RESOURCES

NDP makes correct choice in Hydro decision

Last week's news that the provincial government is pulling the plug on B.C. Hydro's power monopoly couldn't have come too soon.

The B.C. economy is undeniably linked to our rich natural resources, but a succession of governments has failed to strengthen the economy by capitalizing on them.

Instead, by allowing uncertainty over access to resources, imposing regulatory impediments and a series of mandated cost increases, and failing to produce a competitive tax regime, the B.C. government has effectively stymied natural-resource development.

Government ignores the economics of its natural-resource industries at its peril, as evidenced by collapsing resource revenues. Today, twice as many mines are closing in the province as are opening, and catastrophic cost increases in timber harvesting are causing that industry to begin a frightening retrenchment.

A good start to reversing this damage would be by providing access to less-expensive electrical energy.

The government has a legislated monopoly to create and supply power to most of the province through B.C. Hydro.

IN MY OPINION

DAVID JOHNSTON

The responsibility for establishing competitive power rates lies with the provincial government.

The responsibility for establishing competitive power rates effectively lies with the utility's master, the provincial government. Power rates have increased over the years, due in no small part to government's imposition of substantial water-use taxes and dividends.

These are effectively taxes on economic development. Alberta and Washington state, on the other hand, have created competitive markets for industrial power.

Logically, such free-market power should be available to benefit the B.C. economy and help maximize employment. Unfortunately, not only does B.C. Hydro maintain high rates for its power, but the utility also blocks access to cheaper power from our neighbors.

As a captive industry, mining is effectively trapped. In the face of ever-increasing global competition, more attractive power rates are essential if B.C. mining is to sustain the 30,000-plus jobs and the many other benefits it provides today.

From our perspective, sustaining these benefits is definitely worthwhile.

With a workforce of 1,100 workers, Highland Valley Copper annually injects $80 million in employee wages into the B.C. economy.

Purchasing of goods and services contributes an additional $180 million, creating another 1,500 jobs. Our annual tax contribution to various government coffers is about $50 million, including tax costs in power which I estimate at $15 million.

Given the right economic conditions, we have the potential to add eight years to our planned 11-year life, thus maintaining jobs and benefits to the province.

Clearly, maintaining the Highland Valley Copper operation for longer is worthwhile to the province, but it will not occur without long-term competitive power rates.

The provincial government has an obvious choice to make: continue to tax economic development through B.C. Hydro or allow the B.C. electrical system to become an engine for employment by allowing free-market power for industry.

With last week's announcement, it appears government is finally moving in the right choice.

There will be many winners — government will still get its tax take through income, sales and other taxes; industry will grow; and people will be employed.

David Johnston is president and general manager of Highland Valley Copper, the largest copper mine in Canada.

How Highland Valley Copper has identified 350 million additional tonnes of mineralization and how a more efficient operation could turn that mineralization into ore. That would extend the life of Canada's biggest open pit copper mine well into the next century.

Looking AHEAD

BY PATRICK WHITEWAY

→ Highland Valley Copper

While low copper prices fo... Princeton Mining Corp. this summer to close the Similco mine in southern British Columbia, about 120 km to the north, Logan Lake, B.C. was buzzing with talk that the life of the nearby Highland Valley mine would be extended by eight years to 2016.

The huge open pit mining operation, which consists of two pits — the Valley and Lornex pits — is owned 100% by Highland Valley Copper (HVC) of Vancouver, which in turn is owned by Cominco Ltd (50%), Rio Algom Ltd. (33.6%), Teck Corp. (13.9%) and Highmont Mining Co. (2.5%).

In the first half of 1996, 77,600 tonnes of copper contained in concentrates and 800 tonnes of molybdenum contained in concentrates were produced by Highland Valley. Operating profits were $66 million (before British Columbia taxes) on revenues of $218 million in the first six months of 1996, compared with an operating profit of $156 million on revenues of $300 million in the same year-ago period.

Mine operators made two critical in-pit crusher moves this year that promise to lower operating costs over the next few years and geologists have found additional mineralization adjacent to and below the existing Valley pit's designed depth.

In 1995, the cost of producing a pound of copper at Highland Valley averaged 66¢.

ADDING RESERVES

Two years ago, the HVC joint venture partners decided to drill below the current designed depth of the Valley pit. Prior to that, drilling had stopped either because the drills had reached their technical capabilities or because 10 years of reserves had already been blocked out. Information from these holes indicated, however, that the porphyry orebody had continuity and that it extended laterally at depth.

In general, the deposit is shaped like a ..orseshoe with one li... wal... the other, and with w... core, explains Chief G... Amon. The wide limb h... extent and comes back... south wall of the pre... design while the narrow limb, which occurs in the west wall, is higher grade. The 1994-'95 drilling programs were designed to define the extent of this mineralization.

Results are now in and 350 million tonnes of mineralization at about 0.384% copper are indicated. That's in addition to the 503.9 million tonnes of reserves as at January 5, 1996, which average 0.422% copper and 0.0077% molybdenum.

To mine this new mineralization a major wall push-back and removal of some 460 million tonnes of waste rock would be be required. At a mining rate of 46 million tonnes per year (ore and waste), that would extend the life of the operation by about 7 ½ years. The current mine plan has production scheduled until 2008.

It should be noted that even though the new mineralization would add another 7 ½ years to the operation, none of these preliminary plans to push back the

Photos on previous page: At an average of 125,000 tonnes per day, the mill at Highland Valley is the largest in Canada. In August 1996, operators moved the No.4 in-pit crusher to a new location (upper left). One of the crusher components weighed 1,825 tonnes (second from right). A new Bucyrus-Erie blasthole drill (right) should boost productivity.

walls of the pit to gain access to this mineralization have been approved by the joint venture partners.

There are some constraints to the plan. Finding a place to dump waste rock will become a challenge. If the mine is expanded, planners would have to consider raising the waste piles to the west of the pit and would evaluate moving the crusher presently in the Lornex pit, to the Valley pit in 2006. Waste rock would then be crushed and conveyed to the Lornex pit for in-pit storage. The economics of doing this are still unknown. Production costs are another constraint.

CRUSHER MOVES

In 1987, HVC installed two semi-mobile in-pit crushers and two in-line conveyors, feeding two mill stockpiles. This year, the company will spend $21 million to move the two in-pit crushers and realign the conveyors.

The so-called No. 4 crusher was being moved when *Canadian Mining Journal* visited the mine in mid-July and the No. 5 crusher was to be moved to a new position 100 metres lower in the pit in September.

To move each 3-component unit takes about 7 days. The largest of the components weighs about 1,825 tonnes and is moved on a flatbed equipped with 388 wheels.

The object of the moves is to shorten the haul distance and to mine the ore below the present crusher/conveyor locations. The last time a crusher was relocated was in 1991.

THE LATEST EQUIPMENT

In 1986, there were four types of trucks operating at Highland Valley. Today there is only one type — Caterpillar 789Bs. The mine now runs 33 of these units, each with a haulage capacity of 172 tonnes.

