

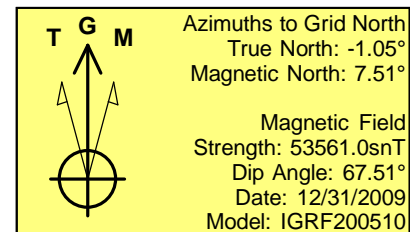
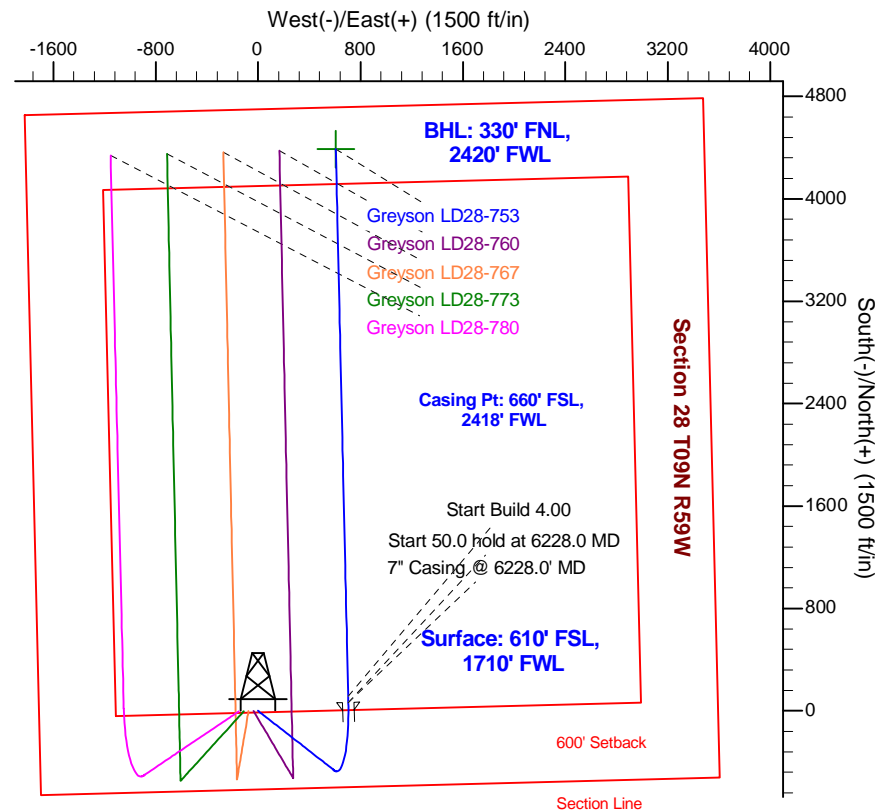
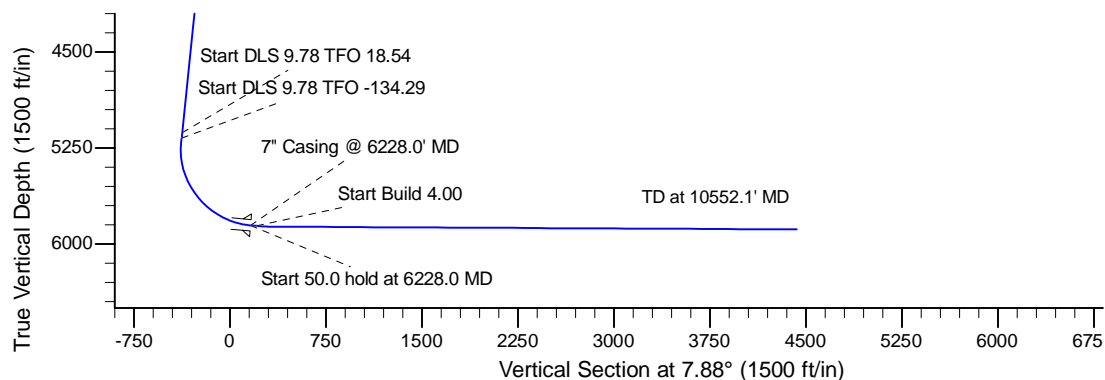
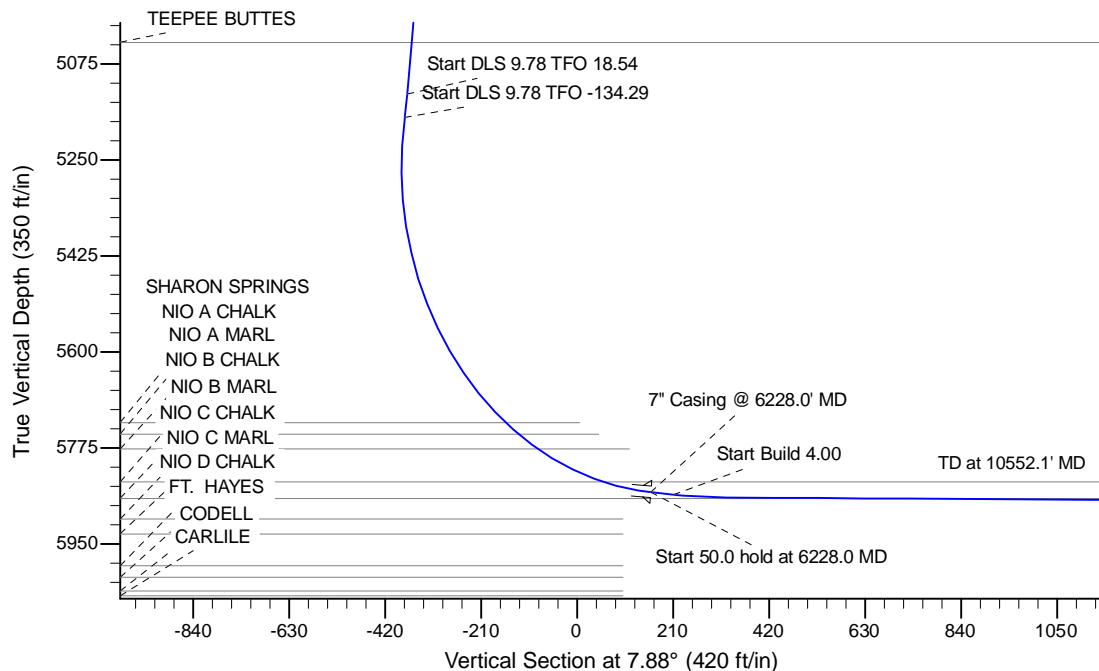
Project: Wattenberg Field  
Site: LD (Sec.28-T09N-R58W) Weld County, CO  
Well: Greyson LD28-753  
Wellbore: Original Drilling  
Design: APD - Rev 0

