

83-#337 A-#11244

OWNER/OPERATOR BILLITON CANADA LTD. 8  
1982 Geochemistry Assessment Report  
RR1, RR2, RR6-9 CLAIMS  
FORT STEELE AND GOLDEN MD 82-F/16E, 82-K/1E  
49°59'N 116°11'W

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

11,244

Brian J. Paul  
August 8, 1983

1982 GEOCHEMISTRY ASSESSMENT REPORT

TITLE Greenland Creek Property

CLAIMS RR1, 2, 6, 7, 8 and 9 claims

COMMODITIES Sn, W

LOCATION 60 Km northwest of Cranbrook  
Latitude 49°59'N Longitude 116°11'W  
Fort Steele and Golden Mining Division

BY Brian J. Paul

FOR BILLITON CANADA LTD.

WORK PERIOD July 26, 1982 to June 17, 1983

BILLITON VANCOUVER OFFICE

August 8, 1983

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## SUMMARY

The RR1, RR2 and RR6-9 mineral claims, totalling 87 units, are located in southeastern British Columbia, 60 km northwest of the city of Cranbrook in the Fort Steele and Golden Mining Divisions at 49°59'N latitude, 116°11'W longitude. Access is by logging road from Highway 93 to the confluence of Buhl and Skookumchuck Creeks, and thence by helicopter from Cranbrook or Fairmont Hot Springs. This assessment report presents the results of a reconnaissance panned concentrate sampling program on the property conducted during the period July 26-29, 1982.

The RR claims are underlain for the most part by rusty-weathering argillites, siltstone and quartzite belonging to the Proterozoic lower Aldridge Formation. The lower Aldridge is overlain in the extreme northwestern corner of the claim block by grey turbidite wackes and laminated siltstone of the middle Aldridge Formation. Intraformational conglomerate occurs sporadically along the contact between the two units.

Intrusive into the lower Aldridge Formation are a large number of basic sills of Proterozoic age, the Moyie Intrusions. The sills, which are generally conformable to bedding in the Aldridge, are comprised predominantly of meta-diorite, with thicknesses of 60 to 120 metres being common.

The south-eastern portion of the claim block is underlain by leucocratic quartz monzonite belonging to the Cretaceous White Creek Batholith. A number of large plugs and dykes of granite pegmatite occur in the area immediately south of Greenland Creek.

Reconnaissance panned concentrate sampling conducted on the RR1, RR2 and RR6 to 8 claims revealed widespread anomalous values in tin and tungsten. Many of these anomalous values are attributable to known veinlet occurrences of scheelite and wolframite within the Moyie diorite on the RR8 claim, with additional occurrences being indicated on the RR2 (Nine Lake area) and RR9 claims.

## INTRODUCTION

### General Statement

This report presents the results of a reconnaissance panned concentrate program on the RR1, RR2 and RR6 to 8 claims between July 26 and July 29, 1982, by B.J. Paul, W.J. Shanks and D. Wukadinovic of Billiton Canada Ltd.

### Location and Access

The RR claims are located in southeastern British Columbia, 60 kilometres northwest of the city of Cranbrook and 35 kilometres west of the community of Skookumchuck on Highway 93. Approximate geographical coordinates for the centre of the property are 49°59'N latitude, 116°11'W longitude.

Access is by well-maintained gravel road to the confluence of Buhl and Skookumchuck Creeks, and thence by helicopter from either Cranbrook or Fairmont Hot Springs.

### Topography, Climate

Relief on the RR claims is high, with elevations ranging from 1895 to 2860 metres. The claims cover most of Rusty Ridge, from Doctor Creek on the 82-K/1 sheet south to Elcore Lake on 82-F/16, as well as most of the Greenland Creek drainage area.

Tree line is at an elevation of approximately 2350 metres, with alpine larch at the higher elevations and pine, spruce and tamarack in the valley bottoms.

