

# 2613

This is Geophysical Report No. EM-70-107  
For Highland Chief Mines Ltd. 'A, B, CC, Key Claims Group.  
Four miles East of Clapperton, B.C.  
September 21, 1970.

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### Plans (Rear)

#1 Anomalous Plan (Southern Portion)	EM-70-107-1
#2 Anomalous Plan (Northern Portion)	EM-70-107-2
#3 Claims Location Plan	EM-70-107-3

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ELC GEOPHYSICS GEOPHYSICAL REPORT NO. EM-70-107 COVERING THE A,B,CC AND KEY CLAIMS GROUP IN THE KAMLOOPS MINING DISTRICT, APPROXIMATELY FOUR MILES DUE EAST OF CLAPPERTON, B. C. (121°W - 50°N) FOR HIGHLAND CHIEF MINES LTD. JUNE 23, 1970 to SEPTEMBER 21, 1970.

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## Purpose:

The purpose of the EM Survey No. EM-70-107 over the Highland Chief Mines Ltd. property was to determine the relative anomalous features created from geological formation changes and to thereby record them for the purpose of geological assessment.

## Geological Reference:

The department of mines and technical surveys map 1010A of the geological series. The property located approximately four miles due east of Clapperton, B.C.

## Location:

The A,B,CC and Key Claims Group and the area

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surveyed is north and east of the Papsilqua Indian Reserve and due east of Papsilqua Creek. The town of Clapperton on the Nicola River has a latitude equivalent to about the centre of the property and is approximately four miles due west of the property. Map reference coordinates 121°W longitude 50°N latitude. See our plan No. EM-70-107-3.

Presentation:

The survey control and grid lines are presented in two sheets, Sheet 2 showing the northern portion and Sheet 1 the southern portion. The north-south coordinates are established with the 00 base line being the division point of the two plans. The east-west coordinates are established with the 0 base line extending along the westerly portion of the plans and passing through the campsite at 00+00. The gridlines have an average spacing of 500 feet with an average station spacing of 100 feet. The gridlines are 7000 feet east and west, the control lines extend the survey north and south approximately 15,000feet.

The EM values are shown along the gridlines in profile form with the vertical component shown in the dark line and the horizontal component in the light line.

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The interpretation of these Ronka EM readings are based on the related values, the phase of progressive changes and the reversal of values, in association with the neighbouring gridlines.

Instrumentation:

The E.M. Instrument manufactured by Geonics Instruments of Toronto, Ontario, is a type EM 16 and was operated from an infinite source consisting of the Naval Radio Station NPG in the State of Washington, U.S.A. on 18.6 Khz.

Results:

The survey results are shown as indicated on plan No. EM-70-107-1 referring to the Southern half of the survey, and plan No. EM-70-107-2 for the Northern half. The north-south linear anomaly in the eastern portion of the survey CL1 indicates an abrupt formation change with relatively good conduction and the neighbouring line C1 to the west forms the western limit of what is referred to as the Z1A zone. A second north-

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south linear anomaly CL5 shows prominence in the north but becomes increasingly weaker in the south. The CL6 linear anomaly shows conduction and parallels the Z3 zone. The Z3 zone borders the drainage area and appears to be associated with the topography. The linear anomaly CL4 crosses the Z4 zone in the west and seems to terminate as it reaches the Z3 zone.

The southern portion of the survey shown on plan No. EM-70-107, Sheet 1, shows the continuation of Z1B zone from Z1A on plan EM-70-107, Sheet 2. The Z1B formation includes the south-eastern portion of the plan and the CL2 linear anomaly, bounded by the contact line C1.

The most prominent feature is the Z2 zone formation that is cut off by the linear formation F1, forming the southern boundary. The linear anomaly CL3 is the most anomalous feature of the survey showing strong inter-facial reactions in both structure and conductivity. The lesser linear anomalies L1 and L2 also contribute to the lower anomalous zones in Z2. This zone continues to the north-east and is indicated as far north as 10+00N. The paralleling linear anomalies L4 and L5 seem to be associated with this formation. To the west of the contact line C2 there is very little anomalous activity except in

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in the northwest in the vicinity of the zone Z4 that extends down from the northern portion. The C4 western boundary of Z4 is the predominant reading and leaves the surveyed area on the gridline 5 South at 15+00 West.

