



Coro forges ahead in Argentina, Chile

SITE VISIT

USPALLATA, ARGENTINA — **Coro Mining** (COP-T) is a company on a mission. The junior explorer debuted on the market in mid-2007 and plans to be a mid-tier base metals producer within three years. From that point on, the plan is to develop a new mine every two to three years.

Sound far-fetched? Perhaps. But the team behind Coro has done it before. The company is the brainchild of former managers of the highly successful junior **First Quantum Minerals** (FM-T, FQVLF-O).



BY GWEN PRESTON

Alan Stephens, president and CEO of Coro and formerly the vice-president of exploration for First Quantum, says that after the excitement of getting First Quantum to production, managing the company became a bit mundane.

“We needed another challenge — we left First Quantum with a view to replicate that success to the best of our ability,” he says. “And I’m fairly confident that we can.”

Michael Philpot, another former First Quantum vice-president, is Coro’s executive vice-president and secretary. And Coro’s CFO, Damian Towns, also came over to the upstart from First Quantum.

The group focused in on South America. Their first step was to bring an experienced South American team on board, and they found Juan Carlos Roman to head the group. Roman, Coro’s vice-president of development and production, came from **Antofagasta Minerals** (ANFGY-O, ANTO-L) where he was responsible for all of the copper giant’s Chilean mining operations. From his 25 years of mining experience in Chile, Roman was able to pull together a Coro team that knows its way around Chilean and

Argentinean geology and politics.

Roman and his team found projects for Coro, picking up one in Argentina and several in Chile. The projects had to fit Coro’s criteria: open-pit copper projects in politically stable countries, close to infrastructure, with the potential to contain at least 400 million lbs. of copper.

With people and projects in place, the company was set to go public in June. Then Argentinean politics reared its head.

Coro’s most advanced project is San

Jorge, a medium-sized copper-gold porphyry deposit in Mendoza province, Argentina. In June, in response to election year environmental activism, the provincial legislature passed a law banning the use of toxic chemicals in any metal-based mining activity in the province. The term “toxic chemicals” includes sulphuric acid.

Those pushing for the ban were concerned about contamination of and competition for the water supply. In a water-deprived country such as Argentina, tensions mount quickly when the issue involves water.



CORO MINING

The shaft support for a small scale mining operation near Coro Mining’s Flores project.



CORO MINING

The rounded hills of the San Jorge copper-gold deposit at the foot of the Andes in Argentina.

With the feasibility of the company's flagship project now in jeopardy, Coro delayed its market debut. Management decided one of their responses to the law would be a constitutional challenge, which they filed in mid-July. Several other affected companies followed suit. And Coro went public in July despite the situation.

Provincial elections in late October ushered in a new government that Coro anticipates will revisit the legislation sometime this year. There's pressure to do so from the constitutional challenges as well as from the federal government, which owns a uranium project in the province that's also been left in limbo. In addition, the new governor of Mendoza, Celso Jaque, is a stated supporter of mining.

While the setback would leave many companies aghast, Coro's management has enough experience working in Argentina to take it in stride.

"We've taken the view that we will sit down and engage with the new government and demonstrate the benefits of the project," Stephens says. "At this point, the cost of not going ahead — to us, but also to the region — is now real."

The project presents itself as an obvious

target. San Jorge is a mound in the Argentinean desert, really a foothill to the Andes rising up to the west. The rounded hill is made up of granodiorite porphyry stock with associated contact and hydrothermal breccias intruded into Paleozoic sandstones and shales. Strong silicification and quartz stockwork have developed in the sediments and porphyrys.

A handful of north-south faults cut through the hill. On the west side, the porphyry hosts copper mineralization, though the best grades are associated with tourmaline brecciation. Below an oxide layer that penetrates to an average depth of 30 metres, sits a supergene enrichment blanket, and that covers an extensive primary sulphide zone.

"It's a typical porphyry," Stephens says. "It's expandable at depth in the sulphides based on the copper price." The deepest hole drilled to date cut down 500 metres and still ended in sulphide.

Results from the summer drill program produced a significant increase in San Jorge's resources. A 27-hole drill program was split between infill drilling, focused on improving the definition of various ore types and providing further informa-

tion on the distribution of gold in the enriched and primary sulphide ore layers, and stepout drilling, designed to define extensions to the deposit.

Eight of 17 stepout holes encountered additional oxide mineralization, extending the resource boundaries east and north. Hole 1 cut 60 metres of 0.57% copper and 0.1 gram gold; hole 8 returned 37 metres grading 0.46% copper and 0.23 gram gold, and hole 9 intersected 45 metres of 0.4% copper and 0.17 gram gold.

Infill drilling confirmed and better defined the copper and gold grades in the enriched and primary resources. For example, hole 17 cut two mineralized oxide intervals: 14 metres grading 0.45% copper and 0.45 gram gold from 40 metres depth, followed by 28 metres grading 1.21% copper and 0.43 gram gold from 66 metres. The drill then entered the enriched layer, returning 30 metres grading 1.99% copper and 0.33 gram gold. Finally, the primary sulphide layer returned 24.5 metres grading 0.61% copper and 0.25 gram gold.

