5858

GEOLOGICAL REPORT ON THE AJ CLAIM GROUP

SPROAT LAKE AREA, VANCOUVER ISLAND, BRITISH COLUMBIA

ALBERNI MINING DIVISION

49°18'N 125°15'W

FOR

HIGHLAND MERCURY MINES LIMITED

BY

HAROLD M. JONES, P.ENG.

MAY 5, 1976

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SUMMARY

The writer spent from April 10 - 27, 1976 carrying out a program of geological mapping and prospecting on the AJ Nos. 1 - 15 mineral claims, which are located 4.8 kilometers west of Sproat Lake, Vancouver Island, in the Alberni Mining Division.

The claims are underlain by Karmutsen volcanic rocks, consisting mostly of pillow lavas with much lesser flow breccias (?) and tuffs. The volcanics are intruded by numerous narrow diorite dykes.

No mineralized quartz veins or other types of mineral deposit were seen.

No further work is recommended on these claims.

GEOLOGICAL REPORT ON THE AJ CLAIM GROUP
SPROAT LAKE AREA, VANCOUVER ISLAND
ALBERNI MINING DIVISION

INTRODUCTION

The writer, under contract to Highland Mercury Mines Limited, spent from April 10 to 27th, 1976 inclusive carrying out a program of geological mapping and prospecting on the AJ claim group. The property is located on southwestern Vancouver Island 4.8 kilometers west of Sproat Lake in the Alberni Mining Division.

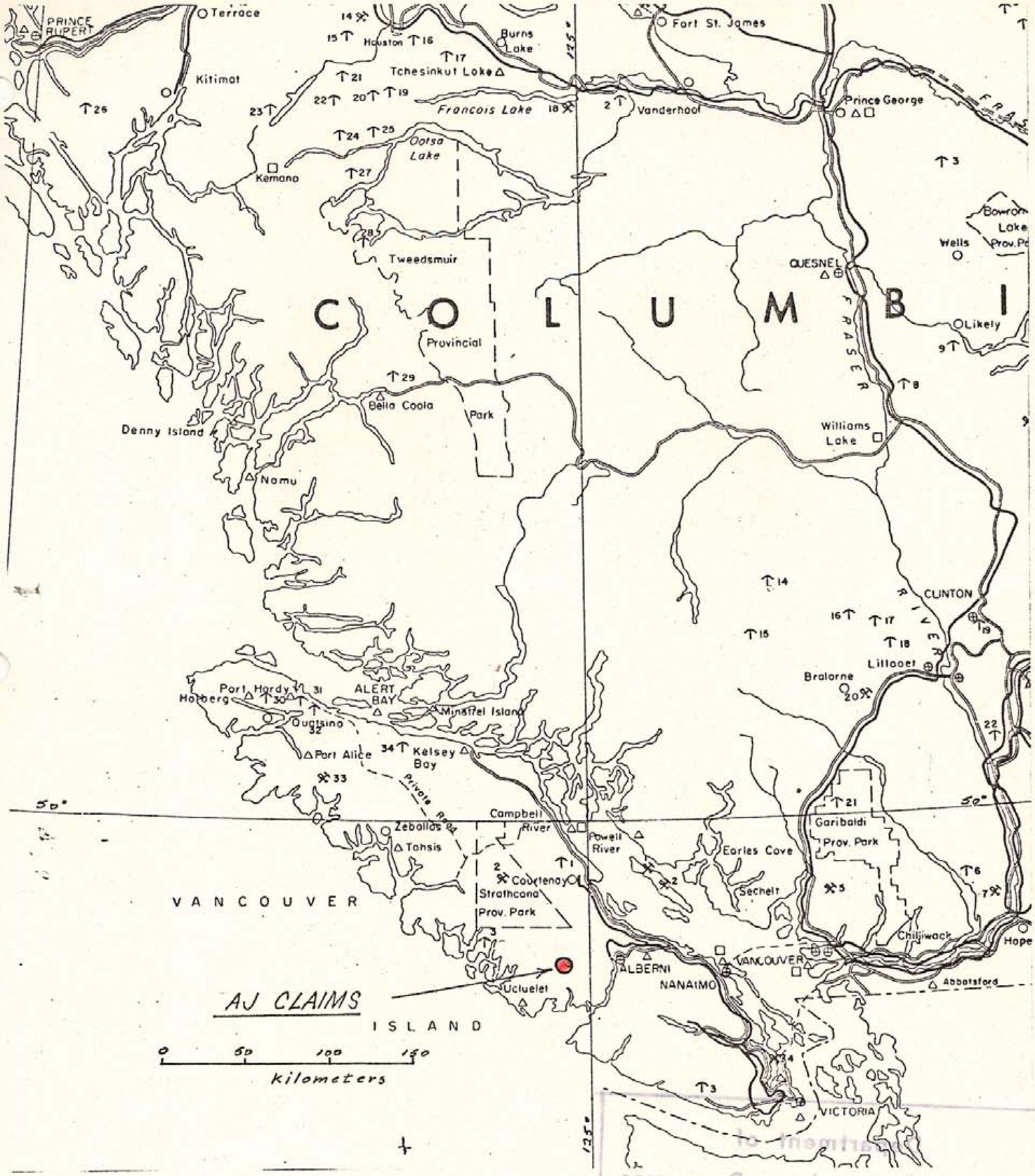
These claims adjoin the east and southeast borders of the old Morning Group and Apex Group crown grants (now held as mineral lease no. 66). These latter claim groups have been intermittently explored since gold bearing veins were discovered here in 1899. At the present time Highland Mercury Mines are conducting an underground exploration program on the Morning Lot No. 975 and have advanced the drift 35 meters this season.

