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# MONICA RESOURCES LTD.

REPORT

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on the

RABBITT MINE - GOLD MOUNT CLAIM GROUP

GRASSHOPPER MOUNTAIN - TULAMEEN RIVER AREA

SIMILKAMEEN MINING DIVISION TULAMEEN, BRITISH COLUMBIA

N. Lat. 49° 33'

W. Long. 120° 54'

92-H-10W

bу

R. WARES, P. Eng.

STRATO GEOLOGICAL ENGINEERING LTD.

103 - 709 DUNSMUIR STREET

VANCOUVER, B. C. V6C 1M9

May 17, 1984



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#### GENERAL

#### 1:1 Location

The Monica Resources Ltd. property is located in the Similkameen Mining Division (92H/10W). It is situated 25 kilometers northwest of the town of Princeton, B.C. (Fig. 1)

#### 1:2 Access

Access to the property is from Tulameen by the Lawless Creek road. A four wheel drive vehicle is required.

### 1:3 Topography

The property ranges in elevation from 900 m. to 1300 m. The south slope of Lawless Creek is steep and difficult of access. (Fig. 2)

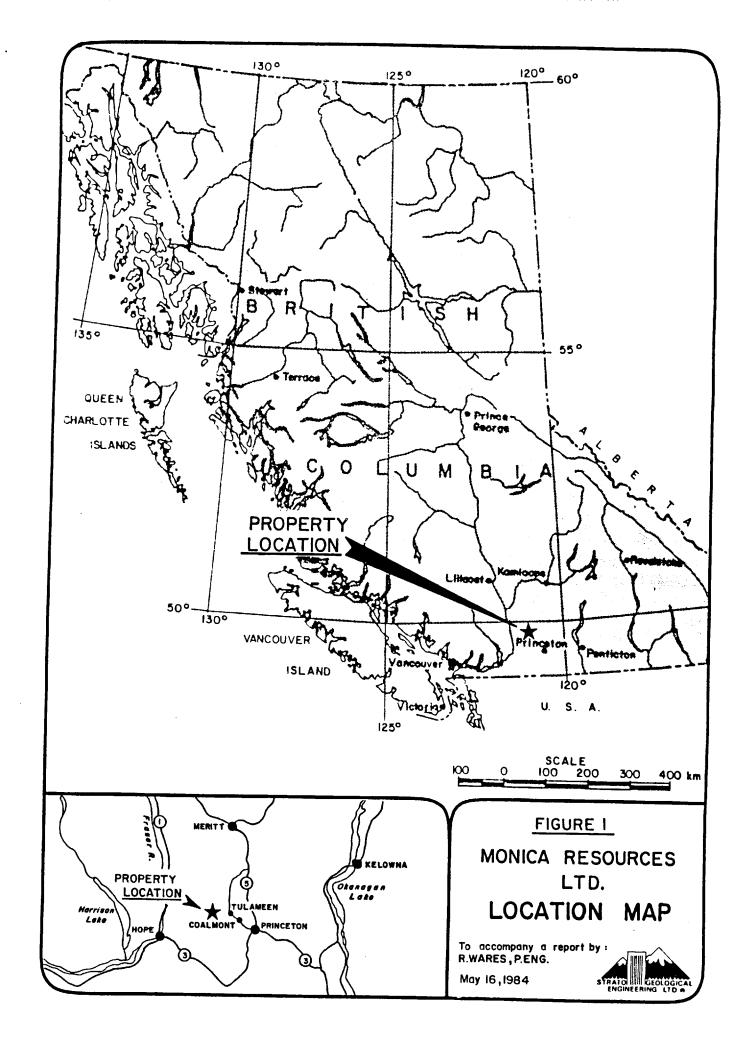
#### 1:4 Claim Status

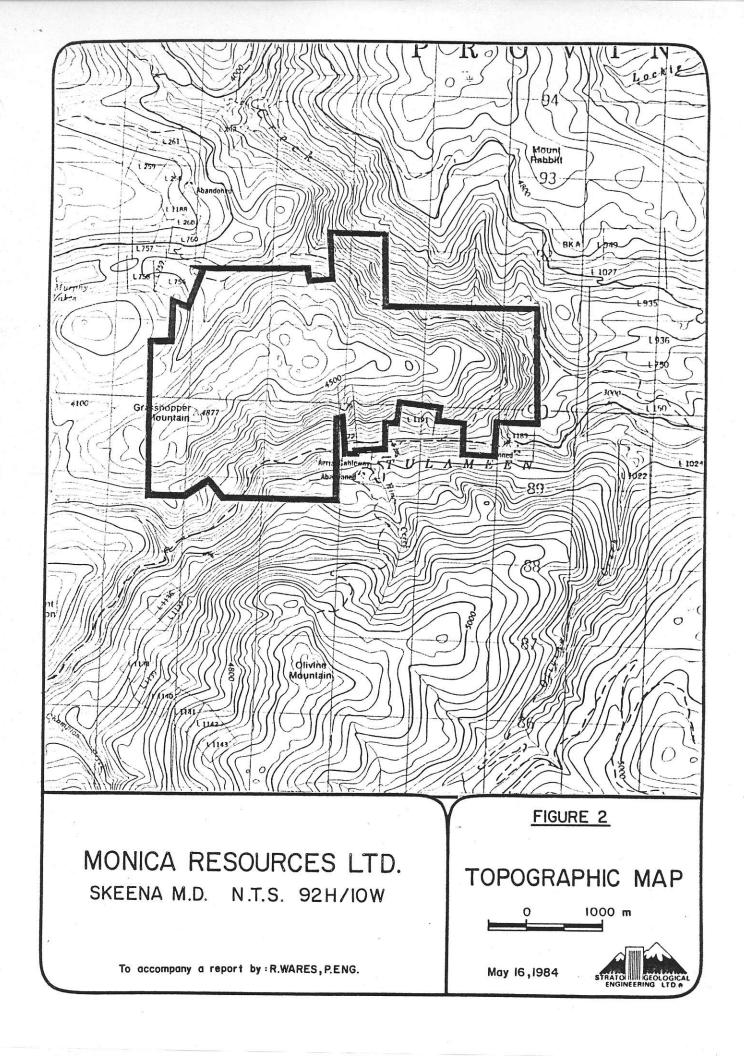
The Monica Resources property comprises the following claims. (Fig. 3)

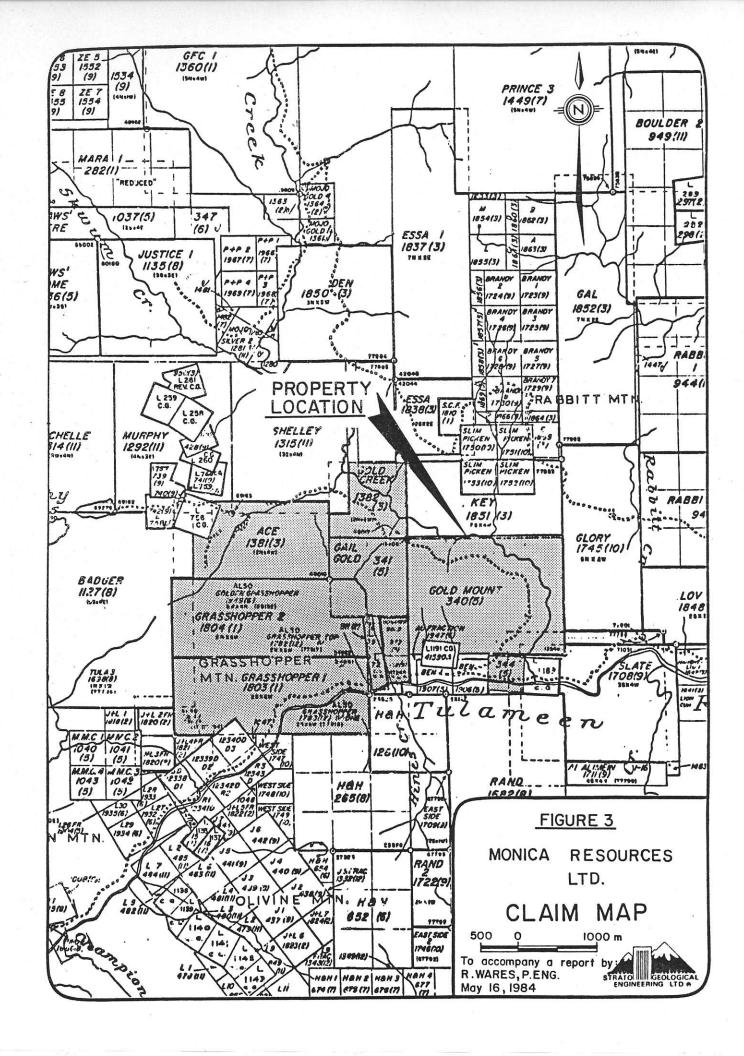
Claim Name	Record No.	Expiry Dat	<u>te</u>	
Gold Mount	340(5)	May	8,	1989
Gail Gold	341(5)	May	8,	1989
Weldonna	344(5)	May	8,	1989
Bonanza Gold	573(5)	May	11,	1989
Bonanza-Queen and	Nevada 511(2)	February	12,	1989
Ace	1381(3)	March	16,	1989
Gold Creek	1382(3)	March	16,	1989
Grasshopper 1	1803(1)	January	10,	1989
Grasshopper 2	1804(1)	January	10,	1989