Summary:

Local geological information was not available, however, rock samples were taken at random by the survey crew to provide a more comprehensive interpretation. The north-east portion of the survey east of the linear strike CL1 shows a Granitic formation whereas the area Z1A and Z1B is Basaltic.

The linear anomaly CL5 that <sup>crosses</sup>~~corsses~~ and terminates the Z2 zone to the north, appears to border the limestone to the west, and especially west of C2 with some intrusives showing within the zone Z2. There appears to be granite and granodiorite extending along the eastern side of C2E. The western side of C2E within Z2 zone periodically shows disseminated mineralization and mineral stain. Old workings exist in the vicinity of line 20+00 South and 35+00 East. (EYE 27,28)  
see Rpt. 230  
Stroking

It would appear that the zones Z1A, Z1B and Z4

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are created from volcanics. Z3 appears to be largely from topographical influence, with CL6 conductive anomaly following the moist side of the valley.

It also appears that the east side of Zone 2 along the line C2E marks the general area of most interest. The L1, CL3, L2, L3, L4 and L5 are all linear anomalies within, or close to the area of interest in the southern portion. In the northern portion the prominent contact anomaly CL1 should certainly be investigated and the upper portion of the zone Z2 along with the linear anomaly CL5. The anomalous area in the vicinity of L8 in the central northern portion warrants geological investigation. The linear anomaly in the west CL4 especially on the north end warrants investigation.

Conclusions:

The area of interest begins in the south at the formation change along the strike of F1, within the bounds of Z2 zone, up to gridline 50+00 South. Thereon the most anomalous area extends northeast along the east side of the Z2 zone and continues in the vicinity of C2E to the north terminating on the CL5 line. The limestone

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contact follows closely to the west side of CL5 from gridline 5+00 North to gridline 45+00 North. The anomalies in the vicinity of the north end of CL5 and L8 are of particular interest with the association of the limestone and warrant investigation.

Recommendations:

In recapping, the order of priorities for follow up work, the order is as follows, CL3, CL5, CL1, L1, L2, L5, L8, L7, CL4, CL2 and L6.

Soil sampling in these areas is recommended as part of the geological study.

  
D.L.HINGS, P.ENG.

GEOPHYSICIST.



A STATEMENT OF COSTS FOR GEOPHYSICAL SURVEY NO. EM-70-107  
COVERING THE A,B,CC AND KEY CLAIMS GROUP, KAMLOOPS MINING  
DISTRICT, APPROXIMATELY FOUR MILES EAST OF CLAPPERTON,  
B.C. BY ELC GEOPHYSICS LTD. JUNE 23, 1970 to SEPTEMBER 12,  
1970.

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Survey Crew

R,L. Reece	45 days @\$60.00	\$2,700.00	
W. Mather	45 days @\$40.00	1,800.00	
G. Olheiser	28 days @\$40.00	1,120.00	
D. Cramer	5 days @\$60.00	300.00	
R. Fuller	24 days @35.00	840.00	
B. Kolson	18 days @\$35.00	630.00	
R. Ellis	12 days @\$30.00	360.00	
			\$ 7,750.00

Transportation

4x4 Truck	50 days @\$12.00		\$ 600.00
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Living Costs

Total Food		\$1,000.36	
Motel		300.00	
			\$ 1,300.36

Equipment and Supplies

Camp, Water pump and misc.			\$ 442.94
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Instrument

Ronka EM 16	45 days @\$10.00		\$ 450.00
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Data Processing and Drafting

D.. A. Cramer	21 days @\$60.00		\$ 1,260.00
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Interpretation and Report

D.L. Hings P.Eng	6 days @\$120.00		\$ 720.00
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TOTAL COST

