

Title: Geological Report on the Ren-Nimrod Property

Claims: Ren 1 533(2) 1 unit  
Ren 2 534(2) 1 unit  
Ren 3 535(2) 1 unit  
Ren 4 536(2) 1 unit  
  
Nimrod 1 445(9) 1 unit  
Nimrod 2 446(9) 1 unit  
Nimrod 3 447(9) 1 unit  
Nimrod 4 448(9) 1 unit  
Nimrod 5 449(9) 1 unit  
Nimrod 6 450(9) 1 unit

Mining District: Nanaimo

NTS Location: NTS Sheet 92L, 50° 31' Latitude  
126° 53' Longitude

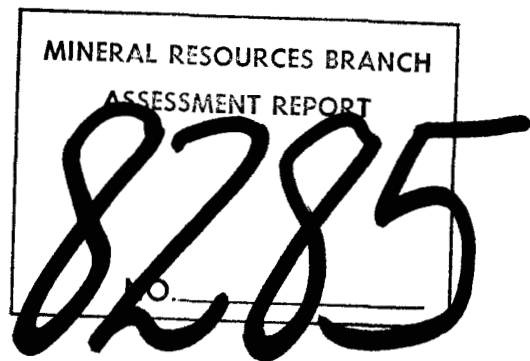
Owner: Skidagate Exploration Limited

Consultant: Nevin Sadlier-Brown Goodbrand Limited

Author : D.J. Brownlee, Geologist

Dates Work Done: April 20 - 22, 1980  
May 30 - June 5, 1980  
September 2 - 5, 1980

Date Submitted: -3.OCT.1980



SUMMARY

Nevin Sadlier-Brown Goodbrand Ltd. conducted a geological survey on Skidagate Exploration Ltd.'s Ren-Nimrod Property Nanaimo Mining District. This report is for submittal under Mineral Act Regulations to apply assessment work.

The property is located at Latitude 50° 31' and Longitude 126° 53'. The Ren-Nimrod Property consists of the Ren 1 to 4 and Nimrod 1 to 6 mineral claims.

The geology was mapped at a scale of 1: 1 000 (Drawings 4 & 5). The property is underlain by Karmutsen Volcanics conformably overlain by Quatsino limestone. The limestone is cut by andesitic and porphyritic rhyolite feeder dikes of the Bonanza Volcanics. These formations are all intruded by Island intrusives which is surrounded by a contact metamorphic zone.

The sphalerite galena mineralization is associated with the porphyritic rhyolite dikes where they intrude Quatsino limestone.

We have recommended to our client that a geophysical and geochemical survey be carried out in order to delineate the porphyritic rhyolite dike system.

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DRAWINGS

following final page

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- Drawing 3 - Regional Geology
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1.0 INTRODUCTION

1.1 Terms of Reference

Nevin Sadlier-Brown Goodbrand Ltd. has been retained by Skidagate Exploration Ltd. as technical consultants on their Ren-Nimrod Property. We conducted geological surveys on the claims, between April and August 1980. We have prepared this report for submission to the Ministry of Energy, Mines and Petroleum Resources as required under Mineral Act Regulations to apply assessment work.

1.2 Location and Access

The property is located at Latitude 50<sup>0</sup> 31' and Longitude 126<sup>0</sup> 53' and is covered by NTS sheet 92L (Drawing 1). Access is by highway and logging roads from Port McNeil British Columbia.

1.3 Terrain

The property is located in semi-rugged terrain on the north-east coast of Vancouver Island, with local relief up to 700 metres. The vegetation is West Coast rain forest type, with alder predominant in the logged areas. The drainage is sub-rectangular in pattern with the creeks flowing year round.

1.4 Property

The Ren-Nimrod Property consists of ten contiguous two post claims (Drawing 2):

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<u>Claim</u>	<u>Record No.</u>	<u>Units</u>
Ren 1	533(2)	1
Ren 2	534(2)	1
Ren 3	535(2)	1
Ren 4	536(2)	1
Nimrod 1	445(9)	1
Nimrod 2	446(9)	1
Nimrod 3	447(9)	1
Nimrod 4	448(9)	1
Nimrod 5	449(9)	1
Nimrod 6	450(9)	1

### 1.5 Previous Work

The only previous work done on the property was by Lorena Mines Ltd. (NPL) on their Lorena Group which was staked during 1972-73. The claims were staked over a copper showing in the Karmutsen Formation Volcanics. The showings are comprised of chalcopryrite, malachite, and azurite in association with pyrite, magnetite, chlorite, and calcite in amygdaloidal filling, fracture fillings and disseminations. The location of this showing on the property is not known, nor if any work other than preliminary exploration was done. No work was done on these showings during this survey of the property.

The Nimrod claims were staked in August of 1979 and the Ren claims in February of 1980. These claims were staked to cover a massive sphalerite-galena showing found in 1959 by a forestry

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engineer. L.J. Werner was contracted to do an initial investigation of these showings in October of 1979. At this time the showing was blasted and three samples were taken for assay, yielding 11.3% combined lead-zinc from a one metre channel sample, and 21.3% and 50.3% combined lead-zinc from grab samples.

#### 1.6 Work Done

The work covered by this report was done between April and September 1980. An initial investigation was carried out April 20-22, 1980 by A.E. Nevin, P.Eng. and T.L. Sadlier-Brown, Geologist.

During the period May 20 - June 5, 1980, D.J. Brownlee, Geologist, and B. Squire mapped the geology of the property and "lamped" the intrusive-limestone contact for scheelite.