# 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	1200.0	0.00	0.00	1200.0	0.0	0.0	0.00	0.00	0.0	
3	1775.0	11.50	128.00	1771.1	-35.4	45.3	2.00	128.00	-28.9	
4	5202.7	11.50	128.00	5130.0	-456.1	583.8	0.00	0.00	-371.8	
5	5246.7	15.64	133.08	5172.8	-462.9	591.6	9.78	18.54	-377.5	
6	6228.0	85.00	358.70	5855.7	65.0	705.0	9.78	-134.29	161.0	
7	6278.0	85.00	358.70	5860.1	114.8	703.9	0.00	0.00	210.2	
8	6395.5	89.70	358.70	5865.5	232.1	701.2	4.00	0.00	326.0	
9	10552.1	89.70	358.70	5887.2	4387.5	606.9	0.00	29.43	4429.3	Greyson LD28-753 BHL 330'FNL, 2420'FWL



## WELL DETAILS: Greyson LD28-753

		Ground Level: 4853.0	
0.0	0.0	Northing	Easting
1507998.69	3451186.82	Latitude	Longitude
40.716480	-103.872310		

Plan: APD - Rev 0 (Greyson LD28-753/Original Drilling)

Created By: Shailey Jewell Date: 12:47, March 05 2015

Checked: \_\_\_\_\_ Date: \_\_\_\_\_

Reviewed: \_\_\_\_\_ Date: \_\_\_\_\_

Approved: \_\_\_\_\_ Date: \_\_\_\_\_

# **Northern Region Drilling - Working**

**Wattenberg Field  
LD (09N-58W)  
Greyson LD28-753**

**Original Drilling**

**Plan: APD - Rev 0**

## **Standard Planning Report**

**05 March, 2015**

# Noble Energy Inc

## Planning Report

<b>Database:</b>	EDM01P	<b>Local Co-ordinate Reference:</b>	Well Greyson LD28-753
<b>Company:</b>	Northern Region Drilling - Working	<b>TVD Reference:</b>	WELL @ 4877.0ft (Original Well Elev)
<b>Project:</b>	Wattenberg Field	<b>MD Reference:</b>	WELL @ 4877.0ft (Original Well Elev)
<b>Site:</b>	LD (09N-58W)	<b>North Reference:</b>	Grid
<b>Well:</b>	Greyson LD28-753	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Drilling		
<b>Design:</b>	APD - Rev 0		

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

<b>Site</b>	LD (09N-58W)			
<b>Site Position:</b>		<b>Northing:</b>	1,523,557.18 usft	<b>Latitude:</b> 40.759270
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,449,341.23 usft	<b>Longitude:</b> -103.877940
<b>Position Uncertainty:</b>	0.0 ft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b> 1.05 °

<b>Well</b>	Greyson LD28-753			
<b>Well Position</b>	<b>+N/-S</b>	-15,558.6 ft	<b>Northing:</b>	1,507,998.69 usft
	<b>+E/-W</b>	1,845.6 ft	<b>Easting:</b>	3,451,186.82 usft
<b>Position Uncertainty</b>		0.0 ft	<b>Wellhead Elevation:</b>	0.0 ft
			<b>Ground Level:</b>	4,853.0 ft

<b>Wellbore</b>	Original Drilling				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF200510	12/31/2009	8.56	67.51	53,561

<b>Design</b>	APD - Rev 0			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD)</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Direction</b>
	(ft)	(ft)	(ft)	(°)
	0.0	0.0	0.0	7.88

<b>Plan Sections</b>										
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	
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,775.0	11.50	128.00	1,771.1	-35.4	45.3	2.00	2.00	0.00	128.00	
5,202.7	11.50	128.00	5,130.0	-456.1	583.8	0.00	0.00	0.00	0.00	
5,246.7	15.64	133.08	5,172.8	-462.9	591.6	9.78	9.41	11.53	18.54	
6,228.0	85.00	358.70	5,855.7	65.0	705.0	9.78	7.07	-13.69	-134.29	
6,278.0	85.00	358.70	5,860.1	114.8	703.9	0.00	0.00	0.00	0.00	
6,395.5	89.70	358.70	5,865.5	232.1	701.2	4.00	4.00	0.00	0.00	
10,552.1	89.70	358.70	5,887.2	4,387.5	606.9	0.00	0.00	0.00	29.43	Greyson LD28-753 BI

