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CITATION EXPLORATIONS LTD. (N.P.L.)

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MINERAL EXPLORATION - DEVELOPMENT

2767 CRESCENTVIEW DRIVE  
NORTH VANCOUVER, B.C.

March 1967

Mr. K. Gordon, President  
Citation Explorations Ltd.  
#720 - 890 West Pender Street  
Vancouver 1, B.C.

REPORT ON  
BRITIAN RIVER PROPERTIES, B.C.

INTRODUCTION

It is the contention of this report that Britian River properties have never been adequately prospected and explored. This opinion is based on re-search of all pertinent data published plus several private reports.

The writer has not been on the property although in the fall of 1964 an attempt to reach the showings by helicopter was foiled by unseasonable early snow.

PROPERTY

The property acquired for exploration by Citation Explorations Ltd. consists of 23 claims held by option agreement plus approximately 50 claims staked by Citation to provide complete protection of possible likely extensions of various zones. A list of these claims with particulars will accompany this report or the agreement.

LOCATION AND TRANSPORTATION

The property is located about 2 to 3 miles west of the mouth of Britian River which dumps into Jervis Inlet which provides tide water transportation. Old logging roads exist in the area west of Britian River but these are im-possible at present. This general area is quite steep with numerous nearly vertical rock bluffs. While transportation will require helicopter service initially, it would not be regarded as a serious problem if exploration should prove successful.

The accompanying 4 mile scale map will illustrate location with respect to the town of Powell River.

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## HISTORY

This mineral zone was probably discovered prior to 1920. In 1924 Mr. Henry Lee examined the showings on behalf of American Smelting and Refining Company and his remarks and assays will appear under the section "Exploration". As far as can be determined, very little, if any, further work was done on the property.

In 1949, because of reported high nickel values in the pyrrhotite of this zone, an option was taken by International Nickel Company of Canada. As part of their examination they sampled the old showings and results are reported following. The nickel possibilities were found to be of no interest to International and since this was their principal interest they dropped the options.

In 1950 Bralorne Gold Mines investigated a small high grade gold stringer which occurs on the property. Nothing of interest was found.

In 1953 the writer, acting for American Smelting and Refining Company, located old files of Mr. Henry Lee. The data in these files relating to the Britian River mineralization was considered quite encouraging and W. Pfeffer, Geologist, was sent to make further examination. His report was considered encouraging and his remarks appear under "Exploration". At that time the property was under option and not available for a deal. It is doubtful that any worthwhile work has been done on the property in recent years.

## GEOLOGY

The most comprehensive references to geology are contained in the Minister of Mines Publications.

- (a) Minister of Mines Annual Report for 1930.
- (b) B.C. Dept. of Mines Bulletin No. 39, "Geology of Lower Jervis Inlet".
- (c) Other information is available from private reports by Henry Lee and W.H. Pfeffer.

From the above sources of information it appears that the Britian River deposits occur near the east margin of a schist, quartzite, greenstone, belt about one mile in width. This belt structurally trends northwest and is about one mile in width. It is completely flanked on each side by Coast Range granite complex.

According to available maps the better mineralization occurs near the east contact between the volcanic-sedimentary belt and the Coast Range granite. This mineralization occurs principally, if not entirely, in the volcanic-sedimentary rocks and consists of at least two massive bodies of mineralization containing zinc, copper, lead, gold and silver pyrrhotite.

Only a limited amount of rock exposure has been done on each of the above ore bodies and so far as may be learned at present the length, average width and depth of these ore bodies is completely unknown.

As for grade of the few assays available, there follows herewith an assay record set up on a comparative basis.

