

PRODUCT

COPPER

PROVINCE OR
TERRITORY

British Columbia

N.T.S. AREA 82 E/2

REF. CU 1

NAME OF PROPERTY

MOTHER LODGE & SUNSET

Open pit, Mother Lode claim (Lot 704).

LOCATION

Lat. 49°06'42" Long. 118°43'

Radius of uncertainty - 50 meters.

Mining Division Greenwood District Similkameen

County Township or Parish

Lot Concession or Range

Sec. Tp. R.

OWNER OR OPERATOR AND ADDRESS

DESCRIPTION OF DEPOSIT

The oldest rocks are cherts and cherty greenstones of the Permian Knob Hill Formation. These appear to be only in fault contact with chert pebble conglomerates of Middle Triassic age which normally unconformably overlie the Knob Hill Formation. Limestone, also of Middle Triassic age, normally overlies the chert pebble conglomerate and is conformable with it on the east slope of the Mother Lode hill. These stratified rocks are cut by intrusive rocks of two types. The older are granodiorite, or in small dykes, granodiorite porphyries. Most specimens are strongly altered with hornblende crystals converted to a felted mass of fine amphibole, some perthite replaced by epidote, and plagioclase partly sericitized. A second group of dykes consists of light-brown porphyries with salmon-coloured feldspar phenocrysts.

Skarn alteration of limestone and chert pebble conglomerate is fairly extensive. The limestone is mostly converted to a garnet skarn, but banded garnet-epidote-actinolite skarns are also fairly common. One large dyke of granodiorite (about 100 feet wide) is evident on the surface, although another was apparently mapped underground. The granodiorite of the dyke itself is slightly skarnified. The limestone and chert pebble conglomerate both strike northward and dip steeply eastward. Two sequences of lime-

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Associated minerals or products of value - Silver, gold.

HISTORY OF EXPLORATION AND DEVELOPMENT

The property is located on the north side of Deadwood Cree about 2½ miles northwest of Greenwood. The Sunset claim lies about 1,800 feet southeast of the Mother Lode.

The Mother Lode claim, staked in 1891, was optioned in 1891 to Col. J. Weir, of New York, who organized The Boundary Mines Company. Exploration work was begun in a cross-cut adit and when this gave indications of a sizeable orebody, a larger company, The British Columbia Copper Company, Limited, was organized in New York and registered in B.C. in 1898. An expanded development program included shaft sinking and the construction of a smelter at Greenwood. The Mother Lode (L 704), Primrose (L 927), Ten Brock (L 1221), and Offspring (1254) claims were Crown-granted to the company in 1899. The smelter was blown in on February 18, 1901. Underground development work to 1902 totalled 7,749 feet. By 1908 the shaft had been deepened to 500 feet. Operations continued with only 2 short interruptions until November 1918 when the mine and smelter closed.

In 1897 the Sunset Group (Sunset, Crown Silver, C.O.D., and Florence claims) was acquired by W.L. Hogg, of Montreal. Exploration work during 1897-1898 was carried out in several shallow shafts and a 400 foot long adit. The Montreal Boundary Creek Mining Company (Limited), was organized in 1899 to acquire the property. The company name was changed that same year to The Montreal and Boston Copper Company, Limited. Exploration work was carried out in an adit and shaft; in 1902 the workings totalled 7,155 feet in length. The company purchased a smelter at Boundary Falls, about 3 miles south of Greenwood, and ore shipments from the Sunset were continued until May 1905 when the operation was shut down. The Dominion Copper Company, Limited, acquired the smelter, and apparently also the Sunset property, and operations were resumed in November 1905. The company ceased operations in 1908 and went into liquidation. Controlling interest in the succeeding company, New Dominion Copper Company, Limited, incorporated June 1909, was acquired by The British Columbia Copper Company, Limited; the latter company has become the operating company for Canada Copper Corporation, Limited, of New York. Further ore shipments were reported from the Sunset in 1915 and 1918. The Sunset closed down in November 1918 when the controlling company closed its operations. The above companies all had their registrations cancelled or charters surrendered in 1924.

see Card 2

Mineral Resources Branch, Department of Energy, Mines and Resources, Ottawa.

