

ASSESSMENT REPORT
ON
THE GOLD NUGGET PROPERTY

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for

BARONA RESOURCES LTD.

GEOLOGICAL BRANCH
ASSESSMENT REPORT

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| SUB-RECORDER RECEIVED |
| DEC 21 1989 |
| M.R. # \$..... VANCOUVER, B.C. |

19,485

November 25, 1989

ALBERNI MINING DIVISION

NIS 92F/3W

North Latitude 49° 02'
West Longitude 124° 58'

By

David Coffin



Vanguard Consulting Ltd.

Tel.: (604) 681-3234

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1.0 INTRODUCTION

At the request of Barona Resources Ltd., a brief program of geological mapping and sampling was undertaken on the Gold Nugget property between October 25 and 30, 1989. The program consisted of geologically mapping and sampling several new sections of road bed and of examining areas of known mineralization in an attempt to discern trends and similarities to other occurrences in the region. This report is based on those examinations, previous reports on the property and region, and on the author's considerable experience in the area.

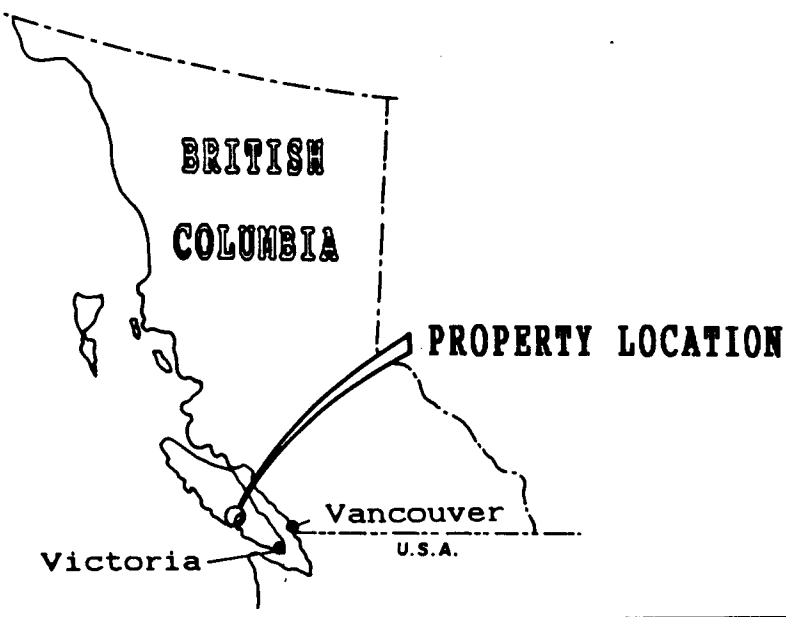
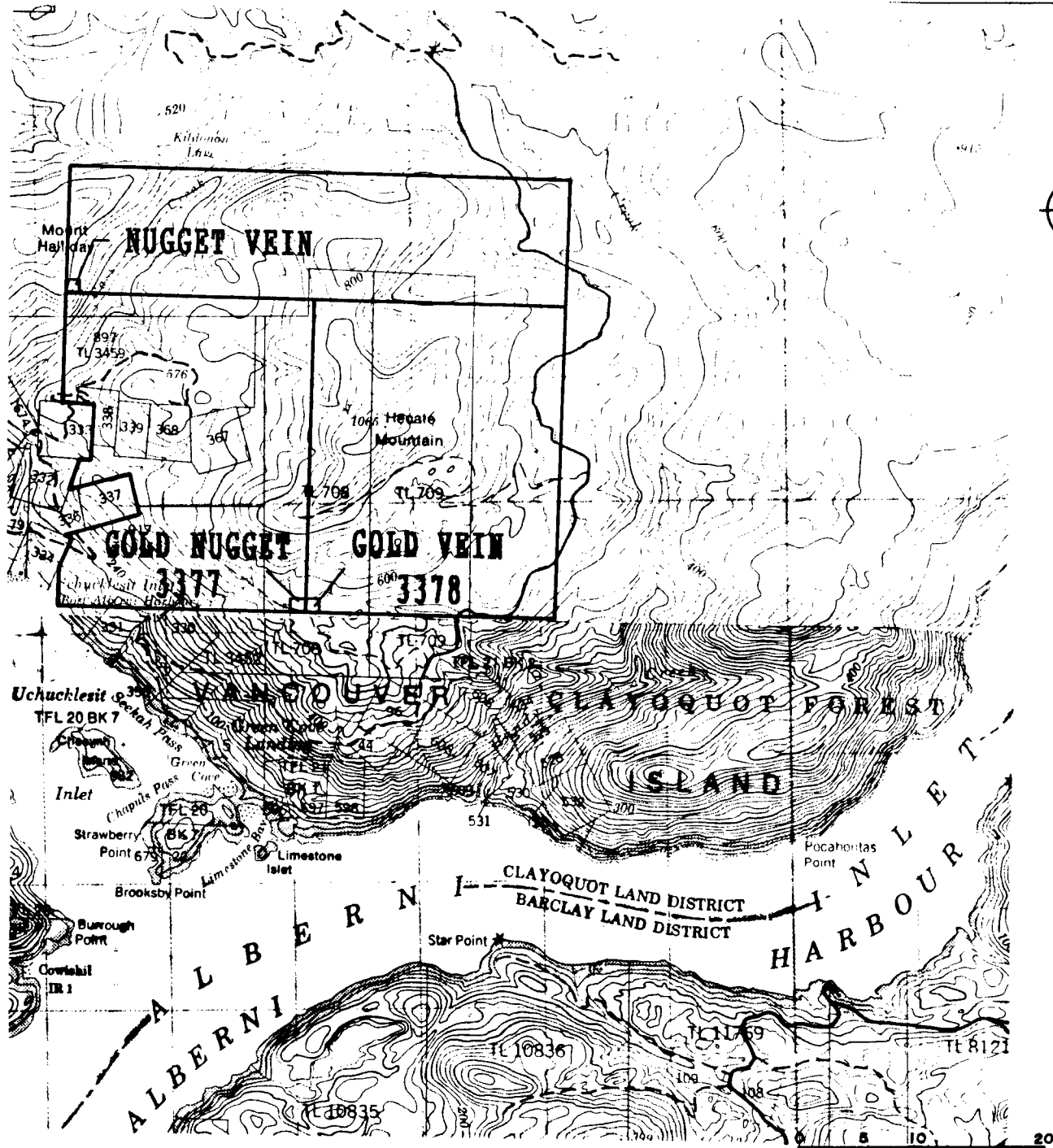
2.0 PROPERTY STATUS

