

**GEOLOGICAL & GEOCHEMICAL ASSESSMENT REPORT**

**on the**

**PACIFIC CLAIM GROUP**

**for**

**GARY WESTGATE**

**Victoria Mining Division**

**N.T.S. 092F02E**

**March 16, 1998  
Vancouver, B.C.**

**GEOLOGICAL SURVEY BRANCH**

**ASSESSMENT REPORT**

**Laurence Sookchoff, P.Eng.  
Sookchoff Consultants Inc.**

25,452

*Sookchoff Consultants Inc.*

# Geological & Geochemical Assessment Report

## on the Pacific Claim Group

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# **Geological & Geochemical Assessment Report**

on the

## **Pacific Claim Group**

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### **Introduction**

A localized geological and soil geochemical exploration program was completed on the Pacific Claim Group in February, 1998. The purpose of the program was to obtain geological information along a portion of an indicated volcanic-sedimentary contact north of Target "A" to determine the potential for mineralization associated with the contact.

Information for this report was obtained from sources as cited under the Selected Reference section of this report and from the completion by the writer of, and the results from, the 1998 exploration program.

### **Summary**

The Pacific Claim Group is located 20 km southeast of Port Alberni on Vancouver Island. Exploration, development and production from lode deposits in the area occurred since the 1890's, leading to recent discoveries of base-precious metal massive sulphide mineralization in the Sicker Group of rocks. The most significant development of this mineralization are the productive Westmin ore deposits located at Buttle Lake, 90 kilometres northwest of the Pacific Claim Group.

A number of other small past producers are located within six kilometres of the Pacific Claim Group. These included the Thistle property located six kilometres to the west and from where 85,874 grams of gold were recovered from Sicker Group hosted volcanogenic mineralization.

From 1985 to 1997, approximately \$125,000.00 has been spent in the exploration of the Pacific claim group. As a result of the exploration, many positive geological features and anomalous mineral indicators have been revealed. The positive features of the completed exploration include the determination that the claim group covers a volcanic-sedimentary contact of the Sicker Group, the delineation of three prime exploration target areas and the diamond drill intersection of a gold-bearing mineral zone.

The Pacific Claim Group is dominantly underlain by Sicker Group volcanic and sedimentary rocks. Previous exploration on the Claims resulted in the delineation of three prime exploration target areas. One of these target areas was tested by five diamond drill holes; one of which intersected a 3.35 metre gold bearing zone which returned an assay of 0.215 ounces of gold per ton. The two other areas remain untested.

The 1998 exploration program consisted of rock and soil sampling along a 48 metre section of a road-cut and a rock sample from a schist zone indicated along a volcanic-sedimentary contact 90 metres west of the road-cut zone. The geochemical results from the sampling were not encouraging to the location of economic mineralization associated with the volcanic-sedimentary contact in the immediate area.

### Property

The property consists of two contiguous grid unit mineral claims. Particulars are as follows.

| <u>Claim Name</u> | <u>Units</u> | <u>Tenure No.</u> | <u>Expiry Date</u> |
|-------------------|--------------|-------------------|--------------------|
| Pacific           | 10           | 316181            | February 20, 1999  |
| Pacific I         | 5            | 316182            | February 20, 1999  |

Any legal aspects relating to this claim group are 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 from the BC Ferries terminal on the east coast of Vancouver Island at Nanaimo, southward to Duncan and westerly to Lake Cowichan. From the city of Lake Cowichan, a paved highway on the eastern side of Lake Cowichan is taken northward to Youbou, continuing on a secondary logging road following the Nitinat River to the southern boundary of the Pacific Claim Group. A second access route is the Nanaimo Lakes route whereby the Nanaimo Lakes junction is taken to the west from 15 km south of Nanaimo. The Nitinat River road 50 km from the junction is intersected four km south of the southern boundary of the Pacific Claim Group. Access within the Pacific Claim Group is provided by numerous logging roads stemming from the main branch of the Nitinat River road.

### Physiography

From the Nitinat River valley, which is central to the Pacific Claim Group and at an elevation of 350 to 500 metres, the topography is moderate to rugged to the east and the north with elevation of up to 1050 metres on a ridge to the north. To the west of the Nitinat River Valley and along the western boundary of the Claim Group, a north northwesterly trending 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 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 up to 500 centimeters per year.

