

# Quest Canada Resources Corp.

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August 6, 1991

860299

Mr. Hans Smit  
Kennecott Canada Inc.  
Comp. 18, Site 15, R.R. #1  
Telkwa, BC  
V0J 2X0

Dear Hans;

Re: Lennac Lake Copper Prospect, N.T.S. 93L/16

Please find enclosed Figure 1 (Composite Plan Map) and T. Pezzot's July 31, 1991 letter addressed to myself.

Figure 1 is a composite of Amax Potash Limited's 1972 geophysical work (B.C. M.E.M.P.R. Assessment Report 3808) and geological work (B.C. M.E.M.P.R. Assessment Report 3807). In particular, Figure 1 notes the limits of the 1972 I.P. survey, contours the >3% and >15% I.P. frequency effect (conductivity), contours a strong low resistivity feature, contours the >1500 gamma magnetic highs, outlines the east and west chalcopryrite mineralized zones and outlines the pyrite-propylitic zone.

Reviewing the geophysics and geology, it became apparent that the geophysics both outlined geological and mineralization-alteration features. A few unresolved issues include the dissimilar I.P. characteristics between the east and west chalcopryrite zones within the pyrite-propylite zone, the northwest trending resistivity low in the east half of the grid area and whether the magnetic features are strictly resultant from mineralization-alteration or may also relate to underlying geological units.

I feel the recommendations made in T. Pezzot's letter, including a re-interpretation of the I.P., expanding the I.P. coverage and conducting a more detailed magnetic and VLF-EM survey will aid in the resolution and differentiation of geological and mineralization-alteration features.

Yours truly,

QUEST CANADA RESOURCES CORP.



Robert Brown, P.Eng.  
Exploration Manager

RB:mh

Encl.

cc: J. Marr

Borough prospect.

93. L 09 W.

6 claim = 120 units

Cu #1 - #6.

**LENNAC LAKE (after Carter, 1972):** The Lennac Lake porphyry copper prospect is 9 miles southwest of Topley Landing (Figure 26).

Hazelton Group volcanic rocks are intruded by an oval stock-like body of quartz-hornblende - biotite feldspar porphyry, elongate in a northeast direction and measuring 4,000 by 2,000 feet. The porphyry is of granodiorite composition and phenocrysts constitute 30 per cent of the rock. Trenches south of the small lake expose relatively unaltered porphyry and a typical specimen from this area consists of quartz, 15 per cent, usually occurring as 2 to 4-millimetre anhedral phenocrysts; plagioclase ( $An_{30-35}$ ), 45 per cent, occurring both in the matrix and as 4 to 7-millimetre euhedral phenocrysts; K-feldspar, 15 per cent, restricted to the matrix and marginal to fractures; biotite, 10 per cent, in the form of 5-millimetre books; and hornblende, 5 per cent, usually exhibiting incipient alteration to fine-grained brown biotite.

Potassic alteration is weak to moderate within the main trench area and consists of secondary K-feldspar adjacent to fractures and secondary biotite, an alteration of hornblende. To the east of the stock are two northeast-striking porphyry dykes and there the intrusive rocks exhibit features typical of a quartz - sericite - pyrite alteration zone. Plagioclase is almost totally altered to sericite - carbonate, hornblende is altered to a mixture of chlorite and epidote, and biotite is completely chloritized. Pyrite is disseminated throughout the rock as well as being intimately associated with altered mafic minerals.

Hazelton Group volcanic rocks have been metamorphosed to biotite hornfels marginal to the porphyry stock and dykes. Inclusions of hornfelsed Hazelton volcanic rocks are numerous within the stock and these rocks also contain significant amounts of magnetite.

Sulphide mineralization is centred about the porphyry stock and occurs over an area of 1.5 by 1 mile. The major copper showings are within the porphyry stock where chalcopyrite, pyrite, magnetite, and minor chalcocite and molybdenite occur in northwest-striking one-sixteenth to one-eighth-inch veinlets with quartz and some K-feldspar. Chalcopyrite mineralization was also noted as films on dry fractures in inclusions of volcanic rocks within the stock and in hornfelsed rocks in a trenched area 1 mile to the east.