Claim posts or claim boundaries were not examined during the present visit.









#### 1:5 Previous Work

The history of the property has been described elsewhere in detail (Tully, private report for Monica Resources Ltd. Dec. 1983.)

The data does not require recapitulation in this report.

The objective of the present examination was to examine surface showings and diamond drill core from the 1983/84 programme with an view to deciphering the structural control and explain the variable results from the above programme. Future work programmes would develop from this study.

The examination was carried out from May 3rd 1984 to May 6th 1984, with sections of drill core stored in Vancouver examined on May 8th 1984.



### 2 Regional Information

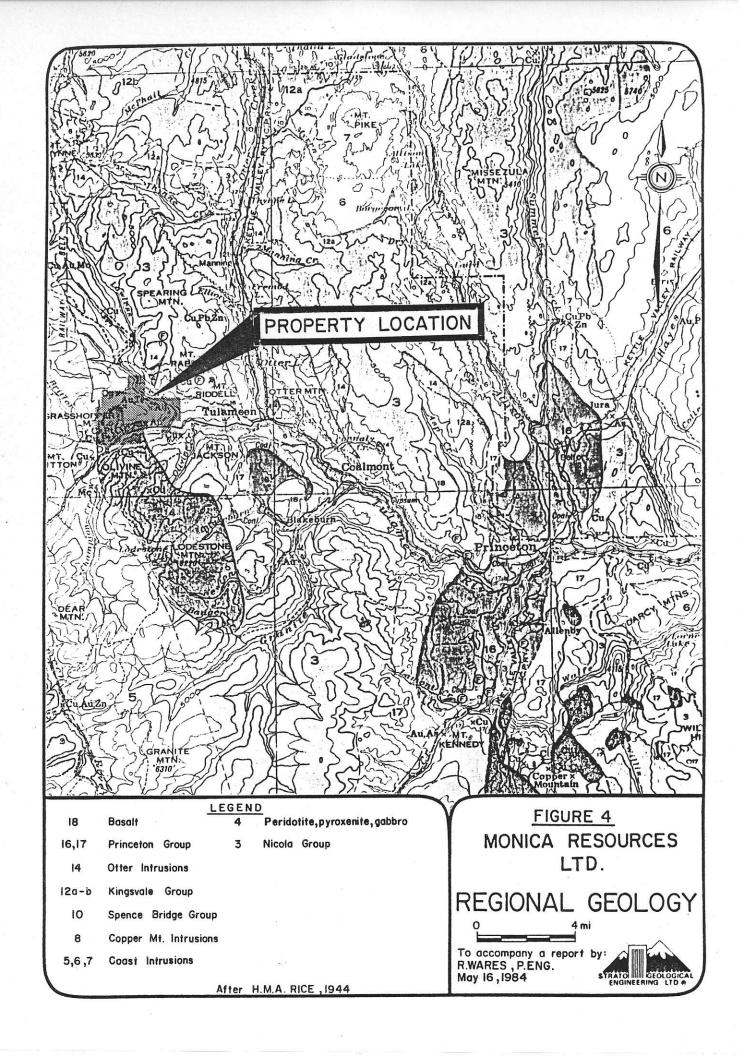
### 2:1 Regional Geology

Previous reports on the property have summarised the available regional geological data. (Fig. 4)

The greater part of the property is underlain by the units assignable to the to the Nicola Formation. They comprise a heterogeneous assemblage of volcanic breccias, volcaniclastic rocks, and subordinate sediments. The unit has been metamorphised to upper greenchist facies.

