

NAME OF PROPERTY HOWE COPPER (ZEL) (PACIFIC COPPER)
(DONALDSON MTN)

OBJECT LOCATED - Adit - west shore of Smithe Lake.

UNCERTAINTY IN METRES 300. Lat. 49°42'35" Long. 123°27'10"

Mining Division Vancouver District New Westminster

County Township or Parish

Lot Concession or Range

Sec Tp. R.

OWNER OR OPERATOR

DESCRIPTION OF DEPOSIT

The area is underlain by Cretaceous-Tertiary biotite granite of the Coast plutonic complex. Drilling in the vicinity of the showings indicates these rocks are intruded by an irregular flat-lying, lensoid muscovite granite approximately 450 feet thick, which dips northeast at 15 to 20 degrees. The upper contact of the muscovite granite is altered to a quartz-muscovite-feldspar rock. The long axis of this altered phase has been traced north-northwest for 2,400 feet from Smythe lake. At the lake it has a horizontal width of 1,200 feet.

Disseminated chalcopryite and bornite, with minor molybdenite and chalcocite(?) occurs over variable widths within the altered zone, which is best exposed on a talus slope extending for 400 feet along the northeast end of Mt. Donaldson on the west shore of Smythe lake.

Quartz veins on the property favour three directions: an east-west set dipping steeply south; an east-west set dipping 40° to 65° north; a north-south set dipping 0° to 20° west. The
see Card 2

Associated minerals or products - Molybdenum, silver.

HISTORY OF EXPLORATION AND DEVELOPMENT

The property is located at elevations of 4,500 to 5,000 feet on Mt. Donaldson, some 13 miles west of Squamish and 3 miles east of the head of Salmon Inlet.

The showings were discovered by Alex Donaldson in 1874. Prior to the Lode Mineral Act the title to the land carried the minerals so about 2 square miles in 8 lots was taken up. Work included a 30 foot drift adit. A small amount of ore was reportedly shipped to Swansea, Wales, in about 1875. In 1877 the 8 lots, Nos. 353, 421-423, 425, 452-454, were Crown-granted to Mr. Donaldson.

The Howe Mining Company, Limited was incorporated in Victoria in September 1877 to acquire the property. The company carried out some exploration and development at intervals until 1883. Work to that date included trenching & stripping and the driving of 3 drift adits on copper-bearing veins. One of the adits, on the west shore of Smithe Lake was driven 88 feet; the second adit lies 1,600 feet to the north. Subsequent events are not known but apparently the Granite Mining & Milling Company and the Howe Group Mining Company, both of Spokane, had some connection with the property in the late 1890's.

Pacific Copper Mines, Limited, incorporated in October 1928, acquired the Crown grants and staked 36 claims and 3 fractions surrounding them. In 1929 the old workings were examined and a Radiore survey carried out. The company charter was surrendered in 1932. No further activity was reported until 1965 when Bralorne Pioneer Mines Limited held the property as the Zel group of 8 claims. Geological mapping and trenching was reported.

Grassett Lake Mines Limited by a November 1966 agreement optioned a 51% interest in the Zel 1-8 claims from the Zel Syndicate, which was owned by Murray Zulaps and associates, of Vancouver. The company staked a further 16 claims (Zel 9-24). Work during 1966-67 included an induced potential survey, and 2,532 feet of drilling in 5 vertical holes. Drill intersections were reported by Graham (22/10/67) as follows:

Hole	Section (Ft.)	Cu %
67-1	0-98	0.30
	98-385	0.12
67-4	38-77	0.38

see Card 2

PRODUCT	COPPER	PROVINCE OR TERRITORY	N.I.S. AREA 72 4/11	REL. CU 6
NAME OF PROPERTY	HOWE COPPER (ZEL) (PACIFIC COPPER) (DONALDSON MTN)	HISTORY OF EXPLORATION AND DEVELOPMENT (continued)		
DESCRIPTION OF DEPOSIT (continued)		Hole	Section (Ft.)	Cu %
<p>longest strike recognized is approximately 900 feet but generally the vein length is 300 feet or less. The veins vary in width but are mainly less than one foot wide. The veins occur in the muscovite granite, and in the biotite granite to the northwest of the muscovite granite. Some 9 parallel quartz veins of the north dipping set are mineralized with bornite, chalcopyrite, cuprite, and molybdenite, and contain silver values. Sampling by McDougall (1956) from the portal to the face of a 95 foot drift adit on one of the veins returned values from 0.22 to 12.45% copper. A composite of the above samples assayed a trace of gold and 1.90 ozs/ton silver.</p>		67-2	0-5.5	0.25
			88.5-117.5	0.55
			273-282	0.30
		Narrow higher grade sections associated with quartz veining in hole 67-2 were as follows:		
			135.5-138	3.07
			261-263	1.52
		In 1972 the property was held as the Karen 1-16 claims, owned by Ken Sato, of Vancouver. Athena Mines Ltd. optioned the claims in April 1972 and carried out airborne magnetometer and electromagnetic surveys and trenching.		
		Amax Exploration, Inc. held the property in 1975 as the West 1 & 2 claims (12 units). Geological mapping was reported.		
		Tonnage and grade have been estimated at ± 0.5 million tonnes at 0.2% copper (The Canadian Institute of Mining & Metallurgy, Special Volume 15, Table I, #15).		
		The property was restaked as the Anthony 1-8 claims, owned by T. O'Brien, of Vancouver. The claims were optioned in December 1979 to Seatac Resources Inc. Geological mapping and rock geochemical sampling were reported in 1983.		

HISTORY OF PRODUCTION

REFERENCES

Reports of Minister of Mines, British Columbia:
1876, p. 429; 1877, p. 413; 1917, p. 281;
1922, p. 251; 1924, p. 244; 1928, p. 389;
1929, p. 395; 1931, p. 173; 1967, p. 62.

Le Roy, O.E.; Preliminary Report on a Portion of the Main Coast of British Columbia and Adjacent Islands; Geol. Surv. of Canada Report 1908, Pt. 1, Report No. 996, pp. 37-38.

Dawson, George M.; The Mineral Wealth of British Columbia; Annual Report Vol. III, Pt. II, 1887-88, p. 102 R, Geol. Surv. of Canada.

Mineral Policy Sector; Corporation Files: "Grasset Lake Mines Limited"; "Athena Mines Ltd."; "Pacific Copper Mines, Limited"; "Seatac Resources Inc".

+Graham, R. Bruce; Grasset Lake Mines Limited, Zel Group, Mount Donaldson; Report 24/05/67, and Letter 22/10/67.

Geology, Exploration and Mining; British Columbia Dept. of Mines: 1972, p. 277; 1975, p. E 106.

Exploration in British Columbia; BCDM: 1983, p. 219.

MAP REFERENCES

Map 42-1963, Squamish, (Geol.), Sc. 1":4 miles, Geol. Surv. of Canada.

*Map 92 G/11 W, Squamish, (Topo.), Sc. 1:50,000.

REMARKS

Comp./Rev. By	DMacR	DMacR					
Date	11-79	02-87					