Brewery High-Strength Receiving Station & Force Main Project

Location: Stevens Point, Wis.
Owners: City of Stevens Point, Stevens Point Brewery
Designer: Donohue & Associates Inc.
Contractors: Miron Construction Co. Inc., August Winter & Sons Inc., Dakota Electric, LW Allen
Manufacturers: Boerger, All-Flo Pump Co. LLC, Vaughan Co. Inc., DeZURIK Inc., Water Technologies
Cost: $1.2 million
Size: 2.9 mgd

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DeZURIK was proud to supply Cast Iron Eccentric Plug Valves (PEC), Glass Lined Eccentric Plug Valves and Level Sensor Isolation Valves as part of this project. For more information on DeZURIK products, visit www.dezurik.com.

At the Stevens Point Brewery in Stevens Point, Wis., waste from the facility was being drained on the floor and hosed down the floor drain. This wastewater was fed to the city's wastewater treatment facility via the collection system, leading to high biochemical oxygen demand (BOD) in the influent stream. Because of the high BOD level, the treatment process became nutrient deficient, causing large outbreaks of filamentous bacteria in the facility's activated sludge process and, therefore, settling issues in the secondary clarifiers.

Taking action, the brewery now pumps its waste out of the fermentation tanks into an onsite lift station tank. After the material is in the tank, two air-operated diaphragm pumps send the material through a force main into an equalization tank at the wastewater treatment plant. When the material is in the tank, it is mixed with other trucked-in high-strength waste. The mixed material then slowly is fed into the facility's anaerobic digesters.

As the project was a public-private partnership, funding determinations had to be made, indicating which party would be financially responsible for each part of the project. Logistical challenges included determining how to handle the unique type of material and range of volumes being pumped. By adding an extra pump at the brewery and installing variable-frequency drives on the mixing and feed pumps, the pumps could be sized to properly handle the expected flows. The tanks at both ends of the force main were designed with mixing systems to prevent the material from settling. The mixing allows the pumps to easily move the material, and also makes a homogenous feed stock for the anaerobic digesters.

After the project was completed, both parties experienced a reduction in operating costs. The brewery has saved on labor costs, while the city's electrical usage has decreased because of the reduced organic loading to the aeration system. No settling problems due to filamentous bacteria have been reported.

"We are very pleased with the completed project. It's great to see a project get this kind of support from both the utility as well as a utility customer. Both parties are already realizing significant benefits from the project," said Joel Lemke, director of the Department of Public Utilities and Transportation for the city of Stevens Point. "I think the really great part of this project is that it gives us both room to grow our operations much more cost-effectively. At the same time, we're doing great things with the resources at hand."

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