

2325

REPORT ON
AEROMAGNETIC SURVEY
KLEANZA MOUNTAIN AREA, BRITISH COLUMBIA
ON BEHALF OF
McINTYRE PORCUPINE MINES LTD.

by

Richard O. Crosby, B.Sc., P.Eng.

April 15, 1970

CLAIMS:

<u>Name</u>	<u>Record Numbers</u>
H 3 - H 14 (inclusive)	71705 - 71716
H 21 - H 26 (inclusive)	72574 - 72579
H 29 - H 44 (inclusive)	72582 - 72597

LOCATION:

About 10 miles northeast of Terrace, B. C.
Skeena Mining Division
128° 54' NE

DATES:

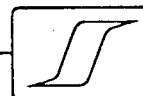
March 18 to March 21, 1970

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(in envelope)	
#3 Plate 3 - Magnetometer Contour Plan	1" = 1000'

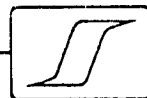
Department of
Mines and Petroleum Resources
ASSESSMENT REPORT

NO. **2325** MAP



SUMMARY

A helicopter-borne magnetometer survey was executed over approximately 12 square miles in the Terrace area, British Columbia. Magnetic anomalies in the vicinity of a gossan zone may represent the intrusive source.



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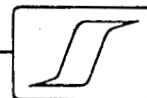
INTRODUCTION

From March 18 through March 21, 1970, an airborne geophysical survey was executed on behalf of McIntyre Porcupine Mines Ltd. in the Kleanza Mountain area, British Columbia, covering approximately 12 square miles (see Plate 1).

The airborne survey consisted of magnetometer measurements using a Scintrex NPM-1 nuclear resonance, total intensity magnetometer.

Appendix "A", attached, gives full details of the airborne geophysical equipment and the ancillary equipment employed, as well as the treatment of data resulting from this survey. In the case of the present survey a Bell 47G3B1 helicopter, on charter from Okanagon Helicopters, was employed as the transport vehicle.

The survey lines were flown at a nominal 1/8 mile line interval at a mean terrain clearance of 400 feet. The magnetometer sensor was flown 50 feet below the helicopter. Flight navigation and flight path recovery have been based upon a topographic map on the scale of approximately 1" = 1000'. Nineteen flight lines measuring a total of 72 line miles were flown on the present programme. The intensity of the earth's total magnetic field in the survey area measures approximately 57,500 gammas and the inclination of the total field vector is approximately 75 degrees. The purpose of the present survey was to obtain information relating to the distribution of intrusive rocks and geologic structure.



PRESENTATION OF DATA

The results of the geophysical survey are presented on Plate 3, on the scale of 1" = 1000'. Some topographic features and the flight lines are shown on the plate. Magnetic data are contoured at a 20 gamma interval. Base datum is arbitrary.

The magnetometer data are presented together with altimeter and fiducial recording on a dual trace Moseley recorder.

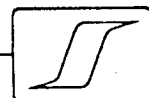
The vertical scale of the magnetic trace is 1" = 100 gammas with automatic steps of 500 gammas.

GEOLOGY

A description of the geology of the area including the present claims is found in G.S.C. Memoir 329 "Geology of Terrace Map - Area, British Columbia", by S. Duffell and J. G. Souther, 1964. The map accompanying this report reveals that most of the area is underlain by volcanic and sedimentary rocks of the Hazelton group. Granitic rocks are mapped north and west of the survey area. Reported mineralization in the map area is copper, gold, silver and iron.

DISCUSSION OF RESULTS

The magnetic field of the survey area is dominated by a positive zone extending from Kleanza Mountain in the extreme southwest corner northward through the claim group to midway along L 19. This zone of increased magnetic intensity reaches a maximum of 1900 gammas on L 8 and 1800 gammas on L 19. The 1500 gamma contour bounds the area on the north and south. Two other areas of increased



magnetic field were recorded on the eastern ends of L 4 and L 5 and L 9 through 14. The remainder of the magnetic field is relatively featureless except for a series of magnetic depressions bounding the main magnetic positive area and a few located over the creeks and valleys, probably reflecting the extreme topographic relief.

The area of increased magnetic intensity is interpreted as arising from intermediate type intrusive rocks. Magnetic anomalies outlined by the 1600 gamma contour centred on L 8 and L 11 immediately west of Kendal Creek may reflect the suspected intrusive underlying the gossan.

