REPORT ON

AERONAGNETIC SURVEY

on the

NOREEN CLAIM

MABEL LAKE, VERNON MINING DIVISION

NTS: 82L/10E

Latitude: 50° 40.4'

Longitude: 118° 41.2'

Owner: W.R. Gilmour

Consultant: K.L. Daughtry & Associates Ltd.

Vernon, B.C.
March 10, 1978

By: K.L. Daughtry, P.Eng
P.P. Nielsen, Geophysicist

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INTRODUCTION

Location, Access, Topography

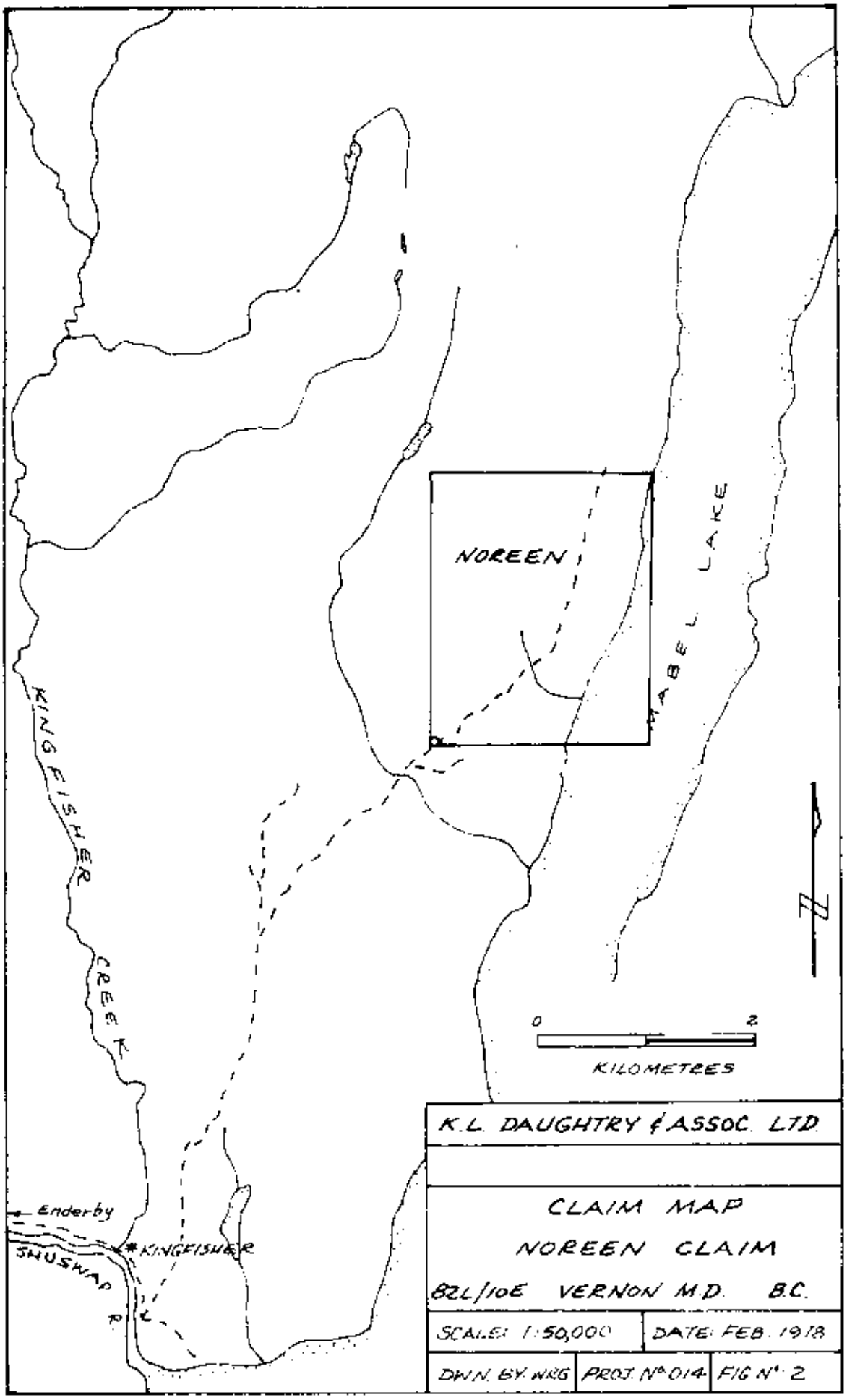
The NOREEN claim is on the west shore of Mabel Lake in the Vernon Mining Division, directly opposite Mount Mabel and 8 km north-northwest of the settlement of Kingfisher (Figures 1, 2). The town of Enderby is 34 km to the west-southwest and the nearest major centre is Vernon, 60 km to the southwest. The co-ordinates of the centre of the property are 50° 40.4' North and 118° 41.2' West. The National Topographic System reference is 82L/10E.