The dominant structural trend is north-westerly. There is clear evidence of a major regional fault system in the vicinity of Lawless Creek. A marked steepening of dip and cleavage is present along Lawless Creek road. The significance or economic importance of this break is yet to be ascertained.





#### 3 Geology

### 3:1 Rock Types

The present report restricted itself to the general vicinity of the Rabbitt Mine and the grid surveyed in October 1983.

The rocks comprise volcaniclastic and sedimentary rocks. Outcrop is not abundant and the greater part of the information is based upon an examination of the drill core.

To the west of the Rabbitt adit, drill core has shown the presence of a heterolithic volcanic breccia. Few outcrops of this type were observed on the surface. The unit was intersected in Holes # 1983-4,5, and 6. The matrix of the breccia is altered to a sericite-chlorite mixture, but it has a superposed alteration related to the vein system.

In Holes # 1983-1,2, and 3, in part, units of a medium to coarse grained volcanic arenite were intersected. Outcrops of this unit were observed in the area.

A thick prism of argillite and silty argillite were observed in Holes # 1983-1 and 2, in fault contact with the volcanic breccias. In road outcrops to the northwest of the adit, these argillite units were observed intercalated in the volcanic arenite.

#### 3:2 Structural Geology

A considerable degree of complexity in the structure of the area was observed.

The general strike and dip of the volcaniclastic units is 150 degrees with a dip of 40 to 60 degrees to the southwest. Structural disturbance is evident in the area of Rabbitt Mine.

The geological compilation (Fig. 5) shows a general pattern. The essential features are:

 A steepening of dip along the Adit fault with the probable development of a conical fold.



- 2) The presence of bedding plane cataclastic zones with augen cataclasites in the volcanic sequence. Some stacking of stratigraphic units appears probable.
- 3) Observation of minor structural features suggests that the drag fold associated with the Adit fault has a gentle plunge to the north.
- 4) The Adit and the southwest zones do not appear, on present evidence, to be synchronous or related. The evidence points to a displacement of part of the south west vein by furthur movement along the Adit fault.

#### 3:3 Mineralization

The focus of exploration on the Rabbitt Mine has been along the north-south fault zone.

Little attention has been paid (apparently) to extending the exposed vein that trends 040 degrees.

Observations in exposed cuts and drill core shows the existence of at least three ages of quartz veins.

The salient feature of the north/south vein is two quartz veins, up to 0.7 m. wide, that carry flanking quartz stringers and pervasive carbonate alteration. Graphite has been remobilized into cleavage planes.

The southwest vein is quite different in its characteristics. It comprises, on the basis of surface and drill core to comprise a steep southern limb and a network of less steeply dipping quartz veins. The significant feature of this vein system is the wide alteration envelope. It is at least 10 m. wide and shows clear gradation from partial recrystalisation to a feldspathrised zone flanking the veins. Stringer quartz veins are variable but widespread in the envelope.

Previous descriptions have summarised information on the geology.



Essentially it comprises free gold, chalcopyrite and minor pyrite and galena in the quartz veins. Scattered pyrite is present in the peripheral alteration units.

#### 3:4 Controls of Mineralization

The inference has been made in previous government reports that the focus of mineralization is a pipe-like body at the intersection of the two vein systems.

While there is clearly a focus at the junction, the available evidence from trenches, suggests that the southwest vein has the potential for an extension along the strike. The sample data in Pit # 4 (1.22 Au/6.0') suggests a probability for a continuation or repetition of the lenses of mineralization. This has not previously been tested.

The following is a summary of the data.

- The north/south structure appears to be, rather than a primary control, a displacement of the southwest vein.
- 2) The southwest vein is marked by a strong alteration envelope that is indicative of prolonged fluid transfer.
- There is clear potential for parallel veins to the southwest vein to be developed elsewhere on the property.
- 4) Extensions or parellel structures should be actively sought.

A distinguishing feature of the vein system is the prevalence of deep weathering. Evidence of this is the joint and shear controlled iron oxides present to depth in both narrow and wide zones. The possibility of near surface enrichment should be kept in mind on this property.

### 3:5 Physical Trenching

Open Cut

The open cut (Fig. 6) demonstrates the structural complexity.

The main fracture strikes 150 degrees, dipping to the west. The quartz vein shear zone, has a westerly limb that exhibits a distinct curving at the south of the cut. In fact several splays are present. Not clearly ascertained is whether these are continuations of the west limb of curving of a previous fault by movement. There is clear evidence of stringer quartz veins in the alteration envelope.

