Owner: H.F. KENWARD AND I. KARMEL

# GEOPHYSICAL REPORT

EM AND OCT GROUPS NEAR BATES CREEK, 49° 120° NW Princeton Area, Nicola M.D. by C. B. Selmser, P. Eng. - June 15, 1967

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# GEOPHYSICAL REPORT
## MAGNETIC SURVEY EM AND OCT GROUPS
## ASPEN GROVE AREA

for

H. F. KENWARD & I. KARMEL
VANCOUVER, B. C.

by

TOM ROLSTON
ELECTRONIC SERVICES
BURNABY, B.C.

June 3½ to June 15, 1967

C. B. Selmser, P. Eng.

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## CERTIFICATE OF QUALIFICATIONS

The formal education of the author consists of undergraduate studies at Union College, Schenectady, N.Y., in engineering and science, with a degree conferred as B. Sc. Graduate study was taken at McGill University and at the University of Toronto in mining geology and geophysics with a degree conferred as M.Sc. He is qualified both in engineering geology and geophysics as a professional engineer.

The author has had some twenty years' experience in the fields of geology and geophysics doing exploration work throughout Canada. He has also worked for a short period of time in the Transvaal region of South Africa.

The author has been a member of the Association of Professional Engineers of Ontario, Alberta and British Columbia for the past 14 years. He is at present an active member of the Association of Professional Engineers of British Columbia with certificate number 4783.

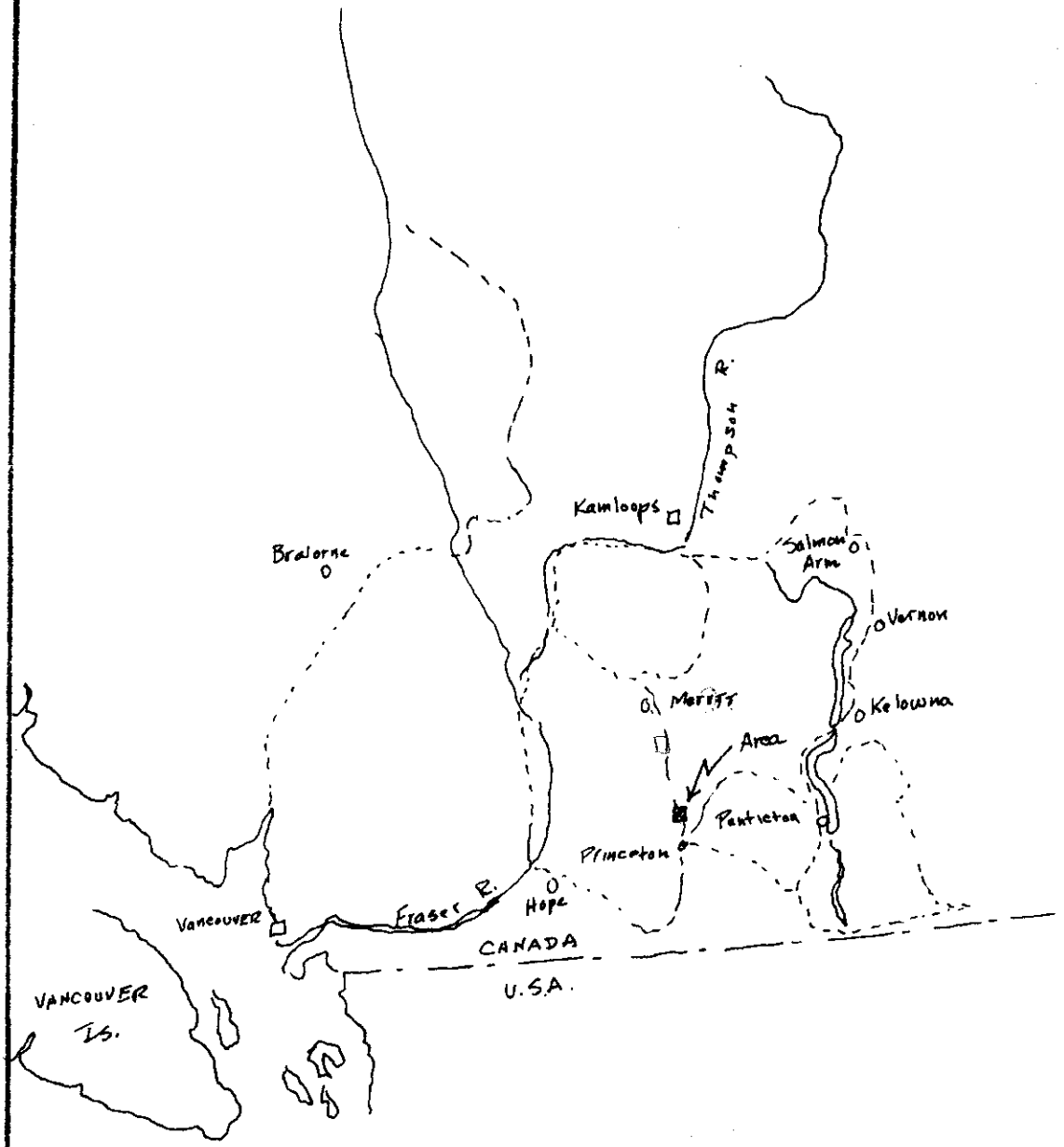
His knowledge of the property outlined in this report has been gained from the surveys. Reference has also been made to government reports and pertinent texts.