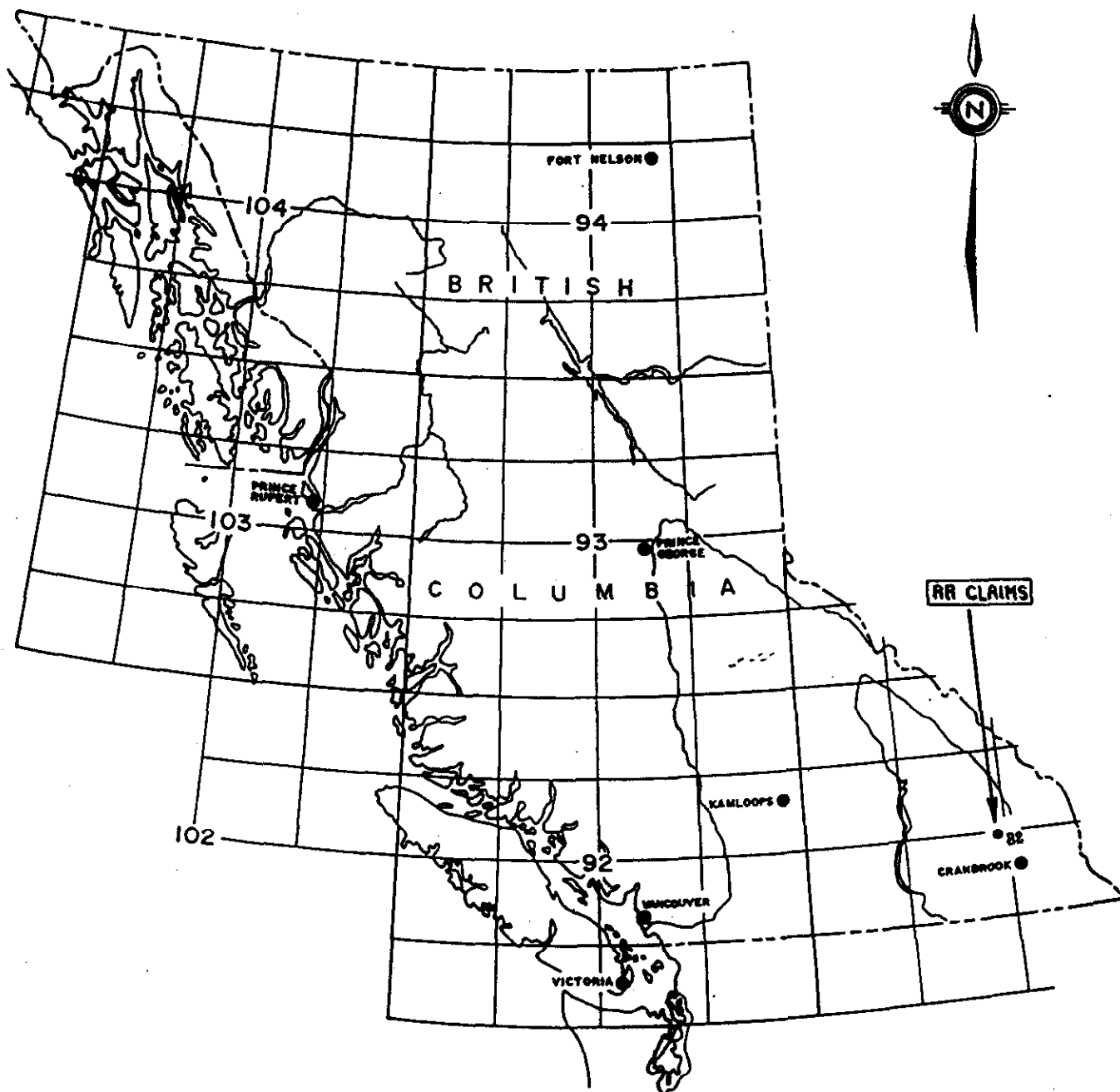
Climatically, the area is relatively dry, although the higher elevations remain snow-covered well into June. The field season at the higher elevations is restricted to nine or ten weeks in July, August and early September.

