

(3) The Vein

The vein is a quartz-filled fissure occupying a well-defined fault fissure. Relative movement along the fissure is in the neighborhood of 30 feet with the north side moving east. The strike is almost due east and west, and the dip is vertical or steep southward. Widths range from a few inches to upwards of 10 feet. The walls are generally free and the vein filling consists of quartz containing bands of sulphide or shadowy dark colored material in the richer sections. Mineralization consists principally of disseminated pyrite with minor amounts of sphalerite, galena and chalcocopyrite.

(4) Ore Shoots

The best ore in the old section of the mine seems to have been mined between walls of greenstone or largely greenstone. This rock appears to have been most competent to maintain a fissure with clean cut walls. The least competent rock exposed in the mine workings is the band of talcose material between the central and western ore shoots. Here the fissure has entirely disappeared.

Mine

Access to the mine is through the recently completed shaft from the surface to the No. 5 level. The two-compartment shaft was constructed by driving a pilot raise from the top of the old winze just above No. 4 level to the surface, later slashing the raise to full size and timbering down to No. 5 level. The shaft is 7 feet by 12 feet outside of timber and is inclined at 85 degrees.

Hoisting equipment consists of a one ton capacity self-dumping skip operating on rails, a counterweight operating in a timber slide in the service compartment of the shaft, and a 75 h.p. Mead-Morris hoist.

The section of the mine being developed at present is on the No. 5 level, 600 feet east of the shaft. Ore is being mined in the 5-2 stope, and the No. 5 level is being driven eastward on the vein.

Stoping by the shrinkage method is on a two-shift-per-day basis. Gardner-Denver R 68 stopers, using $\frac{3}{4}$ -in. Gardner-Denver Carborized steel and $1\frac{1}{2}$ -in. Timken Taper bits, are employed. An average life of 275 feet per bit is obtained. Twenty 6-foot holes is average for a drill shift. 40% Forcite, in 1-in. by 8-in. cartridges, and fired by No. 6 caps, safety fuse and C.I.L. Thermalite Igniter Cord, is used. The cost of explosives is about \$1.00 per ton.

Ore is moved to the shaft by a

Mancha Little Trammer and one-ton ore cars.

Drifting is on a one-round-per-day basis. The drilling shift, consisting of one miner in a clean face, employs a Gardner-Denver S-58 Jackleg with $\frac{3}{4}$ -in. Gardner-Denver Carborized steel and $1\frac{1}{2}$ -in. to $1\frac{1}{2}$ -in. Timken Taper bits. A burn cut of 5 holes in quartz or 7 holes in waste is used. A total of 28 holes per round is drilled and a 6-foot break is obtained. A mucking crew, consisting of a motorman and an Eimco 12B mucking machine operator, cleans out a round in 3 to 4 hours.

The mine makes water at the rate of about 35 gallons per minute. Pumping equipment consists of a 40-h.p. 13-impeller centrifugal pump which operates automatically and runs 5 hours per day.

Ore is now being developed in a new stope, 175 feet long, east of the main fault. The back assays 2.1 oz. gold over an average width of 2.5 feet. Flat faults, with only minor movement, offset the vein and thus cause dilution during mining.

Two diamond-drill holes intersected the new ore shoot below 5 level. One hole assayed 4.32 oz. gold over 2.8 feet and the other 1.60 oz. gold over 3.0 feet.

Insufficient work has been completed to outline the ore-reserve potential east of the fault. Indicated reserves above and below the present ore shoot are estimated at 10,000 tons.

Surface Plant

The surface plant consists of a 60-foot headframe, a 100-ton ore bin and a 50-ton waste bin at the shaft head. Air for the mine is supplied by a 750 c.f.m. Belliss and Morcom automati-

cally operated compressor. Compressor and hoist are housed in a 25- by 40-ft. frame building. Smaller buildings house the change-room and office. The mine crew lives at Rock Creek and Bridesville, and supply their own transportation to the mine.

Power

Power is supplied to the mine from the West Kootenay Power and Light Company's main transmission line which passes within 2000 feet of the shaft. Transformers reduce the voltage from 60,000 down to 440, 220, and 110.

Power costs averaged \$570 per month for the past three months, or \$0.96 per dry ton shipped.

