

92H/15E
GEOPHYSICAL NOTE

on the

Reconnaissance Fluxgate Magnetometer Survey

of the

MOB No. 1-No.20 CLAIMS

"HORNET LAKE PROPERTY"

situated 26 road miles

North of Princeton

on behalf of

Messrs. J. Butterworth and E. Sleeman

Report by:

D. R. Cochrane, P.Eng.

July 8, 1974,

Delta, B.C.

92H/15E

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT

NO. 5081 MAP



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Geotechnical Consulting / Exploration Services

geology
geophysics
geochemistry

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PREAMBLE:

On June 28, 1974, the author was engaged by Messrs. J. Butterworth and E. Sleeman to make a study on the Reconnaissance Magnetometer Survey data recently completed on the MOB claims, (Hornet Lake Property). The area surveyed lies some 28 road miles via Highway No. 3 north of the town of Princeton, Southern British Columbia, and 3 road miles east of Highway No. 3. It is centered on the Hornet Lakes and is adjacent to ground held by Adonis Mines Ltd. This area is underlain by volcanic rocks of the Upper Triassic Nicola Group which has been intruded by the Mount Pike "Coast" intrusive body and various apophyses of this granodiorite-diorite body. Copper showings are widespread in this area, and it has been found that many showings are characterized by relatively high magnetic response, often caused by the presence of disseminated magnetite mixed with copper sulphides.

The purpose of the reconnaissance magnetometer work was to outline magnetically anomalous areas as a guide to mineralization, and, in addition determine regional rock trends and structure in country which is largely overburdened.

SUMMARY AND CONCLUSIONS:

1. A McPhar M700 Electronic Vertical Field magnetometer was utilized along parallel cross lines spaced 400 feet apart. The station (reading) interval was 100 feet apart and 14 line miles of magnetometer survey



work was completed between June 1 and 7, 1974.

2. The data was reduced and corrected for diurnal variation by Cochrane Consultants, and the accuracy of corrected readings is believed to be approximately within the ± 50 gamma range, with readings in the -1000 to +1000 range.

3. Diurnally corrected magnetometer values ranged from a low of -330 to a high of +6300 gammas. The arithmetic mean is 420 and standard deviation 590 gammas. The frequency distribution histogram of values is multimodal, the primary mode lies in the 200 to 300 gamma range and the (upper) secondary mode lies in the 1100 to 1500 gamma range.

4. The multimodal distribution shows that at least two families of magnetic values are present within the survey area, which are believed to be indicative of two "rock type" families. The upper family (i.e. values above +900 gammas) is the most significant since this family may indicate concentrations of magnetite which may be associated with copper mineralization.

5. Magnetometer values were contoured at the (a) 0; (b) +400, (c) +900, and (d) +2000 gamma levels and the resulting isomagnetic plan accompanies this report. The contour levels mark (a) anomalously low; (b) average; (c) division between Family A and Family B sets; and (d) anomalously high values.

6. The isomagnetic surface shows a strong northwest linear bias which presumably reflects the overall lithologic trends and/or structures. The most prominent feature is a large plus 900 gamma zone extending across the northwest survey area quadrant. This zone

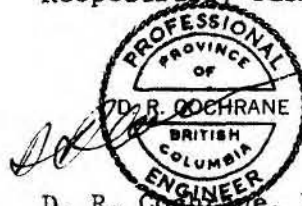


is some 4600 feet long and up to 1200 feet wide. Copper showings occur on the southwest flank of this high within an area characterized by strong northwest trending magnetic lineation. These linears may mark the position of major faults and/or shears, or dikes.

7. A distinct magnetic "break" occurs across the property and is designated A-A' on Figure 3. The line marks the position of several magnetic lows and in addition, abrupt termination of many isomagnetic features.

8. Several areas that are magnetically similar to the copper bearing zone are shown on accompanying figure No. 3 and followup work in these areas is recommended.

