



BEFORE



PREPARATION

Repair one half mile section of a 78 year old, unlined steel transmission pipeline for potable water

TRENCHLESS POTABLE WATER PIPELINE REPAIR

A solution to stop corrosion and repairs the structural integrity of steel transmission pipeline.

Water treatment and distribution products in North America are required to comply with NSF/ANSI 61 standard by most governmental agencies that regulate drinking water supplies. Rhino Linings® trenchless lining system provides a cost-effective pipeline repair solution that meets NSF standards with limited disruption to surrounding neighborhoods.

Challenge

In 2011, Tacoma Water embarked on a project to rehabilitate a leaking, unlined, one half mile section of its steel transmission Pipeline No. 2 that was installed in 1936. The pipeline carries potable water to the City of Tacoma from the main supply reservoirs located in Puyallup, Washington.

The number of services directly connected to Pipeline No. 2 in the section identified for rehabilitation complicated the project. The city needed an affordable solution that would provide a long-term fix for the leaks in the least amount of time possible with the least impact on the surrounding businesses and residences.

Solution

Tacoma Water chose to rehabilitate Pipeline No. 2 by having a contractor, Quest-Inspar, install a Spray-In-Place pipe within the existing 58-inch interior diameter pipe using Pipeliner 5000 11-70 PW, a polyurea/polyurethane that complies with NSF/ANSI-61 Potable Water Standard.

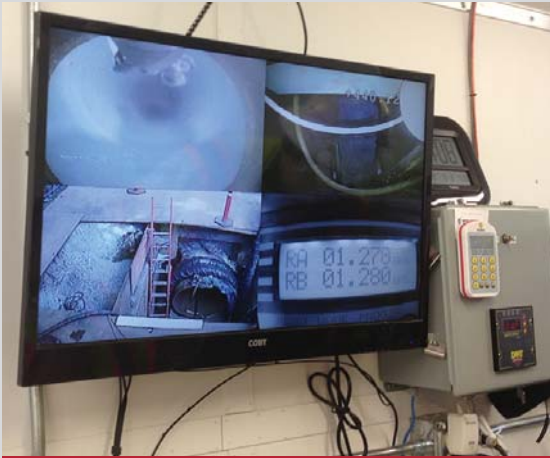
Applied correctly, at a minimum thickness, Pipeliner 5000 11-70 PW forms a water-tight polyurea/polyurethane pipe within the transmission pipeline to span known and unknown leaks. Pipeliner 5000 11-70 PW has a robust application window and can be sprayed at low temperatures and high humidity, which can be beneficial when repairing pipelines.

Pipeliner 5000 11-70 PW is tack-free in 5 to 7 seconds and provides structural support in addition to lining the pipe. In a field test of a lined section of pipe with a 1 inch by 6 inch section of the pipe removed, the liner withstood more than 200 psi without cracking.

Pipeline No. 2 was dewatered and inspected to assess its condition. The general contractor had to apply 30 steel patches to seal leaks. Next, the pipe was cleaned to remove all loose deposits to the standards of SSPC-SP6 (Commercial Blast Cleaning).

Pipeliner 5000 11-70 PW was spray applied using a robotic spray head at 350 to 400 mils thick, or almost $\frac{3}{8}$ of an inch, in a single pass without stress cracking.

Call 800-422-2603, or visit rhinoliningsindustrial.com to learn more about becoming a Rhino Linings applicator.



PREPARATION



PREPARATION



AFTER

Results

The pipe was dewatered and inspected in May 2014, 6 months after the lining installation. Tacoma Water is very pleased with the project and especially satisfied with the Rhino Linings® product used to create a spray-applied, semi-structural, polyurea/polyurethane liner for the rehabilitation of a large-diameter potable-water pipeline.

The newly created pipe is classified as a Class III – Semi-Structural Lining by American Water Works Association Manual M28. The entire project was completed in four weeks with minimal disturbance to the surrounding businesses and residences.

Tacoma Water expects the newly created plastic pipe to serve its purpose for at least 50 years even though the material itself will last longer.

More About Rhino Linings Products Used:

Pipeliner 5000 11-70 PW is a two-component, 1:1 ratio polyurea/polyurethane product formulated with high physical properties including tensile, tear and compressive strength. It can be spray applied using a robotic spray system, a high-pressure one-to-one machine or RhinoPro™ cartridge gun for touch ups and repairs after a pipe has been lined.

Specifically designed for potable water applications, Pipeliner 5000 has passed the rigorous testing requirements of the NSF/ANSI-61 Section 5 (2012) potable water standard and is Truesdail Laboratories listed.



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