62	5,761.4	2,250.3	-54.4	2,250.9	0.00	0.00	0.00	
8,250.0	90.55	358.62	5,760.9	2,300.2	-55.6	2,300.9	0.00	0.00	0.00	
8,300.0	90.55	358.62	5,760.4	2,350.2	-56.8	2,350.9	0.00	0.00	0.00	
8,350.0	90.55	358.62	5,759.9	2,400.2	-58.0	2,400.9	0.00	0.00	0.00	
8,400.0	90.55	358.62	5,759.5	2,450.2	-59.2	2,450.9	0.00	0.00	0.00	
8,450.0	90.55	358.62	5,759.0	2,500.2	-60.4	2,500.9	0.00	0.00	0.00	
8,500.0	90.55	358.62	5,758.5	2,550.2	-61.6	2,550.9	0.00	0.00	0.00	
8,550.0	90.55	358.62	5,758.0	2,600.1	-62.8	2,600.9	0.00	0.00	0.00	
8,600.0	90.55	358.62	5,757.5	2,650.1	-64.0	2,650.9	0.00	0.00	0.00	
8,650.0	90.55	358.62	5,757.1	2,700.1	-65.2	2,700.9	0.00	0.00	0.00	
8,700.0	90.55	358.62	5,756.6	2,750.1	-66.4	2,750.9	0.00	0.00	0.00	
8,750.0	90.55	358.62	5,756.1	2,800.1	-67.6	2,800.9	0.00	0.00	0.00	
8,800.0	90.55	358.62	5,755.6	2,850.1	-68.8	2,850.9	0.00	0.00	0.00	
8,850.0	90.55	358.62	5,755.1	2,900.0	-70.0	2,900.9	0.00	0.00	0.00	
8,900.0	90.55	358.62	5,754.7	2,950.0	-71.2	2,950.9	0.00	0.00	0.00	
8,950.0	90.55	358.62	5,754.2	3,000.0	-72.4	3,000.9	0.00	0.00	0.00	
9,000.0	90.55	358.62	5,753.7	3,050.0	-73.6	3,050.9	0.00	0.00	0.00	
9,050.0	90.55	358.62	5,753.2	3,100.0	-74.8	3,100.9	0.00	0.00	0.00	
9,100.0	90.55	358.62	5,752.7	3,150.0	-76.0	3,150.9	0.00	0.00	0.00	
9,150.0	90.55	358.62	5,752.3	3,199.9	-77.2	3,200.9	0.00	0.00	0.00	
9,200.0	90.55	358.62	5,751.8	3,249.9	-78.5	3,250.9	0.00	0.00	0.00	
9,250.0	90.55	358.62	5,751.3	3,299.9	-79.7	3,300.9	0.00	0.00	0.00	

Noble Energy Inc

Planning Report

Database:	EDM01P	Local Co-ordinate Reference:	Well Kidd LD22-770
Company:	Northern Region Drilling - Working	TVD Reference:	WELL @ 4851.0ft (Original Well Elev)
Project:	Wattenberg Field	MD Reference:	WELL @ 4851.0ft (Original Well Elev)
Site:	LD (09N-58W)	North Reference:	Grid
Well:	Kidd LD22-770	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Drilling		
Design:	APD - Rev 0		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
9,300.0	90.55	358.62	5,750.8	3,349.9	-80.9	3,350.9	0.00	0.00	0.00	
9,350.0	90.55	358.62	5,750.3	3,399.9	-82.1	3,400.9	0.00	0.00	0.00	
9,400.0	90.55	358.62	5,749.9	3,449.9	-83.3	3,450.9	0.00	0.00	0.00	
9,450.0	90.55	358.62	5,749.4	3,499.8	-84.5	3,500.9	0.00	0.00	0.00	
9,500.0	90.55	358.62	5,748.9	3,549.8	-85.7	3,550.9	0.00	0.00	0.00	
9,550.0	90.55	358.62	5,748.4	3,599.8	-86.9	3,600.9	0.00	0.00	0.00	
9,600.0	90.55	358.62	5,747.9	3,649.8	-88.1	3,650.9	0.00	0.00	0.00	
9,650.0	90.55	358.62	5,747.5	3,699.8	-89.3	3,700.9	0.00	0.00	0.00	
9,700.0	90.55	358.62	5,747.0	3,749.8	-90.5	3,750.9	0.00	0.00	0.00	
9,750.0	90.55	358.62	5,746.5	3,799.7	-91.7	3,800.8	0.00	0.00	0.00	
9,800.0	90.55	358.62	5,746.0	3,849.7	-92.9	3,850.8	0.00	0.00	0.00	
9,850.0	90.55	358.62	5,745.5	3,899.7	-94.1	3,900.8	0.00	0.00	0.00	
9,900.0	90.55	358.62	5,745.1	3,949.7	-95.3	3,950.8	0.00	0.00	0.00	
9,950.0	90.55	358.62	5,744.6	3,999.7	-96.5	4,000.8	0.00	0.00	0.00	
10,000.0	90.55	358.62	5,744.1	4,049.7	-97.7	4,050.8	0.00	0.00	0.00	
10,050.0	90.55	358.62	5,743.6	4,099.6	-98.9	4,100.8	0.00	0.00	0.00	
10,100.0	90.55	358.62	5,743.1	4,149.6	-100.1	4,150.8	0.00	0.00	0.00	
10,150.0	90.55	358.62	5,742.7	4,199.6	-101.3	4,200.8	0.00	0.00	0.00	
10,200.0	90.55	358.62	5,742.2	4,249.6	-102.5	4,250.8	0.00	0.00	0.00	
10,250.0	90.55	358.62	5,741.7	4,299.6	-103.7	4,300.8	0.00	0.00	0.00	
10,300.0	90.55	358.62	5,741.2	4,349.6	-105.0	4,350.8	0.00	0.00	0.00	
10,350.0	90.55	358.62	5,740.7	4,399.5	-106.2	4,400.8	0.00	0.00	0.00	
10,400.0	90.55	358.62	5,740.3	4,449.5	-107.4	4,450.8	0.00	0.00	0.00	
10,426.9	90.55	358.62	5,740.0	4,476.4	-108.0	4,477.7	0.00	0.00	0.00	
TD at 10426.9 - Kidd LD22-770 BHL 330°FNL, 1320°FWL										

