OINTMENT PLOSIVES LTD.



te, President of Titan Ltd., is pleased to he appointment of AGGITT as Business Manager residing in .C.

t was previously em-Victoria.

ernational Society of ingineers.

discovery Lake

totaling 8,850 ft. have on the Bear Lake joint the Cheminis mine in d Lake-Larder Lake rio.

te is under option to 94-08 d Mines (TSE) from Minerals (ASE). 94-09 st hole intersected 94-10 old per ton and 0.5% **Patrician completes financing** r 9.2 ft. in what the efers to as a flowearing structure at a

In return for cash and common stock. Centurion Mines (NASDAQ) has acquired the Grand Central mine and 70% control of Mammoth Mining, thereby securing a prospective land package encompassing about 500 acres in the heart of Utah's Tintic district.

The company also acquired 10,800 acres of privately owned mineral rights in the West Tinfic and Sheep Rock districts.

With the Similco copper mine

back in production, Princeton

Mining (TSE) is continuing a drill

program aimed at increasing the

tonnage and grade of the Inger-

belle East deposit, situated 4,000 ft.

south of the existing mill complex.

in southern British Columbia, is

owned by Princeton's wholly

owned subsidiary, Similco Mines.

belle East area defined a geo-

Hole

94-01

94-02

94-03

94-04

95-05

94-06

94-07

Previous drilling in the Inger-

From

(fft.)

30

527

228

511

812

27

301

691

675

418

746

495

798

172

The property, near Princeton

Drill program ongoing

To

(ft.)

87

687

441

567

903

159

438

785

831

501

929

580

852

258

Datation Call

Length

(ft.)

57

160

213

56

91

132

137

94

156

83

183

85

54

86

hole abandoned in overburden

hole abandoned in overburden

at East Ingerbelle deposit 19m

Centurion holds one of the largest ground positions in the historic mining region, and its latest addition includes five past-producing mines. These mines are reported to have produced 691,000 oz. gold, 29.5 mil-1 lion oz. silver, and 78 million lb. of copper. Average grades were 0.3 oz. gold and 12.5 oz. silver per ton and 1.6% copper.

Centurion adds to Tintic area holdings

8023869.39 1th 388.891th 5.5 mg

The newly acquired package includes privately owned,

logical reserve of 21 million

9,870 ft. of a scheduled 15,000-

date as encouraging, particular-

ly Hole 94-06 which intersected

156 ft. grading 1.24% copper

and 0.01 oz. gold per ton in a

new mineralized zone on the

Results to date are as follows:

Copper

(%)

0.47

0.50

0.32

0.37

0.58

0.32

0.53

0.53

1.24

0.24

0.31

0.33

0.45

0.46

cicting of one common chare and

Gold

(oz./ton)

0.008

0.008

0.008

0.008

0.012

0.005

0.008

0.014

0.010

0.005

0.008

pending

pending

pending

south edge of the proposed pit.

ft. program, have been drilled.

So far, 15 holes, totaling

The company views results to

tons grading 0.35% copper.

patented mining properties, with no outstanding royalties or other obligations. Most of the mines were closed more than 50 years ago for economic reasons.

Centurion has identified two blocks of indicated reserves in the near-surface portion of the Mammoth mine, and these can be mined within the next 12 months using existing underground workings. The first block contains 15,000 tons averaging 19.36% copper, while the second contains an estimated 50,000 tons averaging 0.22 oz. gold, 22.5 oz. silver and 7.22% copper.

Also available is stockpiled material previously mined at the Grand Central mine, which requires only crushing, transportation and smelting. Based on sampling, this block contains 10,400 tons of 0.167 oz. gold, 7.2 oz. silver and 0.93% copper.

-Centurion has retained Flour-Daniel Wright to develop a mining plan. Permitting is under way and contractors have submitted mining proposals to Centurion. All infrastructure necessary for supporting a mining operation is available.

Freewest options Kinbauri gold play

Montreal-based junior Freewest Resources (TSE) has agreed to earn a 60% interest in Kinbauri Gold's Morrisette Creek gold property.

