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Roxwell Gold Mines Ltd } Hailstorm
& Suncoast Petroleum Co. }

689-3702
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A Geological Evaluation of the
Hailstorm, Londonderry, and Golden Rodd # 2
Crown Granted Claims,
Kootenay Land District, B.C.

Prepared by

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for

Mr. John Bruk

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SUMMARY

Underground development in 1929-30 was unsuccessful in locating the downward extension of a 20 ft. wide zone of silver mineralization. In the course of the work another mineralized zone containing gold and silver values was discovered but not pursued. A two-stage exploration programme is therefore recommended to explore the claims prior to consideration of any new underground development.

INTRODUCTION

The writer spent one day examining surface showings and geology of the Hailstorm, Londonderry, and Golden Rodd #2 on October 5th, 1982 at the request of Mr. Bruk. Up to one foot of snow was present at the 7000-7600 elevation of Hailstorm Ridge at the time of the visit, but this did not seriously hamper the examination. Two trenched areas were identified on the ridge and the main adit at elevation 7300 ft. was visited and found to be blocked at the portal. An upper tunnel on the east side of the ridge was not visible. A camp consisting of three wooden buildings is present at elevation 7000 ft. but this was not visited.

The examination did not include a survey of the claims, which was done at the time of the Crown Grants. Needless to say, there will be some difficulty in locating precise boundaries on the ground.

Current interest in the Hailstorm property has been spurred by recent gold discoveries at Tillicum Mountain which lies 2 km due west of the west boundary of the Crown Grants (Fig. 1) as shown on the N.T.S. Topographic map.

LOCATION AND ACCESS

The property is located at Lat. $49^{\circ}59\frac{1}{2}'N$ and Long. $117^{\circ}39\frac{1}{2}'$ within the Slocan Mining District (Claim Sheet 82F13/E). It ranges in elevation from 6000 to 7600 feet and occupies the divide known as Hailstorm Ridge between Londonderry (formerly Canyon) Creek and Caribou Creek (Fig. 1). The nearest settlement is the village of Burton, 2 miles south of the railroad at Nakusp, which may be reached via Highway No. 6, 77 miles north of Castlegar, B.C. From Burton the claims may be reached by following the Caribou Creek logging road for 10 miles, branching into Londonderry Creek for 3 miles, and by $2\frac{1}{2}$ miles of foot trail leading to the camp. For the purpose of this visit access was provided by helicopter based at Castlegar.

HISTORY OF EXPLORATION

Mineralization was discovered on Hailstorm Ridge in 1899 when claims were staked by J.B. Jamieson and T. Matthews. Surface stripping was completed in 1901 and the Crown Grants were secured in November 1903 for the Hailstorm (Lot 5875), Londonderry (Lot 5876), and Golden Rodd #2 (Lot 5877) claims, amounting to 149.85 acres.

It was not until 1929 that the Consolidated Mining and Smelting Company optioned the properties, and a short tunnel was driven westwards under the surface showing at a depth of 25 to 30 ft. (el. 7565 ft.). Assays gave a 20 ft. width averaging 0.04 oz/ton Au and 14.9 oz/ton Ag.

To further explore the property an adit was driven from the west side of the ridge in 1929 and 1930. A total of 1395 ft. of cross-cutting, drifting and raising was completed, but sampling results were disappointing and the option was given up in October 1930. (A \$30,000 option payment was due at that time).

While the sampling plan is not available to the writer, it has been established from a reliable source, that the underground programme consisted of 65 samples that were of little interest at the time. Of these

