

CASE

Water treatment is typically an industrial-scale process that makes water more acceptable for an end-use, whether it be for residential, industrial or commercial customers. Worldwide nearly two million people die every year as a result of contaminated water supplies. This case study concerns a new water treatment facility in Wyoming. The facility, in central Wyoming, will eventually treat up to one million gallons of water a day that comes from oil and gas production in the region.

Located between Casper and Riverton, it is the third largest of its kind in the world. Officials say the water treatment plant will effectively clean produced field water to about the same purity as mountain spring water.

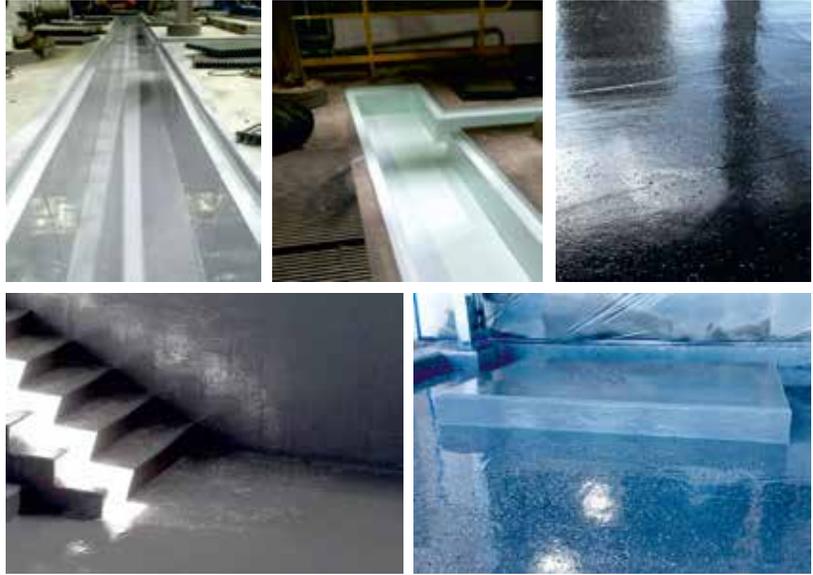
Some of the cleaned water will be used for field operations, while the rest will be piped into Boysen Reservoir. Frequent tests will be conducted at the facility and discharge points, to assure water quality meets state requirements. The plant is expected to be fully operational in mid-2015.

Problem

The plant needed a highly stable, non-toxic, robust and waterproof coating for its new concrete water channels which will be exposed to a potentially corrosive array of chemicals in produced water. Importantly, the operators did not want any downtime during the coating process, something difficult to achieve with VOC-laden conventional epoxy coatings which are also highly susceptible to low ambient temperatures can push out curing times to several days, or even make coating impossible in extreme weather often encountered during Wyoming winters.

Solution

Castagra's Ecodur 201S, which has an ANSI/NSF 61 potable rating, provided solutions on six fronts: no VOCs, absolutely non-toxic, no solvents, ultra-low temperature performance, permanently flexible, and phenomenal bond-ability both short and long term if repairs are required in the distant future.



Ecodur is a natural product with its two main ingredients, gypsum and castor oil, that are naturally occurring products, are combined using a proprietary spray head, into a rapid-curing plasticised gypsum. It has an extensive history of use both in water treatment plants and in cold storage food facilities.

The trough area of about 5,000 square feet was spray-coated with approximately 25 mils of Ecodur and an overcoat of about 20 mils of hand-applied speciality coating Terapoxy which has high resistance to hydrochloric acids strengths typically found in produced water.

The work was carried out by Elite Protective Coatings, of Grand Junction, Colorado.

Application Results

The new concrete trough has been completed with Ecodur and Terapoxy to the customer's satisfaction, post a mandatory 24-hour inspection. An additional 5,000 square feet of concrete flooring and exterior foundation work is being protected with Ecodur only which is especially effective in high-traffic industrial flooring areas because of its retained elasticity and robustness against chemicals and oil in general.

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