		Ozs <u>Au</u>	Ozs <u>Ag</u>	% <u>Cu</u>	% <u>Pb</u>	% <u>Zn</u>	% <u>Ni</u>
<u>UPPER SHOWING</u>							
1924	Henry Lee	5.0	.01	7.8	0.96	1.25	22.4
1949	International Nickel	4.0	.03	10.8	1.1	5.60	20.7
1949	International Nickel	5.4	.04	24.6	4.4	2.1	2.4
1953	Pfeffer	6.0	.03	19.0	4.65	1.2	3.4 nil
<u>MIDDLE SHOWING</u>							
1924	Henry Lee	2.0	.01	4.4	0.04	10.4	26.7
1924	Henry Lee	1.5	Tr.	0.2	0.28	0.2	4.8
1949	International Nickel	2.5	.10	3.4	0.80	0.3	4.4
1953	Pfeffer	Boulders Float large lower area	.02	4.8	Not Assayed	Tr.	10.0
1924	Henry Lee	2.0	Tr.	7.9	7.56	Tr.	5.6

The above samples are grouped so that samples from locations very close together may serve as checks.

Since this prospect has been turned down many times because of metal prices, and since metal prices and grades are co-functional, there is assembled here prices existing at the time of the various examinations and file memorandums.

		<u>Au</u> Per Oz	<u>Ag</u> Per Oz	<u>Cu</u> Per Pd	<u>Pb</u> Per Pd	<u>Zn</u> Per Pd
1924	Henry Lee Report	\$20.67	\$0.66	\$0.13	\$0.08	\$0.06
1939	Dirom File Memorandum	\$35.00	\$0.64	\$0.08	\$0.04	\$0.04
1949	International Nickel Reported Assays	\$35.00	\$0.71	\$0.19	\$0.15	\$0.12

		<u>Au</u> <u>Per Oz</u>	<u>Ag</u> <u>Per Oz</u>	<u>Cu</u> <u>Per Pd</u>	<u>Pb</u> <u>Per Pd</u>	<u>Zn</u> <u>Per Pd</u>
1953	Pfeffer Report	\$35.00	\$0.85	\$0.28	\$0.135	\$0.10
1958	Stevenson File Memo	\$35.00	\$0.89	\$0.25	\$0.12	\$0.10
1965 Jan.	Northern Miner	\$35.00 (\$38.00)	\$1.40	\$0.35	\$0.15	\$0.14

I think it is fair to conclude that increase in the price for these metals far exceeds the increase in the cost of recovering and selling them. There is always the question as to how metal prices will hold in the years to come, and in this connection perhaps a long term contract with floor and ceiling and escalation prices with Japan could be developed. Perhaps this is premature at this time, but if we should be successful in finding enough ore to justify operation, it would mean a capital outlay of at least \$10,000,000.

#### EXPLORATION

It is difficult to specify exact procedure for the next steps to test this property. Obviously thorough geologic mapping and prospecting must be done. At the same time diamond drilling should be carried out for the purpose of determining both vertical and horizontal extent of the known ore zones.

It is estimated that adequate examination of the known showings can be made at the end of July or early in August. On the basis of current information it is expected this will be followed immediately with drilling to test the length, width and depth of the ore bodies. It is expected that an x-ray machine adapted to E - X rods would be used for a start.

For a start the job would be serviced entirely by helicopter. The drill with gas and all heavy supplies and personnel would be hauled from Vancouver to Egnont and by water taxi to Britian River landing. From this point freight etc. would be moved to drill sites by helicopter.

#### CONCLUSIONS

It is concluded that Britian River holds unusually favorable possibilities for finding complex base and precious metal ores to support an economic operation.

Transportation and accessibility are difficult for the initial exploration but if such exploration is successful the transportation problem would

shrink to very favorable proportions since the property is within a few miles of Jervis Inlet and tide water transportation and smelters.

It is considered that this rates well as an exploration bet.

Sincerely,

*Arthur O. Hall*

Arthur O. Hall, P.Eng.

ESTIMATE OF COSTS FOR PROSPECTING AND EXPLORATION

Under present conditions an estimate of cost for this type of project is at best only a guess.

Initial examination	\$ 500.00
Transport to Egnont, drill, etc.	50.00
Water taxi to Britian River, drill, etc.	50.00
Helicopter to showings, drill, etc.	1,000.00
Drilling costs, all inclusive, assays, etc.	10,000.00
Helicopter periodic service	1,000.00
Contingency	<u>1,000.00</u>
	<u>\$13,600.00</u>

EXCERPTS FROM REPORTS BY H. LEE AND W. PFEFFER

INTRODUCTION

It appears desirable at this time to place on record the information which has stimulated our interest in the Britian River and adjacent areas. This information will be compiled in semi-chronological order.

