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VGS → Afton

Afton's untapped mineral wealth targeted

BY SCOTT SIMPSON
VANCOUVER SUN

MINING | Last year it singlehandedly accounted for half the $50 million that investors plugged into mining exploration in British Columbia.

Now, flush with exploration cash, the principals of DRC Resources Corp. are preparing for a drilling season that could answer a two-decade-old question:

Did the former operators of the Afton mine near Kamloops leave most of the wealth in the ground?

Afton Mines Ltd. produced 450,000 ounces of gold and 45 million tonnes of copper from the open pit operation between 1977 and 1988.

DRC believes that there's enough ore-grade material to at least double earlier production of copper and gold with a new, underground mine on the same propert...y.

Investors like the company's idea — DRC raised $24 million in a private placement last November. That's almost half the amount of exploration investment that came to B.C. in 2003.

President and CEO John Kruzick said the company will spend up to $12 million on an advanced underground exploration program this year.

The project is located adjacent to the Trans-Canada Highway 10 kilometres east of Kamloops, alongside the original Afton mine.

DRC has spent $5 million on exploration and indications from last year's drilling program suggest the mine is viable at a world copper price of 85 cents per pound — copper is currently trading on world markets in the area of $1.20 per pound.

"The price of copper has improved the economics at a lot of deposits. It has certainly helped ours," Kruzick said.

Assay results indicate concentrations of copper-gold equivalent at around 1.75 per cent and running as high as three per cent.

"Most mines in B.C. run 0.4 per cent, 0.5 per cent copper, so that's pretty good."

The project underwent a scoping study earlier this year, with recommendations to proceed with underground exploration and completion of a feasibility study.

Kruzick expects the feasibility study to be complete within a year, and says it would take a further 12 to 14 months to start up the mine.

With a highway, water, electricity and natural gas supplies immediately available it would cost a relatively cheap $150 million to bring the mine to startup.

Copper production would be somewhere in the order of 80 million pounds a year and about 75,000 ounces of gold, with an estimated 17 years of production.

It would create about 200 to 250 full-time jobs for miners.

interest in the property. The holes were drilled from two collars, four from the first, and three from the second, and the following are the better results:

Hole	From (m)	Intercept (m)	Au (g/t)	Ag (g/t)
DN03-1	3.7	2.4	10.8	565.0
DN03-2	5.6	3.0	9.6	545.1
DN03-5	67.8	1.1	5.0	2,619.8
DN03-6	121.6	1.0	15.5	1,177.0

Under the terms of the option, Lateegra has agreed to pay Teuton C$200,000 in staged payments, to issue 100,000 common shares and to spend C$2.5 million on exploration over a five year period.

No.14 assays

Band-Ore Resources Ltd has completed diamond-drilling at the newly-discovered No.14 zone, part of its Thorne gold property in Ontario. The better of the recent results are as follows:

Hole	From (m)	Intercept (m)	Au (g/t)
GW-03-16	82.4	1.0	5.75
GW-03-17	125.8	4.5	9.59
incl.	127.6	2.7	14.92
GW-03-21	332.0	3.0	1.12

Gold mineralisation occurs in highly-altered sediments and porphyry lithologies. The (intermittent) strike length of No.14 zone is 180 m. The company intends to continue the drilling, with the target of increasing the current, inferred, resource, estimated at about 4 Mt at a grade of 3 g/t Au.

Development

New reserve estimate for Dikulushi

Anvil Mining NL has re-estimated resources and reserves at its Dikulushi copper-silver mine in the Democratic Republic of the Congo, following the generation of additional data by a diamond- and reverse-circulation-drilling programme which was completed earlier this year. The new data, relating to material below the previous open-pit model, allow a new total resource estimate of 1.72 Mt at 7.18% Cu and 201 g/t Ag, comprising measured resources of 573,000 t at 7.48% Cu and 205 g/t Ag, indicated resources of 939,000 t at 7.15% Cu and 209 g/t Ag, and inferred resources of 210,000 t at 6.45% Cu and 153 g/t Ag, using a cut-off grade of 1.5% Cu.

