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MAPS AND GRAPHS - at end of report

		Scale
# location map	Figure 1	$l^{"} = 134$ miles
#)claims map	Figure 2	1" = 2000 feet
± 3 geology map	Figure 3	1" = 2000 feet

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CUMULATIVE FREQUENCY GRAPH MAGNETOMETER DATA Figure 4

MAPS - in pocket		Scale		
± 5 magnetometer survey				
DATA AND CONTOURS	Sheet 1	1" = 400 feet		

 \pm Soil sampling geochemistry DATA AND CONTOURS Sheet 2 1" = 400 feet

SUMMARY

A combined magnetometer and soil sample survey was carried out over the Fan claim group located in the Laird Lake area north of Princeton in the Similkameen Mining Division during August, 1972. The primary purpose of the surveys was to directly delineate any possible zones of copper sulphides. A secondary purpose of the magnetometer survey was to assist in the mapping of the geology.

The property is located 12.5 miles N15W of Princeton. Access is by Highway No. 5 and 4 to 5 miles of dirt road. The terrain varies from almost flat to steep-sided ravines and the tree cover from dense secondary growth to open pine trees.

Much of the property is underlain by various rock types of the Nicola group. Intruded into these rocks is a pink granodiorite of the Coast Intrusions. On the southwest corner of the property is a diorite possibly of post Nicola age. Mineralization in the area is in the form of pyrite, molybdenite, chalcopyrite and other copper sulphides. A limited amount of disseminated chalcopyrite within pyrite is found on the Fan 27 mineral claim.

- Geotronics Surveys Ltd. ---

The magnetic survey produced a zone of magnetic highs and corresponding lows within the Nicola rocks. It was unsuccessful in mapping the geology.

From the copper soil sample results, the two most promising anomalies are found within the granodiorite. Within the favourable magnetic zone, only isolated highs were produced, which, however, correlated with the magnetic highs.

CONCLUSIONS AND RECOMMENDATIONS

In considering whether the property warrants further exploration, the following points should be contemplated.

- The rock types are favourable. That is there is the Nicola volcanics, host rock on Adonis' property which is intruded by a granodiorite and possibly a diorite.
- The property has good, strong structure in the form of faults that lie in the Summers Creek-Allison Creek fault system.

- 3. There is good brecciation on the eastern part of the Fan claims.
- Though not excessive, some pyrite has been found throughout the volcanics.
- 5. Chalcopyrite mineralization has been found in the southeast corner, though only a small amount.
- The property has good proximity to the Adonis sulphide body.
- 7. Alteration was noted on the property largely in the southeast corner. However, the alteration was found to be fairly limited.

Considering the above facts, Sookochoff felt the most favourable part of the property was the southeast. The following are points revealed by the soil sampling and magnetometer surveys.

 Good, positive indications are given by the magnetic survey in the way of strong magnetic highs within the southeast corner.

- No indications as strong are given elsewhere on the property.
- 10. The soil sample copper anomalies are comprised of isolated highs except for perhaps two which occur in the granodiorite. All the anomalies within the more favourable magnetic zone are isolated but they do correlate directly with magnetic highs.
- 11. Little alteration and pyritization was noted within the magnetically favourable zone. Overburden may be a factor here.

Though all the above points are not entirely favourable, it is felt that considered as a whole, they warrant further work, but largely on the southeastern part of the property.

- A. Additional soil samples should be taken on 200-foot lines. Over the magnetic highs, the station interval should be dropped from 200 feet to 100 feet.
- B. An induced polarization survey should be carried out over the southeastern portion. A line-spacing of 400 feet and station spacing of 200 feet should be

quite adequate. It must be expected that all the IP survey may do is verify the magnetic survey results in outlining magnetite-mineralized zones.

C. From (A) and/or (B) trenching may be warranted. It is therefore highly recommended to test all trench locations for overburden depth with the hammer seismic.

Respectfully submitted, GEOTRONICS SURVEYS LTD

David G. Mark, Geophysicist



September 11, 1972 Vancouver, B.C.

GEOCHEMICAL - GEOPHYSICAL REPORT

on

SOIL SAMPLING AND MAGNETOMETER SURVEYS

FAN CLAIM GROUP

LAIRD LAKE AREA, SIMILKAMEEN M.D., B. C.

INTRODUCTION AND GENERAL REMARKS

This report discusses the procedure of soil sampling and magnetic surveys and the compilation and interpretation of the resulting data. The surveys were completed over the Fan Claim Group during August, 1972.

The field work was carried out by Scott Boyd and one assistant. The writer visited the crew and property periodically to ensure the surveys were being carried out in a professional manner. The number of line miles completed was 23.5 and the number of soil samples picked up was 682. The total area of the property was covered. The object of both surveys was to outline possible areas of copper sulphide mineralization such as occurs on the Adonis Mines property to the immediate east. On this property copper mineralized zones have been reflected by magnetic highs. A secondary object of the magnetic survey is to map intrusives within the Nicola volcanics.

PROPERTY AND OWNERSHIP

The property is owned by Jay Butterworth and is being optioned to Equatorial Resources Ltd., of Vancouver, B. C. It consists of the following claims which are shown on Figure 2.

Name	Record No.	Expiry Date
Anita # 3-10	35721-28	May 25, 1973
Fan # 25-28,	34682-85	Nov 29, 1972
Fan # 43-48	34700-05	Nov 29, 1972
J.E. #7, 9, 11, 12, 1	4 35403,05,07,08,10	April 28, 1973

Len # 1

Record No and recording date of the Len # 1 claim was not available to the writer

LOCATION AND ACCESS

The property is located between Allison Creek and Summers Creek about two miles east of Dry Lake and 12.5 miles N 15 W of Princeton, B.C.

