



REPORT ON *02/87*  
GEOLOGICAL EXPLORATION  
OF THE  
HOOP 1-5 CLAIMS  
VICTORIA MINING DIVISION, B.C.  
NTS 92F/2E 49°01'N LAT. 124°31.5'W LONG.  
FOR  
*Owner/Operator:* GATOR RESOURCES CORPORATION  
DECEMBER 31, 1985  
T. Neale, B.Sc. T.G. Hawkins, P.Geol.

FILMED

GEOLOGICAL BRANCH  
ASSESSMENT REPORT

14,461



## SUMMARY

The Hoop 1-5 claims, located on Mt. Hooper in the Victoria Mining Division are underlain by northwest trending rocks of the Paleozoic Sicker Group including Nitinat Formation mafic (to intermediate) flows and pyroclastics and Myra Formation intermediate tuffs to cherty tuffs.

A major northwest trending heavily carbonatized shear zone up to at least 200 m wide crosses the southwestern corner of the property. Anomalous gold values of up to 120 ppb over 2 m as well as some anomalous Cu, Ni, and Cr results have been returned from the shear zone and from quartz veins in and near the shear. It is possible that a high-tonnage, low-grade Au deposit could be present in the shear zone area of the Hoop property.

Indications of possible volcanogenic massive sulphide mineralization on the Hoop property include anomalous(?) Cu results (up to 364 ppm Cu) from samples containing pods of massive sulphides, and the presence of banded cherty tuff with bands of sulphides up to 3 cm wide. The Heather property, of Chevron Canada Resources Limited, located 5 km southeast of the Hoop property, hosts a zone of pyrite-chalcopyrite stringer mineralization believed to represent the edge of a massive sulphide body. Regional mapping by the GSC indicates that the band of Myra Formation rocks hosting the Heather showing continues onto the Hoop property.

A three-phase exploration program of the Hoop 1-5 claims is recommended. Phase IA is to consist of grid soil sampling of the shear zone area with detailed geological mapping and sampling as well as reconnaissance geological mapping, prospecting and rock sampling of the northern and eastern areas of the property, at an estimated cost of \$31,000. If warranted by Phase IA results,



Phase II is to consist of detailed geological, geochemical, and geophysical grid work and trenching, estimated to cost \$44,000. If warranted by Phase II results, Phase III will include IP surveys of anomalous grid areas followed by diamond drilling at an estimated cost of \$106,000.



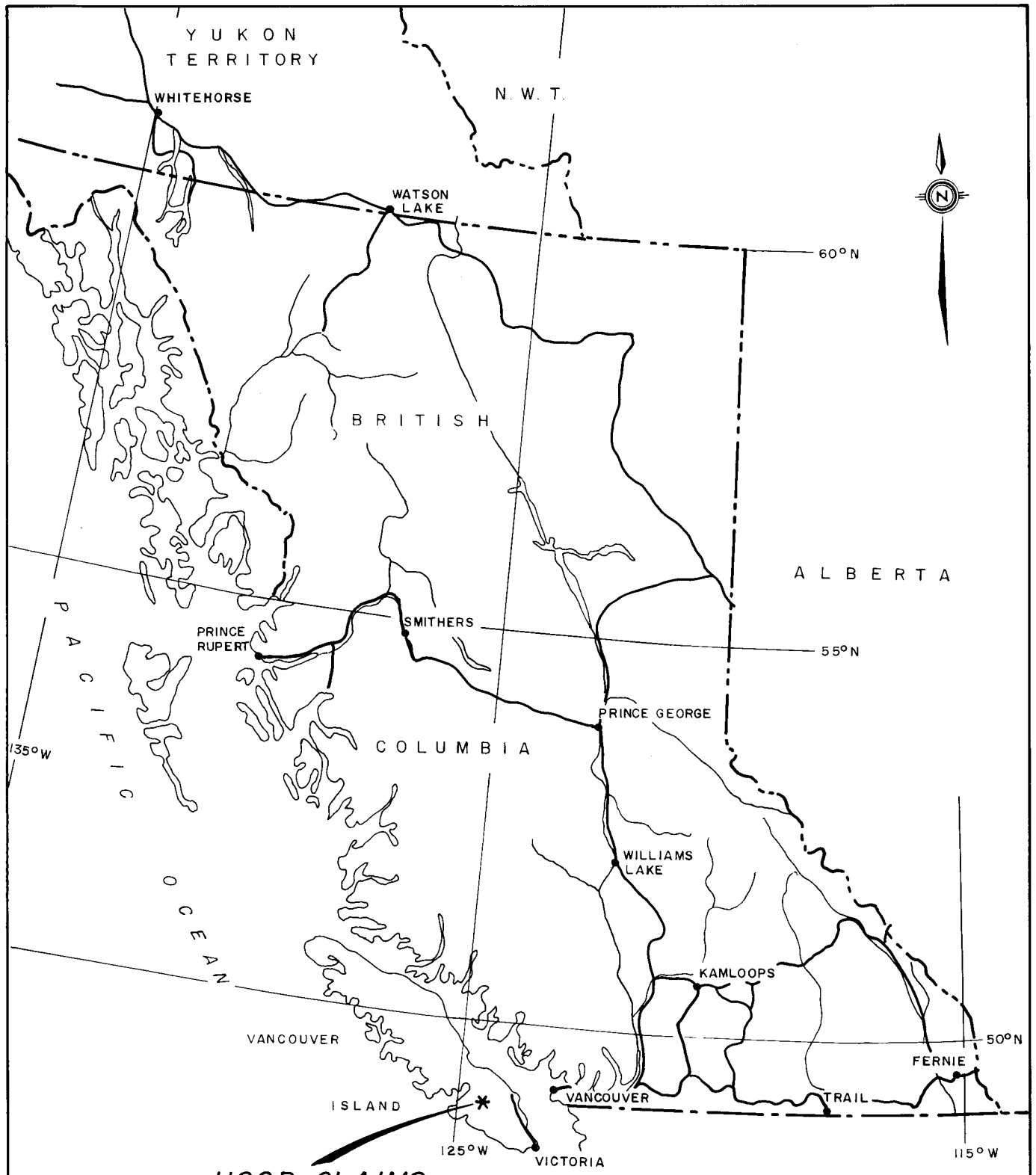
## TABLE OF CONTENTS

	<u>Page</u>
SUMMARY	i
1.0 INTRODUCTION	2
2.0 PROPERTY LOCATION, ACCESS, TITLE	3
3.0 PREVIOUS WORK	5
4.0 REGIONAL GEOLOGY	6
4.1 Sicker Group	6
4.2 Vancouver Group	9
4.3 Bonanza Group	10
4.4 Nanaimo Group	10
4.5 Intrusive Rocks	11
4.6 Structure	12
4.7 Economic Setting	13
4.8 Mineral Occurrences and Deposits	16
5.0 PHASE I EXPLORATION	38
5.1 Property Geology	38
5.2 Mineralization and Rock Geochemistry	41
6.0 RECOMMENDED WORK PROGRAM	45
6.1 Plan	45
6.2 Budget	46
6.3 Schedule	50
7.0 CONCLUSIONS	53
8.0 RECOMMENDATIONS	55
CERTIFICATE - T. Neale, B.Sc.	57
- T.G. Hawkins, P.Geol.	58
REFERENCES	59
Appendix I - List of Personnel and Statement of Expenditures	
Appendix II - Rock Sample Descriptions and Lithochemical Results	
Appendix III - Certificates of Analysis/Assay	
Appendix IV - Abbreviations Used in Mineral Occurrences Section	




LIST OF ILLUSTRATIONS

		<u>Page</u>
Figure 1	Location Map	1
2	Claim Map	4
3	Regional Geology Map	7
4	Mineral Occurrences Location Map	17
5	Property Plan, Geology and Rock Sampling - Hoop Claims	In Pocket
Table 1	Phase I Project Schedule	51
2	Phase II Project Schedule	52



**HOOP CLAIMS**

<b>GATOR RESOURCES CORPORATION</b>	
<b>GENERAL LOCATION MAP</b>	
<b>HOOP CLAIMS</b>	
VICTORIA MINING DIVISION	
Project No: V 190	By: T. N.
Scale: 1 : 8 000 000	Drawn: J. S.
Drawing No: 1	Date: DEC. 1985.
 <b>MPH Consulting Limited</b>	



## 1.0 INTRODUCTION

This report represents the compilation of field work carried out on the Hoop claims by MPH Consulting Limited at the request of Gator Resources Corporation. Field work carried out included geological mapping at 1:10,000 scale of as much of the property as was readily accessible, as well as concurrent prospecting and rock sampling. The work was carried out by an MPH crew under the supervision of N.O. Willoughby, B.Sc. from May 23 to May 28, 1985. A one-day follow-up to some of the anomalous rock sample sites was carried out on September 26, 1985.

The report includes a summary of all known geological and mining exploration activity in the area, a description of regional geology and a discussion of the economic setting of the property. A recommended work program designed to explore the economic massive sulphide and/or quartz vein potential of the claims is also provided.



## 2.0 PROPERTY LOCATION, ACCESS, TITLE

The Gator Resources Corporation Hoop 1-5 claims are located 31 km southeast of Port Alberni on Mount Hooper in the Victoria Mining Division of British Columbia. The claims are centred at approximately 49°01'N latitude, 124°31.5'W longitude on NTS Mapsheet 92F/2 (Figures 1 and 2).

Access to the claims is by Crown Forest Industries Ltd.'s paved Nitinat Main Road which may be reached from either Port Alberni or Youbou (Youbou is closer). The claims are located approximately 10 km north of the Crown Forest gate (which may be locked). A system of logging roads provides good access on the east side of the Nitinat valley up to about 850-1000 m, although at least one of the roads is unusable due to washouts. Access to the northeastern corner of the claim group may be possible via Sadie Creek from Nanaimo Lakes.

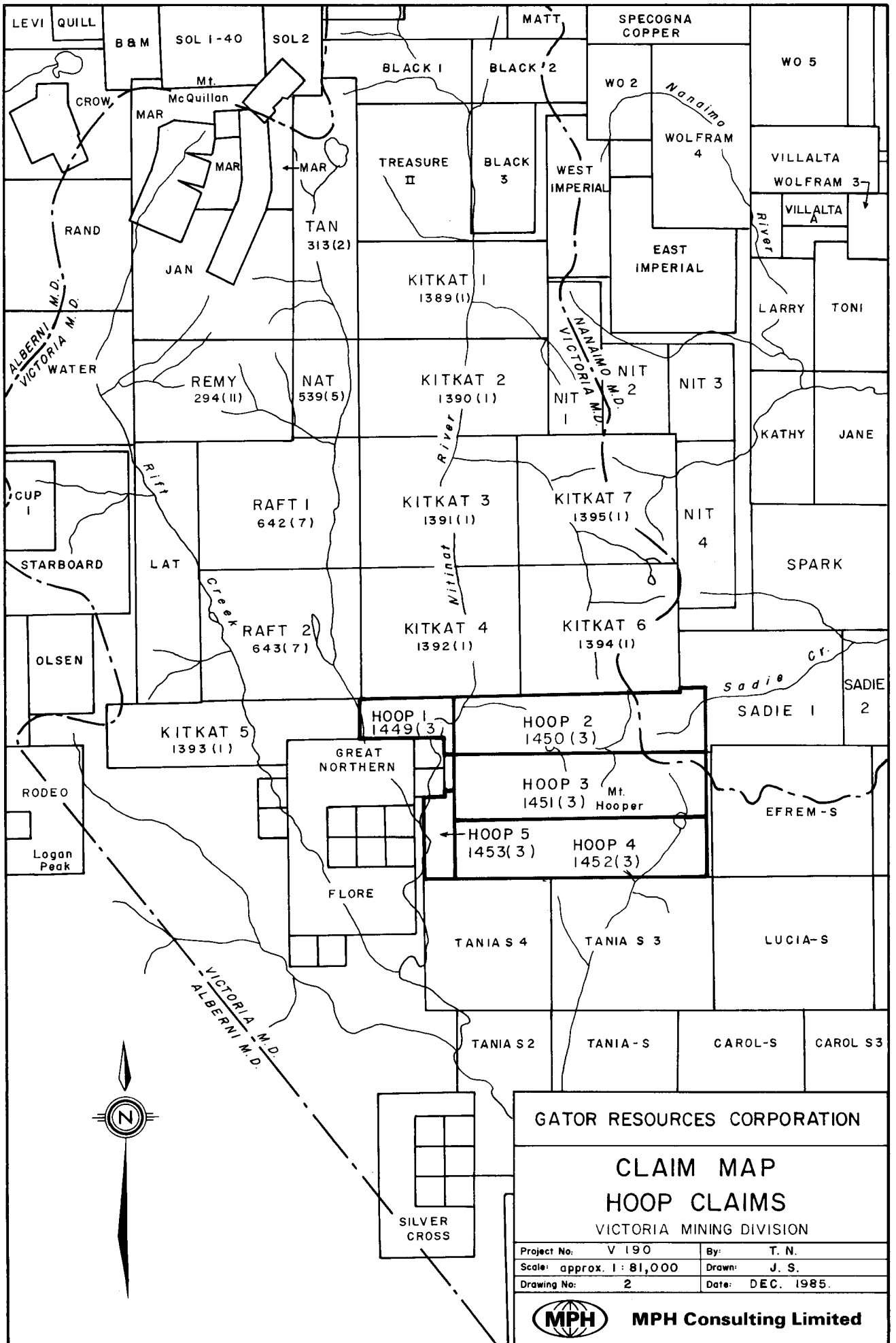
Claim information is summarized below:

<u>Claim</u>	<u>Record No.</u>	<u>Units</u>	<u>Anniversary Date</u>	<u>Year Registered</u>
Hoop 1	1449(3)	6	March 12, 1986	1985
Hoop 2	1450(3)	16	March 12, 1986	1985
Hoop 3	1451(3)	16	March 12, 1986	1985
Hoop 4	1452(3)	16	March 12, 1986	1985
Hoop 5	1453(3)	<u>3</u>	March 12, 1986	1985

57

The claims are all owned by Gator Resources Corporation.





**GATOR RESOURCES CORPORATION**

**CLAIM MAP**  
**HOOP CLAIMS**  
VICTORIA MINING DIVISION

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### 3.0 PREVIOUS WORK

Government geological work in the area includes mapping by C.H. Clapp (1912), J.E. Muller and D.J.T. Carson (1969), and J.E. Muller (1977, 1980 and 1982).

A regional aeromagnetic survey flown by Hunting Survey Corp. Ltd. in 1962 is believed to have included the Hoop Claims area.

