86-162 - 15101
01/87

RAM EXPLORATION LTD.



# REPORT ON PHASE 2 EXPLORATION SILVER CLAIM GROUP GOLDEN MINING DIVISION SOUTHEAST BRITISH COLUMBIA

Latitude = 50° 19.8' N
Longitude = 116' N,
NTS = 82K/ 21.8'
BW



Mineral Claims
Silver 1 - 1262 (1) , Silver 2 - 1263(1)

Owner/Operator = Mandusa Resources Ltd.

Reported By = Carl A. von Einsiedel, BSc.
Tom Kraft, BSc.

Submitted = September 6, 1985

## TABLE OF CONTENTS

## LIST OF FIGURES



## LIST OF TABLES

# TERMS OF REFERENCE

# AND

# INTRODUCTION

## TERMS OF REFERENCE

Mandusa Resources Ltd. was initially incorporated to carry out an evaluation of reported high grade, silver - lead - zinc mineralization located near Invermere in southeastern, B.C. The company holds two mineral claims (Silver 1 and 2) which cover surface and underground workings previously known as the "Charlemont / Melody" Prospect (See Occurrence No. 20 - GSC Map No. 1326A)

On behalf of Mandusa Resources, Ram Exploration completed Phase 1 and Phase 2 Exploration programs as recommended by Magrum, (1983) and von Einsiedel, (1984).

## INTRODUCTION

Phase 1 Exploration comprised locating and preliminary sampling of slumped trenches and prospect adits (von Einsiedel, 1984). The current program included additional trenching and rehabilitation of these workings, a detailed VLF-EM Survey in the vicinity of known mineralization and reconaissance prospecting and mapping the the central part of the Silver 1 Claim.

The project was carried out between July 10 and July 25, 1985. Geological mapping was conducted by T. Kraft, BSc. accompanied by N. Tudakovic, P.Eng. and mining technicians, D. McLean and D. Richards.

# SUMMARY

# AND

# RECOMMENDATIONS

## SUMMARY

On behalf of Mandusa Resources, Ram Exploration carried out Phase 2 Exploration of the Companies Silver Claim Group situated near Invermere in Southeastern, B.C. These claims were staked in 1983 to cover the former "Charlemont / Melody" Prospect, a vein type Ag-Pb-Zn occurrence which has received intermittent exploration since its initial discovery at the turn of the century.

Phase 1 Exploration successfully located the workings however, two of three prospect adits and most of the trenches were slumped. Based on results of initial sampling it was recommended that the adits and trenches be rehabilitated for mapping and sampling purposes. In addition, Phase 2 included a detailed VLF-EM Survey in the vicinity of the workings and reconaissance scale geologic mapping and prospecting of the central part of the Silver 1 Claim.

The Silver Claims are situated in a folded sequence of undifferentiated argillites, calcareous schists and carbonates of the Proterozoic aged Dutch Creek and Kitchener - Siyeh Formations. These rocks form part of the Purcell Anticlinorium, a NNW trending fold belt characterized by broad, open folds in competent strata and tight complex folds in thinner, more in competent strata. Associated with the folding episodes was the development of fracture zones along the axial trace of individual folds. It is within this type of structure that silver - lead - zinc (copper - antimony) mineralization is developed on the Silver 1 and 2 Claims.

The current seasons exploration program established several important characteristics concerning the deposit. Detailed geologic mapping and sampling showed that:

(1) There are at least two distinct vein structures which host significant Ag-Pb-Zn-Cu-Sb mineralization. These are described as the Charlemont No. 1 and No. 2 veins.

(2) Grades are variable ranging from a low of 2.29 oz./ton Ag, 1.84% Pb, 3.30% Zn, 0.04% Cu and 0.04% Sb to as high as 54.32 oz./ton Ag, 28.18% Pb, 15.98% and 1.69% Cu with Sb contents of up to 1.07%. These grades represent a dollar value (at current metal prices) of between $70.00 and $840.00 per ton.

## RECOMMENDATIONS

Exploration to date of the Silver Claim Group has identified significant mineralization within two separate vein structures. The vertical extent of this mineralization is unknown and it is therefore recommended that the company carry out a modified version of the Phase 3 Exploration Program outlined by Magrum, (1983).

Phase 3 will comprise short hole diamond drill testing (allow 500 m) of the vein structures as well as continued reconaissance exploration of any parts of the claim group not yet examined. Figure 3 illustrates the proposed diamond drill hole locations.

