SPRINGVALE RECYCLED WATER HDD

OIL/GAS | SEWER | STORMWATER | POWER | **WATER** | **TELCO**

PROJECT OVERVIEW

Due to the requirement to provide water to an important industrial area of the Blue Mountains in New South Wales, UEA was engaged to install a number of significant HDD crossings as a part of the pipeline construction.

LOCATION
Lisdale NSW

CLIENT
Private

PIPE
710mm PE112 SDR 8.2 HDPE & 2 x 63mm PE100 SDR 11

GEOLOGY
Sandstone & siltstone

LENGTH
920 metres

TECHNIQUE
HDD

SCOPE OF WORKS

UEA completed the construction of parallel bores, both 920 metres long with 1,500 mm of separation. The first bore was for a 710mm water main, and the second bore housed two 63mm communication lines. The bores ran adjacent to a coal conveyor belt and crossed under the Castlereagh Highway, the Cox's River and a railway line.

Due to the distance, hole volume and likely rock ground conditions, UEA utilised the Gallagher 660 drill rig to undertake both bores. UEA's in-house team developed a bore design so that the underbore would predominantly remain within the sandstone and siltstone rock layers along the alignment.

CHALLENGES

UEA developed the bore design for both client and RMS approval as the bores crossed a highway, river and railway. The design had to adhere to certain limitations, such as being located well underneath the piles at the bridge on Castlereagh Highway, while ensuring the bore was within the pre-determined easement. Due to design limitations and minimal space at the entry of the HDD, UEA proposed that space between the water pipe and communication line bore be a minimum of 1.5 metres. Where separation between the two bores could not be maintained horizontally, the communications bore achieved a vertical separation by increasing the depth while also remaining within the easement. Due to varying surface levels and various

specific site restrictions, a wireline system was employed to track the underbores. The use of a wireline system allowed the drill head to be tracked to a depth of 30 metres, while minimising the interaction between the HDD crew and live traffic (both vehicular and freight trains) and waterways.

As the project was completed during winter, UEA had to continually work through subzero temperatures. These temperatures introduced a new challenge, requiring the HDD crew to develop new methods to maintain the equipment while reducing any downtime from icing – a rare occurrence in Australian conditions.

COMPLETION

The two pipelines were installed successfully and within the allocated time. This included the submission of all quality assurance documentation (work as executed drawings, NATA accredited hydrostatic testing and weld testing reports) for the commissioning of this section of the pipeline. As a result, UEA was asked to design and install two further bores as part of the project.