

RAM EXPLORATIONS LTD.

SUMMARY REPORT  
AND  
PROPOSED EXPLORATION PROGRAM  
OTTAWA CREEK PROJECT

REVELSTOKE AND SLOCAN MINING DIVISIONS  
SOUTH EASTERN BRITISH COLUMBIA

FILMED

Longitude = 117° 06' W

Latitude = 50° 34' N

NTS = 82K11W

Mineral Claims

Ottawa 1, Record No. 2463

Ottawa 2, Record No. 2464

Haskins, Record No. 5548

Owner / Operator: Loumic Resources Ltd.

Reported By: A. S. Greene, P. Geol.

C. von Einsiedel, B. Sc.

Submitted: November 30, 1988

GEOLOGICAL BRANCH  
ASSESSMENT REPORT

18-095

|        |      |    |
|--------|------|----|
| LOG No | 1212 | PL |
| Author |      |    |
| Date   |      |    |

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TERMS OF REFERENCE

AND

INTRODUCTION

## TERMS OF REFERENCE

By way of an option agreement effective October 1, 1987, Loumic Resources Ltd. acquired a 100% interest in 45 mineral claims located roughly 70 kilometers southeast of Revelstoke in southeastern British Columbia. The claims adjoin similar properties which host precious metal mineralization and are therefore considered a "grassroots" prospect.

The claims are of interest because they cover parts of a complex fault zone (termed the "Cambourne" or "Central" Mineral Belt) which hosts several past producing mines and recently developed prospects. Of particular interest is a new discovery situated at the northwestern end of the Cambourne Mineral Belt (indicated reserves are currently estimated at 400,000 tons grading 0.30 oz/ton gold; Windflower Mines News Release dated Jan. 12, 1988).

On the basis of this information, Loumic Resources commissioned Ram Explorations Ltd. to conduct an evaluation of the property and, if warranted, to make recommendations for continued exploration.

## INTRODUCTION

During October and November, 1987, an exploration program was carried out consisting of: airborne multifrequency electromagnetic and magnetic surveys; geological mapping of the southern part of the claim area; and, an examination of several nearby precious metal occurrences. As part of this program Loumic Resources participated in a road rehabilitation project to upgrade access to the claim area.

This report describes results of these surveys and outlines recommendations for continued exploration.

SUMMARY  
AND  
RECOMMENDATIONS

## SUMMARY AND RECOMMENDATIONS

The Ottawa Creek Project consists of 45 mineral claims covering an area approximately five kilometres long and two kilometres wide located roughly ten kilometres northwest of Gerrard. The property is within the "Central" or "Cambourne" Mineral Belt, the most important of two parallel belts of gold, silver and base metal occurrences collectively referred to as the Trout Lake Mining District.

Geological mapping by Read, 1975 (GSC Map Nos. 432 and 464) shows that the Trout Lake District forms the northern terminus of the Kootenay Arc, an important metallogenic province which hosts most of the well known lead-zinc-silver (gold) camps of the western cordillera. Rocks within the project area comprise complexly folded metasediments and metavolcanics belonging to the Lardeau Group (Fyles, 1962).

The property is of interest primarily because of its location within the Cambourne Mineral Belt. This belt extends for roughly 60 kilometres beginning northwest of Cambourne and continuing southeast past Gerrard.

Throughout the Cambourne Belt over 100 polymetallic, vein-type occurrences are known. Five of these have undergone extensive, shallow reserve definition or were mined on several levels including the recent Windflower Mines discovery near Cambourne, the Spider/Eclipse Mine, the True Fissure Deposit, the Nettie Lake Mine and the Silver Cup Mine. All of these prospects occur in close proximity to a major northwest trending fault zone typically near junctions with cross structures (northeast trending faults). Until recently only sporadic exploration of the best known prospects has been carried out.

The objectives of the present exploration program were to delineate favourable geological environments such as fault or fracture zones and

contact areas within the claim group and to assess the significance of precious metal occurrences on adjoining properties.

Published technical records document exploration of several occurrences in the Ottawa Creek Claim area including the Foggy Day Prospect (located 2 kilometres to the northwest), the Golden Crown Prospect (located approximately 2 kilometres to the west) and massive sulfide showings exposed immediately south of the claim area. All of these prospects consist of fault controlled, gold bearing quartz veins which occur within the same lithologic units exposed on the Ottawa Creek Claims.

Skyworld Resources Ltd. has recently completed diamond drill testing of gold occurrences on the Foggy Day Prospect and have reported grades of between 0.1 and 3.2 oz/ton gold across widths of up to several meters. Historical records regarding the Golden Crown Prospect document sampling of quartz veins which returned grades of 0.25 oz/ton gold across widths of up to 5 meters. The close proximity of these occurrences suggests that the Ottawa Creek claim area has potential to host mineralization similar to that developed at the better known prospects of the Trout Lake area (notably Windflower Mines discovery).

According to Emons (1914), prospectors identified several gold occurrences in the southern part of the claim area, however these were not examined as part of the present survey.

Results of a sophisticated airborne HEM and magnetics survey indicate several high priority targets in the central and south central parts of the claim area. Magnetics maps indicate a buried intrusive body flanked by volcanic rocks which have been cut by several major fault zones. This type of environment is a common host for local mineral deposits and it is recommended that an evaluation be made of all known targets.



An exploration program consisting of surface exploration followed by trenching and if warranted, diamond drilling is suggested at an estimated cost of \$200,000.

Respectfully Submitted,

A handwritten signature in cursive script, appearing to read "A.S. Greene", with a long horizontal flourish extending to the right.

A.S. Greene, P.Geol.  
Consulting Geologist

C.A. von Einsiedel, BSc.  
Consulting Geologist

SECTION 1

PROPOSED EXPLORATION PROGRAM

### 1.1 Exploration Targets

(please refer to figure no.s 6 and 7)

The objective of the proposed program will be to evaluate target areas identified by the airborne survey.

#### Phase 1

This stage of exploration should consist of geological mapping and soil geochemical surveys along the trace of all EM conductors. The total estimated cost of these surveys is \$75,000 to be allocated as follows:

|   |               |
|---|---------------|
| Engineering/Supervision/Reports                                 | \$ 10,000     |
| Helicopter Support and Related Technical                        | 20,000        |
| Surface Exploration Program<br>- allow 5 man field crew 20 days | 30,000        |
| Assays  | 5,000         |
| Contingency   | <u>10,000</u> |
| Total   | \$ 75,000     |

#### Phase 2

Phase 2 will be a follow-up program consisting of trenching and if warranted, diamond drilling, designed to test anomalous areas identified during Phase 1. Provision should be made for an expenditure of \$125,000 to be allocated as follows:

|  |               |
|--|---------------|
| Engineering/Supervision/Reports                      | \$ 25,000     |
| Trenching and Tracked Equipment Support              | 25,000        |
| Diamond Drilling<br>- 500 meters @ \$100 (inclusive) | 50,000        |
| Contingency  | <u>25,000</u> |
| Total  | \$ 125,000    |

The total estimated cost of these surveys is \$200,000. In the event that completion of this program identifies a significant mineralized zone, provision would have to be made for an additional 1,500 metres of follow-up diamond drilling.

SECTION 2

PROPERTY DESCRIPTION

## 2.1 Property Location, Access, Ownership

(please refer to figure nos. 1, 2, 5, and 6)

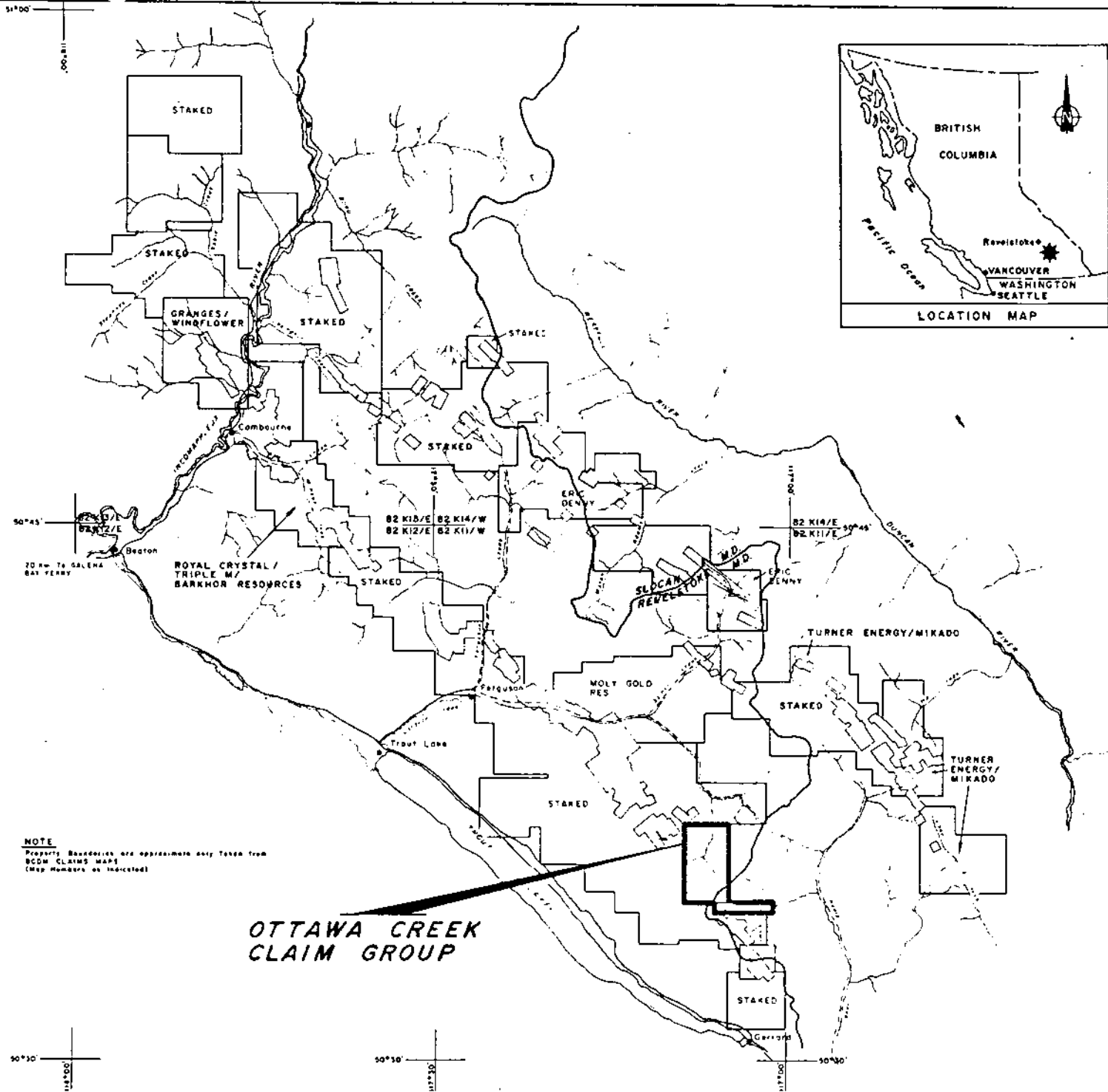
The Ottawa Creek Claim Group consists of three located mineral claims (45 claim units) situated in the Selkirk Mountains roughly 10 kilometers northwest of Gerrard in southeastern B. C. The geographic centre of the claim area is approximately longitude  $117^{\circ} 06' W$ , latitude  $50^{\circ} 34' N$ .