The Gold Nugget Property consists of three Modified Grid System Mineral Claims located in the Alberni Mining Division. Particulars are as follows:

| Claim Name | Units | Record Number | Expiry Date |
|-------------|-------|---------------|---------------|
| GOLD NUGGET | 20 | 3377 | Nov. 3, 1990* |
| GOLD VEIN | 20 | 3378 | Nov. 3, 1990* |
| NUGGET VEIN | 16 | 3963 | Nov. 2, 1990 |

The claims were staked in 1987 and 1988. The original Nugget Vein claim (record # 3568) lapsed in May of 1989 and was restaked upon the completion of the mapping program. The claims are registered in the name of Barona Resources Ltd. The total area of the claim block is 56 units, less approximately 2.2 units covered by third party owned Crown Grants on the western edge of the Gold Nugget claim (see Claim Map, Fig 1).

*Upon the acceptance of this report for assessment credit.



| | |
|-----------------------------|--------------------------|
| BARONA RESOURCES LTD | |
| GOLD NUGGET PROJECT | |
| ALBERNI M. D. | NTS: 92F/2W |
| CLAIM MAP | |
| FIG. 1 | |
| COMPILED BY: EPC | DRAWN BY: P.H. |
| SCALE-1: 50,000 | DATE: Nov., 1989 |
| REVISED: | Vanguard Consulting Ltd. |

3.0 LOCATION, ACCESS AND TOPOGRAPHY

The claims are located around Hecate Mountain, approximately 2.5 kilometers north of the junction of Alberni and Uchucklesit Inlets. The closest settlement is Kildonan, a post office and collection of float houses located along the northern shore of Uchucklesit Inlet west of the property.

Access to the property can be gained via the Lady Rose ferry from Port Alberni, 45 kilometers distant to the northeast, which can dock south of the property at Green Cove, or west of the property at Snug Harbour. Float planes or barges can also be taken to either location. Numerous logging roads, mostly in good repair, access the bulk of the property.

Elevations on the property range from sea level at the south west corner, to 1065 metres at the peak of Hecate Mountain. Topographic relief ranges from moderate slopes in the west central parts of the property to extremely rugged near Hecate Mountain and the major creek valleys.

Most of the property has been logged, with ground cover ranging from fresh slash to stands of alder, clinging vines and immature spruce and cedar, depending on the age of the new growth. Underbrush in most of the southern, less recently logged, areas is extremely dense.

Cass and Sweetwater creeks dissect the property, draining south and west into Uchucklesit Inlet, while Handy creek and its tributaries drain east and south off the eastern side of the property. Smaller creeks abound and sufficient water for exploration is unlikely to ever be a problem on the property.

Climate in the property area is generally mild, with snow cover on the upper elevations during mid-winter months. Precipitation in the area is very heavy, averaging 200 days a year rainfall.

