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FILE NO:	

GEOLOGICAL ASSESSMENT REPORT  
ON THE  
HIGHLAND MARY CLAIM  
BARNATO PROPERTY  
STEWARTSON CREEK AREA  
GREENWOOD MINING DIVISION

NTS: 82E/7W  
LATITUDE: 49° 27' N 28' 30"  
LONGITUDE: 118° 54' W

BY  
MOHAN R. VULIMIRI, M.S. F.G.A.C.

FOR  
CARMAC RESOURCES LTD.

January, 1990

<b>SUB-RECORDER</b> RECEIVED
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GEOLOGICAL BRANCH  
ASSESSMENT REPORT

19,526

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SUMMARY AND CONCLUSIONS

Mineralization consisting of mainly pyrite, arsenopyrite and minor chalcopyrite, with significant gold values occurs in andesitic volcanic rocks. The andesitic volcanic rocks belong to the Late Paleozoic Wallace Formation, and are intruded by rocks of Jurassic age.

The district has a long history of sporadic mining exploration. Mineralization in the area was discovered in 1870's.

The author conducted the property evaluation with the purpose of designing a program for systematic mining exploration in the area. Preliminary mapping, chip and dump sampling, suggests that the property and the area has a very good potential for the occurrence of a significant sized mineral deposit.

## INTRODUCTION

The author, accompanied by Grant Crooker, conducted property evaluation on the Highland Mary Claim on October 19, 1989. The evaluation consists of preliminary geological mapping, representative chip sampling, sampling of the dumps and grab sampling.

The last recorded work was performed in 1938 and consists of trenching and shaft sinking.

The claim is located approximately 50 kilometres east of Penticton and 5 kilometres west of Kettle River.

## PROPERTY DESCRIPTION

The Highland Mary Claim consists of 1 unit. The title number is 1835. With the acceptance of this report the expiry date of the claim is October 22, 1990.

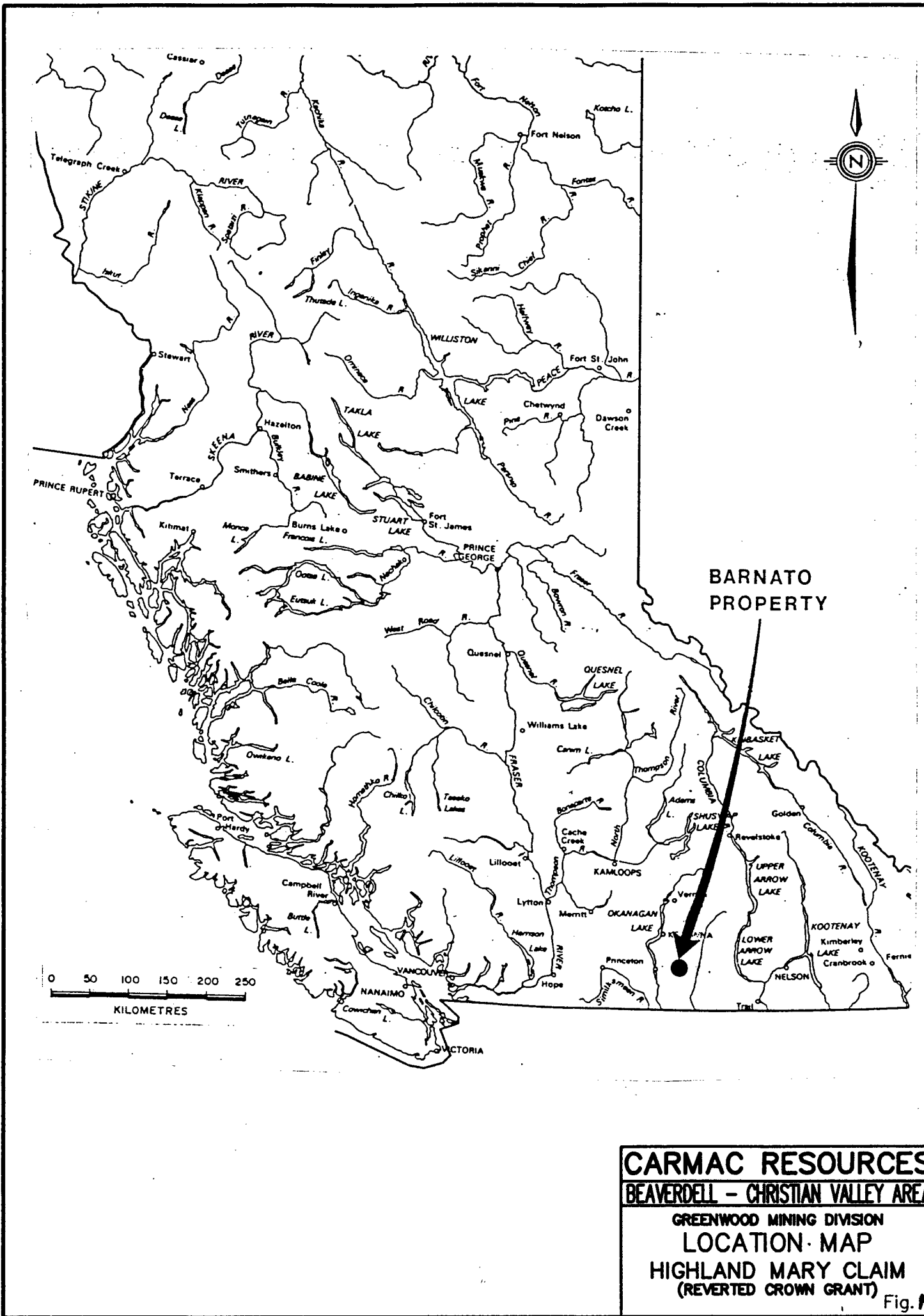
Carmac holds 100% interest in the above reverted crown grants.

