

PROSPECTUS
AUG. 5, 1977.

GEOLOGY EVALUATION REPORT

Ortell Lake Area, Yukon Territory
LEAH 57-72, LEAH 105-120, LEAH 175A and 176A
and LEAH 177-190 Claim Group

Nadaleen River Sheet - NTS 106-C-3
Mayo Mining District, Yukon Territory
Latitude $64^{\circ}07'$ and Longitude $133^{\circ}00'$
for

SPROATT SILVER MINES LTD.

#333 - 885 Dunsmuir Street, Vancouver, B.C.

by

R. G. HILKER, P.ENG.

Consultant Geologist, Whitehorse, Y.T.

June 4th, 1977.

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INTRODUCTION

The Ortell Lake area is located within the Nadaleen River, NTS Sheet 106C, in the eastern part of the central Yukon. Ortell Lake is 96 air miles northeast of Mayo. The area of interest is only accessible by fixed wing aircraft into Ortell Lake or by rotary blade aircraft.

During the summer field season of 1976, McIntyre Mines Limited exploration crews discovered lead, silver and zinc mineralization north of Ortell Lake and south of the Nadaleen and Rackla Rivers. Subsequently, in September and October of 1976, McIntyre staked several hundred Yukon Quartz Mineral Claims along a predominately east-west strike direction, to cover a favourable geological belt of rocks and mineralized showings. The following reference to the mineralization and staking is quoted from the McIntyre Mines Limited Annual Report dated 11 March 1977:

"In the northeast part of the Yukon Territory, extensive showings of lead, silver and zinc mineralization were staked by McIntyre and a limited amount of geological mapping and sampling was completed. A core drilling programme is scheduled for the coming season to test the showings."

The McIntyre Mines staking was directed adjacent to the east-west trending contact between the Ordovician to Mississippian age Road River Formation (OSDr) and the Hadrynian aged Carbonate Unit (Hls). Therefore, due to the exploration and staking activity in the Ortell Lake region, the management of a group of Vancouver-based companies moved field crews into the area. During the McIntyre staking, field crews from Highhawk Mines Ltd., Envoy Resources Ltd., Sproatt Silver Mines Ltd. and Bow River Resources Ltd. staked a group of 192 claims which cover approximately 9.09 miles of the favourable east-west geological contact. The 192 claims were located between two large claim groups acquired by McIntyre Mines Limited. The

Highhawk et al claim group is staked to adjoin the McIntyre claims to the east and to the west.

McIntyre Mines Limited exploration crews are presently reported to be active in the Ortell Lake area and preparing for the 1977 field season.

The LEAH claim group is located in high mountainous terrain near the 5,000 feet elevation. Due to the present snow conditions at the higher altitude on the LEAH claim group, the writer has not visited the property to conduct a field inspection of the geology in the area. It is unknown to the writer whether any sulphide mineralization is present on the LEAH claim group located near Ortell Lake.