#### Pit # 1

This pit exhibits clear evidence of the two vein types in the southwest vein. The southeast quartz vein has a strike of 230 degrees and dip of 85 degrees south but has offset veins that strike 030 degrees, with a 061 degree dip to the east. Small rodding structures plunge 010 degrees at 030 degrees. The flatter structures form an anastomosing network. Ferruginous dolomite forms a clear halo around the veins. (Fig. 5)

#### Pit # 2

This road outcrop exhibits a 0.50 m. vein striking 056 degrees and dipping 065 degrees to the east.

#### Pit # 3

This pit is partly obscured and not much information can be obtained.

#### Pit # 4

This pit demonstrates the presence of two varying veins within the general vein system. The southern vein is steep and has offset less steep veins. This occurence is characterized by small, central vugs, around which the blebs of chalcopyrite are clustered. This appears to indicate a late nature to the gold in the deposit.



### Geophysics/Geochemistry

In October 1983, a limited survey was carried out. (Fig. 8) The essential features are:

- The existence of three magnetic domains.
- 2) The presence of a strong VLF conductor from 0+50 N, 1+00 E to 5+00 S, 1+00 E.
- 3) A distinct geochemical anomaly with high Au (610 ppb.) at 5+00 S, 1+50 E.
- 4) A strong Au (1550 ppb.) at 0+50 S, 0+50 W.

An analysis of the data reveals that:

- a) The anomoly at 0+50 S, 0+50 W is caused by contamination.
- b) The strong VLF conductor is caused by an argillite zone. Outcrop is limited but it may be the surface expression of the eastern fold limb from the fold of the Rabbitt Mine.
- c) The association of the Cu/Au appears to be the best pathfinder.

Geochemical prospecting through gully sampling and contour sampling would be the most effective method of extending areas of known mineralization.

### 5 Diamond Drilling

#### 5:1 General

The previous diamond drilling, totalling 182 m., was drilled to test the lateral and down dip extensions of the Rabbitt vein system. The results were variable. A failure to appreciate the complexity of the vein system resulted in holes being drilled at shallow angles to the dip.



5:2 Holes # 1983-1 and 2.

This hole intersected a variable sequence of alteration and meta-volcanic rocks. To a depth of 8.3 m., it encountered a green / grey volcanic arenite. To 10.67 m., it intersected a quartz-ferrodolomite zone with an anastomosing network of small quartz stringers. Remnant alteration 'xenoliths' are present. To 11.40 m., there is a broken graphite-quartz zone with a cleavage at 20 degrees to CA. From 11.4 to 13.11 m., the hole intersected a zone of diminishing alteration in a fine grained sericite.

From 13.11 to 32.62 m., the hole cut a dark argillite with thin gritty horizons. Bedding was 30 degrees to the CA.

From 32.62 m., a deformed and gougy zone was present. Fine pyrite was present. Several sets of quartz stringers were present. To 36.72 m., there was a thin zone of strongly intermixed argillite and arenite. A sharp, but deformed, transition was present below this to a coarse volcanic arenite, becoming finer grained down the hole. Irregular finely veined zones were present. The small veinlets cut across the bedding planes. (Fig. 9)

Hole # 2 was collared in volcanic arenite. From 10.98 m. to 14.98 m., the hole cut a sheared and oxidized zone with a ferrodolomite fringe. To 29.57 m., it cut a finely grained argillite with scattered fine quartz stringers tranverse to the bedding. A strong clay/graphite gouge was present at 35.10 m. Minor folds were evident in the drill core.

To 39.62 m., the hole cut a variable altered volcanic arenite with quartz-carbonate alteration from 34.20 m. To 46.95 m., the hole passed to a less altered volcanic arenite with a diminuation in alteration and seperate stringer veins. To 57.01 m., the hole passed to a weakly altered arenite.

A sharp laminated transition at 57.01 m. appears to be a cataclastic (semi-mylonite) zone, seperating a lower crystal tuff (?) from a volcanic arenite.(Fig. 9)



5:3 Hole # 1983-3.

This hole was cased to 6.09 m. To 15.84 m., it cut an intercalated argillaceous siltstone and grit. Thin quartz-augen cataclasites are present.

From 15.84 to 16.45 m., it cut a broken sheared zone with strong oxidation. The quartz vein has a ferrodolomite alteration halo to 16.91 m. passing to a quartz sericite envelope to 18.89 m. A thin volcaniclastic with minor graphite was present to 20.11 meters.