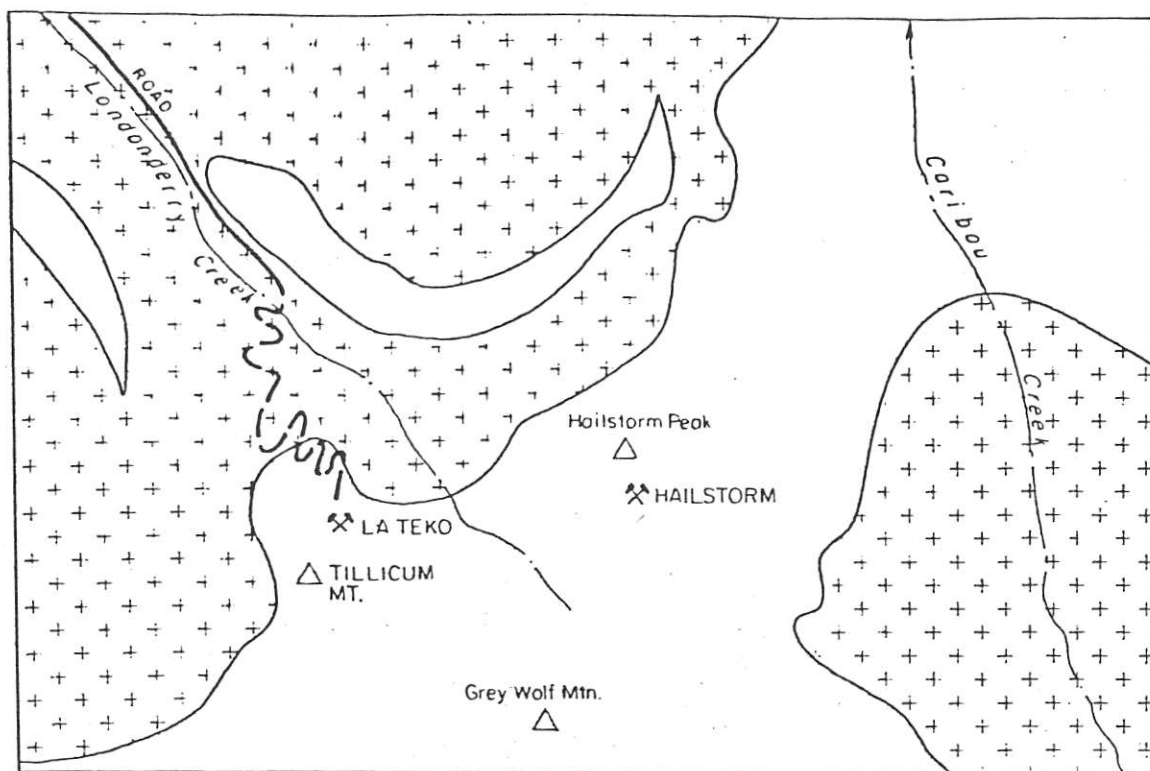
samples 63 gave Au trace to 0.04 oz/ton, and 2 gave 0.04 to 0.1 oz/ton; the same samples yielded silver assays as follows: 57 samples gave Ag trace to 1.0 oz/ton, and 8 samples assayed 1.0 to 10 oz/ton. The two best sample locations, which were described as 'faces with no record of further investigation', are reproduced in Plate I of this report.

GEOLOGY




The geology of the area east of Burton is described by Little (1960), and in greater detail by Hyndman (1968). The Hailstorm property lies within the Shuswap metamorphic complex of southeastern B.C., near the north margin of the 'Valhalla gneiss dome'. The local geology consists mostly of metasedimentary rocks of probable Triassic or Jurassic age with minor intercalations of metavolcanic flows (Fig. 2). These rocks suffered regional metamorphism up to the amphibolite grade in addition to a minimum of three episodes of folding and one of granitic intrusion, all this comprising the Columbian orogenic event.

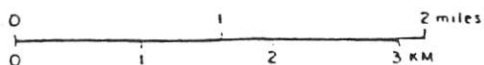
A large granitic stock outcrops approximately 1½ miles north of the Crown Grants (Fig. 2). However, a traverse of the north part of Hailstorm ridge shows that there is an increasing proportion of fine-grained granitic sills and dikes within strata mapped by Hyndman (1968) as metasedimentary rocks. A similar gradation may occur between the ridge crest and the portal of the adit, since the underground workings were recorded as occurring as 'a stockwork of calcite veins in granite'.

The metasedimentary rocks exposed near the Hailstorm workings consist of a mixture of dark grey to black well laminated schists, calcareous semi-pelites, pelitic psammites and fine-grained rusty quartzites. The latter probably originated as cherts and contain up to 30% disseminated pyrrhotite which tends to emphasize the bedding. A steeply dipping schistosity is well developed in the pelitic horizons, with a dominant ESE to WSW strike essentially parallel to the sedimentary layering of the schists. Schistosity is only weakly developed in the calcareous and cherty horizons.



LEGEND

-  GRANITIC INTRUSION
-  MESOZOIC META-MORPHIC ROCKS
-  LOGGING ROAD



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GENERAL GEOLOGY
HAILSTORM PEAK & TILLICUM MTN.