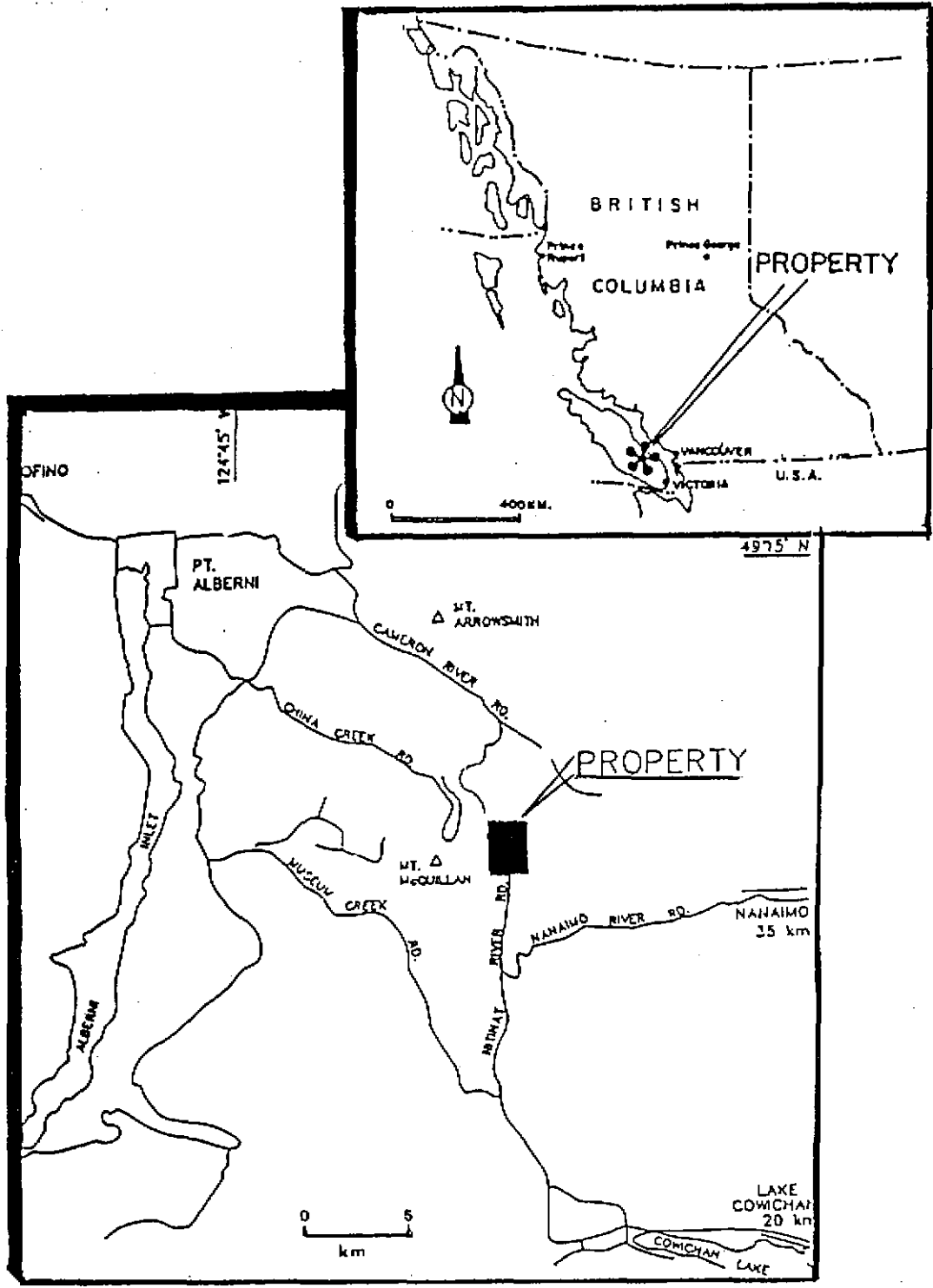


Figure 1. Location and Claim Map\*

\* Claim Map: Ministry of Energy, Mines and Petroleum Resources Map 092F02E.

**Local Resources**

Most services and supplies for the exploration program could be available from 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.

## History

The history of the area is significant from the productive mining operations of Westmin Resources at Buttle Lake, 90 kilometres to the northwest of the Pacific Claim Group. The Westmin ore deposits occur within the Sicker Group of rocks.

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 work on the 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 1, 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 deposit is continuing to this day.

The history of the Pacific Claim Group 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 and 1944, a period during which several properties produced a small tonnage of high - grade ore.

The main producers within the Pacific Claim Group area included (Figure 3):

| Property      | Tonnes | Gold (g) | Silver (g) | Distance from the Pacific Claim Group |
|---------------|--------|----------|------------|---------------------------------------|
| 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                                |

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 mineralization hosted by the Sicker Group of rocks. As a result, a staking rush developed on Vancouver Island giving rise to claims staked covering a belt of inclusive Sicker Group rocks, of over 150 kilometres long and 15 kilometres wide. The area covered stretched northwest from Duncan to the Westmin Resources operations at Buttle Lake. From 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 were reported.