During the years 1963 to 1966, Gunnex Ltd. carried out a regional mapping program over a large portion of the E&N Land Grant, with limited prospecting and silt sampling. They compiled a list of all known mineral occurrences in the area and visited many of them.

A preliminary assessment of the property based on a limited amount of rock sampling and geological mapping carried out on the Hoop claims by MPH Consulting Limited in February 1985 and government mapping was prepared by MPH for Gator Resources Corporation (Neale and Hawkins, 1985). Lithogeochemical analysis of the rock samples returned values of up to 0.8 ppm Ag, 206 ppm Cu and 94 ppm Zn. Whole rock analysis of five of the samples revealed indications of possible alteration typically associated with volcanogenic massive sulphide deposits. An area of the property shown by government mapping as being underlain by West Coast Complex intrusive and metamorphic rocks was found to actually be underlain by andesitic (to dacitic) volcanics cut by dioritic sills and/or dykes.

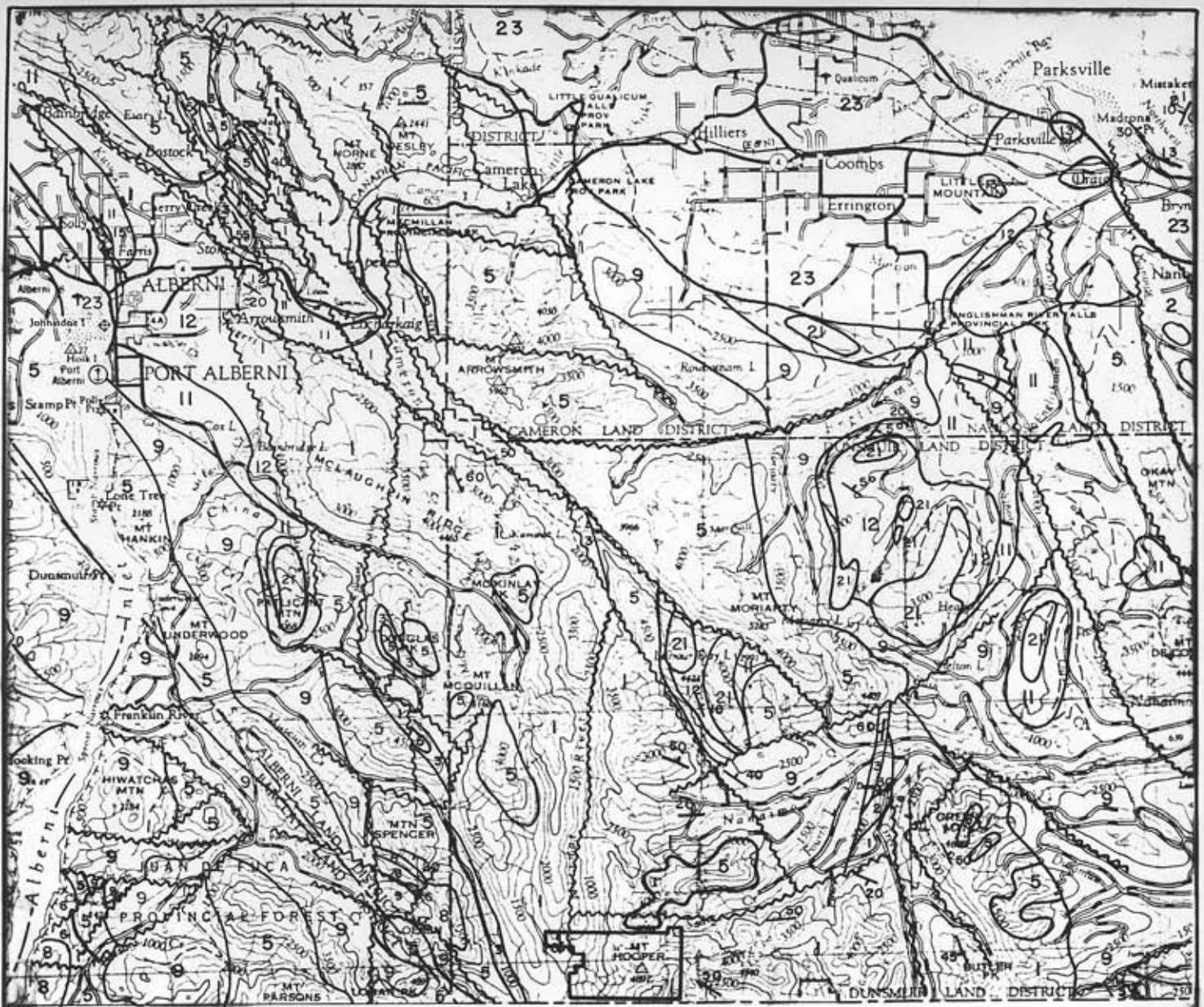
#### 4.0 REGIONAL GEOLOGY

The predominant rock units in the Port Alberni-Nitinat River area are the Upper Paleozoic Sicker Group rocks and the Lower Mesozoic Vancouver Group rocks. Both are eugeosynclinal sequences of volcanic and sedimentary rocks. Lesser amounts of the Upper Cretaceous Nanaimo Group and of intrusive rocks of various ages also occur (Figure 3).

##### 4.1 Sicker Group

The oldest rocks in the area are those of the Sicker Group. Muller (1980) proposed the following subdivision of the Group from youngest to oldest: Buttle Lake Formation, Sediment-Sill Unit, Myra Formation, and Nitinat Formation.

The Nitinat Formation (Unit 1) consists predominantly of basic volcanic rocks, most commonly flow-breccias, including some massive flows and rare pillow basalts or agglomerates. Locally, medium grained, generally massive basaltic tuff is interbedded with the flows. The flow-breccia is composed of fragments of basalt up to 30 cm in length containing uralite phenocrysts and black or white amygdules, both from 1 mm to more than 1 cm in size, in a matrix of finer grained, similar basalt(?). Thin sections show that the uralite is replacing diopside. Uralitized gabbroic rocks underlie and intrude the volcanics and are believed to represent feeder dykes, sills, and magma chambers to the volcanics. The Nitinat Formation may be distinguished from the similar Karmutsen Formation by the usual lack of pillow basalts, the abundance of uralite phenocrysts, the pervasive shear foliation, and lower greenschist or higher metamorphic grade.



### LEGEND

#### QUATERNARY

23 Glacial and alluvial deposits

#### TERTIARY

21 Hornblende quartz diorite, leucoquartz monzonite, porphyritic dacite, breccia.

#### UPPER CRETACEOUS

##### NANAIMO GROUP

13 EXTENSION-PROTECTION FM.: sandstone, conglomerate, shale, coal.

12 HASLAM FM.: shale, siltstone, fine sandstone.

11 COMOX FM.: sandstone, conglomerate, shale, coal.

#### MIDDLE TO UPPER JURASSIC

9 ISLAND INTRUSIONS: biotite-hornblende granodiorite, quartz diorite.

#### LOWER JURASSIC

8 BONANZA GROUP: andesitic to latitic breccia, tuff, and lava; minor greywacke, argillite, and siltstone.

#### UPPER TRIASSIC

##### VANCOUVER GROUP

6 QUATSINO FM.: massive to thick bedded limestone, minor thin bedded limestone.

5 KARMUTSEN FM.: pillow-basalt and pillow breccia, massive basalt flows, minor tuff, volcanic breccia; Jasperoid tuff, breccia and conglomerate at base.

#### TRIASSIC OR PERMIAN

4 Gabbro, peridotite, diabase.

#### LOWER PERMIAN TO PENNSYLVANIAN SICKER GROUP

3 BUTTLE LAKE FM.: limestone, chert.

2 MYRA FM.: lower unit; argillite, greywacke, conglomerate, tuff, minor limestone. Upper unit; rhyodacite to rhyolite tuff, lapilli tuff, breccia lesser siliceous siltstone, argillite, quartz porphyry and mafic flows.

1 NITINAT FM.: basaltic uralite porphyry, agglomerate, pillow lava; greenschist.

0 5 10 km



GATOR RESOURCES CORPORATION

REGIONAL GEOLOGY MAP

HOOP CLAIMS

VICTORIA MINING DIVISION

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The Myra Formation (Unit 2) unconformably overlies the Nitinat Formation. In the Nitinat-Cameron River area the Myra Formation is made up of a lower massive to widely banded basaltic tuff and breccia unit, a middle thinly banded pelitic albite-trachyte tuff and argillite unit, and an upper thick bedded, medium grained albite-trachyte tuff and breccia unit. In the lower unit crudely layered mottled maroon and green volcanoclastic greywacke, grit, and breccia are succeeded by beds of massive, medium grained dark tuff up to 20 m thick interlayered with thin bands of alternating light and dark fine grained tuff with local fine to coarse breccias containing fragments of Nitinat Formation volcanics. The middle unit is comprised of a sequence of thinly interbedded, light feldspathic tuff (albite trachyte or keratophyre composition) and dark marine argillite which has the appearance of a graded greywacke-argillite turbidite sequence. In the upper part of the middle unit sections of thickly bedded to massive black argillite occur. The upper unit contains fine and coarse crystal tuffs in layers up to 10 m thick with local rip-up clasts and slabs of argillite up to 1 m in length as well as syngedimentary breccias of light coloured volcanic and chert fragments in a matrix of black argillite.

The type locality of the Myra Formation is Myra Creek, at the south end of Buttle Lake, about 95 km northwest of the Hoop claims. There, volcanoclastic rocks consisting dominantly of rhyodacitic or rhyolitic tuff, lapilli tuff, breccia, and some quartz porphyry and minor mafic flows and argillite (Upper Myra Formation) are host to Westmin Resources' Myra, Lynx, Price, and H-W massive sulphide (Cu-Zn-Pb-Au-Ag-Cd) deposits.

Muller (1980) estimated the thickness of the Nitinat Formation at about 2000 m and that of the Myra Formation at 750 to 1000 m. Both the Nitinat and Myra Formations were dated as Devonian and/or older by Muller (1980).



The Sediment-Sill Unit contains thinly bedded to massive argillite, siltstone, and chert with interlayered sills of diabase. It is transitional between the Myra and Buttle Lake Formations. It is not mapped within the report map area.

The Buttle Lake Formation (Unit 3) consists of a basal green and maroon tuff and/or breccia overlain by coarse grained crinoidal and calcarenitic limestone, fine grained limestone with chert nodules and some dolomitic limestone. Lesser amounts of argillite, siltstone, greywacke, or chert may also be present.

The Buttle Lake Formation is up to 466 m thick. The age of the formation, on the basis of fossil dating appears to be Middle Pennsylvanian, but could possibly be as young as Early Permian (Muller, 1980).

#### 4.2 Vancouver Group

The Karmutsen Formation volcanic rocks (Unit 5) overlie the Buttle Lake Formation limestone paraconformably to form the base of the Vancouver Group. They are the thickest and most widespread rocks on Vancouver Island. The formation, which is well exposed southeast of Port Alberni, consists mainly of dark grey to black pillowed basalt, massive basalt, and pillow breccia. Flows are commonly aphanitic and amygdaloidal. Pillowed volcanics generally occur toward the base of the section.

Conglomerate containing clasts of Sicker Group rocks and jasperoid tuff form basal sections in the Nitinat-Horne Lake area.

Karmutsen Formation rocks are generally relatively undeformed compared to Sicker Group rocks and are dated Upper Triassic and older.



Massive to thick bedded limestone of the Quatsino Formation (Unit 6) occurs south of Mount Spencer. The limestone is black to dark grey and fine grained to micro-crystalline. In the vicinity of intrusive rocks, coarse grained marble is recognized. Thin bedded limestone also occurs in the formation. Fossils indicate an age of Upper Triassic (Muller and Carson, 1969).

#### 4.3 Bonanza Group

The Bonanza Group (Unit 8) is made up of interbedded lava, breccia, and tuffs ranging in composition from basalt to rhyolite with intercalated beds of marine argillite and greywacke. It is exposed south of Mount Spencer and south of Corrigan Creek and consists of light coloured andesite to latite breccia, tuff, and flows with minor greywacke, argillite, and siltstone. The Bonanza Group is considered to be of Lower Jurassic age.

#### 4.4 Nanaimo Group

Upper Cretaceous Nanaimo Group sedimentary rocks are scattered throughout the area. Extensive exposures occur near Port Alberni, Patlicant Mountain, and south and northwest of Mount Moriarty. The formations present comprise the basal portions of the Nanaimo Group.

The Comox Formation (Unit 11) consists mainly of quartzofeldspathic, cross-bedded beach facies sandstone and lesser conglomerate. Numerous intercalations of carbonaceous and fossiliferous shale and coal are characteristic.

The Haslam Formation (Unit 12) is a near shore littoral depositional facies unit characterized by massive bedded fossiliferous sandy shale, siltstone and shaly sandstone.

Interbedded coarse clastic conglomerate, pebbly sandstone and arkosic sandstone of the Extension-Protection Formation (Unit 13) are beach and deltaic sands. Minor shale and coal are reported.

#### 4.5 Intrusive Rocks

Gabbro, Peridotite, Diabase (Unit 4). Mafic and ultramafic rocks of Triassic or Permian age are scattered throughout the area. A large band is exposed approximately 8 km north of Port Alberni.

Although mapped as intrusive, some of these rocks may be basal flow units of the Karmutsen Formation.

Island Intrusions (Unit 9). Exposures of mainly quartz diorite and lesser biotite-hornblende granodiorite occur throughout the area and are assigned an age of Middle to Upper Jurassic. Intrusive contacts with Sicker and Bonanza Group volcanic rocks are characterized by transitional zones of gneissic rocks and migmatite although contacts with Karmutsen Formation volcanic rocks are sharp and well defined. Skarn zones are reported at the contact of Island Intrusion rocks with Quatsino Formation limestone and less frequently with Buttle Lake Formation limestone.

Tertiary (Catface or Sooke) Intrusions (Unit 21). Sills and stocks of mainly hornblende-quartz diorite and dacitic hornblende-feldspar porphyry plus lesser leucocratic quartz monzonite intrude Nanaimo Group sedimentary rocks and Sicker Group rocks in the area.



#### 4.6 Structure

The Buttle Lake Arch, Cowichan-Horne Lake Arch and Nanoose Uplift are north-northwesterly trending axial uplifts and are believed to be the oldest structural elements in south central Vancouver Island. Uplifting occurred before the late Cretaceous, and possibly before the Mesozoic (Muller and Carson, 1969). Sicker Group volcanic and sedimentary rocks occur at the core of these uplifts.

