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CONFIDENTIAL

PRELIMINARY REPORT

on the

GOLD CLAIM

(Formerly AU-RAIN Property)

Fish Lake Area

82E-6W

Osoyoos Mining Division, B.C.

for

E & D Joint Venture

Ste. 1024, 355 Burrard Street

Vancouver, B.C. V6L 2G8

Vernon, B.C.  
February 28, 1979

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K. L. Daughtry & Associates Ltd.

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## INTRODUCTION

The GOLD claim, comprising 12 units, has recently been staked to cover a known gold-silver showing in Tertiary rocks southeast of Okanagan Falls, B.C. The showing, formerly known as the AU-RAIN property, displays characteristics in common with the Dusty Mac Mine, the Consolidated Cinola property in the Queen Charlotte Islands, and the Black Dome prospect of Barrier Reef Resources.

K.L. Daughtry & Associates have been following progress on the AU-RAIN property for a number of years as part of their Tertiary Gold/Silver Project. During the course of a airborne radiometric survey conducted on behalf of the E & D Joint Venture in the autumn of 1978, a radiometric anomaly was discovered in Tertiary sediments about 2 km from the AU-RAIN showing.

It was decided that further exploration was warranted in the area, and the GOLD claim was staked to cover the gold-silver showing.

### LOCATION, ACCESS, TOPOGRAPHY

The GOLD claim is located astride Fish Creek, a southerly-flowing tributary of Vaseux Creek, 20 km (12.5 mi) southeast of Okanagan Falls, B.C. (Figures 1, 2). Venner Meadows is immediately west of the west boundary, and Fish Lake is 8 km (5 mi) north-northeast of the centre of the claim. Elevations on the property vary from 1330 to 1600m a.s.l. (4350 to 5250 feet). The National Topographic System reference is 82E/6W and the co-ordinates of the area of the showings are  $49^{\circ} 16.0'$  north and  $119^{\circ} 18.4'$  west.

Good access is provided to the property by driving up the Shuttleworth Creek logging road from Okanagan Falls for 27 km (16.5 mi). Much of the claim is covered by second growth with abundant windfalls and peckerpole pine.

Topography is rolling and typical of the Okanagan Plateau. The central part of the claim is a bowl-like depression between low hills. The upper part of the Fish Creek canyon extends to the southwest corner of the claim.

### PROPERTY

The property consists of the GOLD 12-unit claim staked by P.P.Nielsen on February 1-2, 1979 in the Osoyoos Mining Division. The claim has not been recorded at the time of writing; the Tag Number is 12228 (Figure 2).

## HISTORY

K.G.Ewers and partners of Okanagan Falls, B.C. staked the AU-RAIN group of 8 claims in June 1973. This is the first recorded activity in the area of the GOLD claim. The AU-RAIN property was staked to cover an occurrence of gold-silver mineralization exposed in a road cut on a recently upgraded logging road.

The prospectors dug two trenches, one on either side of the road. The western trench encountered bedrock but the eastern one was entirely in overburden.

In November 1973, Teck Corporation Limited conducted limited soil and rock geochemical surveys and magnetometer and VLF-EM surveys over the immediate area of the showing. Soil sampling indicated the presence of above-background gold, silver and mercury values near the showing. The geophysical surveys did not indicate significant magnetic or VLF-EM response.

In June 1974, Teck enlarged the grid and carried out further soil sampling. This work delineated an area, anomalous in gold and silver values, which extended about 1100 x 800 feet (330 x 240 m). Teck concluded that the anomalies were "related to nearby gold and silver mineralization of very limited areal extent", and dropped their option. The total value of Teck's work filed for assessment was about \$3500.00.

In 1975, Ewers and partners dug 4 trenches and cut over 800 metres of trail. 21 rock samples were submitted for gold and silver assays.