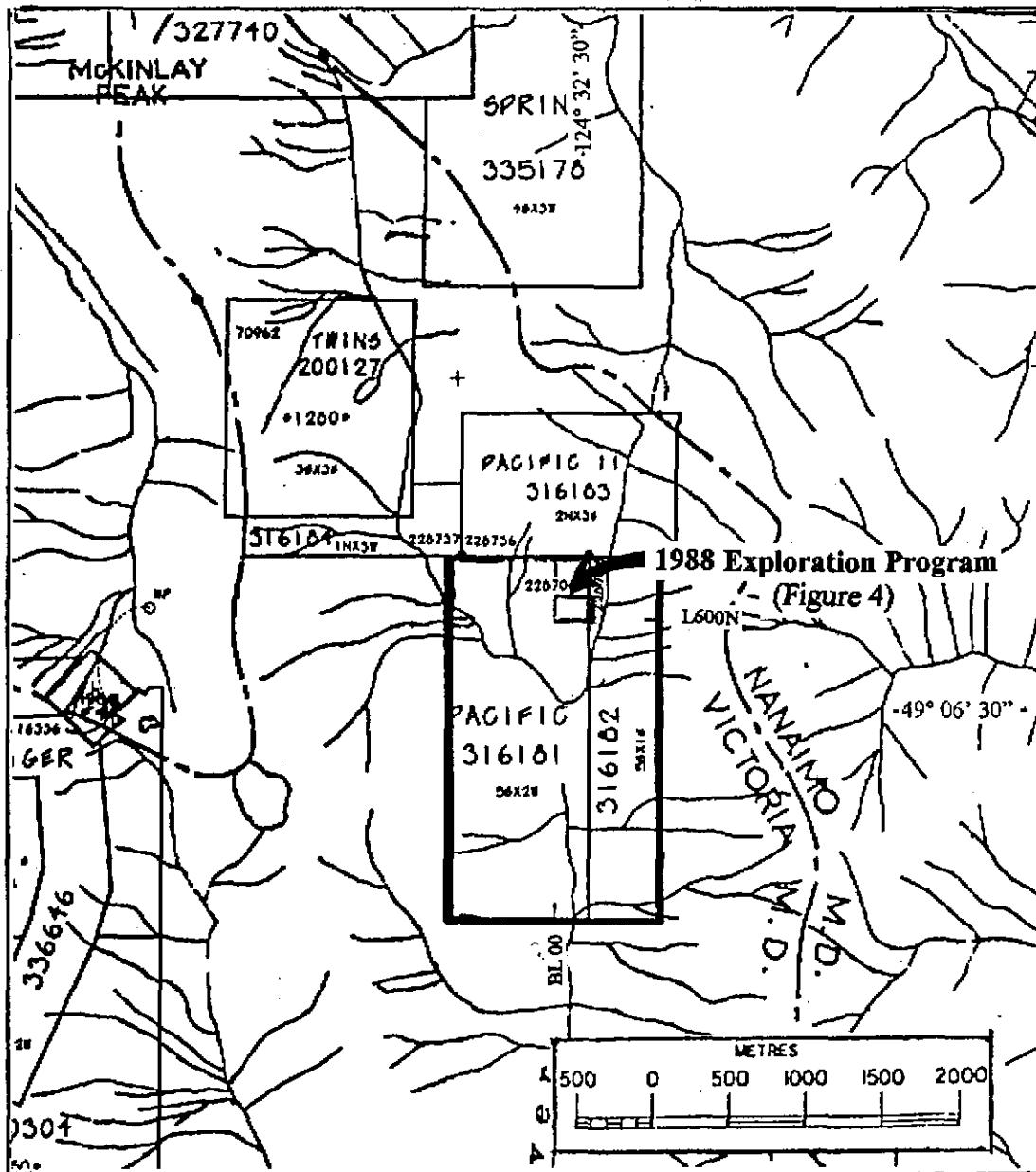


Figure 2. Claim and Index Map. (Ministry of Energy, Mines and Petroleum Resources Map 092F02E)

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 I) claims.
- 1987 Swift Minerals Ltd. - 10.4 km of grid emplacement; recce geological mapping conducted over and tied into the grid; magnetometer and VLF-EM surveys; geochemical survey; rock samples and trenches on the Snapper (Pacific & Pacific I 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 (adjacent and to the north of the Pacific Claim Group).
- 1989 Jantri Resources Inc. - Rock sampling.
- 1993 Calcap Investments Ltd. - Geological (Lineament Array Analysis) and geophysical (VLF-EM).
- 1995 Localized geochemical sampling and geological mapping on Target "C".
- 1996 Localized geological mapping and sampling along a road cut between Target "A" and Target "B".
- 1997 Localized geological and geochemical exploration program on Target "B".

### **Results of Previous Exploration**

Ven Huizen (1990) provides an account of the previous exploration results on the then Snapper claims; presently covered in part by the Pacific and the Pacific I claims. The exploration results are included herein as Figure 4 which also is the Index Map indicating the area of exploration performed in the 1998 exploration program.

According to Ven Huizen (1990), three areas considered worthy of further exploration were delineated on the Snapper claims. Target A as indicated on Figure 4, is located in the central portion of the Pacific I claim and consists of a three to 10 metre wide mineralized shear zone traced on strike for 500 metres. Several rock chip samples taken from the area reportedly returned assays of greater than 0.10 oz/t Au and up to 3.5 oz/t Ag. Five diamond drill holes were completed to test the zone. The best result yielded an assay of 0.215 oz/t Au over an interval of 3.35 metres from DDH 4.

Target B is located within the northwestern portion of the Pacific I claim. The exposure is a quartz-carbonate structure along the road where rock chip samples returned assays of 0.114 oz/t Au over 1.5 metres and 0.038 oz/t Au over 1.0 metres. Ven Huizen reports that this zone appears to occur along a fault extending for 400 metres. Elevated copper and zinc values in the soil also occur along this fault zone. A rock chip sample taken from along the road reportedly yielded an assay of 6,650 ppm Cu. The sample site occurs close to a VLF-EM conductor which coincides with a magnetic high and a gold soil anomaly.

Target C is located within the southern portion of the Pacific I claim and consists of several mineralized shear zones along road cuts. Although rock samples collected here reportedly returned assays with low gold values, soil samples and geophysical data indicate that mineralization may be extensive (Ven Huizen, 1988).

In 1994, a VLF-EM survey and lineament array analysis of the Pacific claims was conducted. The results indicated that the primary structures and possibly the structures controlling the mineralization, are north-northeasterly trending (Sookochoff, 1994).

A localized geological and soil sampling survey completed within Target C in 1995 resulted in the determination that anomalous, spotty gold values in the soil could provide the basis for the delineation of, and thus a specific target for locating potentially economic gold deposits (Sookochoff, 1995).

A localized geological and sampling program completed between Target "A" and Target "B" in 1996 indicated a geological contact between the Sicker volcanics and argillites in the northeast portion of the property. Altered zones up to 50 metres from the contact reflected elevated copper values. The road -cut sampled was 250 metres west of the DDH-4 / 0.215 oz/t Au intersection. (Sookochoff, 1996).



A localized geological and sampling program completed on Target "B" in 1997 did not confirm the south southwesterly projection of the 1988 "anomalous" zinc zone and did not reveal any other anomalous mineral value within this indicated zone. (Sookochoff, 1997).

### General Geology

The Pacific Claim Group is located within the Cowichan Uplift of the Insular Belt, which is the westernmost major tectonic subdivision of the Canadian Cordillera. Muller (1979) reports that 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.