Respectfully submitted,

**Carl A. von Einsiedel, BSc.**

**Tom Kraft, BSc.**

**September 6, 1985**
**Vancouver, B.C.**

## COST ESTIMATE

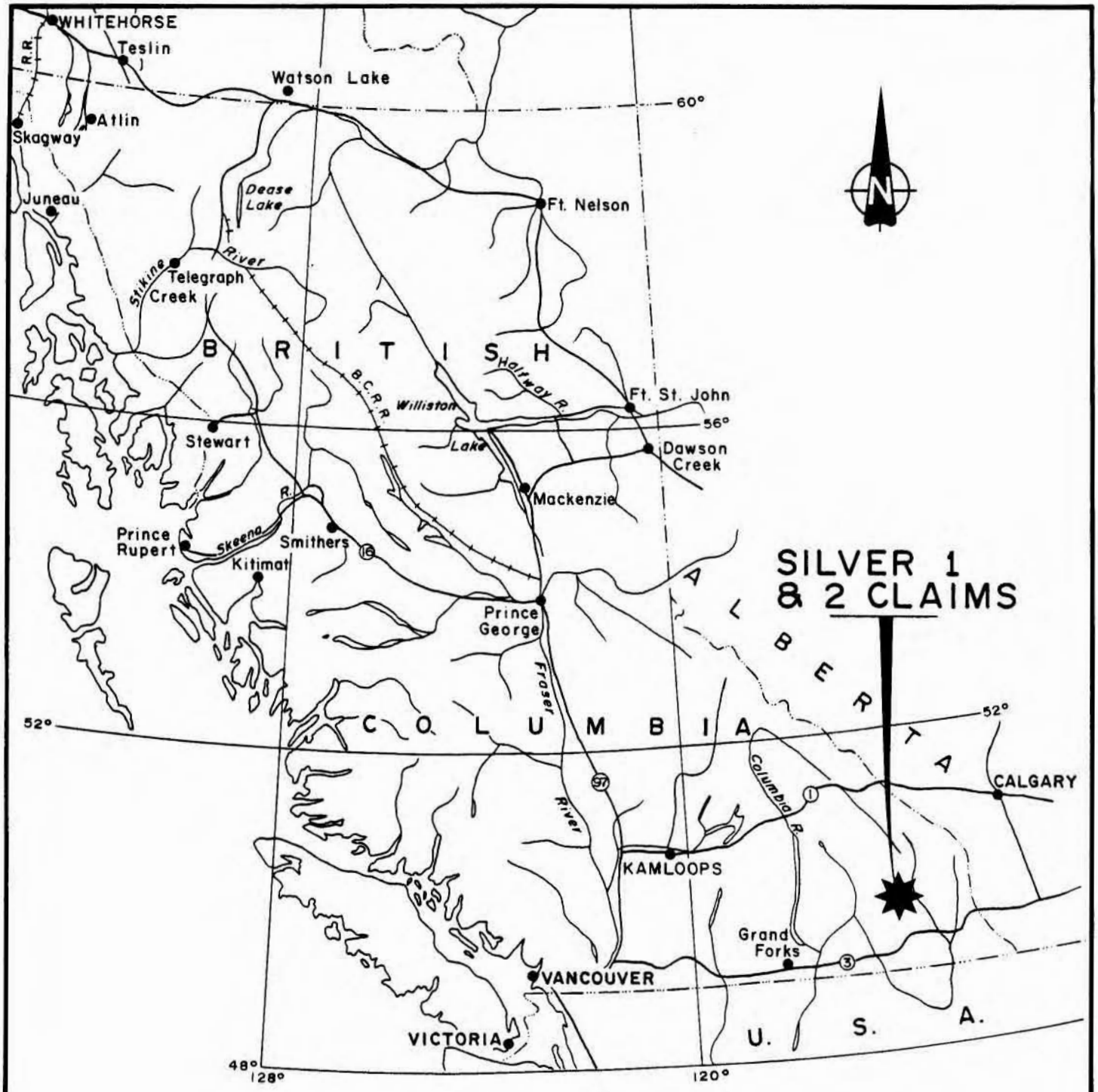
The following cost estimate incorporates new information, available since the initial evaluation report by Magrum, (1983).

**Phase 3**

| | |
|---|---|
| Supervision | |
| Geologist - 30 days @ 250.00 | 7,500.00 |
| Technician - 30 days @ 175.00 | 5,250.00 |
| Mobilization / Demobilization | |
| (includes 5 hours helicopter charter) | 5,000.00 |
| Trenching and Drill Site | |
| Preparation | 10,000.00 |
| Diamond Drilling | |
| allow 500 m @ $100.00/ m | 50,000.00 |
| Assays / Geochemical Sampling | |
| Rock Samples - 50 @ 30.00 | 1,500.00 |
| Geochem Samples - 100 @ 12.50 | 1,250.00 |
| Camp / Accomodation | |
| 120 man days @ 50.00/day | 6,000.00 |
| Fuel and Supplies | 2,000.00 |
| Report | 3,500.00 |
| Contingency | 15,000.00 |
| Total | $107,000.00 |

# SECTION 1

# GENERAL




MANDUSA RESOURCES LTD.

# LOCATION MAP

OF

# SILVER 1 & 2 CLAIMS

480 240 0 480 960 1440

Km

AUG. 1985

FIG. 1

## 1.1 Property Description

The Silver Claim Group is located between Toby and Coppercrown Creeks approximately 30 km southwest of Invermere, southeastern, B.C. The centre of the claim group is located at 50 degrees 18' N. latitude and 116 degrees 22' W. longitude.

Access to the claims is via a well maintained gravel road to the confluence of Toby and Coppercrown Creeks and then by trail along Coppercrown Creek. Access to the showings is best achieved by helicopter.

The claims cover the north face of Coppercrown Mountain which consists of paralell, steep sided ridges with elevations ranging between 3,500 and 8,500 feet. The Charlemont prospect is situated on the west side of Coppercrown Creek at an elevation of approximately 7,000 feet.

