

STATEMENT OF EXPENDITURES  
CONTINENTAL POTASH CORPORATION LIMITED  
KAMLOOPS, BRITISH COLUMBIA

Linecutting	\$ 4,374.35
Magnetometer Surveying	2,426.56
Induced Polarization Surveying	24,469.26
Supervision	<u>1,186.84</u>
	<u>\$32,457.01</u>

725

**GEOPHYSICAL REPORT**  
**ON PROPERTY OF**  
**CONTINENTAL POTASH CORPORATION LIMITED**

**KAMLOOPS MINING DIVISION**  
**KAMLOOPS, BRITISH COLUMBIA**

**Claims surveyed:**

MIX 1 to 12 inclusive  
MIX 15 to 29 inclusive  
MIX 31, 33, and 35  
MIX 37 to 44 inclusive  
MIX 46, 48, 50 and 52  
MIX 77 to 80 inclusive  
MIX 93 to 98 inclusive

which are located approximately 10 miles southwest of Kamloops,  
British Columbia.

The surveys were carried out during the period May 25 to  
October 30, 1965.

The field work was under the supervision of Mr. R. Pild,  
Geophysicist.

The report was written by Mr. E. B. Nicholls, P.Eng., Geophysicist

**SULMAC EXPLORATION SERVICES LIMITED**

**NOVEMBER 19, 1965**

**GEOPHYSICAL REPORT**  
**ON PROPERTY OF**  
**CONTINENTAL POTASH CORPORATION LIMITED**

**KAMLOOPS MINING DIVISION**  
**KAMLOOPS, BRITISH COLUMBIA**

**SULMAC EXPLORATION SERVICES LIMITED**

**NOVEMBER 19, 1965**

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#4 - - - - - Resistivity

**GEOPHYSICAL REPORT**  
**ON PROPERTY OF**  
**CONTINENTAL POTASH CORPORATION LIMITED**

**KAMLOOPS MINING DIVISION**  
**KAMLOOPS, BRITISH COLUMBIA**

**Introduction**

During the period May 25 to October 30, 1965, a combined magnetometer and induced polarization survey was carried out over the property of Continental Potash Corporation Limited located in the Kamloops Mining Division, Kamloops, British Columbia.

The survey was conducted by geophysical crews of Sulmac Exploration Services Limited under the field supervision of Mr. R. Pild, geophysicist. The results of these surveys are discussed in this report and are shown on the accompanying maps.

**Summary and Recommendations**

A magnetometer and an induced polarization survey were carried out over the property of Continental Potash Corporation Limited near Kamloops, British Columbia. The magnetometer

survey, while not indicating any zone of importance, did infer possible contacts between rock types. The underlying rocks are probably of the Nicola series with intrusions of more basic rocks present. However, the eastern portion of the claim group, which exhibits considerable magnetic relief, may be underlain by members of the Iron Mask Batholith.

The I.P. survey was carried out using a structural 200 foot electrode separation. Certain areas of the property gave relatively low resistivities. These areas may have produced a masking effect for the underlying rocks. Apart from the eastern part of the property, the property in general gave relatively high background values, however a number of anomalous zones are to be found within this high background. Further detail I.P. work is essential in order to define anomalous zones when located under these circumstances. For this reason, only two zones, regarded as the more important zones and on which further work should be carried out, have been indicated on the accompanying map. Should this investigation prove encouraging, then the other anomalies should be further investigated, with diamond drilling to follow if warranted.

It is also recommended that a study be made of the geophysical results and the geological survey of the property

in conjunction with these of the adjoining properties. By this means a more detailed analysis of the data could be made which would be of benefit to all companies concerned.

Property, Location and Access

The property of Continental Potash Corporation Limited discussed in this report consists of a group of 52 contiguous mineral claims. These claims are shown on the accompanying map and are listed as follows:

MIX 1 to 12 inclusive  
MIX 15 to 29 inclusive  
MIX 31, 33, and 35  
MIX 37 to 44 inclusive  
MIX 46, 48, 50 and 52  
MIX 77 to 80 inclusive  
MIX 93 to 98 inclusive

Location of the property is some 10 miles southwest of Kamloops, British Columbia. A good gravel road passes through the western part of the property. This road, known as the Lac Le Jeune road, joins the main Trans-Canada Highway some 6 miles west of Kamloops.

## Method of Survey and Instrument Data

### I.P. Electrode Array

The data were obtained using the "three-electrode array". This array consists of one current ( $C_1$ ) and two potential electrodes ( $P_1$  and  $P_2$ ) being moved together along the survey line. The second current electrode ( $C_2$ ) is fixed at "infinity". Only a basic electrode spacing of 200 feet was used during the survey.

### I.P. Instrument

The instrument used was of the pulse-type and is similar in design and operation to that described by R.W. Baldwin in "A Decade of Development in Overvoltage Survey", A.I.M.E. Transactions, Vol. 214, 1959. Power for the unit is obtained from a Briggs and Stratton 4 H.P. motor coupled to a 400 c.p.s. generator which provides a maximum of 1500 watts d.c. to the ground. The cycling rate is 1.5 seconds current on and 0.5 seconds current off, the pulses reversing continuously in polarity. The data collected consists of measurement of the current ( $I$ ) flowing through  $C_1$  and  $C_2$  and of the primary voltage ( $V_p$ ) between  $P_1$  and  $P_2$  during the 'current on' period. During the 'current off' period the overvoltage appearing between  $P_1$



and  $P_2$  is measured. This gives a measurement of the polarization ( $V_s$ ) in milliseconds. The "apparent chargeability" in milliseconds is calculated by dividing the polarization ( $V_s$ ) by the primary voltage ( $V_p$ ). The "apparent resistivity" in ohm-meters is obtained by dividing the primary voltage  $V_p$  by the current  $I$ , and multiplying by a proportionality factor which depends on the geometry of the array used.

#### I.P. Data

A line grid was established throughout the property based on lines 400 feet apart with pickets at 100 foot intervals along the lines. The picket lines were cut in a north-south direction. A total of 63.54 miles of line were cut and chained prior to the survey. The I.P. survey was carried out over 56.5 miles of line.

The results of the survey are shown as contour maps of "chargeability" and "resistivity" at a scale of 400 feet to the inch.

#### Magnetometer Survey

The magnetometer survey was carried out along the same picket lines as the I.P. survey for a total of 58.5 miles. The magnetometer survey was carried out using a Sharpe MF-1

Fluxgate magnetometer. This instrument measures variations in the vertical component of the earth's magnetic field to an accuracy of  $\pm 10$  gammas.

The data obtained were plotted and contoured on a map at a scale of 400 feet to the inch.

### Discussion of Results

#### Magnetometer Survey

The magnetometer survey indicated that the larger portion of the property has very little magnetic relief. However, the claims along the east boundary show considerable magnetic variations indicating that this area is underlain by more basic rock types than the rest of the claim group. It is probable that this eastern section is underlain by members of the Iron Mask Batholith whereas the rest of the property is underlain by rocks of either the Kamloops or Nicola volcanic series. However, within the volcanics are isolated areas of one or more basic rocks. One is found in the south central part near a lake.

Possible contacts and faults inferred from the magnetics are shown on the accompanying map.

