

# SOUTH SURPRISE WASTEWATER FACILITY

In the western Phoenix suburbs, the City of Surprise, Arizona was incorporated in 1960 with a population of 1,000. By the year 2000, the population had flourished to 30,848. With this explosive growth came the need for expanded water and wastewater facilities. The original wastewater treatment plant had to be enlarged not once but twice.

The new Plant III 4.0 MGD Expansion Facility design was completed in December 2001. City Water Services Director Richard Williams, Sr. knew he had to provide corrosion protection for tons of new concrete. Drawing on past experience with a Tnemec coatings system for Plants I and II, it was logical for him to turn to local Tnemec coating consultant Joe Keilbey for counsel. For the Plant III expansion, the wastewater bearing structures included the influent pumping wet well, influent channels, grit chamber and RAS/WAS pumping wet well.

For all concrete surfaces exposed to hydrogen sulfide (H<sub>2</sub>S) gas, Keilbey specified a three-coat system of Series 218 MortarClad (for patching the concrete), Series 434 Perma-Shield H<sub>2</sub>S at 1/8 inch DFT, and a topcoat of Series 435 Perma-Glaze at 15 mils DFT. "With extensive submerged surfaces in this new plant, we had A-O Painting apply Series 434 and 435 — a modified polyamine epoxy mortar system — because these extremely durable linings provide superior resistance to H<sub>2</sub>S permeation in wastewater immersion environments," Keilbey said. Williams was impressed with Tnemec's reliable performance and coatings system. "These areas have been in service and performing well since 2001," he said.

## FEATURED PRODUCTS

- Series N69 Hi-Build Epoxoline II
- Series 218 MortarClad
- Series 434 Perma-Shield H<sub>2</sub>S
- Series 435 Perma-Glaze
- Series 1074 Endura-Shield II



## PROJECT INFORMATION

**Project Location**  
Surprise, Arizona

**Project Completion Date**  
December 2001

**Owner**  
City of Surprise

**Architect / Engineer**  
R.T. Engineers International - Phoenix, Arizona

**Fabricator / Applicator**  
A-O Painting, Inc. - Tucson, Arizona

For the Surprise, Ariz. 4.0 MGD Plant III Modular Expansion Project, Tnemec specified a thick film polyamine epoxy mortar system specially designed to resist the MIC and H<sub>2</sub>S environments found in treatment plants.