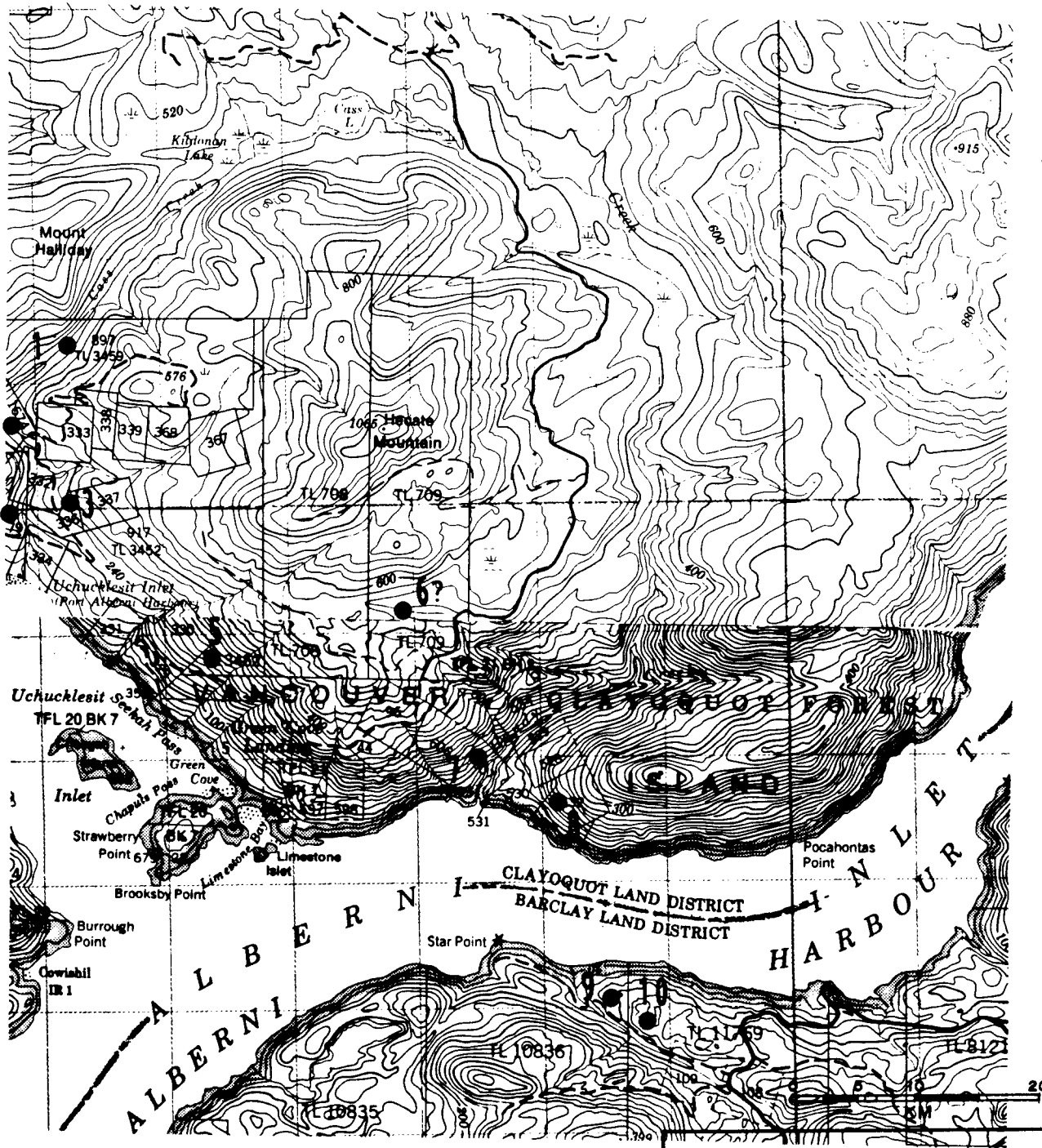
4.0 HISTORY

The area around Uchucklesit and Alberni Inlets contains numerous old workings and previous small producers. The Alberni area has been noted for its unusually high density of mineral occurrences, nearly four times the average of the British Columbia Cordillera as a whole (Sutherland-Brown, 1988). Most of the old workings date back to the turn of the century when the area was heavily prospected for copper.

The Cascade property, on the western edge of the Gold Nugget property, was prospected at the turn of the century following the discovery of patches of high grade chalcopryrite in limestone replacement bodies. 124 tons was mined in 1904 and 1905, yielding 104 oz of silver and 32,251 lbs copper. Mining ceased after 1905 due to a property dispute with a local fishery (MMAR 1916). The matrix for the mineralization is not described but is assumed to be skarn related.

On the Sunshine property (lots 332,336-37) to the east of the Cascade property copper was found as chalcopryrite found with magnetite in bands and lenses in an epidote-garnet skarn which followed a limestone/diorite contact. In 1916, 5 tons were mined from the property yielding 7 oz of silver and 1915 pounds of copper (MMAR 1916). Much the same description is given for the Saucy Lass prospect (lots 1673-77) to the northwest of the Sunshine property, although no assay values are reported.

Perhaps the most intriguing occurrence is the Defiance group. The location for this group is not precisely known though the 1916 Minister of Mines Annual report describes the property as being "at the headwaters of a tributary of Handy Creek about 4000 feet from shore". Minfile places this occurrence near the centre of the southern end of the Gold Vein claim, which fits the earlier description. Apparently there were fairly extensive



MINERAL OCCURANCES (Commodity)

- | | |
|-----------------------------|-------------------------|
| 1 Black Prince (Fe) | 6 Defiance (Fe, Cu, Ag) |
| 2 Saucy Lass (Cu, Ag) | 7 Happy John (Cu, Au) |
| 3 Sunshine (Cu, Ag, Au) * | 8 Monitor (Cu, Au) * |
| 4 Cascade (Cu, Ag) * | 9 Gladys (Cu, Au, Ag) |
| 5 Southern Cross (Cu, Ag) * | 10 Edith (Cu, Ag) |

* Former producer
 ? Location uncertain

Source: Minfile & Minister of Mines Annual Reports.

LOCAL MINERAL OCCURANCES AND PAST PRODUCERS

NTS: 92F/2W

ALBERNI M.D.

92C/15W

COMPILED BY: EPC

DRAWN BY: P.H.

SCALE-1:50,000

DATE: Nov., 1989

REVISED:

FIG. 2

workings, although no descriptions for them have been found. A sample taken from the dump material in 1916 yielded 1.2 oz silver, 3.3% copper and 52.6% iron (MMAR 1916). The showing was described as magnetite bearing skarn scattered through diorite adjacent to a limestone contact. Careful prospecting during the next program may be able to locate this occurrence.