Proven and probable reserves at Dikulushi are estiamted at 1.14 Mt at 8.11% Cu and 238 g/t Ag, using a copper price of US$0.75/lb and a silver price of US$5.40/oz. The reserve estimate represents an additional year of life for the mine, at present output rates. The mine plan assumes that ore will continue to be treated through the dense-medium separation plant until the June 2004 quarter, when treatment will change to a ball mill and flotation-plant process.

Tasiast resource upgrade

Toronto-based Defiance Mining Corp. has received a final technical report concerning its Tasiast gold deposit in Mauritania from ACA Howe International Ltd. The report increases the measured and indicated resource estimate for Tasiast from the recently-announced 10.2 Mt at 3.1 g/t Au (*MJ*, September 26, p.243) to 12.07 Mt at 3.06 g/t Au. Additional, inferred, resources are now estimated at 12.43 Mt at 2.25 g/t Au (formerly 14.4 Mt at 2.31 g/t Au).

The increase is attributed in the report to "an unnatural linear distribution pattern" of inferred resources created by the geostatistical model used in preparing the previous resource estimate.

Geological and structural controls of the deposit indicate that the material should be classified as measured and indicated resource.

De Beers loses Angolan case

Angola's state-owned diamond producer, Endiama, has claimed a victory over De Beers in arbitration regarding a row that resulted in the South African diamond mining company suspending Angolan operations over two years ago (*MJ*, June 1, 2001, p.417).

De Beers had wanted its US$31 million investment in Angola returned with interest (*MJ*, January 3, p.1), but an arbitration panel convened in Brazil said that the money should remain in the country and has ordered De Beers to pay the majority of the costs.

Redross development proceeds

Mincor Resources NL has decided to develop the Redross nickel mine near Kambalda in Western Australia. The A$11 million development represents the company's third nickel mine in the district, together with the Miitel and Wannaway operations, and will, like them, be an underground mine. Redross is currently estiamted to contain reserves of 526,000 t at 2.95% Ni, enough for a mine life of four years at the proposed production rate of 4,000 t/y nickel in concentrate.

Construction of the decline at Redross will begin next month, and is expected to take 10 months to complete. Barminco has been selected to build the mine, and first production is anticipated during September 2004.

Ore production will be toll-treated at WMC Resources Ltd's Kambalda mill, and the concentrate sold to WMC under an off-take agreement, under the deal in which Mincor acquired Miitel from WMC about 36 months ago (*MJ*, January 5, 2001, p.9). The Redross mine was originally expected to begin production this year.

DRC's Afton prefeasibility

DRC Resources Corp.'s consultant, Behre Dolbear & Co. Ltd, has completed a prefeasibility study for the Afton copper-gold project in British Columbia. The study envisages an underground mining operation, using block-caving techniques, producing 9,000 t/d of ore, and annual output of 34,050 t of copper and 80,000 oz of gold. Full production rates are expected to be achieved during the third year of operation, and the forecast mine life is about 17 years.

Initial capital costs are estimated at C$149.7 million. Metals price assumptions of US$0.85/lb copper, US$375/oz for gold and US$200/oz for palladium were used in the study. Afton is a former open-pit mine, and the site is currently being environmentally reclaimed by the previous owner, Teck Cominco Ltd. DRC Resources acquired the mining leases at Afton when Teck Cominco allowed the leases to lapse, but the latter is understood to have retained ownership of the existing mill and tailings pond, and to retain all environmental liabilities relating to the closed operation.

Lepanto's Victoria II tax break

Lepanto Consolidated Mining Co. has won financial incentives for the expansion of its Victoria gold operation in the Philippines. The company applied to the Philippine Government for a four-year income-tax holiday, extendable by three years; beginning in April 2004, or whenever the mine begins commercial operation.

Lepanto expects to invest US$73.4 million in the expansion, designed to produce about 1 Mt/y of ore, yielding 162,860 oz/y of gold.

Telfer gas-supply contract

Gas transmission company GasNet Australia Group has agreed to supply Newcrest Mining Ltd's planned Telfer gold-copper mine in Western Australia (*MJ*, April 4, p.242).

