

## News Release

ACEC of Arizona recently honored the City of Phoenix and their prime consultant, CSA Engineering, with the Grand Award for Engineering Excellence in the category of Water and Wastewater. The \$3,000,000 - 91<sup>st</sup> Avenue Wastewater Treatment Plant Chlorination Improvements Project, involved a major upgrade of the chlorine disinfection system used to destroy harmful bacteria and viruses in the final treatment of sewage.

In addition to the chlorine equipment upgrades, much of the 75,000 plus feet of 1 ½ to 3-inch carbon steel and PVC piping was evaluated through an extensive testing program to determine material degradation and life-cycle structural integrity. This testing and evaluation resulted in considerable savings to the overall project cost by determining the pipe's longer material life span than what had been originally assumed. Other aspects included the determination of piping and equipment layout to enhance operational safety and accessibility.

During the construction phase, a need to convert the facility chlorine bulk storage to a one-ton chlorine cylinder system was identified. The conversion involved the replacement of four 20-ton liquid chlorine storage tanks and two 17-ton trucks to a one-ton system. This major conversion was implemented while maintaining continuous plant operation.

Several non-structural issues were addressed including cost and the development of a complex construction sequencing process that would allow for the continuous disinfection needs of the plant while incorporating all the safe handling procedures inherent with chlorine, a hazardous material. Other city operated treatment plant chlorine system upgrades had been identified for future work and because this project represented the first of several to follow, equipment costs and installation procedures measured in quantifiable units was an important factor for identifying future cost savings. Several new design standards were subsequently implemented for use at other treatment plants.

The significance of this project was underscored by the role that the 91<sup>st</sup> Avenue Plant plays as the major sewage treatment facility for the metropolitan area, which treats sewage from the City's of Scottsdale, Mesa, Tempe, Glendale, Peoria, including the City of Phoenix. The plant's, 180 million gallons per day treatment capability serves a population equivalent of greater than two million residents.

Determination of longer piping life and other system layout improvements will save millions of dollars in future capital improvement expenses and institute safer operations resulting in greater occupational safety.

For more information on this project or on how CSA can assist you with your future projects, contact Mr. Peter Chan (602) 454-9100 or you can visit our website at [www.csaei.com](http://www.csaei.com).