Ore Shipments

Ore is trucked from the mine to Rock Creek, a distance of 16 miles, by the E. Cox Transfer Company of Greenwood. Contract price is \$1.50 per ton. At Rock Creek the ore is dumped into 70-ton gondola cars and hauled to Trail by the Canadian Pacific Railway.

Personnel

Mr. A. G. Diuto is General Superintendent. Fifteen men are employed at the mine, distributed as follows:

Underground 12
Surface 3

Operating Data

During August, September and October of this year 1846 dry tons of ore were shipped. Assays were as follows:

Gold 1.438 oz. per ton
Silver 1.99 oz. per ton
Silica 68.0%
Lead 1.0%
Zinc 0.87%

Operating data is shown below:

	Average per month	Per ton	Per oz. gold
Dry tons shipped	615.39		
Gross smelter returns	\$29,040.07	\$47.19	\$31.63
Trucking and freight	2,796.72	4.54	3.05
Net Smelter Returns	\$26,243.35	\$42.65	\$28.58
Operating Costs:			
Administration	\$ 1,938.17	\$ 3.15	\$ 2.11
Mining	7,040.54	11.44	7.67
Current Development	2,551.45	4.15	2.78
Total operating costs	\$11,530.16	\$18.74	\$12.56
Estimated returns to be applied against future development	\$14,713.19	\$23.91	\$16.02

General

To develop additional ore plans are now underway to sink the main shaft to the 6th level and then drift to the East, and also to extend the 3rd level to the East.

The object of this program is to develop sufficient ore to justify the construction of a mill with a capacity of at least 100 tons per day.

Gold City Mining Corporation
Caramelia Gold Project
Bridesville, British Columbia
Canada

The Camp McKinney Gold Mine

By H. L. HILL and L. P. STARCK
Consulting-Managing Engineers



H. L. HILL, P. Eng.

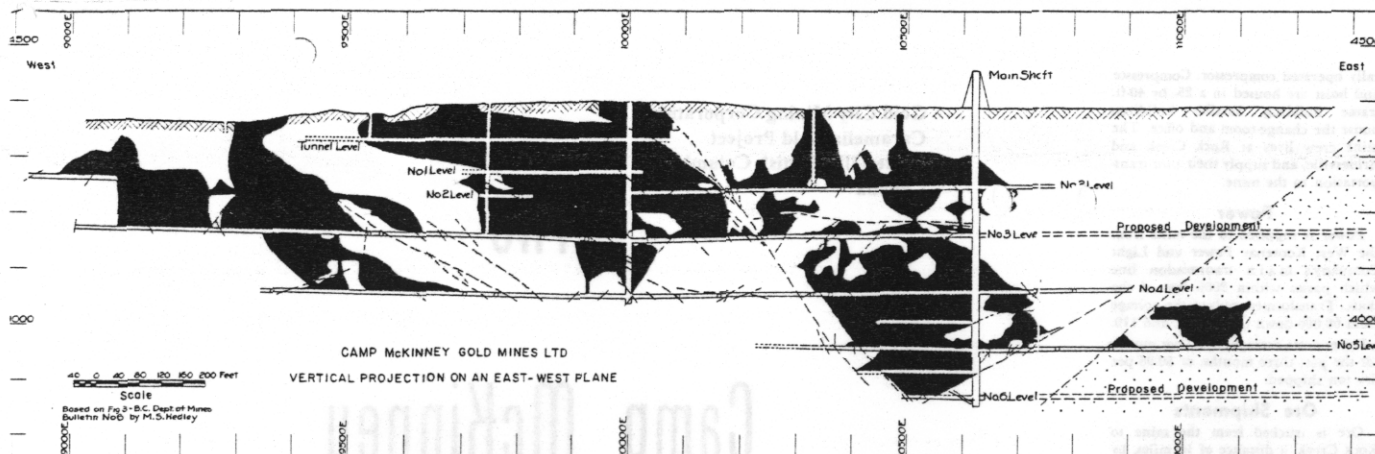


L. P. STARCK, P. Eng.

A paper to be presented at the 66th Annual Convention,
Northwest Mining Association, Spokane, Washington, Dec.
2 and 3, 1960.