From 20.11 to 27.73 m., the halo passed into an alteration envelope with a sericite-feldspar matrix. Pervasive silicification was present from 26 to 27.73 m.

The hole cut a vein, at narrow angles, from 27.73 to 29.56 m. Fine traces chalcopyrite were present, with ferrodolomite and late oxidation iron oxides. The angle to the core axis was 25 degrees, giving a true width of 0.77 m. (2.54).

The hole passed back to an alteration envelope, diminishing to 33.69 m. (End of Hole) (Fig. 10)

5:4 Hole # 1983-4

This hole was collared in a volcanic breccia, with subangular chloretised fragments in a sericite chlorite matrix to  $19.35~\mathrm{m}$ .

A quartz vein at shallow angles to CA was intersected at 19.65 to 20.42 m., surrounded by an altered feldspathised envelope. From 22.70 to 26.3 m., the hole cut a variably altered volcanic breccia, with incipient secondary feldspar, then passed at 28.38 m. to a weakly altered volcanic breccia.

A progressive increase in alteration was noted from 29.00 to 34.30 m., with secondary feldspar and secondary hornblende. The hole passed to an augen cataclasite at 36.57 m.

Below that unit, to 39.47 m., a black cherty siltstone was intersected, with 3% disseminated pyrite. Iron oxide staining was present.



To the end of the hole (45.00 to 72.00 m.), the hole cut a dark volcanic arenite/grit. (Fig. 10)

5:5 Hole # 1983-5

This hole was collared in a volcanic breccia with fragments up to 15 cm. in diameter. A fine incipient cleavage is developed.

To 23.32 m., the hole intersected a veined and feldspathised zone, with remnant fragments present. It passed back to a medium altered volcanic arenite with broken quartz veins at 24.99 to 26.677 m. (Fig. 11)

5:6 Hole # 1983-6

This hole was collared in a medium altered volcanic breccia to 40.30 m., with thin feldspathised zones peripheral to the small quartz veins.

From 41.30 to 45.10 m., the hole cut a semi-cataclasite with a gradation from the above. Some alteration is evident in the hole across the cataclastic zone. (Fig. 11)

5:7 Interpretation of Drill Results

The drill results present a complex, and often bewildering, pattern.

Certain salient features are evident from the compilation.

The plan of drill holes (Fig. 12) shows the geological contrast between the east and west walls of the Adit fault.

Holes # 1 and 2 were drilled into volcanic arenite overlying the argillaceous unit, which is at least 15 m. thick. Both these holes drilled through the Adit fault, marked by gouge, graphite and clay slips and a fine network of quartz stringers. Hole # 3 likewise drilled through this argillaceous unit and into a broad altered envelope around the quartz veins. Hole # 3 was drilled at a shallow angle to the veins in the southwest zone. The plan shows that the hole cut across some of the splay faults in the open cut area.



Holes # 4 and 5 drilled through a heterolithic volcanic breccia and into a variable zone of alteration in the vein area.

Holes # 6, 4, and 3 cut a cataclastic zone within the west sequence.

Assay data from the previous drilling were variable in result. (see preious reports)

Holes # 1 and 2 intersected a thin fault controlled vein to the east of the main vein. A 0.79 m. interesection assayed 0.099 oz. Au / ton over this zone.

Hole # 2 did not have any assays of note.

Hole # 3 had a zone of 0.92 m., from 15.70 m. to 16.62 m., of 0.232 oz. Au / ton over that width. At 27.59 m. to 29.42 m., assays averaged 1.645 Au over 1.82 m. The true width of the zone is 0.77 m.

Hole # 4 gave generally low assay values, with the exception of 36.60 m. to 38.10 m. (120 to 125 ft.),where sludge values ran 0.301 oz. Au / ton. Assays of this section (split core) gave an assay (# 1819) of 0.011. However an assay of the other half of the split section gave an average value of 0.285 Au / ton over 5.5 ft. core width or 2.4 ft. true width.

Holes # 5 and 6 did not reveal, in the previous investigation, any values of economic significance.

The drill data shows the following:

- 1) The southwest vein is the one of economic significance.
- The vein has a strong alteration envelope but a degree of variability in the veins and gold values.
- 3) The zone is tabular in the geometric sense but exhibits (apparently) discontinuity in gold values.
- 4) The vein system should be explored and exposed by surface trenching, sampled and evaluated, prior to any furthur drilling.



