

Purdex Minerals Ltd.

M. A. R. GROUP

Terrace, B. C.

020865

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Vancouver, Canada

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314 MARINE BUILDING

VANCOUVER I. B. C.

INTRODUCTION

On August 5, 1964, the writer in company with Mr. T. Wilkinson, prospector for Purdex Minerals Ltd., examined the principal showings on the M.A.R. Group of claims and in addition made a cursory examination of the general geology of the group. The writer also interviewed both the geologist who staked the claim group and the men who have been prospecting it.

Location: 54°45' N. Lat., 128°45' W. Long.

The claim group consists of 28 claims staked from west to east up Maroon Creek from near the northeast shore of Kitsumgallum Lake. The claims are two and four abreast along the north side of Maroon Creek to a distance of about five miles from Kitsumgallum Lake. The valley of Maroon Creek is flanked on the north side by bedrock cliffs which soar thousands of feet out of the U-shaped valley that is a narrow gut near the lake but a relatively broad valley near the headwater six miles to the east, (Fig. 1). The area of the claim group includes the steep slopes and cliffs of the north side of the valley plus the high, rocky, forested slopes over the crest of the cliffs to the north.

Kitsumgallum Lake lies 20 miles north of the town of Terrace which is on the CNR and the highway to Prince Rupert. The lake can be reached by float plane or by road to the south end of the lake from where a good trail leads four miles up the east side of the lake to Maroon Creek. The construction of a road along this trail will involve considerable work along talus slopes but should not present any extraordinary difficulties.

A fair to poor trail leads eastward up Maroon Creek from the lake for a distance of three miles, close to the main showings which lie about 1,000 feet up on the north side of the valley, near the base of the main cliffs.

History: Low-grade, widespread copper mineralization has been known for some time in the Maroon Creek area but not until the spring of 1964 have claims been staked on any occurrences. The claims were staked in the name of E.E. Mason in trust for Purdex Minerals Ltd.

SUMMARY & CONCLUSIONS

Prospecting by the Purdex Minerals Ltd. crew on the M.A.R. Group north of Terrace, B.C., has revealed the existence of one or more

SUMMARY & CONCLUSIONS (Cont'd)

fracture zones within which the rocks have been silicified and mineralized with quartz veins and finely disseminated chalcopyrite. The Maroon #1 Showing is a bedding-plane fracture zone ranging in width from 10 to 30 feet for an exposed length of about 250 feet. The zone is conformable with the wall rocks which are gneissic granodiorite in the hanging wall and banded migmatized metasediments in the footwall. The zone itself is comprised of silicified hornfelsic to slaty footwall-type rocks with a pronounced fracturing along the bedding planes which is absent outside of the zone.

The rocks within and immediately adjacent to the zone are abundantly impregnated with very fine crystalline chalcopyrite and the fracture faces are commonly coated with malachite. Two 5 foot chip channel samples taken by a prospector across the lower edge (footwall) of the zone ran 0.60 and 0.98% copper. Other samples well into the footwall rocks below the zone assayed from 0.11 to 0.58% copper over a total stratigraphic width of 30 feet.

These few samples, combined with the strength of the structure and the wide distribution of chalcopyrite in the rocks, suggest that this showing (Maroon #1) well warrants further sampling and prospecting. The showing should be sampled as much in a bulk-type of sampling as possible, chip panels are suggested by the writer.

A similar showing, called Maroon #2, occurs 1/2 mile west of Maroon #1 but it was not seen by the writer. It should be checked for a control structure similar to the #1 zone and sampled accordingly.

The base camp should be moved to the vicinity of Maroon #1 Showing to facilitate prospecting of this area of the property, along the extensions of the known zones.

GENERAL GEOLOGY

A body of granitic intrusive rock extends up the south and east side of Kitsumgallum Lake. This granitic apophyse is an extension of the Coast Range batholith and is surrounded by a complex of granitized Jura-Cretaceous sedimentary and volcanic formations. The area of the claim group is underlain principally by sedimentary gneisses, schists, migmatites and gneissic granodioritic rocks.

