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GEOLOGICAL & GEOPHYSICAL ASSESSMENT REPORT

on the

PACIFIC CLAIM GROUP

Victoria Mining Division

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

NTS 92F/2E

49° 06' 20"

124° 32' 20"

23,482

July 19, 1994
Vancouver, B.C.

Laurence Sookochoff, P.Eng.
Consulting Geologist

Calcap Investments Ltd.

Geological & Geophysical Assessment Report
on the
Pacific Claim Group

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Calcap Investments Ltd.

Geological & Geophysical Assessment Report

on the

Pacific Claim Group

Summary

The Pacific Claim Group (Property) is located in an area that has a history of successful mineral exploration. The Property is located 20 kilometres southeast of Port Alberni and at the headwaters of Nitinat River, a watercourse that was placer mined in the 1860's. The development and production from lode deposits in the area occurred in the 1890's, the 1930's and 1940's and more intensively in recent years resulting from the discovery of base-precious metal massive sulphides in the Sicker Group of rocks.

Previous exploration of the Property has resulted in establishing: that a volcanic - sedimentary contact of the Sicker Group occurs on the Property; three prime exploration target areas; a 3.35 metre zone which returned 0.215 ounces per ton gold from the drill testing of one of the exploration target areas.

The 1993 VLF-EM survey results could be interpreted to substantiate the 1990 prime north-northwesterly trending VLF-EM survey results. However, based on the 1993 lineation array analysis, the north-northwesterly trending structures, which were considered as the predominant trend, were limited to a secondary capacity. It appears that the primary and most significant structural trend, as related to mineralization, may be the north-northeasterly structures.

Introduction

A VLF-EM survey and a lineament array analysis were completed on the Pacific Claim Group in September and October 1993. The exploration program was carried out to obtain additional structural related information to contribute to the analysis of the structural control of potentially economic mineralization.

The information for this report was obtained from publications as set out in the Selected Reference section of this report and from work completed on the Property by the writer since September, 1993.

Property

The Property consists of a contiguous block of four located mineral claims comprising 39 units. Particulars of the claims, as obtained from the office of the Vancouver Gold Commissioner, are as follows:

<u>Claim</u>	<u>Units</u>	<u>Tenure No.</u>	<u>Expiry Date</u>
Pacific	20	316181	February 20, 1995
Pacific I	10	316182	February 20, 1995
Pacific II	6	316183	February 19, 1995
Pacific III	3	316184	February 19, 1995

Any legal aspects to this claim group is beyond the scope of this report.

Location and Access

The Pacific Claim Group is located on Vancouver Island, British Columbia, 20 kilometres southeast of Port Alberni at the headwaters of Nitinat River.

Access is provided either from Duncan to the south or from Port Alberni to the northwest. The Duncan access route is from Duncan westerly to Lake Cowichan and to Nitinat along the north shores of Cowichan Lake and northward along Nitinat River to the southern portion of the Pacific Claim Group. The distance from Duncan to the property is approximately 80 kilometres. Access from Port Alberni is via the Cameron River road for 20 kilometres to the northern portion of the Pacific claim group.

Access within the Pacific Claim Group is provided by many logging roads stemming from the main Nitinat and Cameron River access routes.