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AGS - Caramelia
Camp McKinney



Introduction

Camp McKinney Gold Mines Limited, a private company, operates the old Cariboo-Amelia mine at Rock Creek, B.C. Siliceous ore is mined and shipped directly to Cominco at Trail at a rate of about 700 tons per month.

Location

The property of Camp McKinney Gold Mines Ltd. consists of nine Crown-granted mineral claims, and is in the Greenwood Mining Division in south-central British Columbia about nine miles north of the International Boundary. It is reached by seven miles of branch road leaving Highway No. 3 three miles east of Bridesville. Rock Creek, a station on the Kettle Valley branch of the Canadian Pacific Railway, is nine miles east of the above road junction on Highway No. 3.

History

The history leading to the current operation of the Cariboo Amelia mine is as follows:

1860—Placer gold was recovered from Rock Creek and its tributaries.

1864—Lode gold was discovered on and covered by the Victoria claim.

1887—The Cariboo vein was discovered.

1894—George McAuley and associates, of Spokane, Washington, after development of the Cariboo and Amelia claims, formed the Cariboo Mining and Milling Company, and erected a 10-stamp mill. This operation continued through 1897 producing \$380,000 and paying \$189,000 in dividends.

1898—McAuley and Toronto associates formed the Cariboo-McKinney Mining and Milling Company Limited to take over the operation. Property

controlled by this company included the Cariboo, Amelia, Alice, Emma, Maple Leaf, Soutooth and Okanagan claims. The milling capacity was increased by the addition of 10 stamps. This operation continued through 1903, produced \$803,000 and paid \$377,000 in dividends. The mine was closed down at the end of 1903 when exploration failed to find the vein beyond the fault at the east end of the mine.

Several years after the Cariboo-McKinney company closed down other interests dewatered the mine to the No. 4 level, but ceased operations when it was discovered that the old stopes were exhausted.

1917-1918—Twenty-nine claims in the area were optioned by the Consolidated Mining and Smelting Company and some surface exploration carried out.

1929—Shafts on the Waterloo and Fontenay claims were dewatered by C. F. Low of Vancouver, but no work was done.

1934—The Bralco Development and Investment Company of Vancouver optioned the Cariboo holdings and several other claims. Some surface was done and five diamond-drill holes put down to explore the westward extension of the vein and of the west and central section of the mine. Results were not encouraging and the option was dropped.

1939—Pioneer Gold Mines of B.C. Limited optioned the Cariboo-McKinney holdings and dewatered the mine. The workings were examined, surveyed, and sampled. Three diamond-drill holes were drilled underground from the east end of No. 4 and No. 5 levels, and eight were drilled from the surface to explore the eastward ex-

tension of the vein to the north. Results were discouraging and the option was dropped.

Total production to 1939 amounted to 69,581 oz. gold and 6,859 oz. silver from 123,457 tons. Dividends totalled \$566,000.

1940—The property was leased by G. Boag and Associates, who mined pillars and stope remnants above the Tunnel level. During the summer of 1941 Highland-Bell Ltd., who had done some development work on the Warton claim in 1940, took over the lease, mined some ore and did 200 feet of drifting and crosscutting above the water level at the Tunnel level. The lease reverted to Boag and Associates late in the year.