Access to the property is by the main Enderby-Mabel Lake road up the Shuswap River to Kingfisher, then north for 4 km along an active logging road, then northeast for 2.7 km along a disused bush road to the legal corner post of the NOREEN claim. The latter road may not be passable to two-wheel drive vehicles in wet weather. The western and northern parts of the claim are accessible by various other logging and bush roads from Kingfisher.

The property is on the moderately to steeply sloping, east-facing mountainside above Mabel Lake (Figure 2). A north-easterly trending area of moderately sloping terrain about 800 m wide extends from the southwest corner of the claim to the middle of the north boundary. Steep, cliff-studded slopes extend uphill to the northwest and down to Mabel Lake on either side of this "bench". The variability in topography is believed to be directly related to underlying geological structure and lithology.

Elevations vary from 390 m at Mabel Lake to 1225 m at the northwest corner of the claim. The area is generally snow-covered from November to April.

...2


NOREEN
MABEL LAKE
KINGFISHER CREEK
Enderby
KINGFISHER
SHUSWAP R.
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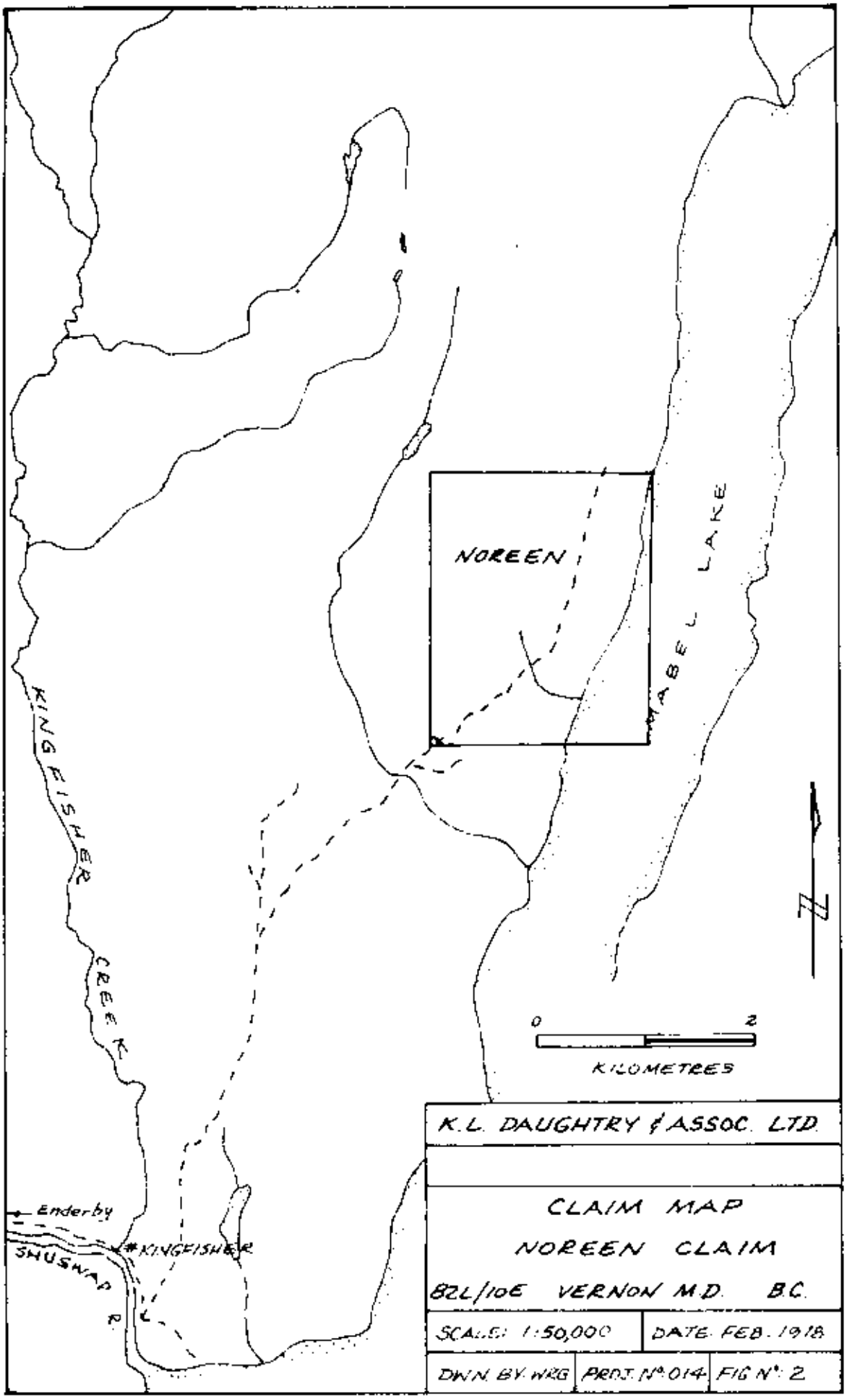
2
KILOMETREES
K.L. DAUGHTRY & ASSOC. LTD.
CLAIM MAP
NOREEN CLAIM
82L/10E VERNON M.D. B.C.
SCALE: 1:50,000
DATE: FEB. 1918
DWN. BY: NRG
PROJ. N° 014
FIG N° 2