Several other occurrences are found to the south of the property. Most of these, such as the Southern Cross, Happy John and Monitor are also skarn related with attendant copper, silver and gold values. More extensive accounts of these occurrences can be found in the 1988 report on the Gold Nugget property (Borovic, 1988). Locations for MINFILE occurrences local to the claims, including those described above can be found on figure number 2.

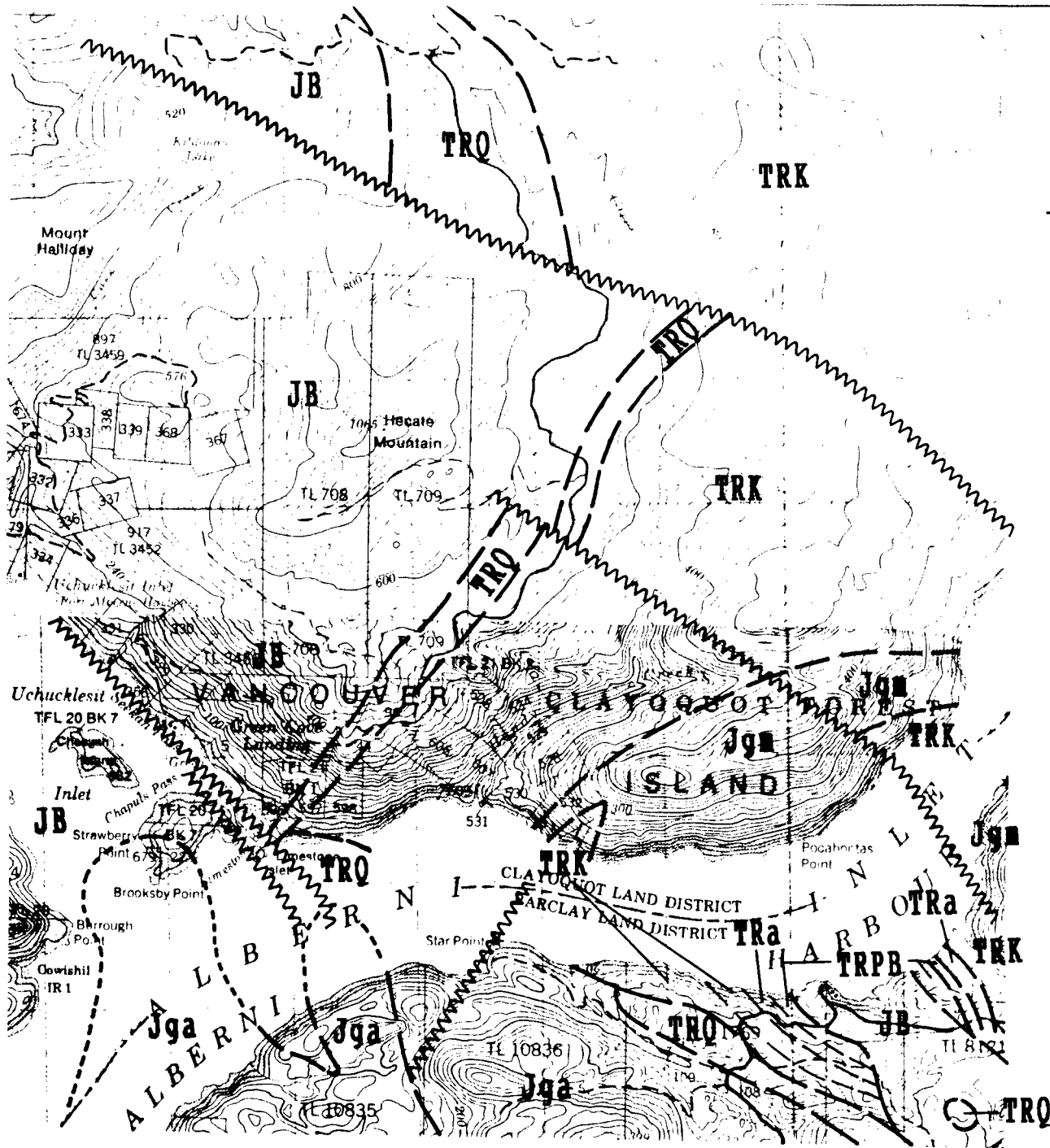
4.1 PROPERTY HISTORY

The property was first staked in November 1987. In January and February 1988 a program of combined geological, geophysical and geochemical work was conducted by IGNA Engineering and Consulting Ltd. for Barona Resources Ltd. The program identified a number of areas of sulfide mineralization containing significant levels of copper content, and identified several areas of anomalous geophysical and geochemical response requiring further work.

5.0 REGIONAL GEOLOGY (fig. 3)

Vancouver Island lies within the western most major tectonic sub-division of the Canadian Cordillera, the Insular Belt. According to Sutherland-Brown and Yorath (1987) "the area is dominated by three thick, discrete volcanic piles separated by thinner platformal sequences and penetrated by a major group of plutons that are consanguineous and coeval with the youngest pile. The tectonic settings of the three superimposed volcanic sequences evolved from a primitive marine arc to a marine rift, and then to a mature emergent arc".