Respectfully submitted,



D. R. Cochrane, P. Eng.
July 3, 1974.



FIELD PROCEDURE:

A McPhar M-700 vertical force fluxgate magnetometer was used on the project. The station interval was 100 feet along lines spaced 400 feet apart. Approximately 14 line miles of magnetometer surveying was completed and Messrs. Butterworth and Sleeman operated the magnetometer. A base station near 3N on the base line was used for checking diurnal variation during the day. The field work was completed between June 1 and 7, 1974. All readings were taken while facing west, and notes as to magnetic reading, position and remarks were kept by the operator.

DATA PROCESSING:

Magnetometer values were corrected for diurnal variation in the office of Cochrane Consultants Ltd. from the data available in the field notes. The arithmetic mean and standard deviation was calculated by a standard program on a Wang 600 programmable electronic calculator. The frequency histogram was prepared manually. Contour intervals were selected on the basis of the statistical information. Drafting, at a scale of 1 inch:500 feet was completed by Mr. B. A. Cochrane.

DISCUSSION:

The following summarizes the statistical information:

Base station: 3N; BL +460 gammas, June 1, 1974
Range: -330 to +6300 gammas
Arithmetic Mean: 420 gammas



Standard Deviation: 586 gammas
Frequency Distribution: Multimodal, primary mode in the 200 to 300
gamma range
Family "A" below 900 gammas; Family B, 900 to 6300 gammas

The following table describes contour levels:

Values	Description
below 0	anomalously low
0 to 420	below average
420 to 900	above average
900	separation of Family A and B
+900	anomalous (?) Family B

The isomagnetic plan whos two distinct magnetic response areas:

- (a) a high magnetic feature situated in the northwest survey area sector and
- (b) a relatively low amplitude magnetic plain surrounding this feature.

The magnetically high complex shows distinct northwest linear bias and is roughly 4600 feet long and up to 1200 feet wide. This zone may indicate subsurface rocks which are different from the remainder of the survey area, and the linears associated with this feature may be faults or shear zones. Three areas of copper mineralization were noted in the field records, and these fall on the southwest flank of the high. Thus followup along this zone, especially northwesterly is certainly warranted. An abrupt linear magnetic feature designated A-A' on Figure No. 3 marks a change in many magnetic features and its cause is as yet unknown. A weak plus 900 gamma zone is centered near the east end of line 1N and this feature may indicate bedrock lithology similar to the large magnetic high. The northeast flank of the large magnetic high



is also considered a prime exploration target zone since many of the magnetic characteristics present along the copper bearing zone are also present on this opposite flank.

Followup work is recommended in the zones outlined on Figure No. 3, and this followup work might consist of more detailed mag and/or soil sampling.

Respectfully submitted,



D. R. Cochrane, P. Eng.,
July 8, 1974,
Delta, B.C.

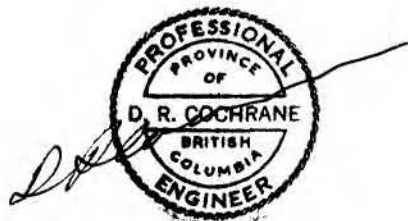
APPENDIX I

Certificate

I, D. R. Cochrane of the Municipality of Delta in British Columbia do certify that:

1. I am an independent consulting geological engineer with an office at 4882 Delta Street, Delta, B.C.
2. I have practised my profession continuously since graduation from the University of Toronto (B.A.Sc. '62) and Queen's University (M.Sc. Eng. '64).
3. I am a member in good standing of the Association of Professional Engineers, Province of British Columbia, and also a member in Ontario, Saskatchewan and The Yukon Territory.
4. This work is based on the magnetometer data given to me by Mr. Sleeman and Mr. Butterworth and that I have not examined the claims area as such, but have first hand knowledge of the general region.
5. I have no interest either direct or indirect in the MOB claims nor do I expect to receive any such interest.

D. R. Cochrane, P.Eng.
July 8, 1974,
Delta, B.C.



APPENDIX II

Instrument Specifications McPhar M-700

MAXIMUM SENSITIVITY - 20 gammas per scale division on 1000 gamma range.