# Noble Energy Inc

## Planning Report

<b>Database:</b>	EDM01P	<b>Local Co-ordinate Reference:</b>	Well Greyson LD28-753
<b>Company:</b>	Northern Region Drilling - Working	<b>TVD Reference:</b>	WELL @ 4877.0ft (Original Well Elev)
<b>Project:</b>	Wattenberg Field	<b>MD Reference:</b>	WELL @ 4877.0ft (Original Well Elev)
<b>Site:</b>	LD (09N-58W)	<b>North Reference:</b>	Grid
<b>Well:</b>	Greyson LD28-753	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Drilling		
<b>Design:</b>	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
KOP - Start Build 2.00									
1,250.0	1.00	128.00	1,250.0	-0.3	0.3	-0.2	2.00	2.00	0.00
1,300.0	2.00	128.00	1,300.0	-1.1	1.4	-0.9	2.00	2.00	0.00
1,350.0	3.00	128.00	1,349.9	-2.4	3.1	-2.0	2.00	2.00	0.00
1,400.0	4.00	128.00	1,399.8	-4.3	5.5	-3.5	2.00	2.00	0.00
1,450.0	5.00	128.00	1,449.7	-6.7	8.6	-5.5	2.00	2.00	0.00
1,500.0	6.00	128.00	1,499.5	-9.7	12.4	-7.9	2.00	2.00	0.00
1,550.0	7.00	128.00	1,549.1	-13.1	16.8	-10.7	2.00	2.00	0.00
1,600.0	8.00	128.00	1,598.7	-17.2	22.0	-14.0	2.00	2.00	0.00
1,650.0	9.00	128.00	1,648.2	-21.7	27.8	-17.7	2.00	2.00	0.00
1,700.0	10.00	128.00	1,697.5	-26.8	34.3	-21.8	2.00	2.00	0.00
1,750.0	11.00	128.00	1,746.6	-32.4	41.5	-26.4	2.00	2.00	0.00
1,775.0	11.50	128.00	1,771.1	-35.4	45.3	-28.9	2.00	2.00	0.00
1,800.0	11.50	128.00	1,795.6	-38.5	49.2	-31.4	0.00	0.00	0.00
1,850.0	11.50	128.00	1,844.6	-44.6	57.1	-36.4	0.00	0.00	0.00
1,900.0	11.50	128.00	1,893.6	-50.8	65.0	-41.4	0.00	0.00	0.00
1,950.0	11.50	128.00	1,942.6	-56.9	72.8	-46.4	0.00	0.00	0.00
2,000.0	11.50	128.00	1,991.6	-63.0	80.7	-51.4	0.00	0.00	0.00
2,050.0	11.50	128.00	2,040.6	-69.2	88.5	-56.4	0.00	0.00	0.00
2,100.0	11.50	128.00	2,089.6	-75.3	96.4	-61.4	0.00	0.00	0.00
2,150.0	11.50	128.00	2,138.6	-81.4	104.2	-66.4	0.00	0.00	0.00
2,200.0	11.50	128.00	2,187.6	-87.6	112.1	-71.4	0.00	0.00	0.00
2,250.0	11.50	128.00	2,236.6	-93.7	119.9	-76.4	0.00	0.00	0.00
2,300.0	11.50	128.00	2,285.6	-99.8	127.8	-81.4	0.00	0.00	0.00
2,350.0	11.50	128.00	2,334.6	-106.0	135.7	-86.4	0.00	0.00	0.00
2,400.0	11.50	128.00	2,383.6	-112.1	143.5	-91.4	0.00	0.00	0.00
2,417.8	11.50	128.00	2,401.0	-114.3	146.3	-93.2	0.00	0.00	0.00
PIERRE									
2,450.0	11.50	128.00	2,432.6	-118.3	151.4	-96.4	0.00	0.00	0.00

# Noble Energy Inc

## Planning Report

<b>Database:</b>	EDM01P	<b>Local Co-ordinate Reference:</b>	Well Greyson LD28-753
<b>Company:</b>	Northern Region Drilling - Working	<b>TVD Reference:</b>	WELL @ 4877.0ft (Original Well Elev)
<b>Project:</b>	Wattenberg Field	<b>MD Reference:</b>	WELL @ 4877.0ft (Original Well Elev)
<b>Site:</b>	LD (09N-58W)	<b>North Reference:</b>	Grid
<b>Well:</b>	Greyson LD28-753	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Drilling		
<b>Design:</b>	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)
2,500.0	11.50	128.00	2,481.6	-124.4	159.2	-101.4	0.00	0.00	0.00
2,550.0	11.50	128.00	2,530.6	-130.5	167.1	-106.4	0.00	0.00	0.00
2,600.0	11.50	128.00	2,579.6	-136.7	174.9	-111.4	0.00	0.00	0.00
2,650.0	11.50	128.00	2,628.6	-142.8	182.8	-116.4	0.00	0.00	0.00
