

LOG NO: <i>April 11/91</i> RD.
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FILE NO:

**HLX RESOURCES LTD.  
MAGNETOMETER SURVEY REPORT  
ON THE KC 1 AND KC 2 CLAIMS**

**OMINECA MINING DIVISION, B.C.  
NTS 930/4W**

**BY  
PERRY GRUNENBERG  
MARCH, 1991**

CLAIM NAME	UNITS	RECORD NO.	RECORD DATE
KC 1	20	10097	FEBRUARY 14, 1999
KC 2	20	10098	FEBRUARY 14, 1999

**LOCATION:** 55°07' NORTH LATITUDE; 123°56' WEST LONGITUDE

**OPERATOR:** HLX RESOURCES LTD.

**OWNER:** COOKE NATION SYNDICATE

**CONSULTANT:** PERRY GRUNENBERG, B.Sc., F.G.A.C.

**GEOLOGICAL ASSESSMENT REPORT**

21,197

MAGNETOMETER SURVEY REPORT  
ON THE KC 1 AND KC 2 CLAIMS  
OMINECA MINING DIVISION, B.C.  
NTS 93 O/4W

**SUMMARY**

The KC claims are located approximately 33 kilometres south of Mackenzie, B.C., in the Omineca Mining Division. The property consists of two modified grid claims (40 units) staked immediately east of the Mount Milligan property. During the period February 5th to 10th, 1991, a 9.025 line kilometre magnetometer survey was completed on the claims. Much of the survey was of a reconnaissance nature due to heavy snow conditions at that time which prevented access to a significant portion of the claims. In general, the results of this survey show shallow magnetic gradients, which correspond to the low magnetic relief displayed by G.S.C.'s regional airborne survey of the area. Future magnetic survey lines should be carried out in a NW-SE orientation in order to locate the airborne anomalies on the ground.

MAGNETOMETER SURVEY REPORT  
ON THE KC 1 AND KC 2 CLAIMS  
OMINECA MINING DIVISION, B.C.  
NTS 93 O/4W

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## 1.0 INTRODUCTION

### 1.1 LOCATION AND ACCESS

The KC claims are located immediately west of Philip Lakes, along the Finlay-Philips forest service road, which junctions with highway 97 approximately 155 kilometres north of Prince George, and 33 kilometres south of Mackenzie, B.C. (figure 1). This main forest service road, which bisects the KC 2 claim in an east to west direction from kilometre 66 to kilometre 69, also leads to the Mount Milligan property to the west. The road currently provides good all year access to the property. Timber on parts of the KC claims has been clear-cut, allowing easy access to different areas within the claims.

### 1.2 PHYSIOGRAPHY, VEGETATION, AND CLIMATE

The KC claims are located on the Nechako Plateau, west of the Rocky Mountain Trench. Much of this area lies on glacially deposited material in an area of low topographic relief. Maximum relief in this area is about 450 metres. Drumlins and eskers striking northeasterly are present on the property, but the majority of the surface is very flat. The property lies along Rainbow Creek which flows north into the Nation River.

Some of the claim area is forest covered, with open pines in areas of good drainage, and spruce, balsam and fir in wetter areas. Thick growths of alder, devil's club and wild rose may be encountered along creek valleys.

The property experiences typical northern interior climate, with relatively dry summers and moderate snowfalls in winter. Average July temperature is 20°C and average January temperature is -10°C.

### 1.3 CLAIM INFORMATION

The claims are located within the Omineca Mining Division and consist of 2 modified grid claims totalling 40 units (Figure 2). The property is held by D.L. Cooke in trust for the Cooke-Nation Syndicate. Claim information is listed in Table I on page 4.

HLX RESOURCES LTD.