The geological mapping was completed during the period September 2 - 5, 1980 by D.J. Brownlee.

### 2.0 GEOLOGY

#### 2.1 Regional Geology

The region is composed mainly of the Vancouver Group rocks (Drawing 1, Table 1). The Vancouver Group consists of Triassic Volcanics of the Karmutsen Formation, conformably overlain by the Quatsino Formation limestone. These are

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TABLE 1

PERIOD	STAGES	GROUP OR FORMATION	MAP UNIT	LITHOLOGY	THICKNESS (Feet)	
TERTIARY	Miocene?	Tertiary Volcanics, Sediments	Tv Ts	Basaltic to dacitic lava, tuff, breccia; conglomerate conglomerate	1,000	
	Not in contact; disconformable?					
	Eocene?	Tertiary Intrusions	Tg	Quartzdiorite		
	Intrusive contact in Alberni map-area					
CRETACEOUS	UPPER	Maestrichtian? Campanian	Nanaimo Group (incl. Suquash Fm.)	uKN	Greywacke, siltstone, shale conglomerate, coal	400
		Disconformable contact?				
		Cenomanian Albian	Queen Charlotte Group	IKQc	Greywacke, conglomerate, siltstone, shale, coal	1,000-3,500
	Disconformable contact					
	LOWER	Barremian Hauterivian Valanginian	Longarm Formation	IKL	Greywacke, conglomerate, siltstone	200-1,300
		Equal age but diverse tectonic setting				
		Pacific Rim Sequence	JKs	Argillite, greywacke? conglomerate		
JURASSIC	MIDDLE	Unconformable contact				
			Island Intrusions	Jg	Quartz diorite, granodiorite, quartz monzonite, quartz-feldspar porphyry	
		Intrusive contact				
	LOWER	Pliensbachian Sinemurian	Vancouver Group (gradational contacts within group)			
			Bonanza Volcanics Harbledown Fm.	IJev JH	Andesitic to rhyodacitic lava, tuff, breccia; greywacke, argillite, tuff	1,000-18,500
TRIASSIC	UPPER	Norian	Parson Bay Fm.	uRPB	Calcareous siltstone, shale, greywacke, conglomerate, breccia	1,000-2,000
		Karnian	Quatsino Fm.	uRQ	Limestone	100-2,500
			Karmutsen Fm. includes in upper part Intervolcanic Limestone	muRk uRQ2	Basaltic lava, pillow lava, breccia Limestone	10,000-20,000
	Mid.	Ladinian	Sediment - sill unit		Diabase, argillite	2,500
PENNSYLVANIAN?		Disconformable or unconformable contact				
		Sicker Group	Ps	Limestone, siltstone	700	
		Migmatic contact?				
	pre-Cretaceous	Westcoast Complex	PMdin	Quartz diorite, agmatite, amphibolite, gneiss		

After Muller J.E. 1974

conformably overlain by the Upper Triassic volcanoclastics of the Parson Bay Formation and the volcanics of the Bonanza Subgroup.

The Vancouver Group is intruded by a batholith of the Island Intrusives which are Middle Jurassic in age. These batholiths are generally elongated north-northwesterly, sub-parallel to the major faults in the region.

The property is bounded by three regional faults; the Bonanza fault to the east, the Nimpkish fault to the west, and the Johnstone Strait fault to the north. These three faults bound a structural block known as the Nimpkish Block.

## 2.2 Property Geology

On the property, two of the formations in Vancouver Group have been mapped, the Karmutsen and Quatsino Formations (Drawings 4 & 5, Section 1).

The Karmutsen Volcanics, on the property are massive medium-dark green basaltic flows. It is difficult to distinguish individual flows. Vesicles are uncommon and generally filled with calcite, with some containing chalcopryrite, malachite, and azurite. The flows are cut by joints which are approximately perpendicular the assumed orientation of the flows. The joint surfaces are discontinuously coated with calcite, and rarely pyrite, chalcopryrite. No interbeds of limestone were found in the Karmutsen Formation where mapped.

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- 5 -

The Quatsino Formation conformably overlies the Karmutsen Formation in this area. Immediately overlying the volcanics, the limestone is massive, medium grey in colour and thickly bedded. The bedding in the area of the conformable contact is approximately  $314^{\circ} 14^{\circ}$  SW and likely reflects the orientation of the conformable contact. The jointing here is also approximately perpendicular to the bedding and coated with calcite and pyrite. The limestone grades upward into a darker more argillaceous limestone with interbeds of chert and chert modules. The limestone has been locally recrystallized in patches to "off-white" marble, along with certain beds near the contact with the intrusives being selectively recrystallized to marble. The bedding orientation becomes more erratic and steeper dipping, towards the intrusive contact.

The Quatsino Formation is intruded by dikes of andesitic to rhyolitic composition, 0.5 to 2 metres width. These dikes are most likely feeders for the Bonanza Volcanics. The andesitic dikes are fine-grained, dark green, with no phenocrysts. The porphyritic rhyolite dikes are medium grey in colour with 2-5 mm plagioclase phenocrysts. None of the dikes mapped were traceable due to the overburden and vegetation in the area. The dikes have intruded along joint planes and fractures with little deformation of the host rock. Brecciation of the host rock was noted only at the main showing.

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The intrusive is a medium grained quartz monzonite, weathering a light pinkish orange colour, becoming finer grained and granodioritic in part near the contact with the host rock.