**NC-72-1 - Quartz - hornblende - biotite Feldspar Porphyry:** Sample was collected from a trench near the central part of the stock. Chalcopyrite occurs in narrow quartz-filled fractures.

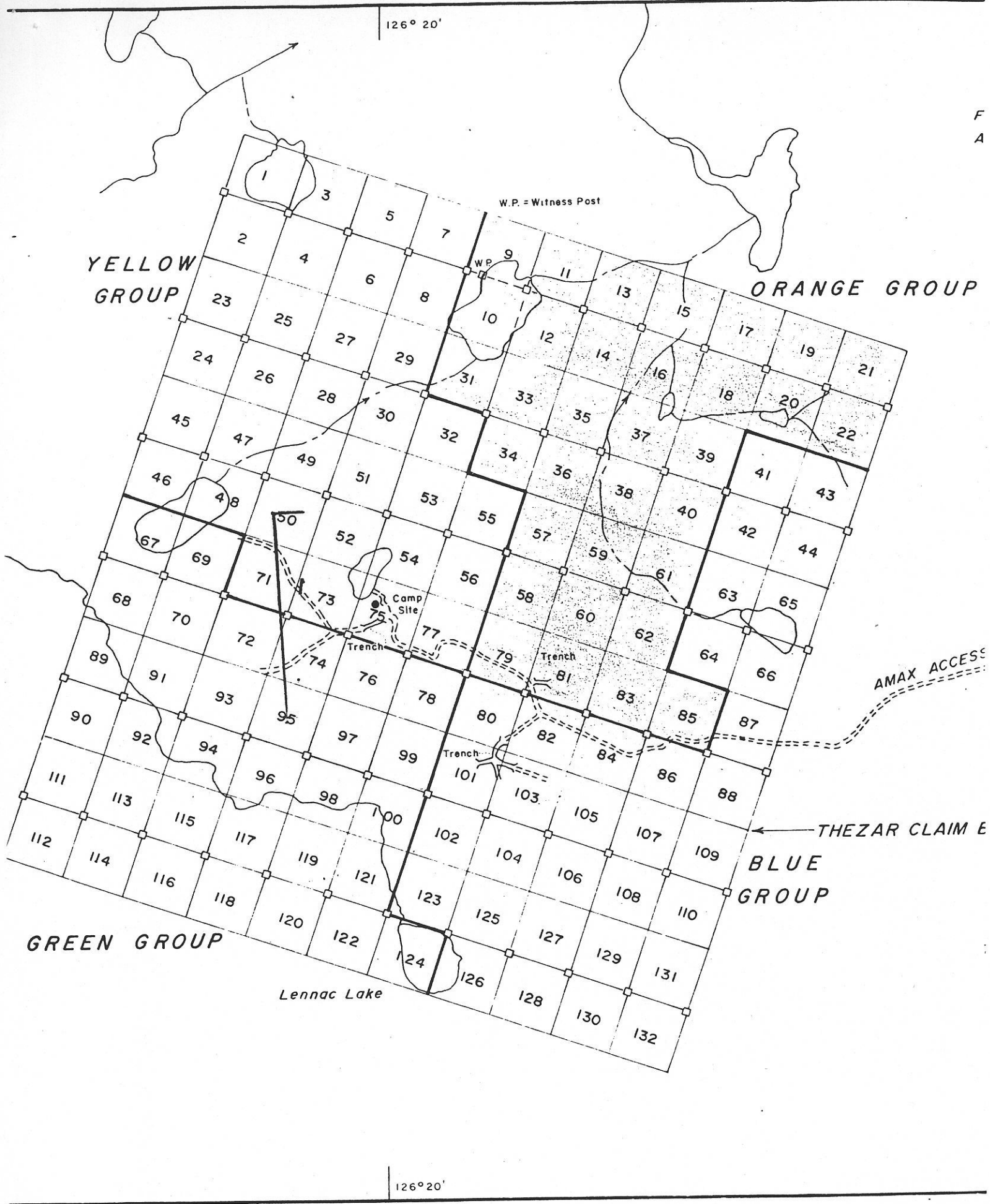
Thirty per cent of the rock is composed of 4 to 7-millimetre phenocrysts of plagioclase ( $An_{30-35}$ ), biotite books and hornblende needles to 5 millimetres, and 2-millimetre quartz eyes. These are set in a fine-grained matrix of quartz, biotite, plagioclase, and K-feldspar. Magnetite also occurs in the matrix.