Included in the series of meta-sedimentary-volcanic rocks is a belt of micaceous gneiss-schist which appears to be continuous from Kitsumgallum Lake up the north side of Maroon Creek for a distance of at least six miles. This rock is revealed in infrequent exposures along the cliffs and as float in the rock slides along the creek. The general strike of the formations up Maroon Creek is approximately east-west, with a dip of about 30 degrees to the north, thus the formations trend almost parallel to the valley of Maroon Creek.

On the north side of Maroon Creek, about three miles up Maroon Creek from the lake, a band of silicified hornfelsic gneisses is relatively intensely fractured over stratigraphic widths of ten to thirty feet. Within this zone the altered rock is mineralized extensively, with chalcopryrite as disseminations and with malachite as "paint" along fractures. Prospectors have reported occurrences of bornite and chalcopryrite in a schist-felsite zone further to the west but these occurrences were not seen by the writer.

ECONOMIC GEOLOGY

MAROON #1 SHOWING: Approximately 2,000 feet north of Maroon Creek on a tributary creek called Wilkinson Creek there is a series of gneisses, schists and migmatites exposed in abrupt, high cliffs through which Wilkinson Creek cuts a deep slot canyon boxed by successive vertical steps down which the creek falls. At an elevation of about 1,000 feet above Maroon Creek and 100 feet above the foot of the cliffs the Wilkinson Creek canyon exposes a fracture zone which is roughly conformable with the bedding of the metasediments and which ranges in width from ten to thirty feet. The hanging wall fracture of the zone is generally the strongest and most persistent of the fractures comprising the zone and it generally seems to follow the bedding and banding of the rocks. The hanging wall fracture strikes N80W and dips 30 degrees north, (Figs. 2, 3 & 4).

At the canyon of Wilkinson Creek the rock above the hanging wall fracture of the zone is medium to coarsely crystalline gneissic granodiorite whose foliation is parallel to the hanging wall of the zone. The granodiorite continues upstream at least as far as a waterfall about 50 feet from the fracture zone. Considerable float of finely crystalline siliceous gneisses and hornfelsic rocks occur in the creek bed below these falls, indicating that the granodiorite is succeeded by these rocks further upstream. At the creek the fracture zone ranges from 10 feet to 30 feet in true width with a fairly strong fracture forming the footwall. The footwall fracture angles across the bedding of the rocks, converging with the hanging wall from east to west and thus narrowing the zone, (See Fig. 2). Beneath the footwall the rocks are mixed fine crystalline hornblende gneisses and granodiorite migmatitic bands.

This mineralized zone has been designated Maroon #1 Showing.

STRUCTURE: Between the two bedding-plane fractures described above as the hanging wall and footwall of the zone are a number of discontinuous, open and tight, subsidiary parallel fractures which are fairly well distributed between the boundary fractures and clustered from a few inches to several feet apart, in several places in the exposure they are expressed as slaty cleavage in a hornfelsic rock.

Cross fractures, between hanging wall and footwall, are generally absent; however, at two places, one on either side of the creek, steeply dipping fractures cut the hanging wall rocks and partially penetrate the main fracture zone, some branches merging with the hanging wall fracture and others cutting through it to die deeper within the zone. (Fig. 2). On the exposure west of the creek the copper stain is most concentrated on the rock in the vicinity of the intersection of the steep fracture with the hanging wall of the main zone.

The rocks above and below the fracture zone, no matter what

ECONOMIC GEOLOGY (Cont'd)

their type, are notably free of fractures, thus appear massive and smooth along the cliff outcrops in contrast to the rocks within the zone which present a blocky appearance.

EXTENSION: The fracture zone can be traced for a distance of approximately 60 feet southwest from the creek canyon to the cliff brow. Further prospecting of the zone in that direction will have to be done from the flatter slopes above the cliffs. To the south the zone extends along the side of the canyon for a distance of 70 feet then around the corner for 50 feet where it rakes down the hillside to the east under the overburden at the base of the cliffs. The zone would appear to be stronger and wider to the east than to the west from the vicinity of Wilkinson Creek.

MINERALIZATION: The rocks within the fracture zone are comprised principally of alternately banded thin layers of finely crystalline black-green, slaty hornfelsic rocks and white silicified migmatitic gneisses with minor schistose layers. White quartz veins are common throughout the zone and roughly follow the foliation and bedding fractures but locally cut across these structures. The quartz veins are very discontinuous and lensey, ranging in widths from less than an inch to one foot.