SOURCE G.S.C. BULL. 160

SCALE 1: 63,360

OCT. 1982

FIG. 2

Asymmetric minor folds were noted at one point near the northern claim boundary, and a prominent 'b' lineation was recorded near one of the trenches. The 'b' lineations plunge from 90° to 33° towards the south-west.

Metavolcanic rocks were recognized in the form of a narrow band of pillowed andesite located between the two trenched areas. Some lamprophyre dikes occur to the north of the claims, and others may have been covered by snow during the visit.

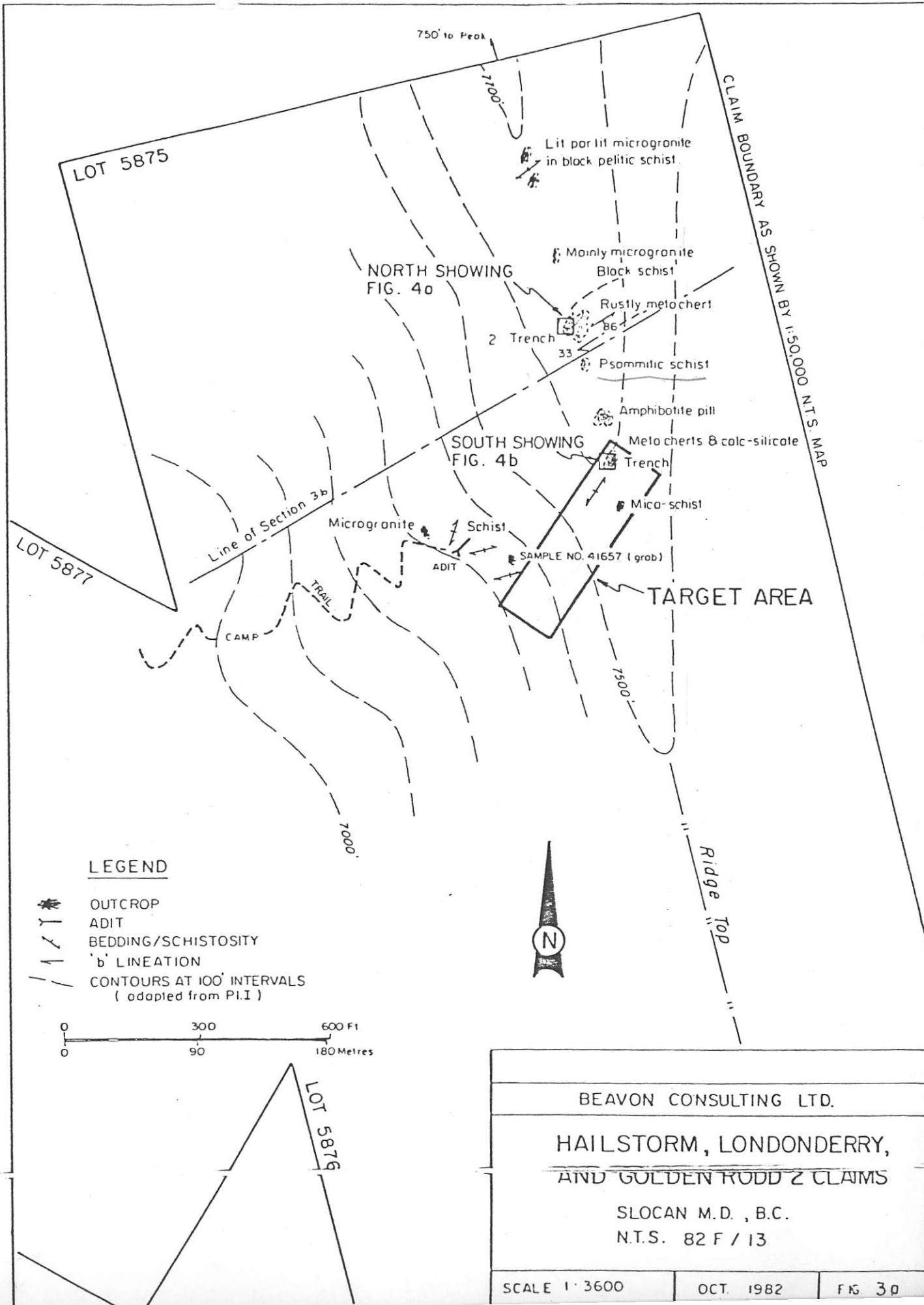
The granitic injections observed consist of a weakly rusted muscovite microgranite which occurs as lit-par-lit and transgressive dikelets. Ptygmatic folding was noted at one point. As noted above, the proportion of granitic injections increase to 40% within 500 feet of the northernmost trenches. The proportion is less than 5% in the vicinity of the trenches themselves. Where well developed, the microgranites are weakly porphyritic, and are cut by vertical northwest striking pegmatitic dikelets that appear to be following an early joint system.