Access to the Trout Lake area is by paved highway from Revelstoke or Nakusp. Access to Gerrard is via government maintained gravel roads from either Trout Lake or Kaslo.

Access to the claim area is via a moderately steep 4 x 4 track which extends north from Gerrard roughly 14 kilometers to within one kilometer of the boundary of the property. As part of the present exploration program, several steep sections of the access road were relocated, new culverts were installed and an additional 2.0 kilometers of roads were constructed.

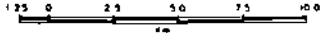
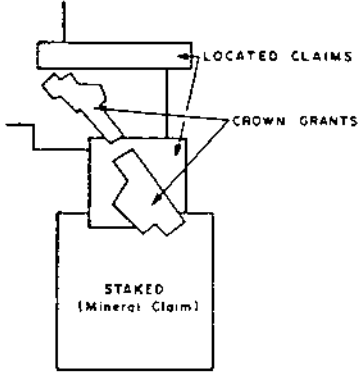
The claims cover Ottawa Creek Valley at elevations ranging from 4,500' at the northern claim boundary to ridgetops of over 9,000' in the southeastern part of the property. Figure 5 shows the topography of the claim area. Figure 6 is an orthophoto mosaic which shows physiography.

Title is recorded in the Revelstoke and Slocan Mining Divisions on Mineral Title Reference Map No. 82K11W as shown in Table 1.



**LEGEND**

- All Weather Road
- - - - - Cut Track (Not Maintained)



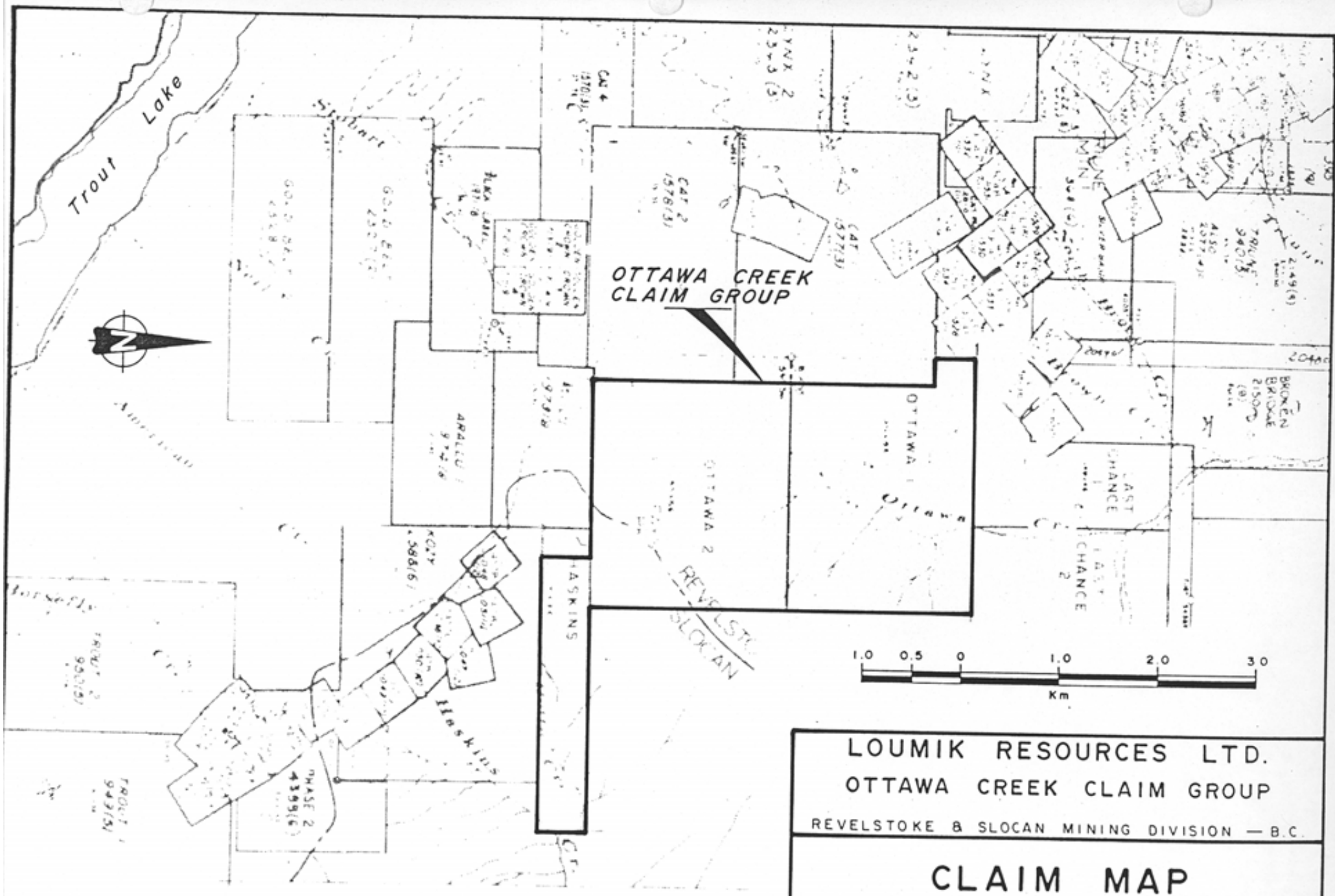
**NOTE**  
 Property Boundaries are approximations only Taken from  
 BCDM CLAIMS MAPS  
 (Map Numbers as Indicated)

**OTTAWA CREEK  
 CLAIM GROUP**

LOUMIK RESOURCES LTD.  
 OTTAWA CREEK CLAIM GROUP  
 REVELSTOCK & SLOCAN M.D. - B.C.

**PROPERTY LOCATION  
 MAP**

|                                       |                                      |             |
|---------------------------------------|--------------------------------------|-------------|
| RAM EXPLORATIONS LTD<br>VANCOUVER BC. | DRN BY TS<br>CHK BY<br>DATE JAN 1988 | FIG NO<br>1 |
|---------------------------------------|--------------------------------------|-------------|



LOUMIK RESOURCES LTD.  
 OTTAWA CREEK CLAIM GROUP  
 REVELSTOCK & SLOCAN MINING DIVISION — B.C.