The 1900 gamma anomaly on L 8 is coincident with the Prince Island copper showing.

CONCLUSIONS AND RECOMMENDATIONS

The airborne geophysical survey has indicated zones which warrant field investigation.

It is recommended that a geochemical survey be completed over the claim group to check for anomalous copper conditions. If the results are positive, an induced polarization survey should be conducted in order to map the subsurface distribution of metallic sulphides.

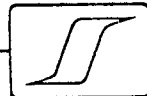
Respectfully submitted,

SEIGEL ASSOCIATES LIMITED

Richard O. Crosby

Richard O. Crosby, B.Sc., P.Eng.
Geophysicist

Vancouver, B. C.
April 15, 1970



MAGNETOMETER - SCINTREX NPM-1

The Scintrex NPM-1 nuclear resonance airborne magnetometer is based on a Newmont modification of a Varian Associates magnetometer and is produced under license to both companies. It is a very light weight, solid state unit, especially designed for use in a helicopter or light fixed-wing aircraft where weight is an important consideration.

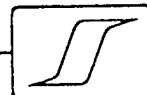
Its cycle period is 1.1 seconds. Each cycle it measures the total intensity of the earth's magnetic field and this quantity, in gammas, is recorded, in analogue form, on a suitable graphic recorder. The full scale sensitivity is usually 1000 gammas and the recorder automatically steps each 500 gammas. In very active areas a full scale sensitivity of 5000 gammas with steps of 2,500 gammas may be employed. Only the magnetic variations are actually recorded although the absolute base level may be established from the NPM-1 as well.

The magnetic sensing head may be on a cable as much as 100 ft. below the aircraft or, in some installations, may be rigidly attached to the aircraft on a suitable boom.

The intrinsic noise level of each reading is about 5 gammas.

Where it is intended to contour the NPM-1 information it is customary to fly tie lines across the survey grid. A fixed magnetic field monitor is often used as well, on the ground, primarily to indicate periods of magnetic storms during which the aeromagnetic data should be considered as unreliable.

The aeromagnetic data may be contoured if desired, using a contour interval of 25 gammas or up, depending on the amount of magnetic relief. Alternatively they may be used simply for purposes of correlation with simultaneously obtained electromagnetic data to determine which conductor zones are appreciably magnetic.



ANCILLARY EQUIPMENT.

1. Altimeter

A Bonzer, high frequency solid state radioaltimeter is employed to continuously indicate the mean terrain clearance of the helicopter or other transporting aircraft. The altimeter is installed in the aircraft (unless otherwise indicated) so that the elevation of the sensing birds (electromagnetic or magnetic) will be less by the usual vertical displacement of these birds below the aircraft.

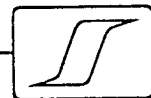
The output of the Bonzer may be expressed in analogue form on a suitable graphic recorder, or may be, for convenience, converted to a semi-digital form on a recorder side pen. In the latter event the altimeter record is a series of spaced pulses whose separation is proportional to the mean terrain clearance.