The copper mineralization within the zone occurs as very fine crystalline chalcopyrite irregularly disseminated throughout the fine grained siliceous crystalline rocks and irregularly along the various fractures. Malachite stain is common but patchily distributed in and on the rocks throughout the zone and in the hanging wall rocks in the vicinity of the steep fractures in the hanging wall. The copper mineralization within the zone is definitely concentrated on and near the fractures; the stronger or more closely-spaced the fracturing, the better the mineralization. Some rock within the zone is barren.

GRADE: No work has been done on this exposure except for a few samples taken from each side of the creek by one of the Purdex prospectors as a guide for further work. A five foot chip sample across the lower part of the zone about 50 feet west of the creek ran 0.18% Cu.

A five foot chip sample was taken from the zone on the east side of the creek extending upwards from just above the footwall fracture. This sample ran 0.60% Cu. Below that another 5 foot chip sample, which included the footwall fracture, but four feet of which was below the zone, ran 0.93% Cu.

It is significant that successive five foot chip samples below

ECONOMIC GEOLOGY (Cont'd)

the last sample mentioned above, all well below the main fracture zone, ran as follows (from top to bottom): 0.58, 0.20, 0.11, 0.15, 0.12 and 0.18% Cu. These of course are not ore but they indicate considerable impregnation by copper of the wallrock beneath the main zone and thus the possibility of large low grade copper occurrences in the area.

Not enough sampling has been done to evaluate the mineralized zone, therefore the prime objective at this stage is to comprehensively bulk sample all available exposures of the zone. Because of the erratic distribution of the chalcopyrite within the zone chip channel samples will not give a true representation of the overall grade of the zone. For this reason the zone should be marked off in panels about two feet in width and five feet in length extending across the zone from footwall to hanging wall, and moiled chip samples taken from each panel, resulting in a generous near-bulk sample.

OTHER SHOWINGS: The Purdex prospectors have sampled another showing which is similar to the Maroon #1 Showing and located about 1/2 mile west of the latter. This showing was not seen by the writer but has been examined by Mr. Agnew, Purdex geologist. Seven chip channel samples, five feet each in length, were taken by Purdex prospectors along a "granite bluff" at this showing and they returned values ranging from 0.03 to 0.18% copper. It cannot be determined on what structure, if any, this sampling was done. The showing has been designated as Maroon #2.

These grades are not ore but they do suggest that cupriferous zones similar to the Wilkinson Zone are not uncommon in the area and thus they enhance the potential of the property for further prospecting.

It should be understood that prospecting and development on this property is extremely difficult because of the high rock cliffs and extremely heavily forested steep lower slopes. Foot travel is of necessity very slow.

RECOMMENDATIONS

The Maroon #1 Showing warrants full-scale sampling and continued prospecting along its east and west extensions. At the present time it is difficult to estimate the grade of the zone but the widths appear to be from 10 to 30 feet. If the grade across such widths runs consistently over one percent copper then the zones are of definite interest; therefore, the above recommended sampling is the most important immediate step in the evaluation of these showings.

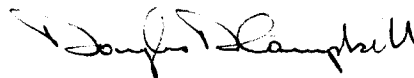
It is recommended that soil samples be taken on the hill-slope below the cliffs east of Wilkinson Creek, where the Maroon #1 Zone disappears beneath overburden.

To facilitate the prospecting and sampling in this part of the property the writer has recommended the construction of a new campsite and heliport near Maroon Creek at the vicinity of the showings.

Further prospecting east up Maroon Creek should be continued to its headwaters.

It is recommended that at least \$5,000 be expended on this program with additional funds available for further work pending sample results.

Respectfully submitted,



Douglas D. Campbell, P.Eng., PhD.