## CLAIM MAP

|  |                             |          |
|--|-----------------------------|----------|
| RAM EXPLORATIONS LTD.<br>VANCOUVER, B.C. | DWN. BY: T.M.               | FIG. No. |
|  | CHK. BY: <i>[Signature]</i> | 2        |
|  | DATE: JAN. 1988             |          |

TABLE 1

OTTAWA CREEK PROJECT - REVELSTOKE AND SLOCAN MINING DIVISIONS  
 LIST OF MINERAL CLAIMS, RECORD NUMBERS, EXPIRY DATES, OWNERSHIP AND OPTION TERMS

OTTAWA CREEK CLAIM GROUP

| <u>CLAIM NAME</u> | <u>RECORD No.</u> | <u>No. OF UNITS</u> | <u>EXPIRY DATE</u> | <u>OWNER</u> | <u>OPTION TERMS</u>  |
|-------------------|-------------------|---------------------|--------------------|--------------|--|
| OTTAWA 1          | 2463              | 20                  | OCTOBER 9, 1988    | JUDY TRKLA   | - OPTION TO PURCHASE 100% INTEREST FOR \$25,000 IN CASH AND \$150,000 TREASURY SHARES TO BE ISSUED IN STAGES ON COMPLETION OF EACH PHASE OF ENGINEERING. |
| OTTAWA 2          | 2464              | 20                  | OCTOBER 9, 1988    | JUDY TRKLA   |  |
| HASKINS           | 5548              | 5                   | OCTOBER 19, 1988   | JUDY TRKLA   |  |



## 2.2 Regional Geology and Exploration Model

2-4

(Please refer to Figure No. 3, 4 and 5)

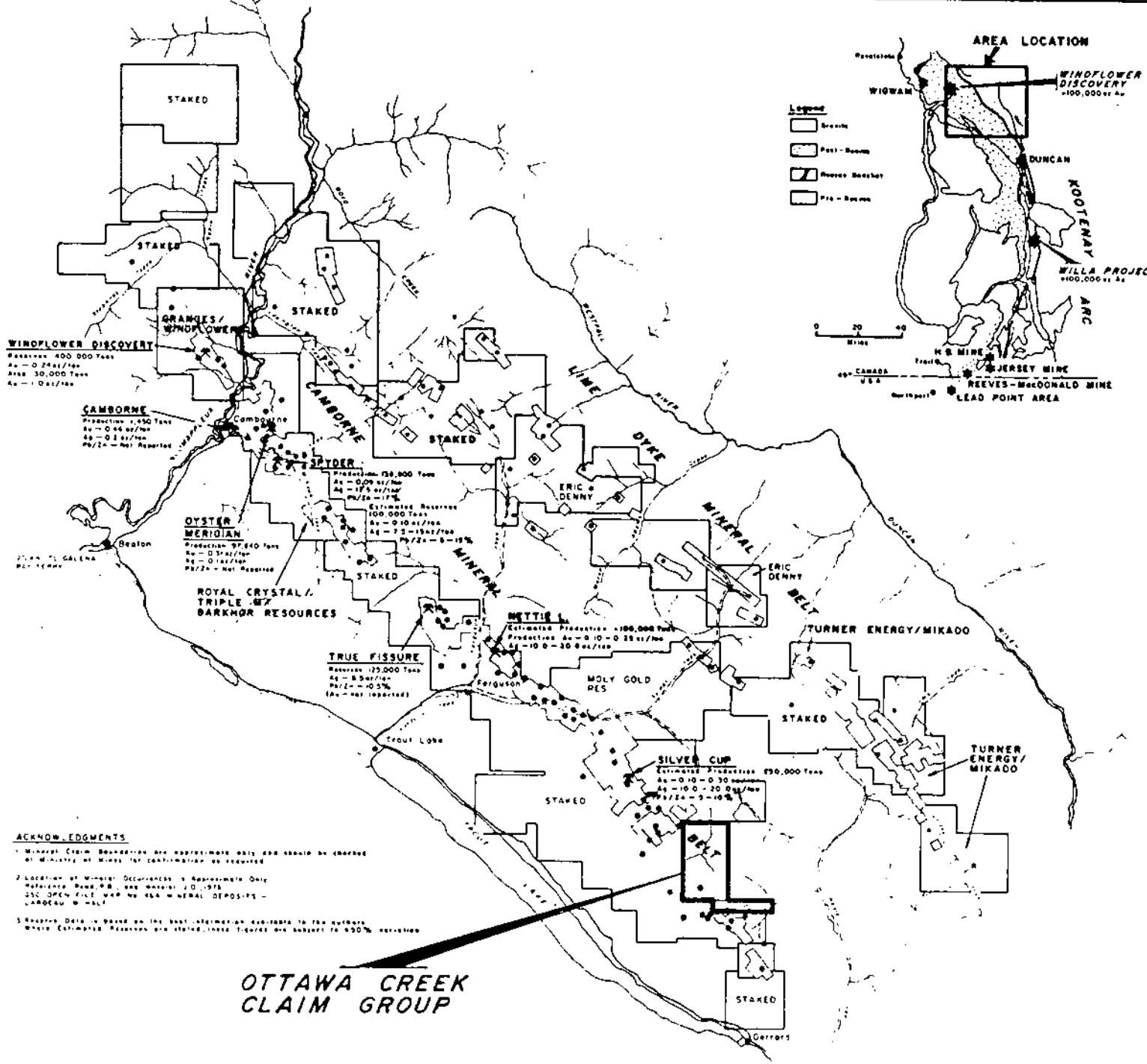
The regional geology of the Trout Lake District was recently described by Fyles (1962) and Read (1976).

The district forms the northern terminus of an arcuate belt of complexly folded metasediments and metavolcanics which extend from northern Washington to Revelstoke in southeastern British Columbia. This belt, termed the Kootenay Arc, hosts many of the well known Pb-Zn-Ag camps of the western Cordillera and is considered an important metallogenic province. A new gold discovery in the northwestern part of the Trout Lake District (Windflower Mines) indicates good potential for medium tonnage gold deposits and has generated considerable industry interest in the area.

In the vicinity of Trout Lake, the rocks of the Kootenay Arc are dominated by complicated vertical folds which strike northwest and plunge 20 - 40° to the northwest. One of the more prominent folds is the Silver Cup Anticline, a broad, isoclinally folded structure which extends for over 60 kilometres (from Gerrard in the southeast to Scott Creek west of the Incomappleux River; Granges - Windflower discovery area).

Rocks within the Silver Cup fold comprise argillites, siliceous argillites, quartzites, phyllites and chlorite schists belonging to the Lardeau Group (Broadview, Ajax-Sharon Creek and Jowett Formations). Along this structure, a practically continuous, northwest striking, axial fault system (termed the Cambourne Fault) has been developed, individual sections of which may be traced up to several kilometres (refer to figure no.3).

Between Gerrard and Scott Creek a belt of over 100 precious metal occurrences have been identified in close proximity to the Cambourne Fault. These occurrences are collectively referred to as the Central or Cambourne Mineral Belt (refer to figure no. 3).

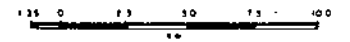
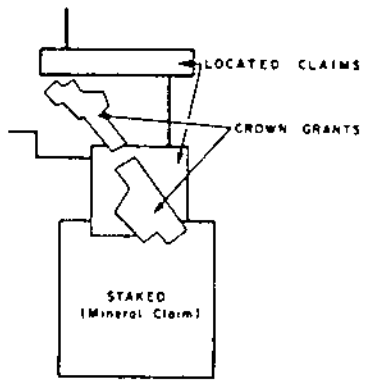


- Legend**
- Staked
  - ▨ Past - Bound
  - ▧ Precious Metal
  - ▩ Past - Bound



**LEGEND**

- Precious Metal Occurrence
- ✶ Past Producing Mine



LOUMIK RESOURCES LTD.  
OTTAWA CREEK CLAIM GROUP  
REVELSTOKE & SLOCAN M.D. - B.C.

**MINERAL OCCURRENCE MAP**

**ACKNOWLEDGMENTS**

1. Mineral Claim Boundaries are approximate only and should be checked by Ministry of Mines for confirmation as required.
2. Location of Mineral Occurrences is Approximate Only. Reference: Map 98, 100, 102, 104, 106, 108, 110, 112, 114, 116, 118, 120, 122, 124, 126, 128, 130, 132, 134, 136, 138, 140, 142, 144, 146, 148, 150, 152, 154, 156, 158, 160, 162, 164, 166, 168, 170, 172, 174, 176, 178, 180, 182, 184, 186, 188, 190, 192, 194, 196, 198, 200.
3. Reserve Data is based on the best information available to the company. Where Estimated Reserves are stated, these figures are subject to 100% verification.