Caterpillar trucks were selected for their higher speeds and ability to stop and accelerate quickly, which in turn improves pit safety. The new Caterpillar trucks also have excellent breaking going down steeper ramps, so all haul roads are now constructed at a 10% grade compared to the previous 8%.

The mine is presently experimenting with new oil additives manufactured by Esso. The objective is to increase the life of the planetary gears in the Caterpillar trucks. All oils used on the site are recycled.

Assisting in the budgeting process is a new software program from Caterpillar which, after some calibration, accurately predicts fuel consumption and cycle times.

The mine is also commissioning a new blasthole drill manufactured by Bucyris-Erie (B-E). A 49RII, it is capable of putting down holes 12 inches in diameter. Working with B-E, surveyors Aquila and global positioning system (GPS) manufacturer Trimble Navigation Ltd., Highland Valley has installed a GPS unit on the mast of the new drill. This allows the operator to position the drill set-up based on a bullseye on a computer screen in the operator's booth.

GPS technology is also used by pit surveyors to pick up hole locations and to profile pit roads. Future applications may include a truck tracking system integrated seamlessly with the present truck dispatch system.

On a typical day, 7 shovels and 26 trucks are moving ore and waste. To coordinate the activity, a truck dispatch system manufactured by Modular Mining has been in use since 1989. Based on productivity cycles, the system can project four cycles into the future. A single truck typically moves 42 loads per day. The key is to do a better job with fewer trucks; strip the ore quicker and to avoid line-ups at the crushers.

A SMARTER, MORE MATURE WORKFORCE

Gainsharing has taken longer to arrive at Highland Valley than originally anticipated. A program, designed to encourage employees to participate and cooperate in lowering the cost of producing a pound of copper, was originally proposed by the previous General Manager, David McPhail before he retired in 1995. The present General Manager, David Johnston, who has experience with introducing a gainsharing system at the much smaller Polaris mine, put the brakes on while a new labour contract was negotiated.

Johnston is now implementing a program to educate employees on the new union/management system. Under the proposed gainsharing system, employees will be encouraged to improve quality and productivity by competing with their own work history (average unit cost performances over three years) in return for a monthly payout.

"The objective of the system is to make people more self-directed so that they act when something needs to be done rather than being told to do it," Johnston says.

"Gainsharing is about communicating ideas and cooperating to build mutual respect," says a company newsletter. "Becoming a lower-cost producer brings more than just cash rewards. We get the satisfaction of knowing we're a tougher, more secure competitor in the copper market." **CMJ**

Vancouver's *Not-So-White* Knight

Here's an environmental story with a twist. A mining company comes to the rescue of a major urban centre.

For the past 5 years sewage treatment facilities in the Greater Vancouver Regional District (GVRD) have created a large stockpile of troublsome bio-solids.

At $65 per tonne, disposing of this foul-smelling material in conventional landfill sites is an expensive proposition for GVRD. And the problem is not about to go away. In 1995 alone a total of 50,000 tonnes of the material were produced by GVRD sewage treatment plants and this figure is expected to climb to 250,000 tonnes per year in the next few years.

So where does Vancouver dump its sewage? This summer, as part of an experiment, GVRD trucked 5,000 tonnes of bio-solids to the Highland Valley mine. The idea is to see if the material could be spread over the huge expanse of tailings and waste rock around the mined-out Bethlehem and Highmont pits in an effort to revegetate them.

Bio-solids are considered to be a better fertilizer than conventional chemical fertilizers because they slowly release nutrients, elliminating the need to re-apply fertilizer every year. Interestingly, the bio-solids contain, on average, 150 ppm copper.

"If the idea is approved and permitted after the trial runs, we'll look at who pays for transportation and spreading," says Bob Hamaguchi, Senior Environmental Engineer for Highland Valley.

To revegetate a hectare of barren waste rock requires about 50-200 tonnes of fertilizer. There are about 4,800 hectares yet to be revegetated on the Highland Valley property. So about one million tonnes of Vancouver bio-solids could be used to the benefit of both GVRD and HVC.

How's that for cooperation?

Figures are taken from 24 agreements signed in 1991 covering 18,814 employees in metal and non-metal mines and in non-metal mining rose by an average of 2.8%.

No m[illegible]r agreements were reached [illegible] coal miners in 1991.

PROFILE

Highland Valley

Highland Valley's Hansen committed to mining, family

Captains of industry are often portrayed as nose-to-the-grindstone types with little interest in anything but business at hand. But this dated stereotype clearly doesn't apply to Poul Hansen, president of Highland Valley Copper.

Hansen heads up a company which operates a copper mine near Logan Lake, B.C., one of the world's largest in terms of tonnage mined and milled. But he also devotes time and energy to organizations such as British Columbia's Children's Hospital and Junior Achievement.

Poul Hansen

Committed to the principle of sustainable development, Hansen is a member of the British Columbia Round Table on the Environment and the Economy, and a member of Vancouver Foundation's Environmental Advisory Committee.

In his spare time, he enjoys tennis and gardening at his home in Vancouver, which he shares with wife, Judith. The couple has three adult children.

Hansen was born in Frederiksberg, Denmark, and after a stint with the Royal Danish Navy, lived in such cities as Copenhagen, Vancouver and Tokyo while involved in the shipping and trading business.

His first exposure to mining came when he joined the Cominco organization in 1974. He became president of Highland Valley Copper in 1986, after returning from London where he was chairman and managing director of Cominco Europe. (Highland Valley Copper is owned 50% by Cominco, 33.6% by Rio Algom, 13.9% by Teck and 2.5% by Highmont Mining.)

Highland Valley has measured and indicated reserves of 691.7 million tonnes averaging 0.414% copper and 0.0069% molybdenum, sufficient for 17 more years. Last year, the company carried out a detailed assessment of potential mineralization surrounding the mine, and this year plans to investigate the more promising targets identified in the regional program.

The operation processed 46.3 million tonnes of ore last year at a record average throughput rate of 126,827 tonnes per day. The total production of copper contained in 439,930 tonnes of concentrates was 378.4 million (payable) lb. Both production numbers were record highs.

Hansen believes mining is important to British Columbia's economy, and he wants that to continue. But because bringing in new mines has become so difficult, costly and time-consuming, he fears his company's mine could be the only one of its type still operating in the province at the end of this century.

A less cumbersome mine review process would help turn things around, Hansen says, as would economic and tax policies allowing the industry to be globally competitive. Security of tenure (and investment) is also important, he adds.

Obituary

PETER PRICE

Peter Price (formerly of Noranda, Quebec) died at Ajax Pickering General Hospital on Sunday, April 19, 1992, in his 94th year. Mr. Price was the husband of the late Jean K. Price; loving father of Pete and his wife Jeannie of Pasadena, California; Bill and his wife Dian of Oshawa; and Doug and his wife Audrey of Regina. He is also survived by nine grand-

CIM Meeting

Chilean mining joint venture law and privatization will be the subject of the next CIM Mineral Economics Society discussion group meeting at the Toronto Board of Trade, May 5.