I.P. Survey

The I.P. survey was carried out using an electrode spacing of 200 feet. No detail work was conducted over areas which appeared anomalous. The variation in resistivity values obtained could be ascribed mainly to changes in the overburden thickness and in the overburden and bedrock resistivities. Areas of relatively low resistivities may have created a masking effect as the chargeability values are also low. This is due to the fact that the overvoltage effect is dependent on the primary voltage which is itself proportional to the resistivity.

A number of anomalous areas are indicated on the "chargeability" map which are worthy of further investigation by a more detailed I.P. survey. Without this extra data it is impossible at this time to draw any definite conclusions as to the cause of the anomalies, except to say that mineralization could be one of the causes.

In general, the eastern section that indicated magnetic relief shows as mainly low background readings, with isolated anomalous zones. The rest of the property, particularly south of the baseline, shows a number of zones with a background value higher than normally expected in the general area. It is

possible, therefore, that the formations in the western portion of the property have a high chargeability factor. Two such zones are shown on the chargeability map accompanying this report. Further work is warranted on these two zones in order to define them better. Should they prove encouraging, then, of course, more detail work would be warranted on other zones showing high chargeability values.

Respectfully submitted,

SULMAC EXPLORATION SERVICES LIMITED

*EB Nicholls*

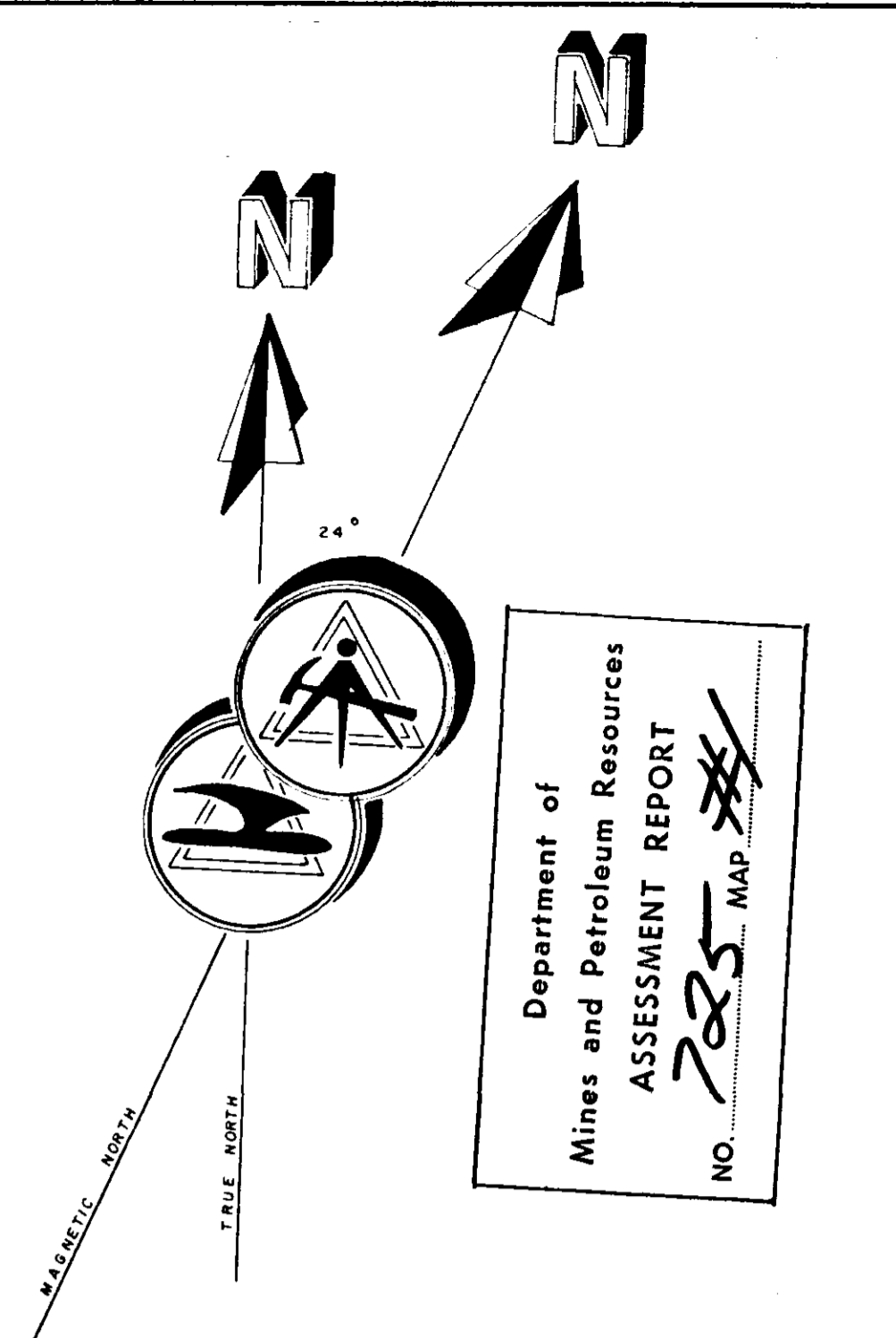
E. B. Nicholls, B.Sc., P.Eng.,  
Geophysicist.

November 19, 1965

APPENDIX

The following personnel were employed on the survey:

E. B. Nicholls	Chief Geophysicist	Aug. 5, 6, Sept. 5, 15, Oct. 28, Nov. 17, 18, 19, 1965
R. Pild	Field Geophysicist	June 25 - Oct. 30, 1965
K. Kerslake	Geophysical Operator	June 25 - July 14 July 21 - Aug. 30, 1965
E. Gabor	Geophysical Operator	July 27 - Oct. 30, 1965
L. Jensen	" Assistant	" "
R. Reimer	" "	" "
D. Holland	" "	July 27 - Aug. 31, 1965
J. Holgate	" "	Sept. 1 to Oct. 30, 1965
D. Grant	Draftsman	Aug. 9, 17, Sept. 1, 9, 20, 30, Oct. 20, 26, 28, 29, Nov. 1, 2, 10, 17, 18, 19, 1965
J. Brown	Linecutter	May 25 - June 27, 1965
T. Brown	"	" "
G. Galbraith	"	" "