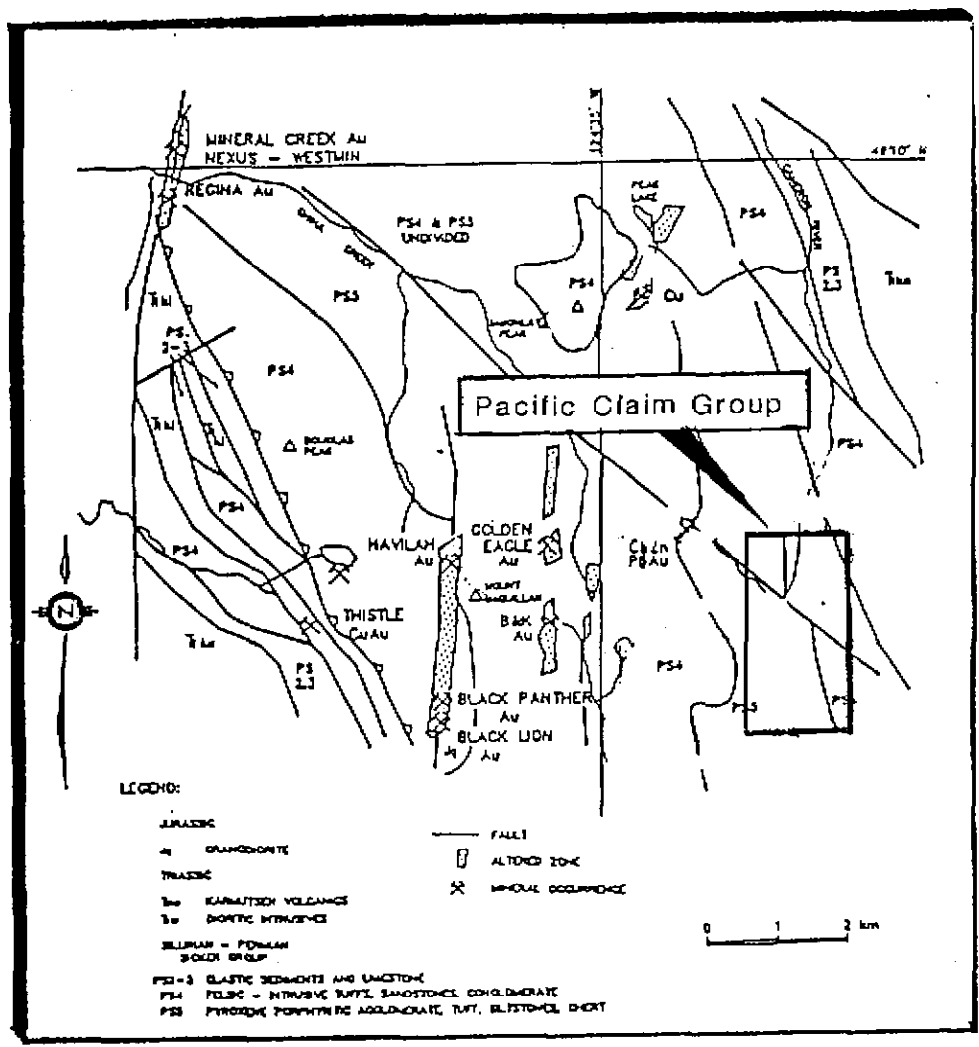


Figure 3. Regional and Property Geology. (Westerman, 1988)

The area is dominated by the late Paleozoic aged Sicker Group which Muller (1977) describes 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 large section exposed west of Buttle Lake consisting of a 320 metre 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 the westerly directed fault systems affecting the Sicker and the 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 Pacific Claim Group with periodic sills and dykes of diabase and gabbroic composition. Geological mapping of portions of the Claims 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 dykes and sills, most of which trend southeasterly. The second unit is a bright orange and rusty weathering carbonated volcanic and sedimentary rock containing copper stained pyritic quartz-carbonate veins.

The structure of the Pacific Claim Group is principally a northwest trending synform and two northerly trending faults characterized by carbonated volcanics in localized areas. Shear zones associated with the faults contain bright orange and rusty weathering carbonated country rock containing numerous northerly and easterly trending quartz-carbonate veins. 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. The host rock of the fault zone is variably flooded with carbonate and hosts erratic pyritic disseminations.

Within the Target C area of the 1995 soil geochemical survey, where former exploration results revealed gold values of 0.09 oz/t in rock samples and 50 ppb in soil samples, the bedrock consists of a pale green carbonated andesite containing occasional quartz-carbonate stringers.

