



October 6th, 1969.

Mr. J.E. Magee, General Manager, Western Mines Limited, Eox 800, Campbell River, B.C.

Dear Sir:

Please find enclosed two copies of our Mr. R.W. Phendler's report entitled "Geological Reconnaissance of Tofino-Bedwell Sound Region".

Time consumed on this project, including mobilization and preparation of the report amounted to 16 days. Our invoice covering professional services and disbursements is also enclosed.

Yours very truly,

BACON & CROWHURST LTD.

W.R. Bacon, P.Eng.

WRB/ic

cc: Mr. W. Jewitt, President, Western Mines Limited, 505 Burrard St., Vancouver, B.C. (letter only)

REPORT

ON

GEOLOGICAL RECONNAISSANCE

of

TOFINO-BEDWELL SOUND REGION

VANCOUVER ISLAND, BRITISH COLUMBIA

for

WESTERN MINES LIMITED

by

R.V. PHENDLER, B.Sc., P.Eng.

Vancouver, B.C.

October 6th, 1969.

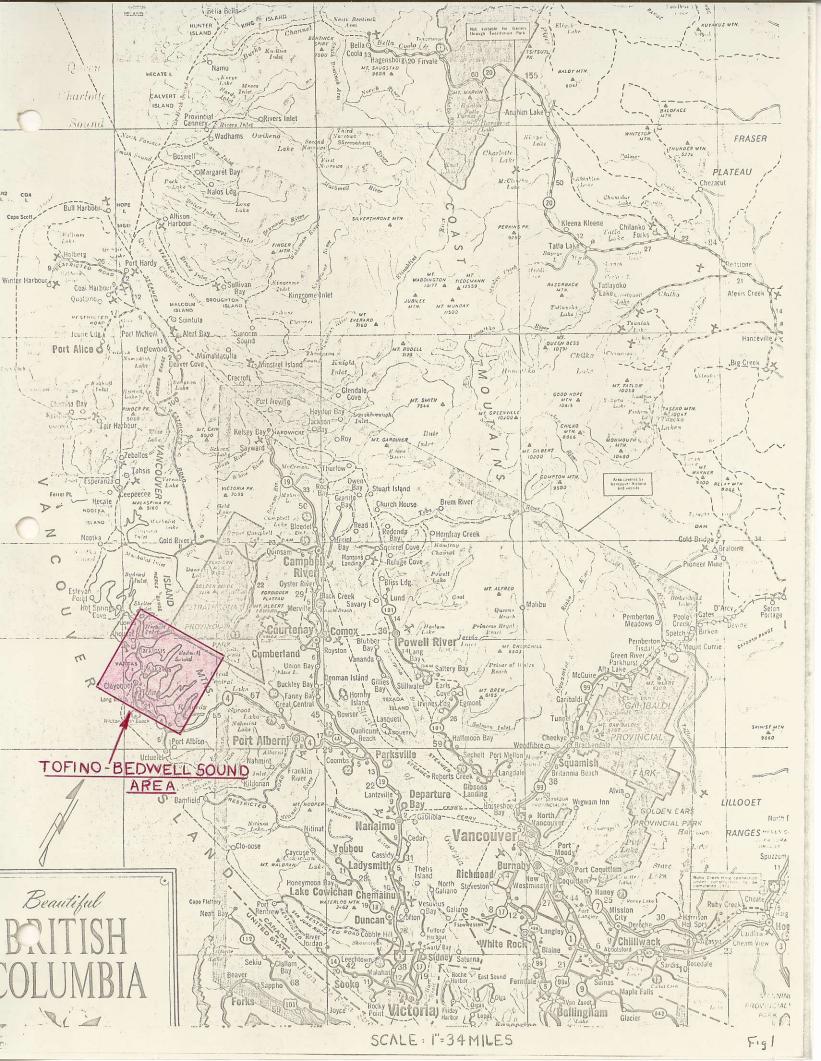


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INTRODUCTION

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In September, 1969, at the behest of Western Mines Limited, a program of reconnaissance geological mapping in parts of the Tofino-Bedwell Sound area was carried out by the undersigned. This was the initial phase of a proposal set forth by Mr. W.T. Muraro.