### 6 Summary and Conclusions

#### 6:1 Summary:

- 1) The detailed study of surface and drill data on the Rabbitt property shows a high degree of structural complexity.
- 2) The dominant structural element is the 'Adit' fault which juxtaposes units of differing lithologies. The general strike and dip of the meta sediments is 140 degrees with a dip of 30 50 degrees to the southwest. The fault zone cuts across the regional strike, producing a steepening of dip and local small scale folding.
- 3) The units to the west of the 'Adit' fault comprise a heterolithic volcanic breccia in thrust contact with dark siltstones. To the east, the units comprise, at least in the local sense, an argillaceous sequence overlain by a volcanic arenite.
- 4) Quartz veining occurs both as tabular veins and as stringer zones in the wider alteration envelope. Along the 'Adit' fault, the quartz veins are associated with graphite impregnations and ferrodolomite. The southwest zone is exposed on surface for a strike length of at least 45 meters.
- 5) The southwest vein is the one that has economic potential. The continuity of this vein is uncertain because of limited trenching.
- 6) Only limited exploration, with modern methods, has been carried out on the Monica Resources property. The significance of other (reported) small vein occurences is unknown.



#### 6:2 Conclusions:

- 1) The potential of the Rabbitt showing on the property has not been exhaustively or adequately tested.
- 2) The southwest vein system, where the good gold values have been obtained, requires careful trenching, sampling, followed up (if results are sustained) by drill sampling.
- 3) The vein system is marked by a wide alteration envelope and several types of quartz veining. Extensions to the southwest have not been sought in the past.
- 4) A multiple objective programme is recommended for the property. A prime objective should be to adequately sample and extend the southwest vein system. A second objective should be to extend the vein to the southwest and seek parallel structures to the north and south of the vein. Prospecting and exploration should be extended elsewhere on the property for parallels to the Rabbit vein system, and for faulted extensions of the vein.
- 5) A programme totalling \$86,000.00 is recommended.

Respectfully submitted, Strato Geological Engineering Ltd.





### 7 Work Programme

### 7:1 Objectives

An exploration programme on the Monica Resources Property should be designed to meet several objectives.

- a) Sample and test the southwest vein.
- b) Extend the vein by careful trenching and mapping.
- c) By careful prospecting, air photo studies, and exploration look for parallel structures to the southwest vein and sample these, if located.
- d) Test other areas of quartz veining on the property for economic potential.
- e) Drill test strike and down dip extensions of the Rabbitt vein system.

#### 7:2 Work Breakdown

The recommended work programme is broken into several component phases. Several of these components can be overlapped with no detriment to the overall objectives.

- 1) Trenching the southwest vein ...... 2 wks.
- 2) General mapping, prospecting, geochemical
  sampling ...... 2 wks.
- 3) Prospecting and sampling of other small showings ...... 1 wk.
- 4) Limited diamond drilling to test the strike and down dip extensions of the southwest vein.



#### 7:3 Costs

1)	Trenching,	sampling	the	southwest	vein		\$20,000.00
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2)	Detailed	prospect	ing a	and s	ampling	of	
	continua	tions of	the v	vein			\$10,000.00

- 4) 300 m. of diamond drilling at \$100.00/m. . \$30,000.00

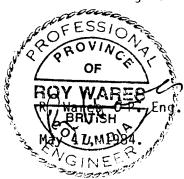
Subtotal ...... \$75,000.00

Plus 15% contingency ...... \$11,250.00

Total ...... \$86,250.00

\$86,000.00

Respectively submitted by, Strato Geological Engineering Ltd.