## LOCATION, ACCESS AND PHYSIOGRAPHY

The property is located in southeastern British Columbia, 33 kilometres north of Westbridge. Access to the property is via a logging road from the main Kettle River road, or from Beaverdell located towards the west.

Topography is moderate with elevations ranging from 880 metres to 1000 metres. Vegetation cover is approximately 90% and consists of fir, spruce and pine.

Average precipitation consists of 24 centimetres of rain and 100 centimetres of snow. Average temperatures range from 1°C in winter to 15°C in summer. The property is snow-free from June to October.



**BARNATO  
PROPERTY**

**CARMAC RESOURCES**  
**BEAVERDELL - CHRISTIAN VALLEY AREA**  
GREENWOOD MINING DIVISION  
LOCATION MAP  
**HIGHLAND MARY CLAIM**  
(REVERTED CROWN GRANT) Fig. 1

FUKI

BAR 7  
1034(5)  
3S x 5W

10311

Dear  
Creek

LOR 5  
1234  
(7)

LOR 6  
1235(7)  
(7)

Highland Mary  
Stewartson Cr.

PAN 1  
5204(7)  
5N x 4W

POT 2  
Stewartson

PAN 2

5205  
(7)  
5N x 4E

Triple Lakes  
Creek

Creek

MINDY Cr.

LC  
12:  
3N x  
C

1825(10) L2302  
1971(1)  
5270(10)  
5271(10)  
1971(1)  
L1467  
71-C.G.

WAS 9  
5270(10)

WAS 10  
5271(10)

WAS 17  
5278(10)

WAS 18  
5279(10)

WAS 7  
5268(10)

WAS 8  
5269(10)

WAS 15  
5276(10)

WAS 16  
5275(10)

WAS 5  
5266(10)

WAS 6  
5267(10)

WAS 13  
5274(10)

WAS 14  
5275(10)

WAS 3  
5264(10)

WAS 11  
5272(10)

WAS 12  
5273(10)

WAS 1  
5262(10)

WAS 2  
5263(10)

1827(10) L1285  
Rev.C.G.

4115(7) L2638  
Rev.C.G.

