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**Operator(s):** Laird, James W. Author(s): Laird, James W., Laird, James W. **Report Year:** 2004

PROS

Prospecting

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(100.0 ha;)

PROS Prospecting

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**ARIS Summary Report** 

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By: James W. Laird

**Qualified Prospector** 

**Owner/Operator** 

December, 2004

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#### <u>Summary</u>

This report summarizes prospecting work done on the Howe Copper Mine property located at Smithe Lake on Mt. Donaldson, near Sechelt Inlet, BC. The property is owned and operated by James W. Laird, Qualified Prospector, and currently consists of four contiguous two-post mineral claim units covering one square kilometre of mineral tenure surrounding the old Howe Copper Mine.

The property was visited via helicopter on August 19, 2004 to examine the potential metallic and non-metallic mineral resources, assisted by Bill Plavac, mineralogist and prospector, and Brendan Laird, prospector. Several mineral deposit types are present including; porphyry Cu-Mo, vein Cu-Ag-Au-Mo, industrial mineral bulk-tonnage quartz, industrial mineral muscovite mica, and optical-grade museum-quality quartz crystals.

The porphyry Cu-Mo and related Cu-Ag-Au-Mo vein systems have received most of the previous work, however, no potential ore zone has been delineated as yet. More recent efforts have concentrated on the bulk-mineable quartz and muscovite mica deposits, which, while showing significant economic potential are hampered by lack of a road and a short working season. The discovery of highvalue optical and museum-quality quartz crystals offers the possibility of a helicopter-assisted hand mining operation to recover economically significant amounts of crystalline material.

#### **Introduction**

This prospecting report was prepared to satisfy mineral claim assessment work requirements as outlined in the Mineral Tenure Act. The information contained within was prepared by owner/operator James Laird following two field trips to the claims area on September 28<sup>th</sup>, 2003, and August 19<sup>th</sup>, 2004. The owner was assisted in field exploration by Christopher Laird, prospector in 2003, and by Bill Plavac, mineralogist and prospector, and Brendan Laird, prospector in 2004. Additional information regarding historical work on the property was obtained from the publications of the Department of Mines and Geological Survey Branch of BC, the Geological Survey of Canada, and various other sources.

# **Howe Copper Location**



#### Location and Access

The Howe Copper Mine property is located approximately 55 kilometres northwest of Vancouver, BC (Figure 1). It is situated at 1417 metres elevation on the eastern slope of Mount Donaldson at Smithe Lake, near the northern end of Sechelt Inlet. Access is best gained via helicopter flying southwest from Brackendale Airport near Squamish, a distance of 25 kilometres, or from Sechelt airport to the south, a distance of 35 kilometres. Several previous and ongoing logging operations have constructed rough roads that approach to within one kilometre of the property boundary, however, precipitous intervening terrain precludes using this access for equipment.

#### **Property Description**

The Howe Copper Mine property was discovered in 1874, and has been repeatedly claimed and lapsed by various companies and prospectors since that time. The property currently consists of four contiguous two-post mineral claim units (Figure 2), covering all known mineralized exposures. The mineral claims were staked by James Laird on September 28<sup>th</sup>, 2003, and are 100% owned and operated by same. The claims consist of the following grouped titles:

<u>Claim Name</u>	<u>Units</u>	Tenure Number	Expiry Date
HC-1	1	405455	Sept. 28, 2008
HC-2	1	405456	Sept. 28, 2007
HC-3	1	405457	Sept. 28, 2007
HC-4	4	405458	Sept. 28, 2008

#### **Topography and Environment**

The property lies on the steep eastern slope of Mt. Donaldson at an elevation of 1417 metres at Smithe Lake. The terrain is alpine in nature and is almost completely underlain by rock outcrop, with the exception of several talus slopes and small lakes. Small stunted spruce and cedar trees, blue huckleberry bushes and deep alpine mosses are the prevailing vegetation found. Black bear, mountain goat, cougar, deer and a variety of rodents are found in the vicinity. The climate is generally moderate and wet, with the bulk of the moisture falling as rain from March to November and as deep snowfall in the winter months. Snowpacks in shaded areas may persist into late summer.