### 8 Certificate

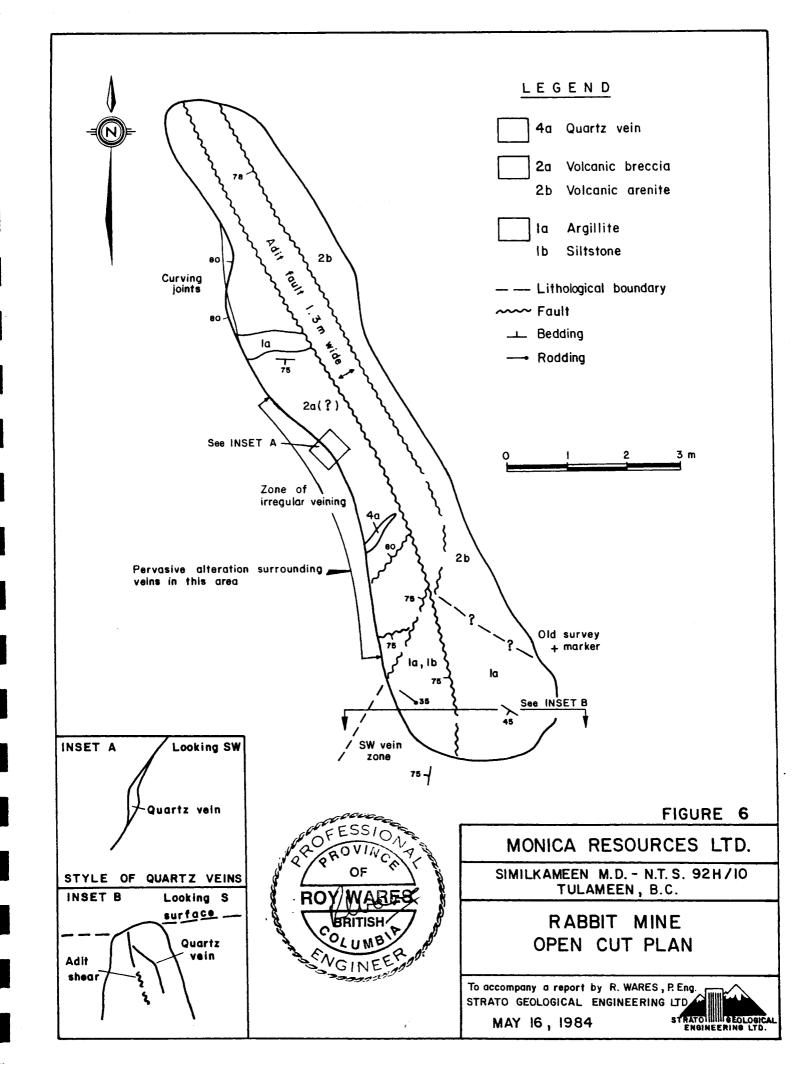
- I, Roy Wares, with a business address in the City of Vancouver, do hereby declare that:
  - I am a registered member, in good standing of the Association of Professional Engineers of B.C.
  - 2) I have been involved in various aspects of my profession for twenty years, in B.C., Canada, the United States, and the United Kingdom.
  - 3) I am a graduate of Aberdeen University with a B. Sc. (Hons.) Geology and a M. Sc. (Geology) from Queen's University, Kingston, Ontario.
  - 4) The facts described herein are based upon an examination of the Rabitt Mine property on May 3rd to May 5th of 1984.
  - 5) I have no interest, directly or indirectly, in the property and securities of Monica Resources Ltd., nor do I expect to receive any.
  - 6) I hereby consent to this report, being used by Monica Resources Ltd. for a statement of material facts, provided this is not used in a manner contrary to that intended in the report.

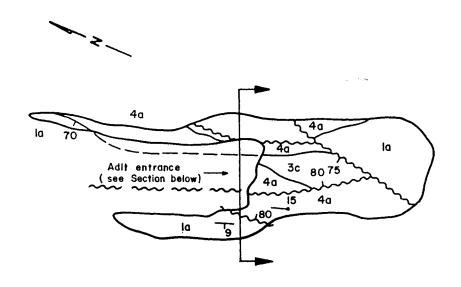
Vancouver, B.C.

May 17, 1984.

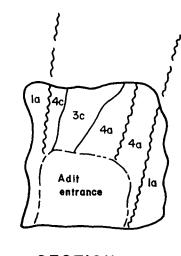








## PLAN VIEW



SECTION

### LEGEND

4a Quartz vein

3c Strong alteration

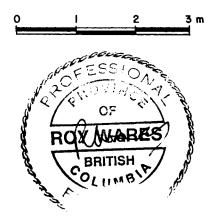
la Argillite

--- Lithological boundary

~~~ Fault

-- Bedding

→ Rodding



## FIGURE 7

### MONICA RESOURCES LTD.

SIMILKAMEEN M.D. - N.T.S. 92H/IO TULAMEEN, B.C.

## RABBIT MINE ADIT ENTRANCE

To accompany a report by R.WARES, P. Eng. STRATO GEOLOGICAL ENGINEERING LTD.

MAY 16, 1984