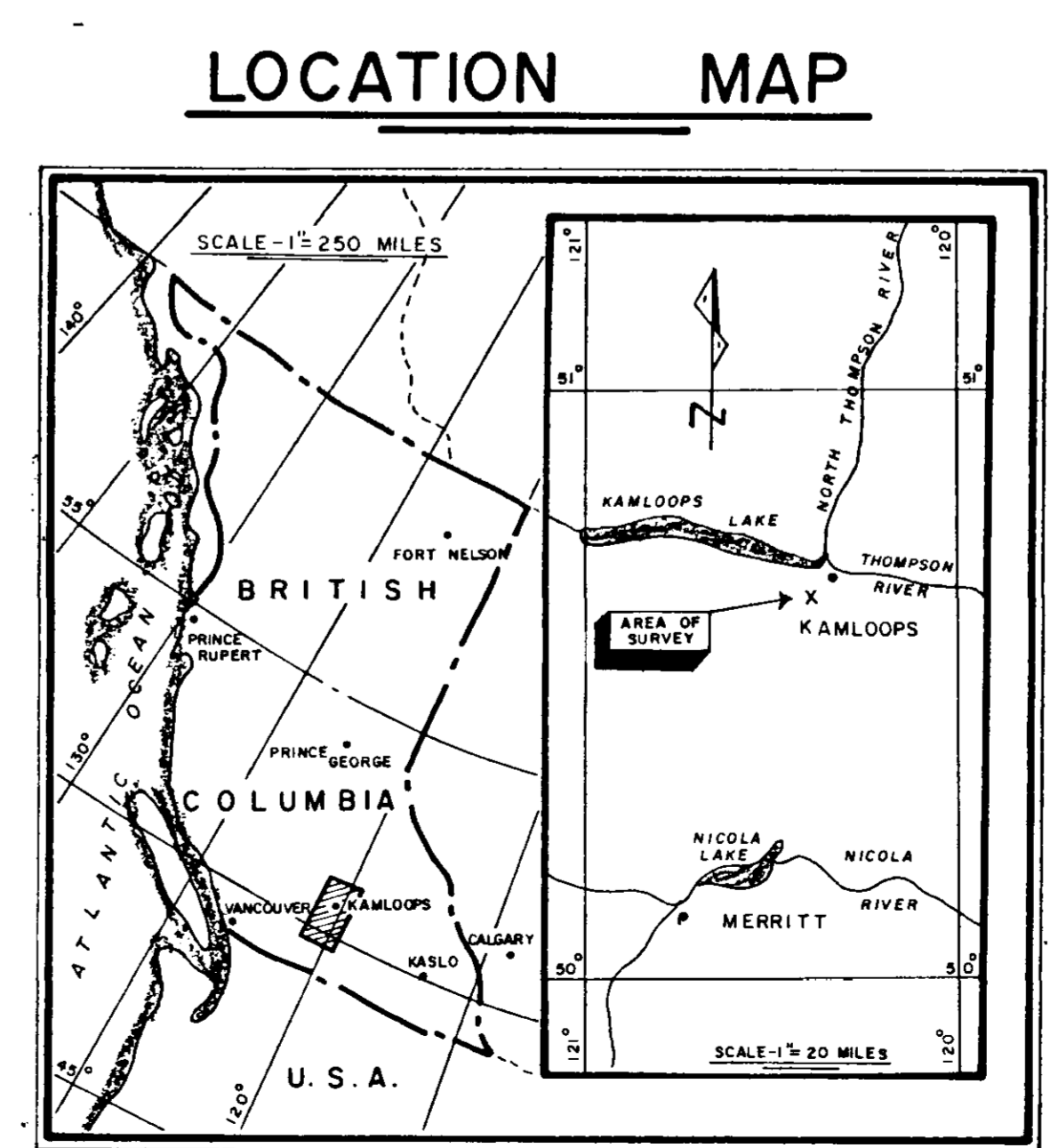


**LEGEND**

PROPERTY BOUNDARY ————

CLAIM OUTLINE - - - - -

LAKE BOUNDARY ————



**CONTINENTAL POTASH CORPORATION LIMITED**

KAMLOOPS-BRITISH COLUMBIA #725  
KAMLOOPS MINING DIVISION

**CLAIM MAP**

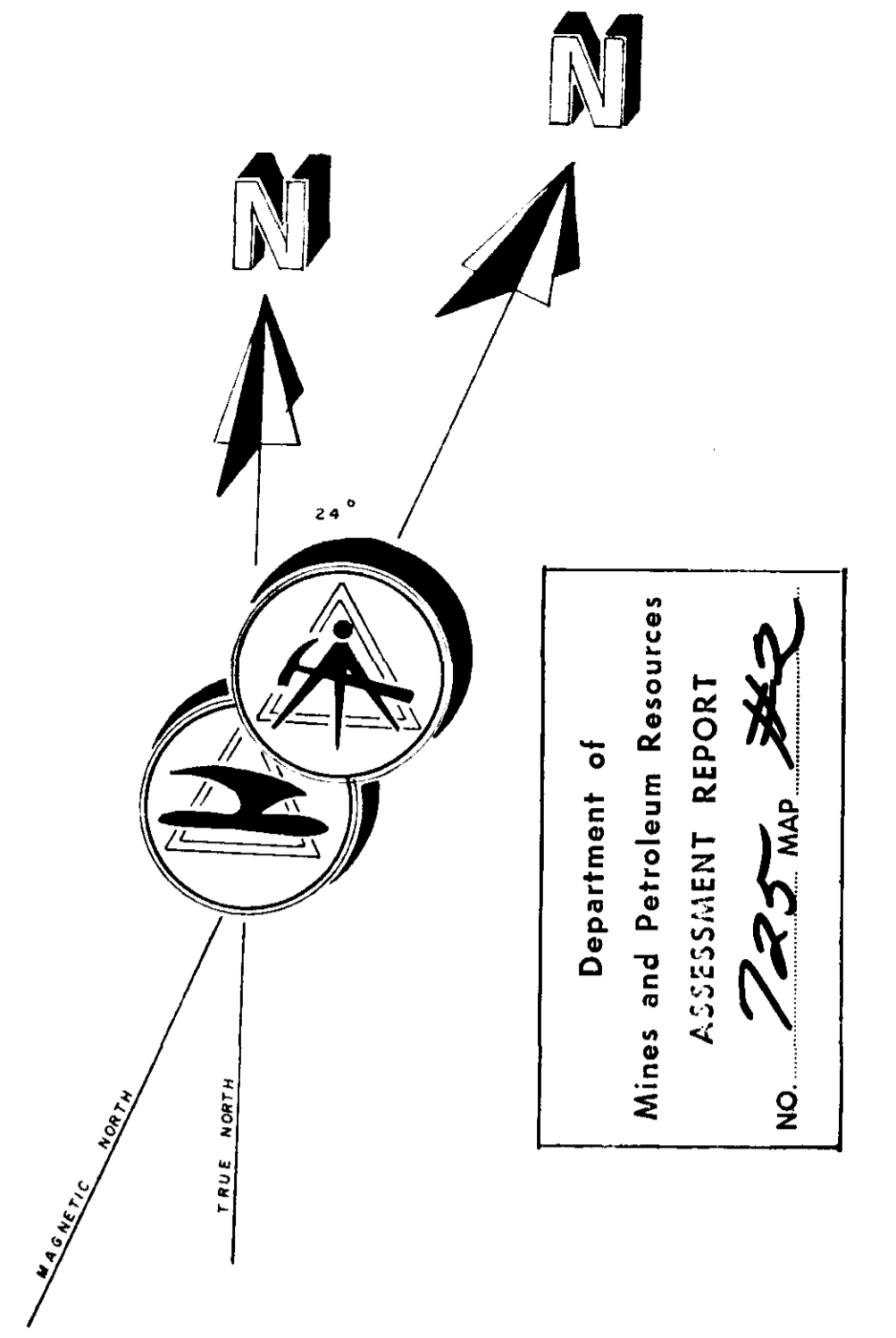
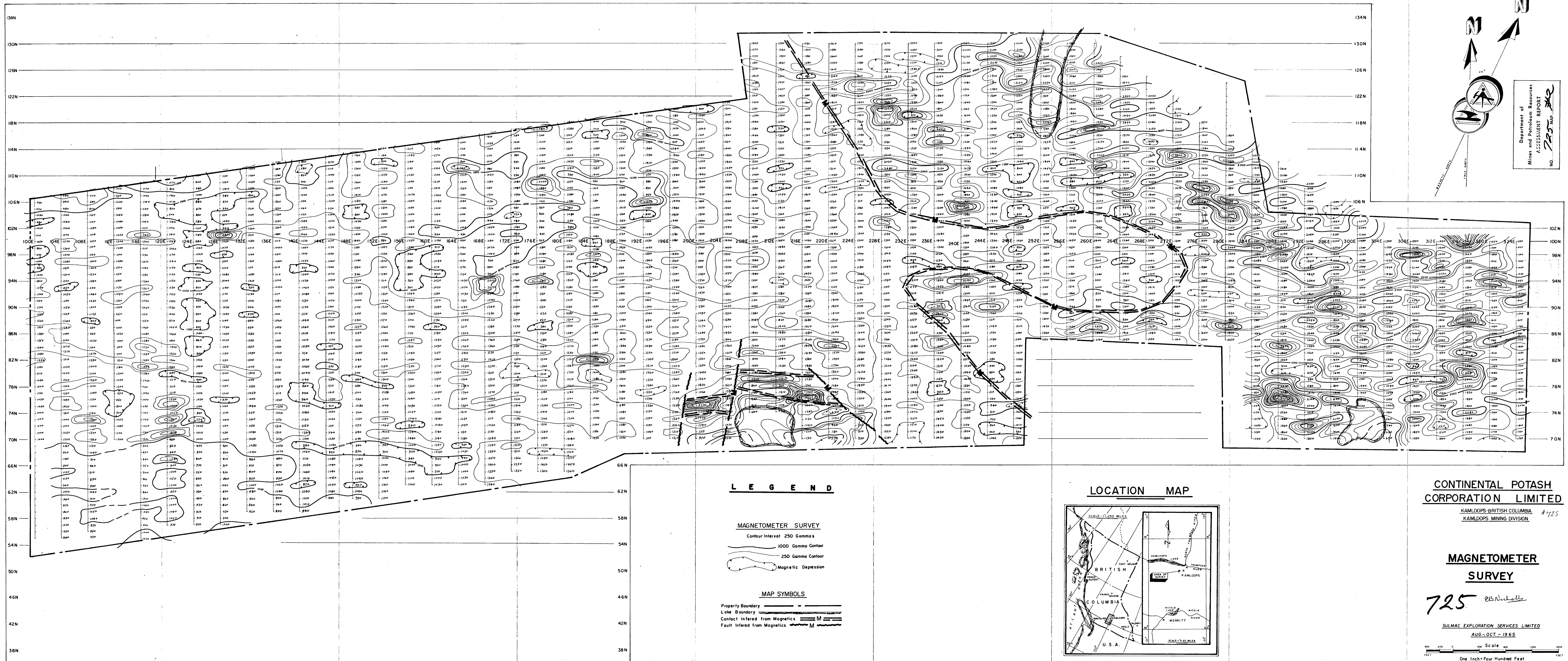
725 *EB Nicholls*