**OTTAWA CREEK CLAIM GROUP**

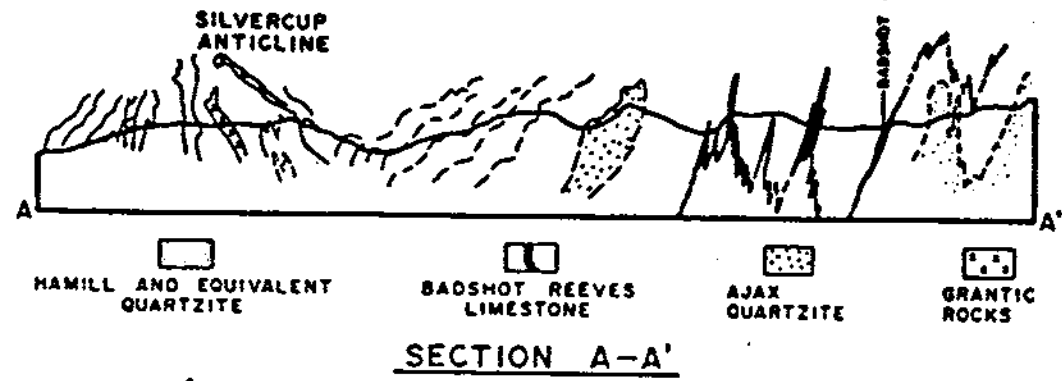
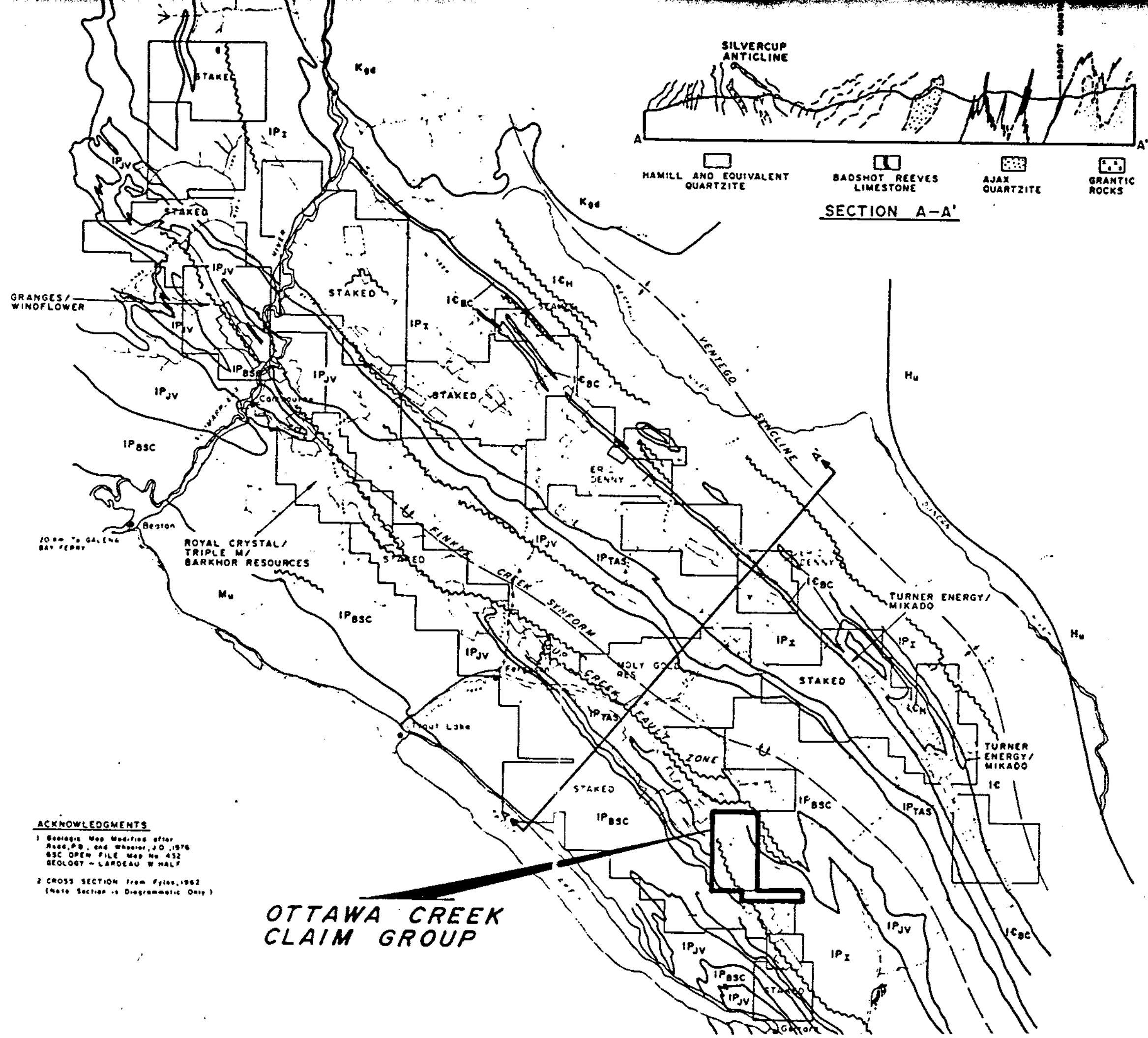
Precious metal mineralization within this belt consists of fault controlled, vein-type occurrences which vary in metal content from predominantly gold bearing to silver and base metal rich types. Some prospects consist of massive sulphide bands (up to 2.0 meters wide) containing abundant lead and zinc in addition to gold and silver while other consist of barren looking, white quartz containing variable gold and only minor silver and base metal values.

The authors have considerable local experience and have compiled a brief summary of the principal characteristics of these occurrences.

- 1) Mineralization occurs where cross fracturing (typically having a north to northeast orientation) intersects quartz filled, sub-conformable to conformable bedding plane faults.
- 2) Mineralization occurred in several episodes and is almost always associated with the development of siderite and ankerite. Alteration is minor in most rock types however propylitic and carbonate alteration minerals are developed where phyllitic or chloritic rocks are mineralized.
- 3) Sulphide minerals tend to occur at or near vein contacts or along graphitic partings within the veins. Gold may occur either with sulphides or "free" within quartz veins.

It is concluded that bedding plane faults developed along the Silver Cup Anticline represent favourable exploration targets particularly in areas of cross-fracturing.

The Ottawa Creek claims cover approximately 4 kilometers of strike length along the Cambourne Fault zone.

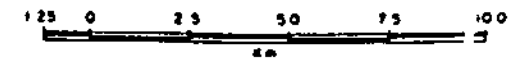
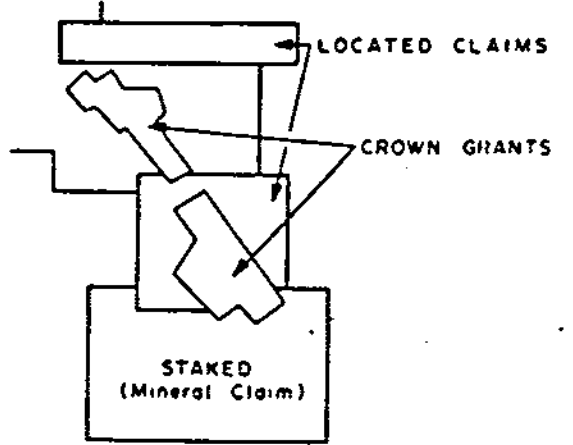


**LEGEND**

- CRETACEOUS**  
**Kgd** Battle Range Batholith - granodiorite, diorite
- MISSISSIPPIAN TO PERMIAN**  
**Mu** Milford Group - phyllite, grit, conglomerate, meta-basalt
- CAMBRIAN TO DEVONIAN**  
**LARDEAU GROUP**  
**IPBsc** Broadbent Formation - phyllite, greenstone, limestone  
**IPJv** Jewett Formation - limy phyllite, greenstone  
**IPtas** Triano, Ajax, Sharon Creek Formations - siliceous phyllite, quartzite, grey-black phyllite  
**IPz** Index Formation - limy phyllite, greenstone, orange-brown limestone, limestone, quartz grit
- CAMBRIAN TO LOWER CAMBRIAN**  
**ICbc** Beecher Formation - limestone
- LOWER CAMBRIAN TO MADRYNIAN**  
**ICh** Hamill Group - phyllite, grit, limestone, minor greenstone
- MADRYNIAN**  
**Hu** Marshall Creek Group - sandstone, siltstone, slate, limestone