Asymmetric southwest verging anticlinal structures characterized by sub-vertical southwest limbs and moderately dipping northeast limbs are reported at Buttle Lake and in the Cameron-Nitinat River area. Intense shearing and metamorphism to chlorite-actinolite and chlorite-sericite schist occurs in steep and overturned limbs of folds. Overlying Buttle Lake Formation limestones are relatively undeformed except where they are thin.

Vancouver Group units are not as intensely folded; gentle monoclinical and domal structures have been mapped. However, Karmutsen Formation volcanic rocks locally conform to the attitude of underlying Myra and Buttle Lake Formations (J.E. Muller, 1980).

Some early Mesozoic faulting occurred in the area prior to emplacement of Island Intrusions. Middle to Upper Jurassic intrusive activity (Island Intrusions) occurred along northwesterly trends.

Extensive west-northwest trending faulting occurred during the Tertiary and is best illustrated by large displacements of Nanaimo Group sediments. The north trending Alberni Valley fault is traced over 45 miles and displaces a section of Karmutsen Formation approximately 5,000 feet (Muller and Carson, 1969).



#### 4.7 Economic Setting

The Sicker Group, and to a lesser extent, the Vancouver Group of volcanic rocks, have been explored intermittently since the 1890's for gold and base metal mineralization.

Until recently, deposits of copper and gold-silver in quartz veins and shear zones hosted by mafic to intermediate volcanic rocks and base metal plus gold-silver skarn deposits were the most widely recognized economic and subeconomic metal concentrations in the Port Alberni area. Placer mining for gold was carried out during the 1940's in various localities, especially in the China, Mineral and Corrigan Creeks area.

The volcanogenic massive sulphide deposits of Westmin Resources Ltd., first discovered in 1917 although not recognized as volcanogenic until the late 1960's, occur at Buttle Lake, approximately 70 km northwest of the Port Alberni area. Four zones of mineralization consisting of the ore minerals sphalerite, chalcopyrite, galena, tetrahedrite-tennantite plus minor bornite and covellite, are hosted by pyritic rhyolitic to rhyodacitic volcanic and pyroclastic rocks of the Myra Formation.

Proven reserves of the Lynx (open pit), Price and Myra deposits are 1,021,400 T grading 1% Cu, 0.9% Pb, 7.4% Zn, 0.06 oz Au/T, 2.6 oz Ag/T (1983). Published reserves of the H-W zone are 15,232,000 T averaging 2.2% Cu, 5.3% Zn, 0.3% Pb, 0.07 oz Au/T and 1.1 oz Ag/T (Walker, 1983). In the 3 years 1980 to 1982, there were 895,048 T of ore milled producing 16,109,000 lbs Cu, 96,356,000 lbs Zn, 14,231,000 lbs Pb, 56,000 oz Au, 2,528,000 oz Ag and 129,000 lbs Cd.

Another volcanogenic massive sulphide deposit in the Sicker Group is the Twin J Mine near Duncan on Mount Sicker, about 60 km



southeast of the Hoop claims. Two parallel orebodies, each containing pyrite, chalcopyrite, sphalerite and minor galena in a barite-quartz-calcite gangue and chalcopyrite in quartz, occur in schists believed to have been derived from acidic volcanics (Myra Formation).

Total production from 1898 to 1964 was 305,770 tons producing 44,491 oz Au, 934,522 oz Ag, 21,053,360 lb Cu and 45,864,654 lb Zn with at least 362,854 lb Pb and 10 lb Cd.

Chevron Canada Resources Limited has carried out a major exploration program on the Heather property, 5 km southeast of the Hoop claims. A pyrite-chalcopyrite stringer zone assaying up to 0.284 oz Au/T, 0.66% Cu is hosted by Myra Formation silty rhyodacite tuff. The showing is believed to possibly represent the edge of a volcanogenic massive sulphide body. This band of Myra Formation rocks also outcrops on the Hoop claims. A total of \$200,000 had been spent by Chevron on the property as of February 20, 1984; further work including diamond drilling was planned.

On the Lara property, 46 km southeast of the Hoop claims, Aberford Resources Ltd. has completed at least 40 diamond drill holes on geochemical and geophysical anomalies. In January 1985 an intersection of 26.2 feet (true thickness) of mineralization grading 0.1 oz Au/ton, 1.97 oz Ag/ton, 3.01% Zn, 0.68% Cu, and 0.45% Pb was announced. By July 1985 the discovery zone had been traced for 1,300 feet and to an average depth of 350 feet. The zone is open on both ends and to depth. The zone grades 0.051 oz Au/ton, 1.12 oz Ag/ton, 1.98% Zn, 0.44% Cu, and 0.36% Pb and averages 20.53 feet in true width. A diamond drill hole located 1650 feet east of the zone along strike intersected 12.07 feet (true thickness) of massive sulphide mineralization grading 0.213 oz Au/ton, 8.60 oz Ag/ton, 9.22% Zn, 1.16% Cu, and 2.53% Pb.



The mineralized zone is stratiform and is hosted by a rhyolite porphyry unit of the Sicker Group. Metal ratios of the zone are very close to those of the Buttle Lake mines of Westmin Resources Ltd. The Twin J Mine is located 9 km southeast of the Lara property (i.e. on strike) and is geologically similar.

On the Villalta property, massive hematite up to 46 feet thick carries Au. The hematite occurs in a paleo-karst topography at the top of the Buttle Lake Formation. A reserves estimate of 200,000 tons indicated ore grading 0.1-0.2 oz Au/ton with minor base metals content was made in 1981. Asarco Exploration Co. of Canada Ltd. and Falconbridge Ltd. have carried out exploration programs since 1981. The Villalta property is located 11 km north-northeast of the Hoop claims.

Five past producing mines occur in the Port Alberni area. The Thistle Mine produced 2,760 oz Au, 2,120 oz Ag and 681,425 lbs Cu from 6,920 T of ore. It was originally considered to be a skarn deposit (Stevenson, 1945; Carson, 1968) but is now considered to be a volcanogenic prospect. A total of 16 significant Cu and/or Au mineralization occurrences have been located on the property, 15 of which are located within a 225 m thick unit of mainly basaltic flows which are believed to be correlative with Muller's Sediment-Sill Unit and/or Myra Formation. Surface assays reported range from 0.226 to 1.22 oz Au/ton, 0.15 to 1.33 oz Ag/ton, and 2.71 to 10.2% Cu over apparent true thicknesses of 15 cm to 4 m. The best assay from 1984 diamond drilling was 0.514 oz Au/ton over 20 cm. Westmin has spent approximately \$406,000 on the property in 1983 and 1984. A further \$400,000 is to be spent in 1985. A recent news release (October 22, 1985) states that the exploration target on the Thistle property is a volcanogenic deposit of at least 3 million tons grading 0.2 oz Au/ton and 2% Cu. The Thistle Mine is located 13 km northwest of the Hoop claims.



The Havilah Mine (1,046 T produced 259 oz Au, 1,404 oz Ag) and the Vancouver Island Gold Mine (483 T produced 384 oz Au, 52 oz Ag) are quartz vein deposits hosted by andesite and andesite tuff of the Sicker Group.

The Black Panther Mine is a quartz vein deposit hosted by a shear zone in Sicker Group andesite and Island Intrusions diorite located 10 km northwest of the Hoop claims. Production of 1,890 T of ore yielded 509 oz Au, 953 oz Ag, 12,319 lbs Pb and at least 4,478 lbs Zn and 498 lbs Cu.

The other past producer in the area is the 3-W Mine which consists of gold-bearing quartz veins in Island Intrusions diorite and granodiorite. Production amounts to 116 tons of ore grading 4.0 oz Au/ton, 4.3 oz Ag/ton, 0.23% Cu, and 1.1% Pb. The 3-W Mine is located 11 km west of the Hoop claims.

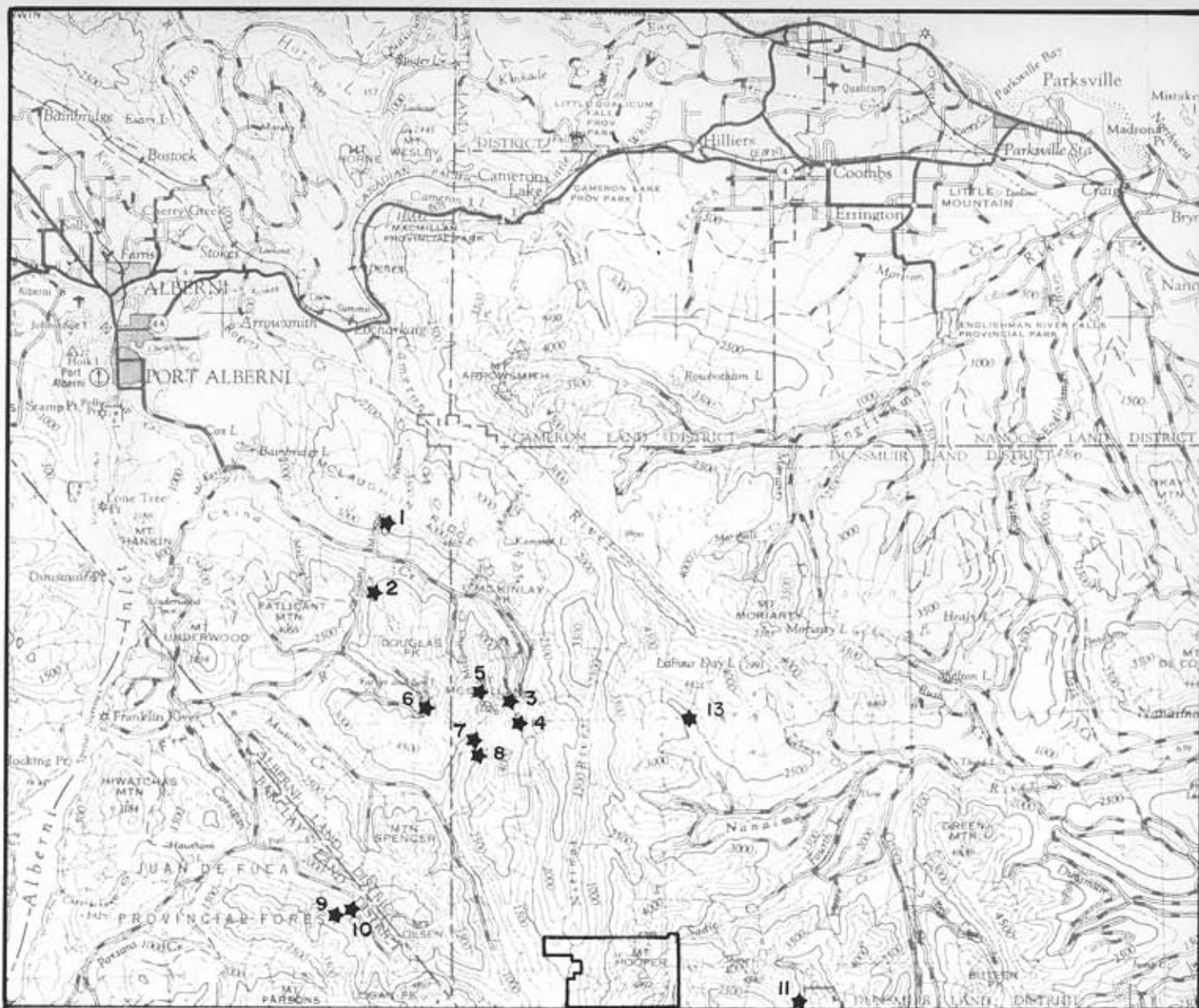
Significant gold, base metal, and other deposits and occurrences of the Sicker Group in the Port Alberni to Mount Hooper area are summarized below (Figure 4).

#### 4.8 Mineral Occurrences and Deposits

1. Vancouver Island Gold; (Victoria, L.205G; Alberni, L.206G; Missing Link, L.214G; Alberni Consolidated) Au, Ag, Cu

##### Geology

The area is underlain by highly altered massive, tuffaceous, slightly porphyritic, and amygdaloidal andesites of the Sicker Group. Three main quartz veins developed shears and contain a small amount of pyrite and some free gold. As well, a 40 foot wide shear zone has



GOLD DEPOSITS AND OCCURRENCES

- 1. Vancouver Island Gold Mine
- 2. Regina
- 3. Golden Eagle
- 4. B & K
- 5. Havilah
- 6. Thistle
- 7. Black Panther
- 8. Black Lion
- 9,10. 3 W
- 13. Villalta

OTHER OCCURRENCES

- 11. Shaw Creek
- 12. Heather (4.7 km SSE from Mt. Hooper)



GATOR RESOURCES CORPORATION

MINERAL OCCURRENCE  
LOCATION MAP  
HOOP CLAIMS

Project No:	V 190	By:	T. N.
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Drawing No:	4	Date:	DEC. 1985.



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been extensively altered by ankerite, quartz stringers, occasional pyrite veinlets, and kaolinitization.

#### Economic Features

Recorded production in 1896, 1898, 1933-36 and 1939 totals 483 tons of ore yielding 384 oz Au, 52 oz Ag and 194 lb Cu.

The Mac vein is traced for 250 feet and ranges from 3 to 18 inches wide, averaging 5 to 6 inches. Sixty-three samples taken over the 250 feet averaged 6 inches in width and 3.69 oz Au/ton. The highest assay was 20 oz Au/ton. A 40 ton shipment from the Mac vein returned 2.9 oz Au/ton and 0.5 oz Ag/ton (Ref. 1-1934).

The Belcher vein is exposed discontinuously for 950 feet and ranged from almost nothing to 4 feet in width, averaging 6 to 12 inches in the upper adit. Gold content is reported to be low except in the shaft and stope workings. Recent sampling results show from 0.003 to 0.29 oz Au/ton and from 0.06 to 0.10 oz Ag/ton over 5 foot lengths (Ref. 3).

The Dunsmuir vein is exposed in trenches for about 400 feet and ranges up to 10 inches in width. No assays are reported (Ref. 1-1936).

The Waterfall vein is exposed for 108 feet and is 3 inches to 2.5 feet wide. Gold assays were low in sampling done by Vancouver Island Gold Mines Ltd., except for two samples which ran 1.4 oz Au/ton over 3 inches and 11.8 oz Au/ton over 6 inches (Ref. 1-1934). This illustrates the very spotty nature of free gold distribution.



Seventy-nine chip samples taken from the carbonatized shear zone by the BCDM assayed from nil to 0.16 oz Au/ton over widths of 5 and 10 feet (Ref. 1-1936).

A 1934 BCDM report stated that there is a possible relationship between bands of sediments and gold mineralization, as the gold values in the Mac vein are concentrated just above a bed of argillaceous sediments and are low below that.