Green hornblende is partially altered to biotite and primary biotite books are poikilitic and exhibit incipient (10 per cent) alteration to chlorite.

**TACHEK CREEK (after Carter, 1969):** The Tachek Creek copper-molybdenum prospect is 4 miles south of Topley Landing (Fig. 26).

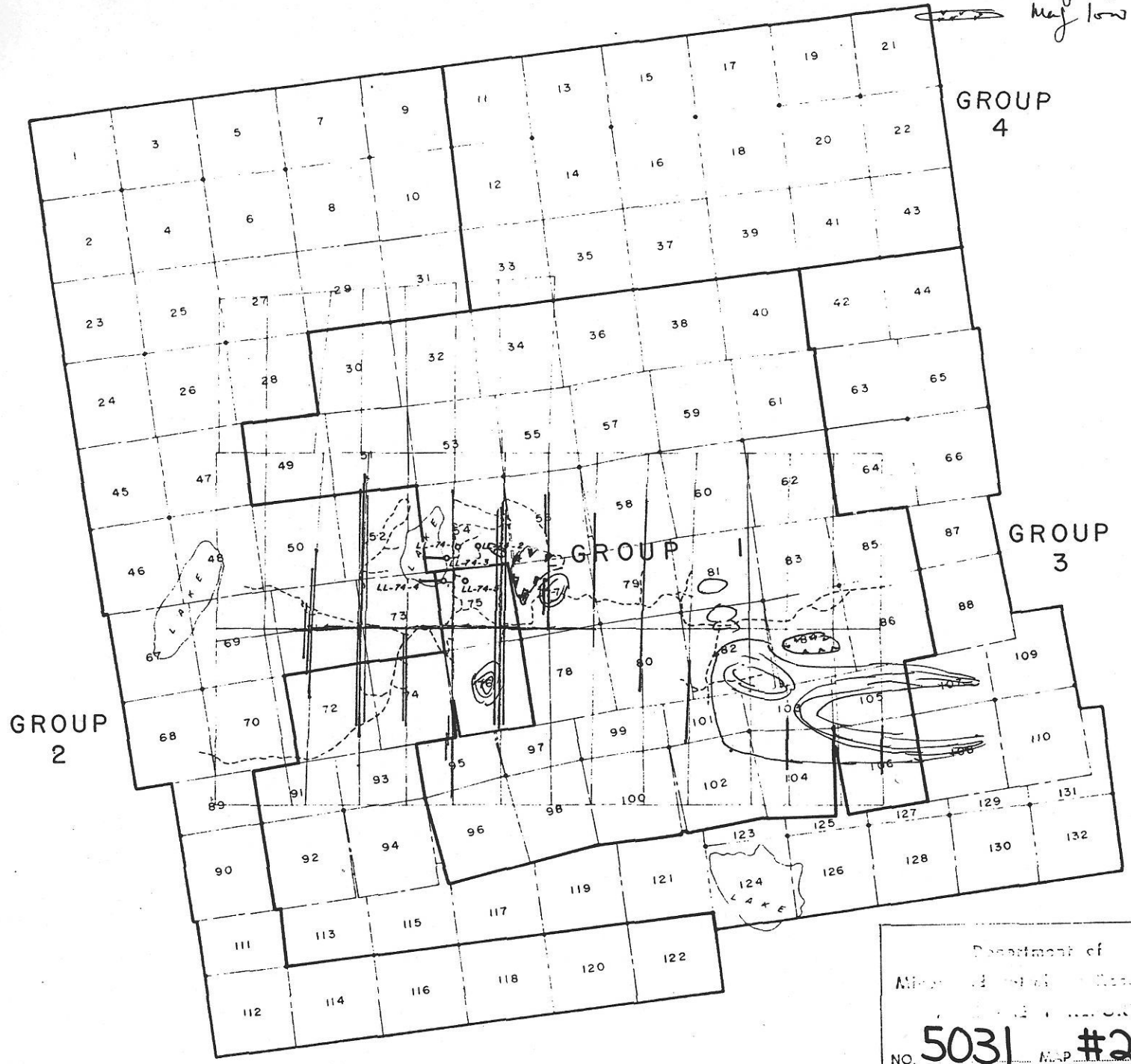
126° 20'