**SYMBOLS**

- ~~~~~ Fault  
 -| -| -| Axis of Antiform, Synform  
 -| -| -| Axis of Anticline, Syncline  
 ——— Geological Contact (Approximate)



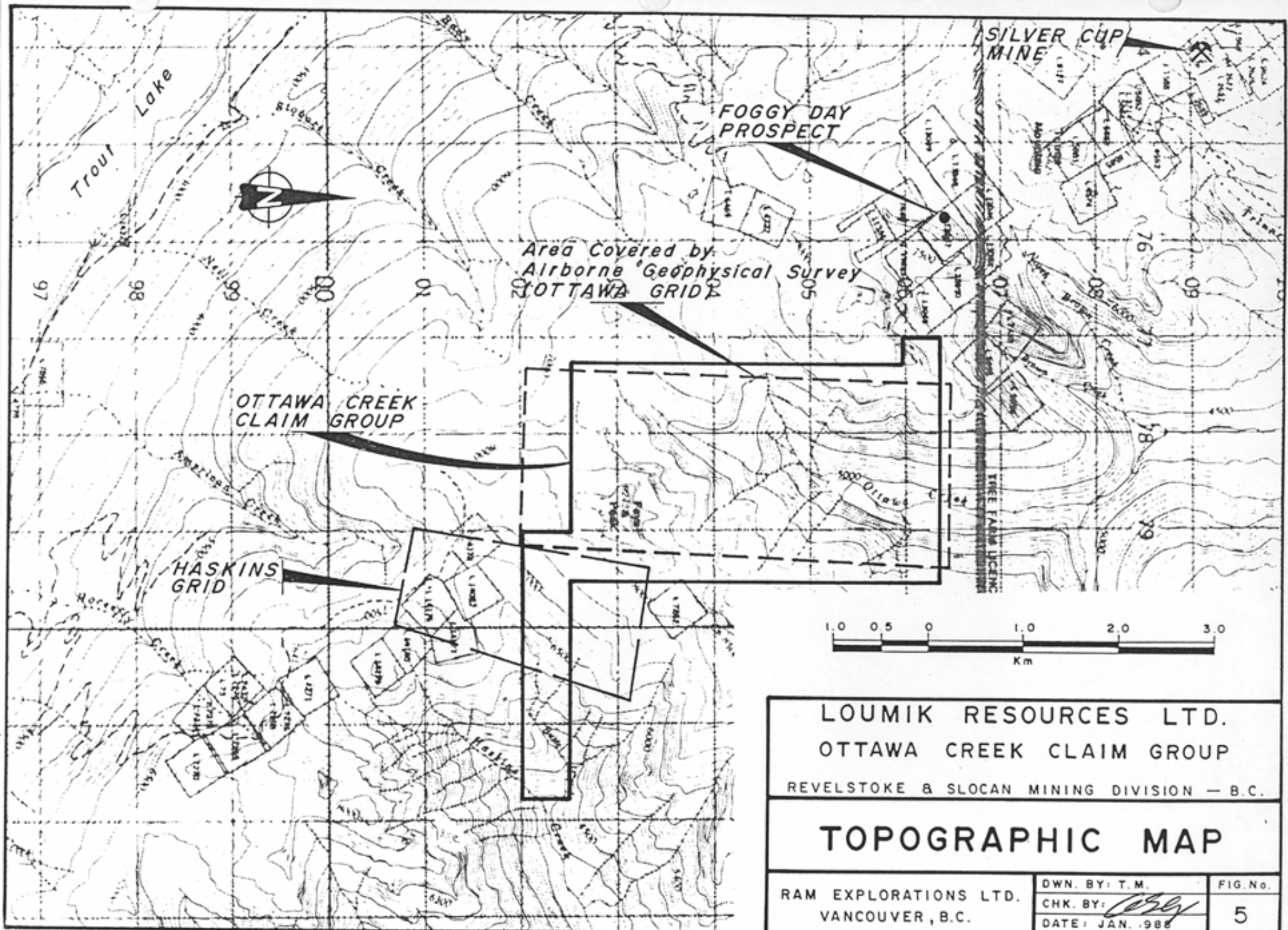
**ACKNOWLEDGMENTS**  
 1. Geologic Map Modified after Ross, P.B. and Wheeler, J.O. 1976. BSC OPEN FILE Map No. 452. GEOLOGY - LARDEAU W. HALF

2. CROSS SECTION from Fyfe, 1962. (Note Section is Diagrammatic Only)

**OTTAWA CREEK CLAIM GROUP**

**LOUMIK RESOURCES LTD.**  
**OTTAWA CREEK CLAIM GROUP**  
**REVELSTOKE & SLOCAN M.D. - B.C.**

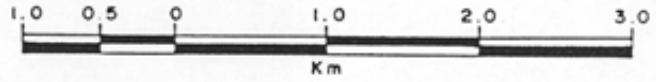
**REGIONAL GEOLOGY**



Area Covered by  
Airborne Geophysical Survey  
**OTTAWA GRID**

**OTTAWA CREEK  
CLAIM GROUP**

**HASKINS  
GRID**



**LOUMIK RESOURCES LTD.**  
**OTTAWA CREEK CLAIM GROUP**  
 REVELSTOKE & SLOCAN MINING DIVISION — B.C.

**TOPOGRAPHIC MAP**

|  |                             |          |
|--|-----------------------------|----------|
| RAM EXPLORATIONS LTD.<br>VANCOUVER, B.C. | DWN. BY: T.M.               | FIG. No. |
|  | CHK. BY: <i>[Signature]</i> | 5        |
|  | DATE: JAN. 1988             |          |

### 2.3 Previous Exploration

The only reported exploration within the claim area is described in an early 1900's summary report on mineral properties within the Trout Lake District. Ermons (1914), notes that "prospectors identified a northwest striking belt of calc-schist cut by northeast oriented fractures containing quartz, carbonate and sulfide minerals. Selected samples of this material assayed: 0.13 oz/ton gold, 5 oz/ton silver and 4% combined base metals."

The location of this occurrence is described as the headwaters of Ottawa Creek at elevations of between 7,000 and 8,000'. By description, this prospect is within the claim area however no examination has recently been made.

During the 1986/87 season, surface geological and preliminary diamond drilling programs were carried out by various operators throughout the Cambourne Belt. On the adjoining Foggy Day Property, Skyworld Resources reported encouraging results from sampling and drilling of gold bearing quartz veins and plan follow-up diamond drilling programs in 1988. Other operators also reported encouraging results however, a detailed account is beyond the scope of this report.

For additional information regarding recent exploration within the Trout Lake area the reader is referred to information published by Granges Exploration; Windflower Mines Ltd., Brynoldson Mines Ltd., Triple M Mining Corp., Winslow Gold Mines Ltd., Royal Crystal Resources Ltd., Barkhor Resources Ltd., Halley Resources Ltd., Jazzman Resources Inc. Camfrey Resources Ltd., Mikado Resources Ltd., and K-2 Resources Ltd.

## 2.4 Property Geology and Description of Mineral Occurrences (please refer to figure no.7)

Geological mapping carried out during the present survey shows that the southern part of the claim area covers a northwest plunging fold (Silver Cup Anticline) consisting of a core of Jowett Formation metavolcanic rocks flanked by argillities, phyllites and quartzites of the Broadview Formation. On the northeast flank, a bedding plane fault (probably an offset extension of the Cambourne Fault) separates these rocks from chlorite schists and limestones belonging to the Index Formation. Figure no.7 shows the distribution of these units and includes a comprehensive mineralogic description.

Regional mapping by Read (1976) shows that the central and northern parts of the claim area are underlain by Index Formation metavolcanics and sediments also cut by bedding plane faults.

Figure no.5 shows the approximate position of several gold occurrences in close proximity to the claim area which occur within the same geological environment. These include: the Foggy Day, Golden Crown and Haskins prospects all of which consist of quartz veins containing free gold and in some cases, silver and base metals.

Mapping of the Haskins Prospect showed massive sulfides in a quartz gangue, localized along a northwest trending fault. Select samples of this material returned grades of up to 0.11 oz/ton gold, 51 oz/ton silver and a base metal content of over 20%. This fault structure has been traced across the Haskins Claim and across the southeastern corner of the Ottawa 2 Claim and will be further evaluated by geochemical and geophysical surveys as part of Phase 1 exploration.

To the west of the claim area Emons (1914) reported grades of between 0.25 and 0.70 oz/ton gold from two to five meter wide quartz veins (Golden Crown Prospect: located approximately 1.5 kilometers west of

the claim area). On the Foggy Day prospect, Skyworld Resources (1987) drill tested gold and silver bearing quartz veins and reported grades of between 0.013 and 3.2 oz/ton gold across widths of up to several meters.



SECTION 3  
GEOPHYSICAL SURVEYS

### 3.1 Airborne Electromagnetic and Magnetic Survey (please refer to figure no.6)

From an exploration viewpoint, one of the most important characteristics of metallic mineral deposits is their low resistivity and correspondingly high conductivity relative to surrounding bedrock. In some cases these properties permit identification of such occurrences by remote sensing methods such as electromagnetic surveys.

Electromagnetic surveys utilize receiving coils to measure changes in the alternating electromagnetic field produced by eddy currents in subsurface rocks when subjected to an alternating primary signal. The responses encountered by an electromagnetic survey are of three main types. Bedrock conductors, which may include massive sulfide bodies, graphitic fault zones and to a lesser extent, graphite rich argillaceous rocks are normally limited in dimension and very often "maximum couple" with the vertical coaxial coil. These responses can be interpreted for conductance, depth and strike.

Secondly, surficial conductors such as overburden, glacial till and lake sedimentation responses, "maximum couple" with the horizontal coplanar coil configuration and are often "broad" responses. This type of response cannot easily be distinguished from deep seated conductors because increased depth also produces a broader response.

Thirdly, "negative" permeability effects occur when rocks are magnetic. The electromagnetic response can become distorted by decreasing the in-phase response, often reversing the polarity of the E. M. signal. Both coil configurations are affected by this phenomenon. Resistivity, conductance, and depth calculations in this instance cannot be calculated.

