92F/5E

92 F 5/12

# GEOPHYSICAL SURVEY

CREAM & BEAR GROUPS

CREAM LAKE AREA 49° 125° N.W.VANCOUVER ISLAND B.C. ALBERNI M.D. FOR SILVER CREAM MINES BY C. B. SELMSER, P.ENG.

1961

1564

# GEOPHYSICAL REPORT
# GROUND MAGNETIC AND ELECTROMAGNETIC SURVEYS
# CREAM AND BEAR GROUPS
# ALBERNI M.D. BRITISH COLUMBIA

for

CREAM SILVER MINES LTD. (NPL)
VANCOUVER, B.C.

by

TOM ROLSTON ELECTRONIC SERVICES
SOUTH BURNABY, B.C.

August 16 to 23, 1967

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

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MAPS

# CREAM SILVER SILVER - LEAD PROSPECT
# BUTTLE LAKE AREA BRITISH COLUMBIA
# REPORT ON GROUND MAGNETICS AND ELECTROMAGNETICS

Sept. 15, 1967

## INTRODUCTION:

The area surveyed with a magnetometer and an electromagnetometer is situated in Strathcona Park, British Columbia. It is 6 miles south of Buttle Lake on Vancouver Island. The lines extended from around Cream Lake to the north outlet of Sugar Lake.

The claims covered in this survey were Bear 5 and Cream 1, 2, 2E, 3, 4, 6, 8. This is only a small portion of the claim group, which extends north of this location toward Buttle Lake. It is bounded on the north-east by Price Creek and on the north-west by Thelwood Creek. The full claim group includes 66 claims in total.

Access to the property is by fixed wind aircraft from Campbell River to Bedwell Lake and thence by trail to a camp above Cream Lake. The alternate route is from Cream Lake into the valley of Price Creek and by trail out to the road near the south end of Buttle Lake.

This survey was carried out to improve the knowledge of the geology and mineralization on this property. The results of this survey are to be used for further prospecting and exploitation.

## WORK SUMMARY:

The magnetic survey and electromagnetic surveys were done during the period from August 16 to 23. This includes the time required for mobilization and return to Vancouver of the two man party. The survey was under the direct supervision of Mr. Stan. K. Lathrop, an exper-

ienced prospector. He also did the magnetic survey, while the electromagnetic survey was being carried out by two operators in the employ of Tom Rolston Electronic Services Ltd.

INSTRUMENTATION:

A Sabre Portable Fluxgate Magnetometer was used in this survey. The instrument was hand held while being read by the operator.

The sensitivity of this magnetometer is 20 gammas. The amount of the vertical component read per scale division was 40 gamma.

This instrument manufactured by Sabre Electronics in Vancouver is compensated for normal changes in temperature. Base readings were made to eliminate any diurnal changes in the magnetic field.

The JEM electromagnetometer, manufactured by the Crone Instrument Company was used in this survey. This instrument is capable of 2 way transmission and reception with two selected frequencies of 480 Hz and 1800 Hz.

GENERAL GEOLOGY:

The oldest rocks exposed in this area are of the Sicker Group and consist of altered basalt flows, breccias and tuffs. These are overlain by crinoidal and cherty limestone and argillite of the Wolfcampian or Earliest Permian Age. Quite possible submarine eruption in the vicinity of Buttle Lake constructed volcanic piles almost to sea level. Where vents appear to have been fewer, the slopes of the volcanic complex were mantled with reworked volcanic debris and minor flows. During quiet periods chert and manganese oxides were deposited. Rapid sinking from Middle Triassic to Middle Karnian times coincided with the effusion of sodic basalt flows (Karmutsen Formation.) There is the occur-

rence of piles of pillow-lava within these massive lavas.

A Post-tectonic pluton of probable Upper Triassic age borders the region on the southwest. This grey granite intrusive is in turn injected by an acidic differentiate in the form of dikes and sills.

This region is occupied by the axis of a broad anticlinal structure which has been faulted in line with its axial length with subsequent slips and subsident blocks of material. Many of these subsidiary shears contain gangue material which has been impregnated with lead and zinc sulphides. The wall rocks which are silicified contain quartz carbonite and sphalerites with some high concentrations os silver. The presence of arsenopyrite usually marks the presence of interstitial amounts of free gold.