The area is forty to sixty miles west of Port Alberni on the west central coast of Vancouver and it is accessible by boat from Tofino. Tofino is accessible by road from Alberni.

The purpose of the project was to examine areas underlain by Sicker group volcanics because the Myra Creek orebodies occur within a section (Formation 4, Fig. 2) of them.

The writer, who is familiar with the geological environment at Myra Creek, was assisted by Mr. W. Padgham, staff geologist at the mine. A 50' fishing boat provided a mobile base and a 14' outboard was used to reach and examine the shoreline. About 55 miles of coastline were examined in some detail and 77 stream sediment samples were taken by Padgham. The area mapped includes Millar Channel, Herbert Inlet, Bedwell Sound, Warn Bay and the head of Tofino Inlet (Deer Bay).

The porphyry copper mineral deposit at Catface Mountain, owned by Falconbridge, is in the area examined.

PHYSICAL FEATURES

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The region is heavily wooded and extremely rugged. The mountains generally rise abruptly from the coastline to elevations of 3000'-4000' and more.

Rainfall is estimated to be at least 200" per year; temperatures rarely fall below freezing.

All parts of the area examined are accessible by boat at all times of the year, as all are in relatively protected waters.

PROPERTY SITUATION

Interest in the area from a prospecting standpoint has been moderate down through the years. In the early 1960's the discovery and exploratory work on Catface Mountain, in the centre of the region under discussion, led to increased activity.

The whole of the peninsula on which Catface Mountain is located is covered by mineral claims, as is much of Vargas Island to the south and Meares Island to the southeast.

At the head of Herbert Inlet, on Abco Mountain, the original Berton Mines is located. This narrow gold-silver vein is not being worked. Six miles east, at the head of Bedwell Sound, are other inactive gold-silver properties.

In the Warn Bay-Deer Bay (head of Tofino Inlet) area, some 150 mineral claims have been located of which about half are cancelled.

HI STORY

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Exploration work has been carried on in the Tofino area for at least forty years. Gold-silver veins have been mined in a small way from properties at the head of Herbert Inlet and Bedwell Sound.

The Catface Mountain porphyry copper deposit of Falconbridge Ltd. was actively explored and diamond drilled between 1960 and 1963. From then until 1968 the mountain was the scene of logging operations. In the summer of 1969, drilling recommenced and widespread exploratory work was done. The Catface Mountain deposit will undoubtedly be developed into a large economic operation but a recovery problem must first be overcome.

In early 1969 J.E. Muller of the Geological Survey of Canada, Vancouver, and J.T. Carson of Noranda Exploration Company, Toronto, compiled a geological map of Vancouver Island. This map shows that the rocks in which Western Mines Limited ore deposits at Myra Creek occur are repeated in the Tofino-Bedwell Sound area. It indicates that rocks of similar age (Sicker Group of Pennsylvanian age) are present but it was not known whether favourable zones of rhyolitic breccias and overlying andesites occur.

In a report dated August 16th, 1969, T.W. Muraro of Western Mines Limited suggested that the Pennsylvanian volcanics in the Bedwell Sound area should be mapped and sampled for indications of copper-zinc deposits similar to the Lynx orebodies on Myra Creek. The present work carried out these recommendations. With regard to silt sampling, it is noteworthy that all the creeks which were tested had obviously been sampled by previous exploration parties, indicating that the region has received considerable recent attention.

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GEOLOGY AND MINERALIZATION

The orebodies at Western Mines' Myra Creek property lie within sheared cherty tuffs and rhyolite flow breccias associated with tuffaceous andesites, all of the Sicker group. These rocks are also found in various parts of Vancouver Island and are considered to be favourable for mineral prospecting.