Jorge Bande, vice-president of development at Chilean copper miner CODELCO will talk

[illegible] laws affecting trade, tax, industry and government finance to draw international [illegible]erest.

Your editorial [illegible]ates that "Canadian stock markets could become the conduit for channelling capital . . . into Latin America." Yes, the resource-oriented Canadian markets could provide such a conduit; even more, we could provide the model for new markets in Latin America.

With steady repatriation of capital into such countries as Nicaragua and growing freedom from government control, local stock markets would allow citizens a vehicle for their own investment, and would provide companies with greater access to investment funds from within their

William Dix

Dix spe almost [illegible] entir working [illegible] within t McInty organiz

→ HVC

Meeting to discuss Highland's future

The Sun CANADIAN PRESS Jan. 12/99

KAMLOOPS — The future of Highland Valley Copper could be decided this week at a meeting between mine executives and the company's two largest shareholders.

Officials from Cominco Ltd. and Rio Algom Ltd., which own 50 per cent and 33 per cent of Highland Valley respectively, will be at the mine Thursday to discuss ways of cutting costs in the face of low commodity prices.

"We will be looking very hard at what we can do to keep this place open," mine personnel manager Rod Killough said Monday. "The problem as we see it is very serious."

Copper prices were at 70.4 cents US a pound Dec 1. By Monday, the price had dropped to 65.3 cents US.

"Taking into account inflation, copper prices are at the lowest they've been since the 1930s," Killough said. "This is not posturing, this is quite serious."

Cominco spokesman Michael Henningson said Thursday's discussions will centre on the mine's business plan as well as ways to cut costs, including staffing, power costs, transportation and materials.

Highland Valley Copper at Logan Lake employs more than 1,000 people and costs $750,000 a day to operate.

The Sun Jan. 20/99

TGS → HVC

Coppei ɹnine seeks 30 per cent rate cut from Hydro

Highland copper mine officials call on Victoria to order a reduction.

JUSTINE HUNTER
SUN BUSINESS REPORTER

KAMLOOPS — Just a 30-per-cent reduction in B.C. Hydro's power rates would put the Highland Valley Copper Mine in a break-even position, company officials said Tuesday.

Faced with high taxes, the sustained erosion of world copper prices and protracted contract talks with its workers, the mine's owners outlined the kinds of concessions they want before they will reconsider plans to shut down the massive operation, which employs 1,000 workers and is a mainstay of the region's economy.

The gap between profit and loss today is narrow: It costs Highland Valley about 68 cents a pound to produce copper that sells for 65.2 cents.

Hydro rates account for about 10 cents per pound of the mine's costs.

"We're talking about three cents a pound — a 30 per-cent reduction in Hydro rates would probably keep Highland Valley open," Lorne Grasley of the B.C. Mining Association said in an interview.

David Johnston, president of Highland Valley Copper, said the mine will reopen when economic conditions allow, but the owners will be pressing for concessions from workers, suppliers and government to try to prevent the planned May 15 closure altogether.

"Our collective agreement is going to be an important thing. Everything will be open with the union," he said. "They may not want it that way, but that's the way it has to be in a circumstance like this."

Highland Valley miners are among the highest paid in the world, earning between $19 and $26 an hour.

Steve Hunt, area supervisor for the United Steelworkers of America, said the union will conduct a series of membership meetings today in response to the announcement of the closure.

"People are scared, some are angry. Our members have worked hard over the last 30 years to make this a showcase mine," he said. "We knew we were running in the danger zone, but the company never would tell us where their break-even point was."

Hunt said the main culprit is simply the price of copper, which has eroded ste[illegible] from $1.15 US in 1996 to almost half that amount today, but he said the company has helped drive those prices down.

"There is not a lot we can do about the world price, but there is something that Highland Valley Copper and some of its partners can do: They are operating some mines in Latin America, for example, that are dumping copper on the world market. So when they complain about the commodity prices, they are competing with themselves."

He said the union is willing to join the company in pressuring Victoria for changes to make the mine more viable, but the company has to be willing to show all its cards.

"It has to be completely transparent. We don't want to get into a political game with them, if that is what it is."

The workers have been without a contract since September, but the Hunt said the collective agreement "is not the issue that makes or breaks us. We haven't even talked about monetary issues."

Highland Valley's 1998 losses are estimated at $8 million — $6 million in December alone as copper prices dropped to 12-year lows. This year would bring losses of $25 million to $35 million if the mine stayed open and world copper prices stayed at present levels, Johnston said.

The impact on the Kamloops region is significant. The company is one of the largest employers in the region and purchases about $80 million in local supplies annually, while employees collect about $100 million in wages and benefits.

Kamloops Mayor Cliff Branchflower said he hopes the provincial government will now recognize that it has to budge on issues like hydro rates to keep the operation running.

"If you beat people over the head enough, maybe they will start to believe the facts — that certainly applies here," he said. "Everyone here hopes they have finally got the message."

While a recovery of copper prices this year is very much in doubt, Johnston suggested there are enough factors that can be controlled in B.C. that could stave off the planned closure.

Electricity rates are one — Johnston has pleaded with the provincial government for months to direct B.C. Hydro to cut its rates.

Less than a year ago Highland Valley Copper, one of the world's largest open-pit mines, was considering expanding its operations with a $200 million refinery at its mine site at Logan Lake, near Kamloops.

But that project went off the rails when the provincial government refused to reduce the electricity rates.

HIGHLAND from D1

HVC

The Sun Jan. 21/99

Victoria balks at breaks

after everyone has been out of work for two years," he said. "We can't beat copper prices."

Beth Duke, who with her husband bought the Logan Lake Bakery last March, agrees employees who are "mortgaged to the wazoo" will be forced to accept concessions to keep the operation going.

Although she has tried to build enough wholesale contracts in neighbouring communities to survive a closure, about a third of her business still comes directly from people on Highland Valley's payroll.

Duke is optimistic that the closure will be prevented.

"We are not at the point of closing and going home yet," she says.

Provincial jobs protection commissioner Eric van Soeren said Wednesday he has an informal agreement with the mine's owners to allow him to try to develop a restructuring package that could include temporary reprieve from various government taxes and tariffs.

"I think they are close enough to the break-even point that the things we can do may be enough to keep the mine open," he said.

But first the company must agree to open its books to an independent third party for a financial review, and the mine's president and general manager, David Johnston, isn't sure that will happen.

A temporary tax holiday — which is all van Soeren has the power to order — won't fix the problem created by present world copper prices, which are not expected to recover until 2001.

"It doesn't do a whole lot for us. It's the same as getting a loan from the bank," Johnston said in an interview at the mine's central office. "We could get a bank loan.

"What we really need to to improve the fundamental economies of the operation for the long term. The copper market has gone to unprecedented low levels; in real terms, it is the lowest since they started keeping statistics in 1908," he said.

In short, it costs the mine more to produce a pound of copper than it can sell it for.

The provincial government has balked at tax breaks and as recently as last month flatly refused to consider a reduction in hydro electricity rates which form about 15 per cent of the mine's production costs.