A number of small tarn lakes and creeks on the property ensure a summer-long supply of water for camping and drilling purposes.

### Claim Data

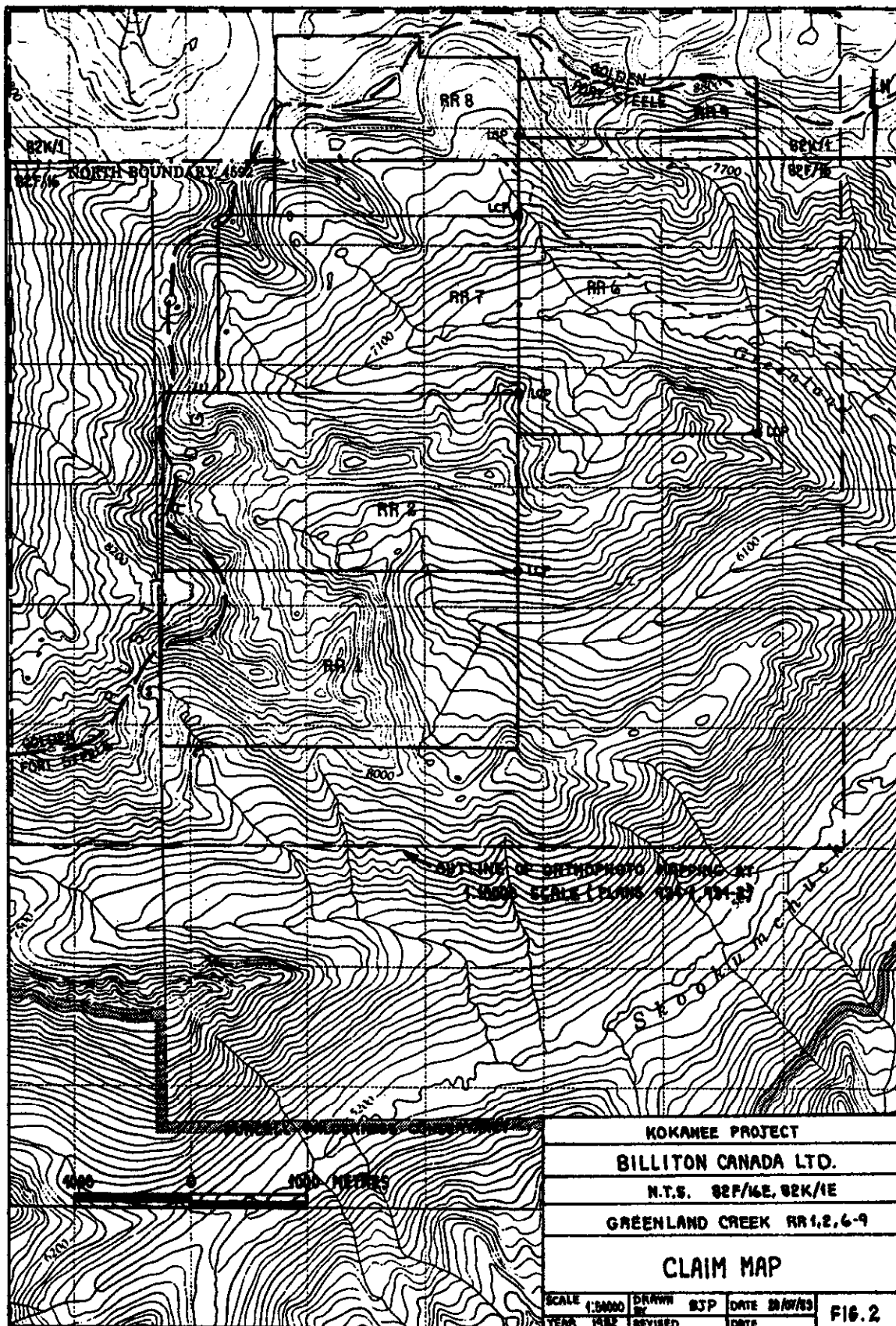
| <u>CLAIM</u> | <u>UNITS</u> | <u>UNIT<br/>NUMBERS</u>     | <u>RECORD<br/>NUMBER</u> | <u>LOCATION<br/>DATES</u> | <u>RECORD<br/>DATE</u> |
|--------------|--------------|-----------------------------|--------------------------|---------------------------|------------------------|
| RR1          | 19           | 1-3, 14-19,<br>25-30, 32-34 | 1652                     | 16 July - 25 July<br>1982 | August 12, 1982        |