The property, consisting of 30 claims northeast of Kirkland Lake, Ont., covers ground along strike from Sudbury Contact Mines' (TSE) Victoria Creek gold project. Sudbury Contact has outlined a mineralized zone with a strike length of 4,600 ft. containing values of up to 0.35 oz. gold per ton over 19.5 ft.

In other news, Kinbauri's court



The Northern Miner September 12, 1994

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Hudson Bay Mining and Smelting Co., Limited (HBM&S), is pleased to announce the appointment of Mr. Brian D. Gordon as General Counsel and Corporate Secretary.

Mr. Gordon was a partner of Thompson Dorfman Sweatman and a member of the firm since receiving his law degree in 1983. During that period of time, he conducted a general business law practice which included representing several mining companies.

In his position as General Counsel and Corporate Secretary, Mr. Gordon will report directly to the Chairman and Chief Executive Officer and will be responsible for all HBM&S legal affairs in Canada.

Hudson Bay Mining and Smelting Co., Limited is a subsidiary of Minorco, a natural resources company incorporated in Luxembourg.

Accident claims two geologists

Geologists Jeffrey Deen, 36, and Mark Burnett, 21, died on the night of July 12, when their vehicle veered off a mountain

dy L. Daggitt

echnical Specialist for pplier of explosives stems, The Ensignpany. He also worked 1 the B.C. heavy conustry after graduating n Economics from the nember of the CIMM er 24, 1994

MM. od 24 MA pile

im Resources

ping and channel sampling ie Santa Juana and Ternmines as part of the feasistudy at the project.

eliminary ore resource calions, based on old data as as data from 11 of the 25 s, indicate the Santa Juana hosts 910,000 tonnes of ble and probable ore averz 6.19 grams gold and 403 s silver, 2.42% zinc, 2.69% and 0.59% copper. The probable and possible ree hosted on the Terneras ct is now estimated to be illion tonnes averaging 3.8 s gold and 326.3 grams siler tonne. The resource is osed mostly of rezagas rial as well as in situ suland oxide reserves.

1 Henderson, project mansaid the key to future dement, beyond the next vears, is finding additional ide ore. Ongoing explois expected to prove up illion tonnes of sulphide

e the \$500,000 feasibility is completed and apd, BLM Mexicana plans nd US\$1.5 million on rehing the underground ngs as well as increasing pacity of the existing mill. ial mining, at a rate of onnes per day, will be ulphide ore above level 12 and oxide and sulphide ore found below level 16. The average head grade is expected to be 4 grams gold, 381 grams silver and 12% combined lead, zinc and copper.

Shrinkage stoping with pneumatic hand-held drills, pneumatic mucking loaders and electric scrapers will be used to mine the veins at a mining width of 0.65 metres. Contract mining costs are expected to be in the US\$30-to-US\$40 range.

The existing mill and flotation plant, built in 1989, are capable of producing a preciousmetals-rich lead concentrate as well as a zinc concentrate, both of which are suitable for delivery to a smelter in Torreon.

Once cash flow from the Terneras project starts, the exploration focus will shift to the developing reserves at El Cobra and San Diego mines.

BLM Mexicana also holds interests in four other properties in Mexico. La Negra gold-silver property in the state of Zacatecas underwent 500 metres of drilling, and assay results are pending. Three other properties - namely the Reyas goldsilver property in Durango, the Miguel Auzo gold-silver property in Zacatecas, and the Jimulco copper-gold porphyry property in Coahuila - will be explored at a later date.

ground to juniors Apr 25 40

autumn and drilling will ied out in the winter. other agreement, Canaolden Dragon Resources can earn a half interest in ms in Jeremie and Cauwps. To do so, it must 1 million on exploration our years (including 0 in the first year) and 000 in cash and/or stock. too, 10 airborne anomae been defined, which ollowed up with ground

geophysics and drilling in the winter.