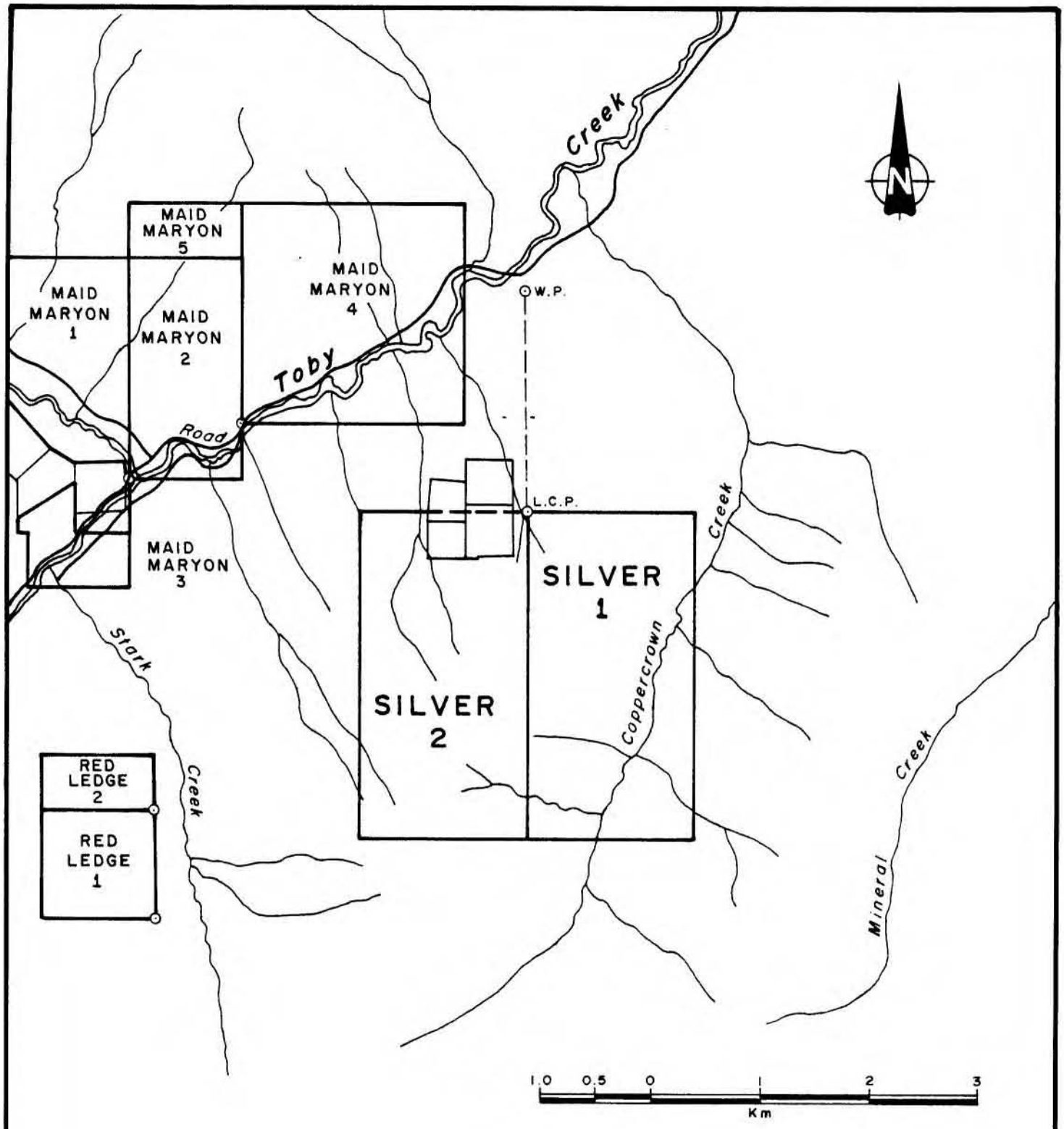
The claim group consists of two located mineral claims comprising 36 claim units recorded in the Golden Mining Division on Map Sheet 82K/1E.

| Claim Name | No. of Units | Record Number | Registered Owner | Expiry Date |
|---|---|---|---|---|
| Silver 1 | 18 | 1262(1) | Mandusa Res. | December 16, 1985 |
| Silver 2 | 18 | 1263(1) | Mandusa Res. | December 16, 1985 |

## 1.2 Development History

The Charlemont / Melody Prospect has received intermittent exploration and development work since the initial discovery in the late 1800's. Early workers carried out liimited trenching and drifting and in 1904, made a small shipment of sorted ore which assayed 96 oz./ton Ag and 59% Pb. Later operators, North Canadian Oils Ltd., 1969, completed geophysical and diamond drilling programs however, results are incomplete and are considered inconclusive.

Mineral Inventory Maps, published by the Ministry of Mines indicate that within several km of the Silver Claims there are




MANDUSA RESOURCES LTD.

SILVER 1 & 2 CLAIMS

GOLDEN MINING DIVISION — BRITISH COLUMBIA

# CLAIM MAP

| | | |
|---|---|---|
| RAM EXPLORATIONS LTD. VANCOUVER, B.C. | DWN. BY: T.M. | FIG. No. |
| | CHK. BY: | 2 |
| | DATE: AUG. 1985 | |

# SECTION 2

# GEOLOGY

## 2.1 Regional Geology

The regional geology was recently summarized (Magrum, 1984) and comprises a northwest trending series of Proterozoic to Lower Paleozoic meta-sediments intruded by Mesosoic quartz monzonite and granodiorite (Reesor, 1973). The Silver Claims are situated along a major structural feature, the Purcell Anticlinorium, which defines a NNW plunging fold belt characterized by broad open folds in competent strata and tight, complex folds in thinner, more incompetent units.