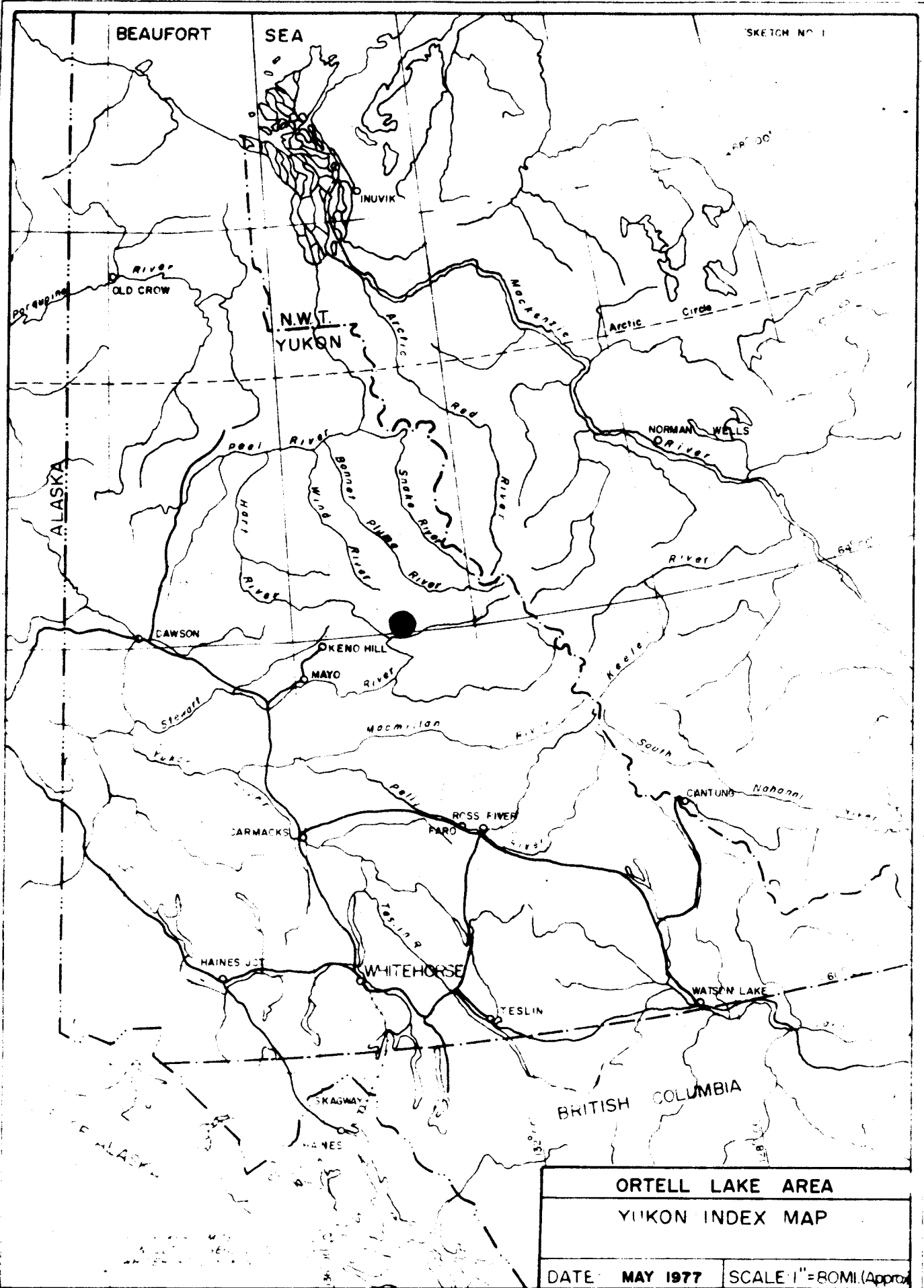
The writer was requested to prepare this report by Mr. Jim McLeod on 17 May 1977.

This geology report has been prepared from information available in Geological Survey of Canada reports and geology maps.

BEAUFORT

SEA

SKETCH NO. 1



ORTELL LAKE AREA

YUKON INDEX MAP

DATE MAY 1977

SCALE 1" = 80MI. (Approx)

LOCATION AND ACCESS

The LEAH claim group is located on the Nadaleen River, NTS Sheet 106C, scale 1:250,000 and on the Claim Sheets 106-C-2 and 106-C-3 in the Mayo Mining District of the Yukon Territory. The east end of the claim group is situated north of Ortell Lake, at 64°07' north latitude and 133°00' west longitude.

Access to the property is by rotary blade aircraft or by fixed wing aircraft to Ortell Lake, approximately 96 air miles northeast of Mayo. A good, all-year, gravel highway is maintained between the City of Whitehorse and the community of Mayo. It is a total of 232 road miles between Whitehorse and Mayo. Northward Airlines has a scheduled Fairchild F27 type of air service from Mayo to Whitehorse on Mondays and Fridays.