Meanwhile, Hemlo Gold Mines (TSE) has begun drilling on Dragon's 333-claim Sewell Reeves property, 48 miles west of Timmins, Ont. Previous drilling in two areas returned low gold values in green carbonate rock and basalts. Hemlo can earn a half interest by spending \$1 million on exploration or a 70% stake by spending \$1.5 million.

Tequila assuming ownership of Asia Pacific property

Toronto-listed Adex Mining is transferring to Tequila Copper its interest in the Asia Pacific copper-gold property in the Philippines.

Adex owns half of Philippines-based Selenga Mining, which holds the operating rights to the property.

The other half of Selenga is held by Starmin Mining (TSE), and this, too, is being transferred to Tequila Copper (along with other Starmin interests).

In consideration, Adex and Starmin will receive special shares and special warrants in Tequila Copper. Each special share and special warrant can be exchanged for one common share of Tequila Copper. Adex will receive 12 million special shares while Starmin will get 10.5 million special warrants.

In the end, Tequila (a company incorporated by Adex) will own a 40% direct and a 60% indirect interest in Selenga. Tequila will consequently own a 100% indirect interest in the Asia Pacific project.

Tequila plans to launch a major drilling program at the Hinoba-an copper deposit, which forms part of Asia Pacific. The deposit contains a geological reserve of 150 million tons averaging 0.48% copper. A feasibility study indicates a minable reserve of 104 million tons averaging 0.45% copper as well as an oxide copper reserve of 7.3 million tons averaging 0.65% copper.

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NEWS ROUNDUP

Production resumes at Similco Mine

VANCOUVER - In August, Similco Mines, a wholly owned subsidiary of Princeton Mining (TSE), resumed production at its open-pit copper mine in southwestern British Columbia.

The mine operated throughout September at a daily rate of 21,214 tons and is currently processing 25,000 tons per day. Initial production has been from the Ingerbelle stockpile, which contains 10.3 million tons of 0.25% copper and 0.006 oz. gold per ton.

Drilling of the East Ingerbelle zone is increasing grade and tonnage, the overall geological reserve having previously been calculated at 21 million tons grading 0.35% copper. Over the past five years, Similco produced, on an annual basis, 55 million lb. copper, 15,300 oz. gold and 360,000 oz. silver.

88-99 Kookaburra defines Tacaza reserves

VANCOUVER - Drilling on the Tacaza project in southeastern Peru has outlined a geological resource of 4.4 million tonnes grading 1.35% copper, based on a 0.5% cutoff. Kookaburra Resources (VSE) has drilled 7,700 metres in

more than 125 holes, covering a strike length of 1,450 metres.

Subsequent soil samples, taken at 50-metre spacings over a 900-by-2,300-metre area, indicate good copper-lead-zinc correlation. The samples also indicate that the known mineralization extends at least 800 metres to the north. In addition, two outlined areas have yet to be tested. Kookaburra has about \$4.5 million in working capital and

15.4 million shares outstanding.

New Island hits gold at Glover

With its first drill hole, New Island Minerals (ASE) has intersected significant gold mineralization at its 26,000-acre Glover Island property in Newfoundland.

The hole intersected 0.30 oz. gold per ton over a true width of 20 ft. This intercept included a high-grade core which averaged 0.40 oz. over 10 ft.

The work is being carried out on the Lucky Smoke zone

co-Nevada buys platinum royalty

ty-holder Franco-Nevada (TSE) has paid US\$2.25 to South Africa-based urg Platinum for a 5% fits interest royalty in intry's Pandora platoperty.

Africa, and according to com-

pany President Pierre Lassonde, "the property was a bargain with no risk."

The 17,193 acre property contains 31 million oz. of proven and probable platinum group

The orthern Miner



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SENIOR GEOLOGIST

Ok Tedi Mining Limited is a major producer of copper/gold concentrate, treating ore at 80,000 tons per day utilizing single stage crushing, sag and ball milling, conventional and column flotation and produce handling. The Company is managed by BHP Minerals, the major shareholder.

