

An effective debate: Doggett v. Enders

Brian Sylvester

During a Sunday afternoon panel discussion on the effectiveness of exploration, Michael Doggett, HanOcci Mining Advisors, laid down the gauntlet and Stephen Enders, Renaissance Resource Partners, answered the challenge.

“Exploration spending is increasing while discoveries are not but who gives a rat’s ass?” asked Doggett, citing a copper exploration and production dataset spanning 1979 through 2008.

“The purpose of exploration is to replace reserves. If we’re talking about the copper business, a simple measure of exploration effectiveness then is simply to look at the replacement ratio of reserves to production,” Doggett posited.

Doggett said that in 1979 copper reserves totalled 350 million tonnes, and that over that 30-year period the industry produced 322 million tonnes of copper.

In 2008, at the end of the study, copper reserves stood at 550 million tonnes for a “net reserve addition” of a little more than 500 million tonnes of copper over the previous 30 years.

“Does this really look like an industry that has a discovery problem if we’re adding reserves at twice the rate we’re producing? Over that 30 years, our (copper) production has increased from 8 million tonnes a year, to 16 million tonnes a year, and we’re still adding reserves at twice the rate of production. To me, that doesn’t raise a lot of red flags.”

Doggett also compared copper reserves over each year of the study and noted that there was never a time when copper reserves dipped much below the amount needed for another 30-35 years’ worth of production at current levels.

Doggett said that between 1989 and 2008 one hundred new copper mines went into production. The mean value of profit per deposit is \$395 million each. The cost per discovery was \$116 million, based on \$11.6 billion spent on exploration over that same period. If you add the cost of development, it works out to \$221 million per deposit.

This means the average return on exploration was \$174 million per copper deposit.

“Can we do better? It’s completely unrealistic, to tell you the truth, that we could do any better. I don’t think we are going to magically get better at exploration. There’s a silver bullet, there’s no panacea...Overall, we’re going to do well just to do what we’ve always done in terms of keeping up with reserves and resources,” Doggett said.

But copper is not gold and Enders, a former executive with Newmont Mining, took issue with Doggett's view. He examined exploration from the perspective of a major mining company.

"I'm here to say that (exploration success) is never enough. It's never in the right geopolitical area, or if it is there is something wrong from a social perspective. It's never enough grade; it's never big enough. It's typically not close enough to infrastructure, and if it is then it's too close," Enders said.

He added: "Yes, indeed, we have to do a lot to continue to up our game and to keep pace with what society's needs are."

Enders outlined a number of current problems with the exploration system.

Some of these include declining grade, an unprecedented amount of refractory ore (which increases the cost of processing) in gold deposits, and the mining industry's unwillingness to use new technology to tackle problems.

"To be kind, I think the mining industry is a slow follower to adapt new technology," Enders claimed.

More importantly, Enders said there was a philosophical gap between what major mining companies want and what junior exploration companies often provide.

"I think majors are exploration phobic," Enders said. "They really just want to acquire discoveries and have projects already made. They don't want take the time and the effort required to do exploration.

"Maybe only 30% of (juniors) are serious about creating wealth for others. Most of them are interested in creating wealth *from* others. If you look at a typical junior's fundraising activities and what goes into the ground, they spend 50-75% of their funds keeping the lights on," Enders said.

He added: "The exploration finance game behind the juniors is very, very short-term focused... The exploration business paradigm is broken. Our odds of success are something on the order of one in a thousand to one in ten-thousand to find that deposit that becomes reserves that can be mined."

Enders said that the gold business is very different from copper.

The median gold deposit is 350,000 ounces, whereas the mean deposit size is 1 to 2 million ounces, much smaller than the average copper deposit.

"The fundamental challenge in the gold business is that it's so easy to deplete reserves faster than we can replace them through exploration...My view from a major's perspective is that it's not a sustainable business on its own," Enders claimed.

“Most of the gold mining companies now, at least the majors, are going into copper exploration for porphyry copper-gold deposits.”

Jason Goulden, vice-president of research with Halifax-based Metals Economics Group, said that exploration spending on gold deposits will likely get a boost this year.

“We are likely to see gold continue to gain share (of exploration spending) in 2010,” Goulden said. Overall, barring a dip in metals prices, MEG predicts a 30-40% rise in exploration spending in 2010, after the largest single year drop ever in 2009.