INTERPRETATION:

Reference will be made first to the Magnetic Contour Map, which has areas of high magnetic relief contrasted with two areas of negative values. The negative areas are most apt to represent concentrations of carbonates such as limestone ($Ca\ Co_2$) and anhydrite ($Ca\ So_4$) or Dolomite ($Ca\ Mg\ (Co_3)\ 2$) which exhibit opposite polarity to the earth's field. One of these areas is found in the northwest quarter of Cream 2E, and the other in southwest quarter of Cream 6.

The other type of magnetic high or plus areas are located in the northeast quarter of Cream 4, and in Cream 1 and 3 claims. These are most apt to be related to Volcanic breccias or agglomeritic rocks with a higher than normal content of accessory magnetite.

The intermediate areas could correspond to the presence of the granite rocks. This could include granite differentiates and any other rocks that have been granitized by alteration such as former quartzites.

The negative magnetic areas are near the broad klycepter anomalies. These could be referred to as opposite polarity effects from limestone areas.

The electromagnetic survey exhibits low grade anomalies which seem to follow regional structures in the area. These have been delineated by red dashed lines between respective EM cross-overs in claims Cream 4, 6 and 8 and Bear 5 and 6. The lineament through Cream 4 extends into Cream Lake to join an elongated Klycepter anomaly extending east and west through the lake.