There is no history of any previous mining activity on what is now the AJ claims.

LOCATION AND ACCESS

Geographical co-ordinates of the property are $49^{o}18'N$; $125^{o}15'W$. They are within the 92F/6E N.T.S. map area.

The AJ claims are located on Southwestern Vancouver Island 4.8 kilometers west of Sproat Lake and immediately north of the Taylor River in the Alberni Mining Division. The claims adjoin and lie to the east and southeast of mineral lease 66 which includes lot 975 - Morning Lot; lot 976 - Morning No. 1 Lot; lot 977 - Morning No. 2 Lot; lot 978 - Apex Lot; lot 979 Fraction - Apex Fraction Lot; and lot 980 - Apex Fraction No. 3. The southern limit of the AJ claims borders along provincial highway No. 4.

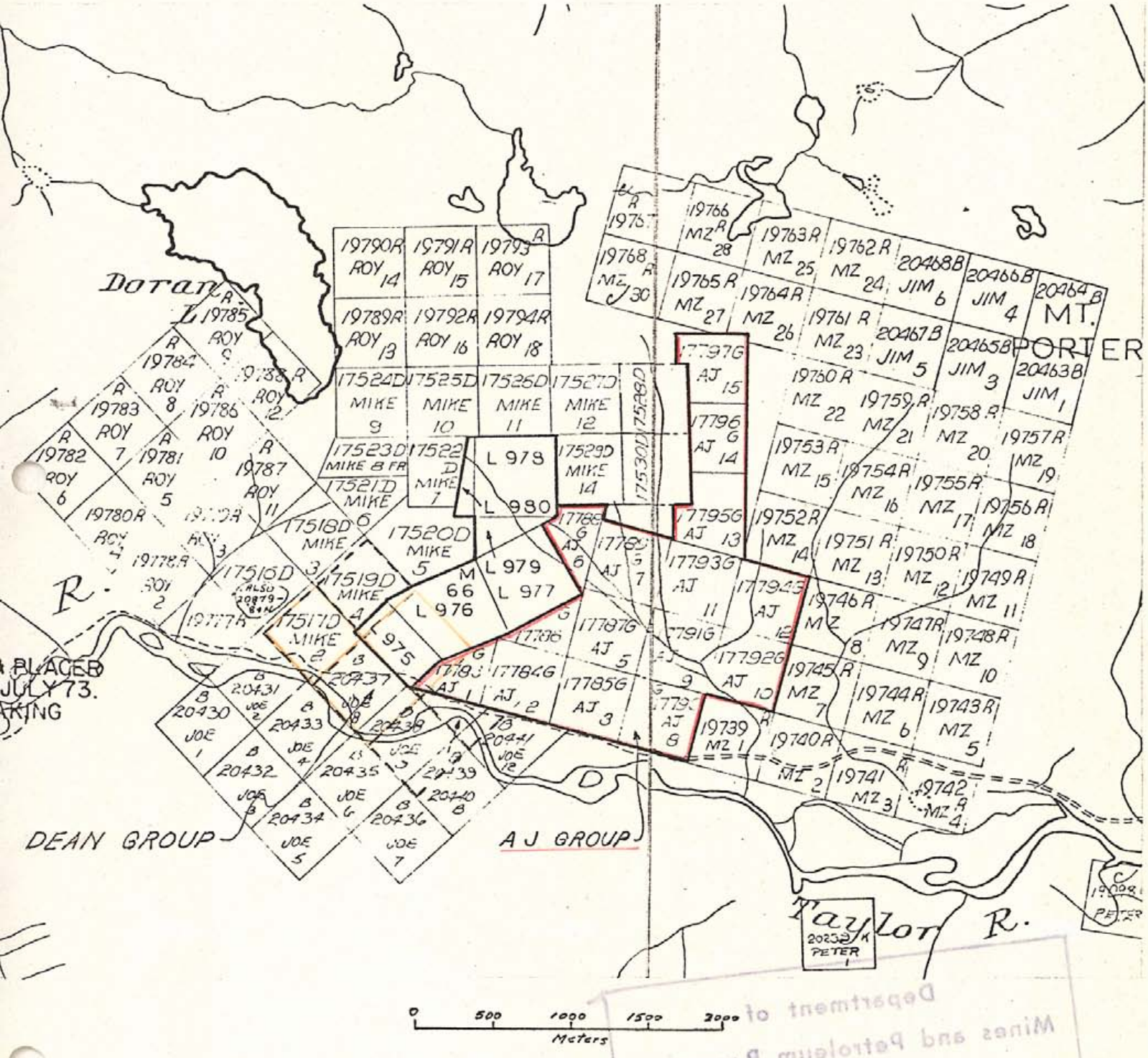


LOCATION MAP

AJ CLAIMS

SPROAT LAKE AREA, VANCOUVER ISLAND

ALBERNI M. D.



CLAIM MAP

AJ CLAIMS

The property is readily accessible via 37 kilometers of paved highway No. 4 west from Port Alberni, which in turn is connected to Nanaimo and the main Island Highway via excellent paved roads.

Locally, numerous good logging roads provide access throughout the claims area.

CLAIMS AND TITLE

The property consists of 15 claims which are described as follows:

Claim Name	Record Numbers	Expiry Date
AJ No. 1-15	17783-17797 inclusive	June 3, 1976

These claims are owned by Lou-Mex Mines Limited and held by Highland Mercury Mines Limited under an option agreement, dated May 14, 1974.

No AJ claim posts were seen during the current geological mapping.

HISTORY

