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REPORT ON THE
ERICKSEN-ASHBY PROPERTY,
ATLIN MINING DISTRICT, B.C.

BY

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194 Yale Avenue
Winnipeg 9, Manitoba
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INTRODUCTION

Location

The property is located in the Atlin Mining District of British Columbia, about 40 miles east of Juneau, Alaska. The claim group covers the southern portion of Ericksen Mountain just east of the junction of the Tulsequah and Taku Rivers.

Access

For the purposes of examination, the property was reached from Winnipeg via commercial jet airliner to Juneau via Vancouver and Seattle. From Juneau, access was by helicopter via the Gastineau Channel and then up the Taku River to Ericksen Mountain. The trip in, flown at very low altitude because of poor visibility, took one hour. The trip out, in clear weather, took forty minutes directly over the mountain.

Wheel- or float-equipped aircraft may land at Tulsequah, the former on a strip used by Polaris-Taku mine prior to its suspending operations---the latter on either the Tulsequah or Taku Rivers at or downstream from the junction.

The property is also accessible by boat. These may be arranged for in Juneau but arrangements should be made well ahead of time.

In spite of the fact that the International Boundary is a completely uninhabited zone, full formalities must be adhered to in Juneau. Livingston Copters, Inc., in Juneau, have had a great deal of experience in this matter and should be consulted for full details and arrangements.

The only economical route for bulk supplies is by boat to the International Boundary followed by a six mile helicopter lift to the campsite on Ericksen Mountain.

Topography

The terrain is extremely rugged with mountains rising sharply from the alluvial plains of the rivers. The plains lie at an elevation of about 500' above sea level. Most of the mountains, including Ericksen Mountain rise to elevations of from five to six thousand feet above sea level. Occasional peaks reach 8000'. The region is maturely dissected with practically no level land except on the quite narrow river plains.

Glaciers occur in many of the valleys. Scouring of valley walls, to the familiar "U" shape, suggests a maximum depth of ice of about 3500' (i.e. elevation of top of ice above sea level). Above this elevation there appears to have been little or no glaciation in parts of the terrain and any float will either be close to its bedrock origin or, perhaps, directly down slope.

Resources.

All manner of timber, from large saw logs to mine lagging etc., is available in the immediate area. The showings are above timberline (some just at the edge) but claims have been staked near the river plains to provide for timber rights and, also, townsite location. At a previous operation in the near vicinity, a sawmill provided a wide variety of construction materials at a net cost of \$35 per thousand.

While previous operations have used Diesel power, several good sites for small power projects occur in the area. Ericksen Creek has about a 30' vertical drop where it enters the Taku River. East of Ericksen Creek there is a falls with a vertical drop of about 1000'.

Meltwater from snow and ice is the main source of water coming down to the rivers so that power generation would depend on annual total precipitation and annual temperature range. Standby Diesel power would be essential in the event of below normal precipitation.

Property

The property is composed of a group of 24 claims as follows:

SIL	1 to 21 Inclusive
SIL	22 ---- Townsite claim
SIL	23 ---- Timber claim
APEX5.	

Staking in the area is one line staking carried out by witnessing at river level. Due to the rugged terrain, all the posts for a line of claims are cut, marked and placed at river bank level.

An examination of the records shows that the claims are all in good standing until July 15th, 1964.

Previous work.

The claims were first staked in 1929 and underwent initial surface prospecting. All materials were back-packed up the trail from the river near Ericksen Creek and a camp established on a slight ledge at about 2500'. Some hand-steel work was done with an adit being squared

off on what is called the Main Showing at an elevation of 4500'. Following this initial work, annual assessment work was carried out from 1930 to 1949.

In 1950, the property was optioned to Consolidated Mining and Smelting Company. The two main showings were sampled and the decision reached to try a diamond drill hole from the valley of Ericksen Creek. At the time, the company was producing from both the Tulsequah Chief and Big Bull Mines. At the time, helicopters had not attained the widespread use they have today so that a road had to be cut and the drill and supplies moved in with horses. The crew started for the drill site about April 1st with drilling getting underway early in August. The hole was drilled to a depth of 1004' at which time a rock avalanche wiped out the drill and site. The hole was abandoned and the option dropped.

From 1951 to 1963, annual assessment work has been carried out.