The geographical coordinates are 49° 39' N latitude and 120° 35' W longitude.

Access is by No. 5 Highway 13.6 miles north of Princeton to a dirt road between Laird Lake and Dry Lake on the east side of the highway. One then travels 3.3 miles up this road to a north-trending road up which the property is approximately one mile.

PHYSIOGRAPHY

The property is found within the southern part of the physiographic unit known as the Thompson Plateau, which forms part of the Interior Plateau system. Generally, the terrain is that of flat upland dissected by creeks and rivers within steep-sided ravines or valleys. The elevation on the property itself ranges about 800 feet between 4000 and 4800 feet above sea level. The terrain of the property is divided into 3 parts.

On the Fan and Len 1 claims, the pronounced topographical feature is the main creek that flows southerly at about 75E on the survey grid. Toward the south, the creek creates a steep-sided ravine the bottom of which is about 600 feet below the ground to the east and west. The vegetation is fairly open with coniferous trees prevailing.

The J.E. claims to the east are fairly flat but are characterized by dense undergrowth, deadfall, tag alder and closely-spaced, small conifers.

On the Anita claims, the slope to the east of 35E (base line on Anita claims) is negligible, but the slope to the west is quite pronounced. For example, L-210N had to be moved 100 feet north to avoid cliffs at 28E. The portion of the claims between 30E and 38E on lines 198N to 214N has been logged off.

Pleistocene ice occupied the Thompson Plateau and thus much of the claims area is covered by glacial drift which could become fairly deep over the flatter areas.

HISTORY OF PREVIOUS WORK

In the spring of 1970, survey lines were compassed in, blazed, chained, and ribboned over the J.E., Fan claims and an area to the south and east. As far as the writer knows, no other work was undertaken.

While the magnetometer and soil sample surveys were being carried out, L. Sookochoff carried out geological mapping on the property.

GEOLOGY

The geological description of the property is largely taken from Sookochoff and Rice. The geology map, Figure 3, is sketched after Sookochoff.

The predominate rock-types in the general area are those of the Nicola Group of Triassic Age which is composed of varicoloured lavas, argillites, tuffs, and limestones. These are intruded by granodiorite and quartz diorite of the Coast Intrusions of Jurassic or later age. Regional faults such as the Allison Creek fault, strike north to north-northwest.

Mineralization throughout the general area is typified by that of the Summers Creek property of Adonis Mines

on which 47,400,000 tons of 0.48% copper have been blocked out (on the Axe group). Its sulphides are chalcopyrite, molybdenite, and pyrite disseminated in Nicola volcanics with quartz-potash feldspar-epidotechlorite-magnetite alteration. Between the Axe group and the Equatorial property are Adonis' Fan claims on which are found pyrite, chalcopyrite, bornite, and chalcocite mineralization.

On Equatorial's property, the Nicola group is found on the southeastern, central and western part of the property. Its rock-types are andesite, brecciated andesite, volcanic breccia, feldspar porphyry, greenstone, fine-grained diorite, hornblende porphyry and vesicular basalt. All these rocks appear to be magnetic to the same degree. On the southwestern corner of the property and possibly post-Nicola is diorite and which is also magnetic. Pink granodiorite of the Coast Intrusions are found over most of the Anita claims and the northern part of the Fan claims. The granodiorite is magnetic as well.

The property, as indicated by topographical features, contains many faults striking in all directions. The contact between the granodiorite and Nicola volcanics is that of faults which strike northerly and westerly.

Oxidation occurs within the granodiorite on the northwestern corner, epidote alteration within the Nicola rocks near the diorite contact, and carbonized, epidote, and chlorite alteration within the Nicola rocks in the southeast corner.

Light disseminations of chalcopyrite within pyrite are found on the Fan 27 mineral claim.

SURVEY GRID

The existing blazed and flagged survey lines on the Fan and J.E. claims were used for both the magnetometer readings and the soil sampling. The survey lines run in an east-west direction. The claim line for the Fan 43-48 mineral claims was used as a base line (approximately 47E) and runs in a north-south direction. Blue flagging upon which was marked the grid coordinates, was placed every 200 feet.

There were many inaccuracies noted in the existing grid and often it was hard to follow. For example, east of 75E the lines are labelled differently than west of 75E. However, because of limited time, it was decided to use the old grid rather than cut out a new one.

On the Anita 3-10 and Len 1 claims, east-west survey lines were compassed in, blazed, chained, and flagged. The north-south Anita claim line was used as a base line and is situated at 35E.

MAGNETOMETER SURVEY

A. Instrumentation and Theory:

The magnetic survey was carried out using a portable vertical component, Model G-110 fluxgate magnetometer manufactured by Geotronics Instruments Ltd. of Vancouver, B.C. This is a visual-null type instrument using a digital dial readout with a range of 100,000 gammas and a reading accuracy of 10 gammas. The G-110 has a temperature co-efficient of 2 gammas per degree centigrade.

Only two commonly occurring minerals are strongly magnetic; magnetite and pyrrhotite. Hence, magnetic surveys are used to detect the presence of these minerals in varying concentrations. Magnetic data are also useful as a reconnaissance tool for mapping geologic lithology and structure since different rock types have different background amounts of magnetite and/or pyrrhotite.

B. Survey Procedure

On the magnetometer survey, readings were taken at 200 foot intervals on the survey lines with the instrument always facing north. The magnetic diurnal change was monitored in the field by the closed loop method and double checked by a series of sub-base stations, spaced every 400 feet on the base lines. The base station for the whole survey was located at the final post of Fan 47 and 48 mineral claims. Only those diurnal changes greater than 20 gammas were corrected.

