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Roca Mines drill-tests BC prospect

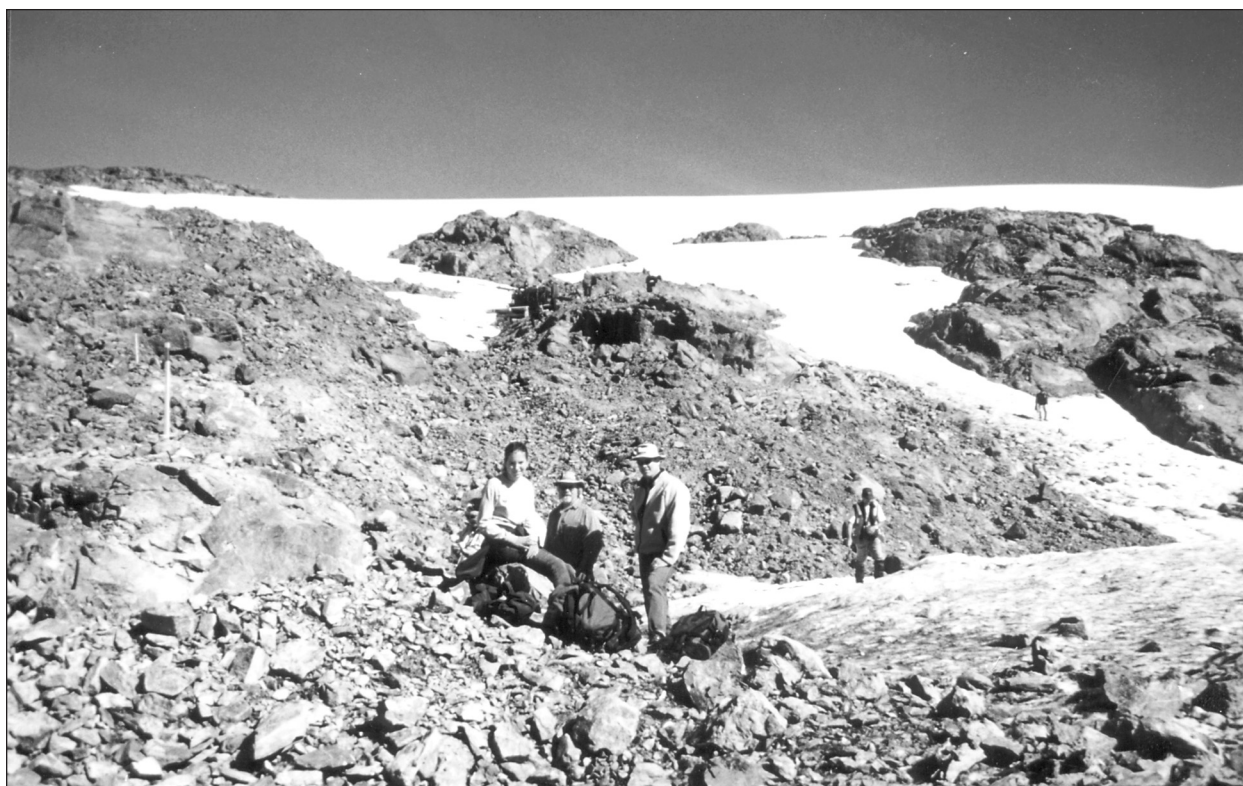


Photo by Richard Graham

Roca President Scott Broughton (front, right) shows analysts the SG zone on the company's Foremore property in northeastern British Columbia. A drill rig turns in the background.

BY RICHARD GRAHAM
BOB QUINN, B.C. — With the drilling season winding down in the mountainous Iskut district of northwestern British Columbia, newly minted **Roca Mines** (ROK-V) is wasting no time in testing for gold-rich, massive sulphide mineralization on its Foremore property.

Sandwiched between **Barrick Gold's** (ABX-T) Eskay Creek operation and **SpectrumGold's** recently acquired Galore Creek copper-gold porphyry deposit, Foremore was first worked in 1987 by Cominco, now **Teck Cominco** (TEK-T). The major identified more than 1,000 volcanic-hosted massive sulphide boulders concentrated in three clusters: the North Boulder (29 samples averaging 10.2%

zinc and 3.5% lead, plus 1.1 gram gold and 87 grams silver per tonne), the South Boulder (53 samples averaging 9.4% zinc, 1.7% lead and 102 grams silver), and Side Glacier Boulder (8 samples averaging 7.6% zinc, 1.7% lead and 8 grams gold).

The clusters lie at the twin termini (5 km apart) of the More glacier, and with strong geophysical conductors identified under the 10-km long glacier, Cominco believed the high-grade source of the mineralization was hiding under the ice. Testing this theory, the major sank six drill holes under up to 200 metres of ice, only to hit graphitic sediments. In 1999, after spending more than \$2 million on the property, Cominco saw the claims lapse. They were quickly picked up

by Smithers-based prospector Lorne Warren.