MAXIMUM MEASUREMENT - Zero to \pm 300,000 gammas in six range.

Range Switch Position	Full Scale in Gammas	Gammas per Scale Division
1K	1,000	20
3K	3,000	50
10K	10,000	200
30K	30,000	500
100K	100,000	2,000
300K	300,000	3,000

MEASUREMENT POLARITY - The above ranges can be reversed in polarity as a simple function of the on-off switch.

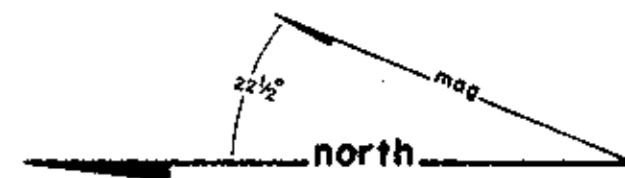
LATITUDE ADJUSTMENT - A fine and course latitude adjustment permit cancelling the earth's field up to 100,000 gammas.

WEIGHT - 6 pounds, including batteries and leather Carrying Case.

CASE DIMENSIONS - 4 x 7 x 11½ inches.

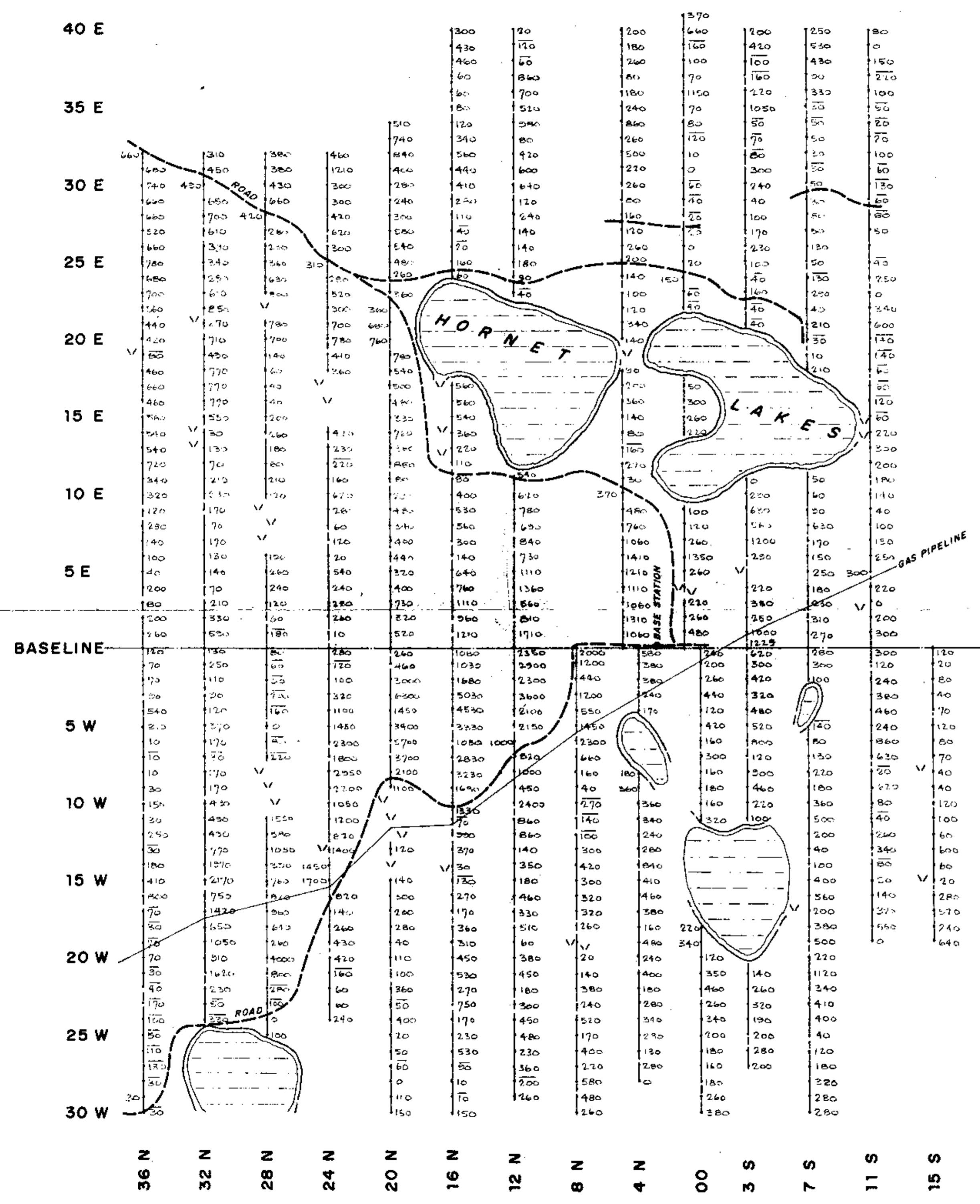
DRIFT - ½ gamma per °C





Legend:

- Baseline
- - - Cross line
- == Road
- Pipeline
- Mag station
- ∇ Swamp
- Mag base station
- 370 indicates negative value
- ALL READINGS IN GAMMAS.



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M1

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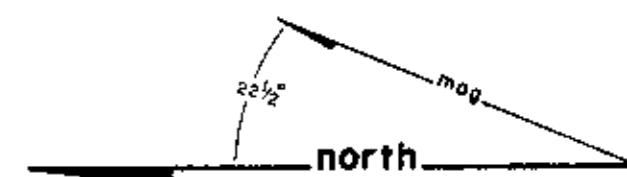
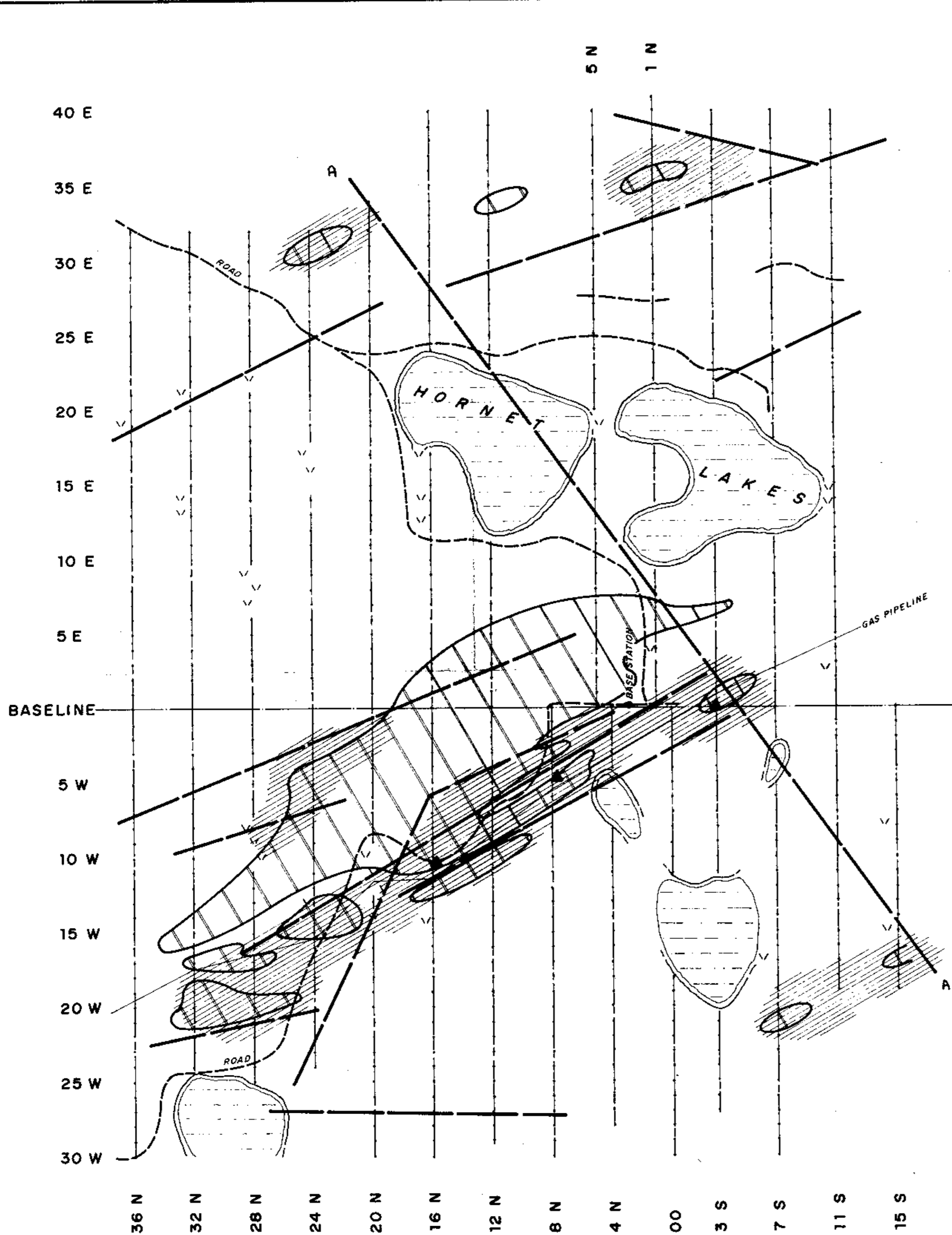
MOB Claims
"Hornet Lake Property"
Similkameen Mining Division, B.C.
J. Butterworth / E. Steeman

