

Water Treatment Plant Finds Solutions to Priming and Leak Issues with Dual Diaphragm Chemical Feed Pump



Application:

A water treatment plant located in Massachusetts strives to provide customers with low rates, high reliability, and quality service. The plant's drinking water comes from shallow sand and gravel deposits located within watersheds. Four groundwater production wells withdraw over a half million gallons per day of drinking water. The sand and gravel form an underwater reservoir, which is continually replenished by rainfall and snowmelt.

At the treatment plant, sodium hypochlorite is being dosed at 1 GPH at 100 psi for the treatment of bacteria and other contaminants.



Problem:

The well site at the plant was using a single diaphragm pump to dose the sodium hypochlorite resulting in issues with keeping the pump primed. Additionally, the pump was experiencing multiple leaks that made the surrounding area messy and dangerous.

Solution:

The single diaphragm pump that had been in use was replaced with Blue-White's® CHEM-FEED® MD1, a multi-diaphragm metering pump. The MD1 chemical feed pump is equipped with the company's exclusive hyperdrive technology which ensures MD1 will deliver smooth, precise, and dependable chemical feed. The near pulseless pumping action and the fact that MD1 experiences no loss of prime makes the pump a good fit for this application.

The Dual Pump Head configuration of MD1 design provides smooth near continuous flow, mimicking the best performance traits of peristaltic pumps. When the MD1's first diaphragm is in the suction phase, the second diaphragm is in the discharge phase. This causes gaseous fluids such as sodium hypochlorite to be pumped in a near continuous flow. MD1 experiences no Vapor Lock and No Lost Prime even when dosing chemicals that off gas, such as sodium hypochlorite.

The thoughtfully engineered MD1 is equipped with Blue-White's exclusive, single layer DiaFlex® PVDF diaphragms. This patented, ultra-durable diaphragm is designed to last the life of the pump.

Installation of the new metering pump was simple. The MD1 was wired into the existing SCADA system panel, the suction line changed and the MD1 primed.

Results:

The water treatment plant has experienced an excellent level of success with the MD1 dual diaphragm metering pump and maintenance has reduced to near zero.