2,700.0	11.50	128.00	2,677.6	-148.9	190.6	-121.4	0.00	0.00	0.00
2,750.0	11.50	128.00	2,726.6	-155.1	198.5	-126.4	0.00	0.00	0.00
2,800.0	11.50	128.00	2,775.6	-161.2	206.4	-131.4	0.00	0.00	0.00
2,850.0	11.50	128.00	2,824.6	-167.4	214.2	-136.4	0.00	0.00	0.00
2,900.0	11.50	128.00	2,873.6	-173.5	222.1	-141.4	0.00	0.00	0.00
2,950.0	11.50	128.00	2,922.6	-179.6	229.9	-146.4	0.00	0.00	0.00
3,000.0	11.50	128.00	2,971.6	-185.8	237.8	-151.4	0.00	0.00	0.00
3,050.0	11.50	128.00	3,020.6	-191.9	245.6	-156.4	0.00	0.00	0.00
3,100.0	11.50	128.00	3,069.6	-198.0	253.5	-161.4	0.00	0.00	0.00
3,150.0	11.50	128.00	3,118.5	-204.2	261.3	-166.4	0.00	0.00	0.00
3,200.0	11.50	128.00	3,167.5	-210.3	269.2	-171.4	0.00	0.00	0.00
3,250.0	11.50	128.00	3,216.5	-216.5	277.0	-176.4	0.00	0.00	0.00
3,300.0	11.50	128.00	3,265.5	-222.6	284.9	-181.5	0.00	0.00	0.00
3,350.0	11.50	128.00	3,314.5	-228.7	292.8	-186.5	0.00	0.00	0.00
3,354.6	11.50	128.00	3,319.0	-229.3	293.5	-186.9	0.00	0.00	0.00
<b>PARKMAN</b>									
3,400.0	11.50	128.00	3,363.5	-234.9	300.6	-191.5	0.00	0.00	0.00
3,450.0	11.50	128.00	3,412.5	-241.0	308.5	-196.5	0.00	0.00	0.00
3,500.0	11.50	128.00	3,461.5	-247.1	316.3	-201.5	0.00	0.00	0.00
3,550.0	11.50	128.00	3,510.5	-253.3	324.2	-206.5	0.00	0.00	0.00
3,600.0	11.50	128.00	3,559.5	-259.4	332.0	-211.5	0.00	0.00	0.00
3,650.0	11.50	128.00	3,608.5	-265.6	339.9	-216.5	0.00	0.00	0.00
3,700.0	11.50	128.00	3,657.5	-271.7	347.7	-221.5	0.00	0.00	0.00
3,750.0	11.50	128.00	3,706.5	-277.8	355.6	-226.5	0.00	0.00	0.00
3,800.0	11.50	128.00	3,755.5	-284.0	363.5	-231.5	0.00	0.00	0.00
3,850.0	11.50	128.00	3,804.5	-290.1	371.3	-236.5	0.00	0.00	0.00
3,900.0	11.50	128.00	3,853.5	-296.2	379.2	-241.5	0.00	0.00	0.00
3,950.0	11.50	128.00	3,902.5	-302.4	387.0	-246.5	0.00	0.00	0.00
4,000.0	11.50	128.00	3,951.5	-308.5	394.9	-251.5	0.00	0.00	0.00
4,043.4	11.50	128.00	3,994.0	-313.8	401.7	-255.8	0.00	0.00	0.00
<b>SUSSEX</b>									
4,050.0	11.50	128.00	4,000.5	-314.6	402.7	-256.5	0.00	0.00	0.00
4,100.0	11.50	128.00	4,049.5	-320.8	410.6	-261.5	0.00	0.00	0.00
4,150.0	11.50	128.00	4,098.5	-326.9	418.4	-266.5	0.00	0.00	0.00
4,200.0	11.50	128.00	4,147.5	-333.1	426.3	-271.5	0.00	0.00	0.00
4,250.0	11.50	128.00	4,196.5	-339.2	434.2	-276.5	0.00	0.00	0.00
4,300.0	11.50	128.00	4,245.5	-345.3	442.0	-281.5	0.00	0.00	0.00
4,350.0	11.50	128.00	4,294.5	-351.5	449.9	-286.5	0.00	0.00	0.00
4,400.0	11.50	128.00	4,343.5	-357.6	457.7	-291.5	0.00	0.00	0.00
4,450.0	11.50	128.00	4,392.5	-363.7	465.6	-296.5	0.00	0.00	0.00
4,500.0	11.50	128.00	4,441.5	-369.9	473.4	-301.5	0.00	0.00	0.00
4,512.8	11.50	128.00	4,454.0	-371.5	475.4	-302.8	0.00	0.00	0.00
<b>SHANNON</b>									
4,550.0	11.50	128.00	4,490.4	-376.0	481.3	-306.5	0.00	0.00	0.00
4,600.0	11.50	128.00	4,539.4	-382.2	489.1	-311.5	0.00	0.00	0.00
4,650.0	11.50	128.00	4,588.4	-388.3	497.0	-316.5	0.00	0.00	0.00
4,700.0	11.50	128.00	4,637.4	-394.4	504.9	-321.5	0.00	0.00	0.00
4,750.0	11.50	128.00	4,686.4	-400.6	512.7	-326.5	0.00	0.00	0.00
4,800.0	11.50	128.00	4,735.4	-406.7	520.6	-331.5	0.00	0.00	0.00

