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P.O. Box 566
WHITEHORSE, YUKON TERRITORY
"LAND OF THE MIDNIGHT SUN"



MAGNETOMETER and GEOCHEMICAL SURVEY

on the

LULU 1-16 CLAIMS GROUP - Sheet 1050-2

Latitude: 60° - 00.5'

Longitude: 134° - 33'

WINDY ARM AREA, TAGISH LAKE,

YUKON TERRITORY.

for

PREMIER MINING CORPORATION LTD.

VANCOUVER, B. C.

BY

R. G. Hilker, P. Eng.,

Whitehorse, Yukon Territory

October 10th, 1969.

This report has been examined by
the Geological Evaluation Unit.
Approved as to technical worth by:
[Signature]
RESIDENT GEOLOGIST
Approved as to cost in the amount
of \$1600.00
[Signature]
RESIDENT MINING ENGINEER
Accepted as representation work
under Section 53(4) Yukon Quartz
Mining Act.
[Signature]

TABLE OF CONTENTS

	<u>Page</u>
Introduction.....	1
Location and Access.....	1
List of Employees.....	2
Claims.....	2
Regional Geology.....	3
Economic Geology.....	3
Conclusion.....	5
Recommendations.....	6
Cost Estimate on Recommended Work.....	6
Expenditures.....	7
Certification.....	8

INTRODUCTION

The Lulu 1-16 Claims were visited by persons employed by R. G. Hilker Ltd., Consulting Geologist, from September 26th to 29th, 1969. During this period of time, 5.4 line miles of magnetometer survey were carried out, fifty-five soil samples were taken, and several samples of vein material were also taken.

The magnetometer survey was performed upon request of the principals of Premier Mining Corporation Ltd., following recommendations made by W. S. Reade, P. Eng., in his report on the property dated October 25, 1968.

LOCATION AND ACCESS

The property is located about 55 air miles South of Whitehorse in the vicinity of Windy Arm, Tagish Lake, Yukon Territory. The claims are on the Yukon Territory/British Columbia border at 60° - 00.5' North Latitude and 134° - 33' West Longitude in the Whitehorse Mining District (Staking Sheet No. 105-D-2). The claims are located on a North-facing slope of the Rams Horn at an elevation of approximately 5,000 feet above mean level and 2,800 to 3,000 feet above the level of Tagish Lake. The claim group lies above the timber line.

Access was provided by helicopter from Whitehorse for the work performed, and helicopter transportation is the most feasible method of transportation. Alternately, a gravel road extends from Whitehorse to the Venus property (via Carcross, Yukon Territory) which is located almost directly across Windy Arm from the Lulu Claims.

LIST OF EMPLOYEES:

The following is a list of employees of R. G. Hilker Ltd., who worked on the property and in preparation of the data acquired on the Lulu 1-16 Claim group:

L. Roberts, General Delivery, Whitehorse, Y. T.	Magnetometer and Geochemical Technician
M. Nichiporick, P. O. Box 2133, Whitehorse, Y. T.	Prospector (Assistant)
S. Zimmer, P. O. Box 1293, Whitehorse, Y. T.	Geologist
R. G. Hilker, P. O. Box 566, Whitehorse, Y. T.	Geologist

CLAIMS

A search of the records at the Whitehorse Recording Office has revealed the following information on the Lulu 1-16 Claim Group:

<u>Claim</u>	<u>Grant No.</u>	<u>Staked</u>	<u>Recorded</u>	<u>Anniversary Date</u>
Lulu 1-4	Y21107-821110	Oct. 7, 1967	Oct. 13, 1967	October 13, 1969
Lulu 5-16	Y26217-Y26228	Sept. 26, 1968	Sept. 27, 1968	September 27, 1969

All claims have been transferred to "Premier Mines Ltd."

During the work on the property, three groups of claim posts were located; the No. 1 Posts of Lulu 1, 2, 3 and 4; the Witness Posts for Lulu 11 and 12; and the No. 1 Posts of Lulu 11, 12, 13 and 14.

The adjoining claim locations were plotted on the basis of information from Staking Sheet 105-D-2. Accordingly, several fractions

are assumed and the actual locations of the other posts should be located to insure adequate coverage.

REGIONAL GEOLOGY

The geology of the Rams Horn area consists of metamorphosed volcanic rocks which have been mapped by J. O. Wheeler of the Geological Survey of Canada (Memoir 312, Whitehorse Map-Area Yukon Territory) as probably belonging to the Taku Group of Pennsylvania and Permian age. The extension of this group into Northern British Columbia has been mapped and described by R. L. Christie of the Geological Survey of Canada (Map 19-1957; Bennett, Cassiar District, British Columbia) as "Unit A" consisting of volcanic rocks (dacite, andesite, basalt, flows, breccias, tuffs) of uncertain age.

