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REPORT ON THE VIKING CLAIM GROUP,
COWICHAN LAKE AREA,
VICTORIA MINING DIVISION, B. C.

PROPERTY FILE

Viking Mines M.A. 30

Nov. 1/66. J.P. Elwell, P.Eng.

REPORT ON THE VIKING CLAIM GROUP,
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INTRODUCTION

This report covers the examination of the mineral showings on the Viking claim group located in the Cowichan Lake area of the Victoria Mining Division of B. C.

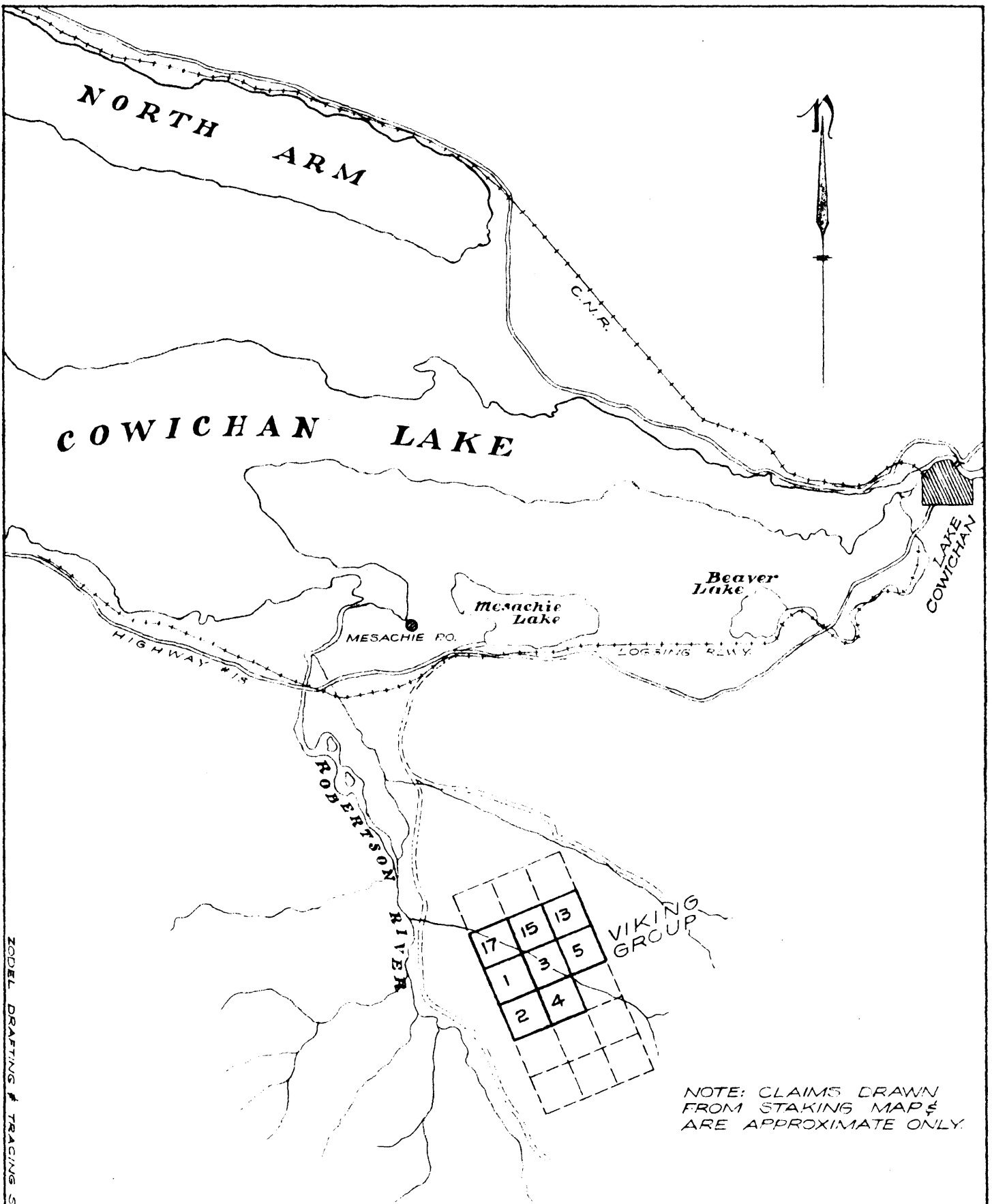
The examination was made by the writer on October 25th, 1966, accompanied by Mr. W. F. McLaren, the staker of the claims. This report was prepared at the request of Viking Mines Ltd., N.P.L., 302 - 180 Seymour Street, Kamloops, B. C.