Magnetic surveys are based on the premise that the concentration of magnetitic minerals is constant within a particular rock type and further, that a contrast exists between different rock types. As a result, magnetic data can be interpreted to reveal areas underlain by

different lithologies as well as areas where offsets have occurred suggesting the presence of faults or fracture zones.

Some ore deposits contain higher percentages of magnetic minerals than the surrounding rocks and may appear as magnetic highs. In other cases, ore deposits are localized along shear or fault zones which commonly act as fluid conduits often resulting in oxidation of associated magnetic minerals. These occurrences would appear as magnetic lows.

The geophysical system that was used for this survey was provided by Apex Airborne Surveys in conjunction with Questor Surveys and is considered one of the most sophisticated systems available. Equipment included a 6 meter Geotech Emex 3 Electromagnetometer (HEM System), a Total Field Nuclear Precession Magnetometer, 35 mm flight path camera, Picodas/Olivetti digital acquisition system, and a radar altimeter. The helicopter used was an Aerospatiale Gazelle provided by Canwest Helicopters Ltd.

The Geotech System utilizes both coplanar and coaxial coil configurations, as well as three frequencies. The system consists of three sets of receivers and transmitters as follows:

- 1) Coaxial Pairs - The coaxial transmitter-receiver pairs are separated by 5 meters and utilize low frequency signals of 380 and 920 Hz. This configuration couples best with vertical, dike-like targets.
- 2) Coplanar Pair - The coplanar transmitter-receiver pairs are separated by 5 meters and utilize a "high frequency" signal of 4020 Hz. This configuration couples best with horizontal tabular targets.

The transmitter and receiving coils for the three frequencies as well as the magnetic sensors are located at the ends of the 6 meter sensor that is commonly called a "bird". The bird is towed 30 meters below the helicopter by means of a suitable cable which also carries the electric signals to and from the bird.

### 3.2 Discussion of Results (please refer to figure no. 6)

The objectives of the airborne survey were to explore overburden covered parts of the project area and to delineate the extent of volcanic and/or intrusive rocks. A total of approximately 70 line kilometers were flown within the claim area. Additional surveys were flown across several known mineral deposits within the Cambourne Mineral Belt to provide a data base for comparison with data from the project area.

A preliminary examination of magnetic data indicates a possible buried intrusive located in the north central part of the claim area flanked by volcanic rocks of the Index Formation. In addition, bedding plane faults are indicated in the central and southern parts of the claim area. In addition, a north to northeast striking zone is indicated in the central part of the claim area.

An examination of electromagnetic data shows three distinct conductivity anomalies termed Area "A", Area "B" and Area "C". These anomalies are approximately co-incident with the fault zones indicated by magnetic data and are considered excellent targets.

Figure no. 6 shows geophysical data and figure no. 7 shows proposed areas of detailed geochemical and geophysical surveys.

## REFERENCES

The following maps, publications and reports were used in the compilation of the report.

B.C. Ministry of Mines Annual Reports, 1898 p. 1059, 1900 p. 981, 1923 p. 234, 1926 p. A274, 1927 p. 295, 1930 p. 447.

GSC Memoir No. 161 p. 55

Read, P.B., 1976. Geology - Lardeau West Half. GSC Map No. 434.

Westmin Resources, 1983. Summary Report of 1982 Fieldwork, Mohawk and Related Properties. Westmin Resources Corporate Files.

STATEMENT OF COSTS

STATEMENT OF COSTS

Re: Ottawa Creek Claim Group - Preliminary Exploration Program; Administrative Expense; Geological Mapping and Ground Control Surveys; Rehabilitation of Horsefly Creek Access Road; Preparation of Flight Control Orthophotomosaic; Low Level, Rotary Wing, Multifrequency Electromagnetic Survey; Ottawa Grid and Haskins Grid; Preparation of Technical Reports (Period: October 15 to December 30, 1987).

Administrative Expense

|                       |          |
|-----------------------|----------|
| Project Co-ordination | \$ 1,500 |
| Liability Insurance   | 500      |
| Sub-total             | \$ 2,000 |

Geological Mapping and Ground Control Surveys

Equipment and Related Technical

|   |        |
|---|--------|
| - Truck Rental - 4 days @ \$75                  | \$ 300 |
| - Fuel, maintenance                             | 200    |
| - Radio Cumminications System - 4 days @ \$7500 |        |
| - Survey equipment rental \$50                  |        |
| - Geochemical assays<br>6 rock @ \$27.50        | 165    |

Personnel

|  |       |
|--|-------|
| - Geologist (A.S. Greene) - 4 days @ \$400 | 1,600 |
| - Technicians (2) - 4 days @ \$225         | 1,800 |
| - Accommodation - 12 man days @ \$50       | 600   |

Sub-total \$ 5,215

Rehabilitation of Horsefly Creek Access Road

(Note: This category is payable 50% by Loumik Resources Ltd. and 50% by Quattro Resources Ltd.)

Equipment and Related Technical

|                                   |        |
|-----------------------------------|--------|
| - Mobilization / Demobilization   | \$ 750 |
| - D6D - 242 hours @ \$100         | 24,200 |
| - Service Truck - 26 days @ \$100 | 2,600  |
| - Fuel, maintenance               | 1,050  |

|  |           |
|--|-----------|
| <i>Personnel</i>   |           |
| - Supervisor (D. Richards) - 26 days @ \$275                         | \$ 7,150  |
| - Accommodation (including equipment operator)<br>52 man days @ \$50 | 2,600     |
| <i>Sub-total</i>   | \$ 38,350 |

*Note: Loumik Resources Pro-rata Contribution* \$ 19,175

*Preparation of Flight Control Orthophoto Mosaic*

|                                      |          |
|--------------------------------------|----------|
| <i>Ottawa and Haskins Claim Area</i> | \$ 5,000 |
| <i>Sub-total</i>                     | \$ 5,000 |

*High Sensitivity, Low Level, Rotary Wing Multifrequency Electromagnetic Survey (inclusive of supervision; co-ordination of geophysical consultant; geophysical equipment; landing site preparation and maintenance; fuel and ancilliary equipment; accommodation; power generation; crew travel and vehicle rentals; continuous recording magnetometer base station; computer rental; and, Data interpretation)*