The company currently has a vacancy for an experienced Senior Geologist to join the Geology team. The position reports to the Chief Geologist. The responsibilities of the position are to upgrade the geologic skills and understanding of national staff within the Geology Department and the Mine Division, and to ensure that the ore reserve base is fully understood through drill and updating of geologic model. The Senior Geologist directs the production of geologic plans and cross-sections of the mine area, and evaluates grade control systems, making modifications where necessary. He/she will also direct exploration programs outside the mine area. Supervision and training of PNG National personnel are requirements of the position.

To be considered for this senior position you must have 8-10 years experience in geology programs in Mine Operations and Exploration with extensive experience in porphyry coppers and related ore bodies. A BSc in Geology or related field is essential and MSc is desirable.

This position will be offered on an employment contract based package to appeal to high calibre applicants. Furnished married/single accommodation will be provided in a secure, wellestablished town which has good facilities. Remuneration will be based on previous experience and include a significant isolation allowance.

If you are seeking satisfying and rewarding work overseas and would like to be considered for this position, we would like to hear from you before December 31, 1994.

Please send confidential resume to: Manager, Human Resources, BHP Minerals, Copper Division, 550 California Street, San Francisco, CA 94104-1020. An Equal Opportunity Employer.

The Main Favorable Hori-1 zon, a 10-to-20-metre layer which hosts the copper-silver mineralization, marks the transition between continental sandstone deposition and the overlying marine deposition. It encompasses an area measuring 70 miles long by 25 miles wide. Outcrops are limited (and produced only) by the erosion on northwest-southeast-trending anticlines.

Sampling at the Granizo showing returned a strike length of 42 metres averaging 2.11% copper and 37.9 grams silver per tonne over a width of 8.72 metres.

Francisco is seeking a jointventure partner.

Princeton expands Similco reserves

VANCOUVER — A drilling program has boosted the reserve base of the Similco mine project in southwestern British Columbia.

Princeton Mining (TSE) says. minable reserves at the Ingerbelle deposit have risen to 56.6 million tons.

A mining plan has already been proposed and is awaiting government approval. The first phase outlines 14.3 million tons grading 0.32% copper and 0.007 oz. gold per ton at a strip-0.2 199 glt Au ping ratio of 0.8-to-1. A second phase calls for the mining of 42.3 million tons averaging 38.4 m tonnes 0.329% copper and 0.007 oz. gold with a stripping ratio of 10.2.18 falt Am. 1.7-to-1.

Similco continues to process ore from a stockpile containing 10.3 million tons averaging 0.25% copper and 0.006 oz. gold. The company expects the first phase of mining to begin in early 1995.

Calneva Resources (CRK: VSE) has changed its name to International Calneva Gold (ICG:VSE) on a 1-new-for-5old-share basis.

13.0 M tonnes

Pec 19, 1984 PIL

9.3 m tonnes 0.187g/tAy

KAD - 30/95



ROSSIANU AICA PIOUUCCU AUOULI 6.2 million tons at a recovered (Positive study at grade of 1% copper, 0.47 oz. gold and 0.60 oz. silver per ton.

"We are certainly in elephant" country," said Michael Muzylowski, former president of Granges who recently joined the board of Pacific Vangold.

Much of the historic production came from Le Roi mine, the founding asset of what is now Cominco.

Le Roi's mineralization occurs in shear-vein systems along the northern margin of a monzonite intrusion. Gold mineralization is generally mesothermal, taking the form of massive sulphide veins containing pyrrhotite, pyrite, arsenopyrite and chalcopyrite.

Exall's Santo Tomas by Brian Christie

A new copper mine may be in the works for Exall Resources (TSE), following completion of a positive prefeasibility study on the Santo Tomas project in Mexico's Sinaloa state.

The study --- carried out by Bateman Engineering, Mintec and Mountain States R & D envisions a 60,000-tonne-perday operation that would produce, on an annual basis, 306 million lb. copper, 69,000 oz gold and 2.3 million oz. silver.

The mining rate could eventually be increased to 120,000 tonnes per day, with financing

See EXALL, Page 6

stake in Aur. Cyprus is acquiring the shares for investment purposes and may not increase its holdings beyond this level without the consent of Aur.