The author has no financial interest in this property other than the survey work, and is acting wholly as a consultant to the interested principal. Any remuneration received has been for expenses incurred during the survey and for his professional services.

C. B. Selmser

C. B. Selmser, P. Eng.

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 1 MAP 1059




LOCATION MAP

Scale: 1 in. = 50 mi.

C.B.Le.

# GEOPHYSICAL REPORT
EM AND OCT GROUPS

June 15, 1967

## INTRODUCTION:

This area is situated near Aspen Grove in the Kamloops District of the Nicola Mining Division. It is reached by road from Princeton to Tulameen and thence northward. Princeton is on the Hope-Princeton Highway. The exact geographical location is 49° 55' and 120° 35' W, and it is traversed east and west by Bates Creek. Alleyne Lake lies toward the east of the area.

The claims and fractions of two different groups make up this area. These are the EM and OCT groups. The OCT claims were staked by R. Matier on October 5, 1966, and the EM group was staked by R. Green on October 5, 1965. These claims were staked on behalf of Kenward and Karmel. The claim map submitted with this report shows the boundaries of these claims and the related culture, such as streams and roads.

This survey was carried out to discover any magnetic anomalies which may be related with the lithology of the bedrock or any magnetic type mineralization which might be associated with sulphides containing copper and gold. It will be the aim of this report to relate magnetic anomalies to lithology, mineralization or the structural geology in this area.

## SUMMARY OF WORK:

The survey was made by Mr. Tom Rolston, who has had extensive experience in the field doing magnetic surveys. He has worked the past 8 years for large mining companies doing surveys of this nature.

This survey was made during June 3 to 13, 1967. During these 11 days readings were made on the occupied atations. Notes were also taken and related to the earth's magnetic field as determined in this area and at the date of the survey.

HISTORY OF THE AREA:

This area is generally known as the Aspen Grove Copper Camp. There are several important occurrences of copper in the district which have given this district the name. It is reported in Memoir 243 that the area extends north from the Copper Mountain District.

Dr. H.M.A. Rice states, "It is surely more than a coincidence that deposits whose mineral constituents should be so conspicuously like those of Copper Mountain should occur dotted along a line of faulting extending north from Copper Mountain. If, as suggested by these considerations, the Aspen Grove Copper deposits originated from solutions genetically connected with those that produced the Copper Mountain ores, and that these solutions entered the host rock through channels afforded by fault zones mentioned above it is odd that no member of the Copper Mountain intrusions, to which the mineralizing solutions would also be related, has been seen along this belt. Perhaps such intrusions are present, but are covered by rock or drift."

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Geological Survey, Mem 243, Geology and Mineral Deposits of the Princeton Map Area, B.C. by H.M.A. Rice, P. 91.

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The copper minerals in this district are disseminated through volcanic rocks of the Nicola group. The Vancouver and Victoria claims have a considerable amount of copper carbonate, where shear zones cross a lens of Nicola limestone.

MAGNETIC INSTRUMENT:

A Sabre Portable Fluxgate Vertical Component Magnetometer was used in this survey. The instrument was hand held during reading using a spirit level to orientate the vertical plumb.