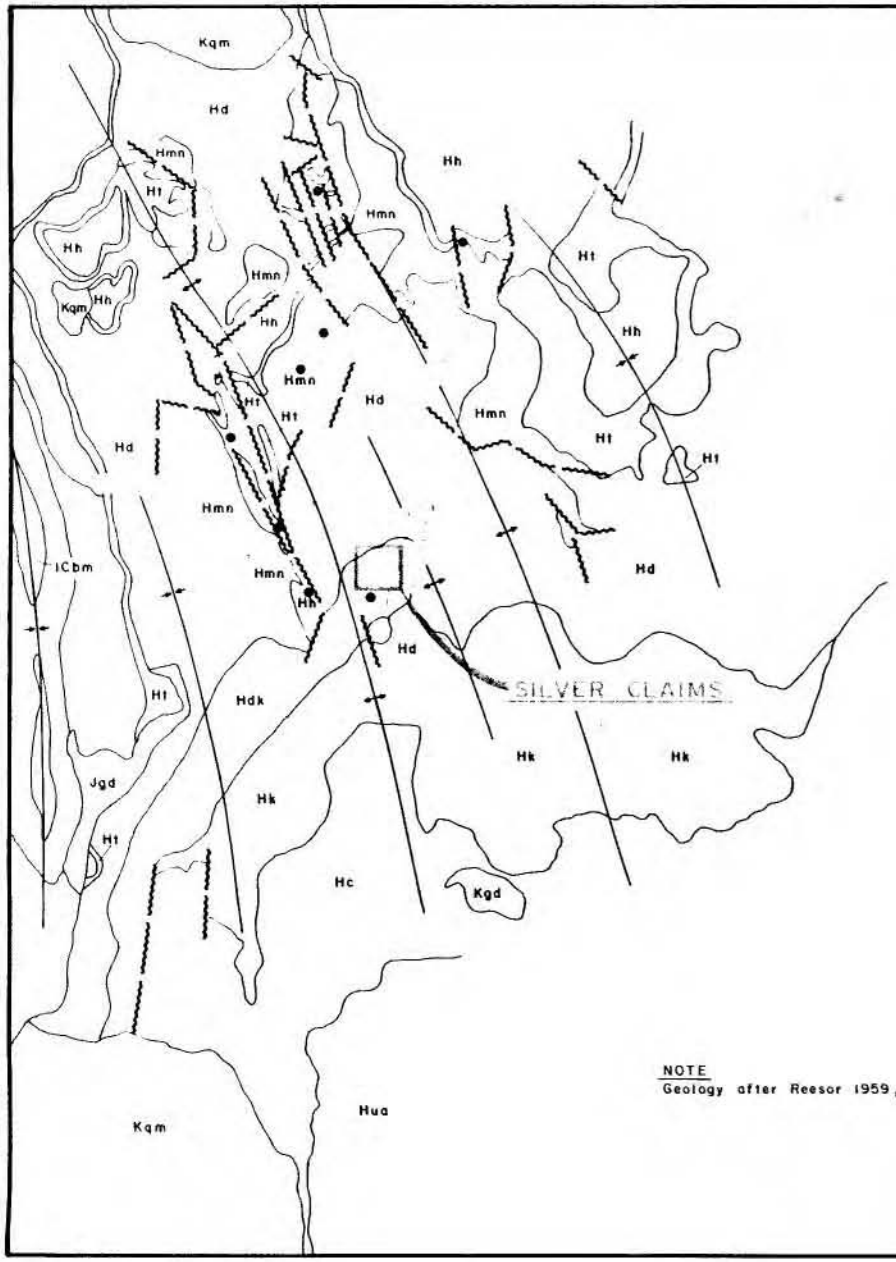
The "Charlemont" prospect is situated in a folded sequence of undifferentiated Proterozoic argillites and calcareous chists, carbonates and grits of the Dutch Creek and Kitchener - Siyeh Formations. These rocks are crosscut by steeply dipping, NNW trending, shear and fracture zones which in places, hosts high grade, silver - lead - zinc mineralization.

## 2.2 Property Geology

The area in the vicinity of the grid is predominantly underlain by a dolomitic limestone unit (Unit 1 - Figure 4) intercallated with argillite lenses, and an argillite unit (Unit 2 - Figure 4) which are part of the unsubdivided Proterozoic Dutch Creek and Kitchener-Siyeh Formations. A carbonatized felsic dyke (Unit 3 - Figure 4) and a mafic dyke (Unit 4 - Figure 4) intrude the argillites to the north and west, respectively.

Unit 1 is a fine-grained gray-white dolomitic limestone unit composed of individual beds up to 0.5 meters in thickness. This unit hosts the sulphide bearing quartz carbonate veins and is open to the northeast, south and east portions of the grid. The argillites vary from grey to grey-green or black in colour and are thinly bedded to laminated, and prospecting along the mountain ridge to the northwest of the grid suggests that this unit encompasses most of the northern portions of the property.

The carbonatized felsic dyke (?) located to the north of the grid, varies from 3 to 5 meters in thickness and trends approximately 335 degrees. It is fine-grained and has a mottled, buff-green colouration. Detailed thin section work reveals that the unit is comprised primarily of altered carbonates and plagioclase feldspars, with minor amounts of mariposite and pyrite. Field observations indicate that the unit is a carbonatized felsic dyke (?), however microscopic examinations suggest that the unit may possibly be an altered argillite. The reader is referred to appendix A which is an independant




## LEGEND

CRETACEOUS

- Kqm — Intrusives

LOWER CAMBRIAN

- ICbm — Badshot Formation — marble, phyllite, schist.
- ICh — Hamill Group — quartzite, phyllite, schist

HADRYNIAN
Windermere Group

- Hh — Horsethief Creek Group — schist, marble, quartzite, conglomerate.
- Ht — Toby Formation — conglomerate.

HELIKIAN
Purcell Group

- Hmn — Mount Nelson Formation — dolomite
- Hd — Dutch Creek Formation — argillite, locally dolomitic.
- Hdk — Dutch Creek & Kitchner Siyeh Formation.
- Hk — Kitchener — Siyeh Formation — dolomitic & calcareous argillite
- Hc — Creston Formation — argillaceous quartzite
- Hua — Aldridge Formation — quartzite.

## SYMBOLS

- Fault.
- Anticline.
- Syncline.
- Pb, Zn, Ag Occurrence.

2.0 0 4.0 8.0 10
Km

NOTE
Geology after Reesor 1959, Lardeau E/H Geology Map No 1326A

MANDUSA RESOURCES LTD.
SILVER 1 & 2 CLAIMS
GOLDEN MINING DIVISION — BRITISH COLUMBIA

# REGIONAL GEOLOGY MAP

| | | |
|---|---|---|
| RAM EXPLORATIONS LTD. VANCOUVER, B.C. | DWN BY T.M. | FIG. No. |
| | CHK BY. | 3 |
| | DATE AUG 1985 | |

petrographers interpretation based on a thin section examination.

A narrow, fine-grained, wakly carbonatized mafic dyke located to the west of the grid intrudes the argillite along the foliation plane. This unit is green in colour, and contains up to 50% limonite occurring as small blebs or patches.

The argillite-limestone contact is undulatory, but sharp, and has a general north-south trend. A northwest-southeast trending fault offsets this contact by approximately 100 meters.

Structure

The dominant structural feature in the area is the distinctive cleavage in the argillites, which often obscures the primary bedding/laminations. Despite localized variations, both the cleavage and the bedding have a general NNW trend; the cleavage dips steeper to the east than the bedding.

As previously noted, a NW (?) trending fault offsets the limestone-argillite contact in the southern part of the grid (see Figure no. 5).

## 2.3 Mineralization

Geologic mapping and sampling of the "Charlemont / Melody" Prospect has outlined several vein structures as well as indications of replacement type mineralization. This mineralization has been developed by a series of trenches and short adits as illustrated in Figure No.4.