NOREEN
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K.L. DAUGHTRY & ASSOC. LTD.
CLAIM MAP
NOREEN CLAIM
82L/10E VERNON M.D. B.C.
SCALE: 1:50,000
DATE: FEB. 1918
DWN. BY: WRG
PROJ. No. 014
FIG No. 2

Property

The NOREEN claim, record number 236, comprising 20 units in the Vernon Mining Division, was staked by the present owner, W.R. Gilmour, on January 24, 1977 and recorded on February 18, 1977. This claim covers the area of the original NOREEN 1-8 claims staked in 1971 and the later OK 1-8 and ROLET 1-6 claims staked in 1973.

Mineralization was first discovered on the present property in 1971 by prospectors on a regional exploration project under the direction of the writer. A strong zinc anomaly was found in stream sediments in a small creek above the west shore of Mabel Lake. Follow-up prospecting discovered several large marble boulders carrying low-grade zinc-lead-copper mineralization. Soil sampling on a grid delineated strong zinc and lead anomalies north of the mineralized float. The NOREEN 1-8 claims were staked, but nothing further was done and the claims lapsed in 1972.

In 1973 the property was re-staked as the OK 1-8 claims by partners of the writer. Several backhoe trenches and pits were put in the area of the soil anomaly and a narrow zone of lead-zinc mineralization was discovered. Also in 1973 the ROLET 1-6 claims were staked by S.Brewer adjacent to the south boundary of the OK claims to cover the area in which the original mineralized float was found. Several backhoe trenches and pits were excavated in this area. By 1976, all claims had lapsed and the ground was open until the present NOREEN claim was staked early in 1977.

Work Programme

An airborne magnetic survey was conducted over the area of the NOREEN claim in February, 1978. The object of this work was the delineation of magnetic anomalies related to zones of pyrrhotite-sphalerite-galena ± chalcopyrite mineralization known to exist on the property. A total of 32 line-kilometres of survey were flown by helicopter along parallel lines at constant terrain clearance. The grid lines were laid out at right angles to the general trace of the metasedimentary rocks hosting the mineralization. The cost of this survey was greater than anticipated due to the prevalence of poor flying conditions and consequent delays and postponements.

GEOLOGY

The NOREEN claim is underlain by high-grade metamorphic rocks of the Shuswap Complex. Rock types include marble, quartzite, metasedimentary gneiss, amphibolite and pegmatite. The metamorphic grade is probably upper amphibolite facies.

The property is on the east limb of a large fold structure, possibly an overturned syncline plunging southerly. The Kingfisher lead-zinc property of Colby Mines Ltd. is on the western limb. The NOREEN showings are of the same type and are believed to be in the same stratigraphic sequence as the Kingfisher showings.

