LAND 32-160

ASSESSMENT REPORTS

MAP No. 115F15 TYPE OF WORK: Geology

REPORT FILED UNDER	Silver City Mines Ltd.
DATE PERFORMED	DATE FILED: November 10, 1966
LOCATION - LAT.	61°48'N Canyon City Area, Yukon
LONG.	[redacted] 140° 36' W
CLAIM Nos.	Marc 1-32 Y4991-Y5022
	33-34 Y5304-Y5305
	35-56 Y5023-Y5044
	57-144 Y5216-Y5303
WORK DONE BY	R.J. Cathro (Archer, Cathro and Associates Ltd)
WORK DONE FOR	Silver City M.L.
REMARKS	Geology Map 1" - 50,000
	Economic Mineral deposits will be found in volcanic rocks, as fissure fillings or replacement bodies or in other local rocks as contact metasomatic deposits

VANCOUVER
434-1197

WHITEHORSE
667-4113

ARCHER, CATHRO & ASSOCIATES LTD.
CONSULTING GEOLOGICAL ENGINEERS

P.O. Box 1051
WHITEHORSE

PROPOSED EXPLORATION

MARC PROPERTY
UPPER WHITE RIVER DISTRICT
YUKON.

SILVER CITY MINES LTD.

November 10, 1966

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MAPS

(in pocket)

Figure 1- Location Plan

INTRODUCTION

Silver City Mines Ltd. is the owner of the Marc claim group which covers the site of the original copper discoveries made on Upper White River, southwest Yukon, in 1905. The writer visited the property on October 31, 1966 to inspect the rocks outcropping in the area and topographic conditions. The writer has worked as a geologist in the Yukon for almost four years and is completely familiar with northern conditions.

PROPERTY

The Marc property consists of 144 contiguous claims which are registered in Whitehorse, Yukon as follows:

CLAIM NAME	NO.	GRANT NO.	OWNER	EXPIRY DATE
Marc 1-32	32	Y4991-Y5022	Silver City Mines Ltd.	April 26, 1967
33-34	2	Y5304-Y5305	" " "	May 5, 1967
35-56	22	Y5023-Y5044	" " "	April 26, 1967
57-144	88	Y5216-Y5303	" " "	May 4, 1967
Total	144			

In addition, Silver City Mines Ltd., under optional purchase agreement dated October 14, 1966, controls the following six claims which cover the site of the original discovery claim.

Slaggard 1-2	2	90561-90562	A. Rivers	Sept. 4, 1967
Goldenhorn 1-4	4	90563-90566	A. Rivers	Sept. 4, 1967

Where the term "Marc property" is used in this report, these six claims are included.

One claim exists within the boundaries of the Marc group which is not owned or controlled by Silver City Mines Ltd. The Last Treasure claim was patented on January 31, 1916 as #12081, Lot 15, Grant 901. It is wholly owned by the North American Transportation and Trading Co., Chicago, Illinois.

LOCATION AND ACCESS

The Marc property straddles White River at the Upper Canyon, just upstream from its confluence with the Klutlan (Generc) River. It is about fifteen air-miles from the nearest point on the Alaskan Highway, Mile 1168, which, in turn is 250 miles by road northwest of Whitehorse.

The nearest fixed-wing aircraft and helicopters are based in Whitehorse. Two small lakes are suitable for small aircraft, one on the Marc claims on the southeast side of White River, and the other a half mile north of the property boundary on the northwest side of the river. Because most of the property lies within the fork of the two rivers, both of which are glacier fed, wide and dangerous in spring and summer, it cannot be reached by all-weather road without the construction of a major bridge. A winter road about twenty miles long can be constructed along the east side of White River without much difficulty, crossing the Klutlan River on an ice bridge.

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HISTORY

Prospectors searching for placer gold discovered native copper float in the gravels of White River in 1905. Further prospecting uncovered native copper and primary copper sulfide minerals filling narrow fractures and vesicules in fine textured, massive volcanic flows. A few shallow trenches and short adits were put in but failure to find any large exposures discouraged further exploration and the area has remained unexplored since that time. All the original claims, except the patented Lost Treasure, were abandoned. The first recent claims, for which records are available, were recorded in 1962. Until now, modern scientific exploration techniques have never been applied to the White River copper district.

