



Chemical grouting stops manhole infiltration in Stratford

Fixing the problem was integral to completing new sewer mainline project

A few hours of work and 10 gallons of chemical grout is what it took to stop a manhole infiltration that threatened timely completion of a new sewer mainline project in Stratford, Ontario.

The project was plagued by heavy groundwater infiltration in one manhole in particular. The exact source of the water was unclear, but the city's location near Lake Victoria and in the centre of an isthmus bounded by Lake Erie and Lake Huron means that groundwater levels are high throughout the area. The rate of flow was significant enough to stop work down the line from this manhole.

The main contractor had other pending projects, so delaying construction could mean losing the firm for weeks to another project while the city solved the

problem. As a result, the city contracted out dewatering activities so work could progress. Dewatering costs typically start at \$2,000 a day (\$250 an hour) and can easily balloon quickly. The dewatering was further complicated by the need to transport the pumped water off-site due to a conservation authority mandate. Shutting off the infiltration was critical to completing the project in a timely fashion and on budget.

To identify a quick and permanent solution, Stratford officials worked with strataWORKS, a distributor in Cambridge, ON that helps municipalities and property owners solve infrastructure problems. Jim Hill of strataWORKS recommended curtain grouting the manhole with an expanding, watertight polyurethane grout. Curtain grouting solved a

similar situation in Kingston, ON, a few months later.

Dynamite Contracting performed the work. The bottom of the manhole is approximately 25 feet below the road surface. Dynamite technician Bruce Parrot entered the manhole using standard confined space protocols. He drilled holes and installed injection ports around the structure. Parrot then systematically worked his way around the manhole, injecting grout until the infiltration was stopped. The entire process took a few hours and 10 gallons of Prime Flex 920 from Prime Resins. The product is a hydrophobic polyurethane, certified to meet NSF/ANSI Standard 61 for contact with potable water, a bonus given the proximity to sources of Ontario's drinking water.

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