

The Sapphire Rush in Madagascar Turns High Tech

ANTHONY W. HADDAD

I lakaka, Madagascar isn't on most maps. A little more than a decade ago there was no town, and only a handful of people called this area home. But since the discovery of sapphire a decade ago, it has been the site of a major and ongoing sapphire rush. A world-class alluvial deposit has attracted tens of thousands of Malagasy to the area, booming the population from a handful of residents to over 300,000.

The rush has also attracted MineCore International Inc. (PINK: MCIO), a San Jose-based, vertically integrated mining company. MineCore, through its Malagasy holdings, holds 40-year government leases on 15,000-hectare sites in the largest known sapphire deposit in the world.

MineCore estimates the properties to have indicated (probable) reserves of \$16.6 billion insitu of sapphires. (The company stresses that the average of US\$159 BCM value placed per cubic meter of gravel is an estimate based on the bulk sampling tests completed by the Behre Dolbear Group for zone two and may not be representative of the 15,000-hectare site.)

The company is made up of three divisions: construction, infrastructure, and marketing. These divisions give MineCore its vertical integration, supporting its core business of sapphire extraction and enabling it to keep profits in-house. The company intends to expand its vertical support to include stone cutting and retail stores.

Initially, however, the company intends to mine the stones and sell them rough. "It's imperative to generate cash flow," says Jerry G. Mikolajczyk, chairman and COO. "We will separate the stones out because sapphires larger than one gram are sold individually, and since there is a shortage of stones, there is an unlimited, open market for them."

One gram of sapphires is made up of five carats. In cutting and polishing, 80% of a stone is lost, giving you a carat gemstone for each one-gram rough sapphire found. Depending on the shape of the rough stone, higher or lower yields can be achieved; flat rough stones yield smaller finished gemstones, and rounded or square rough stones yield larger finished gemstones.

"I've had a 16-gram flat stone and a five-gram round stone," says Mikolajczyk, "and I was able to sell the round stone for more, despite the smaller size." A perfect finished gemstone is geometrically perfect and reflects light in a precise way.

Large flat stones may need to be chopped up into smaller bits to have the right dimensions. The upshot of it all is that larger stones sell for exponentially more than smaller stones. A one-gram stone that can yield a one-

carat gem can sell for \$2,000 or more. A two-gram stone sells for about \$8,000, and a three-gram stone sells for about \$15,000.

Sapphires are used in a variety of sources beyond jewelry, such as solar cells, LEDs, and semiconductors. "Sapphire will be the replacement for silicon," says Mikolajczyk. "It can be melted and used in all types of high-tech applications. We plan to sort the non-gemstone sapphire from the profitable gemstones and turn the waste into profits."

There's a huge market for the smaller stones and the waste. The company recently collaborated with industry experts to develop a detailed white paper researching the industrial applications of sapphire in semiconductor, solar cell, LED and other applicable high technology markets.

The white paper was prepared by Hammond Group/New Tech Research, a consortium of renowned engineers and researchers with backgrounds from various technology pioneers such as Intel and IBM. "The results indicate that the overall market for non-gemstone sapphire continues to grow at a phenomenal rate as multiple high-volume applications merge even as historic usage models undergo price pressure," says Mikolajczyk. "It's reminiscent of the early silicon market development."

The research report projects a \$500 million non-gemstone market by 2012 and \$1 billion by 2017, and conservative estimates indicate a compounded annual growth rate in the 21% to 24% range. A growing use of sapphire is expected in the solar, automotive, semiconductor and LED lighting.

Driving this is the fact that sapphire is an alternative to silicon. It has a higher melting point (silicon melts at 1414 Celsius, sapphire at 2045), important in computer chips because the chips are running so fast that the silicon is melting. In solar cells, the doping agent that's used to pick up the light energy reacts differently to sapphire and has a positive effective that makes the cell more efficient. When radiation-hardened, sapphire has many military and aerospace applications.

Though Minecore currently trades on the Pink Sheets, the company expects to be fully reporting as of their fiscal year-end of March 31, 2008 and on the OTCBB by the summer of 2009. **E**

RISKS: *Although it plans to become current with its filings in 2009, the company has not yet filed a quarterly or annual report with the SEC. As with any mining operation, you don't know what's in the ground until you dig or have proven reserves. Also, this area of Madagascar has a reputation for being dangerous, which requires extra levels of security and precaution.*