# Noble Energy Inc

## Planning Report

<b>Database:</b>	EDM01P	<b>Local Co-ordinate Reference:</b>	Well Greyson LD28-753
<b>Company:</b>	Northern Region Drilling - Working	<b>TVD Reference:</b>	WELL @ 4877.0ft (Original Well Elev)
<b>Project:</b>	Wattenberg Field	<b>MD Reference:</b>	WELL @ 4877.0ft (Original Well Elev)
<b>Site:</b>	LD (09N-58W)	<b>North Reference:</b>	Grid
<b>Well:</b>	Greyson LD28-753	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Drilling		
<b>Design:</b>	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)
4,850.0	11.50	128.00	4,784.4	-412.8	528.4	-336.5	0.00	0.00	0.00
4,900.0	11.50	128.00	4,833.4	-419.0	536.3	-341.5	0.00	0.00	0.00
4,950.0	11.50	128.00	4,882.4	-425.1	544.1	-346.5	0.00	0.00	0.00
5,000.0	11.50	128.00	4,931.4	-431.3	552.0	-351.6	0.00	0.00	0.00
5,050.0	11.50	128.00	4,980.4	-437.4	559.8	-356.6	0.00	0.00	0.00
5,100.0	11.50	128.00	5,029.4	-443.5	567.7	-361.6	0.00	0.00	0.00
5,106.7	11.50	128.00	5,036.0	-444.4	568.7	-362.2	0.00	0.00	0.00
<b>TEEPEE BUTTES</b>									
5,150.0	11.50	128.00	5,078.4	-449.7	575.5	-366.6	0.00	0.00	0.00
5,200.0	11.50	128.00	5,127.4	-455.8	583.4	-371.6	0.00	0.00	0.00
5,202.7	11.50	128.00	5,130.0	-456.1	583.8	-371.8	0.00	0.00	0.00
<b>Start DLS 9.78 TFO 18.54</b>									
5,246.7	15.64	133.08	5,172.8	-462.9	591.6	-377.5	9.79	9.41	11.54
<b>Start DLS 9.78 TFO -134.29</b>									
5,250.0	15.42	132.21	5,176.0	-463.5	592.3	-378.0	9.69	-6.71	-26.14
5,300.0	12.56	115.68	5,224.5	-470.3	602.1	-383.4	9.78	-5.73	-33.07
5,350.0	11.17	92.68	5,273.5	-472.9	611.8	-384.6	9.78	-2.77	-45.99
5,400.0	11.79	68.13	5,322.5	-471.2	621.4	-381.6	9.78	1.25	-49.10
5,450.0	14.17	48.93	5,371.2	-465.3	630.8	-374.5	9.78	4.74	-38.41
5,500.0	17.59	36.07	5,419.3	-455.2	639.9	-363.2	9.78	6.85	-25.71
5,550.0	21.57	27.56	5,466.5	-440.9	648.6	-347.9	9.78	7.96	-17.03
5,600.0	25.86	21.67	5,512.2	-422.6	656.8	-328.6	9.78	8.57	-11.78
5,650.0	30.31	17.38	5,556.3	-400.4	664.6	-305.6	9.78	8.91	-8.57
5,700.0	34.88	14.11	5,598.5	-374.5	671.9	-278.9	9.78	9.13	-6.54
5,750.0	39.51	11.52	5,638.3	-345.0	678.6	-248.8	9.78	9.27	-5.19
5,800.0	44.19	9.39	5,675.5	-312.2	684.6	-215.5	9.78	9.36	-4.25
5,850.0	48.90	7.60	5,709.9	-276.3	689.9	-179.2	9.78	9.43	-3.59
5,879.9	51.74	6.64	5,729.0	-253.5	692.8	-156.2	9.78	9.47	-3.19
<b>SHARON SPRINGS</b>									
5,900.0	53.64	6.04	5,741.2	-237.6	694.5	-140.2	9.77	9.48	-2.98
5,915.2	55.08	5.61	5,750.0	-225.4	695.8	-127.9	9.79	9.51	-2.86
<b>NIO A CHALK</b>									
5,950.0	58.39	4.67	5,769.1	-196.4	698.4	-98.8	9.78	9.51	-2.70
5,965.4	59.86	4.27	5,777.0	-183.2	699.4	-85.6	9.79	9.54	-2.56
<b>NIO A MARL</b>									
6,000.0	63.16	3.43	5,793.5	-152.8	701.5	-55.3	9.78	9.54	-2.44
6,050.0	67.94	2.29	5,814.2	-107.4	703.7	-9.9	9.78	9.56	-2.28
6,100.0	72.73	1.22	5,831.0	-60.3	705.1	36.9	9.78	9.57	-2.13
6,121.4	74.77	0.78	5,837.0	-39.8	705.5	57.2	9.79	9.59	-2.05
<b>NIO B CHALK</b>									
6,150.0	77.52	0.21	5,843.9	-12.0	705.7	84.8	9.78	9.58	-2.00
6,200.0	82.31	359.24	5,852.6	37.2	705.5	133.5	9.78	9.59	-1.95
6,228.0	85.00	358.70	5,855.7	65.0	705.0	161.0	9.78	9.60	-1.91
<b>Start 50.0 hold at 6228.0 MD - 7" Casing @ 6228.0' MD</b>									
6,250.0	85.00	358.70	5,857.6	86.9	704.5	182.6	0.01	0.01	0.00
6,278.0	85.00	358.70	5,860.1	114.8	703.9	210.1	0.00	0.00	0.00
<b>Start Build 4.00</b>									
6,300.0	85.88	358.70	5,861.8	136.7	703.4	231.8	3.99	3.99	0.00
6,350.0	87.88	358.70	5,864.5	186.6	702.2	281.1	4.00	4.00	0.00
6,395.5	89.70	358.70	5,865.5	232.1	701.2	326.0	4.00	4.00	0.00
6,400.0	89.70	358.70	5,865.5	236.6	701.1	330.4	0.00	0.00	0.00
6,450.0	89.70	358.70	5,865.8	286.6	700.0	379.8	0.00	0.00	0.00
6,500.0	89.70	358.70	5,866.0	336.6	698.8	429.2	0.00	0.00	0.00

