

SYNTHO-GLASS[®] XT

PIPELINE REINFORCEMENT AND REPAIR



Problem

This 900 psi (62 bar), 12" OD petroleum transmission line which lies beneath the Magdalena River in Columbia was showing signs of substantial wall loss over a 42" (1 m) area at a bolted flange.

Conditions

Mobilization of men and material to the jobsite was a concern, as the line was located more than a half mile (800 m) into the river. The men carried the materials to the jobsite while walking on top of the pipe since the bordering zone was underwater or in mud up to 3' (1 m) deep. The team was forced to use sandbags to form a temporary dam around the section of pipe, thus gaining access around the flange.

Solution

In order to promote adhesion, the pipe was prepared using the MBX Bristle Blaster to remove rust, paint, and other foreign matter, while providing a good anchor profile, then cleaned using a solvent wipe. Pits were filled using the Syntho-Poxy[™] HC load transfer epoxy putty, then the entire repair area was coated with Syntho-SubSea[™] LV, a high compression strength, two-part, Kevlar[®] reinforced epoxy. The two-part epoxy stopped the corrosion and provided a load transfer median engineered to cycle and work with the 900 psi (62 bar) line. The line was then wrapped with 12 layers of Syntho-Glass[®] XT, a 54,000 psi (3,723 bar) tensile strength fiberglass composite sleeve, which provides structural integrity to the pipe-line.

Result

A repair that could have otherwise taken weeks was completed inexpensively in less than one day. The Syntho-Glass[®] XT composite system fully restored the pipe's strength to enable operations at full MAOP of 900 psi (62 bar).



©Neptune Research Inc. (NRI) NRI[®] and Syntho-Glass[®] XT are registered trademarks of NRI. Syntho-Poxy[™] HC and Syntho-SubSea[™] LV are trademarks of NRI. Kevlar[®] is a registered trademark of E.I. du Pont de Nemours and Company. Please contact your local NRI distributor or office for the most current product specifications. User shall determine suitability of product for use and assumes all risk. XT CS 1211

NRI
Innovative Composite Solutions