#### History

- 1895: Alberni, Chicago, Warspite, Victoria claims staked; dispute over ownership.
- 1896: Alberni Consolidated Mining Co.; won dispute, shaft at 40 feet and a tunnel being driven, two tons of ore shipped from a smaller vein (Dunsmuir?) uphill from main vein, open cut on 8-30 inch vein on Chicago claim.
- 1897-98: An English company built a 10 ton per day 8 stamp mill and only made two clean-ups. Results unknown.
- 1933-39: Vancouver Island Gold Mines Ltd. (NPL); R.W. Williams leased the reverted Crown Grants in 1933 and turned them over to Vancouver Island Gold Mines. Numerous open cuts were made, 5 adits totalled 1,905 feet including various raises, etc. on the quartz veins and 2 adits totalling 277 feet and 12 strippings were made on the carbonatized shear zone. A total of 403 tons of ore was mined. In 1936 a 35 ton pilot mill was built, but only milled a few tons of ore before the operations were ceased due to operating difficulties. In 1939 some rehabilitation work was done in the Mac adits and 48 tons of ore were shipped.
- 1964: Gunnex Ltd.; visited property, some sampling. Mapping planned for 1966.





1973-74: Keywest Resources Ltd.; (Sam Group) sampling in Belcher adits, prospecting, geological mapping on surface and underground.

1976: Western Mines Ltd.; (Tasha-Shannon and Rupert-Dog claim groups) reconnaissance geological mapping and soil sampling.

### References

- 1) MMAR 1895-650, 1896-6, 1897-566, 1898-1132, 1943-F2-4, 1936-F25-30, 1944-148
- 2) GEM 1973-230, 1974-173
- 3,4) AR 4915, 6153
- 5,6) GSC P68-50 p38  
Map 1963-49
- 7) Gunnex #6
- 8) Minfile 92F079

## 2. Regina (L.55G) Au, Ag, Cu

### Geology

Lenses and veinlets of quartz with pyrite, chalcopyrite, some galena, and Au and Ag values occur in shears in silicified and pyritized Sicker Group andesite. Some reports also mention sphalerite in the quartz. Another type of showing occurs in highly silicified and leached pyritic, ankeritic andesite which contains gold values.

### Economic Features

The quartz lenses and silicified zones vary up to 2 feet in width but the mineralized portions appear to be very discontinuous. A grab sample of quartz with considerable pyrite, chalcopyrite and galena from the dump assayed at 0.66 oz Au/ton, 14.0 oz Ag/ton (Ref. 1-1944). A large,

highly oxidized bulk sample from the carbonatized zone assayed 0.64 oz Au/ton, trace Ag (Ref. 1-1944). A sample from 20 tons of ore on the dump (possibly hand sorted) in 1930 returned \$3.60 Au/ton, 5 oz Ag/ton, 5.0% Cu (Ref. 1-1930). A grab sample from 40 tons of high grade hand-picked ore on the dump in 1964 assayed 0.02 oz Au/ton, 1.8 oz Ag/ton, 2.57% Cu, 1.98% Pb and 9.01% Zn (Ref. 7).

### History

- 1898: Alberni Gold Development Syndicate; granted Crown Grants L.54, 55, 57.
- 1930: E. Maralia; an open cut and an incline shaft a few feet deep. Twenty tons of ore from this work on a dump.
- 1944: E. Marillia; no recent work. Five adits totalling 288 feet, a 30 foot incline shaft, 2 open cuts, and a 5 foot pit at the entrance to one of the adits exist. All probably date back to the late 1890's.
- 1964-65: Gunnex Ltd.; visited the workings, sampling, prospecting in the general area.
- 1976: Western Mines Ltd.; (Tasha) geological mapping 1:14,400, soil sampling.

### References

- 1) MMAR 1898-1197, 1930-291, 1944-148-150
- 2) EBC 1976-111
- 3) BCDM Bull 1 p132  
(Special Report #5, 1936)
- 4) AR 6153
- 5,6) GSC P68-50 p38  
Map 1963-49
- 7) Gunnex #7
- 8) Minfile 92F078



3. Golden Eagle (L.198G) Au

Geology

A vein of ribbon-quartz cuts a small intrusion of feldspar porphyritic diorite and contains pyrite, minor sphalerite, galena, chalcopyrite and arsenopyrite (about 10% total sulphides) and gold values. Sicker Group volcanics and bedded cherts occur in the area.

Economic Features

The vein varies from a few inches to 8 feet, averaging about 3.5 feet in width and has been traced in outcrop for 400 feet along strike and 325 feet vertically. An assay of \$56 Au/ton, 3 oz Ag/ton and 1% Cu is reported and assays of up to \$103 Au/ton are reported to have been obtained in 1894 (Ref. 1-1899). A tunnel 500 feet below the surface showing never intersected the vein despite being driven 1,500 feet beyond the estimated intersection point of 600 feet.

History

1892: The discovery of 2 quartz veins by prospectors searching for the source of the China Creek placer gold prompted the original claims to be staked.

1893-1902: Various individuals and/or companies; 4 adits totalling 205 feet in upper workings, an adit driven at a lower level to avoid snowslides from 1896-1902 reached 2,100 feet without intersecting mineralization, "development work" of an unspecified nature.

1964-65: Gunnex Ltd.; prospecting and silt sampling in the general area. Also visited the lower adit and a showing near Summit Lake (B and K?) where rock samples were taken.



### References

- 1) MMAR 1893-1080, 1894-773, 1895-651, 1896-7, 556, 1897-566, 1898-1132, 1899-607, 779, 785, 1902-230, 1944-G150
- 2) AR 10194
- 3,4) GSC P68-50 p38  
Map 49-1963, 17A
- 5) Gunnex #12
- 6) Minfile 92F080

#### 4. B and K Au, Ag

##### Geology

Many widely scattered narrow quartz veins containing pyrite and minor galena, sphalerite and chalcopyrite with Au and Ag values occur in andesite tuffs and flows, basalt and local black chert; often in shear zones. A zone of strongly carbonatized andesite 6 to 25 feet wide contains minor pyrite, galena and sphalerite in narrow veinlets. In the southern workings, veins are surrounded by a strong ankeritic carbonate alteration zone.

##### Economic Features

The "high-grade" vein has been exposed in open cuts for 130 feet and is 5 to 8 inches wide. A sample assayed at 3.84 oz Au/ton, 3.2 oz Ag/ton, 0.06% Cu over 5 inches. This vein may be on Golden Eagle property (Ref. 4).

A vein near the north end of the workings varies from 1 to 6 inches to a 6 foot stringer zone in width. Assays of 2.56 and 2.26 oz Au/ton are reported (Ref. 1-1944).

A sample from quartz nodules containing galena and pyrite



from an open cut on two parallel shears, each 18 inches wide, ran 0.82 oz Au/ton and 0.7 oz Ag/ton (Ref. 4).

No assays are reported from the carbonatized zone. Many other quartz veins, from a hairline to 8 inches wide, for which no assays are available, occur within an area about 1,250 feet long.

#### History

1938-40: Angus Beaton, Ed Keisig; staked claims, prospecting, 17 open cuts and trenches, stripping.

1964-65: Gunnex Ltd.; prospecting and silt sampling in the general area.

#### References

- 1) MMAR 1944-151
- 2,3) GSC P68-50 p38  
Map 49-1963
- 4) Gunnex #13
- 5) Minfile 92F081

5. Havilah (King Solomon, Storm, Red Rose, Spike, Sol 14)  
Au, Ag, Cu, Pb, Mo

#### Geology

Sicker Group andesite is intruded by Jurassic diorite and by Tertiary hornblende-feldspar and quartz-feldspar porphyry stocks, dykes and sills. Ribbon-quartz veins and lenses containing abundant pyrite, sphalerite and galena and lesser chalcopyrite and arsenopyrite occur in shears in the andesite. Occurs on the same shear zone as Black Panther (#7 below) and Black Lion (#8 below).



### Economic Features

The recorded production in 1936 and 1939 totals 1,046 tons yielding 259 oz Au, 1,404 oz Ag, 4,243 lb Cu and 12,676 lb Pb. There are three main veins.

The Gillespie vein is the lowest. It is 3 to 34 inches wide and has been traced for 650 feet in 5 trenches. Most of the production came from the Gillespie vein. Assays range up to 0.4 oz Au/ton, 2.2 oz Ag/ton, 0.4% Pb and 0.30% Zn over widths from 4 to 63 inches (Ref. 1-1936, 1944). Some oxidized samples taken over 1 foot assayed as high as 7 oz Au/ton and 3 oz Ag/ton. Average grade of the ore shipped from the Gillespie vein was 0.235 oz Au/ton and 1.28 oz Ag/ton (Ref. 1-1939). The vein was faulted off in two of the three adits and could not be rediscovered.

The Alberni vein consists of a 10 foot wide by about 70 feet long zone of intense shearing containing 1 to 3 lenticular quartz veins 4 to 24 inches wide. Assays of 3.66 oz Au/ton and 5.2 oz Ag/ton over 4 inches and 1.8 oz Au/ton and 2.3 oz Ag/ton over 20 inches are reported (Ref. 9).

The McQuillan vein was prospected with a 57 foot adit. It ranges up to 8 inches in width. Assays of up to 1 oz Au/ton over 8 inches and 1.6 oz Ag/ton over a different 8 inches, are reported (Ref. 9).

A fourth vein on the easterly side of the cirque 1 to 2 feet wide assayed 0.16 oz Au/ton and 0.6 oz Ag/ton from an oxidized 2 foot sample (Ref. 9).



### History

- 1893: First mentioned in MMAR (King Solomon).
- 1895: An open cut on the McQuillan(?) vein.
- 1936-44: Havilah Gold Mines Ltd.; claims staked in 1934 and 1936 by Walter Harris. In 1936, 7 tons of ore were mined from the upper showings (Alberni and McQuillan veins). In 1938-39, 2,072 feet of drifting, crosscutting and raising on three levels on the Gillespie vein resulted in production of 1,039 tons of ore. Diamond drilling and prospecting were also carried out. A highline tram was built to transport ore and supplies between the base camp and the mine. Little if any work was done after 1939.
- 1947: Nitinat Mines Ltd.; owned the ground.
- 1964: Gunnex Ltd.; silt sampling in McQuillan creek drainage, rock sampling wherever mineralization was observed.
- 1974-77: Cominco Ltd.; geological mapping 1:4800, soil sampling, trenching, several IP and resistivity surveys.

### References

- 1) MMAR 1893-1080, 1895-652, 1936-F30, 1939-88, 1944-G153
- 2) GEM 1974-172
- 3) EBC 1975-E95, 1976-E111, 1977-E110
- 4-6) AR 5354, 6138, 6643
- 7,8) GSC P68-50 p38  
Map 49-1963, 17A
- 9) Gunnex #11
- 10) Minfile 92F082



6. Thistle Au, Ag, Cu

Geology

The area is underlain by a belt of upper Sicker Group volcanic rocks folded into a large complex anticline. The mine is located within a package of rocks known as the Flow Complex (probably correlative to Muller's Sediment-Sill Unit) which unconformably(?) underlies the Buttle Lake Formation. The Mine Flow Unit of the Flow Complex hosts the mine and 15 of 16 additional Cu and/or Au showings on the property.

At the mine, a highly variable succession of basaltic flows, flow breccias, and massive to bedded and graded tuffs and cherty tuffs is mapped.

Mineralization is found within relatively thin stratabound to crosscutting? intervals of moderate to very strong chlorite alteration of the basaltic host rocks. Sericite-epidote alteration also occurs, but apparently is not associated with mineralization.

The ore consists of gold-bearing pyrite-chalcopyrite (and local magnetite) in quartz-calcite gangue occurring in 3 or 4 main stratabound? zones of discontinuous anastomosing veins and veinlets to massive to semi-massive beds?

The Thistle Mine was reported by early workers to be a skarn deposit in altered limestone intruded by fine-grained diorite.

Economic Features

The ore occurs in layers 5 to 45 cm thick. Assays from 1983 sampling of the old workings range from 3.8-11.8% Cu,





0.14-2.16 oz Au/T, and 0.39-1.04 oz Ag/T. Older reports indicate that ore was found in lenses up to 18' by 25' in size. Diamond drilling in 1984 (NW of the mine) yielded assays ranging from 0.046 oz Au/T to 0.284 oz Au/T over massive sulphide intersections of 2-27 cm. The best assay was 0.514 oz Au/T over 20 cm of chloritic basalt including 2 cm of massive pyrite.

A recent (October 22, 1985) news release states that the exploration target on the Thistle property is a volcanogenic deposit of at least 3 million tons of 0.2 oz Au/ton and 2% Cu.

#### History

1896: First staked.

1899: A. Watson et al; lower adit (500 adit) driven 65 feet but hadn't intersected ore that was 6 to 8 feet wide on surface, upper adit (300 adit) driven 90 feet but also hadn't intersected an orebody. A pit on one of the surface showings.

1901: Alberni Gold and Copper Co. Ltd.; roadbuilding, development work.

1902: J.M. Watson; granted Crown Grant L.91G.

1927: A. Watson et al; a 25 foot tunnel with a 20 foot crosscut, all in ore. (300A adit?)

1938-1940: United Prospectors Ltd.; shipments of ore were made from open cuts and glory holes and the old dumps.

1941-1942: Vancouver Island Diamond Drilling and Exploration Co.; 1789 tons ore mined, shut down July 25, 1942.

1944: The workings existing on the property included four adits totalling 527 feet, an 18 by 25 foot stope 60 feet long, two glory holes totalling about 6,000 cubic yards, and several open cuts. Owned by United Prospectors Ltd., but no work done since 1942.

- 1962: Hunting Survey Corp.; regional aeromagnetic survey, geological mapping at the mine area.
- 1964-1965: Gunnex Ltd.; visited the area, but no mapping done, silt sampling and prospecting in the general area.
- 1965: Vananda Explorations Ltd.; magnetometer, SP, and geochemical surveys, 4 diamond drill holes totalling 1,745 feet.
- 1979: Kargen Development; linecutting, soil sampling.
- 1982: McQuillan Gold; airborne EM and magnetometer surveys, soil sampling, rock sampling, trenching, EM survey.
- 1983-85: Westmin Resources Ltd.; geological mapping, rock sampling (for assay, whole rock geochem and thin sections), prospecting, diamond drilling.