The 450-km pipeline will be laid from Port Hedland to Telfer on the edge of the Great Sandy Desert. GasNet's contract is for a 15-year period, extendable for an additional five or ten years. The A$114 million pipeline will be built by the middle of next year, by McConnell Dowell Constructors Pty.

US reverses waste regulations

The US Government has relaxed regulations concerning the disposal of mine waste. Companies are now to be allowed to utilise all of the 20 acre (0.08 km^2) parcels that they lease from the government for the storage of waste, rather than a 5 acre portion thereof. The previous administration (of President Bill Clinton) interpreted the Mining Law of 1872 as stipulating that each 20-acre mining claim was limited to a 5-acre waste dump.

Doug Hock, Newmont Mining Corp.'s spokesman, says that the decision makes sense, restoring a "decades-old understanding of the law".

Trepca restart planned

Paul Nelles, the United Nations-appointed manager of the Trepca lead-zinc mining and smelting complex in Kosovo, says that the operation must recommence mining activities in some of the open pits by the end of the year, in order to generate cash flow. The complex was closed following the conflict in the former Yugoslavia.

The mines are in need of extensive modernisation, but a lack of money is hampering progress. Mr Nelles says that a transitional period of production of up to three years is needed to gather production and processing data, since information generated prior to the closure is not of a sufficient standard to satisfy foreign investors.

Trepca is also considering selling some of its assets. These include a zinc dust and zinc oxide plant, which requires investment of only US$1.17 million (€1 million) to restart operations.

Tulawaka feasibility

Explorations Minières du Nord Ltd (EMN) has received a feasibility study for the development of the joint-venture Tulawaka gold deposit in Tanzania from its partner, Pangea Goldfields Ltd, a wholly-owned subsidiary of Barrick Gold Corp. The study envisages an open pit operation capable of producing more than 500,000 oz of gold over a four-year period from 1.42 Mt of ore at a grade of 11.54 g/t Au. Processing would be via a 1,000 t/d gravity and carbon-in-leach circuit, recovering 95% of contained gold.

Capital costs are estimated at about US$39.5 million, not including pre-stripping. EMN holds a 30% interest in Tulawaka, and has mandated RMB Resources Ltd to arrange up to US$12 million in

→ Afton/Ajax

53

Mine ready to close down

KAMLOOPS — The last bucketful of copper ore was scraped from the Ajax pit Wednesday by a diesel-electric loader and hauled by truck to the crusher at Afton Mine.

"We expect the mill will probably close down over the weekend," said mine manager Ivan Moser. "Everyone will stay on board to start reclamation next week."

About 80 workers will be laid off at the end of the month and 50 more will be let go at the end of July, leaving a dozen remaining to do reclamation work.

The mine opened in the mid-1970s and ran until 1991, when it closed because of a high Canadian dollar and plummeting copper prices. It re-opened in 1994 with jobs for 200 and pumped an estimated $30 million a year into the local economy

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SIMILCO

MABC v.1, No. 2, Fall '94

AFTON/AJAX

(continued from page 1)

Similco Mines Ltd. has reached agreement with Mitsubishi Materials Corporation to provide Similco with a US $3.6 million Advance Payment Facility. The Advance is payable against the production and delivery of concentrate. The funds will be used to fund the start-up and for general working capital purposes.

In order to protect the economics of the operation, Similco Mines Ltd. has put in place a Price Protection Program for approximately 30 million pounds of copper over the first twelve months. Under this program, Similco is assured a minimum of US $1.00 per pound and receives 100 per cent participation of any price over US $1.10.

The unionized workers have been very supportive of the start-up and have ratified, by close to a 90 per cent vote, a two year extension of their existing agreement to July 4, 1996.

The price of copper in Canadian dollars has increased by more than 40 cents per pound since the mine operation was suspended last November 30.

Similco Mines Ltd. is a 100 per cent subsidiary of Princeton and has produced an average of 55 million pounds of copper, 25,000 ounces of gold and 350,000 ounces of silver annually over the last five years.

Afton Mine

Teck Corporation confirmed that it will reopen the Afton/Ajax copper-gold mine located near Kamloops, British Columbia.