1971

ALSO, MINDY 3  
4371(6)

ALSO, MINDY 4  
4370(9)

MINDY 1  
4368(9)

MINDY 2  
4369(9)

AMP 2  
5497(6)

AMP 1  
5497(6)

AMP 4  
5499(6)

AMP 3  
5499(6)

Wash

5085(12)  
L989  
Rev.C.G.

JAY BLUEJAY  
8D  
3768(6) 4356(6)

BLUEJAY  
8B  
4354(6)

MONTANA  
4309(4)  
4S x 4E

**CARMAC RESOURCES**  
**BEAVERDELL - CHRISTIAN VALLEY AREA**  
 GREENWOOD MINING DIVISION  
**CLAIM MAP**  
**HIGHLAND MARY CLAIM**  
 (REVERTED CROWN GRANT)

Fig. 2

### HISTORY AND PREVIOUS WORK

Many of the claims in the area were staked and considerable surface work was completed by 1878. Gold mineralization was discovered in the area between 1896 and 1897. In 1937 - 1938, two cars of sorted ore, totalling approximately 84.9 tons, grading 1.58 oz/ton gold, 0.23 oz/ton silver and 10.17% arsenic were shipped to Tacoma smelter. Subsequently in 1938, Cominco optioned the Barnato Claim, and conducted a trenching and drilling program.

Several open-cuts, and shafts were dug in 1938. Assays up to 0.5 oz/ton gold across 8 inches were obtained. There is no record of work on the claim since 1938.

### REGIONAL GEOLOGY

The area is mainly underlain by mostly andesitic volcanic rocks of the Wallace (Anarchist) Formation of late Paleozoic and Early Mesozoic age. These rocks consist of metamorphosed andesitic tuffs, cherts, flows and volcanic derived sedimentary rocks. The Wallace Formation is intruded by diorite plugs and dykes belonging to Jurassic Westkettle Pluton (Figure 3).

The volcanic rocks trend approximately north - northwest.

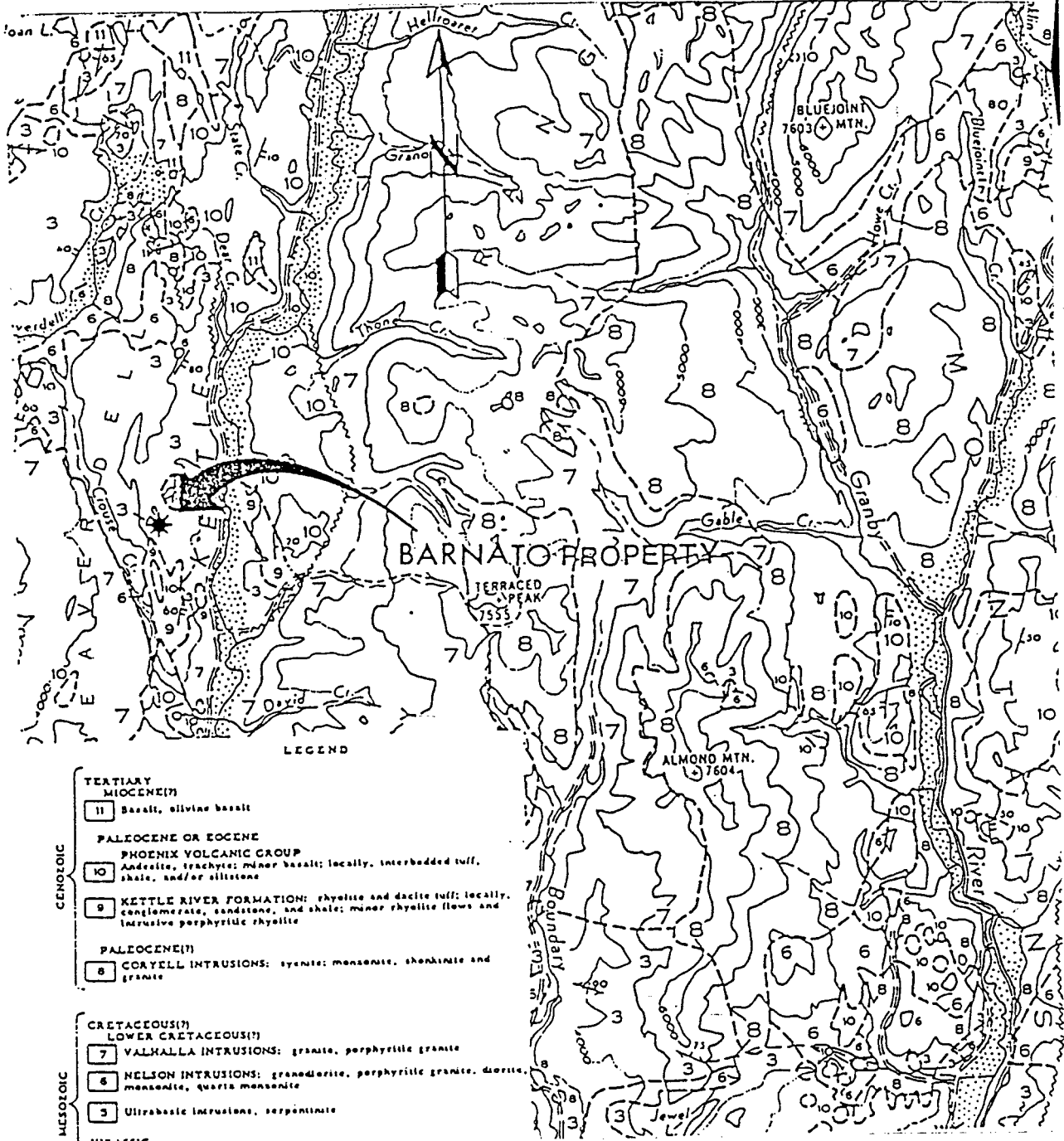
Details with regards to Regional Geology can be referred to in G.S.C. Memoir 79 (Reinecke, 1910, 1915), Geological Series and Geology, No. 65 (Little, 1953, 1956).