#### References

- 1) MMAR 1899-778, 1901-1097, 1902-307, 1927-340, 1928-366, 1930-291, 1939-40,88, 1940-73, 1941-71, 1942-66, 1944-154-157, 1965-238
- 2-5) AR 8088, 9126, 10237, 11064
- 6,7) GSC P68-50 p38  
Map 49-1963
- 8) Gunnex #10
- 9) Minfile 092F083
- 10) Nexus Resource Corporation; News Release dated November 1983
- 11) VS October 22, 1985

#### 7. Black Panther (Nitinat) Au, Ag, Pb, Zn, Cu

##### Geology

Ribbon-quartz lenses containing variable amounts of sulphides, mainly pyrite with minor galena and sphalerite occur in a shear zone which follows the contact of andesite



lava on the west and diorite breccia on the east. The wall-rock of the shear is strongly altered by ankeritic carbonate for widths of a few inches to 30 feet which locally is cut by numerous quartz stringers.

#### Economic Features

The shear zone has been traced for at least two miles but the best mineralization is at the Black Panther workings where quartz lenses are one inch to three feet thick and up to 40 feet long. Four samples containing "heavy sulphides" from the 2700 and 2790 adits assayed from 2.30 to 2.88 oz Au/ton (Ref. 1-1944). A 1964 assay from the dump is reported as 1.16 oz Au/ton, 2.1 oz Ag/ton, 0.14% Cu and 1.73% Pb (Ref. 4).

Production in 1947, 1948 and 1950 totalled 1890 tons which yielded 509 oz Au, 953 oz Ag, 498 lb Cu and 12,319 lb Pb and at least 4,478 lb Zn.

#### History

- 1936: Claims first staked, upper adits driven shortly thereafter.
- 1939: Walter Harris; prospecting, drifting, cross-cutting (presumably those adits referred to above).
- 1941: Pioneer Gold Mines of B.C. Ltd.; drove the 2700 (Main) adit and the 2450 adit (about 1,200 feet of drifting, crosscutting and raising), 1,631 feet of diamond drilling.
- 1944-48: Nitinat Golds Ltd. (became Nitinat Mines Ltd. in 1947); built a 25 ton flotation mill, mining, shipped 68.5 tons of concentrate.
- 1962: Hunting Survey Corp.; regional aeromagnetic survey, geological mapping at the workings.
- 1964-65: Gunnex Ltd.; visited the workings, took a rock sample.

### References

- 1) MMAR 1939-88, 1941-71, 1944-157, 1945-114,  
1947-182
- 2,3) GSC P68-50 p38  
Map 49-1963
- 4) Gunnex #14
- 5) Minfile 92F084

## 8. Black Lion Au, Ag

### Geology

Similar to Black Panther (#7 above), as the Black Lion is on the southerly extension of the same shear zone as Black Panther. Zones of quartz-sulphide (pyrite, galena, gold values) stringers are found in a strongly carbonatized zone 10 inches to 9 feet wide with local evidence of strong shearing.

### Economic Features

Open cuts exposed the "vein" for 175 feet with another exposure located 1,300 feet to the south. The quartz-sulphide stringer zone is 12 to 18 inches wide. A sample of quartz and sulphides assayed 1.2 oz Au/ton. Samples of quartz-sulphide stringers and carbonatized country rock ranged from 0.27 to 0.43 oz Au/ton. The carbonatized rock itself assayed at trace to 0.03 oz Au/ton (Ref. 1-1944, Ref. 4).

### History

- 1941: Bralorne Mines Ltd.; prospecting, open cuts.
- 1942-64: Some diamond drilling is reported to have been done sometime during this period.
- 1964-65: Gunnex Ltd.; silt sampling and prospecting in the general area.

### References

- 1) MMAR 1944-159
- 2,3) GSC P68-50 p38  
Map 49-1963
- 4) Gunnex #15
- 5) Minfile 92F085

### 9,10. 3W (WWW, Corrigan Creek Mine) Au, Ag, Pb, Cu

#### Geology

Tongues of granodiorite alternate with masses of hybrid diorite; both rock types have been cut by feldspar porphyry dykes. Two quartz veins occupy fissures and contain pockets of pyrite, galena and sphalerite. Another quartz vein is a mineralized gouge zone that does not everywhere contain quartz.

#### Economic Features

No. 1 vein measures 300 feet long by 4 to 10 inches wide and is exposed in one adit, four open cuts. A channel sample near the adit assayed 6 oz Au/T, 4 oz Ag/T over 4 inches (1935).

No. 2 vein measures 160 feet long by 8 inches wide. A channel sample assayed 7.3 oz Au/T, 5.3 oz Ag/T over 10 inches (1935).

No. 3 vein measures 308 feet long by 2 to 14 inches wide. A channel sample assayed 1.3 oz Au/T, 0.9 oz Ag/T over 14 inches (1935). Grab samples assayed 7.25 oz Au/T; and 0.18 oz Au/T, 0.2 oz Ag/T (1964).

A recently discovered(?) vein measures 1,000 feet long by 2 inches to 2 feet wide. The best grab sample assayed 1.7 oz



Au/T, 3.99 oz Ag/T (1970). A grab sample taken by MPH in 1983 returned 18,000 ppb Au, 3,060 ppm Pb, 12,000 ppm Zn, 11.2 ppm Ag.

#### Production

1899-1941: A total of 116 T of ore was mined, yielding 471 oz Au, 500 oz Ag, 2,424 lb Pb and 538 lb Cu.

#### History

1898-1899: Various owners; staking, prospecting, one adit driven.

1930-1935: Franklin River Gold Mines Ltd.; development, some mining.

1940's: Various; prospecting, sampling.

1963-1964: Gunnex Ltd.; prospecting, sampling.

1970: John Cotowick; limited mining operations.

1974: Corrigan Creek Gold Mines Ltd.; geological mapping (surface and underground), geophysics, trenching, stripping, 50' underground work.

#### References

- 1) MMAR 1898-1132, 1899-607, 1906-198, 1921-206, 1922-228, 1926-295, 1927-341, 1930-291, 1932-203, 1933-250, 1935-F49, 1940-27, 1941-27, 1944-59
- 2) GEM 1970-289, 1974-172
- 3) BCDM Bull 1 p132
- 4) AR 2771
- 5) GSC P68-50 p38  
Map 1963-49
- 6) The Miner October 1935
- 7) Minfile 092F141, 092F085

11. Shaw Creek (Black Prince) MnGeology

Lenses of manganese silicates, mainly rhodonite, occur in highly folded red and white cherty Sicker Group tuffs. Hard, black siliceous oxides coat some of the manganese lenses. The lenses appear to be conformable with the cherty tuffs.

Economic Features

Manganese mineralization is exposed over an area of 300 feet by 100 feet. Assays range from 14-40.8% Mn and 30-57% Si.

History

1918: Dickie, Noble, Anderson and Service; stripping and open cuts at four different points within an area of about 10 acres.

References

- MMAR 1918-297  
GSC P64-37, p19  
P72-53, pp34-56  
EGS12, pp115-119  
BCDM Bull 37, p69  
Canadian Munition Res. Comm. Final Report, 1920, pp90, 92-94  
Canadian Rockhound, February 1966, p7  
Manganese Deposits of Cowichan Lake, H. Sargent, 1939  
Manganese Occurrences in B.C., H. Sargent, 1956, p21  
Minfile 92F186

12. Heather Au, CuGeology

A zone of stringer to massive pyrite-chalcopyrite in quartz occurs in an altered silty rhyodacitic tuff horizon of the Myra Formation. The silty tuff is underlain by maroon tuff and overlain by green tuff, both of the Myra Formation. The stringer zone is believed to possibly represent the edge of a massive sulphide body.

Economic Features

The best assay from a trench on the original showing is 0.284 oz Au/ton, 0.66% Cu from a selected sample. Soil sampling located 2 Au-Cu anomalies; one over the original showing, and one to the west of the property. Several weak geophysical anomalies were located, but no strong ones.

History

1983-84: Chevron Resources; airborne EM/mag; geochemical, geological survey. Diamond drilling planned on original showing. \$200,000 spent to February 20, 1984.

References

TML 1984, #066, 140, 180  
NM August 2, 1984  
Private File Information

13. Villalta Au, Zn, Cu, Ag, W, FeGeology

Extensive areas of powdery to massive hematite carrying Au values, believed to represent a weathered massive sulphide horizon, occur at the top of a limestone horizon (Buttle Lake Formation?) in a well-developed paleokarst topogra-



phy. Gold showings are also reported to occur in bands of chert and massive sulphide with the limestone, in massive sphalerite at the contact of limestone and underlying argillite, in pyrite stringers in argillite, in shears, and in quartz veins.

#### Economic Features

The hematite is at least 100 feet wide by 360 feet "downdip" by up to 46 feet thick. Diamond drilling assays include 3.676 oz Au/ton, 0.56 oz Ag/ton, 7.65% Zn, 0.76% Cu over 1 foot, and 2.29% Zn, 0.41 oz Ag/ton, 0.033 oz Au/ton over 26 feet.

A 1200 cubic foot bulk sample taken in 1982 returned 0.20 (oz/ton?) Au, 0.30 (oz/ton?) Ag, 0.47% Cu, 0.53% Fe. Reserves are reported as approximately 200,000 tons indicated at 0.1 to 0.2 oz Au/ton with "minor" base metals content (August 18, 1981).

#### History

- 1976-79: E. Specogna; discovered mineralization, trenching, soil, rock sampling, 3 packsack DDH for 46'.
- 1980-81: Canamin Resources Ltd.; mapping, trenching, sampling, 15 NQ, BQ DDH for 6255'.
- 1982: Asarco Exploration Co. of Canada Ltgd.; geochemical, geophysical surveys, bulk sampling, stripping.
- 1983: Canamin Resources Ltd.; geochemical survey.
- 1984: Falconbridge Ltd.; airborne geophysics, at least 4 DDH, geochem.

References

EBC 1977-E109, 1978-E126, 1979-128  
AR 7792, 8458, 10789  
BCDM Geological Fieldwork 1980, pp. 112-114  
TML 1984, #066, 140, 180  
NM Aug. 2, 1984  
Canamin Resources Ltd.; Report to Shareholders dated  
April 9, 1982  
Minfile 92F384

## 5.0 PHASE I EXPLORATION

The Phase I exploration program carried out by MPH Consulting Limited on the Hoop claims consisted of geological mapping at 1:10,000 scale, rock sampling, and prospecting over as much of the property as was readily accessible. A total of 39 rock samples was collected and subsequently analyzed by Rossbacher Lab for Au by AAS and by 30-element ICP by Acme Analytical Lab. Follow-up mapping and sampling of anomalous sample sites resulted in 11 samples, which were analyzed for Au, Ag, Cu, Ni, and Zn by AAS by Rossbacher Lab.

### 5.1 Property Geology

The Hoop claims are underlain by essentially northwest trending mafic to intermediate volcanic and volcanoclastic rocks plus cherty and in part aquagene tuffs of the Paleozoic Sicker Group.

The Nitinat Formation which is mapped over the eastern two-thirds of the property comprises a variety of mafic volcanic (Unit 1) and volcanoclastic (Unit 2) rocks.

Dark green aphanitic to medium grained massive, vesicular and amygdaloidal basalt-andesite (Unit 1b) is the most common volcanic rock unit on the property. Where developed, amygdules consist primarily of white to reddish carbonate, less commonly of chlorite, silica, and zeolites. The unit is frequently associated with porphyritic andesite.

Flow breccia (Unit 1c) is particularly well developed in the north of the claims. The unit, which is light green to green in colour, shows flow banding and irregular rip-up clasts of up to



50 cm in length. The clasts are andesitic to dacitic in composition based on apparent silica content.

Porphyritic andesite (Unit 1d) is common throughout the claim block and consists of 5 to 15% phenocrysts of plagioclase and chloritized and/or uralitized pyroxene hosted by a light green aphanitic to fine grained groundmass.

Poorly sorted andesite tuff (Unit 1e) was noted in a few instances. The rock is fine to medium grained and contains angular crystal and lithic clasts.

Pillowed basalt (Unit 1a) was not mapped on the property but was noted in outcrops just to the north and on strike with the volcanics of the property.

Irregular sections of hematized, maroon-coloured volcanics occur in the vicinity of contacts with tuff breccia.

Mafic volcanoclastic rocks range from coarse crystal lithic tuff to tuff breccia (Unit 2). Angular to rounded agglomeratic to lapilli-sized fragments of pyroxene-feldspar porphyritic andesite and dacite are the most common lithic clasts. Chloritic clasts and smaller cherty clasts were noted in tuff breccia south of Mount Hooper. Intermediate to felsic tuff clasts also are numerous. The clast content ranges from 5 to 50% of the rock.

Thin interbeds of coarse porphyritic andesite (Unit 2a) may be in part tuffs. The rock is characterized by light grey-green siliceous clasts and uralite phenocrysts, probably pseudomorphed after pyroxene. The resulting mottled and irregular surface (weathered) texture is diagnostic of the unit.

Rock lithologies possibly correlative with the Myra Formation were mapped over the remaining western one-third of the property. The Myra Formation on the Hoop claims is dominated by very fine to medium grained light grey green to light grey dacite tuff and crystal lithic tuff (Unit 3). The best exposures occur on the main Nitinat road and on the main Hoop #1 claim gravel road. Occasional thin cherty bands are associated. The crystal components of the crystal lithic tuff comprise mainly feldspar and lesser pyroxene or amphibole. Small (<5 mm diameter) lithic clasts are dacitic in composition. Traces of disseminated pyrite are common.

Spectacular light grey green to grey cream and buff laminated chert and cherty tuff (Unit 4) are well exposed in the Nitinat River and on the logging road cuts on Hoop #4 claim. Thin interbeds of dacitic tuff are common. Some sections of cherty tuff contain 1-3 m wide bands of 2-5% disseminated pyrite resulting in gossanous weathered surfaces.

Andesite tuff (Unit 5) differs little from dacite tuff although it is much darker green in colour. It apparently underlies the laminated cherty tuff unit.

A roughly circular body of medium grained gabbro (Unit 6a) apparently intrudes tuff breccia on the southwest flank of Mount Hooper.

Fine to medium grained diorite (Unit 6b) is frequently admixed with andesite tuff of Unit 5.

An aphanitic rhyolite dyke (Unit 7) was mapped north of Mount Hooper.

## Structure

The most obvious structural feature on the Hoop property is a major northwest-trending shear zone in the southwestern corner. The shear zone is up to 200 m wide. It is heavily carbonatized (probably ankerite as the zone weathers rusty) and contains very abundant irregular quartz  $\pm$  carbonate veinlets to about 1 cm sub-parallel to parallel to foliation. This shear zone may be a southerly extension of the Black Panther shear. The Black Panther Mine, a former gold producer, is located 10 km northwest (along strike) of the Hoop property. The Black Panther shear is reported to have ankeritic alteration  $\pm$  quartz stringers over widths of up to 30 feet.