Employment and Investment Minister Mike Farnworth, who is responsible for B.C. Hydro, said he was ready to discuss rates with the company and .

But he denied allegations that industrial consumers in B.C. are being over-charged, allegations that have been given new weight by a letter that came out recently in the wrongful dismissal suit filed by former Hydro president John Sheehan.

Kamloops North Thompson MLA Kevin Krueger cited Sheenan's letter, in which he called industrial rates "out of line" in accusing Hydro of exporting B.C. jobs by selling hydro to American industries for less than their B.C. competitors.

Farnworth denied the charge, explaining that any customers that pay less do so because they are buying on the spot market, where prices can rise and fall dramatically.

Farnworth said B.C. industrial customers pay among the lowest prices in North America and said the big problem is the drop in the price of copper.

"It's 3.4 cents a kilowatt hour [for electricity] in B.C. compared to compared to eight cents a kilowatt hour in Arizona and and seven cents a kilowatt hour in Nevada," he said.

"Let's not forget, the reason for this shutdown is that copper prices are at the lowest price since the depression and there are record inventories of copper on the world market," he said.

That stance can't last, Johnston says.

"The way industry is disappearing from B.C., sooner or later someone has to realize they need to create economic conditions that are not antagonistic to business. Otherwise, who is going to pay the bills?"

He said the rates charged by Crown-owned B.C. Hydro must fall. "It's fine to use all kinds of intellectual arguments to justify the high rates but at the end of the day there is a simple choice to be made: You either take that power and sell it across the border or you invest it in keeping several thousand people at work in B.C. That's where the political decision comes in."

That take-it-or-leave-it approach has riled union members who don't believe the threat of closure is anything more than a game of brinkmanship.

"Our membership is being held for ransom," said the union's area supervisor, Steve Hunt, as he emerged from a closed-door meeting with workers Wednesday morning.

"It seems the fight is not over what we do here; it is more of a political fight waged by the president of this company against the government."

The company will present the union with a proposal next week which is expected to outline cuts in the labour force and rollbacks in other benefits contained in the contract that expired last September but Hunt said the union won't negotiate until it is convinced the operation really isn't economically viable.

"We have put the company on notice that if they want us to talk about anything, they must be absolutely transparent. We want an independent review of the financial situation and of their entire structure from top to bottom. We are not going to panic and do anything until the facts are all laid out before us."

Workers such as Steinthorson aren't sure there is an appetite among the membership for a major showdown because the alternatives are grim. Highland Valley miners are among the highest paid in the world, earning between $19 and $26 an hour.

Steinthorson, who has tickets in two trades, says he could head into Kamloops and find work paying half of the value of his benefits package alone but others, who have served much longer than his 13 years at Highland Valley Copper, "don't have a snowball's chance in hell" of finding work if the mine closes.

T69

Highland Valley to shut down

1.5% of total world copper

The first major casualty of the prolonged depression in the copper market appears to be the high-cost British Columbian producer, Highland Valley Copper (HVC). This week, its president, David Johnson, said that the company had decided to suspend operations indefinitely as from May 15. Mr Johnson said that the major decline in world copper prices over the past 18 months had resulted in significant losses during the December quarter and increasing losses are now projected for 1999.

HVC is a partnership between Cominco Ltd (50%), Rio Algom (33.6%), Teck Corp. (11.4%) and Highmont Mining Co. (5%). The HVC partnership was originally formed in 1986 between Lornex Mining Corp. and Cominco to mine a major copper porphyry in the Kamloops region of British Columbia. The Valley orebody has yielded more than 1,000 Mt of ore, and in 1997, some 45 Mt of ore were milled at an average grade of 0.39% Cu. Production amounted to 162,400 t of copper and 1,000 t of molybdenum in concentrates, plus 30,000 kg of silver and 200 kg of gold. Proven and probable reserves stood at 457 Mt averaging 0.42% Cu. Last year, the operation produced 170,000 t of copper in concentrate at a cash cost of US$0.68/lb. Copper is currently trading at US$0.65/lb, close to an 11½ year low.

Mr Johnson acknowledged the efforts of all employees in contributing to a substantial improvement in production costs over the past two years but said that neither this nor the company's investments in plant and equipment have been able to overcome the negative financial impact of rising world copper inventories and the metal's resultant price decline. Further cost reductions may be possible and to this end the company is continuing to work with utilities, suppliers, governments, employees and the union. Meanwhile, however, until conditions "are favourable for sustained profitable operations" the mine, which employs more than 1,000 people, will remain shut.

News of the closure plans came as a surprise as, only a week previously, market rumours of closure had been dismissed by a spokesman for HVC,

Continued on p.34

Highland Valley Copper's operation in British Columbia is scheduled to shut down in May (Photograph courtesy of Cominco Ltd.)

Queensland coal blow

Construction of the Hail Creek coal project in Queensland has been deferred and will be reviewed again in 12 months' time. Leigh Clifford, the chief executive of Rio Tinto Energy, whose wholly-owned subsidiary, Pacific Coal, has an 82% interest in the project, says the group remains committed to Hail Creek but "could not ignore the depth of recession in Asia when considering its timing". "It is no longer appropriate to start project construction in 1999", he added. Construction of a mine, railway and other necessary infrastructure would take about two years.

Hail Creek, which has marketable reserves of 148 Mt, is located in the Bowen Basin of central Queensland and would be capable of producing 5.5 Mt/y of good-quality coking coal. Japanese steel mills would be the principal customers and last year a leading Japanese steelmaker, Nippon Steel, acquired a 10% stake in the project (*MJ*, October 2, 1998, p.250). The cost of the purchase was not disclosed but the capital cost of developing the mine has been estimated at A$400 million. The other participants are Marubeni Coal Pty Ltd (5.33%) and Sumitomo unit, Sumisho Coal Devt Pty Ltd (2.67%). □

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Highland Valley closure

Continued from p.33

and the company had announced that it had agreed 1999 concentrate supply contracts with Japanese smelters at relatively favourable terms – US$66-67/t for treatment and 6.6-6.7 c/lb for refining. The HVC operation is certainly at the higher end of the cost curve but there are other operations in North America, notably BHP's Robinson mine in Nevada and Asarco's Ray mine in Arizona, where costs are probably at least as high. Also, HVC, being a Canadian producer, is more insulated against the decline in copper prices than the US mines because its costs are mainly incurred in Canadian dollars whilst its sales are measured in US dollars.

Under British Columbia law, companies are required to give 16 weeks minimum notice of an impending shut-down. However, some analysts are sceptical about the closure announcement and point out that negotiations for a new labour contract are still under way. They also note that early last year, when the closure of a much smaller mine was looming (the 14,000 t/y Mount Polley copper-gold mine), the BC Government granted concessions which helped avert the closure. In HVC's 1997 annual report it notes that, whereas operating costs have been steadily lowered, government-imposed costs, by contrast, have increased at a steady rate.