SULMAC EXPLORATION SERVICES LIMITED  
AUG - OCT - 1965

Scale 1:250 Miles  
One inch = Four Hundred Feet

DESIGNED BY E.B. NICHOLLS DRAWN BY S.A. GRANT

TO ACCOMPANY REPORT BY E.B. NICHOLLS DATED NOV. 19, 1965

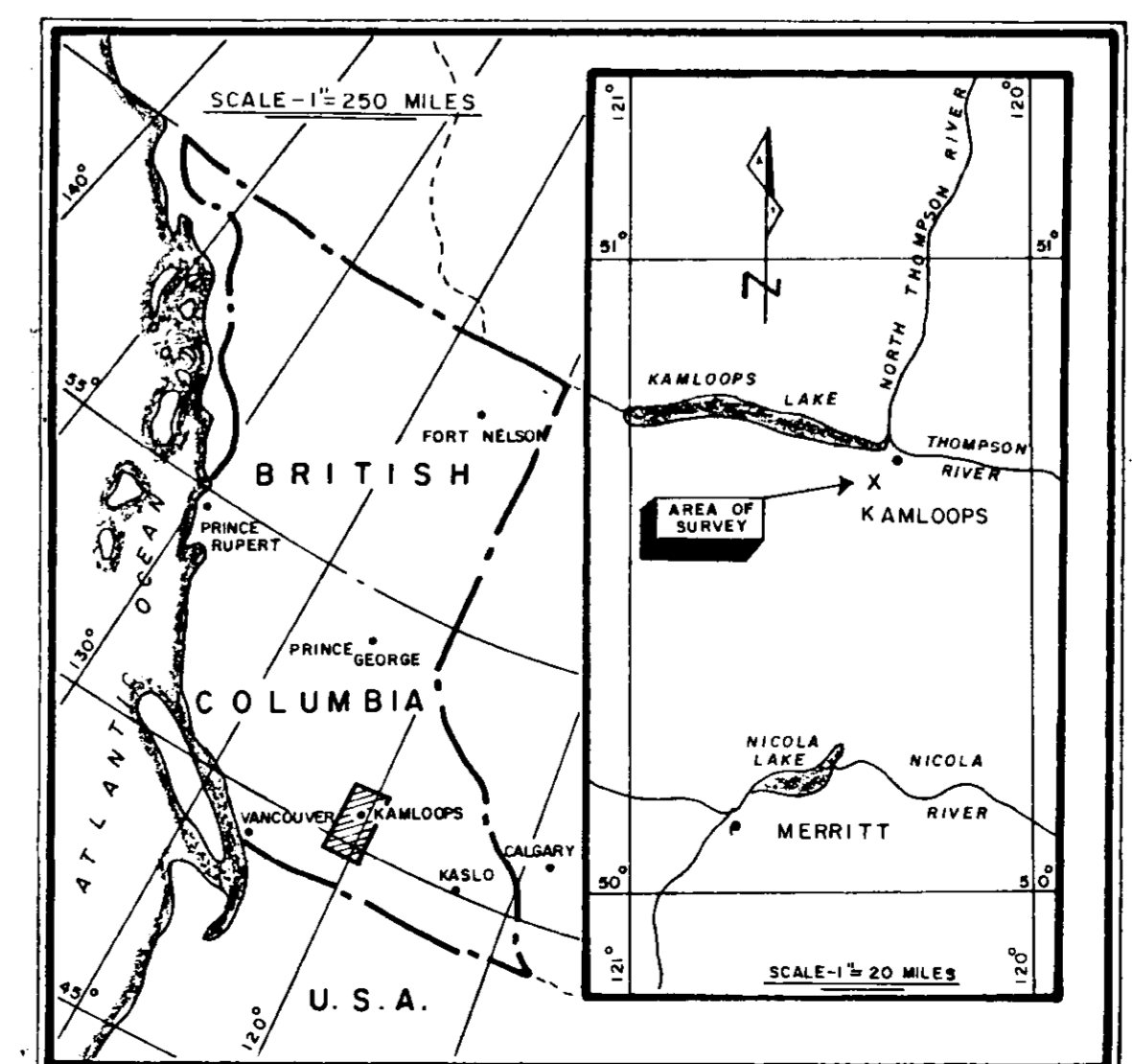


**LEGEND**

**MAGNETOMETER SURVEY**  
 Contour Interval 250 Gammas  
 1000 Gamma Contour  
 250 Gamma Contour  
 Magnetic Depression

**MAP SYMBOLS**  
 Property Boundary  
 Lake Boundary  
 Contact Inferred from Magnetics  
 Fault Inferred from Magnetics