A biotite, hornblende quartz diorite is present in the northwest block of the Ren claims. The mafic content is 10-15%. The rock is light to dark green in colour, weathering to a medium whitish green. Plagioclase phenocrysts up to 5 mm are present in a fine grained mafic matrix.

A contact metamorphic zone 1 to 10 metres thick lies between the Island Intrusive and the Quatsino Formation, where limestone has been highly contorted and silicified. The rock weathers a dark rusty reddish brown due to the 0.5 - 1% disseminated pyrite found throughout the metamorphic zone.

### 2.3 Mineralization

Minor copper mineralization consisting of chalcopyrite, malachite, and azurite in vesicles, and chalcopyrite and pyrite along fracture surfaces and disseminations are found in the Karmutsen Formation.

Adjacent to dikes cutting the Quatsino Formation, pyrite partially replaces the chert. Pyrite is also found along fracture surfaces throughout the Formation.

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- 7 -

The main showing consists of massive sphalerite-galena occurring in a brecciated zone adjacent to a porphyritic rhyolite dike. During the initial investigation it was found that the showing contained up to 0.5% scheelite, determined by ultraviolet lamp. Therefore a comprehensive survey of the property was undertaken to lamp it for scheelite. No indication of scheelite was found except at the original sphalerite-galena showing.

No mineralization was found in the intrusives, either disseminated or localized along structural elements.

### 3.0 CONCLUSIONS AND RECOMMENDATIONS

The only geologically interesting setting on the property is that of porphyritic rhyolite dikes intruding the Quatsino Formation. It is in this setting that the massive sphalerite-galena-tungsten showing occurs. It is recommended that a geophysical survey utilizing EM and/or proton magnetometre in conjunction with a soil geochemistry survey be directed at locating and tracing these dikes.

Respectfully submitted,

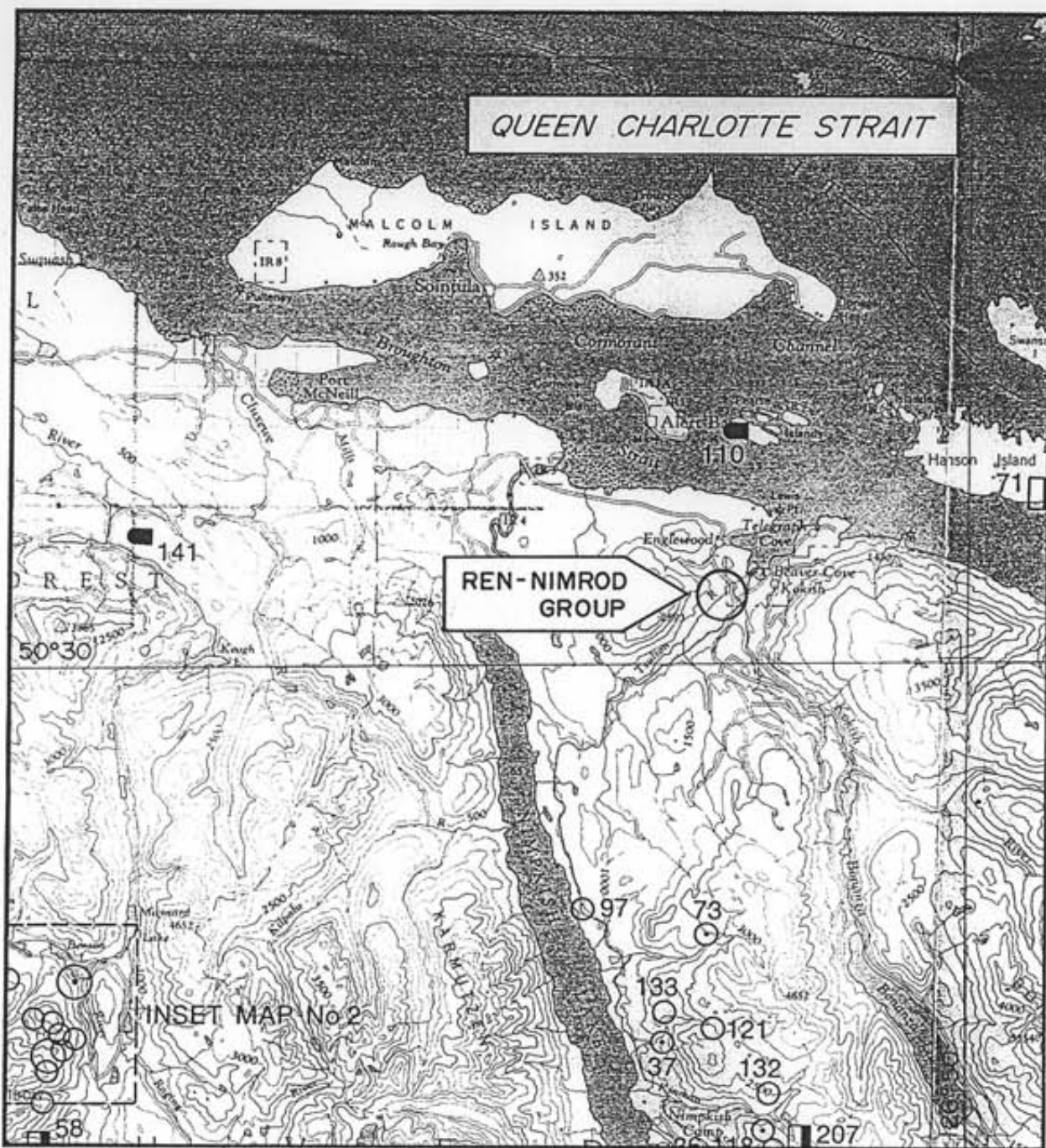
NEVIN SADLIER-BROWN GOODBRAND LTD.

