



The Power of Teamwork

Washington Gas, which serves the Washington, D.C., metropolitan area, has successfully moved their keyhole activities from an in-house, one-off program, to a year-round endeavour that is fully integrated and supported by the company's alliance partner and construction contractors, and has resulted in real savings.

While this transformation neither happened overnight nor without concerted effort nor planned capital investment by their contractors, the end result has been very impressive indeed.

In addition to the work with its contractors, Washington Gas focused a significant amount of effort working with the permitting/paving jurisdictions in order to gain their acceptance, and sometimes reconfirmation, of keyhole as a form of final paving/restoration.

It's also a great model for gas utilities to adopt if they are seeking a way to tackle their own accelerated pipe replacement and repair programs while completing the work both on-time and on-budget.

By implementing a comprehensive keyhole program with an emphasis on a strong contractor/utility alignment, Washington Gas has demonstrated how to successfully get the job done effectively and efficiently.

Recognizing that there was potential for savings by incorporating keyhole technology into the work methodologies, from 2006 to 2008 Washington Gas worked closely with their contractor crews using time and material rates (T&M) on a select range of applications, to set bench-marks for the upcoming contracting process.

By 2008, with the scope of work clearly defined and the program and processes identified, the contractors could confidently respond to the RFP and bid the work with greater bottom-line accuracy. More importantly, contractors would have the confidence to purchase the necessary capital equipment knowing that the work would be secured for years to come.

Northern Pipeline Construction (NPL) worked closely with Washington Gas during the initial stages of the keyhole assessment study. NPL already was Washington Gas' Alliance Partner and bid and successfully added a portion of the accelerated pipe replacement program to its existing contract.

NPL's capital investment would be significant and included: 31-construction crews; 28-keyhole crews – including 5 separate and distinct keyhole core setting crews used exclusively for the core reinstatement process; support from 19-vacuum excavation units and 5-Utilicor Heavy Duty Series 500 coring trucks; as well as a fleet of auxiliary equipment from dump trucks to special trailers outfitted exclusively for the core reinstatement process. However, NPL knew from the outset that if they performed to plan, their return on investment (ROI) would be secure.

The use of keyhole coring and reinstatement technology executed as a production line process also lowered the cost and improved the efficiency of this pipeline replacement project.

According to Clayton Munsey, Washington Gas Manager Field Technologies, "Making an 18-inch diameter keyhole cut, rather than a conventional 3- by 5-foot or 4- by 6-foot utility cut, has

reduced our costs by approximately 5 - 35 percent, depending on the type of use - scattered work or part of a programmatic approach to replacement. A majority of savings comes from eliminating the need for extensive pavement restoration work associated with digging a conventional sized hole."

However, the cost savings realized by Washington Gas were only part of this good news story. Allowing Washington Gas's Alliance Partner to secure longer term commitments from the utility and guaranteed work volumes were also key to the program's success.

Also, in addition to the cost savings, improved customer service was realized with quicker completion of final restoration as compared to traditional construction, where the final restoration occurs at the end of the overall work.

Brandon Wytovich, NPL's asset manager for the Washington, D.C., metropolitan area, understands that utility work is a two way street. "For a contractor to be able to gain the efficiencies associated with a properly run rehabilitation program requires an upfront commitment on our part to a large and scalable workforce and a significant capital investment in purpose-built coring and vacuum equipment." (Continued on next page)



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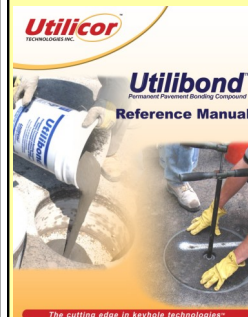
Winter Issue

Utilibond Reference Manual Now Available!

After more than 15 years performing engineering tests on the keyhole process and moving reinstatement standards from the informal to the documented all while refining the information and applications available for the keyhole process, Utilicor announces the publication of the all new **Utilibond Reference Manual**

Inside find answers from how to perform a proper keyhole core reinstatement, to valve box reinstatement procedures, to municipal approvals, and more!

Get your copy today and get up to date on the industry standard in keyhole core bonding compounds.



The Utilibond Reference Manual is available for download from Utilicor's website, <http://www.utilicor.ca/utilibond.php>, or for a printed format email us at info@utilicor.ca.