If the closure does go ahead, the most marked impact would be on Japanese smelters, the principal customers. A May closure would probably mean that concentrate shipments of stockpiled material could continue until June, but there would still be a shortfall of some 90,000 t of copper in concentrates over the full year. Thus far, the HVC announcement has had little impact on the London Metal Exchange copper price. □

LEADING INDICATORS

Share Indices	Jan 20	Change on week (%)	High-Low (%)	Year's Max/Min
FT Ordinary	3,514	0.7	59	3,925-2,913
US Dow Jones	9,336	–0.1	88	9,545-7,742
FT Gold Mines	980	–1.4	43	1,352-702
Australian All Mining	590	–3.8	41	692-520
South African Gold	951	–1.1	44	1,311-673
Toronto Met/Min	3,188	–4.8	34	4,356-2,596
Nikkei Dow	14,028	4.7	22	17,205-13,071
Hang Seng	10,315	0.4	70	11,811-6,859
James Capel Indices (100 on 1/1/89 except*)	**Jan 20**			
Global Base Metal	111	–1.6	37	141-93
Global Diversified Mining	109	0.5	29	144-94
Global Gold Ex S Africa	77	–2.3	44	102-56
Global Gold	67	–1.7	42	89-51
Global Mining	93	–0.4	35	121-78
Smaller Mining Companies	45	–0.4	22	61-40
†North American Base Metal	150	–2.3	50	177-122
North American Gold	86	–2.6	41	118-64
Latin American Mining*	136	13.2	14	237-120
Latin American (Ex CVRD)*	97	7.5	8	172-90
†Other Metals/Minerals	104	1.8	31	133-91
†Global Coal Mining	138	–3.2	58	153-116
*100 on 1.1.90				
†Rebased by Mining Journal				
Commodity Prices	**Jan 20**			
Gold (London)	$285.85	0.1	18	$315-279.65
Copper (LME)	$1,441.50	–0.3	4	$1,878.50-1,425.50
Aluminium (U.S. prod.)	58.50c	0.0	18	74-55
Brent Blend (dated)	$10.85	0.6	23	$15.62-9.44

Thompson Creek makes further cuts

Thompson Creek Metals Co. intends to cut molybdenum production by 3 Mlb/y. In October last year, the company announced a production cut of 8 Mlb/y. The latest cuts will be effected by reductions at both the Thompson Creek mine in Idaho and the Endako mine in British Columbia, and their combined output will be reduced to 21 Mlb/y as a consequence. All current sales commitments can be met at the reduced production rate. The two mines have a combined annual capacity of 32 Mlb.

Last month, the company warned that if prices for molybdenum did not improve it might feel obliged to close down one of the operations completely (*MJ*, December 18, 1998, p.486). In this week's statement, it said that the new production plans will allow the company to maintain its low-cost profile through improved mine production plans, enhanced mill recoveries and reduced costs of supplies and services. Since last October, the workforce at the two operations has been trimmed by 130 but no further job losses are foreseen, and at Endako, negotiations with the BC Job Protection Commission regarding concessions in power rates and property taxes are in their final stages.

Since May 1998, the price of molybdenum oxide has plummeted from the US$4.30-4.50/lb range to a current level of US$2.60/lb, although last November it had been as low as US$2.30/lb. □

Tara ruling

Last Friday (January 15), the Irish Supreme Court affirmed the decision of the Irish High Court in February 1997, and dismissed all the claims against Tara Mines Ltd and its Finnish owner, Outokumpu Oyj, brought against them by Bula Ltd (an Irish company now in receivership) and a number of its shareholders. The decision is final and conclusive as the Supreme Court is the final court of appeal in Ireland. The Tara mine at Navan, 50 km northwest of Dublin, is Europe's largest zinc mine and last year it produced some 141,000 t of zinc and about 35,000 t of lead.

Tara Exploration and Development Co. discovered the Navan orebody in 1970. Initial drilling outlined some 70 Mt of reserves averaging 10.1% Zn and 2.63% Pb, underground development began in 1973 and initial production started in 1977. However, around 10 Mt of the reserves in the Navan orebody were located to the north of the Blackwater River where mineral rights had been acquired by third parties. The dispute with Bula has centred on this northern portion of the orebody and on Bula's claims that it has been frustrated in its attempts to develop a mine.

Bula initiated its proceedings in 1986, against Tara Mines, Outokumpu, 12 current or former directors of Tara (including three government-nominated directors), the Irish Minister for Energy and a former government-nominated director of Bula. The allegations against the defendants initially included trespass and theft of ore, civil conspiracy and breach of the conditions of Tara's State mining lease. This resulted, Bula alleged, in its being prevented from independently developing its part of the Navan orebody and being pressured into selling its part of the orebody to Tara Mines at a price below market value. Bula was claiming an amount between I£139 million and I£327 million, depending upon the way in which it alleged the orebody might have been developed. The Supreme Court has found that there were no grounds for the allegations, or for damages. Costs have been awarded to Outokumpu, Tara and the other defendants in the case. □

Asian copper initiative

Nippon Mining and Metals Co., Japan's largest copper producer, is hoping to secure a deal with LG Metals of South Korea whereby the two companies would join up as equal partners to create a giant with combined copper refining capacity of around 900,000 t/y. Takashi Sakamoto, president of Nippon Mining, is scheduled to visit LG Metals' operations in Onsan and Changhang next week. LG Metals is the only producer of refined copper in South Korea, with 420,000 t/y of refining and 350,000 t/y of smelting capacity.

Last year, the Swiss-based trading group Glencore AG and Metallgesellschaft AG of Germany were reported to be interested in buying LG Metals (*MJ*, August 14, 1998, The Sun May 18/99

Some optimism remains for Highland mine deal

Despite a break in talks between company and union, some workers feel an agreement can be reached.

SUN NEWS SERVICES

KAMLOOPS — Despite a break in talks between the union and officials of Highland Valley Copper, some workers are optimistic that a deal can be reached to reopen the huge open-pit mine.

"I think for everybody's sake it would have been nice if they actually had been able to achieve [a deal] but maybe sometimes in negotiations you have to have breathing time in between," miner Al Smith said in a telephone interview.

The mine shut down Saturday after the two sides failed to reach a deal on wage cuts.

Smith said workers knew the mine would be closed for what they hope will be a short time.

The mediator trying to work out a deal that would save the company money during tough economic times called off what was to be a marathon negotiating session about 2 p.m. Sunday.

"He suggested we adjourn talks and let both parties review their respective positions," company official Trevor Phelps said.

The mediator will keep in touch with company and United Steelworkers union officials and will call them back to talks if a deal seems possible, Phelps said.

"We will be talking again but we don't know how soon," said Carol Landry, president of Local 7619 of the United Steelworkers of America.

Highland Valley, located near the community of Logan Lake 50 km southwest of Kamloops, is the largest open-pit copper mine in Canada.

About 1,000 people were employed at the mine. The closure is a huge blow to the economy of central British Columbia.

Highland announced in January it planned to close the mine May 15.

Record low copper prices and the high cost of doing business in British Columbia made it too expensive to continue operations, mine officials said.

Landry said the company rejected a new union offer that would have provided assistance when copper prices are low.