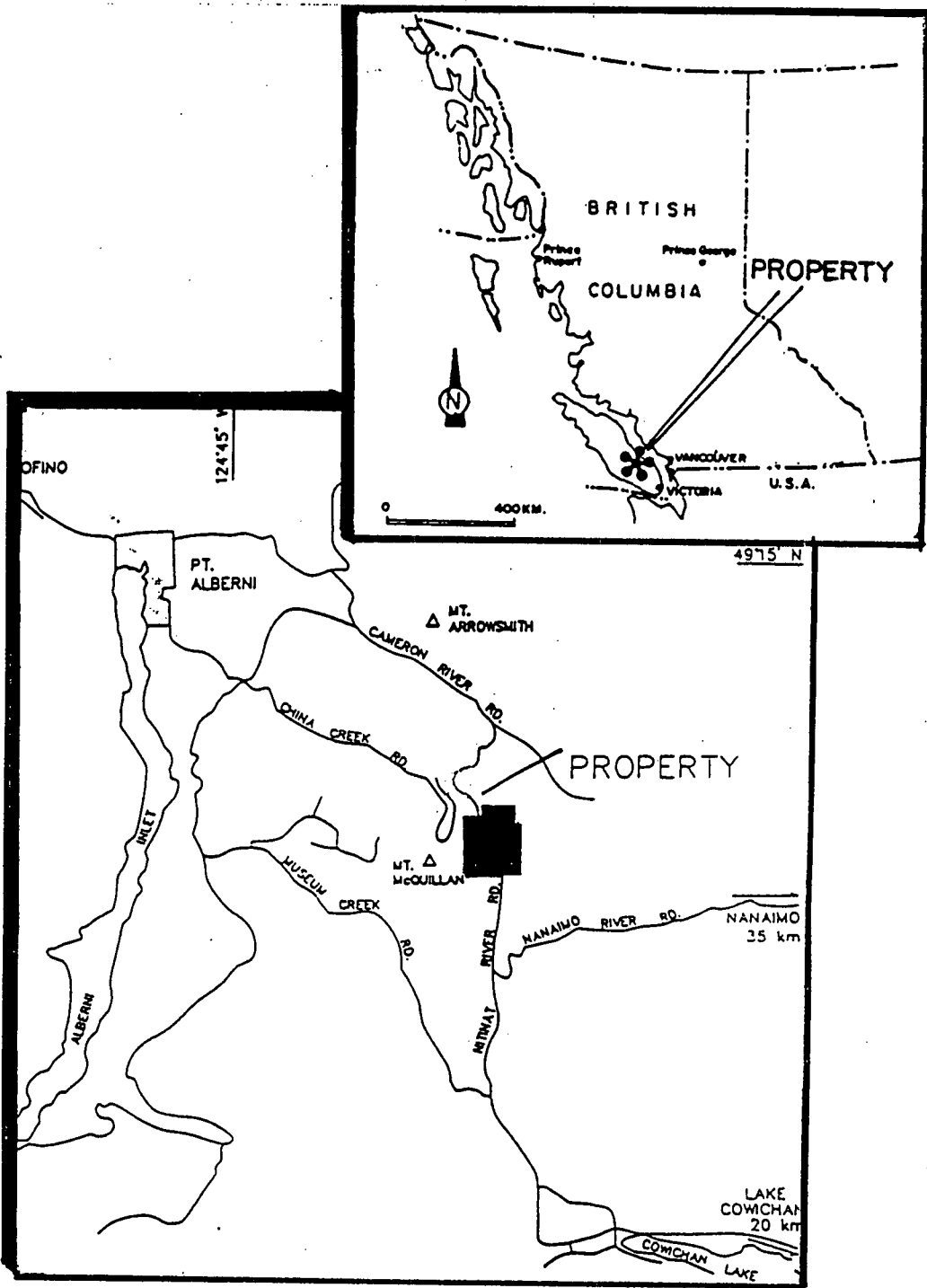


Figure 1. Location Map (After Westerman, 1988)

Physiography

From the Nitinat River valley, which is central to the Pacific group and at an elevation of 350 to 500 metres, the topography is moderate to rugged to the east and north with elevations of up to 1,050 metres on a ridge in the north. To the west of the Nitinat River valley and along the western boundary of the claims, a north northwesterly ridge occurs with elevations of up to 1,250 metres.

Climate

The climate is typical of the west coast with a high precipitation which falls mostly as rain and mostly in the winter months. In the summer months the periods of rain are shorter and less frequent than in the winter. The total precipitation varies from year to year but could be 500 centimetres per year.

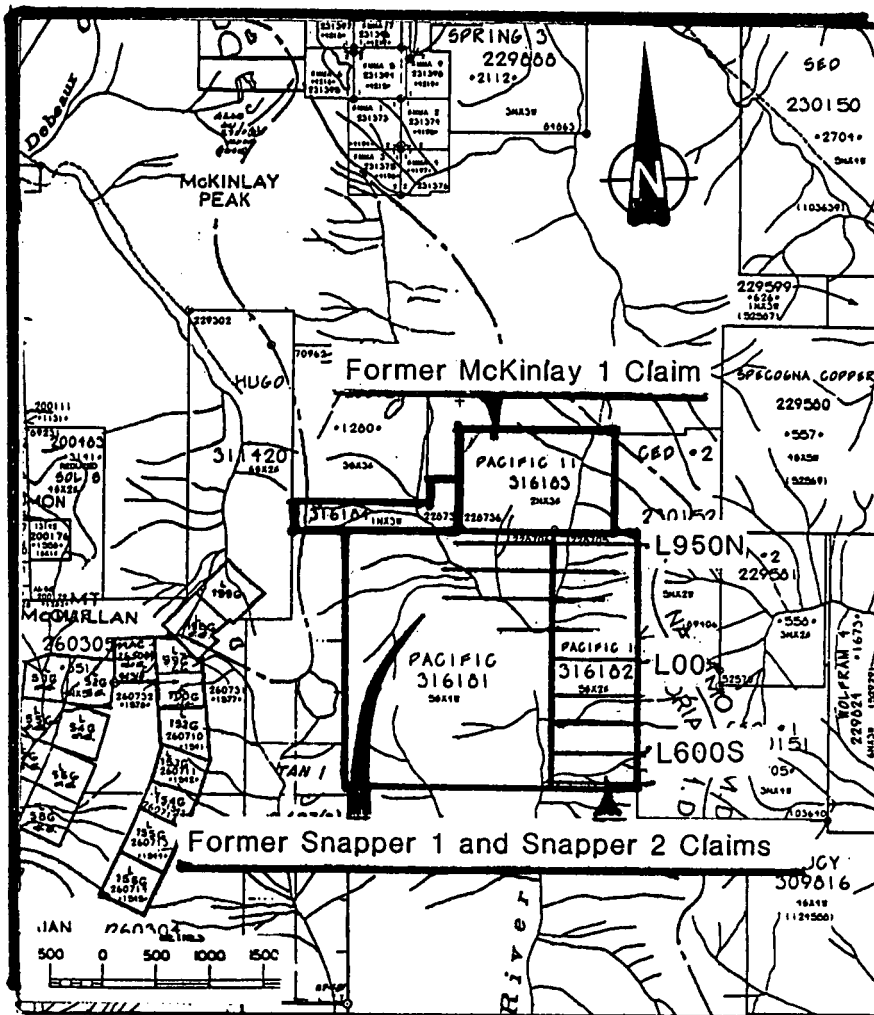


Figure 2. Claim and Index Map. (Ministry of Energy, Mines and Petroleum Resources Map 092F02E used as a base map) showing the location of the Pacific Claim Group to the former claims and the 1993 grid area.

Access within the Property is provided by many logging roads stemming from the main Nitinat River and Cameron River access routes.

Local Resources

Most services and supplies for exploration would be available from either Port Alberni on the west coast or from Nanaimo on the east coast of Vancouver Island. These two centres could also be the source of adequate labour resources and skills for the development and production stages of a viable mining operation.

Port facilities are available at Port Alberni for concentrate shipment overseas.

History

The history of the general area is significant from the producing property of Westmin Resources at the southwest side of Buttle Lake, 90 km to the northwest of the Pacific Claim Group. The significance of the Westmin deposit to the Property is that is that the ore deposits of the Westmin Mine occur within the Sicker Group of rocks - the same group of rocks as covered by the Property.