  
Douglas J. Brownlee, Geologist

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SKIDAGATE EXPLORATION LTD.

**REN-NIMROD GROUP  
LOCATION MAP**

NANAIMO M.D., B.C.

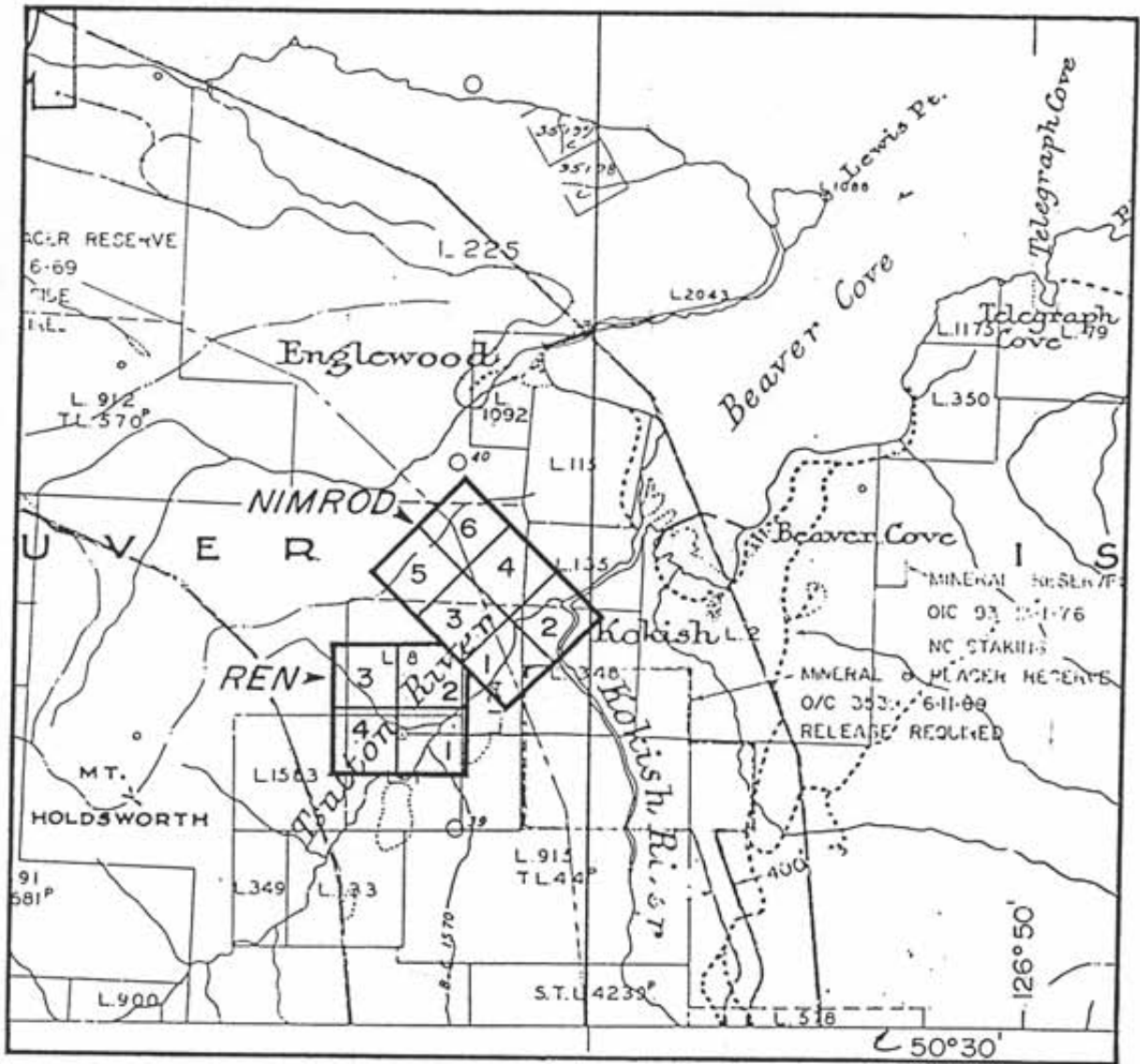
NTS SHEET 92L

DRAWN BY BEM

DRAWING N° 1

SCALE 1:250,000

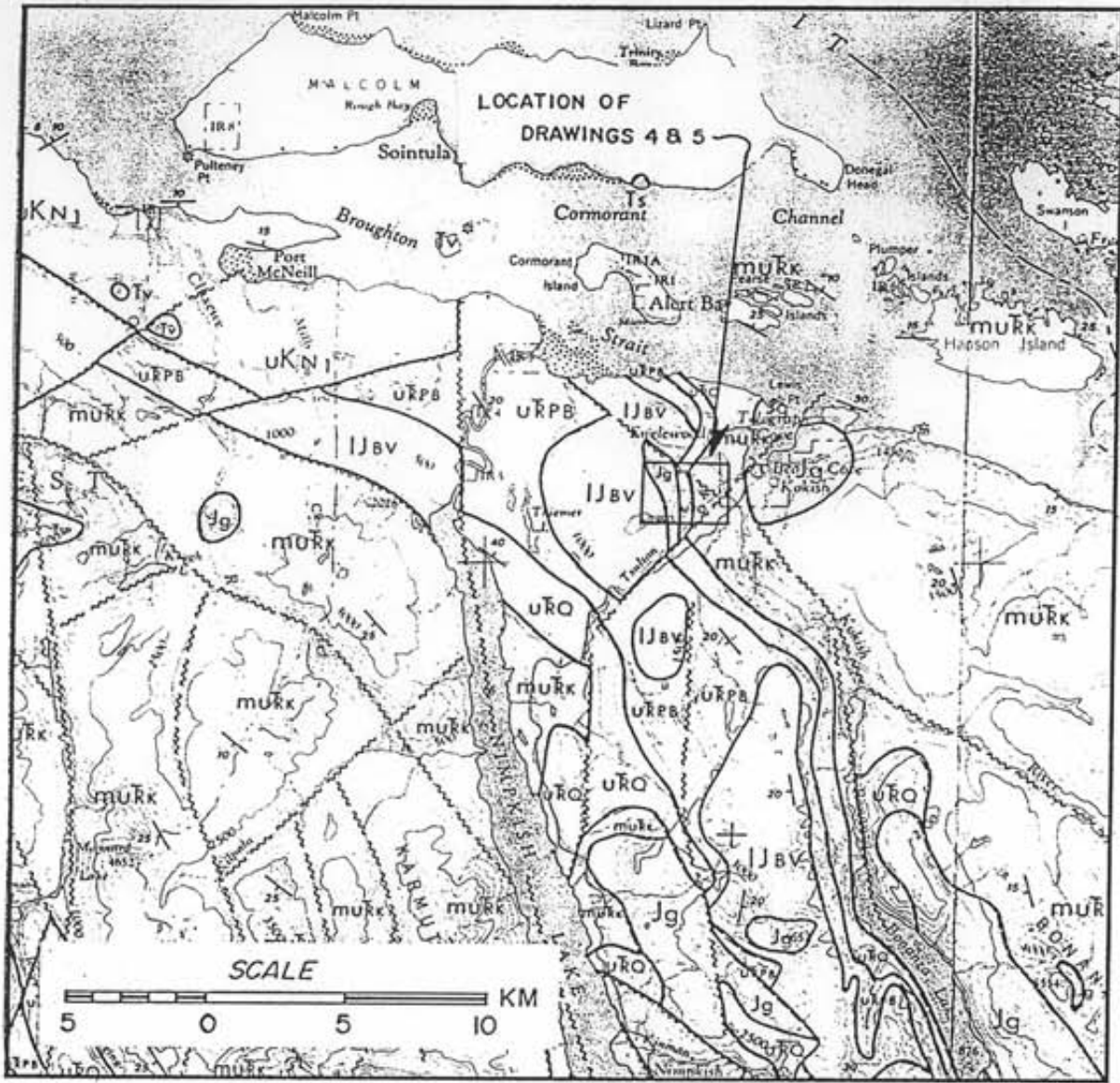
NEVIN SADLIER-BROWN GOODBRAND LTD.  
SEPTEMBER 1980



SKIDAGATE EXPLORATION LTD.	
REN - NIMROD GROUP CLAIM MAP	
NANAIMO M.D., B.C.	NTS SHEET 92L 10W
DRAWN BY BEM	DRAWING N° 2
SCALE 1:50,000	
NEVIN SADLIER-BROWN GOODBRAND LTD. SEPTEMBER 1980	