Afton Operating Corporation, a wholly-owned subsidiary of Teck Corporation, has concluded a collective agreement with the United Steelworkers of America (Local 8637) as well as concentrate sales agreements. Maintenance work will start in early August and full production should be resumed by the end of September. Operations were suspended nearly three years ago because of depressed metal prices as well as the high value of the Canadian dollar.

The mine will employ 150 people and will generate $30 million annually in economic activities in the province, largely in the Kamloops area.■

Price Waterhouse Releases Report on Industry

MINING INDUSTRY LOSSES CONTINUE

Although British Columbia's mining industry continues to operate at a loss, the industry is reporting some signs of financial improvement, according to the Annual Report on the British Columbia Mining Industry, compiled by Price Waterhouse. However, under current economic conditions, approximately two-thirds of the industry still remains unprofitable.

Overall industry losses for 1993 were $14 million. That compares with losses of $119 million in 1992 and $485 million in 1991. Net mining revenues for 1993 are reported at $1.7 billion compared with $1.9 billion in 1992 and $2.2 billion in 1991. According to Price Waterhouse partner Mike Smith, a rejuvenated coal sector and the decline in the Canadian dollar played a major role in the apparent turnaround of B.C.'s second largest resource industry. Smith was responsible for compiling the report.

in this sector is mostly a result of the resumption of full operations at three mines: Fording River, Fording Greenhills and Elkview.

Decline of the Canadian Dollar

The decline of the Canadian dollar against the U.S. dollar increased net mining revenues by approximately $122 million in 1993.

Copper Prices Drop

A significant drop in copper prices had an adverse effect on 1993 results. International copper prices fell almost 17 per cent in 1993, decreasing net copper revenues by $207 million. Exploration and development expenditures rose from 1992 levels of $29 million to $39 million this year, mostly as a result of the Eskay Creek development. However, primary exploration expenditures in British Columbia by survey participants were only $9 million in 1993,

> *"The mining industry made payments of $347 million to the three levels of government in taxes and other charges in 1993."*

million to the three levels of government in taxes and other charges in 1993. While direct taxes increased, payment to government related to employment declined in 1993 as overall industry employment levels dropped. Direct employment from mining continues to decline, falling to 8,899 this year.

The report notes the encouraging cooperation and consultation between industry and government through the Premier's Forum on Mining. One result was the 1994 budget incentive for the mining sec-

EXPLORATION AND DEVELOPMENT HIGHLIGHTS

1990

SOUTH-CENTRAL DISTRICT

R.E. Meyers and T.B. Hubner, District Geology, Kamloops

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INTRODUCTION

Exploration in south-central British Columbia continued at lower than usual levels during 1990. The competition for exploration dollars, particularly for Junior company projects has been high. Weak gold prices and a scarcity of project funding severely hampered many projects that were previously very active in the 1987-89 period. Announcements of mine closures at Brenda and Beaverdell and depleting reserves at other operations added to an already subdued economic outlook in the exploration and mining industry in the southern interior.

Fortunately, a contrastingly strong base metal market has partially off-set the slump in precious metals-oriented Junior company activity. As a result, exploration and development at operating mines has had the effect of counter-acting the negative trends in the region and has contributed to maintaining a stable and secure production environment for the established base metal producers.

Total exploration and development expenditures in the district estimated for 1990 dropped to about $36.5 million, from some $70 million spent in 1989 (Table KAM-1). Approximately 49 per cent of the total, amounting to $18.01 million, was spent on exploration projects (Figure KAM-1). This figure includes nearly $4.4 million (or 24 per cent) devoted to exploration at active mining operations. Compared to the estimated $20 million spent in 1989, a 7.5 per cent drop in exploration funding in south-central B.C. is indicated for 1990.

Mine development expenditures in the district were also substantially lower for 1990, totalling $18.5 million, compared with $50 million estimated for 1989 (Table KAM-2). However, the 1989 figure included development costs for two new mines, Afton's Ajax deposit and Minnova's Samatosum mine. The bulk of the 1990 development budget went to general construction and expansion at Highland Valley Copper.