The adjoining Morning and Apex Groups, now a mineral lease No. 66, have been intermittently explored ever since gold bearing veins were first discovered in 1899. Work included: surface hand trenching, 107 meters of drifting in one adit, 3 meters of drifting in each of several other adits and diamond drilling. Underground drifting in the long adit is presently in progress.

There is no record or evidence of any similar activity on the ground now covered by the AJ claims. It has been staked several times as evidenced by old claim posts encountered during the 1976 mapping program but no old workings were recognized.

TOPOGRAPHY

The property lies on the northern side of the Sproat Lake - Taylor River valley which is characterized by stepped terrain consisting of steep bluffs and benches, out of the relatively narrow flat valley floor. The claims area is almost completely logged giving it a very barren appearance and accentuating the rough terrain.

The southwestern part of the property is essentially barren rock outcrop which forms a series of steep bluffs and cliffs. These rise continuously from the valley floor at an elevation of 45 meters to over 600 meters above sea level, at which point the cliffs grade into rounded knolls. Areas between bluffs and cliffs are talus slopes composed of rubble of all sizes grading from small to huge blocks three or more meters in largest dimension. Benches are also covered by coarse talus. This part of the property has some areas which are inaccessible to anyone except a skilled mountaineer.

The southeastern part of the property is relatively flat consisting of an irregular bench which terminates along its southern margin in a series of steep bluffs, beneath which is the flat Taylor River valley.

The remainder of the property is steep mostly overburden-covered terrain, the average slope of which is 35 degrees.

