

GEOLOGICAL AND GEOCHEMICAL REPORT ON THE
MEHITABEL CLAIMS NOS. 1-38 INCL.

015576

Located: East of Keele Peak and straddling the Yukon-NWT
boundary in the Mayo and Mackenzie Mining
Districts respectively

Claims Sheet 105 P-5

Latitude $63^{\circ}.26'$
Longitude $129^{\circ}55'$

for

Panoche Mining Corporation

Work
Performed: July 26th to August 2nd

and

September 10th to 18th

by

Ian Turnbull

C O N T E N T S

	<u>Page</u>
INTRODUCTION	1
LOCATION AND ACCESS	1
TOPOGRAPHY	1
CLAIMS	1
TOPOGRAPHIC MAPPING	2
GEOLOGY	2
MINERALIZATION	3
GEOCHEMICAL SURVEY	3
Methods and Procedure	3 & 4
Results	4
CONCLUSIONS AND RECOMMENDATIONS	5
 APPENDIX I	
Time and Cost Distribution	
 Accompanying Maps	
Location of Property	
Claims Plan	1" : 1/2 mile
Geology	1" : 1/2 mile
Drainage Geochem. Copper	1" : 1/2 mile
" Molybdenum	1" : 1/2 mile
" Lead	1" : 1/2 mile
" Zinc	1" : 1/2 mile
" Manganese	1" : 1/2 mile
" Tungsten	1" : 1/2 mile

INTRODUCTION:

As a result of a "grass roots" field program, the Mehitabel claim group, comprising 38 full-size claims were located during the summer of 1970. Reconnaissance stream sediment sampling and geological mapping was completed over the claims and the immediate area. Panoche Mining Corporation is the recorded owners of the claims. The property is herein referred to as the "Hess" property.

LOCATION AND ACCESS:

The Hess property is located in the northern part of the Selwyn Mountains, east of Keele Peak, Sekwi Mountain Map Sheet 105P-5. The claims straddle the Yukon-NWT boundary, some 10 miles north of mile 225 on the Canol Road, Latitude $63^{\circ}26'$, Longitude $129^{\circ}55'$.

Access to the property area has generally been by helicopter from the Macmillan Pass airstrip, some 20 miles to the southwest. The Canol Road is maintained only as far as Macmillan Pass, a road distance of approximately 150 miles from Ross River. During the summer months, the Canol Road can be traversed by 4-wheel drive vehicles as far as an abandoned camp at mile 222.

TOPOGRAPHY:

The Hess property claims all lie above tree line and cover an area with very rugged and severe relief. Valley walls have in most cases broken down into extensive talus slopes and the valleys themselves are narrow with immature swamps developed in their floors.

CLAIMS:

The Hess property comprises 38 full-size claims held by Panoche Mining Corporation and comprise four groups as follows:

<u>Group</u>	<u>Claim Number</u>	<u>Record Number</u>	<u>Record Date</u>	<u>Mining Division</u>
A	Mehitabel 1-2	Y33451-2	24.8.70	Mayo, Y.T.
B	Mehitabel 3-18	T37373-88	21.8.70	Mackenzie, N.W.T.
B	Mehitabel 19	T37369	21.8.70	Mackenzie, N.W.T.
B	Mehitabel 20	T37390	21.8.70	Mackenzie, N.W.T.
C	Mehitabel 21-28	Y33563-70	9.10.70	Mayo, Y.T.
D	Mehitabel 29-38	Y33571-80	9.10.71	Mayo, Y.T.

TOPOGRAPHIC MAPPING:

A topographic map of an area within map sheet 105-P comprising approximately 18 square miles was prepared by Lockwood Survey Corporation Limited of Vancouver, from federal photography exposed in 1948 and 1949 at a scale of 1" = 2,640'. Vertical and horizontal control was obtained from the relevant 1:250,000 map sheet. The reconnaissance type map was prepared in pencil manuscript form at a scale of 1" = 1,000' with a 100 foot contour interval.

