Tank Roof Rehabilitations Ensure TCEQ Compliance
Abilene, Texas

The City of Abilene, Texas (City) is located approximately 150 miles west of Fort Worth and was described as the “Future Great City of West Texas” when it was founded in 1881. Abilene has a historic past that includes the Texas and Pacific Railway and Dyess Air Force Base; it has since evolved into a regional center for distribution, commerce, industry, transportation and education. As the City’s economy has flourished over the years, the water quality standards for the City has also progressed.

The City of Abilene operates several reinforced concrete water tanks in their system constructed in the 1940’s. Due to the age, the tanks were in need of rehabilitation in order to comply with current standards. One of the major issues was a lack of sufficient slope in the roof that resulted in ponding water to accumulate on the roof after rain events. Ponding water on the tank roof creates additional loading and can potentially allow for contaminated rain water to enter the tank which can negatively affect the water quality. In addition, the roof access hatches and vents were in very poor condition and required replacement to meet Texas Commission on Environmental Quality (TCEQ) standards. DN Tanks Concrete Tank Services (CTS) was contracted to rehabilitate these tanks due to extensive expertise on concrete tank rehabilitation and retrofits.

The first phase of the tank upgrades was to remove the existing roof hatches and install new concrete curbs. This allowed for larger, locking, TCEQ compliant aluminum hatches to be installed on each of the tank roofs. In order to reduce the ponding water on the roofs, a procedure was developed to first identify the low areas and then fill these areas to provide positive drainage from the center of the tank to the outside edge. After the work was completed, the roofs were flooded again to confirm the repairs provided the desired result.

DN Tanks CTS remobilized to the site to complete the second phase of the tank rehabilitation which included the application of a three component waterproof, urethane coating system. This coating system was installed to help shed rainwater and sealed all minor hairline cracks preventing any contaminated water from permeating into the tank. It also provided a more uniform appearance for the roof after the rehabilitation work was completed.

The City of Abilene, Texas now has multiple 70 year old concrete water storage tanks that are TCEQ compliant and will effectively be in service for many years to come.