LCP LOCATION BY COMPASS & CHAIN

Geology after Muller J.E., 1974

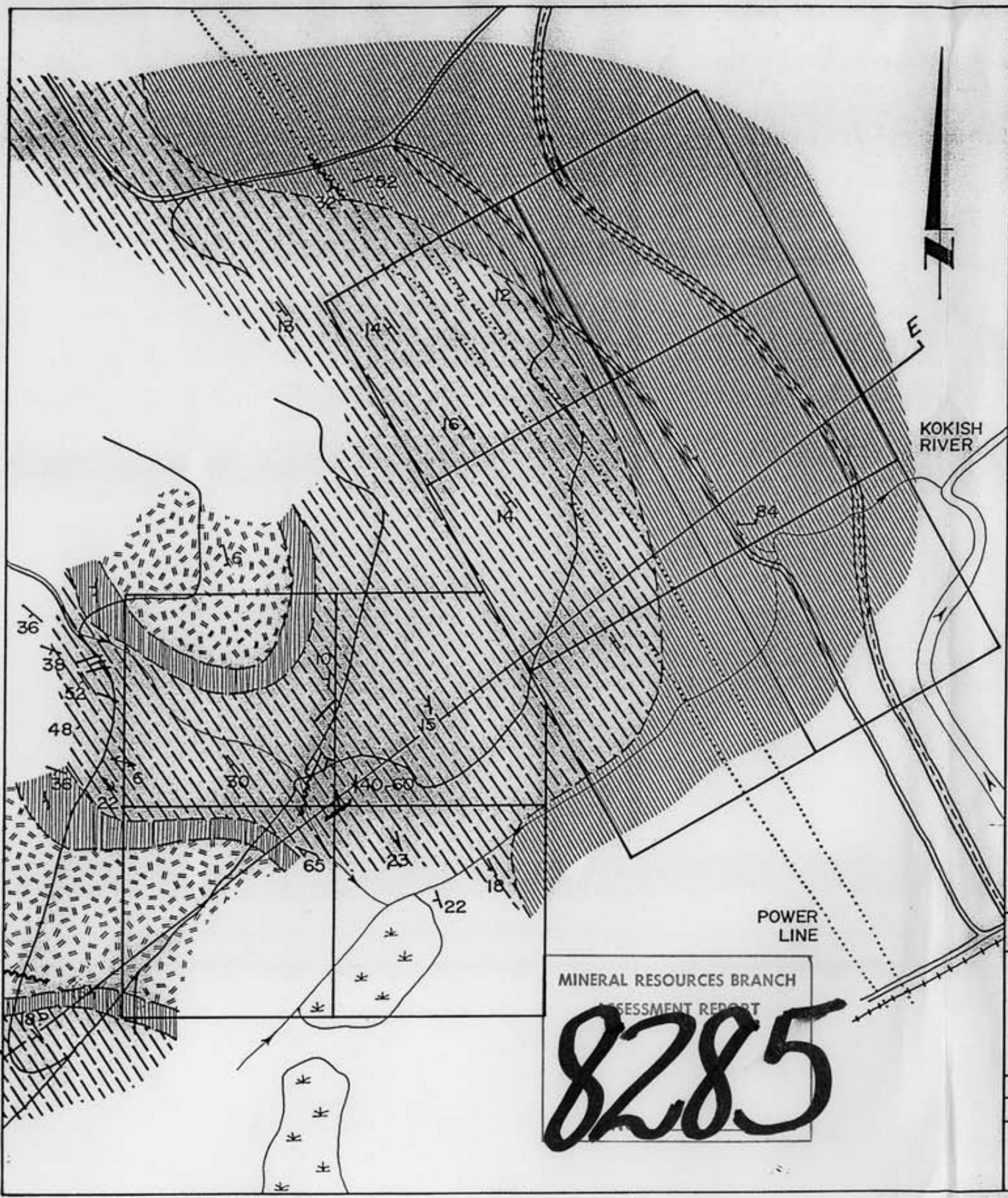


**LEGEND**







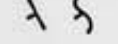




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|--------------------------------|-------|---|
| <b>TERTIARY</b>                | uRq   | QUATSINO FORMATION: limestone   |
| Ts                             | muRk  | KARMUTSEN FORMATION: basaltic lava, pillow lava, breccia, aquagene tuff |
| Tv                             | —     | GEOLOGICAL BOUNDARY - approximate                                       |
|                                | ~~~~~ | FAULT - approximate   |
| <b>CRETACEOUS</b>              |       |   |
| uKN <sub>1</sub>               |       |   |
| <b>JURASSIC</b>                |       |   |
| Jg                             |       |   |
| <b>TRIASSIC &amp; JURASSIC</b> |       |   |
| IJBV                           |       |   |
| uRPB                           |       |   |

- uKN<sub>1</sub> Greywacke, conglomerate, siltstone, coal.
- IJBV BONANZA VOLCANICS: andesitic to rhyodacitic lava, tuff, breccia
- uRPB PARSON BAY FORMATION: calcareous siltstone, shale, limestone, greywacke, conglomerate, breccia.

SKIDAGATE EXPLORATION LTD.	
<b>REN-NIMROD GROUP REGIONAL GEOLOGY</b>	
NANAIMO M.D., B.C.	NTS SHEET 92L
DRAWN BY BEM	DRAWING N° 3
SCALE 1:250,000	
NEVIN SADLIER - BROWN GOODBRAND LTD. SEPTEMBER 1980	



**LEGEND**

-  ISLAND INTRUSIVE: GRANODIORITE, QUARTZ MONZONITE, BIOTITE-HORNBLende QUARTZ DIORITE
-  CONTACT METAMORPHIC ZONE
-  QUATSINO FORMATION
-  KARMUTSEN FORMATION
-  PORPHYRITIC RHYOLITE DIKES  
ANDESITE DIKES
-  FAULTS; DEFINED, ASSUMED
-  BEDDING, CONTORTED
-  JOINTS
-  FOLDS; SYNCLINE, ANTICLINE
-  GEOLOGICAL CONTACT, ASSUMED
-  CROSS-SECTION W-E



MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT

**8285**

SKIDAGATE EXPLORATION LTD.