# Noble Energy Inc

## Planning Report

<b>Database:</b>	EDM01P	<b>Local Co-ordinate Reference:</b>	Well Greyson LD28-753
<b>Company:</b>	Northern Region Drilling - Working	<b>TVD Reference:</b>	WELL @ 4877.0ft (Original Well Elev)
<b>Project:</b>	Wattenberg Field	<b>MD Reference:</b>	WELL @ 4877.0ft (Original Well Elev)
<b>Site:</b>	LD (09N-58W)	<b>North Reference:</b>	Grid
<b>Well:</b>	Greyson LD28-753	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Drilling		
<b>Design:</b>	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)
6,550.0	89.70	358.70	5,866.3	386.6	697.7	478.5	0.00	0.00	0.00
6,600.0	89.70	358.70	5,866.6	436.5	696.6	527.9	0.00	0.00	0.00
6,650.0	89.70	358.70	5,866.8	486.5	695.4	577.2	0.00	0.00	0.00
6,684.2	89.70	358.70	5,867.0	520.7	694.7	611.0	0.00	0.00	0.00
NIO B MARL									
6,700.0	89.70	358.70	5,867.1	536.5	694.3	626.6	0.00	0.00	0.00
6,750.0	89.70	358.70	5,867.3	586.5	693.2	676.0	0.00	0.00	0.00
6,800.0	89.70	358.70	5,867.6	636.5	692.0	725.3	0.00	0.00	0.00
6,850.0	89.70	358.70	5,867.9	686.5	690.9	774.7	0.00	0.00	0.00
6,900.0	89.70	358.70	5,868.1	736.5	689.8	824.0	0.00	0.00	0.00
6,950.0	89.70	358.70	5,868.4	786.5	688.6	873.4	0.00	0.00	0.00
7,000.0	89.70	358.70	5,868.7	836.4	687.5	922.8	0.00	0.00	0.00
7,050.0	89.70	358.70	5,868.9	886.4	686.4	972.1	0.00	0.00	0.00
7,100.0	89.70	358.70	5,869.2	936.4	685.2	1,021.5	0.00	0.00	0.00
7,150.0	89.70	358.70	5,869.4	986.4	684.1	1,070.8	0.00	0.00	0.00
7,200.0	89.70	358.70	5,869.7	1,036.4	683.0	1,120.2	0.00	0.00	0.00
7,250.0	89.70	358.70	5,870.0	1,086.4	681.8	1,169.6	0.00	0.00	0.00
7,300.0	89.70	358.70	5,870.2	1,136.4	680.7	1,218.9	0.00	0.00	0.00
7,350.0	89.70	358.70	5,870.5	1,186.3	679.6	1,268.3	0.00	0.00	0.00
7,400.0	89.70	358.70	5,870.7	1,236.3	678.4	1,317.6	0.00	0.00	0.00
7,450.0	89.70	358.70	5,871.0	1,286.3	677.3	1,367.0	0.00	0.00	0.00
7,500.0	89.70	358.70	5,871.3	1,336.3	676.2	1,416.4	0.00	0.00	0.00
7,550.0	89.70	358.70	5,871.5	1,386.3	675.0	1,465.7	0.00	0.00	0.00
7,600.0	89.70	358.70	5,871.8	1,436.3	673.9	1,515.1	0.00	0.00	0.00
7,650.0	89.70	358.70	5,872.1	1,486.3	672.7	1,564.4	0.00	0.00	0.00
7,700.0	89.70	358.70	5,872.3	1,536.3	671.6	1,613.8	0.00	0.00	0.00
7,750.0	89.70	358.70	5,872.6	1,586.2	670.5	1,663.2	0.00	0.00	0.00
7,800.0	89.70	358.70	5,872.8	1,636.2	669.3	1,712.5	0.00	0.00	0.00
7,850.0	89.70	358.70	5,873.1	1,686.2	668.2	1,761.9	0.00	0.00	0.00
7,900.0	89.70	358.70	5,873.4	1,736.2	667.1	1,811.2	0.00	0.00	0.00
7,950.0	89.70	358.70	5,873.6	1,786.2	665.9	1,860.6	0.00	0.00	0.00
8,000.0	89.70	358.70	5,873.9	1,836.2	664.8	1,910.0	0.00	0.00	0.00
8,050.0	89.70	358.70	5,874.1	1,886.2	663.7	1,959.3	0.00	0.00	0.00
8,100.0	89.70	358.70	5,874.4	1,936.1	662.5	2,008.7	0.00	0.00	0.00
8,150.0	89.70	358.70	5,874.7	1,986.1	661.4	2,058.0	0.00	0.00	0.00
8,200.0	89.70	358.70	5,874.9	2,036.1	660.3	2,107.4	0.00	0.00	0.00
8,250.0	89.70	358.70	5,875.2	2,086.1	659.1	2,156.7	0.00	0.00	0.00
8,300.0	89.70	358.70	5,875.4	2,136.1	658.0	2,206.1	0.00	0.00	0.00
8,350.0	89.70	358.70	5,875.7	2,186.1	656.9	2,255.5	0.00	0.00	0.00
8,400.0	89.70	358.70	5,876.0	2,236.1	655.7	2,304.8	0.00	0.00	0.00
8,450.0	89.70	358.70	5,876.2	2,286.1	654.6	2,354.2	0.00	0.00	0.00
8,500.0	89.70	358.70	5,876.5	2,336.0	653.5	2,403.5	0.00	0.00	0.00
8,550.0	89.70	358.70	5,876.8	2,386.0	652.3	2,452.9	0.00	0.00	0.00
8,600.0	89.70	358.70	5,877.0	2,436.0	651.2	2,502.3	0.00	0.00	0.00
8,650.0	89.70	358.70	5,877.3	2,486.0	650.1	2,551.6	0.00	0.00	0.00
8,700.0	89.70	358.70	5,877.5	2,536.0	648.9	2,601.0	0.00	0.00	0.00
8,750.0	89.70	358.70	5,877.8	2,586.0	647.8	2,650.3	0.00	0.00	0.00
8,800.0	89.70	358.70	5,878.1	2,636.0	646.7	2,699.7	0.00	0.00	0.00
8,850.0	89.70	358.70	5,878.3	2,685.9	645.5	2,749.1	0.00	0.00	0.00
8,900.0	89.70	358.70	5,878.6	2,735.9	644.4	2,798.4	0.00	0.00	0.00
8,950.0	89.70	358.70	5,878.8	2,785.9	643.3	2,847.8	0.00	0.00	0.00
9,000.0	89.70	358.70	5,879.1	2,835.9	642.1	2,897.1	0.00	0.00	0.00
9,050.0	89.70	358.70	5,879.4	2,885.9	641.0	2,946.5	0.00	0.00	0.00
9,100.0	89.70	358.70	5,879.6	2,935.9	639.9	2,995.9	0.00	0.00	0.00