### PROPERTY GEOLOGY

Rock exposures in trenches, shafts and outcrops on the Highland Mary Claim were examined (Figure 4). Mainly two dominant rock types were observed.

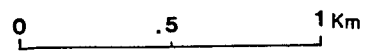
1. Quartz diorite or granodiorite plugs and dykes. Texture is medium to coarse-grained, and in places porphyritic. The mafic content varies rich to poor.
2. Andesitic volcanic rocks. Texture is fine-grained and foliated in places. Composition varies from felsic to mafic.

Other rocks documented on the property include a calcareous unit interbedded within the andesitic unit. Porphyritic dykes were observed to cross-cut all the units in the area. These dykes are medium to coarse-grained, light to dark green in colour, and partly porphyritic.



LEGEND

- |                |    |   |
|----------------|----|---|
| GENOZOIC       | 11 | TERTIARY<br>MIOCENE(?)<br>Basalt, olivine basalt  |
|                | 10 | PALEOCENE OR EOCENE<br>PHOENIX VOLCANIC GROUP<br>Andesite, trachyte; minor basalt; locally, interbedded tuff, shale, and/or siltstone |
|                |    |   |
|                | 8  | PALEOCENE(?)<br>COAYELL INTRUSIONS: syenite; monzonite, shonkinite and granite  |
| MESOZOIC       | 7  | CRETACEOUS(?)<br>LOWER CRETACEOUS(?)<br>VALHALLA INTRUSIONS: granite, porphyritic granite   |
|                |    |   |
|                | 5  | Ultrabasic intrusions, serpentinite   |
|                | 4  | JURASSIC<br>ROSLAND GROUP<br>Andesite, lacite; agglomerate and flow breccia, minor graywacke  |
| PALAEOZOIC     | 3  | PERMIAN(?)<br>ANARCHIST GROUP<br>Greenstone, graywacke, limestone, paragneiss   |
|                | 2  | PENNSYLVANIAN AND/OR PERMIAN<br>MOUNT ROBERTS FORMATION: graywacke, greenstone, limestone; paragneiss                                 |
| PROTEROZOIC(?) | 1  | MONASHEE AND GRAND FORKS GROUPS<br>Paragneiss; minor crystalline limestone and pegmatite  |



**CARMAC RESOURCES**  
**BEVERDELL - CHRISTIAN VALLEY AREA**  
 GREENWOOD MINING DIVISION  
 REGIONAL GEOLOGY  
 HIGHLAND MARY CLAIM

Fig. 3



The andesitic rocks are intensely hornfelsed along the contact with quartz diorite and/or granodiorite plugs.

