

Wilson, Okla., Water Storage Tank Project



Location: Wilson, Okla.
 Owner: City of Wilson, Okla.
 Designer: WT Energy
 Contractors: WT Energy, Raven Lining Systems
 Manufacturer: Raven Lining Systems
 Cost: \$140,000
 Size: 20,000 sq ft

The city of Wilson, Okla., employs four 80,000-gal underground tanks to store its potable water, which is supplied from wells. The original concrete storage tanks were built in the 1930s.

Two of the tanks had deteriorated, with cracks, leaks and exposed rebar, and needed to be either repaired or replaced. One of the tanks was in such poor condition that it was put completely out of service, requiring Wilson to purchase water from neighboring cities at a cost of \$4,000 per month. It was determined that replacing the tanks would cost \$1.4 million, while a repair would cost only \$140,000.

Due to the hard well water, a thick layer of calcite had built up on the tanks over time and had to be removed before they could be rehabilitated. To prepare the surface, grit blasting was performed, removing the calcite and loosening the concrete. The walls then were repaired using a cementitious material

to repair the extensive deterioration.

During the project, temperatures fluctuated between 20°F and 50°F. Because of the cold temperatures, a coating system engineered to be applied and cured in a cold environment was required. The tanks were primed with Raven 171FS concrete epoxy primer to reduce out-gassing. The tanks then were lined with AquataFlex 510. To ensure a monolithic lining, WT Energy performed a spark test to identify flaws and make necessary repairs. The project was completed in March 2015.

"Thanks to WT Energy and Raven Lining Systems, the city of Wilson was able to repair the tanks for \$140,000, which was a \$1.26 million savings for the city," said Frank Schaaf, mayor of Wilson. "On top of this capital savings, the town will be able to realize an additional \$480,000 savings over the next 10 years by not having to purchase as much water from a neighboring town to meet the city of Wilson's potable water demand." 