C. Treatment of Data

A cumulative frequency graph, Figure 4, was drawn from all the magnetic data and the mean background value was read off to be 55,050 gammas. For ease of drafting 54,000 gammas was subtracted from all values and placed on Sheet 1. The data was then contoured at a 200-gamma interval with contours 54,800 (800) gammas and lower being dashed and those 55,000 (1000) and above being solid.

D. Discussion of Results

The magnetic values range 2,830 gammas from a minimum of 250 gammas to a maximum of 3,080 gammas.

The magnetic map, Sheet 1, was correlated with Sookochoff's geology map. There was poor correlation between the contacts as mapped by Sookochoff and the magnetic contours. That is, it appears that the magnetometer is a poor tool for mapping the geology in this area. However, some other interesting correlations were noted.

The magnetics over the pink granodiorite is relatively quiet when compared to the rest of the survey area. However, there are anomalous highs reaching values of 1,800 gammas. Rock outcrops of granodiorite are found on and around these highs and it therefore appears that the magnetic pattern over the granodiorite is largely a reflection of the depth of overburden. That is, highs occur over rock outcrops and lows where depth of overburden is greater.

There is also a limited amount of terrain effects within this area. Slight highs are produced on the top of hills and slight lows at their bottom.

As seen on Sheet 2, the greatest magnetic variation is found within the Nicola volcanics on the southeast corner of the property. Strong magnetic lows are

found adjacent to strong magnetic highs. This is, no doubt, caused by the dipole effect which is often attributed to magnetite.

The general strike of the individual anomalies appear to be north-south. However, most of the anomalies fall on a line that strikes N60E. The northsouth strike is at least partly caused by the bias error which here is due to more readings being taken along an east-west direction than a north-south direction.

The highs cannot be attributed to one particular rocktype within the Nicola volcanics. However, in the area

the rock-types are largely andesite, brecciated andesite, and feldspar porphyry.

Some of the anomalies are probably partly due to terrain effects such as the largest one located at about 60E on lines ll6N to 144 N. However, as in the case of others, the intensity of this anomaly is much greater than that which could be attributed to terrain effects.

There is no peculiar magnetic pattern over the diorite as mapped by Sookochoff that could prove economically interesting except for magnetic highs on the east end. These highs, however, could well be within the Nicola volcanics since they are close to the contact and since the contact itself is largely assumed.

SOIL SAMPLING SURVEY

A. Survey Procedure:

The samples were picked up at 200-foot centres on the 400-foot separated survey lines. Samples were taken at approximately a 3 to 6 inch depth with a D-handle shovel and placed in brown wet-strength paper bags with grid co-ordinates marked thereon. The soil horizon tested was largely B with some A. A note was made of any extraordinary soil conditions that may give rise to misleading assay results. Silt samples were also picked up wherever a stream intersected a survey line.

B. Testing Procedure:

All samples were tested by General Testing Laboratories of Vancouver, B.C. The sample is first thoroughly dried and then sifted through a -80 mesh screen. A measured amount of the sifted material is then put into a test tube with subsequent measured additions of a solution of perchloric and nitric acid. This mixture is next heated for a certain length of time. The parts per million (ppm) copper is then measured by atomic absorption.

C. Treatment of Data:

The results were placed on Sheet 2. The anomalous threshold value was estimated to be 50 ppm and the sub-anomalous threshold value, 30 ppm. (a term used by the writer to denote the minimum value that is not considered anomalous but still important as an indicator of mineralization). The 30 ppm contour was dashed in and those values 50 ppm and above were contoured at a 50 ppm interval by solid lines.

D. Discussion of Results:

As can be seen on Sheet 2, the anomalies consist largely of sporadic highs, except perhaps anomalies A and B, that occur in all rock types.

Two of the most promising anomalies are those labelled A and B which are found within the granodiorite and strike in a northerly direction. Anomaly A is 2,400 feet long by 200 and 400 feet wide and reaches an intensity of 163 ppm. Anomaly B is 1200 feet long by 400 feet wide and reaches an intensity of 240 ppm. The north part of Anomaly A and Anomaly B correlate with magnetic highs whereas the south part of Anomaly A correlates with a low.

Anomalies C and D are also found within the granodiorite but are not as large and do not correlate with the magnetics.

There are no anomalies as large as A and B within the Nicola volcanics and especially within the more promising southeastern part of the property. However, within the zone of magnetic highs that strike N60E, there are a series of anomalies and sub-anomalies that correlate directly with magnetic highs. These are labelled E to J. Anomaly J in actuality is found on the contact between granodiorite and the Nicola volcanics.

Anomaly K is found outside this zone within the Nicola rocks but also correlates with a magnetic high.

Anomaly L correlates with a magnetic low and is found on the Nicola-diorite contact.

Only a small sub-anomaly surrounds the only known copper occurrence on the property.

The silt samples are high compared to the soils but generally are not that indicative of any copper sulphides. Respectfully submitted, GEOTRONICS SURVEYS LTD.,

David G. Mark, Geophysicist



September 9, 1972

SELECTED BIBLIOGRAPHY

Rice, H.M.A. <u>Geology and Mineral Deposits of the</u> <u>Princeton Map Area</u>, British Columbia., Geol. Surv. of Can., Mem. 243, 1960.

Sookochoff, Laurence, <u>Geological Report on the Fan</u> Claim Group of Equatorial Resources Ltd (NPL) Princeton, B.C. T.R. Tough and Associates Ltd., September, 1972.

George Cross Newsletter, Adonis Mines Ltd., Letters No. 127, 128, 132, 140, 145, 153, 1972.

B.C. Department of Mines and Petroleum Resources, Geology, Exploration and Mining in B.C. p.389, 1970.

RESUME OF

TECHNICAL AND FIELD EXPERIENCE

of

D. SCOTT BOYD

EDUCATION

1971	в.	.Comm.	in	Marketing,	Universi	ty of
				-	British	Columbia.

EXPERIENCE

- 1972 (August) Geotronics Surveys Ltd., Crew chief on magnetometer, VLF-EM, and soil sampling surveys.
- 1971 (April- Kerr Addison Mines Ltd., First two years Dec) as assistant and latter 3 years as crew chief and supervisor on trenching, blasting, linesept) cutting, drilling, soil sampling, geological mapping, EM, SP, ground magnetometer,airborne magnetometer, IP, and hammer seismic.
- 1966 (June Falconbridge Nickel Mines Ltd., soil Sept) sampling.

GEOPHYSICIST'S CERTIFICATE

I, DAVID G. MARK of the City of Vancouver, in the Province of British Columbia, do hereby certify:

> That I am a Consulting Geophysicist of GEOTRONICS SURVEYS LTD., with offices at 514-602 W Hastings Street, Vancouver 2, B.C.

I further certify that:

- I am a graduate of the University of British Columbia (1968) and hold a B.Sc., degree in Geophysics.
- I have been practising in my profession for the past four years and have been active in the mining industry for the past seven years.
- 3. I am an associate member of the Society of Exploration Geophysicists and a member of the European Association of Exploration Geophysicists.
- 4. This report is compiled from data obtained from magnetometer and soil sampling surveys carried out by Scott Boyd and myself during August, 1972 on the Fan Claim Group, and pertinent data from published maps and reports as listed under Selected Bibliography.
- 5. I have no direct or indirect interest in the properties or securities of Equatorial Resources Ltd., Vancouver, B.C. nor do I expect to receive any interest therein.

David G. Mark Geophysicist

September 11, 1972

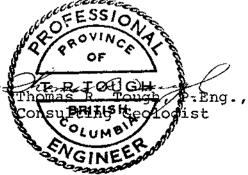
ENGINEER'S CERTIFICATE

I, THOMAS R. TOUGH, of the City of Vancouver, in the Province of British Columbia, do hereby certify:

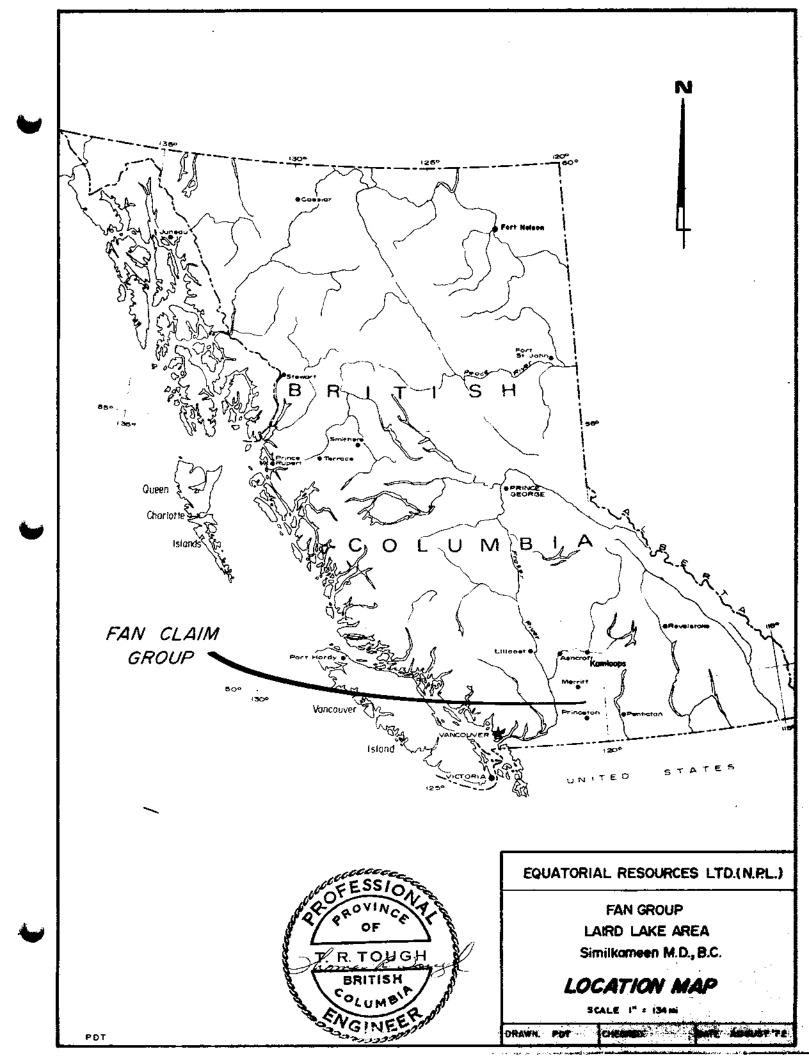
> That I am a Consulting Geologist and an associate of T.R. Tough & Associates Ltd., with offices at 519-602 W Hastings Street, Vancouver 2, B.C.

I further certify:

- I am a graduate of the University of British Columbia (1965) and hold a B.Sc. degree in Geology.
- I have been practising in my profession for the past six years and have been active in the mining industry for the past thirteen years.
- 3. I am registered with the Association of Professional Engineers of British Columbia.
- 4. I have studied the accompanying report dated September 11, 1972 on magnetometer and soil sampling surveys over the Fan Claim Group submitted by Geotronics Surveys Ltd., written by David G. Mark, B.Sc. Geophysicist, and concur with the findings therein.
- 5. I have no direct or indirect interest whatsoever in the property described herein, nor the securities of Equatorial Resources Ltd (NPL) and do not expect to receive any interest therein.

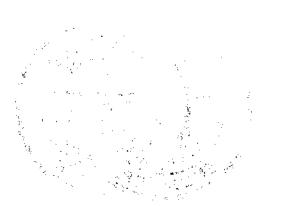


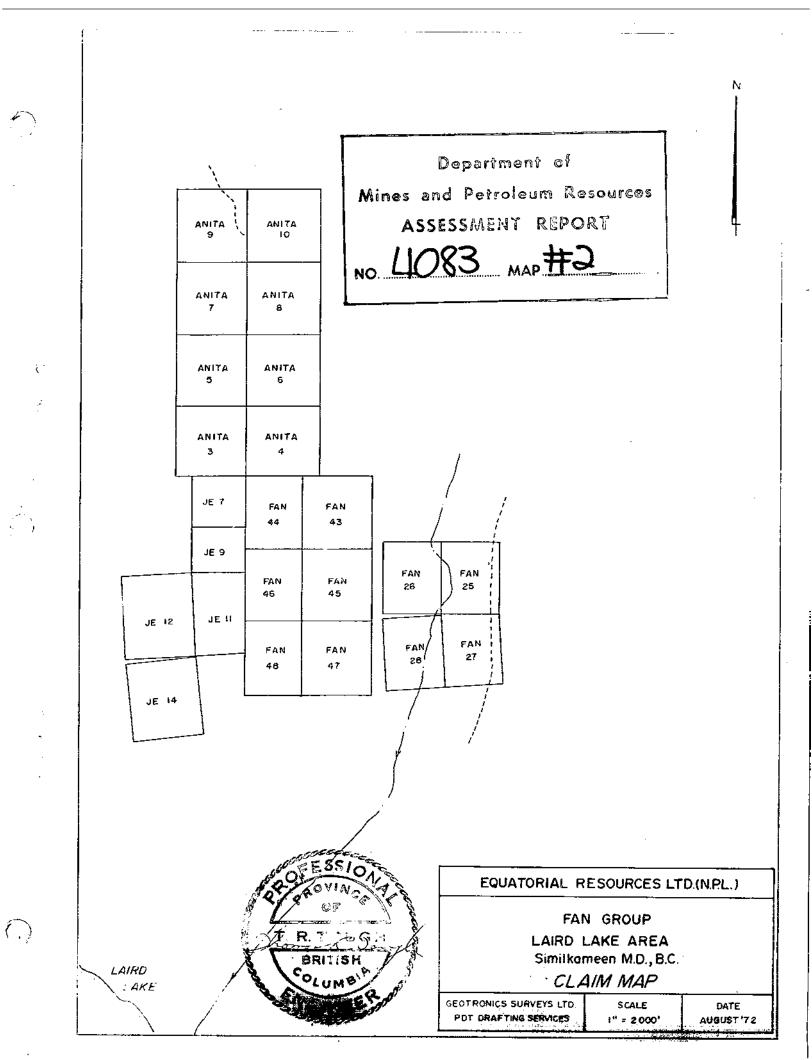
September 11, 1972

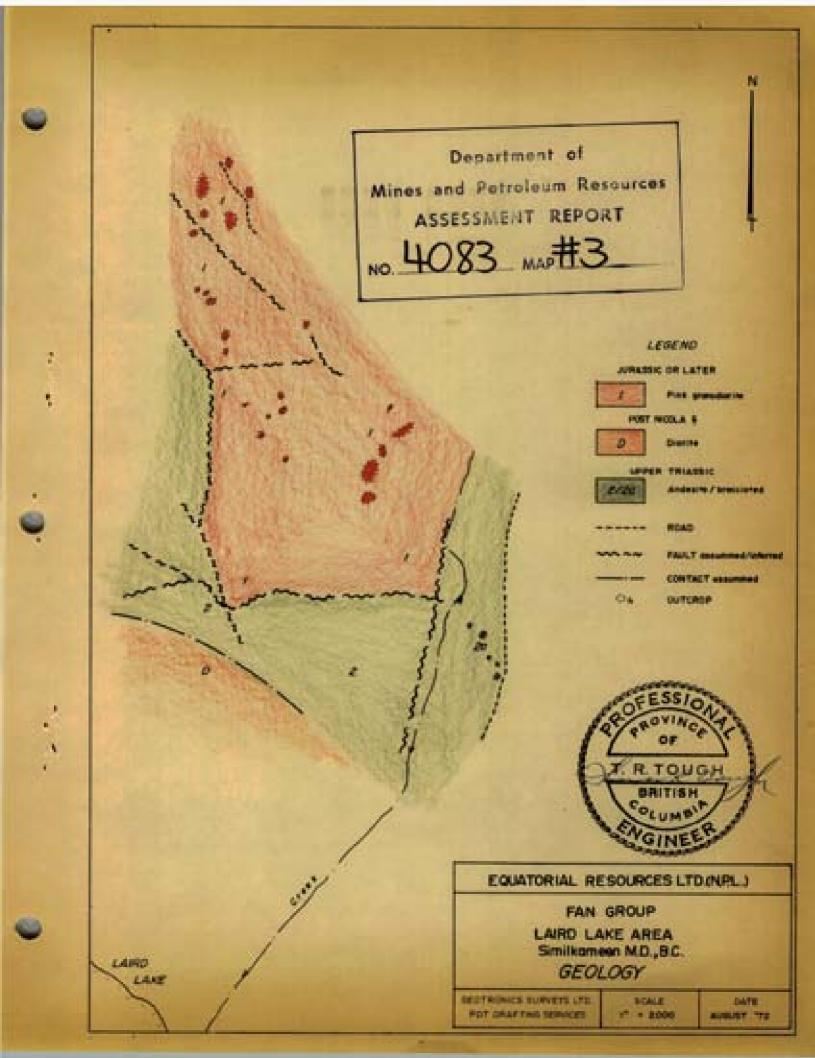


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Department of Mines and Petroleum Resources ASSESSMENT REPORT NO 4083 MAP #1







CONTRACT NO. 72-89

FAN CLAIM GROUP, PRINCETON AREA LIARD LAKE AREA, SIMILKAMEEN M.D., B.C.

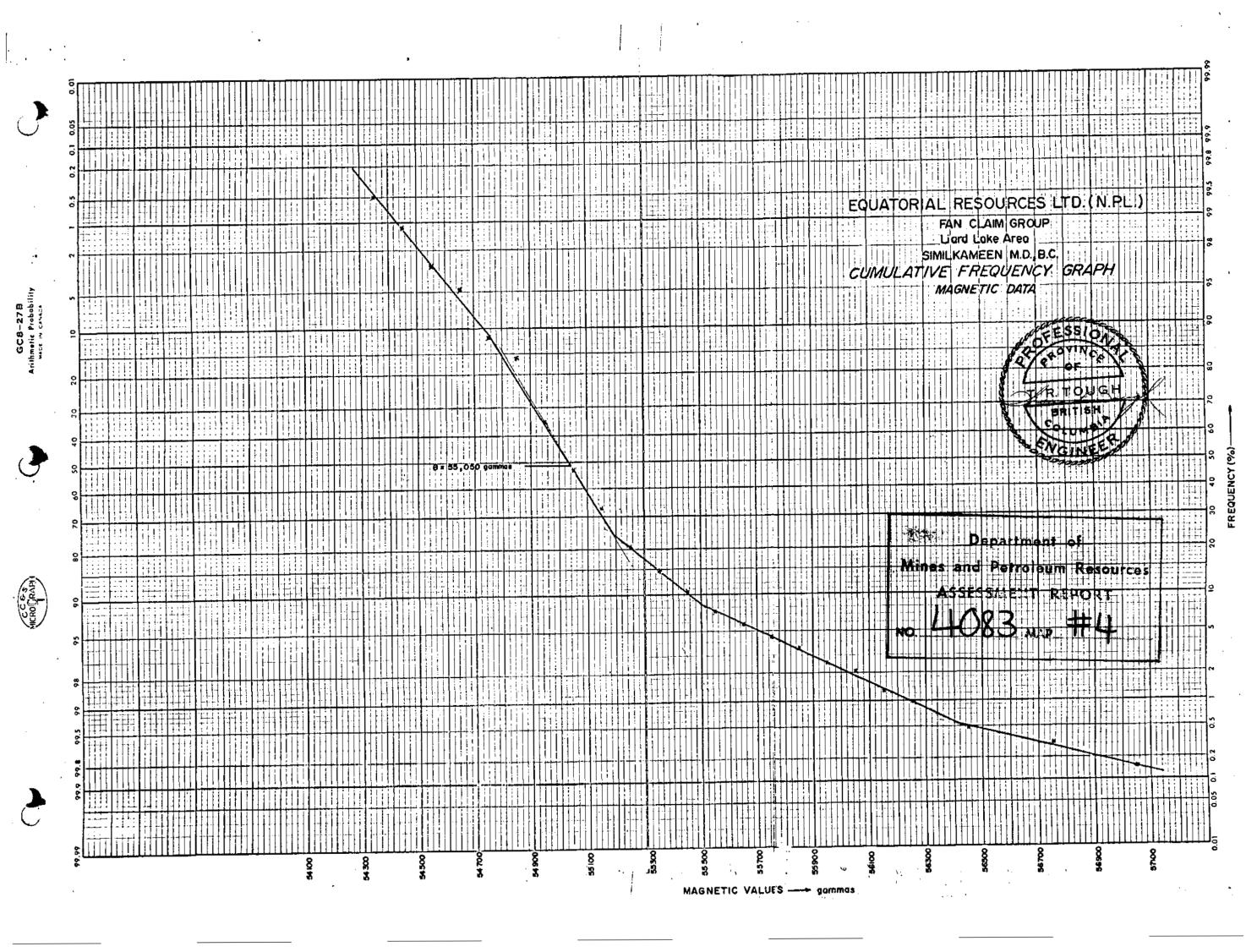
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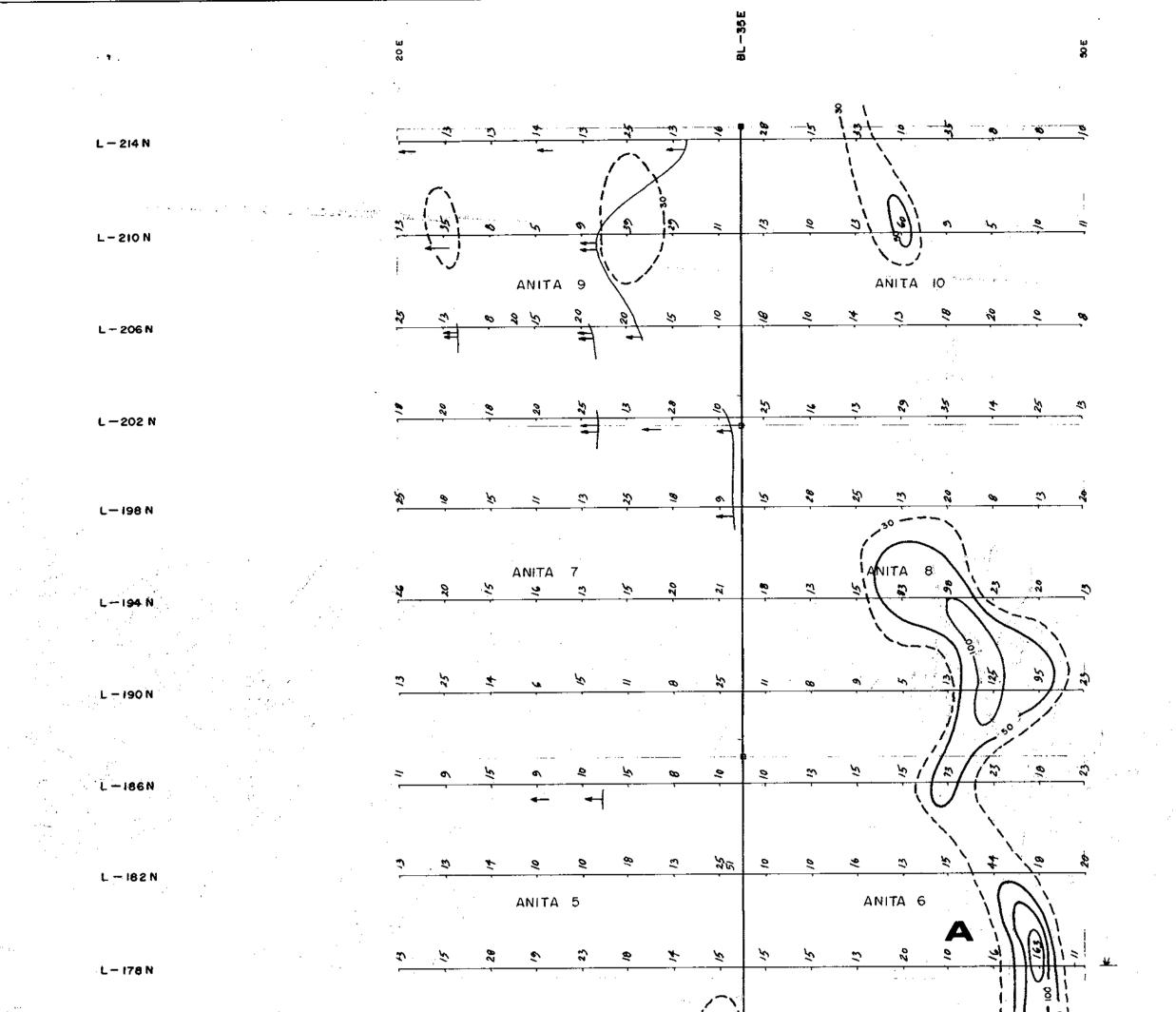
D.S. Boyd, supervisor - 17 days @ 100.00 P. Jones, geophysical assistant - 17 days	\$ 1,700.00
@ 60.00	1,020.00
	2,720.00
4-wheel drive rental - 3 weeks @ 150.00	450.00
Survey supplies	150.00
Mapping - P.D.T 32 hours @ 10.00	320.00
Geochemical and interpretation report -	
35 hours @ 20.00	700.00
Engineering fees	300,00
Soil sample preparation and analyses	
682 @ 150.00	1,023.00

TOTAL

\$ 5,663.00

City Declared before me at the V an arriver , in the Mar of 30 Province of British Columbia, this hove ber 1972, A.D. day of مف A Commissioner for taking A fidavits within Britis! Columbia or A Notary Public in and for the Hovince of British Columbia Sub-mining Recorder Þ



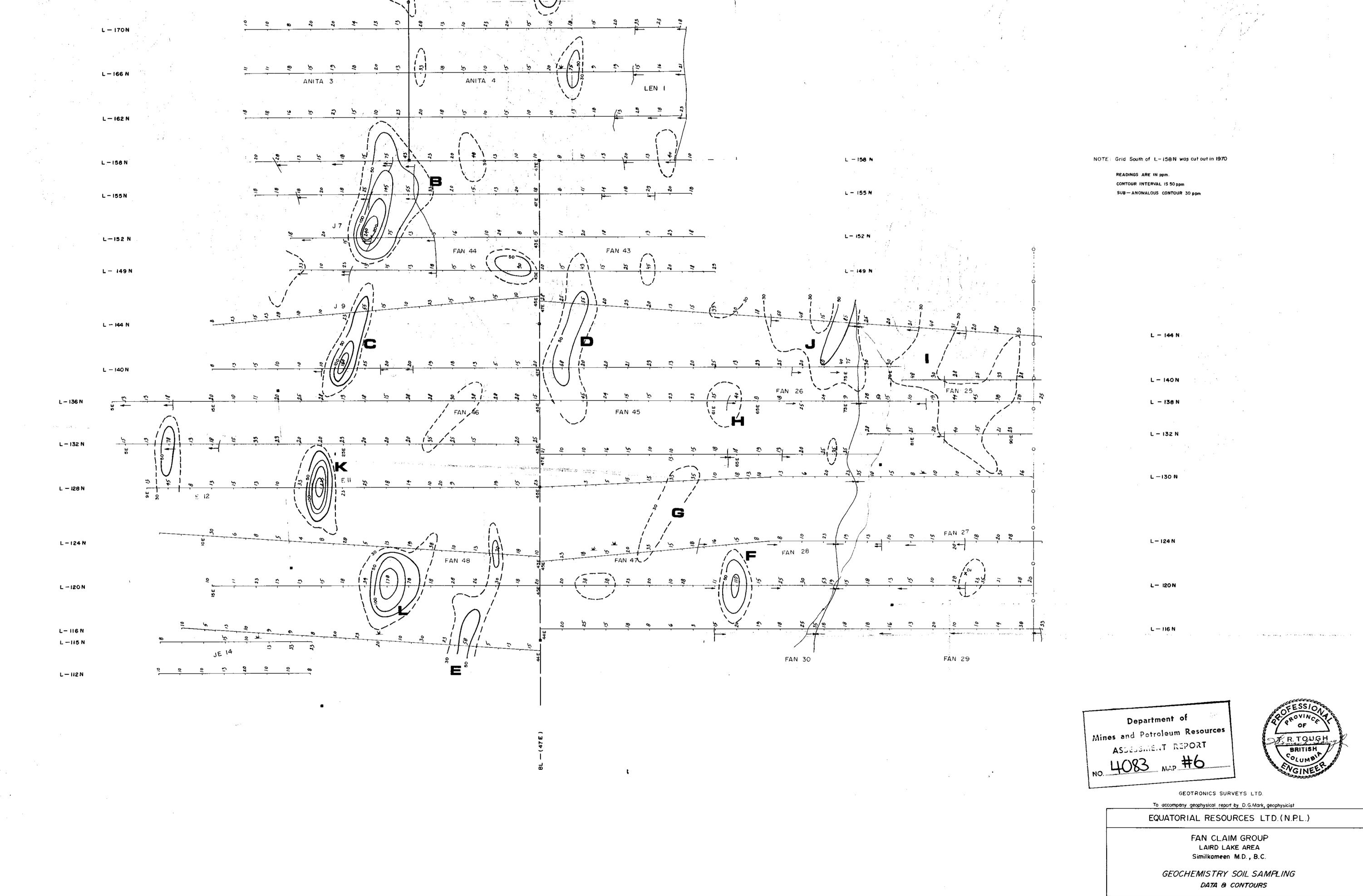


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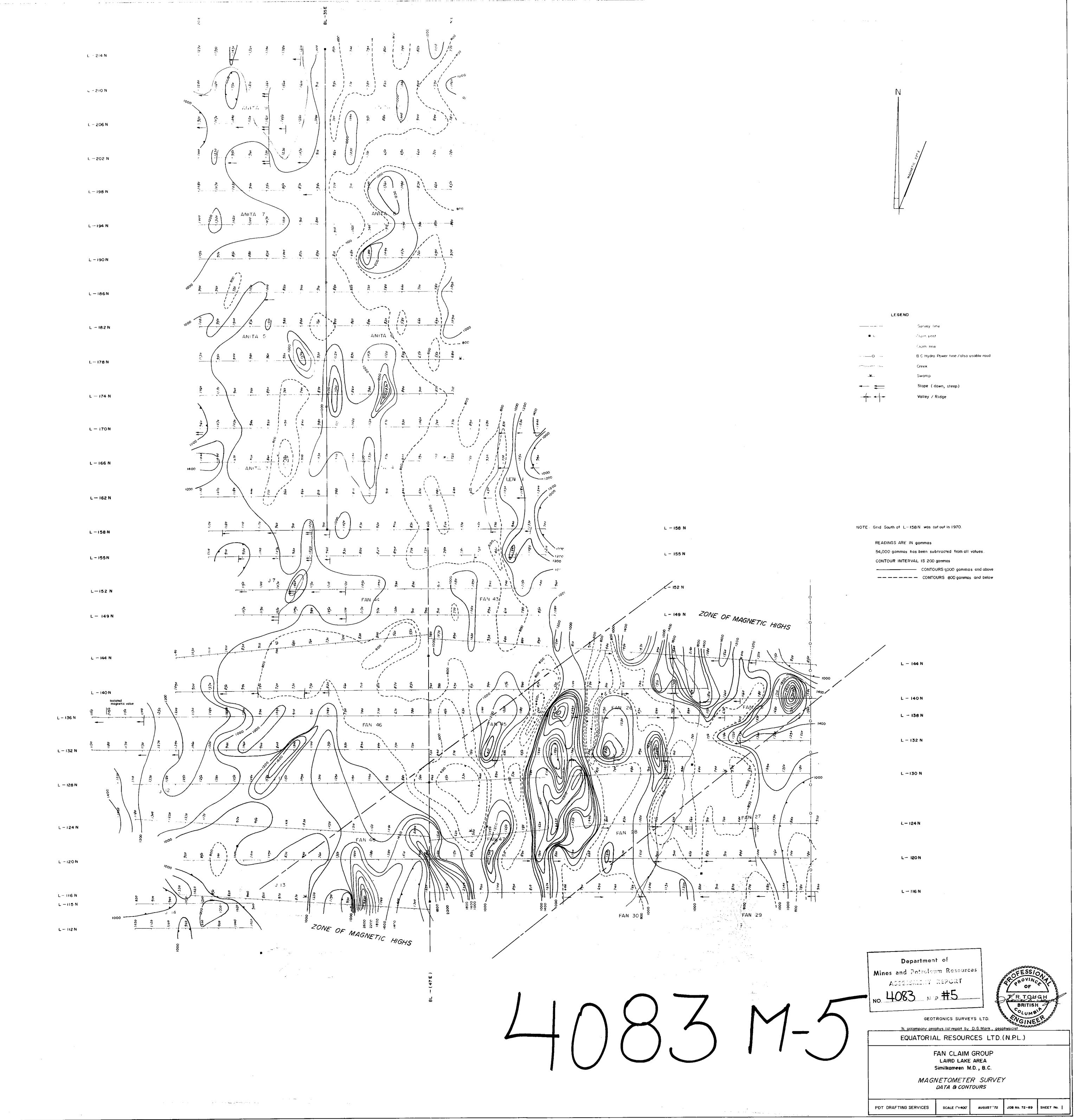
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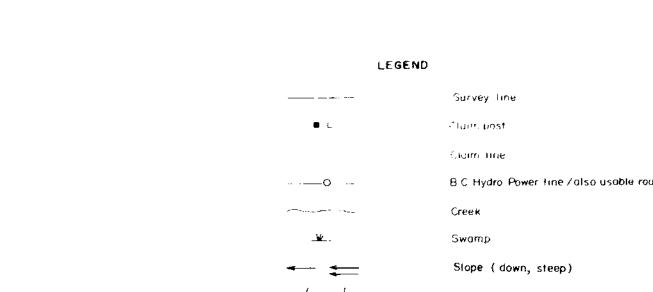
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