Roca entered the scene in 2002, when company founders Scott Broughton and John Mirko, president and director, respectively, inked a deal to acquire the project.

Under the agreement, Roca agreed to pay \$100,000 and issue 600,000 shares over three years. The vendor retains a 2.5% net smelter return royalty. So far, 200,000 shares have been issued and \$25,000 paid.

The company's first move was to compile data on the project, including air photos, to determine possible sources of the mineralized boulders.

"It is hard to imagine how a big glacier some three kilometres across could have eroded a source and

pushed mineralized boulders into discreet clusters without smearing them across the outflow of the terminus,” said Broughton, who spoke to *The Northern Miner* during a recent site visit.

Sticking with the tried and true method of prospecting, the then-privately-held company discovered gold-silver-rich stringer-style sulphide mineralization uphill from the Side Glacier Boulder field. This mineralization, dubbed the SG showing, is hosted in quartz-sericite-altered intermediate-to-felsic volcanics. Grab samples returned up to 23.8% combined lead-zinc plus 20.1 grams gold. Further prospecting 200 metres to the southeast led to the discovery of the SG East zone, where stratiform mineralization consists of disseminated-to-massive pyrite, magnetite, and minor chalcopyrite-hosted in a limey argillite.

On the back of the project, the company completed a \$1.5-million initial public offering and began trading in December 2002.

The 2003 field season began in June, when the junior collected rock-saw channel samples from the SG zone. However, rather than wait for the assay results, Roca has elected to move forward and start drilling.

“We know it’s mineralization there [in the SG zone],” said Broughton. “We can see it. So regardless of the results, it would have been drilled.”

Mineralization at the SG zone is defined by roughly stratabound sphalerite-galena veins at, or near the contact between, felsic tuffs and underlying thin-bedded limestones and chloritic phyllites. The veinlets are typically 1-2 cm wide and run parallel to the predominant foliation. The zone ranges from 5 to 8 metres thick with sulphides comprising 5-40% of the rock.

One of the key stratigraphic markers, which can be used to trace mineralized extensions, is in the structural footwall of the zone. This takes the form of a series of well-bedded micritic limestones. This is important because the felsic stratigraphy at the zone is influenced on both the footwall and hangingwall contacts by reworked, volcanoclastic rocks. In

this type of reworked environment, primary sulphide bodies typically cannot be preserved. The task at hand is to find deeper sub-basins close to the felsic section, where sulphide bodies can be held in tact. However, Roca is not adhering to any specific geological model.

“We should not have blinders on,” said Roca’s senior advisor, John Baker. “We have a very significant thickness of good-grade mineralization at the SG zone.”

Roca’s field crews have traced the SG felsic horizon via the limestone contact for 3 km and finished an initial round of drilling over the stringer-style mineralization. While awaiting the results, the company has launched a geophysical survey over the contact zone to define further drill targets.

“This whole contact is prospective, so basically we want to walk a drill along the contact,” said Baker.

Heterolithic boulders

On a broader scale, one of the most intriguing indicators for significant massive sulphide mineralization in the area remains a mystery. Northeast of the SG zone lie boulders of heterolithic carbonate rock debris flows. The boulders contain felsic, limestone and oxidized sulphide fragments, clearly placing them stratigraphically above the felsic rock package. The boulders show several favourable features for hosting a deposit, including good porosity and rapid sedimentation favourable for sulphide burial and preservation. Based on these boulders and the identified lithologies, the junior is targeting massive sulphide mineralization on the side of an interpreted felsic dome, which is centred north of the SG zone.

“There are boulders in the South Boulder and SG boulder fields that aren’t representative of the mineralization at the SG zone,” said Baker. “It’s more massive stuff. So there is something in the area we have not found yet, and we think we have the vectors that tell us which way to go to find the massive sulphide deposit.”

Meanwhile, about 3.5 km north-east of the SG showing, Roca has

discovered massive sulphide mineralization uphill from the North Boulder field. Samples from the area, known as the BRT zone, have yielded an average of 10.2% zinc, 8.6% lead, 0.27% copper, 2.04 grams gold and 186.6 grams silver over 3 metres. The planar sulphide body is hosted in a chlorite-sericite-pyrite schist that has been deformed into a 20° south-to-southeast-plunging antiform. The zone, which lies at the transition between well-stratified deformed phyllitic sedimentary rocks and an overlying mafic volcanic package, occurs structurally and stratigraphically below the horizon that hosts the SG showing.

The alteration at the BRT zone indicates a low-sulphidation, volcanic-hosted massive-sulphide type of mineralization. Gold values often exceed 2 grams, making the zone a likely candidate for precious metal enrichment, with the gold showing a strong correlation with arsenic and not barite.