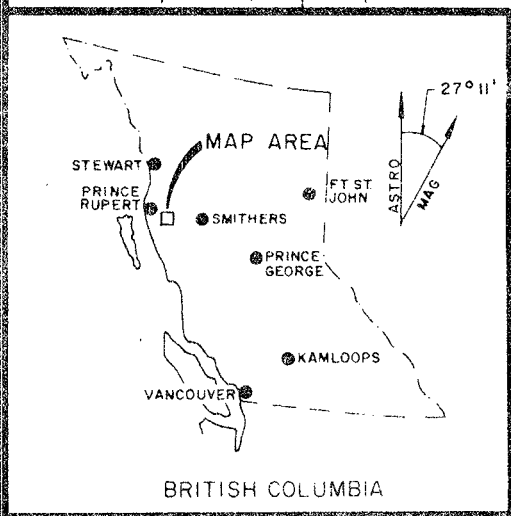
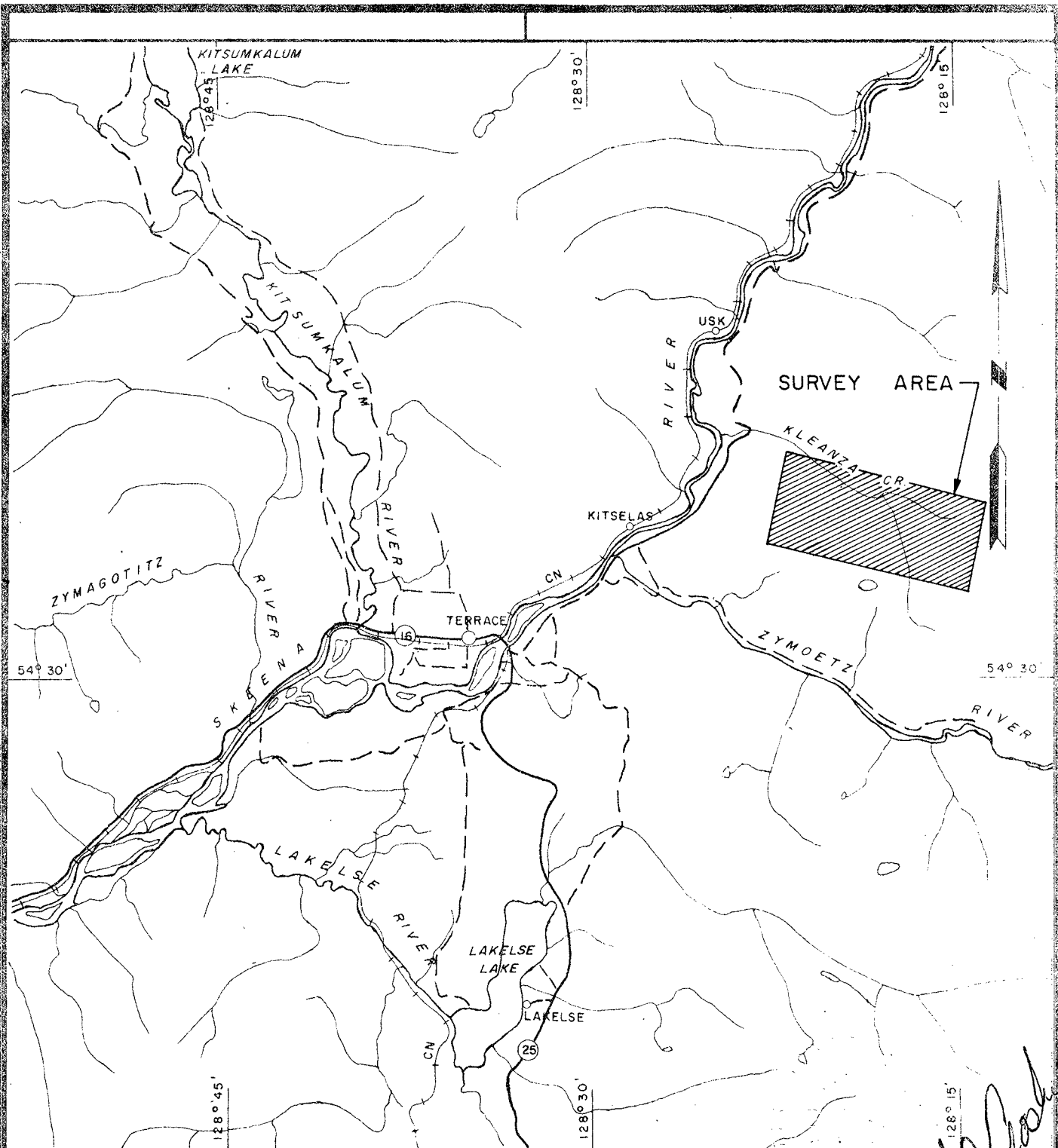
2. Positioning Camera

A Vinten Mark 3 16 mm positioning camera is employed with a wide angle lens. Photographs of the ground are taken with sufficient frequency to give a complete record of the flight path of the aircraft or helicopter. The frequency of exposure is controlled by the intervalometer referred to below.

3. Intervalometer

A Scintrex IA-2 intervalometer provides regularly spaced timing pulses which drive the positioning camera exposure mechanism and produces synchronous "fiducial marks" on the side pen of the geophysical graphic recorder or recorders. Because of the synchronization of the geophysical traces and the positioning camera it is then possible to relate the geophysical events of interest to their proper ground location. The timing pulse frequency may be adjusted in accordance with the ground speed of the aircraft so that an adequate flight path record is obtained.



