

# CASE STUDY

## Stopping Gushing Pipe Leaks Using Single-Component Polyurethane Resin

**PROBLEM:** Ken Kane and his company, Precision Chemical Grout, were recently called upon by the Gadsden Water Works and Sewer Board in Alabama to address a water infiltration issue. The municipality had installed PVC slipline pipes of various sizes (30-inch PVC slipline inside of 36-inch host pipe, 20-inch PVC slipline inside of 24-inch RCP host pipe, and 12-inch PVC slipline inside of 15-inch RCP host pipe, respectively). The PVC pipes were installed to stop infiltration of river and groundwater.

The space between the slipline and host pipes had active leaks that, according to the municipality's flow monitoring, were contributing an additional 3.5 million gallons per day (MGD) to their wastewater stream. To put that into perspective, that's more than enough water to fill five Olympic-sized swimming pools.

**SOLUTION:** The repair was completed in six days using chemical grout from Prime Resins to seal the annular spaces in the seven slipline sections. The project required roughly 100 gallons of Prime Flex 920. After some trial and error on the first section, the method was perfected and subsequent sections were completed in a fraction of the time with less material. "This particular project was an engineer's worst nightmare to develop a permanent solution to stop the leaks at the manhole connections," said Gadsden Water and Sewer engineer Brian A. Purcell. "With the help

**According to the municipality's flow monitoring, the leaks were at a level of 3.5 MGD (million gallons per day).**

from Prime Resins and the team at Precision Chemical Grout, the infiltration was eliminated, which resulted in substantial cost savings at our sewer treatment plant."

**HOW THEY DID IT:** To inject the polyurethane resin, Precision Chemical Grout used 10-foot sections of ½-inch PVC pipe as a probe connected to an F-valve. This allowed for standing in the invert and pushing pipe 10 feet up into the annular space, typically installing two PVC pipes for each of the leaking pipes

sealed—one at 4 o'clock and one at 8 o'clock to ensure grout would fully fill the annular space between the slipline and host pipe — packing open space with towels or sandbags to contain the resulting foam.



This still image from an on-site video shows the severity of the leaks.

**BENEFIT:** The leaks were completely sealed in six days, ending the 3.5 MGD leaks that had existed for several years with a modest investment.

**"Simply put, this situation had been ongoing and a thorn in the municipality's side for over a decade. They had tried other methods such as using cement grout, but were at a complete loss."**

**"As far as Prime Resins' products, I have had excellent results from all the products, but without a doubt the technical staff there makes the biggest difference. There is no substitute for experience, and regardless of what I get myself into, I know I can bounce ideas off those guys and have a couple of plans of attack to work with."**

- Ken Kane, Owner, Precision Chemical Grout

**"As the engineer for Gadsden Water and Sewer, I highly recommend Prime Resins products for eliminating infiltration in a sewer system."**

- Brian A. Purcell, P.E. Engineer, Gadsden Water Works and Sewer Board