**LOCATION MAP**



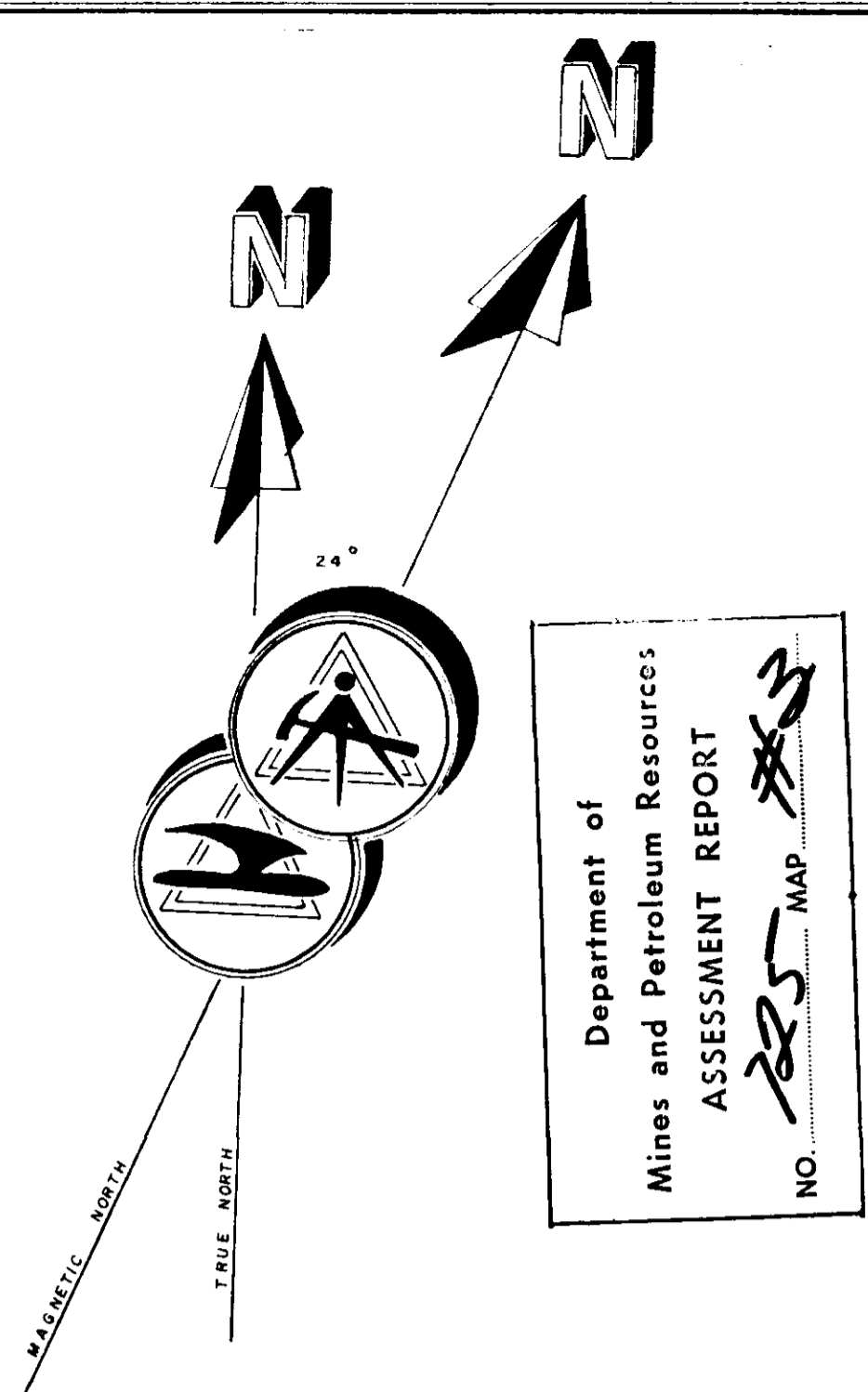
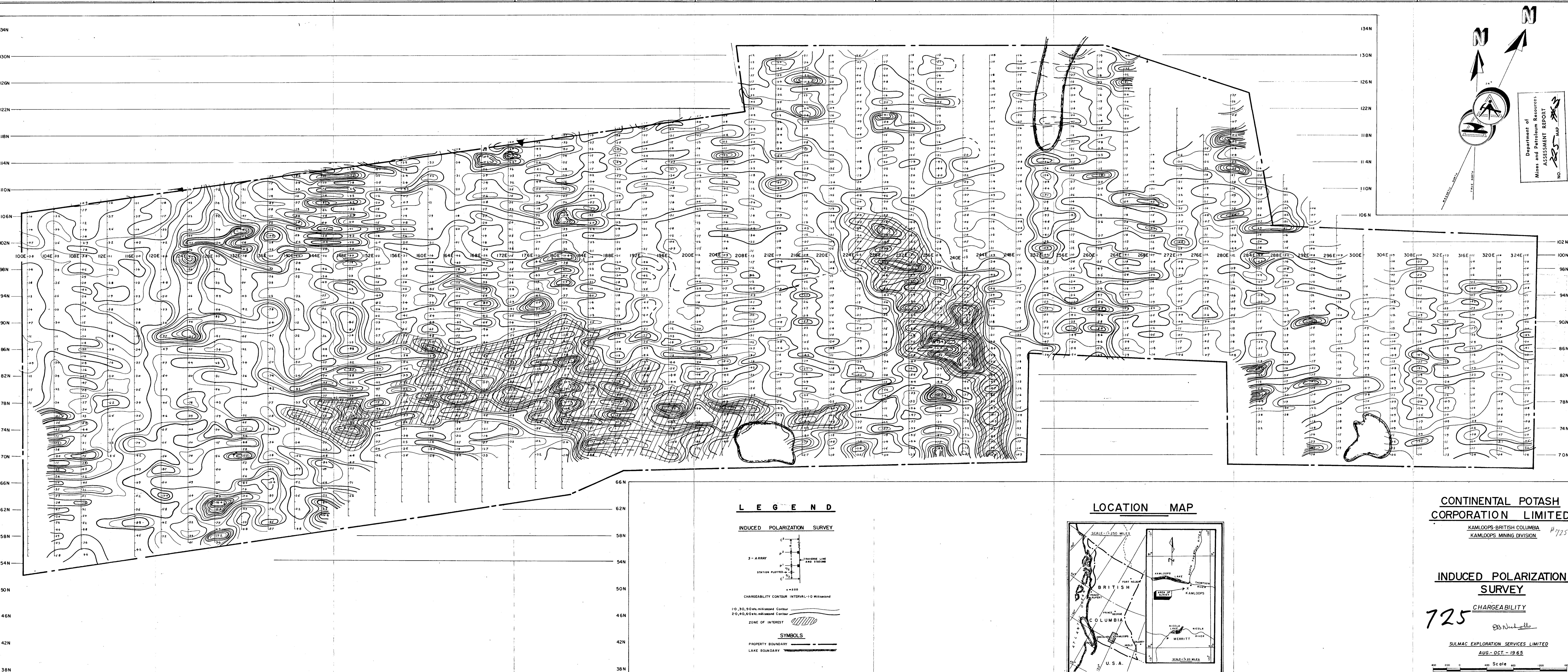
**CONTINENTAL POTASH CORPORATION LIMITED**  
 KAMLOOPS-BRITISH COLUMBIA #125  
 KAMLOOPS MINING DIVISION