LOCATION AND ACCESS

The Viking group consisting of 8 claims is located on the flank and ridge of the mountain to the east of Robertson River with the center of the block being about 3 miles due south of Mesachie Lake P.O. The terrain is steep and rugged, elevations within the claim area ranging from about 800 feet on the west side, to over 2,500 feet at the southeast corner.

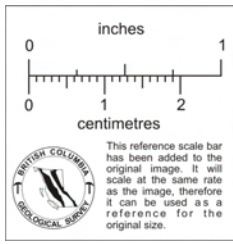
Present access to the claim area is by way of a logging road from Mesachie Lake to a point on the edge of the claim block near the initial posts of Viking #1 and #2 claims. There are no trails above this point, but the terrain though steep, is fairly clear of timber and brush, and can be traversed in most parts by foot.

An alternative access route which appears feasible to develop is by way of an abandoned logging road which leads up the northeast flank of the mountain ridge to an elevation of 2000



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NOTE: CLAIMS DRAWN FROM STAKING MAPS ARE APPROXIMATE ONLY.



LOCATION PLAN
OF
VIKING CLAIM GROUP

SCALE: 1:50000

feet and at one point is only 1000 feet from the principal mineral showings. This road requires some repairs to make it passable to four wheel drive vehicles, and about 1000 feet of new road would have to be constructed, but there appeared to be sufficient overburden in the area to make the road without excessive rock blasting.

A location plan prepared from the staking map is included with this report.

PROPERTIES

The property consists of 8 located claims as follows:

<u>Name</u>	<u>Tag Number</u>
Viking #1 to #5, incl.	765061 to 765065, incl.
Viking #13	765073
Viking #15	765075
Viking #17	765077

EARLY HISTORY

There is no record of the earliest prospecting and work in the area, but there are remains of an old cabin at the 2000-foot level, and a small cut has been opened up over a narrow quartz vein, presumably in search of gold values. This work probably dates from the early 1900's.

More recently prospecting and development was done on the copper showings, and the following is quoted from the Minister of Mines Report for 1955 when the property was known as

the Lorry group.

"This group of claims held by location is 3 miles south of Mesachie Lake P.O. Copper Ridge Silver Zinc Mines Ltd. leased the property and underground work was carried out under the direction of W. S. Ellis. An adit at 2500 foot elevation was driven to trace the downward extension of a quartz-chalcopyrite showing. The adit was driven in a northeasterly direction for 270 feet, and from it two short raises were driven totalling 80 feet in length. Ten diamond drill holes were drilled for a total of 545 feet."

In the Minister of Mines Report for 1956 there is mention of preparations being made to mine the high grade chalcopyrite ore from the adit. There is no mention of the amount of ore extracted or its copper content.

REGIONAL GEOLOGY

The claim area lies in a broad area of basic flow rocks termed the Franklin Creek Volcanics and classified as Triassic age. They consist mainly of basalt and diabase and are generally fine-grained and vary from dark grey to green and black in color, and are both porphyritic and non-porphyritic. In the region of the mineral showings on the claim area these rocks have been intensely sheared and fractured, and are cut by numerous quartz stringers. Some outcroppings of quartz-feldspar which may be dikes were also noted, but there were insufficient exposures to determine their trend. Alteration products in the shear zones

consist mainly of epidote and other skarn minerals.

DESCRIPTION OF THE MINERALIZED ZONES

Prospecting of the claim area has disclosed three zones of copper mineralization which have been designated zones #1, #2, and #3. Zone #3 was not examined by the writer but is the most westerly showing and is said to be an area of copper stained volcanics with some disseminated chalcopyrite showing in freshly broken samples. The nature of this occurrence has not been determined so far.

Zones #2 and #3 and the intervening area were examined and sampled, and are described below. A sketch map of these showings on a scale of 100 feet to the inch is included with this report.