Other mines which have produced in the immediate area are the Polaris-Taku, the Tulsequah Chief and the Big Bull. B. C. Department of Mines statistical records show the following production from the Tulsequah Chief and Big Bull mines over the period, 1951 to 1957:-

<u>TONS</u>	<u>OUNCES</u>			<u>POUNDS</u>	
	Gold	Silver	Copper	Lead	Zinc
1,029,089	94,254	3,400,773	27,207,864	29,966,859	124,692,862
<u>Average</u>	0.081	3.3	1.32%	1.46%	6.05%

GENERAL GEOLOGY

The area is underlain by a series of interstratified volcanic and sedimentary rocks of Permian age. The volcanic rocks are mainly andesitic flows which exhibit typical brecciated patterns.

The sedimentary rocks on the property are of two main kinds. There is a well-defined bed of white to creamy grey crystalline limestone which appears to be the most important host rock for the mineralization. Just to the west of the crystalline limestone is a coarse-grained, fossil-bearing bed containing occasional complete shells and fragments of a few corals and crinoid stems. This bed is about 50' wide and has already served as a valuable marker in determining the displacement on faults.

To the west of the fossil bed a series of somewhat thinner bedded rocks occurs. These are composed of alternate beds of grey, fine-grained limestone and cream to white chert.

During a helicopter reconnaissance of the east side of Ericksen Creek a sill of light coloured intrusive rock was noted. From this sill a dyke of similar material could be seen cutting out across the bedding of the sedimentary-volcanic complex. On the No. 1 zone, on the face of an inaccessible cliff, a hard weathering dyke could be seen cutting across a zone of gossan. The dyke, in turn, was offset by the gossan zone.

STRUCTURAL GEOLOGY

Folding.

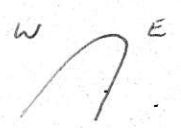
Observations on both drag folding and fracture cleavage show that the strata on Ericksen Mountain are on the ^{west} east limb of an anticlinal structure which exhibits some evidence of overturning. Dips vary from 75° west to vertical except on minor drag folds where dips may be as low as 50° over short distances.

One characteristic, of all the mineralized zones that were observed, is that the bedding shows a considerable departure in both strike and dip from the major regional trend. It is necessary to conclude here that minor folds on the major anticlinal limb will probably have considerable bearing on the attitude and continuity of the mineralized zones.

Faulting.

There is a strong suggestion that both the Tulsequah and Taku Rivers have etched out major faults. The Tulsequah valley runs about N 20° W and the Taku valley about N 30° E. On the property, actual surfaces of movement (with offset marker beds) were found to represent these two directions. For purposes of this report, the faults paralleling the Tulsequah valley will be called Tulsequah-type faults and the faults paralleling the Taku valley will be called Taku-type faults.

On the northwesterly Tulsequah-type faults, one observation showed the displacement was northeast wall to the south for a distance of about 20'. On the northeasterly Taku-type faults, two observations showed a step like displacement with the northwest wall moving northeast. In one case the displacement was about eighteen inches (measured on a hard chert marker). In the other case the displacement was about 150' as measured on the displacement of the thin bedded member of the series and also on the fossil-bearing bed.



ECONOMIC GEOLOGY

General

Mineral production from the area has been of two major types. First, the arsenical gold ores of the Polaris Taku with very minor associated values in base metals and, second, base metal ores with high silver values, important values in lead and zinc and minor gold values.

As indicated on the map accompanying this report, three distinct zones of mineralization have been established. They have been numbered, from east to west, as the No. 1 Zone, the No. 2 Zone, and the No. 3 Zone. In general, all three zones are composed of quite extensive mineralization by fine grained pyrite. In these zones of pyrite mineralization occur masses of varying length of nearly massive galena with which is associated, varying amounts of sphalerite.

No. 1 Zone.

This zone was not actually examined on the ground but was viewed from a rock cliff which faces it. Ropes and climbing equipment would be necessary to reach the showing though float could be obtained from talus slides below it. During the helicopter reconnaissance it was seen to continue over the sharp, ridge-like nose of Ericksen Mountain and to parallel the general trend of the No. 2 Zone which occurs on the crest of the ridge. While the zone was characterized chiefly by the light brown gossan which indicates pyrite, several lenses of dark, reddish brown gossan, which indicates galena and sphalerite in the zones actually studied, were noted.

From records made available to me and from estimating data as well as possible in the rugged terrain, I believe it is possible that the diamond drill hole drilled by Consolidated Mining and Smelting was just entering the No. 1 Zone. Limestone, slightly mineralized by pyrite and pyrrhotite, was reported to have made up the last core just before the drill site was destroyed.

No. 2 Zone.