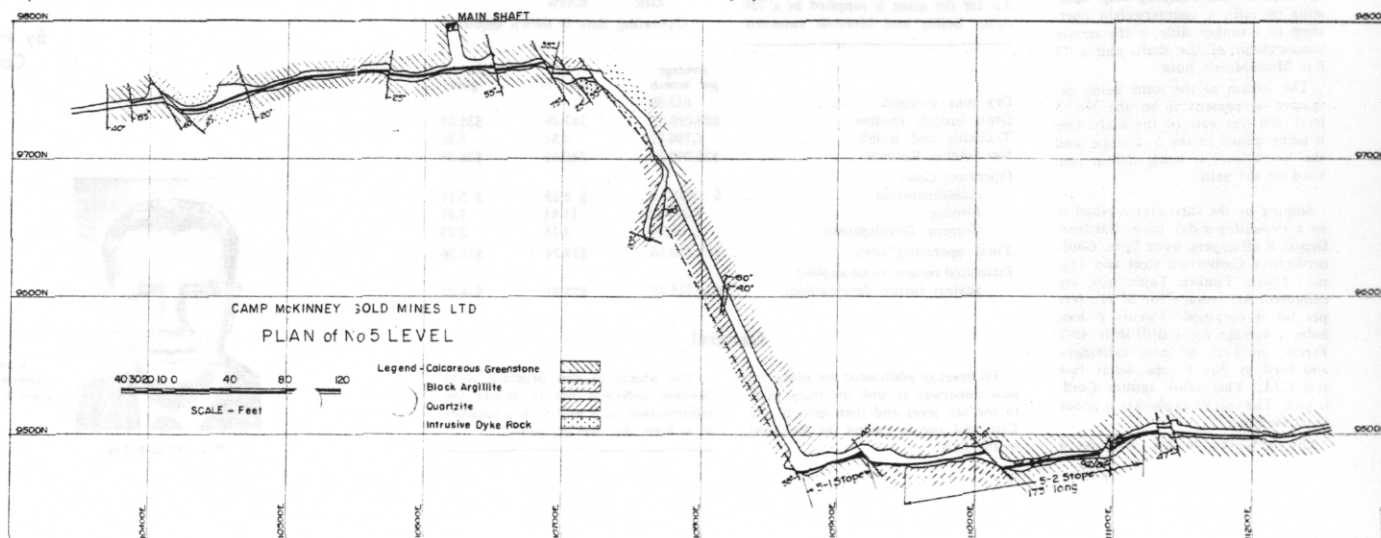
1942—Leases on the mine were taken by E. Wanke and Associates of Rock

Creek, B.C., who continued working through 1946 after dewatering the mine to the No. 2 level, and by Fritz of Midway, B.C., who worked through 1943. Ore was mined from surface pillars. Production from 1943 through 1946 totalled 1,570 tons, yielding 1,026 oz. gold and 1,496 oz. silver.

1957—W. E. MacArthur of Greenwood optioned the property, and with associates located the eastern extension of the main vein beyond the fault by surface diamond drilling.

1958—R. Hunstone and Associates then optioned the property from MacArthur and, after an examination by the writers, dewatered the mine and drove a 250-foot crosscut southeast on 5 level, and drifted 50 feet on the vein encountered.

1959-1960—Giant Mascot Mines, Mt.



Washington Copper Co., and Clarke Gibson and Associates financed the property into production. Returns from the operation started in July, 1960.

Geology

The Geology of the area has been described by W. E. Cockfield (1935), C. E. Cairnes (1937) of the Geological Survey of Canada, and M. S. Hedley (1940) of the B.C. Department of Mines.

(1) Rock Types

The rocks in the vicinity of the mine workings consist, for the most part, of a highly metamorphosed bedded series. Intruded into these are a number of dykes of varying age and composition. Strong alteration of the vein walls has obscured the identity of the rock types. While local variations occur, the general strike of the bedded rocks throughout the workings is north-west and the dip 45° to the north-east.

The most typical rocks forming the walls of the main ore shoots are calcareous greenstone and argillaceous quartzite. The former grades from a massive type of normal andesitic appearance and composition with irregular calcite veining to well banded rocks consisting of alternate parallel bands of greenstone and calcite from a fraction of an inch to several inches in thickness. The typical argillaceous quartzite consists of bands of almost pure silica separated by thin argillaceous partings. Gradations between the two rock types exist.

Occupying much of the unstopped section, indicated on the longitudinal projection between the west ore shoot

and the central ore shoot, is a 50-foot wide band of talcose material containing fragments of biotitic and siliceous rocks. The identity of the vein is lost in this material.

(2) Faulting

The vein within the mine workings is cut by numerous faults with displacements ranging from a few inches to several hundred feet which have greatly hampered mining and development. The faulting appears to be entirely post mineral with no effect on the vein other than to offset it.

The faults may be grouped as follows, from earliest to latest:

(a) A series of westward-dipping faults which offset the footwall block to the south from a few inches to 20 feet. The vertical component may be several times as large with the hanging wall probably moving downward.

(b) A series of major thrusts (including eastward dipping faults and flat faults) some of which are closely related, forming, as in the central section of the mine, a complex system. The hanging wall blocks have moved north and west. Displacement in the case of the flat fault above the east end of No. 3 level has been at least 400 feet.