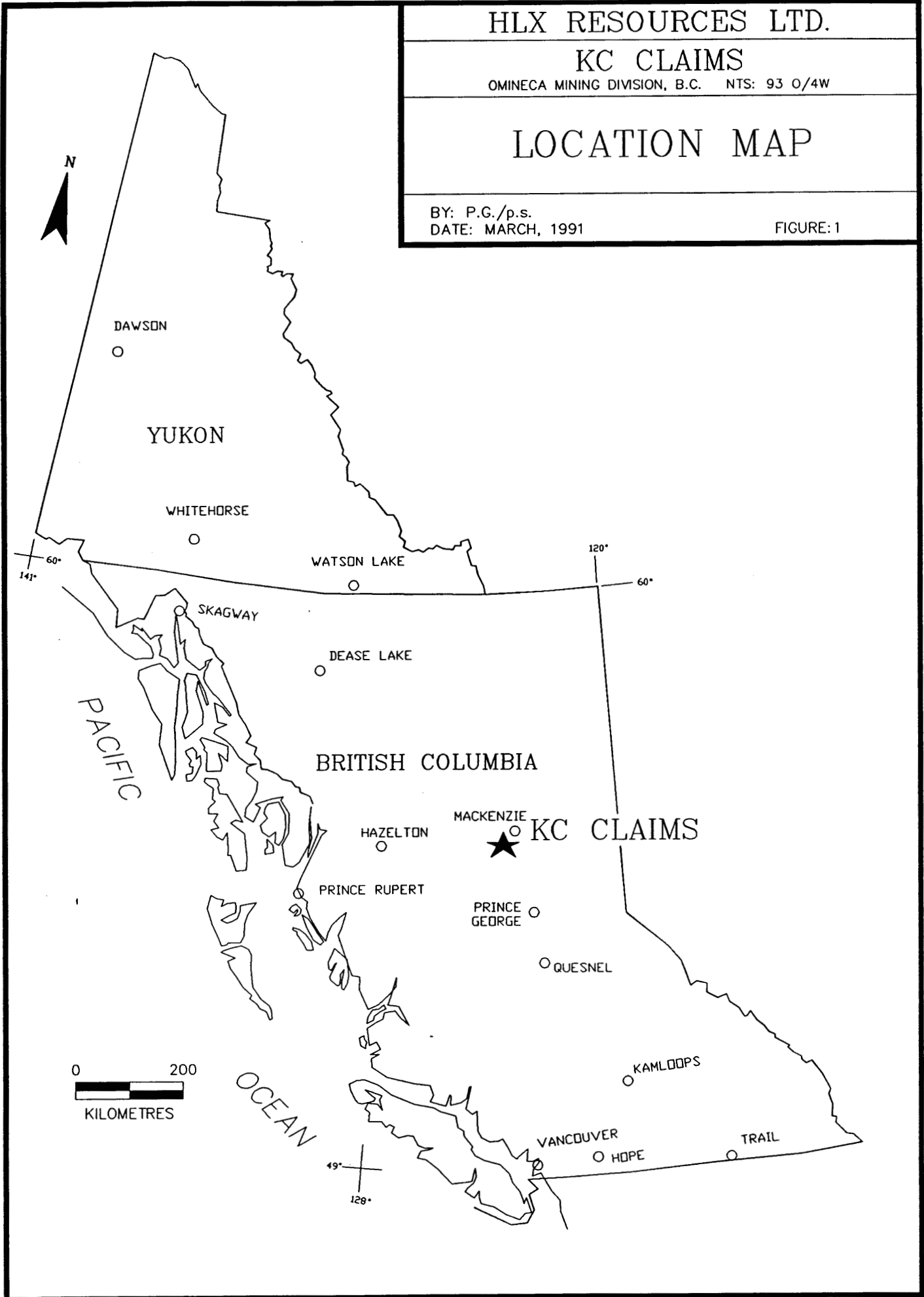
KC CLAIMS

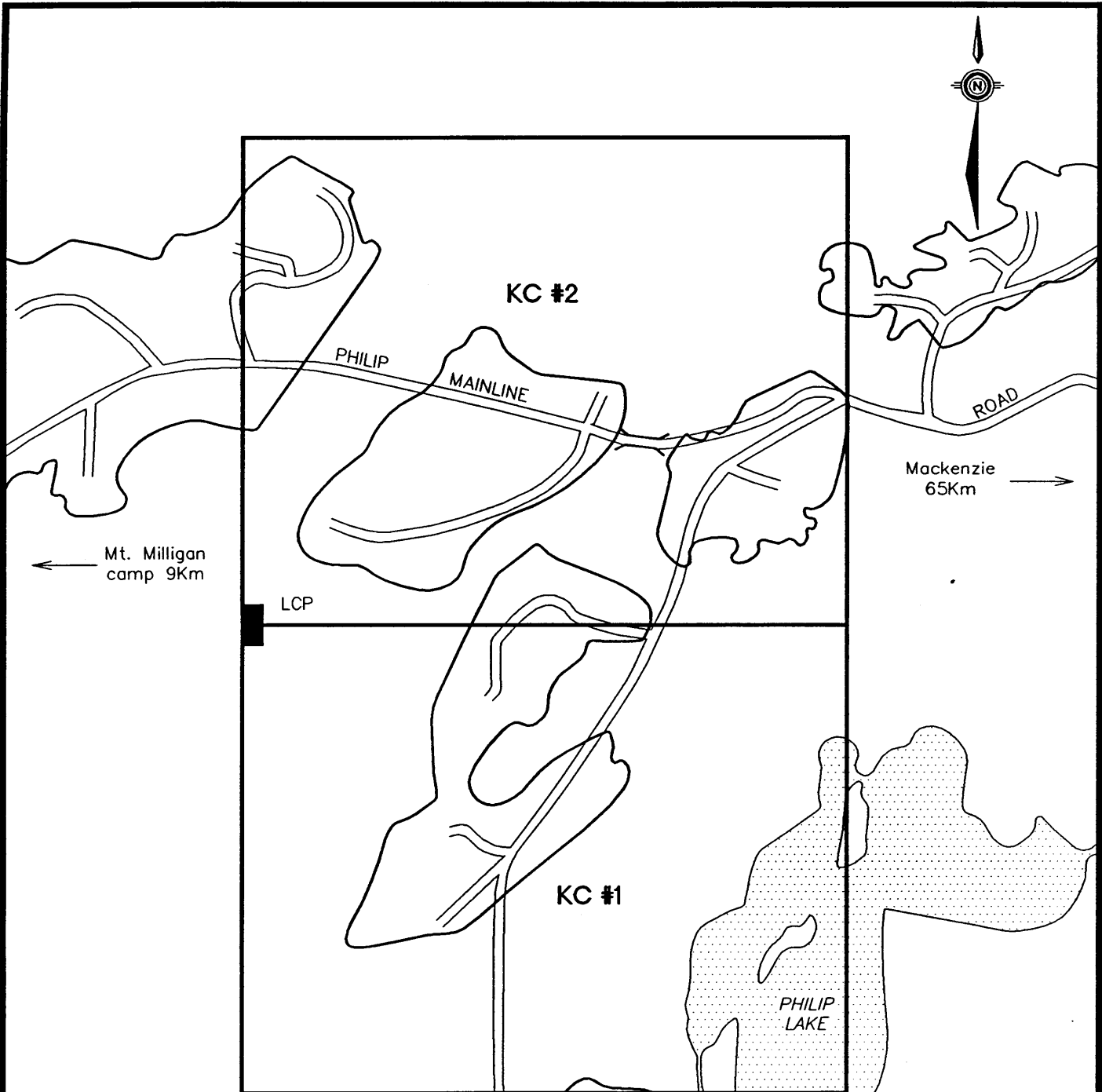
OMINECA MINING DIVISION, B.C. NTS: 93 O/4W

LOCATION MAP




BY: P.G./p.s.  
DATE: MARCH, 1991

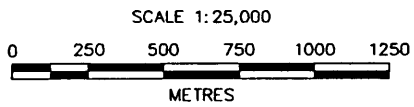
FIGURE: 1





**LEGEND**

-  ROAD
-  BRIDGE
-  LOGGED AREA



HLX RESOURCES LTD.  
 KC CLAIMS  
 OMECEA MINING DIVISON, B.C. NTS: 93 0/4W  
 CLAIM MAP

BY: P.G./p.s.  
 DATE: MARCH, 1991

FIGURE: 2

**TABLE I**  
**CLAIM STATUS**

CLAIM NAME	UNITS	RECORD NUMBER	RECORD DATE
KC 1	20	10097	FEBRUARY 14, 1989
KC 2	20	10098	FEBRUARY 14, 1989

#### 1.4 HISTORY

Exploration of the Nechako Plateau dates back to the late 1800's when a wave of individuals prospecting the numerous watercourses north from the Cariboo gold fields following placer gold strikes. Limited placer gold production continues to date from a variety of creeks in the area.

In the late 1960's and early 1970's regional exploration for copper porphyries covered much of the Nechako Plateau. Results of these surveys were often discouraging since exploration techniques employed at that time were not capable of handling the deep glacial overburden of the area.