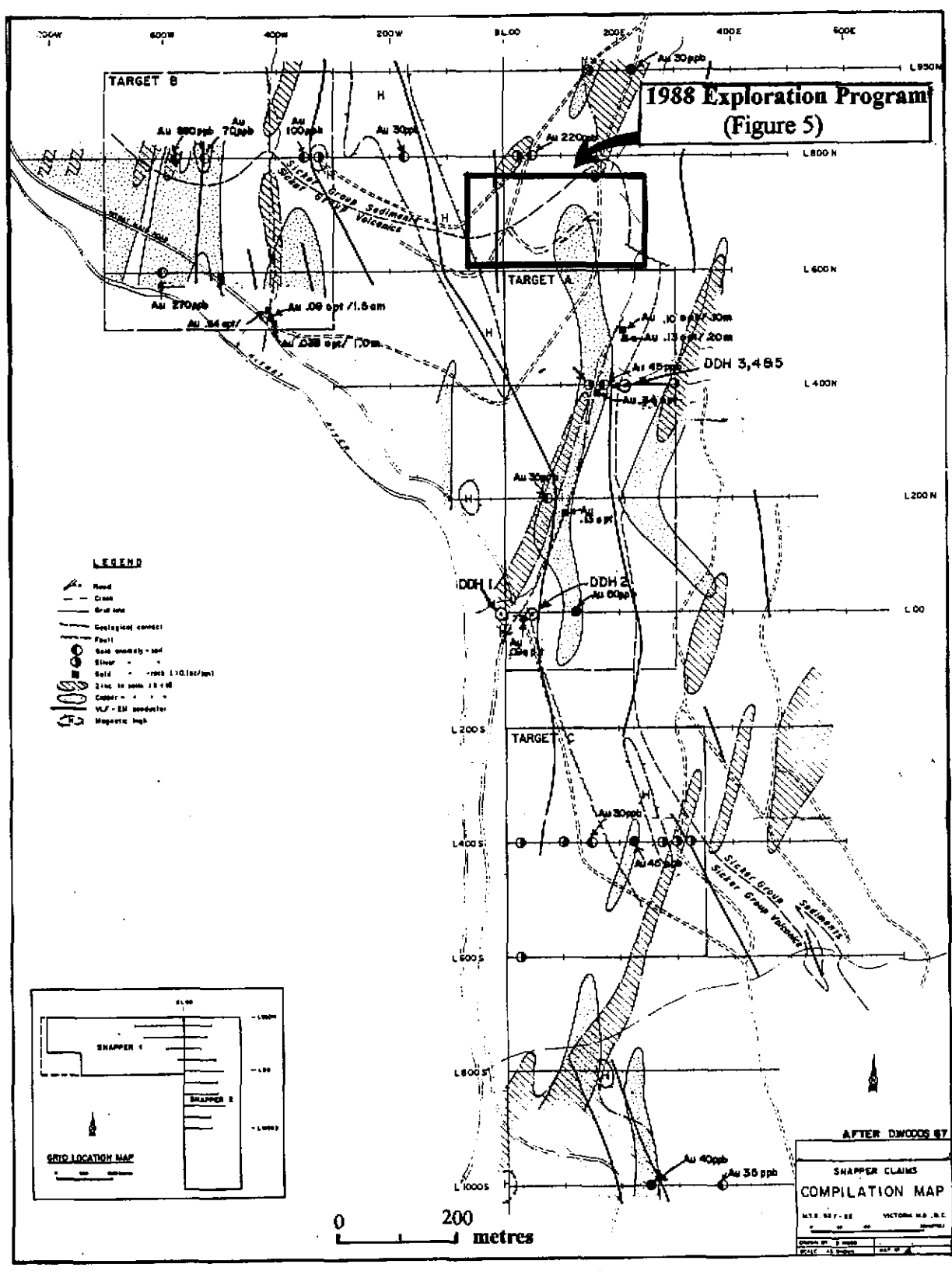


Figure 4. Index Map. Showing the relative location of the 1998 exploration program to the exploration results of previous exploration programs on ground covered by the Pacific Claim Group (Base Map: Woods, 1987).

In the Pacific Claim Group area, the volcanogenic mineralization of 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 a 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 wall-rock is variably replaced by mariposite and carbonate minerals.

Mineralization on the Pacific Claim Group is hosted by the Sicker Group and consists of pyrite, chalcopyrite and minor sphalerite occurring within quartz-carbonate veins and carbonated volcanics and sediments. Within the veins, sulphides range from less than 1% to approximately 4% and are disseminated within the carbonated rocks. Veins represent up to 20% of shear zone rocks in one location. In the 1996 exploration program, a two centimeter quartz-carbonate massive sulphide bearing vein was located which returned an assay of 80 ppb Au, 160 ppm As and 1,703 ppm Cu.

Diamond drill hole 4 of five drill holes completed in the 1988 exploration program, intersected a 3.35 metre section of mineralization which returned an assay of 0.215 oz/t Au. The depth of the intersection is not known and the core is not available for inspection, however, the drill hole was located at the geologically indicated contact between the sediments and the volcanics of the Sicker Group (Figure 4).

### 1998 Exploration Program

The 1998 exploration program consisted of a localized geological and geochemical program 500 metres north of the northwest corner of Target A.

### Geological

#### General

The purpose of the geological and geochemical program was to obtain geological information along a portion of an indicated volcanic-sediment contact north of Target "A" in order to determine the geological potential for controlling mineralization associated with the contact. Rock and soil samples were taken at eight metre intervals within the volcanic sequence along 48 metres of a road-cut. Rock samples were also taken from an indicated 15 metre wide silicified schist zone with well developed schistosity trending at 315° and dipping vertically. The schist, exposed for 40 metres along the road some 100 metres west of the road-cut zone, appears to be related to the volcanic-sedimentary contact.

## Results

The rock samples of the "greenstone" volcanics taken along the 48 metre section of the road rock exposures, returned only minor mineral values. The maximum values were 104 ppb Au and 46 ppm As in sample 98-R-6 which was a sample of greenstone hosting a four cm limonitic altered zone.

### Table I

#### Pacific Claim Group Rock Sample Description

Rock and Soil Samples taken by Laurence Sookochoff, P. Eng.  
February, 1998

| Sample No. | Location (metres SW from switchback) | Description  | Au ppb | As ppm | Zn ppm |
|------------|--------------------------------------|--|--------|--------|--------|
| 98-R-1     | 30                                   | Greenstone w/ fractures at 70°/30°W;<br>< 1cm frequency        | 3      | 11     | 77     |
| 98-S-1     | 30                                   |  | 1      | 4      | 107    |
| 98-R-2     | 38                                   | Carbonated greenstone w/ vuggy carb veinlets                   | 2      | <2     | 69     |
| 98-S-2     | 38                                   | No sample  |        |        |        |
| 98-R-3     | 46                                   | Lightly altered limonitic zone                                 | <1     | <2     | 69     |
| 98-S-3     | 46                                   |  | 4      | 13     | 131    |
| 98-R-4     | 54                                   | Greenstone w/ 2 cm silicified zone<br>light carbonate flooding | 4      | 7      | 66     |
| 98-S-4     | 54                                   |  | 30     | 9      | 87     |
| 98-R-5     | 62                                   | Lt green maroon volcanic w/ irregular carb str                 | 9      | <2     | 67     |
| 98-S-5     | 62                                   |  | 1      | 8      | 150    |
| 98-R-6     | 70                                   | Four cm lt limonitic carbonated zone in greenstone             | 104    | 46     | 64     |
| 98-S-6     | 70                                   |  | 46     | 47     | 228    |
| 98-R-7     | 78                                   | Greenstone   | 4      | <2     | 78     |
| 98-S-7     | 78                                   |  | 12     | 15     | 64     |

General

The purpose of the geochemical survey was to compare the mineral values with the rock geochemical values in place and to detect potential mineralization up slope from the sample locations.