An earlier(?) fault trending northeasterly across the central portion of the property does not appear to offset the shear zone.

A northwest-trending antiform, possibly related in some way to the shear zone, was observed in outcrop at the location of sample 8580. Z-folding indicative of this antiform or a similar one was observed at 8862.

## 5.2 Mineralization and Rock Geochemistry

Mineralization observed on the Hoop property includes disseminated to massive pods of pyrite in both Nitinat and Myra Formation rocks, and quartz  $\pm$  carbonate veins containing varying quantities of sulphides. A major shear zone up to at least 200 m wide in the southwestern corner of the property appears to contain anomalous gold concentrations. A number of quartz veins (up to 1.5 m wide) on both sides of the shear zone, and possibly related to it, have also yielded anomalous gold results.



Anomalous samples collected from the shear zone are summarized below:

	<u>Au (ppb)</u>	<u>Others (ppm)</u>
8864	230	W-15
8865	10	Ni-200, Cr-491
8866	30	As-334
8875	2000 (ICP)	Cr-1712, Ni-641
8880	30	Cu-2670, Ag-0.9, Ni-721, Co-224, As-410

All of the above samples were later followed up with detailed mapping and sampling. A total of 5 grab samples (9464-68) collected in the area of 8864/65 did not yield any anomalous Au results (all 10 ppb), but averaged 390 ppm Ni (maximum 1220 ppm). Sample 9472, a 1 m sample from the site of 8866 returned only 10 ppb Au. Sample 9471, collected at the site of 8875, returned only 10 ppb Au and 54 ppm Ni. More encouraging was sample 9469, a 2 m sample from the 8880 location, which confirmed the earlier results with analyses of 120 ppb Au, 910 ppm Cu, and 118 ppm Ni.

Anomalous samples collected from quartz veins near the shear zone are summarized below:

	<u>Au (ppb)</u>	<u>Others (ppm)</u>
8858	40	
8862	20	
8867	10	Ni-108, Cr-307
8579	20	Be-3.0, Bi-6

Sample 8858 is actually wallrock from a vein; the vein itself did not return anomalous values (8857). Re-sampling of 8862 yielded a value of only 10 ppb Au (#9470). Re-sampling of 8579 yielded a result of 50 ppb Au (#9462), however, this vein is just south of the property boundary.

Sample 8580, collected from just north of the shear zone, returned a value of 100 ppb Au. Re-sampling (#9463) returned a value of 70 ppb Au. At this locality pyrite occurs as disseminations and stringers to 5% in the hinge zone of an antiform within well-bedded Myra Formation tuffs. The occurrence of repeatable gold values in a structurally controlled setting could be significant if the structure can be followed along strike.

Two samples collected further away from the shear zone and containing pods of massive sulphides both contained anomalous Cu concentrations. Sample 8860, of Unit 2 tuff with pods of massive sulphides, yielded 364 ppm Cu and 132 ppm Ni. Sample 9351, Unit 1 andesite (possibly Unit 5), collected from an outcrop about 400 m south of the Hoop property boundary, yielded 309 ppm Cu. Sample 8871 did not return any anomalous values; however, it is geologically very interesting as it consists of banded cherty tuff containing bands of sulphides up to 3 cm wide. These samples are interesting in that they indicate that a suitable environment for volcanogenic massive sulphide mineralization could be present. The Heather (volcanogenic massive sulphide?) showing occurs 5 km southeast (along strike) of the Hoop property. Much more work, including detailed follow-up of the sample areas, is necessary to establish their true significance.

The only other anomalous sample, #8736, a carbonatized Unit 1 andesite containing 2-3% disseminated pyrite, returned a value of 213 ppm Zn.

Based on these results it would appear that 2 potentially economic types of mineralization occur on the Hoop property: 1) Au ( $\pm$ Cu, Ni, Cr) in and around the major shear zone in the southwestern corner of the property; 2) volcanogenic massive sulphides in Sicker Group volcanics. The shear zone is especially intriguing as it is likely a southerly extension of the Black





Panther shear zone. The Black Panther Mine is located 10 km northwest of the Hoop property and has produced 1890 tons of ore (1947-50) grading 0.27 oz Au/ton and 0.50 oz Ag (ton with minor Pb, Zn, and Cu content) (see Section 4.8 for a description of the Black Panther Mine).

A list of rock sample descriptions and selected lithogeochemical results is included in Appendix II. Full analysis results are included in Appendix III.



## 6.0 RECOMMENDED WORK PROGRAM

### 6.1 Plan

Phase I geological exploration has identified an area for further investigation, namely the major shear zone in the southwestern corner of the Hoop property. Eight anomalous Au values have been returned from samples collected from the shear zone or close to it, as well as various anomalous Cu, Ni, and/or Cr results.

Phase IA exploration, therefore, will concentrate on this area, while completing reconnaissance mapping and rock sampling of the northern and eastern areas of the property, which were only briefly visited during Phase I. A soil sampling grid will be established over the shear zone, extending approximately 250-300 m beyond each side of the zone. Grid lines will be spaced at 100 m intervals, with soil samples collected every 50 m along grid lines. Detailed geological mapping and sampling will be carried out over the soil sampling grid. Detailed geological mapping and sampling will also be carried out in the areas of samples 8860, 8863, 8871, and 8878 to investigate the possible significance of these samples with respect to volcanogenic massive sulphide mineralization. Whole rock geochemical analyses on volcanic rock samples will be used in a computer program designed to identify the presence of alteration features typical of haloes surrounding known volcanogenic base metal and/or gold deposits. Reconnaissance level geological mapping, rock sampling, and prospecting will be carried out over the remainder of the property in an effort to locate additional target areas.

Contingent upon favourable Phase IA results, Phase II is to consist of detailed geological, geochemical, and geophysical follow-up to anomalies located over the shear zone or in new



target areas. Soil sampling grid(s) will be established over new target areas and/or extended from the Phase IA grid, if necessary. Magnetometer and VLF-EM surveys will be carried out over all soil grids, as well as detailed geological mapping and sampling. Towards the end of Phase II, trenching of showings or anomalies will be carried out.

If warranted by Phase II results, Phase II will consist of IP survey(s) over anomalous grid areas, followed by diamond drilling of the highest priority targets.

The following cost estimates are for Phase IA and Phase II geological, geochemical, and geophysical work. The cost estimate for Phase II does not include any provision for helicopter support, which may be necessary if a grid were to be established in an area of the property not accessible by road. If helicopter support is necessary the cost of Phase II would increase by roughly \$5,000. A provisional cost estimate for Phase III is also provided; the detailed Phase III budget and schedule will be contingent upon Phases I and II.

## 6.2 Budget

### Phase IA

Mobilization/Demobilization		\$	500
Personnel			
Geologist 14 days @ \$325	\$ 4,550		
Assistants/Soil Samplers (2)			
14 days @ \$200	<u>5,600</u>		10,150



## Support Costs

Food and Accommodation		
42 man days @ \$40	\$ 1,680	
4WD Truck 14 days @ \$110	1,540	
Communications 14 days @ \$25	350	
Helicopter 2 hours @ \$450	900	
Miscellaneous Supplies	<u>350</u>	\$ 4,820

## Analyses

60 Rocks (Au, ICP) @ \$12.20	\$ 732	
15 Rocks (Whole Rock) @ \$32.00	480	
270 Soil Samples (Au, ICP) @ \$10.60	<u>2,862</u>	4,074

## Consulting/Supervision

4 days @ \$450	\$ 1,800	
Expenses	<u>400</u>	2,200

## Report Writing

Geologist 6 days @ \$325	\$ 1,950	
Drafting 40 hours @ \$18	720	
Materials, Typing, Copying	<u>750</u>	<u>3,420</u>
		25,164

Administration @ 15% (on \$11,264)

<u>1,690</u>
26,854

Contingency @ 15%

<u>4,028</u>
--------------

Total, say	<u><u>\$ 31,000</u></u>
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Phase II

Mobilization/Demobilization \$ 850

## Personnel

Geologist 15 days @ \$325	\$ 4,875	
Soil Samplers/Geophysical Technicians (3) 15 days @ \$200	<u>9,000</u>	13,875

## Support Costs

Food and Accommodation 65 man days @ \$40	\$ 2,600	
4WD Truck 15 days @ \$110	1,650	
Communications 15 days @ \$25	375	
Miscellaneous Supplies	<u>350</u>	4,975

## Equipment Rental

Magnetometer + Base Station Receiver 15 days @ \$130	\$ 1,950	
VLF-EM Receiver 15 days @ \$25	<u>375</u>	2,325

## Trenching

Technician 5 days @ \$250	\$ 1,250	
Drill Rental, Powder, Steel	<u>1,000</u>	2,250

## Analyses

300 Soil Samples (Au, ICP) @ \$10.60	\$ 3,180	
80 Rocks (Au, ICP) @ \$12.20	976	
15 Rocks (Whole Rock) @ \$32.00	<u>480</u>	4,636

## Consulting/Supervision

4 days @ \$450	\$ 1,800	
Expenses	<u>400</u>	2,200



Report Writing		
Geologist 8 days @ \$325	\$ 2,600	
Geophysicist 2 days @ \$350	700	
Drafting 50 hours @ \$18	900	
Materials	<u>1,000</u>	<u>5,200</u>
		36,311
Administration @ 15% (on \$15,011)		<u>2,251</u>
		38,562
Contingency @ 15%		<u>5,784</u>
Total, say		<u><u>\$ 44,000</u></u>

Phase III

IP Survey 10 days @ \$2,500		\$ 25,000
(includes linecutting, camp, report)		
Diamond drilling 450 m @ \$145		65,250
(including camp, geologist, assaying samples, report)		
		<u>90,250</u>
Administration @ 15% (on, say, \$15,000)		<u>2,250</u>
		92,500
Contingency @ 15%		<u>13,875</u>
Total, say		<u><u>\$106,000</u></u>



### 6.3 Schedule

The following tables are summaries of the projected time requirements for Phases IA and II. Phase III is estimated to take four weeks to complete.

Week	1 .....	2 .....	3 .....	4 .....	5 .....	6 .....
Mobilization						
Geology, Prospecting						
Soil Sampling						
Geophysics						
Analyses						
Consulting	—	—				
Demobilization			—			
Report			—			

TABLE 1

PHASE IA PROJECT SCHEDULE  
HOOP CLAIMS





Week	1 .....	2 .....	3 .....	4 .....	5 .....	6 .....
Mobilization	—					
Geology, Prospecting	—					
Soil Sampling	—					
Geophysics	—					
Trenching		—				
Analyses		—				
Consulting	—	—				
Demobilization			—			
Report			—			

TABLE 2

PHASE II PROJECT SCHEDULE  
HOOP CLAIMS





## 7.0 CONCLUSIONS

1. The Hoop 1-5 claims are underlain by northwest trending rocks of the Paleozoic Sicker Group including Nitinat Formation mafic (to intermediate) flows and pyroclastics and Myra Formation intermediate tuffs to cherty tuffs.
2. A major northwest trending shear zone crosses the southwestern corner of the property. The shear zone is up to at least 200 m wide and may be a southerly extension of the Black Panther shear zone. Anomalous values in Au ( $\pm$  Cu, Ni, Cr) have been obtained from some rock samples collected from the shear zone and from quartz veins in and near the shear, indicating the possibility of outlining a low-grade high-tonnage Au deposit on the Hoop property.
3. Re-sampling of anomalous sample sites returned generally lower results, although a result of 120 ppb Au and 910 ppm Cu over 2 m was also recorded.
4. Rock samples containing pods of massive sulphide have returned results of up to 364 ppm Cu. As the Sicker Group is a well known host for volcanogenic massive sulphide deposits, the Hoop claims have the potential to host such a deposit. The Heather (volcanogenic massive sulphide?) showing is located 5 km southeast of the Hoop property. Additional exploration is required to assess the significance of the anomalous Cu results with respect to volcanogenic massive sulphide mineralization.



5. Anomalous Ni and Cr results in rock samples indicates a potential for the presence of Pt/Pd mineralization. Selected samples should be analyzed for Pt and Pd to test this possibility.
  
6. Additional work including Phase IA detailed geological mapping and sampling and grid soil sampling of the shear zone area with reconnaissance geological mapping and sampling of the northern and eastern areas of the property; Phase II detailed geological, geochemical and geophysical grid work; and Phase III IP surveys and diamond drilling is required to assess the economic potential of the Hoop 1-5 claims.

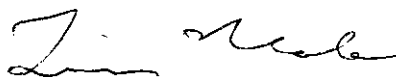


## 8.0 RECOMMENDATIONS

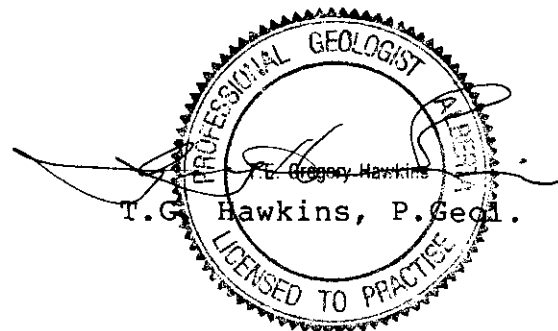
1. It is recommended that Phase IA geological and geochemical exploration of the Hoop 1-5 claims be carried out at an estimated cost of \$31,000.
2. It is recommended that the shear zone in the southwestern corner of the property be investigated with respect to its potential as a high-tonnage low-grade Au deposit, initially with grid sampling and detailed geological mapping and sampling.
3. It is recommended that the areas of samples 8860, 8863, 8871, and 8878 be the subject of detailed geological mapping and sampling in order to determine their significance with respect to the possible existence of volcanogenic massive sulphide mineralization on the Hoop property.
4. Whole rock geochemistry of volcanic rock samples is recommended as a means of identifying and delineating alteration haloes surrounding volcanogenic mineralization.
5. As most of the 1985 mapping and sampling was carried out in the southwest corner of the property, it is recommended that reconnaissance geological mapping, sampling, and prospecting be carried out over those areas of the property which were not covered in as much detail as the southwest corner.

6. Contingent upon favourable Phase IA results, Phase II is recommended to consist of detailed geological, geochemical, and geophysical follow-up of anomalies located over the shear zone and/or in new target areas located by reconnaissance work. Estimated cost of Phase II is \$44,000.
  
7. If warranted by the results of Phase II, Phase III is recommended to consist of IP surveying and diamond drilling at an estimated cost of \$106,000.

Respectfully submitted,  
MPH Consulting Limited

A handwritten signature in cursive script, appearing to read 'T. Neale'.