"It also would give them some cost reductions on a permanent basis but they told us they're still not interested."

The mine, which is owned by Teck, Cominco and Highmont Mining of Vancouver and Rio Algom of Toronto, lost $8 million last year and about $10 million so far this year.

The B.C. job commissioner found the mine was viable but needed about $14 million in savings.

The province agreed to tie electrical prices to copper prices, but Highland Valley officials say the deal with B.C. Hydro depends on an agreement with the union.

The offer would allow the company to operate with copper prices as low as 60 cents. The current price hovers at about 70 cents. Last year it dropped to 61 cents.

The company is looking for a contract that would tie wages to copper prices as well. Phelps said they want a sliding scale with a maximum 15-per-cent reduction when prices drop.

Smith said there will undoubtedly be wage concessions. It is just a matter of "working out the details."

The union's contract with Highland Valley expired last October.

Logan Lake Mayor Al Kemp said it was extremely disappointing that talks broke down.

"I was surprised they didn't give it any longer. It's the uncertainty of what could happen and might happen. That type of thing, it gets to people."

It will take at least two weeks for the mine to be brought back into production now that it has shut down.

There are maintenance and safety crews working to keep the mine ready for a return to work "should there be a breakthrough," Phelps said.

Kamloops Chamber of Commerce president Dave Blackwell said the community hasn't felt the full impact of the mine closure yet.

"But if they don't come to an agreement [to reopen the mine], it will probably affect another 4,000 people in the Kamloops area who either work for suppliers to Highland Valley or are suppliers themselves," he said.

"Kamloops is a supply centre and a permanent closure would certainly have a big impact here."

Accept pact, Highland mine workers urged

The Sun Aug. 26/99

JUSTINE HUNTER
SUN BUSINESS REPORTER
WITH REUTERS

More than three months after the giant Highland Valley Copper mine shut down, the Steelworkers' union is urging its members to accept a precedent-setting package that will see wages tied to world copper prices.

If Highland's 830 union workers approve the tentative agreement in a secret ballot Sunday, the first group of workers could return to work the following day, with recall completed in six weeks and full production beginning Oct. 25.

The proposed five-year contract, retroactive to Oct. 1 of last year, ties the workers' wages to the price of copper on the London Metals Exchange and allows for a 15-per cent fluctuation in the wages based on the metal's performance.

"It is a risk-and-gain plan," said Carol Landry, president of local 7619 of the United Steelworkers of America.

"If copper goes below 68 cents,

Copper prices control wages

we take a discount on our wages. If copper goes over 80 cents, we receive our money back."

The average wage of about $24 an hour could fluctuate as much as 15 per cent, but Landry said the proposed settlement contains significant improvements over the company's last offer.

"I think there will be a lot of relief for a lot of the members and their families. At least we have a guarantee the mine is going to reopen and unless copper drops significantly, we are going to retain our wages," she said in an interview.

"Those are all good things, given the market we face today, and I think our members will recognize that."

Copper prices hit a 12-year-low in March — dropping to almost 60 cents a pound — and the company lost $15 million this year before shutting down the operation May 15.

Copper prices have since recovered slightly, with September futures ending Wednesday at 75.20 cents a pound, while August spot settled at 75.20 cents. December closed at 76.60 cents.

Highland Valley, located at Logan Lake southwest of Kamloops, is one of the highest-cost mines in North America and produces about 1.4 per cent of the world's supply of copper. I produced 170,000 tonnes o copper last year.

"The perception is that if Highland Valley reopens the market will flip back into a surplus situation," one trader said. "I don't know if that much actually hinges on Highland Valley. But as long as that's the perception, then it becomes reality."

The contract also provides the workers with a $2,000 lump-sum payment over three years, with $750 to be paid Oct. 1, an additional $750 to be paid Oct. 1, 2000, and the remaining $500 to be paid the following year.

"It's very innovative and if ratified by the workers, it could set a new standard for the resource sector," said Trevor Phelps, supervisor of public affairs at Highland Valley. "It provides very competitive wages and benefits for the employees and increases the security for the company."

The company has also negotiated a concession package from its suppliers and from B.C. Hydro, but that deal, put together by the provincial job protection commission, hinges on acceptance by the employees on Sunday.

The mine is a partnership between Cominco, Rio Algom, Teck Corp. and Highmont Mining Co.

TGS → HVC

Kamloops mine pact reached

Aug. 25/99

VANCOUVER SUN

The giant Highland Valley Copper mine near Kamloops could reopen as early as Oct. 15 after the union representing mine employees urged its members to accept the company's latest wage offer.

Mediator Brian Foley said Tuesday night that the union had agreed to the company offer which ties wages to the price of copper. The proposed five-year agreement also includes a lump-sum payment of $750 this year and $1,000 on Oct. 1, 2001.

The 900 unionized employees are scheduled to vote on the proposal Aug. 29, Foley said.

The giant copper-molybdenum mine in Logan Lake closed indefinitely May 15.

Things looking up for Highland Copper

KAMLOOPS — Highland Valley Copper produced a record amount of copper in 2000 and expects another strong year based on worldwide supply and demand.

The mine has released figures showing it produced 406.7 million pounds of payable copper last year, up from the previous record of 378.4 million pounds in 1991.

The mine, owned by Cominco Ltd. and Rio Algom Ltd., also bested a previous record for average tonnes of ore milled a day. "We're breaking all kinds of records," mine official Trevor Phelps said.

The record year stands in contrast to 1999, when the mine bounced back from a prolonged shutdown caused by copper prices that dipped that March to an average monthly low of about 62 cents US a pound.

Copper prices averaged 82 cents a pound in 2000.

Phelps attributed the record year to efforts by workers and management and by a change in focus on the way the mine fragments copper ore.

There is now more blasting done in the pit to break up rock before it goes to crushing and milling processes.

"We found the best move is to spend the money up front and blast it," Phelps said.

The mine also forecasts a strong year in 2001, buoyed by copper prices predicted to average 85 cents US a pound becaus worldwide production has falle below western world consump tion.

Canadian Pr

HVC named in price-fixing probe

MINING | Worldwide investigation includes B.C.'s largest copper operation

BY SCOTT SIMPSON
VANCOUVER SUN

British Columbia's largest copper mine has been named in a worldwide probe into alleged price fixing on global copper markets.

Investigators with the Canadian Competition Bureau served notice late Tuesday upon Highland Valley Copper that the mining operation near Kamloops, one of the world's largest copper operations, must provide documents in connection with a potential scandal involving global mining giants BHP Billiton, Rio Tinto and Freeport-McMoRan.

Vancouver's Teck Cominco is the principal shareholder with a 63.9-per-cent interest, BHP Billiton holding 33.6 per cent of Highland Valley.

A Bloomberg report out of London on Wednesday said U.S., European and Canadian regulators are investigating whether the world's biggest mining companies colluded to drive up prices in the $24-billion copper market.

Surprise inspections by regulators were made at the offices of BHP Billiton and Rio Tinto Plc in London, while Freeport-McMoRan Copper & Gold Inc. of New Orleans received a grand jury subpoena.