# **Howe Copper**



#### <u>History</u>

The Howe Copper Mine mineral deposits were first discovered by Alexander Donaldson in 1874, several tunnels and opencuts were constructed to investigate quartz vein structures prior to 1900. At present, only the location of one 30-metre long tunnel at Smithe Lake is positively known. The earliest geological maps presently available are those done by Josiah Jacques in 1881, and it has been stated that a small amount of copper-silver ore was shipped to Swansea, Wales about 1875. Little additional work was done until the late 1920's, when Pacific Copper Mines Ltd. built a trail from the shoreline of Sechelt Inlet and constructed a camp near the mine. It was stated in newspaper reports of the day that previous development consisted of "about 300 feet of tunneling at different levels". An early type of geophysical survey known as "Radiore" was done over the property but results were not encouraging, and the property again was allowed to lapse.

In 1956, the Minex Development Company Ltd. was formed to explore the property, rich assay values were quoted and a drill program proposed, apparently nothing further was done. During 1965 Bralorne-Pioneer Mines Ltd. geologically mapped and sampled the mine area, concluding that mineralization was locally very rich but also sporadic, no economic ore zones were defined. In 1967, Grasset Lake Mines Ltd. drilled 5 diamond drill holes for a total of 2500 feet, no record of assays or geological information has been located. Old core boxes found on the property show little evidence of significant mineralization.

During 1972, Athena Mines Ltd. flew an airborne geophysical survey over the property including 72 line-kilometres of magnetometer, EM and radioactivity. Results were anomalous but did not indicate any new mineralized zones. Seatac Resources Ltd. did some ground geophysical work and geological mapping from 1980 to 1983, no new resources were discovered. Between 1988 and 1990, prospector Don Bragg investigated the property, sampling the copper mineralized areas and testing the industrial mineral potential of the quartz and muscovite mica deposits. He concluded that the mica in particular could be developed into an economic resource, based on extensive testing of a small bulk sample.

Although quartz crystals have been previously noted in geological reports on the property, no attempt has been made to assess the potential value and marketability of this resource. The present study is focussed on the possibility of limited hand-mining of the valuable quartz crystal specimens for sale directly to collectors and museums.

#### Regional and Property Geology

Given that this prospecting program was focussed on the occurrence of quartz crystals within known quartz deposits, no attempt has been made to revise the existing geological base maps or property geology. Consequently, the following concise geological description was taken from the BC Minfile Report on the property.

"The Howe Copper occurrence is predominantly underlain by biotite and homblende-biotite granite of the Jurassic to Cretaceous Coast Plutonic Complex. Intruding these, and incorporating blocks of the biotite granite, is a sugary textured, fine to medium grained, vuggy muscovite granite. Drusy quartz crystals often line the vugs. The muscovite granite has a potassium-argon age date of 83 million years (Late Cretaceous) (Geological Survey of Canada Open File 611). Locally, several linear outcrops occur, comprised of bedded lapilli tuff or tuffaceous rock striking northeast with moderate dips northwest.

The most prominent feature of the property are masses of quartz and quartz veins which crisscross the area. At least three sets of veins are recognized in association with major joints. Two areas of locally widespread and irregular quartz masses are also evident. The veins commonly pinch and swell and appear discontinuous in length. The quartz occurs in the form of milky to translucent masses and crystals. Larger veins are vuggy and often filled with drusy quartz, various copper minerals and muscovite. A persistent mineral constituent of the quartz veins is a muscovite mica which occurs primarily along the selvage of the veins. It also occurs as massive books completely enveloped by the quartz and lining the vugs and cavities. Small aplitic dikes, 2 to 10 centimetres in width, transect the area and are locally parallel to the strike of the joint systems.

The intrusive rocks are well jointed in at least two directions; the dominant joint striking east with steep north and south dips, and the secondary system striking 020 degrees and dipping almost vertically.