Regionally, exploration in the Adams Lake and Kamloops areas far surpasses the rest of the district as the most active (Figure KAM-2), exhibiting a steady increase over the past three years. The Princeton-Tulameen area is a somewhat distant second, but also shows increased activity, due in large part to major programs near Siwash Lake and at Copper Mountain. The Revelstoke and Greenwood areas have had modest, but notable increases in the numbers of projects, over previous years. However, in spite of the relatively few operators, exploration expenditures for the Revelstoke area rank third in the district (Figure KAM-3), primarily due to the advanced stage of the J & L project. This factor illustrates the impact that just one advanced stage project can have on a region. By contrast, the steady decline of exploration activity and the lack of major projects in the Okanagan and Bridge River areas have seriously changed the industry picture in these two exploration camps in only two years.

On a parallel trend with steadily increasing activity in the Adams Lake, Kamloops and Revelstoke areas, the progressive shift towards base metals oriented projects in the region is another reflection of strengthening base metal markets, particularly for copper and zinc. In the intermediate term, these areas are likely to capture an increased share of exploration funding, particularly if gold and silver prices remain weak. The decline in activity in the Okanagan, Hedley and Bridge River areas also reflects an overall decreasing focus on vein and skarn precious metals targets.

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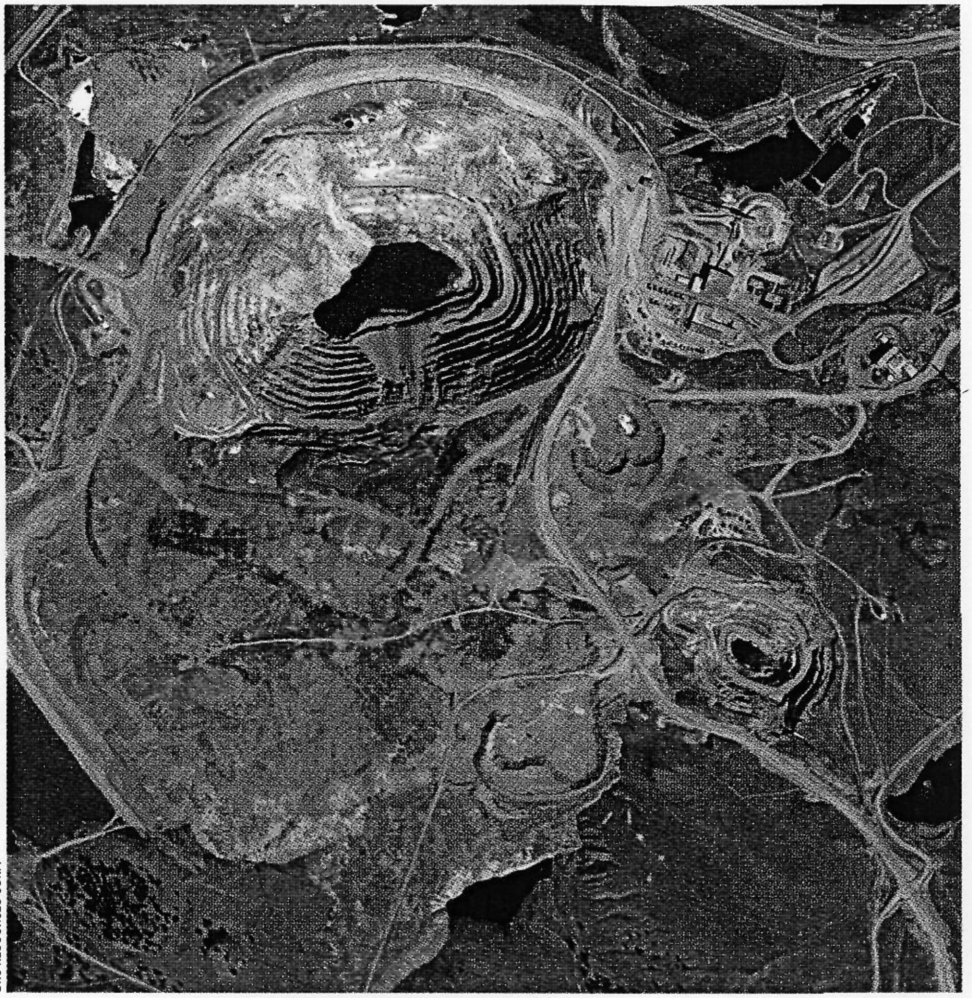
DRC Resources taking anoth



DRC RESOURCES CORP.