The regional area is underlain by the Triassic Karmutsen formation, a thick pile composed of a lower pillow lava member, an intermediate pillow breccia and an upper massive amygdaloidal member all containing diabase and microdiorite sills. This is overlain by massive grey limestone of the late Triassic Quatsino formation. Two thin upper Triassic units, the Parson Bay formation composed of flaggy argillite, greywacke and sandy and shaley limestone, and the Sutton group of limestones overlie the Quatsino formation. Overlying these formations is the early Jurassic Bonanza group, a thick sequence consisting of a lower fine grained felsic tuff, the intermediate Redbed massive dacitic tuff and the upper pyroclastic andesites, grading to rhyolitic tuffs at the top of the formation. All of the above are intruded by batholiths and stocks of the Island Intrusions, largely composed of quartz diorite to granitic rocks believed to be of Jurassic age. (Muller, 1977)



FORMATIONS

| <u>SEDIMENTARY ROCKS</u> | | <u>INTRUSIVE ROCKS</u> | |
|--------------------------|---|------------------------|--|
| JB | Argillite , Greywacke Basalt to Rhyolitic Lavas. | Jga | Island Intrusions: Granodiorite , Quartz Diorite. |
| TRPB | <u>Parsons Bay Formation:</u> Calcareous Siltstone , Greywacke , silty Limestone. | Jgm | Island Intrusions: Granite , Quartz Monzonite |
| TRQ | <u>Quesno Formation:</u> Massive Limestone. | | |
| TRK | <u>Karmutsen Formation:</u> Basaltic Lava , pillow Lava, Breccia Tuff. | | |

REGIONAL GEOLOGY

FIG. 3

| | |
|------------------|-------------------|
| COMPILED BY: EPC | DRAWN BY: P.H. |
| SCALE-1 : 50,000 | DATE: Nov. , 1989 |

REVISED:

Regional Geology after : Muller (1977) , Sutherland - Brown , etal (1987)

Vanguard Consulting Ltd.

5.1 PROPERTY GEOLOGY

Layered rock on the property is composed of massive, gray Quatsino limestone which is found most abundantly in the south and east, a thin member of Parsons Bay argillite seen in the central property area, and an overlying section of andesitic Bonanza volcanics. These units are intruded by generally felsic Island intrusive, as a pluton in the northwest of the property and as dykes or small plugs in the southwest.

The area has undergone several episodes of structural deformation and precise relationships are difficult to recognize in detail, but the general trend of layered lithologies is to the NNE through the property. Evidence in the southeastern part of the property that the Bonanza volcanics were emplaced into a karst topography further complicates structural interpretation. Some evidence from surrounding ground indicates that an arc structure, open toward and centered to the east, may exist; such an arc, if present, could be the result of the intrusive activity or may represent the result of progressive structural deformation. Detailed study of the Parsons Bay lithologies would greatly aid future structural interpretation.

An examination of the showings in the west-central area of the property, reported by Borovic in 1988, indicated an alignment along a linear feature trending slightly north of east. This feature, interpreted as a fault cutting all lithologies, is presented on Figure 4. It should be noted that the area where this feature intersects the northerly trending fault mapped by Borovic contains the most pervasive silicification seen in the area. It should also be noted that rock sample GNC-01, of minor shearing and silicification in andesite several km east of the trend, contained elevated amounts (2527 ppm) of copper.

A section of new road located in the south-central portion of the Gold Nugget claim was geologically mapped and sampled and is presented on Figure 5 at 1:2500 scale. The sampling did not return results of economic significance; sample descriptions are presented as Appendix B. A portion of the main road in the southeastern part of the Gold Vein claim was also geologically mapped and is presented on Figure 4 at 1:5000 scale.

David Leffer
25/11/89



REFERENCES

- Borovic, I. (1988) "Report on the Mineral Exploration of the Gold Nugget Property" Private report for Barona Resources Ltd.
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- Sutherland Brown, A. 1988; "Mineral Inventory of the Alberni Region Vancouver Island, British Columbia"; British Columbia Mineral Resources Division; Open File 1988-24
- Sutherland Brown, A., Yorath, C.J., Anderson, R.G., and Dom, K. , 1986; "Geological Maps of Southern Vancouver Island, LITHOPROBE 1" ; Geological Survey of Canada, Open File 1272

APPENDIX A
CERTIFICATE

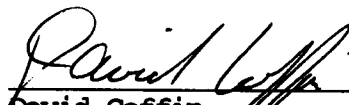


CERTIFICATE

I, David Coffin, of the City of Vancouver in the Province of British Columbia, do hereby certify that:

- I) I am a consultant with the firm of Vanguard Consulting Ltd. at 510 - 1185 West Georgia St., Vancouver, B.C., V6E 4E6.
- II) I attended the Haileybury School of Mines, Ontario, in the department of Mining Technology, from 1975 to 1977.
- III) Since 1974 I have worked at a variety of jobs in the Canadian mineral exploration field, including regional and detailed prospecting, detailed geological mapping, core logging, property and project management, property valuation and program development.
- IV) This report is based on fieldwork undertaken by myself during October, 1989, on information supplied by Barona Resources Ltd., and from public sources where available.
- v) I hold no direct or indirect interest in the properties described herein, or in any securities of Barona Resources Ltd. or any associated companies, nor do I expect to receive any.
- vi) This report may be utilized by Barona Resources Ltd., for inclusion in a Prospectus or a Statement of Material Facts.

Submitted at Vancouver, B.C.