### MINERALIZATION

Mineralization, consisting of mainly arsenopyrite and pyrite with significant gold values, occurs in the andesitic volcanic rocks. Sample locations are shown in Figure 4.

Sample assays and descriptions are given below:

Sample No	Type	Au oz/ton	Ag oz/ton	Description
HM 1	Chip 0.3m	0.323	0.13	20% arsenopyrite + pyrite
HM 2	Chip 0.2m	0.001	0.01	Siliceous volcanic
HM 3	Dump	0.550	0.17	40% arsenopyrite + pyrite
HM 4	Chip 2.0m	0.349	0.04	20% arsenopyrite + pyrite
HM 5	Chip 2.0m	0.001	0.01	Siliceous volcanic
HM 6	Dump	0.502	0.06	40% arsenopyrite + pyrite
HM 7	Dump	1.770	0.14	50% arsenopyrite + pyrite

### RECOMMENDATIONS

Examination of rock types and mineralization, suggest that extensive trenching along strike detailed geological mapping and geochemical survey is necessary for properly evaluating the mineral potential of the property.

If results warrant, a diamond drilling program should be initiated.

January, 1990

*Mohan Vulimiri*  
Mohan Vulimiri

REFERENCES

- B.C. Minister of Mines Annual Reports; 1938 A and D Highland Mary
- B.C. Department of Mines, 1966: Report on the Barnato Group. P. 193.
- B.C. Department of Mines, 1967: Report on the Barnato Group. P. 225.
- Gewargis, W.A., 1981: Interim Report on the Barnato Group.
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- Hewett, F., 1983: Report on the Barnato Group.
- Hogarth, R.D., 1982: 1981 Diamond Drilling Report on the Barnato Claim Group.
- MacLeod, J.W., 1980: Geochemical Report on the Barnato Group.
- Pezzot, T. and White, G., 1980: Airborne VLF-EM and Magnetometer Survey on the Kettle #1 and Kettle #2 Claims.
- Seraphim, R.H., 1977: Report on the Barnato Group.
- ., 1980: Report on the Kettle River Claim.

DETAILED COST STATEMENTWages \*

Grant Crooker	} 0.5 days at \$350.00/day	\$ 175.00	
Mohan Vulimiri Report writing		0.5 days at \$350.00/day	\$ 175.00
		<u>\$ 350.00</u>	\$350.00

Assays

7 Samples Au & Ag (12.75 + 3.50)	\$ 113.75	\$113.75
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Board and Lodging

0.5 days at \$60.00/day	\$ 30.00	<u>\$ 30.00</u>
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TOTAL		\$ 493.75
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\* Wages include office overhead and administration costs.

CERTIFICATE OF QUALIFICATIONS

I, Mohan R. Vulimiri, hereby certify that:

I am a Consulting Geologist, with business address at 822 East 12th St., North Vancouver, B.C. V7L 2L1.

I am a graduate of Indian Institute of Technology, Kharagpur, India with a B.Sc., Honours in Geological Sciences.

I received a Master of Science degree in Economic Geology from the University of Washington, Seattle, U.S.A.

I am a Member of Society of Economic Geologists, Member of Society of Mining Engineers and a Fellow of the Geological Association of Canada.

I have practised my profession as a Geologist since 1970, and in responsible positions since 1974, in British Columbia, Yukon, Saskatchewan, and South Western U.S.A.

The information, conclusions and recommendations in this report are based on a field examination of the property.

I have no interest, direct or indirect, in the property or in the securities of Carmac Resources Ltd.