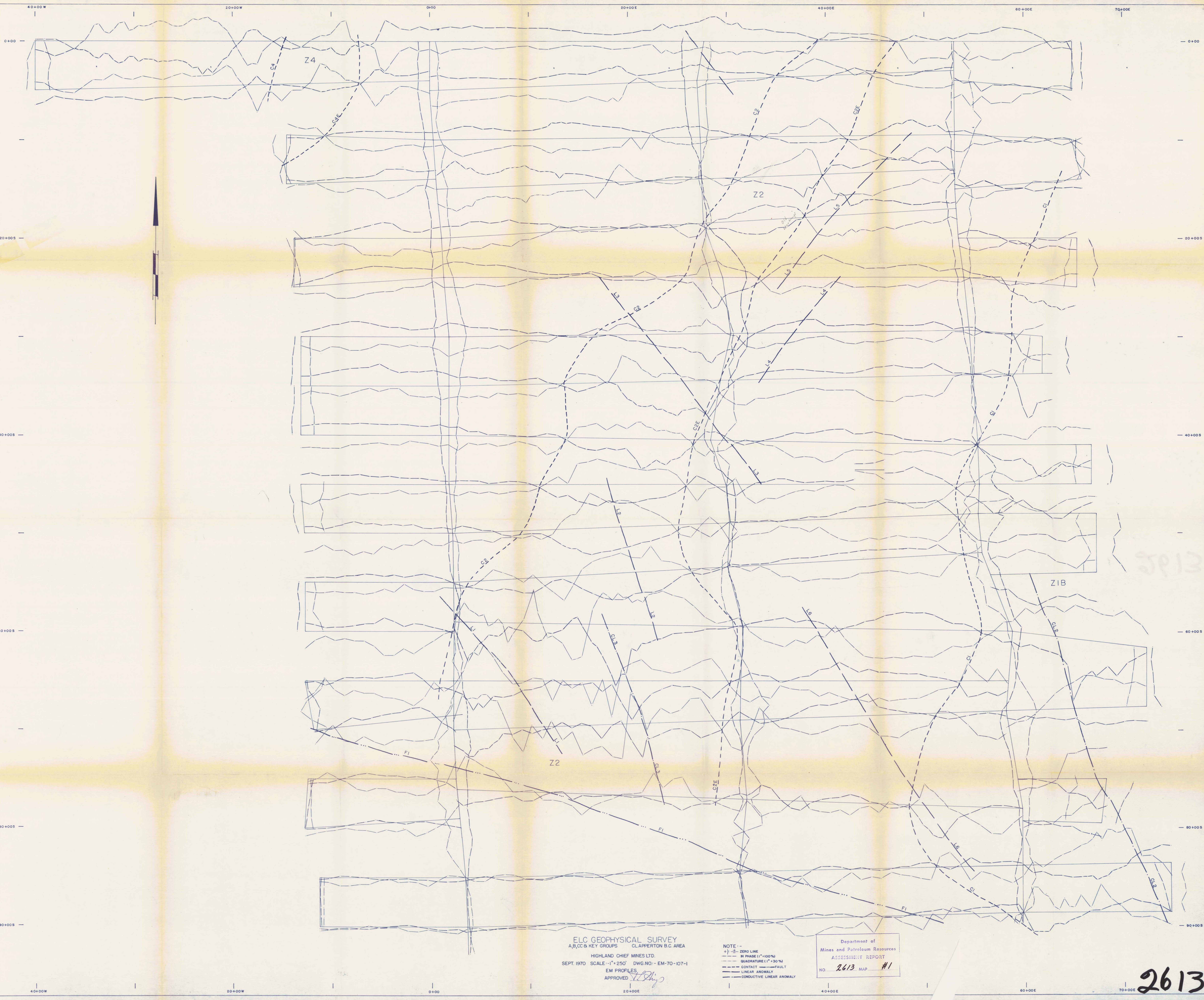
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\$12,523.30