F  
A



— 3-9  
 = 9-15 PFE  
 = >158

○ map highs  
 ⊖ map lows



Department of  
 Mineral Resources  
 and Energy  
 NO. **5031** MAP **#2**

# GeoSci Data Analysis Ltd.

3740 Lockhart Rd., Richmond, B.C. Canada V7C 1M3

Tel: (604) 271-6959

Robert Brown  
Quest Canada Resources Corp.  
840 - 650 West Georgia St.  
Vancouver, B.C.  
V6B 4N6

July 31, 1991

Dear Robert:

On July 23, 1991 I was given copies of three assessment reports describing work conducted on the Lennac Lake copper prospect in NTS 93L/16 and 93L/9. Quest Canada Resource Corp. requested that I review this data and outline some viable options for geophysical exploration on this project.

Assessment report #3807, authored by G.M. Leary and J.F. Allen describes the geological environment and the results of a soil geochemical study completed in 1972. Assessment report #5031 was authored by C.J. Hodgson and describes the results of 1974 drill program. The bulk of this study was concerned with assessment report #3808, authored by G.M. DePaoli and J.F. Allen which describes magnetometer and induced polarization surveys conducted in 1972.

The results of the magnetic survey were presented in contour format and three anomalous features were interpreted. One of these anomalies is described a magnetic low partially ringed by highs. This magnetic low is coincident with a large IP anomaly and was interpreted as being as result of hydrothermal alteration.

The induced polarization data was gathered with a McPhar frequency domain system, configured in a dipole-dipole array with an "a" spacing of 300 feet. Survey lines were established on 800 foot centres and readings taken at 300 foot station intervals. Measurements were gathered at four separations ( $n = 1, 2, 3, 4$ ) and calculated apparent resistivity, Metal Factor and Percent Frequency Effect values were presented in pseudosection format. Additionally a plan map illustrating the  $n=1$ , P.F.E. data was included in the report. No plan map of the apparent resistivity data was included in the report I received.

A simplified interpretation of the data was presented which identified an arcuate pattern of very high P.F.E. values surrounding lower, but still anomalous readings. An observation was noted that the outcrop along the ring of the IP anomaly was pyritized while chalcopyrite mineralization was observed within the ring structure. This area is identified in assessment report #3807 as the West zone of copper mineralization. No anomalous IP

values were reported in the vicinity of the East zone.

I do not feel that the written interpretation presented in assessment report #3808 adequately analyzes the geophysical data. A cursory examination of the magnetic contour map reveals a number of one and two line anomalies which have not been discussed in the report yet are likely responses to the underlying geology. In addition to the contour presentation included in this report, the magnetic data should be analyzed in profile format to help determine the geometry and nature of the source bodies generating the observed anomalies.

The induced polarization survey appears to be doing an adequate job of outlining the West zone of copper mineralization. There are however a number of zonations observed in the IP data within this large anomaly which have not been adequately described. There has also been no mention or interpretation of the apparent resistivity component of the IP survey. A cursory examination of the pseudosection profiles indicates that there are a number of variations in this data which likely reflect the underlying geology.

