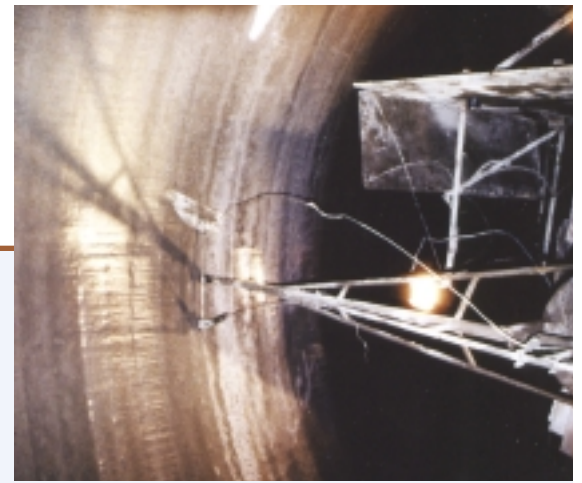


The crew applies the cement mortar lining to the inside of the 184"-diameter pipeline. ▶



Pipeline Rehab Survives the Elements

Projects rarely are easy. However, throw in a remote site, steep siphon, a limited number of access points, harsh winter conditions and environmental concerns and you have a daunting project. This was the task facing Spiniello Companies' Western Division who were asked to save 8,800' of 184"-diameter pipeline.

- Some of the pipe was suspended on rollers and piers at 120' apart.
- The job had to be completed between November and March, and harsh winters can take their toll both on the pipe and on the crew.

At Risk

Ninety-five thousand acres of irrigated farmland and orchards in the state of Washington served by the Wahluke Branch Canal Siphon was at risk. This system of regulating reservoirs, canals and pipelines has been supplying eastern Washington since the 1950s. However, when the South Columbia Basin Irrigation District (SCBID) built this monumental project to protect the farming community, deterioration from rust and the astronomical cost of replacing it were never considered.

The Solution

To the engineers of Kennewick, Wash., there seemed to be only one answer: remove the old rusted liner coating and replace it "in-place" with a centrifugally applied cement mortar lining. The study from Tetra Tech/KCM Engineers said that it was imperative to save the investment made by SCBID, but a number of factors made this project particularly difficult.

- 2,474 of the 8,800 linear feet of pipe were elevated 20'-25' off the ground.

Stage One

The first step consisted of removing all the old coating on both parts of the Siphon and vacuum it from the inside of the steel pipe. A portion of the steel pipe originally was coated with black coal tar mastic and after a period of 40 years, the coating failed and the pipe rusted severely.

The first attack was made by large chipping guns. The guns worked like air-operated chisels, removing the old liner materials. The guns were followed by sandblasting machines that scoured the insides of the pipe to a bright metal finish. The same process was applied to the remaining 2,474' of elevated piping.

Stage Two

The next step was installing the new lining. Chuck Garbe, director of marketing and sales at Spiniello, describes the new cement mortar lining inside the pipe surface as one that creates a chemical shield that permanently prevents rust from forming between the lining and the pipe.

"Severe winter conditions and elevated portions of the pipeline set this project apart

from standard rehabilitation projects," Spiniello owners Gary Stivaly and Emil Solimine said. "A design change in the lining equipment allowed us to work from each end instead of through the manholes along the pipe."

The trenchless technique produced outstanding results in these adverse conditions. The contractor was able to improvise as the jobsite conditions dictated.

For more information on this subject, circle 861 on the reader service card.



▶ Portions of the 8,800' pipeline were elevated 20'-25', making this project particularly challenging. ▶