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HISTORY OF PRODUCTION

From 1900 to 1962, inclusive, a total of 4,639,828 tons of ore were shipped from the Mother Lode and Sunset mines. From this ore 178,381 ounces of gold, 721,560 ounces of silver, and 79,993,675 pounds of copper were recovered.

MAP REFERENCES

- Map 6-1957, Kettle River, (Geol.), Sc. 1":4 miles.
#Geologic Sketch Map of the Mother Lode and Sunset, Sc. 1":400 feet - Report of Minister of Mines, British Columbia, 1968, p. 229.
Map 749 G, Aeromagnetic Survey adjacent to the Forty-Ninth Parallel, Sc. 1":4 miles.
*Map 82 E/2, Greenwood, (Topo.), Sc. 1:50,000.
Map 8497 G, Greenwood, (Aeromag.), Sc. 1":1 mile.

REMARKS

See: Greyhound, 82 E/2, CU 6.

REFERENCES

- Reports of Minister of Mines, British Columbia:
1896, p. 577; 1897, pp. 585, 586; 1898, p. 1121;
1899, pp. 752, 765, 849; 1900, pp. 866, 875, 880;
1901, p. 1054; 1902, p. 178; 1903, p. 165; 1904,
p. 214; 1905, pp. 177, 182; 1906, p. 156; 1907,
p. 111; 1908, pp. 112, 116; 1909, p. 130; 1911
pp. 174, 176; 1912, p. 163; 1913, p. 141; 1915,
pp. 198, 203; 1916, p. 254; 1918, p. 209; 1956,
p. 75; 1957, p. 38; 1959, p. 58; 1960, p. 64;
1961, p. 64; 1962, p. 68; 1968, pp. 228-230+.
- Geology, Exploration and Mining; British Columbia Dept. of
Mines: 1969, p. 307; 1970, p. 429; 1971, p. 380;
1973, p. 38; 1974, p. 36.
- LeRoy, O.E.; Mother Lode and Sunset Mines, Boundary
District, B.C.; Memoir 19, Geol. Surv. of Canada, 1913.
- Jacobs, E.; British Columbia Copper Company's Mother Lode
Mine, Boundary District of British Columbia; Canadian
Mining Journal, July 1, 1907, pp. 228-233.
- Mineral Policy Sector; Corporation Files: "Cadillac
Explorations Limited"; "Greyhound Mines Ltd."; "Aabro
Mining & Oils Ltd."; "Cumberland Mining Company
Limited"; "The British Columbia Copper Company,
Limited"; "GM Resources Limited"; "Mascot Mines &
Petroleums Limited".
- Mineral Policy Sector; Resource File: M.C. 167-C3-2-19.
- Sheraphim, R.H.; Geology and Copper Deposits of the Boundary
District; Canadian Institute of Mining and Metallurgy,
Transactions, Vol. LIX, 1956.
- Ore Dressing and Metallurgical Investigation No. 600;
Copper-Gold Ore from the Sunset and Motherlode Mines,
Boundary District, B.C.; Report No. 748, July to
December 1934, pp. 141-151, Mines Branch, Ottawa.

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DESCRIPTION OF DEPOSIT (continued)

stone with conglomerate to the east occur so that they appear to be duplicated. They also appear to be overturned. One northerly trending steep fault occurs that presumably drops the limestone-chert pebble sequence down in the west block. Another important fault, presumably a thrust dipping west at a low angle, must underlie the area because the steep attitudes indicated throughout show no indication of altered orientation as they approach what seems to be an underlying plate of Knob Hill chert. Such chert occurs only a short distance under the floor of the Sunset pit and at a slightly greater depth under the Mother Lode.

Sulphide mineralization and magnetite are erratically distributed in the pit walls presently available for examination. Chalcopyrite is most abundant in the Sunset pit, but the tonnage of ore is small.

The Mother Lode orebody lies between crystalline limestone on the northwest and a fault, strike north 15 degrees east, dip 80 degrees east, on the southeast. The orebody strikes north 30 degrees east, curving eastward at the northeast end, and the dip is described in Memoir 19 as steepening from 45 to 70 degrees southeast and steepening to nearly vertical in the lower part.