1924

Henry Lee, as resident exploration engineer for American Smelting and Refining Company, had occasion to examine the Britian River showings in 1924. Many years later as resident engineer for the American Smelting and Refining Company, I reviewed Mr. Lee's files and considered the prospect of possible interest. At that time, however, the property was under option to a mining company.

Mr. Lee was regarded as a particularly competent exploration engineer, and he evidently found the property to be of some interest. Quotes from the legible parts of his notes and reports are as follows:

"Galena is unusual ore in this district and it is probable that copper will predominate in depth in the lower showings."

"Upper showings, only parts of which could be seen, is a good prospect that needs intelligent and systematic work."

"The various outcroppings have been shot into and left for some other showing without any effort being made to trace the ore along the strike, and the surface has not been trenched by crosscut or strike stripping."

"There may be other occurrences not yet found."

"Indications - if the lenses of ore are large enough and continuous enough to be mined economically - are for a large low grade operation as the mineralized zone is wide."

"In view of the difficulty of access and the expense of providing transportation to tidewater, I think the work outlined should be done before any purchase is considered."

"So far my impressions are that the ore is lensey, but the chances for continuous lenses are good."



1953

Under my direction on behalf of American Smelting and Refining, Mr. W. Pfeffer examined the Britian River showings in this belt and a copy of his report is on file at this office. Excerpts from his report are as follows:

1. Summary of Conclusions & Recommendations:

A preliminary examination was made of the Britian River claims. There is a one mile wide belt of sedimentary rocks that appears to have been favourable for the deposition of pyrrhotite, chalcopryrite, sphalerite and galena. With these minerals is associated minor gold and a fair amount of silver. Nickel and platinum are entirely absent.

To date only two mineral finds have been made that are of sufficient grade and width for an ore shoot. Their length and depth remains to be proven. Besides this several other smaller finds have been made of good grade but poor width. This indicates, however, that mineralization is wide-spread.

The present owners hope to prove up some of the known occurrences in length and width by further trenching and prospecting. If they are successful another examination of the property may be undertaken to determine if the occurrences are then of the dimension and grade to represent individual ore shoots. The next step would be to decide if a programme should be undertaken to find additional ore shoots within the favourable zone. A geophysical survey should be the easiest method for further exploration.

2. Exploration Possibilities:

The one mile belt of sedimentary rocks seems to have been favourable for mineralization and it should be a good area for further exploration. The massive pyrrhotite and other sulphides should lend themselves well to geophysical surveys (magnetometer and electrical methods) both in trying to extend the known finds and in detecting new mineral occurrences. The main obstacle to completing such a survey with ease is the rugged nature of the terrain.