This zone lies approximately 800' west of the No. 1 Zone and is the zone which has received most attention to date. The prospectors who worked the showing have divided it into three main occurrences as follows:-

Glory Hole showing --- occurs on the crest of the ridge of Ericksen Mountain at elevation 4000. =4400

Main Showing --- occurs down the ridge on the northwest face of Ericksen Mountain at elevation 3500. =3900

Cliff showing --- occurs on a steep cliff face on the northwest face of Ericksen Mountain at elevation 3000. =3400

In addition to the above zones, at least two rock strippings --- in which short hand steel holes were used --- were found farther down the slope, just within the timber, at elevation 2500.

In order to systematize work and discussion on the showings it has been decided to give new designations to the various showings and these are indicated on the map which accompanies this report. The Glory Hole (which name could suggest that some actual mining had been done) becomes No. 1 Pit -- No. 2 Zone. The Main Showing becomes No. 2 Pit -- No. 2 Zone. The showings down near timberline become Pits No. 3, 4 and 5.

The cliff showing, as a result of the establishment of marker beds, becomes a showing on the No. 3 Zone.

All of the showings on the No. 2 Zone have the general characteristics of the deposits as outlined above. The No. 2 Pit, the only one accessible at the time of my examination, shows 34' of massive sulphide on the steep cliff face where the adit was collared. It was possible to sample 15' of this (chip samples across the face) without special rigging. The results of this sampling are shown in Appendix 1.

The mineralized showings of the No. 2 Zone occur in close proximity to the main crystalline limestone member and parallel the Tulsequah-type faults. In turn, as indicated on the map accompanying this report, the veins are offset by faults of the Taku System.

No. 3 Zone.

This zone which was previously thought to be a part of the No. 2 Zone is now seen to be an entirely separate zone. A grab sample was obtained from a small outcrop on a steep cliff face just above the edge of a large talus slide. About ten feet of snow still covered the main accessible area so that full data on the occurrence could not be obtained.

During the helicopter reconnaissance, the No. 3 Zone was seen to extend right to the top of Ericksen Mountain and disappear under the heavy snow remaining on the crest. It is estimated that the No. 2 Zone lies somewhere between 300' and 500' west of the No. 2 Zone though distances are difficult to estimate and chaining could not be done without special rigging.

The No. 3 Zone lies on a Tulsequah-type fissure and is also accompanied by a crystalline limestone member. High up on the slope, the vein is seen to be offset by a fault which strikes about ten degrees off the Tulsequah direction.

CONCLUSIONS

1. Masses of galena and sphalerite, which have been proved to have high values in silver, occur in three well-defined zones over a horizontal distance of approximately 4500' and over a vertical difference of elevation of 1500'. The latter is the difference in elevation between the upper and lower showings on the No. 2 Zone. (Note: In this connection, it is important to note that during the helicopter reconnaissance, two gossans were noted on steep cliffs which rise sharply from the Taku River. One gossan is on strike of the No. 2 Zone and another -- on a cliff face east of the cabin at river level -- is on strike of the No. 1 Zone).
2. The Ericksen Mountain showing is the only known mineralized zone in the area which has not received extensive exploration by adits and drilling. There can be no question that the reason for the lack of attention has been the limited accessibility.
3. The showings warrant further exploration which must be done by carefully engineered planning to keep costs, in successive phases, at a minimum.

RECOMMENDATIONS

1. Topographic and geologic mapping to a scale of 1" to 200' to provide as complete a map as possible for planning and estimating exploration work. This will involve both direct stadia measurements on accessible points and triangulation from an established base line to tie in points which are inaccessible but visible from the lower bench of Ericksen Mountain.
2. Tunneling from near the only satisfactory campsite which is located about 400' west of the No. 2 Zone where it shows in the cliff face. While this work cannot be planned efficiently until the map is available, the reasons for this approach can be listed. They are as follows:-
 1. Drill crews and equipment will be under cover and protected from rock falls (occurring during heavy rains) and slides similar to the one which destroyed the Consolidated Mining and Smelting setup.
 2. Holes can be planned on the basis of geological reasoning instead of having to drill them from a certain place just because the drill can be set up.

3. An underground type diamond drill can be used instead of the much more expensive surface equipment. Note:- It is reported that the Consolidated hole was drilled at considerable cost including fixed costs such as company engineering etc., In Vancouver I obtained what amounts to a bid figure for the underground machine of \$6 per foot.

3. In what must be considered a tentative layout, until the map is ready, I would suggest that the tunnel start in the No. 3 Zone showing on the cliff face where abundant talus is available for leveling to a compressor site. The tunnel line should aim, as closely as possible, for about the centre of the No. 2 Pit -- No. 2 Zone. From this tunnel location it would be possible to drill holes to explore both the No. 2 Zone and the No. 3 Zone.