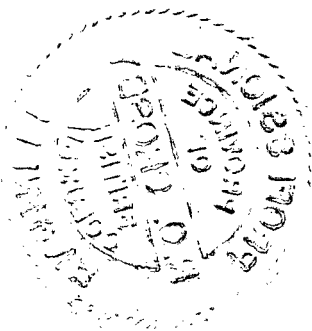


McINTYRE PORCUPINE MINES
 LOCATION MAP
 AIRBORNE GEOPHYSICAL SURVEY
 KLEANZA MOUNTAIN AREA, B.C.

SCALE IN MILES

SURVEY BY
 SEIGEL ASSOCIATES LIMITED
 MARCH 1970

PLATE 1



Department of
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ASSESSMENT REPORT

NO. **2325** MAP **#1**

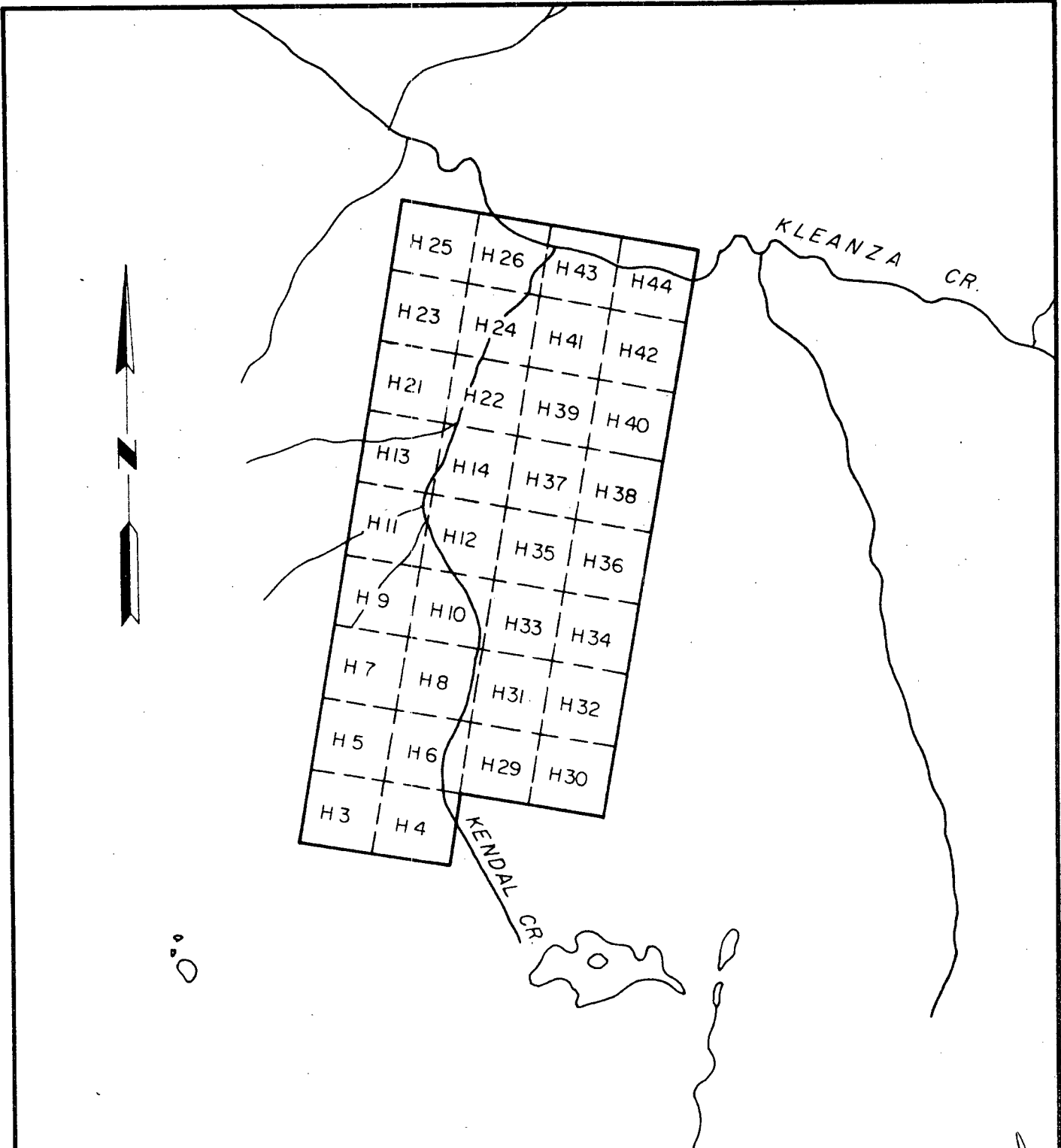


PLATE 2

McINTYRE PORCUPINE MINES LTD.