The geological structure is dominated by schistosity (Hyndman 1968) which, from published regional data and personal observation, varies in strike due to folding. No fold closures were observed by the writer, but moderate changes in the strike occur both near the adit and on the ridge crest (Fig. 3a). With the exception of the shear zone noted in the north (main) showing, no faults were observed. However, numerous snow covered saddles along Hailstorm Ridge could conceal faults or other recessive geological units.

MINERALIZATION

1. Near the North Showing (Fig. 4a)

~~Old reports state that the main (or north) showing is a zone~~
of calcite veins 90 ft. long and 10-15 ft. wide with silver values averaging 15 oz/ton. The trenches were filled with snow at the time of the



LOT 5875

LOT 5877

LOT 5879

750' to Peak
1100'

CLAIM BOUNDARY AS SHOWN BY 1:50,000 N.T.S. MAP

NORTH SHOWING
FIG. 4a

SOUTH SHOWING
FIG. 4b

Line of Section 3b

ADIT

TRAIL

CAMP

Lit por lit microgranite
in black pelitic schist.

Mainly microgranite
Black schist

Rustly metachert

Psammitic schist

Amphibolite pill

Meta cherts & calc-silicate

Mica-schist

SAMPLE NO. 41657 (grab)

TARGET AREA

7500'

Ridge Top

1000'

LEGEND

- OUTCROP
- ADIT
- BEDDING/SCHISTOSITY
- 'b' LINEATION
- CONTOURS AT 100' INTERVALS
(adapted from P.I.I.)

0 300 600 Ft
0 90 180 Metres



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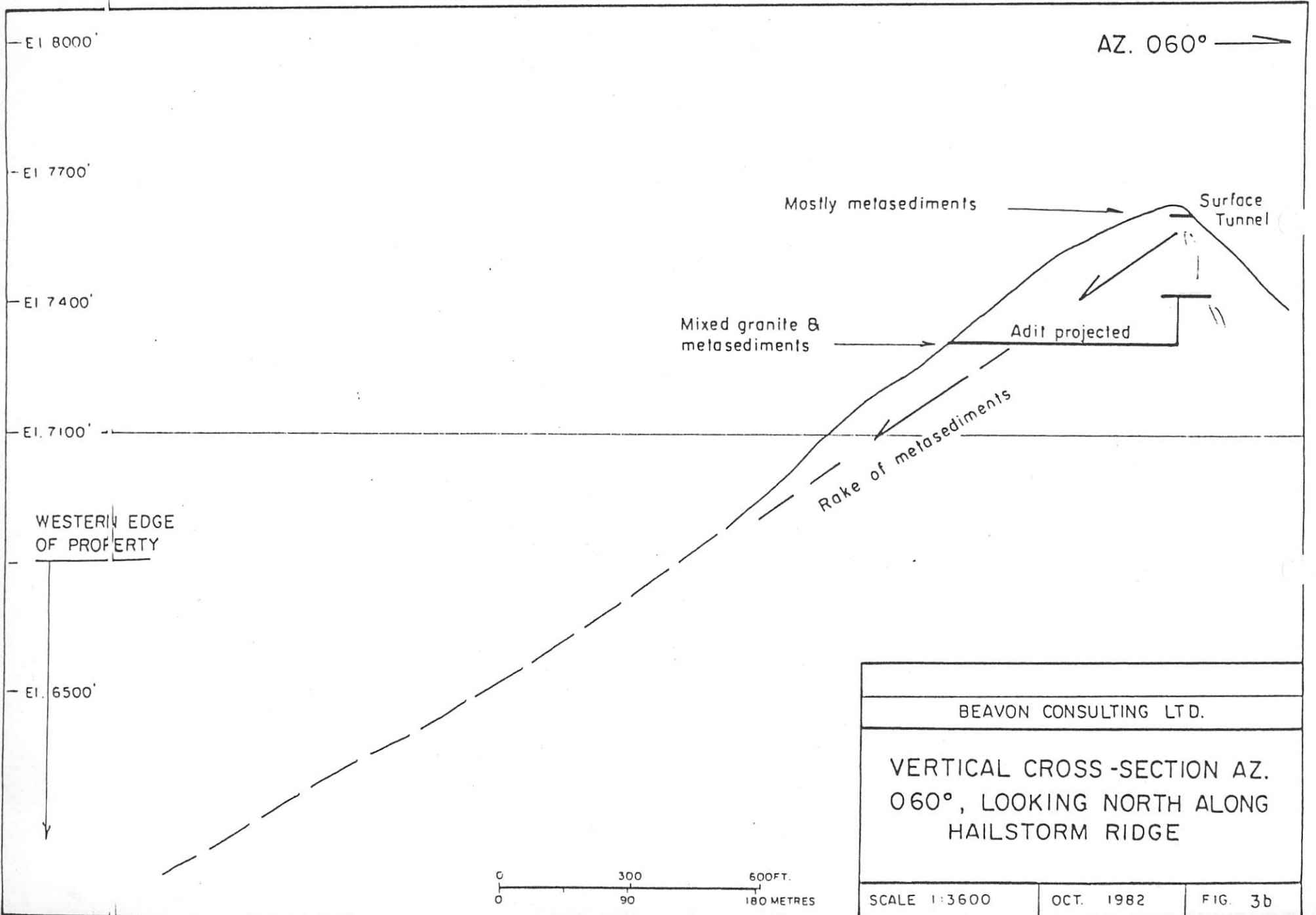
HAILSTORM, LONDONDERRY,
AND GOLDEN RODD 2 CLAIMS