August 19, 1964

CERTIFICATE

I, Douglas D. Campbell, with business and residential addresses in Vancouver, British Columbia, do hereby certify that:

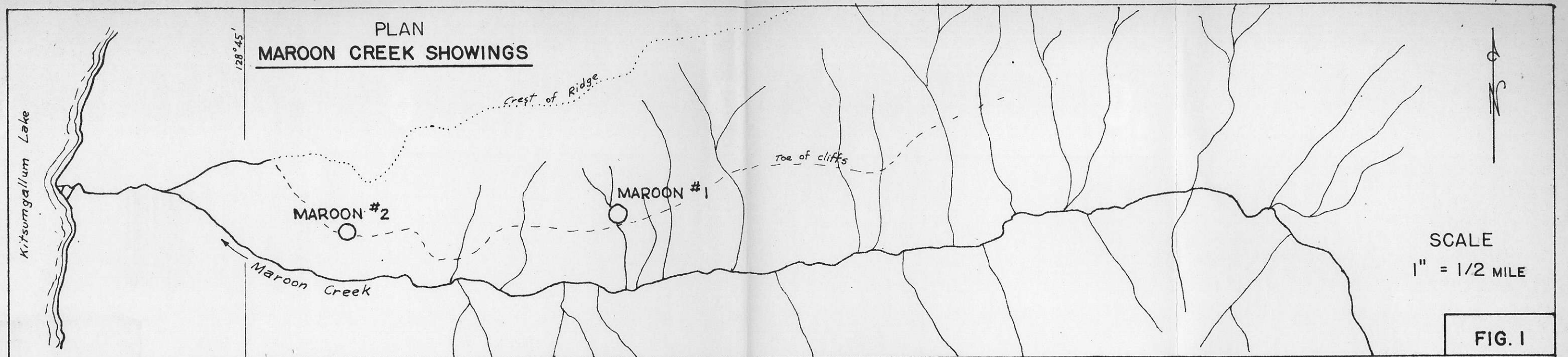
1. I am a consulting geological engineer.
2. I am a graduate of the University of British Columbia, (B.A.Sc., Geological Engineering, 1946), and of the California Institute of Technology, (Ph.D., Economic Geology and Geophysics, 1955).
3. I am a registered Professional Engineer of the Province of British Columbia.
4. From 1946 until 1957 I was engaged in mining and mining exploration in Canada and the United States as geologist for a number of companies. I was chief geologist for Eldorado Mining and Refining Co. Ltd. when I retired in 1957 to begin private practice as a consulting geologist.
5. I personally have examined the principal showings on this property and in addition have interviewed the engineer who supervised the work on the property.
6. I have not received, nor do I expect to receive, any interest directly or indirectly in the properties or securities of Purdex Minerals Ltd.