4. First holes drilled should be up-holes from the face of the tunnel to cut the No. 2 Zone at a point about 100' below the surface outcrop. If possible, the first holes should aim to cut the zone no more than 50' below the surface but this cannot be determined until the map is completed.

The reason for as short a stepout as possible from the surface showings is that the influence of plunge from dragfolding has not been determined.

5. Contingent on preliminary drilling, other holes would test the structure down dip by first flattening the up-holes and then, finally, going to down-holes.

ESTIMATES OF EXPENDITURES

It is believed that the map can be produced by the end of the current field season -- about September 1st. Coincident with topographic and geologic interpretations, cost studies can be made during the winter in preparation for a start on the exploration programme in the spring. Until these cost studies have been completed, the following must be regarded as tentative.

1963

Staff transportation to area	\$ 800.00
Wages 2 men-3 months @ \$500/mo.	3000.00
Board and camp supplies	1100.00
Survey equipment	1000.00
Helicopter service (24 hrs. @ \$130)	<u>3120.00</u>
	<u>\$ 9020.00</u>

1964

Compilation and planning	\$ 1000.00
Helicopter service in camp setup $-\frac{1}{2}$ month @ \$9000/mo.	4500.00
Supervision -- 2 men, \$1500/mo. for 3 months	4500.00
Supervision board -- 2 @ \$6 per day for 3 months	1080.00
Tunneling -- 200' @ \$100 per foot	20000.00
Drilling -- 3000 feet @ \$6	18000.00
Assaying	2500.00
Supervision transportation in and out ----- 2 men @ \$425	<u>850.00</u>
	<u>\$52430.00</u>

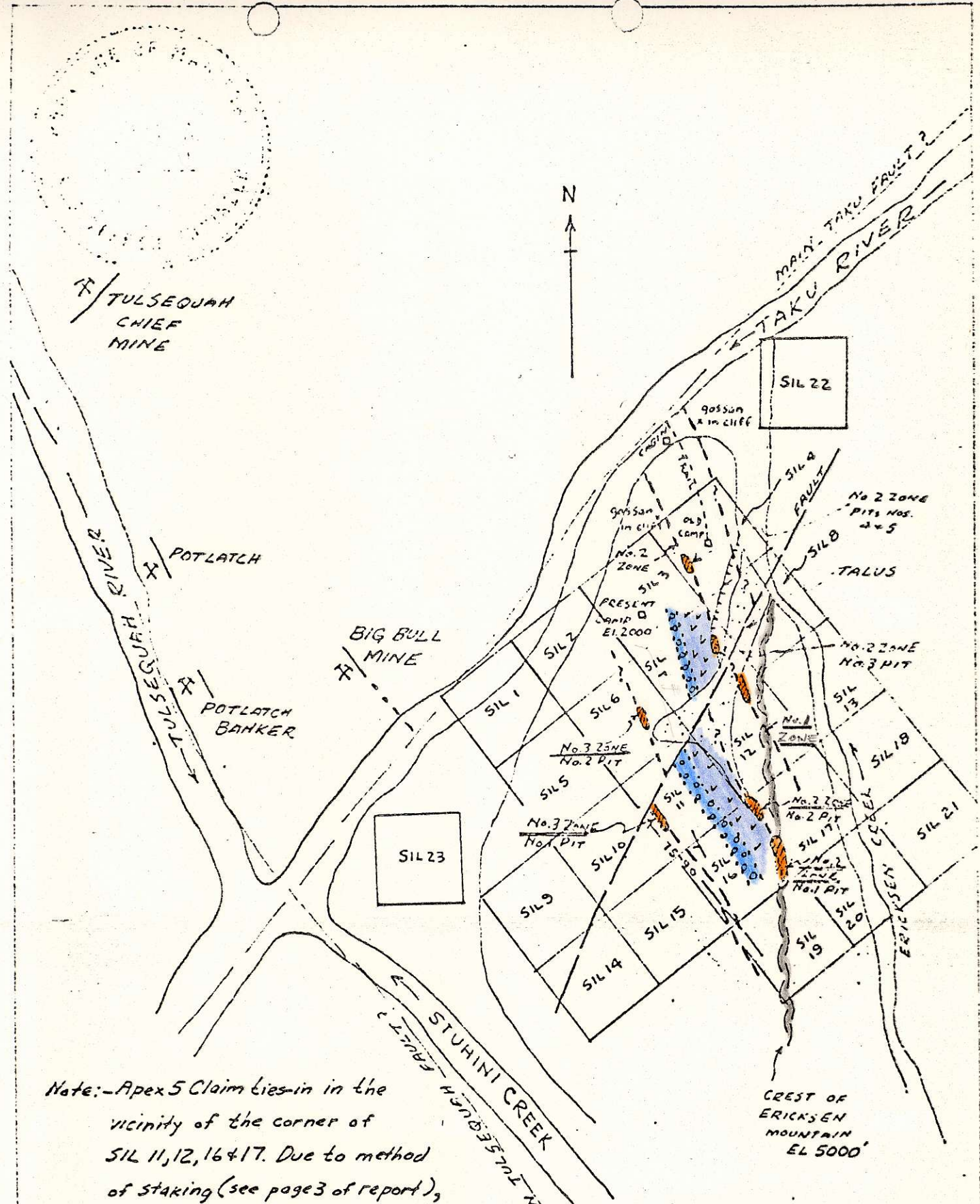
In this tentative stage of planning and in
the interests of realism it is believed
necessary to add to the above total a
30% contingency protection thus