SLOCAN M.D., B.C.
N.T.S. 82 F / 13

SCALE 1:3600

OCT. 1982

FIG 30



visit but the writer was able to sample the adjacent wind-swept east side of the ridge (Fig. 4a) which exposed an isolated 1 ft. diameter outcrop of well mineralized fault material surrounded by a 30 ft. width of rusty metacherts. A moderately coarse grained intergrowth of calcite and sphalerite surrounding a fault-breccia fragment of pyrrhotitic metachert yielded 10.4 oz/ton Ag and 0.019 oz/ton Au in what must of necessity be regarded a grab-sample (#41662). This sample is regarded as the attenuated eastward extension of the main calcitic showing.

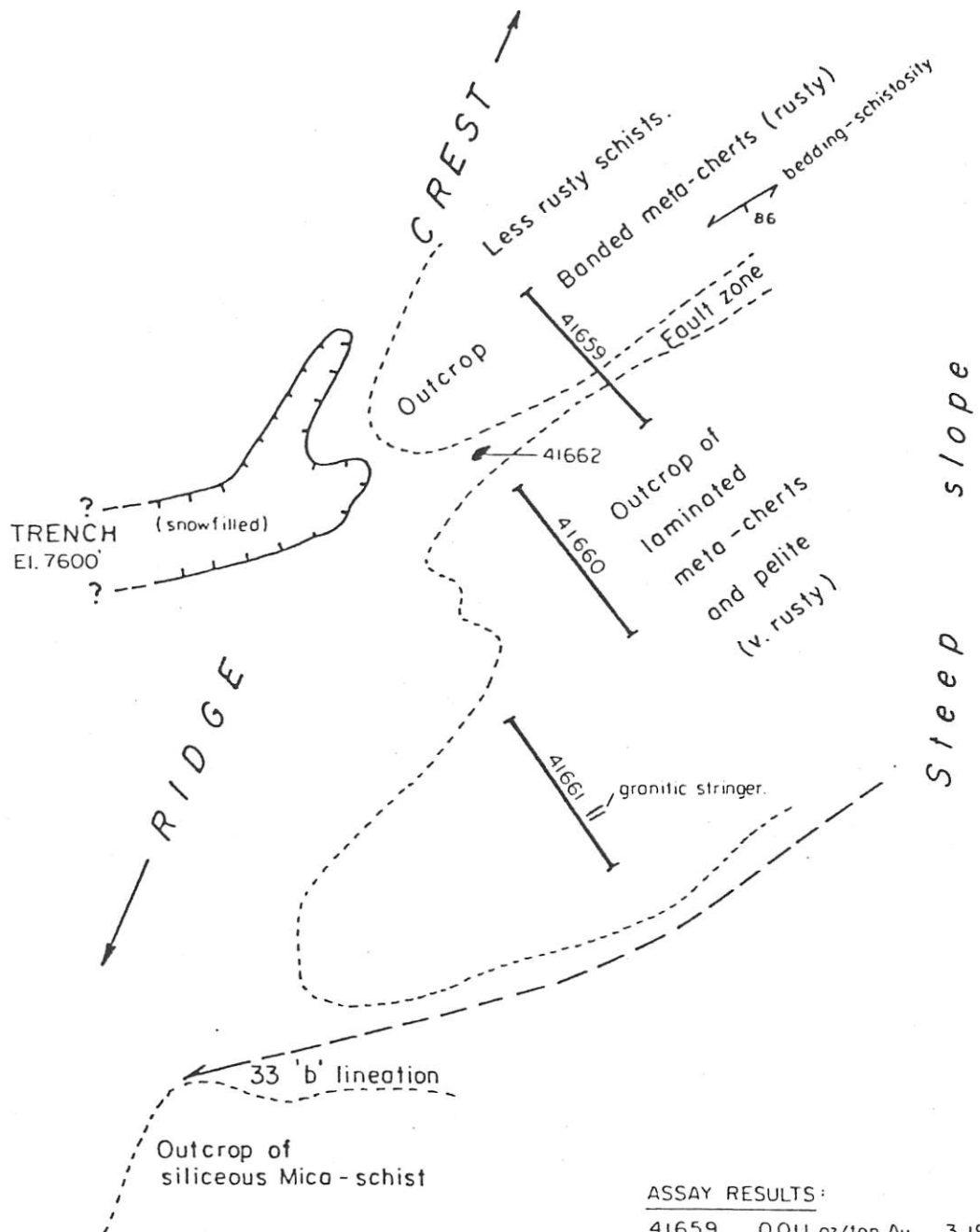
An 8.0 ft. discontinuous chip sample, composed of 5.0 ft. located in an outcrop immediately north of the sample #41662 and 3.0 ft. of the wall rock south of the strike continuation of the mineralized fault zone gave 3.19 oz/ton Ag and 0.011 oz/ton Au (#41659).