MAGNETOMETER VALUES Fig.1

N.T.S. 92H/10B15
Drawn July 1974, B.A.C.
To accompany a geophysical note by D.R. COCHRANE, P. Eng., dated July 8, 1974.
Scale: one inch equals 500 feet.

Checked:

Cochrane Consultants Limited
4002 Delta Street Delta B.C.



Legend:

- Baseline
- - - Cross line
- Road
- Pipeline
- Mag station
- ∨ Swamp
- Mag base station
- Greater than 900 gammas
- ▨ Areas of magnetic interest
- Magnetic linear
- ▲ Copper showing

5081
M3

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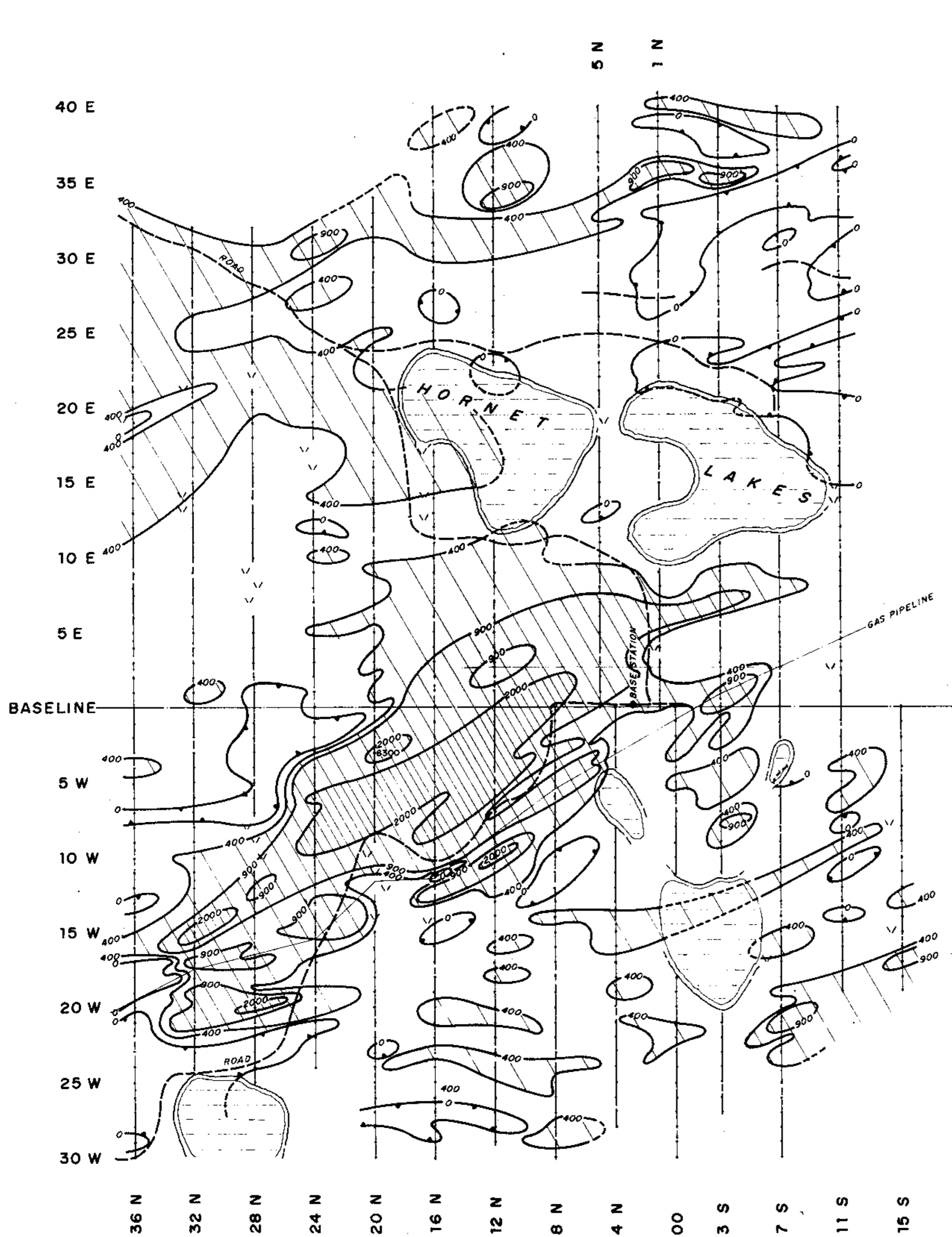
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 J. Butterworth / E. Sleeman

INTERPRETATION

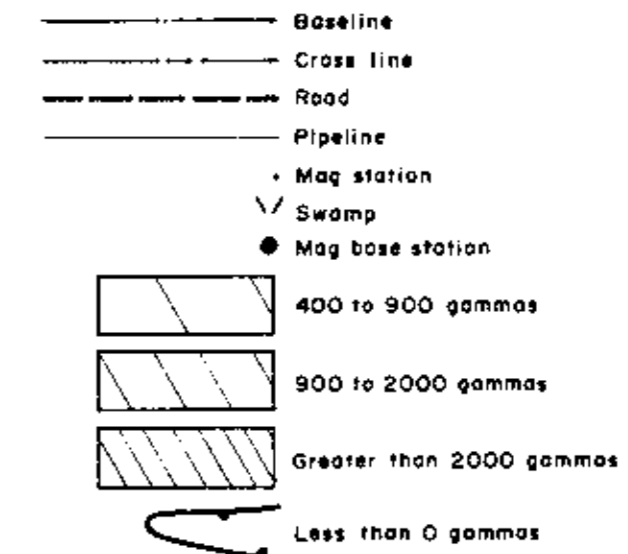
Fig. 3

N.T.S. 92 H/10815
 Drawn July 1974, B.A.C.
 To accompany a geophysical note by D.R. COCHRANE, P. Eng., dated July 8, 1974.
 Scale: one inch equals 500 feet.