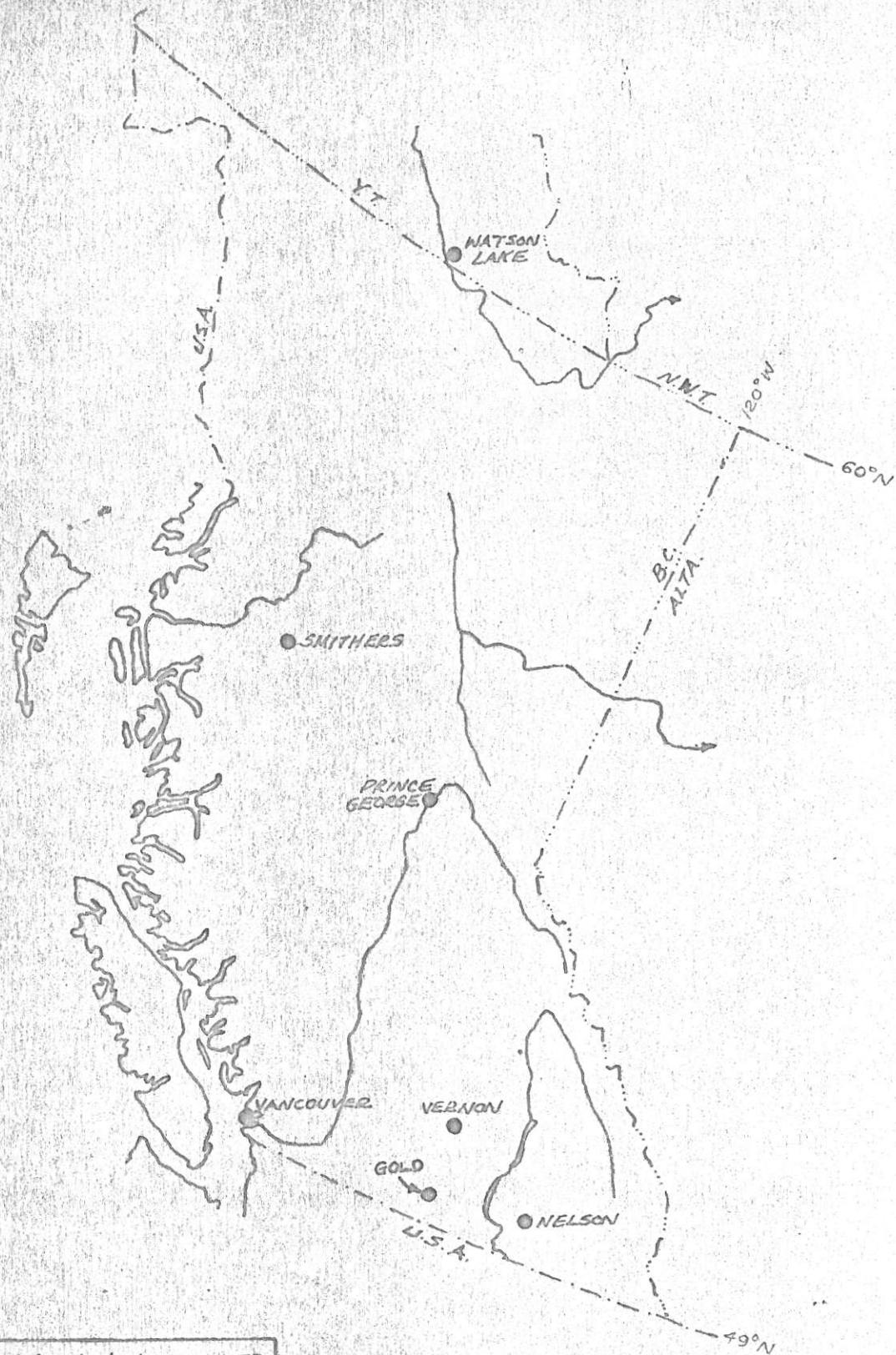
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Granby Mining Corporation carried out a channel sampling program of outcrops, road cuts, and trenches in November 1975. Granby's report concludes "...appreciable gold and silver mineralization occurs erratically in limited aerial extent....". "It might merit additional detailed sampling and some exploration, but its potential is considered not enough for Granby at this time".

From November 1975 to May 1976, Ewers and partners conducted bio-geochemical surveys, trenching, and assaying. Some of this work was financed by Canex Placer Limited.

Apparently no further work was performed, and the AU-RAIN claims were allowed to lapse in 1978. The area of the showings were re-staked as the GOLD claim by the current owner in February 1979.





K.L. DAUGHTRY & ASSOC. LTD

E & D JOINT VENTURE

LOCATION MAP  
GOLD PROPERTY

Osoyoos M.D.

Project No 098

FIG. NO. 1

# GEOLOGY

The GOLD property is in an outlier of early Tertiary volcanic and sedimentary rocks which are correlative with rocks of the White Lake Basin 11 km to the west and northwest.