The two remaining samples are 10.0 ft. continuous chip samples covering the bulk of the rusty banded metachert outcrop immediately south of the mineralized shear zone. These samples, which average 25-30% pyrrhotite, with little visible evidence of precious or base-metal content, gave consistently anomalous silver values of 0.6 oz/ton and low but nevertheless anomalous gold values of 0.01 oz/ton (#41660, 41661). While these results suggest that the silver rich calcite veins of the main showing may be derived from a stratabound protolith of probable syngenetic origin, the possibility of supergene enrichment cannot be discounted at this stage, particularly because of the manganese-iron oxides coating the sampled outcrops.

The south contact of the rusty metasediments with clean psammitic schists is obscured immediately to the south of the sampled area. To the north, the rusty metacherts grade into less rusty in part calcareous semi-pelites with limited cherty developments.

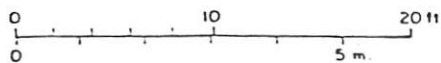
2. The South Showing (Fig. 4b)

The second showing occurs in a trench about 275 feet south of the main zone at the crest of the ridge. It consists of another steeply dipping rusty metachert zone over 10 feet wide striking 030° . A central zone of relatively massive siliceous material contains minor sub-horizontal



ASSAY RESULTS:

41659	0.011 oz/ton Au	3.19 oz/ton Ag
41660	0.011 " "	0.62 " "
41661	0.007 " "	0.63 " "
41662	0.019 " "	10.14 " "



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HAILSTORM CLAIM
SAMPLE PLAN
MAIN SHOWING

SCALE 1:120

OCT. 1982

FIG. 4a

calcite-tension gashes surrounded by 40% pyrrhotite mineralization. At this point there is a suggestion of calc-silicate formation with diopside. A 10.0 ft. continuous chip sample yielded 0.019 oz/ton Au and 3.40 oz/ton Ag. A higher assay would have resulted from the central 5.0 ft. of this south zone.

3. Elsewhere

Weakly disseminated mineralization was noted in a small cut in microgranite 150 ft. east of the adit. It consists of 1 cm vugs rimmed by calcedonic silica enclosing skeletal pyrite intergrown with a soft red mineral with earthy lustre. A grab sample (#41657) yielded less interesting results than the ridge showings, namely 0.06 oz/ton Ag and .002 oz/ton Au.