The junior has moved the drill rig to this area and is currently drilling the target.

At the nearby North zone, which was found in 2002, mapping and prospecting have traced lead-zinc-silver mineralization in quartz-sericite-pyrite schists interfoliated with chloritic schists. Mineralization consists of laminations and disseminations of pyrite, sphalerite and galena with lenses of semi-massive-to-massive pyrite in the quartz-sericite-pyrite schist. Most of the better-grade samples consist of high-sulphide veins and replacement associated with low-angle faults in argillites. The schist ranges from 2 to 5 metres thick and is believed to be stratigraphically lower than the rocks, which host the BRT zone. The North showing is associated with a strong geophysical conductor.

Gold targets

The Foremore property also hosts gold targets that Roca believes warrant further work.

At the Westmore target, 2 km southwest of the North Boulder field, Cominco discovered gold-bearing sheeted quartz veins hosted in the Westmore granite stock. Histori-

cal samples returned up to 162 grams gold from boulders and 20.1 grams gold from grab samples in outcrop. The vein averages 0.25 to 2 metres in width and strikes east-west and southeast-northwest. Limited work by Roca yielded 17.05 grams gold in float samples and 2.27 grams gold from chip samples.

The second major gold target lies 1.5 km southeast of the SG zone. Dubbed Hanging Valley, Cominco reported samples grading as high as 93.7 grams gold over a 1-metre chip sample. The mineralization occurs in sulphide lenses in foliation-parallel structures and thin shear zones. Roca aims to prospect the Mississippian limestone and felsic rocks in this area for possible extensions of the SG zone, as well as for a source for the rocks at the South Boulder field.

In drawing up its exploration plans, Roca is using the Eskay Creek deposit, just 45 km to the south, as a model.

High-grade mineralization in the Eskay Creek was first recognized in the 1930s, but it was not until 1971 that a 1.5-tonne sample of high-grade ore was extracted from the 22 zone, about 2 km southwest of the now-prolific 21 zone. In 1979, these trenches were mined to produce 8.7 tonnes of hand-cobbed ore. Finally, in 1989, the first real significant mineralization was encountered when Murray Pezim-led Calpine Resources cut 208 metres grading 27.2 grams gold and 30.2 grams silver in hole 109.

The rest, as they say, is history.

Eskay Creek went into production in 1994 with the ore so high-grade (greater than 3 oz. gold-equivalent per tonne) that it was simply mined, crushed and shipped directly to smelters with no milling or concentrating. A mill was established only in 1998, and even today, more than half the production is shipped directly.

“Geophysics did not work at Eskay either, and well-mineralized rocks helped point the way uphill to the deposit,” said Broughton.

21B zone

Most of the initial reserves at Eskay were defined in the 21B zone, which is hosted in Middle Jurassic volcanic and sedimentary rocks. The zone forms a lens-shaped body measuring 900 by 300 by 20 metres. The mineralization occurs as a stratabound sheet in carbonaceous mudstones of the contact unit and in feeder veins in the underlying rhyolite breccia.

Based on mineral associations and continuity of grade, the 21 zone has been divided into two deposits: the 21A (formerly called the South zone) and the 21B (which includes the former Central and North zones). These deposits are separated by 140 metres of weak mineralization. Diamond drilling has traced the entire zone for 1.4 km along strike and 250 metres down-dip over widths of 5-45 metres.

The exploration success did not stop at startup. In 1995, drilling intersected the NEX and Hangingwall zones. The NEX lies north of the

21B lens, at the same stratigraphic horizon, and consists of mainly massive sphalerite, tetrahedrite, galena and lesser lead-sulphosalts, with late chalcopyrite stringers crosscutting the lens. The Hangingwall zone is stratigraphically above the NEX zone, generally above the first basaltic sill, and dominated by pyrite, sphalerite, galena and chalcopyrite.

In 2002, one of two holes drilled into the historic 22 zone yielded 6.2 grams gold over 80.1 metres, including a higher-grade section running 64.1 grams gold over 4.7 metres. This area is the focus of Barrick’s 2003 exploration drilling.

Eskay Creek-style mineralization is unusual in that there is a close association between low-temperature epithermal gold-silver and volcanogenic massive sulphide deposit types. The epithermal mineralization is characterized by gold, silver, arsenic, antimony and mercury mineral suites and forms massive and stratabound lodes, as well as more usual crosscutting veins and disseminations. The massive sulphide mineralization shows typical ore textures but atypical mineralogy and significant precious metal enrichment.

Said Broughton: “The Foremore property is in an extremely rich metallogenic belt, and we have a large property with a lot of smoke, so we expect to make more discoveries during the course of the field season.”

Roca has 11.8 million shares outstanding, or 13.8 million fully diluted. At presstime, it was trading at around 30¢.