

By Craig Mandli

Chemical metering pumps help eliminate vapor lock and loss of prime

Problem

A military base in California's San Diego County has a water supply and wastewater treatment plant to serve a population of 70,000. Diaphragm metering pumps had been used to inject sodium hypochlorite into the wastewater treatment system. The cycle consists of a suction and discharge phase. During the suction phase, gaseous chemicals were causing vapor lock and causing the pump to lose prime.

Solution

The pumps were replaced with two **Proseries-M MD-3 double-diaphragm metering pumps (Blue-White Industries)** for beta testing. In dual diaphragm configuration, when the first diaphragm is in the suction phase, the second is in the discharge phase. This helps create a near-continuous sodium hypochlorite flow, preventing gas buildup and loss of prime.



RESULT

The pumps delivered the chemical in the high-pressure application and eliminated vapor lock. The pumps injected 12.5 to 18 percent sodium hypochlorite at 5 to 10 gph at 90 to 120 psi. Smooth dosing eliminated the need for a pulsation dampener. The installation was simplified by the pumps' drop-in-place design and built-in controls. **714/893-8529; www.blue-white.com**

Screw pumps solve high-lift pumping problem

Problem

The Willmar (Minnesota) Wastewater Treatment Plant needed a single-stage screw pump for 43.2 feet of lift.

Solution

The plant installed three **Landustrie open screw pumps (EPIC International)**. They pump 8,333 gpm. The pumps, 84 inches in diameter and 74 feet 6 inches long, have solid one-piece ductile cast iron (not welded) upper and lower shafts and flanges, and reinforced flight starts. They use self-aligning bearings.



RESULT

The screw pumps solved the lift problem, and have run without incident since they were installed. **804/798-3939; www.epicintl.com**

Chemical feed pumps provide reliable service for ozone pretreatment

Problem

The 37 mgd William B. Cater Water Treatment Plant in Santa Barbara, California, needed an upgrade to add ozone pretreatment facilities, including a new metering pump system.

Solution

The plant team chose **Encore 700 metering pumps (UGSI Chemical Feed)** for a durable hydraulic diaphragm and the economy, simplicity and serviceability of mechanical diaphragm liquid ends. It is driven by a rotating crankshaft where eccentricity can be smoothly adjusted during operation. The pump valves operate efficiently and with minimal vibration. Pumps are available in six diaphragm sizes and double simplex capability for capacities to 660 gph and back pressure to 175 psi.



RESULT

With minor maintenance, the pumps have metered 12.5 percent sodium hypochlorite accurately and reliably. The pumps also deliver the plant's primary coagulant, a viscous blend of aluminum chlorohydrate and polymer that weighs over 11 pounds per gallon and is corrosive to metals. **855/669-3845; www.ugsichemicalfeed.com tpo**

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