Early Tertiary rocks were probably once co-extensive between the White Lake Basin and the area of the GOLD property. Tertiary faults have tilted and uplifted intervening blocks resulting in erosion of the Tertiary units between the Okanagan Valley and the subject area. The distribution of Tertiary rocks in the outlier itself may be controlled by unmapped Tertiary block faults.

The pre-Tertiary basement rocks in the area of the property are shown on GSC Map 15-1961 as Mesozoic Valhalla granitic rocks and metamorphic rocks of the older Monashee Group.

The GOLD claim is underlain by andesitic flows and tuffs which overlie sedimentary rocks south of the area of the showings. The andesitic rocks are described by Verzosa (1974) as dark-coloured fine-grained feldspar porphyry and tuff. Verzosa also mentions areas of rusty, highly altered and silicified rock associated with a northeasterly-trending zone of shearing and fracturing. Alteration is accompanied by pyritization in places, is patchy, and is spatially related to bands, veins and veinlets of calcite. He also describes a siliceous volcanic breccia, or possibly lahar, which he compares to similar rocks at the Dusty Mac Mine 12 km to the northwest. The mineralization at the GOLD property appears to be generally related to the altered and fractured rocks.



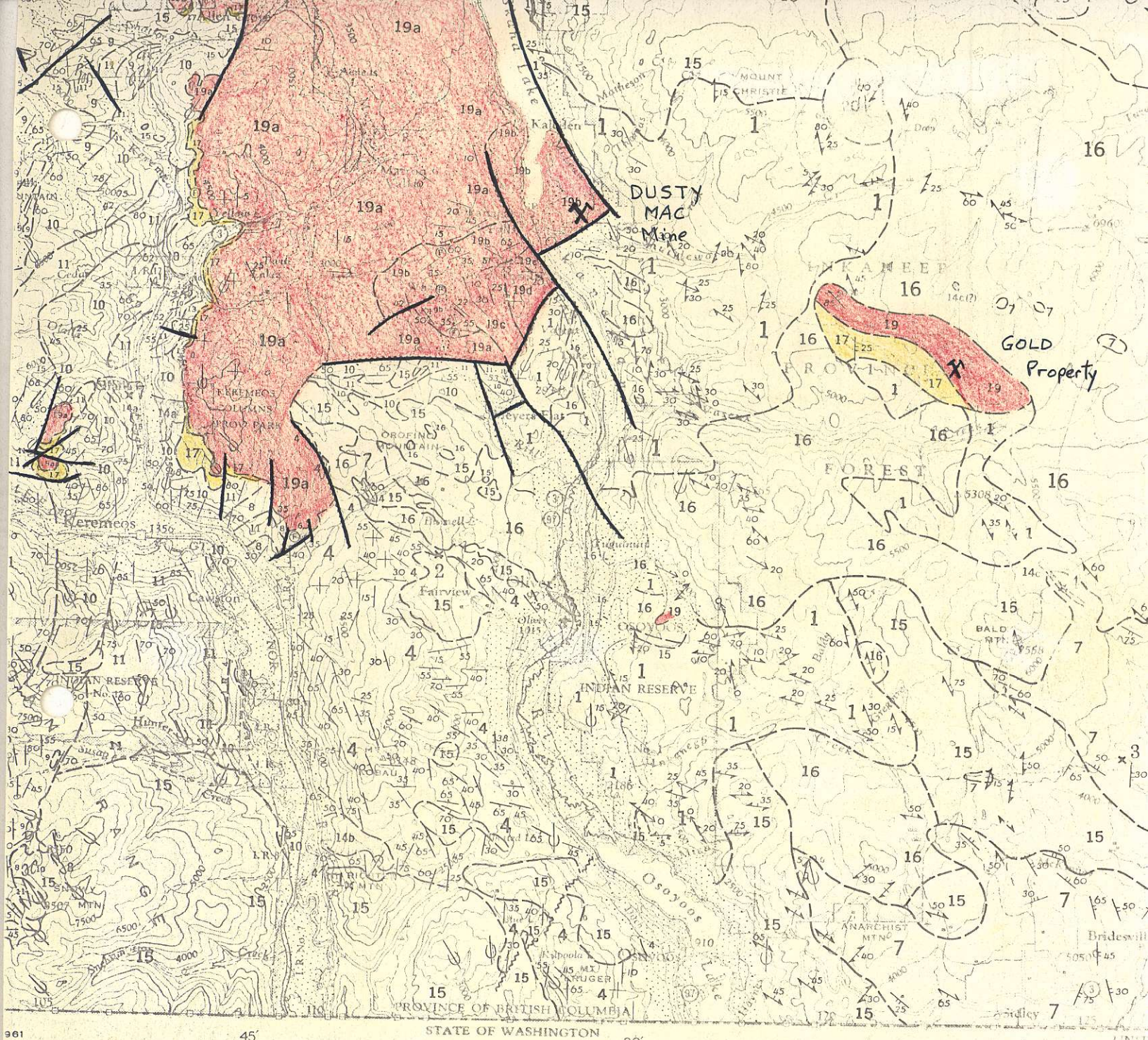
# MINERALIZATION

Gold and silver mineralization on the GOLD property is believed to be similar to that at the Dusty Mac Mine near Okanagan Falls. The Dusty Mac produced 102,819 tons of ore from an open pit in 1975-76. Shipping grade averaged 0.19 oz/ton Au and 3.28 oz/ton Ag. The ore deposit is described by Church (1973) as being localized in "a lens-like zone of silicified Eocene volcanic rocks and sedimentary debris containing minor disseminated pyrite and native silver". The host rocks are "light-coloured pyroclastic rocks, thick lahar deposits of feldspathic andesite, minor andesite lavas, and some sandstones and carbonaceous shales". Church also reports that "mineralization appears to be largely controlled by the fault system. Quartz veins and gossans are present in or adjacent to most of the main faults. The main mineralized zone....is a gently dipping lens of quartz breccia....".

According to the operators at the mine, (personal communication), drilling on 25-foot centres was necessary to control mining because no geological control of mineralization was recognized. There were only general spatial relationships between ore and areas of alteration, fracturing, and silicification.