The best mineralization observed consists of two, NNW trending quartz-carbonate veins which contain lenses and streaks of galena, sphalerite, pyrite and tetrahedrite. The presence of the latter mineral is evidenced by the high antimony contents (0.1 - 1.0%) and the development of malachite and azurite as oxidation products on exposed sulfide mineralization.

Galena occurs as sub - euhedral grains (1 - 5mm) in patches or streaks up to several cm wide. Tetrahedrite and pyrite occur as finely disseminated grains within the galena rich streaks. Sphalerite occurs as discrete, euhedral crystals (1 - 2mm) within the quartz - carbonate (gangue) material. Oxidized samples display abundant malachite, azurite and limonitic staining.

TABLE NO. 1

## Rock Sample Descriptions

| Sample ID | Ag(oz/t) | Cu% | Pb% | Zn% | Sb% | Description |
|---|---|---|---|---|---|---|
| **Charlemont No. 1 Vein** | | | | | | |
| CHMT 010 | 14.68 | 0.23 | 17.20 | 27.50 | -- | -(0.60 channel) highly oxidized quartz-carbonate vein with abundant galena, sphalerite. |
| 85006K | 2.29 | 0.04 | 1.85 | 3.30 | 0.04 | -(0.50m chip sample) ruggy, quartz-carbonate vein 3-5% galena, 1-2% malachite. |
| **85007K *** | 8.41 | 0.44 | 2.11 | 11.39 | 0.24 | -(0.60 chip sample) 5-8% galena, abundant fine grained sphalerite, 2-3% malachite, 5% disseminated medium grained pyrite. |
| CHMT 008 | 54.32 | 1.69 | 28.18 | 15.98 | -- | -(0.90m channel) quartz-carbonate vein heavily mineralized with galena, sphalerite and malachite (tetrahedrite). |
| 85009K | 3.31 | 0.09 | 0.55 | 1.49 | 0.07 | -(0.25m chip sample) shear hosted quartz-carbonate vein in dolomitic limestone. |
| 85010K | 10.69 | 0.26 | 2.00 | 2.45 | 0.18 | -(0.63m chip sample) quartz-carbonate vein with 5-10% galena, 5% sphalerite, 2% malachite. |
| CHMT 003 | 33.53 | 0.60 | 32.60 | 0.61 | -- | -(0.40m channel) quartz-carbonate vein with abundant galena, malachite (tetrahedrite). |
| CHMT 004 | 3.94 | 0.29 | 3.78 | 2.16 | -- | -(0.80m channel) quartz-carbonate vein with minor galena, sphalerite. |
| CHMT 005 | 12.95 | 0.34 | 10.20 | 1.75 | -- | -(0.50m channel) sheared dolomite with quartz-carbonate stringers, 20% galena. |
| CHMT 006 | 3.18 | 0.06 | 3.10 | 1.46 | -- | -(0.40m channel) quartz-carbonate vein with minor galena, sphalerite. |
| **Charlemont No. 2 Vein** | | | | | | |
| **85014K *** | 10.97 | 1.07 | 2.11 | 1.40 | 1.06 | -(0.40m chip sample) quartz vein, abundant limonite, 10% galena, malachite, azurite. |
| 85015K | 6.80 | 0.33 | 2.37 | 0.50 | 0.35 | -(0.65m chip sample) quartz vein, extremely oxidized, abundant limonite. |
| CHMT 001 | 48.25 | 1.66 | 20.00 | 0.89 | n/d | -(1.0m channel) galena with abundant malachite staining on fracture surfaces in limestone. |

| Sample ID | Ag(oz/t) | Cu% | Pb% | Zn% | Sb% | Description |
|---|---|---|---|---|---|---|
| **Miscellaneous Samples/Dump Samples** | | | | | | |
| 85001K | n/d | 0.12 | n/d | n/d | n/d | -altered felsic dyke (3m wide), 1-2% fine grained pyrite, abundant limonite on weathered surface, crosscuts bedding, moderately carbonatized. |
| 85002K | n/d | n/d | n/d | 0.11 | n/d | -(0.30m chip sample) quartz-carbonate vein, milky-white quartz, no visible sulphide mineralization. |
| 85003K | 0.56 | n/d | 0.74 | 0.77 | n/d | -(0.35m chip sample) 2-3% galena, less than 1% fine disseminated pyrite, 5-10% limonite. |
| 85004K | 0.27 | 0.03 | 0.13 | 0.03 | 0.04 | -(0.50m chip sample) quartz vein, 1-2% galena. |
| 85005K | 0.16 | n/d | 0.22 | 0.23 | n/d | -(grab sample) quartz vein, vuggy with abundant limonite, no visible sulphides. |
| 85008K | 0.19 | n/d | 1.08 | 0.07 | n/d | -(0.60 chip sample) 1-2% disseminated galena, 1% fine disseminated pyrite. |
| **85011K *** | 9.25 | 1.38 | 2.04 | 1.35 | 0.91 | -(selected grab sample from ore pile, adit no. 1) 60% galena, 2-3% malachite. |
| 85012K | 0.84 | 0.02 | 0.31 | 0.16 | 0.02 | -(0.20m chip sample) quartz-carbonate vein, 2-3% galena, less than 1% disseminated fine pyrite. |
| 85013K | 2.03 | 0.50 | 0.93 | 0.10 | 0.03 | -(0.35m chip sample) quartz-carbonate vein, argillite on footwall and limestone on hanging wall, 1% galena, 1-2% disseminated pyrite, abundant limonite. |
| 85016K | 0.38 | 0.20 | 0.12 | 0.04 | 0.14 | -(grab sample) argillite, black, well folliated, less than 1% pyrite along foliation surfaces. |
| 85017K | 0.07 | 0.01 | 0.02 | 0.02 | n/d | -(grab sample) mafic intrusive, 4m wide, 3-5% spotted limonite, carbonatized. |
| 85018K | 0.04 | 0.01 | 0.02 | 0.02 | n/d | -(grab sample) shear zone, hosted in the mafic intrusive, 0.2m wide, abundant limonite. |
| CHMT 002 | 2.92 | 0.06 | 3.36 | 3.80 | -- | -(grab sample) disseminated galena and sphalerite in grey-green limestone. |

**NOTE:** (a) -- not assayed
(b) n/d none detected
(c) * sample resubmitted for assay -- reported Pb% not consistent with modal percentage galena.
(d) CHMT 1984 sample series

Charlemont No. 1 Vein

This vein has been traced by a series of trenches and three short adits over a strike length of 70m and a vertical range of 25m. 2-4

Trenches expose a highly oxidized, quartz - carbonate vein (0.3 - 0.9m in width) which hosts variable amounts of galena, sphalerite and tetrahedrite. Mineralization exposed within the adits is less oxidized and occurs within discontinuous lenses or patches along the vein. Table 1. lists results from both surface and underground sampling.