GEOLOGY:

A complex assemblage of Devonian and Mississippian sediments have locally been intruded by a granitic stock, which has in turn uplifted and possibly overturned some sections of the invaded rocks. These latter have been mapped and classified as follows:-

1. Dark grey and black siltstone. This is generally a hard and widely fractured rock, commonly rust stained, occasionally containing pyrite.
2. Black fissile shale, which rapid weathering has reduced to extensive talus slopes, show intermittent rust staining.
3. Competant purple and grey brown chert, also in parts extremely fractured. Pyrite is commonly disseminated throughout the unit, and the rocks have a yellow brown stain.
4. Finely banded light grey and dark grey or black chert. Sulphides generally absent. Interbanded with fine crystalline limestone and limy argillite rocks.
5. Dark grey and medium or coarse crystal limestone occurs together with "swiss cheese" limestone. This latter appears to have originated as an interbanded chert and limestone, from which subsequent intense local folding and differential weathering has produced a corrugated surface of silicious bands with a corroded pale-grey friable calcic matrix.

The approximately elliptical pluton, intruding the sediments is typical of the Cretaceous intrusive bodies which occupy a belt extending from Keele Peak south to the Itsi Range. The plutonic rocks are fresh, grey-green, coarse-grained hornblende biotite granite to granodiorite. They locally, contain large crystals of potassium feldspar, though this porphyritic habit does not appear to be widespread. Mafic minerals account for approximately 30% of the rock and consist mainly of hornblende which also occurs as phenocrysts, and minor biotite. At the margins of the pluton the rocks are occasionally gneissic. Contacts with the invaded sediments are normally sharp and cross-cutting.

Directly related to the pluton are numerous 5 feet to 30 feet wide dykes which cut the sediments. These dykes strike mainly N.10°W and are steeply dipping or vertical. They comprise fine to medium grained intermediate rocks, with approximately 25% mafic minerals. They may carry minor disseminated pyrite.

MINERALIZATION:

The unit which appears to host the copper mineralization is a dark green fine-grained basic rock of uncertain origin. The rock is extensively altered, highly calcic and epidotized. Originally it may have been a basic igneous rock such as a gabbro, but certain factors, viz: field orientation and the large percentage of epidote present indicate that the unit may also have been derived from an impure limestone on the southern margin of the pluton. The noted mineralization comprises chalcopyrite and pyrrhotite disseminated in the basic host rock and appear to be largely interstitial and late. Mineralized samples were collected from localities in the valley wall over a length of approximately 2,000 feet. However, the mineralization is not continuous, and may be confined if related to the intruding dykes. Two gossans within the altered basic rocks carried pyrite, pyrrhotite and minor chalcopyrite.

On the north side of the pluton pyrrhotite and minor chalcopyrite were found, mainly as float, occurring within a similar host. The source of the float at the top of a slide was not accessible. A sample of mineralized float was assayed and contained 0.09% Cu, 0.01% Ni.

In places where the intermediate dykes intrude carbonate rocks, skarn zones have formed. Three of these carried chalcopyrite and in one case molybdenite was also present. This last was exposed over an area of 120 feet by 30 feet.

GEOCHEMICAL SURVEY

Methods and Procedure

Stream sediment samples were collected from drainages within the project area, at quarter mile intervals. Samples were placed in wet-strength Kraft paper envelopes, partially dried at room temperature, and transported to the Barringer Research Laboratory in Whitehorse. The samples were further dried in an air oven at 70°C and sieved to -80 mesh on nylon screens. The material was then split into 0.2 gm. samples for further treatment.

All samples were analyzed for copper, molybdenum, lead, zinc, tungsten and manganese. In the case of assays for copper, lead, zinc and manganese samples were digested in perchloric acid and diluted to 10 mls., the resultant solution being submitted to an Atomic Absorption unit and the metal values measured. Molybdenum and tungsten analyses were carried out by bisulphate fusion and colorimetric comparison using zinc dithyol as a reagent.