YUKON QUARTZ MINERAL CLAIMS

The following-described Yukon Quartz Mineral Claims data has been extracted from a Certified Record of Mineral Claim by R. G. Ronaghan, Mining Recorder, Mayo Mining District, dated the 27th day of May, A.D. 1977 at 1:00 p.m.

The LEAH claims are located on NTS Sheet 106-C-3 in the Mayo Mining District of the Yukon Territory.

<u>Claim Name</u>	<u>Anniversary Date</u>	<u>Grant Number</u>	<u>Grantee or Registered Owner</u>
LEAH 57-64	October 28, 1977	YA 13211- YA 13217	M & B Mining Services Ltd.
LEAH 65-72	October 28, 1977	YA 13219- YA 13226	M & B Mining Services Ltd.
LEAH 105	October 28, 1977	YA 13259	Donald A. Roxbough
LEAH 106-112	October 28, 1977	YA 13260- YA 13266	Donald A. Roxborough
LEAH 113-120	October 28, 1977	YA 13267- YA 13274	Emma Tvait
LEAH 175A	October 28, 1977	YA 13331	M & B Mining Services Ltd.
LEAH 176A	October 28, 1977	YA 13332	M & B Mining Services Ltd.
LEAH 177-182	October 28, 1977	YA 13333- YA 13338	M & B Mining Services Ltd.
LEAH 183-190	October 28, 1977	YA 13339- YA 13346	M & B Mining Services Ltd.

It is further noted by the writer that the LEAH claim status is certified by the Mayo Mining Recorder to 1:00 p.m. on the 27th day of May, A.D. 1977.

133'00"

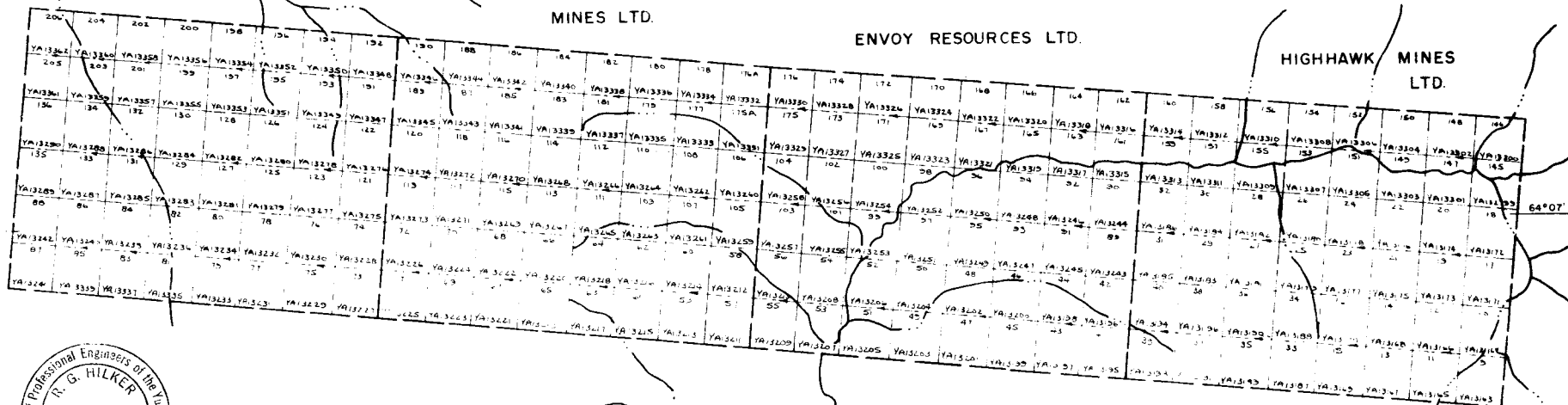


BOW RIVER
RESOURCES LTD.

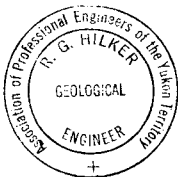
SPROAT SILVER
MINES LTD.