15729.00
\$ 68159.00

Signed _____
George A. Russell, P.Eng.

Dated at 194 Yale Avenue,
Winnipeg 9, Manitoba
on July 8th, 1963

See following pages for map,
appendix and certificate.



Note: - Apex 5 Claim lies in in the vicinity of the corner of SIL 11, 12, 16 & 17. Due to method of staking (see page 3 of report), exact location is not known.

- LEGEND.
- MINERALIZED ZONE -
 - FOSSIL BED
 - CRYSTALLINE LIMESTONE
 - FAULT

ERICKSEN-ASHBY PROPERTY
 SKETCH MAP OF SHOWINGS
 SCALE 1" = approx. 2200'

To accompany my report dated
 July 8, 1963
 Signed *[Signature]* P. ENG.

APPENDIX

Sample notations for samples taken during the period of examination:

Sample No. 1 --- Chip sample across 15' at adit level, No. 2 Pit ----
No. 2 Zone.

Au oz. ton	Ag oz/ton	Pb %	Zn %
<u>.02</u>	<u>35.1</u>	<u>20.24</u>	<u>23.23</u>

Sample No. 2 --- Snow slope below No. 3 Zone on cliff -- massive fine-grained pyrite plus disseminated ----- talus float.

Au oz./ton	Ag oz./ton
<u>Tr</u>	<u>3.2</u>

Sample No. 3 --- No. 3 Zone -- Outcrop surrounded by snow below cliff --
check only for silver mineralization.

Au oz./ton	Ag oz./ton	Pb %	Zn %
<u>.02</u>	<u>12.0</u>	<u>2.89</u>	<u>0.10</u>

Sample No. 4 --- Old camp showing -- uphill from showing Bacon and
I saw --- suspected arsenopyrite mineralization --
galena on slips -- test for Au Ag

Au oz./ton	Ag oz./ton
<u> </u>	<u> </u>

Sample No. 5 --- Sphalerite sample to be checked for Ag ---

Au oz./ton	Ag oz./ton	Pb %	Zn %
<u>.02</u>	<u>1.6</u>	<u>0.69</u>	<u>8.56</u>

CERTIFICATE

In regard to my report on the Ericksen-Ashby Property, Atlin Mining Division, Northern British Columbia, I, George Alfred Russell of 194 Yale Avenue, Winnipeg 9, Manitoba do hereby certify as follows:-

1. I am a graduate of the Minnesota School of Mines, University of Minnesota, Minneapolis, Minnesota with the Degree of Engineer of Mines (in Geology) -- 1934, and, further, that I am a graduate of Queen's University, Kingston, Ontario with the Degree of Master of Science in Geology and Mineralogy -- 1935.
2. I am a member in good standing of the Association of Professional Engineers of the Province of Manitoba and am a member of the Board of Examiners of that group.
3. I have applied for and been granted certification to practice by the Association of Professional Engineers of the Province of British Columbia for the work covered by this report.
4. At present I am an Associate Professor of Geology at the University of Manitoba and Chairman of the Committee on Geological Engineering of that school.
5. That since graduation in 1935 I have been continuously engaged in the practice of my profession --- fulltime for various companies in the United States and Canada for the first twelve years and during summer holidays from teaching for the last sixteen years.
6. That this report is based on a five day examination of the showings, geology etc. --- June 28, 29, 30, July 1 and 2, 1963.
7. That I have no interest, either directly or indirectly, nor do I expect to receive, either directly or indirectly, any interest in the properties covered by this report or in the securities of any company which may be formed on the property.

Respectfully submitted,

George Alfred Russell, P.Eng.

Dated at 194 Yale Avenue, Winnipeg 9,
Manitoba this eighth day of July, 1963