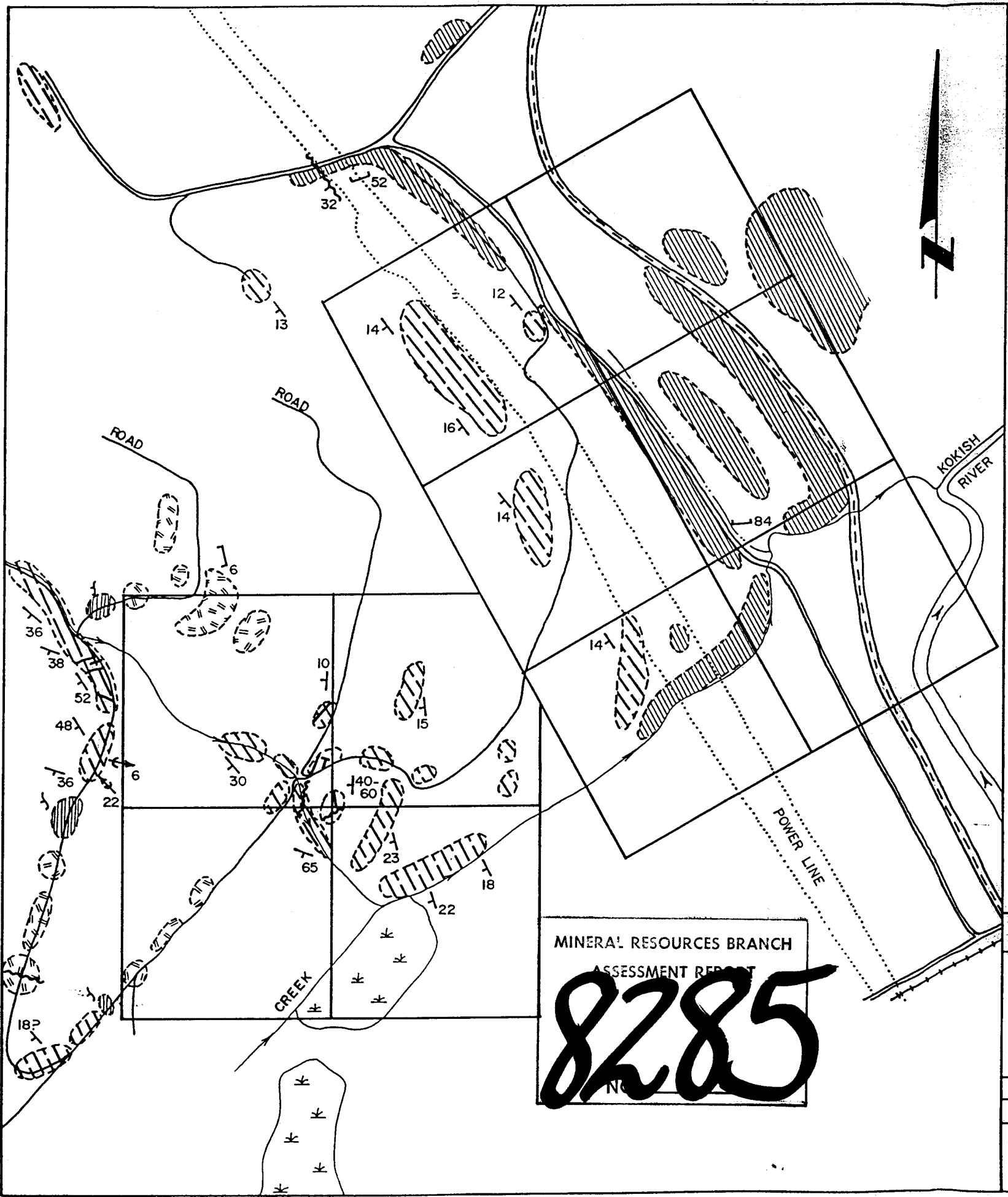
**REN-NIMROD GROUP  
GEOLOGY**

NANAIMO M.D., B.C.      NTS SHEET 92L 10W



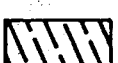





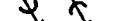
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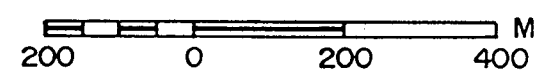
SCALE

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SEPTEMBER 1980