# Noble Energy Inc

## Planning Report

<b>Database:</b>	EDM01P	<b>Local Co-ordinate Reference:</b>	Well Greyson LD28-753
<b>Company:</b>	Northern Region Drilling - Working	<b>TVD Reference:</b>	WELL @ 4877.0ft (Original Well Elev)
<b>Project:</b>	Wattenberg Field	<b>MD Reference:</b>	WELL @ 4877.0ft (Original Well Elev)
<b>Site:</b>	LD (09N-58W)	<b>North Reference:</b>	Grid
<b>Well:</b>	Greyson LD28-753	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Drilling		
<b>Design:</b>	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)	
9,150.0	89.70	358.70	5,879.9	2,985.9	638.7	3,045.2	0.00	0.00	0.00	
9,200.0	89.70	358.70	5,880.1	3,035.9	637.6	3,094.6	0.00	0.00	0.00	
9,250.0	89.70	358.70	5,880.4	3,085.8	636.5	3,143.9	0.00	0.00	0.00	
9,300.0	89.70	358.70	5,880.7	3,135.8	635.3	3,193.3	0.00	0.00	0.00	
9,350.0	89.70	358.70	5,880.9	3,185.8	634.2	3,242.7	0.00	0.00	0.00	
9,400.0	89.70	358.70	5,881.2	3,235.8	633.1	3,292.0	0.00	0.00	0.00	
9,450.0	89.70	358.70	5,881.5	3,285.8	631.9	3,341.4	0.00	0.00	0.00	
9,500.0	89.70	358.70	5,881.7	3,335.8	630.8	3,390.7	0.00	0.00	0.00	
9,550.0	89.70	358.70	5,882.0	3,385.8	629.7	3,440.1	0.00	0.00	0.00	
9,600.0	89.70	358.70	5,882.2	3,435.7	628.5	3,489.5	0.00	0.00	0.00	
9,650.0	89.70	358.70	5,882.5	3,485.7	627.4	3,538.8	0.00	0.00	0.00	
9,700.0	89.70	358.70	5,882.8	3,535.7	626.3	3,588.2	0.00	0.00	0.00	
9,750.0	89.70	358.70	5,883.0	3,585.7	625.1	3,637.5	0.00	0.00	0.00	
9,800.0	89.70	358.70	5,883.3	3,635.7	624.0	3,686.9	0.00	0.00	0.00	
9,850.0	89.70	358.70	5,883.5	3,685.7	622.9	3,736.3	0.00	0.00	0.00	
9,900.0	89.70	358.70	5,883.8	3,735.7	621.7	3,785.6	0.00	0.00	0.00	
9,950.0	89.70	358.70	5,884.1	3,785.6	620.6	3,835.0	0.00	0.00	0.00	
10,000.0	89.70	358.70	5,884.3	3,835.6	619.5	3,884.3	0.00	0.00	0.00	
10,050.0	89.70	358.70	5,884.6	3,885.6	618.3	3,933.7	0.00	0.00	0.00	
10,100.0	89.70	358.70	5,884.8	3,935.6	617.2	3,983.1	0.00	0.00	0.00	
10,150.0	89.70	358.70	5,885.1	3,985.6	616.1	4,032.4	0.00	0.00	0.00	
10,200.0	89.70	358.70	5,885.4	4,035.6	614.9	4,081.8	0.00	0.00	0.00	
10,250.0	89.70	358.70	5,885.6	4,085.6	613.8	4,131.1	0.00	0.00	0.00	
10,300.0	89.70	358.70	5,885.9	4,135.6	612.7	4,180.5	0.00	0.00	0.00	
10,350.0	89.70	358.70	5,886.1	4,185.5	611.5	4,229.9	0.00	0.00	0.00	
10,400.0	89.70	358.70	5,886.4	4,235.5	610.4	4,279.2	0.00	0.00	0.00	
10,450.0	89.70	358.70	5,886.7	4,285.5	609.3	4,328.6	0.00	0.00	0.00	
10,500.0	89.70	358.70	5,886.9	4,335.5	608.1	4,377.9	0.00	0.00	0.00	
10,550.0	89.70	358.70	5,887.2	4,385.5	607.0	4,427.3	0.00	0.00	0.00	
10,552.1	89.70	358.70	5,887.2	4,387.5	606.9	4,429.3	0.00	0.00	0.00	
TD at 10552.1 - Greyson LD28-753 BHL 330'FNL, 2420'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										
Greyson LD28-753 BHL	0.00	0.00	5,887.2	4,387.5	606.9	1,512,386.17	3,451,793.75	40.728490	-103.869830	
- plan hits target center										
- Point										

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
6,228.0	5,855.7	7" Casing @ 6228.0' MD	7	8-3/4	



# Noble Energy Inc

## Planning Report

<b>Database:</b>	EDM01P	<b>Local Co-ordinate Reference:</b>	Well Greyson LD28-753
<b>Company:</b>	Northern Region Drilling - Working	<b>TVD Reference:</b>	WELL @ 4877.0ft (Original Well Elev)
<b>Project:</b>	Wattenberg Field	<b>MD Reference:</b>	WELL @ 4877.0ft (Original Well Elev)
<b>Site:</b>	LD (09N-58W)	<b>North Reference:</b>	Grid
<b>Well:</b>	Greyson LD28-753	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Drilling		
<b>Design:</b>	APD - Rev 0		

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,417.8	2,401.0	PIERRE		0.00	
3,354.6	3,319.0	PARKMAN		0.00	
4,043.4	3,994.0	SUSSEX		0.00	
4,512.8	4,454.0	SHANNON		0.00	
5,106.7	5,036.0	TEEPEE BUTTES		0.00	
5,879.9	5,729.0	SHARON SPRINGS		0.00	
5,915.2	5,750.0	NIO A CHALK		0.00	
5,965.4	5,777.0	NIO A MARL		0.00	
6,121.4	5,837.0	NIO B CHALK		0.00	
6,684.2	5,867.0	NIO B MARL		0.00	

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
1,200.0	1,200.0	0.0	0.0	KOP - Start Build 2.00	
5,202.7	5,130.0	-456.1	583.8	Start DLS 9.78 TFO 18.54	
5,246.7	5,172.8	-462.9	591.6	Start DLS 9.78 TFO -134.29	
6,228.0	5,855.7	65.0	705.0	Start 50.0 hold at 6228.0 MD	
6,278.0	5,860.1	114.8	703.9	Start Build 4.00	
10,552.1	5,887.2	4,387.5	606.9	TD at 10552.1	

# **Northern Region Drilling - Working**

**Wattenberg Field**

**LD (09N-58W)**

**Greyson LD28-753**

**Original Drilling**

**APD - Rev 0**

## **Anticollision Summary Report**

**05 March, 2015**

**Noble Energy Inc**  
Anticollision Summary Report

<b>Company:</b>	Northern Region Drilling - Working	<b>Local Co-ordinate Reference:</b>	Well Greyson LD28-753
<b>Project:</b>	Wattenberg Field	<b>TVD Reference:</b>	WELL @ 4877.0ft (Original Well Elev)
<b>Reference Site:</b>	LD (09N-58W)	<b>MD Reference:</b>	WELL @ 4877.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Greyson LD28-753	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Original Drilling	<b>Database:</b>	EDM01P
<b>Reference Design:</b>	APD - Rev 0	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	APD - Rev 0		
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
<b>Interpolation Method:</b>	MD Interval 100.0ft	<b>Error Model:</b>	ISCWSA
<b>Depth Range:</b>	Unlimited	<b>Scan Method:</b>	Closest Approach 3D
<b>Results Limited by:</b>	Maximum center-center distance of 10,000.0 ft	<b>Error Surface:</b>	Elliptical Conic
<b>Warning Levels Evaluated at:</b>	2.00 Sigma	<b>Casing Method:</b>	Not applied