(c) An eastward dipping fault, between the central and eastern ore shoots, in which the hanging wall block has moved relatively down and to the south with a total displacement of upwards of 300 feet.

(d) A westward dipping fault that cut off the vein at the end of 4, 5 and 6 levels of the old mine. The horizontal displacement is more than 300 feet with the hanging wall moving to the north.

**Gold City Mining Corporation
Big Blackfoot Resources Ltd.**

**✓SE:GCP
ASE:BLF**

JOINT NEWS RELEASE

January 23, 1997

FOR IMMEDIATE RELEASE

**LETTER OF INTENT
CAMELIA GOLD PROJECT, CAMP MCKINNEY, BRITISH COLUMBIA**

Vancouver, B.C.: John Chapman, President, Gold City Mining Corporation and Paul White, President of Big Blackfoot Resources Ltd. are pleased to report that a Letter of Intent has been signed on Gold City's Camelia Gold project. Big Blackfoot will have an option to earn up to a 50% Joint Venture interest in the Project by conducting \$815,000 in mineral exploration over the next four years, and by paying Gold City \$105,000 in cash and 200,000 Common shares of Big Blackfoot, over the same period.

The Project consists of 2,200 hectares of contiguous mineral lands located at Camp McKinney and Dayton Camp near the International Boundary in South Central British Columbia, and just 20 kilometres northwest of Battle Mountain Gold Company's 1.8 million ounce Crown Jewel gold deposit.

The Project area has been a focus of gold exploration since the 1860's. The historical Rock Creek placer gold fields, are located adjacent to the Project's lode mineral lands. The Cariboo-Amelia mine, which is a part of the Project, is British Columbia's first dividend paying lode gold mine. The mine commenced underground operations in 1894 and produced 137,000 tons yielding 82,000 ounces of recovered gold. The area geology is very favorable toward discovery of more gold deposits, as seven kilometers of contact between the Anarchist Group metasediments/metavolcanics with Nelson Plutonic Complex felsic intrusives strike northwesterly across the Project lands. This is the same rock contact that hosts the Crown Jewel gold deposit and the new Ket 28 gold discovery 10 kilometers south of the Camelia Gold project.

Big Blackfoot is planning a \$250,000 diamond drill program for the Project in 1997, to test established targets and to test extensions of known gold deposits.

The Option Agreement will be subject to the approval of independent members of each companies' Board of Directors (Paul White is President of Big Blackfoot and a Director of Gold City) and the approval of regulatory authorities.

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For further information contact:

John Chapman, Gold City Mining Corporation	604.682.7677
Paul White, Big Blackfoot Resources Ltd.	403.269.2122

NEWS RELEASE

September 20, 1996

FOR IMMEDIATE RELEASE

**Mineral Land Purchase & Finance Option Agreement
Caramelia Project, Camp McKinney, B.C.**

Management today announced that a formal agreement has been signed by Gold City and Teck Corporation whereby Gold City has acquired mineral lands from Teck, within Gold City's Caramelia project, at Camp McKinney near Bridesville, British Columbia.

For the purchase of five crown granted mineral claims Gold City has paid Teck \$21,000 and granted Teck a 2% NSR royalty on mineral production from the claims. Also, Teck has retained the right to finance mine development at Gold City's Caramelia project if more than 250,000 ounces of gold are proven and a positive feasibility study for development is rendered. If Teck exercises the right to finance, it has the further right to be the project Operator if the mine capital cost exceeds \$20,000,000. Teck's financing and Operator rights under this agreement expire December 31, 2004, if not triggered prior to this date.

At the Caramelia project, Gold City owns a 100% interest in 1,250 hectares of mineral lands, including the historic Cariboo-Amelia lode gold mine, and in addition holds a further 530 hectares of mineral lands under lease and option agreements. Camp McKinney is located in the Boundary Gold Fields 23 kilometres northwest of Battle Mountain Gold Company's Crown Jewel deposit which contains 1.8 million ounces of gold. Production of gold in the region includes approximately 2.7 million ounces in the Hedley Camp, 1.3 million ounces in the Phoenix Camp, and 2.0 million ounces in the Republic Camp.

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For further information contact: John Chapman, President, 604.682.7677.