The sensitivity of this instrument is 20 gammas. The amount of force measured per scale division is 40 gamma.

This instrument is compensated for normal changes in temperature and enough repetitive readings were made in order to compensate for diurnal changes in the magnetic field. No readings were taken during magnetic storms in this survey.

GENERAL GEOLOGY:

A group of green andesites occupies this area. This is a member of the Nicola group and is Upper Triassic in age. Several samples of this rock were taken near the areas showing higher magnetic anomalies. This is probably due to a content of accessory magnetite which is associated with these rocks. These rocks are often sheared into chlorite and talc-sericite schists. They may also be interbedded with lenses of limestone of this same group and age.

The above group of rock has been intruded by granites which have the common name of coast intrusions. These are grey, red or white in colour and have associated pegmatite and aplite dykes. These rocks extend in age from Jurrassic time into the Cretaceous era. In certain places a deep green coarse-grained pyroxenite is associated with these intrusives. This rock because of its large content of magnetite gives very high magnetic anomalies. No rock of this nature has thus far been found on this property.

GEOPHYSICAL OVERLAY MAP:

This map which is an exact reproduction of the claim map and is to a scale of 1 inch equals 400 feet is contoured in degrees of gradually increasing magnetism as follows:

| | | |
|---|---|---|
| 0 - 1000 | gamma | - clear areas |
| 1000 - 1600 | " | - darker series |
| 1600 - 1800 | " | - very dark |

Based on the interpretation of the above areas, a wiggly line has been drawn by the author along areas which are thought to be faulted or sheared. Arrows have been added where it is thought that the shear direction or fault displacement is known.

The long, more or less, continuous fault line, extending north and south through the mapped area is the ALLISON FAULT which can be followed through this district as far as Princeton. This fault break is crossed in a number of places by cross-faults or shear zones which appear in some instances younger and sometimes older than the main fault zone.

The following areas are occupied by breaks in the main fault zone:

(1) in OCT 9 and 12 claims
(2) in EM 5 and 6 claims
(3) in OCT 1, 4 and 6 claims

(1) Appears to be younger than the main fault and is thrust northeast and southwest.

(2) Appears to be older than the main fault and is thrust northwest and southeast.

(3) Appears to be the same age as the main fault and is thrust southwest and northeast.

The clear areas are considered to be mostly underlain by Coast Instrusive. Actual field relationships from outcrops and sampling have definitely proved this relationship.

The higher magnetic anomalies 1600 to 1800 gammas may be related to sulphide ore, which has a larger magnetite content. This is proved by magnetic measurements on samples found near this area.

CONCLUSIONS:

All of the cross faults located along the Allison regional fault may be productive locations for sulphide mineralization. The cross faults sighted as (1) and (3) are thought to be especially favourable, since solutions of the same age as those that formed the Copper Mountain deposits could have formed deposits at these locations.

Whether important copper mineralization exists at the above locations cannot be proved by magnetic surveys alone. Only EM, SP or IP surveys will apply as a direct means of finding mineralization carrying copper.

RECOMMENDATION:

That an EM survey be carried out over the cross sheared areas to find massive mineralization occurrences. This may be supplimented where overburden is light with an SP survey which can be carried out simultaneously with the EM survey. Low values or areas that might contain disseminated or porphyry copper values can then be covered with a limited amount of IP survey work.

Respectfully submitted,

GEO CAL LIMITED

C. B. Selmser

C. B. Selmser, P. Eng.
Chief Geophysicist.

TOM ROLSTON

ELECTRONIC SERVICES

*Magnetic Surveys - Ground & Airborne*

5107 Victory Street
South Burnaby, B.C.

Phone 433-4112
or 435-6551

June 30, 1967.

H.F. Kenward & I. Karmel,
314 - 543 Granville Street,
Vancouver, B.C.

Dear Sirs:

The following is a statement of the costs expended on the Aspen Grove claims: OCT 1-~~16~~ 6 and EM 1-8. These costs were to carry out a magnetometer survey complete with geophysical interpretive report. There was also approximately 5 miles of picket lines to aid in this survey.