Based on the data presented and conversations with Robert Brown of Quest Canada, the following recommendations are made:

1. The existing geophysical data should be entered into a digital data base and analyzed using current computer processing and interpretation techniques. Research into available government airborne magnetic surveys should be included as part of this analysis. Contingent upon the results it is expected that additional geophysical surveying will be required to detail and extend anomalous areas.
2. Any geophysical techniques to be used will require the refurbishing of the old grid or establishments of new ones in selected areas.
3. Considering the concentration and amounts of sulphides found to date, induced polarization techniques will likely provide the best opportunity to directly map the target mineralization.

If the targets are to be high grade zones within the currently defined East and West copper zones, more detailed surveying will be required. This will entail both smaller line and station separations and shorter electrode spacings than previously used.

If the exploration strategy dictates that targets are to be high tonnage, large disseminated bodies then a review of the current data may adequately guide a drilling program on the

West copper zone. The search for similiar zones on the rest of the property will likely involve an expansion of the existing IP program using a similiar electrode configuration. Using IP as a reconnaissance tool can be very expensive and it is advisable to precede this exercise by geological reconnaissance and a review of available aeromagnetic and airphoto data in order to identify areas of specific interest.

4. In addition to the magnetic and IP surveys used to date, vlf-em surveys are also recommended. Considering the moderate topographic relief and reported thin veneer of glacial till overburden, it is likely that a vlf-em survey could help map the near surface geology. This technique may be particularly useful in tracing continuous shear zones, which in some instances are directly related to the observed mineralization.
5. In order to make the most effective use of magnetic and vlf-em techniques as geological mapping tools, it is recommended that the areas of interest be surveyed using a maximum line separation of 100 metres and maximum station separation of 25 metres. Closer spacings may be required in detail areas.

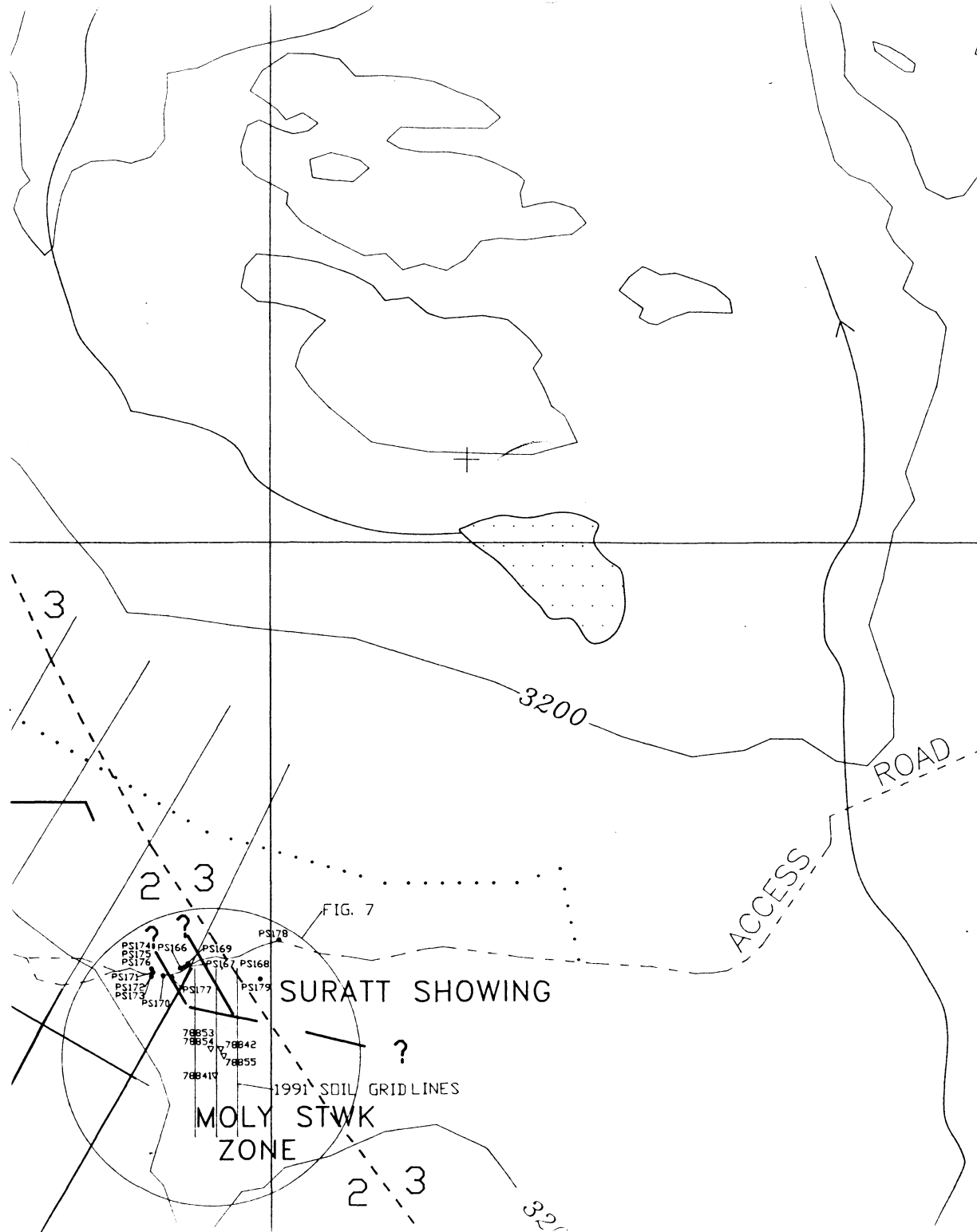
I hope this assessment and these recommendations are adequate for your current needs. If you have any questions concerning the comments made here or require clarification or expansion of any recommendations, please contact me at your convenience.