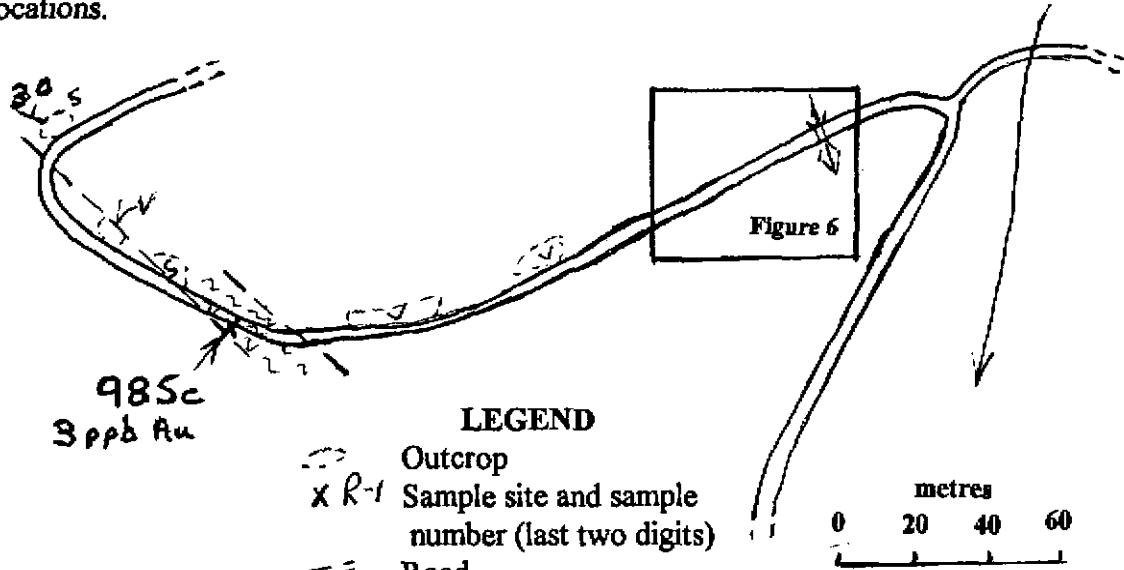


Figure 5

- LEGEND**
- - - Outcrop
  - X R-1 Sample site and sample number (last two digits)
  - == Road
  - - - Geological contact
  - N30 Fracture - strike and dip
  - ~ Shear zone

Sicker Group

- S Sediments
- V Volcanics
- Sc Schist

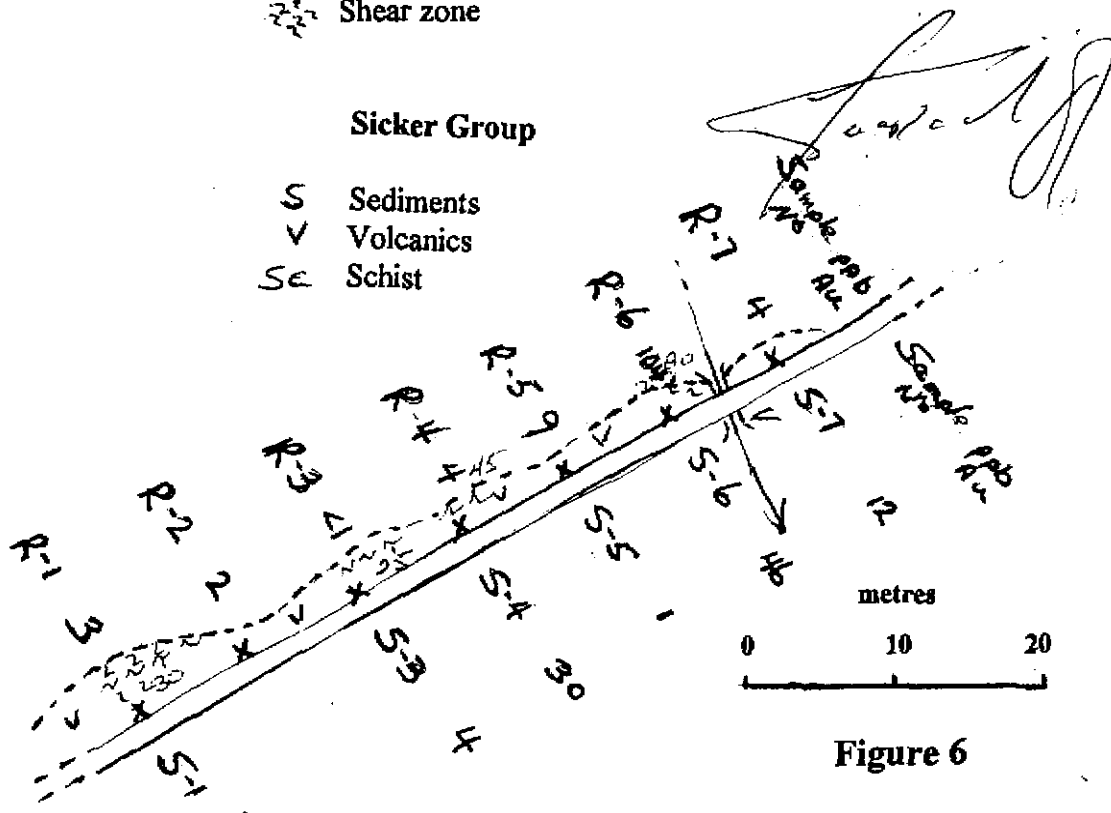


Figure 6

Figures 5 & 6 . Rock and soil sample sites with gold geochem results (ppb) (see Assay Certificate for complete geochem results).

## **Survey Procedure**

Soil samples were taken at eight metre intervals at the same locations as the rock samples except at location 2 where a soil sample was not taken. Samples were selected from the B horizon of the brown to brownish gray soil at a depth of from 20 to 30 centimeters. The soil was placed in a brown wet-strength paper bag with the grid coordinates marked thereon and red flagging with the sample designation (98-S-1, 98-S-2 to 98-S7) placed at the sample site. The samples were delivered by the writer to Acme Analytical Laboratories of Vancouver for a 30 element ICP analysis and a geochem gold analysis.

## **Testing Procedure**

The analysis procedure is first to thoroughly dry the sample. Then a 0.5 gram sample is digested with 3 ml. of 3:1:2 HCL-HNO<sub>3</sub>-H<sub>2</sub>O at 95° for one hour and is diluted to 10 ml with water. The sample is then analyzed by I.C.P. Gold analysis is by aqua-regia/MIBK extract and a GF/AA finish.

## **Treatment of Data**

Due to the low number of samples, a statistical analysis of the results was not performed and only generally "eye-balled" for anomalous values.

## **Results**

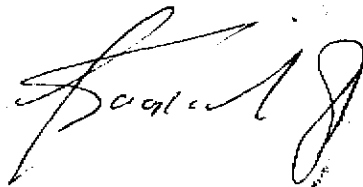
The soil geochemical results were not revealing as to any obvious anomalous mineral values; the highest values being 228 ppm Zn, 47 ppm As and 46 ppb Au. All the mineral values are shown on the accompanying Geochemical Analysis Certificate.

