

Vacuum excavation can be a useful alternative to conventional techniques where there are nearby structures, space is limited or where a deep excavation would be difficult.



# Vacuum Excavation

By TONIA JURBIN



Vacuum excavation is useful when an installation is required in areas with heavily congested utility corridors, especially where there is aging infrastructure in uncertain locations. It is often used for installing utility poles, street lighting, or pilings, but it is also a useful alternative to conventional excavations where there are nearby structures, limited space, or where a deep excavation would require either sloping the excavation walls or extensive shoring.

The technique is a specialty of McRae's Environmental Services of Burnaby, B.C., which offers a very wide range of pipe and underground services in the province.

"Vacuum excavation is becoming a bigger part of our business as customers become more sophisticated," explains Drew Clarke, vice president of sales and marketing for McRae's Environmental. These customers are realizing that, while the upfront costs of this method are higher than those for conventional excavation, the total

costs may be lower when surface restoration and the elimination of damage to other underground services is taken into account.

The vacuum excavation method is being used extensively in the municipality of Richmond, B.C. where water meters are being installed retroactively in most homes and businesses. The method is also becoming popular for doing utility tie-ins. It is also the preferred method for installing groundwater-monitoring wells.

"The key to vacuum excavation is the water pressure," says Clarke. "Exposing existing valves is easy, because the ground has already been dug up — so we use about 1,500 psi for this kind of work. When we are digging in native soils like hardpan or clay, we will go up to about 3,000 psi."

Many of McRae's clients are engineering firms — environmental consultants in particular. Typically, they will be asked to install six or seven wells around an old tank location. "If there proves to be migration of conta-

minated groundwater, more wells are installed in the direction of the flow," says Clarke. "The contaminants tend to follow the path of existing utility trenches. This is when our expertise is valued, because we can install wells in the trench line just below an existing pipe with a minimum of disruption to the surface. The value of this work can't be overstated when you realize that most gas stations are located on busy streets where minimizing disruption is important to our clients. We usually have to work with time restrictions and in a six-hour period can install two or three wells." ♦

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