



Better than “gosh darn good” in Slovakia

By Harry Norman

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Follow up drilling at Biely Vrch has revealed gold at 1 gram per tonne from the surface down to 460 metres, which is likely to contain at least 1.2 million ounces of gold.

EMED is focused on gold and copper in Europe, and the company now has projects in both that are clearly potential company-makers: the Rio Tinto copper mine project in Spain and gold porphyry deposits in Slovakia. The company is awaiting final permitting to trigger operations at the Rio Tinto mine; which could happen as early as September.

Slovakia has a long mining history - most of the silver used in Renaissance Europe originated in Slovakia. Indeed the town of Banska Stiavnica, which is located in the centre of EMED's cluster of licences, has a museum of mining. For two centuries, the mines around Banska Stiavnica produced 24,000 kilograms of silver and 600 kilograms of gold a year, from mining narrow high-grade veins, using traditional technologies, until they were closed in the twentieth century. However, politics, technology and commercial life move on. The Soviet Union, which wasn't interested in mining gold in Europe, collapsed - and Slovakia emerged as an independent country that could set its own mining-friendly priorities. EMED knew that prospective areas of Slovakia, such as the “Central Slovakian Volcanic Field” around Banska Stiavnica, had not been examined with modern technology that could detect disseminated low-grade deposits (large, low-grade prospects that could be detected and exploited commercially using modern know-how and technology).

Having acquired licences to cover exploration of a modest 106 square kilometres, EMED went looking for near-surface, large, low-grade copper-gold prospects, and used soil & stream geochemistry sampling which promptly identified three first-pass near-surface drill targets. The first target to be drilled certainly was “a discovery”: drilling delivered 100 metres of intersections showing mineralisation consistent with gold epithermal and porphyry gold/copper systems. So although not a commercial discovery at that stage, drilling at Biely Vrch validated EMED's thinking about the region.

So what are “gold epithermal and porphyry gold/copper systems” and why should we be interested in them? Epithermal vein systems tend to host relatively high grades of ore – typically silver and/or gold - and they are associated with porphyry deposits which, when commercially viable, are typically large bulk tonnage deposits of low-grade ore – typically copper, or copper and gold. Porphyries are volcanic in origin and they are formed from molten rock moving towards the surface. To get a very general picture, a porphyry is like a head and epithermal veins are like hairs sticking up. The mineralisation of epithermal veins involves hot water moving upwards, transporting and concentrating metals into near-surface veins. However, a further migration of metals can occur in which the metals hosted in the veins also get distributed into networks of veinlets, in the rock that surrounds them – this is known as



“stockwork”. So in this kind of geological context, metal can be found in three places: near-surface veins, stockwork surrounding the veins, and below the epithermal veins and stockwork, as low-grade ore in a porphyry. So you can see the logic in EMED’s thinking; that a region where substantial silver and gold has been mined from near-surface, narrow grade epithermal veins is highly likely to be a region where stockwork and porphyries exist – and ideally some of these porphyries will be at, or near, surface with commercially exploitable grades of metals.

Porphyry copper-gold mines are major sources of gold, usually from low-grade, bulk-tonnage open pit mines. The world’s largest excavation is a copper porphyry mine owned by the Rio Tinto company (who, incidentally, no longer own the Rio Tinto mine in Spain). The Bingham Canyon Mine is an open-pit mine exploiting a large copper porphyry, southwest of Salt Lake City in the USA. Bingham Canyon has been in production since 1906 and is now two and half miles wide and three quarters of a mile deep, covering 1,900 acres. By 2004, the mine had produced more than 15 million tonnes of copper, 23 million ounces of gold, 190 million ounces of silver, and 850 million pounds of molybdenum. The Bingham Mine operates from reserves grading at 0.54% copper, 0.043% molybdenum, 0.32 grams per tonne gold and 2.59 grams per tonne silver. The richest copper-gold porphyry mine is Freeport-McMoran’s Grasberg in Indonesia, with grades of 1.1% copper, 1.04 grams per tonne gold and 3.4 grams per tonne silver, with a resource of 2,500 million tonnes of ore. Nobody is suggesting that EMED is expecting to find something as colossal as Bingham Canyon or Grasberg, but once a commercial porphyry has been identified, developed into a working mine, and the associated infrastructure costs have been recovered, open pit porphyry mines tend to be low-cost long-life cash cows.

It was soon realised that Biely Vrch was a gold porphyry-type deposit, rather than the more usual copper, or copper-gold porphyry. Gold porphyry deposits, such as Lobo, Marte and Refugio, in the Maricunga gold belt in Chile, are typically large (100 million tonnes of ore plus), with low-grade gold ore (0.7 to 1.8 grams per tonne gold) that require relatively simple technology for extraction and processing. Gold porphyry deposits also tend to host ore bodies with a consistent ore grade, which means that a significant ore body is likely to be delineated more rapidly than is usual with other porphyry types. Follow up drilling at Biely Vrch has revealed gold at 1 gram per tonne from the surface down to 460 metres, which is likely to contain at least 1.2 million ounces of gold. EMED currently has two drill rigs working on infill drilling at Biely Vrch in order to bring the ore resource there up to JORC standards – anticipated for early 2009.

Maybe you remember Keith Barron’s oft-quoted article, “Straight Talk on Mining, Number 23”? - “An intersection of 50 gram-metres is pretty good; of 100 or 200 gram-metres is pretty gosh darn good, and anything higher becomes exceptional.” So Biely Vrch, with 460 gram-metres (i.e. “1 gram per tonne from the surface down to 460 metres”) already looks exceptional. In fact, it is already considered by many to have the potential to be a world class, stand-alone mine.

Just establishing that Biely Vrch is a gold porphyry-style deposit is exciting, because gold porphyry deposits tend to occur in clusters. So, not surprisingly, EMED applied to increase its Detva prospect to cover 1107 square kilometres. Initial drilling at two other targets, Kralova and Slatinske Lazy, also confirmed porphyry-style gold mineralisation. However, Harry Anagnostaras-Adams thinks that on the basis of the grades found with this first-pass drilling, Kralova may prove to be an economic find, whereas Slatinske Lazy may not prove to be so. However, the results obtained established conclusively that EMED has discovered something unusual: a new gold porphyry province.

EMED has already identified further targets to drill in the search for more one-million-ounce-plus commercial porphyry gold deposits in Slovakia. In this search, EMED has four main criteria to satisfy: whether the ore body is intact, nearness to surface, grade, and grade consistency. An ore body that has been broken up by faulting is more expensive to mine, an ore body far below surface costs money to reach; the average grade must be consistent and worth mining and so that processing costs can be forecast and controlled.

Edison Research already puts a value of 25p per share on Biely Vrch, so it will be interesting to see how the value of EMED develops as and when the company identifies gold porphyries that can be compared to Biely Vrch. It seems likely that Biely Vrch will become the benchmark for evaluating EMED’s gold porphyries in Slovakia in terms of commercial potential. With the Rio Tinto copper mine project in Spain, and the search for more million ounce gold deposits in Slovakia, exciting times lie ahead for EMED.