Management of Aur and Canada Tungsten consider the share purchase to be the first step in a process that will lead to a merger of the two companies into a larger, financially strong entity. The new company will have two major long-life copper mines, ongoing gold production and a portfolio of properties in North America. Chile and Peru.

"We like the overall asset package, particularly the Andacollo property in Chile," Peter McCarter, Aur's senior vice-president, told The Northern Miner. Canada Tungsten holds a

See AUR , Page 2

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Underground at the Iron Colt gold -silver project. See IRON COLT, Page 14

Copper mines staging comeback in British Columbia

VANCOUVER — Several shutdown copper mines in British Columbia will re-enter production this year, largely because their economics have been improved by higher copper prices and a weaker Canadian dollar.

The reopenings are especially welcome in interior communities such as Kamloops, where many residents make their living, directly or indirectly, from resource-based industries such as mining.

The planned re-opening, by Teck (TSE), of the Afton-Ajax copper-gold mine will mean jobs for 150 people, plus the generation of \$30 million annually, largely in the Kamloops area.

Maintenance work is to begin shortly and Teck expects full production will resume by the end of September. The company's wholly-owned oper-

ating subsidiary, Afton Operating Corp., has already concluded a collective agreement with the United Steelworkers of America, as well as concentrate sales agreements.

At the end of 1992, open-pit minable reserves from the Ajax $\sqrt{2}$ provides for a deferral in the property were reported as being 14.1 million tonnes averaging 0.46% copper. Mill ca- year, and deferral of 50% of pacity at the nearby Aftony plant is 8,500 tonnes per day.

The town of McLeese Lake will be the major beneficiary of the restart of the copper mine of the same name. Owner Gibraltar Mines (TSE) suspended operations late last year but now plans to restart production under the terms of a recent agreement with the **British Columbia government's** Job Protection Commission, which allows for a deferral of certain levies.

However, the company notes

that its decision to resume mining and milling was primarily because of improved copper prices, the lower Canadian/U.S. dollar exchange rate and cost reductions.

The government agreement payment of 50% of hydroelectricity rates for just over one municipal taxes. These deferred payments are to be repaid by the end of 1998. For a temporary period, environmental bonding will be funded at a rate of \$1 million per year, rather than the higher rate of \$2.7 million.

Work on recommissioning the mill and mobile equipment will begin immediately, with production of concentrate cheduled for October. A new tailings line and pumping system will be installed, which means the company will incur

costs of about \$10 million on capital projects and working capital before any cash flow is generated from the property.

The mine will have 277 employees — down from 280 last September when production was cut by 50%, but well above the 196 employees on site when operations ceased entirely last December.

Princeton Mining (TSE) is also gearing up to resume production shortly, at its Similco mine near Princeton in the south. The company says the price of copper in Canadian dollars increased by more than 40¢ per lb. since operations were suspended last November.

The decision to resume operations was also based on positive negotiations with the company's main customer, Mitsubishi Materials, which is

See BRITISH, Page 14

ST., 5TH FLOOR ğ

British Columbia copper mines stage comeback

From Page 1

providing Similco with US\$3.6-million advance payment for startup costs. An added advantage is the support of the unionized workers who voted (by almost 90%) to ratify a 2-year extension of their existing collective agreement.

On an annual basis, Similco's open pits have produced an average of 55 million lb. copper, 25,000 oz. gold and 350,000 oz. · silver over the past five years, ' An exploration program is under way in an effort to test the extent of potentially economic mineralization and prove up an open-pit deposit with at least a 5-year life.

Princeton has taken steps to protect the economics of the Similco operation through a price protection program involving about 30 million lb. copper over the first 12 months. Under this program, the company is assured a minimum of US\$1 per lb. and receives 100% participation in any price over US\$1.10.

The improved outlook for copper is also proving benefi-



Tel. (604) 683-2037 I's gon cot tice vanced exploration- or development-stage projects in the province. Two of the highestprofile projects, Kemess and Fish Lake, are being advanced mining entrepreneurs by Robert Hunter and Robert Dickinson. The partners hope to find a major company interested in acquiring these huge copper-gold deposits and placing them into production.

