

## Keyhole Coring Technology: Cost Saving Solution For Underground Main Repairs

**S**ince last April, Nicor Gas Distribution Supervisor Bob Jones and his crew in Bellwood, IL have had an easier time making repairs to gas pipes beneath streets. Instead of breaking out the pavement with jack-hammers and backhoes to gain access for underground repairs, the Bellwood crews are using a new heavy-duty truck-mounted rotary coring rig built by Utilicor Technologies to cut an 18 inch diameter core out of the pavement. The core is removed and set aside allowing the vacuum excavation crew to expose the underground plant. The leak repair or other maintenance is then performed from the surface using special long-handled tools. The crew, therefore, does no trenching or shoring.

"Once the repair has been completed," Jones said, "the hole is backfilled and the core cemented back into place with a special bonding compound, Utilibond. The roadway is as good as new."

Developed and field-proven by Enbridge Gas Distribution, one of North America's oldest gas distribution companies, and successfully employed without a single failure over the past ten years on thousands of excavations under severe climatic conditions, the rotary coring process has been formally accepted and certified in a growing number of jurisdictions as a permanent pavement reinstatement. According to tests conducted at the Department of Civil Engineering at the University of Illinois at Urbana-Champaign, after just 30 minutes, the bond strength of Utilibond exceeds the state mandated load-bearing standard by five times and is capable of supporting the combined weight of five transit buses. Jones said "After thirty minutes, the repair is almost invisible and the site can be re-opened to traffic. That means less hassle for the neighbors and improved customer satisfaction. It also saves the company money by letting us move on to the next site promptly instead of having to baby-sit a temporary paving repair."

"The Utilicor unit is purpose-built to core through any paved surface - including concrete reinforced with half-inch rebar - in less than 15 minutes and Utilibond lets us reinstate the core

and open the road for traffic 30 minutes after the repair," said Colin Donohue, Manager, Field Operations at Utilicor which is the exclusive manufacturer and distributor of the rotary coring unit and Utilibond. "That's a huge convenience for the public and a huge saving for utility companies looking for ways to reduce maintenance and repair costs", he said, "the unit literally pays for itself in six to eight weeks from savings in paving costs."

While the Utilicor process can't replace trenching and open cut repairs entirely, the new keyhole coring technology can be used to repair hundreds of leaks in cast iron pipes with anaerobic sealant, perform service cut-offs, upgrades and insertions, dig test holes and is expected to be a key element in the maintenance of approximately 500 miles of cast iron pipe that Nicor has in its system.

"It's the most exciting and productive maintenance innovation that I've come across in my more than 18 years with the company," said Keith Griffin, Regional Manager Distribution Metro Region, who inaugurated the program in April.

"Workplace safety is very important to us at Nicor Gas," said Joe Hynes, Manager of Distribution Metro Region. "The coring process is very worker-friendly and we expect fewer back or stress-related injuries, as a result. The coring truck is fast, accurate and powerful."

Since Nicor started using the Utilicor Rotary Coring and Permanent Pavement Reinstatement Process, the Bellwood team has completed more than 150 cores and reinstatements. Nicor Gas expects to do 1,000 repairs a year with the one coring unit working in tandem with two vacuum excavation units.

"That's thousands of dollars in savings per year from just one crew," Hynes said. "Based on our experience so far, rotary coring could soon become a regular addition to our construction and maintenance operations."

And, the Utilicor process is more environmentally-friendly than traditional ways of opening the road. The crews no longer need to dispose of spoil or debris, use temporary patching or repave a section of roadway.

"The process also works for the municipal-



Bellwood's crew coring the roadway in preparation to repair a bell joint.



After completing the underground pipe repair, the Nicor crew reinstated the massive 19-inch composite, asphalt and concrete core using Utilibond for a permanent pavement repair

ity" says Donohue "Not only is the precise circular cut 80% smaller than a conventional rectangular road-cut, but it is almost invisible after the repair, which makes it aesthetically pleasing to the municipality that owns the road. Its high-strength, waterproof bond and circular shape also means no more corner stress cracks and no groundwater leaks that penetrate the surface and cause pavement to fail prematurely. This can add years of life to the roadway and can be the source of major tax savings for the municipality" *P&GJ*