

SYNTHO-GLOSS®

NATURAL GAS PIPELINE REPAIR



Problem

Water bubbling in the middle of the Indian River in Florida was the first sign of a natural gas pipeline leak that challenged contractors to find an innovative way to make an underwater repair. The leaking line, installed around 1965, runs beneath the Indian River, a manatee-protected waterway.

Conditions

Lying beneath 15 feet of water and 3 feet of sediment in a sensitive river environment, the concrete-coated steel pipeline presented a host of challenges to the gas company and their contractor. The line served 16,000 customers on Cape Canaveral and Merritt Island. The diving crews found a six-inch clamp installed over a leak where the line had been patched once before. The company considered and rejected three options for the repair:

Cutting out and replacing a section of the pipe. Drawbacks were the possibility of introducing brine, a mixture of fresh and salty river water, into the pipeline, and the risk of leaking compressor oil and other unwanted materials into the river.

Repairing the clamp. The leak could not be inspected unless the line was opened up, which also could unleash unwanted products. Special ordering a new clamp could take weeks for delivery.

Completely replacing the pipeline. To perform a directional drill beneath the river bed and install 6-inch pipe would cost \$1.2 million.

After much research, it was decided that the leak would be the ideal opportunity to utilize Syntho-Glass®. Syntho-Glass, which is used in conjunction with an underwater Kevlar® reinforced epoxy, can be used to strengthen steel, iron, cement and even wood.

Solution

Divers spent two days excavating a 30-foot-long by 6-feet-deep by 2-feet-wide hole around the leaking pipe. The divers removed the pipe's cement coating and cleaned the area to find the clamp and the 2-inch blow-down valve facing downwards instead of up. The pipe was in good condition but the leak was equivalent to a 3/4-inch open line. Gas was leaking from both sides of the clamp and from the 2-inch blow-down.

The pressure in the 60 psi (4 bar) line was lowered and equalized at 15 psi (1 bar), which was maintained so water would not enter the line. The divers first applied Syntho-SubSea™ Epoxy, a two-part Kevlar-reinforced epoxy, which took approximately two hours. Over the next two days, the divers applied an eight layer application of Syntho-Glass along the entire length of the 30-foot repair area, effectively building a composite sleeve around the pipe.

Result

The project was completed successfully at a cost of just \$60,000, with no interruption of service for their 16,000 customers.

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