| <u>CLAIM</u> | <u>UNITS</u> | <u>UNIT<br/>NUMBERS</u> | <u>RECORD<br/>NUMBER</u> | <u>LOCATION<br/>DATES</u>  | <u>RECORD<br/>DATE</u> |
|--------------|--------------|-------------------------|--------------------------|----------------------------|------------------------|
| RR2          | 18           | 1-6, 11-16,<br>17-22    | 1653                     | 17 July - 24 July,<br>1982 | August 12, 1982        |
| RR6          | 20           | 1-4, 13-20<br>24-31     | 1657                     | 17 July - 19 July,<br>1982 | August 12, 1982        |
| RR7          | 15           | 1-5, 12-21              | 1658                     | 19 July, 1982              | August 12, 1982        |
| RR8          | 12           | 1-4, 13-20              | 1697                     | 27 Sept - 28 Sept,<br>1982 | August 12, 1982        |
| RR9          | 4            | 1, 16, 17, 27           | 1698                     | 27 Sept - 28 Sept,<br>1982 | August 12, 1982        |



|                              |          |         |               |
|------------------------------|----------|---------|---------------|
| KOKANEE PROJECT              |          |         |               |
| BILLITON CANADA LTD.         |          |         |               |
| N.T.S. 82F/16E, 82K/1E       |          |         |               |
| GREENLAND CREEK RR 1, 2, 6-9 |          |         |               |
| LOCATION MAP                 |          |         |               |
| SCALE                        | DRAWN BY | BJP     | DATE 10/01/73 |
| FIELD YEAR                   | 1982     | REVISED | DATE          |

FIG. 1



ORTHOPHOTO MAPPING

An orthophoto map at 1:10000 scale (Plan 394-1) was constructed in anticipation of further work on the RR claims during 1983. The map was prepared by the Northway-Gestalt Corporation in Toronto, Ontario, using existing aerial photographs and a Gestalt Photo Mapper (GPM). Both orthophotographic and topographic base maps were prepared.

(geochemistry section follows immediately)

## GEOCHEMISTRY

### Sampling and Analytical Procedure

Twenty-three panned concentrate samples were collected during the period July 26 to July 29, 1982, as part of an on-going reconnaissance program in the Skookumchuck Creek-White Creek area.

The panned concentrate samples were hand-panned in the field; ten kilograms of sediment (approximate) was panned to a dilute concentrate of 50 to 100 grams and collected in a plastic bag. The concentrates were sent by bus parcel express to TerraMin Research Laboratories Ltd. in Calgary, Alberta.

In the laboratory, the panned concentrates were sieved to -20 mesh and weighed. A representative portion of the -20 fraction was then pulverized to -250 mesh and analyzed for tin and tungsten.

For tin analyses, a one gram sample was fused with ammonium iodide and the sublimate leached with dilute hydrochloric acid. An aliquot was removed and a colour complex formed with gallein was measured colorimetrically.

For tungsten analyses, a one gram sample was fluxed with a  $KCl-KNO_3-Na_2CO_3$  fusion mixture and leached with water. An aliquot was removed and a colour complex formed with dithiol was measured colorimetrically.