Dated at Vancouver, British Columbia, this 1st day of January, 1990.

Mohan R. Vulimiri

Mohan R. Vulimiri

APPENDIX 1

ROSSBACHER LABORATORY LTD.

2225 S. Springer Ave., Burnaby,  
British Columbia, Can. V5B 3N1  
Ph: (604)299-6910 Fax: 299-6252

CERTIFICATE OF ANALYSIS

TO : CARMAC RESOURCES  
860-625 HOWE STREET  
VANCOUVER, B.C.  
PROJECT :  
TYPE OF ANALYSIS : ASSAY

CERTIFICATE # : 89437  
INVOICE # : 10109  
DATE ENTERED : 89-11-08  
FILE NAME : NAG89437  
PAGE # : 1

FRE FIX	SAMPLE NAME	oz/t Au	oz/t Ag
A	B 1	0.001	0.01
A	B 2	0.001	0.01
A	B 3	0.009	0.01
A	B 4	0.007	0.02
A	B 5	0.375	0.04
A	B 6	0.030	0.01
A	B 7	0.001	0.01
A	B 8	0.176	0.01
A	B 9	0.003	0.01
A	B 10	0.001	0.01
A	B 11	0.189	0.04
A	B 12	0.002	0.01
A	B 13	1.960	0.10
A	B 14	0.060	0.02
A	B 15	0.003	0.01
A	B 16	0.002	0.01
A	B 17	0.091	0.02
A	B 18	0.001	0.01
A	HM 1	0.323	0.13
A	HM 2	0.001	0.01
A	HM 3	0.550	0.17
A	HM 4	0.349	0.04
A	HM 5	0.001	0.01
A	HM 6	0.502	0.06
A	HM 7	1.770	0.14
A	OK 1	0.022	
A	OK 2	0.002	
A	OK 3	0.001	
A	OK 3 A	0.019	
A	OK 4	0.004	
A	OK 5	0.002	
A	OK 6	0.001	
A	OK 7	0.035	
A	OK 8	0.002	
A	OK 9	0.001	
A	OK 10	0.007	
A	OK 11	0.001	
A	OK 12	0.001	
A	OK 13	0.002	

*Highland Mary*

CERTIFIED BY : *J. Rossbach*

ROSSBACHER LABORATORY LTD.

2225 S. Springer Ave., Burnaby,  
British Columbia, Can. V5B 3W1  
Ph: (604)299-6910 Fax: 299-6252

CERTIFICATE OF ANALYSIS

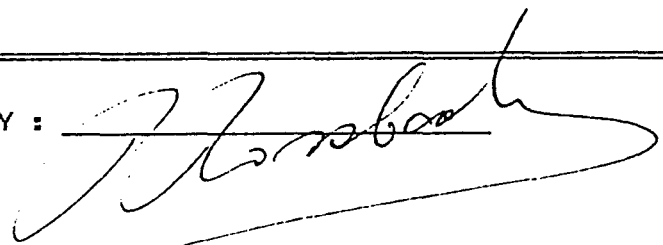
TO : CARMAC RESOURCES  
860-625 HOWE STREET  
VANCOUVER, B.C.