Wheeler describes the general area of the claim group as follows:

"Around Windy Arm, on Nares Mountain, and near Jubilee Mountain, a sheared and disrupted block of chert and dioritic rocks of heterogeneous texture and composition is associated with ultramafic rocks, ribbon chert and some slate and limestone."

ECONOMIC GEOLOGY

The earliest mention of activity in the Rams Horn area was by D. D. Cairnes in 1908 (GSC Publication No. 982, referred to in Memoir 284, P. 255):

"Some work was done this Summer on the Rams Horn on the East side of Windy Arm, and a very good looking

quartz ore carrying galena, zinc blend, chalcopyrite and pyrite were seen there, but the veins were too narrow to be profitably worked."

Following the staking of the Lulu 1-16 claims in the interest of Premier Mining Corporation Ltd., a property examination was made by W. S. Reade, P. Eng., on September 12, 1968. Reade examined two old adits which were driven on mineralized shears or veins in a complex dioritic rock (greenstone). Magnetite, pyrrhotite and chalcopyrite were found in the vein zones which had significant assay values in copper, silver, nickel and gold. Reade also refers to "skarny rock" and "skarny patches" associated with the vein zones and mention is also made of sulphide float in the talus. In concluding his report, Reade recommended that the claim group should be covered by a magnetometer survey with 400 foot line spacings and 100 foot intervals.

On September 26th, 1969, a two-man crew from R. G. Hilker Ltd. was flown into the area to carry out a portion of the recommended magnetometer survey. A grid system, consisting of 400 foot line intervals and 100 foot stations was laid out by chain and compass with the lines oriented north-south and the base line east-west. A Sharpe MF-1 Fluxgate Magnetometer was used for the survey and the standard procedures for magnetometer surveys were adhered to. A base control station was located on the baseline at line 28 + 00 West and given an arbitrary value of 2000 gammas. Magnetometer traverses were made starting and closing on the base control station at approximately two hour intervals. Diurnal corrections were calculated and all readings were adjusted relative to the base control station value of 2000 gammas. A statistical analysis was not made on the

survey readings due to time consideration for submitting the report. Values were contoured at 100 gamma intervals starting at 2000 gammas. No highly anomalous areas were found, but several weak "anomalies" have been contoured.

A total of 54 soil samples were taken on the grid system on 400 foot intervals as a basic reconnaissance program. Samples were analyzed by the Whitehorse Assay Office for parts-per-million (PPM) lead. A volcanic ash horizon was found at several of the sample locations and sampling procedure was revised to penetrate this layer where found.

The following samples were taken from the claim group:

<u>Sample No.</u>	<u>Location</u>	<u>Description</u>	<u>Oz/Ton Ag</u>	<u>%Pb</u>	<u>%Ni</u>
-	7+00W;13+50N	disseminated fine grained galena in dirty quartzite		NOT ASSAYED	
-	11+00W;6+00N North Side of Creek 200 feet above creek bed	arsenopyrite, scorodite and pyrite in quartz vein in dirty quartzite		NOT ASSAYED	
3788	ADIT-0+50W 2+00S	galena, pyrite, pyrrhotite	20.2	4.6	-
3789	ADIT-0+50W; 2+00S	galena, pyrite, pyrrhotite (gives reaction to dimethylglyoxime)	--	-	0.63

CONCLUSIONS

The magnetic and geochemical surveys indicate the possibility of mineralized structures existing in the northern extremity of the existing grid area.

Of the 54 samples taken, 14 samples had lead values of 20 parts-per-million or greater. The average value of the 54 samples is 15 parts-

per million. The anomalous readings in the southeast portion of the grid probably reflect the vein systems located in the cirque face and the excavated material from the adits.

The arsenopyrite and scorodite float found on the grid indicate a mineralogically favourable environment for gold values in addition to the known values for silver and nickel.

The silver-to-lead ration of the galena is extremely favourable (20.2 oz/ton Ag and 4.6% Pb yields a ratio of 20.2:4.6 or 4.4:1) indicating that, should any shipments be made, extensive transportation costs will not be incurred by shipping the heavy, low-profit lead.

RECOMMENDATIONS

A program of detailed geological mapping should be carried out over the area along with representative sampling of known mineralized areas.

The present magnetometer survey should be continued and extended to cover the entire Lulu claim group and any adjacent geologically favourable areas.

A detailed geochemical survey should be carried out over the recommended magnetometer grid. Determination should be continued for lead. With the high silver content of the vein material, additional geochemical analysis might well be carried out for silver values.