3. Conclusions and Recommendations:

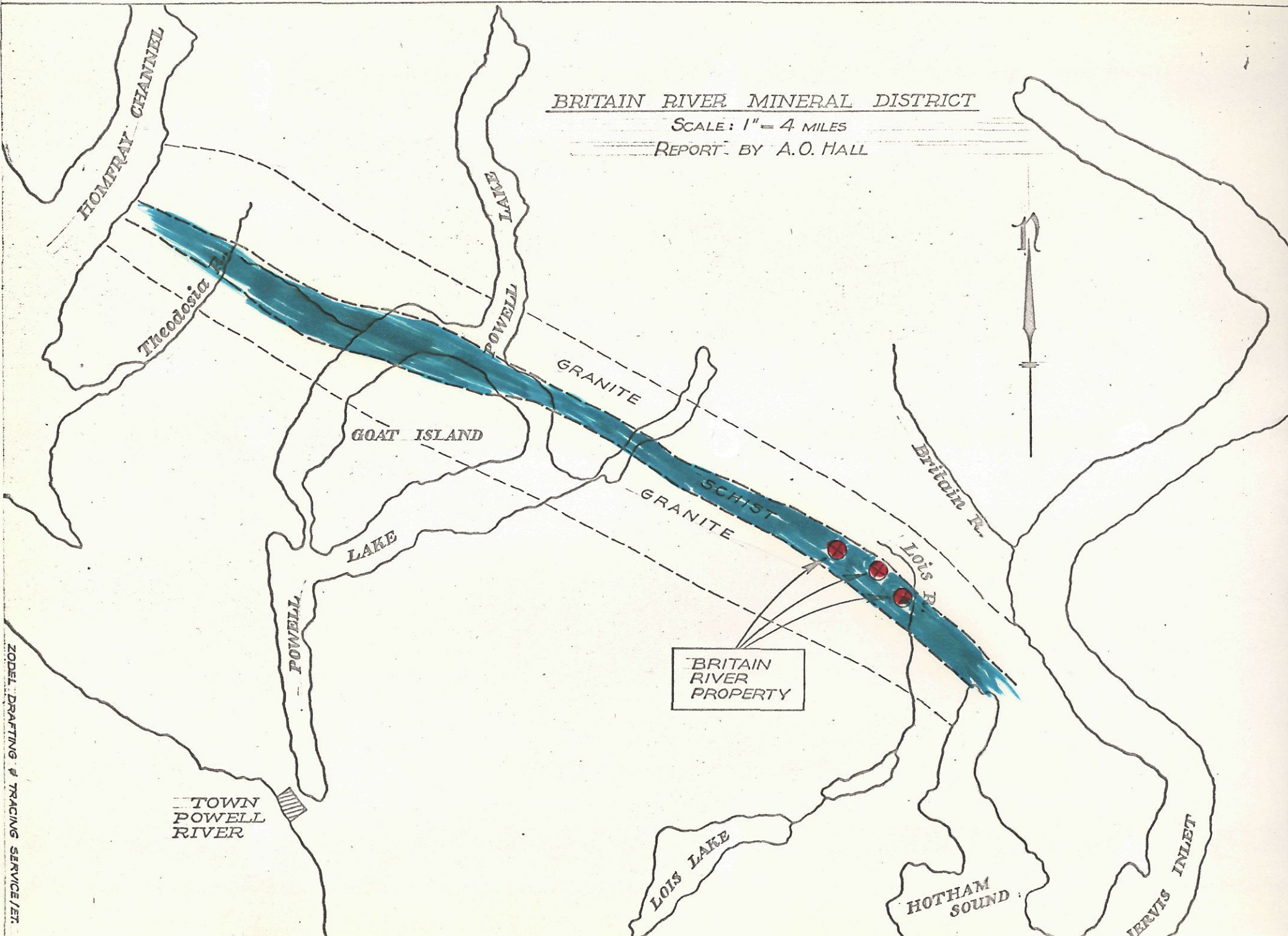
Several showings of fair grade have been found. The gold quartz veins examined by Bralorne are too small to be of interest to the company. The high grade silver-lead-zinc mineralization of the old Mt. Diadem Mine is too narrow and discontinuous to be of interest.

The only finds to date that might be of value are those on the Linda No. 3, 4 and 10 claims. The two main occurrences on the first two claims show a good grade and width, but they have not been proven up in length. The mineralization on the Linda No. 10 claim shows a good grade, but the widths appear to be small and the ore has not been proven in length.

BRITAIN RIVER MINERAL DISTRICT

SCALE: 1" = 4 MILES

REPORT BY A.O. HALL



ZODEL DRAFTING & TRACING SERVICE/ET.

CERTIFICATION

I, Arthur O. Hall, with business and residence address at 2767 Crescentview Drive, North Vancouver, British Columbia, do hereby certify that:

1. I am a Consulting Mining Engineer.
2. I am a graduate of Haileybury School of Mines.
3. I am a registered Professional Engineer in the Province of British Columbia and a member of A.I.M.E. and C.I.M.M.
4. I have been engaged in the business of mineral exploration for 26 years.
5. I have not received nor do I expect to receive any interest, directly or indirectly, in the properties or securities of Citation Explorations Ltd.
6. I have not examined or been on these properties.

*Arthur O. Hall*

Arthur O. Hall  
Professional Engineer.

March, 1967