T. Neale, B.Sc.



December 31, 1985



CERTIFICATE

I, T. Neale, do hereby certify:

1. That I am a graduate in geology of The University of British Columbia (B.Sc. 1978).
2. That I have practised as a geologist in mineral exploration for seven years.
3. That the opinions, conclusions, and recommendations contained herein are based on field work carried out by MPH personnel on the property in May and September 1985, on library research, and on my experience in the area.
4. That I own no direct, indirect, or contingent interest in the subject property, or shares or securities of Gator Resources Corporation or associated companies.

A handwritten signature in cursive script, appearing to read 'T. Neale', is positioned above the typed name.


T. Neale, B.Sc.

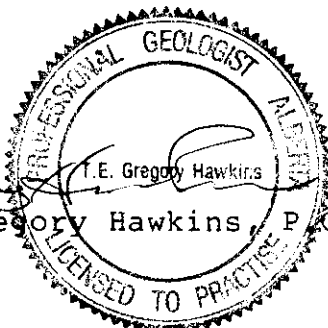
Vancouver, B.C.  
December 31, 1985

CERTIFICATE

I, T.E. Gregory Hawkins, do hereby certify:

1. That I am a Consulting Geologist with business offices at 301, 409 Granville Street, Vancouver, B.C. V6C 1T2.
2. That I am a graduate in geology of The University of Alberta, Edmonton (B.Sc. 1973), and of McGill University, Montreal, (M.Sc. 1979).
3. That I have practised within the geological profession for the past twelve years.
4. That I am a Fellow of the Geological Association of Canada and a Professional Geologist registered in the Province of Alberta.
5. That the opinions, conclusions and recommendations contained herein are based on field work carried out on the property in May and September 1985, and supervised by me.
6. That I own no direct, indirect, or contingent interests in the subject property or shares or securities of Gator Resources Corporation or associated companies.

  
T.E. Gregory Hawkins, P. Geol.



Vancouver, B.C.  
December 31, 1985

### REFERENCES

- Carson, D.J.T. 1968. Metallogenic Study of Vancouver Island with Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks; Ph.D. Thesis, Carleton University.
- Clapp, C.H. 1912. Southern Vancouver Island; GSC Memoir 13.
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- Muller, J.E. and D.J.T. Carson. 1969. Geology, and Mineral Deposits of Alberni Map-Area, British Columbia (92F); GSC Paper 68-50.
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- Neale, T. and T.G. Hawkins. 1985. Preliminary Assessment and Recommended Work Program, Hoop 1-5 Claims; for Gator Resources Corporation, March 22, 1985.





Stevenson, J.S. 1945. Geology and Ore Deposits of the China Creek Area, Vancouver Island, British Columbia; Annual Report of the Minister of Mines of the Province of British Columbia, 1944, pp. A143-A161.

Walker, R.R. 1983. Ore Deposits at the Myra Falls Minesite; Western Miner, May, 1983, pp. 22-25.



**APPENDIX I**

List of Personnel and  
Statement of Expenditures



## LIST OF PERSONNEL AND STATEMENT OF EXPENDITURES

The following expenses have been incurred on the Hoop 1-5 claims for the purposes of mineral exploration between the dates of May 23 and 28, 1985 and September 26, 1985.

### Personnel:

N.O. Willoughby, B.Sc.			
Geologist	4.5 days @ \$325	\$1,462.50	
T. Kraft, B.Sc.			
Geologist	6.5 days @ 250	1,625.00	
R. Krause, B.Sc.			
Geologist	6.5 days @ 250	1,625.00	
G. Cope, B.Sc.			
Geologist	2 days @ 250	500.00	
K. Barron, B.Sc.			
Geological Asst.	4.5 days @ 175	787.50	
T. Neale, B.Sc.			
Geologist	3.5 days @ 325	1,137.50	
T.G. Hawkins, P.Geol.			
Consulting Geologist	2 days @ 450	<u>900.00</u>	
			\$ 8,037.50

### Expenditures:

Food and Accommodation		643.63	
Transportation		556.20	
Analyses			
37 rocks @ \$11.95 (Au, ICP)	442.15		
11 rocks @ 9.65			
(Au,Ag,Cu,Ni,Zn)	106.15		
1 rock @ 6.00	<u>6.00</u>		
		554.30	
Report Costs (drafting, typing, copying)		623.37	
Miscellaneous (maps, phone, courier)		179.75	
Administration Fees		<u>232.53</u>	
			<u>2,789.78</u>
			<u>\$10,827.28</u>



## **APPENDIX II**

**Rock Sample Descriptions and  
Lithogeochemical Results**

Rock Sample Descriptions and  
Lithogeochemical Results

Sample No.	Description	Cu ppm	Zn ppm	Other(s) ppm
8579 (=9462)		13	10	20 ppb Au 3.0 Be 6 Bi
8580 (=9463)		32	20	100 ppb Au 120 Ba
8735		4	18	
8736	Andesite - gossanous, pyrite disseminated and blebby to 2-3%; carbonatized; zone 2-2.5 m wide.	7	213	
8737		98	100	156 Ba
8738	Dacitic tuff - contains <2% small disseminated pyrite cubes, as well as quartz veins which contain <2% pyrite.	54	92	
8739	Dacite tuff	120	75	
8740	Dacitic tuff - fine-grained, banded; contains <2% pyrite disseminations and small veinlets.	124	87	
8853	Basalt/andesite tuff - a diffuse 5-10 mm wide band of silicified, cherty-looking tuff in dense, dark green basalt/andesite; contains disseminated pyrite cubes to 3 mm adjacent to anastomosing quartz veinlets to 1 cm.	20	16	12 W
8854	Quartz vein - 10 cm wide; composed of quartz, carbonate, serpentine, and chlorite.	28	35	234 Cr
8855	Quartz veins in chloritic tuff.	31	52	157 Cr

Sample No.	Description	Cu ppm	Zn ppm	Other(s) ppm
8856	Agglomerate - pale green clasts up to 50 cm in dark green matrix; epidote-filled vesicles, epidote veining, carbonate veining, disseminated sulphides.	67	62	
8857	Quartz-CO <sub>3</sub> -epidote vein - rusty; 3 cm wide.	24	37	
8858	Wallrock of 8857 (agglomerate?)	74	63	40 ppb Au
8859	Tuff - crystal fragments 2-5 mm, rock fragments to 2 cm; CO <sub>3</sub> d, epidotized, chloritized.	37	17	
8860	Tuff (???) containing massive sulphide pods.	364	55	132 Ni
8861	Quartz-CO <sub>3</sub> vein - contains sulphide lenses; vein is parallel tuff bedding.	55	39	
8862 (=9470)	Quartz-CO <sub>3</sub> vein - contains sulphide lenses.	81	41	20 ppb Au
8863	Dacitic Flow? grading into tuff - fine-grained; contains cherty bands, bands of sulphides (along joint planes?) and sulphide-filled chloritic blebs.	110	31	19 W
8864 (=9464-68)	Rusty shear in CO <sub>3</sub> d andesite.	14	26	230 ppb Au 15 W
8865 (=9464-68)	Rusty shear with quartz-CO <sub>3</sub> pods in phyllite; shear is about 80 m across.	93	52	200 Ni 297 Sr 491 Cr
8866 (=9472)	Phyllite - highly foliated/sheared; crenulated with pods of quartz between crenulations. Old sample site #HT-3.	6	15	30 ppb Au 334 As

Sample No.	Description	Cu ppm	Zn ppm	Other(s) ppm
8867	Quartz vein in jointed metabasalt/andesite.	17	56	108 Ni 307 Cr
8868	Rusty shear with vuggy quartz veins; locally sheared to gouge.	25	40	
8869	Quartz vein in 8868 shear.	4	21	
8870	Quartz vein.	25	22	
8871	Banded cherty tuff with sulphidic bands - sulphide bands to 3 cm wide; concordant vuggy quartz veins; interbedded with dark green chloritic meta-andesite.	39	69	
8872	Shear zone in interbedded cherty fine-grained tuffs and andesitic volcanics; shear zone is rusty, contains sulphides with quartz and is 1-2 m wide.	77	61	
8873	Same as 8872.	108	58	
8874	Same as 8872.	25	17	
8875 (=9471)	Shear zone in banded cherty tuff - 30 cm wide, very deeply weathered and rusty. (Au value from <u>ICP</u> )	78	62	2 ppm Au 1712 Cr 641 Ni
8876	Carbonate-epidote vein with quartz stringers in agglomerate.	28	21	
8877	Quartz vein.	7	43	
8878	Rusty chert - contains scattered sulphide blebs; from an outcrop of interbedded cherty tuff and andesite flows.	102	75	
8879	Shear zone - rusty, about 30 m wide; vuggy quartz veins parallel foliation; sericitic, fuchsite in places.	35	59	

Sample No.	Description	Cu ppm	Zn ppm	Other(s) ppm
8880 (=9469)	Diorite dyke - 5 m wide, cut by quartz stringers; contains disseminated sulphides in 0.5-1 mm cubes in central portion of dyke.	2670	35	30 ppb Au 0.9 Ag 721 Ni 224 Co 410 As
8881	Quartz vein - vuggy, very rusty.	12	25	
9351	Andesite - lenses of massive sulphides and 10-15% disseminated pyrite; carbonatized.	309	85	
9352	Andesite? - phenocrysts to 1.5 cm of pyroxene ± hornblende and minor plagioclase in an aphanitic mesocratic matrix; massive; moderately carbonatized; 4% fine disseminated pyrite; possibly bleached/baked equivalent of adjacent mafic volcanics.	48	54	
9462 (=8579)	1.5 m wide quartz vein with pods of massive pyrite. Pods are 10 cm x 4 cm and comprise up to 1% of vein. Vein is hosted in pillowed basalt.	14	12	50 ppb Au
9463 (=8580)	Seafoam green, folded, bedded lapilli tuff. Disseminated and stringer pyrite to 5% in hinge zone. Rusty weathered.	98	60	70 ppb Au
9464 (=8864/ 65)	Dark green, strongly sheared, sericite-chlorite altered basalt. Trace disseminated pyrite.	40	58	
9465 (=8864/ 65)	Rusty, ankeritic quartz vein trending parallel to shearing. 10 cm wide, trace disseminated pyrite.	2	58	1220 Ni



Sample No.	Description	Cu ppm	Zn ppm	Other(s) ppm
9466 (=8864/ 65)	Strongly sheared, dark green, sericite-chlorite altered basalt. Abundant quartz, in plane of foliation, is often rusty on surface. Trace pyrite in the basalt.	64	74	294 Ni
9467 (=8864/ 65)	As 9466.	94	62	
9468 (=8864/ 65)	As 9466.	74	72	306 Ni
9469 (=8880)	Channel sample across 2 m. Rusty fracture/shear zone in dark green, chloritic basalt. Pyrite occurs as massive fracture fillings, disseminations and stringers to 10%. Trace malachite.	910	58	120 ppb Au 118 Ni
9470 (=8862)	Channel sample across 1 m. Alternating (1-3 cm beds) chloritic basalt tuff and cherty tuff. Disseminated pyrite to 10% in central .5 m of sample.	56	74	
9471 (=8875)	Seafoam green, well-bedded, silified, basalt tuff. 2-5% finely disseminated pyrite. Occasional quartz-rich layers. Light grey to rusty brown weathering.	88	72	10 ppb Au
9472 (=8866)	Channel sample across 1 m. Intensely sheared, dark green, basalt flow(?). Abundant rusty quartz-ankerite veinlets parallel shearing. Chloritic-sericitic alteration along foliations. Occasional 10 cm, eye-shaped blebs of quartz.	90	126	



**APPENDIX III**

Certificates of Analysis/Assay

ROSSBACHER LABORATORY LTD.

2025 S. SPRINGER AVENUE  
 BURNABY, B.C. V5B 3H1  
 TEL : (604) 299-4819

CERTIFICATE OF ANALYSIS

TO : MPH CONSULTING LTD.,  
 301-409 GRANVILLE ST.,  
 VANCOUVER, B.C.

CERTIFICATE#: 85119  
 INVOICE#: 5241  
 DATE ENTERED: 85-06-14  
 FILE NAME: MPH85119  
 PAGE # : 1

PROJECT: V190  
 TYPE OF ANALYSIS: GEOCHEMICAL

PRE FIX	SAMPLE NAME	PPB Au	oz/t Au	oz/t AuDUP
	8735	10		
	8736	10		
	8737	10		
	8738	10		
	8739	10		
	8740	10		
	8853	10		
	8854	10		
	8855	10		
	8856	10		
	8857	10		
	8858	40		
	8859	10		
	8860	10		
	8861	10		
	8862	20		
	8863	10		
	8864	230	0.004	0.005
	8865	10		
	8866	30		
	8867	10		
	8868	10		
	8869	10		
	8870	10		
	8871	10		
	8872	10		
	8873	10		
	8874	10		
	8875	10		
	8876	10		
	8877	10		
	8878	10		
	8879	10		
	8880	30		
	8881	10		
	9351	10		
	9352	10		

RECEIVED JUN 24 1985

CERTIFIED BY :

*J. Rossbach*



ROSSBACHER LABORATORY LTD.

2225 S. SPRINGER AVENUE  
BURNABY, B.C. V5B 3N1  
TEL : (604) 299 - 6910

CERTIFICATE OF ANALYSIS

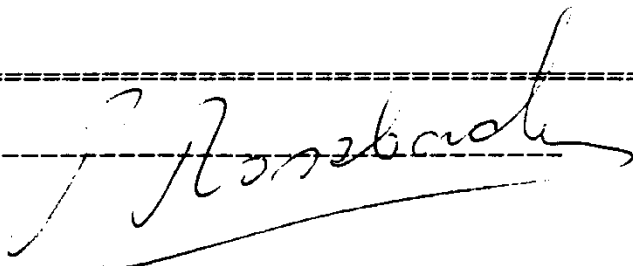
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301-409 GRANVILLE STREET  
VANCOUVER B.C.