The geology of the GOLD showings, as described by Verzosa (1973, 1974) and Kim (1975) appears to be correlative with that at the Dusty Mac Mine. Mineralization has been discovered in several road cuts, trenches and outcrops. There does not appear to be any direct relationship between higher-grade gold and silver values and intensity of alteration, pyritization, silicified or fracturing. In fact, the highest grade material discovered to date is in "fresh" andesite.





961  
S MAP MAY BE OBTAINED FROM THE  
OLOGICAL SURVEY OF CANADA, OTTAWA

STATE OF WASHINGTON

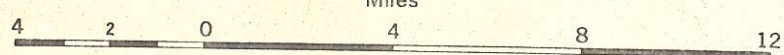
PRINTED BY THE

MAP 15-1961  
(REVISION OF MAP 538A)  
**GEOLOGY**  
**KETTLE RIVER**  
(WEST HALF) 82F-3E  
**BRITISH COLUMBIA**

Figure 2  
GOLD Property  
Location & Regional Geology

- Eocene volcanic rocks
- Eocene(?) sediments
- Tertiary block faults

Scale: One Inch to Four Miles =  $\frac{1}{253,440}$   
Miles



Approximate magnetic declination, 23° 00' East



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Work by Teck delineated a northerly-trending zone 1100 feet by up to 800 feet (330 x 240 m) in which anomalous gold and silver values occurred in soils (Figure 3). All known occurrences of mineralization occur within or near the soil anomaly, and there is some correlation between high soil values and higher assays in bedrock. However, most of the property has a thick overburden cover, and this may be limiting the geochemical response.

The higher assays in gold and silver were taken from cuts, trenches and outcrops along an east-west zone 800 feet long through localities G,D,B,A and J. The best assays from each locality are summarized below.

<u>Locality</u>	<u>Rock Type</u>	<u>Width (ft)</u>	<u>Au oz/ton</u>	<u>Ag oz/ton</u>
G	Fresh andesite	10	0.35	1.02
D	Silicified rock	4	0.13	0.23
B	Silicified volcanics with qtz and calcite stringers	6	0.05	0.11
A	Silicified rock, qtz and calcite veins	3	0.15	0.22
A	?	5 (?)	0.28	0.13
J	?	5 (?)	0.10	0.25

### CONCLUSIONS

The results of exploration to date, by Ewers et al, Teck Corporation, Granby Mining and Placer Development, indicate the presence of a mineralized zone 800 feet long, open at both ends, which carries significant gold and silver mineralization. Soil sampling suggests a larger area of mineralization may be present. Deep overburden cover will hamper future geochemical and geological exploration.

Considering the current price levels of gold and silver, and the interest in other deposits of this type, further exploration is definitely warranted.