COST ESTIMATE ON RECOMMENDED WORK

Line Cutting (16 miles at \$75.00)	- \$	1,200.00
Geological Mapping (16 miles at \$100.00)	-	1,600.00
Magnetometer Survey (16 miles at \$75.00)	-	1,200.00
Geochemical Survey (16 miles at \$100.00)	-	1,600.00
Geochemical Determinations - 800 Samples at \$2.00	-	1,600.00
Camp Costs and Expediting	-	1,500.00
Transportation Costs	-	<u>3,000.00</u>
	-	11,700.00
10% Contingencies		<u>1,170.00</u>
	- \$	12,870.00

EXPENDITURES

The following expenditures were made for Premier Mining Corporation Ltd. on the Lulu 1-16 claims, sheet 105-D-2.

Nelson's	- \$ 27.25 ✓
Gulf	- 6.30 ✓
Riverside Grocery	- 60.78 ✓
TNT	- 448.40 ✓
Assaying	- 54.00 ✓
	12.00 ✓

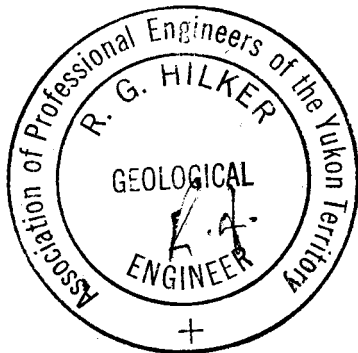
Labour:

L. Roberts: Sept. 24-29	- \$360.00
M. Nichiporick: Sept. 26-29	- 140.00
S. Zimmer: Sept. 26 & Oct. 1	- 200.00
Drafting	- 100.00
Report Preparation	- <u>600.00</u>
TOTAL	-\$2008.73

I, ROBERT G. HILKER, do hereby certify that the above expenditures were made on the Lulu 1-16 claims Sheet 105-D-2 - Whitehorse Mining District.

R. G. Hilker, P. Eng.

October 10, 1969



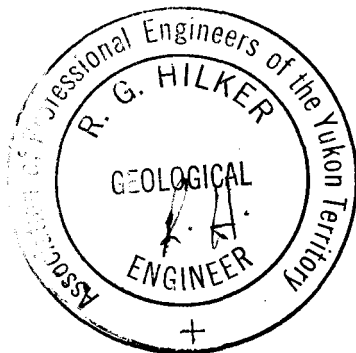
Commissioner for Yukon Territories
in and for the Yukon Territory.

CERTIFICATION

I, ROBERT G. HILKER of #6 Chalet Crescent Hillcrest, in the City of Whitehorse, in the Yukon Territory, DO HEREBY CERTIFY;