The mineral showings of the Westmin Myra and other productive ore zones were originally staked in 1917 after the removal of the Strathcona Park Reserve. The Paramount Mining Company acquired title to about forty mineral claims on Myra and Price Creeks and performed extensive exploration and development of mineral zones which, with additional exploration and development by others on the claims resulted in the production from the Myra deposit. Production commenced in 1972 and to January 01, 1989 the Myra Falls operation, which included ore from other deposits on the property, processed 9,170,609 tonnes of ore. Production at the Westmin project is currently on hold.

The history of the Property area is summarized herein from reports by Westerman (1988) and Ven Huizen (1990).

The history of the specific area stems from the 1860's when placer mining was active at the headwaters of China creek, Nitinat River and Franklin River. Lode mining was initiated in the 1890's when gold bearing quartz veins were located and staked on Mineral creek, at the headwaters of McQuillan creek, in the Soloman Basin and at the headwaters of China creek. Mining activity lasted to 1900 during which time a stamp mill was in operation on Mineral creek.

Mining was reactivated in 1933 to 1944, a period during which several properties produced a small tonnage of high grade ore.

The main producers within the Property area (Figure 3) included:

<u>Property</u>	<u>Tonnes</u>	<u>Gold (g)</u>	<u>Silver (g)</u>	<u>Distance from Pacific Group</u>
Havilah	950	9,056	43,669	5 km W
Regina	365	9,245	1,679	10 km NW
Black Panther	1,715	15,832	29,642	5 km W
Thistle	6,283	85,874	65,969	6 km W

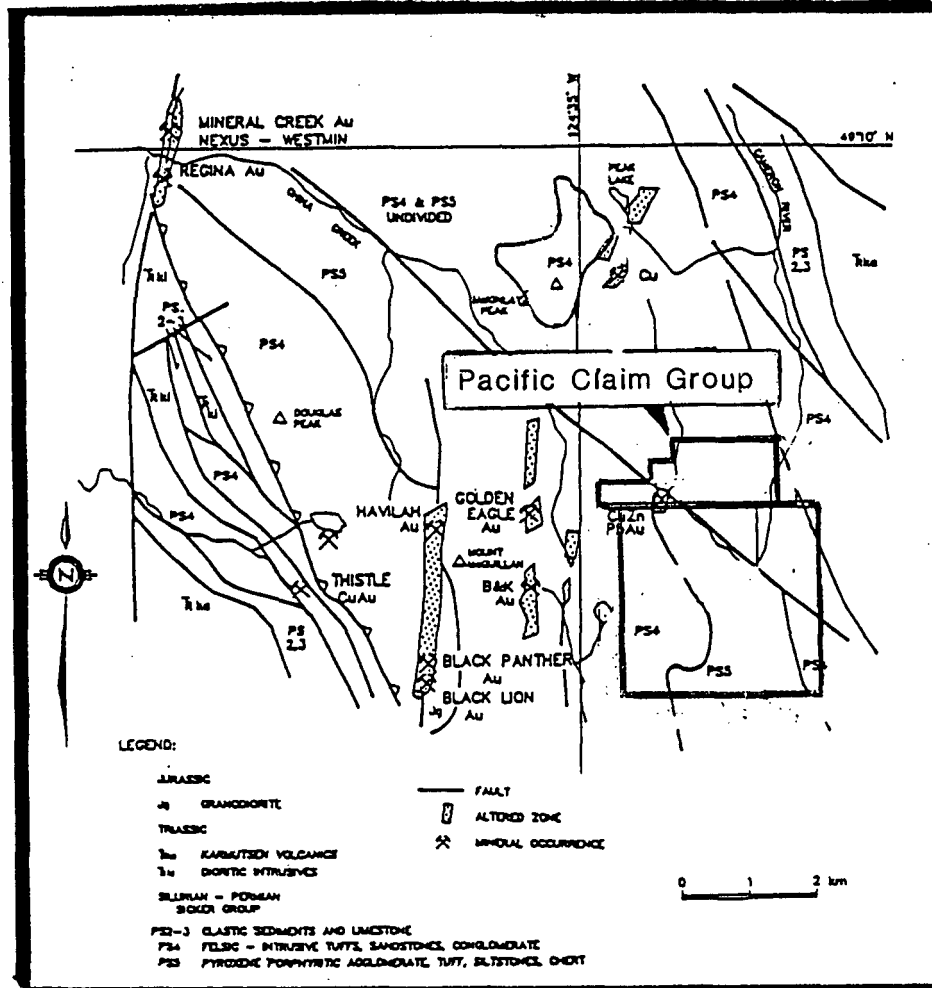


Figure 3. Regional and Property Geology.
(Westerman 1988)

Showing the location of the Pacific Claim Group to other mineral properties referred to in text

Mining activity in the area was revived in the late 1970's with the increase in precious metal prices and the discovery of base-precious metal massive sulphide deposits in the Sicker Group of rocks. A staking rush developed on Vancouver Island resulting in the coverage of a belt including the favorable Sicker Group, of over 150 kilometres long and 15 kilometres wide. The area covered stretched northwest from Duncan to the Westmin Resources Ltd. mining operation at Buttle Lake.

As a result of the increased exploration activity, numerous "new" mineral showings were discovered with some developed to varying degrees. The more significant developments occurred on the Thistle property and at the Mineral creek (Regina) property where substantial tonnages of base and precious metal mineralization are reported.

Exploration work on the ground covered by the Pacific claim group is reported as follows:
(Claim names in brackets are the names of the present claims in the Pacific claim group).