Of more recent interest is exploration and development on the Mount Milligan property currently operated by Placer-Dome Inc. Here, copper-gold porphyry mineralization has been discovered by drilling and trenching of a combination of soil geochemical and magnetic anomalies. The KC claims were staked along the eastern margin of the Mount Milligan property because of the potential for the occurrence of other copper-gold deposits in the area.

In 1989, a reconnaissance soil survey was completed by D.L. Cooke and R.U. Bruaset along logging roads which cross the property. This survey was limited to the KC 2 claim. Because of the unknown thickness but widespread nature of glacial drift cover in the area, mineralized volcanic float was also collected for analysis. Anomalous levels of gold in soils and copper-gold in rock "grab" samples lead to the conclusion that more detailed geochemical work was warranted.

### **1.5 WORK COMPLETED FOR HLX RESOURCES LTD. IN 1991**

During the period February 5 to 10, 1991, a 9.025 line kilometre magnetometer survey was completed by a two person crew based in Mackenzie, B.C. The survey, using a Scintrex MP-2 Proton Precession Magnetometer, included 6.275 kilometres of reconnaissance style free traverses along roads within the property, and 2.75 kilometres over fixed grids along pre-surveyed, flagged, hip-chained and compassed lines.



## 2.0 GEOLOGY

The area of the KC claims comprises flat to rolling country where bedrock is generally obscured by widespread glacial cover. Regionally, the property lies within the northwest trending central volcanic core of the upper-Triassic lower-Jurassic Takla group of the Quesnel Belt. Takla volcanics are dominated by subaqueous alkalic pyroxene porphyritic andesite and basalt flows and pyroclastics with subordinate intercalated tuffs and argillites. Intruding the volcanic stratigraphy are comagmatic alkaline syenite-monzonite-diorite stocks and younger calcalkaline plutons.

The area is marked by "pull-apart" fault structures which trend northwesterly and northeasterly.

More detailed analysis of geology of the area has been obtained from extensive drilling of the Mount Milligan property, where Mark Rebagliati of Rebagliati Geological Consulting, and Dave Copeland of C.E.C. Engineering Ltd. have summarized the geology for that deposit. Further detailed geology may be obtained from these persons.

On the KC claims, abundant erratics in the glacial cover found on the KC 2 claim in 1989 consisted of augite andesite and basalt boulders. Some of these volcanic boulders were found to be impregnated with disseminations of pyrite, with or without chalcopyrite.

### 3.0 MAGNETOMETER SURVEY

The claims were staked over the southwest corner of an inverted V shaped area of magnetically high values as recorded by government airborne magnetometer survey (Figure 3). This anomalous feature lies within 5 kilometres of the Mount Milligan magnetic high associated with that deposit, however, it appears to be a totally separate feature.

#### 3.1 INSTRUMENT AND SURVEY TECHNIQUES

A Scintrex MP-2 portable proton precession magnetometer was utilized to measure magnetic variations on the claims. The MP-2 records total magnetic field and has a resolution of 1 gamma, an accuracy of plus or minus 1 gamma over an operating range of 20,000 to 100,000 gammas in 25 overlapping steps, and a gradient tolerance of up to 5000 gammas per metre.

Magnetic readings were taken along previously established survey stations at 25 metre intervals. The time of day was recorded at each station to later correct the field readings for diurnal variations. This was done through the establishment of a base station at which magnetic recordings were made at the beginning and end of each survey day. Each survey line could then be corrected proportionately for the variation of base station recordings corresponding to the interval of time used to complete that line. "Looping" of lines was also used so that more than one recording was made at a given station during the day to supplement the base station data.

A total of 9.025 line kilometres was surveyed in this manner for a total of 362 magnetic recordings. Of this total, 6.275 kilometres were completed on existing road accesses, and 2.75 kilometres were completed on compassed north-south trending lines.

#### 3.2 PRESENTATION OF RESULTS AND CONCLUSIONS

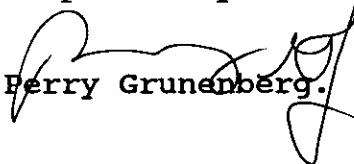
The locations of magnetic survey points with some topographical features are shown in Figure 4 and the corrected magnetic data is displayed in Figure 5. Readings are in gammas with a base of 57,000 gammas.