FIELD PROGRAM - 1976

Highland Mercury Mines Limited contracted McElhanney Surveying in 1974 to lay out a number of accurate survey hubs on mineral lots Nos. 975 and 976. Several of these hubs were used as reference points for mapping control on the AJ claims.

From April 10 - 27, 1976 the writer carried out a program of geological mapping and prospecting on the AJ claim group. To facilitate control for mapping survey points were set along the main logging roads which crossed the property at convenient locations. In several areas it was necessary to traverse between roads. Highway No. 4 was incorporated into the survey since it follows the southern limit of the claims and also has an accurate control hub nearby.

The AJ control survey was carried out using a Brunton Compass and a "Topochaix" - lost thread measuring device. At all stations both front and back sight bearings were recorded to check for local magnetic declinations. Adjustments were made where necessary. Slope angles were measured for each course using a Suunto clinometer so that all lengths could be corrected to horizontal distance. Elevations for each station were taken using a Lufft pocket altimeter.

Geological mapping, on a scale of one inch equals 300 feet (1 cm = 36 meters) was done using the above mentioned control survey points for reference. Outcrops were tied to this survey by either compass and Topochaix, compass and pace, compass and altimeter, or by compass triangulation. A variety of methods had to be used because of the severe terrain, and/or distance from a control point.

GEOLOGY

A. General Geology

The AJ property is underlain by the Karmutsen formation which is one of the thickest and most widespread volcanic sequences on Vancouver Island. Muller (1968) describes this Upper Triassic (or older) formation as composed primarily of basalt which occurs as pillows, pillow breccias and massive, bedded flows. Minor tuffs and limestone beds are also present within the formation.

The Karmutsen formation is intruded by middle to early Late Jurassic Island Intrusions. These granitic rocks have an areal extent in the Alberni map-area second only to the Karmutsen Formation. Batholithic bodies of these intrusions are shown by Muller (1968) to be a few miles northwest of the AJ claims. He also shows faulted sections of the intrusives on or very near the claims.

Muller (1968) shows many faults within the general area of the property, one of which trends west-northwest and is followed by Taylor River into Sproat Lake. A second one is shown as striking northwesterly, passing near Doran Lake and through the AJ claims area.

B. Local Geology

Geological mapping of the AJ claims showed that almost the entire area is underlain by a monotonous sequence of pillow lavas cut by a scattering of narrow dioritic dykes. (See Map 92F6E-1) The pillow lavas are overlain by flow breccias with some included tuff beds. This change occurs at higher elevations in the northeast part of the mapped area. Unfortunately, this contact area occurs where outcrops are sparse. It also coincided with the snow line at the time of mapping.

The basalt pillow lavas show little variation throughout the area. The pillows are commonly dark, dense, fine grained basalt but in places show an amygdaloidal texture due to the presence of quartz and chloritized mafic amygdules.

The pillows are usually large ellipsoids 1 - 2 meters long by 0.25 - 1.0 meters wide. Over most of the area the contacts between the pillows are marked by an iron stained reaction rim 5mm - 25mm wide.

These reaction rims are now accentuated by the recent burning of logging slash which turned the surface of the pillows a light orange-brown and the rims a very dark brown. Quartz and epidote filled many of the open spaces between pillows with the result that many irregular masses of these minerals are seen on most outcrops.

Come sections of the pillow lavas show neither obvious reaction rims nor quartz-epidote masses. In these areas spherical fractures with a thin coating of hematite are the only indications of pillows.

Flow breccias, seen only in the northeastern part of the area mapped, are characterized by angular fragments of light green to brown feldspar prophyry 5-15 cm or larger in diameter in a dark grey matrix of finely crushed porphyry. Only on some weakly weathered surfaces is this fragmental texture obvious; otherwise this rock unit looks like a porphyry.

Tuff beds were seen in only one area within the above mentioned breccias. They were finely bedded, light green, with many small rounded feldspar grains in a chloritic groundmass.

Numerous dykes 1.5 - 2.5 meters wide occur on the property, most of which follow the northwest fracture direction. These dykes vary from fresh diorite to dark, altered hybrid diorite to altered andesite porphyry. It is common to find several of these dykes closely spaced and parallel. Since these dykes are all very similar except for the degree of alteration they have all been conveniently classes as diorite.