- 1985 Stream sediment sampling and rock sampling on the Matt (Pacific & Pacific 1) claims.
- 1987 Swift Minerals Ltd. - reconnaissance surveys on the McKinlay 1 (Pacific III) claim.
- 1987 Saga Resources Ltd. - 10.4 km of grid emplacement; reconnaissance geological mapping conducted over and tied into the grid; magnetometer and VLF-EM surveys at 25 meter stations along the grid; geochemical survey (262 samples); 37 rock samples and two trenches on the Snapper (Pacific & Pacific 1) claims.
- 1988 Saga Resources Inc. Five diamond drill holes on the Snapper 2 (Pacific I) claim.
- 1988 Jantri Resources Inc. - Fill-in geochemical sampling and some geological mapping on the McKinlay (portions of Pacific III) claims.
- 1989 Jantri Resources Inc. - Rock sampling (17 samples).

Results of Previous Exploration on the Pacific Claim Group

On the results of the surveys on the McKinlay I Claim (Western portion covered by the Pacific III claim) Westerman (1988) reports that:

"The surveys undertaken on the McKinlay 1 claim have been of a reconnaissance nature. The alteration zone on line A (described in the previous section) correlates with weak soil anomalies for gold (31 ppb), copper (134 ppm) and silver (2.5 ppm). A northeast trending gossan zone, east of Nitinat River, correlates with weakly anomalous zinc values (150 - 190 ppm) and a single gold value of 410 ppb in soils."

Ven Huizen (1990) provides an account of the previous exploration results on the Snapper (Pacific III and Pacific 1) claims).

"The results of the surveys delineated three areas considered worthy of further exploration. Target A is bounded on the north by L600N, on the south by Line 100S, on the west by the baseline and on the east by 300E. Target "A" consists of a 3 to 10 meter wide mineralized shear zone traced on strike for 500 meters. Several rock chip samples taken from the area assayed greater than .10 opt Au and up to 3.5 opt Ag. Five holes were drilled to test zone "A" with the best results yielding .215 opt Au over 3.35 meters.

Target B is located in the northwestern part of the grid area and is bound on the north by the boundary of the claims which is L950N, on the south by 500N, on the west by 700W and on the east by 300W.

Target "B" shows an exposed quartz-carbonate structure along the road with rock chip assays including .114 opt Au (over 1.5 m) and .038 opt Au over 1.0 meters. This zone appears to be found along a fault zone extending 400 meters to the northern property boundary. Elevated copper and zinc soil values are also found along this zone. Another rock chip sample taken from along the road yielded a copper value of 6,650 ppm and occurs close to a VLF-EM conductor which coincides with a magnetic high and gold soil anomaly.

Target C is located between L200S and 600S and is bounded on the west by the baseline and the east by 350E. Several mineralized shear zones were encountered in this area along road cuts and although rock samples collected here contained low gold values. Soil samples and geophysical data indicate that mineralization may be extensive enough to warrant a closer look."

General Geology

The Property is within the Cowichan uplift of the Insular Belt, which is the westernmost major tectonic subdivision of the Canadian Cordillera. According to Muller (1979), the Insular Belt (Island Mountains) contains a middle Paleozoic and a Jurassic volcanic-plutonic complex, both apparently underlain by gneiss-migmatite terrains and overlain respectively by Permo-Pennsylvanian and Cretaceous clastic sediments. A thick shield of Upper Triassic basalt (Karmutsen Formation) overlain by carbonate-clastic sediments separates these two in space and time.

The area is dominated by the late Paleozoic aged Sicker Group which is described by Muller (1977) as being subdivided into a lower volcanic formation, a middle greywacke-argillite formation, and an upper limestone formation. The group is exposed in narrow, fault-bounded uplifts.

The volcanic rocks range from fine grained banded tuffs to breccias with clasts 10 cm or more in size and agglomeratic lava flows. The greywacke-argillite sequence occurs in graded beds of argillite and siltstone or in thicker beds of greywacke sandstone. The Buttle Lake Formation is the youngest part of the Sicker Group with a type section exposed west of Buttle Lake consisting of 320 m section of interbedded crinoidal limestone and chert.

The structure of the Island is almost entirely dominated by steep faults. Only the flysch-type Pennsylvanian and Jura-Cretaceous sediments and associated thin-bedded tuffs show isoclinal shear folding. Faulting and rifting probably occurred during the outflow of Karmutsen lavas in Late Triassic time, establishing the northerly and westerly directed fault systems affecting Sicker and Vancouver Group rocks (Muller 1977).

The dominant structures in the area are reportedly north and northwest trending high angle faults with local smaller scale east-west trending extensional faults.

Property Geology

Sicker Group rocks are predominant on the property with periodic sills and dykes of diabase and gabbroic composition. Geological mapping of portions of the Pacific Claim Group by Wood indicated four mappable units.

One of two units of the Sicker Group is described as dark green basalt and minor andesite which is often vesicular and includes coarse flow breccia and possibly coarse volcanoclastic sediments. The second unit is a grey-green medium grained greywacke and siltstone with minor rusty weathering black argillite and black chert.

One of the two Tertiary units is described as light grey-green feldspar porphyry dikes and sills, most of which trend southeasterly. The second unit is a bright orange and rusty weathering carbonatized volcanic and sedimentary rock, containing copper stained pyritic quartz-carbonate veins.

The structure on the Property is principally a northwest trending synform and two northerly trending faults characterized by carbonatized volcanics in localized areas. Shear zones associated with the faults contain bright orange and rusty weathering carbonatized country rock containing numerous northerly and easterly trending quartz-carbonate veins.

In the writer's examination of the Property (Pacific Claim Group), the principal northerly trending zone of Target B is a moderate to intensely altered fault zone hosting a series of quartz-carbonate veinlets of up to two centimetres in width. The occasional veinlet is coxcombed and hosts powdered limonite. Limonite also occurs within the veinlets. The host rock of the fault zone is variably flooded with carbonate and hosts erratic pyritic disseminations.

Mineralization

In the Property area, the volcanogenic mineralization at the Thistle property (Figure 3) is hosted by the Sicker Group and occurs as disseminated to massive sulphide mineralization, consisting of pyrite, chalcopyrite and minor pyrrhotite plus sulphide rich quartz-carbonate veins within sheared pyritic quartz-sericite schist with chloritized mafic volcanic flows and tuffs.