**LEGEND**

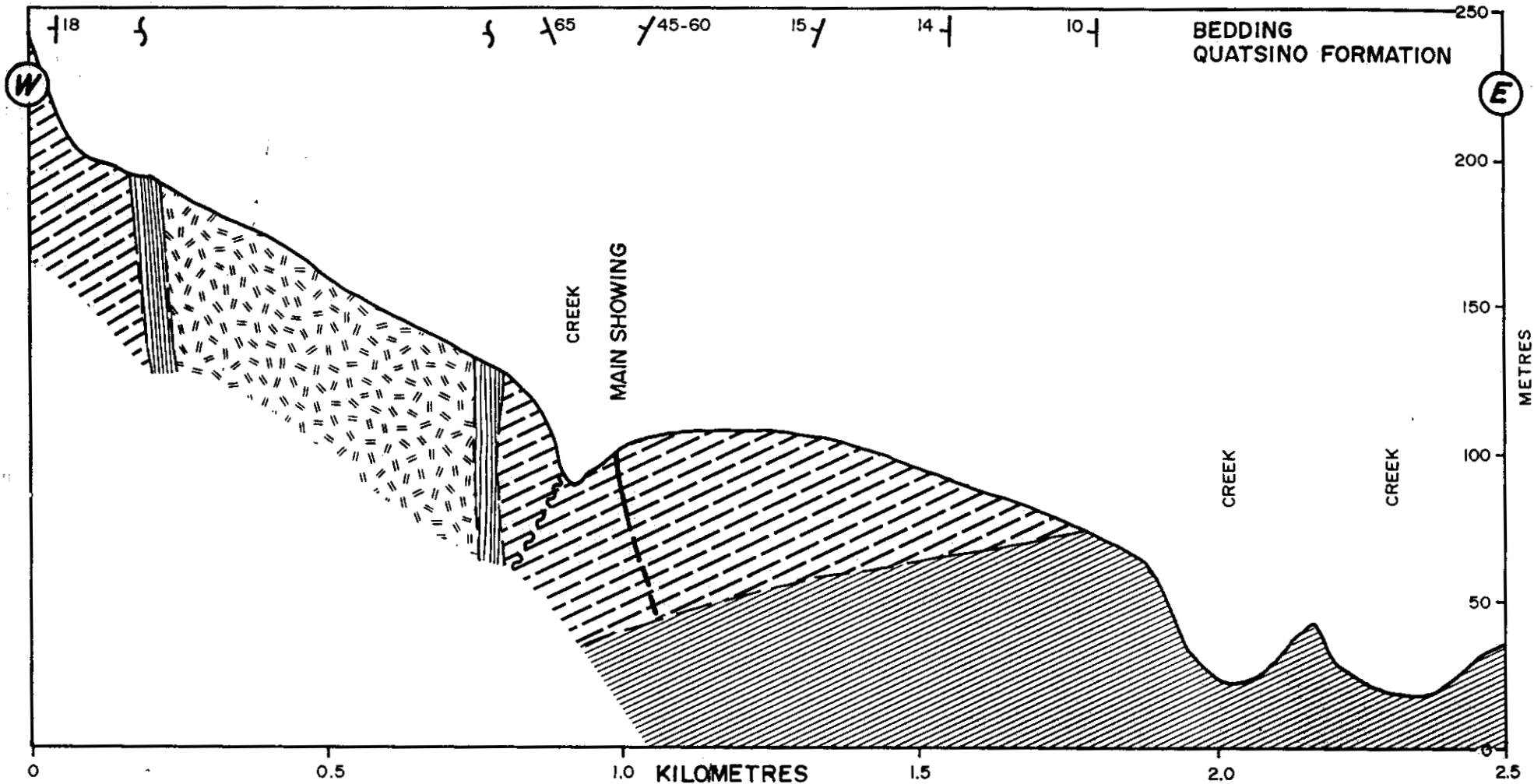
-  ISLAND INTRUSIVE: GRANODIORITE, QUARTZ MONZONITE, BIOTITE-HORNBLLENDE QUARTZ DIORITE.
-  CONTACT METAMORPHIC ZONE
-  QUATSINO FORMATION
-  KARMUTSEN FORMATION
-  PORPHYRITIC RHYOLITE DIKES  
ANDESITE DIKES
-  FAULTS; DEFINED, ASSUMED
-  BEDDING, CONTORTED
-  JOINTS
-  FOLDS; SYNCLINE, ANTICLINE










MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT  
**8285**

SKIDAGATE EXPLORATION LTD.	
<b>REN-NIMROD GROUP OUTCROP GEOLOGY</b>	
NANAIMO M.D., B.C.	NTS SHEET 92L 10W
DRAWN BY B.E.M	DRAWING N° 5
NEVIN SADLIER-BROWN GOODBRAND LTD. SEPTEMBER 1980	





**LEGEND**

- |   |                                    |   |           |
|---|------------------------------------|---|-----------|
|  | INTRUSIVE                          |  | QUATSINO  |
|  | CONTACT                            |  | KARMUTSEN |
|  | PORPHYRITIC RHYOLITE DIKE, ASSUMED |   |           |
|  | FAULT, ASSUMED                     |   |           |
|  | BEDDING, CONTORTED                 |   |           |
|  | GEOLOGIC CONTACT, ASSUMED          |   |           |

SKIDAGATE EXPLORATION LTD.

**REN-NIMROD GROUP  
CROSS-SECTION W-E**

NANAIMO M.D., B.C.

DRAWN BY BEM

DRAWING N° 6

HORIZ. SCALE 1:10,000

VERT. SCALE 1:200

NEVIN SADLIER-BROWN GOODBRAND LTD.  
SEPTEMBER 1980

APPENDIX AItemized Cost StatementFEES

T.L. Sadlier-Brown, Geologist, April 20-22, 1980, \$464/day, 2 days	\$ 928.00
A.E. Nevin, P.Eng., April 20-22, 1980, \$512/day, 2 days	1,024.00
D.J. Brownlee, Geologist, May 30 - June 5th, September 2 - 5th, 1980 \$225/day, 10 days	2,250.00
B. Squire, Geological Assistant, May 30th - June 5th, 1980, \$125/day, 6 days	<u>750.00</u>
	\$4,952.00

DISBURSEMENTS

4 x 4 Truck, \$25/day, 16¢/km, September 2-5th, 1980, 1,463 km	334.08
Fuel	69.35
Topo Map	3.64
B.C. Ferry, September 2, 5th, 1980	26.00
Hotel Accomodations, September 2-5th, 1980, 3 days	84.00
Meals, September 2-5th, 1980	<u>48.60</u>
	\$ 565.67
TOTAL	\$5,517.67

APPENDIX B

STATEMENT OF AUTHOR'S QUALIFICATION

I, Douglas J. Brownlee, hereby certify that:

1. My residence address is 206 - 1330 Bute Street, Vancouver, B.C., my office address is 4th floor - 134 Abbott Street, Vancouver, B.C., V6B 2K4; and that I am a Geologist by occupation
2. I graduated from the University of Alberta in June, 1980 with a B.Sc. (specialization) in Geology. I have been practicing my profession since January, 1980
3. I conducted the geological work described in this report.


  
Douglas J. Brownlee, Geologist

APPENDIX C

STATEMENT OF SUPERVISOR'S QUALIFICATIONS

I, Andrew E. Nevin, hereby certify that:

1. My residence address is 1201 - 1875 Robson Street, Vancouver, B.C., my office address is 4th floor - 134 Abbott Street, Vancouver, B.C. V6B 2K4; and that I am a Geologist by occupation
2. I hold a B.Sc. in Geophysics from St. Lawrence University, an M.A. in Geology from University of California, Berkeley, and a Ph.D. in Geology from University of Idaho. I have been practicing my profession since 1961, and I am a member of the Association of Professional Engineers (Geological) of the Province of British Columbia, and a Registered Professional Geologist in the State of Idaho
3. The work described in this report was conducted under my direct supervision.

  
Andrew E. Nevin, Ph.D., P.Eng.