On the northwest side of the present Mother Lode pit a dragfold is exposed having a plunge of approximately 25 degrees to the southwest. The localization of the orebody may be related in some way to dragfolding of this sort.

At the Sunset there are two orebodies, flat lying and of irregular shape. They have been mined partially in two main pits (an east pit and a west pit), and in some smaller pits covering a distance from northwest to southeast of about 400 feet. Bedding on the west side of the east pit strikes north-south and dips about 50 degrees east; on the east side of the west pit the strike is north-south and the dip 35 degrees west. Diamond-drill holes to the underlying Knob Hill formation show that the dip flattens toward the east side of the east pit. The rock immediately underlying the ore is siliceous breccia, similar to that at the Mother Lode. The only limestone observed was a faulted block at the north side of the west pit.

HISTORY OF EXPLORATION AND DEVELOPMENT (continued)

Apex Gold Mines, Limited acquired the Mother Lode and Sunset groups in 1936. No activity was reported by the company and in 1955 the claims were sold to Surety Oil & Minerals Limited. Magnetometer and electromagnetic surveys were carried out in 1955 and by March 1956 some 7,000 feet of diamond drilling had been completed to test geophysical anomalies and evaluate the shaft pillar in the old Mother Lode workings. Construction of a 1,000 ton per day concentrator and preparation of the Mother Lode for open pit mining was begun. The company name was changed in November 1956 to Woodgreen Copper Mines Limited. The concentrator was put into operation in January 1957 and operated until August of that same year when the company went into bankruptcy. The company was reorganized under the name Consolidated Woodgreen Mines Limited in February 1959. Production was resumed in June 1959 at 500 tons per day. Surface drilling was done on the Sunset claim in 1959, followed by some stripping and mining in 1960. The mining and milling operation closed in April 1962. The company name was changed in 1964 to Cumberland Mining Company Limited. The concentrator was moved to Mount Washington, Vancouver Island, in 1964.

Aabro Mining & Oils Ltd. in 1968 acquired the Mother Lode and Sunset groups, and also the Greyhound group (82 E/2, CU 6) located about $1\frac{1}{4}$ miles to the southeast, for a total of about 49 claims and fractions. Construction of a 2,000 ton per day mill on the site of the former Woodgreen mill was begun in 1968. A joint venture agreement was reached with Cadillac Explorations Ltd. in February 1970 whereby Cadillac advanced funds towards completion of the mill. Under the agreement a new operating company, Greyhound Mines Ltd., was incorporated in March 1970. Milling began in September 1970 at about 1,500 tons per day utilizing ore from the Greyhound pit (82 E/2, CU 6). Exploration work on the combined property during 1970 included induced potential and magnetometer surveys over 32 line miles, and percussion drilling totalling 15,000 feet in 100 holes. Reserves at the Mother Lode was reported as follows: Proven, 701,378 tons; probable 740,159 tons; and inferred 864,338 tons, all at 0.65% copper (Northern Miner, Sept. 24, 1970). Milling operations were suspended in January 1971. Greyhound Mines was placed in receivership and late in the year ownership of the property passed to Cadillac. The company name was changed during 1971 to Cadillac Explorations Limited.

continued reverse of Card 2

HISTORY OF EXPLORATION AND DEVELOPMENT (continued)

Mascot Mines & Petroleum Limited, a wholly owned subsidiary of Giant Mascot Mines Limited, purchased the property in August 1973. A program of exploration begun in 1973 was completed in August 1974. This included magnetometer and geochemical soil surveys, percussion, rotary, and diamond drilling. Disposal of the mill facility was begun in 1976. The parent company (Giant Mascot) changed its name in 1977 to GM Resources Limited. In June 1983 GM amalgamated with Campbell Resources Inc and two other companies under the name Campbell Resources Inc. Proven and probable reserves for the combined Motherlode and Greyhound properties are approximately 449,000 tons grading 0.65% Cu, 0.015 oz/t Au, 0.13 oz/t Ag (Joint Management Information Circular, Royex Sturgex Mining L and Cullaton Lake GML, 27/04/84).