|                                |           |
|--------------------------------|-----------|
| <i>Ottawa Creek Claim Area</i> | \$ 25,000 |
| <i>Haskins Claim Area</i>      | 5,000     |
| <i>Sub-total</i>               | \$ 30,000 |

*Preparation of Technical Reports*

|  |          |
|--|----------|
| <i>Geologist (C. von Einsiedel) - 3 days @ \$350</i> | \$ 1,050 |
| <i>Geologist (A.S. Greene) - 2 days @ \$400</i>      | 800      |
| <i>Drafting and Secretarial</i>                      | 1,400    |
| <i>Reductions and Printing</i>                       | 750      |
| <i>Sub-total</i>                                     | \$ 4,000 |

**TOTAL** \$ 65,390



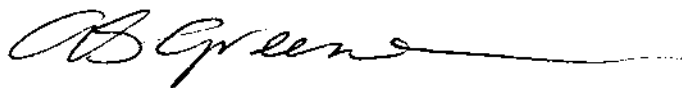
**CERTIFICATES**

## CERTIFICATE

I, Alfred Sonni Greene of Kootenay Bay in the province of British Columbia certify that:

1. My address is P.O. Box 57, Kootenay Bay, British Columbia, V0B 1X0 and that my occupation is that of Geologist.
2. I am a graduate of the University of Calgary, 1969, with a degree of Bachelor of Science - Geology.
3. I have been a practising geologist since 1969 and am a member in good standing of the Association of Professional Engineers, Geologists and Geophysicists of Alberta.
4. This report is based on: results of several personal examinations of the subject property; results of geochemical and geophysical surveys carried out under my supervision; and on the results of extensive research regarding local mineral deposits.
5. I have no interest, either directly or indirectly in the properties or securities of Loumic Resources Ltd.
6. I consent to the use of this report in a Prospectus, Statement of Material Facts or Qualifying Report for submittal to the Superintendent of Brokers or the Vancouver Stock Exchange.

Dated this 30th day of January, 1988 at Vancouver, British Columbia.



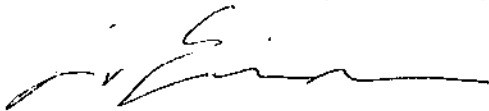
A.S. Greene, P. Geol.  
Consulting Geologist

CERTIFICATE

I, Carl A. von Einsiedel of the City of Vancouver in the Province of British Columbia, certify that:

1. I am a consulting geologist with offices located at 210 - 470 Granville Street, Vancouver, B.C.
2. I am a graduate of Carleton University in Ontario in Geological Sciences with a degree of BSc.
3. I have been employed in the field of mineral exploration since 1980 and have made application to the Fellowship of the Geological Association of Canada.
4. This report is based on: results of several personal examinations of the subject property; results of geochemical and geophysical surveys carried out under my supervision; and on the results of extensive research regarding local mineral deposits.
5. I have no interest, either directly or indirectly, in the properties or securities of Loumic Resources Ltd.
6. I consent to the use of this report in a Prospectus, Statement of Material Facts or Qualifying Report for submittal to the Superintendent of Brokers or the Vancouver Stock Exchange.

Dated this 30th day of January, 1988 at Vancouver, British Columbia.



Carl von Einsiedel, BSc.  
Consulting Geologist

APPENDIX 1



# VANGEOCHEM LAB LIMITED

MAIN OFFICE  
1521 PEMBERTON AVE.  
NORTH VANCOUVER, B.C. V7P 2S3  
(604) 986-5211 TELEX: 04-352578

BRANCH OFFICE  
1630 PANDORA ST.  
VANCOUVER, B.C. V5L 1L6  
(604) 251-5656

REPORT NUMBER: 871145 AA

JOB NUMBER: 871145

RAM EXPLORATION

PAGE 1 OF 1

| SAMPLE # | Ag<br>oz/st | Au<br>oz/st | Cu<br>% | Pb<br>% | Zn<br>% |
|----------|-------------|-------------|---------|---------|---------|
| GR-AM-01 | 50.52       | .104        | .12     | 26.50   | 1.15    |
| GR-AM-02 | .65         | .030        | <.01    | .20     | .01     |
| GR-AM-03 | 8.60        | .022        | .22     | 6.95    | 27.45   |
| GR-AM-04 | 2.27        | .014        | .09     | 2.10    | 2.60    |
| GR-AM-05 | 32.87       | .084        | .15     | 32.05   | 1.50    |

### DETECTION LIMIT

1 Troy oz/short ton = 34.28 ppm

|                |                         |               |     |     |
|----------------|-------------------------|---------------|-----|-----|
| .01            | .005                    | .01           | .01 | .01 |
| 1 ppm = 0.0001 | ppm = parts per million | < = less than |     |     |

signed:

TABLE 2

ROCK SAMPLE DESCRIPTIONS AND ASSAY RESULTS

PROJECT: OTTAWA CREEK

PREPARED: 1987-11-14

HASKINS PROSPECT (SEE FIGURE NO. 7 FOR LOCATIONS)

| FIELD<br>REF. No. | ASSAY<br>REF. No. | AU<br>oz/ST | Ag<br>oz/ST | Pb<br>(%) | Zn<br>(%) | DESCRIPTION   |
|-------------------|-------------------|-------------|-------------|-----------|-----------|---|
| GR-AM-01          | -                 | 0.104       | 50.52       | 26.50     | 1.15      | CHARACTER SAMPLE, HEAVY GALENA, PYRITE MINERALIZATION AS COARSE MASSIVE MATERIAL (60%) IN QUARTZ DUMP AT PORTAL OF CAVED ADIT ON NORTH SIDE OF BONANAZA BASIN (NORTHWEST TRENDING STRUCTURE). |
| GR-AM-02          | -                 | 0.030       | 0.65        | 0.20      | 0.01      | ALTERED VOLCANICS SHOWING MINOR DISSEMINATED SULFIDES, PROPYLITIC ALTERATION.   |
| GR-AM-03          | -                 | 0.022       | 8.60        | 6.95      | 27.45     | CHARACTER SAMPLE FROM DUMP AT CAVED PORTAL, 100M NORTHWEST OF TRENCH No. 8-2. MASSIVE, FINE GRAINED SPHALERITE AND GALENA IN QUARTZ-CARBONATE GANGUE.   |
| GR-AM-04          | -                 | 0.014       | 2.27        | 2.10      | 2.60      | DISSMEMINATED SULFIDES IN SILICIFIED VOLCANICS.   |
| GR-AM-05          | -                 | 0.084       | 32.87       | 32.05     | 1.50      | GRAB SAMPLE, MASSIVE COARSE GRAINED GALENA FROM DUMP, MINOR SPHALERITE, CHALCOPYRITE.   |

OTTAWA CREEK PROSPECT

|   |       |    |      |    |    |   |
|---|-------|----|------|----|----|---|
| - | 15085 | TR | 0.20 | TR | TR | CHANNEL SAMPLE ACROSS 2.50 METER WIDE FRACTURED ZONE CONTAINING QUARTZ STRINGERS AND MINOR SULFIDES IN CALC SCHIST (NEWTON EMMONS, 1914). |
|---|-------|----|------|----|----|---|

TABLE 2

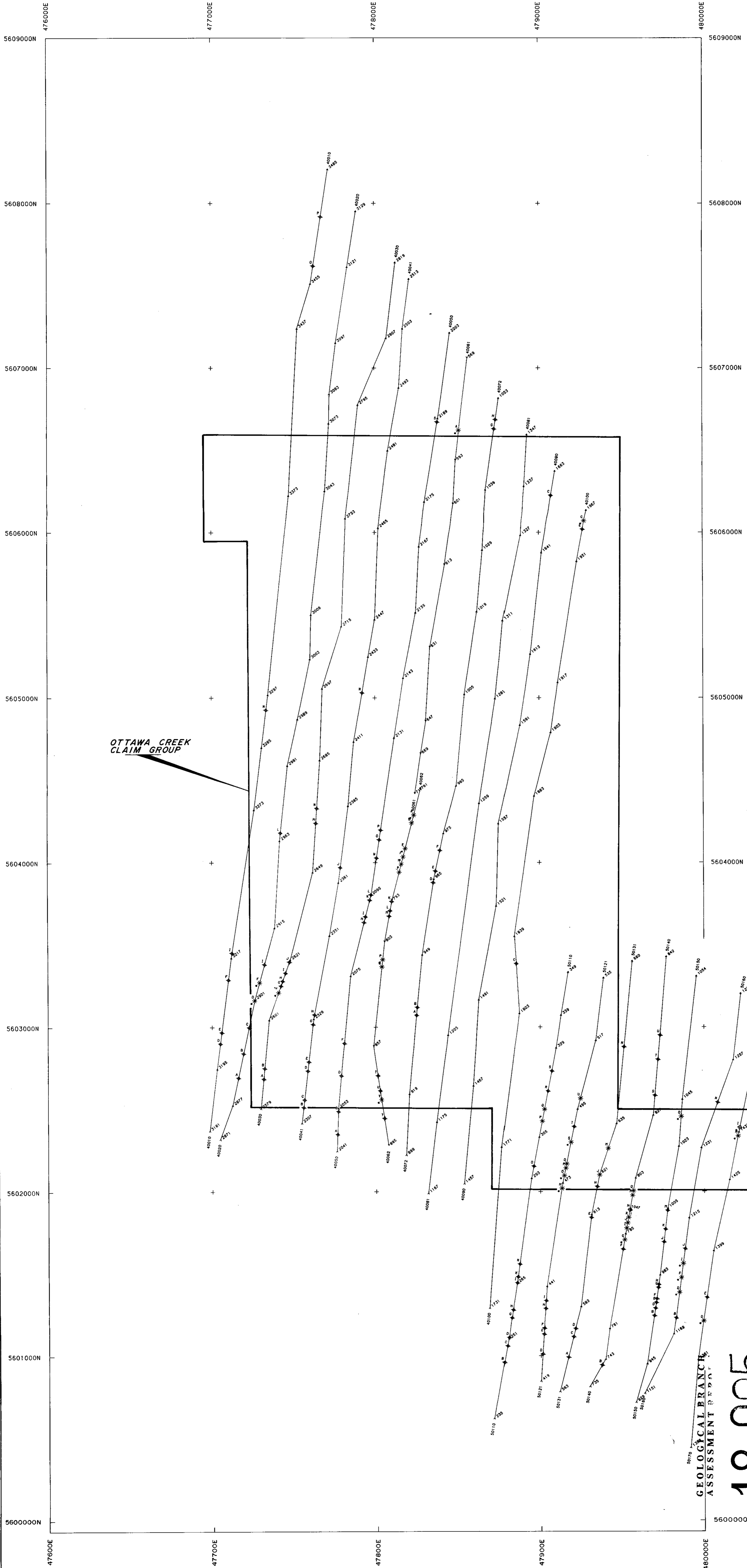
ROCK SAMPLE DESCRIPTIONS AND ASSAY RESULTS

PROJECT: OTTAWA CREEK

PREPARED: 1987-11-14

OTTAWA CREEK PROSPECT - CONT'D

| <u>FIELD</u><br><u>REF. No.</u> | <u>ASSAY</u><br><u>REF. No.</u> | <u>AU</u><br><u>OZ/ST</u> | <u>AG</u><br><u>OZ/ST</u> | <u>PB</u><br><u>(%)</u> | <u>ZN</u><br><u>(%)</u> | <u>DESCRIPTION</u>  |
|---------------------------------|---------------------------------|---------------------------|---------------------------|-------------------------|-------------------------|---|