Adit 1

This adit is located immediately west of the helicopter pad, and extends 18.5 meters along the vein at an orientation of 336 degrees. Blasting, trenching and the removal of fallen rock exposed two zones of mineralization. These zones are: (a) a 25 cm wide shear (85009K), and (b) a quartz carbonate stockwork attaining a width of 63 cm (85010K) located at the back of the adit.

Adit 2

Adit 2 is located 25 meters up slope from adit 1 and has a length of 5 meters. Two mineralized conjugate veins are exposed: (a) a 60 cm wide quartz vein at the portal (85006K), and (b) a raggy 50 cm wide vein at the back of the adit (85006K). Adit 2 is an upslope extension of adit 1.

Adit 3

This adit is situated approximately 20 meters upslope from adit 2, and is believed to have a length of 2-3 meters. Loose rock at the portal precluded detailed mapping and sampling.

Charlemont No. 2 Vein

This vein is exposed at the western edge of the lowermost trench and hosts mineralization similar to that within the No. 1 Vein. This mineralization was originally interpreted as fracture controlled replacement type (von Einsiedel, 1984) however, additional trenching established vein type characteristics.

Several meters east of the no.2 vein, galena and sphalerite occur as disseminated grains within a bed of dolomotized limestone. This mineralization is interpreted as a possible replacement type occurrence.

The remaining veins, typically associated with WNW trending shears are too small and the mineralization too sparse to warrant additional investigation.

Rock sample assays and sample descriptions are included in Table No.1. Samples consisted of approximately 0.5 kg of material which was shipped to Acme Laboratories in Vancouver. Samples were pulverized to 100 mesh and a 0.5 g split was used for the analysis.

The 0.5 g split was digested with 5ml of 3:1:2 HCl to HNO3 to H2O at 95 degrees C for 90 minutes and is diluted to 10 ml with H2O. Assays were performed with an ICP unit (Inductively Coupled Plasma Spectroscope).

# SECTION 3

# GEOPHYSICAL SURVEY

## 3.1 VLF-EM Survey

The VLF-EM survey was carried out using a Geonics EM-16 receiver. This instrument measures the secondary electromagnetic fields generated by buried conductive bodies when subjected to a primary electromagnetic (radio) signal. The primary signal is provided by high frequency military radio transmitters located in the United States.

To assess the usefulness of VLF-EM as a prospecting tool in evaluating this type of mineralization, a detailed survey was conducted in the vicinity of the old workings. A total of 3.0 line km were completed at 12.5 m intervals on 25 m spaced grid lines (WNW orientation) using Cutler, Maine as a transmitting station (17.8 KHZ). Data is presented in profile form with conductor axes shown as bold dashed lines (see Figure no. 6F).

## 3.2 Results

An evaluation of "in phase" VLF profiles indicates several weak NNW and WNW trending conductors in the vicinity of the workings. The NNW conductors are approximately coincident with the Charlemont No. 1 and No. 2 veins and are interpreted as the signature of steeply dipping NNW trending shear structures.

The WNW conductors are broader and less well defined than the NNW conductors and are interpreted as a secondary fracture orientation.

## CERTIFICATE

I, T. Kraft, do hereby certify:

1. That I am a graduate in geology of Carleton University, Ottawa, Ontario (B.Sc., 1984).

2. That I have practised as a geologist in mineral exploration for one year.

3. That the opinions, conclusions and recommendations contained herin are based on field work carried out during July, 1985 and on library research..

4. That I own no direct, indirect, or contingent interest in the subject property, or shares or securities of Mandusa Resources Ltd. or associated companies.

T. Kraft, B.Sc.

**Vancouver, B.C.**
**September 6, 1985**

## CERTIFICATE

I, C. von Einsiedel, do hereby certify:

1. That I am a graduate in geology of Carleton University, Ottawa, Ontario (B.Sc. 1982).

2. That I have practised as a geologist in mineral exploration for the past six years.

3. That the opinions, conclusions, and recommendations contained herein are based on the results of field work carried out during August, 1984, and on extensive research. C.v.E. results of the present evaluation

4. That I own no direct, indirect or contingent interest in the subject property or shares or securities of Mandusa Resources Ltd.

C. von Einsiedel

C. von Einsiedel, B.Sc.

**Vancouver, B.C.**
**September 6, 1985**

## STATEMENT OF COSTS

| | |
|---|---|
| Mobilization (travel Van. - Toby Crk rtn.) | $ 1,500 |
| Personell | |
| T. Kraft - 9 days @ 200.00 | 1,800 |
| D. Richards - 15 days @ 200.00 | 3,000 |
| D. McLean - 7 days @ 200.00 | 1,400 |
| Helicopter Charter - 3.5 hrs @ 500.00 | 1,750 |
| Equipment Rental | |
| 4x4 - 18 days @ 70.00 | 1,260 |
| Drill and accessories | 800 |
| Fuel, insurance | 775 |
| Explosives | 300 |
| Camp / accommodation - 30 days @ 45.00 | 1,350 |
| Assays - 16 @ 20.00 | 320 |
| Report Preparation | |
| C. von Einsiedel - 5 days @ 250.00 | 1,250 |
| T. Kraft - 7 days @ 200.00 | 1,400 |
| drafting | 1,300 |
| secretarial, printing | 700 |
| Total | $ 19,605 |

## Appendix 1

Harris
EXPLORATION
SERVICES

MINERALOGY AND GEOCHEMISTRY

534 ELLIS STREET, NORTH VANCOUVER, B.C., CANADA V7H 2G6 TELEPHONE (604) 929-5867

Job # 85-39
August 9th, 1985

Report for: Tom Kraft,
c/o Ram Explorations Ltd.,
404-850 West Hastings St.,
Vancouver, B.C.
V6C 1E1

Sample 85-001K

Work required:

One thin section for petrographic examination and report.