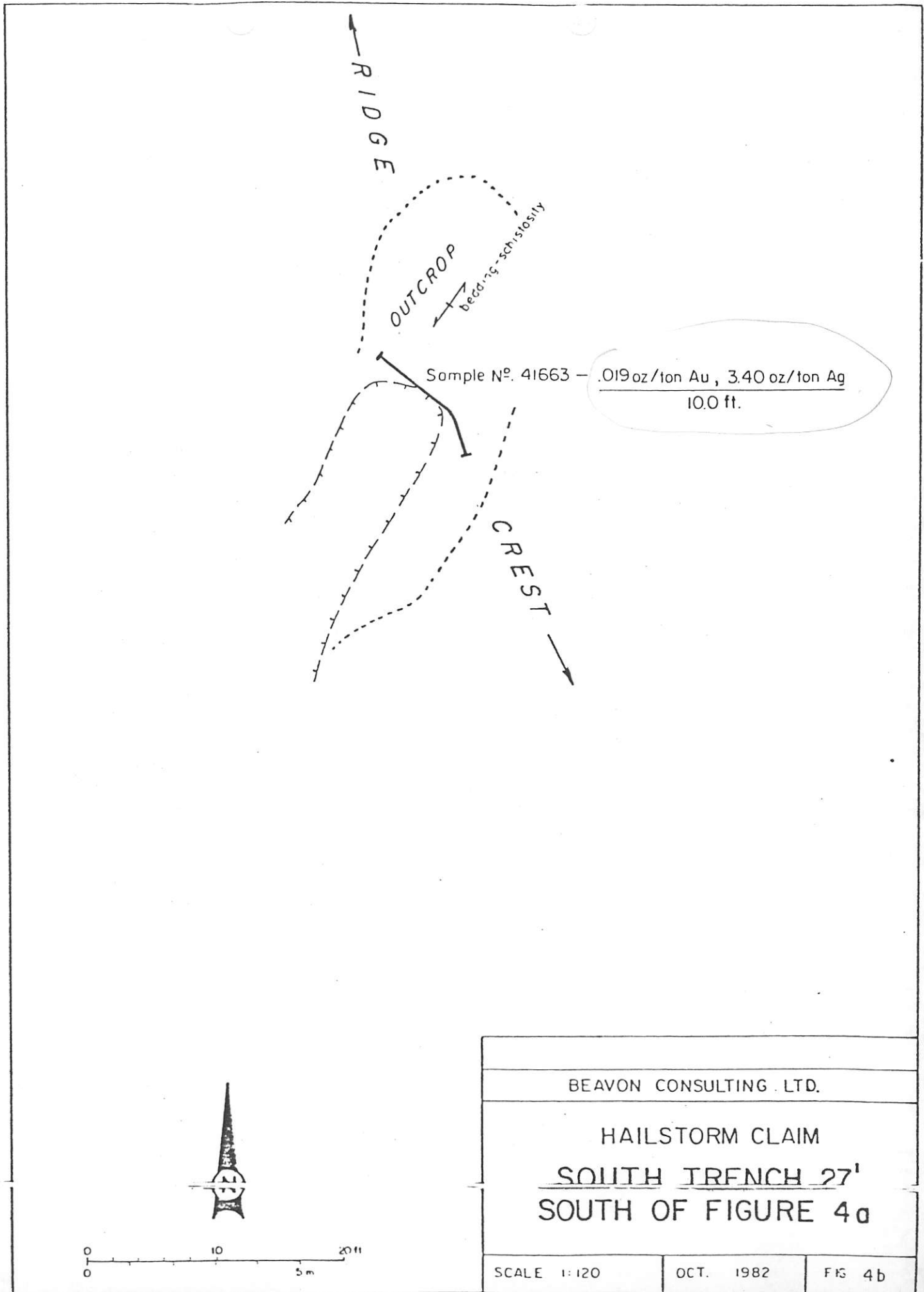
The continuous chip samples weighing 4-5 lbs. were submitted to Min En Laboratories Ltd. for fire assay for gold and acid digestion - chemical analysis for silver. Prior to shipment to the laboratory they were tested for fluorescent minerals. No magnetic attraction was noted in the vicinity of the showings, nor was it detected in a subsequent re-examination of the samples. No nickel test was applied to the pyrrhotite.

CONCLUSIONS AND RECOMMENDATIONS

1. The Hailstorm, Londonderry and Golden Rodd #2 Crown Grants are located 2 km along geological strike from the Tillicum Mountain gold showings (Fig. 2).

2. The failure of the 1930 work programme on these claims to locate the downward extension of the main surface mineralization may be attributed to either an increase in granitic injections into the meta-sedimentary host rocks at depth or to a suspected south-westward shallow rake of the mineralized zone (See Fig. 3b).

