



## Scale Control in Two-Mile-Long Wastewater Line at Beef Hide Tannery

FTC-1600 installed January 25, 2018

A large beef hide and tannery plant in Dakota City, Nebraska, was experiencing process disruption due to build-up inside a wastewater line that runs two miles from the tannery to a wastewater treatment plant. Deposits slowly accumulated inside the pipe until the flow became so constricted that the line required jetting—a process of cleaning the line using a high-pressure hose. The plant has been jetting the line twice a year, taking three employees two days of work to complete each time.

The purpose of installing the Flow-Tech chemical-free system was to see if the treatment could inhibit deposit formation in the two-mile-long PVC line carrying high-strength (pH 12) wastewater from the tannery to the facility's wastewater treatment plant. The goal was to maintain or increase the flow rate through the eight-inch line by keeping scale and other deposits from reforming and building up inside the line. The accumulation inside the line is more than 50% carbonaceous material—likely fat and grease—and the remainder is composed of calcium carbonate and sand.

Performance was monitored with weekly flow rate measurements at a fixed pumping pressure of 30 psi. Immediately after the line has been jetted, the flow rate at 30 psi is typically about 500 gallons per minute (gpm). At the time of installation of the Flow-Tech system, the flow rate was 172 gpm, indicating significant deposit built up inside the line. After one week of Flow-Tech treatment, the flow rate increased to 196 gpm, indicating that some deposits were removed.

As seen from the data collected January 25 through April 12 in the table below, the flow rate oscillated between 183 and 196 gpm for the remainder of the study. If the flow rate had decreased, it would have indicated that the Flow-Tech treatment was not inhibiting deposit formation—as the flow rate consistently decreased without any treatment. Because the flow rate remained relatively steady, this demonstrates that the Flow-Tech technology is inhibiting further deposit build-up in the line.

### Flow Rate in Flow-Tech Treated Line

Date	Flow Rate (gpm)
1/25/2018	172
2/1/2018	196
2/8/2018	196
2/15/2018	183
2/22/2018	196
3/1/2018	183
3/8/2018	183
3/15/2018	183
3/22/2018	183
3/29/2018	196
4/5/2018	185
4/12/2018	186

Additional data available soon