Zone #1

This consists of a strong north-south striking shear zone with a dip of 60° to the east. Overburden effectively covers most of the shear except where it has been opened up by trenching and by an adit.

The first trench at an altitude of 2030 feet has exposed a width of 10 feet of shear zone consisting of silicified volcanics and quartz veins. Chalcopyrite occurs as massive nodules and vein-like structures in the quartz, and also as disseminations and fine fracture fillings in both the quartz and volcanics.

A second trench across the shear at an altitude of 2100 feet has sloughed in to obscure the bedrock, but broken rock from the trench consists mainly of altered volcanics and epidote, with chalcopyrite as disseminations. It would appear that there is a change in rock types between the two trenches which are about

400 feet apart in a horizontal plane, but no definite conclusion can be made until more stripping has been done.

At elevation 2000 feet the shear splits, with one branch striking to the west on a bearing of 265° , with the main shear continuing to the south and curving slightly to the west. Only a small portion of the branch shear was exposed, which consisted of fractured and silicified volcanics, with chalcopyrite as disseminations and small fracture fillings.

The adit reported in the section "Early History" has been collared at the 2000 foot elevation at the junction of the main #1 and branch shear zones. This adit was not examined as the mouth had caved and had backed-up water inside, but is reported to be 270 feet long and to follow the hanging wall of the shear, and has opened up some massive chalcopyrite in a quartz vein structure.

Below the adit the shear is effectively covered with slide rock, but malachite stain was seen on rock exposures in the hanging wall, and considerable copper bearing float material was found for over 1000 feet downslope.

Zone #2

This shear zone is exposed on the face of a steep bluff at an elevation of 1780 feet. It appears to be parallel to the #1 zone shear, that is, it strikes north-south and dips at 60° to the east. It was estimated to be 8 feet wide at the point examined, of which 6 feet from the hanging wall had been exposed by recent prospecting.

The shear zone consists of fractured and silicified

volcanics containing some narrow quartz stringers. Mineralization consists of pyrite, chalcopyrite and some bornite as disseminations, small blebs, and fracture fillings. Malachite is present as surface alteration.

The rocks between the #1 and the #2 shear zones show considerable fracturing, and are cut by a large number of narrow quartz stringers ranging in width from less than an inch to 2 - 3 inches. These stringers all run roughly parallel to the two shears, and malachite stain was noted in many instances. One of the wider stringers has been opened up by an old cut, evidently as a gold prospect.

SAMPLING

Sampling of the property consisted of taking chip samples across the exposed mineral zones where possible, together with a number of grab samples of representative material from the trenches and showings. The results of the samples taken by the writer along with additional samples previously taken by Mr. W. P. McLaren, are tabulated below:

<u>Sample No.</u>	<u>Taken By</u>	<u>Oz. Au.</u>	<u>Oz. Ag.</u>	<u>f. Cu.</u>	<u>Description</u>
47354	W. P. McL.	Tr.	0.70	6.05)	#1 zone, floor of drift over 6'
47355	"	0.005	0.60	6.70)	
47356	"	0.01	0.10	10.50)	
47357	"	Tr.	0.40	1.80)	Chip samples over 5', #2 shear zone.
47358	"			0.80)	
47359	"			1.20)	
47360	"			0.95)	
47361	"	0.005	1.40	7.05	Chip sample over 6' main cut, #1 shear.
47362	"	Tr.	0.55	1.60	Chip sample over 10' top of #1 shear.
47363	"	Tr.	0.70	3.40	Grab sample #3 zone, 300' E. of old cabin.

<u>Sample No.</u>	<u>Taken By</u>	<u>Gr. Au.</u>	<u>Gr. Ag.</u>	<u>Gr. Cu.</u>	<u>Description</u>
47364	J.P.H.	0.005	0.50	4.60	Chip sample across 6' - #2 shear.
47365	"	Tr.	0.65	1.60	#2 shear zone - grab sample.
47366	"	Tr.	0.50	1.05	Chip sample across 6' #2 shear, 10' below #47364.
47367	"	Tr.	0.70	1.60	Grab sample, #2 shear zone.
47368	"	Tr.	0.30	1.00	Top trench - #1 zone, grab sample.
47369	"	0.005	0.90	7.65	#1 zone, main trench above adit, - grab sample.
47370	"	Tr.	0.15	2.00	Portal of adit. Grab sample min. volcanics.
47371	"	Tr.	0.70	4.60	#1 zone - grab sample from adit muck.

