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### A Unique Tool to Meet a Unique Challenge

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When Belgium-based Conex decided it wanted to expand out of its soil analysis role and into the drilling industry, it also made one other significant decision – to enter the marketplace with a sonic drill rig. “We didn’t want anything conventional...and we knew that the sonic rig could do it all,” says Conex’s Rene Kroonen.

“Geothermal is booming here and the sonic rig allows us to drill much faster and cheaper which keeps the per-foot costs of drilling down,” he says. “And, if we hit mixed soils, we don’t have to pull a conventional rig off and try to put something else in there.” With his sonic drill rig mounted on crawler tracks, Kroonen also says his access to sites is far better and he says he uses far less water than a conventional rig. “It’s a super machine and for those people who have never seen one, they are very impressed...it’s a unique tool that can meet all sorts of unique challenges,” adds Kroonen.

Manufactured by the Sonic Drill Corporation, Conex’s rig came wrapped and delivered with a free training program. “It was great to have a senior driller come over to our country and train us on how to use it,” Kroonen says. “The training helped us get it in use right away.” In addition to geothermal installations, Conex says it also plans on using it for environmental investigations and water well drilling. In fact, its sonic rig has already left for France where it is drilling deep water wells for a golf course located near Paris’s Disney World. “They already had a French drill rig out there but it wasn’t successful when they ran into some tough terrain (limestone and firestone) so they’ve called us in,” he says. Thanks to the sonic drill rig’s unconventional technology, it was able to easily “buzz” through the mixed sands, clays and unconsolidated materials.

#### Sonic Drilling in the UK



Woking, Surrey, a picturesque city of 100,000 residents, has typically been best known as the former home of author H. G. Wells but, today, it’s also known for its innovative approach to sustainable development. In 2001, Woking won the Queen’s Award for Enterprise for its energy services initiatives and, more recently, in 2005, it took the revolutionary step of installing a geothermal system to heat and cool a new sports pavilion. Due to the area’s distinctive geology, the job of drilling the geothermal loop holes fell to the Dutch company of Sonic Drilling BV, of Horst, Holland.

“There was a lot of water and mudstone and limestone in the drilling conditions,” says Jan Heldens, president of Sonic Drilling BV. “For most drills, they would have got stuck.”

Despite the conditions, Heldens and his crew were able to drill 106 meters for each geothermal loop, at a rate of about 1½ loops per day. “The job went very smooth...there were no breakdowns or issues,” says Heldens. “The only consideration was that there was very little space to drill in.”

With the Woking project finished, Heldens and his team were back in the UK again, this time working for BP on a land reclamation project. Once that job finished, the Sonic drill rig was on its way to Glasgow to provide a demonstration of its unique talents there for a highway project.

#### Turning Canada's Dirt Into Gold



As one of the largest countries in the world, Canada’s substantial land mass of more than nine million square kilometers contains some of the most diverse geology on the planet. From arctic ice flows to sub-arid deserts, the Canadian landscape offers a stunning variety of conditions for drillers.

The list of Canada’s natural resources is long; iron ore, nickel, zinc, copper, gold, lead, molybdenum, potash, diamonds, silver, coal, petroleum and natural gas to name a few. Ironically, most of those riches are covered by millions of square kilometers of dirt, sand, silt, cobble, granite or ice – a fact that has made drilling for them all that more difficult.

Mineral exploration in unconsolidated material has always been a risky proposition due to the lack of an economical, versatile or accurate method of determining where to mine – at least that was the case until the development of the sonic drill head. Although the diamond drill has long been the preferred tool for mineral exploration in hard rock, in unconsolidated material, it has two unfortunate drawbacks. First, it doesn’t drill well in unconsolidated materials and, secondly, it can’t provide accurate core samples from those kinds of rock formations. Only a sonic drill can recover a continuous core including boulders, clays, silt, sand and gravel and lay it in its stratigraphic sequence – from the surface all the way down to 300 ft (100 m) and deeper.

Using the patented sonic drill head, cores can be obtained from a wide variety of mineral deposits including oil sands, slag piles, mine tailings and heap leach pads with an absolutely minimal amount of disturbance and compaction. The samples are then extruded into clear plastic sleeves. Neatly laid out, these core samples can be subjected to a detailed visual examination and analysis, followed by sampling, photographing and archiving for a permanent record of the existing mineral conditions. In other words, the gold, or other valuable mineral, remains where it was found in the sample. As well, cased holes prevent the collapse of the borehole and ensure that cores are not contaminated by up-hole debris.

By creating a comprehensive description of the lithology and stratigraphy of the underlying geological setting, a prospective property can be evaluated in the most accurate manner possible. In Canada, and in other countries where challenging terrain exists, the sonic drill has proved to be the much-anticipated tool that can help direct new exploration in the most efficient manner possible. With the advent of this revolutionary technology, turning dirt into gold (or silver or copper) just got a whole lot easier.