The latest measured and indicated oxide resource at San Jorge is estimated at 32.3 million tonnes grading 0.53% copper. The enrichment zone contributes less tonnage but at a slightly higher grade: 26 million tonnes grading 0.65% copper and 0.21 gram gold. The bulk of the tonnage comes from the primary sulphide zone, which is estimated to contain 136.2 million tonnes grading 0.43% copper and 0.19 gram gold.

Inferred oxide, enrichment, and primary resources add up to an additional 73 million tonnes averaging 0.37% copper and 0.14 gram gold.

Aside from the current political problems around being in Mendoza province, the project's location would make development fairly easy. The town of Uspallata, which has grid power, is 45 km from the project. It's a town that lives off traffic along the highway between Mendoza City, which is 100 km to the southeast, and Santiago, Chile, 250 km southwest over a mountain pass.



In a water-starved country, the San Jorge property has a stream running into it from the mountains in the west, with a flow of 200 to 300 litres per second. In addition, the north-south faults that cut the property drain all water away from the rest of the valley.

"The water goes 2,000 metres underground," Stephens says. "It doesn't flow into ranching land or into other streams at all."

If developed, the leach pads would sit on the west side of the hill on a plot of land with a natural 4.5% slope. The expanse of flat land surrounding the rest of the project leaves more than enough room for an electrowinning plant and a tailings dam.

And, to reduce issues around land ownership, Coro bought the land covered by its mineral claims. The company ended up with a sizable chunk — a 1,200-sq.-km ranch property with considerable upside potential.

"We have a couple ideas around what to do with this land package," Philpot says. "We're almost certainly going to create a nature reserve in the mountainous part of the ranch for the province to manage — Argentina doesn't have very many reserves or parks along those lines."

The company is also considering possibilities for using parts of the property for agriculture. Currently, the land is worth roughly \$10,000 per hectare. If Coro can develop vineyards on the land, the price shoots up to \$40,000 per hectare.

"It would also show people that vineyards and mining can coexist," Philpot says. "So we're thinking about that. The property could be very worthwhile on many levels. It's a nice, self-contained area that we control in its entirety."

Coro's team does not have any further drilling planned for San Jorge. Philpot says the company has gathered more than enough data for the prefeasibility study already under way. The study is evaluating a leach-only operation that would see 20,000 tonnes of copper produced annually from the oxide and enrichment ore.

Most components of the study are complete, including environmental baseline studies, hydrology and hydrogeology studies, infill drilling, and power supply studies. The study costing includes \$10 million to bring a power line into San Jorge from Uspallata. Metallurgical test work predicts heap leach recoveries of 82% from the oxide ore and 70% from the enrichment ore, with acid consumptions around 25 kg per tonne.

One interesting question being addressed in the study is whether the company should buy sulphuric acid or construct a sulphuric acid plant.

"There's a definite acid shortage in northern Chile," Stephens says. "So you start to think: if it costs \$20 to \$30 million to build an acid plant and then \$45 per tonne to produce, compared to spending \$95 to \$120 per tonne to buy, what's the best plan?"

While the prefeasibility engineers study a leach-only scenario, Coro is also conducting an internal evaluation on the feasibility of a combined leach and flotation operation. The study is looking at 10,000 tonnes of copper produced annually from a leach operation plus 25,000 to 35,000 tonnes per year of copper in concentrates from flotation of enrichment and primary ores. Adding sulphide ore flotation would likely increase the mine life to 15 years from nine years, and add a significant gold credit.

"A combined leach and sulphide process seems the most favourable but only the study will tell," Stephens says.

Coro's other major project is Flores, which includes the Barreal Seco, Salvador, and Celeste properties. The properties, which *The Northern Miner* also recently visited, are in Chile's Atacama Desert near the boundary of Regions II and III, 100 km northeast of the port of Chanaral and 80 km northwest of the Potrerillos smelter.

Mineralization at Barreal Seco, the project's main deposit, is classic iron oxide-copper-gold (IOCG) type. Disseminations, veinlets, and matrix

filling of copper oxides and sulphides are associated with diorite stocks and dykes. In the Main zone, primary sulphides and higher-grade oxides are confined to a steep-sided, structurally bounded breccia and specularite stockwork zone. In the Southeast zone, Coro has outlined structurally controlled mineralization with lower-grade disseminations in favourable lithologies.

Post-mineral cover blankets the property in a thin layer. Beneath it, the oxide layer is 70 to 200 metres thick, a mixed zone fills the next 10 metres, and the primary zone extends to depth below. The deepest drill hole penetrated to 400 metres depth and ended in mineralized sulphides.

Barreal Seco hosts a measured and indicated oxide resource of 26.3 million tonnes grading 0.56% copper. Adding the mixed zone brings the leachable resources up to 28.8 million tonnes grading 0.55% copper, with inferred resources pitching in 4 million tonnes grading 0.42% copper.