## **Conclusions**

The 1998 rock and soil geochemical program was not successful in locating any potential or possible mineral zones. The potential for gold bearing quartz veins were not indicated in the rock and soil geochemical results and the soil geochemical results were not indicative of a potential base metal volcanogenic zone in association with the indicated Sicker Group volcanic-sedimentary contact up slope from the road-cut zone. The 15 metre wide shear zone west of the road-cut zone which correlates with the volcanic-sedimentary contact, although containing narrow veinlets of limonitic altered carbonate, was not indicated to host gold or base metal mineralization.

The positive results from the 1988 program, in that the sampled location was not within one of the previously delineated anomalous or Target areas, is that future exploration should be confined directly to the Target areas or along the projected extensions of open ended anomalous zones within the Target areas.

Respectfully submitted,  
Sookochoff Consultants Inc.

A handwritten signature in black ink, appearing to read 'Laurence Sookochoff', written in a cursive style.

Laurence Sookochoff, P.Eng.

March 16, 1998  
Vancouver, B.C.



### Selected References

MULLER, J.E. - Geology of Vancouver Island. Open File 463. 1977.

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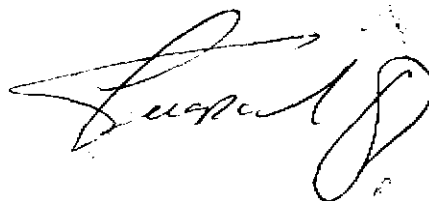
### Certificate

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

I am a Consulting Geologist and principal of Sookochoff Consultants Inc. with offices at Suite 1027, The Standard Building, 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 practicing my profession for the past thirty three years.
3. I am registered and in good standing with the Association of Professional Engineers of British Columbia.
4. Information for the accompanying report was obtained from sources cited under the Selected References section of this report and from work completed by the writer on the Pacific claim group.



Laurence Sookochoff, P.Eng.

March 16, 1998  
Vancouver, B.C.

**Pacific Claim Group  
Statement of Costs**

The field work on the Pacific Claim Group was carried out from June 15, 1997 to February 20, 1998 to the value as follows:

|                                       |                    |
|---------------------------------------|--------------------|
| L. Sookochoff, P.Eng.                 |                    |
| 2 man days @ \$575.                   | \$ 1,150.00        |
| Car rental:                           |                    |
| 2 days @ \$60.00 plus gas & km        | 192.50             |
| Room & board:                         |                    |
| 2 man days @ \$150.00                 | 300.00             |
| Assays                                | 232.30             |
| Results & map compilation             | 350.00             |
| Report, xerox, printing & compilation | <u>750.00</u>      |
|                                       | <u>\$ 2,974.80</u> |

**Appendix I**  
**ASSAY CERTIFICATES**

GEOCHEMICAL ANALYSIS CERTIFICATE

Sookochoff Consultants Inc. PROJECT PACIFIC File # 9800657

1027 - 510 W. Hastings St, Vancouver BC V6B 1L8 Submitted by: L. Sookochoff



| SAMPLE#          | Mo ppm | Cu ppm | Pb ppm | Zn ppm | Ag ppm | Ni ppm | Co ppm | Mn ppm | Fe % | As ppm | U ppm | Au ppm | Th ppm | Sr ppm | Cd ppm | Sb ppm | Bi ppm | V ppm | Ca % | P %  | La ppm | Cr ppm | Mg % | Ba ppm | Ti % | B ppm | Al % | Na % | K % | W ppm | Au* ppb |
|------------------|--------|--------|--------|--------|--------|--------|--------|--------|------|--------|-------|--------|--------|--------|--------|--------|--------|-------|------|------|--------|--------|------|--------|------|-------|------|------|-----|-------|---------|
| 98-R-1           | <1     | 27     | 5      | 77     | .3     | 27     | 19     | 634    | 4.61 | 11     | <8    | <2     | <2     | 94     | 1.4    | <3     | <3     | 38    | 4.14 | .114 | 10     | 28     | 1.31 | 150    | <.01 | 6     | 1.35 | .03  | .35 | <2    | 3       |
| 98-R-2           | <1     | 33     | 6      | 69     | .5     | 26     | 16     | 465    | 3.84 | <2     | <8    | <2     | <2     | 64     | .8     | <3     | <3     | 91    | 1.21 | .070 | 8      | 36     | 1.86 | 193    | .07  | <3    | 2.46 | .07  | .19 | <2    | 2       |
| 98-R-3           | <1     | 4      | 5      | 69     | .4     | 27     | 17     | 502    | 3.94 | <2     | <8    | <2     | 2      | 31     | 1.4    | <3     | 4      | 34    | 2.22 | .151 | 16     | 13     | .57  | 194    | <.01 | <3    | .95  | .02  | .35 | <2    | <1      |
| 98-R-4           | 1      | 68     | 11     | 66     | .8     | 26     | 23     | 710    | 5.19 | 7      | <8    | <2     | 2      | 32     | .9     | <3     | 5      | 199   | 3.23 | .159 | 8      | 51     | 1.57 | 305    | .23  | 3     | 3.73 | .10  | .08 | <2    | 4       |
| 98-R-5           | <1     | 130    | 4      | 67     | <.3    | 16     | 11     | 550    | 3.07 | <2     | <8    | <2     | <2     | 76     | .6     | <3     | <3     | 124   | 1.74 | .137 | 9      | 49     | 1.25 | 107    | .24  | <3    | 1.98 | .08  | .13 | 2     | 9       |
| 98-R-6           | 5      | 56     | 17     | 64     | .3     | 19     | 18     | 1750   | 6.72 | 46     | <8    | <2     | 3      | 11     | .9     | <3     | 9      | 55    | .28  | .112 | 10     | 24     | .08  | 315    | <.01 | <3    | .88  | .01  | .25 | <2    | 104     |
| RE 98-R-6        | 5      | 53     | 13     | 63     | <.3    | 20     | 18     | 1741   | 6.70 | 44     | <8    | <2     | <2     | 11     | 1.4    | <3     | 4      | 55    | .28  | .112 | 10     | 23     | .07  | 327    | <.01 | 5     | .88  | .01  | .24 | <2    | 100     |
| 98-R-7           | <1     | 63     | 6      | 78     | .6     | 30     | 26     | 1137   | 4.14 | <2     | <8    | <2     | 2      | 79     | 1.2    | <3     | <3     | 148   | 2.94 | .172 | 12     | 71     | 2.51 | 167    | .02  | 4     | 2.66 | .08  | .30 | <2    | 4       |
| 98-SC            | <1     | 33     | 5      | 99     | <.3    | 31     | 13     | 325    | 3.17 | 2      | <8    | <2     | <2     | 67     | .6     | <3     | <3     | 41    | 2.85 | .321 | 13     | 40     | 1.24 | 119    | .02  | 6     | 1.45 | .01  | .53 | <2    | 3       |
| STANDARD C3/AU-R | 26     | 63     | 39     | 171    | 5.4    | 37     | 12     | 772    | 3.33 | 59     | 15    | 2      | 21     | 30     | 24.3   | 20     | 23     | 83    | .59  | .091 | 19     | 167    | .61  | 152    | .10  | 20    | 1.87 | .04  | .17 | 21    | 450     |
| STANDARD G-2     | 1      | 3      | 6      | 47     | <.3    | 8      | 5      | 522    | 1.99 | 2      | <8    | <2     | 5      | 74     | <.2    | <3     | 6      | 42    | .66  | .097 | 8      | 76     | .59  | 231    | .14  | <3    | .98  | .08  | .48 | 2     | <1      |