Results:

The sample is a fine-grained, evenly granular carbonate - plagioclase rock of uncertain origin.

Estimated mode

| | |
|---|---|
| Carbonate | 65 |
| Plagioclase | 20 |
| Sericite | 8 |
| Quartz | 2 |
| Rutile | 5 |
| Pyrite | trace |

It consists largely of a non-foliated aggregate of subhedral carbonate grains about 0.1mm in size. This forms a matrix within which is developed a semi-continuous network of pockets and wisps of plagioclase and sericite with minor quartz.

Much of the plagioclase is very fine-grained, microgranular or felsitic (grain size 0.01mm). Tiny flecks of sericite occur intergranularly in this material, which shows rather diffuse granularity suggestive of partial recrystallization. It shows gradations to rather coarser form with local development of partially euhedral, well-twinned grains of 0.1mm or more. Here and there, adjacent anhedral patches of this better crystallized plagioclase appear to represent optically continuous remnants of grains up to 1mm or so in size.

The sericite forms non-oriented felted masses (maximum grain size 0.05mm) and pockets up to 0.2mm, more or less intergrown with the plagioclase, and also small wisps scattered throughout the carbonate matrix.

The sericite in this rock is the green variety commonly referred to as mariposite.

The carbonate is essentially non-reactive to dilute acid and is a magnesian and/or ferroan variety. Note that it shows no limonitic alteration. There is an impression in the thin section that there may be more than one variety of carbonate present (one showing a more extreme relief than the other). This could however be merely an effect of differential orientation.

A specific identification of the carbonate species could be achieved by XRD or SEM microanalysis.

The nature and origin of this rock is unclear from the petrographic evidence. Its fabric appears to be a recrystallized one. Although there is no foliation, the sericite looks metamorphic - or metasomatic - rather than a product of alteration of feldspar. The water-clear unaltered character of the plagioclase and its variable grain size likewise suggest metamorphic recrystallization. The coarser crystals could possibly be remnants of phenocrysts or clasts. The carbonate may be largely metasomatic or could have been an original constituent of exhalative origin, perhaps in a fine-grained crystal tuff. No trace of layering survives.

The even grain and textural homogeneity of the rock are hard to reconcile with alteration of a hydrothermal type unless subsequently modified.

The textural mode and association with carbonate are typical of the occurrence of mariposite from other areas.

J.F. Harris Ph.D.

SILVER 2

SILVER 1

"Charlemont No. 1 Vein"
Surface trace of principal vein structure.

L0+75N
L0+50N
L0+25N
L0+00
L0+25S
L0+50S
L0+75S

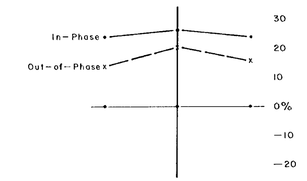
8200
8100
8000
7900
7800
7700
7600
7500
7400
7300
7200
7100
7000
6900
6800

N 00+00W
N 00+50W
N 01+00W
N 01+50W
N 02+00W
N 02+50W
N 03+00W

## LEGEND

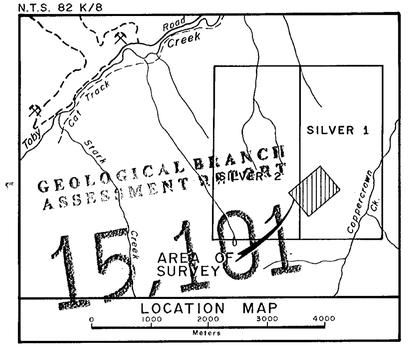
Trace of Conductor Axis.

INSTRUMENT : GEONICS EM-16
Transmitter : Cutler, Maine (NAA)




1cm = 10%

N.T.S. 82 K/8




10 0 20 40 60 80
Meters

MANDUSA RESOURCES LTD.
SILVER 1 & 2 CLAIMS
GOLDEN MINING DIVISION — BRITISH COLUMBIA

# VLF-EM SURVEY

| | | |
|---|---|---|
| RAM EXPLORATIONS LTD.<br>VANCOUVER B.C. | DWN. BY: T.M.<br>CHK. BY:<br>DATE: AUG. 1985 | FIG. No.<br>6 |

SILVER 2

SILVER 1

"Charlemont No. 1 Vein"
CHMT 003-006,008,010
85006K,85007K,85009K,
85010K

"Charlemont No. 2 Vein"
85015K,85016K
CHMT 001

CHMT 002

D.D.H. 86-1,2

D.D.H. 86-3,4

D.D.H. 85-7

D.D.H. 86-5,6

ADIT 1

ADIT 2

ADIT 3

TALUS

L0+75 N
L0+50 N
L0+25 N
L0+00
L0+25 S
L0+50 S
L0+75 S

2+00 W
1+00 W
0+00
1+00 E
2+00 E

8200 8100 8000 7900 7800 7700 7600 7500 7400 7300 7200 7100 7000 6900 6800 6700 6600 6500

85001K 85002K 85003K 85004K 85005K 85006K 85007K 85008K 85009K 85010K 85012K 85013K 85015K 85016K 85017K 85018K

## LEGEND

MESOZOIC (?)