David Coffin
November 25, 1989

APPENDIX B

SAMPLE DESCRIPTIONS



Gold Nugget Program

October, 1989

Sample Descriptions

- GNC 01** **Grab**
Sample taken near the end of road "G-9", northwestern portion of property. Grab sample from a shear zone trending 170°/ 85E with minor quartz and calcite alteration; reddish gouge ~20cm wide.
- GNC 02** **60 cm Chip**
Taken on Powderhouse road at 230 m. A pyrite "skarn", approximately 2 metres wide, heavy pyrite content, up to "massive, black weathering, some epidote and bands of garnet.
- GNC 03** **20 cm Chip**
Taken on Powderhouse road at 584 m. A small (~0.2m) skarn in grey limestone, more silicified than most seen with tourmaline and disseminated pyrite. Trends 010/ subvertical.
- GNC 04** **100 cm Chip**
Taken on Powderhouse road at 886 m. Large block of banded skarn. Bands are garnet and tremolite with pyrite in the garnet bands, especially near the limestone. Skarn has an irregular flare structure with a trend of 090/35N.
- GNC 05** **50 cm Chip**
Taken on Powderhouse road at 939 m. The northeast margin of a volcanic dyke trending 110/80SW. 30 to 60 cm. wide alteration zone in limestone containing quartz, chlorite, pyrite and some garnet.
- GNC 06** **130 cm. Chip**
Taken on Powderhouse road at 939 m. A 120 cm dyke trending 110/80SW composed of dark green intermediate volcanic with feldspar and calcite stringers filling fractures parallel to trend. Increased chlorite and tremolite at the SW margin.
- GNC 07** **100 cm. Chip**
Taken on Powderhouse road at 936 m. Silicified zone with pyrite, magnesite(?) staining on surface. Zone has a red-black and buff banded weathering pattern. Trends 030/60E and is in irregular contact with andesite below. Zone contains a silicified shear trending 148/42SW. Sample taken across shear and silicified zone.

GNC 08 200 cm. Chip
Medium grained siliceous zone containing disseminated pyrite (~5%), epidote fills narrow fractures trending 130/65NE to 050/20N.

GNC 09 Grab
Taken from Powderhouse road near upper junction. Heavily leached quartz pyrite outcrop with hematite and manganese staining. Outcrop contains clots of pyrite with crystals to 1 cm, averaging 3-4mm.

GNC 10 200 cm. Chip
Taken on Powderhouse road at 71 m from upper junction. @ metre chip from a limestone inclusion in andesite with a 3 cm. shear on the west side trending 140°. Limestone has been silicified and pyritized.

GNC 11 175 cm. Chip
Taken on upper road 30 metres from junction. Zone of silica replacement in ?andesite, defined by a trend of 055/flat lying to 30NW.



APPENDIX C

ANALYTICAL PROCEDURE AND RESULTS



MIN-EN Laboratories Ltd.

Specialists in Mineral Environments

Corner 15th Street and Bewicke
705 WEST 15th STREET
NORTH VANCOUVER, B.C.
CANADA

ANALYTICAL PROCEDURE REPORTS FOR ASSESSMENT WORK

PROCEDURE FOR GOLD GEOCHEMICAL ANALYSIS.

Geochemical samples for Gold processed by Min-En Laboratories Ltd., at 705 W. 15th St., North Vancouver Laboratory employing the following procedures.

After drying the samples at 95°C soil and stream sediment samples are screened by 80 mesh sieve to obtain the minus 80 mesh fraction for analysis. The rock samples are crushed and pulverized by ceramic plated pulverizer.

A suitable sample weight 5.0 or 10.0 grams are pre-treated with HNO_3 and HClO_4 mixture.

After pretreatments the samples are digested with Aqua Regia solution, and after digestion the samples are taken up with 25% HCl to suitable volume.

At this stage of the procedure copper, silver and zinc can be analysed from suitable aliquots by Atomic Absorption Spectrophotometric procedure.

Further oxidation and treatment of at least 75% of the original sample solutions are made suitable for extraction of gold with Methyl Iso-Butyl Ketone.

With a set of suitable standard solution gold is analysed by Atomic Absorption instruments. The obtained detection limit is 5 ppb.



**MINERAL
• ENVIRONMENTS
LABORATORIES**

ANALYTICAL PROCEDURE REPORT FOR ASSESSMENT WORK:

PROCEDURE FOR GOLD ASSAY:

Samples are received, catalogued and dried at 105°C if necessary.

Whole sample is passed through a primary crusher which reduces sample to $-\frac{1}{2}$ inch.

Whole sample is further passed through a secondary crusher which further reduces the sample to -10 mesh.

The whole sample is riffled through a $\frac{1}{2}$ inch riffle to obtain a subsample of approx 300-400 grams. The remaining reject is bagged and stored.

The above 300-400 gram split is then pulverized to obtain the -150 mesh using ring 3 dimensional action mill pulverizer.

Sample pulp is now rolled and analysed.

The sample pulp is assayed for gold using a 1 assay ton fire assay preconcentration and atomic absorption finishing techniques.

The remaining sample pulp is retained and stored.

RECOMMENDED PROCEDURE FOR FIRE ASSAY GOLD AND SILVER

Samples are dried at 120° F and after being crushed on a primary crusher to 1/2 inch size they are crushed on a secondary crusher to minus 10 mesh before being split on Jone's riffle. (In accordance with Gy's statistical rules).