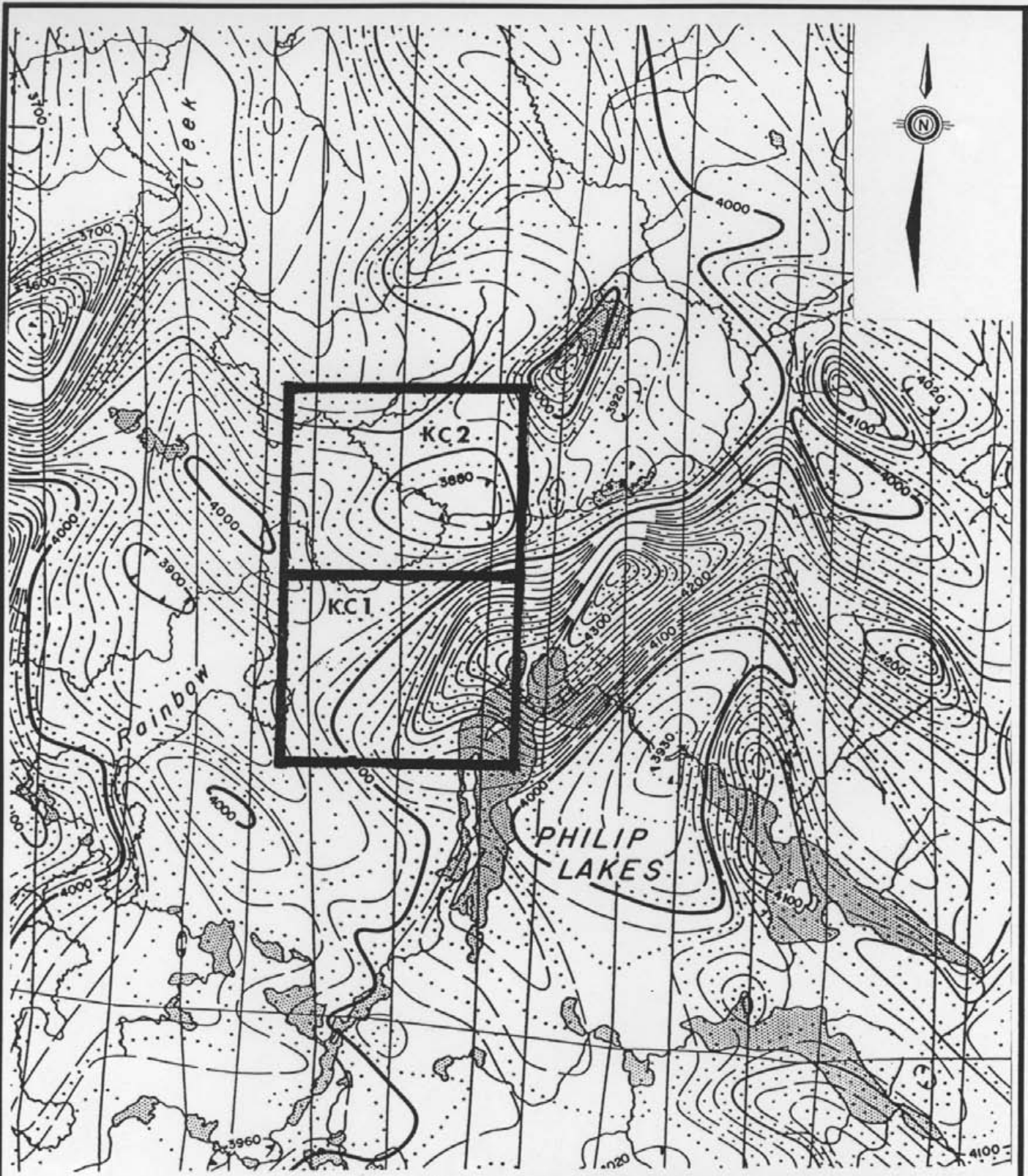
This survey was designed as a prospecting style first pass on the claims in order to collect information in a short

period of time. For this reason, the data is only of limited value. In general, the magnetic readings show a relatively low variation, with overall gradient under 400 gammas. In relation to the regional airborne survey of figure 3, the lines cover areas of low magnetic relief, since the center of the magnetic high in the area is located closer to Philip Lake, to the southeast of areas covered by the ground survey. As well, the survey line directions are roughly parallel to the regional trend of the magnetics in the area. Some of the weaker anomalous features of the ground survey may be reflecting changes in magnetite content of both the underlying Takla Group volcanics and the glacial morrains that cover the area.

