

Customer: United Utilities

Contractor: Balfour Beatty Civil Engineering

Project: Vyrnwy Pipeline Refurbishment

Location: Oswestry to new Crickett trunk main, Shropshire/Cheshire

Date: Summer 2011

HDPE:

- 1.5km (4,291 feet) of 1014mm (40") SDR 51
- 16km (52,493 feet) of 1030mm (40.5") SDR

Technology: Swagelining

Background Information

Radius were involved in part of the refurbishment of the Vyrnwy Large Diameter Trunk Main. The 130 year old cast iron main consists of 3 parallel pipelines totalling 240km. Water is transported from Lake Vyrnwy via this large main to supply 210 million litres of water a day to 900,000 people in Cheshire and Merseyside.

Brief Description



- Radius have been involved in phase one of United Utilities' project refurbishing 18km of pipe between Oswestry and New Crickett which had, over the years, built up deposits of iron.

- Being involved from concept right through to pre-assembly and insertion stages, Radius had an in-depth understanding of the requirements and constraints of the project.

- Radius provided a tailor-made pipe solution to meet the requirements of the project. 17.5km of SDR 51 Dark Blue PE 100 was supplied in both 1014 and 1030mm diameters in 13.5 and 15m lengths as an alternative to the standard 12m.



- The unique 1014 and 1030mm SDR 51 pipes provided ideal solutions for Swagelining, offering both a large diameter and a thin wall without compromising on pipe integrity or capacity.





- The flexible PE 100 pipes were installed using the Swagelining technique. The PE liner was drawn through a specialist machine, temporarily reducing the pipe diameter in order to insert it into the iron host main. The visco-elastic properties of PE meant that natural relaxation enabled the pipe to revert back to its original size.

- Radius was able to offer a unique solution supplying pipes which were bespoke to this project in terms of diameter, SDR and length.



- By supplying the pipe in 13.5 and 15m lengths, the number of butt fusion welds was reduced by 11% and the carbon footprint cut by 42 lorries.

- Radius' SUPER recycling scheme was able to remove and recycle any PE off-cuts and butt fusion shavings created in the process. Pipe end protector bags were also re-used to collect the PE waste for collection.

“ Through early engagement with Radius we were able to work with them to develop a bespoke PE pipe solution to meet the design specification of the Swagelining technique. The existing pipeline is rural in nature and Radius was able to help determine the most suitable transportation routes to and from site, minimising our impact on the local communities but at the same time maximising pipe length deliveries. ”

Mike Holme
Project Manager
United Utilities