### RECOMMENDATIONS

1. A programme of either backhoe trenching or, preferably, percussion drilling should be conducted as soon as possible to test the main showing area.
2. When snow conditions permit, geological mapping and geochemical sampling should be carried out over the entire property.
3. Further land acquisition is desirable, and should be considered.
4. The potential for uranium mineralization should be investigated.

Appendix 1

REFERENCES

- |                |        |  |                  |
|----------------|--------|--|------------------|
| Church, B.N.   | (1977) | Tertiary Stratigraphy in South Central B.C.<br>In Geological Field work, 1977 B.C. Ministry<br>of Mines & Petroleum Resources. |                  |
| -----          | (1973) | Geology of the White Lake Basin. Bulletin 61<br>B.C. Department of Mines & Petroleum Resources.                                |                  |
| -----          | (1970) | GEM pp 396-402. B.C. Department of Mines &<br>Petroleum Resources.   |                  |
| -----          | (1969) | GEM pp 294-296.  |                  |
| GEM            | (1976) | pp E26-27  | AU, RAIN         |
| -----          | (1975) | p E21  | AU               |
| -----          | (1974) | p 56   | AU and DUSTY MAC |
| -----          | (1973) | p 47   | AU               |
| Kim, H.        | (1975) | Report on AU-RAIN Claim Group for Granby<br>Mining Corporation.  |                  |
| Thompson, K.G. | (1976) | AU-RAIN Claim Group. Assessment Report 5886.   |                  |
| -----          | (1975) | AU-RAIN Claim Group. Assessment Report 5702.   |                  |
| Verzosa, R.S.  | (1974) | Geochemical Report, AU-RAIN Claim Group<br>Assessment Report 5009.   |                  |
| -----          | (1973) | Geochemical and Geophysical Report, AU-RAIN<br>Claim Group, Assessment Report 4763.  |                  |

Appendix 2

SUMMARY OF ASSAY RESULTS - GRABBY MINING CORP.

<u>Sample No.</u>	<u>Location</u>	<u>Au oz/ton</u>	<u>Ag oz/ton</u>	<u>Width (ft)</u>
4960	A	0.153	0.22	3
1	B	0.050	0.11	6
2	C	0.010	0.03	2
3	"	0.045	0.18	6
4	"	0.098	0.26	7
5	D	0.025	0.15	2
6	"	0.118	0.20	2
7	"	0.142	0.26	2
8	"	0.005	0.03	2
9	"	0.008	0.07	2
4970	"	0.016	0.08	3
1	E	0.001	Tr	1
2	F	0.001	0.03	14
3	"	0.021	0.58	5
4	"	0.003	0.04	5
5	"	0.005	0.05	5
6	"	0.007	0.07	5
7	"	0.011	0.06	4
8	G	0.001	0.03	5
9	"	Tr	0.03	5
4980	"	Tr	0.01	5
1	"	Tr	0.04	5
2	"	0.400	0.85	5
3	"	0.294	1.19	5
4	"	0.004	Tr	6
5	"	0.175	0.53	5



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## Appendix 2

### SUMMARY OF ASSAY RESULTS - CHIP SAMPLING - K.G. THOMPSON REPORT - Nov. 6, 1975

"Chip samples normally taken over 5 feet or multiple thereof across veins structures at approximately one pound per foot."

"On narrower veins sufficient length is taken to include hanging and foot wall rock."

<u>Sample No.</u>	<u>Location</u>	<u>Au oz/ton</u>	<u>Ag oz/ton</u>
456	A	0.28	0.13
458	"	Tr	0.26
460	"	Tr	0.28
4	"	0.16	0.12
531x	"	0.18	0.62
464	B	0.01	0.09
1	"	0.39	0.10
2	"	Tr	Tr
526x	"	0.012	0.81
527x	"	0.004	0.16
528x	"	0.012	Tr
529x	"	Tr	0.06
461	C	0.04	0.05
3	"	0.40	0.10
532x	"	0.076	0.10
530x	E	Tr	Tr
33965	H?	Tr	Tr
33966	"	0.03	0.5
5	"	Tr	Tr
6	"	Tr	0.01
463	I?	Tr	0.05

### SUMMARY OF ASSAYS - OWNERS - K.G. THOMPSON - JUNE 1976

<u>Sample No.</u>	<u>Location</u>	<u>Au oz/ton</u>	<u>Ag oz/ton</u>
532	A	0.004	0.33
0626M	F	0.010	Tr
529	G	0.524	0.76
530	"	0.244	0.30
531	"	0.014	0.50
AL-536	"	0.004	0.20
533	J	0.098	0.25

## ECONOMIC GEOLOGY

Traditionally the rocks of Tertiary basins of the southern interior of British Columbia have been known principally for their coal deposits. These rocks have also been noted for an abundance of zeolite minerals, some perlite, and opal and agate localities. However, in recent years, with the advent of advanced geochemical and geophysical methods of prospecting and precise methods of rock dating, it is now known that the Tertiary suite is important in the search for base metals. Tertiary uraniferous conglomerates have also recently attracted attention in southern British Columbia.