CLAIM LOCATION MAP

KENDAL No. 1 GROUP

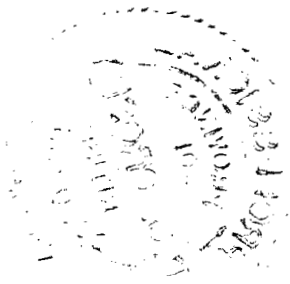
KLEANZA CREEK AREA, OMINICA M.D.

SCALE: 1" = 1/2 MILE

Richard O. Crosby

Department of
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ASSESSMENT REPORT

NO. **2325** MAP **#2**



DOMINION OF CANADA:
PROVINCE OF BRITISH COLUMBIA.
To Wit:

In the Matter of a geophysical survey on behalf of
McIntyre Porcupine Mines Ltd.

I, E. M. Flett for Seigel Associates Limited

of 750 - 890 West Pender Street, Vancouver

in the Province of British Columbia, do solemnly declare that an aeromagnetic survey has been executed on some "H" claims, Kleanza Mountain area, British Columbia between March 18 to March 21, 1970. The following expenses were incurred:

(1) Wages:			
	C. Mohagen	4 days @ \$37.50/day	\$150.00
	D. Phillips	4 days @ \$37.50/day	<u>150.00</u>
			\$300.00
(2)	Transportation & shipping to the job		442.50
(3)	Transportation on the job (helicopter)		655.00
(4)	Food & living & Miscellaneous expenses		172.71
(5)	Use of geophysical equipment		
		4 days @ \$200.00/day	800.00
(6)	Compilation & reporting		
		72 line miles flown @ \$15.00/mile	<u>1,080.00</u>
			\$3,450.21

And I make this solemn declaration conscientiously believing it to be true, and knowing that it is of the same force and effect as if made under oath and by virtue of the "Canada Evidence Act."

Declared before me at the City
of Vancouver, in the
Province of British Columbia, this 21 st
day of April, 1970, A.D.