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Kidd LD22-770 BHL 330	0.00	0.00	5,740.0	4,476.4	-108.0	1,517,799.72	3,455,865.28	40.743140	-103.854780
- plan hits target center									
- Point									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
6,109.7	5,771.2	7" Casing @ 6109.7' MD	7	8-3/4	

Noble Energy Inc

Planning Report

Database:	EDM01P	Local Co-ordinate Reference:	Well Kidd LD22-770
Company:	Northern Region Drilling - Working	TVD Reference:	WELL @ 4851.0ft (Original Well Elev)
Project:	Wattenberg Field	MD Reference:	WELL @ 4851.0ft (Original Well Elev)
Site:	LD (09N-58W)	North Reference:	Grid
Well:	Kidd LD22-770	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Drilling		
Design:	APD - Rev 0		

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,516.4	2,509.0	PIERRE		0.00	
3,417.2	3,401.0	PARKMAN		0.00	
4,049.5	4,027.0	SUSSEX		0.00	
4,460.5	4,434.0	SHANNON		0.00	
5,110.2	5,082.0	TEEPEE BUTTES		0.00	
5,831.2	5,688.0	SHARON SPRINGS		0.00	
5,875.9	5,709.0	NIO A CHALK		0.00	
5,948.2	5,737.0	NIO A MARL		0.00	

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
1,500.0	1,500.0	0.0	0.0	KOP - Start Build 2.00	
4,500.9	4,474.0	-391.8	9.3	Start Drop -2.00	
5,165.2	5,137.0	-420.0	10.0	KOP #2 - Start Build 9.00	
6,109.7	5,771.2	161.0	-4.0	Start 75.0 hold at 6109.7 MD	
6,184.7	5,777.7	235.7	-5.8	Start Build 9.00	
10,426.9	5,740.0	4,476.4	-108.0	TD at 10426.9	

Northern Region Drilling - Working

**Wattenberg Field
LD (09N-58W)
Kidd LD22-770**

**Original Drilling
APD - Rev 0**

Anticollision Summary Report

06 March, 2015

Noble Energy Inc
Anticollision Summary Report

Company:	Northern Region Drilling - Working	Local Co-ordinate Reference:	Well Kidd LD22-770
Project:	Wattenberg Field	TVD Reference:	WELL @ 4851.0ft (Original Well Elev)
Reference Site:	LD (09N-58W)	MD Reference:	WELL @ 4851.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Kidd LD22-770	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	EDM01P
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:	MD Interval 100.0ft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.0 ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program	Date	3/6/2015		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	10,426.5	APD - Rev 0 (Original Drilling)	MWD	MWD - Standard

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
LD (09N-58W)						
Kidd LD22-780 - Original Drilling - APD - Rev 0	966.3	967.3	38.8	34.7	9.571	CC
Kidd LD22-780 - Original Drilling - APD - Rev 0	1,000.0	1,001.0	38.8	34.6	9.227	ES
Kidd LD22-780 - Original Drilling - APD - Rev 0	10,426.9	10,540.9	662.1	484.0	3.718	SF