In the White Lake area a few small showings of ferrimolybdate are reported in the granite slide breccia of the Skaha Formation north of Green Lake. However, the Dusty Mac gold-silver discovery east of Skaha Lake has been the most interesting recent discovery in the area.

### THE DUSTY MAC PROSPECT

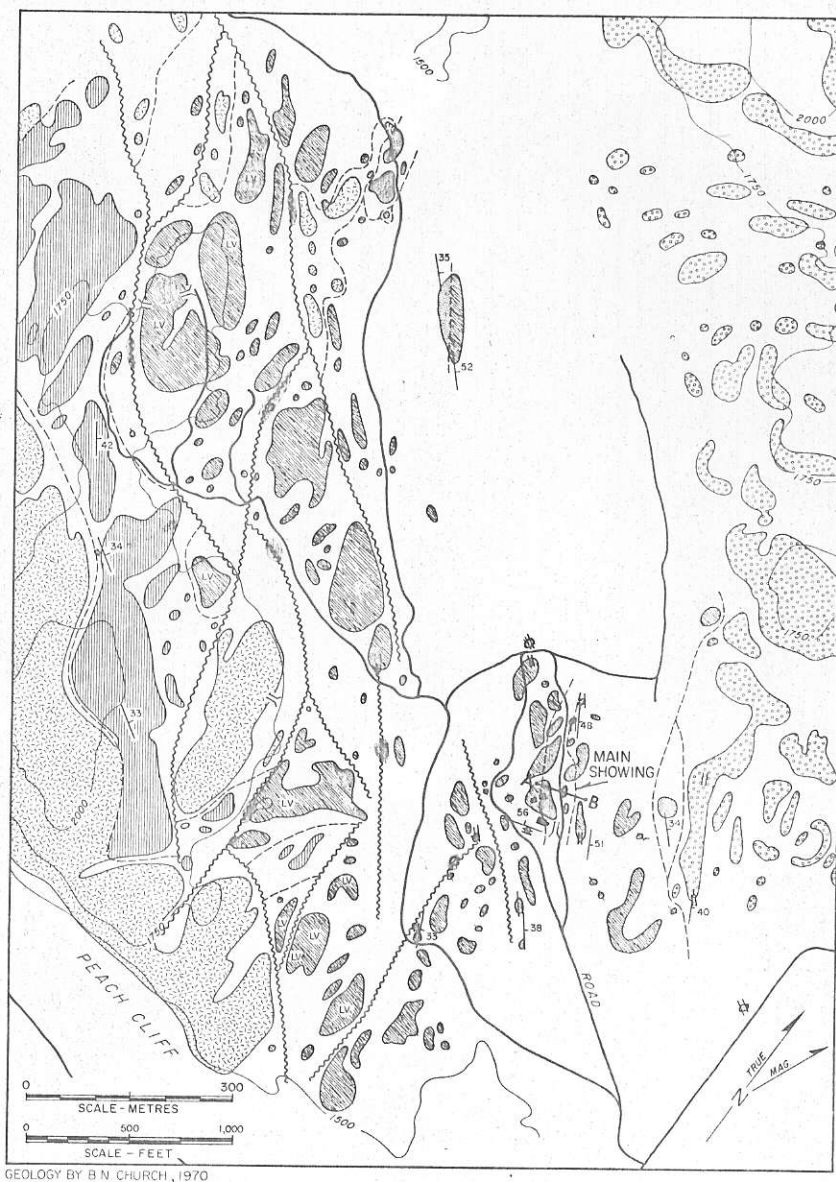
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The Dusty Mac prospect is located about 1 mile east of Okanagan Falls (Figs. 1.2 and 5.1). The deposit consists of a lens-like zone of silicified Eocene volcanic rocks and sedimentary debris containing minor disseminated pyrite and native silver. Also, some quartz veins on the property carry minor bornite and chalcopyrite.