Within a radius of twenty miles of Tofino is a segmented area underlain by Pennsylvanian rocks of the Sicker group. Underlying the Sicker group volcanics are metamorphic rocks composed of gneissic granodiorite, sheared meta-andesites and metasediments.

The Sicker group consists mainly of 5000 feet or more of volcanic tuff and breccia of intermediate composition interbedded with minor limestone and argillite.

Thick bedded andesite flows are common whereas cherty tuffs and rhyolitic flow breccias, which are the more favourable host rocks, are in the minority. Rocks of the latter type are found in Herbert Inlet, in the south part of Bedwell Sound, Warn Bay and Deer Bay. (Please refer to unit 4 (yellow) of the accompanying geological map - Fig. 2.) Sheared andesite volcanics of the Sicker group were seen on the north side of Catface Mountain. The rock here is considered to be part of a complex of hornblende-plagioclase gneiss and amphibolite which is probably the product of regional metamorphism of Sicker and later Vancouver group rocks recrystallized during a major Middle Jurassic orogeny.

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No sheared cherty tuffs and volcanic breccias were observed anywhere, but unaltered, undisturbed phases of these favourable rock types were encountered in the southern part of Bedwell Sound, Warn Bay and Deer Bay. The areas between these inlets are considered to be prime prospecting ground.

The porphyry copper deposits on Catface Mountain consist of very large volumes of 0.5% copper mineralization within an intrusive complex consisting principally of highly altered quartz monzonite. The main sulphide minerals are very fine grained chalcopyrite and pyrite. Bornite is minor. Rocks surrounding the porphyry copper deposits are pyritized, mainly basic, volcanics.

Chalcopyrite-quartz lenses within cherty tuffs were found on the northeast flank of Catface Mountain close to a hornblende diorite intrusive. Other mineralization encountered during the mapping consisted of pyrite lenses within massive andesite in Millar Channel, and quartz pyrite stringers in cherty tuffs in Cypress Bay, Bedwell Sound and Warn Bay.

Samples taken during the work are as follows:

Sample No.	<u>% Cu</u>	<u>%</u> 2n	Oz.Ag	Oz.Au	Z NL	Location	
17301 17302	.01	*.01 *.01	*.01 *.01			Millar (Channel
17303	.03	*.01	.01			83	출 포
17304	.01		*. O1			Herbert	Inlet
17305	*.01		*.01	4.003		84	21
17306	.11		.07	.003		8.9	8.5
17307 17308	2.35		.50	*.003	*.01	Cypress	Bay
17309	*.01		.01	*.003		Bedwell.	Sound
17310	.01		.01	*.003		李宗	莱 带
17311	.01	.02	.03	*.003		Varn Bay	9

* Less than

It was not surprising to find chalcopyrite-bearing quartz stringers in the vicinity of Catface Mountain (sample 17307). The ground is well covered by mineral claims.

Although none of the other samples contain significant amounts of copper or zinc, the presence of sulphides within the cherty tuffs and rhyolitic breccias is considered to be encouraging.

SUMMARY OF PROSPECTING POSSIBILITIES

Favourable formations of the Sicker group were observed in the eastern part of the region surveyed. Because these rocks are similar to those in which the Myra Creek deposits occur, they warrant first priority in the form of careful prospecting and semi-detailed, geological mapping. It is believed that air photo interpretation should aid in this work, revealing any strong faults or shear zones that may be present.

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The occurrence of a porphyry copper deposit in the area under consideration is, of course, interesting and indicates that, in any future program, the Coast Intrusives cannot be ignored.

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Unfortunately analyses of the stream sediment samples are not available for comment. (Padgham took these directly to Myra Creek for drying and analysis). The results obtained from the silts will obviously influence the direction and scale of future work.

Respectfully submitted,

BACON & CROWHURST LTD. SIO NGI R.W. Phendler. .Eng.