ENVOY RESOURCES LTD.

HIGHHAWK
MINES LTD.



64'07"



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CONSULTING GEOLOGIST
WHITEHORSE, Y.T.

SHEETS 106-C-2,3

ORTELL LAKE AREA

LEAH CLAIM GROUP
NADALEEN AND RACKLA RIVER AREA

DATE	MAY 1977	MAYN. MINING DISTRICT
DRAWN		SCALE = 1/2 MILE

GEOLOGY

Physiography and Topography

The East Rackla, Nadaleen and Stewart Rivers are located near the boundary of the Stewart Plateau and the Selwyn Mountains. The LEAH claim group is situated in the Nadaleen Range, southeast of the Wernecke Mountains, northwest of the Hess Mountains and south of the Selwyn Mountains.

The Selwyn Mountains occupy a region of 360 miles in length along a northwest axis and having a width of 50 - 80 miles. Numerous lead, silver and zinc mineralized showings have been discovered in carbonate and shale units and facies in the Selwyn Mountains during recent years. The Selwyn region is considered a prime mineral exploration area for large tonnage, massive sulphide mineralization, occurring as stratigraphic-bound deposits.

The LEAH claim group is staked in the Nadaleen Range between 3500 and 5500 feet elevation. The vegetation varies from stunted spruce to willow cover below the 4500 foot level to light willow above the timberline.

The Selwyn Mountains and Selwyn Basin are a division of the eastern tectonic belt of the Canadian Cordillera.

General Geology

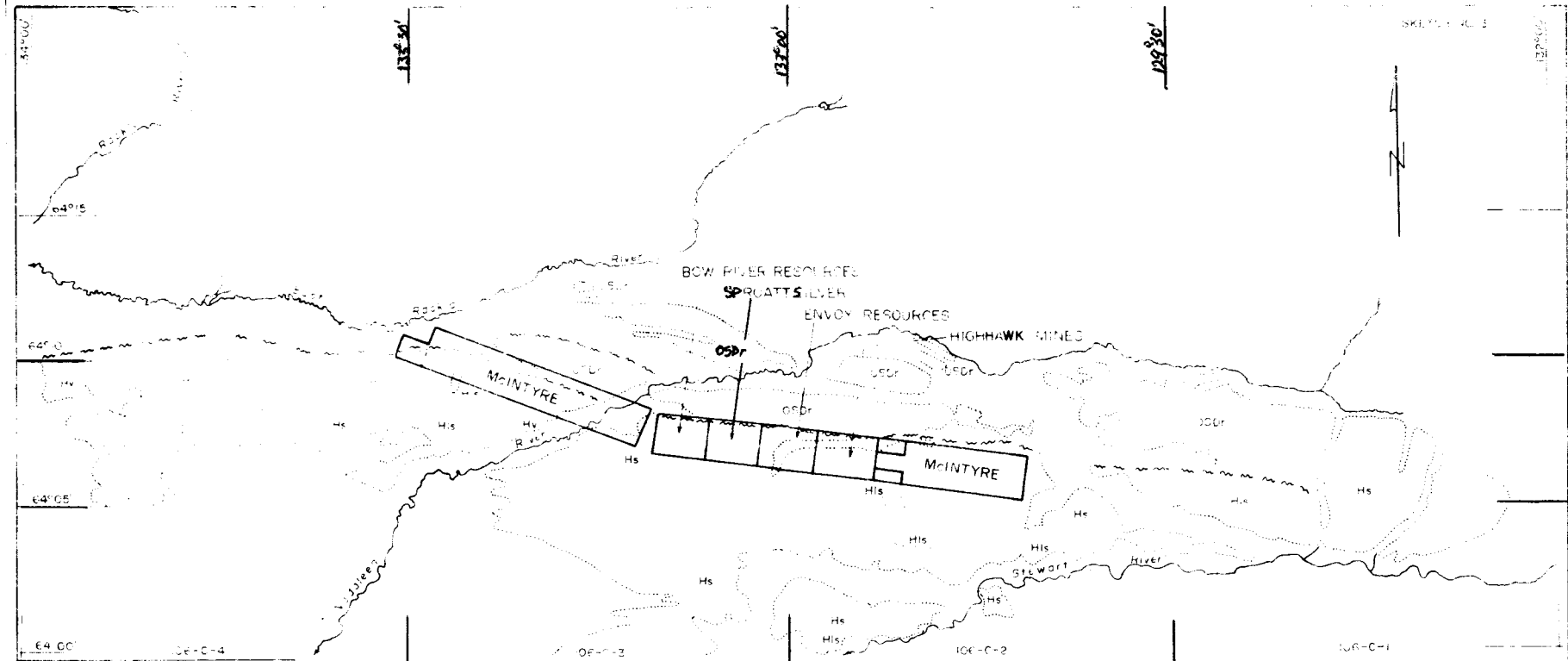
The LEAH claim group is located on or near a fault contact between the OSDr Road River Formation of black shales and siltstone and the Hls carbonate facies of the Hadrynian aged Grit Unit. The Road River Formation is considered to be Ordovician, Silurian and lower Devonian in age.