CONCLUSIONS:

None of the magnetic or electromagnetic surveys correspond with exposures of mineralized rock or structures. The magnetic anomalies are equivalent more or less to the lithology of the district. The electromagnetic lineaments follow main or regional structural lineaments. They have little or no correspondence with any of the mineralized subsidiary shear zones.

Respectfully submitted,

GEO CAL LIMITED

C. B. Selmser

C. B. Selmser, P. Eng.

## REFERENCES ON BUTTLE LAKE AREA


(1) Jeffery, W. G. (1964) Buttle Lake Area, Minister of Mines Report 1964.

(2) Tectonic History of the Insular Belt of British Columbia by A. S. Brown Special Vol. No. 8, 1966, CIM

(3) Gunning, H. C. (1931) Buttle Lake Map Area, Vancouver Island, B. C.

(4) Klycepter Surveys Ltd., by D. L. Hings, Cream and Bear claims (1966)

(5) Report by H. A. Quinn on Cream Silver Mines Nov.27, 1966

## 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.

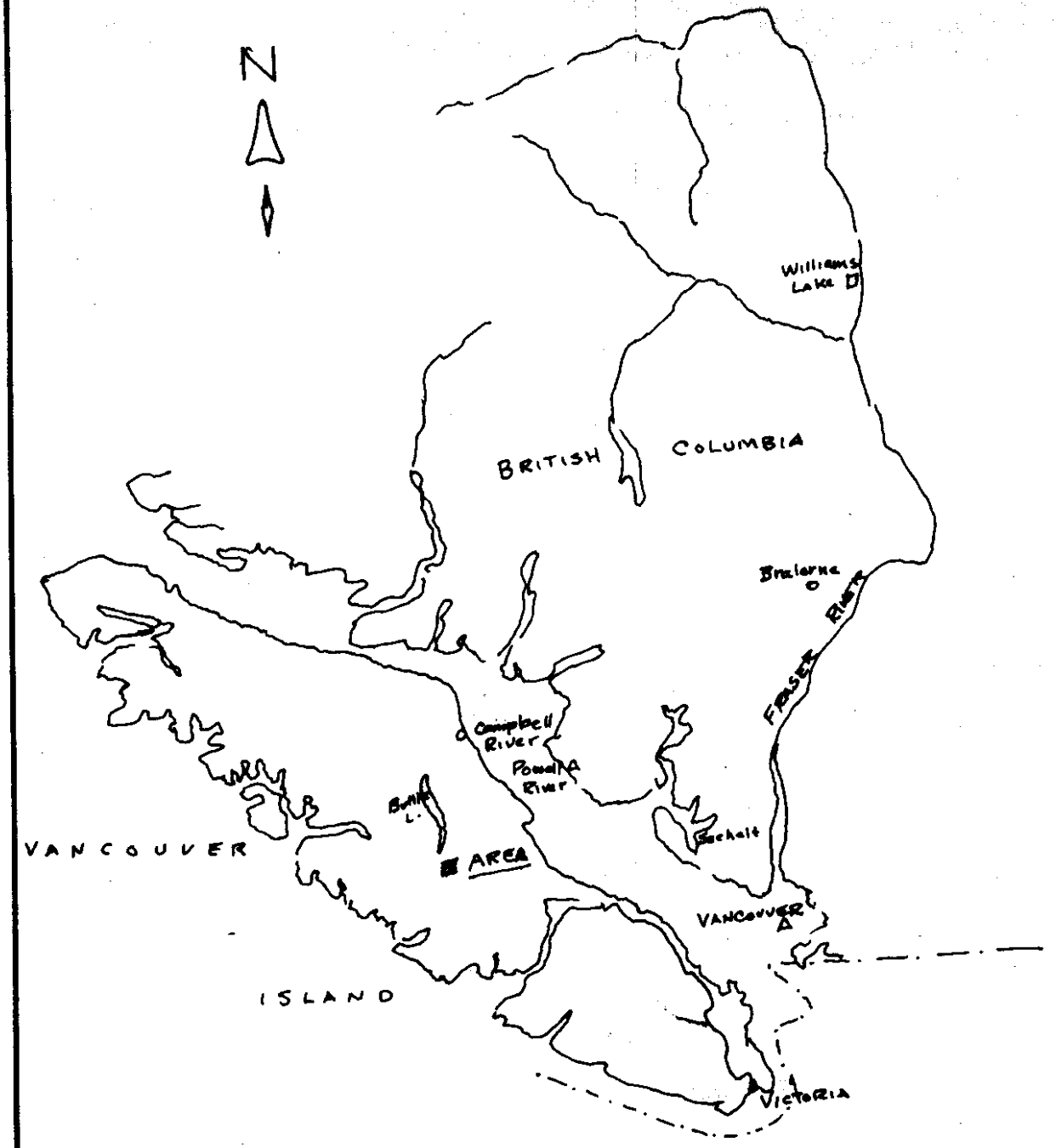
The author has been a member of the Association of Professional Engineers of Ontario, Alberta and British Columbia for the past 14 years. He is at present an active member of the Association of Professional Engineers of British Columbia with certificate No.4683.