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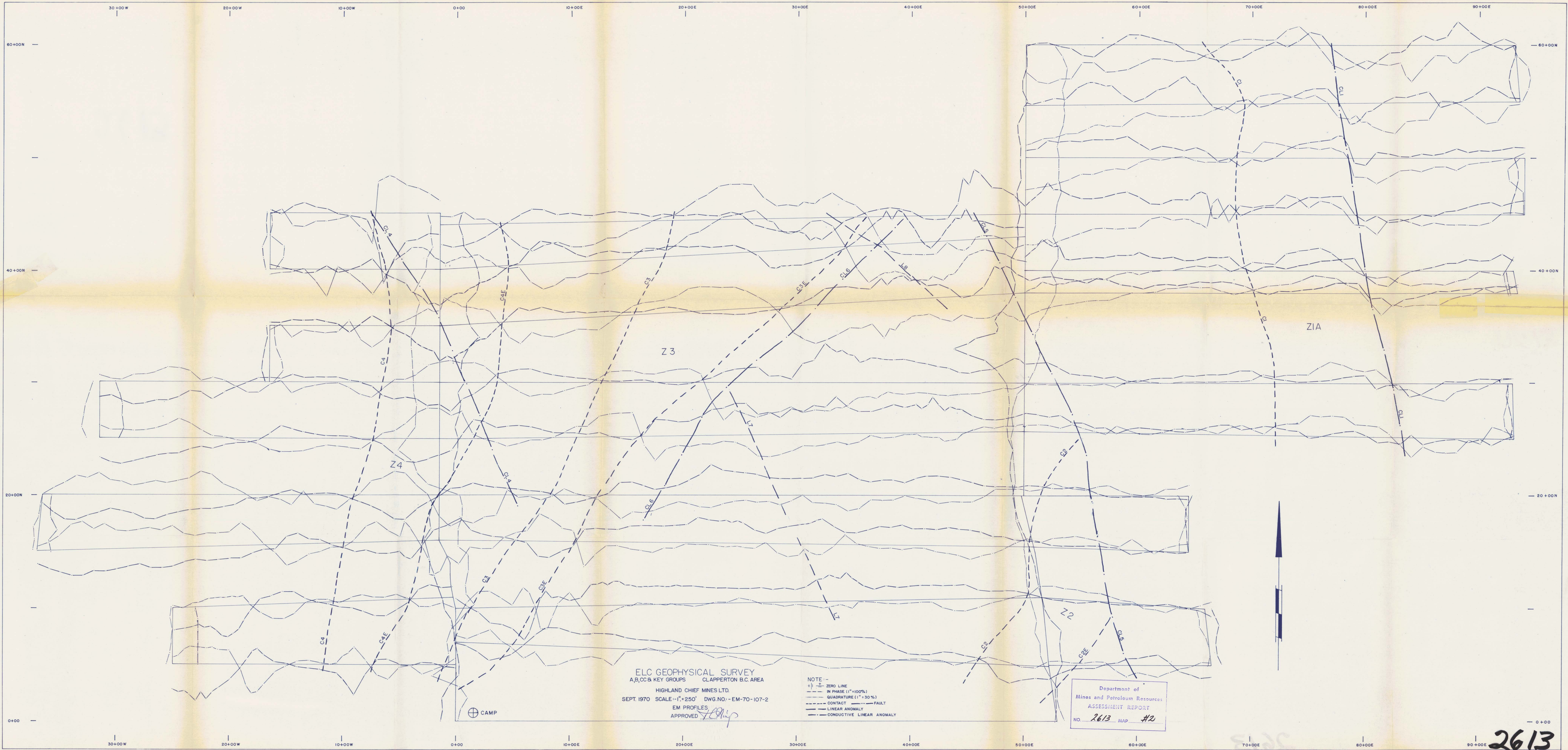


ELC GEOPHYSICAL SURVEY  
 A,B,C,C & KEY GROUPS CL APPERTON B.C. AREA  
 HIGHLAND CHIEF MINES LTD.  
 SEPT. 1970 SCALE: 1" = 250' DWG. NO. - EM-70-107-1  
 EM PROFILES  
 APPROVED: *[Signature]*

NOTE: -  
 +|- ZERO LINE  
 IN PHASE (1" = 100%)  
 QUADRATURE (1" = 30%)  
 --- CONTACT --- FAULT  
 --- LINEAR ANOMALY  
 --- CONDUCTIVE LINEAR ANOMALY

Department of  
 Mines and Petroleum Resources  
 ASSESSMENT REPORT  
 NO. 2613 MAP #1

