



# HDD employed by McCormack Drilling to complete 'River Crossing'

McCormack Drilling recently completed the installation of two new 450mm diameter water main carrier pipes under the River Strule near Newtownstewart in Co Tyrone by means of Horizontal Directional Drilling (HDD)

Established over 40 years ago, McCormack Drilling is a market leader in the use of the technology using innovative solutions to provide trenchless crossings throughout the UK & Ireland.

HDD is a 'no-dig' technique used to install pipelines and conduits across large waterways or roadways and in areas where traditional open-cut trenching techniques can compromise the environment. Typically, a surface launched drilling rig is set up on one side of the crossing and a pilot hole is drilled along a predetermined drill path under the obstacle. Having completed the pilot hole, the hole is reamed to the required diameter before the fabricated pipeline is pulled into position. Common uses are pipelines for telecommunications and power cable conduits, water lines, sewer lines, gas and oil lines, product pipelines and environmental remediation casings.

## Understanding Geology

Soil and local geology provide the biggest challenge to successful operation. Greg McCormack

explains 'Even with the vast amount of specialist equipment we deploy on our sites key to success is our initial survey and geological assessment. What we find in the first stages of a job determines which of our specialist rigs and recycling systems we deploy. That way we always complete to the satisfaction of our customers. The geological data for the River Strule indicated that rock and large boulders were present along the proposed bore route. Conventionally this would be impractical for HDD however in the design and feasibility stage we considered some innovative ideas which made the crossing possible'

## Innovation Key to Success

Using their American Augers DD140 and their Mincon 60 Air Hammer to pilot bore, itself a unique innovation in HDD techniques, McCormack Drilling designed a special drill profile for each bore using AutoCAD 3D Civils software. A Digitrak guidance system was used to display the drill head location and control drilling direction giving a "real-time" bird's-eye view.

Critically both pilot bores were completed with three metres lateral separation maintained and a depth of cover of between two and three metres. After a three staged reaming of the pilot holes the final diameter of 650mm was completed and the final pipe was pulled through in a total of five hours. To finish the job their American Augers machine, a DD8, was used to insert the 250mm water main into the 450mm carrier pipe.

## Environmental Responsibility

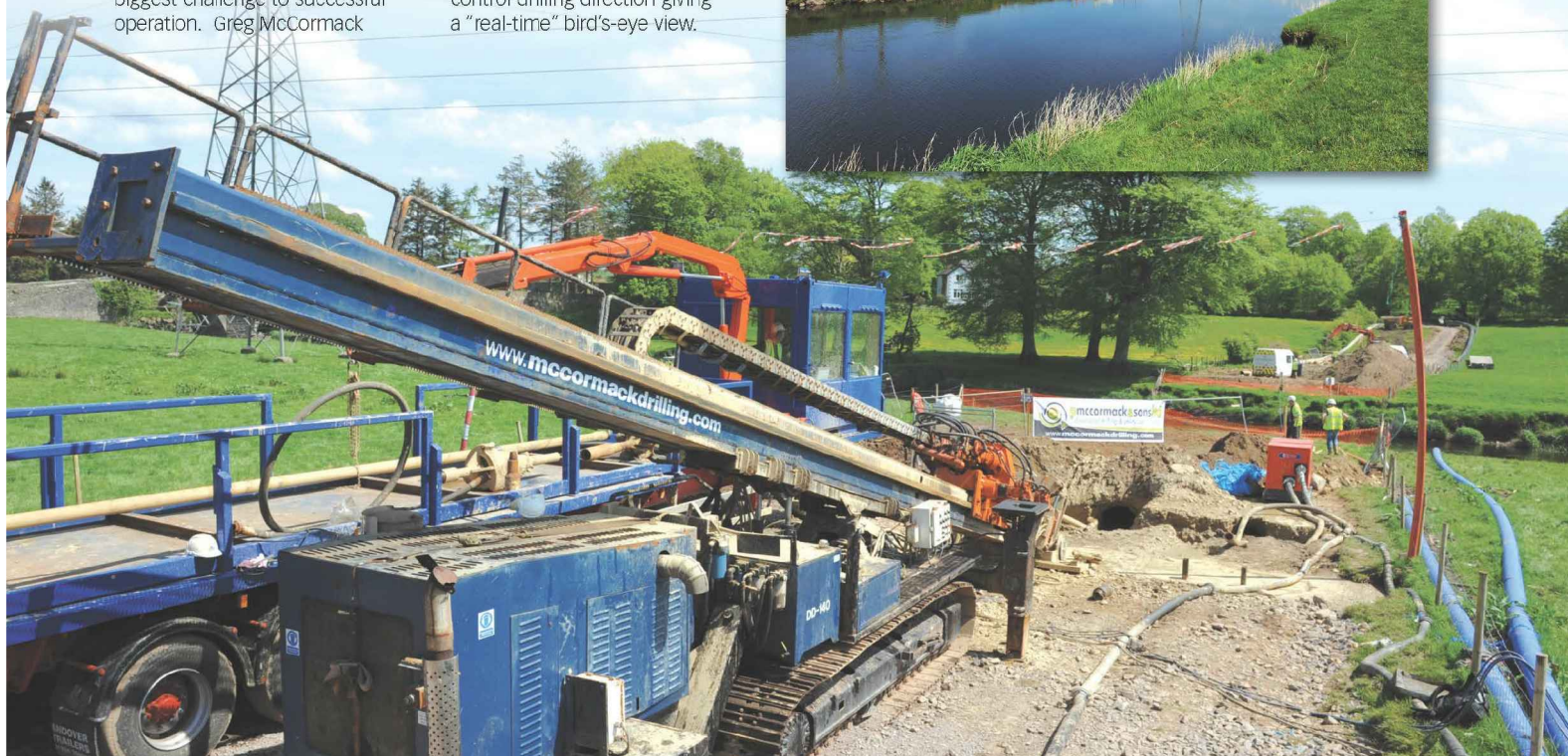
In addition to HDD having a minimal environmental impact McCormack Drilling believes it is essential to always consider

the process itself and practices drill fluid recycling on every job to minimise waste and eliminate harmful effects on the environment. McCormack Drilling use a dedicated Tri-Flo 500 mobile recycling plant to filter, clean and re-use the fluids which are essential to HDD and have their own drill fluid specialist engineers to undertake the process.

The HDD operation crossing the River Strule adjacent to Moyle Bridge was led by McCormack Drilling as part of a scheme by Northern Ireland Water to replace the existing 6" spun iron pipe line and is the second of three major river crossings involving Lagan Construction, Campbell Contracts and McCormack Drilling.



The River Strule near Newtownstewart



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