The host rocks belong to the White Lake Formation of the upper part of the local Tertiary section. These beds consist of light-coloured pyroclastic rocks, thick lahar deposits of feldspathic andesite, minor andesitic lavas, and some sandstones and carbonaceous shales. The older rocks in the immediate area belong to the Marama Formation comprising mainly massive rhyodacite lava well exposed on the high bluffs, known locally as Peach Cliff, overlooking the village of Okanagan Falls.

These units are on the south limb of a southeasterly trending syncline. The beds have variable dips ranging from about 30 to 55 degrees northeast. A strong cross-fracture system strikes about 010 degrees dipping about 80 degrees westerly almost perpendicular to the synclinal axis (Fig. 5.3).

In addition these rocks are cut by an important system of reverse faults. The system trends generally southeasterly, with interwoven easterly and southerly striking segments and splays. The direction and magnitude of movement on these faults are indicated at a number of points where large slices of Marama lava have been thrust outward and upward



# LEGEND

## WHITE LAKE FORMATION

- TUFF-BRECCIA / SANDSTONE, SHALE
- BLOCKY FELDSPAR PORPHYRY LAHAR, LAVA / SANDSTONE AND SHALE
- BLOCKY LAHAR WITH ACCESSORY DACITE FRAGMENTS, MINOR TUFF-BRECCIA AND SANDSTONE

## MARAMA FORMATION

- DACITE LAVA, MINOR BRECCIA
- TECTONIC BRECCIA, SILICIFICATION, QUARTZ VEINS AND GOSSAN

- FAULT
- GEOLOGICAL CONTACT
- TOPOGRAPHIC CONTOUR
- ROAD
- GEOLOGICAL SECTION
- BUILDING
- PORTAL
- BEDDING
- LAVA

TOPOGRAPHIC BASE PROVIDED BY NORANDA MINES LTD

Figure 5.1. Geology of the Dusty Mac prospect, Okanagan Falls.



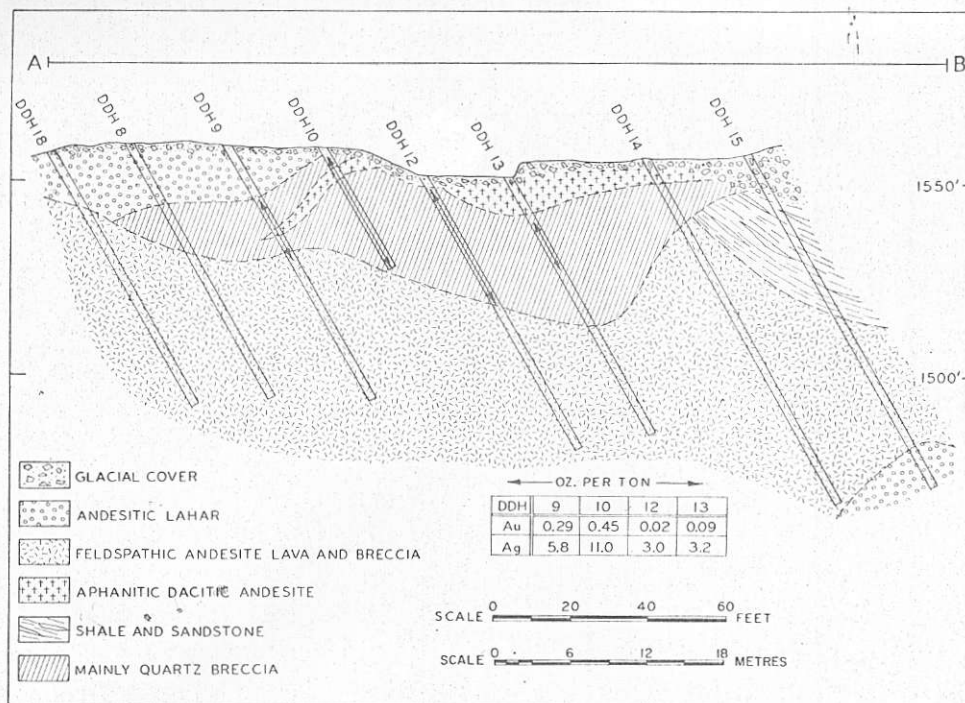


Figure 5.2. Diamond-drill hole section, Dusty Mac Mines Ltd.

from the core of the syncline through several hundred feet of White Lake strata. As in the White Lake basin, reverse faulting is thought to be the result of concentric folding and accommodation of the stratigraphic pile to bedding plane slip.