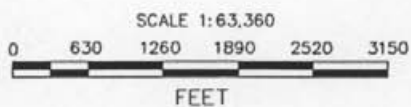
Future survey lines should be run in a northwest to southeast direction to better define the regional high.

Respectfully Submitted

  
Perry Grunenberg.



FROM GSC GEOPHYSICS DIVISION  
 MAP #1573 G "PHILIP LAKES"  
 SHEET 93 0/4 - 1963



HLX RESOURCES LTD.

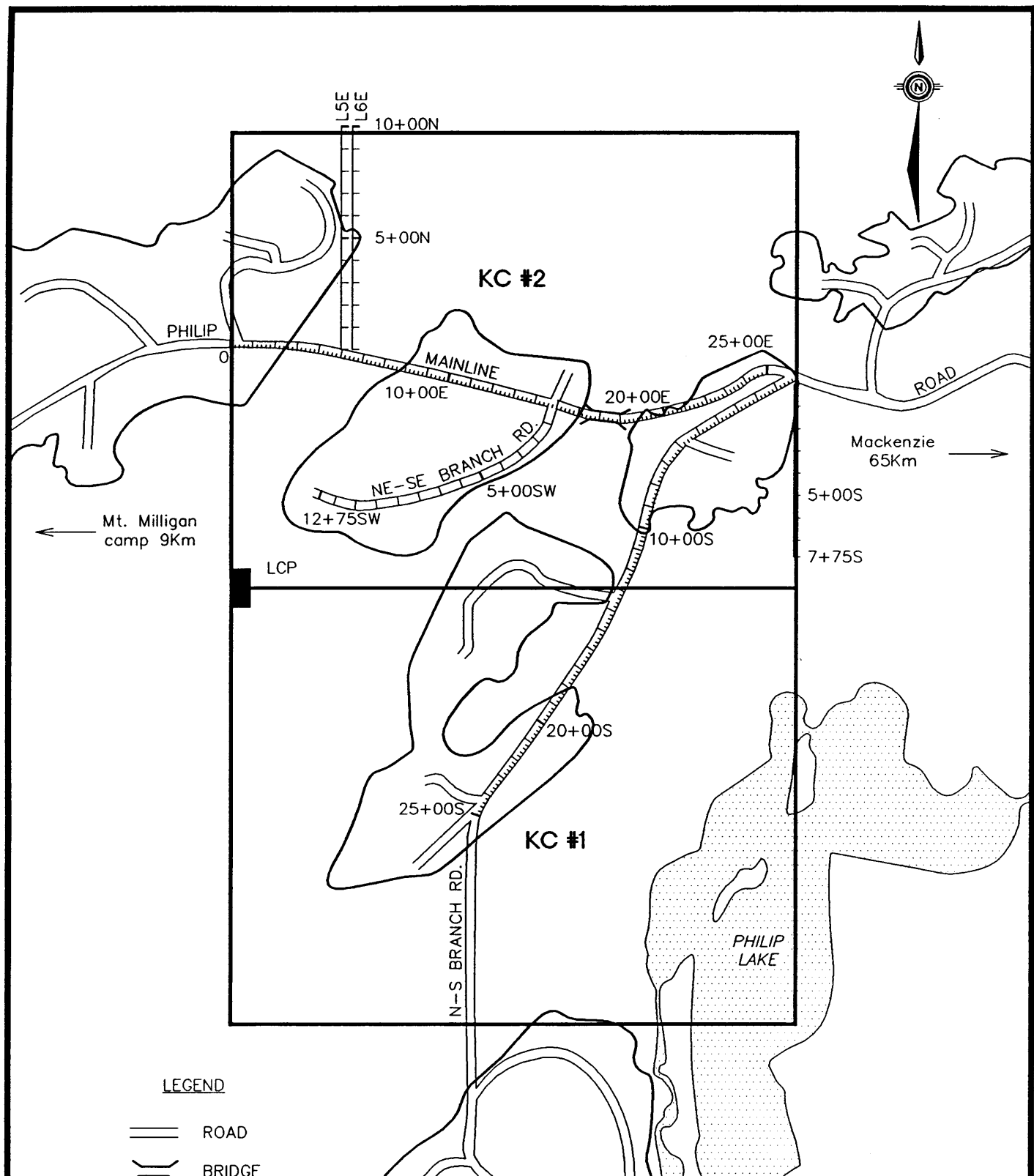
KC CLAIMS

OMINECA MINING DIVISION, B.C. NTS: 93 0/4W




REGIONAL TOTAL  
 FIELD MAGNETICS

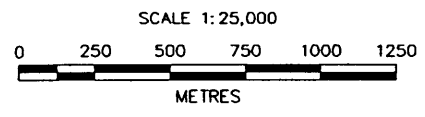
BY: P.G./p.s.  
 DATE: MARCH, 1991

FIGURE: 3



**LEGEND**

-  ROAD
-  BRIDGE
-  LOGGED AREA



<b>HLX RESOURCES LTD.</b>	
<b>KC CLAIMS</b>	
OMINECA MINING DIVISON, B.C. NTS: 93 0/4W	
<b>MAGNETOMETER SURVEY LOCATION MAP</b>	
BY: P.G./p.s. DATE: MARCH, 1991	FIGURE: 4



**COST STATEMENT**  
**HLX RESOURCES LTD.**  
**KC CLAIMS**  
**MAGNETOMETER SURVEY**  
**5 - 10 FEBRYARY 1991**

Salaries & Wages, 2pers, 10mdays @ \$210		\$2,100.00
Food & Accommodation, 10mdays @ \$16.41		164.05
Supplies		115.61
Fuel		226.89
Field Telephone Service		72.76
Rentals:		
Grunenberg Supercab, 5days @ \$65	\$417.30	
Arbor MP2 Mag, 6days @ \$27	173.34	
HLE Field Equipment, 10mdays @ \$10	<u>107.00</u>	697.64
Fixed Wing, CAI Vcr-Smt Rtn		647.34
Consultant, Archean Engineering Ltd.		695.50
Report Preparation		<u>1,286.32</u>
Total		<u>\$6,006.11</u>

## REFERENCES

**COOKE, D.L., 1989; A Statement of Proposal for the Witt, KC and BOW Claims, Mt. Milligan Area, Omineca M.D. (letter dated March 16, 1989).**

**COOKE, D.L., 1989; 1989 Preliminary Geochemical Survey, KC Mineral Claims, Mt. Milligan Area, Omineca M.D., Assessment Report dated November 10, 1989.