At the Mineral Creek zone of the Mineral Creek property (Figure 3) two styles of hydrothermal mineralization occur hosted by the Sicker Group. One type is of gold within a wide zone of cataclasis and pervasive ankerite-quartz-sericite-pyrite alteration and minor arsenopyrite in bedded volcanoclastic and aphyric basalt flow rocks adjacent to the fault. Type two is of gold in quartz veins with minor pyrite and arsenopyrite cutting both the alteration zone and its immediate hanging-wall aphyric basalt host.

At the Havilah (Figure 3), the Gillespie vein is hosted by the Sicker Group and occurs in andesite along a north-northeast trending shear zone. The vein contains ribbon quartz with pyrite, sphalerite, galena, pyrrhotite, arsenopyrite and chalcopyrite. The wallrock is replaced by mariposite and carbonate minerals.

Mineralization within the Pacific Claim Group is hosted by the Sicker Group and consists of pyrite, chalcopyrite and minor sphalerite occurring within quartz-carbonate veins and carbonatized volcanics and sediments. Within the veins, sulphides range from less than 1% to approximately 4% and are disseminated within the carbonatized rocks. Veins represent up to 20% of shear zone rocks in one location.

Bedrock mineralization is indicated in the many delineated soil geochemical anomalies on the property.

Number 4 drill hole of five diamond drill holes, which was indicated to test an anomalous soil geochemical gold zone in a fault zone, reportedly returned an assay value of 0.215 ounces per ton Au over 3.35 meters.

1993 Exploration Program

VLF-EM Survey

A Sabre Model 27 VLF-EM receiver manufactured by Sabre Electronics of Vancouver was utilized in the VLF-EM survey. The primary transmission utilized was from Seattle, broadcasting at a frequency of 18.6 Khz. The VLF-EM receiver measures the amount of distortion produced in the primary transmitted field and a secondary magnetic field which may be induced by a conductive mass such as a sulphide body.

The VLF-EM unit, due to its relatively high frequency, has a major disadvantage in that a multitude of anomalies can result from unwanted sources such as swamp edges, creeks, and topographic highs. On the other hand, the tendency for VLF to respond to poor conductors has aided in mapping faults and rock contacts.

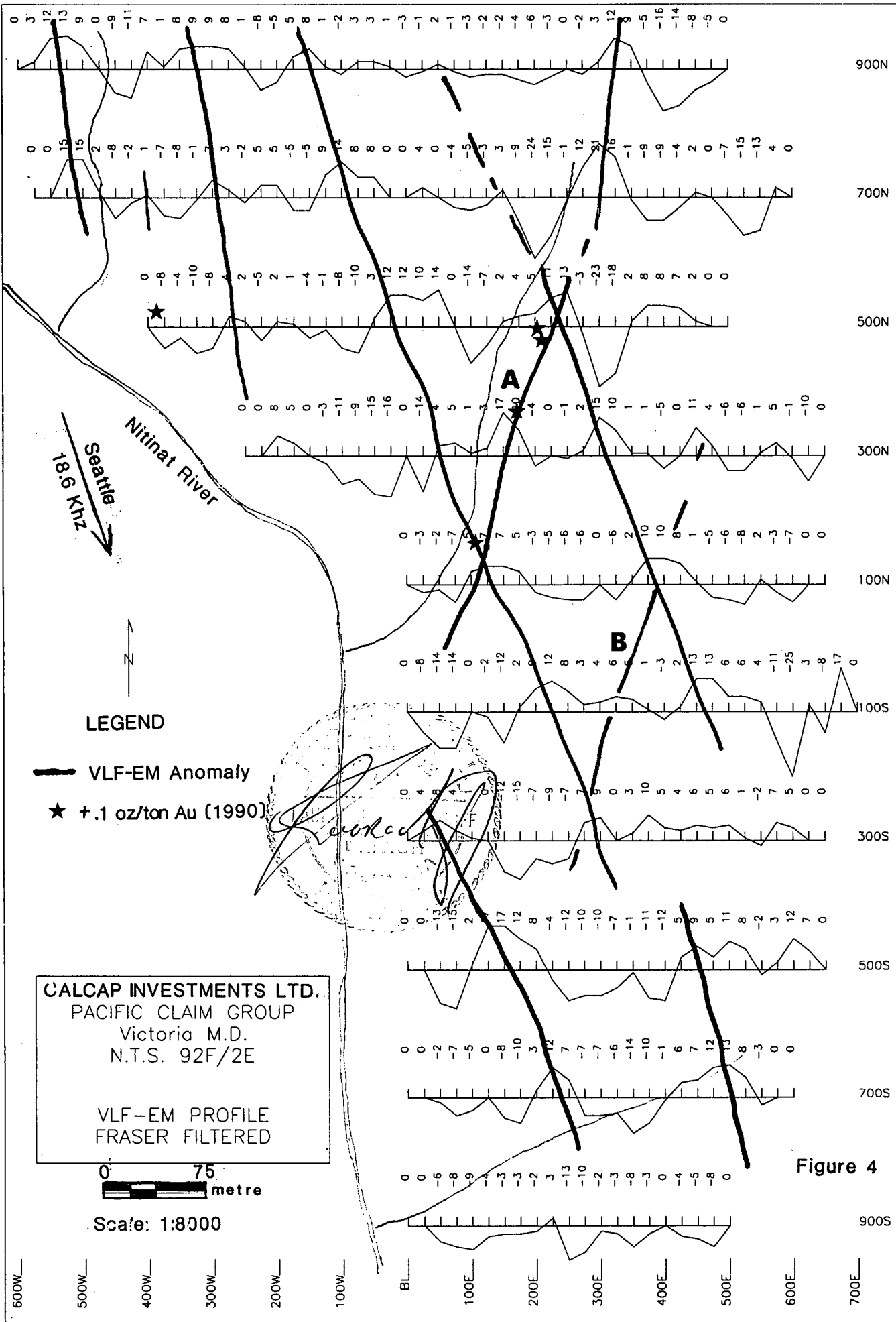
The purpose of the survey was to determine the continuity of the 1990 determined VLF-EM anomalies (Wood, 1987), which were based on survey readings from an east-west 200 metre spaced grid, and to locate any other structural or geological features based on the combined results of the two surveys.