E. M. Flett

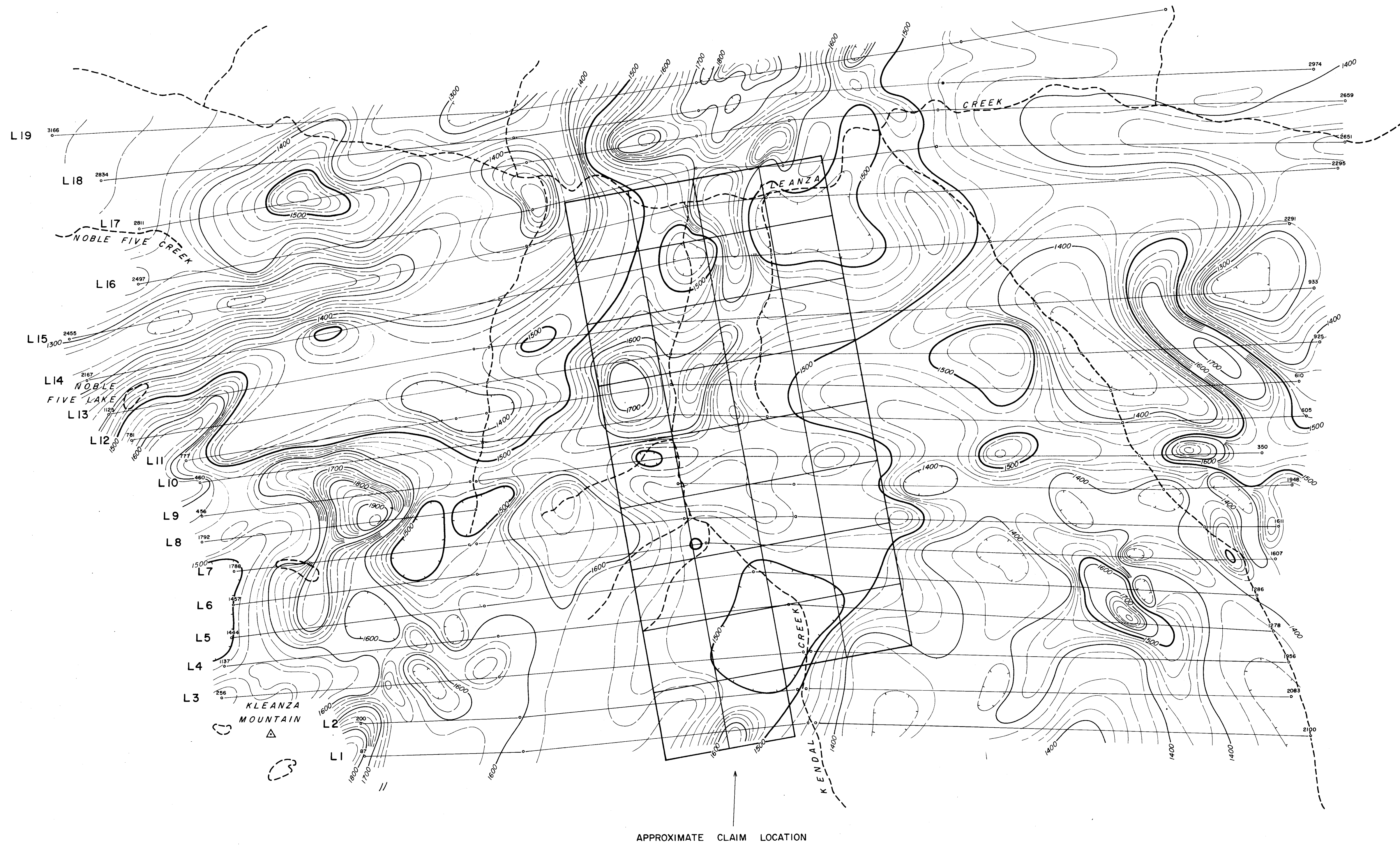
D. Phillips

A Commissioner for taking Affidavits within British Columbia or
A Notary Public in and for the Province of British Columbia.

