Composite Solution Replaces Damaged Casing Spacers

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United States

Pipe Details

- N/A

Summary

- Spacers were needed to replace original spacers that had corroded and failed to stay in place
- The line was under 975 psi (67.2 bar) pressure
- A trained team of Clock Spring technicians carried out repairs in approximately four days.
- The repair restored the pipeline to safe service without interrupting operations.
- The installation of the Clock Spring Spacers allowed the company to meet its safety objectives

When inspection revealed that spacers had failed to stay in place on an encased pipeline under a highway, they immediately looked for a way to address the problem. An evaluation of the situation revealed that the pipe defect had occurred during initial placement, when spacers failed to stay in place when the pipe was pulled into place. This discovery led to a decision to replace the damaged section of line with new pipe.

Closer inspection showed that the line, which was operating under 975 psi (67.2 bar) of pressure, had extensive corrosion over a length of pipe that included a number of girth welds. The presence of the welded joints in the damaged area made the repair particularly critical. The welds, which connected two pipes joined along their circumference, required a repair that would ensure reliable joint strength was achieved and maintained during service.

Clock Springs pre-installed on pipe sections

Casing Spacers at girth weld joint

The existing pipeline was cut and pulled through the casing for removal. When the team inspected the pipe, they found that nearly all the existing casing spacers were broken, and there was significant corrosion at the bolts. Many of the spacers were so damaged that they failed to hold during pipe removal.

To address the problem, the team cut the Clock Spring composite repair sleeve to 5.5-inch (~14 cm) widths and applied the product as casing spacers to provide protection for the girth welds and pipeline during installation.

In advance of the new pipeline installation, the team installed 57 Clock Spring units, spaced 12 feet (~3.7 m) apart on the new pipe sections. This work was executed in a span of eight hours.

The pipe sections were assembled on site. The pipe resting on temporary supports were elevated above the ground before the line pull. Each location was marked for the units to be installed, which a three-man crew installed the units averaging 10 minutes.

The Clock Spring units cured and are ready to pulled within an hour after the installation. Welders can weld with pipe elevated. Can be pulled through the line in an hour.

The entire pipeline replacement took approximately four days.

Spacers from old pipe, failed to stay in place when pipe removed, with corrosion

Before

After

After

There are nearly 3,000 trained Clock Spring installers around the world who are qualified to provide repairs with Clock Spring products. Clock Spring regularly offers training classes for installers and can custom design training for individual company needs.