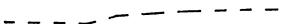

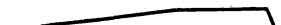
Sincerely,




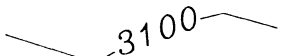


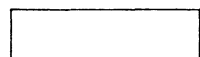


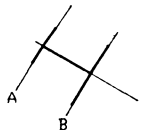




E. Trent Pezzot  
BSc. Geophysics - Geology

ETP/sp

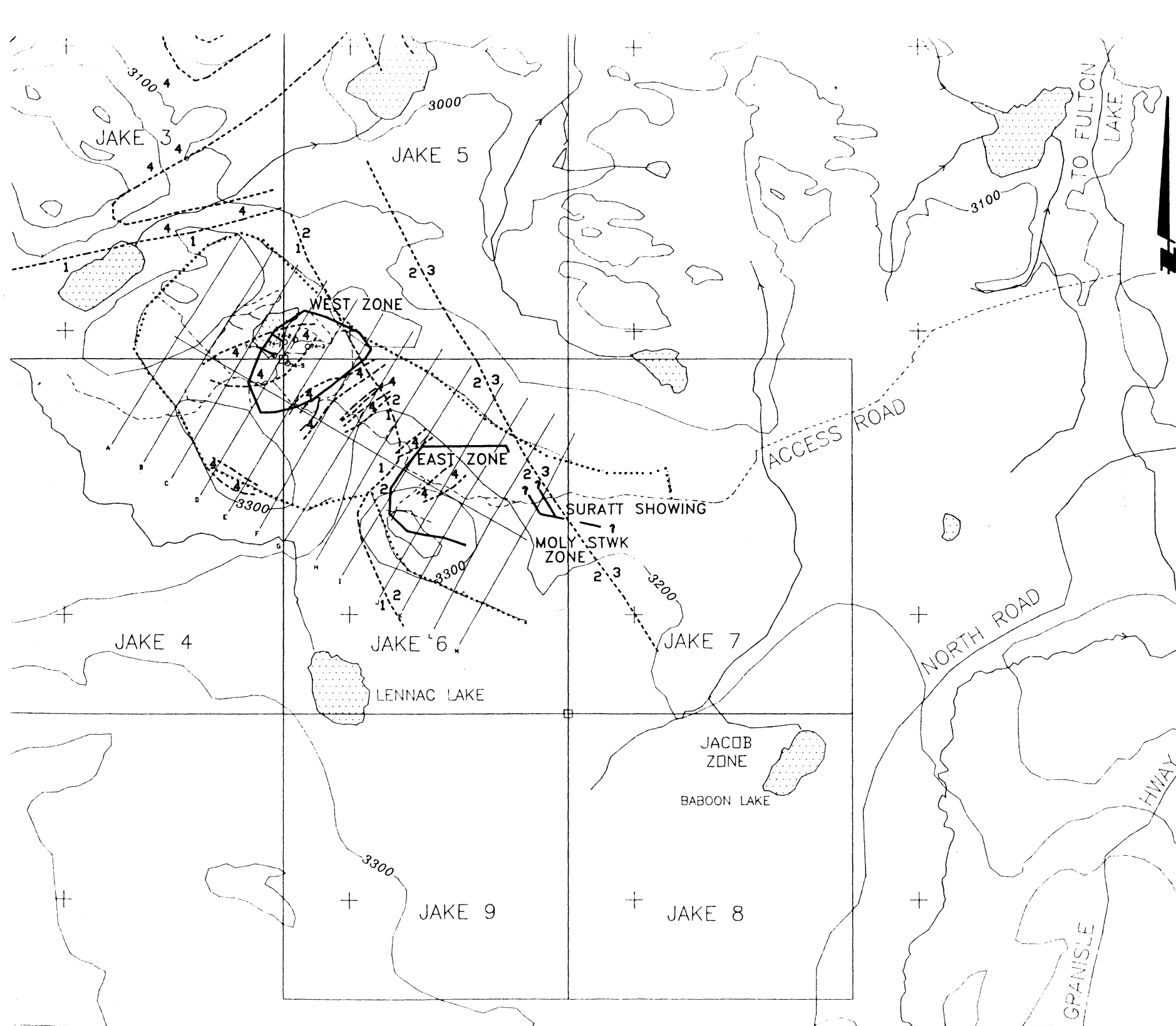


-  GEOLOGICAL CONTACT
-  EXTENT OF PYRITE HALO
-  MINERALIZED ZONE

SYMBOLS

-  4X4 ROAD
-  CONTOUR  
(100 ft interval)
-  STREAM
-  LAKE
-  CLAIM BOUNDARY
-  LEGAL CORNER POST
-  1974 DRILL HOLE
-  I.P. GRIDLINE (Bold line indicates  
refurbishment in 19
-  MAPPING SAMPLES, SOME NOT AN