The Afton copper-gold project being developed by DRC Resources is located south of the Trans-Canada Highway, 10 km west of Kamloops, B.C. Previous owner Teck Corp. operated an open pit mine at Afton in the 1980s, but dropped the claims in 1999. DRC Resources is developing an underground decline and started additional diamond drilling in late January.

by Patricia Liles

Diamond drilling began in late January from the first portion of a new underground decline being developed by Vancouver-based DRC **Resources Corp.** at the Afton copper-gold project near Kamloops, B.C. The company has acquired a 100% interest in the property through claim-staking.

An open pit mine shuttered by former operator **Teck Corp.** since 1987, Afton's deeper mineralization is shaping up as a potential underground project. The southeastern British Columbia property could provide DRC Resources with an opportunity to transition from an exploration company to its first development and producing mine.

"Given where it is, with outstanding infrastructure and location, the grades are robust and the size is robust. This project has a real shot," said Chris Bradbrook, president and CEO of DRC Resources. "We're doing what we need to figure out whether it will be an economic operation."

DRC Resources plans to spend roughly Cdn$1 million per month throughout 2005, part of the total $18 million required to complete a bankable feasibility study in early 2006.

Included in the feasibility work is completion of a 2-km decline, a job begun in November 2004 by mining contractor **Procon Mining & Tunneling Ltd.** In a late January interview, Bradbrook said crews had completed 290 m of that decline, allowing drillers to go underground to start a 20,000-m diamond drill program. **F. Boisvenu Drilling Ltd.** landed the underground drilling contract at Afton.

Afton's existing pit is roughly 700 feet deep. Mineralization almost adjoins the old workings, but dips away sharply from the pit, precluding access by enlarging the closed mine.

"We discovered the deposit by drilling from surface," Bradbrook said. "We did as much as we could, but we can't convert [resources to reserves] unless we go underground."

Drilling to upgrade to reserves and explore

Drilling work this year has two objectives. Primarily, the work is designed to better delineate the orebody and upgrade it to reserves. "We also want to do some additional exploration work, to see how big the deposit is and to look for extensions. We definitely believe in the potential to find more through exploration," Bradbrook said. "Grades for a copper-gold porphyry don't get much better than this."

Mineralization at Afton is continuous over 1,000 m in length, 80 to 100 m wide with a vertical height of 300 m. The deepest mineralization is roughly 775 m below surface.

In addition, the company plans work this year at the nearby Pothook pit, also previously mined. For the first time, surface drilling will test for mineralization between Pothook and Afton. "We don't want to make the mistake of stopping exploration because there may be more there," Bradbrook said.

DRC Resources also plans to drill in 2005 at the Ajax property, located 10 km

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h er good look at Afton

east of Afton, another previously-mined open pit mine. Three drill holes completed in 2004 indicated substantial near-surface low-grade sulphide mineralization. The largest is a 278-m intercept that graded 0.233% Cu and 0.159 g/t Au, according to a July 15, 2004, release.

Drilling to date on Afton, excluding Ajax and Pothook, has identified a measured and indicated resource of 68.7 million tonnes, grading 1.68% Cu equivalent or 2.61 g/t Au equivalent. Mineralization contained is approximately 1.63 billion lb of copper and 1.86 million oz of gold, as well as significant and recoverable amounts of silver and palladium.

An inferred resource of 7.4 million tonnes, containing an additional 151 million lb of copper and 188,000 ounces of gold, has also been identified by prior drilling work completed from 2000 through 2003. About 55,000 m of core samples were taken from 110 holes, according to John Kruzick, board chairman at DRC.

DRC Resources acquired Afton in 1999 after Teck dropped the mining claims, despite some positive intercepts from beneath the pit. "To get some of it below, they would have had to push the pit back, which requires a lot of capital," Bradbrook said. "It wasn't worth it for what they thought was there, but they didn't realize the shape of it...back then, people were not thinking about underground mining in a copper-gold porphyry."