**MAGNETOMETER SURVEY**

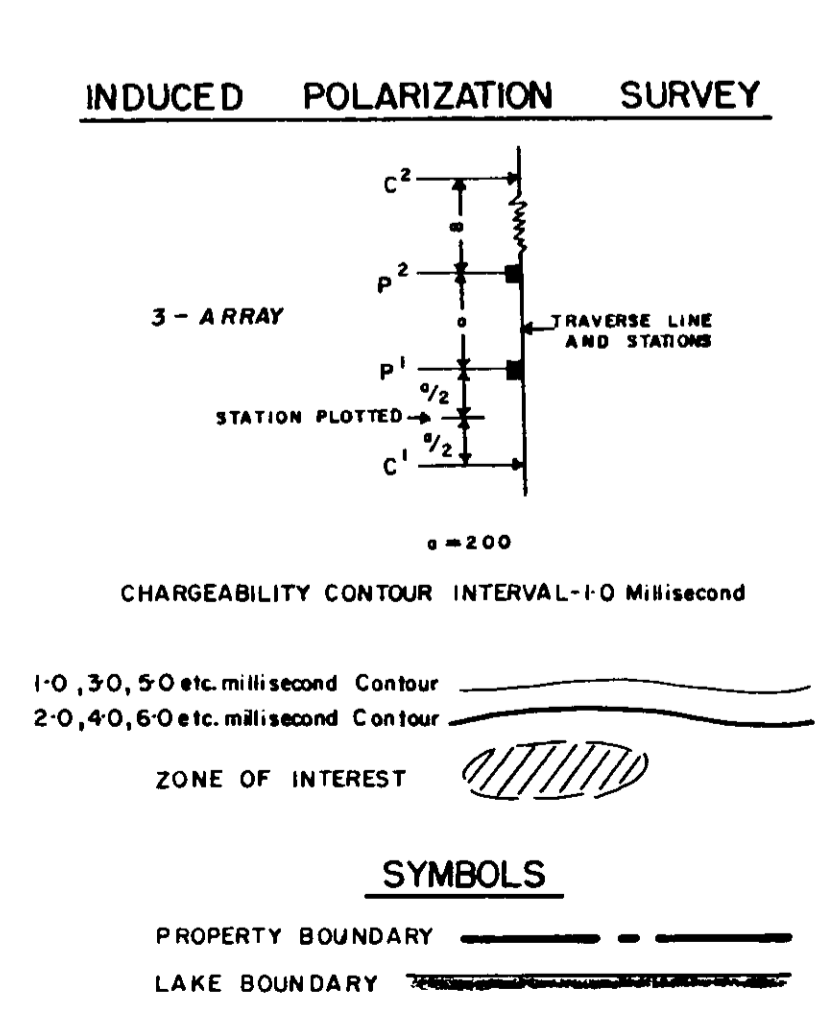
725 E.B. Nicholls

SULMAC EXPLORATION SERVICES LIMITED  
 AUG. - OCT. - 1965

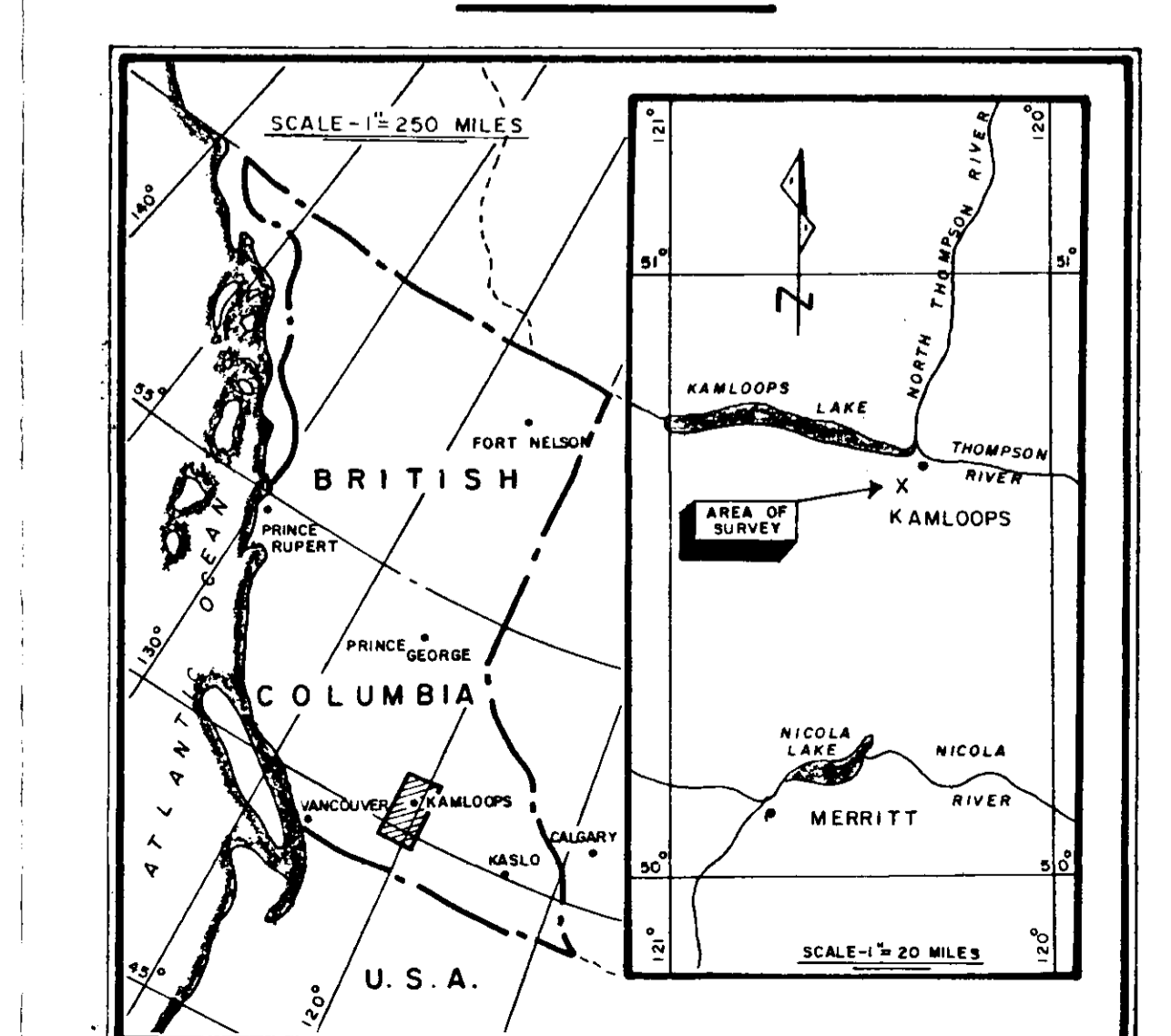
Scale 1:250,000  
 One Inch = Four Hundred Feet



**LEGEND**



**LOCATION MAP**



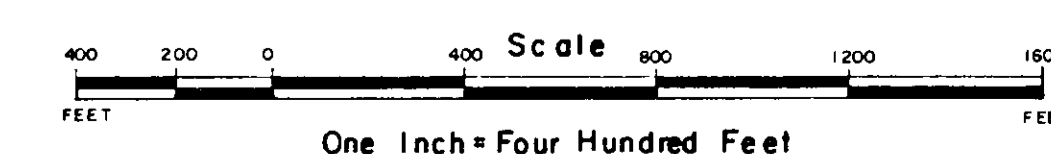
**CONTINENTAL POTASH CORPORATION LIMITED**

