

804370

REPORT ON THE

ELLISON - BRUNNING PROPERTY

GREENWOOD MINING DIVISION, B.C.

NTS 82E/11

Hudson Bay Oil & Gas Ltd.

May 29, 1972

S. Enns

INTRODUCTION

This property was submitted to the Company in the spring of 1971 and at that time, consisted of a confused ground situation. Recent staking of open ground to the south and east by the owners, Brunning and Ellison, on May 21, 1972 has increased the size of the claim block to include ground south of the original claims, and east to the eastern slope of Arlington Mountain.

Location and access of the property is shown in Figure 1.

PREVIOUS WORK

One day of ground examination was spent by Mr. D. Pollock of HBOG on June 1, 1971 who mapped the railway cut crossing claims DKD4 and DKD2. From October 18 - 24, a magnetometer survey was conducted by Mr. I. Hall for HBOG. Results from this work indicated:

- 1) interesting copper mineralization accompanied by hydrothermal alteration
- 2) a high magnetic anomaly trending southeast accompanied by sparse copper mineralization.

PURPOSE

The property was visited on May 26 by S. Enns, I. Hall and A. Saxberg in order to:

- 1) check main showing of mineralized interest along the railway cut.
- 2) visit previously unexamined old mineral showings and workings in the vicinity, documented by old GSC reports. (Cairnes 1937).
- 3) attempt to delineate the significance of the high magnetic anomaly
- 4) assess the potential of the property within the context of a porphyry copper environment.

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GEOLOGY

General:

The Permian Anarchist Group consisting of pyritized quartzite, bands of marble, paragneiss and greenstone, is intruded to the south by foliated diorite and granodiorite which belong to the Nelson Pluton of Cretaceous age. Valhalla granites intrude the foliated diorite east of the Arlington Lakes. Valhalla Plutonic rocks here are younger than the Nelson Pluton, although in other areas to the east they have been noted to be contemporaneous with the Nelson suite. West of the railway cut, Eocene andesite and trachyte belonging to the Marron Formation form a cover to the basement geology. Two Coryell syenite dikes of Oligocene age were noted to cut the Nelson-Valhalla contact zone.

Local:

Mineralization on the property is largely contained in the predominant foliated diorite-granodiorite unit, and consists of specular hematite, magnetite, chalcopyrite, pyrite, molybdenite, and galena.

In the north end of the property there is a hybrid zone consisting of strongly foliated medium to coarse grained granodiorite, and diorite with large mafic angular blocks. These blocks probably represent altered equivalents of Anarchist greenstone, and mafic Nelson diorite as both fine grained and coarse grained varieties are represented. The blocks are almost entirely composed of 5 - 20% magnetite, amphibole, biotite and sparse chalcopyrite. Their size and abundance is adequate to produce a high magnetic anomaly.

Proceeding south along the railway cut, granitic, aplitic and pegmatitic phases cross-cut this zone and become more abundant. These phases are believed to belong to the Valhalla plutonic suite. A small amount of galena was observed in a single quartz-rich pegmatite vein.

Near the southern section of the railway cut on claim DKD2 several very strong shears have been developed and subsequent hydrothermal alteration (argillic, sericitic, chloritic) appears to be local. Mineralization of specular hematite and chalcopyrite occurs in shear zones two to 12 inches wide. The dump from an old adit driven west into the slope indicates massive specular hematite with 1" to 1 1/2" pods of chalcopyrite and hydrothermally altered fragments of diorite which indicate movement along the shear.

Examination of wall rock indicates several trends:

- 1) hydrothermal alteration in diorite dies out rapidly away from the main shear;
- 2) degree of fracturing decreases away from the main shear. These fractures are very commonly coated with hematite, and rarely contain any chalcopyrite.
- 3) there is absence of any disseminated chalcopyrite in the altered diorite.

This type of evidence would suggest that the mineralization and alteration is of local nature - ie. related very closely to shear zones.

An old trench located on the top of the long south ridge of Arlington Mtn. (Fig. 2) was visited. It measured approximately 75 feet west to east, and contained two 15 - 20 foot vertical shafts. Host rock is foliated granodiorite, and mineralization consists of a single 6 - 10 inch quartz vein containing pyrite, chalcopyrite, and molybdenite, and a 2 - 3 inch massive pyrite seam.