The quartz veins structurally parallel each other in a confined area. The three sets of veins strike: (1) east with steep south dips; (2) east with 40 to 65 degree north dips; and (3) north with 0 to 20 degree west dips. The veins commonly split and disappear in hairline fractures; locally they split and rejoin. The veins vary up to 80 centimetres in width but most are less than 30 centimetres wide. The longest strike length is 274 metres but is generally less than 91 metres.

Massive bornite and chalcopyrite is associated with the quartz veining but are also found as minor blebs within vugs of the muscovite granite. Flakes of molybdenite and pods of tetrahedrite and chalcocite were also identified. Cuprite, malachite and azurite are also locally evident and represent oxidation alteration mineralogy. A total of 9 quartz veins have received work in the past. A main adit is developed on the main vein with 3 parallel veins in the hangingwall (HW 1, HW 2 and HW 3 veins). These 4 veins strike east and dip south at 45 to 65 degrees. Approximately 61 metres south of the main adit vein are 3 quartz veins striking north with flat dips (10-20 degrees) to the west. Two other veins are situated on the saddle north and northeast of Slippery Lake, 700 metres northwest of the main adit on Smithe Lake."

#### **Quartz Crystal Mineralization**

Quartz crystal mineralization has been noted in several locations on the property, the most important of which are the main adit vein system, a large quartz mass on the shore of Smithe Lake, and a large quartz mass on the north flank of Mount Donaldson (Figure 3). The best crystal development is often accompanied by abundant muscovite mica, and sometimes by spectacular copper mineralization. The crystals observed in the adit vein are found in large vugs and are often milky-white to translucent in colour. In the quartz mass on the shore of Smithe Lake, muscovite-rich zones are often vuggy and carry translucent to optically clear crystals to 30 centimetres in length. A few exotic crystal forms were noted, including phantom crystals, muscovite inclusions and rare Japan-Law quartz twins. The quartz mass on the north flank of Mount Donaldson has not been investigated in detail as yet, but crystals found in the talus fan directly below it indicate similar conditions to the Smithe Lake mass. In addition, several smokey quartz crystals were found in the talus fan, indicating possible exposure to radioactive elements.

A number of selected samples were obtained from each area of crystallization located. Bill Plavac, a highly experienced mineralogist and specimen collector, will prepare these select samples for offering to museums and private collections, and attempt to determine a fair market value at the wholesale and retail levels. Assuming a favorable market response, future prospecting efforts will focus on locating and hand-mining the best mineralization.

#### Conclusions and Recommendations

In conclusion, the large quartz resources of the Howe Copper Mine property contain valuable quartz crystallization phases, including museum-quality specimens of optically-clear and exotically crystallized quartz up to 30 centimetres in length. Only a small area of the outcropping masses and veins have been prospected to date, additional intensive examination and hand sampling will no doubt reveal new vugs and pockets of crystals.

The recommended program of development will include a 7 to 10 day summer prospecting expedition for three persons, with the goal of locating and extracting a sufficient number of crystals initially to pay for the investigative program, and to determine the potential for a future seasonal, helicopter-supported hand-mining operation.

# **Howe Copper**



#### **Statement of Qualifications**

#### I, James W. Laird do state that;

My address is PO Box 672, Lions Bay, BC VON 2E0

I am a prospector and mining exploration contractor and have been for more than 25 years.

I have completed the BC EMPR course "Advanced Mineral Exploration for Prospectors, 1980".

I am the registered and beneficial owner of the HC-1 to 4 mineral claims.

I managed and participated in all phases of this exploration program, the opinions and conclusions stated herein are entirely my own.

James W. Land

James W. Laird

Laird Exploration Ltd.

December, 2004

## Howe Copper Property – Statement of Expenses

### August 19, 2004

Black Tusk Helicopters -	1027.20
Truck Usage – Lions Bay-Brackendale-Lions Bay 120 km @ 0.60 per km	72.00
James Laird, Prospector 1 day @ 250.00 per day	250.00
Bill Plavac, Mineralogist, Prospector 1 day @ 250.00 per day	250.00
Brendan Laird, Prospector 1 day @ 50.00 per day	50.00
Field Supplies	50.00
Total Expenses	1699.20

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