KAMLOOPS-BRITISH COLUMBIA #725  
KAMLOOPS MINING DIVISION

**INDUCED POLARIZATION SURVEY**

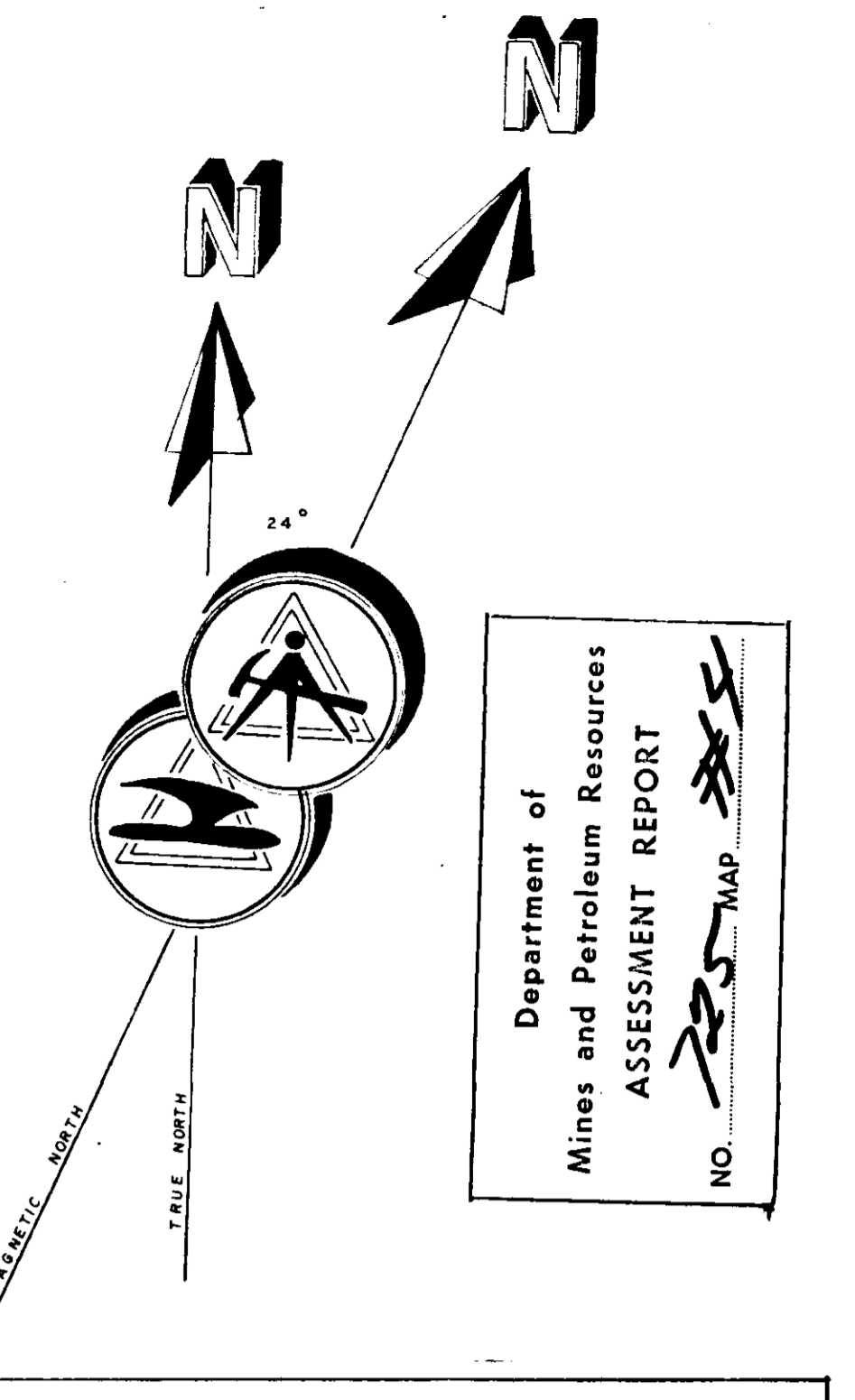
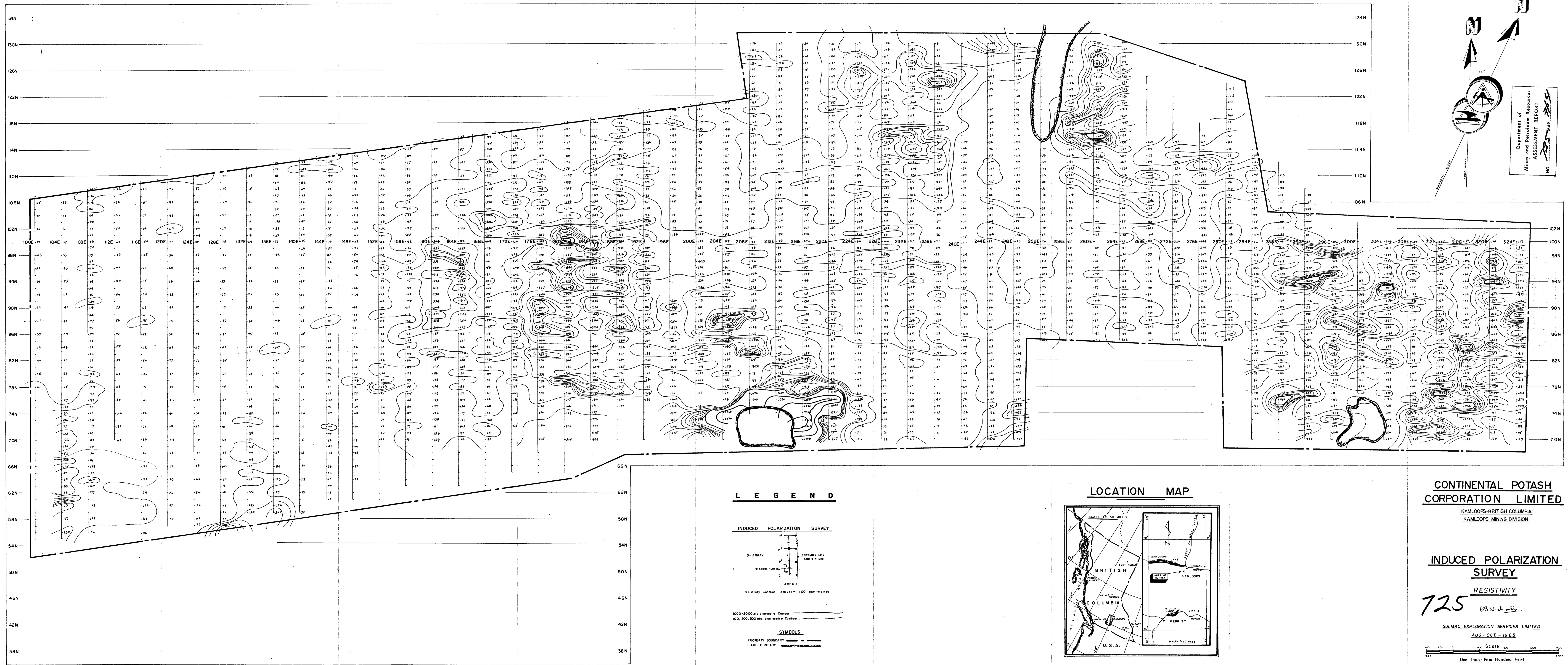
725 CHARGEABILITY  
E.B. Nicholls

