MILLER CREEK PLANT

In July 2002 the Miller Creek Plant in Burien, WA needed to replace deteriorating components in the headworks of the plant. This entailed the installation of new stainless step screens, the replacement of the grit collection system, the repair of the primary distribution box and the addition of air blower capacity to the system. Because the Miller Creek collection system is very long, the residence time of the wastewater in the pipes causes it to become septic, therefore subjecting the headworks to severe hydrogen sulfide attack.

The Miller Creek headworks components had suffered from this exposure. The 20-year old screens had to be replaced, the grit chamber exhibited failing concrete structures and rusted mechanicals, and the concrete primary distribution box had also corroded heavily. Because the headworks could not be taken completely out of service for the project and would have to be shut down in phases, the engineering firm desired a coating system with both a short cure time and chemical resistance. In addition to meeting these two criteria, Tnemec's Series 434 Perma-Shield H2S was chosen because it would allow the contractor to trowel apply the product and reform the surface.

The concrete was power washed and abrasive blasted to remove the deteriorated concrete down to the reinforcement in some areas. Series 218 MortarClad, an epoxy modified cementitious resurfacer, was then used to repair the concrete and build up the existing surface. Next, Series 434, a modified polyamine epoxy mortar, was applied at 125 mils by trowel. According to Garri Garrison, the project manager for the painting contractor, "the epoxy mortar offers hardness and very good adhesion." Garrison has since used the system in many additional projects.

The successful application of the high-build, chemical-resistant epoxy mortar to the splitter chamber boxes was followed by the system's use throughout the vortex grit setting chamber as well. Since the project completed, the engineering firm has visually inspected the coatings. According to Evan Henke, project manager for the engineering firm, there is no sign of coating degradation and the plant workers have reported no flaking or discoloration of the system.

FEATURED PRODUCTS

Series 218 MortarClad
Series 434 Perma-Shield H_2S

PROJECT INFORMATION

Project Location
Burien, Washington

Project Completion Date
Early 2003

Owner
Southwest Suburban Sewer District

Engineer
CHS Engineers, Inc.
Bellevue, Washington

Prime Contractor
TEK Construction, Inc.
Ferndale, Washington

Painting Contractor
Hunnicutt's Inc.
Bellingham & Bothell, Washington

Because the headworks components could not be taken completely out of service during construction, Series 434 Perma-Shield H_2S, a modified polyamine epoxy mortar, was chosen for its short cure time, chemical resistance and ability to be troweled to reform the concrete surface.

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