-  GRAB SAMPLE
-  SOIL SAMPLE FROM TRENCH
-  10 Kg ROCK CHIP SAMPLE



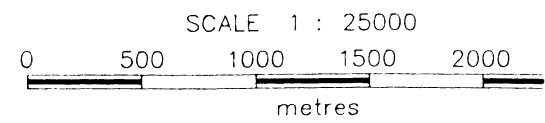


- 4 PORPHYRY DYKES
- 3 UNDIFFERENTIATED VOLCANIC AND MINOR SEDIMENTARY ROCKS
- 2 GREY-GREEN VOLCANICS- MOSTLY FELDSPATIC MASSIVE TUFFS, BRECCIAS, FLOWS
- 1 RED-PURPLE VOLCANICS- MOSTLY TUFFS, BF

- - - - - GEOLOGICAL CONTACT
- EXTENT OF PYRITE HALO
- MINERALIZED ZONE

**SYMBOLS**

- ROAD
- - - - 4X4 ROAD
- 3100 CONTOUR (100 ft interval)
- STREAM
- LAKE
- [ ] CLAIM BOUNDARY
- LEGAL CORNER POST
- ⊙ 1974 DRILL HOLE
- ⊕ GRID



**K Kennecott Canada Inc**

**LENNAC LAKE**  
Geology and Mineralization