<b>Survey Tool Program</b>	<b>Date</b>	3/5/2015		
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.0	10,551.1	APD - Rev 0 (Original Drilling)	MWD	MWD - Standard

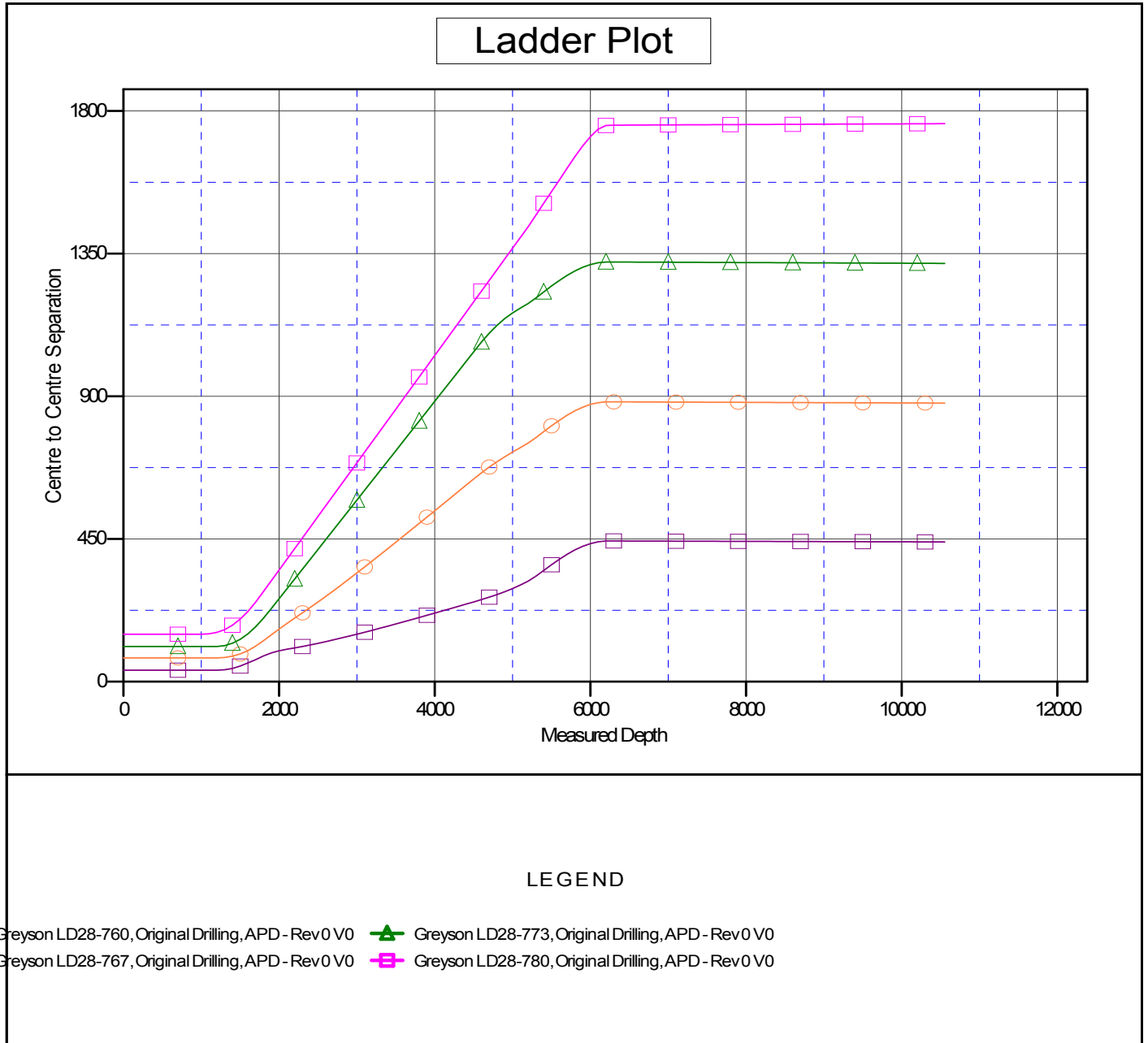
<b>Summary</b>						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
<b>Offset Well - Wellbore - Design</b>						
LD (09N-58W)						
Greyson LD28-760 - Original Drilling - APD - Rev 0	1,200.0	1,201.0	36.0	30.9	7.041	CC, ES
Greyson LD28-760 - Original Drilling - APD - Rev 0	10,552.1	10,551.4	440.7	264.7	2.504	SF
Greyson LD28-767 - Original Drilling - APD - Rev 0	1,200.0	1,201.0	74.8	69.7	14.625	CC, ES
Greyson LD28-767 - Original Drilling - APD - Rev 0	10,552.1	10,545.0	878.6	702.8	4.995	SF
Greyson LD28-773 - Original Drilling - APD - Rev 0	1,166.0	1,168.0	110.9	105.9	22.323	CC
Greyson LD28-773 - Original Drilling - APD - Rev 0	1,200.0	1,201.9	110.9	105.8	21.659	ES
Greyson LD28-773 - Original Drilling - APD - Rev 0	10,552.1	10,574.8	1,319.3	1,143.8	7.516	SF
Greyson LD28-780 - Original Drilling - APD - Rev 0	966.0	968.0	149.7	145.6	36.796	CC
Greyson LD28-780 - Original Drilling - APD - Rev 0	1,000.0	1,000.0	149.7	145.5	35.504	ES
Greyson LD28-780 - Original Drilling - APD - Rev 0	10,552.1	10,591.3	1,760.1	1,585.7	10.095	SF

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<b>Reference Well:</b>	Greyson LD28-753	<b>Survey Calculation Method:</b>	Minimum Curvature
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<b>Reference Wellbore</b>	Original Drilling	<b>Database:</b>	EDM01P
<b>Reference Design:</b>	APD - Rev 0	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4877.0ft (Original Well Elev)  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.500000

Coordinates are relative to: Greyson LD28-753  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 1.05°



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