At the splitting a 500 gram subsample is obtained which is pulverized to minus 100 mesh. After that the sample is mixed, rolled and quartered.

The assay is carried out on a one half assay ton sample, fire assayed at 1750° C with appropriate fluxes.

The lead bottom is then cupeled. (The silver bid can be weighed and the amount calculated, but it's accuracy is questionable.) Then the small bid is dissolved in aqua regia and analysed on the atomic absorption instrument for gold.

Results can be reported either in oz/ton 0.001 sensitivity or gram per metric ton upon request.

In every batch of 20 samples we have one in house natural standard.

For silver a completely separate assay is preferred on a 5.000 gram of subsample, where the sample is dissolved in aqua regia with a chemical separation and filtering. The amount of silver is determined by Atomic Absorption instrumentation.



**MINERAL
• ENVIRONMENTS
LABORATORIES**

ANALYTICAL PROCEDURE REPORT FOR ASSESSMENT WORK:
PROCEDURE FOR 31 ELEMENT TRACE ICP:

Ag, Al, As, B, Ba, Be, Bi, Ca, Cd, Co, Cu,
Fe, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, Sb,
Sr, Th, U, V, Zn, Ga, Sn, W, Cr

Samples are processed by Min-En Laboratories., at 705 West 15th Street, North Vancouver, employing the following procedures.

After drying the samples at 95°C soil and stream sediment samples are screened by 80 mesh sieve to obtain the minus 80 mesh fraction for analysis. The rock samples are crushed by a jaw crusher and pulverized by ceramic plated pulverizer or ring mill pulverizer.

1.0 gram of the sample is digested for 4 hours with an aqua regia HClO_4 mixture.

After cooling samples are diluted to standard volume. The solutions are analysed by computer operated Jarrall Ash 9000 ICAP or Jobin Yvon 70 Type II Inductively Coupled Plasma Spectrometers. Reports are formatted and printed using a dot-matrix printer.

*MIN-EN Laboratories Ltd.**Specialists in Mineral Environments*

Corner 15th Street and Bewicke
 705 WEST 15TH STREET
 NORTH VANCOUVER, B.C.
 CANADA V7M 1T2

METALLIC GOLD ASSAYS

A sub-sample assay pulp is sieved to -120 mesh. The +120 fraction is then assayed totally and the -120 fraction assayed twice. From these assay values one makes a metallics calculation as follows:

| | |
|------------------------|----------|
| Total pulp weight (gm) | 426.1 gm |
| +120 mesh weight (gm) | 14.2 gm |

Assay value of -120 mesh pulp: 2.18 and 2.20 gm/tonne

Assay value of +120 mesh pulp: 6.12 gm/tonne

CALCULATIONS:+120 Mesh Au (mg)

| | | | | |
|-------------|---|-----------------|---|-------------------|
| 6.12 | x | .0142 | = | <u>.087 mg Au</u> |
| Assay value | | +120 wt. in kg. | | Au weight in mg. |

-120 Mesh Au (mg)

| | | | | |
|-------------------------|---|-----------------------------|---|--|
| $\frac{2.18 + 2.20}{2}$ | x | $\frac{426.1 - 14.2}{1000}$ | = | |
|-------------------------|---|-----------------------------|---|--|

| | | | | |
|---------------------|--|----------------------|--|--|
| Average assay value | | -120 mesh wt. in kg. | | |
|---------------------|--|----------------------|--|--|

| | | | | |
|------|---|-------|---|--------------------|
| 2.19 | x | .4119 | = | <u>0.902 mg Au</u> |
|------|---|-------|---|--------------------|

APPENDIX D
COST BREAKDOWN



COST BREAKDOWN

GOLD NUGGET ASSESSMENT, OCTOBER, 1989

Consulting - Field

David Coffin

Geological mapping and sampling

6 days @ \$325.00 \$ 1,950.00

Eric Coffin

Geological mapping, assistant

6 days @ \$225.00 1,350.00

Subtotal \$ 3,300.00

Expenses*

Assays and analyses \$ 196.08

Field Gear 124.08

Groceries, Meals, Accommodations 333.38

Maps, Mylars, Reproductions, copying 344.93

Truck and Chainsaw rentals 785.05

Fuel, Ferries 131.84

Subtotal, Expenses \$ 1,915.36

TOTAL COSTS \$ 5,215.36

* This program was performed at the same time as assessment work on the Liquid Sunshine property, which adjoins the Gold Nugget property to the south. All expenses (with the exception of assay costs) were totalled and then pro rated to each project, 2/3 as to Gold Nugget, 1/3 as to Liquid Sunshine

GEOLOGY

FIG. 4

COMPILED BY - E.P.C. DRAWN BY - P.H.

SCALE - 1 : 5000 DATE - Nov. 1989

REVISED: VANGUARD CONSULTING LTD.