The survey took 11 days to complete, June 3 to 13/67 and was carried out by a two man crew. The total line miles covered at 400 feet line spacing and 100 feet instrument readings was 21 line miles.

| | |
|---|---|
| 11 days magnetometer instrument rental @ $10.00 per day | $110.00 |
| 11 days wages for field supervisor & inst. operator | 550.00 |
| 11 days wages for geophysical assistant @ $35.00 | 385.00 |
| 4 days map drafting and compilation | 200.00 |
| Geophysist fees | 200.00 |
| Printing maps and reports | 10.40 |
| Surveys materials, field books, flagging tape, etc. | 22.60 |
| 5 bundles of pickets for picket lines | 22.37 |
| | $1500.37 |

Yours truly,

Tom Rolston

Tom Rolston

(over)

Declared before me at the City

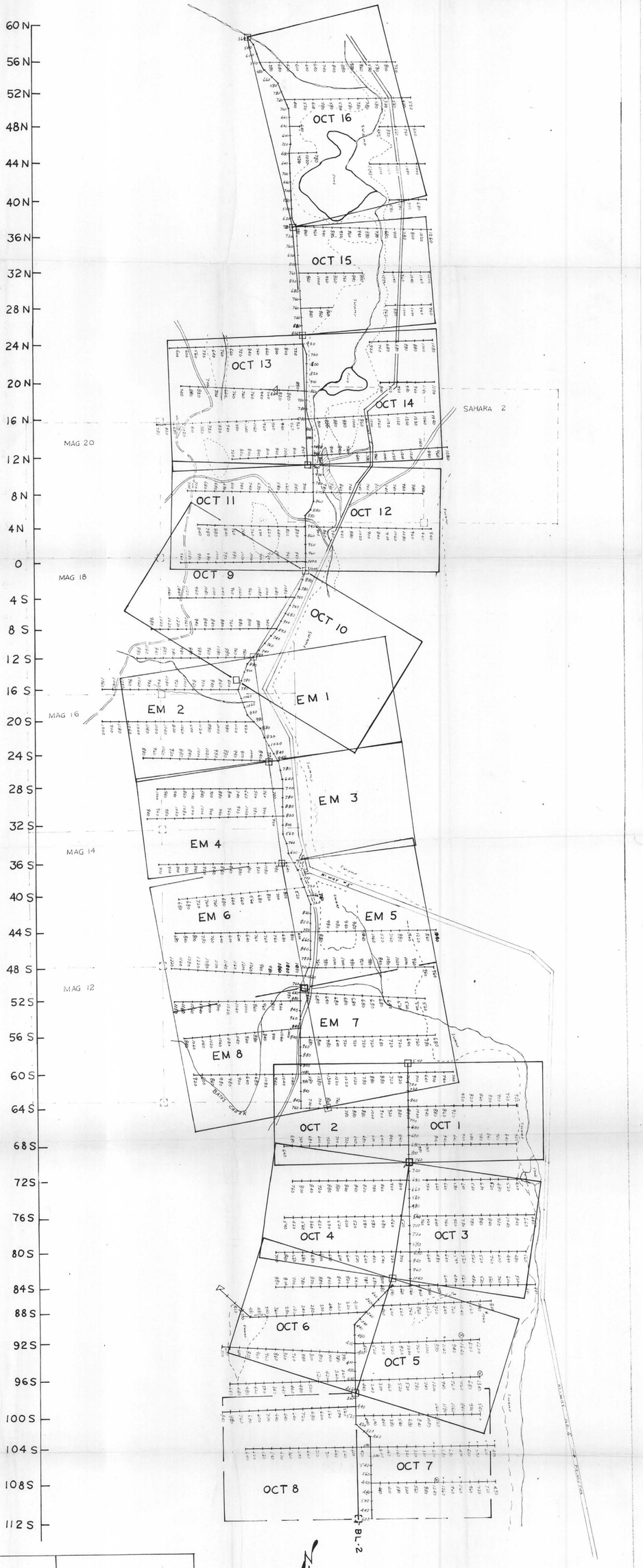
of Vancouver, in the

Province of British Columbia, this 5

day of Sept. 1967, A.D.