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.




LOCATION MAP

scale: 1 in = 50 mi.

TOM ROLSTON

ELECTRONIC SERVICES

*Magnetic Surveys - Ground & Airborne*

5107 Victory Street
South Burnaby, B.C.

[redacted]

PH. 688-5341 OR 434-0137

June 12, 1968

Cream Silver Mines Ltd.

Subject: Geophysical survey - Electro magnetometer and Magnetometer on Cream and Bear claims.

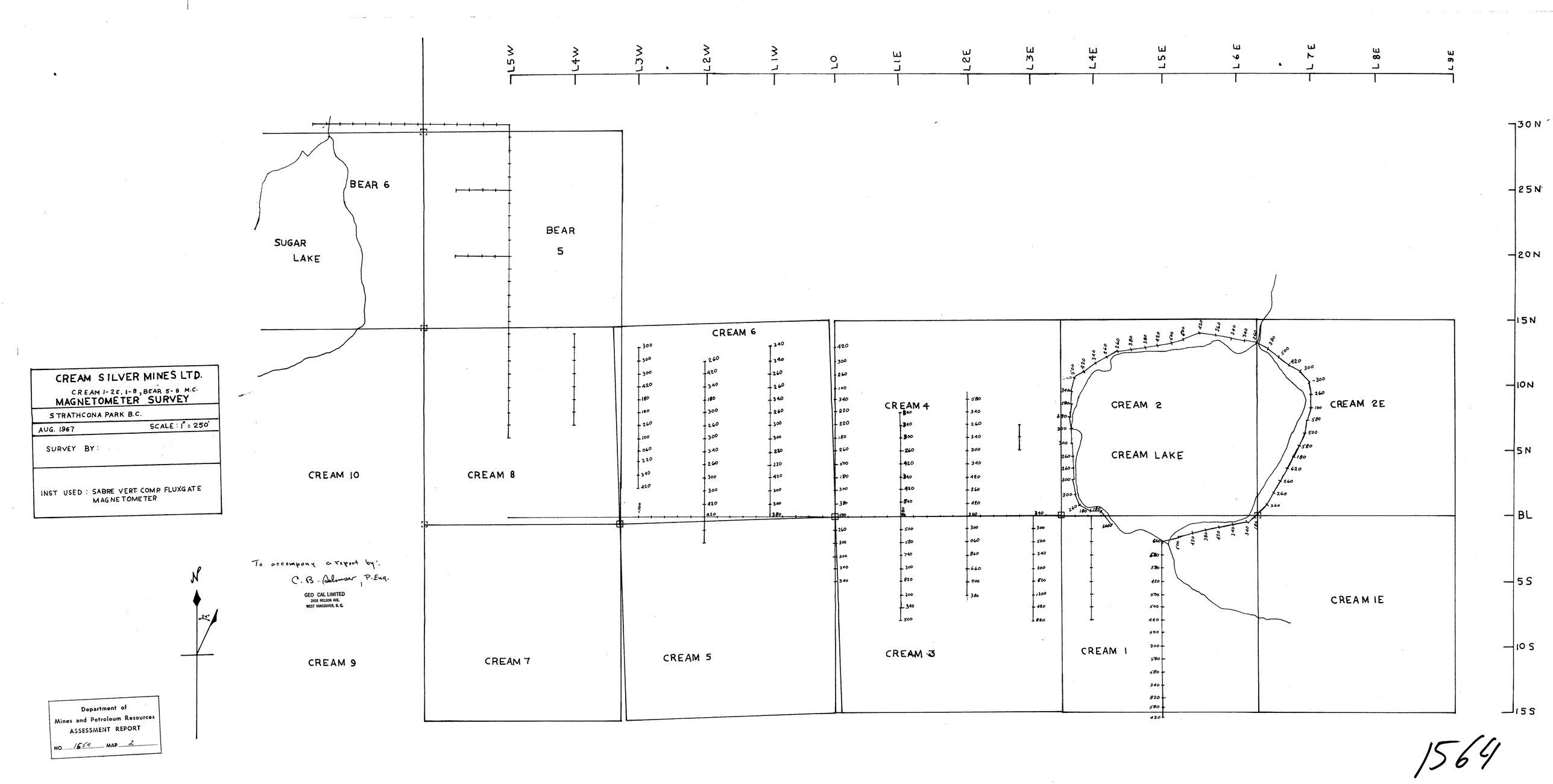
Instrumentation: A J.E.M. Electro-magnetic Set, manufactured by Crone Geophysics Ltd., was used for this survey along with a Portable Vertical Component Fluxgate Magnetometer, manufactured by Sabre Electronic Instruments Ltd. The Electro-magnetic set is capable of two way transmission and reception with two frequencies (480 Hz and 1800 Hz). The magnetometer has a sensitivity of 20 gammas per scale division and measures the vertical component of the earth's magnetic field.

Electro-magnetic survey method:
This survey was conducted using the J.E.M. as a Horizontal loop, with receiver to transmitter separation at 200'. Line spacing was 400' with E.M. readings at station intervals of 100' and closed up to 50' stations where anomalous readings were encountered.

Magnetometer survey method:
This survey was conducted using the Vertical Component Fluxgate Magnetometer. A Base Line was established running East-West, and magnetometer check station established at 400' intervals along this base line. Grid cross lines were run to intersect the base line at the magnetometer check stations. Any diurnal magnetic variation was corrected for on the closing of each survey loop starting and ending at the above magnetic check stations. along the base line.

Tom Rolston

Tom Rolston




CREAM SILVER MINES LTD.

CREAM 1-2E, 1-8, BEAR 5-8 M.C.

MAGNETOMETER SURVEY

STRATHCONA PARK B.C.

AUG. 1967 SCALE: 1" = 250'

SURVEY BY:

INST USED: SABRE VERT. COMP. FLUXGATE MAGNETOMETER

To accompany a report by:
C. B. Delamar, P. Eng.
GEO CAL LIMITED
2658 NELSON AVE.
WEST VANCOUVER, B. C.