The VLF-EM survey was completed within the area of the 1990 VLF-EM survey area with the 1993 grid lines spaced at 200 metres between the 1990 grid lines which were also spaced at 200 metres. VLF-EM readings were taken at 25 metre stations along the east-west grid lines. Ten line kilometres of VLF-EM survey was completed.

The field (raw) data is indicated and profiled on the accompanying Figure 5 with the Fraser Filtered data profiled and anomalies indicated on the accompanying Figure 4.

The results of the 1993 VLF-EM survey results could be interpreted as indicating predominant north-northwesterly trending structures (as interpreted in the 1990 VLF-EM survey), with a conjugate set of north-northeasterly trending cross or "ladder" faults. However, the north-northeasterly trend is indicated as the primary structural trend (from the lineament array analysis) and significant in relation to the established mineralization.

The significance of the north-northeasterly structures is indicated from the 1990 exploration results. The 1993 northeasterly anomalous trend A as indicated on Figure 4 is correlative directly and proximally with 1990 delineated copper and zinc soil anomalies and four of five rock samples that returned in excess of 0.10 oz/ton Au along 400 metres of the anomalous zone. A rock sample at the southwesterly end of this zone, which is open ended in this direction, returned 0.09 oz/ton Au. In addition, one of three diamond drill holes on this fault zone returned 0.215 oz/ton Au over 3.35 metres (10 feet).



Seattle
18.6 KHz

LEGEND

- VLF-EM Anomaly
- ★ +.1 oz/ton Au (1990)

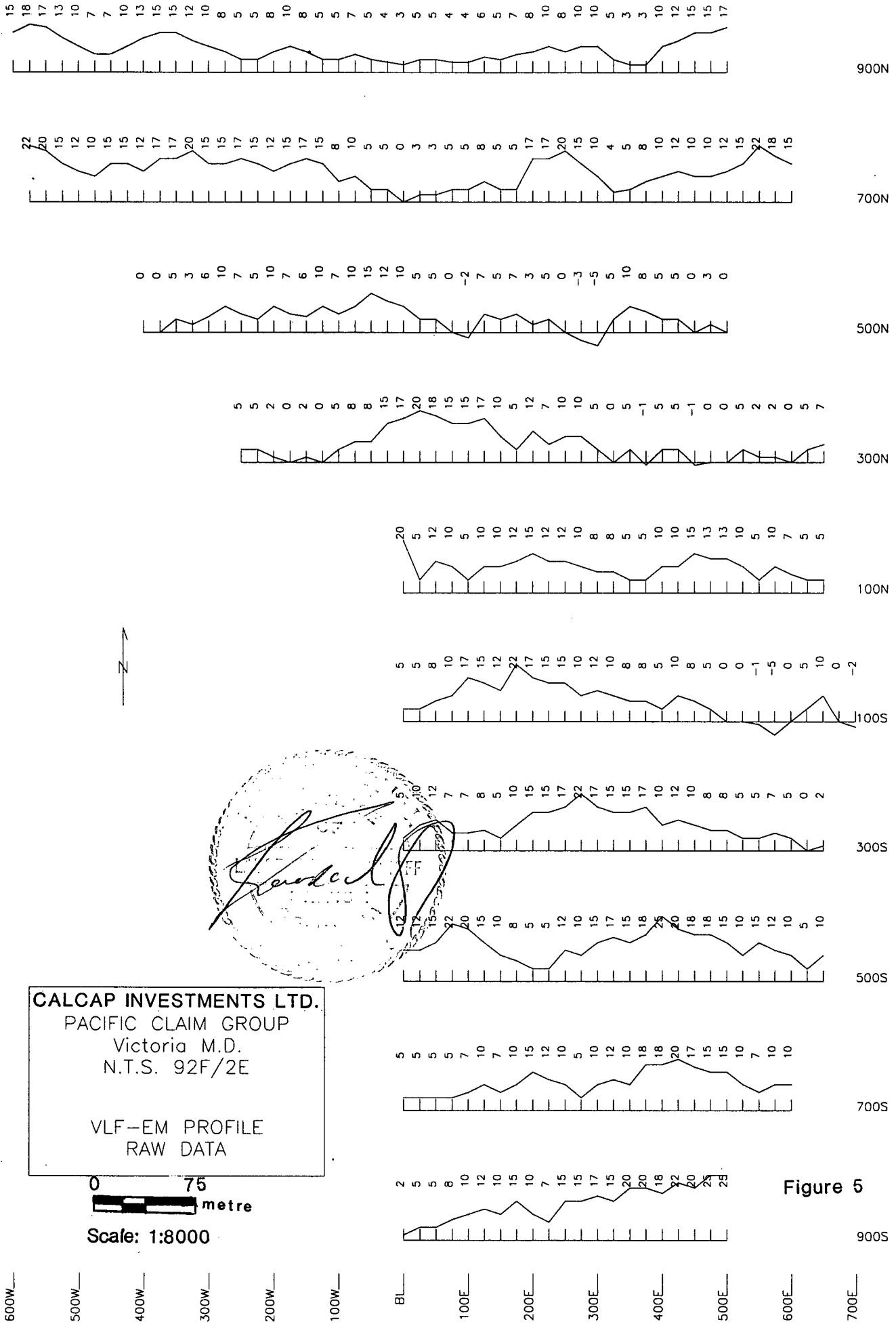
CALCAP INVESTMENTS LTD.
PACIFIC CLAIM GROUP
Victoria M.D.
N.T.S. 92F/2E

VLF-EM PROFILE
FRASER FILTERED

0 75
metre

Scale: 1:8000

Figure 4



CALCAP INVESTMENTS LTD.
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 Victoria M.D.
 N.T.S. 92F/2E

VLF-EM PROFILE
 RAW DATA

0 75
 metre
 Scale: 1:8000

Figure 5

A second north-northeasterly indicated structure designated as B on the accompanying Figure 4, correlates with a 1990 zinc soil anomaly. Other north-northeasterly trending soil geochem anomalies as reported from the 1990 exploration results could indicate parallel mineral controlling structures.