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AUG - OCT - 1965

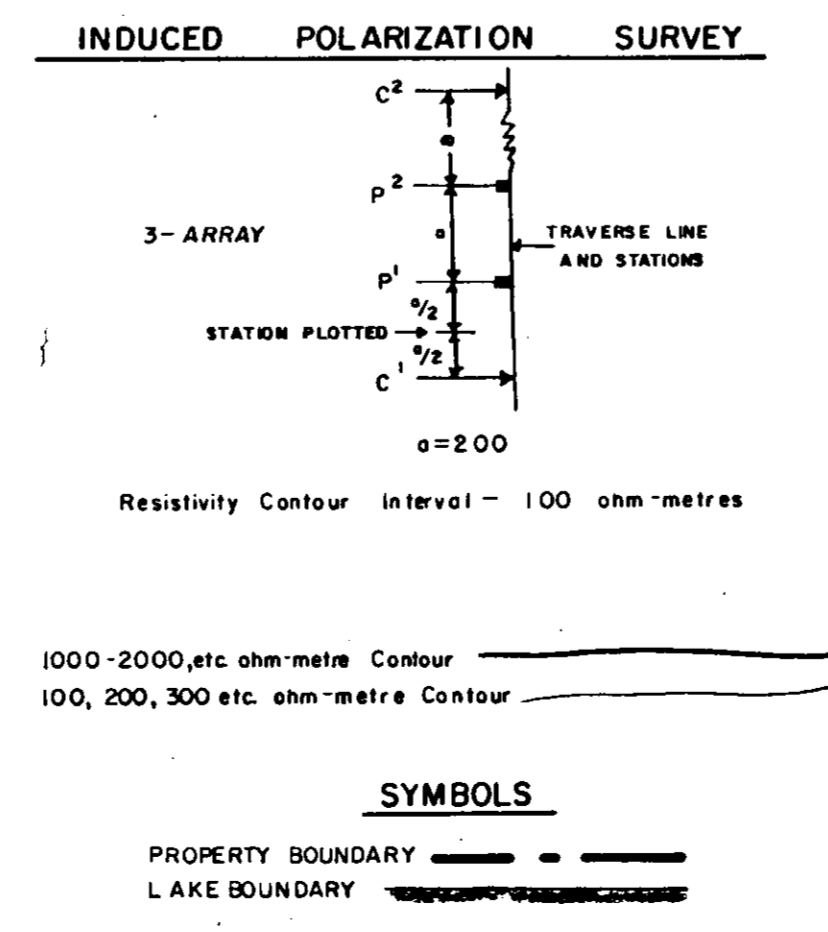


TO ACCOMPANY REPORT BY E.B. NICHOLLS DATED NOV. 9, 1965





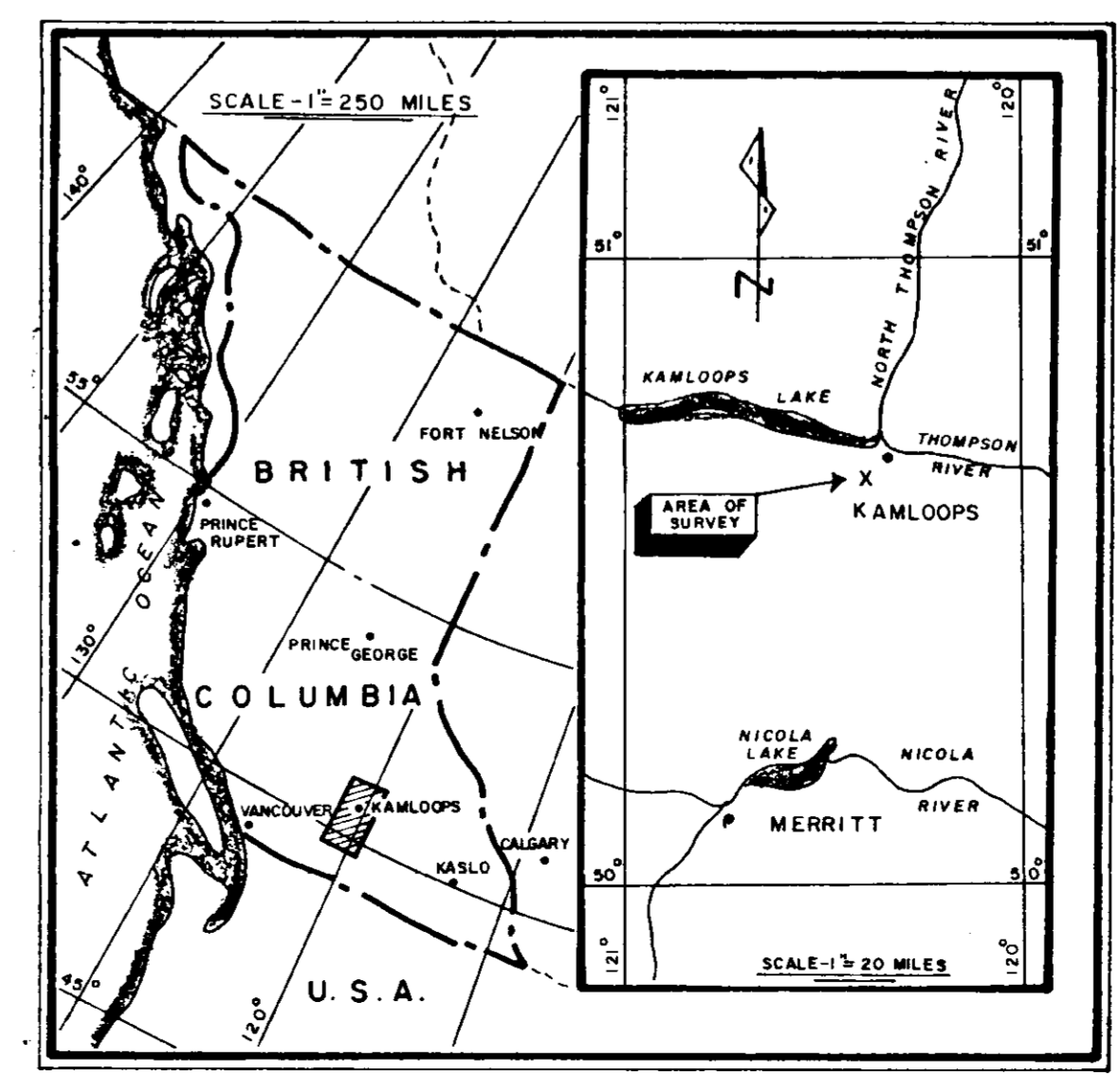
**LEGEND**



1000-2000, etc. ohm-metre Contour  
 100, 200, 300, etc. ohm-metre Contour

**SYMBOLS**  
 PROPERTY BOUNDARY ———  
 LAKE BOUNDARY ———

**LOCATION MAP**



TO ACCOMPANY REPORT BY E.B. NICHOLS DATED NOV. 9, 1965

**CONTINENTAL POTASH CORPORATION LIMITED**

KAMLOOPS-BRITISH COLUMBIA  
 KAMLOOPS MINING DIVISION

**INDUCED POLARIZATION SURVEY**

RESISTIVITY  
**725** E.B. Nicholls

SULMAC EXPLORATION SERVICES LIMITED  
 AUG - OCT - 1965

