

# Hypochlorite Feed Alternatives News™

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## City Solves Reliability and Maintenance Problems for WTP Hypo Feeds *Takes Advantage of Advanced Vacuum Feeders*



At the city's 1200 MGD WTP, 15% hypo is fed at the main entry point to distribution shafts, at the rate of 1000-1200 GPD.



At the city's 80 MGD WTP, 15% hypo is fed at the rate of 120-150 GPD.

A municipal water quality manager reports replacement of sodium hypochlorite (hypo) vacuum feeder units with a more advanced type at one water treatment plant (WTP) has helped allow for continued reliability for chlorination. He also notes replacement of a different vacuum unit at another WTP, with the same more advanced type, to end costly maintenance problems there.

At the city's 1200 MGD WTP, 15% hypo is fed at the main entry point to distribution shafts, at the rate of 1000-1200 GPD. Subsequent continuous monitoring of chlorine residual is conducted to assure an average level of 1.1 mg/L, and a range of 0.8-1.3 mg/L, per water quality department needs. Until last February, the hypo feed was provided by 10-year old vacuum feeders.

“The problem at that location was the manufacturer stopped making those units, which meant their annual delivery of preventive maintenance kits was no longer available,” said the water quality manager. “We could no longer get the O-rings

and other appurtenances, so if there was a leak, there was no fix.”

“We searched for an alternative vacuum feeder, and found one that had references we could contact. We’ve had good performance for two months with three of their units, each rated at 2500 GPD, which we run two at a time.”

At the city’s 80 MGD WTP, the vacuum feeders’ manufacturer was still in business, but chronic leaks stopped their use after a year of operation.

“They were very maintenance-prone, with repairs needed what seemed like daily or very other day,” he recalled. “Gaskets, O-rings, regulators, and diaphragms were all failing, and each episode was taking a day to fix. The corrosive nature of the hypo was the culprit, but with the replacement vacuum feeder, the hypo apparently doesn’t contact the parts. We’re very satisfied with the performance there.”

At the 80 MGD WTP, 15% hypo is fed at the rate of 120-150 GPD.

“We also have metering pumps available at that facility, but prefer to use the vacuum units because their feed is more accurate,” he noted. “We can get within 1 or 2% of our target.”

The JCS Industries chemical feeders used at the city’s WTP’s utilize real-time feed information via electronic flow sensors that allow for continuous monitoring and control of the chemical feed rates.

Each feeder automatically regulates in both fixed and variable control modes, including fixed feed rate, flow paced, residual control, and compound loop. The feeder system

can dose a variety of aqueous chemicals commonly used in municipal and industrial water treatment systems.

The feeder system is comprised of a vacuum injector to safely introduce the liquid into the feed-water stream; a reversing servo motor coupled with a V-notch valve to regulate the chemical feed rate; an electronic flow sensor to monitor and regulate the feed rate; and a control module for complete electronic control and communications.

A plant’s water flow rate and/or a chemical residual signal are used to adjust the chemical liquid flow rate by electronically positioning the servomotor driving the feed control valve. The ratio of input signal to liquid flow is adjustable over a range of 5% to 400% to enable increased liquid feed in response to additional chemical demand.

US Patents have been received for the all-vacuum liquid feeder, which can dose up to 60,000 gal/day.

For further information, contact JCS Industries, 5055 FM 2920, Spring, TX 77388, Tel. 281-353-2100, Fax 281-353-0657, sales@jcsindustries.us.com, www.jcsindustries.u.s.com.

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