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 THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL.  
 - SAMPLE TYPE: ROCK AU\* - IGNITED, AQUA-REGIA/MIBK EXTRACT, GF/AA FINISHED.(10 GM)  
 Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

DATE RECEIVED: FEB 27 1998 DATE REPORT MAILED: *Mar 6/98* SIGNED BY: *[Signature]* D. TOYE, C. LEONG, J. WANG; CERTIFIED B.C. ASSAYERS

## GEOCHEMICAL ANALYSIS CERTIFICATE

AA  
LLAA  
LL

Sookochoff Consultants Inc. PROJECT PACIFIC File # 9800658

1027 - 510 W. Hastings St, Vancouver BC V6B 1L8 Submitted by: L. Sookochoff

| SAMPLE#          | Mo<br>ppm | Cu<br>ppm | Pb<br>ppm | Zn<br>ppm | Ag<br>ppm | Ni<br>ppm | Co<br>ppm | Mn<br>ppm | Fe<br>% | As<br>ppm | U<br>ppm | Au<br>ppm | Th<br>ppm | Sr<br>ppm | Cd<br>ppm | Sb<br>ppm | Bi<br>ppm | V<br>ppm | Ca<br>% | P<br>% | La<br>ppm | Cr<br>ppm | Mg<br>% | Ba<br>ppm | Ti<br>% | B<br>ppm | Al<br>% | Na<br>% | K<br>% | W<br>ppm | Au*<br>ppb |
|------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|---------|-----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|----------|---------|--------|-----------|-----------|---------|-----------|---------|----------|---------|---------|--------|----------|------------|
| 98-S-1           | 2         | 56        | 18        | 107       | 1.0       | 21        | 55        | 2294      | 5.74    | 4         | <8       | <2        | 4         | 26        | 1.4       | 4         | <3        | 155      | .67     | .122   | 20        | 48        | .45     | 372       | .06     | 7        | 3.79    | .01     | .05    | <2       | 1          |
| 98-S-3           | 2         | 106       | 12        | 131       | 1.1       | 35        | 24        | 1066      | 6.25    | 13        | <8       | <2        | 4         | 18        | 1.4       | <3        | <3        | 137      | .53     | .115   | 15        | 61        | .78     | 244       | .09     | <3       | 3.96    | .01     | .05    | <2       | 4          |
| RE 98-S-3        | 2         | 107       | 16        | 134       | .9        | 34        | 23        | 1076      | 6.33    | 12        | <8       | <2        | 4         | 19        | .9        | <3        | <3        | 138      | .53     | .117   | 15        | 61        | .78     | 262       | .09     | 3        | 4.00    | .01     | .06    | <2       | 7          |
| 98-S-4           | 1         | 134       | 11        | 87        | .6        | 41        | 21        | 1147      | 4.79    | 9         | <8       | <2        | 2         | 20        | 1.0       | <3        | 3         | 122      | .76     | .106   | 11        | 52        | 1.50    | 291       | .21     | <3       | 2.73    | .01     | .04    | <2       | 30         |
| 98-S-5           | 2         | 75        | 26        | 150       | .6        | 26        | 27        | 3518      | 5.29    | 8         | 16       | <2        | 3         | 32        | 1.5       | <3        | <3        | 129      | .87     | .156   | 15        | 44        | .62     | 553       | .08     | 6        | 3.35    | .01     | .07    | <2       | 1          |
| 98-S-6           | 37        | 248       | 14        | 228       | .7        | 30        | 37        | 7003      | 22.02   | 47        | <8       | <2        | 5         | 8         | 2.7       | 6         | 17        | 221      | .19     | .120   | 26        | 77        | .17     | 469       | <.01    | <3       | 1.07    | .01     | .03    | <2       | 46         |
| 98-S-7           | 2         | 52        | 10        | 64        | <.3       | 13        | 12        | 384       | 5.29    | 15        | <8       | <2        | <2        | 11        | 1.1       | <3        | <3        | 145      | .20     | .117   | 9         | 38        | .41     | 103       | .03     | <3       | 2.81    | <.01    | .05    | <2       | 12         |
| STANDARD C3/AU-S | 26        | 63        | 39        | 171       | 5.4       | 37        | 12        | 772       | 3.33    | 59        | 15       | 2         | 21        | 30        | 24.3      | 20        | 23        | 83       | .59     | .091   | 19        | 167       | .61     | 152       | .10     | 20       | 1.87    | .04     | .17    | 21       | 50         |
| STANDARD G-2     | 1         | 3         | 6         | 47        | <.3       | 8         | 5         | 522       | 1.99    | 2         | <8       | <2        | 5         | 74        | <.2       | <3        | 6         | 42       | .66     | .097   | 8         | 76        | .59     | 231       | .14     | <3       | .98     | .08     | .48    | 2        | 1          |

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