3. However, the 1930 programme located an additional mineralized zone underground assaying up to 0.1 oz/ton Au, which may correlate with the south zone exposed on the ridge (Plate I).



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HAILSTORM CLAIM		
<u>SOUTH TRENCH 27'</u>		
SOUTH OF FIGURE 4a		
SCALE 1:120	OCT. 1982	FIG 4b

4. The best mineralization occurs in fault controlled fissures and dilatant structures with calcite gangue. It is unlikely that tonnages greater than 100,000 tons could result from such deposits.

5. The significance of the low grade silver assays obtained from the 30 ft. wide rusty metachert horizons on the ridge is not clear because of the possibility of supergene enrichment. Nevertheless, the association of the silver values with the banded cherty horizons requires investigation throughout the surface of the property.

The following work is now recommended :

1. In order to follow up the underground and surface possibilities of the Crown Grants it will first be necessary to map and understand the surface geological structure and stratigraphy and its relationship to the topography. Since no air photographs exist at a suitable scale for orthophotos at 1:1000 a transit, tape and stadia survey will be necessary to accurately delineate topography.

2. Corroborative data should then be sought from an underground geological survey, at 1:500.

3. In order to map and sample the underground workings the adit will require reopening and refurbishing, followed by underground rehabilitation to ensure proper safety standards. Little or no underground development will be required at this stage (Stage 1).

4. Contingent on obtaining favourable results during Stage 1, a second stage of exploration will require underground diamond drilling, for which only a preliminary estimate can be given at the present time, of say 2000 feet. The main target area at present seems to be to the south of the underground workings (Fig. 3a), where granitic injections are least abundant.

BUDGET ESTIMATE

Stage 1

(a) Road Construction, clearing portal	10,000.00
(b) Geological mapping	6,000.00
(c) Underground rehabilitation	15,000.00
(d) Underground Mapping	1,500.00
(e) Board & Lodging	4,000.00
(f) Truck Rentals	1,000.00
(g) Supplies	5,000.00
(h) Assays & Rock Geochemistry	3,500.00
(i) Travel	2,000.00
(j) Supervision	<u>5,000.00</u>
Total Stage 1	\$53,000.00

Stage 2.

(a) Underground diamond drilling (all in) 2500 ft. @ \$30.00	75,000.00
(b) Assays	3,000.00
(c) Supervision	<u>5,000.00</u>
Total Stage 2	\$83,000.00

Total of stages 1 & 2 \$136,000.00

Signed: Roy V. Beavon

October 28, 1982

Roy V. Beavon Ph.D.
Consulting Geologist

Certificate of Assay

82-1B

Attn:

PROJECT No. R. Beavon

TO: Aber Resources,

DATE: Oct. 14/82.

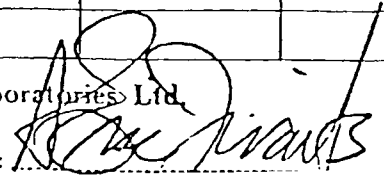
204-475 Howe St.,

File No. 2-791

Vancouver, B.C.

SAMPLE No.	Ag	Au			
	oz/ton	oz/ton			
41657	.06	.002			
59	3.19	.011			
60	.62	.011			
61	.63	.007			
62	10.40	.019			
41663	3.40	.019			

MINE-EN Laboratories Ltd.

CERTIFIED BY: 

MIN-EN Laboratories Ltd.

705 WEST 15th STREET,
NORTH VANCOUVER, B.C., CANADA V7M 1T2
TELEPHONE (604) 980-5814

ANALYTICAL REPORT

Project 82-1B Date of report Oct. 14/82.
File No. 2-791 Date samples received Oct. 7/82.
Samples submitted by: R. Beavon
Company: Aber Resources
Report on: Geochem samples
.....
..... 6 Assay samples

Copies sent to:

1. Aber Resources, Vancouver, B.C.
2.
3.

Samples: Sieved to mesh Ground to mesh -100

Prepared samples stored discarded

rejects stored discarded

Methods of analysis: Ag-Acid digestion-chemical analysis.

..... Au-Fire Assay.

Remarks:

APPENDIX 2

REFERENCES

Hyndman, D.W., 1968. 'Petrology and Structure of Nakusp Map-Area, British Columbia'. G.S.C. Bull. 161.

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1930, p. 263

Private review report on the Hailstorm Crown Grants Underground Programme of 1929, 1930.