Between acquiring Afton and starting feasibility work last November, the company has spent $5 million on the property. "It's a decent amount of money," Bradbrook said. "Considering what was found with that money, it is quite a spectacular use of exploration funds."

Scoping study indicates feasible underground project

In addition to drill work, the company commissioned an advanced scoping study completed in February 2004 by **Behre Dolbear and Co., Ltd.** That work indicates that panel cave mining and conventional flotation are viable methods for mining and processing a 51.5-million-tonne mineral resource grading 1.72% Cu equivalent. Estimated mine life is 17.8 years, based on the mineral resource.

At a mine and mill production rate of 9,000 tonnes/day, average annual production is estimated at 29,000 tons of copper, 71,000 oz of gold, 178,000 oz of silver and 7,700 oz of palladium.

Initial capital costs are estimated at $150 million, with cash costs of US$0.15 and total operating costs estimated at US$0.40/lb of copper. Estimated internal rates of return are nearly 27% pre-tax, and 20% after tax, with a payback period estimated at 3.7 years.

Estimates are based gold and copper recoveries of 90% each, 75% for silver and 74% for palladium. Assumed metal prices are US$0.85/lb of copper, US$375/oz for gold, US$5.25/oz for silver and US$200/oz of palladium.

Development of Afton would be aided by the existing mine infrastructure and its location near the Trans-Canada Highway, 10 km west of Kamloops. "It's definitely a plus for us," Bradbrook said. "Some projects can be hardship assignments for people...we'll never have a problem getting people to work (at Afton)."

Water and power are available at the site, as well as an experienced labour force in the area. A mine operating permit may be available from the former owner (now Teck Cominco), although the two companies would have to come to an agreement about usage.

"The existing permits would have to be updated," Bradbrook said. "To the extent we can use them and upgrade them to make adjustments as needed, we are not starting from scratch on permitting."

All of these factors could play into an accelerated development schedule for the brownfield property. Depending on the progress of financing, construction and permitting, Bradbrook said, "...if everything lines up and works on a good pace, within three years of starting the feasibility study we would like to start up production."

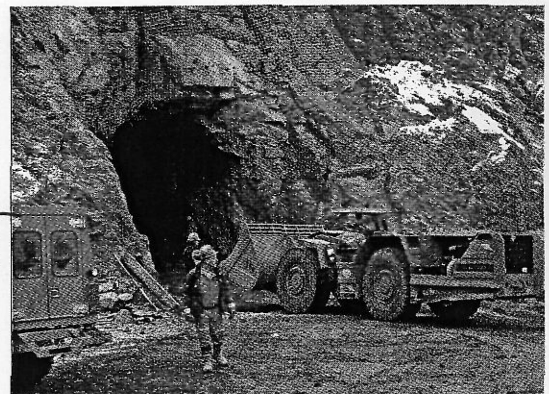
DRC preps for solo development

At this point, DRC Resources is not looking for partners on the project. The company has cash available to cover feasibility costs.

"I think you have to look at these projects with the intention of building them," Bradbrook said. "We will do what we need to build the company and team and to develop the skills to assess the orebody. If we believe it is economic, we'll gradually build that team up to operate it."

Should that happen, DRC Resources will look very different, he said, a sort of hybrid between a copper company and a gold company. Of the existing resource, 65% of its estimated US$3-billion value comes from copper. "There is so much gold in such a high proportion to the copper," Bradbrook said. "Diversity is good, because weakness in one price can be offset by strength in another. From a marketing perspective, we have leverage in two bull markets."

Bradbrook joined DRC Resources last October, after last serving as vice-president of corporate development at Goldcorp Inc. DRC's capital base, share structure, cash position and the Afton asset drew him in. "I view this as an excellent platform to build a serious company," he said. "It's chasing a dream to build something from scratch." **CMJ**



Richard Keane, shift supervisor from Procon Mining & Tunnelling (left foreground) oversees continued work on an underground decline at the Afton copper-gold project in southeastern British Columbia. A 2-km decline is planned for the property, allowing drillers to complete 20,000 m of core from the underground workings, an effort designed to upgrade the measured and indicated resource to reserves.

DRC RESOURCES CORP.

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