Department of
Mines and Petroleum Resources
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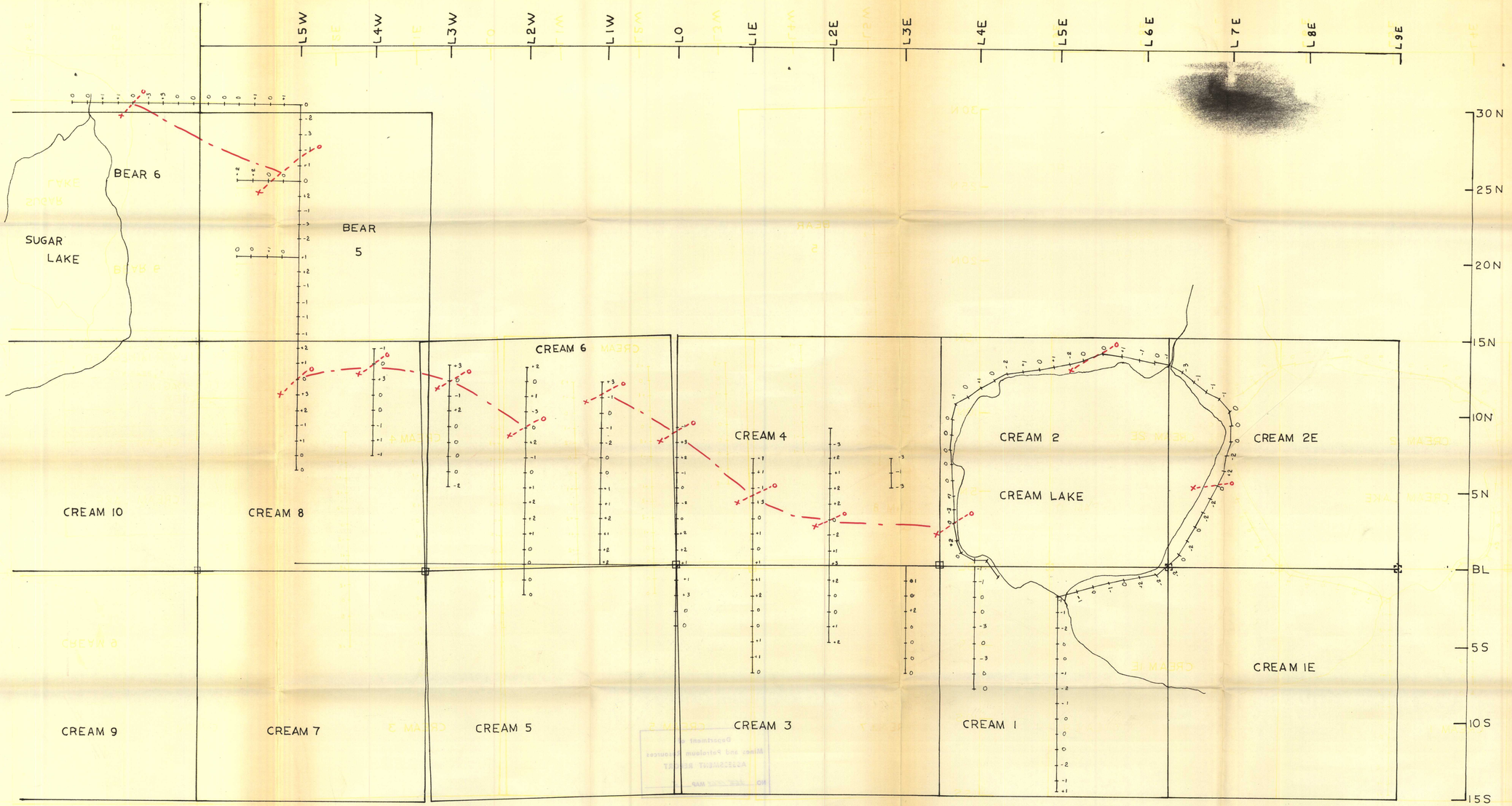
Fig. 1




**CREAM SILVER MINES LTD.**

CREAM 1-2E 1-8, BEAR 5-8

ELECTRO-MAGNETIC SURVEY

STRATHCONA PARK B.C.

AUG 1967 SCALE - 1" = 250'

SURVEY BY: TOM ROLSTON ELECTRONIC SERVICES

INST USED : CRONE JEM DUAL FREQ

LEGEND

□ CLAIM POST

HI / LO = 1800 CPS. / 480 CPS.