Mineralization comprises stratabound pyrrhotite-sphalerite-galena and chalcopyrite in marble, impure calc-silicate gneiss and quartzite. Magnetometer surveys at the Kingfisher property have been valuable in tracing the mineralized zones, and the airborne survey was carried out on the NOREEN claim in an attempt to delineate target areas for future exploration.

AEROMAGNETIC SURVEY

General Comments

During the period January 28 to February 9, 1978 a helicopter-borne magnetic survey was carried out over the area of the property to assist in the geological mapping of the claims and to delineate zones of pyrrhotite with associated sphalerite and galena in marble horizons known to exist in the general area.

Actual flying time to complete the survey as only five hours. However, many days and helicopter ferry-time hours were expended attempting to commence the survey due to unfavourable weather conditions.

Theory of Method Used

The aeromagnetic method can be used to quickly and efficiently measure variations in the magnetic susceptibility between various rock types and mineralization and to delineate any important structures which might be present.

The magnetometer used was a total-field intensity nuclear precession type instrument. Included is a sensor consisting of a cylindrical bottle of kerosene within a direct current-bearing coil horizontally oriented in a "bird" towed below the helicopter on a 25 m cable.

Direct current is passed through the cable for a fixed time causing the proton orbit planes of the hydrogen atoms in the kerosene to align perpendicularly to the axis of the coil.

The current is then automatically shut off allowing the orbit planes to return to their natural random orientation generating a "die-away" envelope at a frequency proportional to the magnetic field present.

This signal is fed to a receiver circuit in the magnetometer console where it is converted to gammas and recorded on an analog strip-chart recorder. A reading is made every second and is accurate to $\pm$ 1 gammas.

Field Procedure and Survey Specifications

The magnetometer and ancillary equipment was mounted in a chartered Bell-206 Jet Ranger helicopter owned by Vernon Helicopters Ltd., which was based in Vernon, B.C. and piloted by Mr. R. Biggs.

Proposed flight lines spaced 220 metres apart were ruled on an airphoto enlargement (scale approximately 1:10,000) on an azimuth of 293° and used as the main control by the navigator. The pilot was reponsible for maintaining a 90 m terrain clearance, of the helicopter, by aid of a Bonzer Radar altimeter. An average ground speed of 80 km/h (50 mph) was maintained.

Good navigational control was facilitated by very low wind velocity, the airphoto blow-up and numerous land-marks including lakes, roads, creeks, and rock-bluffs.

Fiducial marks were impressed on the chart-recorder by the navigator pressing a foot-pedal. Corresponding numbers were marked on the airphoto enlargement to determine actual flight paths.

Instrument Specifications

The following instrument package rented from McPhar Instrument Corp., consisted of the following:

1. Geometrics Model G-803 Proton Magnetometer and bird.
2. Bonzer MK10 Radar Altimeter, antenna and console.
3. Foot pedal fiducial counter.
4. Two Hewlitt-Packard Model H.P. 7155 Analog Strip-chart Recorders.

Data Compilation and Presentation

The fiducial numbers marked by the navigator on the airphoto enlargement were connected by inked straight lines to indicate the actual flightpath along the grid-lines and transferred to a mylar overlay of a controlled topographic map of the property area (scale 1:10,000).

Gamma values for the fiducial points and any other maximum or minimum values between fiducial points were plotted on a working print of this map and contoured at 25 gamma intervals above a datum of 58,000 gammas total field intensity. The contours were then transferred to the controlled mylar overlay which also indicated important land marks. On the finished map, fiducial numbers and gamma values were omitted for reasons of clarity.

Discussion of Results and Interpretation

The aeromagnetic total field values from a high of 58865 gammas at the intersection of flight-line 1 and the west shore of Mabel Lake to a low of 58510 gammas at the 3000 ft. topographic contour on flight-line 26. This resulted in a total magnetic relief of 355 gammas and is illustrated on the isomagnetic contour map as a very pronounced north-south magnetic gradient.

This gradient is also observed on the G.S.C. Aeromagnetic map 8503G, "Mabel Lake", as a very large anomaly which peaks to 59,225 gammas approximately 5.5 km to the south near Kingfisher. Because of the higher terrain clearance local magnetic features are not seen in the G.S.C. data, hence the necessity of this lower level survey.

The local magnetic features observed from the low-level survey consist primarily of north-south deviations (flexures) in the predominate east-west trending regional contours, and occur as prominent peaks on the analog records. In many places, these flexures are persistent, and align themselves across two or more survey flight-lines. They are interpreted to represent pyrrhotite bearing horizons of near-vertical meta-sediments and are shown as lineaments on Figure 3.