4 Mafic Dyke.

3 Felsic Dyke (?) extremely carbonated, limestone.

PROTEROZOIC
PURCELL (HELIKIAN)
Dutch Creek & Kitchner — Siyeh Formations (unsubdivided)

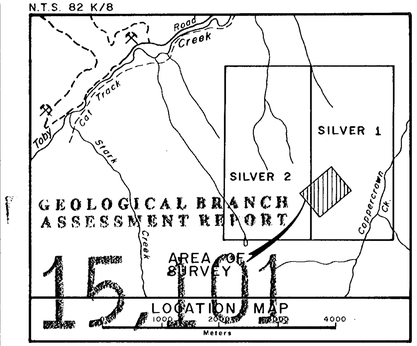
2 Argillite — thinly bedded to laminated; black, green, grey in color.

1 Dolomitic Limestone — bedded, blocky — minor intercalated orgillite.

## SYMBOLS

- Grid line, station.
- Building.
- Trench.
- Adit.
- Outcrop Boundary.
- Geological Contact (defined, approximate).
- Shear (possibly w/ minor sulfide indicated, inferred).
- Bedding (strike, dip).
- Cleavage (strike, dip).
- Shear (strike, dip).
- Joint (strike, dip).
- Fault (approximate
- Mineralized vein structure indicated, inferred.
- 85001K Rock sample location no.
- Sample from 1984 exploration program.
- Proposed diamond drill hole locations

N.T.S. 82 K/8




10 0 20 40 60 80
Meters

MANDUSA RESOURCES LTD.
SILVER 1 & 2 CLAIMS
GOLDEN MINING DIVISION — BRITISH COLUMBIA

# ROCK SAMPLE LOCATIONS & PROPOSED DRILL HOLES

RAM EXPLORATIONS LTD.
VANCOUVER B.C.

DWN. BY: T.M.
CHK. BY:
DATE: AUG. 1985

FIG. No. 5

SILVER 2

SILVER 1

8200 8100 8000 7900 7800 7700 7600 7500 7400 7300 7200 7100 7000 6900 6800 6700 6600 6500

L0+75N
L0+50N
L0+25N
L0+00
L0+25S
L0+50S
L0+75S

2+00W 1+00W 0+00 1+00E 2+00E

TALUS

ADIT 1
ADIT 2
ADIT 3

"Charlemont No. 2 Vein"

Channel Sample Results

| Sample Id | Width | Agoz/ton | Cu% | Pb% | Zn% | Sb% |
|---|---|---|---|---|---|---|
| 85014K | 0.40 | 10.97 | 1.09 | 2.11 | 1.38 | 1.07 |
| 85015K | 0.65 | 6.97 | 0.33 | 2.37 | 0.49 | 0.55 |
| * CHMT 001 | 1.00 | 48.25 | 1.66 | 20.00 | 0.89 | — |

(NOTE - 1985 trenching removed lens of high grade mineralization sampled in 1984.)

"Charlemont No. 1 Vein"

Channel Sample Results

| Sample Id | Width | Agoz/ton | Cu% | Pb% | Zn% | Sb% |
|---|---|---|---|---|---|---|
| ADIT 3 (caved) | | | | | | |
| Sample Id (trench sample) | | | | | | |
| * CHMT 010 | 0.60 | 14.68 | 0.25 | 17.20 | 27.50 | — |
| ADIT 2 | | | | | | |
| 85006X | 0.50 | 2.29 | 0.04 | 1.84 | 3.30 | 0.04 |
| 85007X | 0.60 | 8.41 | 0.41 | 2.11 | 11.39 | 0.23 |
| (trench sample) | | | | | | |
| * CHMT 008 | 0.90 | 54.32 | 1.69 | 28.18 | 15.98 | — |
| ADIT 1 | | | | | | |
| 85009X | 0.25 | 3.31 | 0.09 | 0.55 | 1.49 | 0.07 |
| 85010X | 0.65 | 10.89 | 0.28 | 2.00 | 2.45 | 0.18 |
| * CHMT 003 | 0.40 | 33.53 | 0.80 | 32.60 | 0.61 | — |
| * CHMT 004 | 0.80 | 3.98 | 0.23 | 3.78 | 2.15 | — |
| * CHMT 005 | 0.50 | 12.95 | 0.34 | 10.20 | 1.78 | — |
| * CHMT 006 | 0.40 | 3.18 | 0.08 | 3.10 | 1.96 | — |

## LEGEND

MESOZOIC (?)

4 Mafic Dyke.

3 Felsic Dyke (?) extremely carbonated, limestone.

PROTEROZOIC
PURCELL (HELIKIAN)
Dutch Creek & Kitchner — Siyeh Formations (unsubdivided)

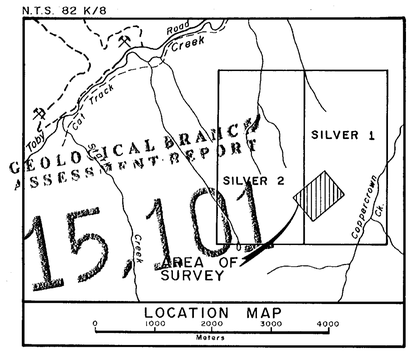
2 Argillite — thinly bedded to laminated; black, green, grey in color.

1 Dolomitic Limestone — bedded, blocky — minor intercalated argillite.

## SYMBOLS

- Grid line, station.
- Building.
- Trench.
- Adit.
- Outcrop Boundary.
- Geological Contact (defined, approximate).
- Shear (possibly w/ minor sulfide indicated, inferred.)
- Bedding (strike, dip).
- Cleavage (strike, dip).
- Shear (strike, dip).
- Joint (strike, dip).
- Mineralized vein structure indicated, inferred.
- Fault (approximate)
- * Sample from 1984 exploration program.

N.T.S. 82 K/8




10 0 20 40 60 80
Meters

MANDUSA RESOURCES LTD.
SILVER 1 & 2 CLAIMS
GOLDEN MINING DIVISION — BRITISH COLUMBIA

# GEOLOGY MAP

| | | |
|---|---|---|
| RAM EXPLORATIONS LTD. VANCOUVER B.C. | DWN. BY: T.M. | FIG. No. |
| | CHK. BY: | 4 |
| | DATE: AUG. 1985 | |