Respectfully submitted,

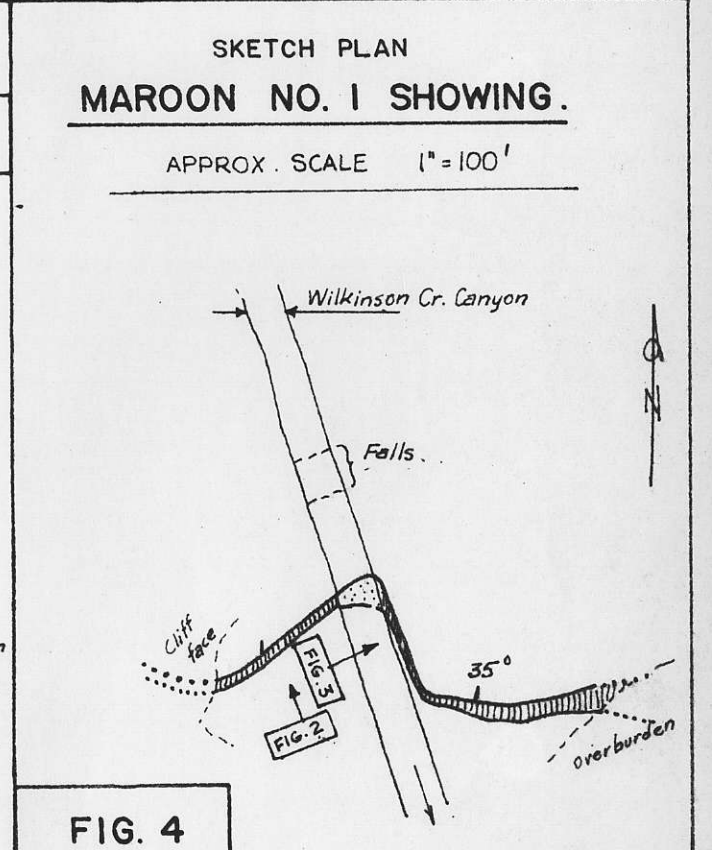
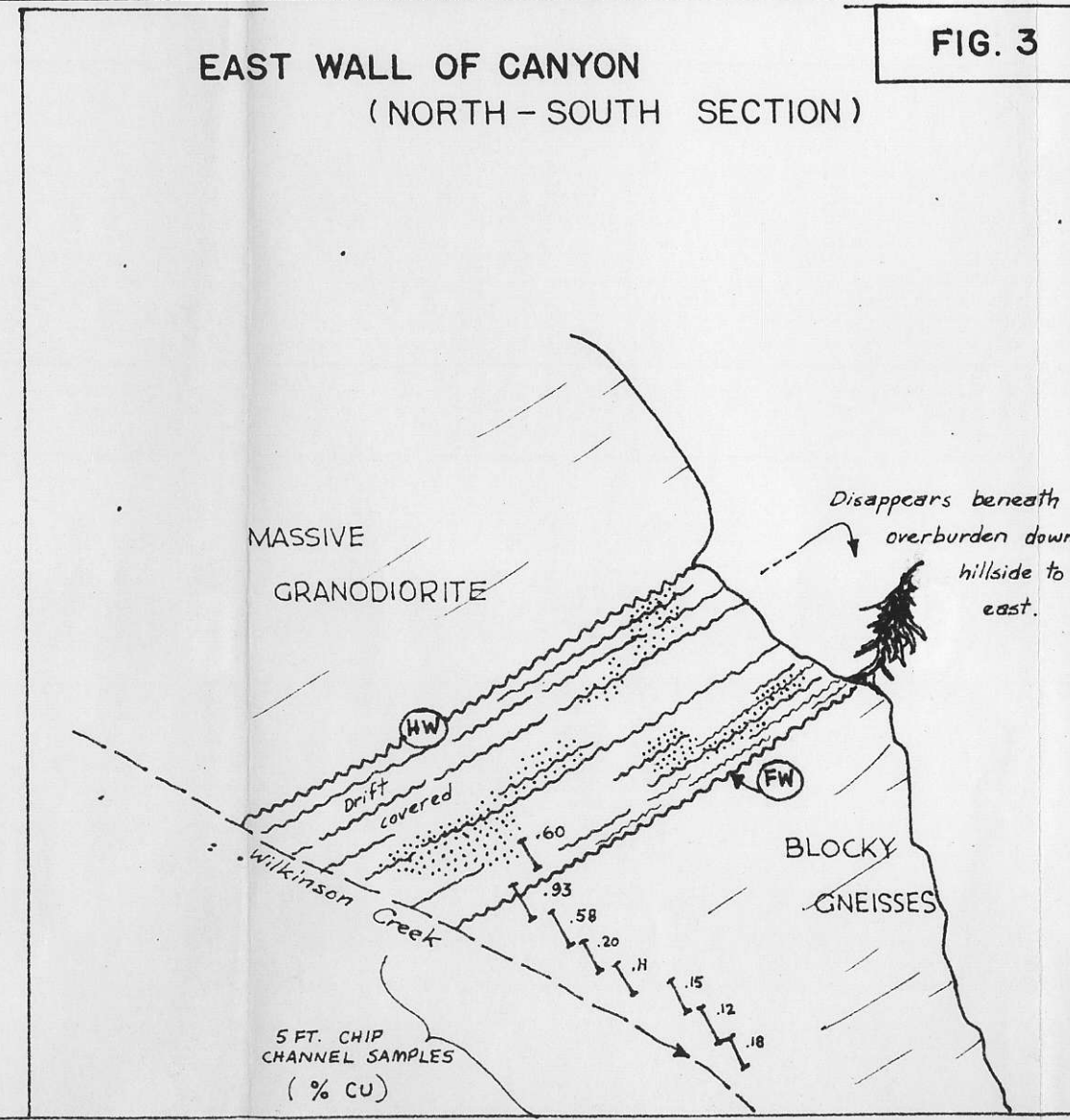
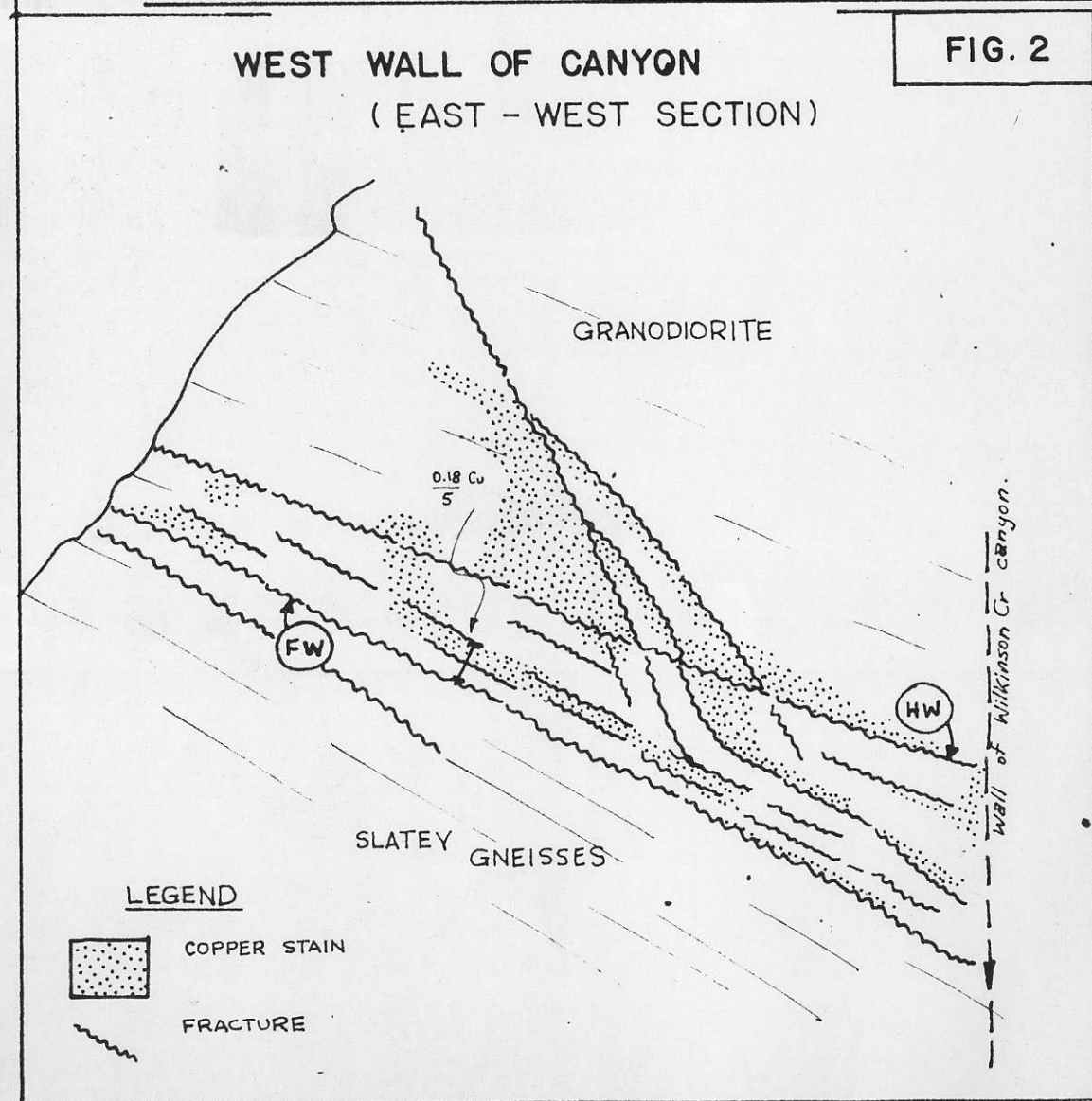


Douglas D. Campbell, B.A.Sc., Ph.D., P.Eng.

Vancouver, B.C.



SKETCH CROSS-SECTIONS OF MAROON NO. 1 SHOWINGS — SCALE (APPROX) 1" = 20'



PURDEX MINERALS LTD.

M.A.R. GROUP

MAROON NO. 1 SHOWING

D.D. CAMPBELL CONSULTANT VANCOUVER B.C.

SCALES AS SHOWN	AUG. 19 1964
FIGS. 1,2,3,4	