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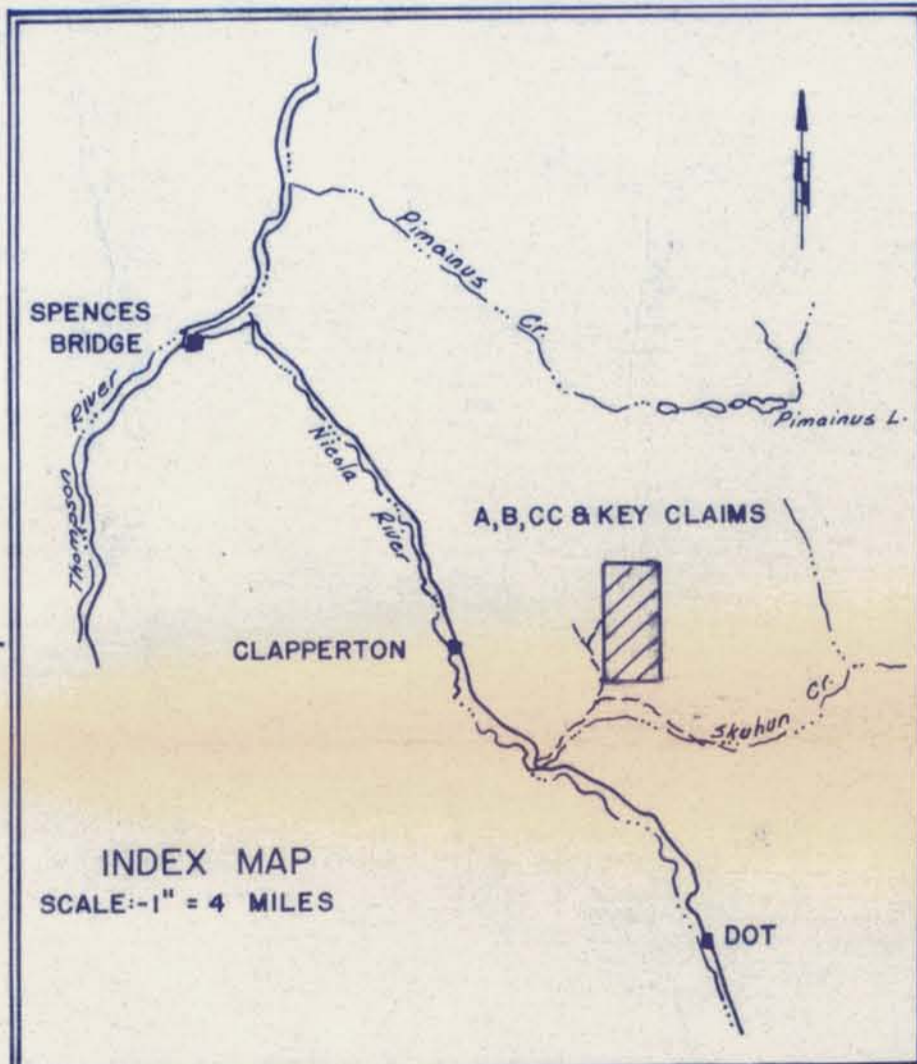


ELC GEOPHYSICAL SURVEY  
 A,B,CC & KEY GROUPS CLAPPERTON B.C. AREA  
 HIGHLAND CHIEF MINES LTD.  
 SEPT. 1970 SCALE: 1" = 250' DWG. NO.: EM-70-107-2  
 EM PROFILES  
 APPROVED *[Signature]*

NOTE:-  
 +|- ZERO LINE  
 --- IN PHASE (1" = 100%)  
 - - - QUADRATURE (1" = 30%)  
 - - - CONTACT - - - - - FAULT  
 - - - LINEAR ANOMALY  
 - - - CONDUCTIVE LINEAR ANOMALY

Department of  
 Mines and Petroleum Resources  
 ASSESSMENT REPORT  
 NO. 2613 MAP #2

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Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT  
NO. **2613** MAP #3

ELC GEOPHYSICAL SURVEY  
A,B,CC&KEY GROUPS CLAPPERTON B.C. AREA  
HIGHLAND CHIEF MINES LTD  
SEPT. 1970 SCALE 1" = 500' DWG. NO. --EM-70-107-3  
LOCATION PLAN  
APPROVED *[Signature]*

NOTE :-  
--- SURVEY LINES  
--- CLAIM LINE    ● CLAIM POST  
--- ROAD    --- CREEK

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