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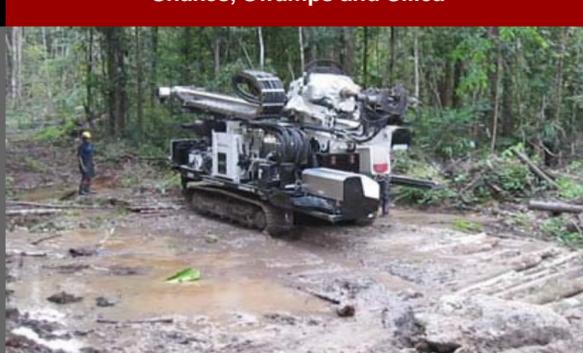
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Snakes, Swamps and Silica



At First Bauxite's massive refractory bauxite properties in Guyana, South America, the weather conditions and terrain, to say nothing of the snakes, make for unique challenges. Headquartered in Vancouver, B.C. Canada, First Bauxite is well on its way to its near-term goal of becoming a medium-sized producer and supplier of high-quality calcined bauxite. The company's Bonasika and Waratilla-Cartwright properties are part of Guyana's historical coastal bauxite belt that was first drilled in the 1940s by Alcan.

With two rainy seasons (May to mid-August and mid-November to mid-January), flash floods are a constant threat. The terrain is alternately hilly and swampy, making movement of drilling rigs and other vehicles dangerous, at times. And, under the thin layer holding up the jungle carpet, the overburden of silica sand is often too porous for traditional mud-rotary drills.

It's the main reason why First Bauxite purchased a Sonic Drill Corporation rig for its exploration and mining operations. Developed in British Columbia, Canada, by company founder Ray Roussy, the sonic drill uses vibration combined with rotary motion to advance the drill stem along with air or water as a lubricant rather than the traditional drilling mud.

"As far as I'm concerned, Ray Roussy has developed the best sonic drill head in the world right now. The improvements done on that head are phenomenal. He's constantly putting his rigs into new fields for new applications and, when he finds out what the limitations are, he corrects them," says full-time drilling consultant Randy Pruden, who was hired to train Guyanese operators on the sonic drill.

Pruden, who has a home overlooking the ocean in Crofton, Vancouver Island, but who travels the world concentrating on "interesting" drilling jobs, says "as far as I know the sonic is the only machine that can do this, and I've used almost all of them, including those of Sonic Drill Corporation's competitors."

Sonic Sampling Accuracy



As the senior drill service consulting expert for the Newmont Mining Corp., Denis Rousseau is totally immersed in his role – assisting geologists at each of the company's mine sites to develop the best drilling program possible.

"Definitely getting the right equipment for the right application is important," Rousseau says. "If the driller and the geologist talk it through beforehand, the goal is to get the right method with the right application at the right price."

Rousseau first introduced sonic drilling at Newmont's massive Minera Yanacocha gold mine in Peru almost eight years ago and, throughout that time, the rigs have proved their versatility in a variety of applications. "We use the sonic where we have already had leach pads, sampling the material to see if we are leaving any gold behind," he explains. "We're getting really good, fast results. The continuous sampling capabilities of the sonic are coming out extremely well."

Rousseau also uses the sonic drill in areas of the mine where good results had previously been obtained with diamond drilling. "To compare them, we twinned half a dozen holes," he says. "Obviously, the speed of the sonic in areas where there was sand, gravel and consolidated matter was about three times as fast as the diamond drill."

Rousseau also took the fastest holes and the best sample holes and compared them. In the harder gravel, the sonic didn't do as well but every hole improved from 7-12 per cent as the operator learned the best techniques. They also twinned some areas in the pit where drilling and blasting had taken place, taking really quick samples to know where to put the material. "Core control is really important...putting all the materials with similar structure together saves a lot of time and money and the sonic was great for that."

Leading the Way with Sonic Coring



As more businesses look to sonic drilling technology for solutions to environmental issues, economic concerns and time constraints, drilling companies are finding unique ways to expand the capabilities of their equipment. One of the leading innovators in this rapidly growing industry is Daryl "DK" Karasch, a sonic drilling foreman for Traut Hydro-Tech, commonly known as Traut Wells, a division of the Traut Companies group based in Waite Park, Minnesota, USA.

Operating a rig manufactured by the Sonic Drill Corporation, Karasch has cored more than 200,000 lineal feet in 18 different states since 1998. Over that time, he has guided the sonic rig through a variety of projects including mineral and sand exploration, site environmental assessments, seismic work, underground storage tank investigations, delineation of contaminants prior to excavation or remediation, hydro profiling, monitoring and recovery wells, glacial sediment studies, geothermal installations, explosives placement and more.

To complete projects too numerous to count, he has bored through unconsolidated soils, clays, cobbles and boulders, shale, sandstone, mudstone, limestone, granite, landfill debris and even concrete. With conventional rigs, hitting certain types of material would have caused the drill to jam, necessitating a move and a restart, but Karasch says the sonic didn't balk at drilling through any of them.

"We use other drilling rigs as well but I think we've found the applications in which the sonic works best," says Karasch. "Our company penny-pinchers have us doing comparative tests against the other rigs head to head, looking at costs, speed recovery rates and such. I don't like to boast but I can't lie to you. Right now, we're out-drilling them at least two to one. I haven't told Ray (president of Sonic Drill Corporation) about that yet but I'm sure he'll enjoy hearing it," he adds.

Ultimately, Karasch says the greatest advantage of sonic drilling is its ability to obtain large volumes of undisturbed core samples which provides a detailed, inch by inch analysis for engineers. "For example, on one environmental exploration project, we looked at the core sample and could see contamination of oil in the limestone. That was not natural. There had been a big oil spill there over time," he says.

"We quickly drilled around the area and they (the client) got a profile of how deep and widespread the problem was so they could start remediation."