SUMMARY AND CONCLUSIONS

The Viking group of 3 located claims is situated east of Robertson River about 3 miles south of Mesachie Lake P.O., in the Cowichan Lake area of the Victoria Mining Division. Old logging roads come to within close proximity of the main showings on the property.

The geology of the area consists of basic flow rocks of the Franklin Creek series which have been intensely fractured and sheared, and are cut by numerous quartz veins and stringers.

The principal zones of interest on the property are two parallel north-south striking shear zones which dip at 60° to the east, and an east-west striking branch shear which probably connects the two main shears. The two main shears are mineralized

with pyrite, chalcopyrite and bornite, with some silver values, associated with quartz veins and stringers, and in fractured and silicified volcanics of the shear zones. The intervening rock between the two main shears is well fractured and cut by numerous quartz stringers, many of which show some copper mineralization.

Previous exploration and development on the property has been concentrated on the eastern, or #1 shear zone, and an adit has been driven 270 feet along the shear to open up a high-grade shoot of chalcopyrite in a quartz vein structure over a width of about 6 feet. The recent examination by the writer indicated that the copper mineralization extends well into the fractured footwall volcanics of this shear and the whole zone between the #1 and #2 shears and above the cross-shear is well fractured and carries copper mineralization. Furthermore, the limits of the shear zones - along strike have not been determined due to overburden cover, so there is no reason to assume that the work done to date has in any way probed the potential of this property.

It is the writer's opinion that the property deserves an exploration program aimed initially at determining the limits of the mineralized zones and exploring the possibilities of a large body of medium to low-grade ore rather than concentrating only on the comparatively small high-grade shoots within the shears. The initial program is outlined below under "Recommendations".

RECOMMENDATIONS

1. An access road should be built from the existing logging road to cross the claim area at about the 2000 foot elevation.
2. The #1 and #2 shear zones should be stripped where feasible at intervals along the strike, and trenched by drilling and blasting to expose fresh rock surfaces for sampling.
3. The existing adit should be cleaned out and repaired.
4. Detailed geological mapping of the rock structures and mineralization should be done concurrently with (2) and (3).
5. The zone between the #1 and #2 shears should be probed by diamond drilling from the adit into the footwall of the #1 shear.
6. Further recommendations can be made on the completion of the above program.

ESTIMATE OF COSTS

The following estimate of the cost of carrying out the above program is provisional only but may be used for budgeting purposes. The actual expenditures which the property justifies will depend on an appraisal of each phase of the program as it progresses.


Phase #1

Construction of access road	\$ 3,000.00
Stripping, trenching, and re-habilitation of adit	6,000.00
Purchase and rental of tools and equipment.	5,000.00
Initial diamond drilling, (allow 2000 ft. @ \$7.00/ft.	14,000.00
Geological mapping and sampling	2,000.00
Engineering, assaying, administration, etc..	4,000.00

Phase #2

Reserve for further diamond drilling and underground exploration as justified by the results of Phase #1	31,000.00
	<u><u>\$ 65,000.00</u></u>

Nov. 1, 1960.

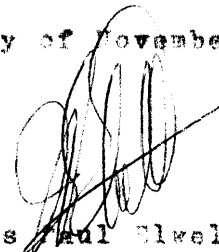

J. P. EDNELL P. Eng.
Consulting Mining Engineer.

C E R T I F I C A T E

I, JAMES PAUL ELWELL, of 4744 Caulfeild Drive, West Vancouver, B. C., do hereby certify that:

1. I am a Consulting Mining Engineer residing at 4744 Caulfeild Drive, West Vancouver, B. C. and with an office at 929 - 510 West Hastings Street, Vancouver 2, B. C.
2. I am a graduate in Mining Engineering from the University of Alberta in 1940, and am a Registered Professional Engineer in the Province of British Columbia.
3. I have no personal interest, directly or indirectly, in the properties examined or in Viking Mines Ltd., M.P.L.
4. The findings in the report are the result of a personal examination of the property made by me October 25th, 1966, and from information obtained from various reports which are acknowledged.

DATED at Vancouver, B. C. this 1st day of November, 1966.


James Paul Elwell, P. Eng.