A Commissioner for taking Affidavits within British Columbia or

Sub-mining Recorder




| MAGNETOMETER SURVEY | |
|---|---|
| E.M. CLAIMS 1-8 ASPEN GROVE<br>OCT. CLAIMS 1-16 AREA B.C. | |
| SCALE 1" = 400' JUNE 3-13 1967 | |
| INST. USED: SABRE PORTABLE VERT. COMP. MAGNETOMETER | |
| SURVEY BY: T. ROLSTON - ELECTRONIC SERVICES | |
| 400' LINES, 100' MAG. STNS. | |

LEGEND

- CLAIM POST
- ROAD
- JEEP ROAD
- CREEK
- SWAMP

To accompany a report by:
C.B. Selmser, P.Eng. Kamloops Dist.
Nicola M.D. 49° 120° NW, June 15, 1967

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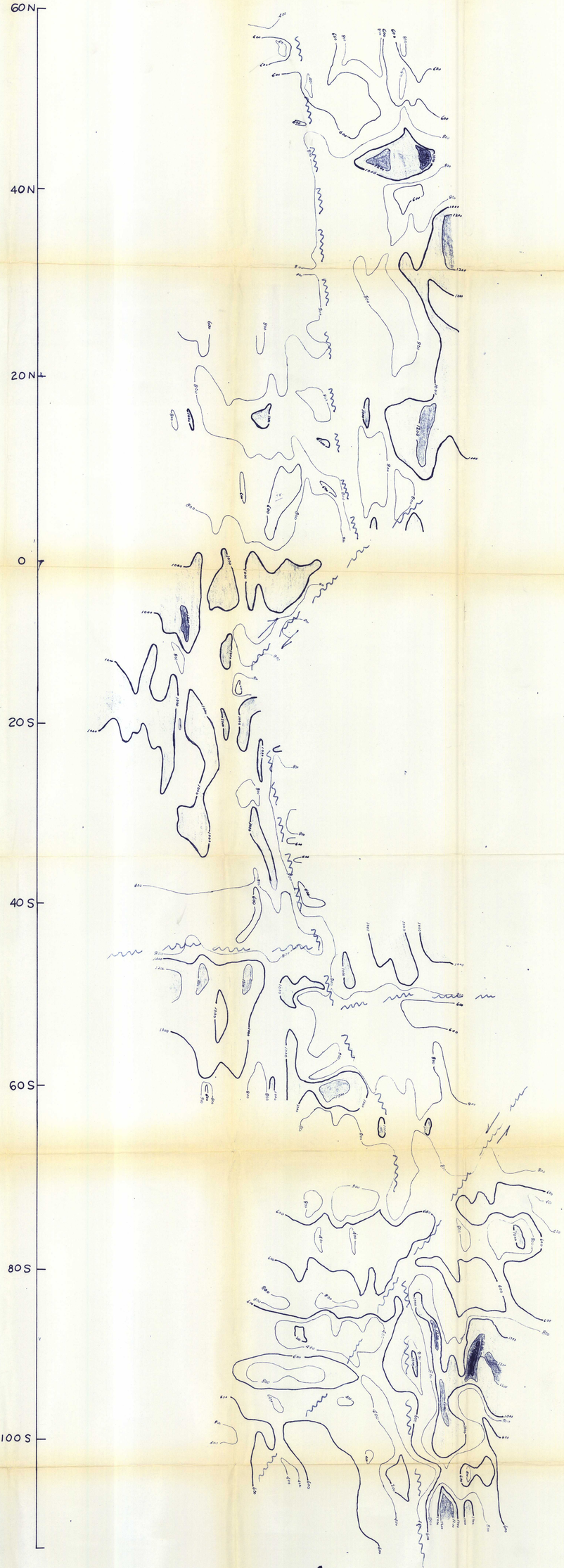


MAGNETOMETER SURVEY

E.M. CLAIMS 1-8 ASPEN GROVE
OCT. CLAIMS 1-16 AREA B.C.

MAGNETIC CONTOUR MAP

200 GAMMA CONTOURS

SCALE 1" = 400' JUNE 3-13 1967

LEGEND

- 0 - 1000 γ
- 1000 - 1200 γ
- 1200 - 1400 γ
- 1400 - 1600 γ
- 1600 - 1800 γ

To accompany a report by:
C.B. Selmser
C.B. Selmser, P. Eng. Kamloops Dist.
Nicola M.D. 49° 120° NW, June 15, 1967

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