Core Heater Process



Before you begin, make sure the core is dry-fitted properly, same as you would in warm weather reinstatements. Place the core heater base in the hole and the core on the base and cover. Begin heating process.



Check the temperature occasionally with a non-contact infrared temperature sensor.



When the surfaces of the core reaches at least 70° F, the core reinstatement process can begin. Make sure the Utilibond powder was stored in a warm location, and mix with warm water.



Remove the core heater and place the core in the opening, which will keep the core warm while mixing the Utilibond. Once ready, remove core, pour in mixed Utilibond, and reinstate the core as per normal procedure.



At 70°F Utilibond will reach final strength gain in 30 minutes, and the road can be safely reopened to traffic.

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Wytovich continued, "It also means training on new procedures and techniques. We had to continually train and educate new employees to ensure that core reinstatements were done properly, as this was where most of the savings for Washington Gas would be realized. In addition, Washington Gas shared some of the saving with us, which made the upfront capital equipment purchase cost effective. This was truly a win-win scenario."

"The Alliance was the perfect platform for keyhole to be piloted", says Tracy Townsend, Washington Gas' Division

Head of Safety, Compliance, Construction & Operations Support and Technology. "We knew that NPL had the experience and equipment to quickly kick-start a keyhole program and tackle this large volume of work. With our commitment to them, as a long-term partner including stability in work, they were able to make the investment in equipment, manpower and training needed to ensure the program would be executed properly and in a timely manner."

The scope of work on this project involved a comprehensive five-year

keyhole program that included running new services, main replacement and coupling encapsulations. By working hand-in-hand with a dedicated contractor, the Washington Gas keyhole project has been running on time and on budget.

Congratulations to a utility and a contractor who both have realized significant efficiencies and cost reductions by working together and by moving their construction practices into the 21st century.



Washington
Gas



SAM Inc. Utilizes Keyhole in S.U.E. Applications

Surveying And Mapping, Inc., (SAM, Inc.) is a national surveying and mapping company headquartered in Austin, TX, along with its subsidiary **SAM-Construction Services, Inc. (SAM-CS, Inc.)** that performs construction phase services. They provide an extensive list of capabilities for their clients, including subsurface utility engineering (SUE), utility coordination (UC), and utility location.

Using the latest technologies, including radio frequency, acoustic, sonic magnetic sensing, and ground penetrating radar, they are able to quickly and reliably locate and accurately map the X and Y position of underground utilities, but not necessarily its depth (Z). Since utility depth is often important for SUE work, the firm uses non-destructive vacuum excavation to expose infrastructure in soft groundcover and has recently added keyhole coring and core reinstatement to their suite of services for utilities buried under pavement.

This work is performed under the direction of Jamey Thompkins, a SAM-CS, Inc. operations manager and utility construction expert with over 20 years of industry experience. Thompkins sees keyhole technology as a natural extension to the vacuum excavation services the firm already provides, and a way to differentiate his company from the competition:

"Keyhole coring is a perfect addition to our toolbox. Often we simply need to expose a utility and confirm its depth or composition. Coring is quick, easy, and safe for our crews. No jackhammers or breakers are needed. But the real beauty is our ability to core ahead of the vacuum truck, capping each cored hole with a circular road plate. This allows for huge gains in efficiency, since no part of the work is tied up waiting for another piece of equipment to finish its task. The core cutting is performed with a Utilicor MPX trailer mounted coring unit, which is easy to position and even easier for my crews to operate."

The big payoff lies in the ability to reinstate the core. "Although the cost of permanent rehabilitation of any road cut falls on the utility requesting the work," says Thompkins, "if we can core, vacuum, backfill, and reinstate the core permanently back into the roadway, that can result in huge savings for our customer. And those savings help us provide more value to our clients -- which is good for us."

Keyhole coring and vacuum excavation makes subsurface utility engineering an even more attractive proposition for municipalities, engineering companies, and utilities who are looking for ways to save money both in the initial planning of new infrastructure build-outs and the associated reduction in pavement rehabilitation costs.

Contact: Surveying And Mapping, Inc.
(www.saminc.biz)



Left: Sam Inc. gets to work with MPX trailer mounted coring unit, making quick work of core cutting process through the roadway

Right: Workers extract and set aside 18" diameter core which will be saved for future permanent reinstatement utilizing Utilibond Core Bonding Compound