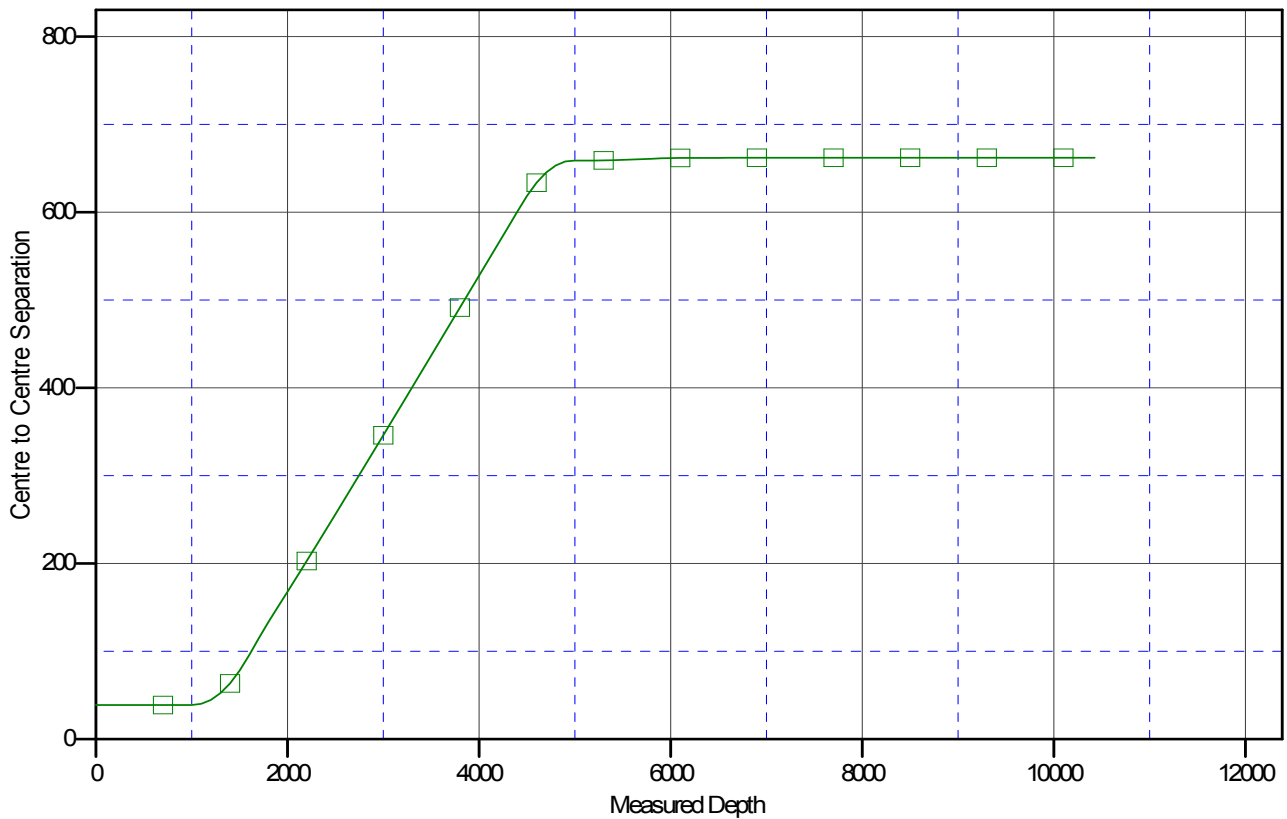
Noble Energy Inc
Anticollision Summary Report

Company:	Northern Region Drilling - Working	Local Co-ordinate Reference:	Well Kidd LD22-770
Project:	Wattenberg Field	TVD Reference:	WELL @ 4851.0ft (Original Well Elev)
Reference Site:	LD (09N-58W)	MD Reference:	WELL @ 4851.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Kidd LD22-770	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	EDM01P
Reference Design:	APD - Rev 0	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4851.0ft (Original Well Elev)
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000

Coordinates are relative to: Kidd LD22-770
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 1.06°

Ladder Plot



LEGEND

■ Kidd LD22-780, Original Drilling, APD - Rev 0 V0

Noble Energy Inc
Anticollision Summary Report

Company:	Northern Region Drilling - Working	Local Co-ordinate Reference:	Well Kidd LD22-770
Project:	Wattenberg Field	TVD Reference:	WELL @ 4851.0ft (Original Well Elev)
Reference Site:	LD (09N-58W)	MD Reference:	WELL @ 4851.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Kidd LD22-770	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	EDM01P
Reference Design:	APD - Rev 0	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4851.0ft (Original Well Elev)
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000

Coordinates are relative to: Kidd LD22-770
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 1.06°

