

Survival in Alaska

Where every foot is worth its weight in gold



Not unexpectedly, gold mining above the Arctic Circle is a tough business. Profitability is not easy to come by and with metal prices on the decline, the availability of good, reliable drill steel can be a question of survival.

Fairbanks Gold Mining Inc is the only mining company operating near the town of Fairbanks, Alaska, just above the Arctic Circle. A subsidiary of Kinross Gold, it was founded during the great Klondike gold rush a century ago. As tough as the conditions were for the miners then, today's gold prices are really putting them to the test.

The main mine, Fort Knox, is a low grade operation (0.92 gpt Au). A higher grade orebody, True North (2.29 gpt Au), was opened nearby last February. Approximately 40 million tonnes of material is scheduled for removal from both pits this year and the operation is expected to produce 450,000 ounces of gold from a total mill throughput of 16.1 million tonnes.

“What we do spend money on is drilling and expanding the life of the mine – core things we have to do to survive,” explains Warren Woods, Mine Superintendent at Fairbanks. “And when

we spend, we look for the best price, best performance, and best service.”

These three factors have opened the door for down-the-hole hammers and bits from Atlas Copco Secoroc and support from Secoroc USA. Secoroc six-inch hammers and bits (6¾" SpeedBit design) have helped to increase productivity, save money, and handle extreme temperatures with ease.

What really keeps the miners happy,

however, is a guaranteed hammer and bit performance contract and a high level of service support.

20 per cent improvement

Right from the start, Secoroc's bits performed better than any others being tested at the time, all in comparable rock conditions, and averaging 5,119 feet/bit – almost a 20 per cent improvement.

“The key was that our costs per foot



Line-up above the Arctic Circle at the Fort Knox mine: From left, Drill & Blast Supervisor Donnie Rice, Dennis Thies, Jacovich Industrial & Construction Supply and Dennis Gibson, Secoroc USA.

stayed the same while productivity was improving," says Mr. Woods.

Hammer life and penetration rate were other key issues. Secoroc's penetration rate was eight per cent faster than competing equipment. But that wasn't the only advantage. Under the Secoroc contract, the company takes responsibility for rebuilding the hammers, which saves time and money.

Secoroc's level of service also came as a pleasant surprise, continues Mr. Woods. "It became evident early on that technical support from Secoroc was going to be there. Say we'd see a drill bit design that obviously wasn't going to work. From the time the engineer would note the problem to the time we would have a redesigned product in the dirt was 30 days. That's a response time unheard of in this industry. As a matter of fact, I have never seen technical support on a product like this in my career."

This support included technicians and personnel from Sweden, the US and Canada and strong local support from Jacovich Industrial & Construction Supply, Secoroc's representative in Fairbanks.

Dan Snodgrass, General Mine Foreman at Fort Knox told M&C: "When we started this mine, we made a commitment to having local support as long as the price is competitive. Anchorage, which is 600 km away, is not local. I don't want to be on a phone and not be able to get hold of somebody. I want someone to come in. It's important to have that eye-to-eye, hands-on stuff."

Meticulous tracking

FGMI management slashed cost/ounce by over 20 per cent from last year through meticulous tracking of cost and productivity. "We keep excellent records and we track the drilling performance every minute of operations," continues Mr. Snodgrass. "We track cost per foot, per hour drilled, total hours, time spent changing bits and tooling."

From this data the mine calculates

penetration rates, drill rates, cost per foot and many other factors. It also helps to track Secoroc's performance. The mine has a guaranteed performance contract with separately negotiated figures for bits and hammers. And what FGMI managers like to see is constant improvements – especially in terms of penetration rate and bit and hammer life.

Around 1.7 million feet a year are drilled at Fort Knox. In 1996 the mine was drilling 145 feet/hour. So far in 2001, with Secoroc equipment, it drills 157.3 feet/hour – about a 10 per cent improvement. At True North, which has slightly softer rock than Fort Knox, Drill & Maintenance Supervisor Kevin Brown reports a penetration rate of 160 feet/hour.

Easy changing

Another unique factor is that the bits are easy and straightforward to change, continues Mr. Brown. "It's really efficient. You don't have to drop a 300 to 400-pound hammer, you're just dealing with the bit which is pretty easy to lift."

According to Donnie Rice, Drill & Blast Supervisor at Fort Knox Mine, the Secoroc bits have reduced bit change from half an hour to 10 to 15 minutes. "Because of the way we change the bits we don't have to rack the steel, which is very time consuming. And we don't need the chain wrenches, deck wrenches, and bit baskets," he says. "Moreover, fewer tool changes mean fewer pinch points where fingers can get smashed. Now we don't see very much of that at all."

Today's hammer life is about 40,000 to 44,000 feet before the sleeves are rebuilt. Not having to constantly rebuild also frees up a mechanic for other projects.

Altogether, the Secoroc hammers and bits run well all year round, even in the extreme Alaskan conditions – from -50F (-45C) in winter to +90F (+32 C) in summer.

In addition to all the savings, the mine is pushing for more improvements. Mr Woods would like to see hammers achieving 80,000 feet before rebuild. **M&C 2•01**