KPD

So far, these talks with majors are in the preliminary stage. But a junior holding the

~ 21 By Cu= 21 mig cu= 21 tht Cu - 780,000 gAu Iron Colt 11 mg By From Page 1

"Anywhere along this contact (with the intrusion) is a good place to look for these veins," said Daniel Wehrle, Vangold's project geologist, who spoke to The Northern Miner on a recent site visit.

The Iron Colt project is about 3,000 ft. east of Le Roi, along the strike extent of the mineralized trend.

Work to date includes rehabilitation and 300 ft. of further development on the No. 6 adit. The adit now extends about 3,000 ft. from daylight, through Cominco's old Columbia-Kootenay mine and on to the Iron Colt property to the west.

Vangold and Silver Ridge pay a monthly rental fee to Cominco to use the adit.

The joint venture completed a 300-ft.-long, 50° raise from the No. 6 level, with three "knuckle-backs" up to the area of the old high-grade drill intersections.

Silver Ridge President Barry Wilson noted that although some of the raising was done

Kemess - namely, St. Philips Resources (VSE) --- has caught the eye of Vengold (TSE). which plans to carry out a due diligence review before it moves to acquire an interest in the copper-gold deposit.

Meanwhile, New Canamin **Resources** (VSE) is hoping its copper discovery near Houston will become the province's next major open-pit mine. The company discovered a new zone of mineralization, which is proving to be of better grade and larger

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in some cases. As a result, the vein could not be sampled all the way up the raise. Wilson did say that about 100 ft. up. the raise encountered material grading 2.5 oz. gold. 125111-1

Further development was also undertaken on the Alberta adit, which was driven from the Iron Colt project about 100 years ago to crosscut the eastern extent of the Le Roi mineralized trend.

The recent development connects the top of the 300-ft. raise with the Alberta adit, which, in turn, is about 200 ft. vertically above the No. 6 level at the bottom of the raise.

At the time of our visit, the sub-level work included a 4-ft.wide sub-drift in the hangingwall of the steeply dipping vein near the top of the raise.

The sub-drifts extended 45 ft. east and west of the raise. Samples were taken across the face of the sub-drift with each advance and graded as high as 12.4 oz. gold across 1.5 ft. Muck samples ranged from 0.31 to 2.67 oz.

discovered in the 1960s.

looked,", Brock nave and why we were all a strength Red Chris, which we have be one of the ricker, the per porphyry deposite in H-Columbia." The combined resource in both zones on the Huckleberry property is reported to be in excess of 160 million tonnes containing 0.475% copper. Kilborn Engineering is carrying out a study on the feasibility of mining the deposits, with results expected in September.

Further north, near Stewart, **American Bullion Minerals** (VSE) has launched a \$3.5-million exploration program of the Red Chris project. The junior acquired an 80% interest in this property in late 1993.

Exploration in the 1970s showed a reported reserve of 33 million tons grading 0.73% copper and 0.014 oz. gold per ton, within an overall reserve of 149 million tons. This year's drilling will continue until late November.

Company President John Brock says the program marks the return of an active junior mining company to British Columbia.

"With so much attention focused on mining ventures abroad, excellent projects here in Canada have been over-

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He adds that government

more supportive of mining that

it has been in the recent pas

"The provincial government :

showing a new attitude the

should create a new sense of or

timism throughout the industry.

Noble Peak

raises money

Resources is raising \$400,000

through a private placement

of flow-through common

The company recently op-

tioned ground to Cyprus

Canada, a unit of Cyprus

Amax Minerals (NÝŠE).

The Cache gold zone in the

eastern Northwest Territo-

ries hosts roughly 364,000

tonnes grading 9.26 grams

per tonne in an altered

be approved by regulators.

The placement has yet to

shares.

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Alberta-listed Noble Peak

Equipment Wanted

MINING PERSONNEL - A resume

Help Wanted

CRUSHERS WANTED --- We are cas