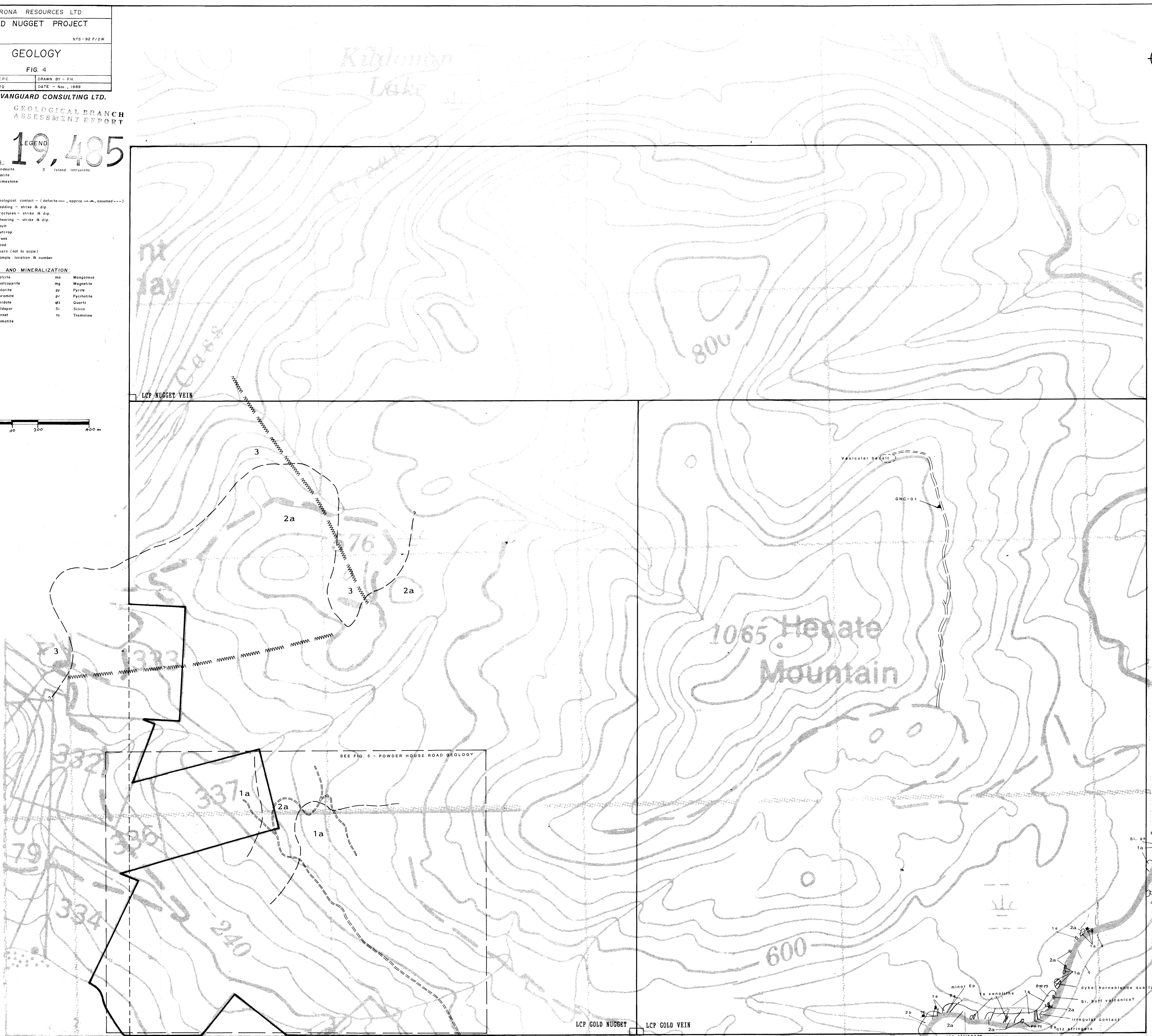
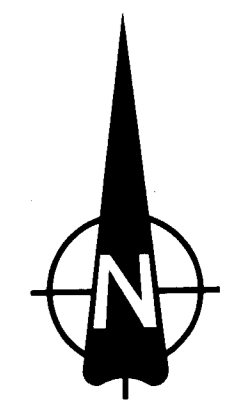
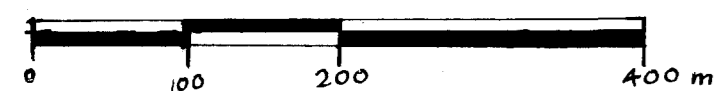
GEOLOGICAL BRANCH
ASSESSMENT REPORT

LEGEND
19,485

- FORMATIONS:
- 2a Andesite
 - 2b Dacite
 - 1a Limestone
 - 3 Island intrusions

- SYMBOLS:
- Geological contact - (definite ---, approx - - - , assumed - - - -)
 - Bedding - strike & dip
 - Fractures - strike & dip
 - Shearing - strike & dip
 - Fault
 - Outcrop
 - Creek
 - Road
 - Skarn (not to scale)
 - Sample location & number

- ALTERATION AND MINERALIZATION:
- | | | | |
|-----|--------------|-----|------------|
| col | Calcite | mn | Manganese |
| cp | Chalcopyrite | mg | Magnetite |
| Cl | Chlorite | py | Pyrite |
| ch | Chromite | pr | Pyrrhotite |
| Ep | Epidote | qtz | Quartz |
| fx | Feldspar | si | Silica |
| go | Garnet | tr | Tremolite |
| hem | Hematite | | |



LCP NUGGET VEIN

333

332

337

335

334

SEE FIG. 5 - POWDER HOUSE ROAD GEOLOGY

1065 Hecate Mountain

LCP GOLD NUGGET LCP GOLD VEIN

minor Ep
1a xenoliths
dyke hornblende quartz diorite
Si. por volcanics?
irregular contact
qtz stringers