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PAGE # : 1

PROJECT: V 190  
TYPE OF ANALYSIS: GEOCHEMICAL

PRE FIX	SAMPLE NAME	PPM Cu	PPM Ni	PPM Ag	PPM Zn	PPB Au
T	9462	14	22	0.4	12	50
T	9463	98	28	0.2	60	70
T	9464	40	34	0.2	58	10
T	9465	2	1220	0.2	58	10
T	9466	64	294	0.2	74	10
T	9467	94	94	0.2	62	10
T	9468	74	306	0.2	72	10
T	9469	910	118	0.2	58	120
T	9470	56	28	0.2	74	10
T	9471	88	54	0.2	72	10
T	9472	90	20	0.2	126	10

CERTIFIED BY :



GEOCHEMICAL ICP ANALYSIS

500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER. THIS LEACH IS PARTIAL FOR MN.FE.CA.P.CR.MG.BA.TI.B.AL.NA.K.W.SI.ZR.CE.SM.Y.NB AND TA. AU DETECTION LIMIT BY ICP IS 3 PPM. SAMPLE TYPE: SOLUTION

DATE RECEIVED: JUNE 12 1985 DATE REPORT MAILED: June 17/85 ASSAYER: V. Saundry DEAN TOYE OR TOM SAUNDRY. CERTIFIED B.C. ASSAYER

ROSSBACHER LAB PROJECT - V190 FILE # 85-0903A

PAGE 1

Table with columns: SAMPLE#, No PPM, Cu PPM, Pb PPM, Zn PPM, Ag PPM, Ni PPM, Co PPM, Mn PPM, Fe %, As PPM, U PPM, Au PPM, Th PPM, Sr PPM, Cd PPM, Sb PPM, Bi PPM, V PPM, Ca %, P %, La PPM, Cr PPM, Mg %, Ba PPM, Ti %, B PPM, Al %, Na %, K %, W PPM. Rows include samples 8735, 8736, 8737, 8738, 8739, 8740, 8853, 8854, 8855, 8856, 8857, 8858, 8859, 8860, 8861, 8862, 8863, 8864, 8865, 8866, 8867, 8868, 8869, 8870, 8871, 8872, 8873, 8874, 8875, 8876, 8877, 8878, 8879, 8880, 8881, 9351, 9352, STD, STD C.

RECEIVED JUN 24 1985



# Chemex Labs Ltd.

-Analytical Chemists    -Geochemists    -Registered Assayers

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North Vancouver, B.C.  
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Telephone: (604) 984-0221  
Telex 04352597

## CERTIFICATE OF ANALYSIS

TO : ROSSBACHER LABORATORY LIMITED  
2225 SOUTH SPRINGER AVENUE  
BURNABY, B.C.  
V5B 3N1

CERT. # : A8513194-001-A  
INVOICE # : I8513194  
DATE : 3-JUL-85  
P.O. # : NONE  
V-197

Semi quantitative multi element ICP analysis

Nitric-Aqua-Regia digestion of 0.5 gm of material followed by ICP analysis. Since this digestion is incomplete for many minerals, values reported for Al, Sb, Ba, Be, Ca, Cr, Ga, La, Mg, K, Na, Sr, Ti, W and V can only be considered as semi-quantitative.

COMMENTS :

Sample description	Al	Ag	As	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Sr	Ti	Tl	U	V	W	Zn
	g	ppm	ppm	ppm	ppm	ppm	g	ppm	ppm	ppm	ppm	g	ppm	g	ppm	g	ppm	ppm	g	ppm	ppm	ppm	ppm	g	ppm	ppm	ppm	ppm	ppm	ppm

8579	0.63	0.1	<10	20	3.0	6	0.06	<0.5	81	139	13	8.09	<10	0.02	<10	0.55	13	<0.01	28	120	<2	<10	1	<0.01	<10	<10	18	<10	10	-	-	
8580	1.18	0.1	<10	120	2.0	2	0.04	<0.5	7	76	32	4.91	<10	<0.01	<10	0.76	58	1	<0.01	2	40	<2	<10	5	0.04	<10	<10	55	<10	20	-	-

Certified by Hart Buchler

RECEIVED JUL 8 1985





## **APPENDIX IV**

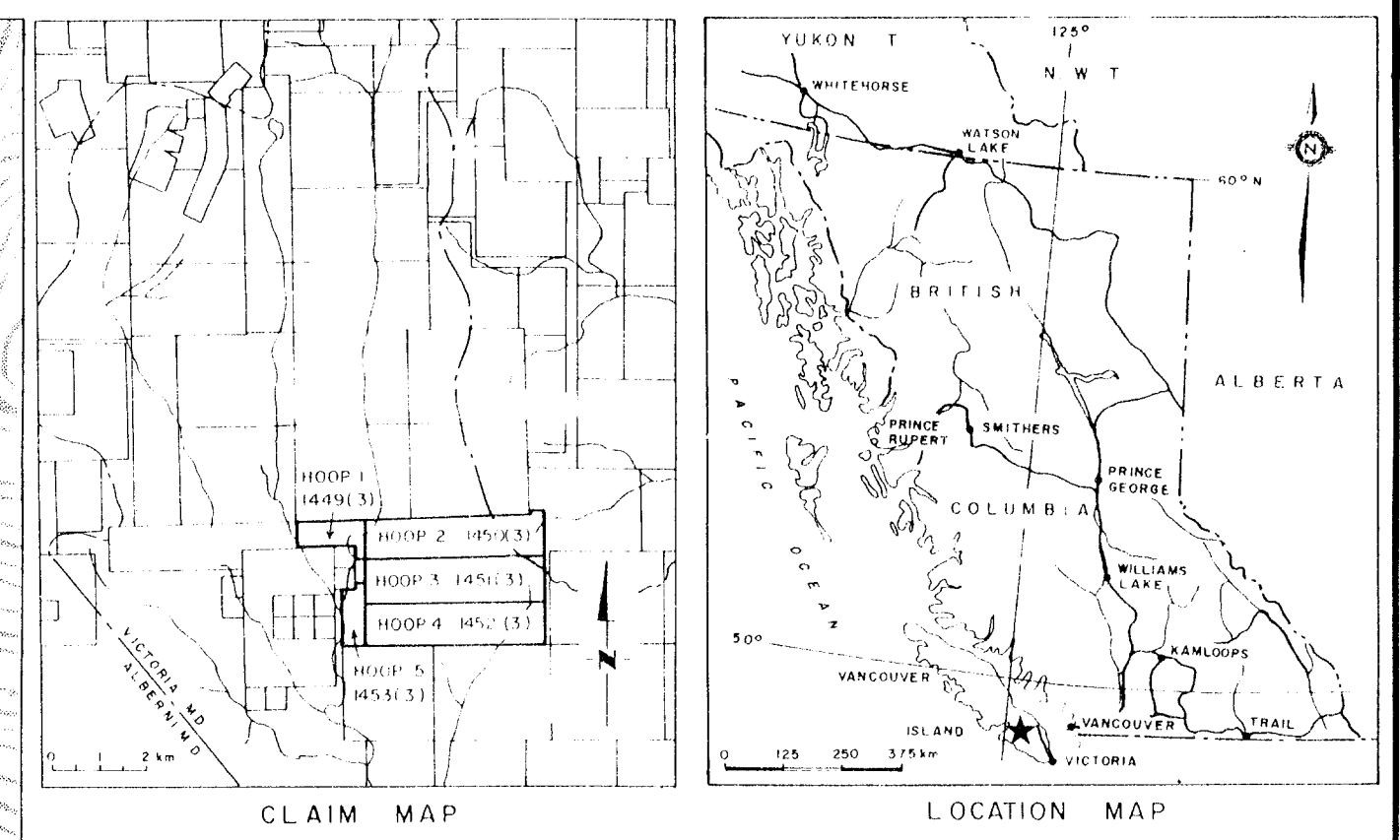
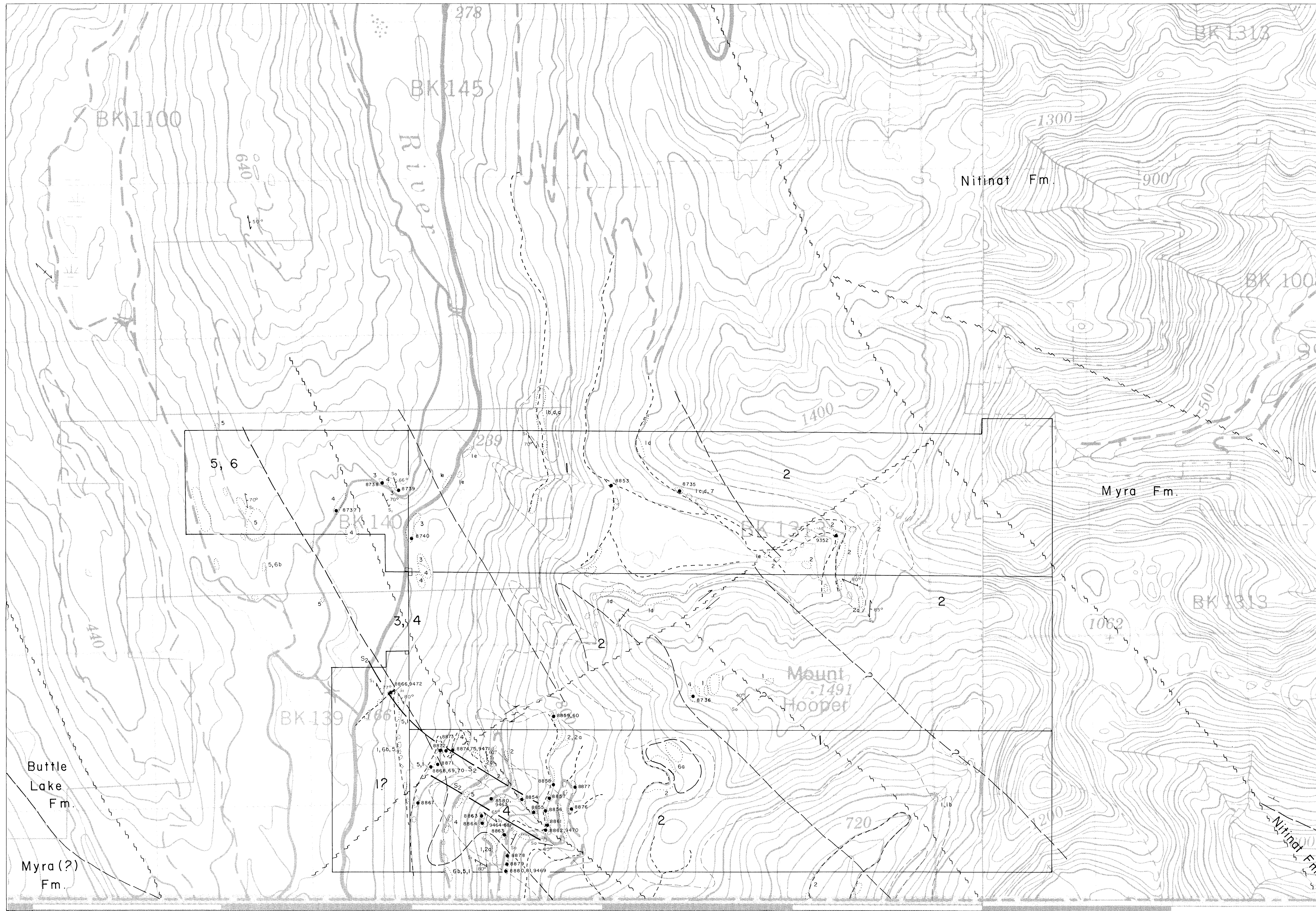
**Abbreviations Used in Mineral Occurrences References**





ABBREVIATIONS USED IN MINERAL OCCURRENCES REFERENCES

AR	B.C. Ministry of Energy, Mines and Petroleum Resources Assessment Report
BCDM	British Columbia Department of Mines
Bull	Bulletin
Carson	Metallogenic Study of Vancouver Island with Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks; D.J.T. Carson, Carleton University, Ph.D. Thesis, May, 1968
EBC	Exploration in British Columbia; B.C. Ministry of Energy, Mines and Petroleum Resources
EGS	Economic Geology Series
GEM	Geology, Exploration and Mining in British Columbia; B.C. Department of Mines and Petroleum Resources
GSC	Geological Survey of Canada
Gunnex	Mineral Occurrences, E&N Land Grant, Vancouver Island, B.C.; Gunnex Ltd., 1966
Minfile	B.C. Ministry of Energy, Mines and Petroleum Resources Minfile, Feb. 2, 1984
MMAR	B.C. Ministry of Mines Annual Report
NM	Northern Miner
P	Paper
TML	Today's Market Line
VS	Vancouver Stockwatch



**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**14,461**  
LEGEND

**GEOLOGY**

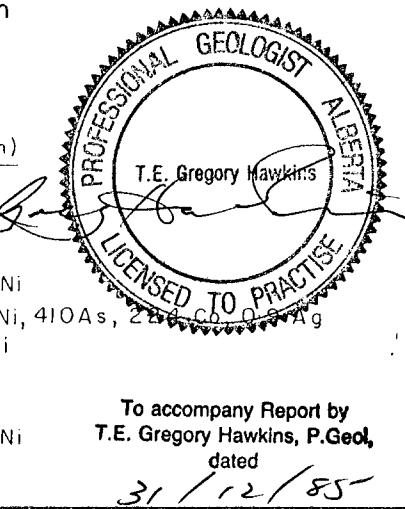
- ( Mapping outside property area is modified from Muller (1980). )
- 7** Felsic Intrusive Rocks
- 6** Mafic Intrusive Rocks, a) gabbro ; b) diorite
- Myra Formation**
- 5** Andesite tuff
- 4** Laminated cherty tuff; with some interbedded dacitic tuff.
- 3** Dacite tuff, crystal lithic tuff; laminated, cherty in places.
- Nitinat Formation**
- 2** Mafic tuff breccia (agglomerate), lapilli tuff, coarse crystal lithic tuff a) coarse porphyritic andesite
- 1** Mafic volcanic rocks ; a) pillowed basalt, b) vesicular, amygdaloidal basalt, andesite, c) flow breccia, d) porphyritic andesite, e) andesite tuff.

**SYMBOLS**

- Outcrop
- Area of outcrop
- Geological contact (approximate)
- Shear zone trace
- Fault (approximate)
- Fault with direction of displacement indicated
- Strike and dip of (shear) foliation
- Strike and dip of bedding
- Claim line with legal corner post
- Roads
- Rock sample number and location

**ANOMALOUS SAMPLES**

Au (ppb)	Others (ppm)
8864 230	
8580 100	
9463 70	
8875 2000 (ICP)	1712 Cr, 641 Ni
8880 30	2670 Cu, 721 Ni, 410As, 2000 Pb
9469 120	910 Cu, 18 Ni
8579 20	3.0 Be, 6.81
9462 90	
8860	364 Cu, 132 Ni



GATOR RESOURCES CORPORATION

PROPERTY GEOLOGY, PLAN  
AND ROCK SAMPLING  
HOOP CLAIMS  
VICTORIA MINING DIVISION

Project No: V 190	By: N. O. W.
Scale: 1 : 10 000	Drawn: J. S.
Drawing No: 5	Date: DECEMBER, 1985.

**MPH** MPH Consulting Limited