E.M. cross over

N

To be accompanied by a report by:

C. B. Sahmer, P. Eng.

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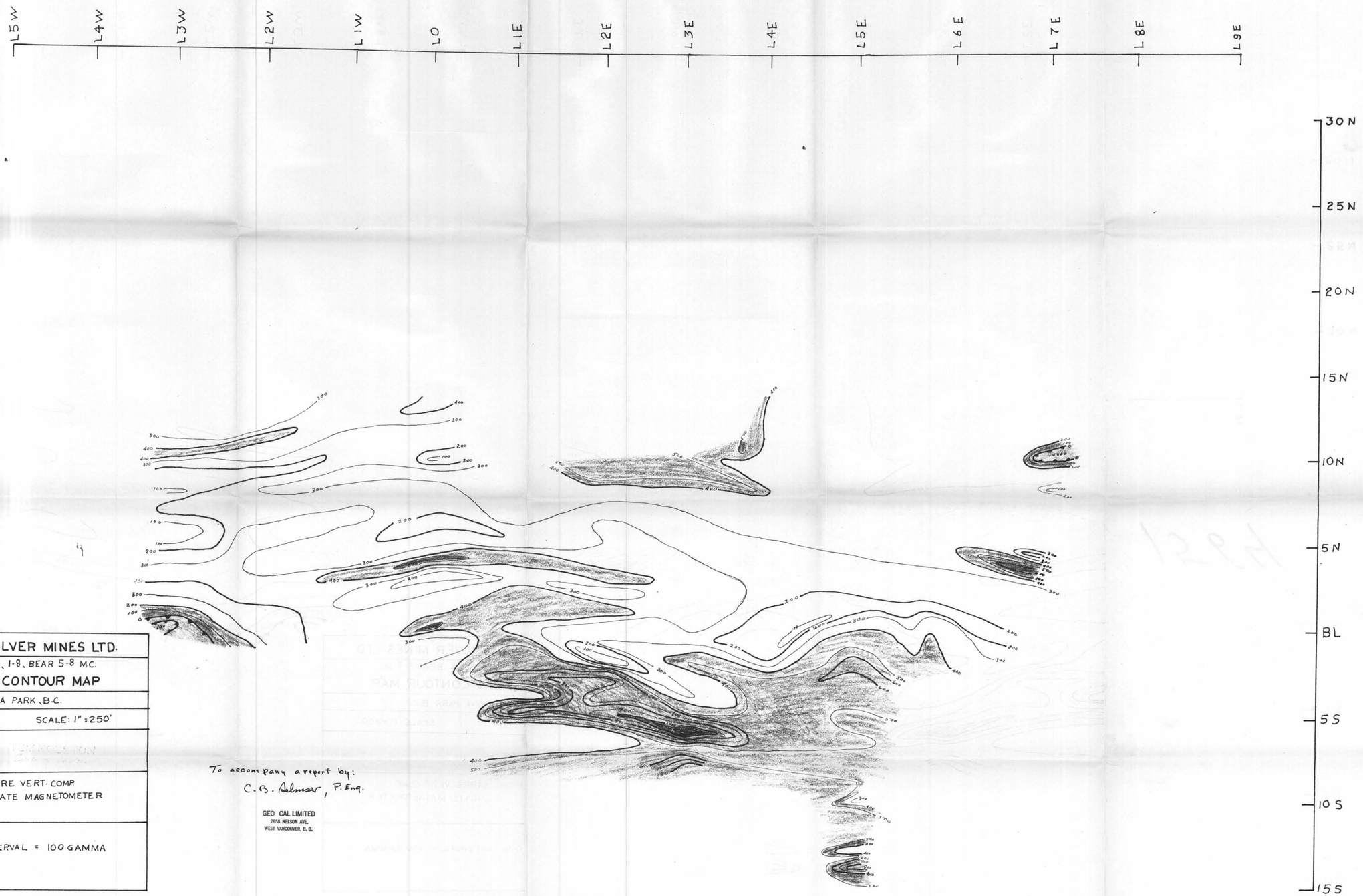
1564

Fig. 3




**LEGEND**

- NEG: 0 - -500 ɣ
- 0 - 500 ɣ
- 500 - 1000 ɣ
- 1000 - 1500 ɣ

Department of
Mines and Petroleum Resources
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| CREAM SILVER MINES LTD. |
|---|
| CREAM 1-2E, 1-8, BEAR 5-8 M.C. |
| MAGNETIC CONTOUR MAP |
| STRATHCONA PARK, B.C. |
| AUGUST, 1967 SCALE: 1" = 250' |
| SURVEY BY: |
| INST. USED: SABRE VERT. COMP FLUXGATE MAGNETOMETER |
| CONTOUR INTERVAL = 100 GAMMA |

To accompany a report by:
C. B. Palmer, P. Eng.

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Fig. 2