At Dusty Mac, mineralization appears to be largely controlled by the fault system. Quartz veins and gossans are present in or adjacent to most of the main faults.

The main mineralized zone, located in the east central part of the property, is a gently dipping lens of quartz breccia (Plate XVI) with varying admixtures of crushed andesite. The body is exposed over a length of about 700 feet striking roughly 140 degrees with a central cross-section width of about 160 feet and a maximum thickness of 30 feet. Surface sampling of this zone by the writer showed some disseminated native silver yielding erratic grades. Assays on five composite samples gave an average value of 0.47 ounce per ton gold and 11.3 ounces per ton silver and a range of 0.02 to 4.31 ounces per ton gold and 1 to 121.4 ounces per ton silver. A published statement by Dusty Mac Mines Ltd. indicates 67,790 tons of ore averaging 0.23 ounce per ton gold and 4.97 ounces per ton silver, according to calculations based on exploration up to December 1969.

A similar large lens of quartz breccia is located about 2,500 feet northwest of the ore zone. Preliminary testing of this body shows only a trace of gold and silver.

The large quartz breccia zones, including the main mineralized zone, are thought to be the result of the following events:

- (1) Development of dilations in major shears.
- (2) Filling of the dilations with quartz, accompanied by gold and silver mineralization.

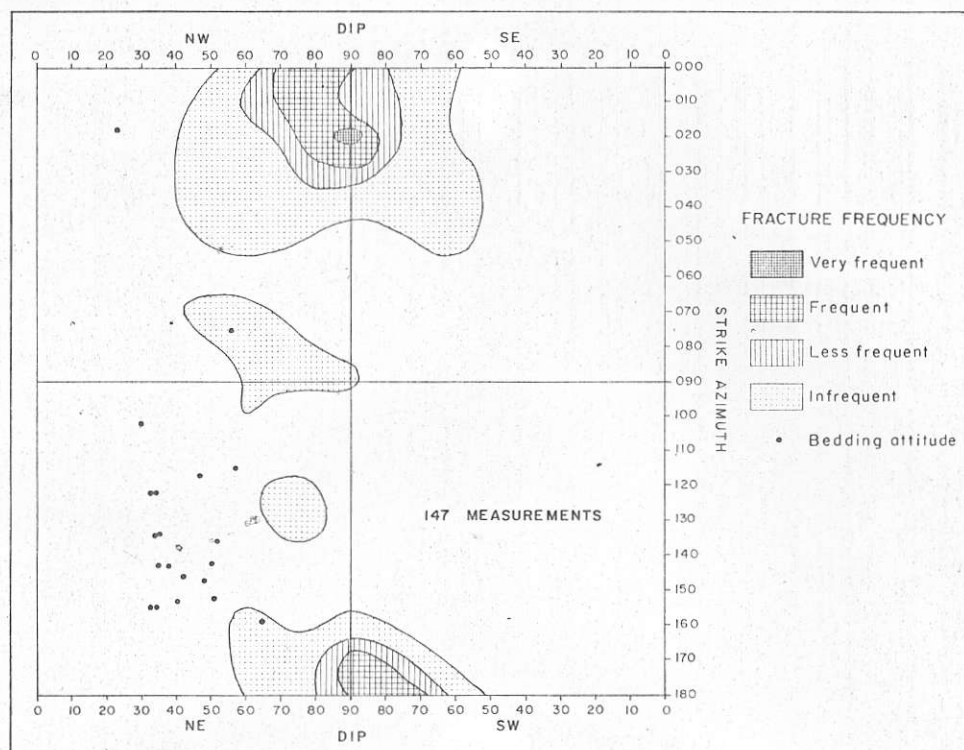


Figure 5.3. Fracture frequency plot, Dusty Mac prospect.

- (3) Late-stage movement in the shear zones resulting in brecciation of the quartz and intermixing of the quartz with crushed andesite wallrocks.

Work done on the property to the end of 1970 includes 52 diamond-drill holes totalling 7,610 feet, 101 percussion holes, 2 bulk samples, and 1 crosscut adit about 150 feet long.

**REFERENCES:** *Geol. Surv., Canada*, Map 627A, Okanagan Falls; *B.C. Dept. of Mines & Pet. Res.*, G.E.M., 1969, pp. 294-296; 1970, pp. 402-406.