One strong magnetic lineament interpreted from isomagnetic contour flexures and the original profiles occurs just west of the lower north-south road (roughly at 700 m A.S.L.) between flight-lines 10 to 16. This feature conforms very

closely to known occurrences of sphalerite, galena and chalcopyrite-bearing marbles and quartzites containing appreciable amounts of pyrrhotite.

The lineaments shown on the isomagnetic contour map are thought to represent narrow zones of pyrrhotite mineralization in a complexly folded and faulted sequence of metasediments very similar to the geology and mineralization observed on the Colby-Kingfisher property approximately 5 km to the northwest.

Conclusions and Recommendations

The aeromagnetic survey has been of great assistance in understanding the geology of the NOREEN property despite a very strong regional influence on the data.

In view of the experience at the Kingfisher property of Colby Mines Ltd. it is very possible that some, if not all, of the interpreted magnetic lineaments could be of economic significance.

Ground magnetometer surveys should be carried out in the areas of these lineaments. For accurate location and orientation of the grids, the original analog strip-chart profiles should be examined.

It is also recommended that a residual isomagnetic contour map be derived from the total field map discussed above so as to remove the strong regional trend and to enhance the local, near-surface magnetic features which may delineate economically significant mineralization known to be associated with pyrrhotite lenses and stringers in the area.

Respectfully submitted:

K.L. Daughtry, P.Eng

P.P. Nielsen, Geophysicist

Vernon, B.C.
March 10, 1978

STATEMENT OF COSTS

Professional Fees		
K.L. Daughtry, P.Eng (Jan. 29 , Feb. 11 & report preparation) 3 days @ $200/diem	$600.00	
P.P. Nielsen, geophysicist (Jan. 29, Feb. 11 & report preparation) 4 days @ $175/diem	700.00	
W.R. Gilmour, geologist (report preparation) 2.5 days @ $150/diem	375.00	
	$1675.00	$1675.00
Helicopter (Vernon Helicopters Ltd.)		
206 Bell 5.4 h @ $330/h	$1782.00	$1782.00
Aeromagnetometer Rental		
17 days @ $98.82/diem	$1679.92	$1679.92
Miscellaneous		
Telephone	$ 2.00	
Maps & Airphotos	39.56	
Printing	21.12	
Shipping	43.97	
Secretarial	30.00	
	$ 136.65	$ 136.65
		$5273.57

STATEMENT OF QUALIFICATIONS

I, Kenneth L. Daughtry, of Tronson Road, R.R. #4, Vernon, British Columbia, do hereby certify that:

1. I am a consulting geologist in mineral exploration.
2. I have been practising my profession in Canada, the United States and Ireland for thirteen years.
3. I am a graduate of Carleton University with a Bachelor of Science degree in geology and chemistry.
4. I am a member in good standing of the Associations of Professional Engineer of British Columbia, Ontario and Yukon, and a Fellow of the Geological Association of Canada.
5. This report is based upon knowledge of the NOREEN property gained during the conduct of exploration since 1971.

K.L. Daughtry & Associates Ltd.