REGIONAL GEOLOGY

According to Geological Survey of Canada map 19-1956, Slaggard Ridge is bounded on both sides by westerly dipping thrust faults. These are probably related in age and origin to the forces which produced the St. Elias uplift and the Shakwak Fault. Outcrop is relatively abundant to the west and consists of young volcanic flows and sediments, of Paleocene age, overlying older volcanics, probably of lower Permian age. Between the faults, the G.S.C. has mapped a wedge of yet a third group of volcanic rocks, upper Triassic or Jurassic in age, which are midway between the other two lava piles in the geological history of the area. These

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latter flows overlie a sedimentary sequence closely related in time to the lower Permian volcanic rocks. Further to the southeast, along Slaggard Ridge, Permian Volcanics outcrop. To the northeast, a five-mile wide, drift-filled valley, the Duke Depression, trends northwesterly and separates the previously mentioned volcanics and sedimentary rocks from a granodiorite stock.

The lower Permian volcanics are greenish, sheared rocks which have been extensively altered to chlorite and amphibole. They can be well described as "greenstones". The related sediments consist of limy argillite and limestone with lesser amounts of sandstone, conglomerate and chert. It is not certain if the sediments, which generally dip about 60 degrees northeast, are conformable with the volcanics.

The Triassic-Jurassic volcanics are distinctive purple, amygdaloidal flows, consisting of chlorite, calcite and chert amygdules in a massive, fine-grained matrix. The attitude of these flows is not known.

MINERALIZATION

Information on the original prospecting done in the area is sketchy and is contained mainly in G.S.C. Memoir 50, 1921. The original showings were located in the purple flow rocks on the steep valley walls some 100-200 feet above the river. Native copper, chalcocite, cuprite, bornite and chalcopyrite were found as narrow veinlets and as amygdules.

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The chalcocite, cuprite and native copper were thought to be secondary alteration minerals produced from the weathering of the primary copper sulfides, chalcopyrite and bornite. It was also felt that only the primary sulfides would be found below the zone of oxidation. Pieces of native copper weighing as much as a ton and one foot thick have been found.

SUMMARY & CONCLUSIONS

Amygdaloidal volcanic rocks containing higher than average amounts of disseminated copper are not uncommon in the Cordilleran. However, the possibility of finding a flow containing economic quantities of disseminated copper is relatively low, although it should not be ignored. It is the writers opinion that economic mineral deposits, if they exist in this area, will belong to either of the following two classifications:

a. in volcanic rocks, as a structurally-controlled fissure filling or replacement body. The influencing structural feature might be a system of wide veins, a stockwork of narrow veins or breccia zone, which could be mined as one block using efficient large-tonnage techniques, or a selective replacement of a particular horizon localized by folding.

b. in other local rocks, as a chemically and structurally localized deposit, such as the contact metasomatic deposits associated with limestone which are now being developed by New Imperial Mines Ltd. at Whitehorse.

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The fact that copper mineralization has been found in this area by conventional prospecting, that major faults cross the claims and indicate that the local structure could be complex, and that modern exploration techniques have never been used in the area, make the Marc claims a very good exploration target.

Geochemical sampling should prove quite useful in locating mineralized areas that are overburden covered between the two faults. The area east of the thrust fault, however, will be less suitable due to its gentle tographic relief and its thicker overburden cover. Geophysics should not be attempted until a better understanding is gained of the type of mineralization present. Without more information on the occurrence and association of the minerals, their degree of dissemination, the depth of oxidation, and the magnetic susceptibility of each of the rock units, selection of a suitable geophysical method will be difficult and interpretation of the results impossible.

RECOMMENDATIONS

The initial exploration program should be designed as follows:

1. Detailed geological mapping of rock types and structure.
2. Sampling, by grab or channel methods of all mineralized areas.
3. Geochemical sampling of favourable overburden-covered areas.