Another small pit measuring approximately 15 feet of excavated material revealed only white quartz vein material with sparse pyrite in foliated granodiorite host. This pit is located on the west slope of Arlington Mtn. (Fig. 2).

Several small mineralized showings in the magnetite-amphibole hybrid zone contain sparse chalcopyrite and are scattered along the west slope of Arlington Mtn. These are similar to the type of mineralization described earlier and are related to the hybrid zone coinciding with the high magnetic anomaly.

CONCLUSION

- 1) The magnetic high is coincident with the hybrid zone of foliated Nelson granodiorite-diorite and is believed to represent the Nelson-Valhalla contact. Insignificant amounts of chalcopyrite are associated with magnetite.
- 2) The small showings on Arlington Mtn. are single quartz vein types which are of no interest to us.
- 3) Chalcopyrite is not disseminated or of fracture fill nature but is associated with hematite. Hematite is localized to shear zones which appear to control fracturing and alteration. (Hematite in fractures is common in the Nelson plutonic rocks - eg: Oulette Creek, Mo claim group). These mineralized shear zones are located near contact of Nelson with Anarchist group.

RECOMMENDATION

In view of the local nature of copper mineralization and alteration (shear zone control), this property is considered to have a low potential as a large porphyry copper prospect.

As such this property is of no immediate interest to HBOG.

May 29, 1972

S. Enns

SE/sh

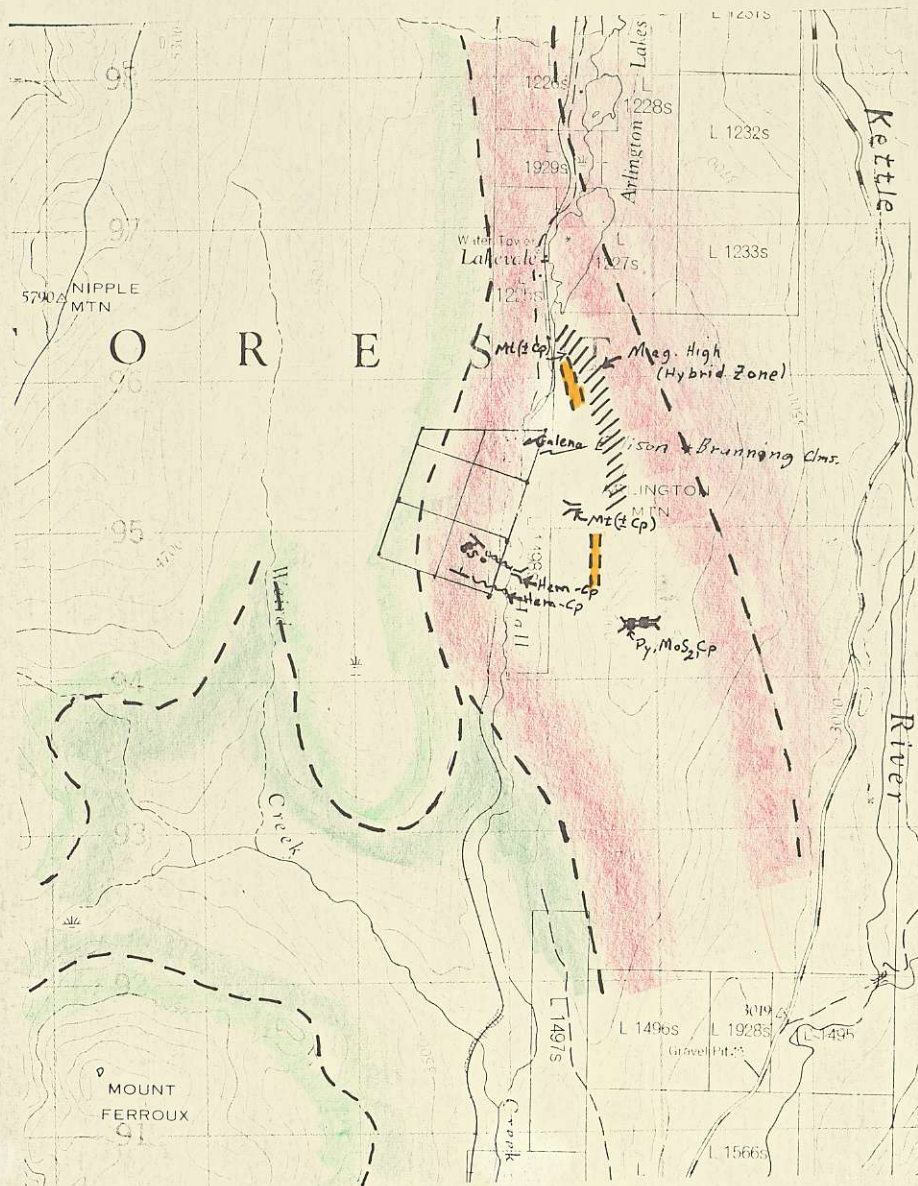
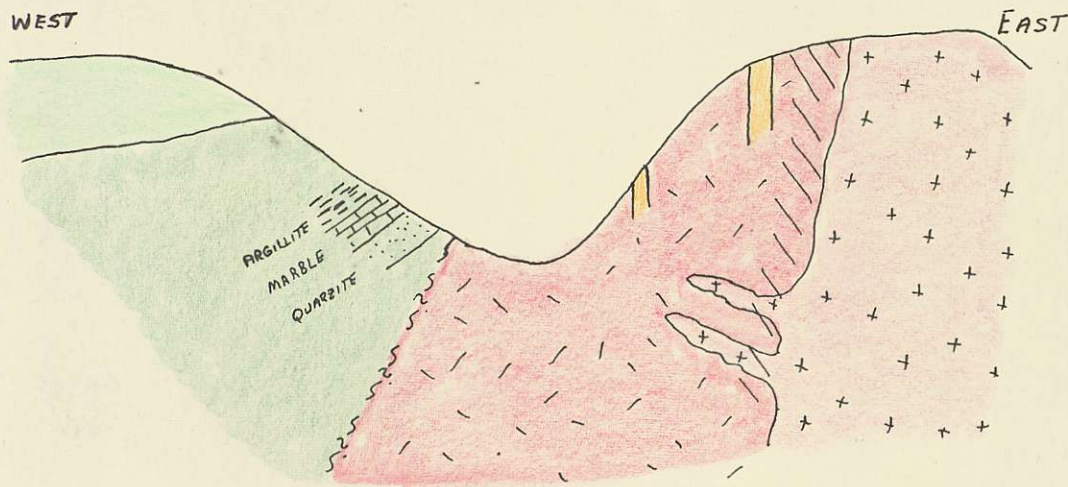