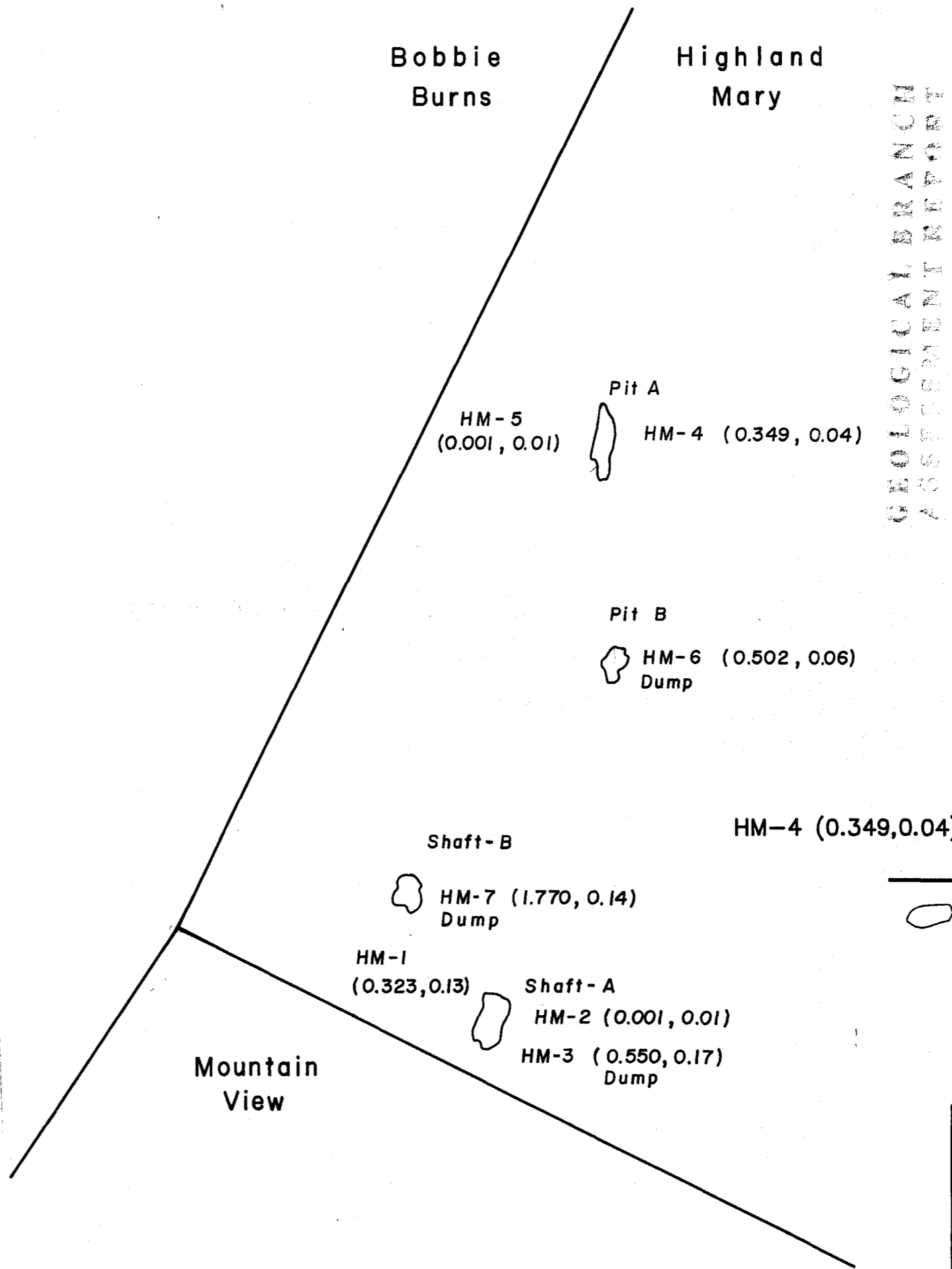
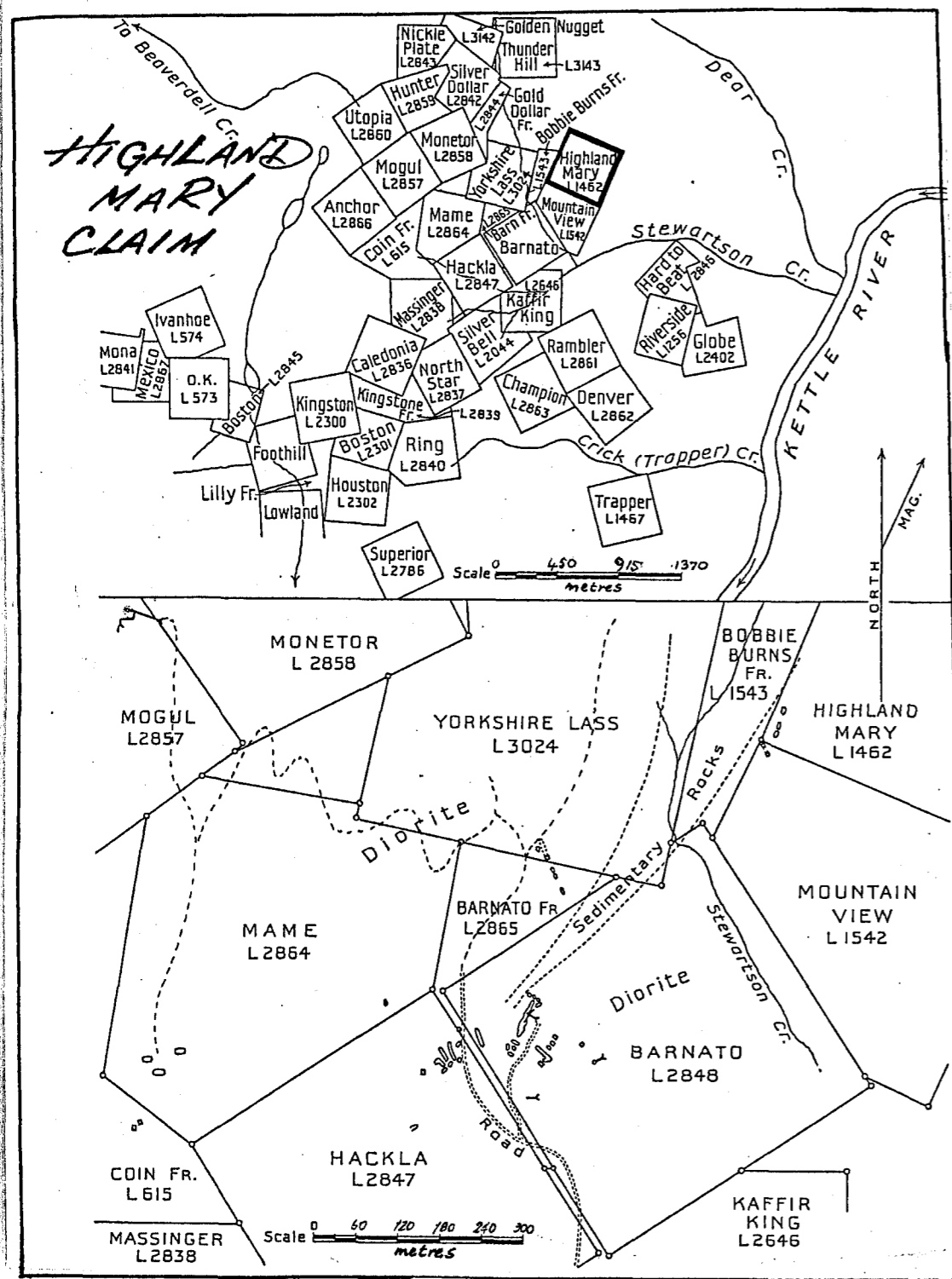
CERTIFICATE # : 89437  
INVOICE # : 10109  
DATE ENTERED : 89-11-08  
FILE NAME : NAG89437  
PAGE # : 2

PROJECT :  
TYPE OF ANALYSIS : GEOCHEMICAL

PRE FIX	SAMPLE NAME	FPB Au
A	A 1	5
A	A 2	5
A	A 3	5
A	M 1	130
A	M 2	90
A	M 3	10

CERTIFIED BY :





GEOLOGICAL BRANCH  
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**LEGEND**

HM-4 (0.349,0.04) Sample Number with Au, Ag values in oz/t  
 Claim boundary  
 Workings  
 All are chip samples unless otherwise noted



**CARMAC RESOURCES**  
**BEAVERDELL - CHRISTIAN VALLEY AREA**  
 GREENWOOD MINING DIVISION  
 HIGHLAND MARY REVERTED CROWN GRANTS  
 SAMPLE LOCATION WITH ASSAYS  
 HIGHLAND MARY

Fig.4