In the sulphide zone, indicated resources are only 1.4 million tonnes grading 0.696% copper. The bulk of the sulphide tonnage is still in the inferred category: 23.5 million tonnes grading 0.568% copper. It is interesting to note that when **Rio Tinto** (RTP-N, RIO-L) calculated a resource estimate (not compliant with National Instrument 43-101) 10 years ago, the sulphide tonnage was 10 times the current inferred amount.

Drilling to date has focused on the oxide portion of the deposit, which the company believes it has fully delineated.

"Our first goal is to get the oxides into production," says Stephens. "We really plan to study the economics of mining the sulphides after mining and leaching the oxides."

Nonetheless, recent infill drilling at Barreal Seco prompted Coro to push ahead plans to evaluate the project's sulphide potential. Hole 70 intersected 58 metres of oxide grading 0.56% copper, followed by 160 metres of sulphide averag-



ing 0.74% copper. Hole 72 returned 56 metres of 0.8% copper and 20 metres of 0.6% copper in the oxide zone, and then hit 126 metres of sulphide grading 0.77% copper.

Stephens now says the company will evaluate the potential for producing both copper cathode and copper in concentrates from the project in an internal scoping study expected in the first half of 2008.

In terms of infrastructure, the project is road-accessible and sits 30 km away from grid power. Water, however, is an issue, seeing as the project is located in the driest desert in the world. Stephens says the company could buy water from the Salvadore mine run by state-owned **Codelco**, but that would require a 70-km pipeline, a permit to extract, and likely a fair chunk of cash.

“What’s probably a better idea is to pipe in seawater,” Stephens says. “We’re only eighty kilometres from the coast, so that’s not prohibitively expensive, and seawater leaching is already being done in Chile.”

The desert sand, specularite crystals sparkling in the sun, currently covers 360 million lbs. of copper resources. Philpot says the company wants to see 400 million lbs. of measured and indicated copper and the project will be ready to go.

“It’s a pretty simple deposit,” Stephens says. “We just have some work to do to prove that it’s viable.”

If Barreal Seco were to advance to production, the other two prospects that make up the Flores project potentially add to mill feed. Salvadora and Celeste are IOCG-type deposits within 30 km of Barreal Seco.

At Salvadora, 17 km southwest of Barreal Seco, copper mineralization is best developed primarily in the contact zones of diorite porphyry bodies. Coro discovered the prospect in 2006 and has explored the surface, trenched, and completed three phases of reverse-circulation drilling. Mineralization has been traced over a strike length of 1 km, still open at both ends.

Drill results have returned copper grades ranging from 0.3% to 1.7%, in oxide and sulphide. Some of the strongest results include hole 36, which returned 16 metres of sulphide mineralization grading 1.72% copper from 110 metres depth; hole 10, which intersected 26 metres of oxide averaging 0.72% copper from 28 metres depth; and hole 17, which cut 128 metres of oxide grading 0.57% copper from 8 metres.

And at Celeste, a 19-hole drill program recently indicated that the potential for a significant copper oxide resource is constrained by a generally shallow depth of oxidation. However, the data indicate that broad zones of structurally controlled primary copper sulphide mineralization are present at Celeste.

For example, hole 5 cut 14 metres of oxide grading 0.71% copper from 24 metres depth, followed at 142 metres depth by 0.56% copper in sulphides over 38 metres. Similarly, hole 18 intersected 16 metres of oxide grading 0.65% copper near surface, then hit 20 metres of sulphide averaging 0.37% copper from 76 metres depth, and 0.72% copper over 28 metres of sulphide from 106 metres down-hole.

Coro forged an interesting and already productive agreement with Phelps

Dodge, now part of **Freeport-McMoRan Copper & Gold** (FCX-N). In exchange for 200,000 shares, Coro has exclusive access to Phelps Dodge’s exploration databases for parts of Chile and all of Mexico and Central America for three years, renewable by mutual agreement. Phelps Dodge holds a 70% back-in right on any projects that Coro acquires within the area covered by the agreement that contain more than 2 million tonnes of copper. If Phelps Dodge exercises the back-in right on a project, the major will carry Coro to production.

“It was this agreement that allowed us to find these projects in the first place,” Stephens says.

In early November, the company announced it had staked a number of prospects derived from the database agreement.

And the company just optioned another property in south-central Chile, called Andrea. Andrea is a copper-gold prospect in Region VII that was explored by two previous junior explorers in the 1990s. Previous exploration focused on delineating mesothermal gold-copper veins within a larger, poorly defined porphyry system. Diamond-drill intercepts were assayed for gold only, and returned highlights including 21.7 metres grading 1.78 grams gold.

From the available geological and drill core data, Coro believes the Andrea property has the potential to host a medium-sized porphyry copper deposit, as well as a more modest-sized gold-copper vein network.

Coro has a 52-week trading range of \$1-2.25. The company has 36.2 million shares issued.