Copper prices have surged about 25 per cent from a 14-year low in 2001, after mining companies including BHP and Phelps Dodge Corp. idled output to prevent a surplus.

The probe focuses on the market for so-called concentrate, a semi-finished product that is refined into pure metal, the European Commission said.

"Copper concentrate supplies are very tight after production cutbacks," said Robin Bahr, an analyst at Standard Bank in London. "This is hurting smelters, who are having to compete to get enough."

Mining companies either refine their own concentrate or pay independent smelters for the work. Custom smelters, such as Japan's Sumitomo Electric Industries Ltd. and Finland's Outokumpu Oyj, have suffered as concentrate supplies fell, and processing fees have dropped to a 10-year low, analysts said.

Highland Valley annually produces about 190,000 tonnes of copper concentrates from its mill — making it the world's third-largest copper concentrator.

Teck spokesman Tom Merinsky said the company has interests in two other copper mines, one in Ontario and one in Peru, but Highland Valley is the only one visited by regulators.

"The Canadian competition authorities are involved and Highland Valley Copper, in which we are a joint venture partner, has been served with a court order to produce records and information in regards to that inquiry," Merinsky said.

He declined to comment on the merits of the investigation or on the allegations.

"The HVC [Highland Valley Copper] fellows will be cooperating but other than that, we really don't have a lot more to say on it at this time."

The mine annually generates $450 million for British Columbia, including $58 million for communities in the Thompson-Nicola region, and employs 950 people.

Sliding copper prices have been a periodic concern for Highland Valley, which endured a lengthy shutdown because of a labour dispute in 1999. A deal was eventually struck that saw mine workers tie a wage increase to the price of copper.

The deal, which was brokered by the province, also saw Highland Valley get a break on its electricity prices.

In 2000 the mine bounced back with a record volume of 406.7 million pounds of payable copper, exceeding its 1991 record output of 378.4 million pounds.

Last month, Teck reported that quarterly copper revenues were up eight per cent over the same period in 2002 — and that operating profit at Highland Valley was $8 million, up from $5 million in 2002, due mainly to higher copper and molybdenum prices.

Meanwhile, the European Commission said its goal is "to ascertain whether there is evidence of a cartel agreement and related illegal practices concerning the fixing of sales prices and sales conditions, customer allocation and market sharing for this product," according to a statement.

Officials could issue a range of penalties, from fines equal to 10 per cent of sales in Europe to the possibility of criminal charges from a grand jury investigation in the U.S.

Rio Tinto, BHP Billiton and Freeport-McMoRan said they would cooperate with the investigations. Freeport was subpoenaed by the antitrust division of the U.S. justice department, spokesman William Collier said. He declined to say what documents were being requested, or the subject of the investigation.

Rio's Kennecott Ut[illegible] Copper unit, based in [illegible]na, Utah, also received a subpoena, spokesman Louie Cononelos said.

Phelps Dodge, the world's second-largest copper producer, was unaware of any contact by government authorities, said Ken Vaughn, a spokesman at the Phoenix-based company.

Chile's Codelco, the state-owned company that is the world's largest copper producer, hasn't been contacted.

with Bloomberg News

VGS → HVC

Teck increases stake in Highland Valley mine

The Sun. Jan. 27/04

CANADIAN PRESS

Teck Cominco Ltd. is increasing its copper production by about 28 per cent by raising its stake in the Highland Valley copper mine in the British Columbia Interior to 97.5 per cent.

Teck Cominco said Thursday it has told BHP Billiton subsidiary Rio Algom Ltd. it will exercise its right of first refusal and pay $73 million US for Rio Algom's 33.57 per cent interest in the Highland Valley copper partnership.

The open-pit mine is forecast to produce 174,000 tonnes of copper concentrate per year over the expected 5½ years of its remaining life.

Members of the United Steelworkers just ratified a three-year collective agreement at the mine, averting a strike with what the union declared to be "the best union contract in the B.C. mining industry for the last 15 years."

The agreement gives the 776 local members a wage increase of five per cent retroactive to Oct. 1, with a further three per cent raise next October and three per cent in October 2005. The Steelworkers said Thursday this will take the average hourly wage at the mine in Logan Lake from $25.25 to $28.13.

There also are improvements to the pension plan, health benefits, dental and optical coverage, long-term disability payments and severance provisions.

Local 7619 president Richard Boyce said the agreement reflects the company's solid position amid high copper prices, adding: "In 2½ years we're back at the table, where we intend to build on our success, despite the limited future of the mine."

■ **HIGHLAND VALLEY PACT**
Union negotiators and management at the Highland Valley copper mine in British Columbia have reached agreement just hours ahead of a strike deadline. The two sides have agreed terms on a new labour agreement after more than three months of talks. Union members are expected to vote on the agreement sometime next week. The resolution of the dispute could have had a negative impact on the LME copper price. However, in the event, the continued problems at Grasberg outlined in Freeport-McMoran Copper and Gold Inc's latest quarterly report (p11) outweighed the news from Highland Valley, and the three-months price of copper was steady this week at around US$2,450/t.

■ **CHALCO EXPANSION PLAN**
Aluminum Corp of China Ltd (Chalco) has submitted an expansion proposal to China's State Development and Reform Commission (SDRC). The company needs the approval of the SDRC to proceed with a 250,000 t/y expansion of its 120,000 t/y Pingguo aluminium smelter in Bose in Guangxi province. Chalco and Alcoa Inc of the US are seeking to form a joint venture to operate the Pingguo complex, which incorporates the smelter and an alumina refinery (*MJ*, November 9, 2001, p355). However, the failure to reach an agreement over power supplies for the complex have thus far prevented the formation of the joint venture.

■ **ANGLO *FORCE MAJEURE***
Anglo Coal Ltd has declared force *majeure* on shipments of coking coal from its Moranbah underground mine in northeastern Australia. The company said that it had been forced to take the measure following a fall of ground at the mine's longwall. The company will reconsider its position next week.

■ **UMMC BUYS ELECTROZINC**
Urals Mining and Metals Co (UMMC), Russia's second-largest copper producer, has bought Electrozinc, the country's second-largest zinc producer. Following the acquisition, Electrozinc will source its concentrate requirements from UMMC's Uchalinsky concentrator which produced 106,900 t of zinc in concentrate in 2003. Electrozinc is expected to produce 85,000 t of zinc in 2004. UMMC said it will invest US$10.4 million on upgrading the Electrozinc operation during 2004.

Kemess optimisation plans

NORTHGATE Exploration Ltd forecasts that gold production from its Kemess South mine in British Columbia will rise slightly from 294,117 oz in 2003 to 300,000 oz in 2004.

Copper production is expected to be 34,000 t compared with 34,500 t in 2003, and the overall cash operating cost (net of by-product credits) is forecast to be US$206/oz.

Northgate plans to implement three projects during the course of 2004 that are designed to improve the throughput and efficiency of Kemess South's grinding and flotation circuits. These will include increasing the rotational speed of two SAG mills, which will increase the ore processing rate by 4%.