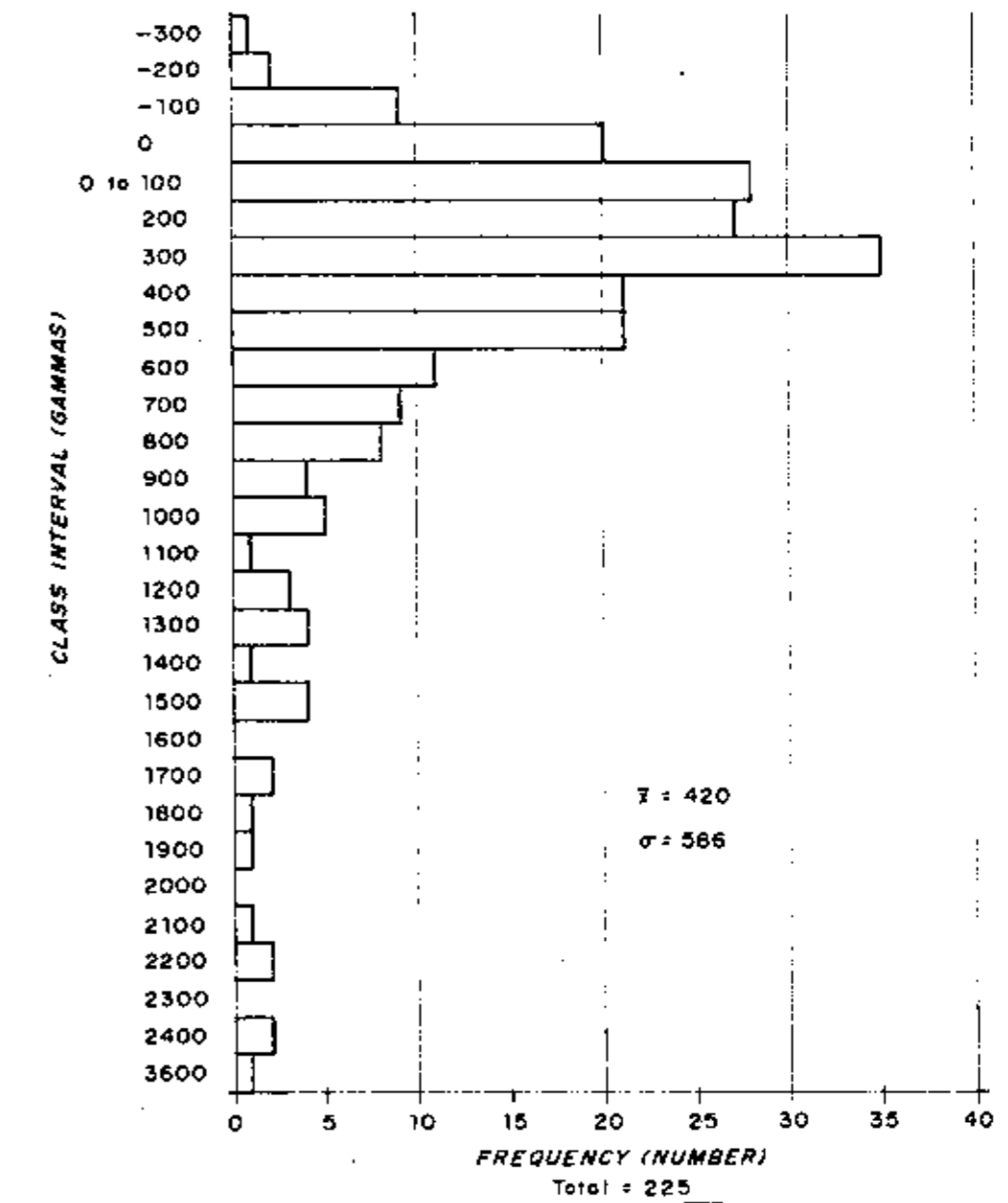




Legend:



Frequency Histogram



5081 M2 Department of
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**MOB Claims
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 Similkameen Mining Division, B.C.
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ISOMAGNETIC PLAN

Fig. 2

N.T.S. 92H/10 B.15
 Drawn July 1974, B.A.C.
 To accompany a geophysical note by D.R. COCHRANE, P. Eng., dated July 8, 1974.
 Scale: one inch equals 500 feet.
 Checked:

