

83-524-11509

A REPORT ON
GEOLOGICAL, GEOCHEMICAL & GEOPHYSICAL
EXPLORATION - 1983

on the
GREENWOOD GROUP OF MINERAL CLAIMS

Comprising: Granby 1 to 8 incl., Record Nos. 3255 to 3262 incl.
Rath 1 & 2; Record Nos. 3294 & 3295
Packrat 1 to 8 incl.; Record Nos. 3296 to 3303 incl.

located in the
Greenwood Mining Division
of **GEOLOGICAL BRANCH**
ASSESSMENT REPORT
British Columbia

NTS 82E/2E
Latitude 49° 09'
Longitude 118° 30'

11,509

owned and operated by
RIMACAN RESOURCES LTD.
P.O. Box 1977,
Grand Forks, B.C., V0H 1H0

by
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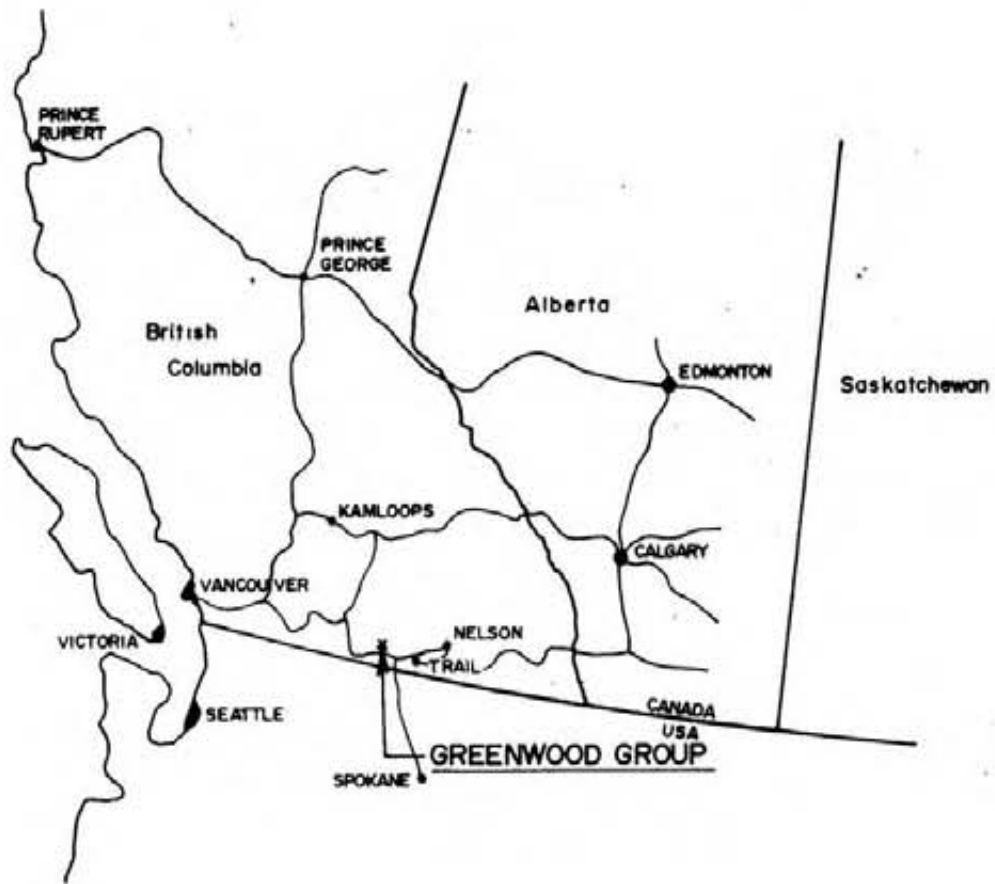
Report No. C83-20
October 6, 1983

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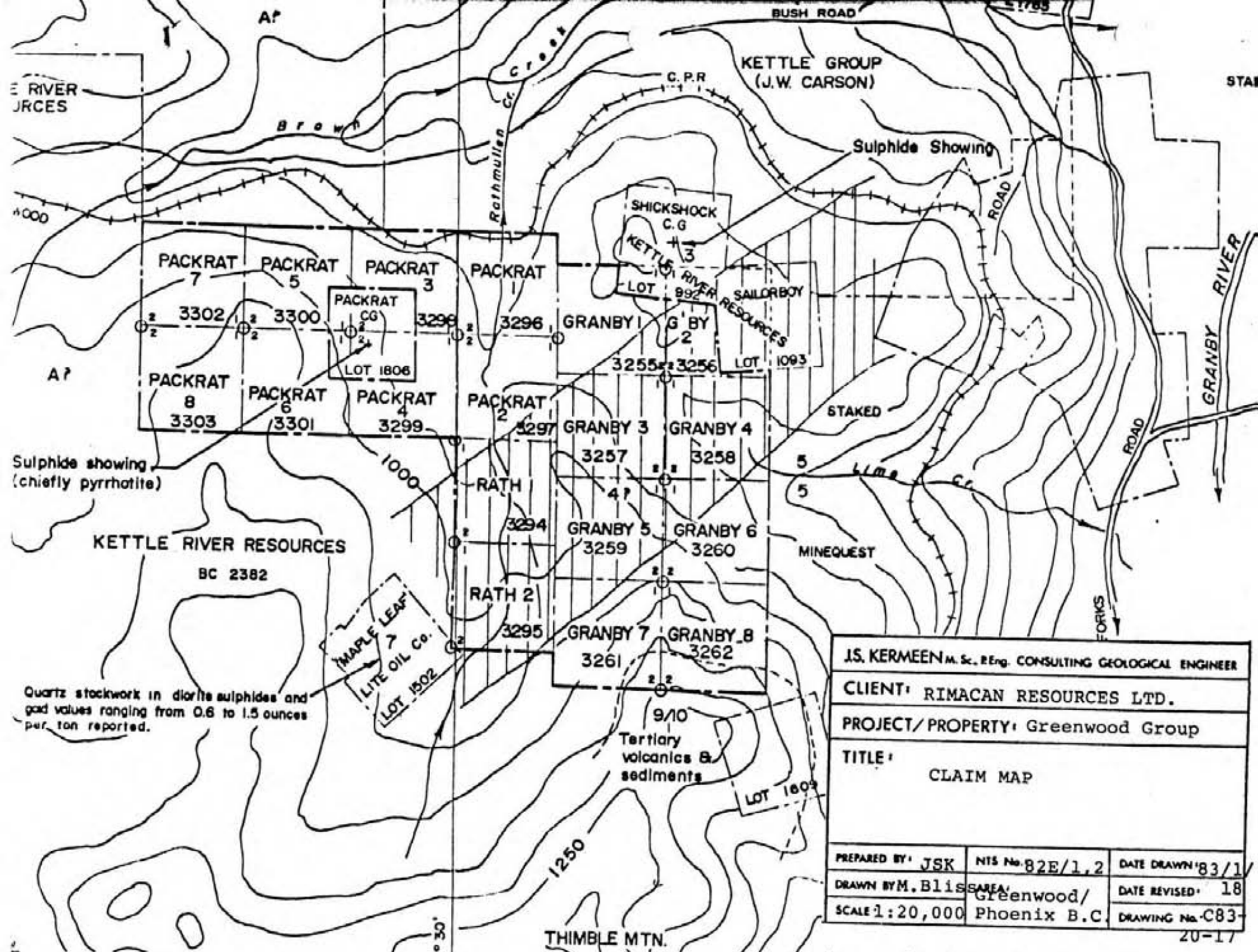
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J S KERMEEN <small>INC.</small> CONSULTING GEOLOGICAL ENGINEER		
CLIENT: RIMACAN RESOURCES Ltd.		
PROJECT/PROPERTY: GREENWOOD GROUP		
TITLE		
LOCATION MAP		
PREP BY: JSK	NTS No	DATE DWN: 83/1/18
DWN BY: MBLISS	AREA	DATE REVISED
SCALE:		DRAWING NO: CBS-20-1



J.S. KERMEEN M.Sc., P.Eng. CONSULTING GEOLOGICAL ENGINEER		
CLIENT: RIMACAN RESOURCES LTD.		
PROJECT/PROPERTY: Greenwood Group		
TITLE: CLAIM MAP		
PREPARED BY: JSK	NTS No. 82E/1,2	DATE DRAWN: '83/1
DRAWN BY: M. Bliss	Greenwood/Phoenix B.C.	DATE REVISED: '18
SCALE: 1:20,000		DRAWING No. C83

INTRODUCTION

The "Greenwood Group" comprising the Granby 1 - 8, Rath 1 & 2 and Packrat 1 to 8 mineral claims located north of Grand Forks, B.C. were staked in October and November, 1982 by various owners; subsequently all claims were transferred to the present owner, Rimacan Resources Ltd.

During the summer of 1983 an exploration program including geological, geochemical and geophysical surveying was performed. All geological work was done by the writer; line cutting and geochemical sampling was carried out by Rimacan Resources Ltd. personnel, instructed and supervised by the writer; geophysical surveys were done under contract by Nielsen Geophysics Ltd. of Vernon, B.C.

This reports records and interprets the results of all work done to date.

MINERAL DISPOSITIONS AND OWNERSHIP

The Greenwood Group comprises eighteen "two-post" mineral claims which are listed below and are depicted on attached map C83-20-4.

<u>Claim Name</u>	<u>Registration No.</u>	<u>Date of Registration</u>	<u>Registered Owner as of December 17, 1982</u>
Granby 1	3255	October 25, 1982	Louis A. Rossi
Granby 2	3256	October 25, 1982	Louis A. Rossi
Granby 3	3257	October 25, 1982	Louis A. Rossi
Granby 4	3258	October 25, 1982	Louis A. Rossi
Granby 5	3259	October 25, 1982	Louis A. Rossi
Granby 6	3260	October 25, 1982	Louis A. Rossi
Granby 7	3261	October 25, 1982	Louis A. Rossi
Granby 8	3262	October 25, 1982	Louis A. Rossi
Rath 1	3294	November 1, 1982	S. Babuin
Rath 2	3295	November 1, 1982	S. Babuin
Packrat 1	3296	November 1, 1982	D. J. Turcotte
Packrat 2	3297	November 1, 1982	D. J. Turcotte
Packrat 3	3298	November 1, 1982	D. J. Turcotte
Packrat 4	3299	November 1, 1982	D. J. Turcotte
Packrat 5	3300	November 1, 1982	D. J. Turcotte
Packrat 6	3301	November 1, 1982	D. J. Turcotte
Packrat 7	3302	November 1, 1982	D. J. Turcotte
Packrat 8	3303	November 1, 1982	D. J. Turcotte

The writer has been advised by Mr. John W. Carson, President, Rimacan Resources Ltd. that as of the date of this report all mineral claims listed above have been transferred to Rimacan Resources Ltd.

Each of the claims measures 1500 feet (457m) x 1500 feet (457m) and each comprises 51.65 acres (20.9 hectares). However, due to overlap of pre-existing crown granted mineral claims the total net area covered is actually approximately 824 acres (333 hectares).

The property surrounds, but does not include the Packrat reverted crown grant, record no. 1806.

LOCATION ACCESS TRANSPORTATION

The Greenwood Group is located in south-central British Columbia at longitude 118° 30' and latitude 49° 09'; it is, respectively, 16 kilometres north of the international boundary, 15 kilometres ENE of the town of Greenwood, B.C., 14 kilometres NNW of the town of Grand Forks, B.C., and 9 kilometres northeast of the Phoenix Mine Site.

A major paved highway, (B.C. No. 3) passes within one kilometre of the west boundary of the group and an all-weather secondary road passes within two kilometres of the east boundary.

The Kettle Valley line of the Canadian Pacific Railway loops around the property on the east and north side.

Parts of the property are currently accessible by means of trails suitable for four-wheel drive vehicles or snowmobiles and no part of the property is more than one hour on foot from the nearest vehicle trail.

The property surrounds surveyed lot 1806 and adjoins surveyed lots 992, 1093 and 1502 all of which are reverted crown-granted mineral claims.

A major hydro power line passes within ten kilometres of the property.

PHYSIOGRAPHY

The Greenwood-Phoenix area lies within the Monashee Mountains which form the southeastern extremity of the Interior Plateau of the Cordilleran Region of British Columbia. Mountains here tend to be rounded, with relatively gentle slopes and are separated by either the flat-bottomed valleys of major rivers or the V-shaped valleys of smaller tributary streams. Elevations within the map area range from 520 metres (1706 feet) above sea level at Grand Forks to 1836 metres (6023 feet) at the peak of Mount Roderick Dhu, immediately north of Jewel Lake. Flat-bottomed valleys have been cleared for agriculture. Most sloping areas are treed, for the most part with merchantable timber.

The Greenwood Group lies on treed sloping ground which covers portions of the north slope of Thimble Mountains and the valleys of Brown, Rathmullen and Lime Creeks which drain easterly in the Granby River.

MINERAL HISTORY OF THE GREENWOOD-PHOENIX AREA

Significant mineral discoveries in the area date from the 1890's and by 1900 several mines, the most important of which was the large Phoenix operation of the Granby Mining Company Limited, had been put into production. Smelters had been established in Grand Forks and Greenwood to handle the low-grade, but direct smelting copper ore which also contained significant gold and silver values. A town of 5000 to 6000 people developed at the Phoenix mine site; today not a vestige of this once bustling community remains.

The Phoenix operations continued until 1919 when dwindling ore supplies and shortages of coking coal induced a closure of the mines.

A number of deposits were worked sporadically during the 1930's and 1940's chiefly for the gold recovered.

In 1955 the Granby Mining Company Limited, who had, in the interim, relinquished ownership of its Phoenix area properties, regained control of several of the original properties.

A small (700 tpd) copper flotation mill was erected and several deposits were put into production in 1959 as salvage open pits, re-mining the former underground mine areas. The operation proved viable and eventually the mill was expanded to 2000 tons per day and a modern, electrified open pit established on the Old Ironsides orebody. Production continued to 1978; interestingly, the duration of operations was the same as in the earlier operation: 19 years.

Several attempts were made to revive the mines in the Motherlode/Deadwood areas west of Greenwood in a manner similar to that at Phoenix. In fact, a mill capable of processing 2000 tons of ore per day was actually built; unfortunately, insufficient ore was found to support more than a few months of operation and the salvage operation failed.

While by far the largest production in the area was from Granby's Phoenix operation and the Motherlode deposit, production is recorded from some 15 other deposits in the area. Several were disseminated copper deposits with gold and silver, similar to Phoenix; others were gold and silver-bearing quartz veins.

Table 1 lists production figures to date from most of the former producers in the area.

Noranda Mines Limited purchased the Zapata Granby Company in 1980 thereby acquiring the Phoenix mine property. Kettle River Resources Limited optioned the ground from Noranda in 1981, staked additional adjacent property and carried out an exploration program which resulted in the discovery, in 1982, of a significant new gold zone.

Other recent notable developments in the area include:

- (1) Diamond drilling and underground work to delineate a gold deposit on a property which was operated jointly by Grenoble Resources and Teck Corporation.
- (2) Re-opening the Detonia Gold Mine near Jewel Lake by Detonia Resources Limited.

HISTORY OF THE GREENWOOD GROUP

The present Greenwood Group covers ground which has been staked on many previous occasions since the late 1800's.

Trenches in bedrock on weak base metal mineralization were found at two locations on the property.

The property surrounds, but does not include the Packrat reverted crown grant which covers the former Senator mine from which massive pyrite and pyrrhotite was mined for smelter flux.

The outcrop areas of the property can be considered to have been prospected in detail. However, to the writers' knowledge there has been little past application of techniques capable of testing overburden covered areas.

DISTRICT GEOLOGY AND MINERALIZATION

East of a north-south fault lying along the Granby River north of Grand Forks, tightly folded metamorphic rocks of the Grand Forks group (paragneiss, schist, crystalline limestone, etc.) are exposed in an upthrown block.

West of this same fault stratified rocks ranging in age from Permian or older to Cretaceous predominate. They are a typical eugeosynclinal assemblage of volcanics (mainly andesitic) and sediments. They are all folded and metamorphosed to greenschist facies. Work in the vicinity of the Phoenix mine resulted in a subdivision of these rocks into an older (Permian?) sequence of bedded chert followed by a mixture of massive chert, argillite, greywacke and greenstone (andesitic flow) known as Knob Hill Formation. Unconformably overlying the Knob Hill formation Triassic sediments consisting of a lower sharpstone conglomerate (origin now questioned) and the Brooklyn Formation comprising primarily limestone, calcareous argillite, and minor shale and chert; locally these rocks are altered to skarn-like mineral assemblage. H.W. Little of the Geological Survey of Canada mapped the area in the 1950's and grouped all of these rocks together as the Anarchist Group.

Major intrusions took place in Cretaceous time starting with ultramafics, now largely altered to serpentine which occur in several tabular masses in the Greenwood-Phoenix Area; in at least one occurrence vestiges of pillows are reported suggesting that extrusive varieties of this same rock are also present. The main Cretaceous intrusions, however, are predominantly of granodiorite composition with smaller amounts of other intermediate to felsic members. A large mass of Nelson granodiorite lies a few kilometres to the north east of the Phoenix camp; smaller plugs ranging from a few metres to three kilometres in diameter intrude the older stratified rocks here and there throughout the area of interest.

Flat-lying to gently-tilted and relatively unmetamorphosed Tertiary sediments and volcanics unconformably overlie the Mesozoic and Paleozoic rocks of the area. They are subdivided into an older sedimentary sequence (arkose, dacite tuff, and conglomerate) termed the Kettle River Formation (Little) and a younger sequence of volcanics (andesite, trachyte and minor basalt) which have been termed the "Phoenix Volcanic Group" by Little in 1957 and later the "Marron Group" by others in the Geological Survey of Canada. West of a north-south line lying three kilometres west of Greenwood, Tertiary volcanics completely obscure all older rocks. Elsewhere throughout the area of interest, smaller remnant patches of Tertiary cover remain, notably at the Phoenix Mine and capping Thimble Mountain eight kilometres ENE of Phoenix.

The last major intrusive event emplaced the "Coryell Intrusions" consisting of syenite, monzonite, shonkinite, and granite. A large mass of this unit extends into the northeast quadrant of the map area; smaller plugs and dikes related to this mass are found throughout the area of interest. Little originally considered this unit to be older than the Tertiary volcanics but later interpretations indicate it intrudes them.

Known economic mineralization in the district can be divided into four types.

- (1) Disseminated chalcopyrite mineralization with significant gold and silver values occurring in Brooklyn crystalline limestone, calcareous argillites and skarns derived therefrom; the largest and the best example is the Old Ironsides ore body at Phoenix.
- (2) Gold, copper, silver deposits occurring in alteration zones adjacent to ultramafic (serpentinite) rocks exemplified by the old City of Paris mine now on the Grenoble Energy Ltd. property.

- (3) Gold and silver-bearing quartz veins often occurring at, or near the contacts between Nelson intrusives and Knob Hill greenstones and sediments; examples are the Jewel Lake deposits of Dentonia Resources and the Providence Mine.
- (4) The recent discovery by Kettle River Resources located one kilometre northwest of the Old Ironsides pit (Phoenix) may represent yet another deposit type. Interesting gold values occur in both stratiform lenses of near-massive sulphides (pyrite, pyrrhotite and minor chalcopyrite) and adjacent laminated cherty argillite with sulphide layers. Of 20 diamond drill holes completed to date, 12 intersected interesting gold values, the best of which assayed 0.193 ounces per ton over a core length of 46.9 feet.

The Greenwood-Phoenix area has many of the features considered favourable for gold mineralization in the Precambrian Superior province gold camps, ie:

- (1) A mafic volcanic assemblage (Knob Hill) followed by a sedimentary assemblage (Brooklyn).
- (2) Ultramafic intrusives (and probably also ultramafic flows, perhaps now largely removed by erosion).
- (3) Felsic intrusives: small masses of the feldspar porphyry intrusives are found throughout the area.
- (4) Major quartz-sericite alteration zones in intermediate pyroclastics.
- (5) Carbonate alteration zones in and adjacent to serpentinized ultramafic rocks.
- (6) Both stratiform and vein type gold mineralization.

SUMMARY OF WORK DONE

Line Cutting

The following lines were cut, chained and picketed at 50 metre intervals:

Baseline	3000E	043°
Crossline	2000N	(133° - 313°)
Tielines	1000E	043°
	2000E	043°
	3800E	043°

Crosslines were run (133° - 313°) at 100 metre intervals throughout most of the property (excepting an area of unfavourable intrusives near the west end of the property) by compass and chain, with co-ordinates marked on flagging at 50 metre intervals.

The entire grid is tied to known points on the railway grade.

Geological Mapping

All lines were traversed by the writers recording location of outcrops on and between the lines. Outcrop boundaries, lithology, structure and mineralization are recorded on map C83-20-4 on a scale of 1:5000.

Selected rock specimens were sent to Vancouver Petrographics Ltd. for thin section and petrographic examination (see Appendix I).

Geochemical Surveys

(a) Reconnaissance Biogeochemical (Humus) Survey:

All sampling was done by Rimacan personnel who were instructed and supervised by the writer.

Samples were collected at 50 metre intervals on lines spaced 100 metres apart over the entire grid.

Samples of black, rotted organic forest litter

were collected in porous fabric bags measuring 10 x 15 cm. Silicate rock material and unrotted vegetation were carefully avoided. Samples were loosely packed and shipped in ventilated cartons to avoid fermentation enroute.

Samples were processed and analysed by X-Ray Assay Laboratories Limited, 1885 Leslie Street, Don Mills, Ontario, M3B 3J4. Humus samples were briquetted under high pressure and analysed for gold and arsenic by neutron activation. The lower limits of analysis for this method (on 8 gram briquettes) are:

Gold : 1 ppb

Arsenic: 1 ppm

Results were plotted on a scale of 1:5000 (see map C83-20-5). Cumulative frequency graphs of the gold values were prepared (see Figure I) and values on the map were contoured.

(b) Geochemical Follow-up:

On the basis of anomalous gold-in-humus analyses area were selected for detailed follow-up (designated areas A,B,C,D & E). Within these areas both humus and B-horizon soil samples were collected at 25 metre intervals on lines spaced 50 metres apart.

Humus samples were analysed for gold by the same procedure outlined above.

B-horizon soil samples were analysed by Chemex Laboratories, Vancouver, as follows:

All samples dry-screened to minus 80 mesh.

- (1) Gold analysed by fire assay and atomic absorption (detection limit 5ppb).
- (2) By perchloric-nitric acid extraction and atomic absorption:

<u>Element</u>	<u>Detection Limit</u>
Silver	0.01 ppm
Copper	2 ppm
Lead	1 ppm
Zinc	1 ppm

Results are plotted on maps C83-20-6 to 14 inclusive.

Geophysical Surveys

VLF Electromagnetic and Magnetometer surveys were conducted by Nielsen Geophysics Limited of Vernon, B.C. Specifications were as follows:

VLFEM:

Instrument - Sabre Electronics VLFEM
 Operators - Philip Nielsen
 Donald Sterling
 Transmitter - Seattle - (225°)
 Readings taken at 25 metre intervals on
 lines spaced 100 metres apart.
 Data Processing - data was Fraser - filtered,
 plotted on a scale of 1:2500
 (C83-20-15) and contoured.

Magnetometer:

Instrument - Geometrics Unimag with 6 ft.
 staff
 Operators - Philip Nielsen
 Donald Sterling
 Total field readings at 25 metre intervals on
 lines spaced 100 metres apart are plotted on
 map C83 - 20 - 14; readings are in gammas above
 an arbitrary datum of 57000 gammas and contoured
 at an interval of 200 gammas.

DISCUSSION OF RESULTS

GeologyDescription of Rock Types

1. Andesite/dacite: Chiefly fine-grained massive thick flows seldom exhibiting a distinct flow-banding. Porphyritic varieties were noted here and there; this unit may also include pyroclastics of corresponding composition. For a detailed description of these rocks refer to samples GG 8, 10, 12, 15 & 16 in Appendix I.
2. Argillite: Not observed on the property; outcrops previously mapped by The Granby Mining Company Limited shows north of the Greenwood Group.
3. Chert: Not observed on the property; outcrops previously mapped by The Granby Mining Company Limited shown north of the Greenwood Group.
4. Sharpstone Conglomerate: Not observed on the property; it is described briefly under "District Geology"; The Granby Mining Company Limited mapped outcrop of this rock east of the Greenwood Group and it is quite possible it occurs on the property in overburden-covered areas.
5. Limestone: Chiefly light grey to white, massive, thick-bedded, fine-to-medium-grained marble; however, the unit does include some thin-bedded rocks which may be carbonated tuffs?
6. "Quartzite"; sugary textured: A fine-grained, highly siliceous rock which under the hand lense has a "sugary" appearance due to spherical quartz grains. Samples GG5 and GG6 (Appendix I) represent altered and heavily - mineralized varieties, respectively. Interestingly, the rock was grouped with a sample of typical host rock for gold mineralization on the Grenoble property (sample GT1, Appendix I). The rock is distinctly stratiform in most exposures.

7. Granodiorite, quartz monzonite, quartz diorite: A variety of intrusive rocks believed to be related to the major Nelson event of Cretaceous age.
8. Arkose: A coarse-grained feldspathic wacke (Kettle River Formation).
9. Andesite-trachyte: Younger volcanic flows (Marron Group).
10. Syenite: Porphyritic, medium-grained, pink to buff, brown-weathering syenite.
11. "Grey" dikes: Grey-coloured, medium-grained, porphyritic rocks of intermediate composition.

Rock Distribution & Structure

West of a line represented by co-ordinate 1600E outcrop is plentiful and exposed rock is intrusive; along line 2000N the writer mapped several outcrops of syenite (unit 10); other outcrops were mapped by Granby as quartz monzonite (unit 7?); thus two ages of major intrusives may be present. Since the major intrusive bodies in the district have not been productive, grid lines were not extended over this area.

Between 1600E and a N-S line through 2000N, 3000E outcrop is virtually absent (except for the Senator Mine workings and some syenite outcrops). The general character of VLF response is similar to areas further east containing andesite/dacite and interbedded sediments; projection of geology exposed to the southwest of the property also supports this view.

Andesite/dacite is the most prevalent exposed rock in the east half of the property, occurring both west and east of the belt of limestone extending between 2100N, 3000 and 3200N, 2750E. The limestone appears to grade, through facies change, into argillite and chert northeast of the property.

The rock type classed as "quartzite" (unit 6) appears to have the most consistent association with sulphide mineralization on the property and may be the host rock at gold deposits elsewhere in the district (see rock descriptions); it occurs adjacent to massive pyrrhotite at the Senator mine, it is the host for banded sulphides at the Ike Showing and occurs interbedded with andesites and other rocks near 2900N, 3300E.

Tertiary sediments (arkose-unit 8) and volcanics (andesite - unit 9) unconformably overlies older rocks at the extreme southeast corner of the property.

Large outcrops of massive Coryell syenite were mapped in the central part of property (2400N, 2300 to 2800E). Also in this area a late "grey dike" (unit 12) intrudes the syenite.

Discernible attitudes in the andesite/dacite rocks are rare; the few attitudes measured in interbedded meta-sediments suggest the rocks were tightly-folded and that steep dips will predominate.

No faults were definitely established. However, the following inferences are made:

Fault A: . . . inferred from a topographic escarpment, disruption of a magnetic feature and terminations of VLF conductors.

Fault B & C: inferred from magnetic disruption, parallel sub-ordinate VLF trends and termination of VLF conductors.

Mineralization

A large irregular body of massive pyrrhotite occurs at the Senator mine workings (surrounded by but not part of this property).

At the Ike Showing pyrrhotite, pyrite and some chalcopyrite occur in a weak skarn zone developed in an interbedded sequence of limestone, andesite and "quartzite" occurring within a larger belt of predominately crystalline limestone; part of the mineralization is distinctly bedded pyrrhotite in "quartzite".

Disseminated veinlets and blocks of chalcopyrite occur within epidote-altered andesite/dacite in old trenches at 2400N, 3450E.

A potential for zinc mineralization on the property is indicated by the anomaly associated with the main limestone belt at the Ike Showing and also by a projection of known zinc anomalies and bedrock mineralization on the property adjoining to the south (see "VLF Electromagnetic Survey").

Although no significant gold mineralization has been detected in bedrock, much of the potentially mineralized ground is obscured by overburden.

GEOCHEMICAL SURVEY

Reconnaissance Humus Survey

A cumulative frequency plot of the gold-in-humus analyses as shown in Figure I suggests that the threshold for anomalous values is about 5 ppb; certainly 7 ppb should be anomalous. These values correspond well with the results of an experimental study in Saskatchewan where the 5 ppb gold-in-humus contour accurately delineated known bedrock gold mineralization (3). Contoured results are depicted on map C83 - 20 - 5. Anomalies detected are identified by letter. Each area is described further in the following section.

Arsenic values in humus were generally low. The highest arsenic values (27 & 46 ppm) correspond with the best gold values near the IKE Showing. Other possibly anomalous readings are at 2100N, 1850E (old Senator Mine area); 2400N, 2650E; 3100N, 3200E. They do not correlate with high gold readings.

Follow-up Geochemical Surveys: (see maps C83-20-6 to 14).

Follow-up Geochemical Surveys

(see maps C83 - 20 - 6 to 14)

In the follow-up survey nine of the humus samples were taken at sites corresponding to sites yielding anomalous gold in the original reconnaissance survey. Comparative results are shown in Table II. Reproducibility at specific sites is not good in that only three of the nine samples in the follow-up survey are anomalous in gold. None of the corresponding B-horizon samples are anomalous in gold.

Cumulative frequency curves were prepared for metals in B-soil as follows:

Figure 2: Au - no distinct threshold value indicated
20 ppb arbitrarily used as threshold.

Figure 3: Cu - threshold value of 70 ppm indicated.

Figure 4: Pb - no distinct threshold indicated -
20 ppm arbitrarily used.

Figure 5: Zn - threshold value of 160 ppm picked.

No potentially anomalous silver values are indicated.

Area A-1:

A two point linear gold in B-soil anomaly (80 ppb and 55 ppb) is supported by a parallel (and slightly down-slope) two point gold-in-humus anomaly (8 and 400 ppb). The anomaly strikes 067° and is open to the northeast.

Almost the entire area surveyed is anomalous in zinc with values ranging from 160 to 1100 ppm.

There is no distinctly anomalous lead or silver values.

A small zone of anomalous copper corresponds well with the gold anomaly.

Zinc and copper anomalies include previously described old workings; the gold anomaly, however appears to be unrelated to the old workings.

TABLE II

Comparison of Duplicated Humus and Soil Samples

<u>Co-ordinates</u>		<u>Sample No.</u>	<u>Original Humus</u>		<u>Duplicate Humus</u>		<u>B-Soil</u>
<u>N</u>	<u>S</u>		<u>Au</u> (ppb)	<u>As</u> (ppm)	<u>Au</u> (ppb)	<u>As</u> (ppm)	<u>Au</u> (ppb)
1900	3750	368	8	4	7	8	L5
2000	3000	1	13	6	1	2	L5**
2300	2850	81	9	4	2	2	L5
2400	2800	89	11	7	1	4	L5
2600	2350	140	5	4	1	8	5
2700	2400	156	6	3	3	3	L5
2700	3700	594	6	14	L1	3	L5
2800	2500	179	9	1	6	5	L5*
2900	2400	198	2	1	1	2	L5

L = less than

* Pit dug 0.5 m L5 ppb
 1.0 m L5
 1.5 m 15

** Pit dug 0.5 m 5 ppb
 1.0 5
 1.5 5
 2.0 5

Area A-2: Two samples on line 2750N yielded anomalous gold in B-soil readings (40 & 45 ppb); they lie 50 metres west of an Au in humus reading of 9 ppb in the original survey. This area appears to be on the fringe of the major zinc anomaly indicated in area A-1. No anomalous silver, copper or lead readings were returned.

Area B: No support was found for three anomalous gold-in-humus readings.

One anomalous Au-in-B-soil reading (125 ppb) was recorded at 2350N, 3000E; detailed check sampling failed to duplicate this value but 60 ppb gold was returned from a site 10 metres northeast of it (see inset C80-20-9).

Higher than average, perhaps weakly anomalous zinc values were encountered near the northeastern part of the grid.

No anomalous copper or silver values were returned.

Area C: The original gold-in-humus reading (10 ppb) was not duplicated and no anomalous gold was found in the B-soil.

Zinc in B-Soil may be slightly anomalous.

Copper, lead and silver in B-soil are not anomalous.

Area D: No anomalous results were returned from follow-up samples.

Area E: The original gold-in-humus value of 8 ppb was duplicated by a 7 ppb reading in the follow-up; no anomalous readings were found in the B-soil samples.

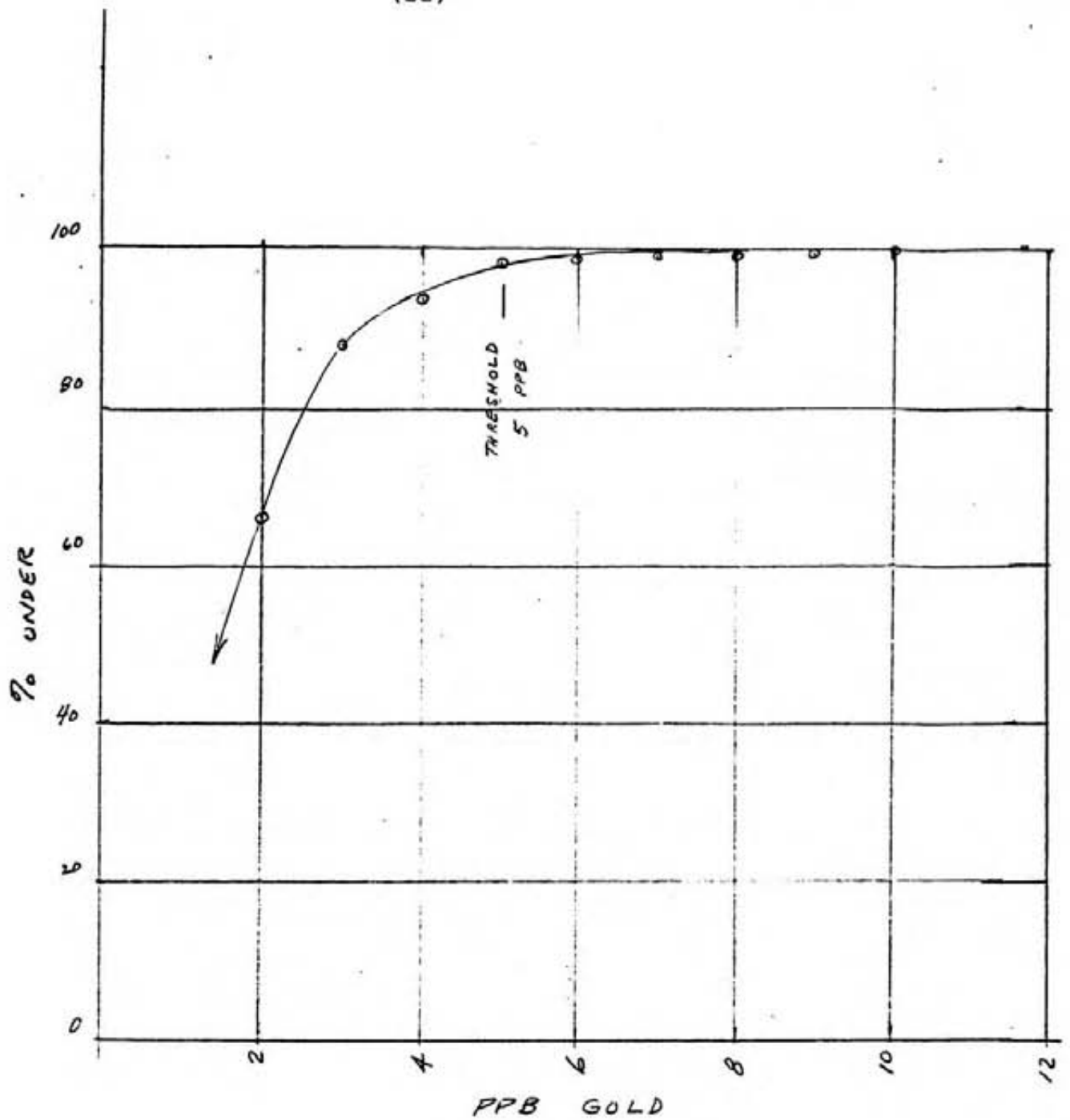


FIGURE 1
CUMULATIVE PERCENT FREQUENCY
GOLD IN HUMUS

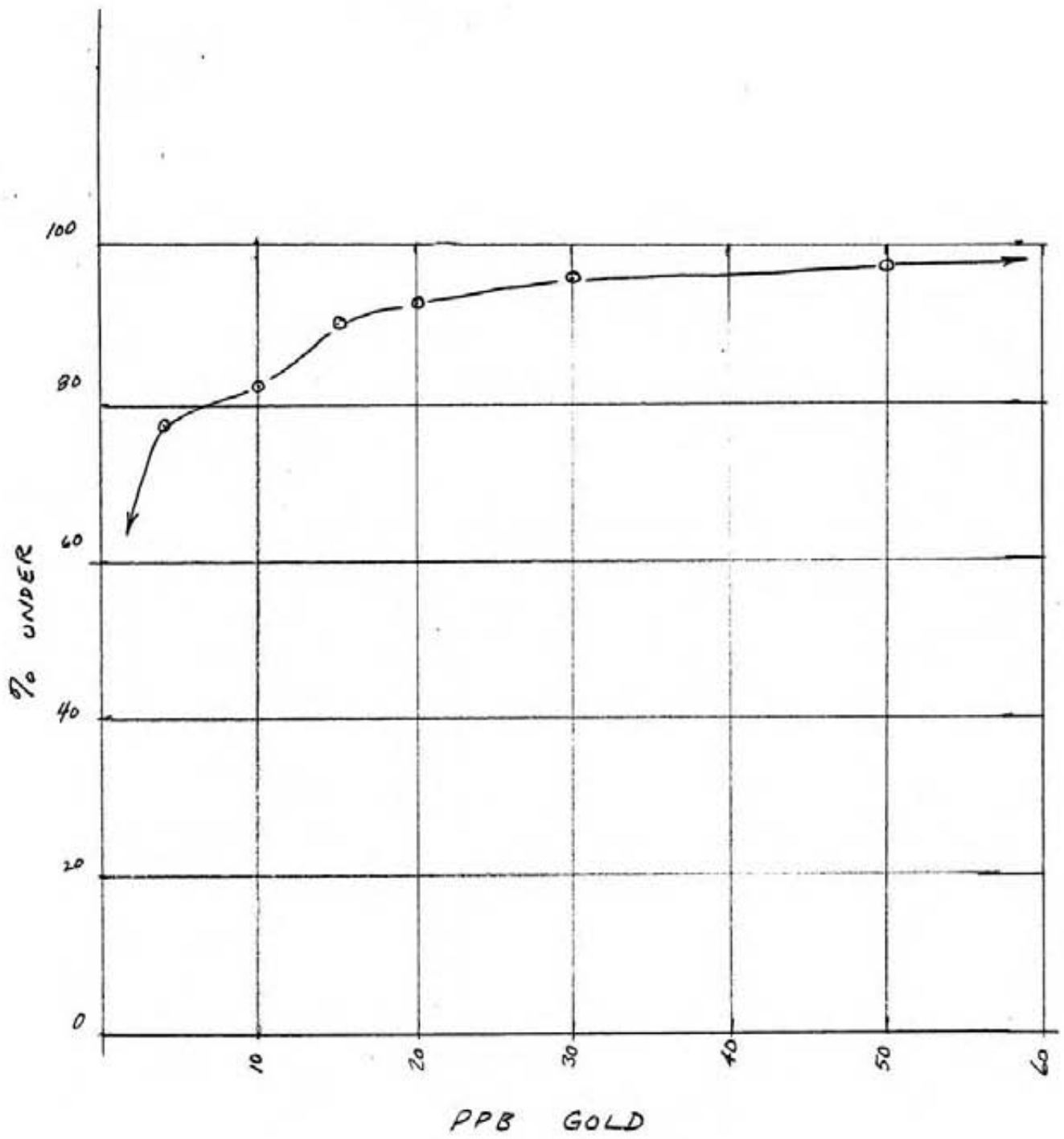


FIGURE 2
CUMULATIVE PERCENT FREQUENCY
GOLD IN B-SOIL

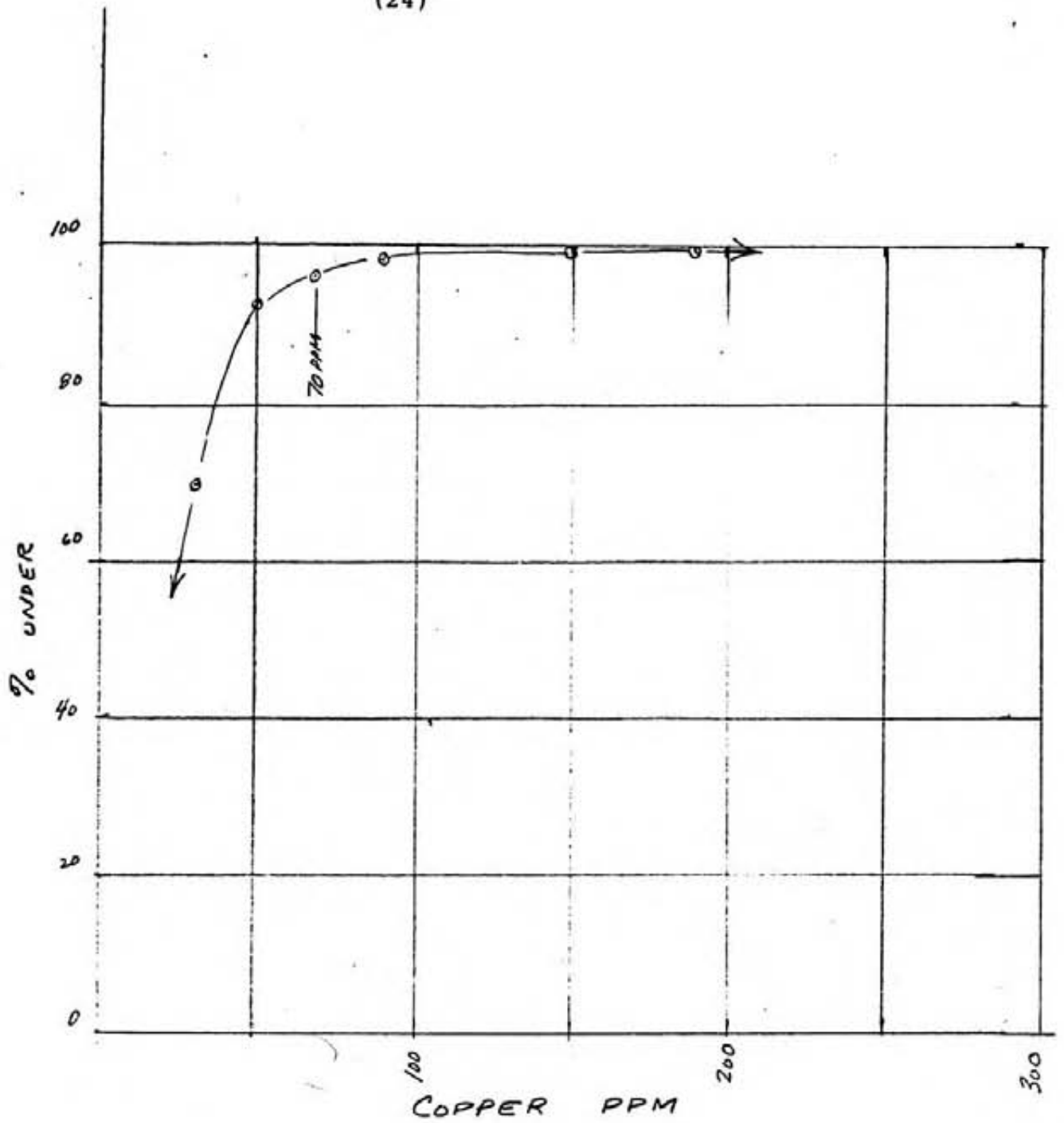


FIGURE 3
CUMULATIVE PERCENT FREQUENCY
COPPER IN B-SOIL

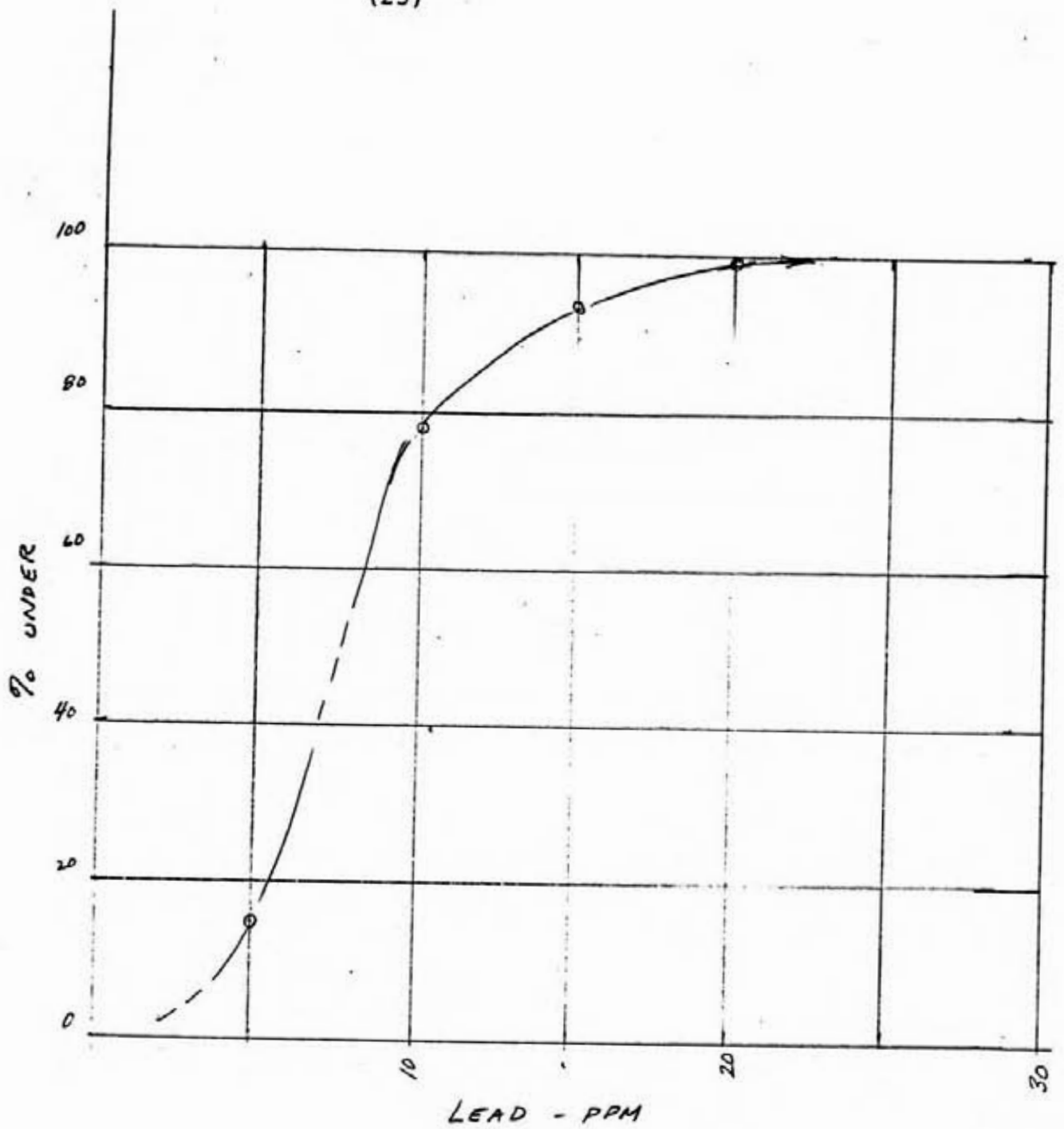


FIGURE 4
CUMULATIVE PERCENT FREQUENCY
LEAD IN B-SOIL

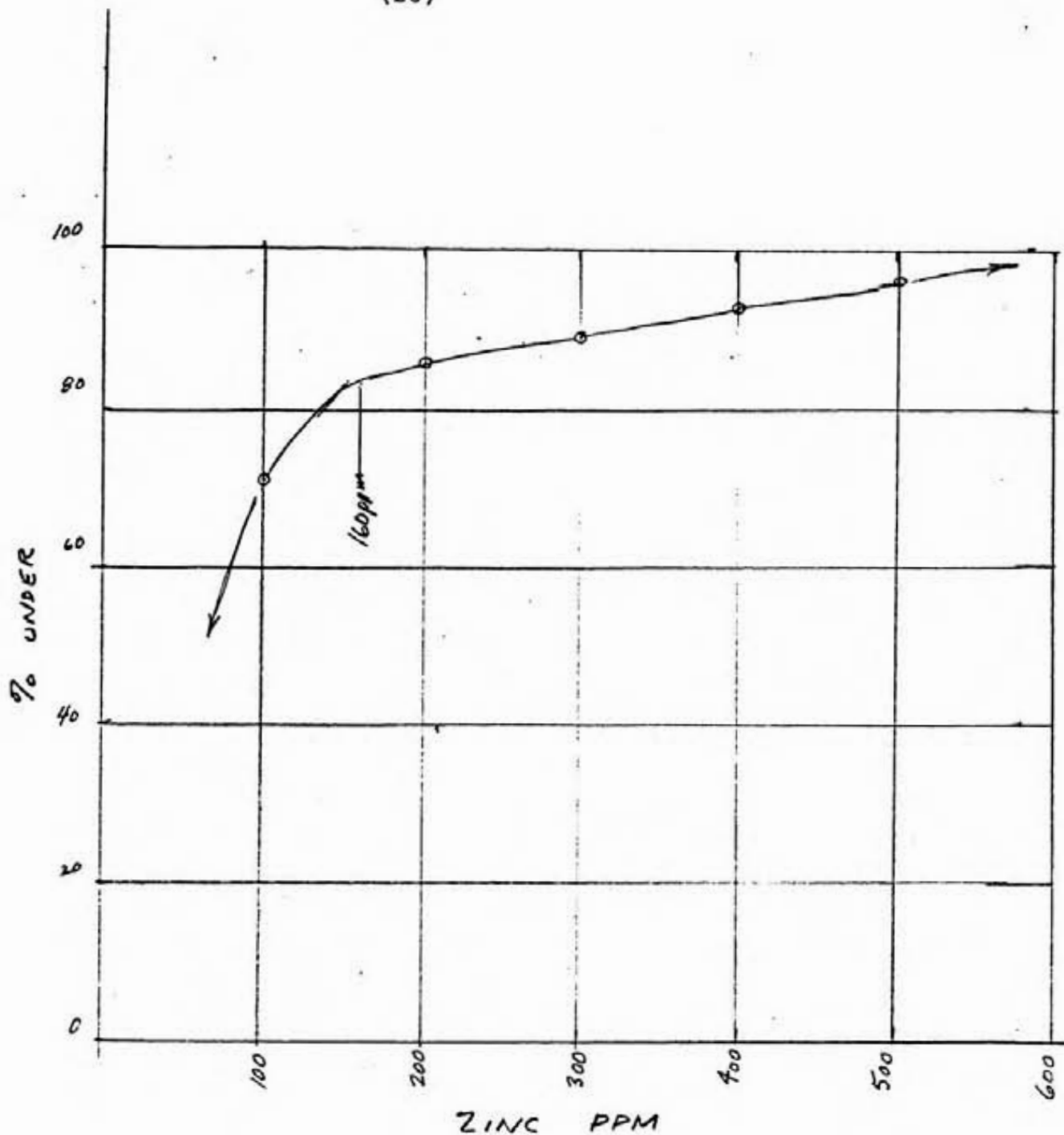


FIGURE 5
CUMULATIVE PERCENT FREQUENCY
ZINC IN B-SOIL

Geophysical SurveysVLF Electromagnetic Survey- Greenwood Group:

A number of "poor to moderate" electromagnetic conductors were delineated. Contouring of Fraser-filtered data was selected as the best method of presenting results as shown on Map C83-20-15; the main conductor trends are also indicated on geology map C83-20-4.

The main conductor trend is northeasterly (015° to 060°) parallel to the formational trends as indicated by geological mapping. Although little direct evidence of the cause of these anomalies was observed, two inferences can be made:

- (1) The conductors do not appear to co-incide with surficial features hence they probably reflect bedrock features.
- (2) Disseminations of graphite and/or sulphides are the most likely causes.

A second, weaker VLF trend transects the formational trend at 070° to 080° degrees; it is interpreted to reflect alteration and/or mineralization along fracture or fault zones.

The conductive belt extending from 1600N, 3100E to 2100N, 3270E: is an extension of a conductive zone delineated on the property adjoining to the south within which strong zinc soil anomalies and high grade sphalerite in bedrock were found (6) (7).

Conductors centred at 2650N, 3180E; 3000N, 3000E; 3050N, 3120E may represent sulphide mineralization within an alternating sequence of andesitic volcanics and clastic sediments.

The conductor centered at 2150N, 2950E appears to co-incide with a limestone contact and could represent a mineralized skarn zone.

The area bounded by 1700N to 3000N and 1900E to 2500E contains a number of weak VLF conductors; since there is no outcrop within this area it is not possible to specifically identify the sources.

Magnetometer Survey:

Moderate to strong magnetic highs were outlined in two areas near the northwestern and southeastern edges of the grid, respectively.

The southeasterly feature appears to be stratiform and to be dislocated by faulting in at least three locations. Several outcrops of andesite/dacite were found within the anomaly as outlined on the map. Several specimens exhibited moderate magnetic susceptibility bases on tests with a suspended hand magnet. Although the andesites here are somewhat more magnetic than those elsewhere on the property it is unlikely that they are the source of the anomaly. The possibility remains of unexposed bands of highly magnetic material within this anomaly.

The strong magnetic high centered at 200N, 1720E has not been identified; there is no outcrop within it. The shape suggests it is an intrusive body.

Similarly, the small, weaker anomalous highs in the area 1600 - 1950N; 1550 - 2000E have not been identified; small intrusive bodies are the most likely explanation.

SUMMARY AND CONCLUSIONS

The Greenwood Group of Rimacan Resources Ltd. comprises 18 continuous mineral claims covering 333 hectares in the Greenwood Mining Division, north of Grand Forks, B.C.

Geological, geochemical and geophysical (VLFEM and Magnetometer) surveys were carried out on the property in the summer of 1983.

Andesitic volcanic rocks (Knob Hill Formation?) and limestone (Brooklyn Formation) are the main stratified rocks on the property. They are intruded by granodioritic intrusives of Cretaceous age (Nelson intrusives) and by Tertiary Coryell syenite. Tertiary arkose and andesitic volcanics unconformably overlie older rocks near the southeast corner of the property.

Known mineral occurrences include massive to banded pyrrhotite associated with quartzite bands with a limestone unit and disseminations of chalcopyrite in andesite/dacite.

A VLFEM survey delineated many weak conductors believed to represent disseminated graphite and/or sulphides in volcanic rocks.

The source of a linear high magnetic anomaly has not yet been positively identified.

A reconnaissance biogeochemical (humus) survey indicated several small areas of weak to moderately anomalous gold mineralization. Poor up correlation on duplicate sampling puts into question the effectiveness of the humus survey in this area.

Follow-up geochemistry indicates a linear gold in B-soil and humus anomaly in Area A-1 which is open to the east.

Follow-up in other areas failed to support anomalous readings returned in the initial survey.

A strong zinc in B-soil anomaly in Area A-1 (which may continue southerly to Area B) has not been adequately

explained. It appears to co-incide with a limestone belt and covers some weak base metal mineralization at the Ike Showing.

Information from the property adjoining to the south suggest an VLFEM anomaly may be the extension of a zone containing both a strong Zn in soil anomaly and sphalerite in bedrock.

Work to date has not yet provided an adequate drill target. However, an environment favourable for stratiform volcanogenic gold and/or base metal deposits has been confirmed and indications from geochemical and geophysical surveys are sufficiently encouraging to warrant continuation of exploration of the property.

RECOMMENDATIONS

- (1) Detailed B-soil geochemistry on a 10 metre x 10 metre grid to further define the gold in B-soil anomaly near the Ike Showing.
- (2) Bulldozer trenching and sampling based on the results of (1) to determine the bedrock source of the gold.
- (3) Geochemical B-soil survey with samples taken at 50 metre intervals on lines spaced 100 metres apart (the existing grid) over that portion of the grid lying east of line defined by the following grid co-ordinates (excepting those areas already samples):

3000N, 2400E
2700N, 2400E
2700N, 2600E
2300N, 2600E
2300N, 2800E
1600N, 2800E

- (4) Experimental Induced Polarization on the following lines:

1700N; 2400E to 3600E
2100N; 1800E to 3900E
2600N; 1800E to 3800E
3000N; 2000E to 3600E

If the results on these lines are encouraging additional fill-in lines may be warranted.

LIST OF REFERENCES

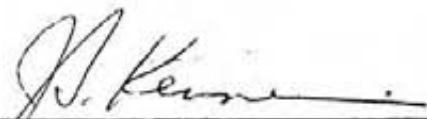
- (1) British Columbia Ministry of Mines Reports for the years 1899 to 1906 inclusive and 1926.
- (2) Dawson, J. M.: "Report on the Sylvester K Property" (private report on the new gold discovery for Kettle River Resources, reprinted in a News Release dated November, 1982).
- (3) Dunn, C. E.: "Gold Biogeochemistry Investigations, Flin Flon Area" Saskatchewan Geological Survey, Summary of Investigations, 1980.
- (4) Hodgson, C. J., Chapman, R.S.G. and MacGeehan, P. J.: "Application of Exploration Criteria for Gold Deposits in the Superior Province of the Canadian Shield to Gold Exploration in the Cordillera", in "Precious Metals in the Northern Cordillera", The Association of Exploration Geochemists, 1982.
- (5) Little, H. W.: Geological Survey of Canada Map 6 - 1957, Kettle River (East Half) with marginal notes.
- (6) Nielsen, P. : (Nielsen Geophysics Limited) personal communications.
- (7) Stewart, G.O.M.: (President and Geologist, Kettle River Resources Limited) Personal communications.
- (8) White, M.V.W., Brooker, E.J., Hoffman, E.L.: "Geological and Geochemical Criteria Useful in Prospecting for Gold", unpublished paper presented in 1980.

CERTIFICATE

I, JAMES SEATON KERMEEN, do hereby certify:

- (1) That I am a Consulting Geological Engineer with offices at 55 Whiteshield Crescent South, Kamloops, British Columbia.
- (2) That I am a member in good standing of the Association of Professional Engineers of British Columbia and Saskatchewan.
- (3) That I am a graduate of the University of Saskatchewan from which I obtained the degrees of Bachelor of Science in Geological Engineering, 1951 and Master of Science in Geology, 1955.
- (4) That I have practiced my profession continuously for 31 years.
- (5) That I personally supervised the work covered by the attached report entitled "A report on the Geological, Geochemical & Geophysical Exploration - 1983 - on the Greenwood Group of Mineral Claims" and was present on the property on the dates indicated in the work summary of the said report.
- (6) That I have no interest, either directly or indirectly, in the property or securities covered by this report; nor do I expect to receive such interest.

Dated this 17 day of Oct., 1983 in the City of Kamloops in the Province of British Columbia.



J. S. Kermeen, M. Sc., P. Eng.
Consulting Geological Engineer

Rimacan Resources

Greenwood Group

Report No. C83-20

Appendix I

Petrographic Study

Note: Only samples prefixed "GG"
are from the Greenwood Group.



Vancouver Petrographics Ltd.

JAMES VINNELL, Manager
JOHN G. PAYNE, Ph. D. Geologist

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8887 NASH STREET
FORT LANGLEY, B.C.
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PHONE (604) 888-1323

Report for: J.S. Kermeen,
55 Whiteshield Crescent South,
Kamloops, B.C.,
V2E 1P3

Invoice 3938

June 20, 1983

Samples: GT-1, A, E, F, GG-5, GG-6, GG-8, GG-10, GG-12, GG-15, GG-16.

Summary

The samples are grouped into the following types:

Dacite GG-8, GG-10, GG-12, A.

These are volcanic rocks consisting dominantly of plagioclase with lesser amounts of quartz and hornblende. GG-12 is porphyritic (plag.) and contains no hornblende.

Carbonate, chlorite and epidote alteration is pervasive and may be quite intense. Epidote mineralization along fractures has occurred in GG-10 and is associated with K-spar alteration.

Andesite GG-15, GG-16, F.

GG-15, GG-16 are inequigranular volcanic rocks dominated by plagioclase (phenocrysts and groundmass) with hornblende and biotite. GG-16 is intensely altered with epidote and calcite.

F is a fine grained andesite intensely altered by calcite.

Altered metasediments GT-1, GG-5, GG-6.

GT-1 is a fine grained quartzite which has been altered by sericite and calcite.

GG-5 is a quartzite which has been altered by epidote and calcite.

GG-6 is a layered rock now consisting of garnet, calcite and pyrrhotite ie. it is a skarn. Minor pyrite and chalcopyrite are associated with the pyrrhotite.

Altered igneous rock E.

Sample E is an intensely altered rock consisting mainly of quartz, sericite and chlorite. The sericite and chlorite have replaced feldspars.


A. L. Littlejohn, M.Sc.

GT-1 Altered (sericite, calcite) quartzite.

This is a very fine grained, more or less equigranular rock with a fine vague foliation. It is highly altered. A veinlet of calcite-pyrite (minor quartz) cuts the rock. Minerals, excluding the vein, are:

quartz	36%
sericite	38
calcite	21
chlorite	3
rutile	1
opaque	1 - mainly pyrite
apatite	minor

Quartz forms rounded grains about 0.05mm in size and appears to be the main mineral of the original rock. Fine grained sericite is disseminated between the quartz throughout the rock. It is concentrated in streaky patches up to 1.5mm in size which lie parallel to the foliation. It may be replacing an unknown mineral. These patches do not contain any quartz.

Calcite forms fine shapeless grains which are also disseminated between the quartz grains and is often mixed with the sericite. It is concentrated around the sericite patches. It also occurs in thin discontinuous veinlets which cut through the sericite patches.

Chlorite forms in very thin stringers partly intergrown with the sericite along the foliation. Ragged flakes less than 0.05mm in size occur within the sericite patches and around the opaque grains.

Rutile forms rounded grains less than 0.01mm in size which are disseminated throughout the rock but are concentrated in clusters within and around relatively coarse sericite. It is sometimes associated with rounded grains of apatite about 0.1mm in size.

Opaque grains (mainly pyrite from the hand specimen) form shapeless to subcubic grains up to 0.2mm in size which occur scattered about the rock.

The vein consists of interlocking calcite grains about 0.5mm in size which are intergrown with massive patches of pyrite. Calcite alteration in the rock is very intense adjacent to the vein. A few coarse quartz grains are intergrown with the calcite.

A. Altered (carbonate, chlorite) dacite

This is a medium grained, more or less equigranular, dark greenish grey volcanic rock. It is moderately altered. A vein of pyrrhotite (hand specimen identification) about 1mm thick cuts the rock. Excluding the vein, minerals are:

plagioclase	69%
quartz	10
hornblende	5
chlorite	7
calcite	7
epidote	1
coarse sericite	1
sphene	minor
opaque	minor

Plagioclase forms subhedral grains from 0.3 to 1.2mm in size, averaging about 0.7mm, which are crowded together. They are highly sericitic and in places the sericite becomes rather coarse, particularly in the cores. Quartz forms shapeless interstitial patches no more than 0.2mm in size between the plagioclase.

Hornblende forms ragged subidiomorphic grains about 1.0mm in size which are intergrown with the plagioclase. Most of the grains are highly altered to a mixture of chlorite and calcite which are very fine grained. Small flakey patches of chlorite occurring between the plagioclase grains may have been amphibole prior to alteration. Small ragged grains of sphene occur within and around the hornblendes. A few larger grains about 0.2mm in size occur between the plagioclase grains. The sphene is associated with very small opaques (probably Fe-oxide).

As well as forming in the altered hornblende, chlorite occurs in vein-like patches and flakey aggregates intergrown with calcite around and partly within the plagioclase. Chlorite is dominant in these. Much of the calcite occurs in widely spaced criss-crossing veinlets about 0.1mm in width. Coarse sericite is sometimes associated with these. These veinlets cross the sulphide vein and form patches around the pyrrhotite.

The sulphide vein consists of subcubic grains about 1mm in size which are intergrown with minor quartz and epidote. The sulphides are often partly surrounded by chlorite and some calcite. Within the body of the rock there are small clusters of epidote associated with shapeless grains of an opaque (presumably same as in the vein).

E. Altered (sericite, chlorite) intermediate igneous rock

This is a medium to fine grained inequigranular, greyish green rock which originally had a hypidiomorphic-granular texture. Alteration has entirely replaced the original minerals except quartz. The original rock may have been a dacite or quartz diorite. The feldspar has been replaced by sericite and the amphibole has been replaced by chlorite and some calcite. Minerals are:

quartz	33%	
sericite	37	
chlorite	18	
calcite	6	
opaque	4	- mainly pyrite
rutile	1	
apatite	1	

Quartz forms shapeless to subrounded grains about 0.3mm in size which are intergrown with lath-like patches of fine grained sericite of about the same size. Extremely fine grained sericite occurs around the edges of the quartz grains, replacing them.

Chlorite occurs in ragged amphibole pseudomorphs up to 0.3mm in size. These occur in the sericitic masses and may form clusters of several 'grains'. The chlorite is colourless in thin-section and forms a mass of extremely fine grained flakes which are intimately intergrown with extremely fine grained calcite. Relatively coarse grained flakes of chlorite sometimes occur by themselves within the sericitic patches. There are a few very thin discontinuous stringers of chlorite. Some of the chlorite-calcite aggregates contain a few flakes of sericite.

Apatite forms rounded grains about 0.1mm in size which occur intergrown with the quartz or within the sericite. These are often full of fine rutile grains which are also disseminated throughout the rock, especially within the chlorite.

Opaque minerals (mainly pyrite from the hand specimen) form cubic grains about 0.6mm in size which are scattered about the rock, often ~~in~~ in clusters. They are often surrounded by a narrow rim of chlorite. Smaller ragged opaque grains about 0.1mm in size are also present disseminated throughout the sericite. These are probably Fe-oxide.

F. Altered (carbonate) andesite

This is a medium to fine grained, equigranular, massive, dark green volcanic rock. Pervasive carbonate alteration (associated with chlorite and sericite) has affected the rock. Small porphyroblastic aggregates of calcite are scattered about the rock. Minerals are:

plagioclase	40%
calcite	37
chlorite	11
quartz	6
Fe-Ti oxide	4
sericite	2
opaque	minor

Plagioclase forms thin laths from 0.1 to 0.3mm in size which are randomly oriented and crowded together. They are highly altered with a fine dusting of sericite and calcite.

Quartz forms small shapeless interstitial patches between the plagioclase grains. It was probably intergrown with plagioclase which has now been replaced by calcite. The calcite forms aggregates of very fine grains occurring between the plagioclase grains. Individual patches rarely exceed 0.2mm in size but they they are interconnected. Extremely fine specks of calcite occur within the laths. In places the calcite is intergrown with fine sericite.

Calcite also occurs in rounded aggregates about 0.6mm in size which are scattered about the rock. These consist of a few interlocking : grains. Some of them are associated with quartz and rarely with chlorite.

Chlorite forms very thin flakes up to 0.3mm in size which occur throughout the rock intergrown with the plagioclase laths. It is often intergrown with sericite and a few small sericite flakes about the same size also occur. In places the chlorite forms small ragged patches consisting of aggregates of very small flakes.

Fe-Ti oxides (perhaps sphene in part) form subcubic grains less than 0.1mm in size which are disseminated throughout the rock. These are associated with cubic opaque grains (Fe-oxide?) about 0.1mm in size.

GG-5 Fractured, altered (epidote, calcite) quartzite

This is a fine to medium grained, inequigranular, pale greenish-grey rock; there is a network of closely spaced fractures filled with calcite which have cut through prior pervasive epidote alteration. Minerals are:

quartz	46%
epidote	18
actinolite	3
calcite	33
opaque	minor

Quartz forms a mosaic of subrounded interlocking grains from 0.03 to 0.1mm in size. The original rock appears to have been composed entirely of quartz. Pervasive epidote mineralization has replaced patches of the quartz throughout the rock. Extremely fine grained epidote forms between the quartz grains. In places the fine grained epidote is mixed with pale green needles of amphibole. Epidote also forms in vein-like patches where it forms rounded interlocking grains about 0.4mm in size; intense epidote alteration occurs around these.

After epidotisation, the rock was fractured and brecciated in places. Calcite formed in the network of closely spaced (less than 1mm) fractures which are about 0.1mm in width. The calcite cuts the massive patches of epidote and fine grained calcite replaces the fine grained epidote and quartz about the fractures. Remnant patches of quartzite contain fine grained calcite between the quartz grains.

Subcubic grains of an opaque mineral (sulphide?) are disseminated about the rock associated with the epidote. A few are intergrown with the coarser epidote. Grain size is less than 0.1mm.

GG-6 Garnet-calcite-pyrrhotite skarn

this is a fine to medium grained equigranular rock with a well developed foliation defined by parallel layers of sulphides up to 1mm thick and spaced up to a few millimetres apart. It is probably an altered metasediment. Minerals are:

garnet	55%
calcite	24
pyrrhotite	16
magnetite	3
pyrite	1
chalco- pyrite	1
biotite	trace

Garnet forms idiomorphic grains about 0.3mm in size which in some layers are packed together and in others are surrounded by calcite or sulphides. The garnets are very cloudy and are weakly birefringent. Zoning is apparent in some grains. Small specks of calcite occur in many of them.

Calcite occurs between the garnets and is concentrated in those layers which are low in sulphides. Individual grains rarely exceed 0.3mm in size and they form a mosaic of grains around each garnet.

The dominant sulphide is pyrrhotite which forms masses making up a layer or occurs between the garnets to the exclusion of calcite. Pyrite and chalcopyrite form inclusions within the pyrrhotite. They often occur together with the chalcopyrite occurring as small grains between the pyrite and pyrrhotite; grain size of the pyrite is about 0.2mm and are it is subcubic in shape. There is one small patch consisting of a mass of intergrown chalcopyrite and pyrite.

The pyrrhotite has been replaced by magnetite which forms ragged patches at the edges of the pyrrhotite and which may be full of small pyrrhotite inclusions. The magnetite has been introduced along very narrow veinlets which cut across the foliation. These are associated with extremely fine grained biotite.

This is a medium grained, more or less equigranular, dark greenish grey volcanic rock. It is mildly altered (mainly carbonate). A quartz veinlet about 1.5mm wide cuts the rock; minor epidote, calcite, tremolite and hematite occur with the quartz. Excluding the vein, minerals are:

plagioclase	68%
quartz	12
hornblende	16
sphene	2
calcite	2
epidote	minor
chlorite	minor
apatite	trace

Plagioclase forms euhedral to subhedral laths up to 1.2mm in size. In places there are aggregates of several laths. It is weakly sericitic. The laths are crowded in a fine grained matrix consisting of an intergrowth of shapeless plagioclase and quartz (plagioclase dominant) with grain size less than 0.05mm. Quartz also forms rounded grains about 0.3mm in size scattered about the fine grained matrix. Traces of apatite are intergrown with the plagioclase and quartz in the matrix.

Hornblende forms subidiomorphic grains up to 1.5mm in size occurring between the plagioclase laths and partly poekilitically intergrown with the groundmass. Ragged grains about 0.15mm in size occur within the groundmass. These sometimes occur in clusters of a few grains. Small rounded sphene grains are associated with the hornblende. Larger subidiomorphic grains up to 0.2mm in size occur between the plagioclase laths in the matrix.

Minor amounts of chlorite occur within the hornblende, sometimes associated with calcite. Epidote forms small grains scattered within the larger plagioclase laths. One large grain has been completely replaced by coarse epidote.

Most of the calcite occurs in veinlets less than 0.01mm wide which are widely spaced. Traces occur replacing the groundmass in small patches.

The quartz in the vein forms rounded interlocking grains about 0.2mm in size. These are intergrown with calcite and tremolitic amphibole which is intimately associated with the calcite. Small grains of epidote occur at the edges of the vein. A few cubic grains of hematite (after sulphide??) about 0.5mm in size occur within the vein.

are associated with the amphibole and sometimes with epidote.

Epidote forms subrounded to shapeless interlocking grains from 0.1 to 1.0mm in size which occur in massive patches around veinlets where it is intergrown with rounded quartz grains about 0.1mm in size. In places the epidote is intergrown with calcite. Fine grained epidote

GG-15 Porphyritic andesite

This is a medium grained, dark green, porphyritic volcanic rock; it is fairly fresh. Minerals are:

plagioclase	21% (phenocrysts)
	34 (groundmass)
hornblende	28
biotite	9
sphene	4
opaque	3
quartz	1
apatite	trace
epidote	minor
calcite	minor
coarse sericite	trace

Plagioclase forms euhedral phenocrysts from 0.6 to 1.0mm in size, averaging about 1.0mm. Some are strongly zoned and most are moderately sericitic. Subrounded phenocrysts of quartz about 0.5mm in size are scattered about the rock. Hornblende also forms phenocrysts occurring as subidiomorphic grains up to 2.0mm in size, averaging about 0.5mm. A few thin acicular grains also occur.

The groundmass consists dominantly of fine plagioclase laths about 0.1mm in size which are intergrown with smaller shapeless grains mixed with extremely fine grained ragged flakes of biotite. Small ragged grains of hornblende are intergrown with the plagioclase and biotite in the groundmass. Sometimes the hornblende in the groundmass is concentrated in a narrow zone around the quartz phenocrysts. There are a few thin discontinuous deuteric veinlets of biotite mixed with hornblende. A few small grains of apatite occur intergrown with the groundmass plagioclase.

Sphene forms ragged rounded grains 0.05mm in size or less which occur within the hornblende phenocrysts. They are often concentrated at the edges of the smaller hornblendes. It is also disseminated throughout the groundmass. The sphene is often associated with opaques (probably Fe-oxide) which form ragged shapeless grains about the same size as the sphene and which are disseminated about the rock. The sphene forms aggregates around the opaques. Some of the opaque-sphene clusters are up to 0.5mm in size. Where sphene is concentrated in a hornblende grain it is sometimes associated with flakes of coarse sericite.

Calcite forms ragged patches less than 0.1mm in size which occur in the groundmass. Small grains of epidote occur in a few of the feldspar phenocrysts and within the groundmass.

GG-16 Altered (epidote, calcite) porphyritic andesite

This is a medium to fine grained, inequigranular, dark green volcanic rock; it is quite crowded with phenocrysts of variable size. It is moderately altered. Minerals are:

plagioclase	38%	(phenocrysts)
	20	(groundmass)
biotite	14	
epidote	9	
hornblende	6	(altered)
calcite	4	
quartz	2	
opaque	5	
sphene	1	
apatite	1	

Plagioclase forms subhedral phenocrysts from 0.3 to 1.5mm in size averaging about 0.6mm. The smaller ones grade in size to anhedral grains about 0.1mm in size which are crowded within a finer grained matrix consisting of interlocking shapeless grains of plagioclase less than 0.005mm in size which are intergrown with fine grained biotite. Prismatic grains of apatite about 0.2mm in size occur within the groundmass. Both the groundmass and porphyritic plagioclase are sericitic.

Other phenocrysts are quartz and hornblende. The quartz forms subrounded grains up to 0.8mm in size. The 'hornblende' forms subhedral grains up to 2.0mm in size; it is highly altered and now consists of calcite full of small sphene and opaque grains; fine biotite mixed with the calcite occurs in some of them.

Sphene and opaque grains (probably Fe-oxide) form subrounded or ragged grains less than 0.1mm in size which are disseminated through the rock as well as being concentrated in the altered hornblende. The sphene often forms around the opaque.

Epidote forms subprismatic grains about 0.2mm in size occurring as single grains within the groundmass and the plagioclase phenocrysts. In places it occurs in clusters up to 1.5mm in size. Rare chlorite is associated with these.

As well as replacing the hornblende, calcite occurs in small ragged patches within the groundmass and sometimes within plagioclase phenocrysts. It has a patchy distribution within the rock.

GREENWOOD GROUP
ITEMIZED COST SHEET

TRANSPORTATION COSTS

Truck Rental	May-12,14,16-21,24,25,26,27,30,31	
14 days @ \$25/day		\$ 350.00
Gas for May.....		126.01
Truck Rental	June 1-3,6-8,9,10,13,14,16,20,27,28	
14 days @ \$25/day		350.00
Gas for June		129.71
Truck Rental	August 9,10,12,15,16	
5 days @ \$25/day		125.00
Gas for August		45.00
TOTAL TRANSPORTATION COSTS		<u>\$1125.72</u>

EQUIPMENT RENTAL

Power Saw Rental	May 12,14,16-21,24-27,30,31	
14 days @ \$10/day		\$ 140.00
Power Saw Rental	June 1-3,6-10,13,14,16,20.	
12 days @ \$10/day		120.00
TOTAL EQUIPMENT RENTAL		<u>\$ 260.00</u>

SURVEYS

July 7 - August 2, 1983

VLF-Em Survey; 32.6 km @ \$100/km	\$3246.00
Ground Magnetometer Survey; 31.5km @ \$80/km	2518.00
Data processing and drafting of EM results (Fraser Filter).....	400.00
TOTAL SURVEY COSTS	<u>\$6164.00</u>

GREENWOOD GROUP

ITEMIZED COST SHEET

WAGES

<u>Ed Carson</u>	May 12, 14, 16-21, 24-31 June 1, 2, 6-10, 13, 14, 16, 20	
24.5 days @ \$100/day.....		\$ 2450.00
<u>Rob Clarke</u>	May 16-21, 24-27, 30, 31 June 1-3, 6-10, 13, 14, 16, 20, 27, 28 August 9, 10, 12, 15, 16	
31 days @ \$100/day.....		3100.00
<u>Dan Smith</u>	May 20, 21, 24-27, 30, 31 June 1-3, 6-10, 13, 14, 16, 20	
20 days @ \$100/day.....		2000.00
<u>Fred Soloveoff</u>	May 20, 21, 24-28, 30, 21 June 1-4, 6-8	
3.5 days @ \$75/day [\$262.50]		
12 days @ \$100/day [\$1200.00].....		1462.50
<u>Barry Becker</u>	June 3, 6, 7, 9, 10, 13, 14, 20 August 9, 10, 12	
10.5 days @ \$100/day.....		1050.00
<u>Neil Bryan</u>	June 3, 6-10, 13, 14, 16, 20 August 9, 10, 12	
12.5 days @ \$100/day.....		1250.00
<u>Kevin Fletcher</u>	June 9, 10, 13, 14, 16, 20 August 9, 10, 12, 15, 16	
11 days @ \$100/day.....		1100.00
<u>TOTAL WAGES</u>		<u>\$ 12412.50</u>

GREENWOOD GROUP

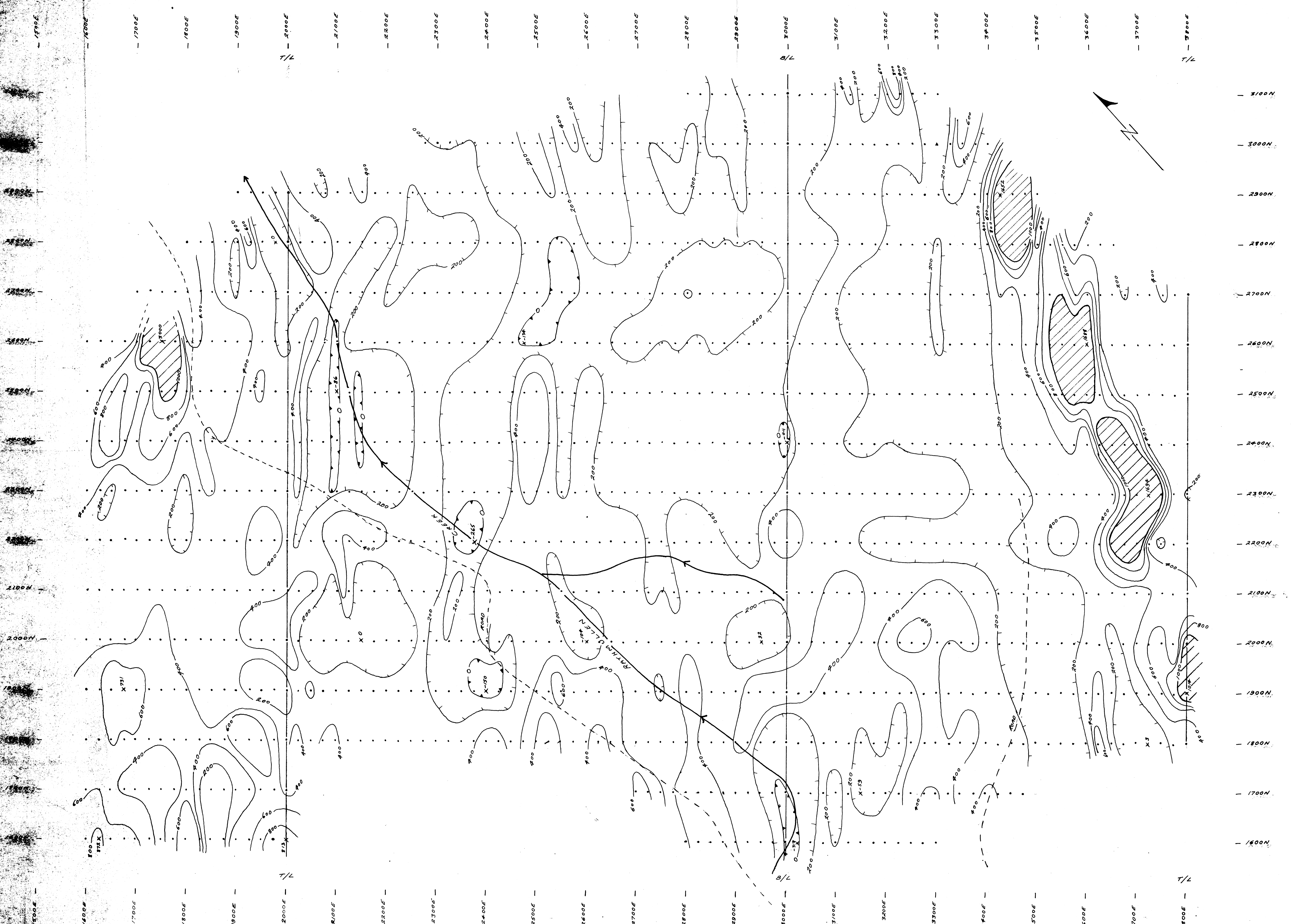
ITEMIZED COST SHEET

ANALYSES

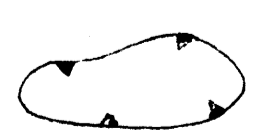
670 Humus samples-analysed for Au,As; \$7.50/sample.....	\$5085.00
681 Humus samples-preparation charges; \$0.70/sample.....	476.70
246 Soil samples-analysed for Cu,Pb,Zn,Ag,Au ppb; \$10.85/sample.....	2669.10
243 Soil samples-preparation charges;201-soil & sediment -80 mesh @ \$0.60/sample.....	145.80
2 Soil samples-preparation charges;203- -35 mesh sieve & ring @ \$2.00/sample.....	4.00
1 Soil sample-preparation charges; 205 - Rock geochem -RING @ \$2.50/sample.....	2.50
7 Soil samples-assayed for Au,Ag; \$12.50/sample.....	87.50
5 Soil samples-assayed for Au,Ag; \$12.50/sample.....	62.50
1 Soil sample-assayed for Cu; \$6.50/sample.....	6.50
TOTAL ANALYSES COSTS.....	<u>\$8539.60</u>

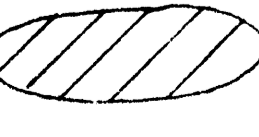
PROFESSIONAL SERVICES COSTS

<u>Geological Engineer:</u> J.S. Kermeen, M.Sc.,P.Eng.	
May - June/83; 6.6 days @ \$400/day.....	\$2640.00
July - Sept./83; 4 days @ \$400/day.....	1600.00
<u>Transportation Costs:</u> J.S. Kermeen, MSc.,P.Eng.	
June 25-30; 2/3 of 880km @ \$0.15/km.....	88.00
July 24, 1/2 of 400km @ \$0.15/km.....	30.00
<u>Accommodation Costs:</u> J.S. Kermeen M.Sc.,P.Eng.	
May 31 - June 3/83.....	155.75
May 30.....	22.26
June 27-28.....	63.60
July 27; 1/3 of \$126.20.....	42.06
<u>Meals:</u> J.S.Kermeen M.Sc.,P.Eng.	
May 31 - June 3/83.....	44.70
June 30.....	5.80
July 27.....	5.85
<u>Draftsman:</u> Martin Bliss;July 1-Sept 1/83; 16.25 hours @ \$12.00/hr.	195.00
Vancouver Petrographics Ltd.....	493.80
TOTAL PROFESSIONAL SERVICES COSTS.....	<u>\$5386.82</u>



LEGEND

 - ISOMAGNETIC LOW (I.E. > 57,000 G's)

 - ISOMAGNETIC HIGH (I.E. < 57,000 G's)

X1494 - PEAK VALUES (HIGH & LOW)

SURVEY SPECIFICATIONS

INSTRUMENT USED :- GEOMETRICS UNIMAG WITH 6' STAFF

STATION INTERVAL :- 25 METRES

DATUM :- 57,000 GAMMAS (V) TOTAL FIELD

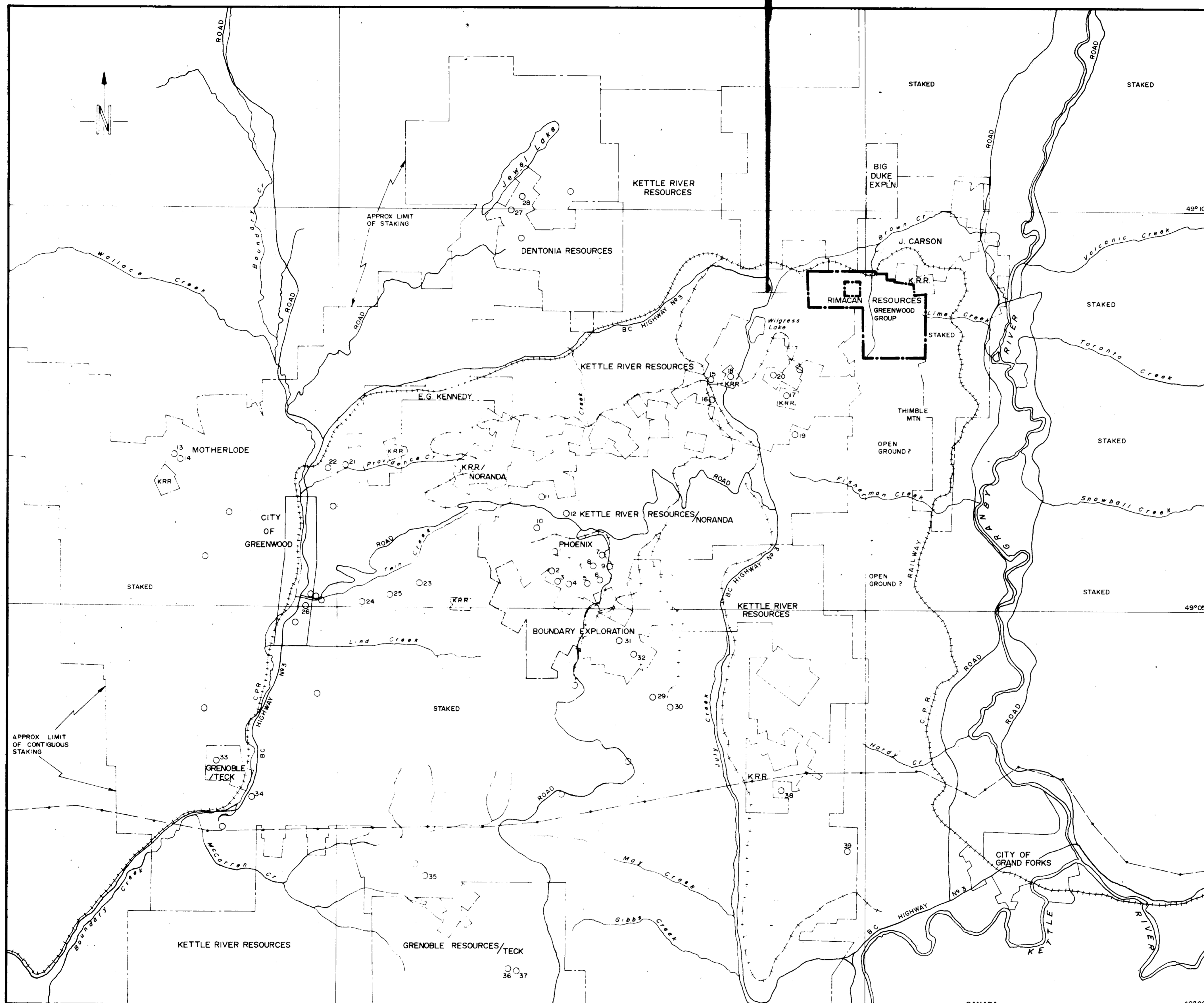
CONTOUR INTERVAL :- 200 GAMMAS (0 - 1000 G's) ABOVE DATUM

GEOLOGICAL BRANCH
ASSESSMENT REPORT

11,509

J.S. KERMEEN, CONSULTING GEOLOGICAL ENGINEER	
CLIENT: RIMACAN RESOURCES LTD	
PROJECT/PROPERTY: GREENWOOD GROUP	
TITLE: GROUND MAGNETOMETER SURVEY	
DATE: AUG 21/83	BY: R.A.N.
SCALE: 1:2500	1cm = 25m

RIMACAN RESOURCES LTD GREENWOOD PROPERTY	
GROUND MAGNETOMETER SURVEY CONTOUR MAP	
GREENWOOD M.D.	NTS: 822/DE
NIELSEN GEOPHYSICS LTD VERNON, B.C.	
DATE: AUG 21/83	
BY: R.A.N.	
SCALE: 1:2500	
1cm = 25m	



FORMER MINERAL PRODUCERS ○

- | | | |
|----|---------------|----------------------------|
| 1 | OLD IRONSIDES | } PHOENIX MINE
Cu Au Ag |
| 2 | NOB HILL | |
| 3 | GREY EAGLE | |
| 4 | WAR EAGLE | |
| 5 | MONARCH | |
| 6 | RAWHIDE | |
| 7 | SNOWSHOE | |
| 8 | GOLD DROP | |
| 9 | CURLEW | |
| 10 | IDAHO | |
| 11 | BROOKLYN | |
| 12 | STEMWINDER | |
| 13 | MOTHERLODE | } Cu Au Ag |
| 14 | SUNSET | |
| 15 | EMMA | } Cu Au Ag |
| 16 | ORO DENORO | |
| 17 | BC | |
| 18 | MOUNTAIN ROSE | |
| 19 | R. BELL | |
| 20 | BLUE BELL | |
| 21 | PROVIDENCE | } Au Ag |
| 22 | ELKHORN | |
| 23 | SKYLARK | |
| 24 | E.P.U | |
| 25 | BAY | |
| 26 | DYNAMO | |
| 27 | JEWEL | } Au Ag |
| 28 | DENTONIA | |
| 29 | ATHELSTAN | } Au Ag Cu |
| 30 | JACKPOT | |
| 31 | GOLDEN CROWN | |
| 32 | WINNEPEG | |
| 33 | SKOMAC | } Ag Pb Zn |
| 34 | RUBY | |
| 35 | N° 7 | |
| 36 | LEXINGTON | } Au |
| 37 | CITY OF PARIS | |
| 38 | HESPERUS | } Au |
| 39 | YANKEE BOY | |

LEGEND

- CLAIM BOUNDARY
- RAILWAY
- RAILWAY, ABANDONED
- POWER TRANSMISSION LINE

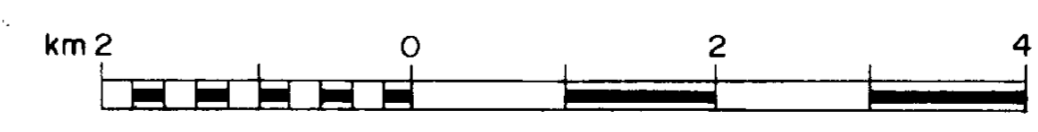
J.S. KERMEEN M.Sc., P.Eng. CONSULTING GEOLOGICAL ENGINEER

CLIENT: RIMACAN RESOURCES Ltd.

PROJECT/PROPERTY: GREENWOOD GROUP

TITLE:
**CURRENT MINING PROPERTY BOUNDARIES
AND
FORMER PRODUCERS**

PREP BY: JSK	NTS No: 82E/1,2	DATE DWN: 83/1/18
DWN BY: MBLISS	AREA: GREENWOOD / PHOENIX B.C.	DATE REVISED:
SCALE: 1:50,000		DRAWING No: C83-20-2



**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

11,509

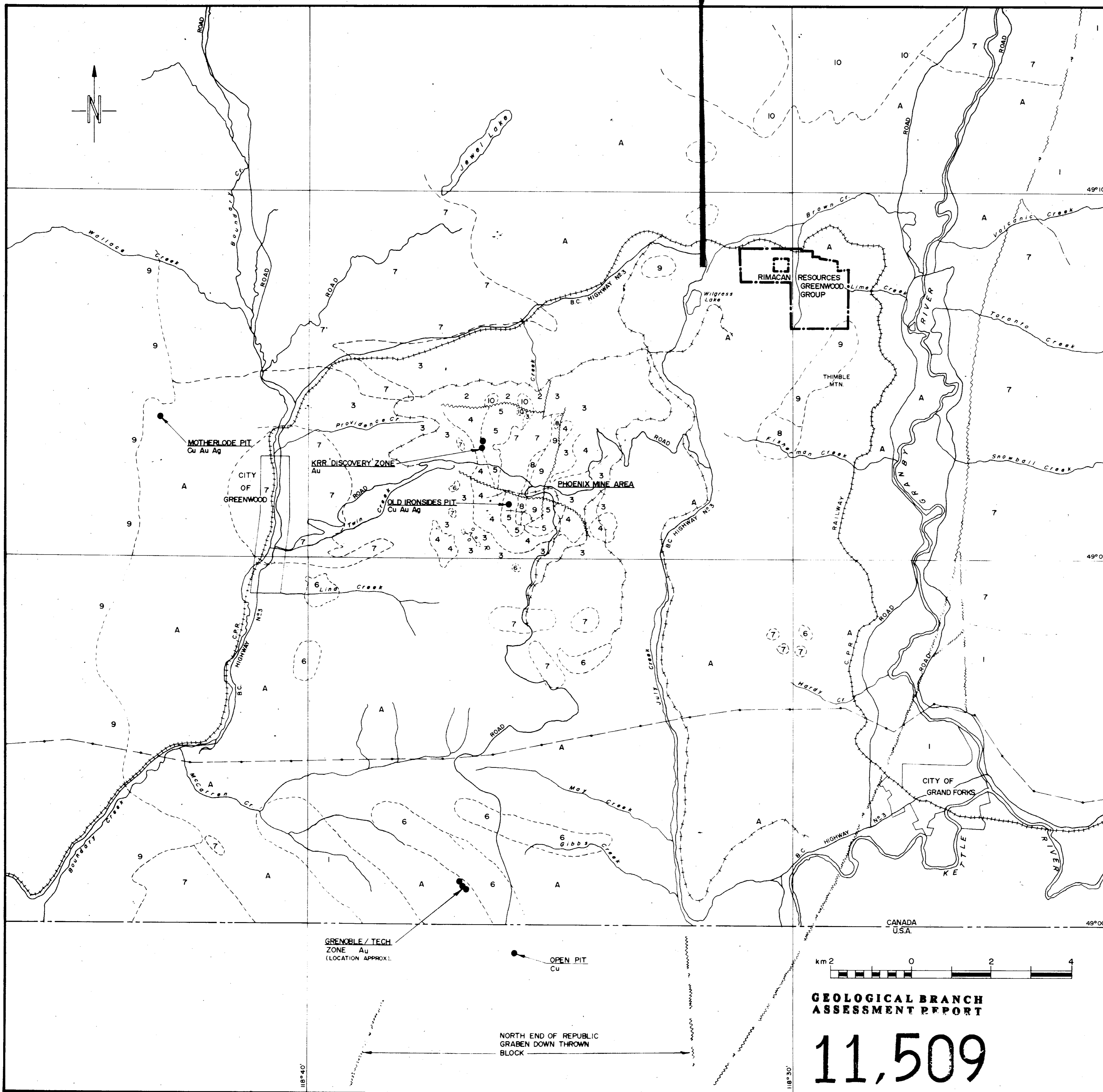
118°40'

118°30'

CANADA
U.S.A.

49°00'

49°10'



LEGEND

GENOZOIC	10	Coryell intrusives: syenite, monzonite, shankinite and granite.
	9	Andesite, trachyte and minor basalt.
	8	Kettle River Formation: arkose, dacite tuff, minor conglomerate and shale.
MESOZOIC	7	Nelson intrusives: granodiorite, quartz diorite, etc.
	6	Ultramafic intrusives: chiefly altered to serpentine.
	5	Brooklyn Formation: limestone, skarn, minor shale, green argillite and chert.
	4	Sharpstone conglomerate.
PALEOZOIC	3	Knob Hill Formation: massive chert, greenstone (altered andesitic flows) and minor amphibolite.
	2	Bedded chert, chloritic schist and argillite.
	1	Grand Forks Group: paragneiss, schist and some crystalline limestone.

A SEE NOTE BELOW.

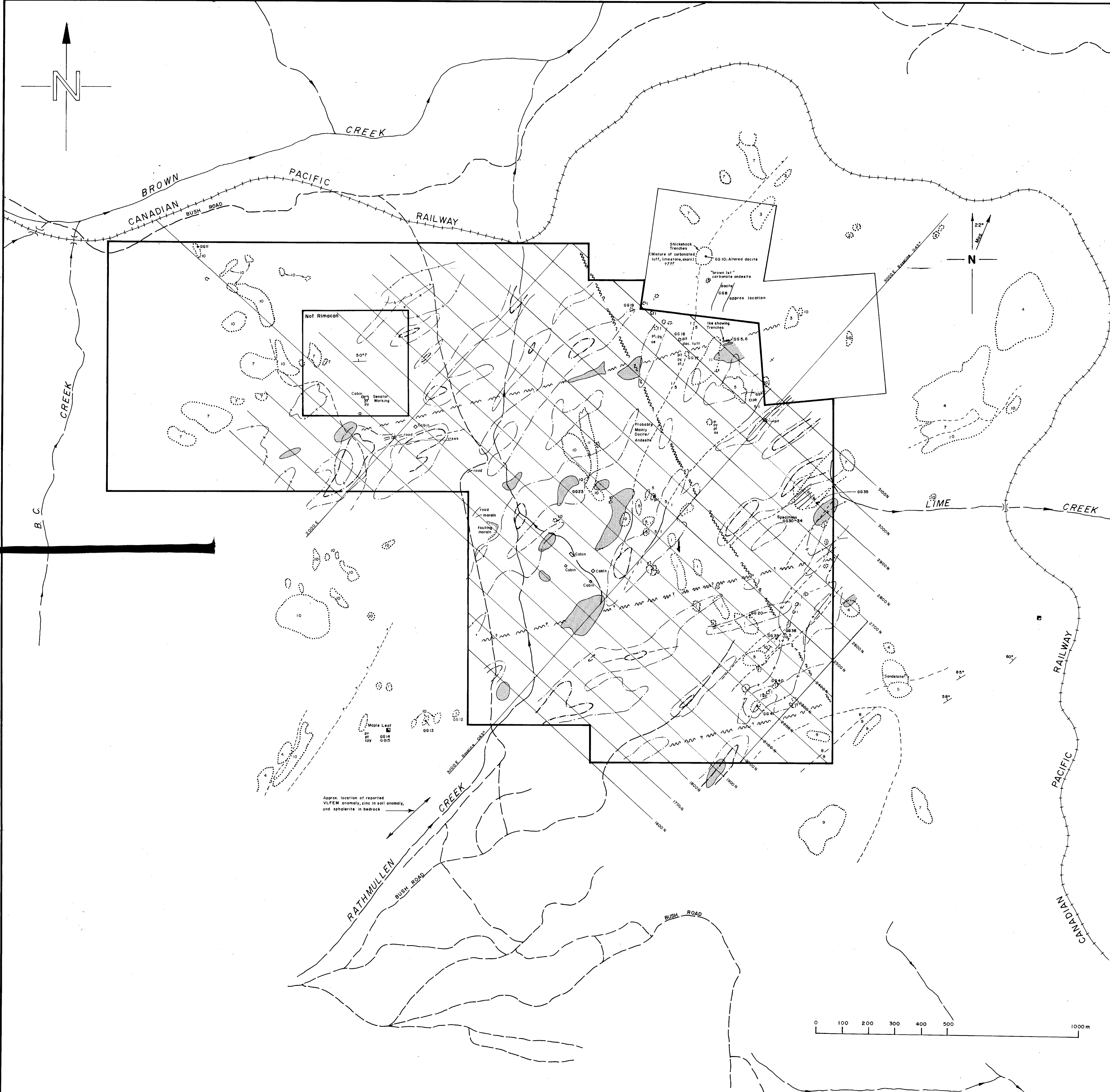
NOTE: Except in the vicinity of the Phoenix Mine area, all stratified rocks of Paleozoic and Mesozoic age are grouped under one unit on available geological maps (GSC Map 6-1957 KETTLE RIVER by H.W. LITTLE) they are designated 'A' to correspond with Little's 'Anarchist Group'.

FAULT

J.S. KERMEEN M.Sc., P.Eng. CONSULTING GEOLOGICAL ENGINEER		
CLIENT: RIMACAN RESOURCES Ltd.		
PROJECT/PROPERTY: GREENWOOD GROUP		
TITLE: GENERAL GEOLOGY		
PREP BY: JSK	NTS No.: 82E/1,2	DATE CWN: 83/1/18
DWN BY: MBLISS	AREA: GREENWOOD/PHOENIX B.C.	DATE REVISED:
SCALE: 1"=50,000	DRAWING NO: C83-20-3	

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

11,509



GEOLOGICAL LEGEND

11	Grey dikes	—	Coryell
10	Syenite, porphyritic	—	Marron Group (Phoenix)
9	Andesite/trachyte	—	Kettle River Fmt
8	Arkose	—	
7	Granodiorite, quartz monzonite, quartz diorite - Nelson	—	
6	*Quartzite*, sugar-textured quartzite	—	Brooklyn Formation
5	Limestone	—	
4	Sharpstone Conglomerate	—	
3	Chert	—	
2	Argillite	—	Knobhill Formation
1	Andesite/dacite flows, some pyroclastics		

/ Strike and dip, bedding and flows
 --- Fault
 GG16 Rock specimen location
 py Pyrite
 pt Pyrrhotite
 --- Geological contacts known
 - - - - - Geological contacts inferred
 ○ Outcrop outline
 - - - - - Fraser filtered VLFEM anomaly outline
 - - - - - Magnetic high outline
 ○ Au in humus anomaly
 ■ Existing shaft

GEOLOGICAL BRANCH ASSESSMENT REPORT

11,509

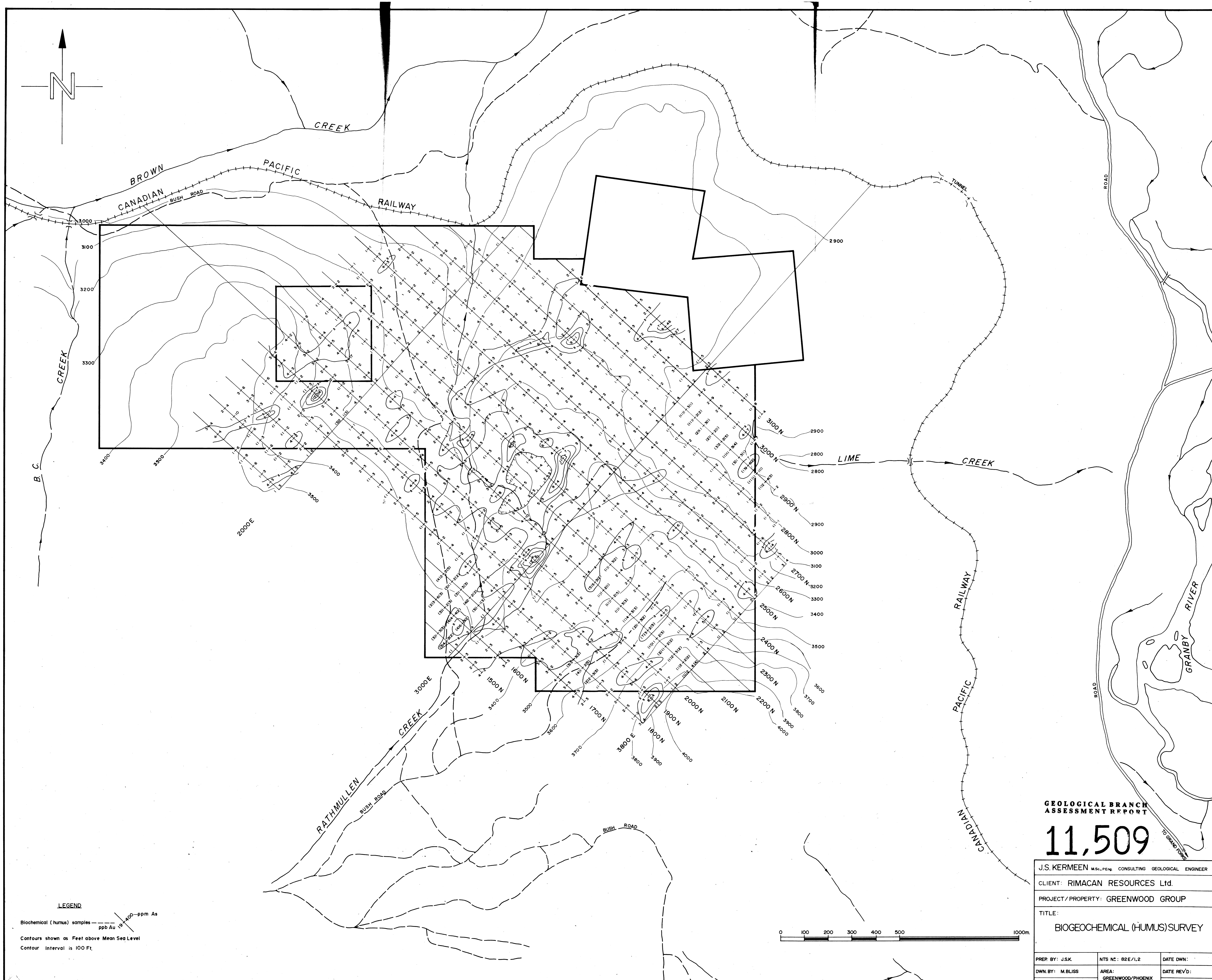
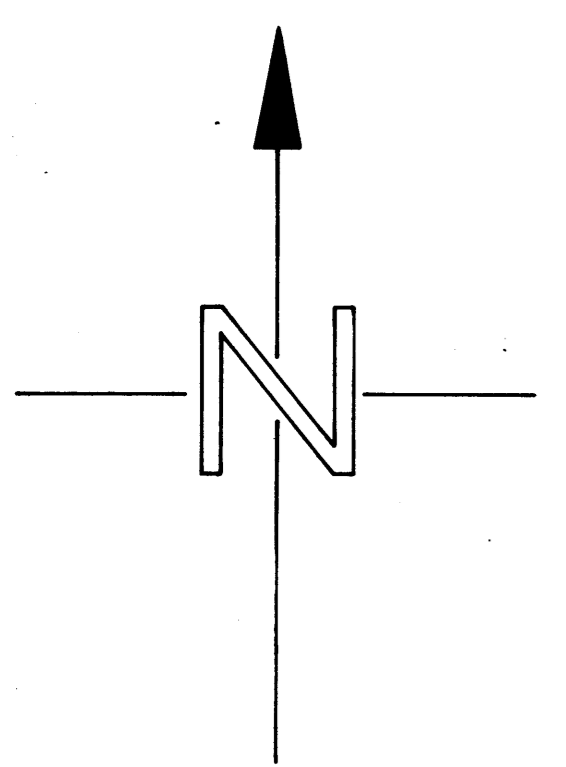
J.S. KERMEEN M.Sc., P.Eng. CONSULTING GEOLOGICAL ENGINEER

CLIENT: RIMACAN RESOURCES LTD

PROJECT/PROPERTY: GREENWOOD GROUP

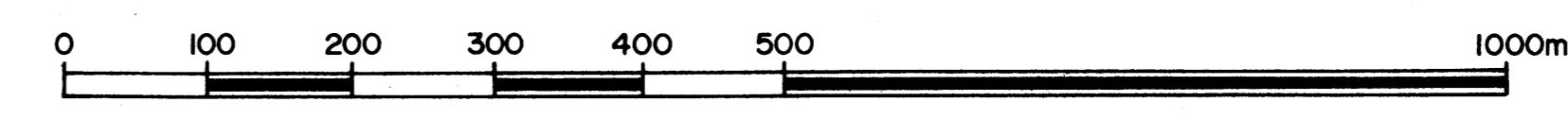
TITLE: GEOLOGICAL MAP SHOWING VLFEM ANOMALIES and MAGNETIC HIGHS

PREP. BY: J.S.K.	NTS No.: 82	DATE DWN: 83/10/14
OWN. BY: P.J.M.	AREA:	DATE REVISED:
SCALE: 1:5000		DRAWING NO: C83-20-4



LEGEND

Biochemical (humus) samples ———— ppm As
ppb Au 19 1400
Contours shown as Feet above Mean Sea Level
Contour Interval is 100 Ft.



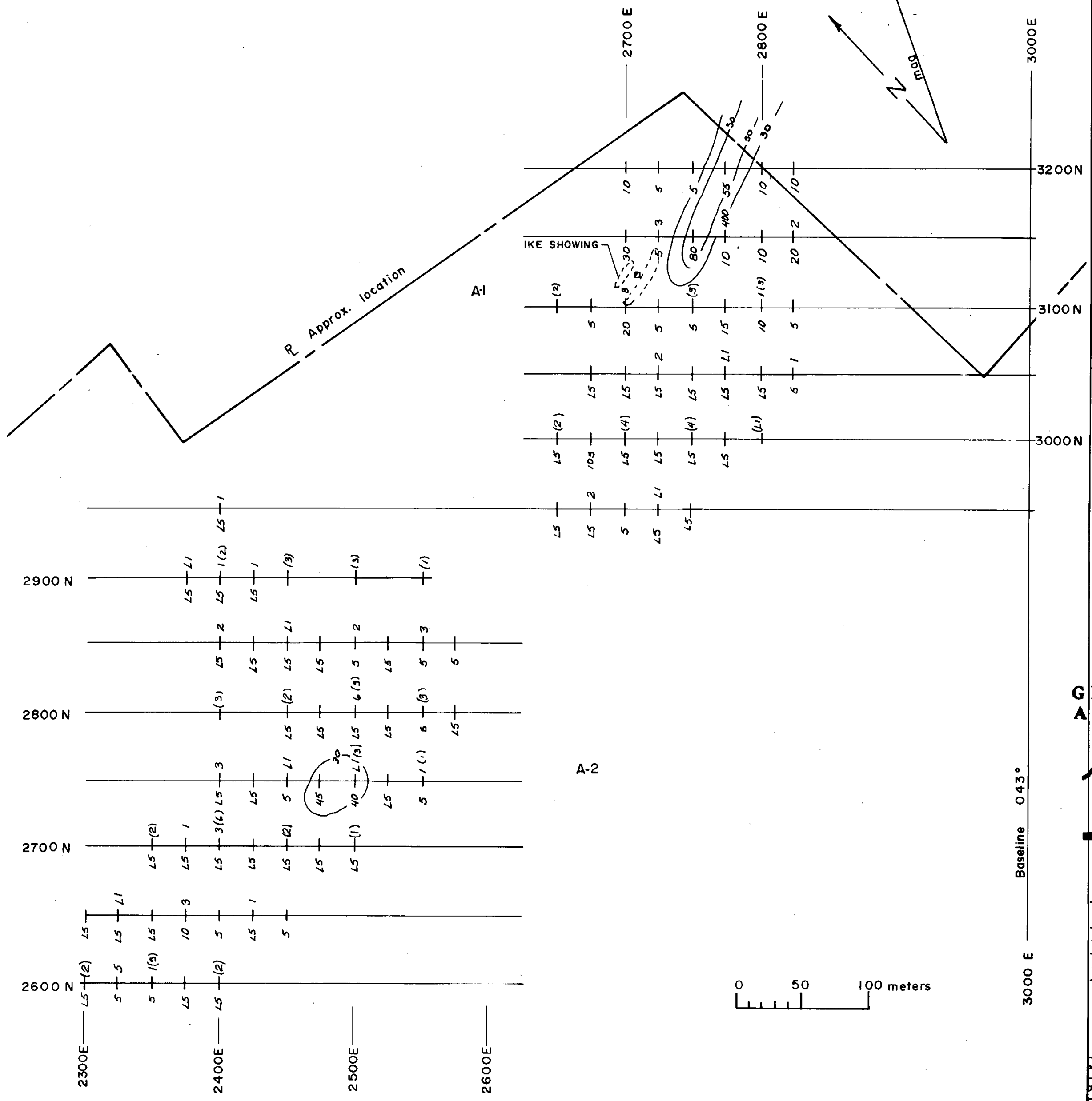
**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

11,509

J.S. KERMEEN M.Sc., P.Eng. CONSULTING GEOLOGICAL ENGINEER		
CLIENT: RIMACAN RESOURCES Ltd.		
PROJECT / PROPERTY: GREENWOOD GROUP		
TITLE: BIOGEOCHEMICAL (HUMUS) SURVEY		
PREP. BY: J.S.K.	NTS NO: 82E/1,2	DATE DWN:
DWN BY: M.BLISS	AREA: GREENWOOD/PHOENIX B.C.	DATE REV'D:
SCALE: 1:5,000		DWG. NO: C83-20-5

LEGEND

- Au in humus p.p.b. Original survey
- Au in humus p.p.b. Follow up survey
- Au in B-soil p.p.b.
- Contours Au in B soil
- Denotes Less Than L



GEOLOGICAL BRANCH ASSESSMENT REPORT

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J.S. KERMEEN M.Sc., P.Eng. CONSULTING GEOLOGICAL ENGINEER

CLIENT: RIMACAN RESOURCES LTD

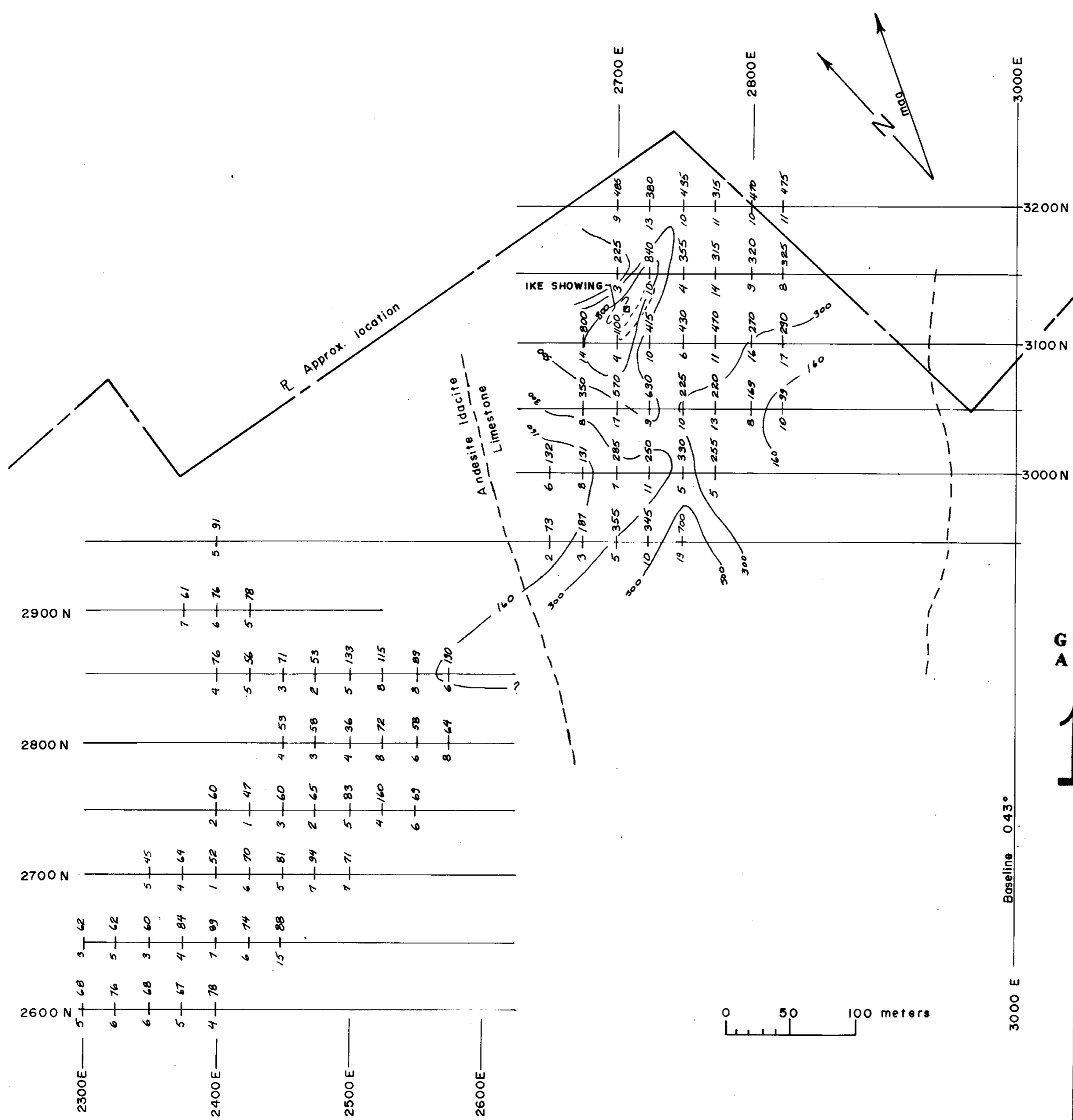
PROJECT/PROPERTY: GREENWOOD GROUP

TITLE:
Au in B-SOIL and HUMUS
AREA A

PREP. BY: J S K NTS No.: 82 DATE DWN: 83/10/10

DWN BY: P J M AREA: DATE REVISED:

SCALE: 1 2500 DRAWING NO: C83-20-6



LEGEND

Sample Pb in B-soil p.p.m.

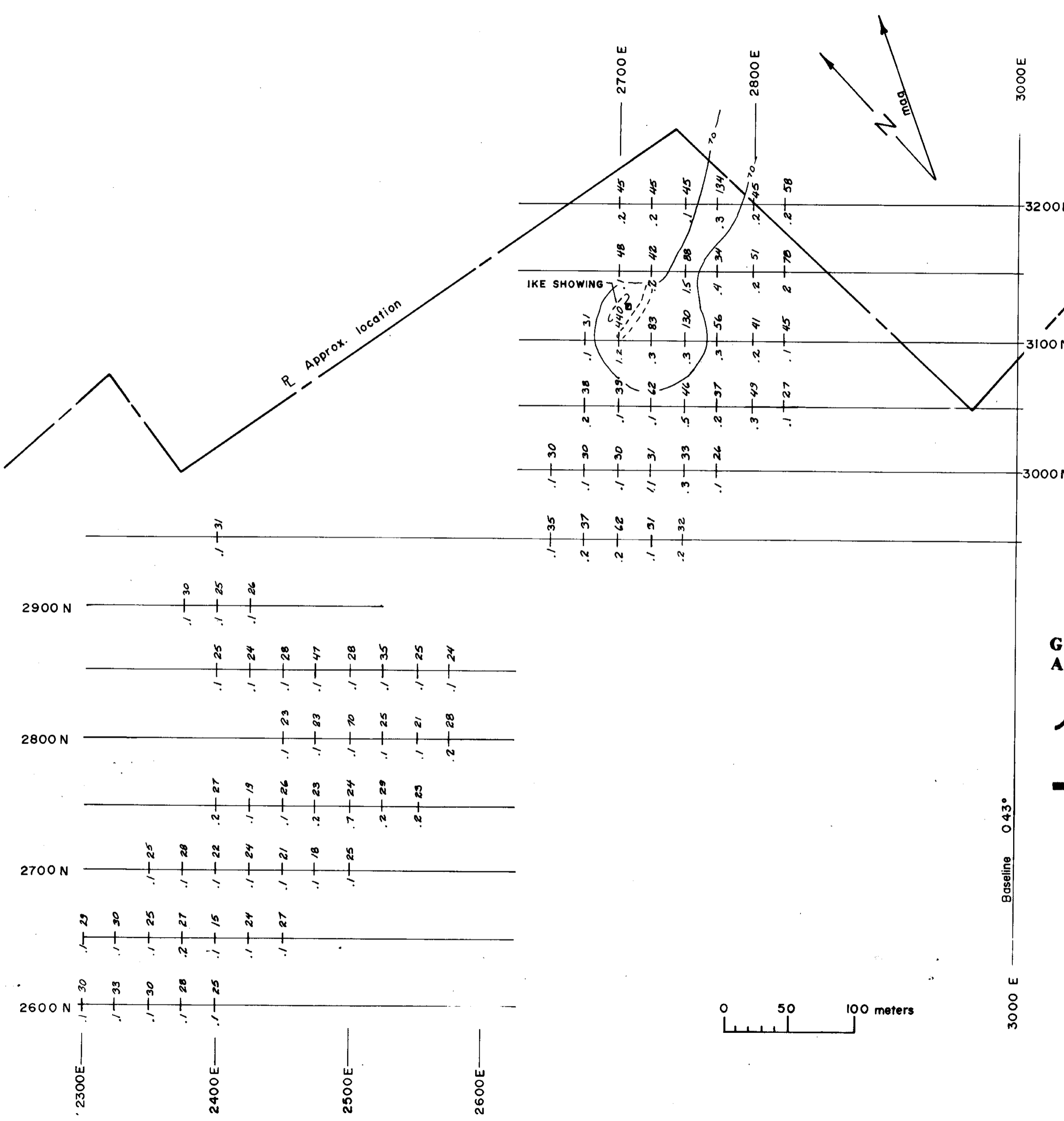
Zn in B-soil p.p.m.

Contours Zn in B-soil

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

11,509

J.S. KERMEEN M.Sc., P.Eng. CONSULTING GEOLOGICAL ENGINEER		
CLIENT: RIMACAN RESOURCES LTD		
PROJECT/PROPERTY: GREENWOOD GROUP		
TITLE: Pb and Zn in B-SOIL: AREA A		
PREP. BY: J.S.K	NTS No.: 82	DATE DWN: 83/10/10
OWN. BY: P.J.M	AREA:	DATE REVISED:
SCALE: 1:2500		DRAWING NO: CB3-20-7



LEGEND

Cu in B-soil p.p.m.

Sample - - - - -

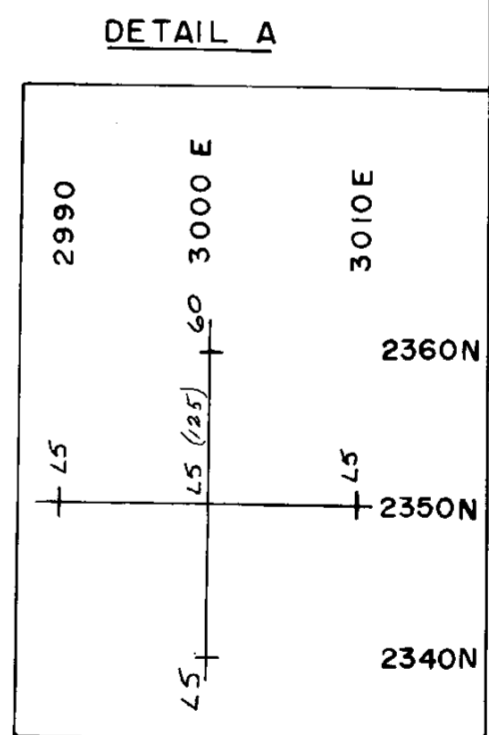
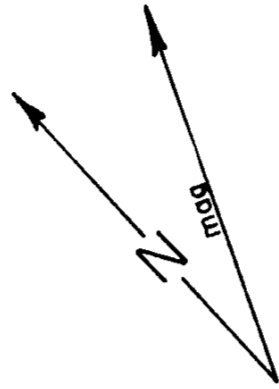
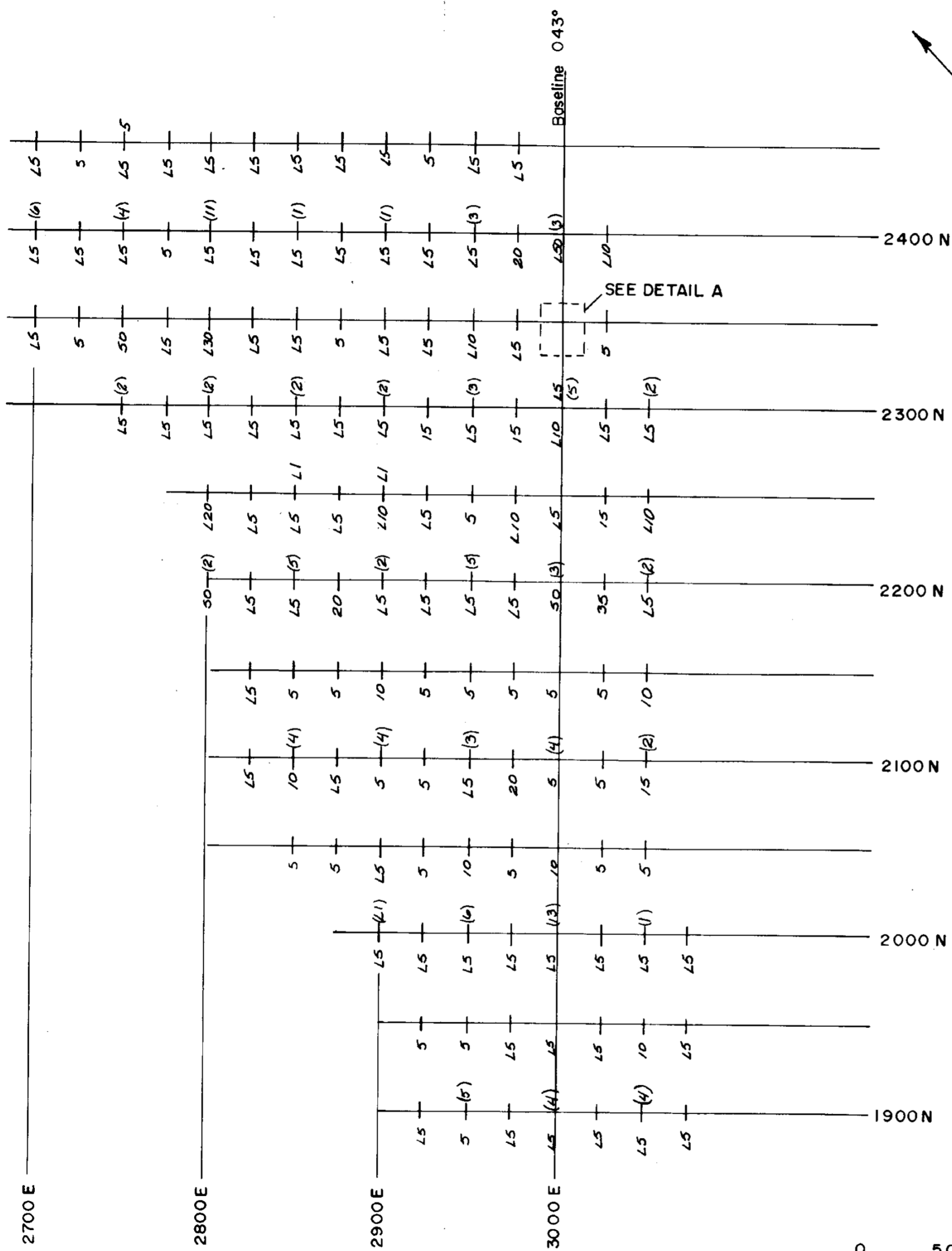
Ag in B-soil p.p.m.

Contours Cu in B soil

GEOLOGICAL BRANCH
ASSESSMENT REPORT

11,509

J.S. KERMEEN M.Sc., P.Eng. CONSULTING GEOLOGICAL ENGINEER		
CLIENT: RIMACAN RESOURCES LTD		
PROJECT/PROPERTY: GREENWOOD GROUP		
TITLE: Ag and Cu in B-SOIL: AREA A		
PREP. BY: J S K	NTS No.: 82	DATE OWN: 83/10/10
OWN. BY: P J M	AREA:	DATE REVISED:
SCALE: 1 2500		DRAWING No: C83-20-8



LEGEND

- Au in humus p.p.b. Original survey
- Au in humus Follow up survey
- Au in B-soil p.p.b.

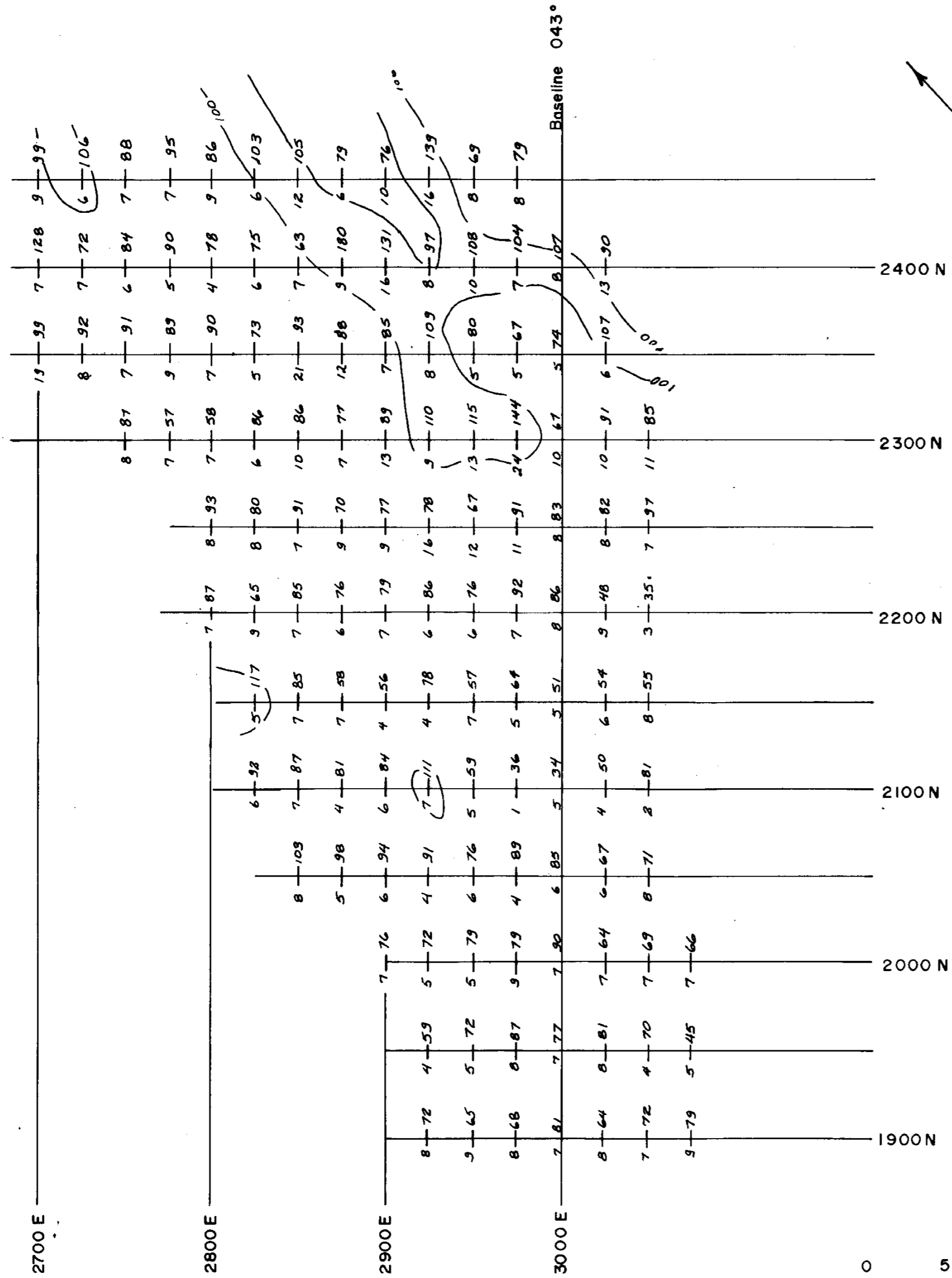
Sample

Denotes Less Than L

GEOLOGICAL BRANCH ASSESSMENT REPORT

11,509

J.S. KERMEEN M.Sc., P.Eng. CONSULTING GEOLOGICAL ENGINEER		
CLIENT: RIMACAN RESOURCES LTD.		
PROJECT/PROPERTY: GREENWOOD GROUP		
TITLE: Au in B-SOIL and HUMUS AREA B		
PREP BY: J.S.K.	NTS No.: 82	DATE DWN: 8/3/10/10
DWN BY: R.J.M.	AREA:	DATE REVISED:
SCALE: 1:2500		DRAWING NO: C83-20-9



LEGEND

Sample Zn in B-soil p.p.m.

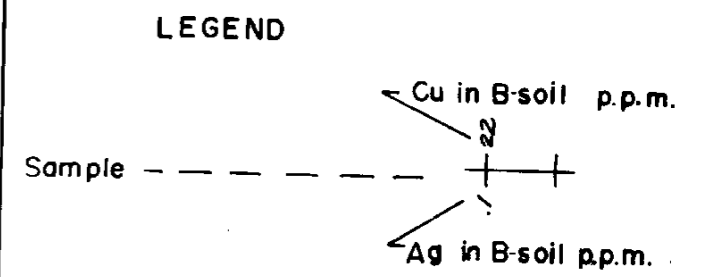
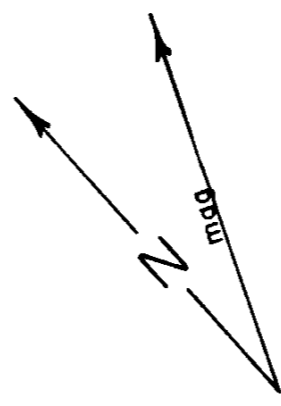
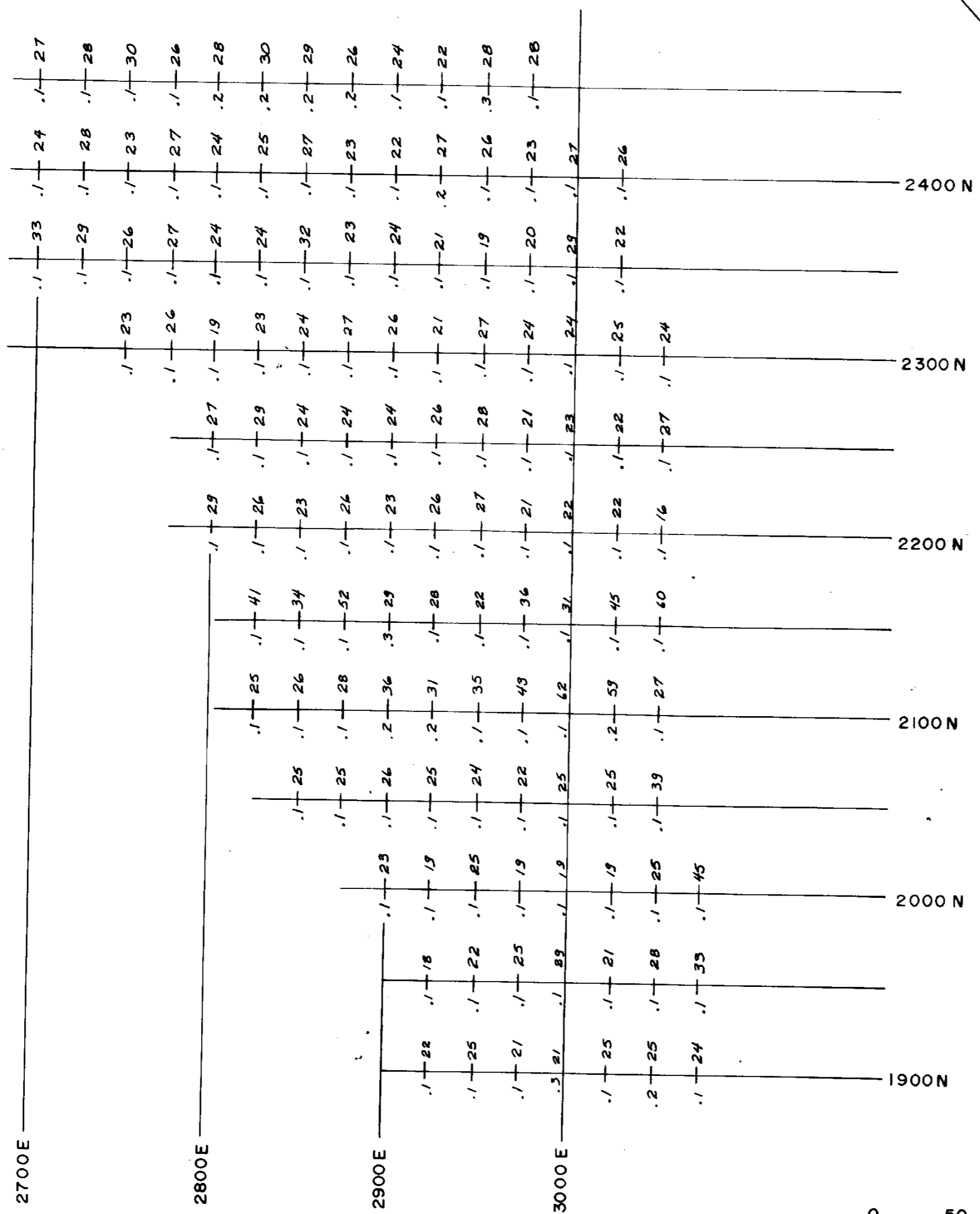
Pb in B-soil p.p.m.

Contours Zn in B soil

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

11,509

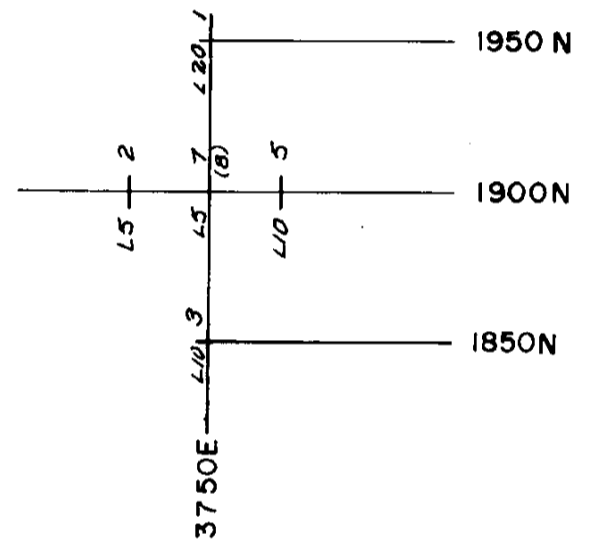
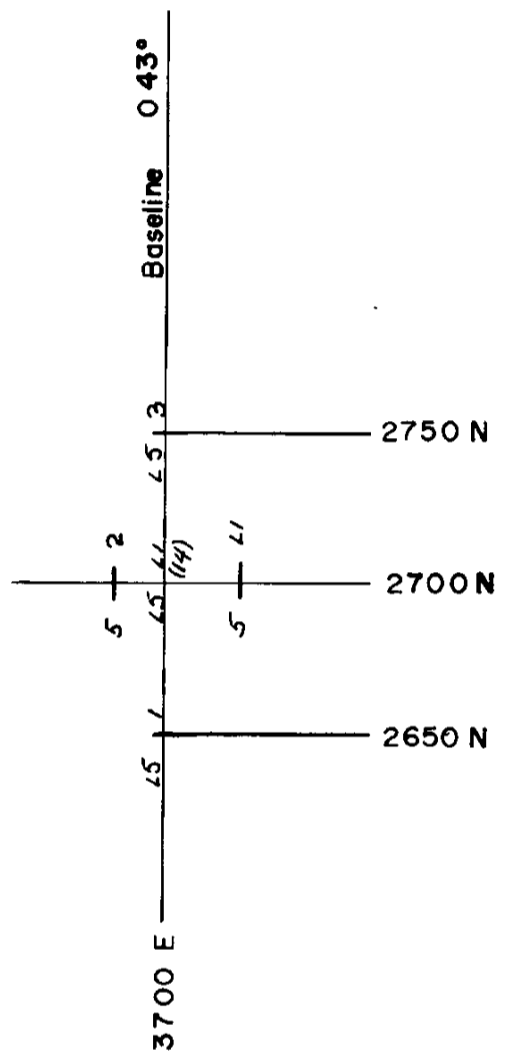
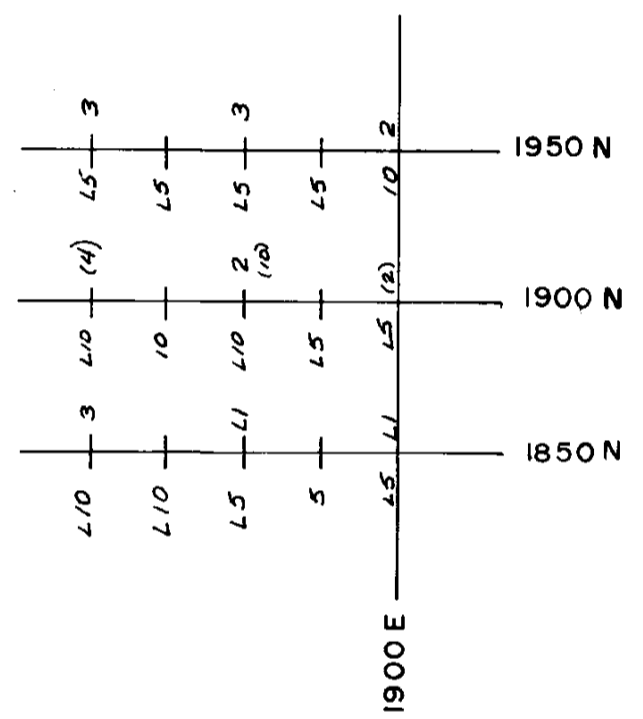
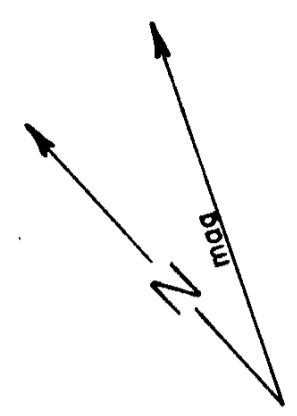
J.S. KERMEEN <small>M.Sc., P.Eng.</small> CONSULTING GEOLOGICAL ENGINEER		
CLIENT: RIMACAN RESOURCES LTD.		
PROJECT/PROPERTY: GREENWOOD GROUP		
TITLE: Pb and Zn in B-SOIL: AREA B		
PREP BY: J.S.K.	NTS No: 82	DATE DWN: 83/10/10
DWN BY: P.J.M.	AREA:	DATE REVISED:
SCALE: 1:2500		DRAWING No: C83-20-10



**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

11,509

J.S. KERMEEN M.Sc., P.Eng. CONSULTING GEOLOGICAL ENGINEER		
CLIENT: RIMACAN RESOURCES LTD.		
PROJECT/PROPERTY: GREENWOOD GROUP		
TITLE: Ag and Cu in B SOIL: AREA B		
PREP. BY: J.S.K.	NTS No.: 82	DATE DWN: 83/10/10
DWN BY: P.J.M.	AREA:	DATE REVISED:
SCALE: 1:2500		DRAWING No: C83-20-II



**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

11,509

AREA C

AREA D

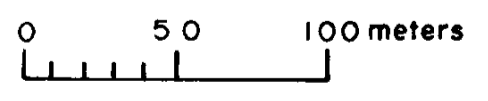
AREA E

LEGEND

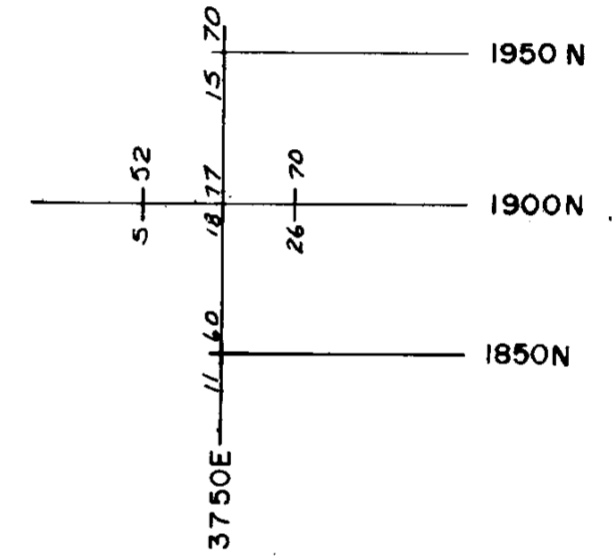
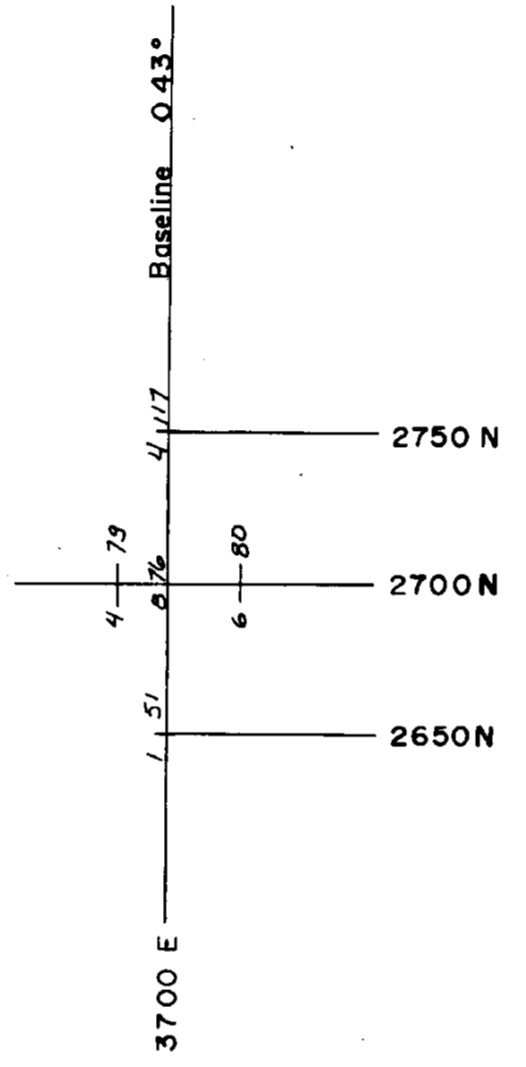
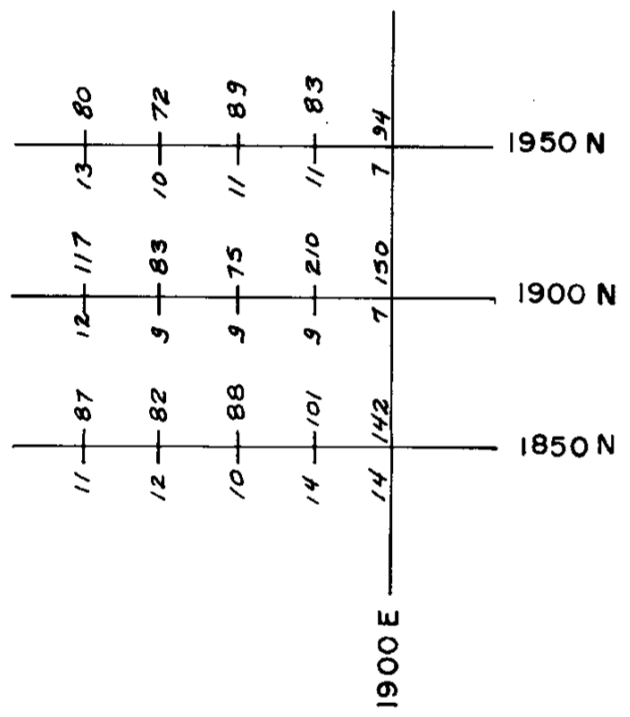
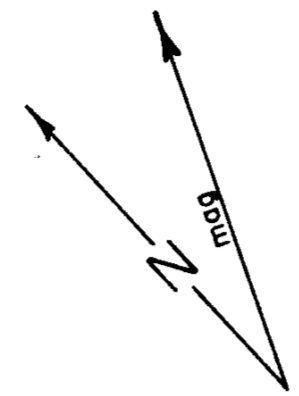
Sample Au in humus p.p.b. Original survey

Au in B-soil p.p.b.

Denotes less than L



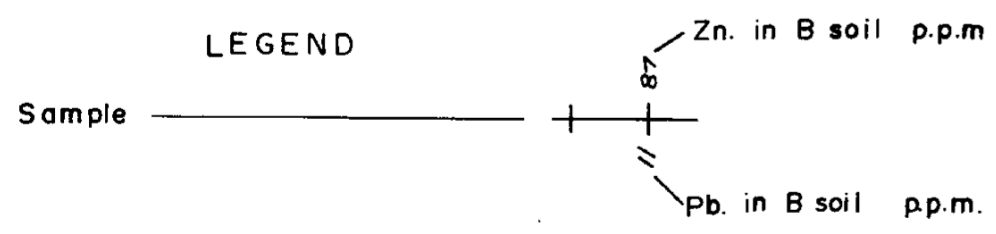
J.S. KERMEEN M.Sc., P. Eng. CONSULTING GEOLOGICAL ENGINEER		
CLIENT: RIMACAN RESOURCES LTD.		
PROJECT/PROPERTY: GREENWOOD GROUP		
TITLE: Au in B-SOIL and HUMUS: AREAS C,D,E		
PREP BY: J.S.K.	NTS No.: 82	DATE OWN: 83/10/10
OWN BY: P.J.M.	AREA:	DATE REVISED:
SCALE: 1:2500		DRAWING NO: C83-20-12



**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

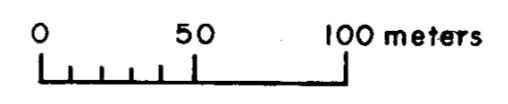
11,509

AREA C
LEGEND



AREA D

AREA E



J.S. KERMEEN <small>M.Sc., P.Eng.</small> CONSULTING GEOLOGICAL ENGINEER		
CLIENT: RIMACAN RESOURCES LTD.		
PROJECT/PROPERTY: GREENWOOD GROUP		
TITLE: Pb and Zn in B-SOIL: AREAS C,D,E		
PREP BY: JSK	NTS No: 82	DATE DWN: 83/10/10
DWN BY: PJM	AREA:	DATE REVISED:
SCALE 1:2500		DRAWING No: C83-20-13