Background and anomalous values for tin and tungsten were determined from an in-house regional data set and are as follows:

| <u>Element</u> | <u>Anaomalous Level (ppm)</u> | <u>Source</u>                      |
|----------------|-------------------------------|------------------------------------|
| Sn             | 20                            | Partitioning (99% Threshold Level) |
| W              | 40                            | Partitioning (99% Threshold Level) |

### Results

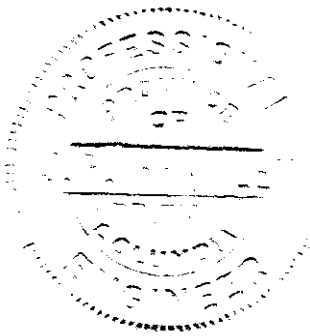
Twelve of the twenty-three panned concentrate samples collected during the reconnaissance program contain anomalous amounts of tin. The anomalous samples occur along Nine Creek (3), Greenland Creek (2) and in a series of three adjoining cirque basins on the RR7 to 9 claims (7). Samples collected

along the upper reaches of Greenland Creek are non-anomalous in tin. Five of the twenty-three panned concentrate samples contain greater than 100 ppm Sn, which is considered highly anomalous. Of these five, three were collected from creeks draining a double cirque basin on the RR8 claim where veinlet occurrences of scheelite and wolframite are known in the Moyie diorite. The remaining two samples were collected on Nine Creek, where there are no known tin/tungsten occurrences. Cassiterite was discovered in quartz veins on the RR9 claim during 1982, with additional occurrences being suggested by the geochemical program on the RR2 (Nine Lake area) and RR8 claims.

All twenty-three panned concentrate samples contain anomalous amounts of tungsten; eight of these samples contain greater than 500 ppm W which is considered highly anomalous. Of these eight samples, one occurs on Nine Creek, three on a small creek draining the cirque basin on the RR9 claim, four on creeks draining the double cirque basin on the RR8 claim and one on Greenland Creek. The five latter samples reflect the known occurrences of scheelite and wolframite on the RR8 claim, and similar mineralization was discovered on the RR9 claim during 1982. The Nine Lake area (RR2 claim) remains unexplored.

Highly anomalous tin and tungsten values, for the most part, appear to coincide.

All of the previously documented mineralization, as well as that discovered during the 1982 field season, is contained in greisen veinlets, quartz veins and felsic veinlets of unknown mineralogy within the Moyie diorite. Scheelite, in particular, is widespread in the Rusty-Greenland Creek area, and additional prospecting may well turn up new occurrences. A full evaluation of the economic potential of the tungsten-(tin) mineralization will require detailed property programs covering most of the RR mineral claims.



Report by: Brian Paul  
Brian J. Paul

Endorsed by: J.P. Franzen  
J.P. Franzen, P.Eng.  
Regional Geologist

APPENDIX I

ANALYTICAL RESULTS



TERRAMIN RESEARCH LABS LTD.

9.

## ANALYTICAL REPORT

Job # 82-119

Date August 25, 1982

Client Project 935 Kokanee

Page 1/1

| Sample No.<br><u>Panned Concentrates</u> | Weight of<br>-20 mesh<br>pan conc. (gm) | Sn<br>ppm | W<br>ppm |
|--|---|-----------|----------|
| 272101                                   |   | 15        | 855      |
| 272102                                   |   | 71        | 2020     |
| 272103                                   |   | 74        | 1310     |
| 272104                                   |   | 31        | 226      |
| 272105                                   |   | 75        | 1035     |
| 272151                                   |   | 5         | 813      |
| 272152                                   |   | 1         | 44       |
| 272153                                   |   | 0         | 94       |
| 272154                                   |   | 4         | 153      |
| 272197                                   |   | 4         | 104      |
| 272198                                   |   | 7         | 205      |
| 272199                                   |   | 25        | 357      |
| 272206                                   |   | 2         | 338      |
| 272207                                   |   | 27        | 776      |
| 272251                                   |   | 105       | 761      |
| 272252                                   |   | 171       | 916      |
| 272253                                   |   | 5         | 167      |
| 272254                                   |   | 3         | 175      |
| 272255                                   |   | 0         | 88       |
| 272351                                   |   | 225       | 658      |
| 272352                                   |   | 100       | 437      |
| 272253                                   |   | 27        | 367      |
| 272501                                   |   | 248       | 3810     |