K.L. Daughtry, P.Eng

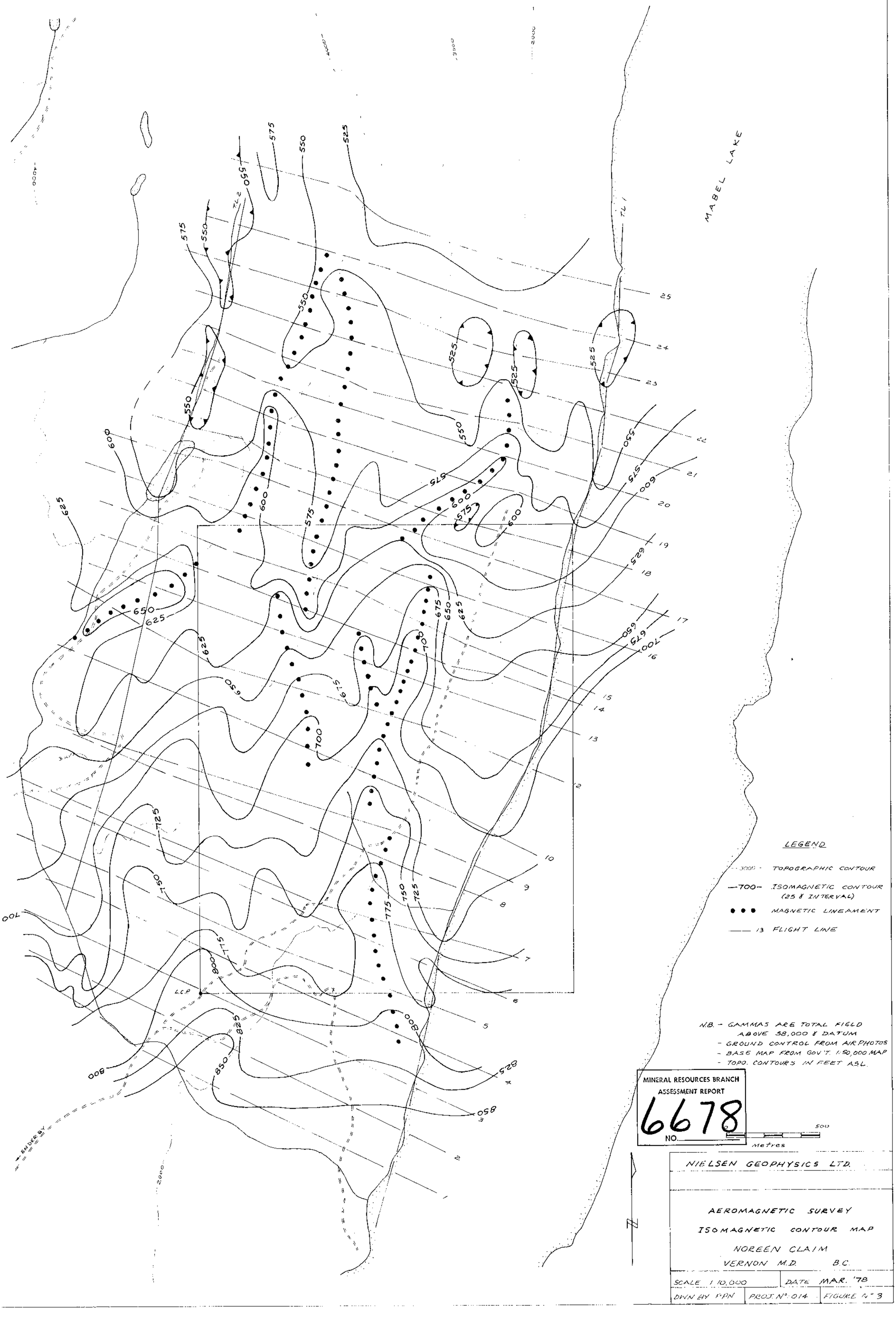
STATEMENT OF QUALIFICATIONS

I DO HEREBY STATE THAT:

1. I am the co-author of this report and carried out the airborne survey described herein.
2. I have been actively and responsible involved in all aspects of mining geophysics in Canada, the United States, Africa and Australia over the past thirteen years.
3. I graduated with a B.Sc. degree in Geophysics from the University of B.C. in 1969.
4. I am the President of Nielsen Geophysics Ltd. with business address at #205-2910-30th Ave., Vernon, B.C.
5. I am a member of the S.E.G., C.I.M.M., and the B.C.G.S.

P.P. Nielsen

P.P. Nielsen, B.Sc.


MABEL LAKE
ENDERBY
L.C.P.
LEGEND
3000 TOPOGRAPHIC CONTOUR
700 ISOMAGNETIC CONTOUR (25 γ INTERVAL)
MAGNETIC LINEAMENT
13 FLIGHT LINE
N.B. - GAMMAS ARE TOTAL FIELD ABOVE 58,000 γ DATUM
- GROUND CONTROL FROM AIR PHOTOS
- BASE MAP FROM GOV'T. 1:50,000 MAP
- TOPO. CONTOURS IN FEET A.S.L.
MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
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Metres
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NIELSEN GEOPHYSICS LTD.
AEROMAGNETIC SURVEY
ISOMAGNETIC CONTOUR MAP
NOREEN CLAIM
VERNON M.D. B.C.
SCALE 1:10,000
DATE MAR. '78
DWN BY PPN
PROJ N°: 014
FIGURE N° 3