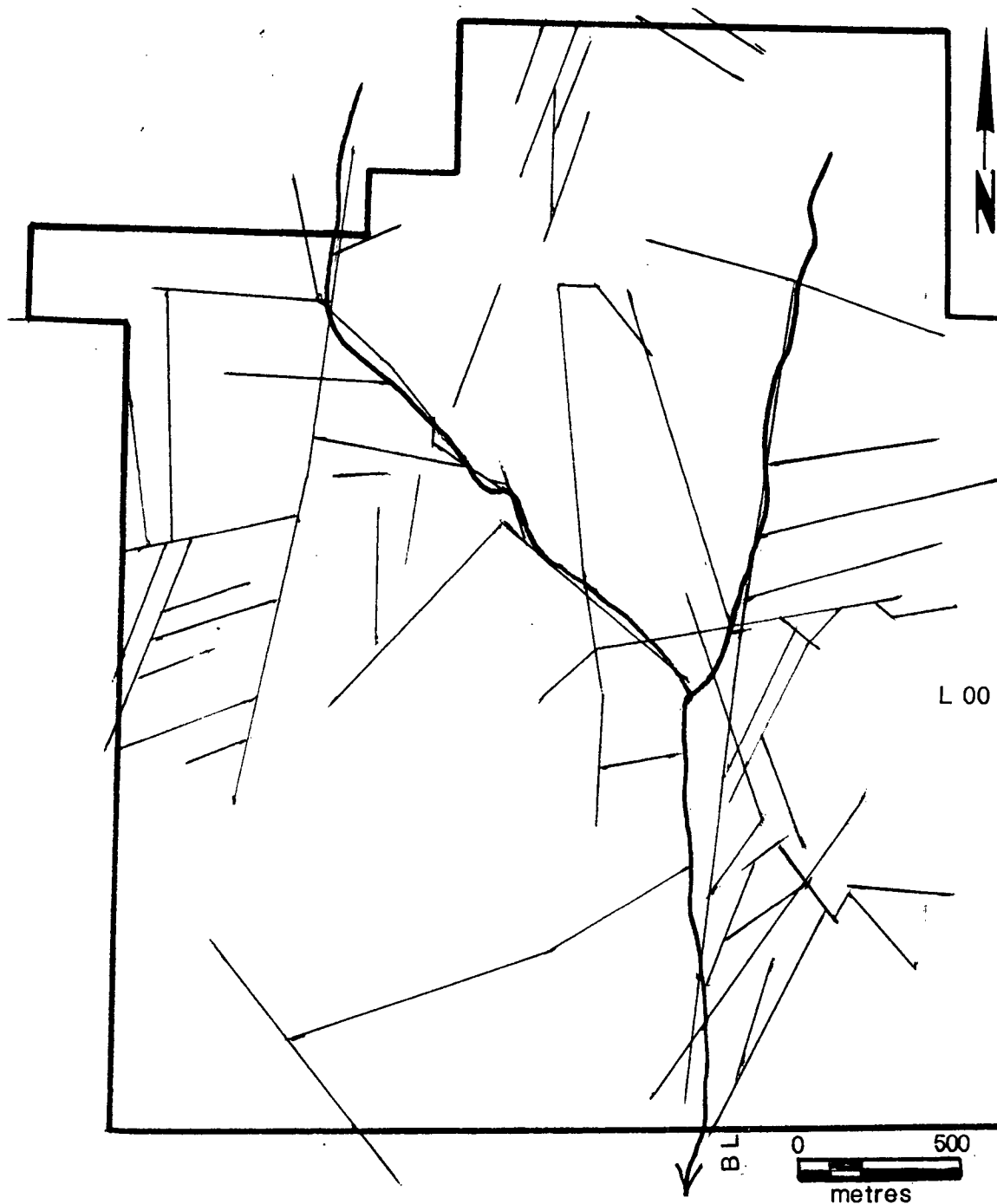


Figure 6. Lination trends as interpreted from aerial photographs. Perimeter boundaries are the outline of the Pacific Claim Group. Scale: 1:20 000.

Lineation Array Analysis

A structural analysis of the Property was completed in a lineation array or fault array analysis. The purpose of the analysis was to determine the fault pattern on the property in order to obtain an understanding as to the potential structural controls to mineralization.

B.C. Aerial photographs B.C. 84026 No's 62, 63 and 64 were utilized for the analysis. The mean photo scale for the survey area is 1:18,600.

The interpreted lineaments, as defined utilizing a stereoscope, were marked on an overlay (Figure 6) with the resulting azimuthal orientation of each lineament represented on a rose diagram in a 5° class interval (Figure 7).

