

91ST AVE. WASTEWATER TREATMENT PLANT

For nearly half a century, the 91st Avenue Wastewater Treatment Plant (WWTP) has relied on just about every product in Tnemec's arsenal of protective coatings. "This is the largest wastewater treatment plant in Arizona and it has used a significant amount of our coatings since it opened," according to Tnemec coating consultant Joe Keilbey. "We've been providing coatings for projects constantly there prior to 1985. At this facility they've probably used 90 percent of the coatings that Tnemec manufactures. Currently Tnemec coatings are being applied at the Unified Plant 2001 (UP01) and Unified Plant 2005 (UP05) areas."

The plant disinfects wastewater from residential and business sources through a series of physical, biological and chemical treatment operations that include grit removal, sedimentation, aeration, clarification, disinfection and dechlorination. Among the diverse coatings applied throughout the plant's vast infrastructure are:

- Epoxy systems for lining steel lids on the plant's 24 anaerobic digesters, with their capacity for 3 million gallons of wastewater and sludge.
- Vinyl ester and aggregate-reinforced hybrid epoxy mortars for protecting concrete in headworks structures susceptible to corrosion attack, including influent channels, flow measurement facilities, bar racks and grit chambers.
- Two-component polyamide epoxies for immersion steel used in clarifier collectors, tank interiors and piping.
- Aliphatic polyurethanes for exterior exposed metals.
- StrataShield floor toppings and wall coating systems.
- Acrylics for exterior brick and masonry throughout the plant.

"Some of these coatings are used for maintenance of existing structures, but the bulk is for new construction," Keilbey noted. "As the plant keeps expanding, we go in with new coatings. There have probably been 25 or 30 additions to the plant over the past twenty-five years, including the two current projects. Tnemec is by far the preferred product out there."

The 91st Avenue Plant serves the cities of Glendale, Mesa, Phoenix, Scottsdale and Tempe that make up the Sub-Regional Operating Group (SROG). The original 5 million gallon per day (mgd) 91st Avenue WWTP was built in 1958 and later replaced with a 45 mgd plant that was subsequently expanded throughout the years. The capacity of the 91st Avenue WWTP is now 179 mgd. An addition to the plant was started in 2001 that will boost the treatment capacity from 179 mgd to 204 mgd.

FEATURED PRODUCTS

Series N69 Hi-Build Epoxoline II
Series 120 Vinester
Series 135 Chembuild
Series 151-1051 Elasto-Grip
Series 180 W.B. Tnemec-Crete
Series 218 MortarClad
Series 237 Power-Tread
Series 270 Stranlok

Series 280 Tnemec-Glaze
Series 282 Tnemec-Glaze
Series 291 CRU
Series 434 Perma-Shield H₂S
Series 435 Perma-Glaze
Series 446 Perma-Shield MCU
Series 1075 Endura-Shield II



PROJECT INFORMATION

Project Location
Tolleson, Arizona

Project Completion Date
Ongoing

Owner
City of Phoenix

Engineers
Malcolm Pirnie - Phoenix, Arizona
Black & Veatch - Phoenix, Arizona

For decades, a multitude of Tnemec high performance coatings have been used to protect the 91st Avenue Wastewater Treatment Plant in Tolleson, AZ from corrosion.