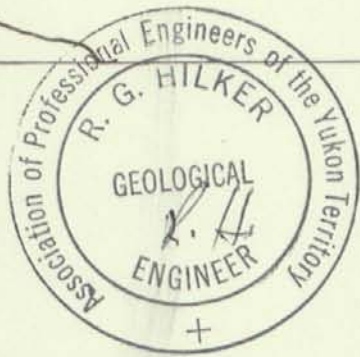
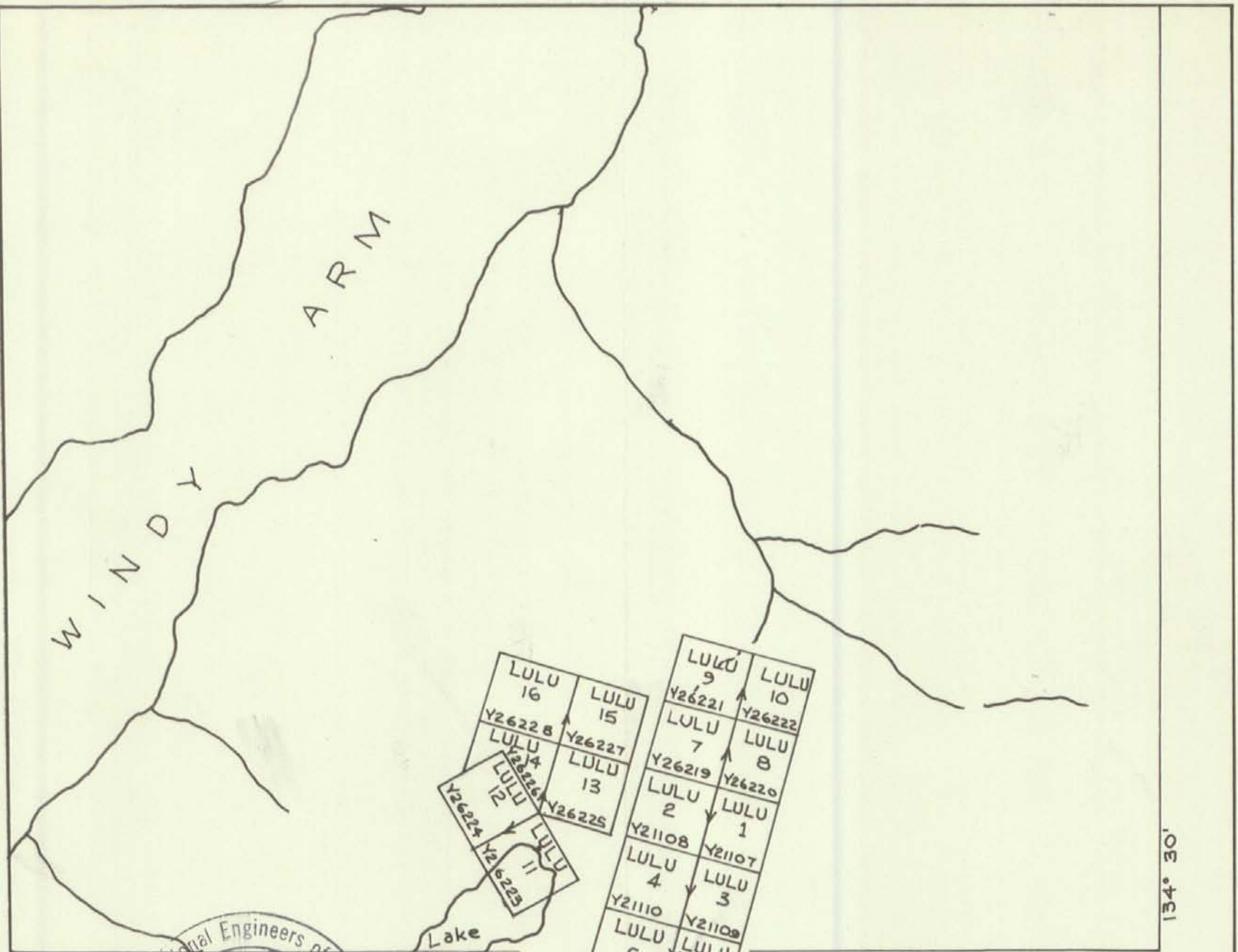
1. THAT I am a Consulting Geologist, with an office located at #8 Northern Metallic Building and postal address P.O. Box 566, in the City of Whitehorse, in the Yukon Territory;
2. THAT I am a graduate of the Michigan Technological University located at Houghton, Michigan, U.S.A., where I obtained a Bachelor of Science degree in Geological Engineering (Exploration Option) in 1962;
3. THAT I am a registered member in good standing of the Association of Professional Engineers of the Yukon Territory, and that I have applied for a non-resident's license in the Association of Professional Engineers of the Province of British Columbia;
4. THAT I have practised my profession as an engineer and geologist for the past seven years.
5. THAT I have personally supervised the reconnaissance magnetics and geochemical field work.
6. THAT I have no direct or indirect interests in any of the mineral claims, or in any of the securities held by Premier Mining Corporation Ltd., 818-510 West Hastings Street, Vancouver 2, British Columbia, nor do I expect to receive any.

DATED this 10th day of October, A.D. 1969.



A handwritten signature in cursive script that reads "R. G. Hilker".

R. G. Hilker, P. Eng.



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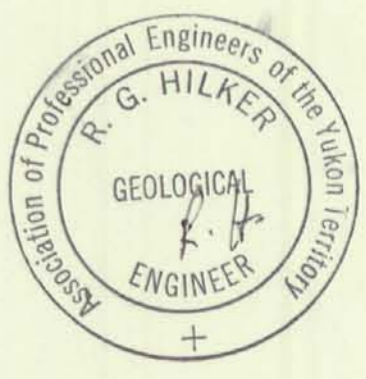
PREMIER MINES LTD.

LULU # 1-16 CLAIMS

SHEET 105 D-2

SCALE: 1" = 1/2 mile.

N



R.G. HILKER LTD.
CONSULTING GEOLOGIST
WHITEHORSE, Y.T.

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PREMIER MINES LTD.

LULU-1-16 CLAIMS SHEET 105-D-2
WINDY ARM, Y.T.

LEAD DETERMINATIONS

DRN BY: R.A.C.

APP'D BY: R.G. HILKER

DATE: OCT 1, 1969.

SCALE: 1" = 400 ft.

N



NOTE: All readings in "GAMMA" and are adjusted to control station value (arbitrary) of 2000 gamma.



R.G. HILKER LTD.
CONSULTING GEOLOGIST
WHITEHORSE, Y.T.

060005

PREMIER MINES LTD.

LULU-1-16 CLAIMS SHEET 105-D-2
WINDY ARM, Y.T.
MAGNETOMETER SURVEY

DRN. BY: R.A.C.	APP'D BY: R.G. HILKER
DATE: OCT 1, 1969.	SCALE: 1" = 400 ft.