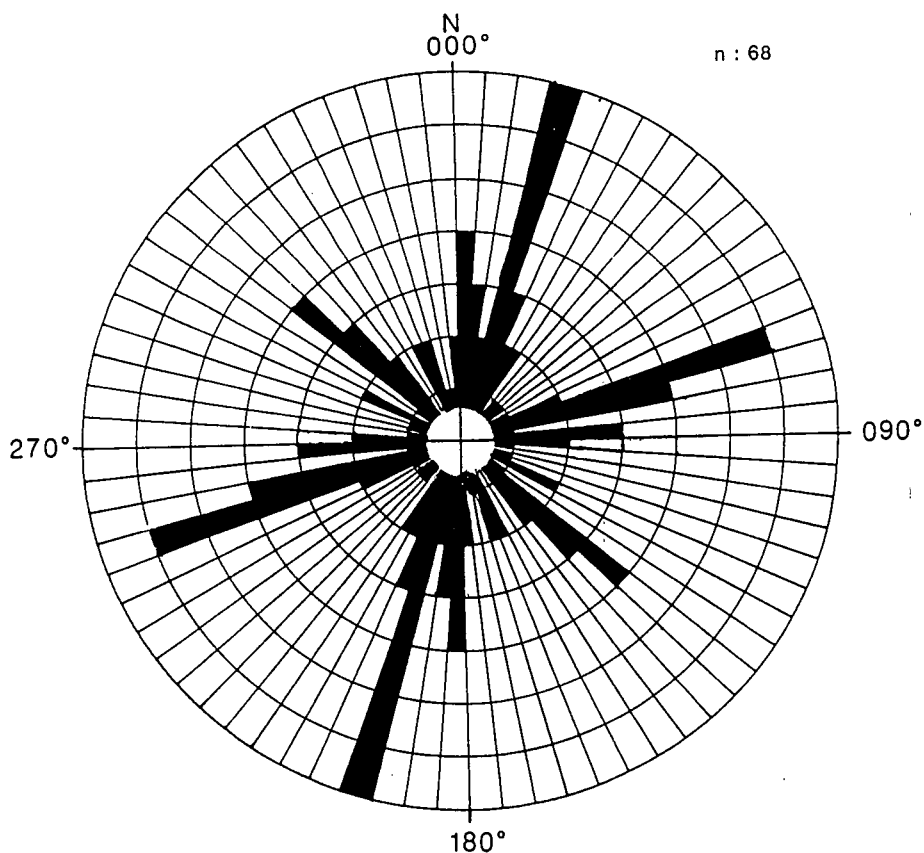


Figure 7. Rose Diagram showing azimuths of lineations on the Pacific Claim Group as interpreted from aerial photographs.

The rose diagram indicated two primary lineament directions; north-northeasterly and west-northwesterly with a subordinate northwesterly trend. The north-northeasterly trend is indicated in the 1993 VLF-EM survey whereas the west-northwest trend is not apparent due to the grid orientation.

Conclusions

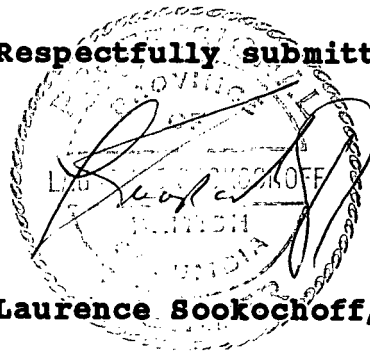
The 1993 exploration results established that the primary structures and possibly the structures controlling the mineralization are north-northeasterly trending.

On a larger scale, a conjugate set of faults is indicated (Figure 6) in the two prime north-northeasterly trending structures within seven hundred metres inside the west and the east boundaries of the Property and the northwest trending structure correlating with the watercourse linking the two structures.

Recommendations

Future exploration of the Property should be targeted on the exploration of the north-northeasterly trending structures with a focus on the area of intersection between the conjugate set. Initially, fault zone A should be explored in detail to determine the mineral indicating and controlling features of the known mineralization within the structure and to locate a prime target to test for economic mineralization. Utilizing the resulting information, other comparable zones would be explored.

Respectfully submitted,



Laurence Sookochoff, P.Eng.

July 19, 1994
Vancouver, B.C.

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CERTIFICATE

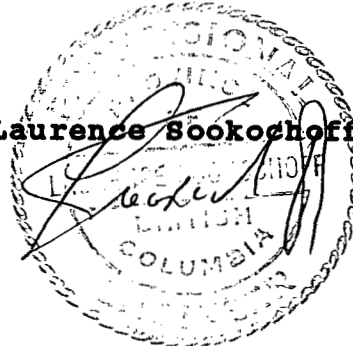
I, Laurence Sookochoff, of the city of Vancouver, in the Province of British Columbia, do hereby certify:

That I am a Consulting Geologist with offices at 1027-510 West Hastings Street, Vancouver, B.C. V6B 1L8

I further certify that:

- 1. I am a graduate of the University of British Columbia (1966) and hold a B.Sc. degree in Geology.**
- 2. I have been practising my profession for the past twenty-eight years.**
- 3. I am registered with the Association of Professional Engineers of British Columbia.**
- 4. Information for the accompanying report was obtained from sources as cited under Selected References and from work done by the writer on the Pacific Claim Group since September, 1993.**
- 5. I do not have any direct or indirect interest in the property described herein nor in the securities of Calcap Investments Ltd.**

Laurence Sookochoff, P.Eng.



**July 19, 1994
Vancouver, B.C.**

Calcap Investments Ltd.
Pacific Claim Group
Statement of Costs

The field work on the Pacific Claim Group was carried out from September 21, 1993 to February 19, 1994 to the value as follows:

Geophysical

Laurence Sookochoff, P. Eng. 4 days @ \$300.	\$ 1,200.00	
Car rental: 4 days @ \$50.00 plus gas & km	282.50	
Room & board: 4 man days @ \$80.00	320.00	
Field supplies	<u>100.00</u>	
		\$ 1,902.50

Geological

Laurence Sookochoff, P. Eng. 1 day @ \$500.	500.00	
Maps	<u>250.00</u>	
		750.00

Geological & Geophysical

Data compilation & draughting	500.00	
Report, xerox, printing	<u>750.00</u>	
		<u>1,250.00</u>
		\$ 3,902.50
		<u>-----</u>