| -                               | 15086                           | 0.10                      | 5.6                       | TR                      | TR                      | CHARACTER SAMPLE - QUARTZ-CHALCOPYRITE PYRITE STRINGERS IN CALC SCHIST (NEWTON EMMONS, 1914). NOTE: 3.25% COPPER. |
| -                               | 15087                           | 0.13                      | 5.0                       | TR                      | TR                      | SELECT SAMPLE - QUARTZ-CHALCOPYRITE PYRITE STRINGERS IN CALC SCHIST (NEWTON EMMONS, 1914).                        |



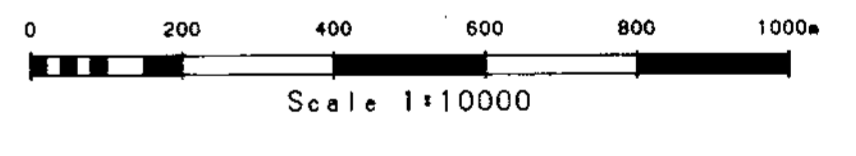
**AIRBORNE SURVEY SPECIFICATIONS**  
 AIRCRAFT : C-540  
 MAGNETOMETER : GEOMETRICS G-803 Proton  
 FLIGHT ALTITUDE : 100 meters above terrain  
 LINE SPACING : 200 m  
 SAMPLE INTERVAL : Magnetics 10 - 20 m  
 LINE DIRECTION : 083 - 183 Degrees  
 TLINE DIRECTION : 087 - 287 Degrees

**LEGEND**

- ⊛ < 1 S
- ⊙ 1-5 S
- ⊕ 5-10 S
- ⊗ 10-20 S
- ⊖ 20-50 S
- ⊙ > 50 S

**INTERPRETATIVE SYMBOLS**

- Bed Rock Responses
- Anomaly Label ⊕ Conductance (S)
  - \* (Possible) ⊙ Depth (m)
  - Anomaly Label ⊖ Surficial Responses
  - Anomaly Label ⊗ Cultural Responses



UNIVERSAL TRANSVERSE MERCATOR GRID  
 ZONE 10

PROCESSED BY TESLA-10 LTD.  
 JOB No. TC1017  
 DECEMBER 1987

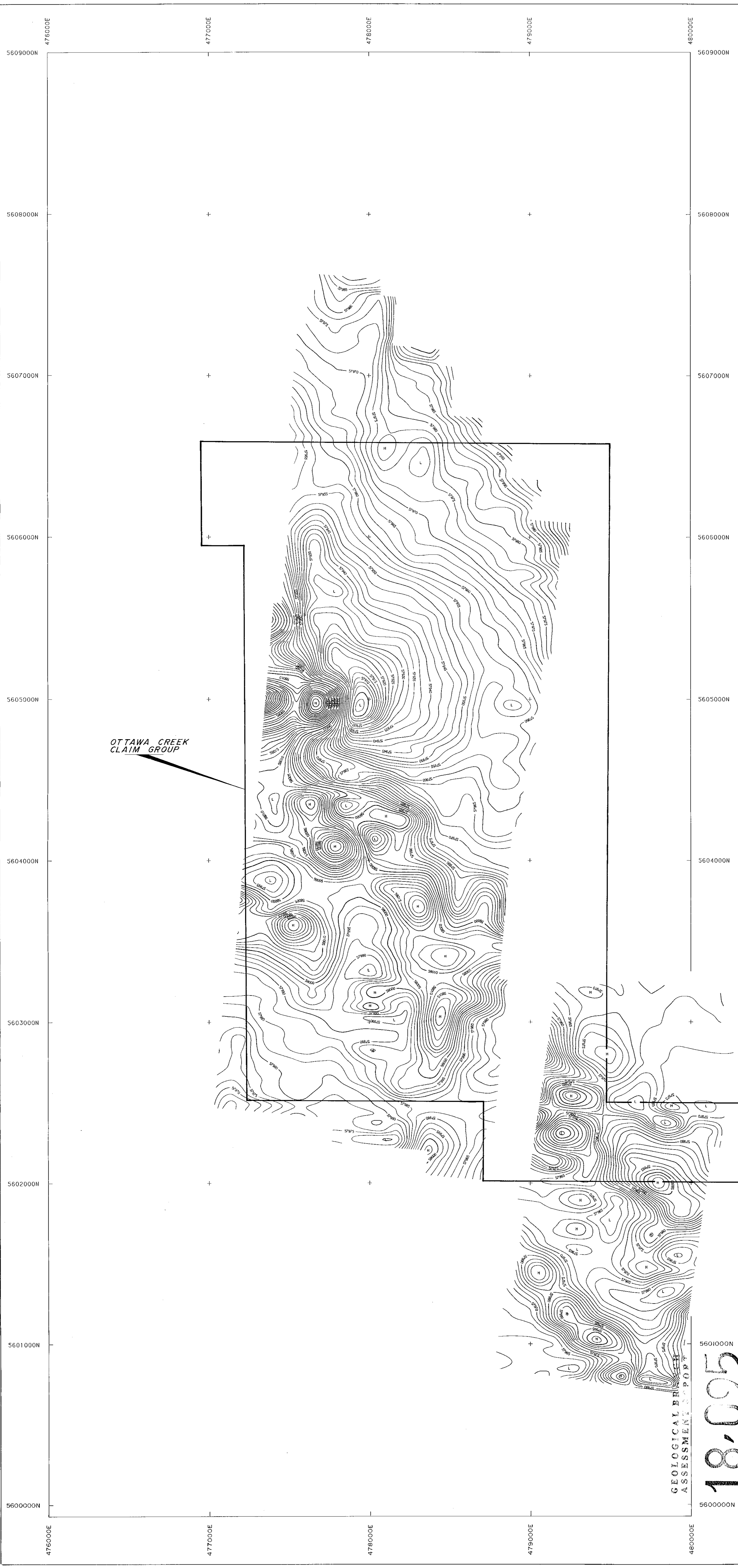
**LOUMIK RESOURCES LTD.**  
 -OTTAWA CREEK CLAIM GROUP-  
 EM ANOMALY MAP  
 Interpretative Conductor Axes  
 FIGURE 6

**18,095**  
 GEOLOGICAL BRANCH  
 ASSESSMENT REPORT

FLOWN: NOVEMBER 1987 FILE NO. 87007

**QUESTOR SURVEYS LIMITED**  
 MISSISSAUGA ONTARIO CANADA





OTTAWA CREEK CLAIM GROUP

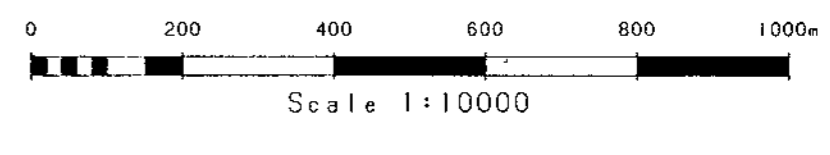
**AIRBORNE SURVEY SPECIFICATIONS**

AIRCRAFT : C-66PL  
 MAGNETOMETER : GEOMETRICS G-803 Proton  
 FLIGHT ALTITUDE : 100 meters above terrain  
 LINE SPACING : 200 m  
 SAMPLE INTERVAL : Magnetica 10 - 20 m  
 LINE DIRECTION : 003 - 183 Degrees  
 TLINE DIRECTION : 087 - 287 Degrees

**LEGEND**

CONTOUR INTERVAL : 2.5 nt

|       |         |
|-------|---------|
| ————— | 1000 nt |
| ————— | 100 nt  |
| ————— | 50 nt   |
| ————— | 10 nt   |
| ————— | 2.5 nt  |



UNIVERSAL TRANSVERSE MERCATOR GRID ZONE 10

PROCESSED BY TESLA-10 LTD.  
 JOB No. Tc1017  
 DECEMBER 1987

**LOUMIK RESOURCES LTD.**

— OTTAWA CREEK CLAIM GROUP —  
 TOTAL FIELD MAGNETIC CONTOURS  
 FIGURE 6A

FLOWN NOVEMBER 1987      FILE NO. 87007

 **QUESTOR SURVEYS LIMITED**  
 MISSISSAUGA ONTARIO CANADA

GEOLOGICAL BRITISH COLUMBIA  
 ASSESSMENT REPORT  
**18,095**



**LEGEND**

- CAMBRIAN TO DEVONIAN (LARDEAU GROUP)**  
Groundwater Formation
- Bp** Phyllite, green to green grey, numerous neoblastic folds, axial plane parallel to foliation, variably porphyritic, common folded quartz and quartz-carbonate lenses.
  - Bps** Phyllite, light green grey, gneiss or siliceous, sparse to trace phyllite, usually bedded, propylitised in some intervals.
  - Bgr** Metagrit or phyllitic grit, grey, fine to coarse elongated quartz grains, thin phyllite laminae, propylitised in some intervals.
  - Bgw** Argillite, dark grey graphitic with black pyritic carbonaceous argillite interbeds.
  - Baq** Gneiss or metagneiss, light grey or light green grey, very fine to microcrystalline.
  - Bis** Limestone and phyllitic limestone, buff to brown weathering, grey to white, coarse crystalline granular, thin lenses quartz, grey phyllite, grey mica schist discontinuous lenses and thin beds, interbedded with phyllite.
- Jowett Formation**
- Jv** Metavolcanics (undifferentiated)
  - Jvd** Metavolcanic dike/sill rock, very fine to microcrystalline texture, buff or altered dike, usually phyllitic, coarse weathering
  - Jp** Phyllite, light green, chloritic with trace amphibole, variably calcareous and pyritic, occasionally with dark grey phyllite laminae.
  - Jq** Gneiss, very finely laminated, variably calcareous and magmatic.
- Sharon Creek Formation**
- Scp** Phyllite, dark grey to black, green grey to grey; siliceous phyllite, grey gneiss, common quartz-carbonate lenses and laminae.
  - Scq** Argillite, grey to dark grey, variably siliceous, common quartz and quartz-carbonate laminae and lenses, fair to good slaty cleavage.
  - Scoc** Argillite, black, carbonaceous, variably phyllitic.
  - Scqg** Argillite, black to dark grey, graphitic, friable, common graphitic slicks.
  - Scos** Argillite, grey, silicified, phantom laminae, offset quartz veins.
  - Scs** Metasiltstone, grey to light grey, very finely laminated.
  - Scs/s** Interbedded units Scs and Scs.
- Alex Formation**
- Aq** Quartzite, grey to black, occasionally carbonaceous, weakly foliated, indistinct bedding, sparse to common locally abundant anastomosing quartz veins and veins, thin beds of grey laminated argillite.
- Triune Formation**
- Tac** Argillite, black carbonaceous.
  - Tas** Argillite, grey, siliceous, poor to blocky slaty cleavage.
  - Tp** Phyllite, dark grey to green grey.
- Index Formation**
- Ip** Phyllite, green grey, gradational to Ipsi.
  - Ils** Limestone, light to dark grey to black carbonaceous, arenaceous microcrystalline to coarse crystalline to fibrographic, variably phyllitic, usually bedded.
  - IdoI** Dolomite, white to buff, finely crystalline to microcrystalline.
  - Ipls** Phyllite, calcareous, or phyllitic limestone, or fine phyllite, light green to brown green, common calcite laminae and calcite or dolomite lenses.
  - Ipsi** Phyllite, siliceous, light grey quartz-muscovite-chlorite schist, usually with common to abundant quartz laminae, stringers and lenses, scattered pyrite, occasional (1) with graphitic laminae.
  - Igr** Metagrit, very fine to coarse grained, elongated rounded quartz grains, usually slightly phyllitic.
  - Ia** Argillite, grey to dark grey, variably siliceous, common quartz and quartz-carbonate laminae and lenses, fair to good slaty cleavage.
  - Iq** Chlorite schist, very finely laminated, variably calcareous and magmatic; chlorite-muscovite-sphalerite (epidote) (actinolite) (calcite) schist.

**SYMBOLS**

- Geological Contact (Approximate).
- Fault Defined, Inferred.
- Foliation, Bedding.
- Anticline, Syncline, Fold Plunge.
- Adit, Rock Sample Location.

**GEOLOGICAL BRANCH ASSESSMENT REPORT**

**18,095**

NOTE: Contour Interval: 100 Feet

**LOUMIK RESOURCES LTD.**  
— OTTAWA CREEK CLAIM GROUP —  
REVELSTOKE & SLOCAN M.D. — B.C.

**GEOLOGY & COMPILATION MAP**

|                       |                 |          |
|-----------------------|-----------------|----------|
| RAM EXPLORATIONS LTD. | DWN. BY: T.M.   | FIG. No. |
| VANCOUVER, B.C.       | CHK. BY:        | 7        |
|                       | DATE: JAN. 1988 |          |