FIGURE 2

Scale 1:50,000

Geologic map of property and surrounding area.

See Figure 3 for legend



OLIGOCENE



Coryell Plutonic Rocks
syenite dikes

Eocene



Marron Formation
andesite, trachyte, minor basalt

CRETACEOUS



Valhalla Plutonic Rocks
granite, aplite, pegmatite veins



Nelson Plutonic Rocks
granodiorite, diorite, quartz diorite

PERMIAN



Anarchist Group
greenstone, quartzite (pyritized) marble, metasediments

FIGURE 3

Diagrammatic west-east geologic section

TABLE 1

TYPES OF MINERALIZATION OBSERVED (In Order of Abundance)

MINERALIZATION	TYPE	HOST AND CONTROL
1. Magnetite (\pm Chalcopyrite)	Metasomatic	Foliated diorite-granodiorite related to magnetic high believed to be controlled by Nelson-Valhalla contact.
2. Hematite-Chalcopyrite	Shear zone replacement	Hydrothermally altered granodiorite fractured and sheared. Chalcopyrite contained in heavy specular hematite which is shear controlled.
3. Molybdenite - Pyrite - Chalcopyrite	Quartz vein	Quartz vein 6 - 10 inches wide cross-cutting foliated Nelson diorite.
4. Pyrite	Shear zone replacement	Seam 2 - 3 inches replacing small shear in foliated Nelson diorite
5. Galena	Quartz - pegmatite vein	Valhalla granitic, aplitic and pegmatitic intrusions into Nelson granodiorite.

REFERENCES

- 1) Hall, I. (1971) Magnetometer Survey Results HBOG Company Report.
- 2) Little, H.W. (1961) Geology of Kettle River (West Half) British Columbia Geol. Survey Can. Map 15 - 1961
- 3) Cairnes, C.E. (1937) Mineral Localities Kettle River (West Half) British Columbia, Geol. Survey Can. Map 539A
- 4) Pollock, D. (1971) Comments on Brunning - Ellison Claims, Greenwood Mining Division, B.C. HBOG Company Memo.