The fault contact between the Road River Formation and carbonate facies strikes in an east-west direction across the Nadaleen River. The general strike of other formations in the Bonnet Plume Range region and north of the Nadaleen Range is north-west.

The sulphide showings, consisting of lead, silver and zinc mineralization, are within the carbonate facies of the Grit Unit. The carbonate facies is Hadrynian in age and consists of a grey and orange weathering dolomite and limestone.

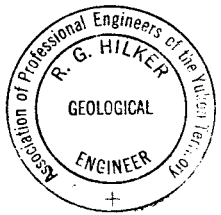
In the Howards Pass area of the southern Selwyn Basin, Canex-Placer have discovered a potentially large tonnage zinc-lead deposit on the Summit Lake property. The sulphide mineralization is reported to occur in the shales of the Road River Formation.

The LEAH claim group covers a 9.09 mile long and 1.7 miles wide strip near or adjacent to the faulted Road River Formation and carbonate facies contact. The favourable geological contact strikes east-west through the Nadaleen, East Rackla and Stewart River area for a distance of approximately 48 miles. McIntyre Mines have staked roughly 28 miles of the contact and carbonate facies rock type in the area (see Claim Ownership Reference Map). The LEAH claim group is staked to cover about 9,000 feet of the carbonates south of the Road River Formation fault contact.



GEOLOGY LEGEND

- Ordovician to Mississippian
- Os** Black shale
 - Ordovician, Soudan, Lower Devonian
 - Osd** Road River Formation - black shale, kiferstone, calcareous minor argillaceous dark limestone
 - Hadrynian
 - Hs** Grit unit - brown, grey, red & green slate, siltstone, feldspathic sandstone, feldspathic, minor grey siltstone, siltstone, fine grey, fine grained weathering, dolomite, limestone, mudstone, greenish, brown, black, carbonaceous, sandstone



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SHEET 106-C-1,2,3,4

ORTELL LAKE AREA

GEOLOGY OF THE NALAEEN AND RACKLA RIVER AREA

DATE	REV.	BY	DATE	REV.	BY
DRAWN BY			CHECKED BY		
SCALE			SCALE		

SEE GEOLOGICAL MAPS OF THE NALAEEN AND RACKLA RIVER AREAS IN THE APPENDICES TO THE REPORT

TABLE OF FORMATIONS

CENOZOIC

Quaternary

Recent and Pleistocene

- Valley alluvial deposits

PALAEOZOIC

Ordovician, Silurian and lower Devonian

Road River Formation

- OSDr - Black shale, siltstone, commonly calcareous, minor argillaceous dark limestone.
- OSsls - Interbanded argillite, limestone and metamorphosed equivalents. OSs Ordovician to Silurian shale and argillite.