The entire area was strongly shattered with the three most prominent fracture sets striking northwest, northeast and due east.

All have near vertical dips. There are numerous variations in strike of these fractures however. The present rugged topography is the result of vertical faults and gently dipping fractures.

Quartz-epidote veins are widespread. Within some fault zones they attain widths up to 15 cm while in fractures they vary from 1-5mm.

No significant mineralization was seen. Minor pyrite, pyrrhotite, and magnetite are disseminated throughout the volcanics. Trace amounts of chalcopyrite occur in the quartz-epidote masses that fill the open spaces between some of the pillows.

CONCLUSION

No mineralized quartz veins similar to those now being explored on the Morning and Apex groups were found during the geological mapping and prospecting of the AJ claims.

In addition no other mineral occurrences were found in this survey.

RECOMMENDATION

It is recommended that no further work be done on the AJ claims.

Vancouver, B. C.
May 5, 1976

Harold M. Jones, P.Eng.

REFERENCES

1. Muller, J.E. and Carson, D.J.T. - Geology and Mineral Deposits of Alberni Map-Area, British Columbia (92F), Paper 68-50

2. Trenholme, L.S. - Summary Report, Taylor River Gold Prospect, private company report

APPENDIX I

SUMMARY OF COSTS

Wages	
H. M. Jones - Consulting Geologist 17 days @ $150/day	$2,550.00
Room and Board	
Motel, including phone - 16 days	135.43
Meals - 17 days	145.41
Vehicle	
3/4 ton pick-up truck @ $70/week plus $12/extra days and 12¢/mile less 20%	284.53
gas, oil, maintainance	72.27
ferry - 2 trips	13.00
Report Preparation	250.00
Map Preparation.....including prints, typing, etc	175.00
	$3,625.64

Harold M. Jones

APPENDIX II

STATEMENT OF QUALIFICATIONS

I, Harold M. Jones, of the City of Vancouver, British Columbia, do hereby certify that:

1. I am a Consulting Engineer.
2. I am a graduate of the University of British Columbia in Geological Engineering, 1956
3. I am a registered Professional Engineer of the Province of British Columbia and also a member of the Canadian Institute of Mining and Metallurgy.
4. I have practiced my profession continuously since 1956 in mining exploration in British Columbia, Yukon Territory, Alaska, Arizona and Australia.
5. I worked continuously on the AJ property from April 10th to 27th, 1976 inclusive carrying out geological mapping and prospecting.
6. I have not received, nor do I expect to receive any interest, direct or indirect, in the AJ claims or Highland Mercury Mines Limited.

Dated at Vancouver, B. C. this 5th day of May, 1976

Harold M. Jones

Harold M. Jones, P.Eng.

5000 E

10,000 E

15,000 E

10,000 N

5000 N

L. 980 Fr.

L. 978

L. 979 Fr.

L. 977

L. 976

L. 975

AJ 15

AJ 14

AJ 13

AJ 12

AJ 11

AJ 10

AJ 9

AJ 8

AJ 7

AJ 6

AJ 5

AJ 4

AJ 3

AJ 2

AJ 1

DEAN 1

DEAN 3

DEAN 4

Snow

To Port Alberni

N

LEGEND

KARMUTSEN FORMATION

A BASALT PILLOW LAVA

B FLOW BRECCIA, TUFFS, AMYGDALOIDAL FLOWS

YOUNGER INTRUSIONS

DIORITE DYKE

ANDESITE DYKE

SYMBOLS

LIMIT OF OUTCROP

TOP OF CLIFF

BASE OF CLIFF

FRACTURES - only principal ones shown

FLOWS and BEDDING

FAULTS

STREAM

DRY STREAM

ROAD - surveyed, inferred

SURVEY STATION - Jones

" - McElhanney

CLAIM BOUNDARY - all inferred

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 5858 MAP 3

M-3

5858

G.A. NOEL & ASSOCIATES
CONSULTING GEOLOGISTS

GEOLOGY MAP
AJ CLAIMS
SPROAT LAKE AREA, VANCOUVER ISLAND
ALBERNI M.D.

DRAWN BY	H.M.J.	DATE	MAY 7, 1976.	SCALE	1" = 200'
TRACED BY		DATE			
REVISED	DATE	REVISED	DATE	DRAWING No.	92 F - 6E - 1