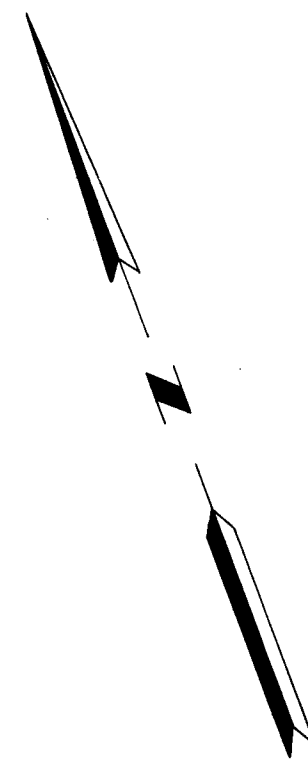
SUB - MINING RECORDER

In the Matter of

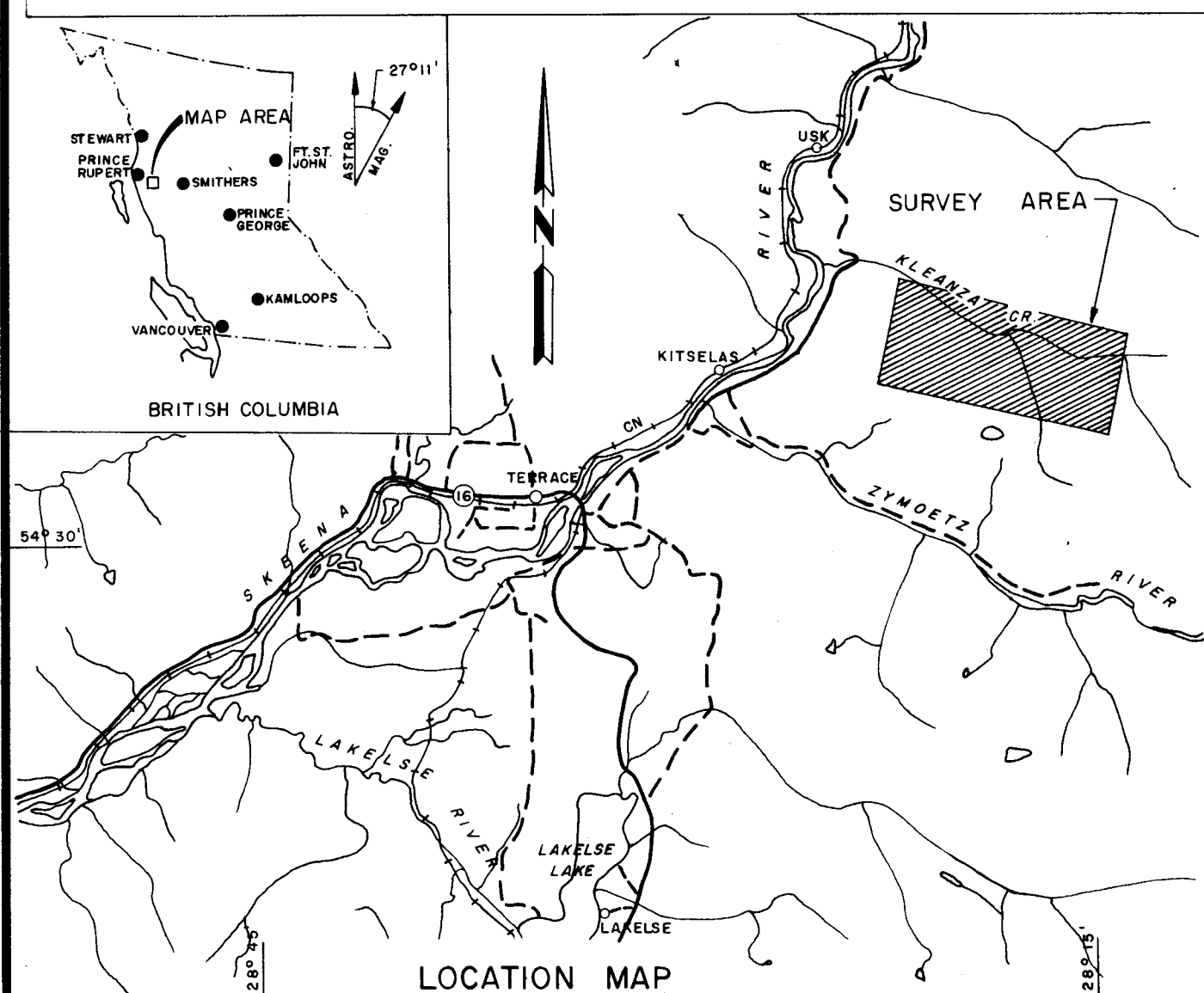
Statutory Declaration
(CANADA EVIDENCE ACT)



APPROXIMATE CLAIM LOCATION



2325



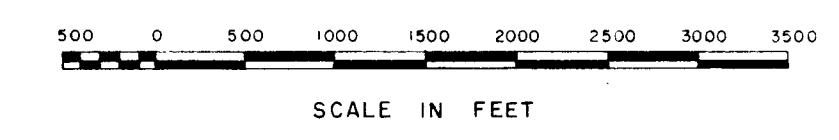
LEGEND:

- FLIGHT LINE, FLIGHT LINE NUMBER AND NUMBERED FIDUCIAL POINT
- ~~~~~ 500 GAMMA ISOMAGNETIC CONTOUR INTERVAL
- ~~~~~ 100 GAMMA ISOMAGNETIC CONTOUR INTERVAL
- ~~~~~ 20 GAMMA ISOMAGNETIC CONTOUR INTERVAL
- MAGNETIC LOW
- BASE VALUE ARBITRARY
- - - - - DRAINAGE

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NO. 2325 MAP #3

PLATE 3
MCINTYRE PORCUPINE MINES LTD.
KLEANZA MOUNTAIN AREA, B.C.
AIRBORNE GEOPHYSICAL SURVEY
MAGNETOMETER CONTOUR PLAN

APPROX. SCALE: 1" = 1000 FT.
SURVEY BY SEIGEL ASSOCIATES LIMITED
FLOWN AND COMPILED MARCH 1970
AIRCRAFT TERRAIN CLEARANCE 400'
FLIGHTLINE SPACING 1/8 MILE



To accompany a geophysical report
dated April 15, 1970 by Richard O. Cosby

Richard O. Cosby
SHEET 1 of 1