PROTEROZOIC

Hadrynian

- Hs - Grit Unit: Brown, grey, red and green slate, siltstone, feldspathic sandstone and conglomerate, minor grey dolomite and limestone
- Hls: Grey and orange weathering dolomite and limestone
- Hv: Dark green and brown, basic volcanic and volcanoclastic rocks

After: S. L. Blussom, Geological Survey of Canada Open File 205, June, 1974; Legend Maps 105N, O, and 106A, B, C.

BIBLIOGRAPHIC REFERENCE TO GEOLOGY AND YUKON QUARTZ MINERAL CLAIMS

1. Geological Survey of Canada - Open File 205, June, 1974 - by S. L. Blussom.
2. McIntyre Mines Limited - Annual Report, March 11, 1977.
3. Geological Survey of Canada - Memoir 247, Physiography of the Canadian Cordillera with Special Reference to the Area North of the Fifty-Fifth Parallel - by H. S. Bostock, 1948.
4. Record of Mineral Claim - Department of Indian and Northern Affairs, Mayo Mining Recorder - R. G. Ronaghan - 1:00 p.m., May 27, 1977.
5. Department of Indian and Northern Development, Whitehorse, Yukon Territory - Claim Ownership Reference Map and Sheet, Nadaleen River Sheet 106C, April 1, 1977 - and Claim Sheets 106-C-2 and 106-C-3.

CONCLUSIONS AND RECOMMENDATIONS

The LEAH claim group occupies a position within the Hadrynian aged carbonates. The dolomite and limestone fault contacts with the Ordovician, Silurian and lower Devonian age shales of the Road River Formation. Recent discovery of lead-silver and zinc sulphide mineralization has been made in the east-west geology contact area of the Nadaleen River region and the LEAH claim group.

The LEAH claim group was staked during the late fall of 1976 when snow cover started to accumulate in the mountains above timberline.

It is recommended that a preliminary evaluation of the 48 contiguous LEAH claims be conducted. It is further recommended that a joint programme of preliminary exploration be conducted on the 192 LEAH claims group, and costs be equally shared between Highhawk Mines Ltd., Envoy Resources Ltd., Sproatt Silver Mines Ltd. and Bow River Resources Ltd. By means of such a joint exploration programme, mobilization, local flying, camp servicing and demobilization costs will be at a minimum when shared between the four companies.

A programme consisting of the following exploration methods is recommended having regard to the favourable stratigraphic horizon occupied by the LEAH claim group:

1. Prospecting: A combination prospector/blaster should make a series of trenches on the LEAH claim group. Trenches should be blasted to expose bedrock and to prospect for sulphide mineralization.
2. Geology Mapping: Reconnaissance geology mapping should be conducted over the carbonate rocks and along the contact with the Road River Formation shale.

3. Geochemistry: Reconnaissance geochemical soil sampling across the claim group and determinations of the soil samples for lead-silver and zinc.
4. Survey Control: A convenient baseline should be established across the claim group to permit good exploration survey control.
5. Basecamp: A suitable basecamp should be located to permit access to the whole claim group, and a series of fly-camps should be used to conduct the exploration programme.

The writer has not visited the property and it is not known whether any sulphide mineralized showings exist on the LEAH claim group.

EXPLORATION PROGRAMME EXPENDITURES

In order to conduct a preliminary evaluation of the 48 LEAH claims, the following first stage programme expenditures are recommended:

First Stage

Survey Control -----	\$ 500.00
Prospecting -----	2,000.00
Geochemical Soil Sampling and Determinations -----	5,000.00
Geology Mapping -----	2,500.00
Camp Costs -----	2,000.00
Flying Costs -----	3,000.00
TOTAL FIRST STAGE -----	<u>\$15,000.00</u>

Second Stage

If favourable exploration results warrant further work on the LEAH claim group, then detailed surface exploration and diamond drilling is recommended.



R. G. Hilker, P.Eng.

4 June 1977