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4. Bulldozing and (or) diamond drilling of geochem. anomalies and mineralized outcrops.
5. If a suitable geophysical method is available, geophysical surveys to trace favourable zones beneath deeper overburden and locate new zones.

The exploration programme of the Marc property must be modifified by three important considerations:

1. No geological or geochemical surveys can be done before the claims expire in late April, 1967.
2. From early May until October or November, the property will be completely isolated except by light aircraft.
3. The geology of the half of the property lying east of the thrust fault is completely unknown and can probably only be learned by diamond drilling.

The following program is recommended to provide the most information for the least expenditure within the time limits available. Also, the program can be easily expanded or modified at the end of each stage, should results warrant it. At the end of Stage 4, a thorough assessment of the potential of the property will be possible.

Stage 1- Winter Road Construction

January, 1967

Construct a 20 mile winter road from the end of the existing Canalask Mine road to the Marc claims, following the east bank of White River.

20 miles @ $350.00 . . . . . .$7,000.00

CANADA
MINES AND TECHNICAL SURVEYS
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NATIONAL TOPOGRAPHIC SERIES | 1:50,000 | FIRST EDITION | CANADA, SHEET 115 F/15

CANYON CITY

YUKON TERRITORY

Scale 1:50,000
1.25 Inches to 1 Mile approximately

Surveyed, compiled, drawn and printed by the Army Survey Establishment R.C.E. 1950-54
Aerial photography by the R.C.A.F. 1948

MAGNETIC DECLINATION 30° 04' EAST
AT CENTRE OF SHEET, 1954
Annual magnetic change 1' westerly

Contour Interval 100 Feet
All Elevations in Feet above Mean Sea Level
North American Datum 1927

Copies may be obtained from
The Map Distribution Office
Dept. of Mines and Technical Surveys,
Ottawa, at 25 cents each

Association of Professional Engineers of the Yukon Territory
R. J. CATHRO
GEOLOGICAL
ENGINEER

LEGEND

- TRIASSIC OR JURASSIC — AMYGDALOIDAL LAVA, BRECCIA
- PERMIAN — ARGILLITE SANDSTONE, CONGLOMERATE
- " — LIMESTONE
- PERMIAN BASIC LAVA, TUFF, BRECCIA, MINOR SEDIMENTS
- THRUST FAULT
- CLAIM BOUNDARY
- PROPOSED WINTERROAD

Geology from G.S.C. Maps 19-1958
And 123 A (1915)

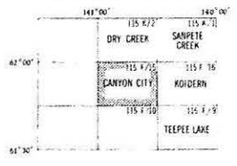
REFERENCE

Roads		Boundary, International	
hard surface, all weather, more than 2 lanes		Province	
hard surface, all weather, 2 lanes		County or District	
loose surface, all weather, 2 lanes		Township or Parish	
less than 2 lanes, all weather		City or Town	
Cart Track, Trail		Reservation, Indian, Military, etc.	
Railways		Power Transmission Line	
normal gauge, multiple track		Telephone or Telegraph, main route	
normal gauge, single track		Horizontal Control Point	
abandoned, or under construction		Boundary Marker	
narrow gauge, single track		Bench Mark	
Bridge, underpass or overpass		Spot Elevation, in feet	
Tunnel		Mine or Pit	

REFERENCE

House, Building		Lighthouse	
School		Wharf or Pier	
Church		Foreshore Flats	
with conspicuous Tower or Spire		Swamp or Marsh	
Post Office		Lake or Pond, intermittent	
Tower, Radio Mast, Lookout, etc.		Glacier or Snowfield	
Cemetery	Cem.	Stream, intermittent	
Quarry		Irrigation Canals, Ditches	
Sand or Gravel Pit		Inundated Land	
Cliff		Contours, elevation	
Cutting		depression	
Embankment		approximate	
Dry River Bed		Forest, heavy, light	

INDEX TO ADJOINING SHEETS



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YUKON TERRITORY

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