**

**COPELAND, D. and REBAGLIATI, M., 1989; Mt. Milligan, An Alkaline Intrusive Related Porphyry Gold-Copper Deposit (from a newsletter revised in September 1989).**

**REGIONAL MAGNETOMETER SURVEY, reference to airborne magnetometer survey from the Geophysics Division of the Geological Survey of Canada, Department of Mines and Technical Surveys, Map number 1573G, Philip Lakes, Sheet 93 O/4, Survey flown in 1963.**

**SPECIFICATIONS for the SCINTREX MP-2 Proton Precession Magnetometer were obtained from the Instruction Manual provided by Scintrex Limited of Concord, Ontario, August, 1980.**



## STATEMENT OF QUALIFICATIONS

PERRY GRUNENBERG, B.Sc., F.G.A.C.

## ACADEMIC

1982	B.Sc. in Geology	The University of British Columbia
1987	Fellowship	Geological Association of Canada

## PROFESSIONAL

1989 to PRESENT	P and L Geological Services, Smithers, B.C.	Contract Geologist working in Mining and Mining Exploration in and around the Smithers area.
1984 to 1989	Hughes-Lang Explorations Vancouver, B.C.	Project Geologist employed to work on geological, geophys- ical, and geochemical surveys with follow-up drilling, in areas throughout B.C. and Yukon.
1983	Strato Geological Engineering Ltd. Vancouver, B.C.	Project Geologist Contracted to work in all aspects of Mining Exploration on properties in Nevada, Washington, and B.C.
1982	P and L Exploration Vancouver, B.C.	Contract Geologist involved in evaluating placer gold prospects near Quesnel and Princeton, B.C.