The rougher flotation cells will be upgraded to increase retention time, improve circuit stability, and increase metal recoveries and concentrate grade. The first phase of the flotation programme will involve the activation of four, currently unused cells, and will be completed before the end of the current quarter.

In addition to the mill programme the company expects to complete the optimisation of the Kemess South open pit during the current quarter. Owing to the inclusion of updated geotechnical data, the new design will incorporate a steeper angle for the south pit wall and a reconfiguration of the haul roads and ramps.

Northgate says the changes will be incorporated into its 2003 year-end reserve statement, where they are expected to have a positive impact on both the life-of-mine stripping ratio and ore reserves.

Meanwhile, the company anticipates the completion of the Kemess North feasibility study by the end of the current quarter.

The deposit is some 5 km north of the existing pit and contains an indicated resource of 5.4 Moz of gold and in excess of 900,000 t of copper. The aim of the study is to convert a substantial portion of this resource into reserves, and extend the life of the Kemess mine by over 10 years.

QIT expansion to meet high-grade TiO_2 demand

RIO Tinto plans to invest US$76 million to expand the capacity of the upgraded-slag plant operated by its wholly-owned subsidiary QIT Fer et Titane Inc of Canada.

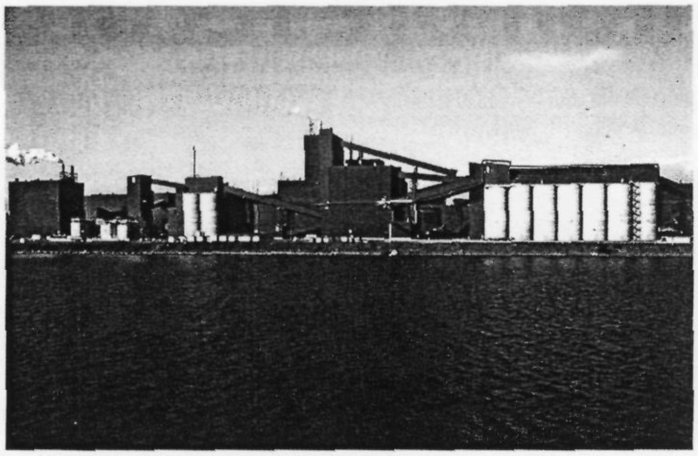
The plant, part of QIT's complex in Sorel-Tracy, Québec, has the capacity to produce 250,000 t/y of high-grade (94.5% TiO_2), low-impurity titanium slag suitable for making pigments by the chloride process. Such pigments are used mainly in paint, paper and plastics. The expansion would raise the upgraded slag capacity to 325,000 t/y, with commissioning in early 2005.

Rio Tinto has earlier indicated that the upgraded-slag plant is designed to be expandable up to 600,000 t/y, in line with demand.

The basic titanium-slag capacity of the whole complex is currently 1.1 Mt/y, which includes both the slag sold as lower-grade (around 80% TiO_2) suitable for making pigments by the sulphate process and the portion of the lower-grade slag that is upgraded to 94.5% TiO_2.

By-products from the complex include liquid iron (capacity 600,000 t/y), pig iron (360,000 t/y), steel (500,000 t/y), and metal powders (200,000 t/y). The raw material comes from QIT's hard-rock ilmenite mine at Havre St Pierre, 900 km downstream on the St Lawrence.

Rio Tinto notes that the expansion is a response by the group to "increase pigment customer demand for very-high-grade titanium dioxide feedstocks". Rio Tinto expects this trend "to continue as



QIT's upgraded-slag plant on the St Lawrence River is to be expanded *Photo: Rio Tinto plc*

Comment: The titanium dioxide feedstock industry is dominated by a relatively small number of participants both on the supply side, notably Richards Bay Minerals and Iluka Resources Ltd, and the demand side (*MJ*, April 11, 2003, p249).

The marketing of the product under long-term arrangements is key, and producers are thus notoriously sparing with information. Rio Tinto reports just one production figure for QIT and its 50% share of Richards Bay Mineral in South Africa (for which it markets 100% of output), combining all of the various titanium dioxide products together (sulphate slag, upgraded slag, rutile and chloride slag). Rio Tinto enjoys a worldwide market share of about 35%.

Rio Tinto's attributable production in 2003 totalled 1.19 Mt, a fall of 6%

2003 total included an 8% reduction (year-on-year) in the December quarter, as "the seasonal pick-up (in demand) in the second half has not been seen to the extent that would normally be expected".

However, in its interim results at the end of July 2003, Rio Tinto noted that demand for very-high-grade chloride feedstock, such as that produced by QIT's upgraded-slag plant, "remains healthy", amid a general position across the range of products of oversupply and high customer inventories.

At 325,000 t/y, this week's expansion decision is at the lower end of the range (325,000-380,000 t/y) outlined at that time for an expansion feasibility study, but the decision reflects both the relative strength of demand from pigment producers using the chloride method

TOS → HVC
Highland
Valley
Copper

BREAKING NEWS FROM THE GLOBE AND MAIL

Teck to extend mine life

FRIDAY, SEPTEMBER 23, 2005
CANADIAN PRESS

VANCOUVER — Teck Cominco Ltd. plans to extend the life of its Highland Valley Copper mine near Kamloops, B.C., about five years — to September, 2013.

The capital cost associated with the extension will be about $40 million, the Vancouver-based firm () said Friday.

"The extension of the Highland Valley mine life significantly adds to our copper production over the medium term," CEO Don Lindsay said in a release.

"This is good news for the work force at Highland Valley, for local communities and the province of B.C. and for our shareholders."

The extension plan involves the release of more ore from the Lornex pit, and the relocation of two in-pit crushers in the Highland Valley pit, together with a push-back of the valley pit wall to release more ore.

Teck Cominco is a major producer of zinc and metallurgical coal and is also a major producer of copper and gold.

Schroeter, Tom EMPR:EX

From: Schroeter, Tom EMPR:EX
Sent: Friday, September 23, 2005 8:59 AM
To: Anderson, Duane EMPR:EX; Freer, Geoff EMPR:EX; Lefebure, Dave EMPR:EX; Hermann, Fred EMPR:EX; Lewis, Jim E EMPR:EX
Subject: RE: HVC Mine life extn

Right on - we were there yesterday with the JOGMEC group and knew that this was in the works.

Tom
Tom Schroeter, P.Eng./P.Geo.
Senior Regional Geologist
Geological Survey Branch
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-----Original Message-----
From: Anderson, Duane EMPR:EX
Sent: Friday, September 23, 2005 8:57 AM
To: Freer, Geoff EMPR:EX; Schroeter, Tom EMPR:EX; Lefebure, Dave EMPR:EX; Hermann, Fred EMPR:EX; Lewis, Jim E EMPR:EX
Subject: HVC Mine life extn

the good news just keeps-a-comin

http://www.globeinvestor.com/servlet/ArticleNews/story/RTGAM/20050923/wteck0923

Duane Anderson
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"I guess I should warn you, if I turn out to be particularly clear, you've probably misunderstood what I've said" - Alan Greenspan