APPENDIX IISTATEMENT OF COSTSa) Salaries

|   |               |
|---|---------------|
| B. Paul (Field Geologist) 4 days @ \$100/day        | \$ 400.00     |
| W. Shanks (Geological Assistant) 4 days @ \$70/day  | 280.00        |
| D. Vukadinovic (Geological Assistant) 4 days 70/day | <u>280.00</u> |
|   | 960.00        |

b) Food and Accomodation

|                               |        |
|-------------------------------|--------|
| 12 man-days @ \$15.00/man/day | 180.00 |
|-------------------------------|--------|

c) Transportation

|                                       |              |
|---------------------------------------|--------------|
| Helicopter: 2.8 hours @ \$481.00/hour | 1,346.80     |
| Truck Rental: 4 days @ \$35.00/day    | 140.00       |
| Fuel and Service                      | <u>60.00</u> |
|                                       | 1,546.80     |

d) Analytical Costs

|  |        |
|--|--------|
| 23 Pan Concentrates Analyzed for Sn and W @ \$10.00/sample | 230.00 |
|--|--------|

e) Orthophoto Map Production 7,300.00f) Report Cost/Miscellaneous 400.00\$10,616.80

APPENDIX IIISTATEMENT OF QUALIFICATIONS

I, Brian J. Paul, with a business address of 460 The Station, 601 Cordova Street West, Vancouver, British Columbia, V6B 1G1, do hereby certify that I have supervised and carried out the field work, and have assessed and interpreted the geochemical data from the RR1, RR2, and RR6-9 mineral claims.

I also certify that:

- 1) I am a graduate of the University of Western Ontario, London, Ontario (Hons. B.Sc. Geology, 1976).
- 2) I am currently enrolled in a graduate program (M.Sc. Geology) at the University of Manitoba, Winnipeg, Manitoba.
- 3) I have engaged in the study and practice of mineral exploration since 1973, the relevant details of which are listed below:

|              |  |
|--------------|--|
| 1973/1974    | Junior Geological Assistant, Ontario Division of Mines, NW Ontario                   |
| 1975         | Temporary Geologist, Union Carbide Exploration, north-central B.C.                   |
| 1976/1977    | Graduate Assistant, University of Manitoba, SE and north-central Manitoba, S. Dakota |
| 1978         | Temporary Geologist, AMAX Minerals Exploration, B.C. and Yukon                       |
| 1979/present | Field Geologist, Billiton Canada Ltd., B.C., Yukon, New Brunswick.                   |



11,244

☐ LEGAL CLAIM POST

CLAIM BOUNDARY

● 272197 4, 104

PANNED CONCENTRATE SAMPLE LOCATION S<sub>1</sub>, W (ppm)

CLAIMS LOCATED BY COMPASS AND CHAIN

SCALE  
400  
METERS



|                                      |                  |               |          |
|--------------------------------------|------------------|---------------|----------|
| KOKANEE PROJECT                      |                  |               |          |
| BILLITON CANADA LTD.                 |                  |               |          |
| N.T.S. 82 F/16 E, B2 K/1E            |                  |               |          |
| GREENLAND CREEK RR 1,2,6-9           |                  |               |          |
| RECONNAISSANCE<br>GEOCHEMICAL SURVEY |                  |               |          |
| SCALE 1:10000                        | DRAWN BY BJW/ELJ | DATE 20/07/88 | PLAN NO. |
| FIELD YEAR 1982                      | REVISED BY       | DATE          | 934 - 2  |