Results

A total of ninety-two stream sediment samples were collected from the project area. Analyses for totals Cu, Mo, Pb, Zn, W and Mn were run, and these results are presented on accompanying plans. From a consideration of this data and data gathered in other regional silt sampling surveys the following have been chosen as threshold values for metal elements in this geological environment:

	Cu	Mo	Pb	Zn	W
Background	0-100	0-6	0-55	0-525	0-8
Threshold	100	6	55	525	8

Anomalous copper values were obtained in all the creeks draining the margin areas around the pluton. Copper mineralization in the altered basic rocks on the north and south flanks of the pluton would seem to be responsible for these high metal values. Silt samples taken from sites underlain by the acid intrusive rocks were in all cases below threshold values and tend to confirm the field prospecting which failed to locate any sulphides within the pluton.

Erratic anomalous molybdenum values occur in those creeks draining to the east of the central pluton. Minor molybdenum mineralization was noted in a skarn host, and together with possible hidden skarns are considered to be the cause of the noted anomalies.

In the most southeasterly creek, anomalous molybdenum values were obtained and appear to be closely associated with an intrusive-sediment contact. An area of anomalous lead values is indicated in the creek draining the northern part of the pluton, and coincides with high copper values. High zinc values also coincide with anomalous copper values but occur in those creeks draining the area south of the pluton. Tungsten values were generally measured as less than 4 p.p.m. However, anomalous results were obtained from two creeks draining the pluton to the south of the project area. The causative source of these high tungsten values is as yet unknown.

CONCLUSIONS AND RECOMMENDATIONS:

Prospecting, reconnaissance mapping, and stream silt sampling have defined an area favourable to mineralization. A relatively large and well exposed altered basic rock type has been found to carry copper mineralization, although the grade, and extent of the deposit is not yet clear. However, this unit is traceable on both the northern and southern flanks of a small pluton, and the southern showing remains unexplored to its southwest.

Drainage sampling has confirmed the location of the mineralized unit and also indicates two molybdenum and one tungsten stream anomalies.

Further intensive exploration is planned for this property, consisting of detailed geological mapping and sampling, and geophysical work to define suitable targets for diamond drilling.

Respectfully submitted,

I. A. C. Turnbull

A P P E N D I X I

Time and Cost Distribution for Geochemical and Geological Survey on the Hess Property, Mehitabel Claim Groups : July - September, 1970.

PERSONNEL

	<u>Occupation</u>	<u>Dates</u>	<u>Days</u>	<u>Rate</u>	<u>Total</u>
Ian Turnbull	Geologist	26.7-2.8 10.9-18-9	17	35	595.00
T. Altenburg	Field Assistant	" " "	17	30	510.00
J. Altenburg	" "	10.9-18.9	9	30	270.00
J. Grant	" "	" " "	9	30	270.00

Postal address for all above personnel:

Suite 1101 - 510 West Hastings Street, Vancouver, B.C.

Camp Costs - 52 man days @ \$10.00 per man day	520.00
Geochemical Analyses	470.70
Barringer Research Laboratories 1198 West Pender Street, Vancouver, B.C.	
Topographic Mapping: 18 sq. miles @ \$50 per sq. mile	910.80
Lockwood Survey Corporation Limited, 1409 West Pender Street, Vancouver, B.C.	
Mayo Helicopters Box 5, Mayo, Y.T.	2,602.49
Far Frontier Services - supplying and hauling fuel Ross River, Y.T.	428.25
TOTAL	6,577.24

C E R T I F I C A T E

I, Ian Turnbull of 1101 - 510 West Hastings Street, Vancouver, B.C., do certify that:

1. I graduated from the Camborne School of Mines, Cornwall, England, in 1965 and was awarded the Associateship of that school.
2. I am an Associate Member of the Institute of Mining Engineers and have practiced my profession in Canada for the past five years.
3. As a salaried employee of Cyprus I have no direct or indirect interest in the property or securities of Panoche Mining Corporation Ltd.
4. The work described herein was carried out by myself or under my direction and supervision.

Date:

I. A. C. Turnbull A.C.S.M.,
A.I.M.E.